Worldwide EMC Test Report Doc Central ID-21587091
For:
C9124AXI-X, C9124AXD-X, C9124AXI-ROW, C9124AXD-ROW

Against the following Specifications:

Emissions	Immunity
47 CFR Part 15:2016	CISPR24:2010+A1:2015
CISPR32:2012:Ed:1	EN IEC61000-6-1:2019
CISPR32:2015:Ed:2	EN55024:2010
CNS13438:2006	EN55024:2010:A1
EN55032:2012	EN55035:2017
EN55032:2015	EN61000-6-1:2007
EN55032:2015:A11	IEC61000-6-1:2016:Ed:3
EN61000-3-2:2014	KN35:2015
EN61000-3-3:2013	NM EN 55024:2018
ICES-003:2016:Iss:6	TCVN 7317:2003
KN32:2015	
KN61000-3-2:2014	
KN61000-3-3:2014	
NM EN 55032:2015	
NM EN 61000-3-2:2015	
NM EN 61000-3-3:2015	
QCVN 118:2018/BTTTT	
VCCI-CISPR 32:2016	

Cisco Systems
EMC Laboratory (US0028), 170 West Tasman Drive, San Jose, CA 95134

A2LA ACCREDITED
CERTIFICATE #1178.01

Bohao Li	
Tested By: Bohao Li **Signed Date:** Apr 01, 2021	Approved By**:** Sam Kim Title: Compliance Manager **Signed Date:** Apr 01, 2021

Date: Apr 01, 2021

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This report replaces any previously entered test report under Doc Central - 21587091

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1 Overview

1.1 Test Summary

The samples were assessed against the tests detailed in section 3 under the requirements of the following specifications:

Emissions

Type	Applied To	Specification
Flicker	AC (<16A)	EN61000-3-3:2013 KN61000-3-3:2014 NM EN 61000-3-3:2015
Harmonics	AC (<16A)	EN61000-3-2:2014 KN61000-3-2:2014 NM EN 61000-3-2:2015
Radiated Emissions	Enclosure Port	47 CFR Part 15:2016 CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 CNS13438:2006 EN55032:2012 EN55032:2015 EN55032:2015:A11 ICES-003:2016:Iss:6 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016
Conducted Emissions	AC (<16A)	47 CFR Part 15:2016 CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 CNS13438:2006 EN55032:2012 EN55032:2015 EN55032:2015:A11 ICES-003:2016:Iss:6 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016
Conducted Emissions	Telecomm (Outdoor)	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 CNS13438:2006 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016

Immunity

Type	Applied To	Specification
ESD Immunity	Enclosure Port	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3

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Type	Applied To	Specification
		KN35:2015 NM EN 55024:2018 TCVN 7317:2003
EFT/B Immunity	Signal	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 EN61000-6-2:2005 EN61000-6-2:2019 IEC61000-6-1:2016:Ed:3 IEC61000-6-2:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
EFT/B Immunity	AC (<16A)	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 EN61000-6-2:2005 EN61000-6-2:2019 IEC61000-6-1:2016:Ed:3 IEC61000-6-2:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
EFT/B Immunity	Telecomm (Outdoor)	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 EN61000-6-2:2005 EN61000-6-2:2019 IEC61000-6-1:2016:Ed:3 IEC61000-6-2:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
Radiated RF Immunity	Enclosure Port	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
Conducted RF Immunity	Signal	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003

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Type	Applied To	Specification
Conducted RF Immunity	AC (<16A)	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
Conducted RF Immunity	Telecomm (Outdoor)	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
Surge Impulse/Immunity	Signal	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3
Surge Impulse/Immunity	AC (<16A)	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
Surge Impulse/Immunity	Telecomm (Outdoor)	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003
Voltage Disturbance Immunity	AC (<16A)	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 EN61000-6-2:2005 EN61000-6-2:2019 IEC61000-6-1:2016:Ed:3 IEC61000-6-2:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003

Notes

For Radiated and Conducted emission results refer to section 2.9 for measurement uncertainty considerations.

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2 Assessment Information

2.1 General

This report contains an assessment of an apparatus against Electromagnetic Compatibility Standards based upon tests carried out on the samples submitted.

The testing was performed by and for the use of Cisco systems Inc:

This report may contain data that is not covered by the A2LA accreditation (Certificate number 1178-01)Please refer to Appendix F for further details.

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With regard to this assessment, the following points should be noted:
1. Results contained in this report relate only to the items tested and were obtained in the period between the date of the initial assessment and the date of issue of the report. Manufactured products will not necessarily give identical results due to production and measurement tolerances.

2. The apparatus was set up and exercised using the configuration and modes of operation defined in this report only.

3. Where relevant, the apparatus was only assessed using the susceptibility criteria defined in this report and Test Assessment Plan (TAP).

4. All testing was performed under the following environmental conditions:

Temperature: 15°C to 35°C (59°F to 95°F)
Atmospheric Pressure: 860mbar to 1060mbar (25.4" to 31.3")
Humidity 10% to 75*% *[Where applicable]

ESD testing the humidity limits used were 30% to 60%
EFT/B tests the humidity limits used were 25% to 75%.

5. AC testing was performed at one or more of the following supply voltages: 110V 60 Hz (+/-20%)
220V 50 Hz (+/-20%)

6. Cisco Systems Inc., are accredited by the American Association for Laboratory Accreditation (A2LA). For the specific scope of accreditation under certificate number 1178-01 see appendix F for further details.

7. Where testing has been performed to EN61000-4-3, additional measurements were conducted to establish the field strength at a 40cm height in both the horizontal and vertical antenna polarities (for floor standing EUT's only). See Cisco ENG-72588.

8. Cisco VCCI Registration
Cisco Systems Inc: 493
Site Registration : A-0154

9. ANSI C63.4 clause N1 implies that an accredited cal lab needs to be used for antenna VSWR/Symmetry measurements but is conflicted by other statements within the Annex. Manufacturers data and measurements (EDCS-15887065) show that our antennas satisfy these requirements as such we have not used an accredited lab.

2.2 Date of start of testing

17-Feb-2021

2.3 Report Issue Date/ Report Revision

Date: Apr 01, 2021

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Report Revision
Note : Previous revisions of the report can be viewed through Doc Central.
Report Revision : 1
Amendment to report : 21587091
Reason For Change: first draft

2.4 Testing facilities

Testing Laboratory
Cisco Systems, Inc.,
170 West Tasman Drive
San Jose, CA 95134,USA

Test Engineers :
Bohao Li
Ryan Pham

2.5 Equipment Assessed (EUT)

C9124AXI-X, C9124AXD-X, C9124AXI-ROW, C9124AXD-ROW

2.6 EUT Description

Cisco C9124AXI-X, C9124AXD-X, C9124AXI-ROW, C9124AXD-ROW Access Point: (where X denotes a country code and ROW denotes rest of the world code), (X=A,B,E,I,R Q,Z and ROW=Rest of the World).
Outdoor environments, with internal antennas. Outdoor Mid-Tier 802.11ax Access Point (AP), Internal Omni, Internal Directional. The difference between Internal Omni, and Internal Directional is the antenna and a couple of resistors. Powered by PoE or AC-DC adaptor input.

2.7 Justification of the worst case test configuration and mode of operation

During the testing, there were some radiation emission below 1GHz data gathered from Ithaca I, the rest tested data were based on Ithaca D. The internal antenna assembly is the major difference between Ithaca I and D. The motherboard and power PCB assemblies are identical except for resistor populates on the motherboard. These function of these resistors is to identify the Ithaca SKU. The software image reads these four GPIOs to determine if they are high (1) or low (0). Therefore, that Ithaca I and Ithaca D should consider as hardware equivalent. The difference will not impact EMC testing results.
Testing to be performed with C9300-24-UX-A PoE switch external to test environment.
RE tested wall and ceiling mount for one testing case and pick the wall mount for the rest testing as is considered worst case.

2.8 Scope of Assessment

Tests have been performed in accordance with the relevant Test and Assessment Plan (TAP), a copy of which is contained in Appendix F of this report, and the relevant Cisco EMC compliance test procedures (ENG-23438).

2.9 Units of Measurement

The units of measurements defined in the appendices are reported in specific terms, these are test dependent. Where radiated measurements are concerned these are defined at a particular distance. Basic voltage measurements are defined in dBuV and current in dBuA.
As an example, the basic calculation for all measurements is as follows:
Emission level [dBuV] = Indicated voltage level [dBuV] + Cable Loss [dB] + Other correction factors [dB]
The components of factors are dependent upon the exact test configurations [see test equipment lists for further details] and may include:-

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Antenna Factors, Pre Amplifier Gain, LISN Loss, Pulse Limiter Loss, Current Probe Factors.
Note: to convert the results from dBuV/m to uV/m use the following formula:-
Level in uV/m = Common Antilogarithm [(X dBuV/m)/20] = Y uV/m

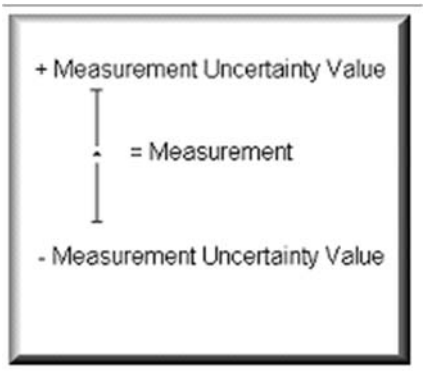
2.10 Measurement Uncertainty

Radiated emissions (expanded uncertainty, confidence interval 95%, coverage factor k=2)
10 kHz - 30 MHz Table/Floor - Marine +/- 2.7 dB (E Field) - Note: Not covered by 16-4-2.
10 kHz - 30 MHz Table/Floor - Marine+/- 2.8 dB (H Field)) - Note : Not covered by 16-4-2.
30 MHz - 300 MHz (Table) +/- 5.1 dB
30 MHz - 300 MHz (Floor) +/- 4.7 dB
300 MHz - 1000 MHz (Table) +/- 5.5 dB
300 MHz - 1000 MHz (Floor) +/- 5.1dB
1 GHz - 10 GHz (Table) +/- 5.4 dB
1 GHz - 10 GHz (Floor) +/- 4.7 dB
10 GHz - 18 GHz (Table) +/- 5.2 dB
10 GHz - 18 GHz (Floor) +/- 4.7 dB
Conducted emissions (expanded uncertainty, confidence interval 95%, coverage factor k=2)
10 kHz - 30 MHz +/- 3.7 dB (using LISN)
150 kHz - 30 MHz +/- 3.1 dB (using CDN)
150 kHz - 30 MHz +/- 2.6 dB (Using TISN - AAN)
150 kHz - 30 MHz +/- 2.7 dB (Using CVP)
150 kHz - 30 MHz +/- 2.8dB (Using Current Probe)

A product is considered to comply with a requirement if the nominal measured value is below the limit line. The product is considered to not be in compliance in case the nominal measured value is above the limit line. For further explanation, refer to Cisco Systems Inc. Measurement Uncertainty Document: (EDCS-16531864)

Decision Rule Employed

Pass: Pass
Fail : Fail
Pass (Uncertain) : If the measured result is below the specification limit by a margin less than the measurement uncertainty; it is not possible to state compliance based on the 95% level of confidence. However, the result indicates that compliance (non-compliance) is more probable than non-compliance(compliance) with the specification limit.



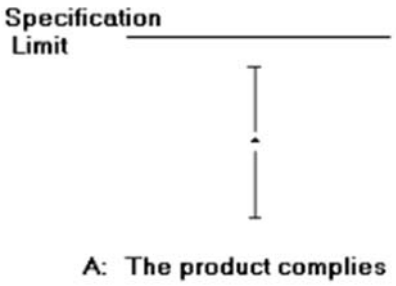
The following case studies demonstrate common measurement scenarios and how measurement uncertainty should be addressed for each.

Key:

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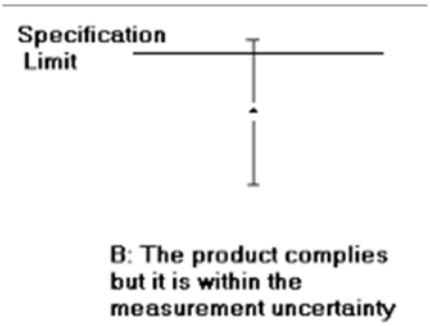
The figure above represents the measured value and the +/- range of uncertainty.

CASE A:



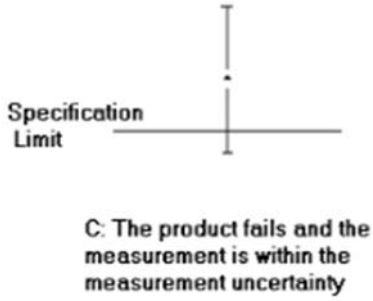
The product clearly complies in this case as it meets the specification limit by a margin greater than the measurement uncertainty.

CASE B:



The product is deemed to comply with the specification limit based upon the shared risk principal which means that there is more chance of the product passing than there is it failing.

CASE C:

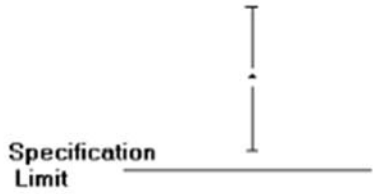


Even though the measurement is within the measurement uncertainty by using the shared risk principal we can judge that the product is more

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likely to fail than it is to pass.
See also case B above.

CASE D:



D: The product fails

The product clearly fails in this case as it meets the specification limit by a margin greater than the measurement uncertainty.
Note:
Not for IEC 60945 Marine which states :

"5.3 Test results : A test report shall be prepared to record the results of all appropriate tests. The measured test results shall be compared with the corresponding acceptable performance limits, and the EUT shall pass the test only if the measured performance margin is favorable and greater than the test measurement uncertainty. The test report shall show, for each test measurement, the test result, its associated measurement uncertainty, the acceptable performance limits, and the performance margin, as applicable."

2.11 Documentation Template Revision Number

Template	Revision #
NEBS Custom Report	7
NEBS Formal Report	7
NEBS TAP	3
Taiwan Custom	7
Taiwan Formal	7
WW Custom Report	7
WW Formal Report	7
WW TAP	3

3 Results Summary

The following tables summarize the results and detail the assessment in terms of:

1. The test type.
2. The specification and class or level applied.
3. The mode of operation of the sample assessed.

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Refer to section 4.2 and 4.3 for Mode and System Details Original test data is stored in TARGA TAP-1057

3.1 Test Result Summary

Harmonics

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
7454	KN61000-3-2:2014	KN61000-3-2:2014	220V 60Hz [+/-20%]	AC Power <16A. 60Hz Test Harmonic requirements	1(EUT), 2(AE)	Pass
7457	EN61000-3-2:2014 NM EN 61000-3-2:2015		230V 50Hz [+/-20%]	AC Power <16A. 50Hz Test Harmonic requirements	1(EUT), 2(AE)	Pass

Flicker

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
7459	KN61000-3-3:2014	KN61000-3-3:2014	220V 60Hz [+/-20%]	AC Power <16A: 60Hz Test Flicker requirements	1(EUT), 2(AE)	Pass
7461	EN61000-3-3:2013 NM EN 61000-3-3:2015		230V 50Hz [+/-20%]	AC Power <16A: 50Hz Test Flicker requirements	1(EUT), 2(AE)	Pass

Conducted Emissions

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
3407	47 CFR Part 15:2016 ICES-003:2016:Iss:6	ANSI C63.4:2014	110V 60Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz AC Power Test: Class: B Measure: Voltage Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
4053	CNS13438:2006	CISPR16 Series	110/220V 60Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
5592	KN32:2015	KN16 Series	220V 60Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
5594	KN32:2015	KN16 Series	220V 60Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
5691	VCCI-CISPR 32:2016		100/200V 50/60Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power : AC Class: B Device: AMN Measure: Voltage Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
5693	VCCI-CISPR 32:2016		100/200V 50/60Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
5699	CNS13438:2006	CISPR16 Series	110/220V 60Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Device: AAN Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
5703	CNS13438:2006	CISPR16 Series	POE	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: DC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
7555	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11	EN55016 Series	POE	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: DC or POE Telecom Line Test Class: B	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
	KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016			Detectors: Quasi-Peak & Average		
7556	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	EN55016 Series	230V 50Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Power Line CE Class: B Device : AMN Measure: Voltage Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass
7575	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	EN55016 Series	230V 50Hz [+/-20%]	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	1(EUT), 2(AE)	Pass

Radiated Emissions

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
4616	47 CFR Part 15:2016 ICES-003:2016:Iss:6	ANSI C63.4:2014	110V 60Hz [+/-20%]	Start Freq: 30MHz - Stop Freq: 1000MHz AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	1(EUT), 2(AE), 3(EUT)	Pass - Uncertain
4617	47 CFR Part 15:2016 ICES-003:2016:Iss:6	ANSI C63.4:2014	POE	Start Freq: 30MHz - Stop Freq: 1000MHz DC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	1(EUT), 2(AE), 3(EUT)	Pass - Uncertain
4621	47 CFR Part 15:2016 ICES-003:2016:Iss:6	ANSI C63.4:2014	110V 60Hz [+/-20%]	Start Freq: 1000MHz - Stop Freq: 40000MHz AC Power Class: B Range: Above 1GHz	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
				Detectors: Peak & Average Measurement distance: 3m		
4622	47 CFR Part 15:2016 ICES-003:2016:Iss:6	ANSI C63.4:2014	POE	Start Freq: 1000MHz - Stop Freq: 40000MHz DC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	1(EUT), 2(AE)	Pass
5600	CNS13438:2006	CISPR16 Series	110/220V 60Hz [+/-20%]	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	1(EUT), 2(EUT), 3(EUT)	Pass - Uncertain
5601	KN32:2015	KN16 Series	220V 60Hz [+/-20%]	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	1(EUT), 2(AE), 3(EUT)	Pass - Uncertain
5602	CNS13438:2006	CISPR16 Series	POE	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	1(EUT), 2(AE), 3(EUT)	Pass - Uncertain
5603	CNS13438:2006 KN32:2015	CISPR16 Series KN16 Series	POE	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	1(EUT), 2(AE), 3(EUT)	Pass - Uncertain
5606	KN32:2015	KN16 Series	220V 60Hz [+/-20%]	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	1(EUT), 2(AE)	Pass
5631	CNS13438:2006	CISPR16 Series	110/220V 60Hz [+/-20%]	Start Freq: 1000MHz - Stop Freq: 6000MHz AC Power Class: B	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
				Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m		
5695	VCCI-CISPR 32:2016		100/200V 50/60Hz [+/-20%]	Start Freq: 1000MHz - Stop Freq: 6000MHz AC Power Class: B Range: Above 1GHz Detector: Peak & Average Measurement distance: 3m/10m	1(EUT), 2(AE)	Pass
5697	VCCI-CISPR 32:2016		100/200V 50/60Hz [+/-20%]	Start Freq: 30MHz - Stop Freq: 1000MHz AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	1(EUT), 2(AE)	Pass - Uncertain
7554	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	EN55016 Series	230V 50Hz [+/-20%]	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	1(EUT), 2(AE)	Pass
7560	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	EN55016 Series	POE	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC or POE Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	1(EUT), 2(AE), 3(EUT)	Pass - Uncertain
7574	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT		230V 50Hz [+/-20%]	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	1(EUT), 2(AE), 3(EUT)	Pass
7582	CISPR32:2015:Ed:2 CNS13438:2006	EN55016 Series	POE	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : DC or POE	1(EUT), 2(AE), 2(EUT)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
	EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016			Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m		

Conducted RF Immunity

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
5288	EN55035:2017 KN35:2015	EN61000-4-6:2014 IEC61000-4-6:2013:Ed:4 KN61000-4-6	230.8V	Start Freq: 0.15MHz - Stop Freq: 80MHz Power : AC Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	1(EUT), 2(AE)	Pass
5290	EN55035:2017 KN35:2015	EN61000-4-6:2014 IEC61000-4-6:2013:Ed:4 KN61000-4-6	230.9V	Start Freq: 0.15MHz - Stop Freq: 80MHz AC or DC Power: Telecom Line Test. Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	1(EUT), 2(AE)	Pass
7599	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	EN61000-4-6:2014 IEC61000-4-11:2004:Ed:2 IEC61000-4-3:2010:Ed:3.2 IEC61000-4-4:2012:Ed:3 IEC61000-4-6:2013:Ed:4	230V	Start Freq: 0.15MHz - Stop Freq: 80MHz Power : AC Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	1(EUT), 2(AE)	Pass
7627	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-	EN61000-4-6:2014 IEC61000-4-6:2013:Ed:4	230.9V	Start Freq: 0.15MHz - Stop Freq: 30MHz AC or DC Power Range : 0.15 MHz to 80MHz Telecom Line Test Apply to: Lines > 3m Level: 3V	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
	1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003			Mod: 1kHz 80% AM Criteria: A		

Radiated RF Immunity

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
3328	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	IEC61000-4-3:2010:Ed:3.2 EN61000-4-3:2006 EN61000-4-3:2006:A1 EN61000-4-3:2006:A2 KN61000-4-2 KN61000-4-8	230.8V	Start Freq: 80MHz - Stop Freq: 1000MHz Power : AC or DC Range: 80 -1000MHz Level: 3V/m Mod: 1kHz 80% AM Step Size: 1% Criteria: A Distance: EDCS-15663086	1(EUT), 2(AE)	Pass
5296	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	IEC61000-4-3:2010:Ed:3.2	230.8V	Start Freq: 1400MHz - Stop Freq: 6000MHz Power ; AC or DC Range: 1.4GHz-6.0GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086	1(EUT), 2(AE)	Pass

EFT/B Immunity

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
7594	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	EN61000-4-4:2012 IEC61000-4-4:2012:Ed:3 KN61000-4-4	PoE	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	1(EUT), 2(AE)	Pass
7596	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019	EN61000-4-4:2012 IEC61000-4-4:2012:Ed:3	230.8V	AC Power: Coupling: Lines to Gnd	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
	EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003			TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B		
7615	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	IEC61000-4-3:2010:Ed:3.2	POE, PoE	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS.. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	1(EUT), 2(AE)	Pass
7619	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	IEC61000-4-4:2012:Ed:3	230.8V	AC Power: Coupling: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B	1(EUT), 2(AE)	Pass

ESD Immunity

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
7621	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	IEC61000-4-2:2008:Ed:2 EN61000-4-2:2009 KN61000-4-2	230.9V, 230.8V	AC or DC Power. Level: 8kV Air Level: 4kV Contact Criteria: B	1(EUT), 2(AE)	Pass

Surge Impulse/Immunity

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
3390	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017 KN61000-4-5	230.9V	AC or DC Power: Telecom Lines: Protection : No Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	1(EUT), 2(AE)	Pass
3413	EN55035:2017 KN35:2015	EN61000-4-5:2014 IEC61000-4-5:2014:Ed:3 IEC61000-4-5:2014+A1:2017 KN61000-4-5	230.9V	AC or DC Power: Protection : No Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Level: 500V Surge: 1.2/50 uS Criteria: B	1(EUT), 2(AE)	Pass
3426	TCVN 7317:2003		230.9V, 230.8V	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1.5kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	1(EUT), 2(AE)	Pass
4066	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017 KN61000-4-5	230.9V	Power: AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: C	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
4908	EN55035:2017 KN35:2015	EN61000-4-5:2014 IEC61000-4-5:2014:Ed:3 IEC61000-4-5:2014+A1:2017 KN61000-4-5	230.9V	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Protection : Yes Level: 0.5kV Surge: 1.2/50 uS Criteria: B	1(EUT), 2(AE)	Pass
7573	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	IEC61000-4-5:2014:Ed:3 EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017	230.9, 230.9V, 230.8V	Power : AC or DC Protection : No Telecom/ Signal Lines: Apply To: Long Distance Lines Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	1(EUT), 2(AE)	Pass
7602	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	IEC61000-4-5:2014:Ed:3 EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017 KN61000-4-5	230.9V	Power: AC Protection : No Level: 1kV Apply To: Line to Line Surge: 1.2/50 uS Criteria: B Level: 2kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	1(EUT), 2(AE)	Pass

Voltage Disturbance Immunity

TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
3372	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 NM EN 55024:2018 TCVN 7317:2003	EN61000-4-11:2004 IEC61000-4-11:2004:Ed:2	230.5V, 115.3V	AC Power: <16A Mains Frequency : 50Hz Reductions : 0% Ut (100% Reduction) 0.5 cycle (B) 70% Ut (30% Reduction) 25 Cycle (B) 0% Ut (100% Reduction) 250 Cycles (C)	1(EUT), 2(AE)	Pass

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TestCase ID	Product Standard	Basic Standard	Voltage	Test Details	Systems Tested	Result
4729	KN35:2015	KN61000-4-11	209.3V/60Hz, 118.6V/60Hz	AC Power: Mains Frequency : 60Hz Voltage Reductions : >95% for 0.5 Cycles [B] 30% for 30 Cycles[C] >=95% for 300 Cycles [C]	1(EUT), 2(AE)	Pass
5980	KN35:2015	KN61000-4-11	118.6V, 209.3V	AC Power: Mains Frequency : 60Hz Reductions : >= 95% for 0.5 cycle[B] 30% for 30 cycle[C] > = 95% for 300 cycle[C]	1(EUT), 2(AE)	Pass
7624	EN IEC61000-6-1:2019 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3	IEC61000-4-11:2004:Ed:2 EN61000-4-11:2004	232.1V, 115.3V	AC Power: <16A Mains Frequency : 50Hz 0% Ut (100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycles (C) 0% Ut (100% Reduction) 250 Cycles (C)	1(EUT), 2(AE)	Pass

3.2 Ports Justification Summary

NA

3.3 Standards Justification Summary

Justification #	Description
11	N/A due to that Standard for the device that has AC power products >16A
12	N/A due to that Standard applies to apparatus intended to be connected to a power network supplied from a high or medium voltage transformer dedicated to the supply of an installation feeding manufacturing or similar plant, and intended to operate in or in proximity to industrial locations

Product Standard	Product Type Intended Use	Justification #
KN61000-3-12:2014	EMC: All Products	11
KN61000-3-11:2014	EMC: All Products	11
EN61000-3-12:2011	EMC: All Products	11

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Product Standard	Product Type Intended Use	Justification #
EN61000-3-11:2000	EMC: All Products	11
EN61000-6-2:2005	EMC: All Products	12
NM EN 61000-3-11:2015	EMC: All Products	11
NM EN 61000-3-12:2015	EMC: All Products	11
EN61000-6-2:2019	EMC: All Products	12
IEC61000-6-2:2016:Ed:3	EMC: All Products	12

3.4 Test case Justification Summary

Justification #	Description	Test Case ID or EDCS Number
1	Product Type Intended Use (PT IU) mismatch.	
2	Port Type (PT) mismatch.	
5	This test only appliesto the enclosure of devices sensitive to magnetic fields (e.g VDU, HD, Speaker, Microphone). This EUT does not have these devices	
8	This requirement is covered by an equivalent test which is included in this TAP, hence assessment is not required. See Spec Id:	5296
10	The enclosure of devices is not sensitive to magnetic fields.	
12	N/A due to that Standard applies to apparatus intended to be connected to a power network supplied from a high or medium voltage transformer dedicated to the supply of an installation feeding manufacturing or similar plant, and intended to operate in or in proximity to industrial locations	

Conducted Emissions

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3406	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6	EMC: ITE | Office EMC: Smart Grid EMC: PLC	AC Power Test: Class: A Measure: Voltage Detectors: Quasi-Peak & Average	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input).	AC (<16A)	1
4088	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	Power : AC Class: A Measure: Voltage	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 220V [60Hz] and 110V [60Hz]	AC (<16A)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
				Detectors: Quasi-Peak & Average			
5451	110V 60Hz [+/-20%]	47 CFR Part 15:2016	EMC: PLC	AC Power Test: Class: N/A Measure: Voltage Detectors: Quasi-Peak & Average	For all other carrier current systems: 1000 µV within the frequency band 535-1705 kHz, as measured using a 50 µH/50 ohms LISN.. 110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input).	AC (<16A)	1
5591	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	Power: AC Power Line CE Class: A Device: AMN Measure: Voltage Detectors: Quasi - Peak & Average	Korea 220V 60Hz +/-20%	AC (<16A)	1
5593	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	Power: AC Telecom Line Test Class: A Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/-20%	Telecomm (Outdoor)	1
5692	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	Power: AC Class: A Device: AMN Measure: Voltage Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	AC (<16A)	1
5694	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	Power: AC Telecom Line Test Class: A Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	Telecomm (Outdoor)	1
5700	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	Power: AC Telecom Line Test Class: A Device: AAN Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 220V [60Hz] and 110V [60Hz]	Telecomm (Outdoor)	1
5701	POE	CNS13438:2006	EMC: ITE | Office	Power: DC Telecom Line Test Class: A Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.	Telecomm (Outdoor)	1
7558	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 EN61000-6-4:2007	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office	Power: AC Telecom Line Test Class: A Detectors: Quasi-Peak & Average		Telecomm (Outdoor)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	EMC: PLC EMC: Smart Grid EMC: ITE | Heavy Industrial				
7566	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Wired Network Port Class: B Detectors: Quasi-Peak & Average	.	Telecomm (Outdoor)	1
7566	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Wired Network Port Class: B Detectors: Quasi-Peak & Average	.	Telecomm (Outdoor)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014					
7579	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 EN61000-6-4:2007 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016 ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: PLC EMC: Smart Grid EMC: ITE | Heavy Industrial	Power: DC or POE Telecom Line Test Class: A Detectors: Quasi-Peak & Average		Telecomm (Outdoor)	1
7581	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN50065-1:2011 EN55032:2012 EN55032:2015 EN55032:2015:A11 EN61000-6-4:2007 IEEE 1901.2:2013+A1:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: PLC EMC: Smart Grid EMC: ITE | Heavy Industrial	Power: AC Power Line CE Class: A Device: AMN Measure: Voltage Detectors: Quasi - Peak & Average		AC (<16A)	1
7587	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Class: B Detectors: Quasi-Peak & Average	.	AC (<16A)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014					
7587	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Class: B Detectors: Quasi-Peak & Average	.	AC (<16A)	1
7588	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power : AC Wired Network Port Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	Telecomm (Outdoor)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014					
7588	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power : AC Wired Network Port Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	Telecomm (Outdoor)	1
7589	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: DC Wired Network Port Class: B Detectors: Quasi-Peak & Average	.	Telecomm (Outdoor)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014					
7590	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power : DC: Wired Network Port Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	Telecomm (Outdoor)	1
7591	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	AC (<16A)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		QCVN 112:2017/BTTTT QCVN 18:2014					
7591	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	AC (<16A)	1

Radiated Emissions

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3402	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 110V [60Hz] and 220V [60Hz]	Enclosure Port	1
3402	POE	CNS13438:2006	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 110V [60Hz] and 220V [60Hz]	Enclosure Port	1
4071	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Korea 220V 60Hz +/-20%. Perform @ 10m only.	Enclosure Port	1
4087	POE	CNS13438:2006 KN32:2015	EMC: ITE | Office	DC Power Class: A Range: Below 1GHz Detectors: Quasi Peak	As Appropriate : Korea : Fastest Ethernet Rate Taiwan : Assess All Ethernet rates.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
				Measurement distance: 10m			
4107	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	AC Power Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Taiwan : Assess All Ethernet rates. AC Class A products must be evaluated at both 110V [60Hz] and 220V [60Hz]	Enclosure Port	1
4619	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)	Enclosure Port	1
4620	POE	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	DC Power Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m		Enclosure Port	1
4623	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	AC Power Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m. 110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)	Enclosure Port	1
4624	POE	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	DC Power Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m.	Enclosure Port	1
5604	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	Power : AC Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Korea 220V 60Hz +/-20%	Enclosure Port	1
5696	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	AC Power Class: A Range: Above 1GHz Detector: Peak & Average Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
5698	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	Enclosure Port	1
7557	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 CNS13438:2006 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016 ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: Smart Grid	Power : DC or POE Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	As Appropriate: Test at Fastest Ethernet Rate except for : Taiwan : Assess All Ethernet rates.	Enclosure Port	1
7559	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016 ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: Smart Grid	Power : DC or POE Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.	Enclosure Port	1
7578	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: Smart Grid	Power : AC Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m or 10m		Enclosure Port	1
7580	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300	EMC: ITE | Office EMC:	Power : AC Class: A Range: Below 1GHz Detector: Quasi Peak	Perform measurements @ 3m or 10m.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		386:2012:V1.6.1 EN50065-1:2011 EN55032:2012 EN55032:2015 EN55032:2015:A11 IEEE 1901.2:2013+A1:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	TNE | Central office EMC: TNE | Non central office EMC: PLC EMC: Smart Grid	Measurement distance: 3m/10m			
7583	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	DC Power Class: A Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis.(Rare for Cisco) Test Cisco products to Test Method EN55032. Limits for equipment Installed in Telecommunication Centers and Industrial environments. All other equipment must meet class B.	Enclosure Port	1
7584	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio |	DC Power Class: B Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis. (Rare for Cisco) Test Cisco products to Test Method EN55032.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	489-52 EMC: Radio | 489-6				
7585	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	AC Power Class: A Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m/10m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis. (rare for Cisco) Test Cisco products to Test Method EN55032. Limits for equipment Installed in Telecommunication Centers and Industrial locations. All other equipment must meet class B.	Enclosure Port	1
7585	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC:	AC Power Class: A Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m/10m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis. (rare for Cisco) Test Cisco products to Test Method EN55032. Limits for equipment Installed in Telecommunication Centers and Industrial locations. All other equipment must meet class B.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	Radio | 489-52 EMC: Radio | 489-6				
7586	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	AC Power Class: B Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m/10m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis (rare for Cisco). Test Cisco products to Test Method EN55032.	Enclosure Port	1
7586	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50	AC Power Class: B Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m/10m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis (rare for Cisco). Test Cisco products to Test Method EN55032.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-52 EMC: Radio | 489-6				

Conducted RF Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3412	User Choice	CISPR35:2016:Ed:1 EN55035:2017 KN35:2015	EMC: ITE | Home [Class B] EMC: ITE | Office	DC Power: Range : 0.15 MHz to 80 MHz Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.	DC (Indoor) DC (Outdoor)	2
3414	User Choice	CISPR35:2016:Ed:1 EMC Corporate Spec EN55035:2017	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products	AC or DC Power. Performed at : ITL DSL Test Range: 150kHz-30MHz Level: 0.15-0.5MHz 107dBuV Level: 0.5-10MHz 107-36dBuV Level: 10-30MHz 36-30dBuV Duration: 0.7ms Period: 8.3ms (for 60 Hz) Criteria A: Perform at External Lab	Broadband Impulse Noise (Repetitive) Applicable only to CPE xDSL ports.. From EN55035. Recommendation ITU-T K.9	DSL	2
3415	User Choice	CISPR35:2016:Ed:1 EMC Corporate Spec EN55035:2017	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products	AC or DC Power: Performed at : ITL DSL Test Range: 150kHz-30MHz Level: 0.15-30MHz: 110dBuV Duration [mS]: 0.24, 10, 300 Criteria: A Perform at External Lab	Broadband Impulse Noise (Isolated) Applicable only to CPE xDSL ports. from EN55035. See Recommendation ITU-T K.93	DSL	2
7598	User Choice	1TR9:2016 CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN300 386:2012:V1.6.1 EN55024:2010 EN55024:2010:A1 EN60601-1-2:2015 EN61000-6-1:2007	EMC: TNE | Central office EMC: TNE | Non central office EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products	Power : DC Range : 0.15 MHz to 80MHz Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN 61131-2 Zone A.	DC (Indoor) DC (Outdoor)	2

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		IEC60601-1-2:2014:Ed:4 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003 EN61131-2:2007	EMC: TNE | Home [Class B] EMC: ITE | Medical Devices EMC: Programmable Logic Controllers				

Radiated RF Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3410	User Choice	EN55035:2017 KN35:2015 CISPR35:2016:Ed:1	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC. Spot Test : 1800, 2600,3500 and 5000MHz Level: 3V/m Mod: 1kHz 80% AM Step Size: n/a Criteria: A Distance: EDCS-15663086		Enclosure Port	8
3421	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	Power : AC or DC Range: 1.4GHz-2GHz Level: 10V/m Range: 2GHz-2.7GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A Distance: EDCS-15663086		Enclosure Port	1
3423	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	Power : AC or DC Range: 80 to 800MHz Level : 3V/m Range: 800-960MHz Level: 10V/m Range: 960 - 1000MHz Level: 3V/m Mod: 1kHz 80% AM Criteria: A Distance: EDCS-15663086		Enclosure Port	1
6464	User Choice	EN61000-6-1:2007 EN61131-2:2007 EN61326-1:2013	EMC: All Products EMC: Programmable Logic Controllers EMC: ITE | Scientific/Lab Use	Power : AC or DC Range: 2.0GHz-2.7GHz Level: 1V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086	EN 61131-2 : All Zones	Enclosure Port	8
6472	User Choice	EN61000-6-1:2007 EN61131-2:2007 EN61326-1:2013	EMC: All Products EMC: Programmable Logic Controllers EMC: ITE | Scientific/Lab Use	Power : AC or DC Range: 1.4GHz-2GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086	EN 61131-2 : All Zones	Enclosure Port	8

Magnetic Field Immunity

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
7397	User Choice	CISPR35:2016:Ed:1 EN55035:2017	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: Freq: 50Hz Level: 1A/m Mod: n/a Criteria: A	Apply to the enclsoure of devices sensitive to magnetic fields.	Enclosure Port	5,10
7399	User Choice	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 NM EN 55024:2018 TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Freq: 50Hz Level: 1A/m Mod: n/a Criteria: A	Apply to the enclsoure of devices sensitive to magnetic fields.	Enclosure Port	5,10
7401	User Choice	KN35:2015	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: Freq: 60Hz Level: 1A/m Mod: n/a Criteria: A	Apply to the enclsoure of devices sensitive to magnetic fields.	Enclosure Port	5,10
7623	User Choice	1TR9:2016 EN61000-6-1:2007 EN61326-1:2013 IEC61000-6-1:2016:Ed:3 EN IEC61000-6-1:2019	EMC: TNE | Central office EMC: TNE | Non central office EMC: All Products EMC: ITE | Scientific/Lab Use	AC or DC Power: Freq: 50Hz & 60Hz Level: 3A/m Mod: n/a Criteria: A	Apply to the enclosure of devices sensitive to magnetic fields. Basic Immunity (Table 1)	Enclosure Port	10

EFT/B Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3370	User Choice	1TR9:2016 EN61000-6-1:2007	EMC: TNE | Central office EMC: All Products	DC Power: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	1 TR9 Level 1. Central Office	DC (Indoor) DC (Outdoor)	2
3388	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 TCVN 7317:2003 NM EN 55024:2018	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: DSL: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B		DSL	2
6514	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61131-2:2007 IEC61000-6-1:2016:Ed:3	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products EMC: Programmable Logic Controllers	DC Power: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	EN61131-2 Zone A	DC (Indoor) DC (Outdoor)	2

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		KN35:2015 NM EN 55024:2018 TCVN 7317:2003					
7616	User Choice	IEC61000-6-1:2016:Ed:3 EN IEC61000-6-1:2019	EMC: All Products	DC Power: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.	DC (Indoor) DC (Outdoor)	2
7644	User Choice	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 EN IEC61000-6-1:2019	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products	AC or DC Power DSL Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	For IEC 61000-6-1 Either 5KHz or 100KHz can be performed	DSL	2

ESD Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3447	User Choice	1TR9:2016 EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office	AC or DC Power. Level: 4kV Air Level: 4kV Contact Criteria: B	TNE Central Office. 1 TR9 Level 1.	Enclosure Port	1
6356	User Choice	EN300 386:2012:V1.6.1 EN60945:2002 IEC60533:2015 NM EN 55024:2018 1TR9:2016	EMC: TNE | Home [Class B] EMC: TNE | Non central office EMC: ITE | Marine	AC or DC Power. Level: 8kV Air Level: 6kV Contact Criteria: B	TNE Non Central Office. With corrigendum 1 (2008): I TR 9 Level 1	Enclosure Port	1

Surge Impulse/Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3389	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN300 386:2012:V1.6.1 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: TNE | Central office	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: Yes Level: 4kV Apply To: Line to Gnd	With primary protection fitted. Telecommunication Centers or Other than Telecommunication Centers.	Telecomm (Outdoor)	12

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		TCVN 7317:2003 NM EN 55024:2018	EMC: TNE | Home [Class B] EMC: TNE | Non central office	Surge: 10/700 uS Criteria: C			
4065	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: Yes Level: 4kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: C	Alternative Test where 10/700 CDN wont allow the EUT to operate. For ports where primary protection is intended : Test applied to all lines simultaneously to earth (ground) with primary protection fitted.	Telecomm (Outdoor)	12
4131	230V 50Hz [+/-20%]	TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: Yes Level: 4kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Primary Protection Installed. Uses ITU-T for the test methods.	Telecomm (Outdoor)	12
4131	POE	TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: Yes Level: 4kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Primary Protection Installed. Uses ITU-T for the test methods.	Telecomm (Outdoor)	12
4909	User Choice	EN55035:2017 KN35:2015 CISPR35:2016:Ed:1	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Protection : Yes Level: 0.5kV Surge: 1.2/50 uS Criteria: B		Antenna (Outdoor)	2
5291	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office	Power: AC Protection : No Level: 0.5kV Apply To: Line to Line Surge: 1.2/50 uS Criteria: B Level: 1kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Telecommunication Centers	AC (<16A)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
5292	User Choice	EN61000-6-1:2007	EMC: All Products	Power : DC Apply to: Indoor/ Outdoor lines Level: 0.5kV Apply To: Line to Gnd Level: 0.5kV Apply To: Line to Line Surge: 1.2/50 uS Protection : No Criteria: B		DC (Indoor) DC (Outdoor)	2
5293	User Choice	EN50293:2012 EN61000-6-2:2019 IEC61000-6-1:2016:Ed:3 IEC61000-6-2:2016:Ed:3 EN IEC61000-6-1:2019	EMC: Road traffic signal systems EMC: All Products EMC: ITE | Heavy Industrial	Power : DC Apply to: Indoor/ Outdoor lines Level: 0.5kV Apply To: Line to Line Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Protection : No Criteria: B		DC (Indoor) DC (Outdoor)	2
5842	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	AC or DC Power: Protection : No Telecom Lines: Apply To: Indoor Lines Apply To: Lines >10m Level: 0.5kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Telecommunication Centers or Other than Telecommunication Centers.	Signal	1

Voltage Disturbance Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3425	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	AC Power: Mains Frequency : 50Hz Reductions: 0% Ut (100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycle (B) 0% Ut (100% Reduction) 250 Cycles (C)	Apply at Zero Crossing. 3 Repetitions per Interruption. Other Than Telecom Centers. Where the equipment has a rated voltage range the following shall apply: – if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); – in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;	AC (<16A)	1
7634	User Choice	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	EMC: All Products	AC Power: >16A Mains Frequency : 50Hz 0% Ut (100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycles (C) 0% Ut (100% Reduction) 250 Cycles (C)	Zero Crossing	AC (>16A)	2

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3.5 Port to Test Cases Justification Summary

NA

4 Sample Details

Note: Each sample was evaluated to ensure that its condition was suitable to be used as a test sample prior to the commencement of testing. Please also refer to the “Justification for worst Case Test Configuration” section of this report for further details on the selection of EUT samples.

4.1 Sample Details

Photographs of the test samples, where appropriate can be found in appendix H

4.2 Samples

Sample	PID	Description	Serial Number	Part Number	Hardware Revision	Manufacturer	Software Revision	Firmware Revision
1	C9124AXD-X	Access Point - EUT Ithaca D	FOC25033DEA	74-125083	01	Cisco Systems, Inc.	8.10.109.41	N/A
3	C3850-24POE	POE Switch - Support	FOC2128U00Y	800-41071-03	V01	Cisco Systems, Inc.	N/A	N/A
4	5GHz Client Laptop	Laptop - Support	CB20864762	59359084	N/A	Lenovo	N/A	N/A
5	2.4GHz Client Laptop	Laptop - Support	R9YD7P5	CS0000034465	N/A	Lenovo	N/A	N/A
6	Server Laptop	Laptop - Support	PF1F37J8	20L6S4T800	N/A	Lenovo	N/A	N/A
7	SOLO 10G	10GBase-T Ethernet Adapter	A01248068002777	N/A	N/A	Sonnet	N/A	N/A
8	Poe Injector		N18226630A04912A05	AIR-PWRINJ-60RGD1		Microsemi		
9	C9300-48UN P1B	Switch	FOC2432L80H			Cisco	N/A	N/A
10	C9124AXI-X	Access Point - EUT Ithaca I	FOC24523WZ9	74-125082	01	Cisco Systems, Inc.	8.10.109.41	N/A

4.3 Traffic Generators

NA

GeneralComments

NA

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4.4 System Details

System #	Sample/Traffic Generator#	Type	Description
1	1	Sample	C9124AXI-X Ithaca D
2	6, 7, 3, 4, 5, 8, 9	Sample	Support Equipment
3	10	Sample	C9124AXI-X Ithaca I

4.5 Software Mode

Mode	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

GeneralComments

NA

4.6 Hardware Mode

Mode	Title	Description/Title
1	Internal Antennas	EUT with earth. shielded cables.
2	Internal Antennas	EUT with earth. shielded cables.
3	Internal Antennas	EUT with earth. shielded cables.

GeneralComments

NA

4.7 Sample Modifications Performed During Assessment

NA

Sample Modification Photographs

NA

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5 Appendices

5.1 Appendix A: Formal Emissions Test Results

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Harmonics

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Test Case Details

TestCase ID: 7454	Test Type: Harmonics		
Product Standard	**Port Type**	**Test Details**	**Comments**
KN61000-3-2:2014	AC (<16A)	AC Power <16A. 60Hz Test Harmonic requirements	Annex 1-11. Korea 220V 60Hz
Basic Standard	KN61000-3-2:2014		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7454-1 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7454-1
Port Reference	[D] AC-DC power supply
Measured Voltage	219.58V 60Hz
Subtest Result	Pass
Comments on the above Test Results	60Hz
Environmental Conditions	
Temperature: (59 to 95)°F	60.4
Humidity: (10 to 75)%	53.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

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Test Results Details

NA

Test Result-Attachments

H-IthacaFL219 60Hz

Test File:	**H-IthacaFL230-20210302_072**
EUT:	**Ithaca**
Test Standard:	**Test per IEC 61000-3-2 Ed. 5.0 – 2018**
Test Class:	**(All Parameters)**
Test Result:	PASS - POHC Allowable
Test Date:	**3/2/2021**
Start Time:	**6:07:35 PM**
Stop Time:	**6:18:03 PM**
Test Duration (min):	**10**

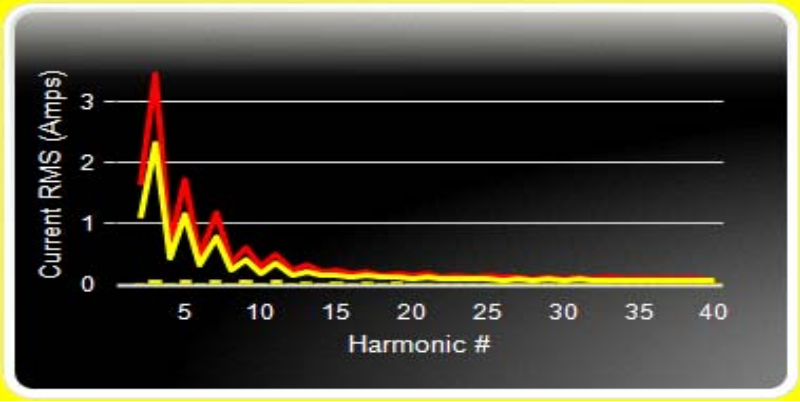
Source Qualification: **Compliance with IEC61000-3-2**

Power Source Distortion:	OK
Customer:	**CISCO**
Test By:	**Ryan**
Comments:	**13.5Hz Modulation Programmable**

General Test Data: (Phase A)

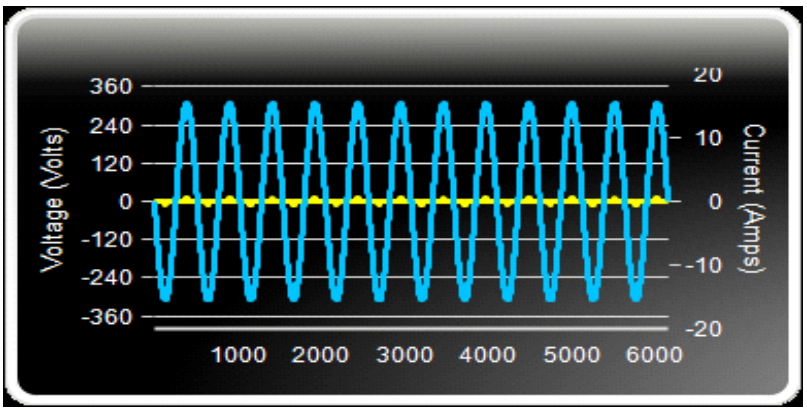
Vrms (Volts):	**219.58**	**Frequency (Hz):**	**60.00**
I_rms (Amps):	**0.158**	**Power (VA):**	**34.8**
I_fund (Amps):	**0.077**	**Power (W):**	**14.2**
I_peak (Amps):	**0.825**	**Power Factor:**	**0.409**
V-THD (%):	**0.30**	**I-THD (%):**	**180.42**
POHC (A):	**0.02**	**POHC Limit (A):**	**0.25**
I-THC (A):	**0.138**	**Meas. Pwr (Min / Max)**	**13.9W/16.0W**
Phase angle of H5 (deg):	**6.2**		

Harmonic Spectrum



Voltage & Current Waveform

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Current Harmonics (values at the end of test)

Harm No.	Harm. Ave.	Harm. Limit (100%)	% Of Limits	Result (Ave.)	Result (Max.)	Harm. Win.	Harm. Win. (150%)	% Of Max
2	0.0055	1.0800	0.5	PASS	PASS	0.0061	1.6200	0.4
3	0.0651	2.3000	2.8	PASS	PASS	0.0661	3.4500	1.9
4	0.0051	0.4300	1.2	PASS	PASS	0.0058	0.6450	0.9
5	0.0609	1.1400	5.3	PASS	PASS	0.0619	1.7100	3.6
6	0.0048	0.3000	1.6	PASS	PASS	0.0054	0.4500	1.2
7	0.0566	0.7700	7.3	PASS	PASS	0.0575	1.1550	5.0
8	0.0042	0.2300	1.8	PASS	PASS	0.0047	0.3450	1.4
9	0.0507	0.4000	12.7	PASS	PASS	0.0515	0.6000	8.6
10	0.0035	0.1840	1.9	PASS	PASS	0.0039	0.2760	1.4
11	0.0442	0.3300	13.4	PASS	PASS	0.0448	0.4950	9.1
12	0.0029	0.1530	1.9	PASS	PASS	0.0032	0.2295	1.4
13	0.0371	0.2100	17.6	PASS	PASS	0.0376	0.3150	11.9
14	0.0022	0.1310	1.6	PASS	PASS	0.0024	0.1965	1.2
15	0.0298	0.1500	19.9	PASS	PASS	0.0301	0.2250	13.4
16	0.0018	0.1150	1.6	PASS	PASS	0.0020	0.1725	1.2
17	0.0227	0.1320	17.2	PASS	PASS	0.0230	0.1980	11.6
18	0.0013	0.1020	1.3	PASS	PASS	0.0015	0.1530	1.0
19	0.0160	0.1180	13.6	PASS	PASS	0.0163	0.1770	9.2
20	0.0012	0.0920	1.3	PASS	PASS	0.0013	0.1380	1.0
21	0.0102	0.1070	9.5	PASS	PASS	0.0105	0.1605	6.5
22	0.0012	0.0830	1.5	PASS	PASS	0.0013	0.1245	1.1
23	0.0052	0.0970	5.3	PASS	PASS	0.0054	0.1455	3.7
24	0.0012	0.0760	1.5	PASS	PASS	0.0013	0.1140	1.1
25	0.0017	0.0900	1.9	PASS	PASS	0.0019	0.1350	1.4
26	0.0013	0.0700	1.8	PASS	PASS	0.0014	0.1050	1.3
27	0.0024	0.0830	2.9	PASS	PASS	0.0027	0.1245	2.2
28	0.0010	0.0650	1.6	PASS	PASS	0.0011	0.0975	1.2
29	0.0042	0.0770	5.4	PASS	PASS	0.0044	0.1155	3.8
30	0.0010	0.0610	1.7	PASS	PASS	0.0011	0.0915	1.2
31	0.0051	0.0720	7.1	PASS	PASS	0.0053	0.1080	4.9
32	0.0007	0.0570	1.3	PASS	PASS	0.0008	0.0855	1.0
33	0.0053	0.0680	7.8	PASS	PASS	0.0054	0.1020	5.3
34	0.0006	0.0540	1.2	PASS	PASS	0.0007	0.0810	0.9
35	0.0049	0.0640	7.7	PASS	PASS	0.0050	0.0960	5.2
36	0.0006	0.0510	1.1	PASS	PASS	0.0007	0.0765	0.9
37	0.0040	0.0600	6.7	PASS	PASS	0.0041	0.0900	4.6
38	0.0005	0.0480	1.0	PASS	PASS	0.0006	0.0720	0.8
39	0.0029	0.0570	5.1	PASS	PASS	0.0030	0.0855	3.5
40	0.0006	0.0460	1.3	PASS	PASS	0.0007	0.0690	1.0

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Power Source Verification Data

Harm No.	Harm. Value	Harm. Limit	% Of Limits	% Of Vfund	Result
2	0.1213	0.4400	27.6	0.055	OK
3	0.6540	1.9800	33.0	0.298	OK
4	0.0455	0.4400	10.3	0.021	OK
5	0.0636	0.8800	7.2	0.029	OK
6	0.0389	0.4400	8.8	0.018	OK
7	0.0368	0.6600	5.6	0.017	OK
8	0.0206	0.4400	4.7	0.009	OK
9	0.0569	0.4400	12.9	0.026	OK
10	0.0164	0.4400	3.7	0.007	OK
11	0.0244	0.2200	11.1	0.011	OK
12	0.0145	0.2200	6.6	0.007	OK
13	0.0340	0.2200	15.5	0.015	OK
14	0.0087	0.2200	3.9	0.004	OK
15	0.0243	0.2200	11.0	0.011	OK
16	0.0200	0.2200	9.1	0.009	OK
17	0.0207	0.2200	9.4	0.009	OK
18	0.0161	0.2200	7.3	0.007	OK
19	0.0180	0.2200	8.2	0.008	OK
20	0.0102	0.2200	4.6	0.005	OK
21	0.0123	0.2200	5.6	0.006	OK
22	0.0094	0.2200	4.3	0.004	OK
23	0.0088	0.2200	4.0	0.004	OK
24	0.0061	0.2200	2.8	0.003	OK
25	0.0045	0.2200	2.1	0.002	OK
26	0.0163	0.2200	7.4	0.007	OK
27	0.0076	0.2200	3.5	0.003	OK
28	0.0111	0.2200	5.0	0.005	OK
29	0.0107	0.2200	4.9	0.005	OK
30	0.0101	0.2200	4.6	0.005	OK
31	0.0108	0.2200	4.9	0.005	OK
32	0.0093	0.2200	4.2	0.004	OK
33	0.0103	0.2200	4.7	0.005	OK
34	0.0045	0.2200	2.1	0.002	OK
35	0.0102	0.2200	4.6	0.005	OK
36	0.0047	0.2200	2.1	0.002	OK
37	0.0106	0.2200	4.8	0.005	OK
38	0.0030	0.2200	1.4	0.001	OK
39	0.0088	0.2200	4.0	0.004	OK
40	0.0057	0.2200	2.6	0.003	OK

Questions & Answers

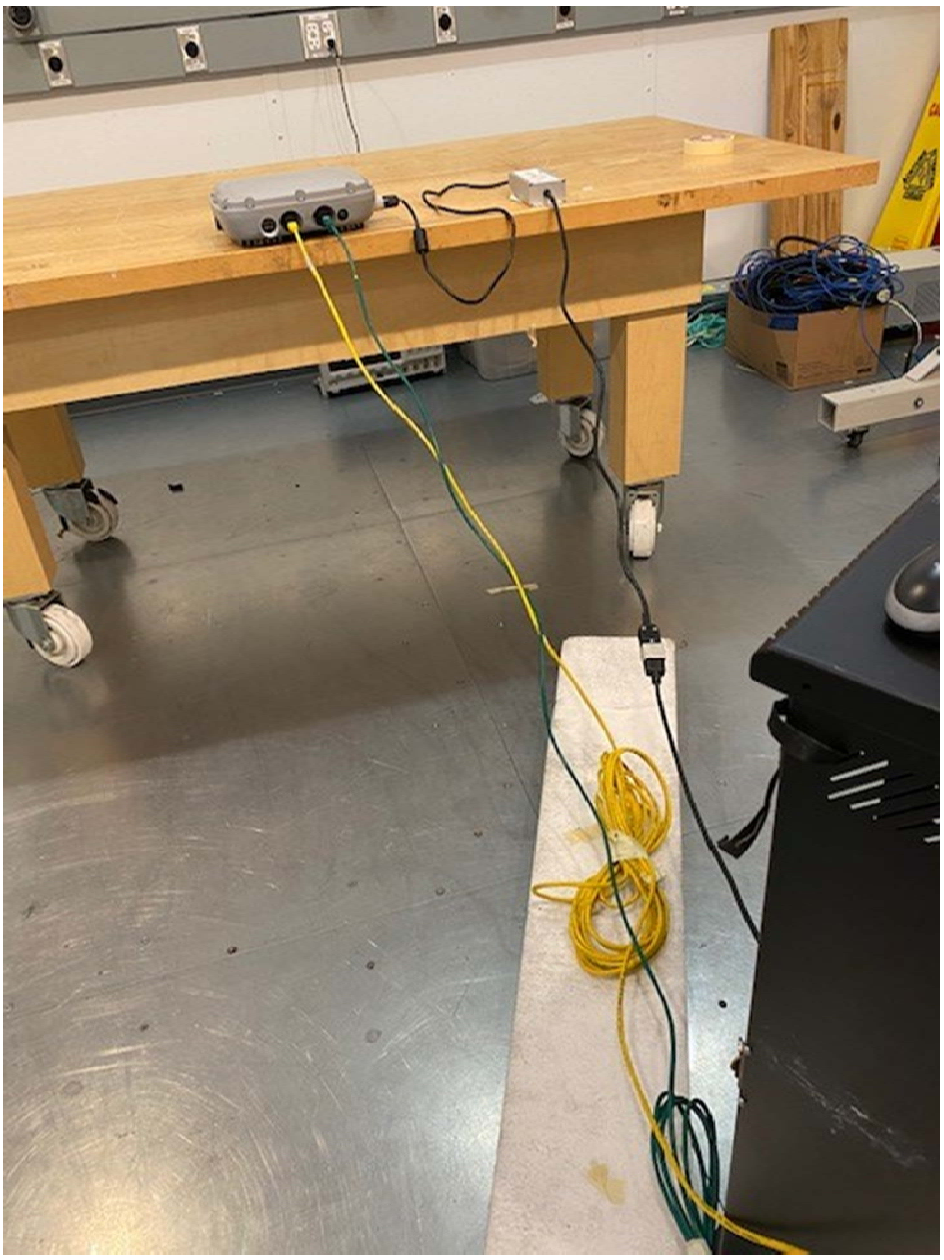
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Does the EUT use 6.1 Control methods (Asymmetrical controls according to IEC 60050-161, 161-07-12 and half-wave rectification directly on the mains supply) ?	NO
If the EUT uses the control methods in 6.1 does it meet the circumstances defined in this section?	N/A
C.10. ITE, other than personal computers, which is marketed with (factory-fitted options) or has expansion slots, is tested with additional loads in each expansion slot that result in the maximum power consumption attainable using the (factory-fitted options) specified by the manufacturer. How was this achieved ?	N/A

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7457	Test Type: Harmonics		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN61000-3-2:2014 NM EN 61000-3-2:2015	AC (<16A)	AC Power <16A. 50Hz Test Harmonic requirements	
Basic Standard			
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7457-1 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7457-1
Port Reference	[D] AC-DC power supply
Measured Voltage	229.61V
Subtest Result	Pass
Comments on the above Test Results	50Hz
Environmental Conditions	
Temperature: (59 to 95)°F	60.4
Humidity: (10 to 75)%	53.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

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Test Results Details

NA

Test Result-Attachments

Latest-Harm

Test File:	**H-20210303_074**
EUT:	**Ithaca**
Test Standard:	**Test per IEC 61000-3-2 Ed. 5.0 – 2018**
Test Class:	**(Class A Test)**
Test Result:	PASS - POHC Allowable
Test Date:	**3/3/2021**
Start Time:	**3:53:43 PM**
Stop Time:	**4:03:54 PM**
Test Duration (min):	**10**

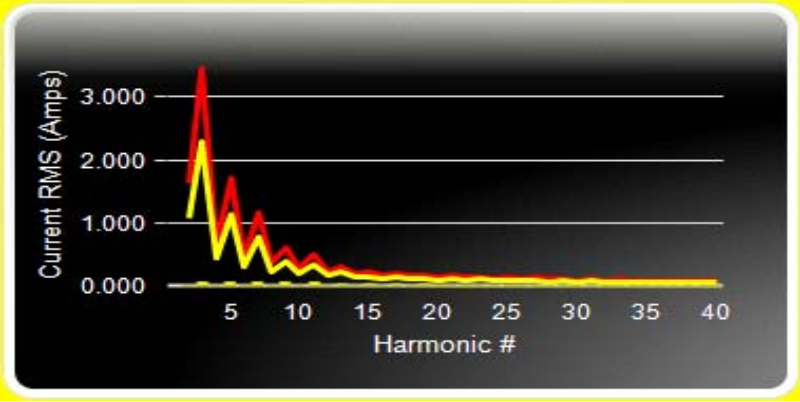
Source Qualification: **Compliance with IEC61000-3-2**

Power Source Distortion:	OK
Customer:	**CISCO**
Test By:	**Ryan**
Comments:	**13.5Hz Modulation Programmable**

General Test Data: (Phase A)

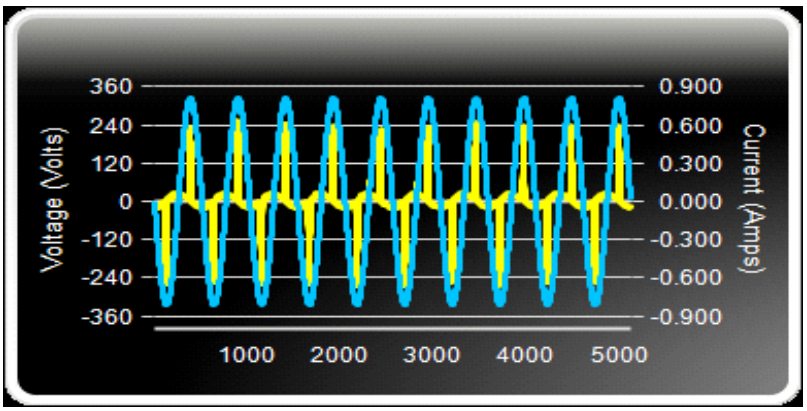
Vrms (Volts):	**229.61**	**Frequency (Hz):**	**50.00**
I_rms (Amps):	**0.153**	**Power (VA):**	**35.0**
I_fund (Amps):	**0.072**	**Power (W):**	**14.1**
I_peak (Amps):	**0.828**	**Power Factor:**	**0.403**
V-THD (%):	**0.27**	**I-THD (%):**	**187.63**
POHC (A):	**0.02**	**POHC Limit (A):**	**0.25**
I-THC (A):	**0.134**	**Meas. Pwr (Min / Max)**	**13.2W/15.7W**
Phase angle of H5 (deg):	**7.4**		

Harmonic Spectrum



Voltage & Current Waveform

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Current Harmonics (values at the end of test)

Harm No.	Harm. Ave.	Harm. Limit (100%)	% Of Limits	Result (Ave.)	Result (Max.)	Harm. Win.	Harm. Win. (150%)	% Of Max
2	0.0054	1.0800	0.5	PASS	PASS	0.0057	1.6200	0.4
3	0.0622	2.3000	2.7	PASS	PASS	0.0636	3.4500	1.8
4	0.0049	0.4300	1.1	PASS	PASS	0.0052	0.6450	0.8
5	0.0586	1.1400	5.1	PASS	PASS	0.0599	1.7100	3.5
6	0.0048	0.3000	1.6	PASS	PASS	0.0051	0.4500	1.1
7	0.0545	0.7700	7.1	PASS	PASS	0.0556	1.1550	4.8
8	0.0042	0.2300	1.8	PASS	PASS	0.0044	0.3450	1.3
9	0.0495	0.4000	12.4	PASS	PASS	0.0504	0.6000	8.4
10	0.0036	0.1840	2.0	PASS	PASS	0.0038	0.2760	1.4
11	0.0432	0.3300	13.1	PASS	PASS	0.0438	0.4950	8.8
12	0.0032	0.1530	2.1	PASS	PASS	0.0033	0.2295	1.4
13	0.0370	0.2100	17.6	PASS	PASS	0.0375	0.3150	11.9
14	0.0022	0.1310	1.7	PASS	PASS	0.0024	0.1965	1.2
15	0.0299	0.1500	20.0	PASS	PASS	0.0302	0.2250	13.4
16	0.0022	0.1150	1.9	PASS	PASS	0.0024	0.1725	1.4
17	0.0237	0.1320	17.9	PASS	PASS	0.0238	0.1980	12.0
18	0.0014	0.1020	1.4	PASS	PASS	0.0015	0.1530	1.0
19	0.0171	0.1180	14.5	PASS	PASS	0.0172	0.1770	9.7
20	0.0014	0.0920	1.6	PASS	PASS	0.0016	0.1380	1.1
21	0.0116	0.1070	10.9	PASS	PASS	0.0118	0.1605	7.4
22	0.0014	0.0830	1.7	PASS	PASS	0.0015	0.1245	1.2
23	0.0066	0.0970	6.8	PASS	PASS	0.0068	0.1455	4.7
24	0.0011	0.0760	1.5	PASS	PASS	0.0013	0.1140	1.1
25	0.0028	0.0900	3.1	PASS	PASS	0.0029	0.1350	2.2
26	0.0015	0.0700	2.2	PASS	PASS	0.0016	0.1050	1.6
27	0.0020	0.0830	2.4	PASS	PASS	0.0023	0.1245	1.9
28	0.0010	0.0650	1.5	PASS	PASS	0.0011	0.0975	1.1
29	0.0034	0.0770	4.5	PASS	PASS	0.0037	0.1155	3.2
30	0.0013	0.0610	2.1	PASS	PASS	0.0014	0.0915	1.5
31	0.0046	0.0720	6.4	PASS	PASS	0.0048	0.1080	4.4
32	0.0008	0.0570	1.4	PASS	PASS	0.0009	0.0855	1.1
33	0.0053	0.0680	7.8	PASS	PASS	0.0054	0.1020	5.3
34	0.0008	0.0540	1.5	PASS	PASS	0.0009	0.0810	1.1
35	0.0049	0.0640	7.6	PASS	PASS	0.0050	0.0960	5.2
36	0.0008	0.0510	1.7	PASS	PASS	0.0009	0.0765	1.2
37	0.0046	0.0600	7.7	PASS	PASS	0.0047	0.0900	5.2
38	0.0004	0.0480	0.9	PASS	PASS	0.0005	0.0720	0.7
39	0.0033	0.0570	5.8	PASS	PASS	0.0034	0.0855	4.0
40	0.0008	0.0460	1.7	PASS	PASS	0.0009	0.0690	1.3

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Power Source Verification Data

Harm No.	Harm. Value	Harm. Limit	% Of Limits	% Of Vfund	Result
2	0.1341	0.4600	29.2	0.058	OK
3	0.6128	2.0700	29.6	0.267	OK
4	0.0461	0.4600	10.0	0.020	OK
5	0.0844	0.9200	9.2	0.037	OK
6	0.0160	0.4600	3.5	0.007	OK
7	0.0376	0.6900	5.5	0.016	OK
8	0.0206	0.4600	4.5	0.009	OK
9	0.0532	0.4600	11.6	0.023	OK
10	0.0161	0.4600	3.5	0.007	OK
11	0.0254	0.2300	11.1	0.011	OK
12	0.0161	0.2300	7.0	0.007	OK
13	0.0283	0.2300	12.3	0.012	OK
14	0.0090	0.2300	3.9	0.004	OK
15	0.0217	0.2300	9.4	0.009	OK
16	0.0122	0.2300	5.3	0.005	OK
17	0.0190	0.2300	8.3	0.008	OK
18	0.0164	0.2300	7.1	0.007	OK
19	0.0175	0.2300	7.6	0.008	OK
20	0.0186	0.2300	8.1	0.008	OK
21	0.0102	0.2300	4.4	0.004	OK
22	0.0134	0.2300	5.8	0.006	OK
23	0.0136	0.2300	5.9	0.006	OK
24	0.0067	0.2300	2.9	0.003	OK
25	0.0048	0.2300	2.1	0.002	OK
26	0.0143	0.2300	6.2	0.006	OK
27	0.0102	0.2300	4.4	0.004	OK
28	0.0126	0.2300	5.5	0.005	OK
29	0.0086	0.2300	3.7	0.004	OK
30	0.0108	0.2300	4.7	0.005	OK
31	0.0085	0.2300	3.7	0.004	OK
32	0.0086	0.2300	3.7	0.004	OK
33	0.0104	0.2300	4.5	0.005	OK
34	0.0063	0.2300	2.7	0.003	OK
35	0.0078	0.2300	3.4	0.003	OK
36	0.0055	0.2300	2.4	0.002	OK
37	0.0102	0.2300	4.4	0.004	OK
38	0.0034	0.2300	1.5	0.001	OK
39	0.0083	0.2300	3.6	0.004	OK
40	0.0108	0.2300	4.7	0.005	OK

Questions & Answers

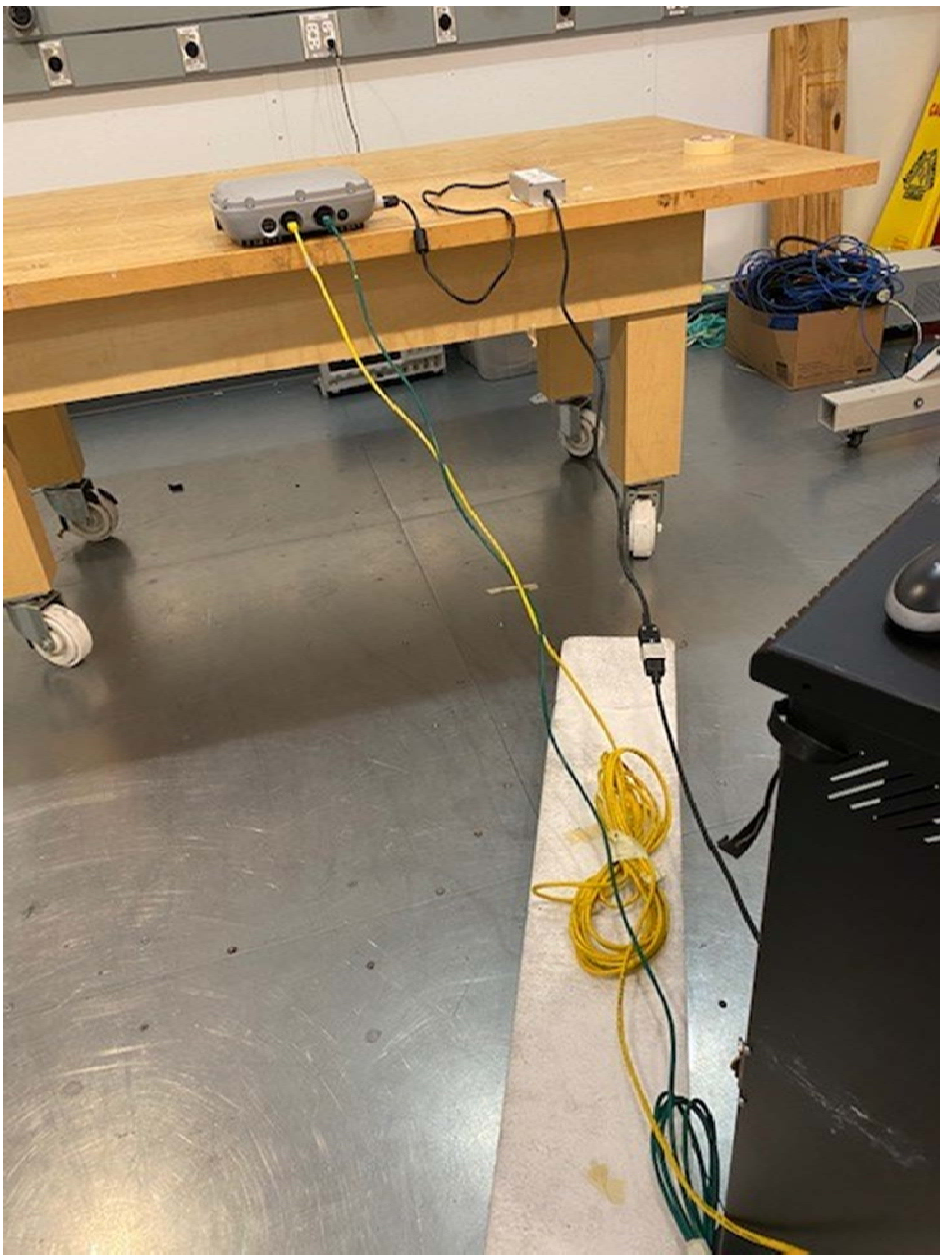
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Does the EUT use 6.1 Control methods (Asymmetrical controls according to IEC 60050-161, 161-07-12 and half-wave rectification directly on the mains supply) ?	NO
If the EUT uses the control methods in 6.1 does it meet the circumstances defined in this section?	N/A
C.10. ITE, other than personal computers, which is marketed with (factory-fitted options) or has expansion slots, is tested with additional loads in each expansion slot that result in the maximum power consumption attainable using the (factory-fitted options) specified by the manufacturer. How was this achieved ?	N/A

Photographs

TITLE: NA
DESCRIPTION: NA

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Flicker

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Test Case Details

TestCase ID: 7459 Test Type: Flicker			
Product Standard	**Port Type**	**Test Details**	**Comments**
KN61000-3-3:2014	AC (<16A)	AC Power <16A: 60Hz Test Flicker requirements	Annex 1-12
Basic Standard	KN61000-3-3:2014		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7459-1 Subtest Date : 3/10/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - General Use-2
Subtest Results	
Subtest Title	7459-1
Port Reference	[D] AC-DC power supply
Measured Voltage	219.58V
Subtest Result	Pass
Comments on the above Test Results	NA
Environmental Conditions	
Temperature: (59 to 95)°F	60
Humidity: (10 to 75)%	45.8

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

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Test Results Details

NA

Test Result-Attachments

F-IthacaFL220 60Hz

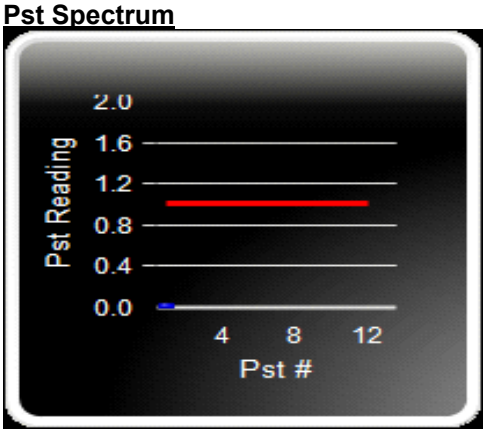
Test File:	**F-IthacaFL230-20210302_072**
EUT:	**Ithaca**
Test Standard:	**Test per IEC 61000-3-3 Ed. 3.1 2017**
Test Class:	**Flicker Test, All Parameters**
Test Result:	**PASS**
Test Date:	**3/10/2021**
Start Time:	**5:07:35 PM**
Stop Time:	**5:18:03 PM**
Test Duration (min):	**10**

Source Qualification:	**Compliance with IEC61000-3-3**
Customer:	**CISCO**
Test By:	**Ryan**
Comments:	**13.5Hz Modulation Programmable**

Phase A

Vrms (Volts):	**219.58**	**Frequency (Hz):**	**60.00**
I_rms (Amps):	**0.167**	**Power (W):**	**14.2**
V-THD (%):	**0.304**	**T-Max (ms):**	**0 (500)**
dmax (%):	**0.000 (4.000)**	**Hi dmax (%):**	**0.000 (4.000)**
dc (%):	**0.000 (3.300)**	**Hi dc (%):**	**0.000 (3.300)**
Pst-1 :	**0.039 (1.000)**		
Plt :	**0.017 (0.650)**		

Pst Spectrum



Plt Spectrum

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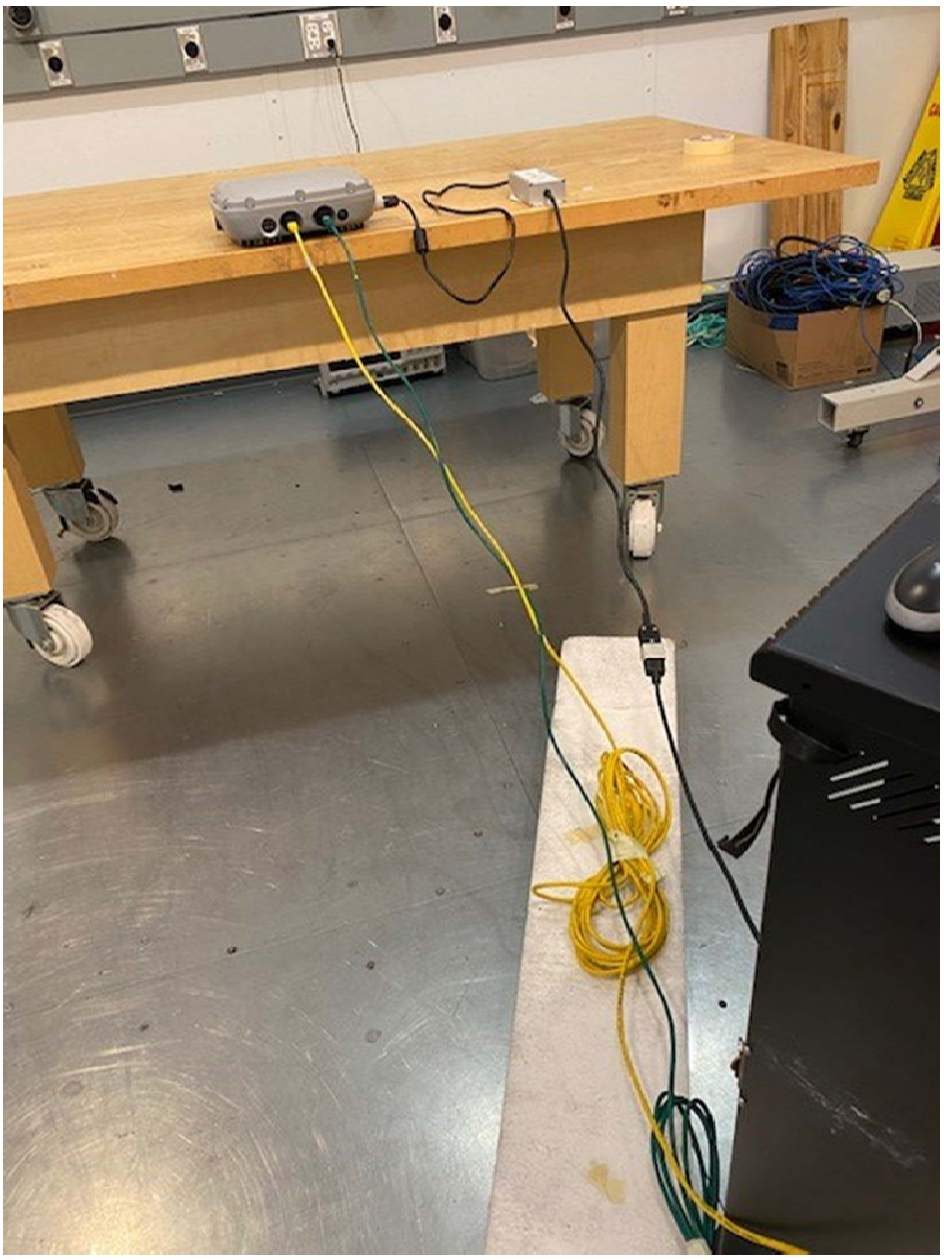


Questions & Answers
NA

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7461 Test Type: Flicker			
Product Standard	**Port Type**	**Test Details**	**Comments**
EN61000-3-3:2013 NM EN 61000-3-3:2015	AC (<16A)	AC Power <16A: 50Hz Test Flicker requirements	
Basic Standard			
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7461-2 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - General Use-2
Subtest Results	
Subtest Title	7461-2
Port Reference	[D] AC-DC power supply
Measured Voltage	229.61V 50Hz
Subtest Result	Pass
Comments on the above Test Results	230V 50Hz
Environmental Conditions	
Temperature: (59 to 95)°F	60
Humidity: (10 to 75)%	45.8

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

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Test Results Details

NA

Test Result-Attachments

F-IthacaFL23050

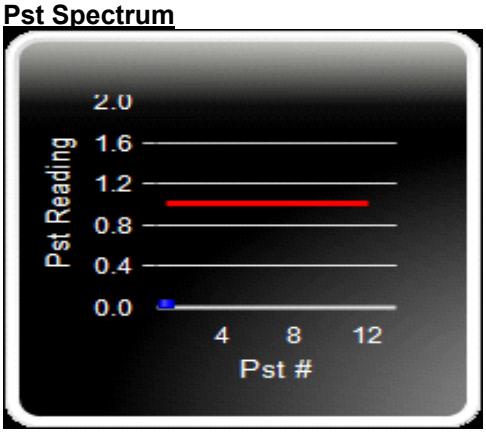
Test File: F-IthacaFL23050-20210303_075
EUT: Ithaca
Test Standard: Test per IEC 61000-3-3 Ed. 3.1 2017
Test Class: Flicker Test, All Parameters (Calc. By Current Method)
Test Result: PASS
Test Date: 3/3/2021
Start Time: 4:09:03 PM
Stop Time: 4:20:17 PM
Test Duration (min): 10

Source Qualification: Compliance with IEC61000-3-3
Customer: CISCO
Test By: Ryan
Comments: 13.5Hz Modulation Programmable

Phase A

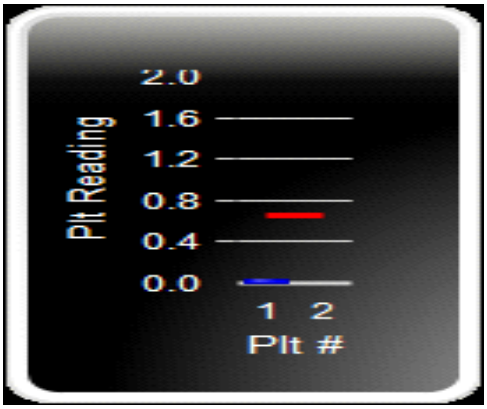
Vrms (Volts):	229.61	**Frequency (Hz):**	50.00
I_rms (Amps):	0.160	**Power (W):**	14.2
V-THD (%):	0.272	**T-Max (ms):**	0 (500)
dmax (%):	-0.921 (4.000)	**Hi dmax (%):**	-0.921 (4.000)
dc (%):	0.000 (3.300)	**Hi dc (%):**	0.000 (3.300)
Pst-1 :	0.068 (1.000)		
Plt :	0.030 (0.650)		

Pst Spectrum



Plt Spectrum

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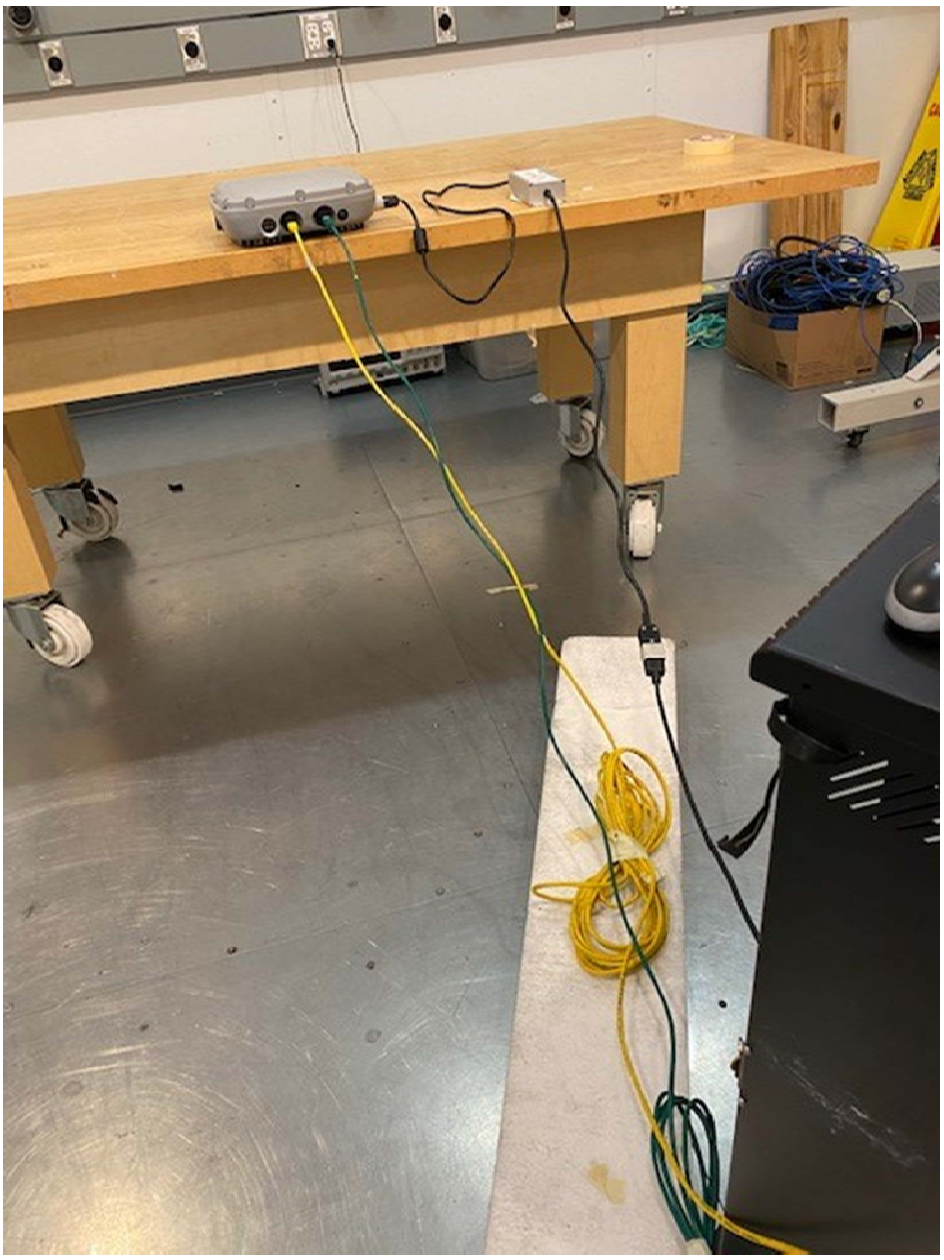


Questions & Answers
NA

Photographs

TITLE: NA
DESCRIPTION: NA

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Conducted Emissions

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Test Case Details

TestCase ID: 3407	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
47 CFR Part 15:2016 ICES-003:2016:Iss:6	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz AC Power Test: Class: B Measure: Voltage Detectors: Quasi-Peak & Average	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input).
Basic Standard	ANSI C63.4:2014		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 3407-1 Subtest Date : 2/20/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	3407-1	
Port Reference	[D] AC-DC power supply	
Measured Voltage	109.8V	
Transducer	LISN	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	73.5	
Humidity: (10 to 75)%	31.7	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plce 120v 2.5g wan poe 1g lan [19-2-2021 12.23]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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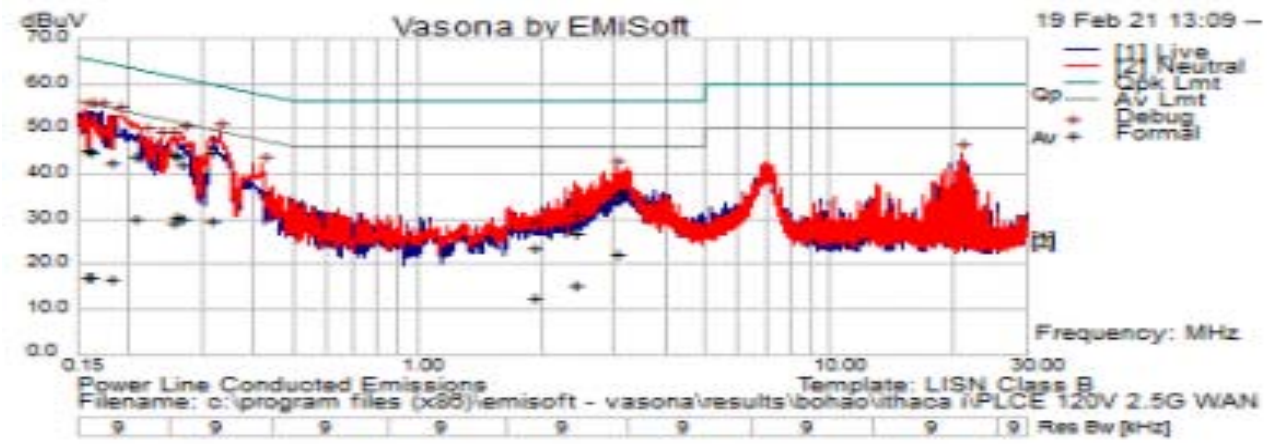
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plce 120v 2.5g wan poe 1g lan [19-2-2021 12.23]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Power Line]
Class/Spec	B / B CISPR AC Power QP
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	LISN Class B
Date/Time	19 Feb 21/13:14, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	.315	24.7	20.3	.0	45.0	Quasi Peak	Neutral	59.9	-14.8	Pass	

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2	.254	23.8	20.5	.1	44.4	Quasi Peak	Neutral	61.6	-17.2	Pass	
3	.259	23.6	20.5	.1	44.2	Quasi Peak	Neutral	61.5	-17.3	Pass	
4	.265	21.9	20.5	.1	42.5	Quasi Peak	Live	61.3	-18.8	Pass	
5	.205	23.4	20.8	.1	44.2	Quasi Peak	Live	63.4	-19.2	Pass	
6	.158	24.3	21.0	.1	45.4	Quasi Peak	Live	65.6	-20.1	Pass	
7	.315	9.3	20.3	.0	29.7	Average	Neutral	49.9	-20.2	Pass	
8	3.016	15.7	20.0	.0	35.8	Quasi Peak	Neutral	56.0	-20.2	Pass	
9	.158	24.3	21.0	.1	45.4	Quasi Peak	Neutral	65.6	-20.2	Pass	
10	.159	24.1	21.0	.1	45.2	Quasi Peak	Live	65.5	-20.3	Pass	
11	.259	10.2	20.5	.1	30.7	Average	Neutral	51.5	-20.7	Pass	
12	.265	9.8	20.5	.1	30.3	Average	Live	51.3	-20.9	Pass	
13	.179	21.9	20.9	.1	42.9	Quasi Peak	Neutral	64.5	-21.7	Pass	
14	.254	8.8	20.5	.1	29.4	Average	Neutral	51.6	-22.3	Pass	
15	.205	9.6	20.8	.1	30.5	Average	Live	53.4	-22.9	Pass	
16	3.016	2.5	20.0	.0	22.6	Average	Neutral	46.0	-23.4	Pass	
17	2.401	6.9	20.0	.0	27.0	Quasi Peak	Live	56.0	-29.0	Pass	
18	2.401	-4.3	20.0	.0	15.7	Average	Live	46.0	-30.3	Pass	
19	1.892	3.7	20.0	.0	23.7	Quasi Peak	Live	56.0	-32.3	Pass	
20	1.892	-7.5	20.0	.0	12.6	Average	Live	46.0	-33.4	Pass	
21	.179	-3.9	20.9	.1	17.1	Average	Neutral	54.5	-37.4	Pass	
22	.159	-3.8	21.0	.1	17.3	Average	Live	55.5	-38.2	Pass	
23	.158	-3.8	21.0	.1	17.3	Average	Neutral	55.6	-38.3	Pass	
24	.158	-4.0	21.0	.1	17.1	Average	Live	55.6	-38.4	Pass	

Test Result-Attachments

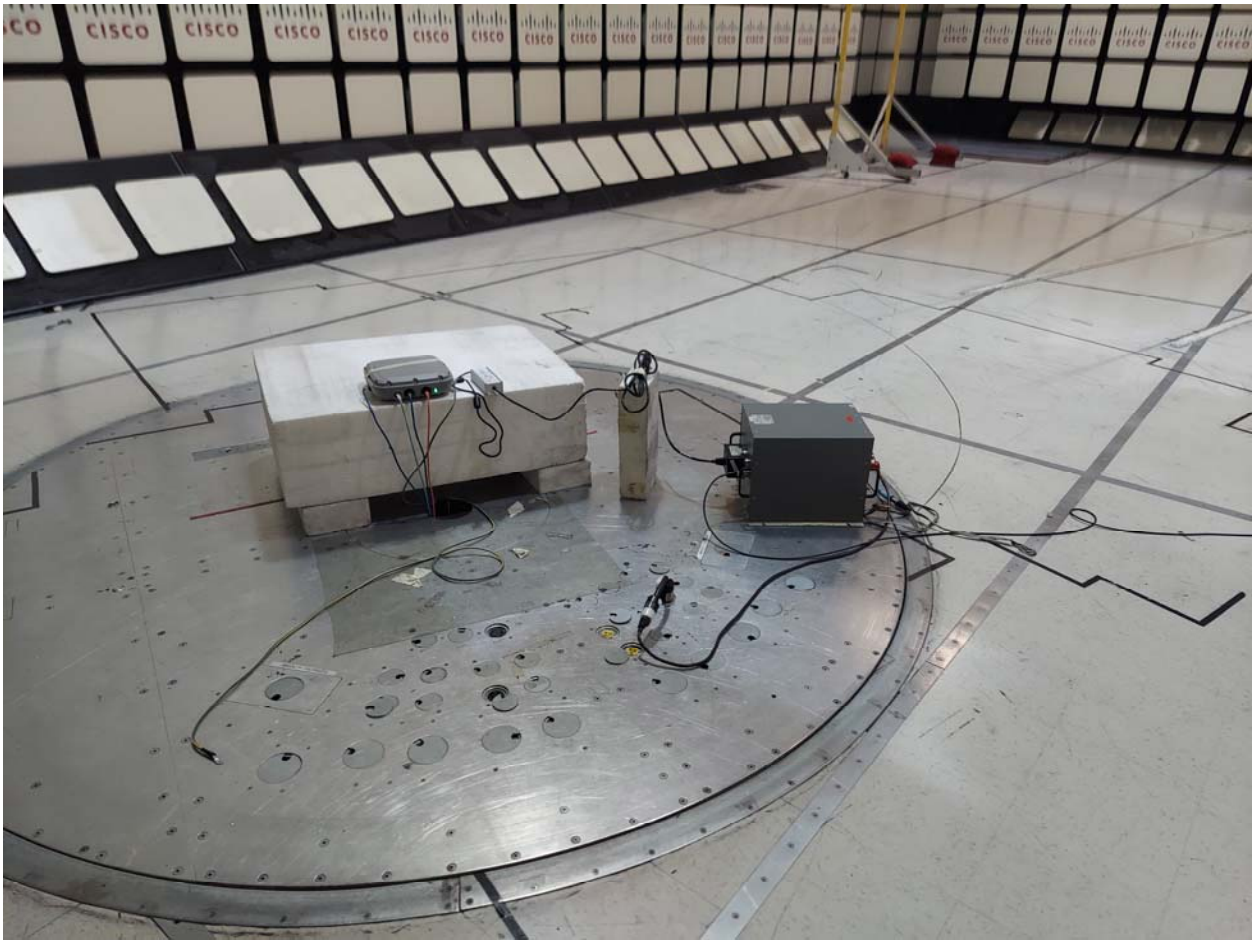
Questions & Answers

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The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 4053	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CNS13438:2006	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.
Basic Standard	CISPR16 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 4053-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4053-1	
Port Reference	[D] AC-DC power supply	
Measured Voltage	119.8V	
Transducer	LISN	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	73.5	
Humidity: (10 to 75)%	31.7	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plce 120v 2.5g wan poe 1g lan [19-2-2021 12.23]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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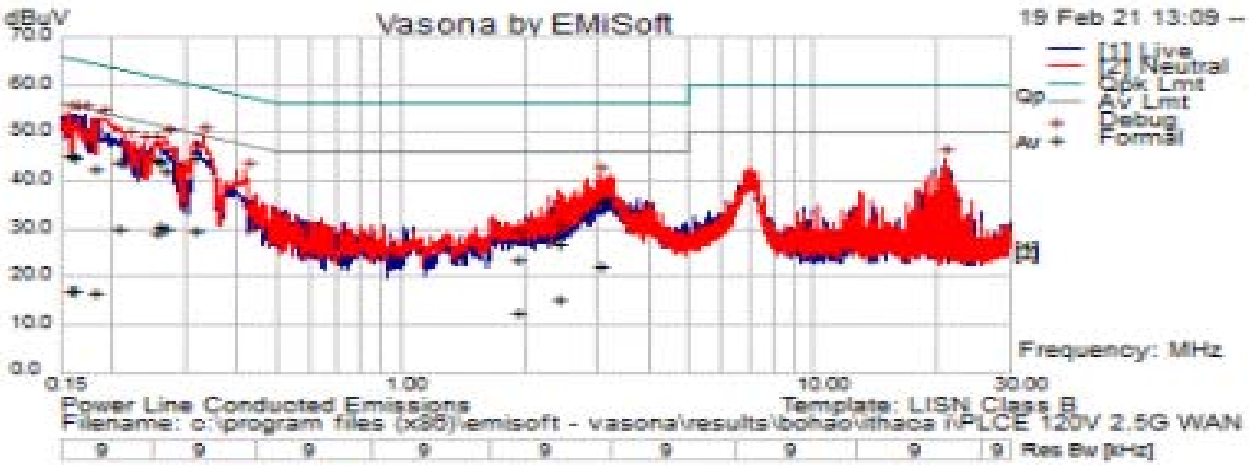
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plce 120v 2.5g wan poe 1g lan [19-2-2021 12.23]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Power Line]
Class/Spec	B / B CISPR AC Power QP
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	LISN Class B
Date/Time	19 Feb 21/13:14, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	.315	24.7	20.3	.0	45.0	Quasi Peak	Neutral	59.9	-14.8	Pass	

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2	.254	23.8	20.5	.1	44.4	Quasi Peak	Neutral	61.6	-17.2	Pass	
3	.259	23.6	20.5	.1	44.2	Quasi Peak	Neutral	61.5	-17.3	Pass	
4	.265	21.9	20.5	.1	42.5	Quasi Peak	Live	61.3	-18.8	Pass	
5	.205	23.4	20.8	.1	44.2	Quasi Peak	Live	63.4	-19.2	Pass	
6	.158	24.3	21.0	.1	45.4	Quasi Peak	Live	65.6	-20.1	Pass	
7	.315	9.3	20.3	.0	29.7	Average	Neutral	49.9	-20.2	Pass	
8	3.016	15.7	20.0	.0	35.8	Quasi Peak	Neutral	56.0	-20.2	Pass	
9	.158	24.3	21.0	.1	45.4	Quasi Peak	Neutral	65.6	-20.2	Pass	
10	.159	24.1	21.0	.1	45.2	Quasi Peak	Live	65.5	-20.3	Pass	
11	.259	10.2	20.5	.1	30.7	Average	Neutral	51.5	-20.7	Pass	
12	.265	9.8	20.5	.1	30.3	Average	Live	51.3	-20.9	Pass	
13	.179	21.9	20.9	.1	42.9	Quasi Peak	Neutral	64.5	-21.7	Pass	
14	.254	8.8	20.5	.1	29.4	Average	Neutral	51.6	-22.3	Pass	
15	.205	9.6	20.8	.1	30.5	Average	Live	53.4	-22.9	Pass	
16	3.016	2.5	20.0	.0	22.6	Average	Neutral	46.0	-23.4	Pass	
17	2.401	6.9	20.0	.0	27.0	Quasi Peak	Live	56.0	-29.0	Pass	
18	2.401	-4.3	20.0	.0	15.7	Average	Live	46.0	-30.3	Pass	
19	1.892	3.7	20.0	.0	23.7	Quasi Peak	Live	56.0	-32.3	Pass	
20	1.892	-7.5	20.0	.0	12.6	Average	Live	46.0	-33.4	Pass	
21	.179	-3.9	20.9	.1	17.1	Average	Neutral	54.5	-37.4	Pass	
22	.159	-3.8	21.0	.1	17.3	Average	Live	55.5	-38.2	Pass	
23	.158	-3.8	21.0	.1	17.3	Average	Neutral	55.6	-38.3	Pass	
24	.158	-4.0	21.0	.1	17.1	Average	Live	55.6	-38.4	Pass	

Test Result-Attachments

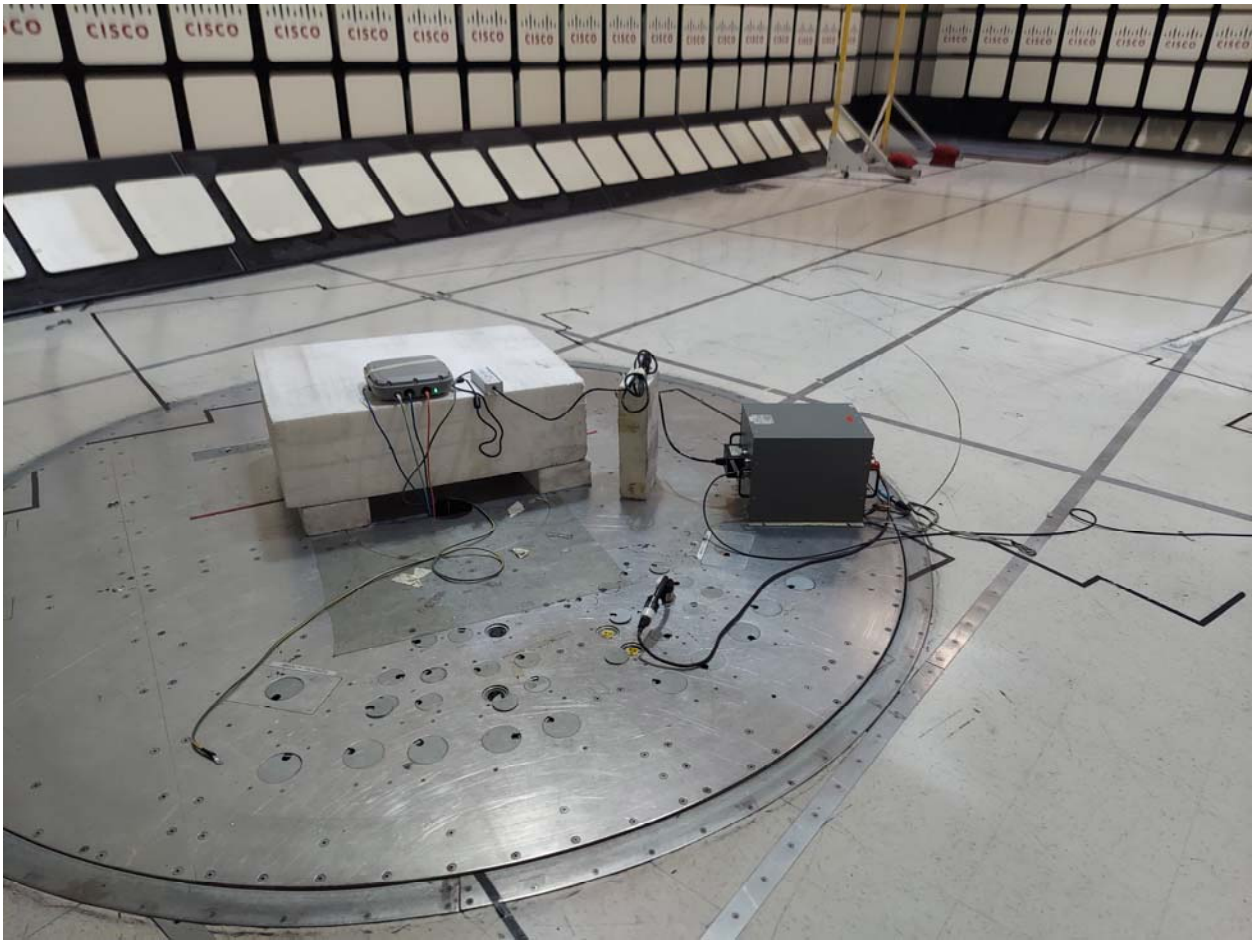
Questions & Answers

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The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A

Photographs

TITLE: NA
DESCRIPTION: NA



Subtest Details

Subtest Number : 4053-2 Subtest Date : 2/19/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	4053-2
Port Reference	[D] AC-DC power supply
Measured Voltage	119.8V
Transducer	LISN
Subtest Result	Pass

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Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	73.5	
Humidity: (10 to 75)%	31.7	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plce 120v 1g wan poe 100m lan [19-2-2021 12.23]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

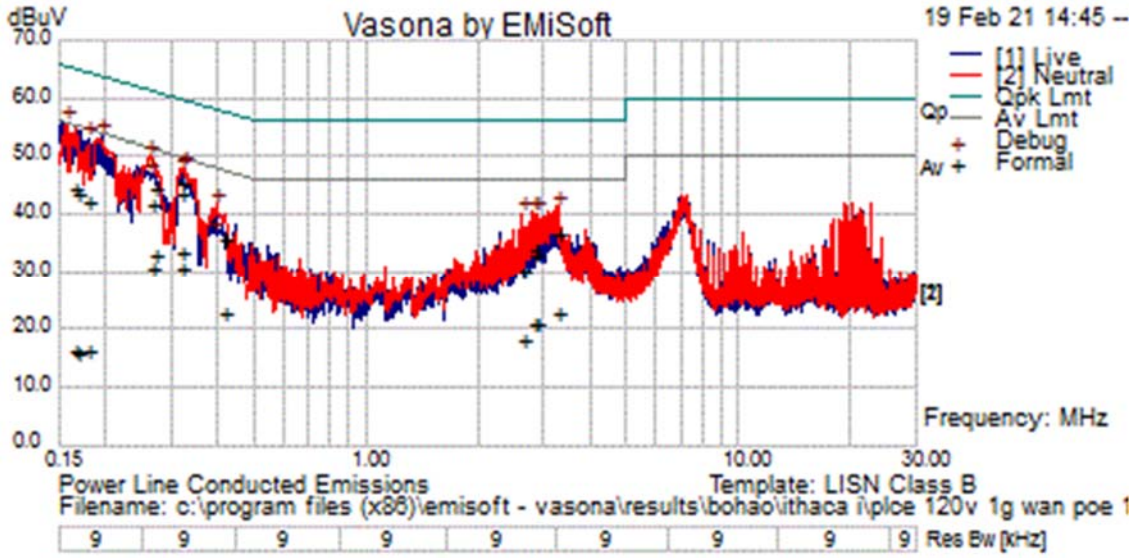
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plce 120v 1g wan poe 100m lan [19-2-2021 12.23]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Power Line]
Class/Spec	B / B CISPR AC Power QP
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	LISN Class B
Date/Time	19 Feb 21/15:00, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	.168	22.5	21.0	.1	43.6	Quasi Peak	Live	65.0	-21.5	Pass	
2	.167	23.6	21.0	.1	44.7	Quasi Peak	Live	65.1	-20.5	Pass	
3	.268	21.2	20.5	.1	41.8	Quasi Peak	Live	61.2	-19.4	Pass	
4	.268	10.1	20.5	.1	30.6	Average	Live	51.2	-20.6	Pass	
5	.178	-4.4	20.9	.1	16.5	Average	Live	54.6	-38.0	Pass	
6	.318	23.3	20.3	.1	43.7	Quasi Peak	Live	59.8	-16.1	Pass	
7	.178	21.4	20.9	.1	42.3	Quasi Peak	Live	64.6	-22.2	Pass	
8	.167	-4.5	21.0	.1	16.5	Average	Live	55.1	-38.6	Pass	
9	.318	10.6	20.3	.1	31.0	Average	Live	49.8	-18.8	Pass	
10	.168	-5.0	21.0	.1	16.0	Average	Live	55.0	-39.0	Pass	
11	2.806	13.7	20.0	.0	33.8	Quasi Peak	Live	56.0	-22.2	Pass	
12	.415	15.7	20.0	.0	35.7	Quasi Peak	Neutral	57.5	-21.8	Pass	
13	3.264	16.7	20.1	.1	36.8	Quasi Peak	Neutral	56.0	-19.2	Pass	
14	.415	2.6	20.0	.0	22.7	Average	Neutral	47.5	-24.8	Pass	

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15	.269	12.6	20.5	.1	33.2	Average	Neutral	51.1	-18.0	Pass	
16	2.629	10.4	20.0	.0	30.4	Quasi Peak	Neutral	56.0	-25.6	Pass	
17	2.866	13.1	20.0	.0	33.2	Quasi Peak	Neutral	56.0	-22.8	Pass	
18	.318	25.0	20.3	.1	45.4	Quasi Peak	Neutral	59.7	-14.4	Pass	
19	.269	24.2	20.5	.1	44.7	Quasi Peak	Neutral	61.1	-16.4	Pass	
20	.318	13.1	20.3	.1	33.4	Average	Neutral	49.7	-16.3	Pass	
21	3.264	2.8	20.1	.1	22.9	Average	Neutral	46.0	-23.1	Pass	
22	2.629	-1.7	20.0	.0	18.4	Average	Neutral	46.0	-27.6	Pass	
23	2.866	1.0	20.0	.0	21.0	Average	Neutral	46.0	-25.0	Pass	
24	2.806	.8	20.0	.0	20.9	Average	Live	46.0	-25.1	Pass	

Test Result-Attachments

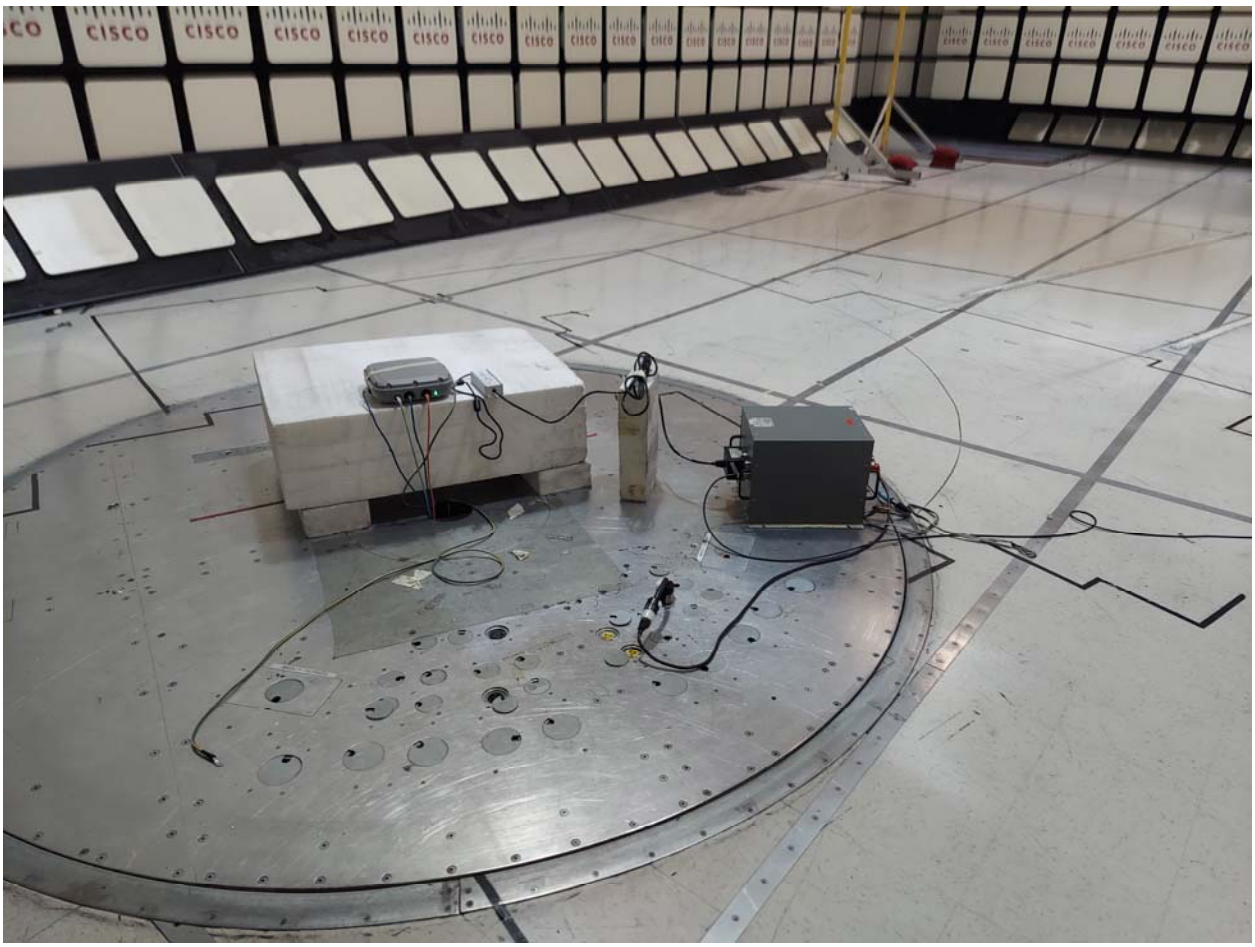
Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 4053-3 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4053-3	
Port Reference	[D] AC-DC power supply	
Measured Voltage	119.8V	
Transducer	LISN	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	73.5	
Humidity: (10 to 75)%	31.7	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plce 120v 100m wan poe 10m lan [19-2-2021 12.23]	.15	30

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Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

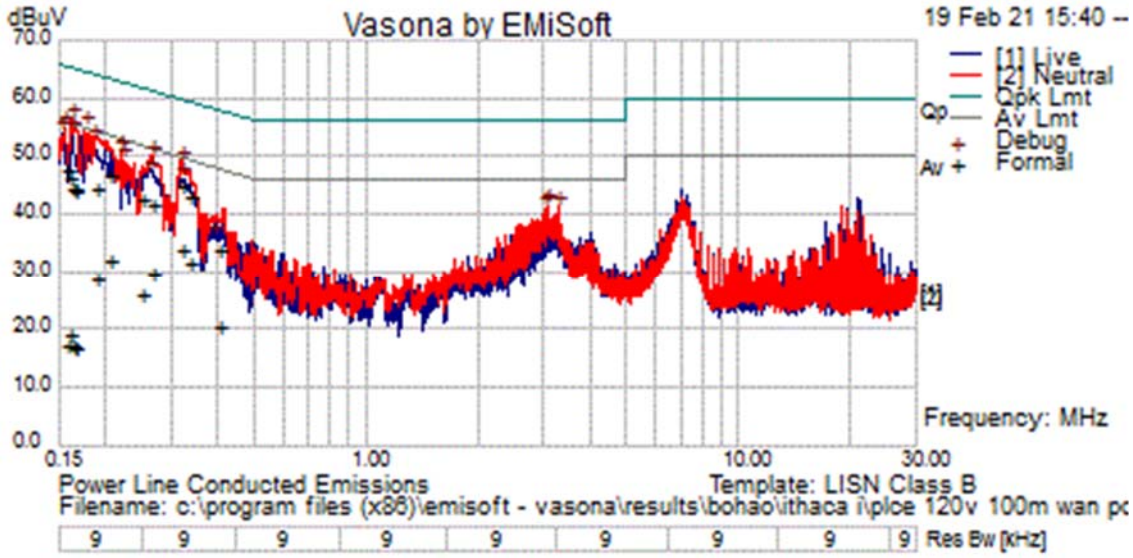
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plce 120v 100m wan poe 10m lan [19-2-2021 12.23]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Power Line]
Class/Spec	B / B CISPR AC Power QP
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	LISN Class B
Date/Time	19 Feb 21/15:40, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	.159	-3.6	21.0	.1	17.5	Average	Live	55.5	-38.0	Pass	
2	.403	.6	20.1	.0	20.7	Average	Live	47.8	-27.1	Pass	
3	.335	22.7	20.3	.0	43.0	Quasi Peak	Live	59.3	-16.3	Pass	
4	.268	9.5	20.5	.1	30.1	Average	Live	51.2	-21.1	Pass	
5	.167	-4.3	21.0	.1	16.7	Average	Live	55.1	-38.4	Pass	
6	.268	21.5	20.5	.1	42.0	Quasi Peak	Live	61.2	-19.2	Pass	
7	.335	11.2	20.3	.0	31.5	Average	Live	49.3	-17.9	Pass	
8	.159	26.6	21.0	.1	47.7	Quasi Peak	Live	65.5	-17.9	Pass	
9	.188	23.7	20.8	.1	44.7	Quasi Peak	Live	64.1	-19.5	Pass	
10	.167	22.9	21.0	.1	44.0	Quasi Peak	Live	65.1	-21.2	Pass	
11	.403	13.7	20.1	.0	33.8	Quasi Peak	Live	57.8	-24.0	Pass	
12	.188	8.0	20.8	.1	29.0	Average	Live	54.1	-25.2	Pass	
13	.163	-3.8	21.0	.1	17.3	Average	Neutral	55.3	-38.0	Pass	
14	.251	22.3	20.6	.1	42.9	Quasi Peak	Neutral	61.7	-18.8	Pass	

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15	.322	24.8	20.3	.1	45.2	Quasi Peak	Neutral	59.7	-14.5	Pass	
16	.167	23.7	21.0	.1	44.7	Quasi Peak	Neutral	65.1	-20.4	Pass	
17	.251	5.7	20.6	.1	26.3	Average	Neutral	51.7	-25.4	Pass	
18	.160	-2.1	21.0	.1	19.0	Average	Neutral	55.4	-36.4	Pass	
19	.322	13.6	20.3	.1	34.0	Average	Neutral	49.7	-15.7	Pass	
20	.206	26.3	20.8	.1	47.1	Quasi Peak	Neutral	63.4	-16.2	Pass	
21	.160	25.3	21.0	.1	46.4	Quasi Peak	Neutral	65.4	-19.0	Pass	
22	.163	23.6	21.0	.1	44.7	Quasi Peak	Neutral	65.3	-20.6	Pass	
23	.206	11.5	20.8	.1	32.3	Average	Neutral	53.4	-21.1	Pass	
24	.167	-4.1	21.0	.1	16.9	Average	Neutral	55.1	-38.2	Pass	

Test Result-Attachments

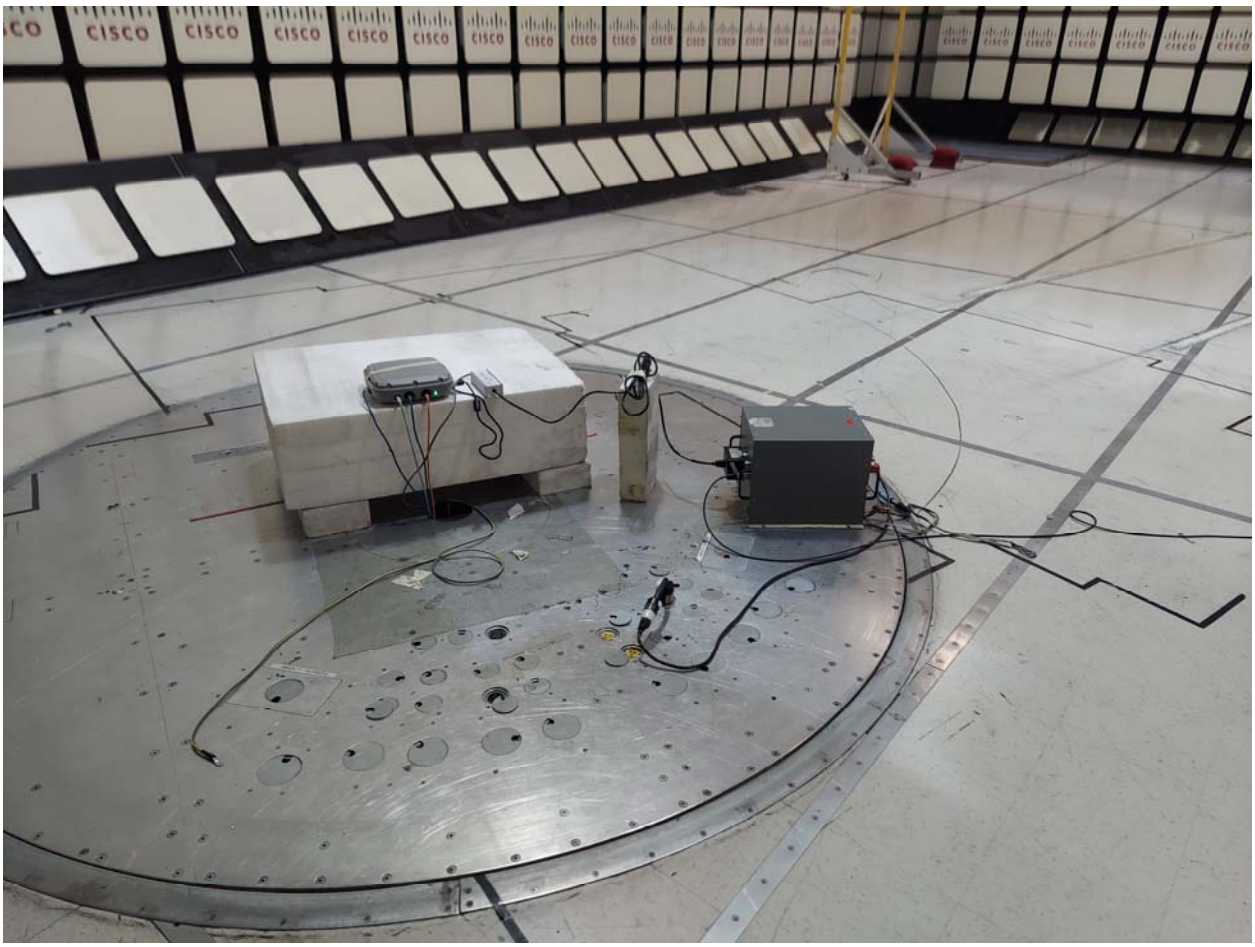
Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5592	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
KN32:2015	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/- 20%
Basic Standard	KN16 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5592-3 Subtest Date : 3/6/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 2	
Subtest Results		
Subtest Title	5592-3	
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M	
Measured Voltage	208.4V	
Transducer	T-LISN	
Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN2.5G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe shield 2.5g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

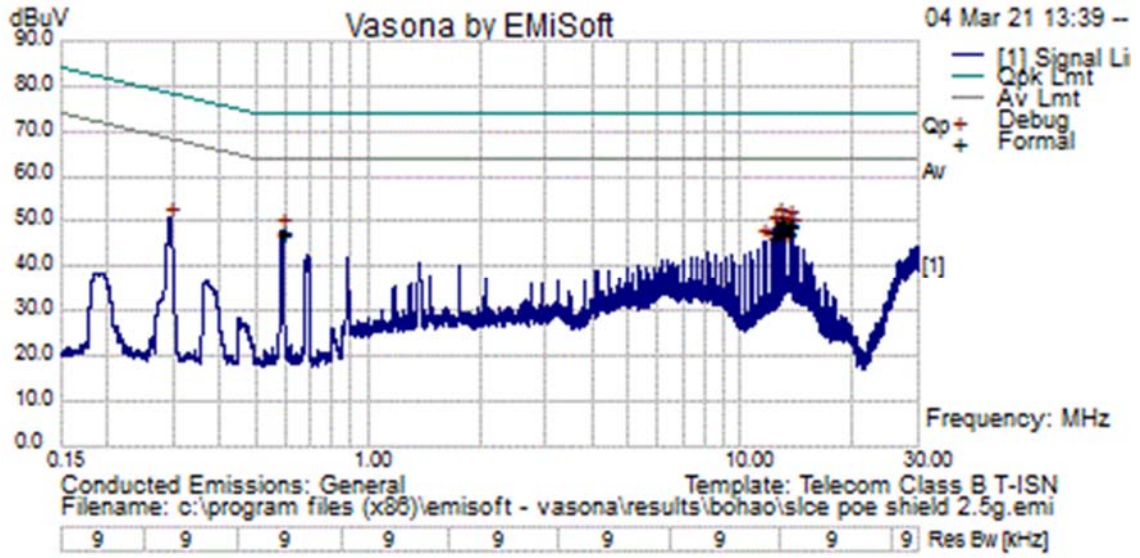
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe shield 2.5g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/13:40, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	12.666	39.1	.4	9.9	49.4	Average	Signal	64.0	-14.6	Pass	

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2	13.549	38.5	.4	9.9	48.8	Average	Signal	64.0	-15.2	Pass	
3	.589	37.9	.1	9.5	47.6	Average	Signal	64.0	-16.4	Pass	
4	12.960	37.2	.4	9.9	47.5	Average	Signal	64.0	-16.5	Pass	
5	13.256	36.8	.4	9.9	47.1	Average	Signal	64.0	-16.9	Pass	
6	12.373	36.7	.4	9.8	46.9	Average	Signal	64.0	-17.1	Pass	
7	12.666	39.7	.4	9.9	50.0	Quasi Peak	Signal	74.0	-24.0	Pass	
8	13.549	39.4	.4	9.9	49.7	Quasi Peak	Signal	74.0	-24.3	Pass	
9	12.960	38.1	.4	9.9	48.3	Quasi Peak	Signal	74.0	-25.7	Pass	
10	13.256	37.8	.4	9.9	48.0	Quasi Peak	Signal	74.0	-26.0	Pass	
11	.589	38.3	.1	9.5	47.9	Quasi Peak	Signal	74.0	-26.1	Pass	
12	12.373	37.5	.4	9.8	47.7	Quasi Peak	Signal	74.0	-26.3	Pass	

Test Result-Attachments

Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A, Shielded

Photographs

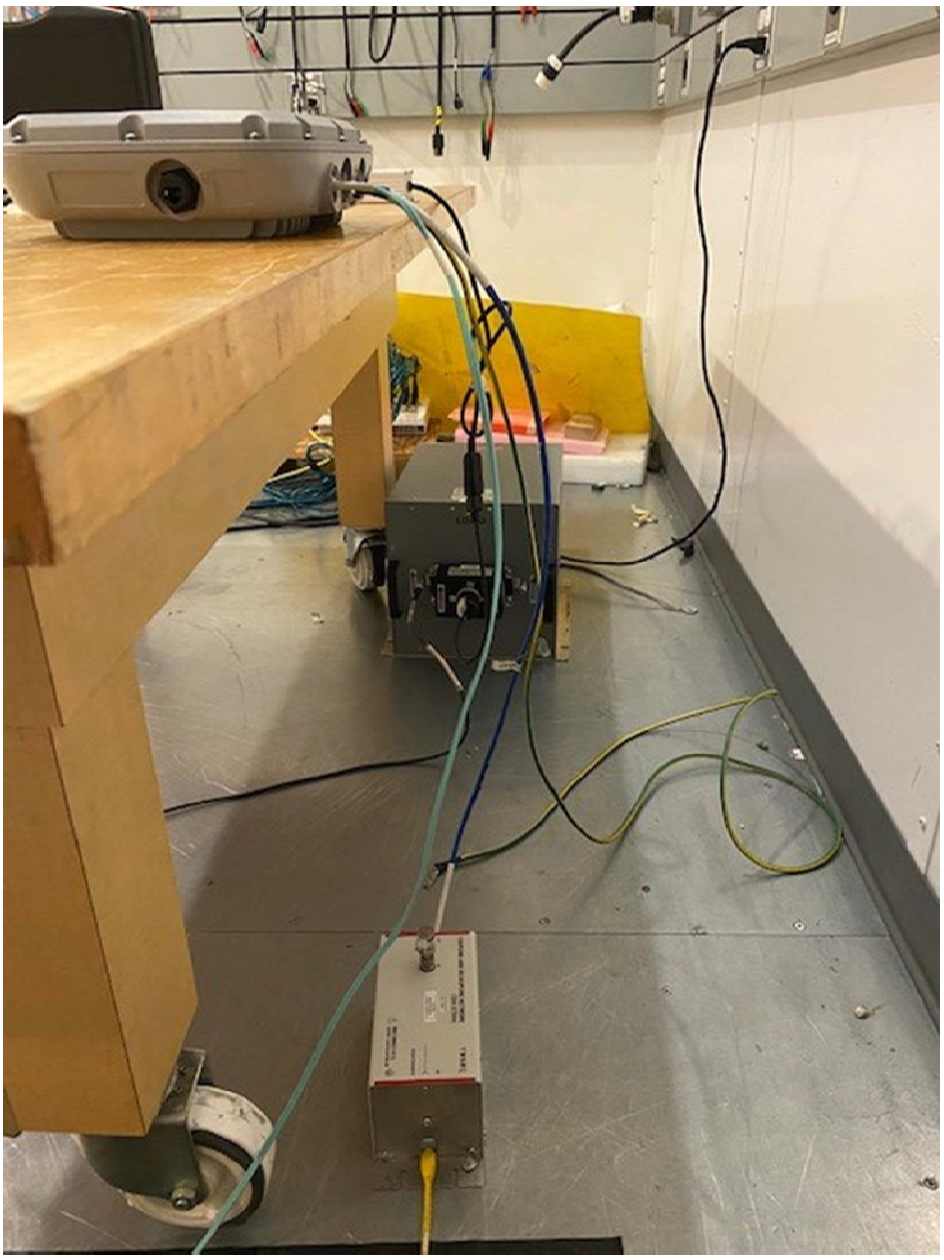
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Subtest Details

Subtest Number : 5592-4 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5592-4
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	208.4V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

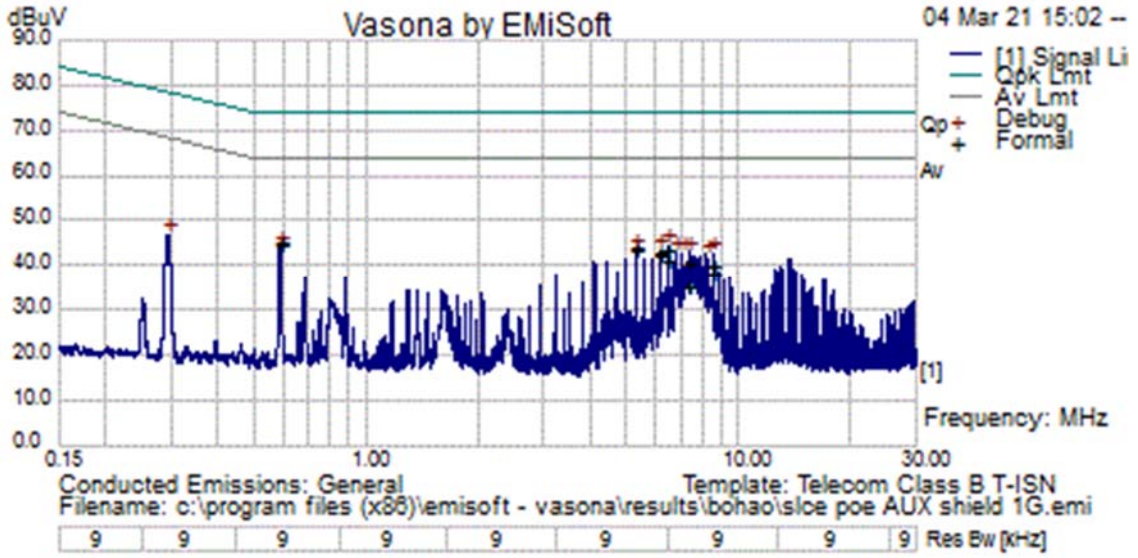
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	6.480	33.6	.3	9.6	43.5	Quasi Peak	Signal	74.0	-30.5	Pass	
2	.589	35.9	.1	9.5	45.5	Quasi Peak	Signal	74.0	-28.5	Pass	
3	6.185	33.5	.3	9.6	43.3	Quasi Peak	Signal	74.0	-30.7	Pass	
4	5.302	34.4	.2	9.5	44.2	Quasi Peak	Signal	74.0	-29.8	Pass	
5	7.362	30.9	.3	9.6	40.8	Quasi Peak	Signal	74.0	-33.2	Pass	
6	8.541	30.0	.3	9.6	39.9	Quasi Peak	Signal	74.0	-34.1	Pass	
7	6.480	31.7	.3	9.6	41.5	Average	Signal	64.0	-22.5	Pass	
8	.589	35.4	.1	9.5	45.0	Average	Signal	64.0	-19.0	Pass	
9	6.185	32.8	.3	9.6	42.6	Average	Signal	64.0	-21.4	Pass	
10	5.302	34.2	.2	9.5	44.0	Average	Signal	64.0	-20.0	Pass	
11	7.362	25.5	.3	9.6	35.4	Average	Signal	64.0	-28.6	Pass	
12	8.541	28.5	.3	9.6	38.5	Average	Signal	64.0	-25.5	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shield

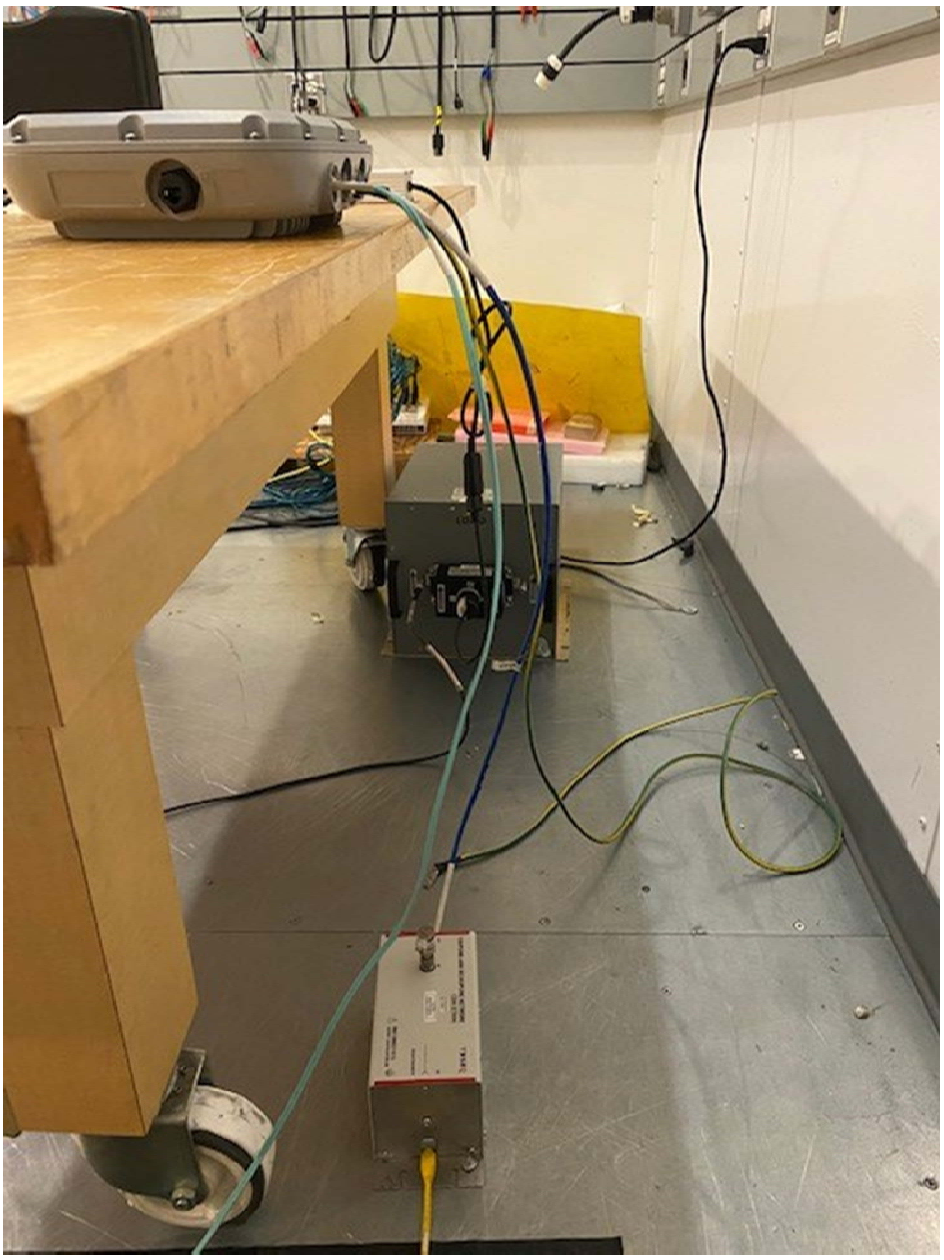
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5594	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
KN32:2015	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/- 20%
Basic Standard	KN16 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5594-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5594-1	
Port Reference	[D] AC-DC power supply	
Measured Voltage	211.2V	
Transducer	LISN	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	74	
Humidity: (10 to 75)%	40.8	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plce 208v 2.5g wan poe 1g lan [19-2-2021 12.23]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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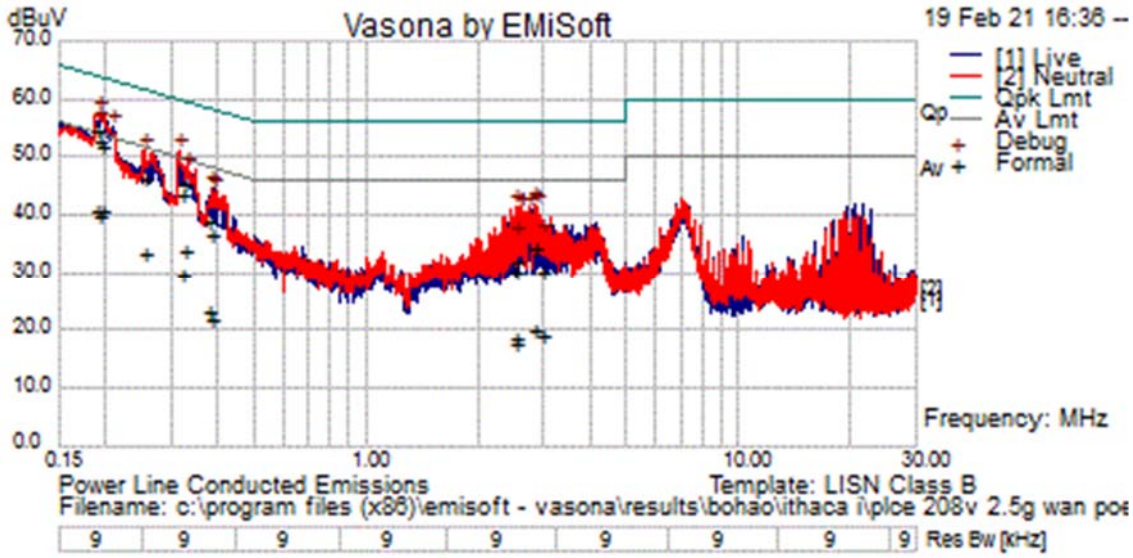
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plce 208v 2.5g wan poe 1g lan [19-2-2021 12.23]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Power Line]
Class/Spec	B / B CISPR AC Power QP
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	LISN Class B
Date/Time	19 Feb 21/16:36, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments

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1	.195	31.1	20.8	.1	52.0	Quasi Peak	Live	63.8	-11.8	Pass	
2	2.984	10.4	20.0	.0	30.5	Quasi Peak	Live	56.0	-25.5	Pass	
3	.382	16.6	20.1	.0	36.8	Quasi Peak	Live	58.2	-21.4	Pass	
4	.318	23.4	20.3	.1	43.8	Quasi Peak	Live	59.8	-16.0	Pass	
5	.191	32.0	20.8	.1	52.9	Quasi Peak	Live	64.0	-11.1	Pass	
6	2.514	10.3	20.0	.0	30.4	Quasi Peak	Live	56.0	-25.6	Pass	
7	.325	25.4	20.3	.0	45.7	Quasi Peak	Neutral	59.6	-13.9	Pass	
8	2.832	14.5	20.0	.0	34.6	Quasi Peak	Neutral	56.0	-21.4	Pass	
9	.190	33.7	20.8	.1	54.7	Quasi Peak	Neutral	64.1	-9.4	Pass	
10	.378	18.7	20.1	.0	38.9	Quasi Peak	Neutral	58.3	-19.5	Pass	
11	.254	25.9	20.5	.1	46.5	Quasi Peak	Neutral	61.6	-15.1	Pass	
12	2.507	11.9	20.0	.0	32.0	Quasi Peak	Neutral	56.0	-24.0	Pass	
13	.195	20.2	20.8	.1	41.1	Average	Live	53.8	-12.7	Pass	
14	2.984	-1.1	20.0	.0	19.0	Average	Live	46.0	-27.0	Pass	
15	.382	1.6	20.1	.0	21.8	Average	Live	48.2	-26.5	Pass	
16	.318	9.4	20.3	.1	29.8	Average	Live	49.8	-20.0	Pass	
17	.191	19.1	20.8	.1	40.0	Average	Live	54.0	-14.0	Pass	
18	2.514	-2.2	20.0	.0	17.9	Average	Live	46.0	-28.1	Pass	
19	.325	13.5	20.3	.0	33.9	Average	Neutral	49.6	-15.7	Pass	
20	2.832	-.1	20.0	.0	20.0	Average	Neutral	46.0	-26.0	Pass	
21	.190	20.2	20.8	.1	41.1	Average	Neutral	54.1	-13.0	Pass	
22	.378	3.0	20.1	.0	23.2	Average	Neutral	48.3	-25.1	Pass	
23	.254	13.0	20.5	.1	33.6	Average	Neutral	51.6	-18.1	Pass	
24	2.507	-1.2	20.0	.0	18.8	Average	Neutral	46.0	-27.2	Pass	

Test Result-Attachments

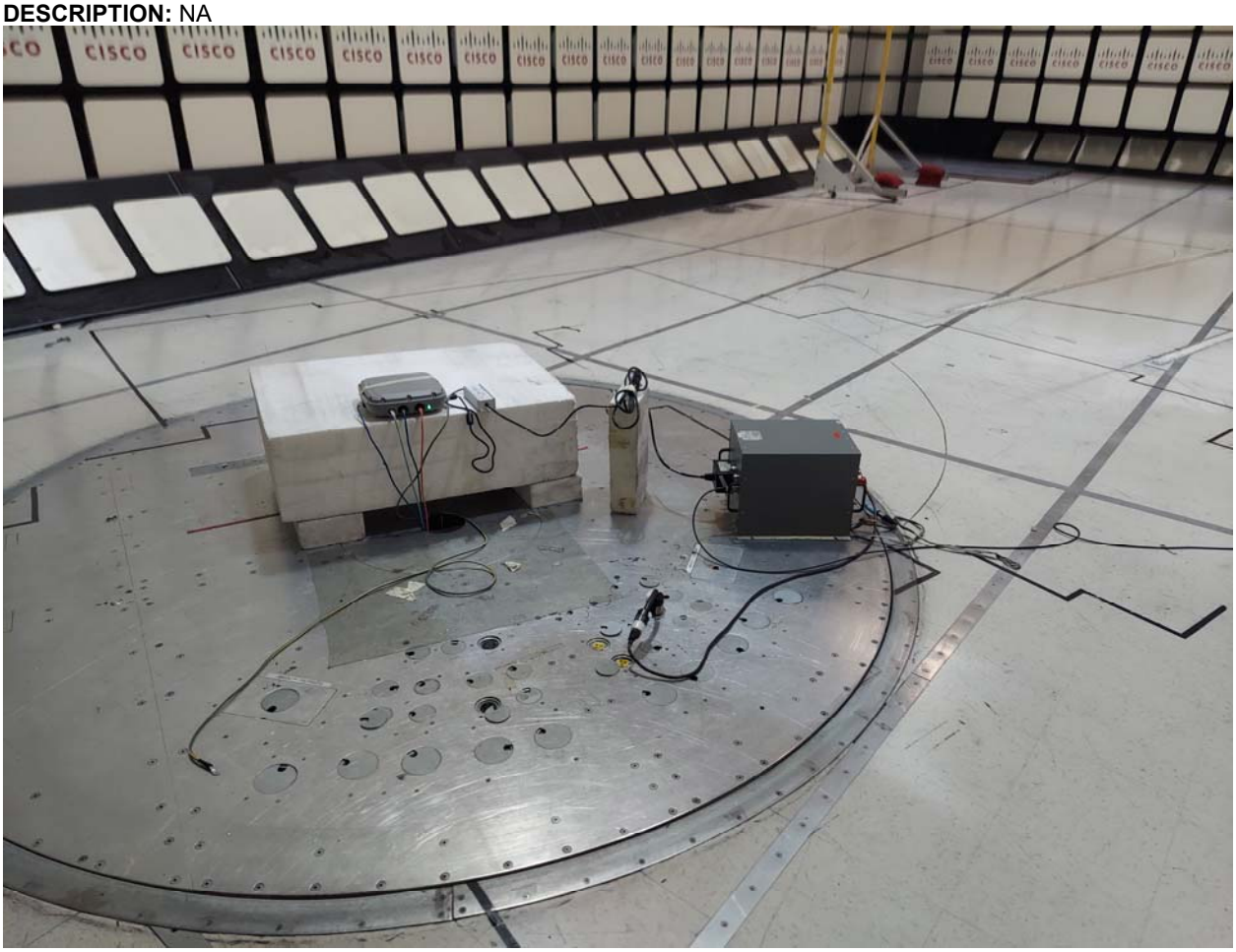
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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 5691	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
VCCI-CISPR 32:2016	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power : AC Class: B Device: AMN Measure: Voltage Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
Basic Standard			
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5691-2 Subtest Date : 3/24/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5691-2	
Port Reference	[D] AC-DC power supply	
Measured Voltage	115.1V 50Hz	
Transducer	LISN	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	74	
Humidity: (10 to 75)%	40.8	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plce 115v 2.5g wan poe 1g lan [24-3-2021 17.3]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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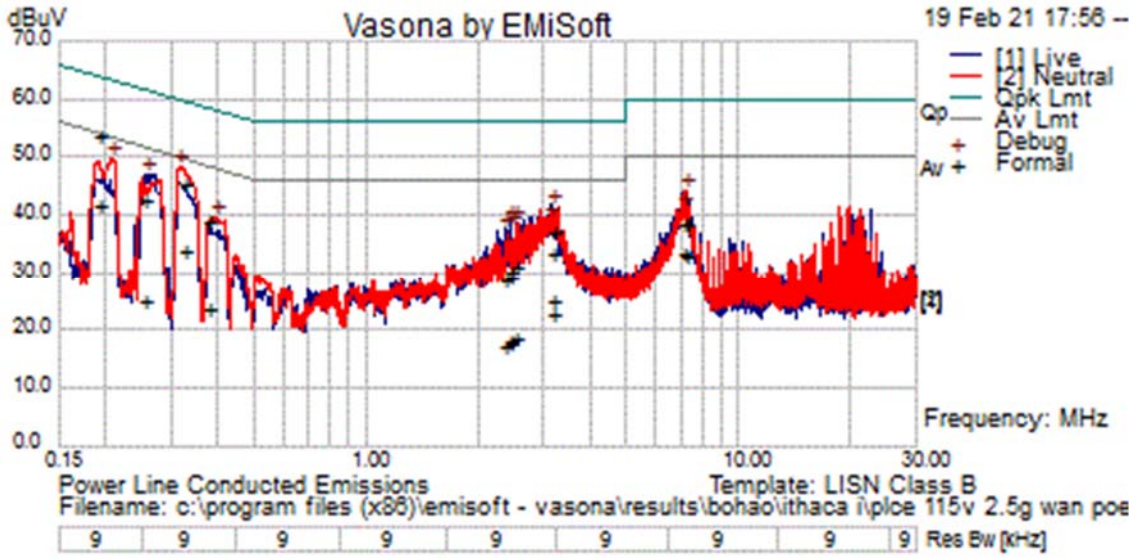
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plce 115v 2.5g wan poe 1g lan [24-3-2021 17.3]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Power Line]
Class/Spec	B / B CISPR AC Power QP
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	LISN Class B
Date/Time	19 Feb 21/17:56, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments

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1	.192	33.1	20.8	.1	54.0	Quasi Peak	Neutral	64.0	-10.0	Pass	
2	.192	21.1	20.8	.1	42.0	Average	Neutral	54.0	-12.0	Pass	
3	.328	25.0	20.3	.0	45.4	Quasi Peak	Neutral	59.5	-14.1	Pass	
4	.328	13.7	20.3	.0	34.0	Average	Neutral	49.5	-15.5	Pass	
5	7.170	13.4	20.2	.1	33.7	Average	Neutral	50.0	-16.3	Pass	
6	7.244	13.0	20.2	.1	33.2	Average	Neutral	50.0	-16.8	Pass	
7	3.158	17.0	20.1	.1	37.1	Quasi Peak	Live	56.0	-18.9	Pass	
8	.379	19.1	20.1	.0	39.3	Quasi Peak	Neutral	58.3	-19.0	Pass	
9	.253	22.0	20.5	.1	42.6	Quasi Peak	Live	61.7	-19.1	Pass	
10	3.158	5.1	20.1	.1	25.2	Average	Live	46.0	-20.8	Pass	
11	7.170	18.5	20.2	.1	38.8	Quasi Peak	Neutral	60.0	-21.2	Pass	
12	7.244	18.4	20.2	.1	38.7	Quasi Peak	Neutral	60.0	-21.3	Pass	
13	3.154	13.5	20.1	.1	33.7	Quasi Peak	Neutral	56.0	-22.3	Pass	
14	3.154	2.9	20.1	.1	23.0	Average	Neutral	46.0	-23.0	Pass	
15	.379	3.7	20.1	.0	23.8	Average	Neutral	48.3	-24.5	Pass	
16	2.528	11.1	20.0	.1	31.2	Quasi Peak	Live	56.0	-24.8	Pass	
17	2.454	10.4	20.0	.0	30.4	Quasi Peak	Live	56.0	-25.6	Pass	
18	2.450	9.5	20.0	.0	29.6	Quasi Peak	Live	56.0	-26.4	Pass	
19	.253	4.5	20.5	.1	25.1	Average	Live	51.7	-26.6	Pass	
20	2.365	9.0	20.0	.0	29.1	Quasi Peak	Live	56.0	-26.9	Pass	
21	2.528	-1.2	20.0	.1	18.9	Average	Live	46.0	-27.1	Pass	
22	2.454	-1.9	20.0	.0	18.2	Average	Live	46.0	-27.8	Pass	
23	2.450	-2.4	20.0	.0	17.7	Average	Live	46.0	-28.3	Pass	
24	2.365	-2.9	20.0	.0	17.2	Average	Live	46.0	-28.8	Pass	

Test Result-Attachments

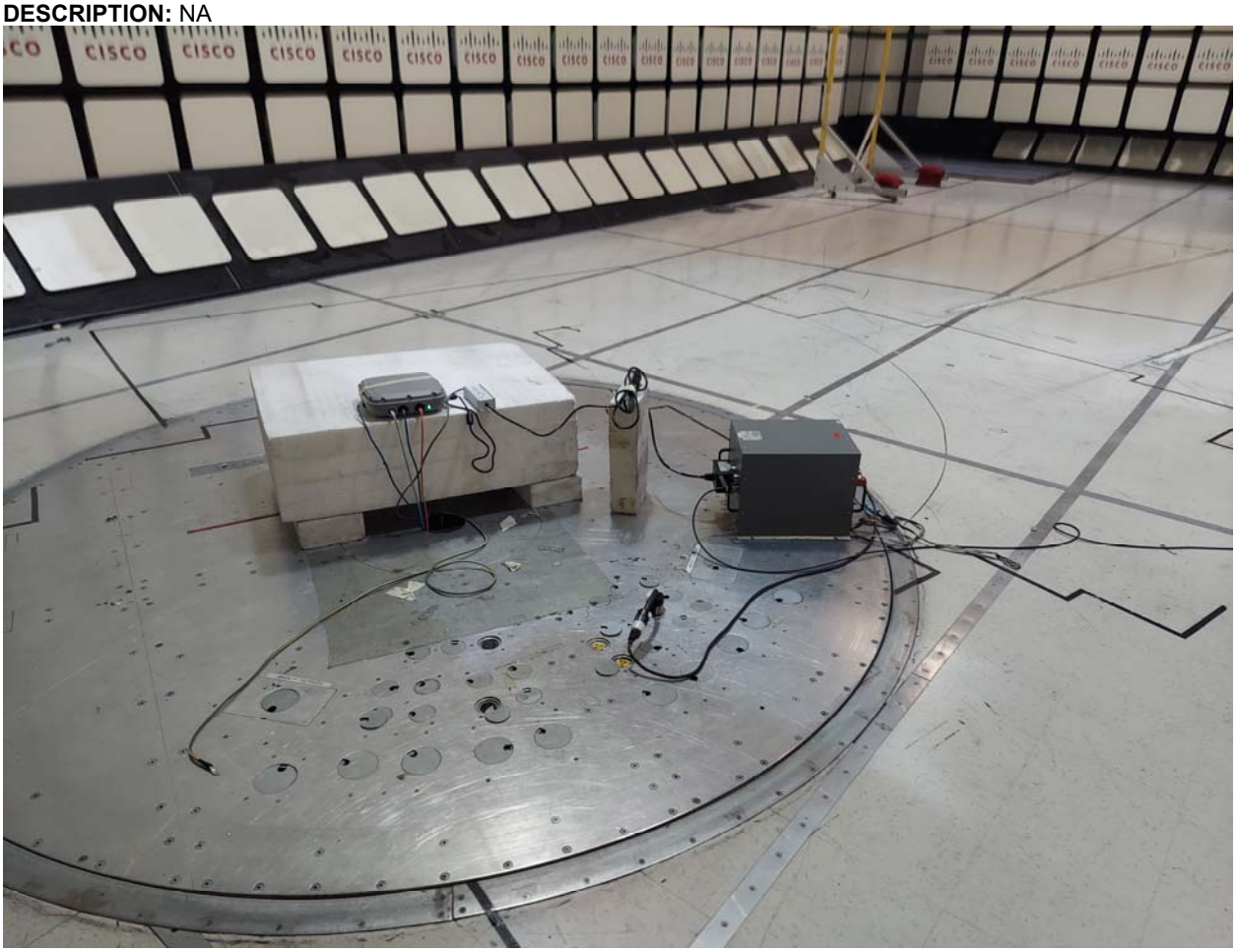
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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 5693 Test Type: Conducted Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
VCCI-CISPR 32:2016	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
Basic Standard			
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5693-3 Subtest Date : 3/6/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 2	
Subtest Results		
Subtest Title	5693-3	
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M	
Measured Voltage	115.4V	
Transducer	T-LISN	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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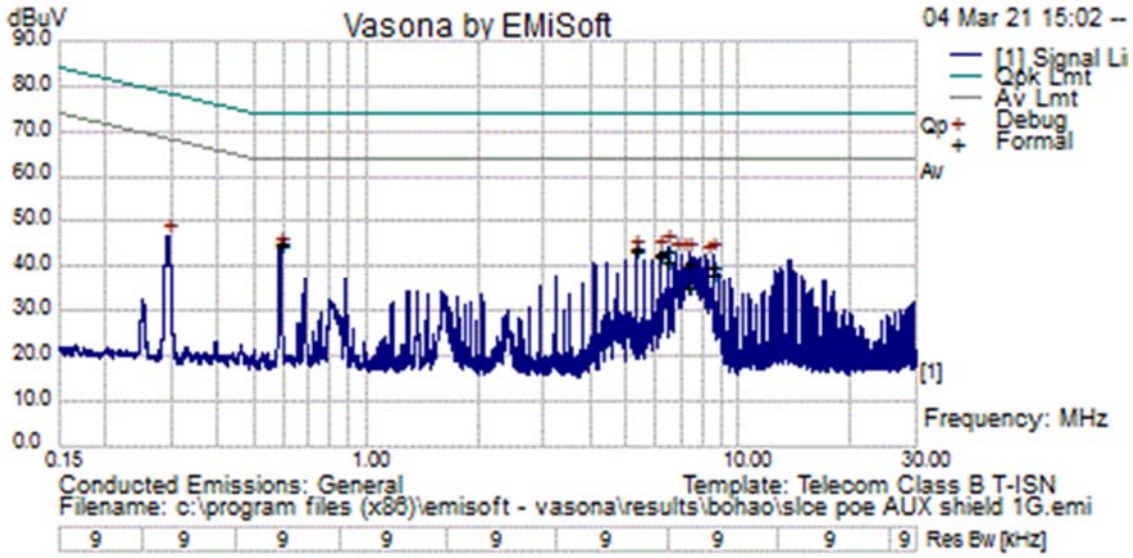
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments

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1	6.480	33.6	.3	9.6	43.5	Quasi Peak	Signal	74.0	-30.5	Pass	
2	.589	35.9	.1	9.5	45.5	Quasi Peak	Signal	74.0	-28.5	Pass	
3	6.185	33.5	.3	9.6	43.3	Quasi Peak	Signal	74.0	-30.7	Pass	
4	5.302	34.4	.2	9.5	44.2	Quasi Peak	Signal	74.0	-29.8	Pass	
5	7.362	30.9	.3	9.6	40.8	Quasi Peak	Signal	74.0	-33.2	Pass	
6	8.541	30.0	.3	9.6	39.9	Quasi Peak	Signal	74.0	-34.1	Pass	
7	6.480	31.7	.3	9.6	41.5	Average	Signal	64.0	-22.5	Pass	
8	.589	35.4	.1	9.5	45.0	Average	Signal	64.0	-19.0	Pass	
9	6.185	32.8	.3	9.6	42.6	Average	Signal	64.0	-21.4	Pass	
10	5.302	34.2	.2	9.5	44.0	Average	Signal	64.0	-20.0	Pass	
11	7.362	25.5	.3	9.6	35.4	Average	Signal	64.0	-28.6	Pass	
12	8.541	28.5	.3	9.6	38.5	Average	Signal	64.0	-25.5	Pass	

Test Result-Attachments

Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shield

Photographs

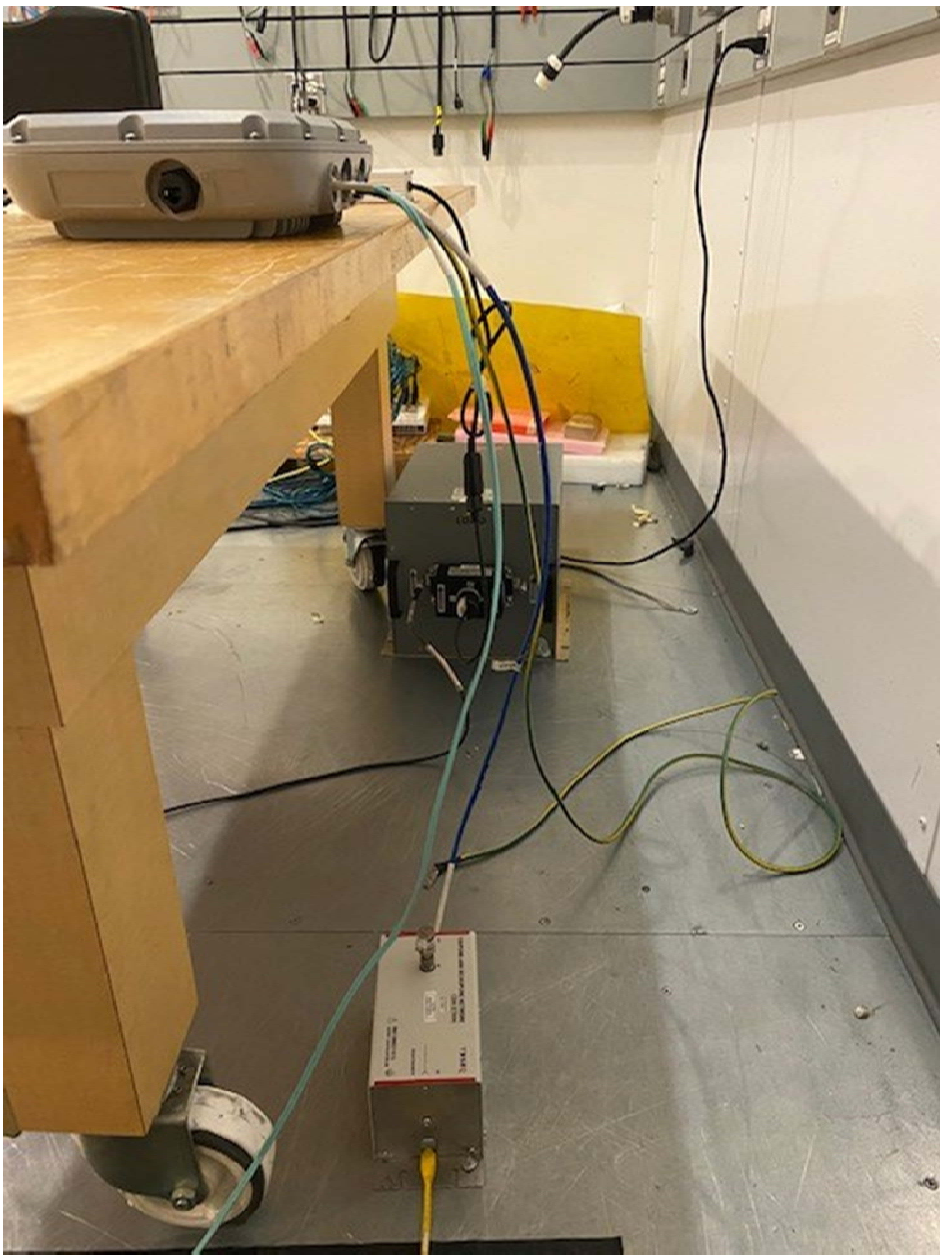
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DESCRIPTION: NA

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Subtest Details

Subtest Number : 5693-4 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5693-4
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	115.4V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

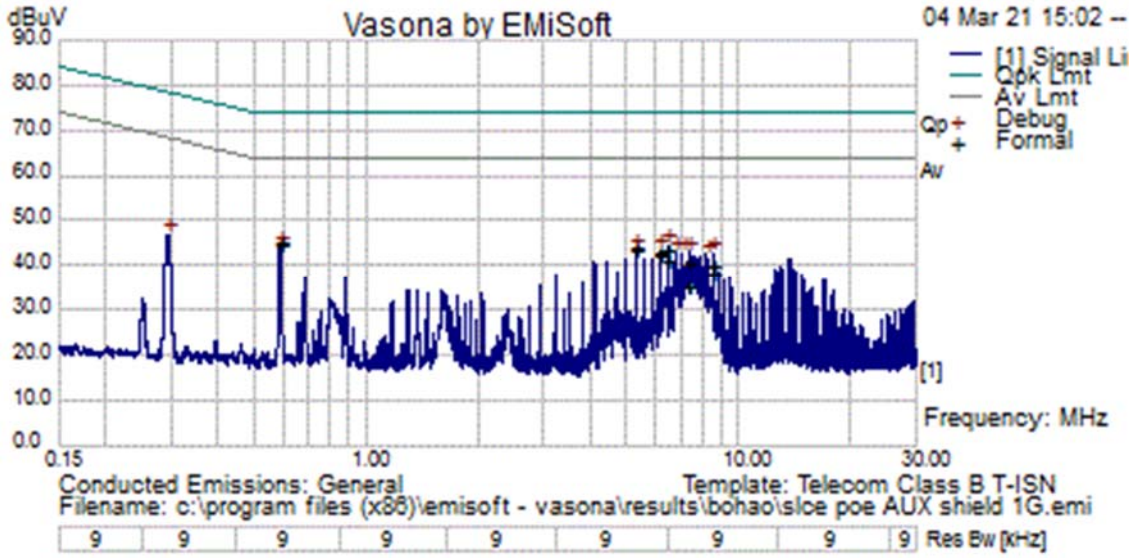
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	6.480	33.6	.3	9.6	43.5	Quasi Peak	Signal	74.0	-30.5	Pass	
2	.589	35.9	.1	9.5	45.5	Quasi Peak	Signal	74.0	-28.5	Pass	
3	6.185	33.5	.3	9.6	43.3	Quasi Peak	Signal	74.0	-30.7	Pass	
4	5.302	34.4	.2	9.5	44.2	Quasi Peak	Signal	74.0	-29.8	Pass	
5	7.362	30.9	.3	9.6	40.8	Quasi Peak	Signal	74.0	-33.2	Pass	
6	8.541	30.0	.3	9.6	39.9	Quasi Peak	Signal	74.0	-34.1	Pass	
7	6.480	31.7	.3	9.6	41.5	Average	Signal	64.0	-22.5	Pass	
8	.589	35.4	.1	9.5	45.0	Average	Signal	64.0	-19.0	Pass	
9	6.185	32.8	.3	9.6	42.6	Average	Signal	64.0	-21.4	Pass	
10	5.302	34.2	.2	9.5	44.0	Average	Signal	64.0	-20.0	Pass	
11	7.362	25.5	.3	9.6	35.4	Average	Signal	64.0	-28.6	Pass	
12	8.541	28.5	.3	9.6	38.5	Average	Signal	64.0	-25.5	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shield

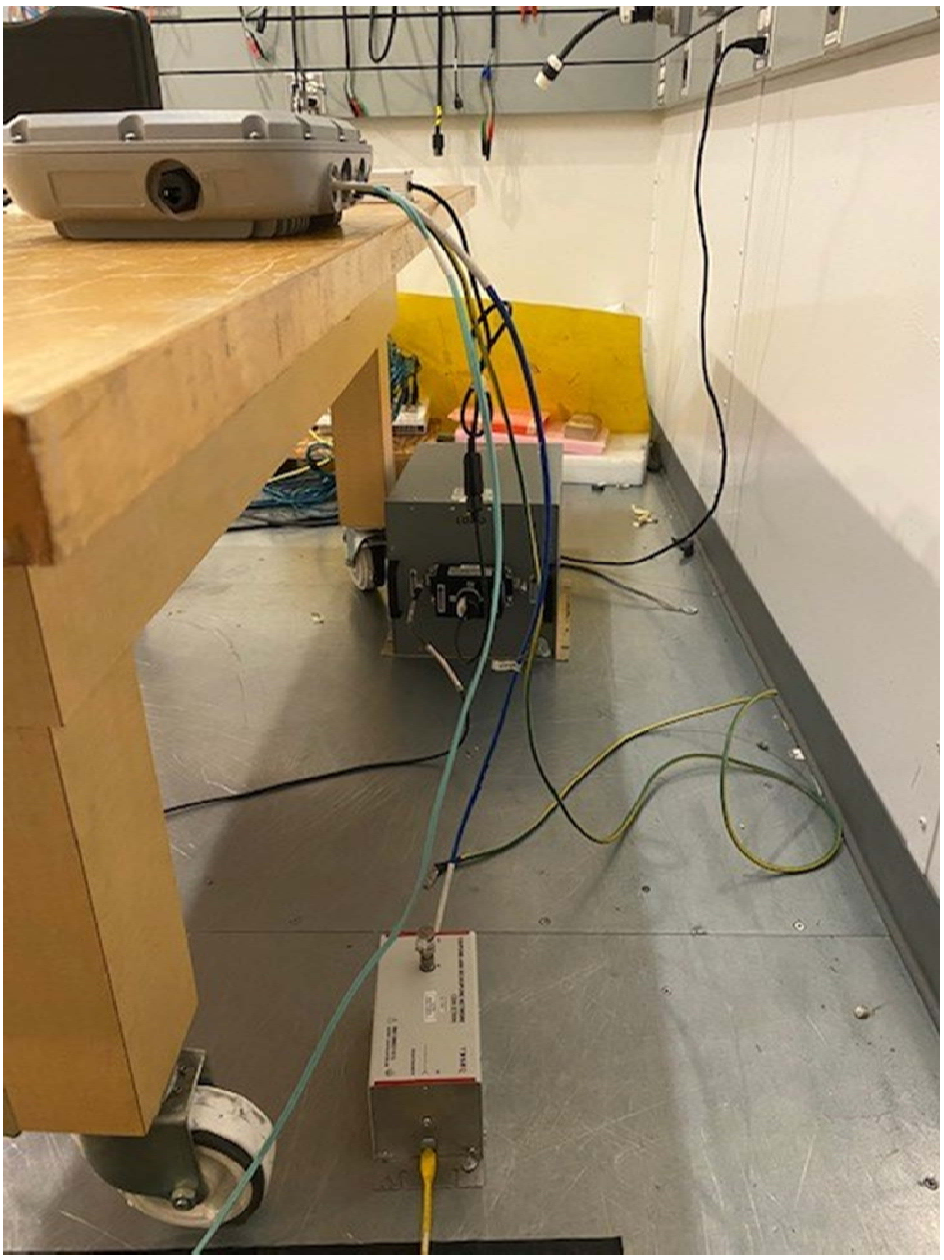
Photographs

TITLE: NA
DESCRIPTION: NA



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DESCRIPTION: NA

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Test Case Details

TestCase ID: 5699	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CNS13438:2006	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Device: AAN Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.
Basic Standard	CISPR16 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5699-10 Subtest Date : 3/6/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 2	
Subtest Results		
Subtest Title	5699-10	
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M	
Measured Voltage	110.6V	
Transducer	T-LISN	
Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE LAN/AUX 1G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 10m [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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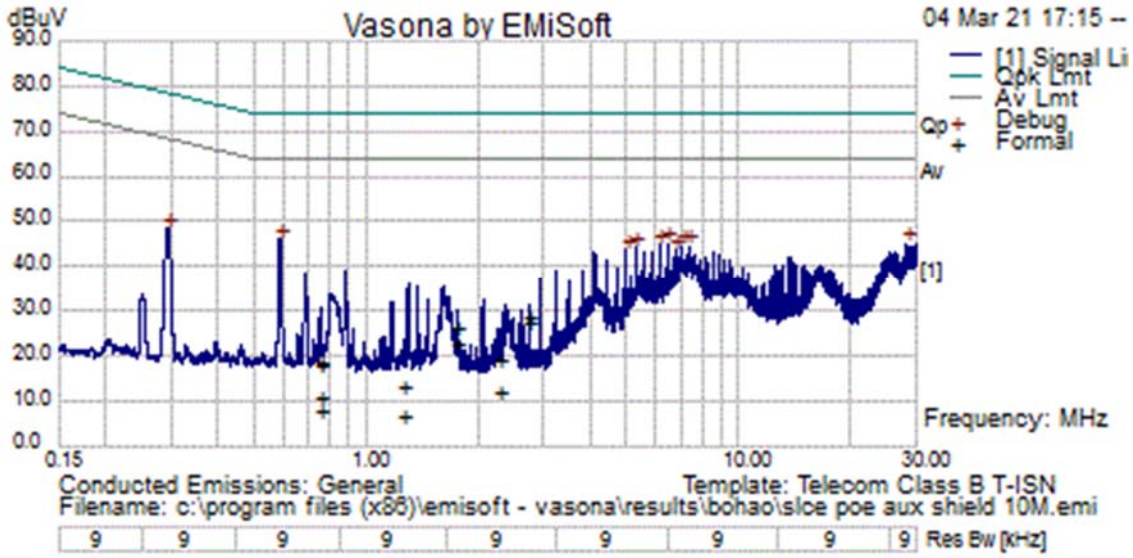
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 10m [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/17:24, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments

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1	.589	36.2	.1	9.5	45.8	Quasi Peak	Signal	74.0	-28.2	Pass	
2	28.392	28.0	.6	9.9	38.5	Quasi Peak	Signal	74.0	-35.5	Pass	
3	6.480	33.9	.3	9.6	43.8	Quasi Peak	Signal	74.0	-30.2	Pass	
4	7.364	31.8	.3	9.6	41.7	Quasi Peak	Signal	74.0	-32.3	Pass	
5	5.303	34.4	.2	9.5	44.2	Quasi Peak	Signal	64.0	-19.8	Pass	
6	.294	38.7	.1	9.6	48.3	Quasi Peak	Signal	68.4	-20.1	Pass	
7	.589	35.9	.1	9.5	45.5	Average	Signal	64.0	-18.5	Pass	
8	28.392	21.9	.6	9.9	32.3	Average	Signal	64.0	-31.7	Pass	
9	6.480	32.3	.3	9.6	42.2	Average	Signal	64.0	-21.8	Pass	
10	7.364	26.5	.3	9.6	36.4	Average	Signal	64.0	-27.6	Pass	

Test Result-Attachments

Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

Photographs

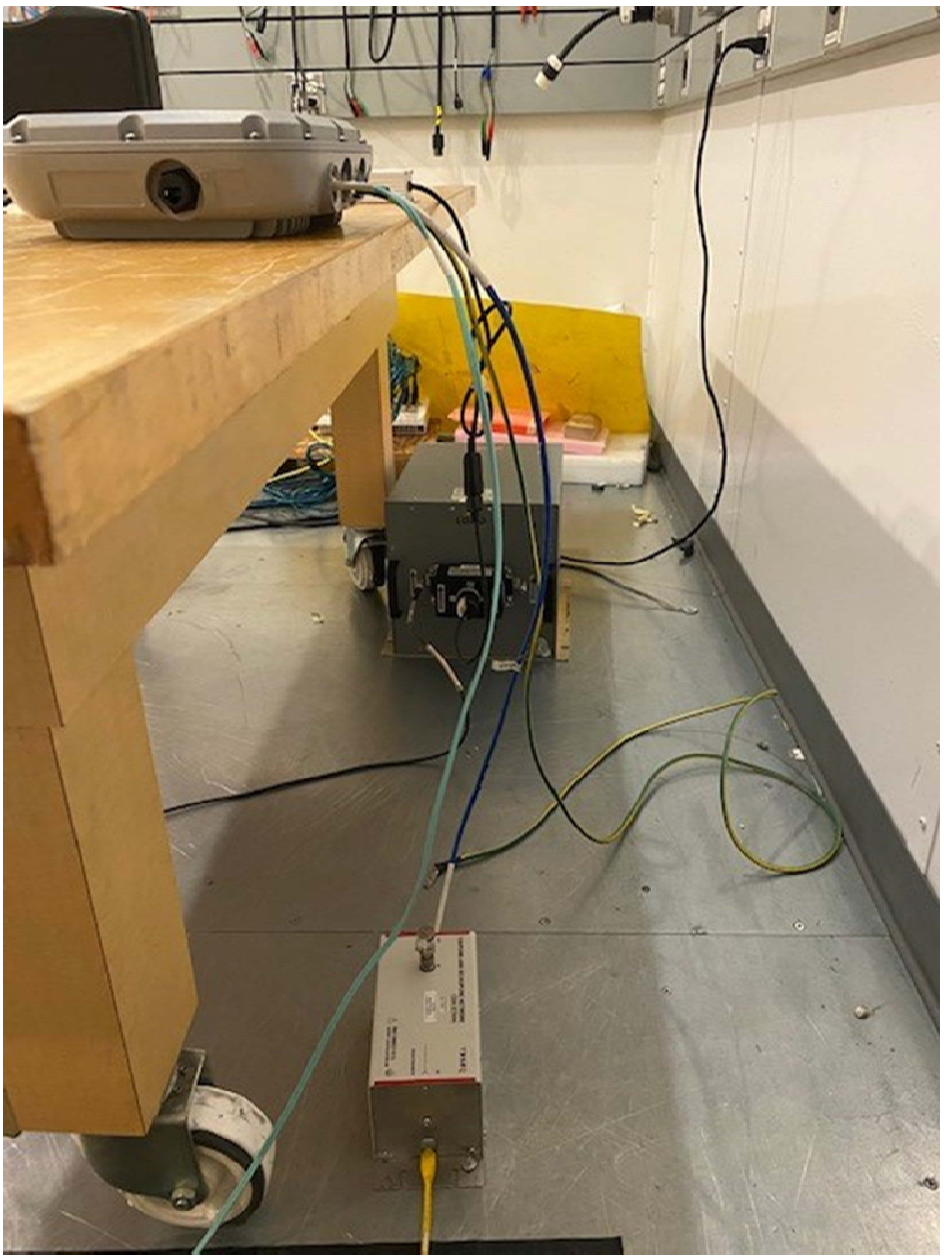
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Subtest Details

Subtest Number : 5699-5 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5699-5
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	110.6V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN2.5G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce 120v shield 2.5g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

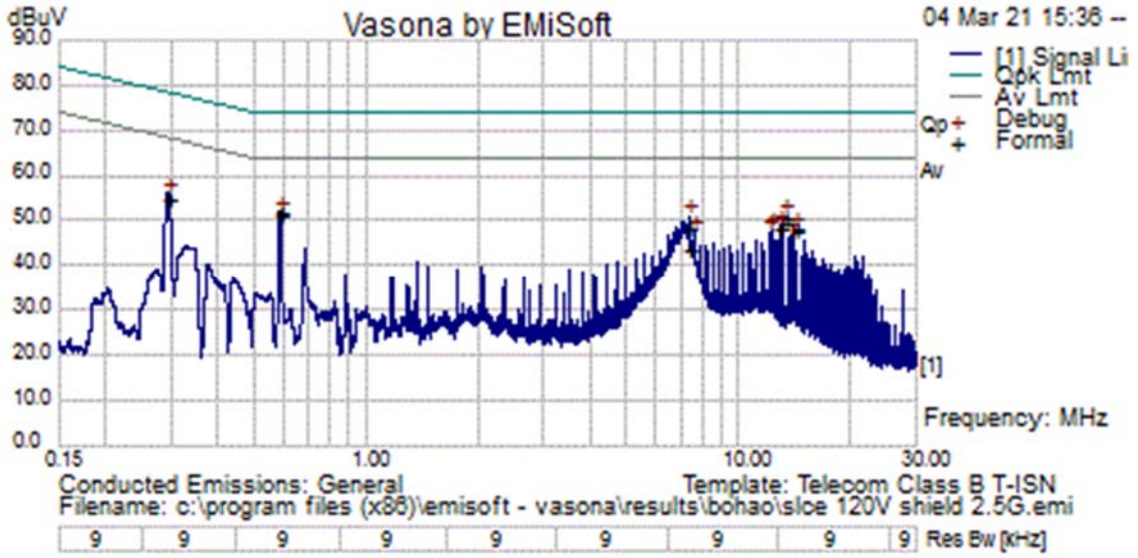
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce 120v shield 2.5g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:37, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	.589	42.0	.1	9.5	51.7	Average	Signal	64.0	-12.3	Pass	
2	.295	45.1	.1	9.6	54.7	Average	Signal	68.4	-13.7	Pass	
3	13.257	39.5	.4	9.9	49.8	Average	Signal	64.0	-14.2	Pass	
4	12.962	37.9	.4	9.9	48.2	Average	Signal	64.0	-15.8	Pass	
5	14.140	37.6	.4	9.9	47.9	Average	Signal	64.0	-16.1	Pass	
6	7.364	33.9	.3	9.6	43.8	Average	Signal	64.0	-20.2	Pass	
7	.589	42.3	.1	9.5	51.9	Quasi Peak	Signal	74.0	-22.1	Pass	
8	13.257	40.5	.4	9.9	50.8	Quasi Peak	Signal	74.0	-23.2	Pass	
9	.295	45.5	.1	9.6	55.1	Quasi Peak	Signal	78.4	-23.3	Pass	
10	12.962	38.4	.4	9.9	48.6	Quasi Peak	Signal	74.0	-25.4	Pass	
11	7.364	38.6	.3	9.6	48.5	Quasi Peak	Signal	74.0	-25.5	Pass	
12	14.140	38.1	.4	9.9	48.4	Quasi Peak	Signal	74.0	-25.6	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

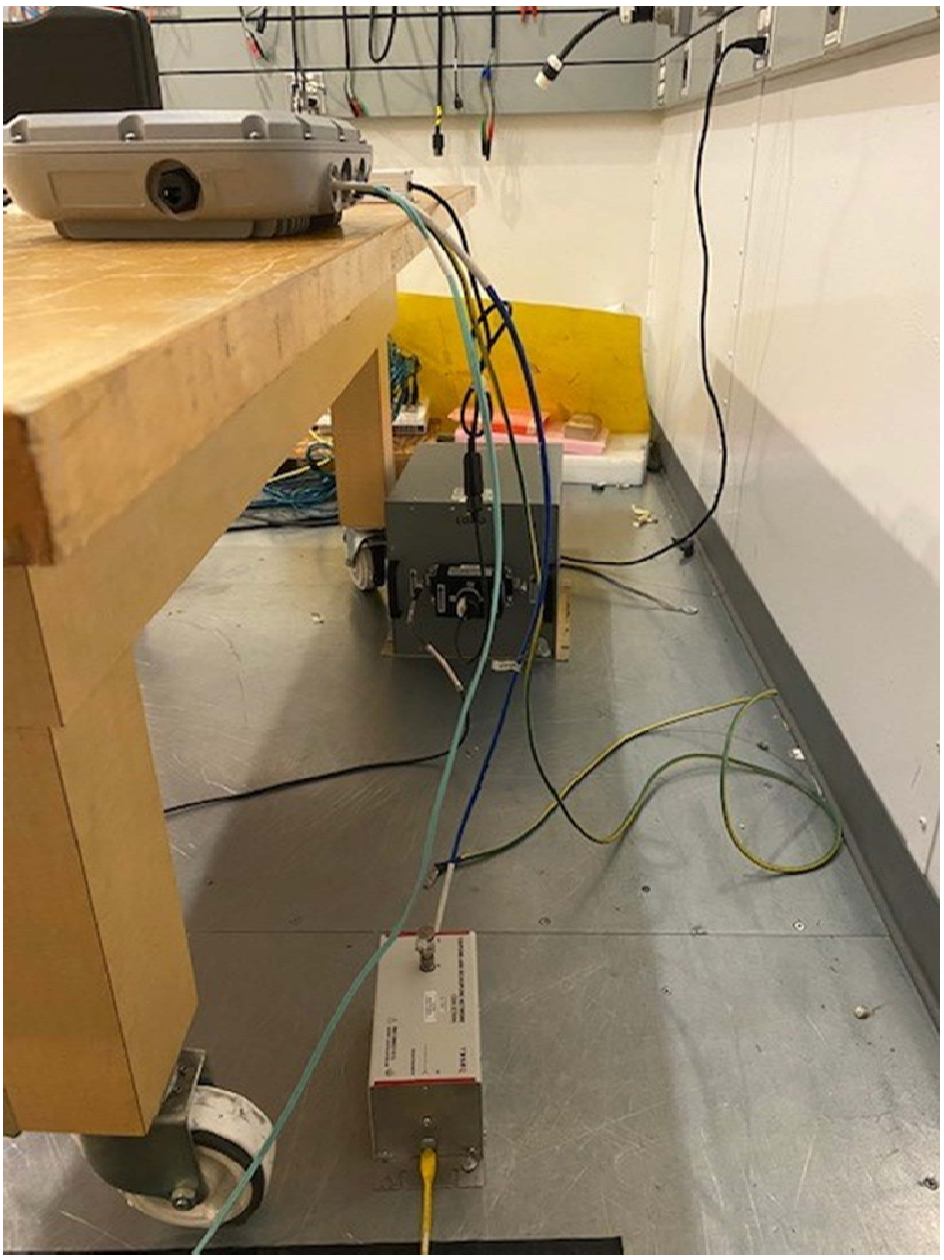
Photographs

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DESCRIPTION: NA



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DESCRIPTION: NA

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Subtest Details

Subtest Number : 5699-6 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5699-6
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	110.6V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN 1G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

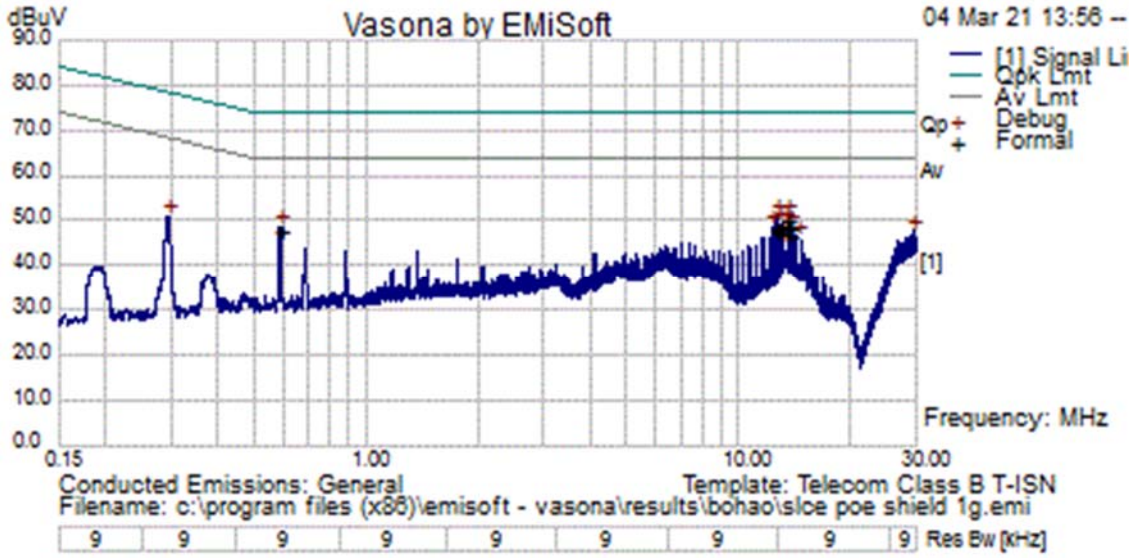
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/13:56, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	12.669	38.5	.4	9.9	48.7	Quasi Peak	Signal	74.0	-25.3	Pass	
2	13.551	39.9	.4	9.9	50.2	Quasi Peak	Signal	74.0	-23.8	Pass	
3	13.256	38.6	.4	9.9	48.9	Quasi Peak	Signal	74.0	-25.1	Pass	
4	12.962	38.2	.4	9.9	48.4	Quasi Peak	Signal	74.0	-25.6	Pass	
5	13.845	38.2	.4	9.9	48.5	Quasi Peak	Signal	74.0	-25.5	Pass	
6	.589	38.5	.1	9.5	48.1	Quasi Peak	Signal	74.0	-25.9	Pass	
7	12.669	37.8	.4	9.9	48.0	Average	Signal	64.0	-16.0	Pass	
8	13.551	38.2	.4	9.9	48.5	Average	Signal	64.0	-15.5	Pass	
9	13.256	36.8	.4	9.9	47.1	Average	Signal	64.0	-16.9	Pass	
10	12.962	37.3	.4	9.9	47.5	Average	Signal	64.0	-16.5	Pass	
11	13.845	36.4	.4	9.9	46.6	Average	Signal	64.0	-17.4	Pass	
12	.589	38.0	.1	9.5	47.6	Average	Signal	64.0	-16.4	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

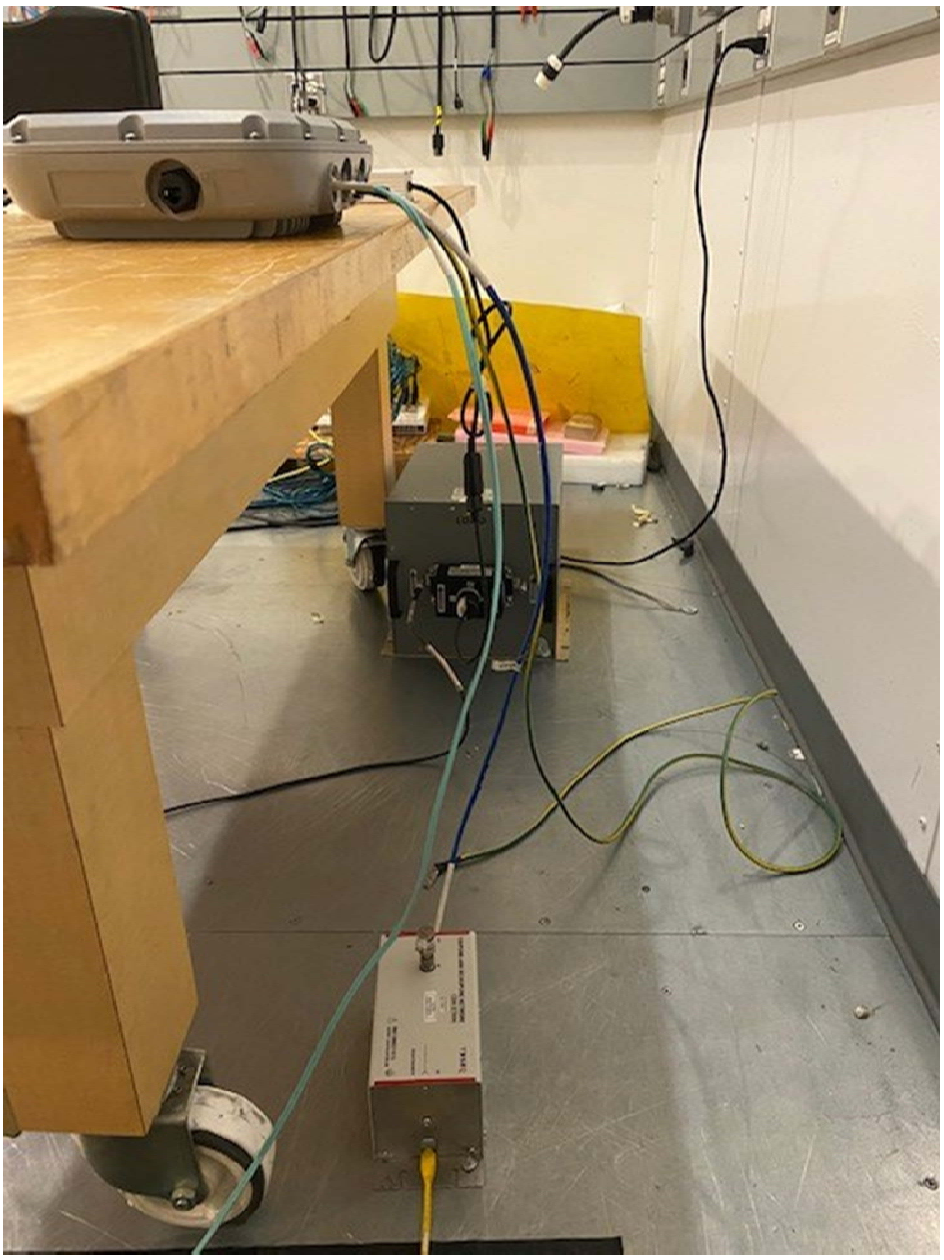
Photographs

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DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5699-7 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5699-7
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	110.6V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN 100M	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe shield 100m [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

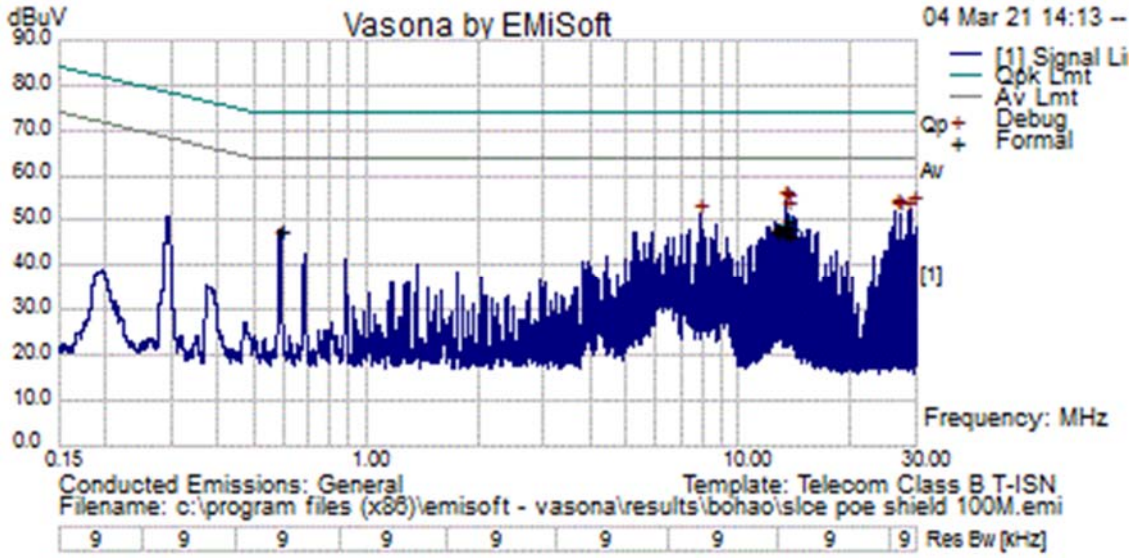
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe shield 100m [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/14:23, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	13.419	44.2	.4	9.9	54.5	Quasi Peak	Signal	74.0	-19.5	Pass	
2	29.235	41.7	.6	9.9	52.2	Quasi Peak	Signal	74.0	-21.8	Pass	
3	26.609	41.5	.6	9.9	52.0	Quasi Peak	Signal	74.0	-22.0	Pass	
4	27.159	40.9	.6	9.9	51.3	Quasi Peak	Signal	74.0	-22.7	Pass	
5	13.602	41.4	.4	9.9	51.7	Quasi Peak	Signal	74.0	-22.3	Pass	
6	7.922	41.4	.3	9.6	51.3	Quasi Peak	Signal	64.0	-12.7	Pass	
7	13.419	42.0	.4	9.9	52.3	Average	Signal	64.0	-11.7	Pass	
8	29.235	39.5	.6	9.9	50.0	Average	Signal	64.0	-14.0	Pass	
9	26.609	38.8	.6	9.9	49.2	Average	Signal	64.0	-14.8	Pass	
10	27.159	38.7	.6	9.9	49.2	Average	Signal	64.0	-14.8	Pass	
11	13.602	39.2	.4	9.9	49.5	Average	Signal	64.0	-14.5	Pass	

Test Result-Attachments

Questions & Answers

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The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

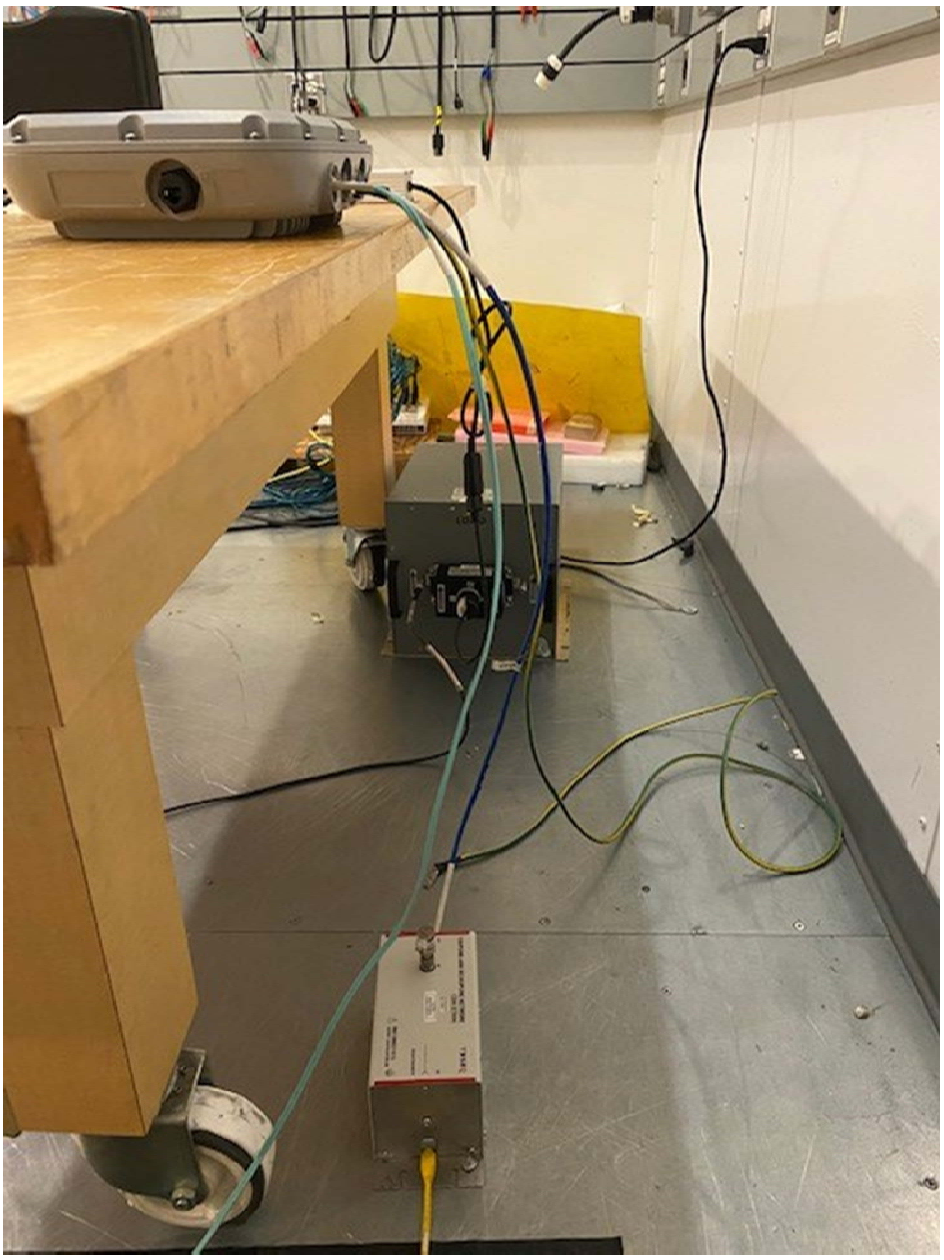
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5699-8 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5699-8
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	110.6V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE LAN/AUX 1G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

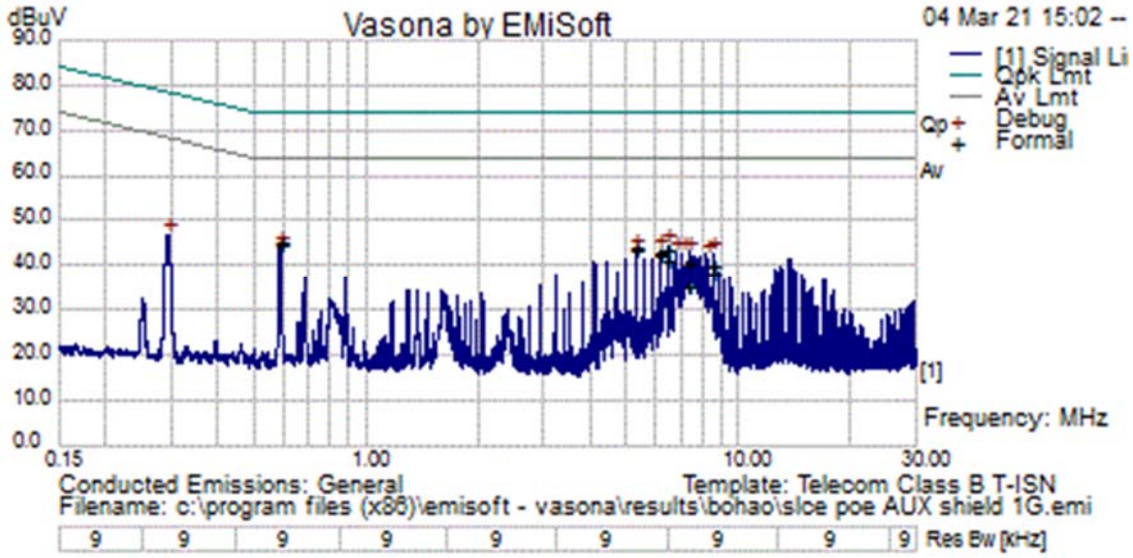
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	6.480	33.6	.3	9.6	43.5	Quasi Peak	Signal	74.0	-30.5	Pass	
2	.589	35.9	.1	9.5	45.5	Quasi Peak	Signal	74.0	-28.5	Pass	
3	6.185	33.5	.3	9.6	43.3	Quasi Peak	Signal	74.0	-30.7	Pass	
4	5.302	34.4	.2	9.5	44.2	Quasi Peak	Signal	74.0	-29.8	Pass	
5	7.362	30.9	.3	9.6	40.8	Quasi Peak	Signal	74.0	-33.2	Pass	
6	8.541	30.0	.3	9.6	39.9	Quasi Peak	Signal	74.0	-34.1	Pass	
7	6.480	31.7	.3	9.6	41.5	Average	Signal	64.0	-22.5	Pass	
8	.589	35.4	.1	9.5	45.0	Average	Signal	64.0	-19.0	Pass	
9	6.185	32.8	.3	9.6	42.6	Average	Signal	64.0	-21.4	Pass	
10	5.302	34.2	.2	9.5	44.0	Average	Signal	64.0	-20.0	Pass	
11	7.362	25.5	.3	9.6	35.4	Average	Signal	64.0	-28.6	Pass	
12	8.541	28.5	.3	9.6	38.5	Average	Signal	64.0	-25.5	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

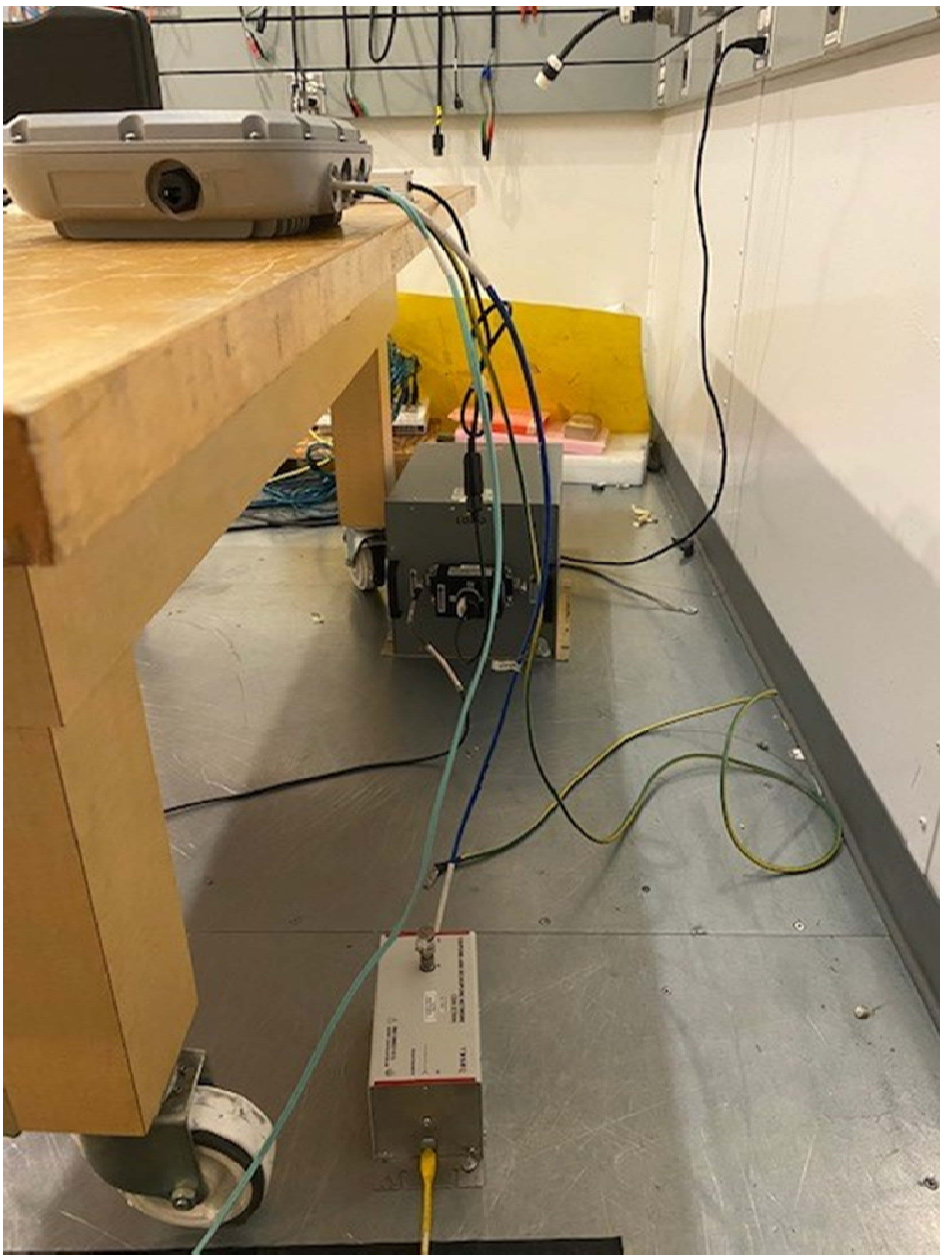
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5699-9 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5699-9
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	110.6V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE LAN/AUX 100M	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 100m [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

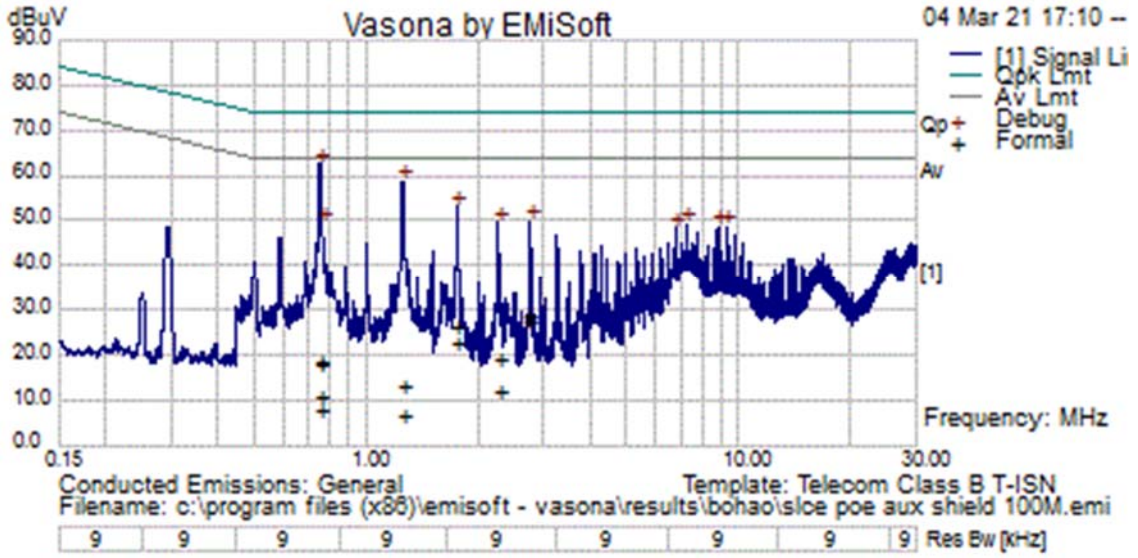
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 100m [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/17:11, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2.756	18.2	.2	9.5	27.9	Average	Signal	64.0	-36.1	Pass	
2	1.763	13.2	.1	9.5	22.8	Average	Signal	64.0	-41.2	Pass	
3	2.756	18.9	.2	9.5	28.6	Quasi Peak	Signal	74.0	-45.4	Pass	
4	1.763	16.9	.1	9.5	26.5	Quasi Peak	Signal	74.0	-47.5	Pass	
5	2.281	2.4	.1	9.5	12.1	Average	Signal	64.0	-51.9	Pass	
6	.754	1.4	.1	9.5	11.0	Average	Signal	64.0	-53.0	Pass	
7	2.281	10.0	.1	9.5	19.6	Quasi Peak	Signal	74.0	-54.4	Pass	
8	.754	9.1	.1	9.5	18.7	Quasi Peak	Signal	74.0	-55.3	Pass	
9	.757	8.5	.1	9.5	18.1	Quasi Peak	Signal	74.0	-55.9	Pass	
10	.757	-1.8	.1	9.5	7.8	Average	Signal	64.0	-56.2	Pass	
11	1.259	-2.7	.1	9.5	6.9	Average	Signal	64.0	-57.1	Pass	
12	1.259	3.7	.1	9.5	13.3	Quasi Peak	Signal	74.0	-60.7	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

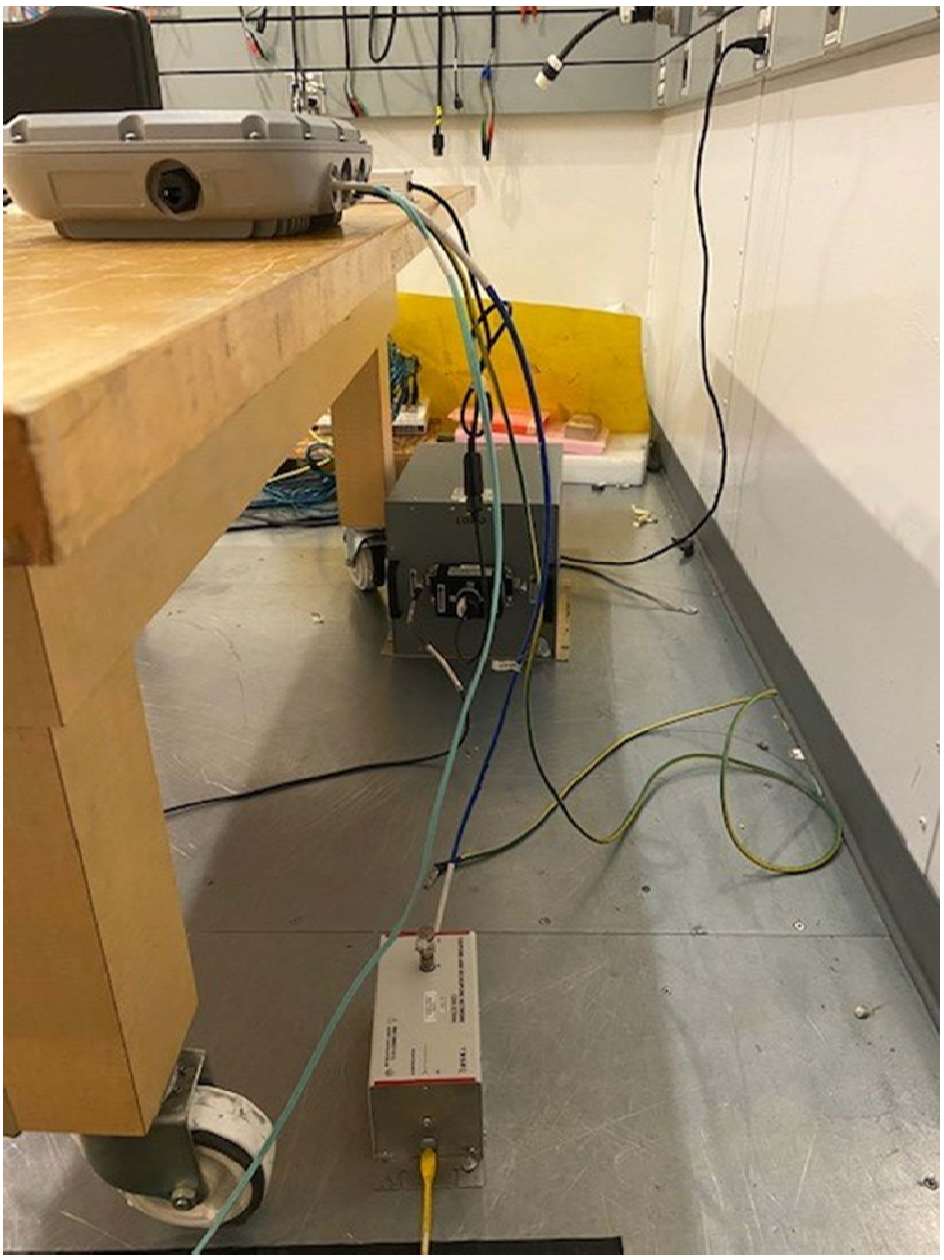
Photographs

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DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5703	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CNS13438:2006	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: DC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.
Basic Standard	CISPR16 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5703-4 Subtest Date : 3/6/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 2	
Subtest Results		
Subtest Title	5703-4	
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M	
Measured Voltage	POE	
Transducer	T-LISN	
Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN2.5G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe shield 2.5g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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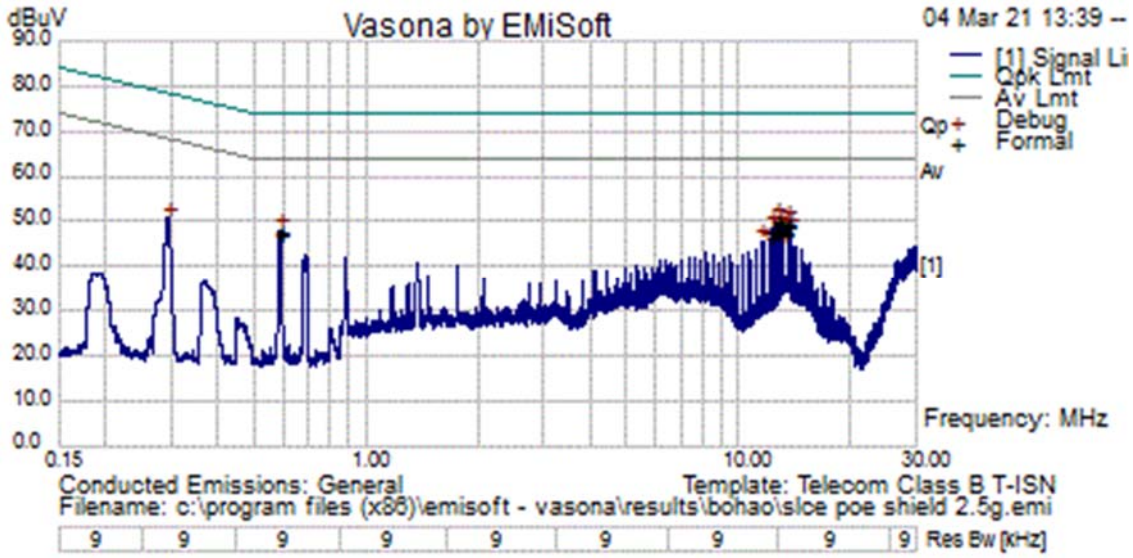
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe shield 2.5g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/13:40, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments

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1	12.666	39.1	.4	9.9	49.4	Average	Signal	64.0	-14.6	Pass	
2	13.549	38.5	.4	9.9	48.8	Average	Signal	64.0	-15.2	Pass	
3	.589	37.9	.1	9.5	47.6	Average	Signal	64.0	-16.4	Pass	
4	12.960	37.2	.4	9.9	47.5	Average	Signal	64.0	-16.5	Pass	
5	13.256	36.8	.4	9.9	47.1	Average	Signal	64.0	-16.9	Pass	
6	12.373	36.7	.4	9.8	46.9	Average	Signal	64.0	-17.1	Pass	
7	12.666	39.7	.4	9.9	50.0	Quasi Peak	Signal	74.0	-24.0	Pass	
8	13.549	39.4	.4	9.9	49.7	Quasi Peak	Signal	74.0	-24.3	Pass	
9	12.960	38.1	.4	9.9	48.3	Quasi Peak	Signal	74.0	-25.7	Pass	
10	13.256	37.8	.4	9.9	48.0	Quasi Peak	Signal	74.0	-26.0	Pass	
11	.589	38.3	.1	9.5	47.9	Quasi Peak	Signal	74.0	-26.1	Pass	
12	12.373	37.5	.4	9.8	47.7	Quasi Peak	Signal	74.0	-26.3	Pass	

Test Result-Attachments

Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

Photographs

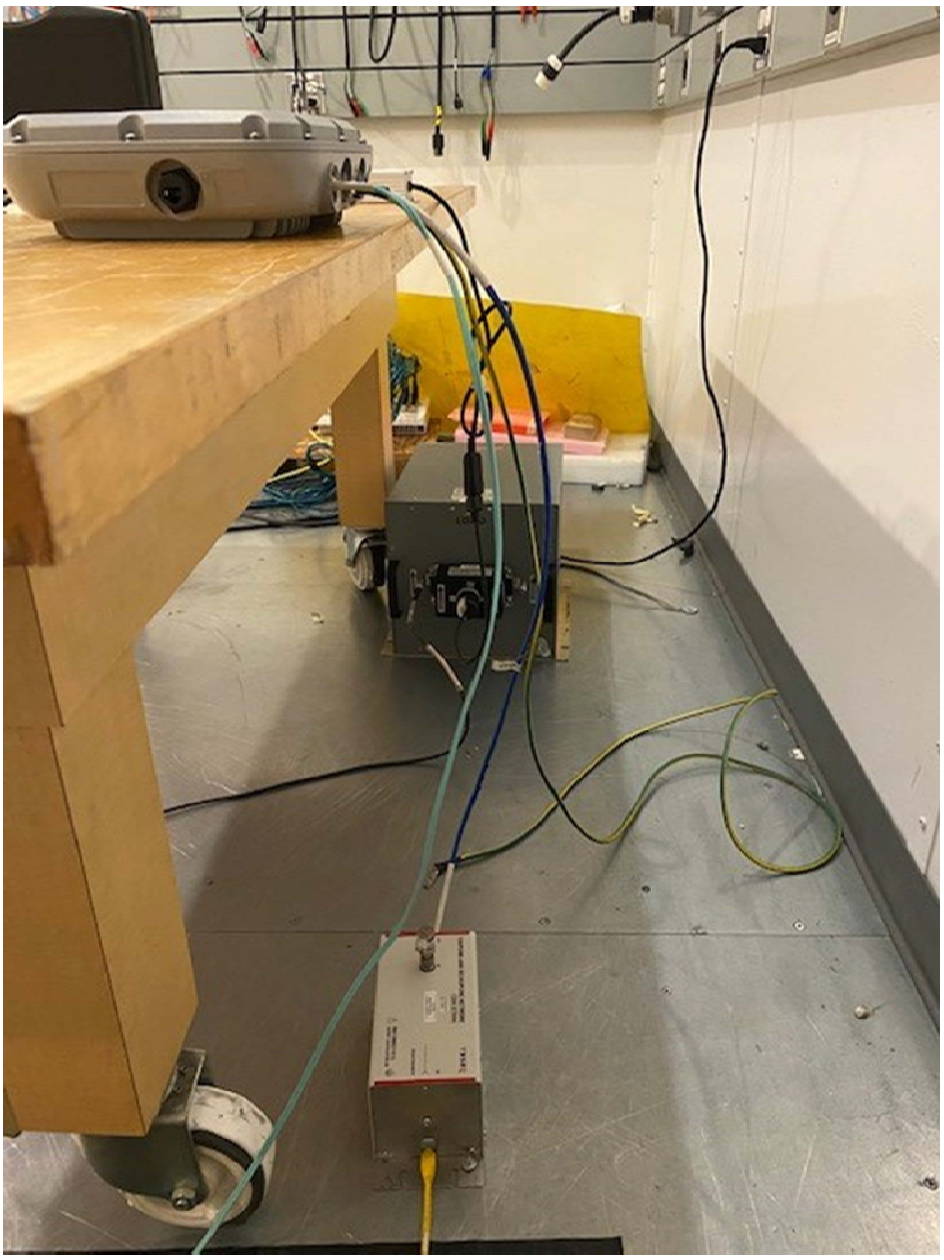
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Subtest Details

Subtest Number : 5703-5 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5703-5
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	POE
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE LAN/AUX 1G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

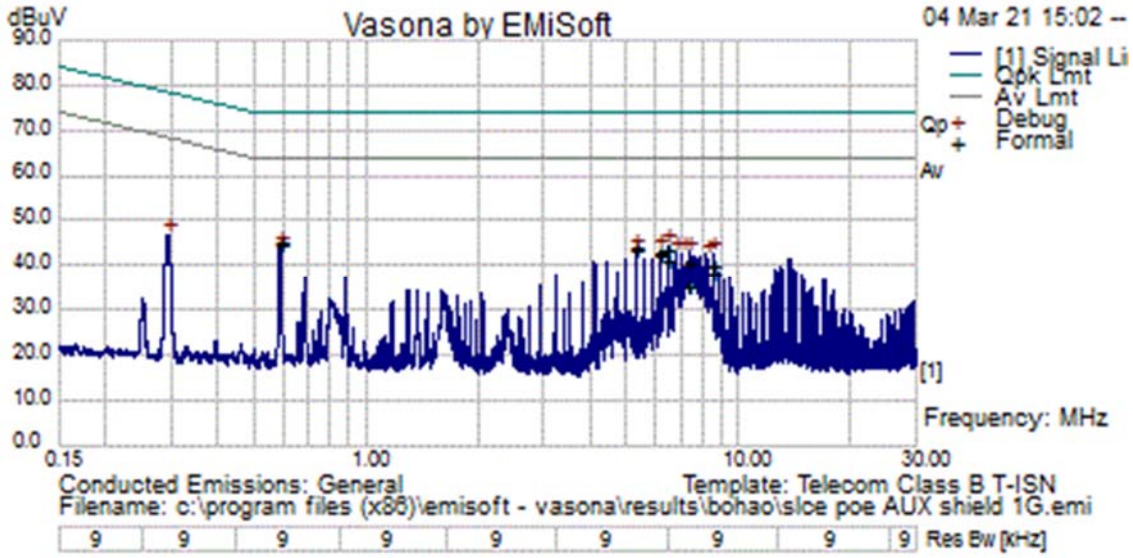
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	6.480	33.6	.3	9.6	43.5	Quasi Peak	Signal	74.0	-30.5	Pass	
2	.589	35.9	.1	9.5	45.5	Quasi Peak	Signal	74.0	-28.5	Pass	
3	6.185	33.5	.3	9.6	43.3	Quasi Peak	Signal	74.0	-30.7	Pass	
4	5.302	34.4	.2	9.5	44.2	Quasi Peak	Signal	74.0	-29.8	Pass	
5	7.362	30.9	.3	9.6	40.8	Quasi Peak	Signal	74.0	-33.2	Pass	
6	8.541	30.0	.3	9.6	39.9	Quasi Peak	Signal	74.0	-34.1	Pass	
7	6.480	31.7	.3	9.6	41.5	Average	Signal	64.0	-22.5	Pass	
8	.589	35.4	.1	9.5	45.0	Average	Signal	64.0	-19.0	Pass	
9	6.185	32.8	.3	9.6	42.6	Average	Signal	64.0	-21.4	Pass	
10	5.302	34.2	.2	9.5	44.0	Average	Signal	64.0	-20.0	Pass	
11	7.362	25.5	.3	9.6	35.4	Average	Signal	64.0	-28.6	Pass	
12	8.541	28.5	.3	9.6	38.5	Average	Signal	64.0	-25.5	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

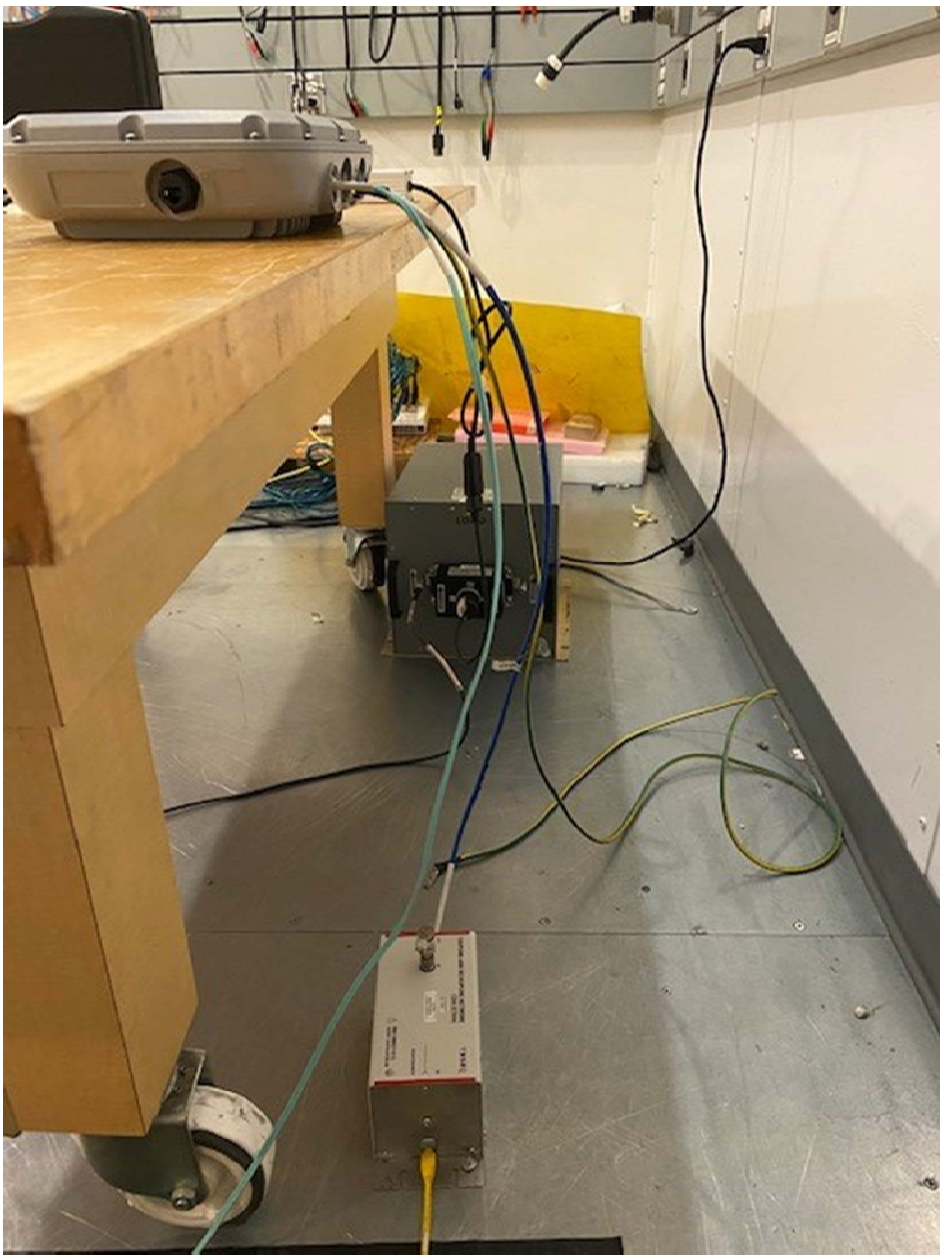
Photographs

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DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5703-6 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5703-6
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	POE
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN 1G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

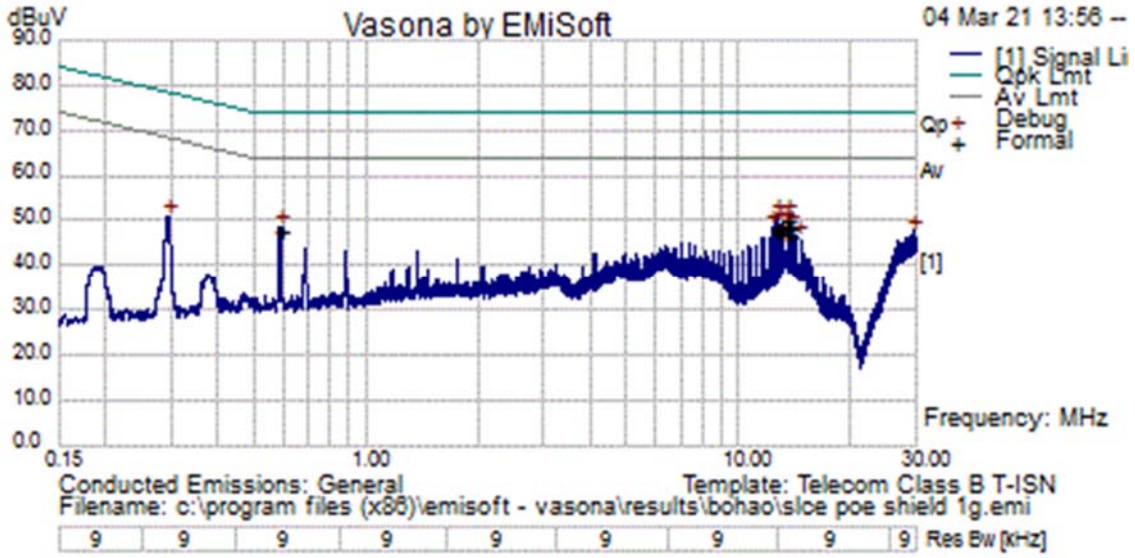
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/13:56, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	12.669	38.5	.4	9.9	48.7	Quasi Peak	Signal	74.0	-25.3	Pass	
2	13.551	39.9	.4	9.9	50.2	Quasi Peak	Signal	74.0	-23.8	Pass	
3	13.256	38.6	.4	9.9	48.9	Quasi Peak	Signal	74.0	-25.1	Pass	
4	12.962	38.2	.4	9.9	48.4	Quasi Peak	Signal	74.0	-25.6	Pass	
5	13.845	38.2	.4	9.9	48.5	Quasi Peak	Signal	74.0	-25.5	Pass	
6	.589	38.5	.1	9.5	48.1	Quasi Peak	Signal	74.0	-25.9	Pass	
7	12.669	37.8	.4	9.9	48.0	Average	Signal	64.0	-16.0	Pass	
8	13.551	38.2	.4	9.9	48.5	Average	Signal	64.0	-15.5	Pass	
9	13.256	36.8	.4	9.9	47.1	Average	Signal	64.0	-16.9	Pass	
10	12.962	37.3	.4	9.9	47.5	Average	Signal	64.0	-16.5	Pass	
11	13.845	36.4	.4	9.9	46.6	Average	Signal	64.0	-17.4	Pass	
12	.589	38.0	.1	9.5	47.6	Average	Signal	64.0	-16.4	Pass	

Test Result-Attachments

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Questions & Answers

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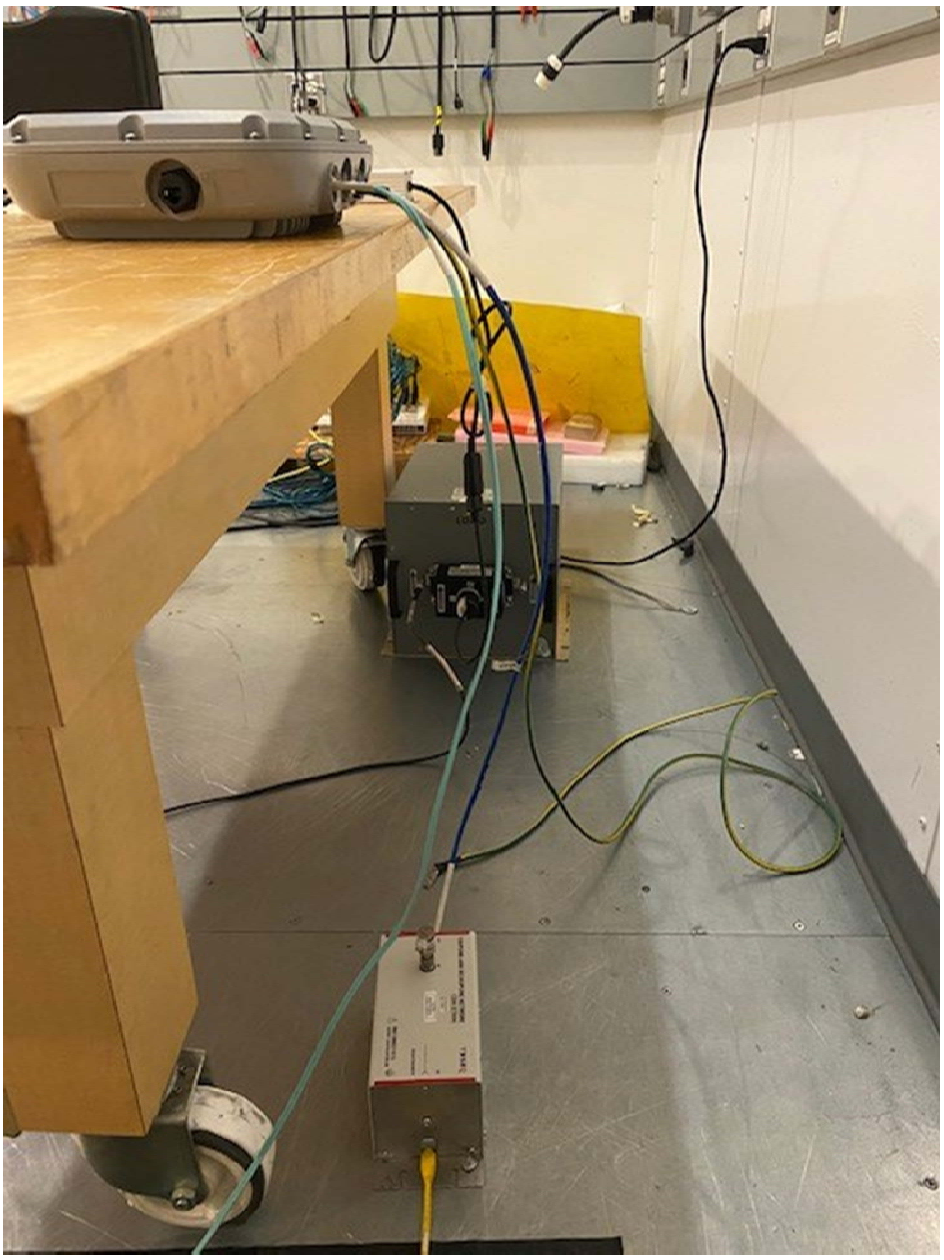
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5703-7 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5703-7
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	POE
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE LAN/AUX 100M	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 100m [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

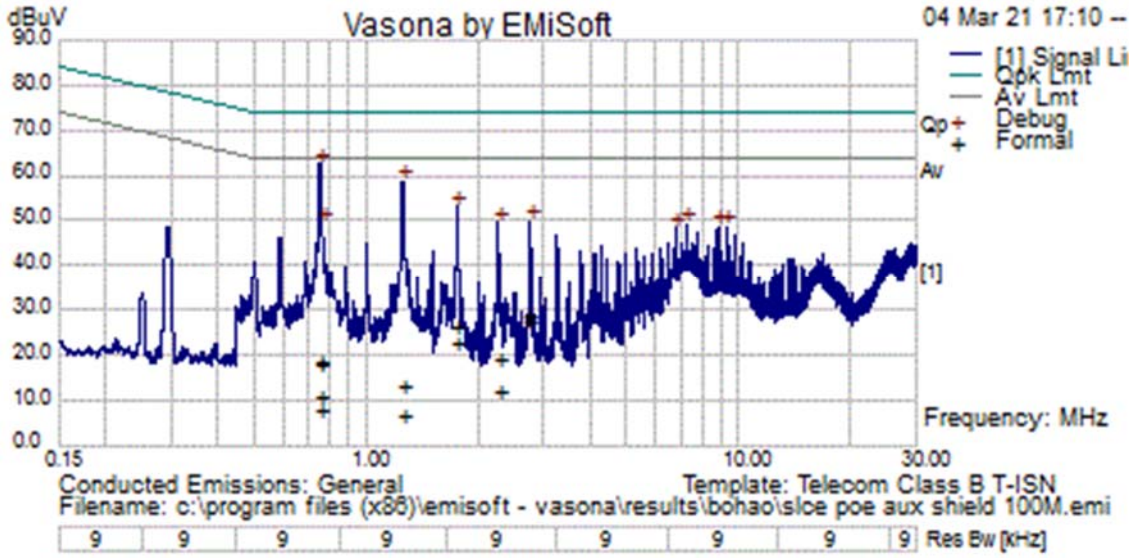
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 100m [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/17:11, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2.756	18.2	.2	9.5	27.9	Average	Signal	64.0	-36.1	Pass	
2	1.763	13.2	.1	9.5	22.8	Average	Signal	64.0	-41.2	Pass	
3	2.756	18.9	.2	9.5	28.6	Quasi Peak	Signal	74.0	-45.4	Pass	
4	1.763	16.9	.1	9.5	26.5	Quasi Peak	Signal	74.0	-47.5	Pass	
5	2.281	2.4	.1	9.5	12.1	Average	Signal	64.0	-51.9	Pass	
6	.754	1.4	.1	9.5	11.0	Average	Signal	64.0	-53.0	Pass	
7	2.281	10.0	.1	9.5	19.6	Quasi Peak	Signal	74.0	-54.4	Pass	
8	.754	9.1	.1	9.5	18.7	Quasi Peak	Signal	74.0	-55.3	Pass	
9	.757	8.5	.1	9.5	18.1	Quasi Peak	Signal	74.0	-55.9	Pass	
10	.757	-1.8	.1	9.5	7.8	Average	Signal	64.0	-56.2	Pass	
11	1.259	-2.7	.1	9.5	6.9	Average	Signal	64.0	-57.1	Pass	
12	1.259	3.7	.1	9.5	13.3	Quasi Peak	Signal	74.0	-60.7	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

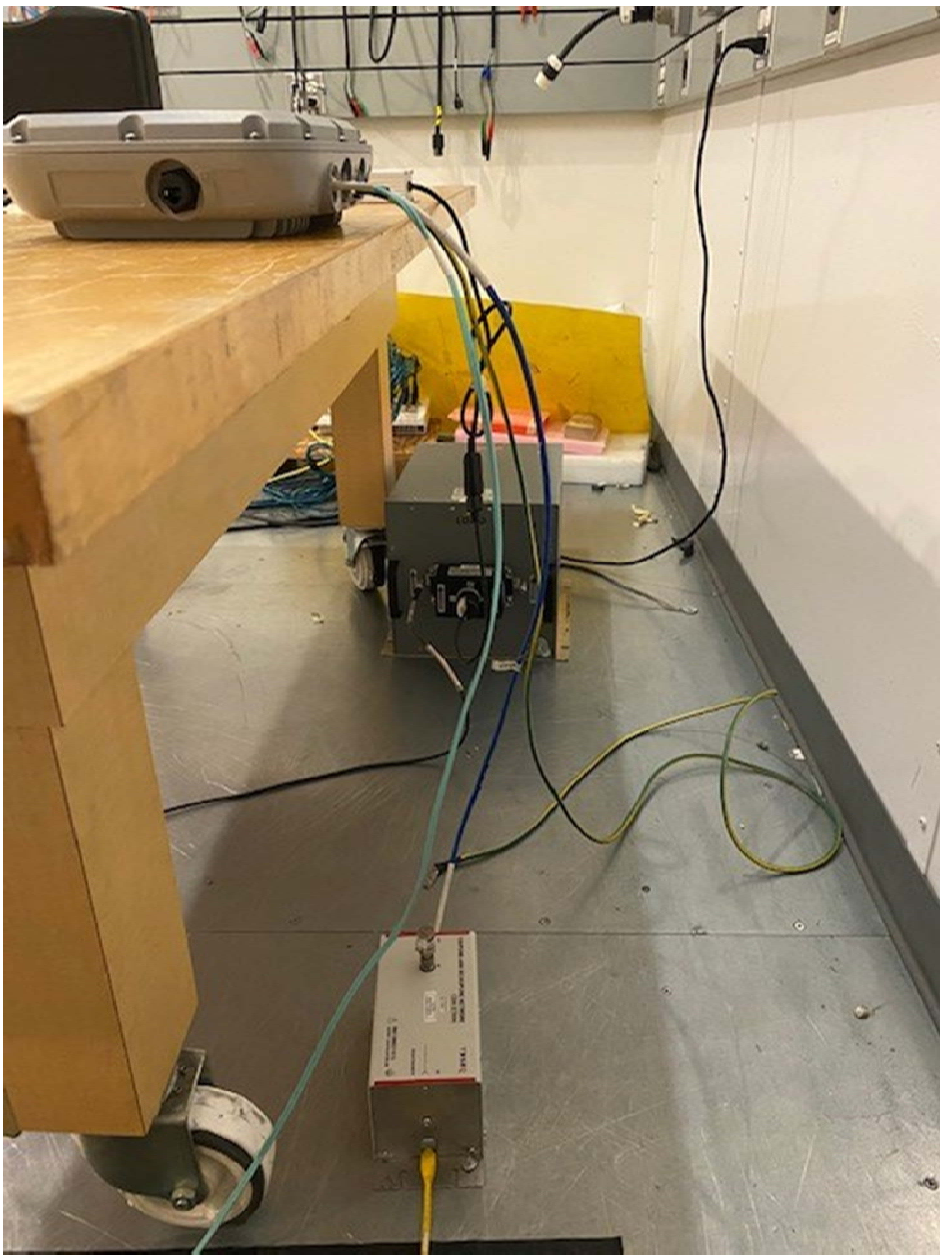
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5703-8 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5703-8
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	POE
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN 100M	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe shield 100m [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

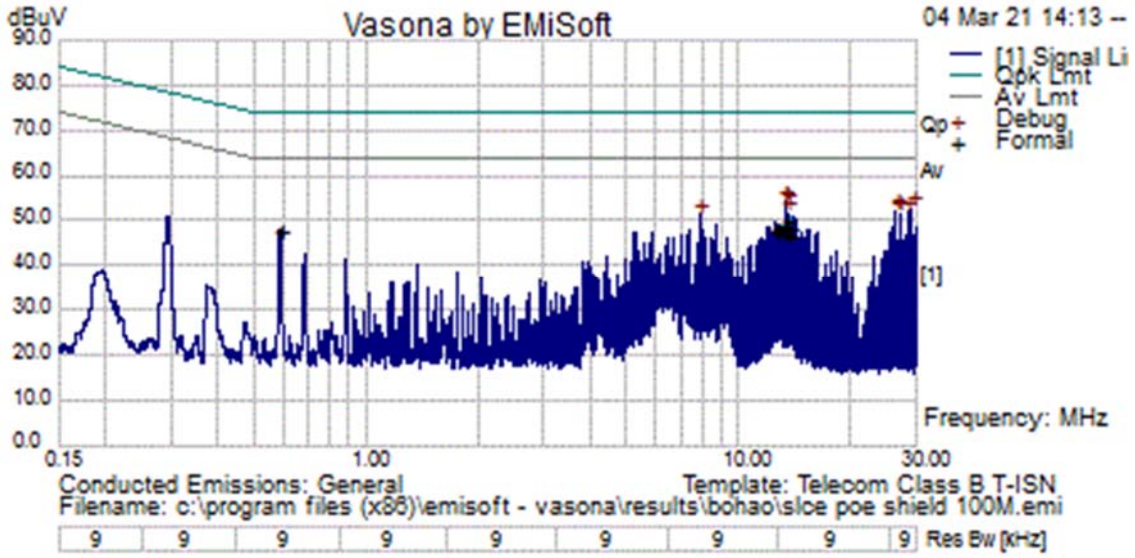
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe shield 100m [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/14:23, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	13.419	44.2	.4	9.9	54.5	Quasi Peak	Signal	74.0	-19.5	Pass	
2	29.235	41.7	.6	9.9	52.2	Quasi Peak	Signal	74.0	-21.8	Pass	
3	26.609	41.5	.6	9.9	52.0	Quasi Peak	Signal	74.0	-22.0	Pass	
4	27.159	40.9	.6	9.9	51.3	Quasi Peak	Signal	74.0	-22.7	Pass	
5	13.602	41.4	.4	9.9	51.7	Quasi Peak	Signal	74.0	-22.3	Pass	
6	7.922	41.4	.3	9.6	51.3	Quasi Peak	Signal	64.0	-12.7	Pass	
7	13.419	42.0	.4	9.9	52.3	Average	Signal	64.0	-11.7	Pass	
8	29.235	39.5	.6	9.9	50.0	Average	Signal	64.0	-14.0	Pass	
9	26.609	38.8	.6	9.9	49.2	Average	Signal	64.0	-14.8	Pass	
10	27.159	38.7	.6	9.9	49.2	Average	Signal	64.0	-14.8	Pass	
11	13.602	39.2	.4	9.9	49.5	Average	Signal	64.0	-14.5	Pass	

Test Result-Attachments

Questions & Answers

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The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

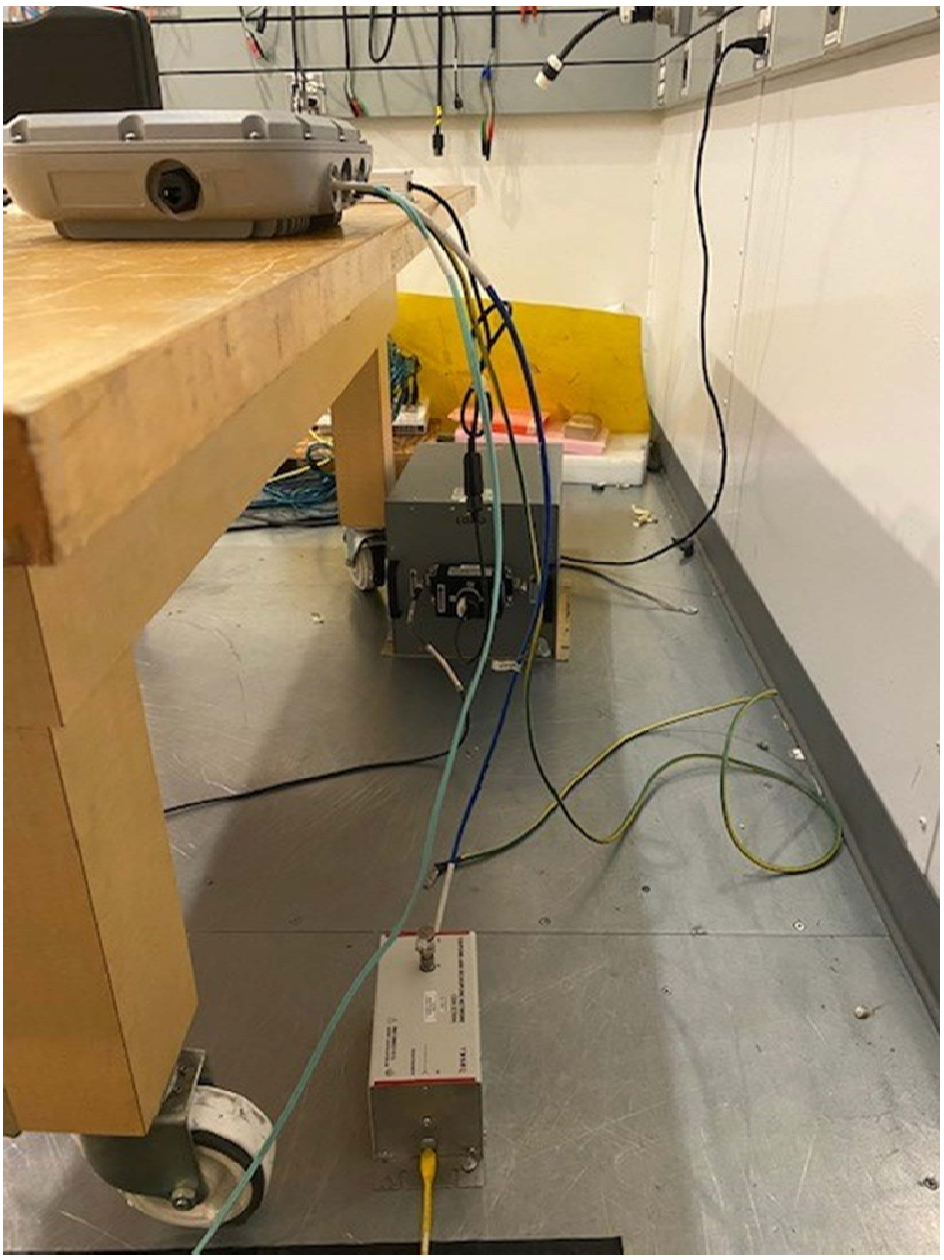
Photographs

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DESCRIPTION: NA

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Subtest Details

Subtest Number : 5703-9 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5703-9
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	POE
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE LAN/AUX 10M	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 10m [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

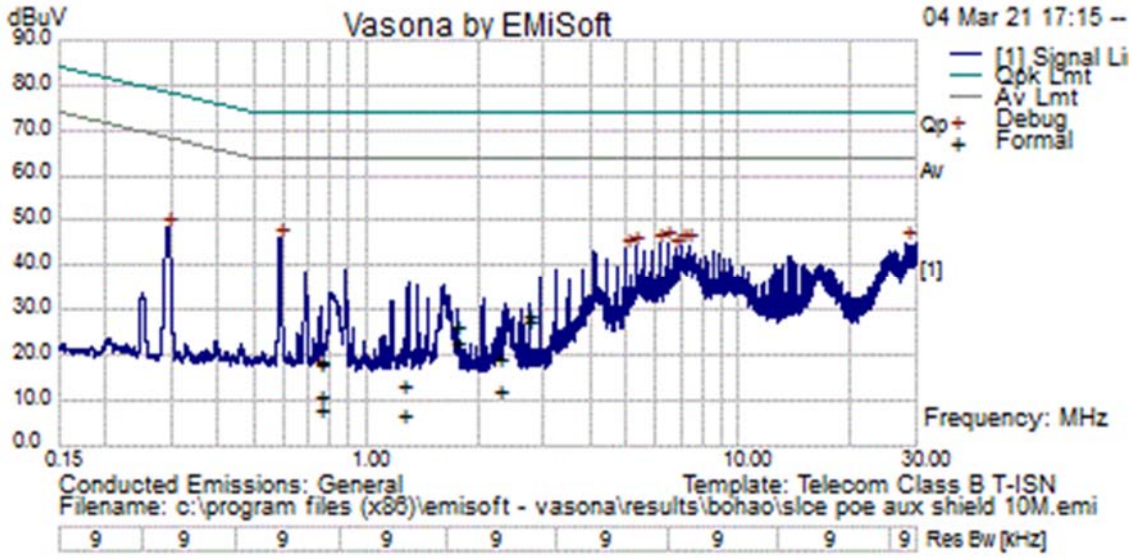
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 10m [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/17:24, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	.589	36.2	.1	9.5	45.8	Quasi Peak	Signal	74.0	-28.2	Pass	
2	28.392	28.0	.6	9.9	38.5	Quasi Peak	Signal	74.0	-35.5	Pass	
3	6.480	33.9	.3	9.6	43.8	Quasi Peak	Signal	74.0	-30.2	Pass	
4	7.364	31.8	.3	9.6	41.7	Quasi Peak	Signal	74.0	-32.3	Pass	
5	5.303	34.4	.2	9.5	44.2	Quasi Peak	Signal	64.0	-19.8	Pass	
6	.294	38.7	.1	9.6	48.3	Quasi Peak	Signal	68.4	-20.1	Pass	
7	.589	35.9	.1	9.5	45.5	Average	Signal	64.0	-18.5	Pass	
8	28.392	21.9	.6	9.9	32.3	Average	Signal	64.0	-31.7	Pass	
9	6.480	32.3	.3	9.6	42.2	Average	Signal	64.0	-21.8	Pass	
10	7.364	26.5	.3	9.6	36.4	Average	Signal	64.0	-27.6	Pass	

Test Result-Attachments

Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

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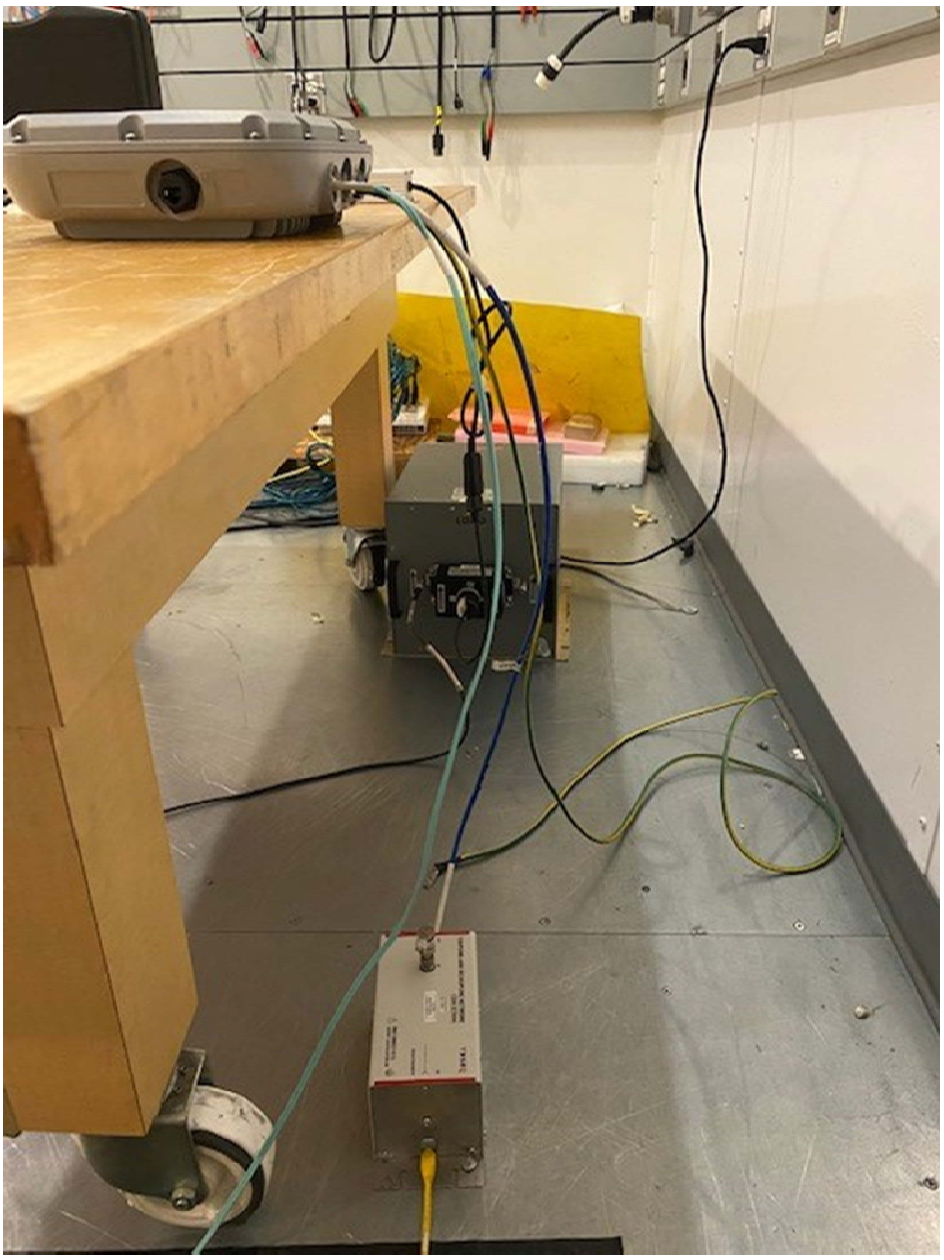
Photographs

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DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7555	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: DC or POE Telecom Line Test Class: B Detectors: Quasi-Peak & Average	
Basic Standard	EN55016 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7555-3 Subtest Date : 3/6/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 2	
Subtest Results		
Subtest Title	7555-3	
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M	
Measured Voltage	POE	
Transducer	T-LISN	
Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE WAN2.5G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe shield 2.5g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

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Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

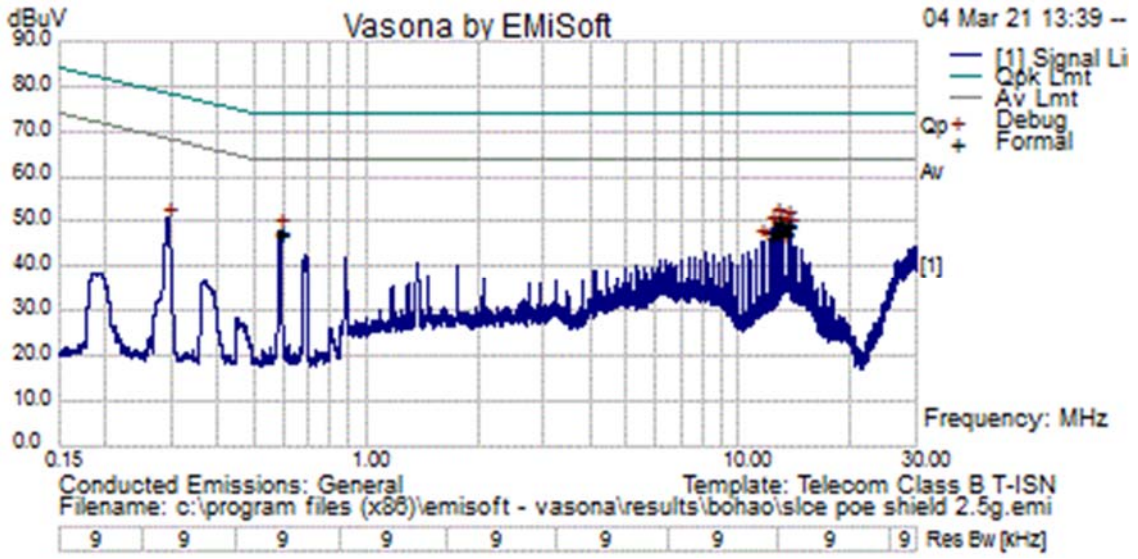
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe shield 2.5g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/13:40, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data

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No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	12.666	39.1	.4	9.9	49.4	Average	Signal	64.0	-14.6	Pass	
2	13.549	38.5	.4	9.9	48.8	Average	Signal	64.0	-15.2	Pass	
3	.589	37.9	.1	9.5	47.6	Average	Signal	64.0	-16.4	Pass	
4	12.960	37.2	.4	9.9	47.5	Average	Signal	64.0	-16.5	Pass	
5	13.256	36.8	.4	9.9	47.1	Average	Signal	64.0	-16.9	Pass	
6	12.373	36.7	.4	9.8	46.9	Average	Signal	64.0	-17.1	Pass	
7	12.666	39.7	.4	9.9	50.0	Quasi Peak	Signal	74.0	-24.0	Pass	
8	13.549	39.4	.4	9.9	49.7	Quasi Peak	Signal	74.0	-24.3	Pass	
9	12.960	38.1	.4	9.9	48.3	Quasi Peak	Signal	74.0	-25.7	Pass	
10	13.256	37.8	.4	9.9	48.0	Quasi Peak	Signal	74.0	-26.0	Pass	
11	.589	38.3	.1	9.5	47.9	Quasi Peak	Signal	74.0	-26.1	Pass	
12	12.373	37.5	.4	9.8	47.7	Quasi Peak	Signal	74.0	-26.3	Pass	

Test Result-Attachments

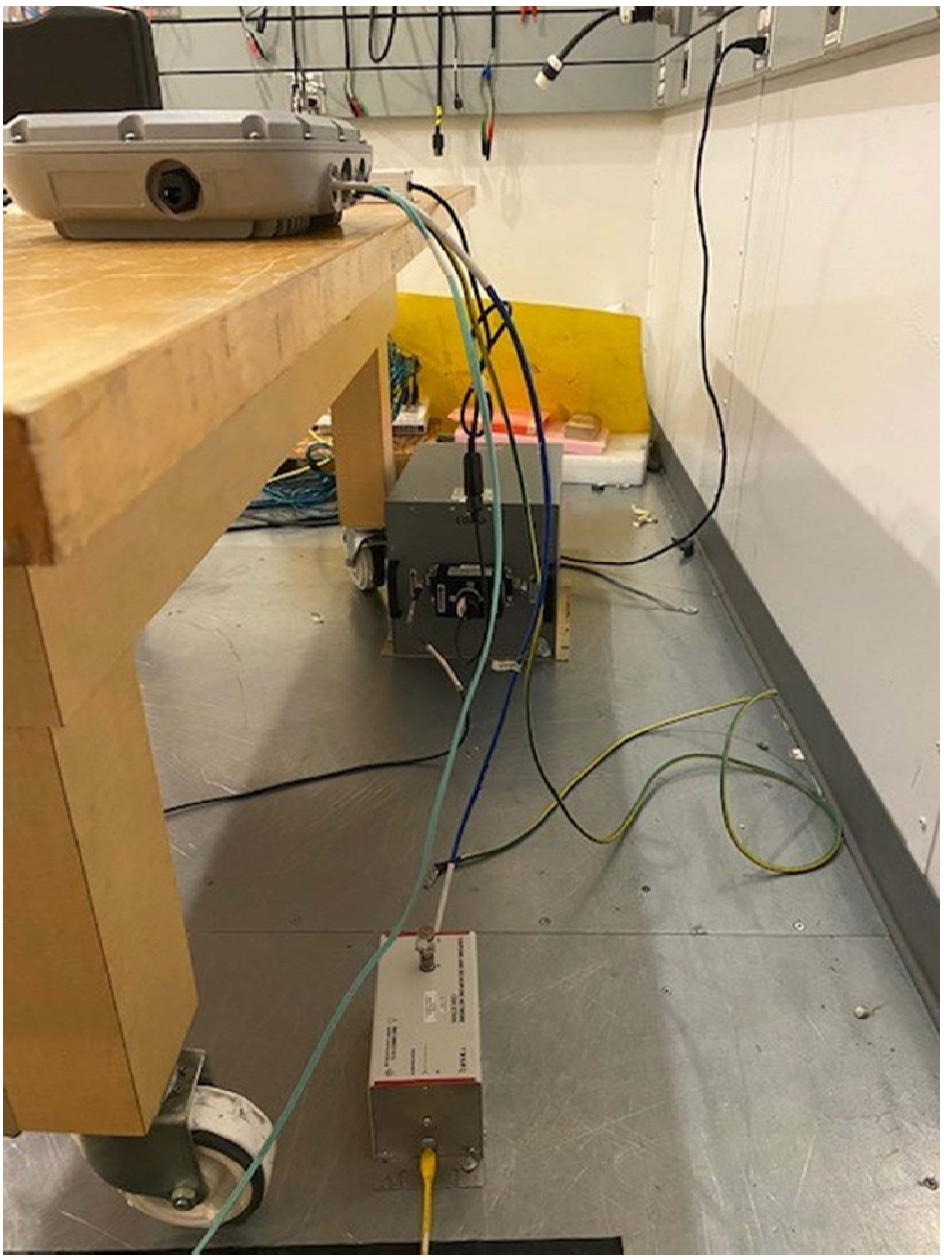
Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

Photographs

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DESCRIPTION: NA

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Subtest Details

Subtest Number : 7555-4 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7555-4
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	POE
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	Shield Cable POE LAN/AUX 1G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

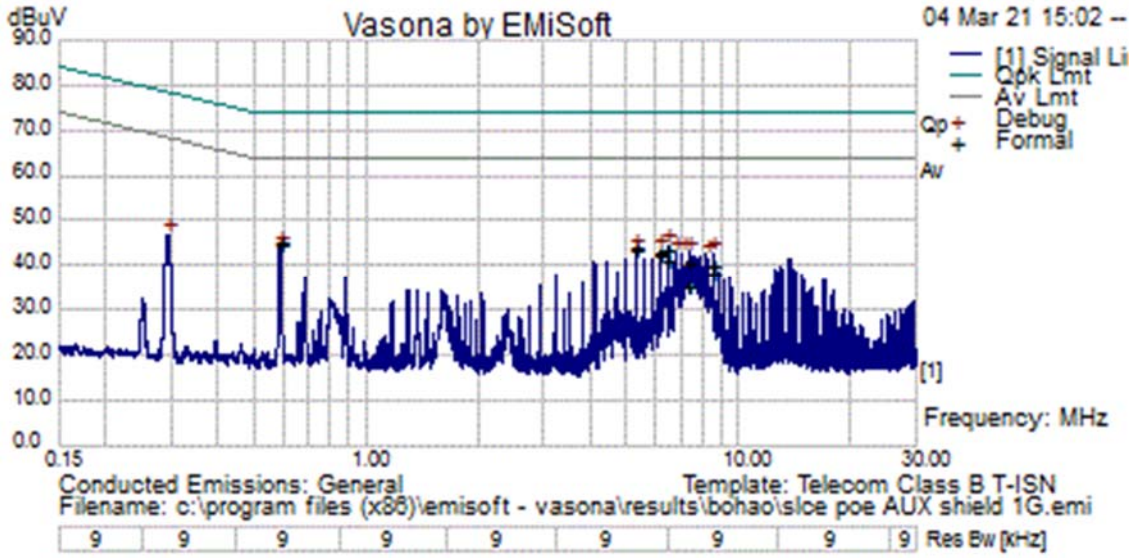
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	6.480	33.6	.3	9.6	43.5	Quasi Peak	Signal	74.0	-30.5	Pass	
2	.589	35.9	.1	9.5	45.5	Quasi Peak	Signal	74.0	-28.5	Pass	
3	6.185	33.5	.3	9.6	43.3	Quasi Peak	Signal	74.0	-30.7	Pass	
4	5.302	34.4	.2	9.5	44.2	Quasi Peak	Signal	74.0	-29.8	Pass	
5	7.362	30.9	.3	9.6	40.8	Quasi Peak	Signal	74.0	-33.2	Pass	
6	8.541	30.0	.3	9.6	39.9	Quasi Peak	Signal	74.0	-34.1	Pass	
7	6.480	31.7	.3	9.6	41.5	Average	Signal	64.0	-22.5	Pass	
8	.589	35.4	.1	9.5	45.0	Average	Signal	64.0	-19.0	Pass	
9	6.185	32.8	.3	9.6	42.6	Average	Signal	64.0	-21.4	Pass	
10	5.302	34.2	.2	9.5	44.0	Average	Signal	64.0	-20.0	Pass	
11	7.362	25.5	.3	9.6	35.4	Average	Signal	64.0	-28.6	Pass	
12	8.541	28.5	.3	9.6	38.5	Average	Signal	64.0	-25.5	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shielded

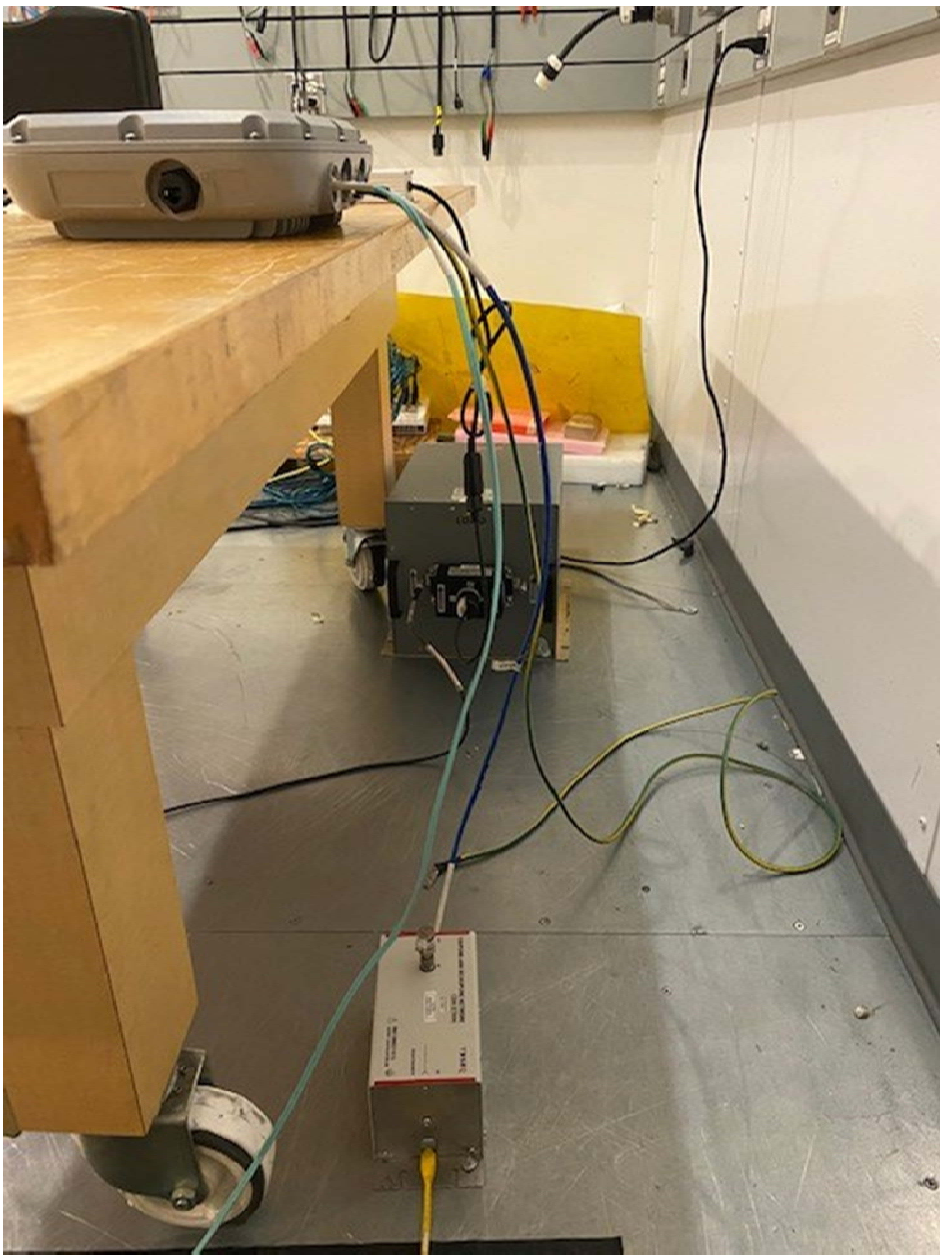
Photographs

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DESCRIPTION: NA



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DESCRIPTION: NA

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Test Case Details

TestCase ID: 7556	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Power Line CE Class: B Device : AMN Measure: Voltage Detectors: Quasi-Peak & Average	
Basic Standard	EN55016 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7556-2 Subtest Date : 3/24/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	7556-2	
Port Reference	[D] AC-DC power supply	
Measured Voltage	230.9V	
Transducer	LISN	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	74	
Humidity: (10 to 75)%	40.8	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plce 230v 2.5g wan poe 1g lan [24-3-2021 17.3]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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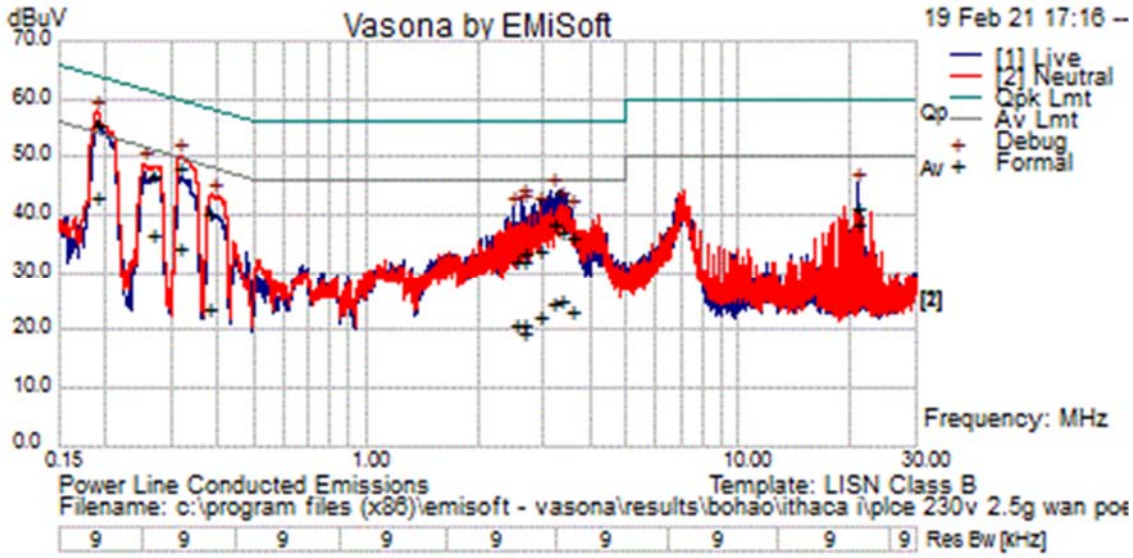
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plce 230v 2.5g wan poe 1g lan [24-3-2021 17.3]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Power Line]
Class/Spec	B / B CISPR AC Power QP
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	LISN Class B
Date/Time	19 Feb 21/17:24, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments

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1	.190	34.8	20.8	.1	55.7	Quasi Peak	Neutral	64.0	-8.3	Pass	
2	.190	22.2	20.8	.1	43.1	Average	Neutral	54.0	-10.9	Pass	
3	.317	28.1	20.3	.1	48.5	Quasi Peak	Neutral	59.8	-11.3	Pass	
4	20.934	17.9	20.5	.2	38.7	Average	Live	50.0	-11.3	Pass	
5	.268	26.5	20.5	.1	47.0	Quasi Peak	Neutral	61.2	-14.1	Pass	
6	.268	16.1	20.5	.1	36.7	Average	Neutral	51.2	-14.5	Pass	
7	.317	14.2	20.3	.1	34.6	Average	Neutral	49.8	-15.2	Pass	
8	3.158	18.6	20.1	.1	38.7	Quasi Peak	Live	56.0	-17.3	Pass	
9	.377	20.1	20.1	.0	40.3	Quasi Peak	Neutral	58.3	-18.0	Pass	
10	3.333	17.2	20.1	.0	37.4	Quasi Peak	Neutral	56.0	-18.7	Pass	
11	20.934	20.5	20.5	.2	41.2	Quasi Peak	Live	60.0	-18.8	Pass	
12	3.579	16.0	20.1	.1	36.1	Quasi Peak	Live	56.0	-19.9	Pass	
13	3.333	5.0	20.1	.0	25.1	Average	Neutral	46.0	-20.9	Pass	
14	3.158	4.7	20.1	.1	24.8	Average	Live	46.0	-21.2	Pass	
15	2.933	13.7	20.0	.0	33.8	Quasi Peak	Neutral	56.0	-22.2	Pass	
16	2.663	13.6	20.0	.0	33.6	Quasi Peak	Live	56.0	-22.4	Pass	
17	3.579	3.3	20.1	.1	23.4	Average	Live	46.0	-22.6	Pass	
18	2.933	2.3	20.0	.0	22.4	Average	Neutral	46.0	-23.6	Pass	
19	2.626	12.0	20.0	.0	32.1	Quasi Peak	Live	56.0	-24.0	Pass	
20	2.502	11.9	20.0	.0	32.0	Quasi Peak	Live	56.0	-24.0	Pass	
21	.377	3.6	20.1	.0	23.8	Average	Neutral	48.3	-24.6	Pass	
22	2.663	1.0	20.0	.0	21.1	Average	Live	46.0	-24.9	Pass	
23	2.502	.8	20.0	.0	20.9	Average	Live	46.0	-25.1	Pass	
24	2.626	-.3	20.0	.0	19.8	Average	Live	46.0	-26.2	Pass	

Test Result-Attachments

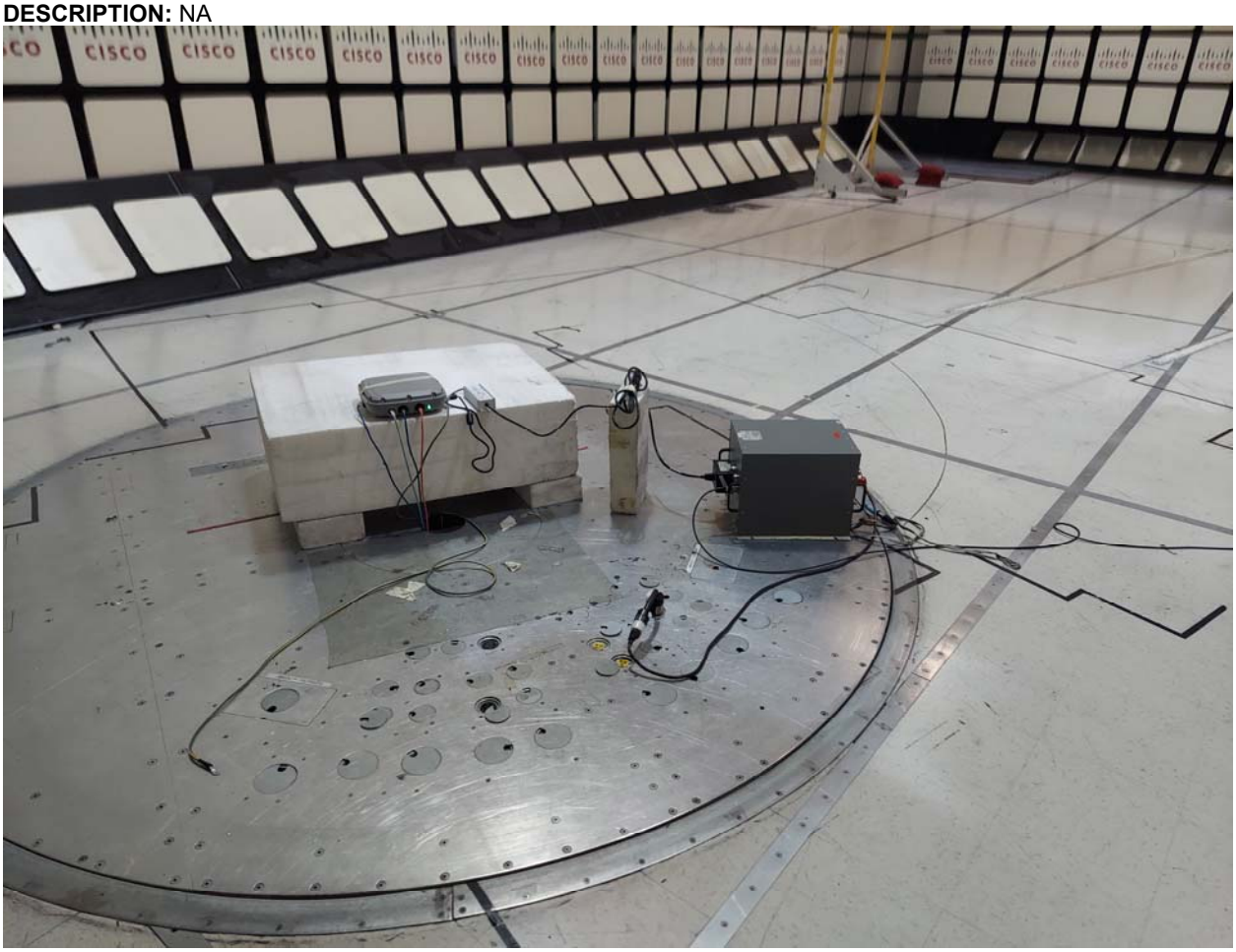
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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	N/A

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 7575	Test Type: Conducted Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	
Basic Standard	EN55016 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7575-2 Subtest Date : 3/6/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 2	
Subtest Results		
Subtest Title	7575-2	
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M	
Measured Voltage	230.8V	
Transducer	T-LISN	
Subtest Result	Pass	
Comments on the above Test Results	Shield WAN 2.5G	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce 230v shield 2.5g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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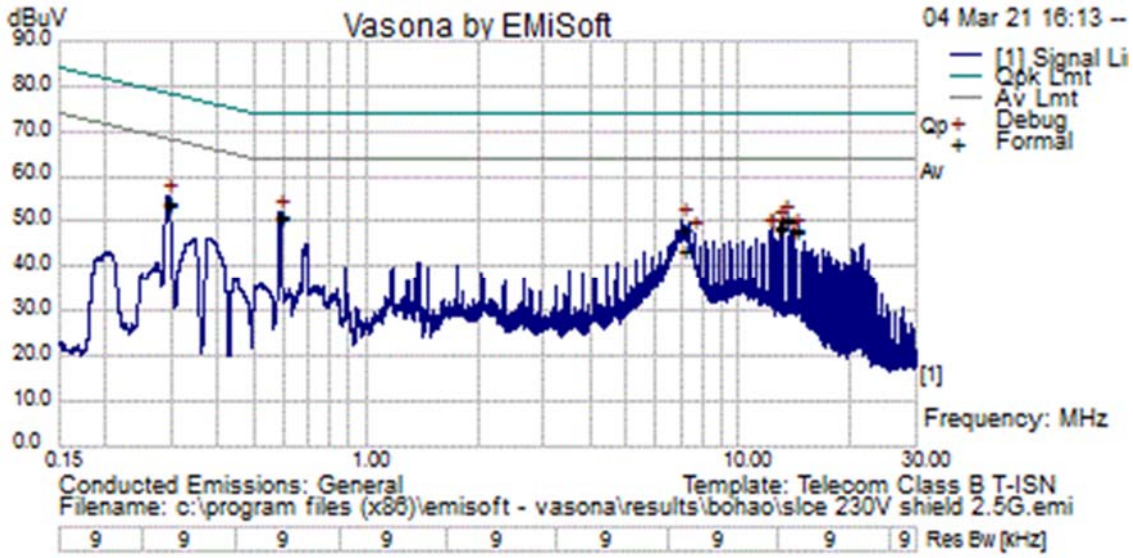
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce 230v shield 2.5g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/16:23, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data											
No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments

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1	.589	42.2	.1	9.5	51.8	Quasi Peak	Signal	74.0	-22.2	Pass	
2	.295	45.3	.1	9.6	54.9	Quasi Peak	Signal	78.4	-23.5	Pass	
3	13.257	40.4	.4	9.9	50.7	Quasi Peak	Signal	74.0	-23.3	Pass	
4	7.071	38.4	.3	9.6	48.3	Quasi Peak	Signal	74.0	-25.7	Pass	
5	12.962	38.9	.4	9.9	49.1	Quasi Peak	Signal	74.0	-24.9	Pass	
6	14.142	38.0	.4	9.9	48.3	Quasi Peak	Signal	74.0	-25.7	Pass	
7	.589	41.8	.1	9.5	51.4	Average	Signal	64.0	-12.6	Pass	
8	.295	44.9	.1	9.6	54.5	Average	Signal	68.4	-13.9	Pass	
9	13.257	40.0	.4	9.9	50.3	Average	Signal	64.0	-13.7	Pass	
10	7.071	33.1	.3	9.6	43.0	Average	Signal	64.0	-21.0	Pass	
11	12.962	38.4	.4	9.9	48.6	Average	Signal	64.0	-15.4	Pass	
12	14.142	37.5	.4	9.9	47.8	Average	Signal	64.0	-16.2	Pass	

Test Result-Attachments

Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shield

Photographs

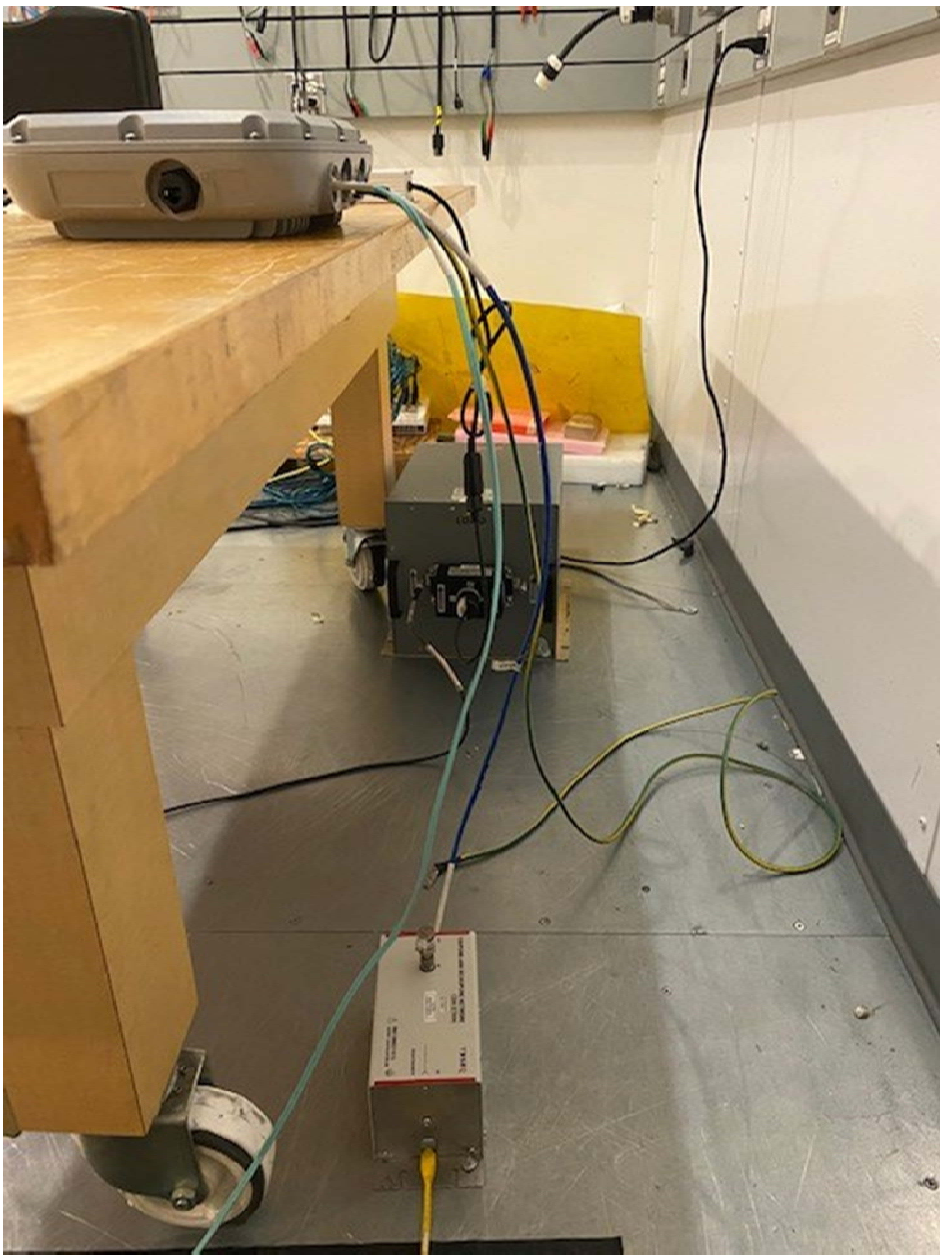
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Subtest Details

Subtest Number : 7575-3 Subtest Date : 3/6/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7575-3
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.8V
Transducer	T-LISN

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Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	59	
Humidity: (10 to 75)%	52	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slce poe aux shield 1g [4-3-2021 9.54]	.15	30

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

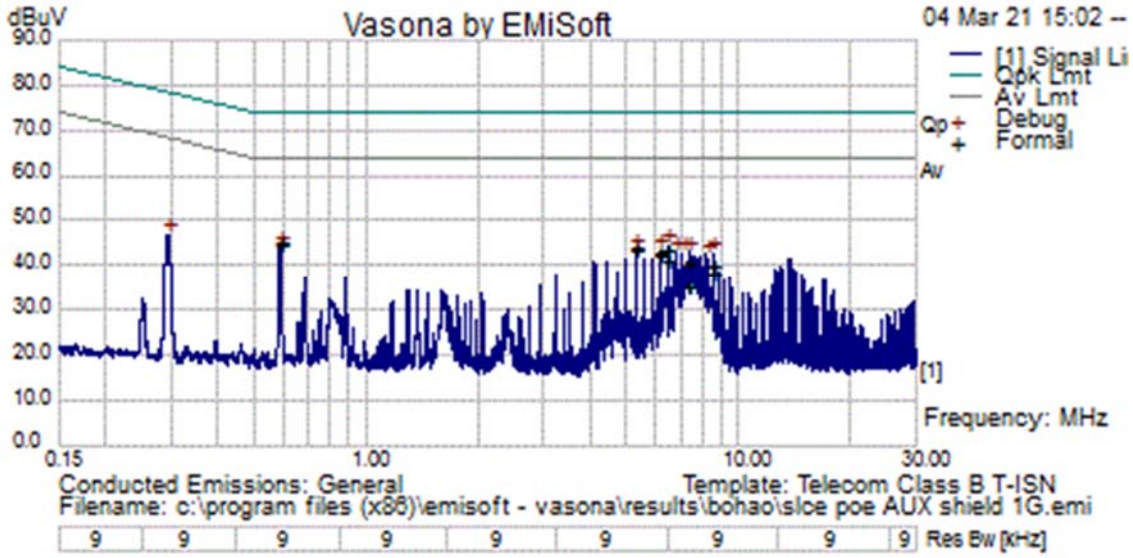
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slce poe aux shield 1g [4-3-2021 9.54]

EMiSoft - Vasona Results	
Test	Conducted Emissions [Signal Line]
Class/Spec	B / B (QP) SLCE Voltage
Range	0.15 - 30MHz
Engineer	Bohao
Lab Used	Lab P Immunity Room 2
Template	Telecom Class B T-ISN
Date/Time	04 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
1	6.480	33.6	.3	9.6	43.5	Quasi Peak	Signal	74.0	-30.5	Pass	
2	.589	35.9	.1	9.5	45.5	Quasi Peak	Signal	74.0	-28.5	Pass	
3	6.185	33.5	.3	9.6	43.3	Quasi Peak	Signal	74.0	-30.7	Pass	
4	5.302	34.4	.2	9.5	44.2	Quasi Peak	Signal	74.0	-29.8	Pass	
5	7.362	30.9	.3	9.6	40.8	Quasi Peak	Signal	74.0	-33.2	Pass	
6	8.541	30.0	.3	9.6	39.9	Quasi Peak	Signal	74.0	-34.1	Pass	
7	6.480	31.7	.3	9.6	41.5	Average	Signal	64.0	-22.5	Pass	
8	.589	35.4	.1	9.5	45.0	Average	Signal	64.0	-19.0	Pass	
9	6.185	32.8	.3	9.6	42.6	Average	Signal	64.0	-21.4	Pass	
10	5.302	34.2	.2	9.5	44.0	Average	Signal	64.0	-20.0	Pass	
11	7.362	25.5	.3	9.6	35.4	Average	Signal	64.0	-28.6	Pass	
12	8.541	28.5	.3	9.6	38.5	Average	Signal	64.0	-25.5	Pass	

Test Result-Attachments

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Questions & Answers

The category of cable simulated by the AAN, where emissions from wired network ports are measured using an AAN. See Table EN55032 C.2	Shield

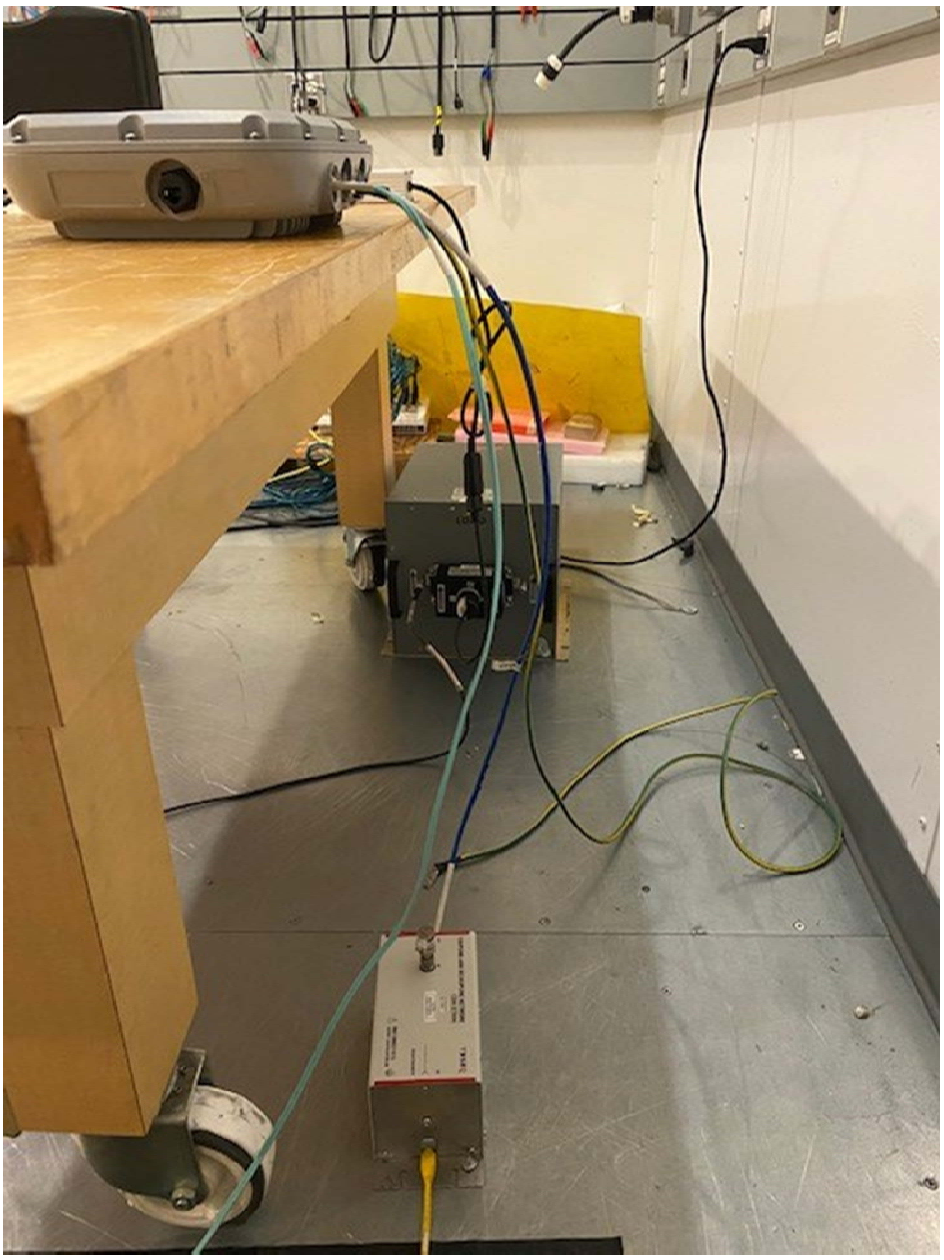
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Radiated Emissions

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Test Case Details

TestCase ID: 4616	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)
Basic Standard	ANSI C63.4:2014		
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 4616-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4616-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8V	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 poe2.5gaux1g208 60 pol [18-2-2021 13.13]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

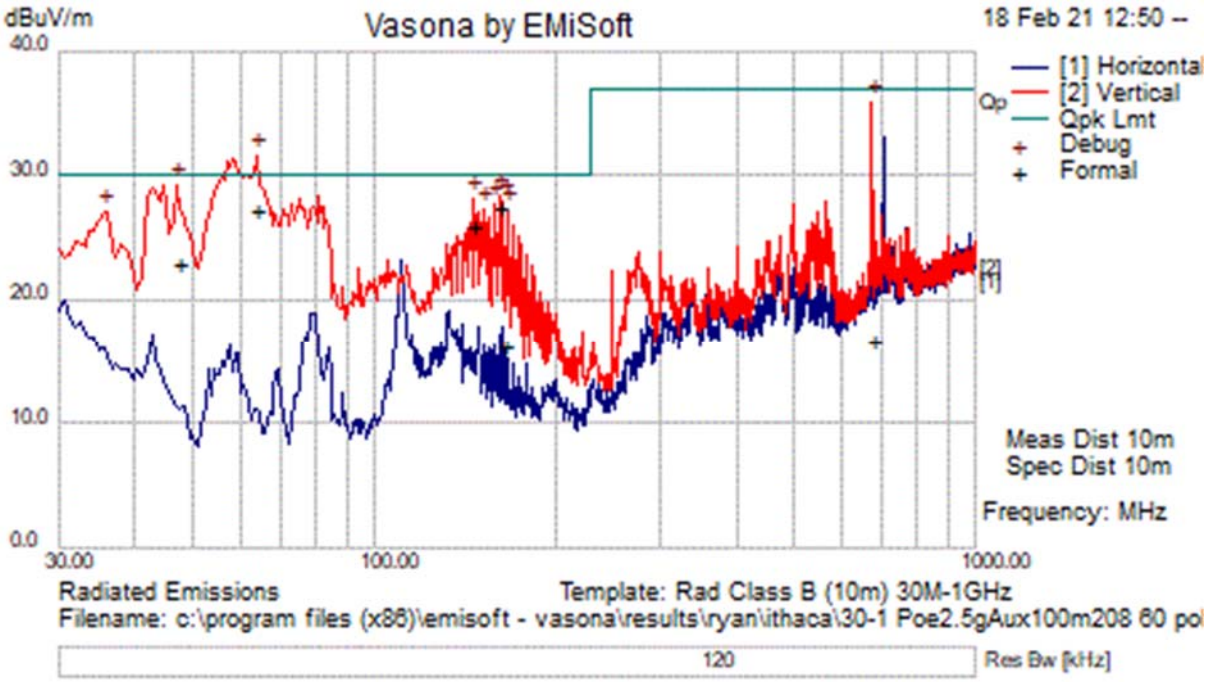
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: 30-1 poe2.5gaux1g208 60 pol [18-2-2021 13.13]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/13:13, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data

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No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	145.917	39.4	1.2	-14.6	26.0	Quasi Max	V	371	23	30.0	-4.0	Pass	
2	161.092	41.4	1.3	-15.2	27.5	Quasi Max	V	171	40	30.0	-2.5	Pass	
3	672.746	22.6	2.8	-8.6	16.8	Quasi Max	V	260	110	37.0	-20.2	Pass	
4	63.876	46.4	.8	-19.9	27.3	Quasi Max	V	118	228	30.0	-2.7	Pass	
5	47.188	40.9	.8	-18.8	22.9	Quasi Max	V	329	258	30.0	-7.1	Pass	
6	164.187	30.3	1.3	-15.3	16.3	Quasi Max	V	259	258	30.0	-13.7	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

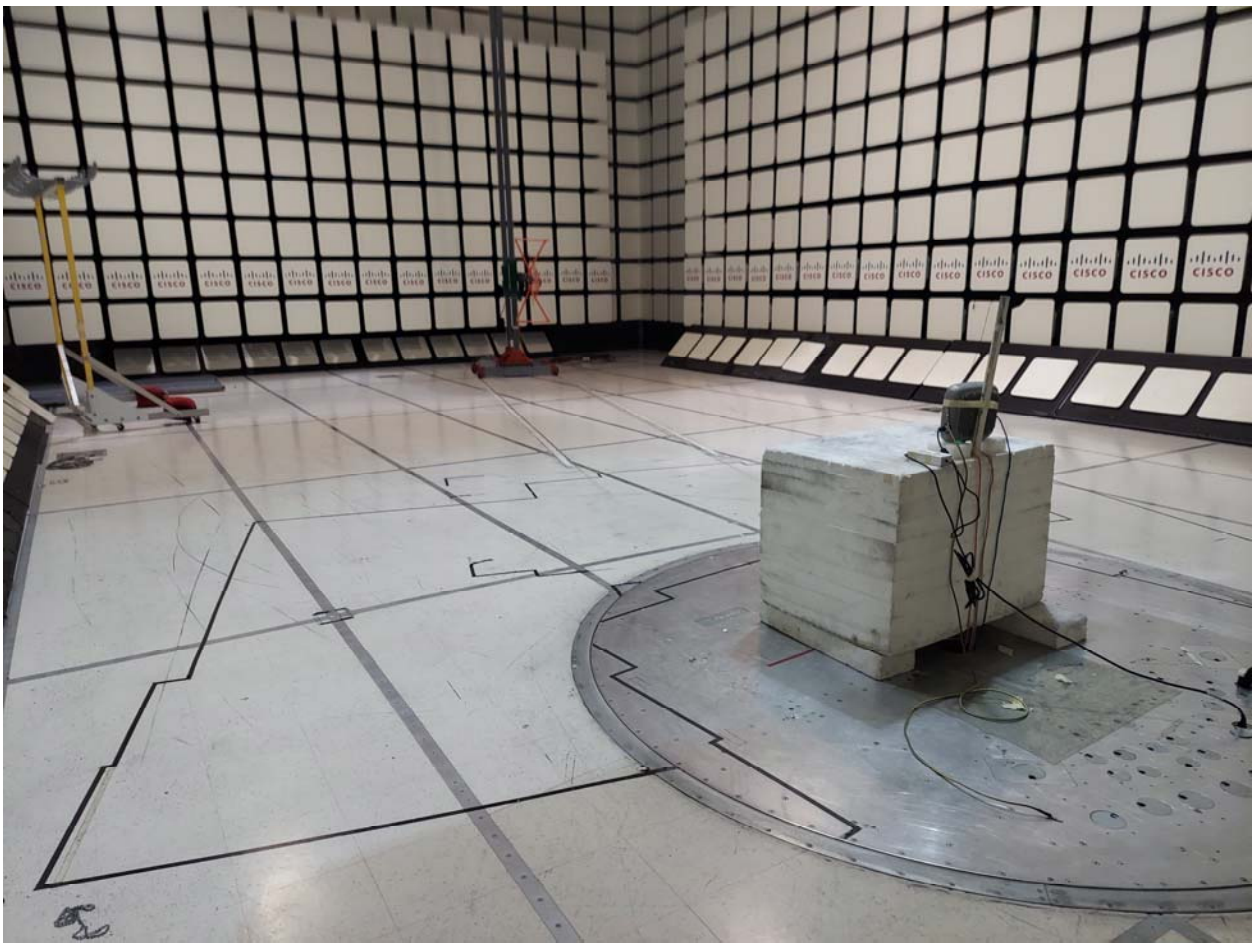
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Subtest Details

Subtest Number : 4616-2 Subtest Date : 3/11/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4616-2	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1upoe2.5gaux1g208 60 pol [10-3-2021 14.39]	30	1000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

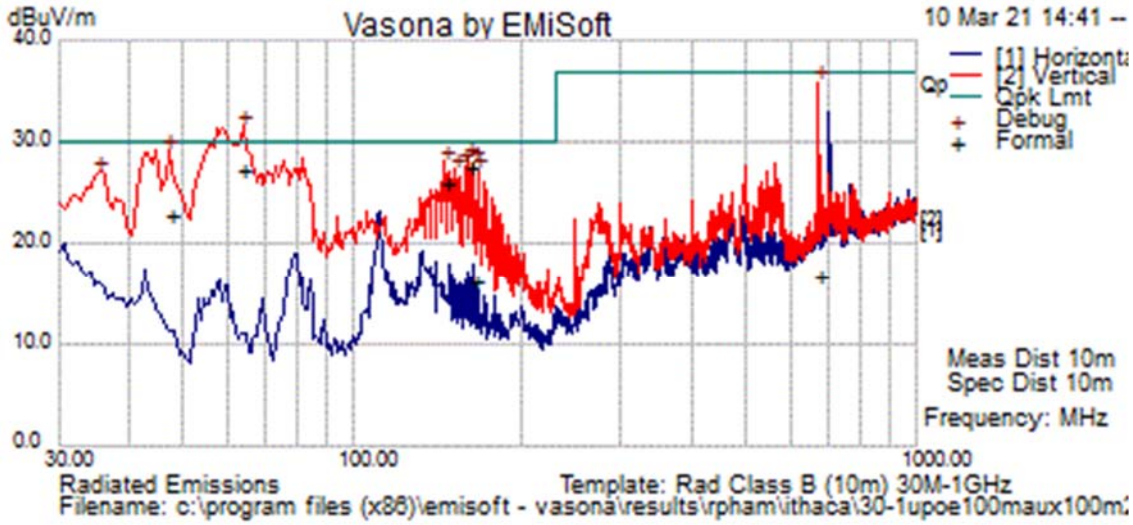
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1upoe2.5gaux1g208 60 pol [10-3-2021 14.39]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:47, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.917	39.4	1.2	-14.6	26.0	Quasi Max	V	371	23	30.0	-4.0	Pass	
2	161.092	41.4	1.3	-15.2	27.5	Quasi Max	V	171	40	30.0	-2.5	Pass	
3	672.746	22.6	2.8	-8.6	16.8	Quasi Max	V	260	110	37.0	-20.2	Pass	
4	63.876	46.4	.8	-19.9	27.3	Quasi Max	V	118	228	30.0	-2.7	Pass	
5	47.188	40.9	.8	-18.8	22.9	Quasi Max	V	329	258	30.0	-7.1	Pass	
6	164.187	30.3	1.3	-15.3	16.3	Quasi Max	V	259	258	30.0	-13.7	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

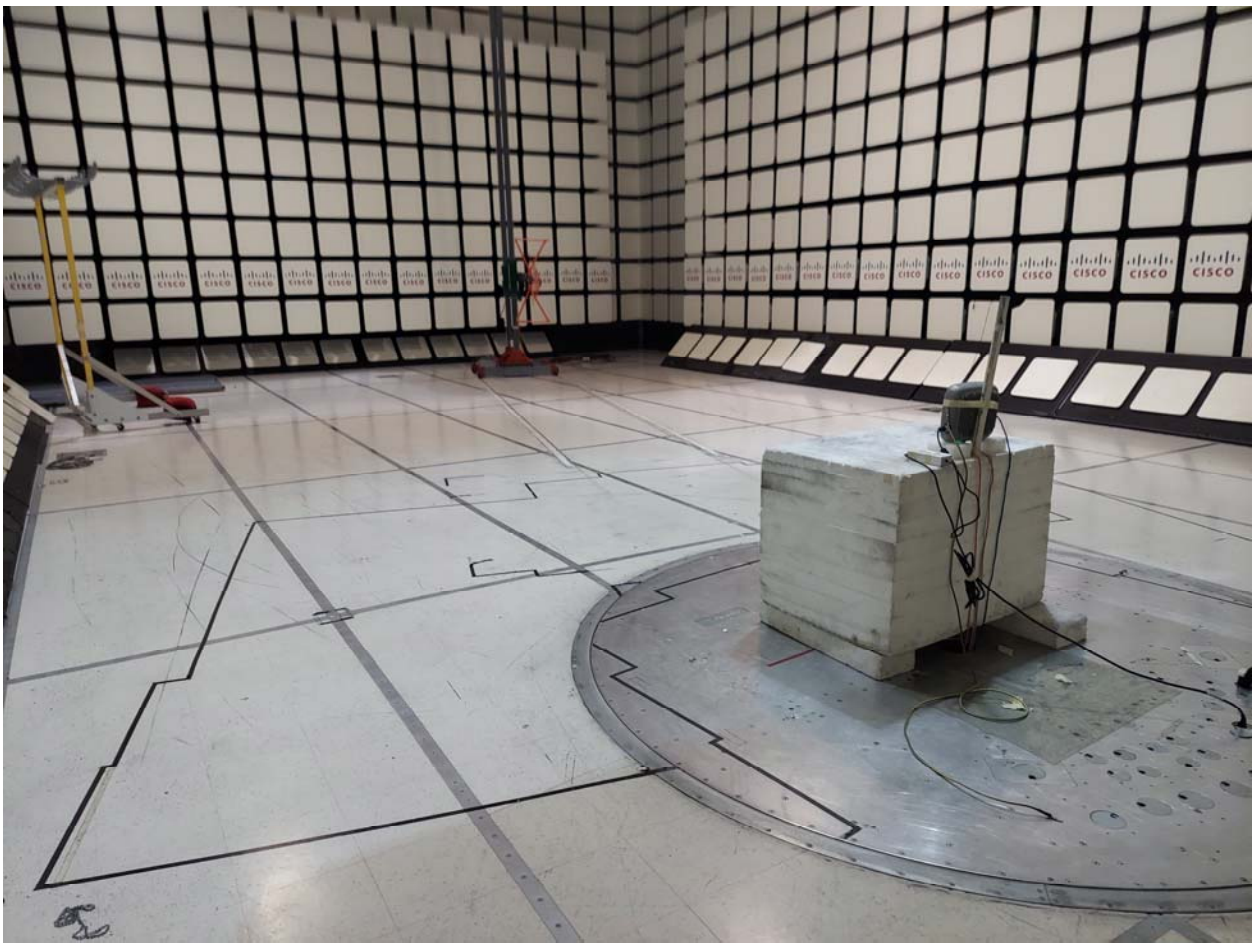
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Test Case Details

TestCase ID: 4617	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz DC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	
Basic Standard	ANSI C63.4:2014		
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 4617-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4617-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	60W	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

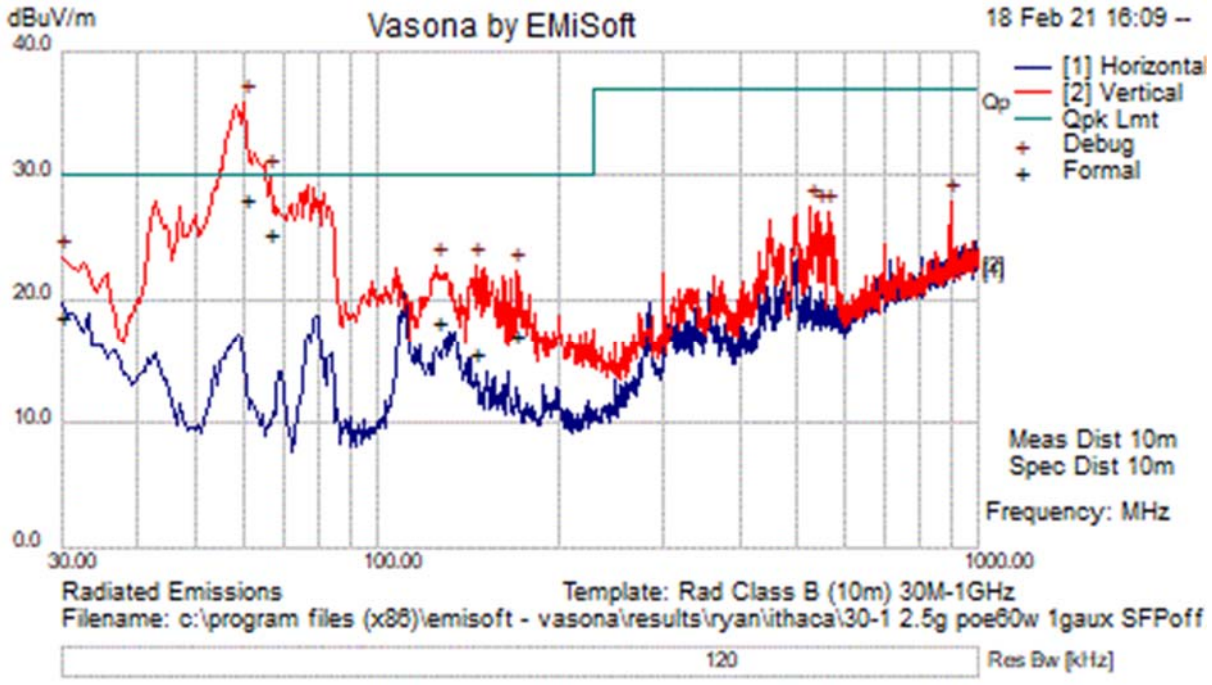
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: 30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/16:09, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data

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No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	145.673	29.0	1.2	-14.5	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.1	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.2	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

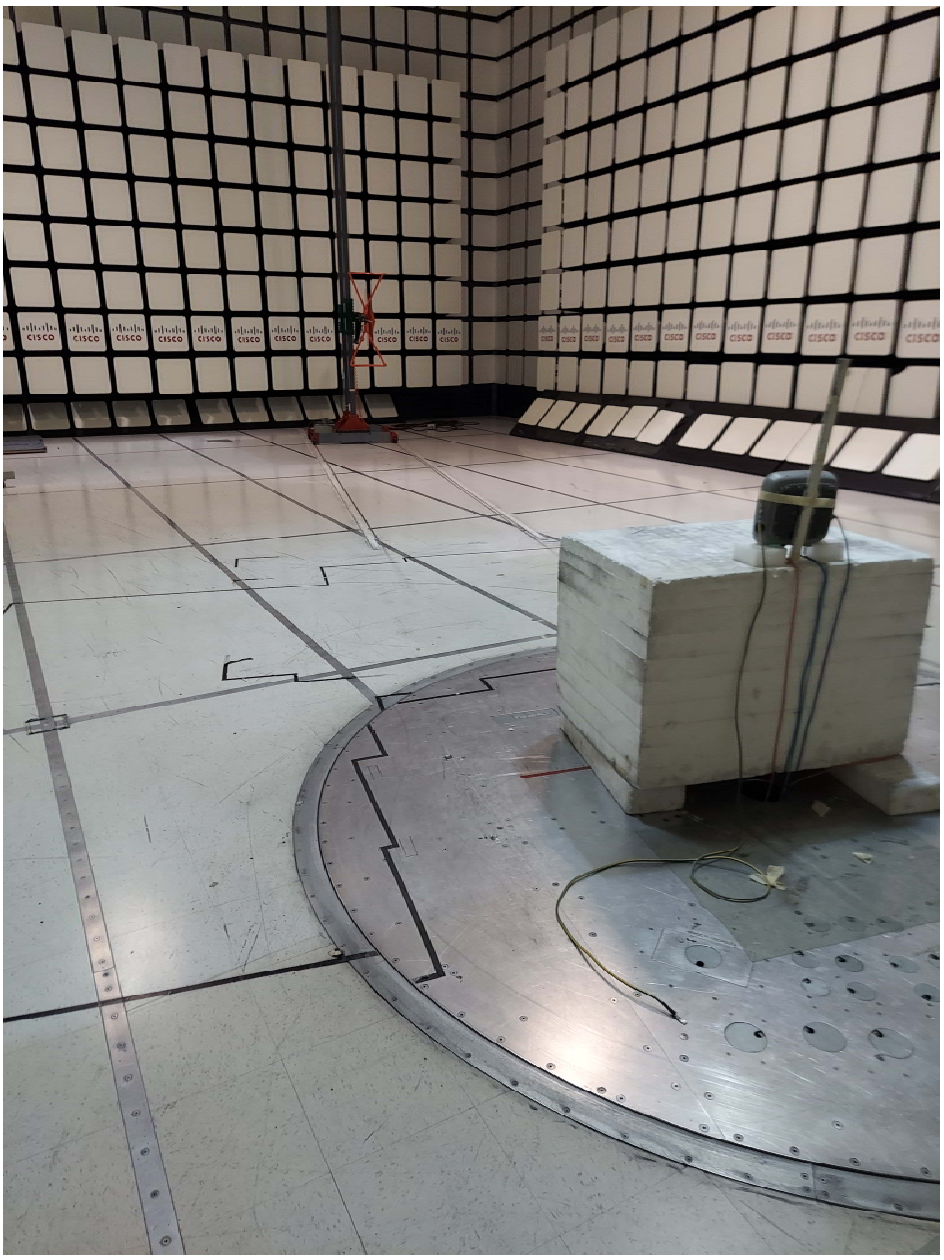
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 4617-2 Subtest Date : 2/19/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	4617-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	POE
Subtest Result	Pass - Uncertain

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Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

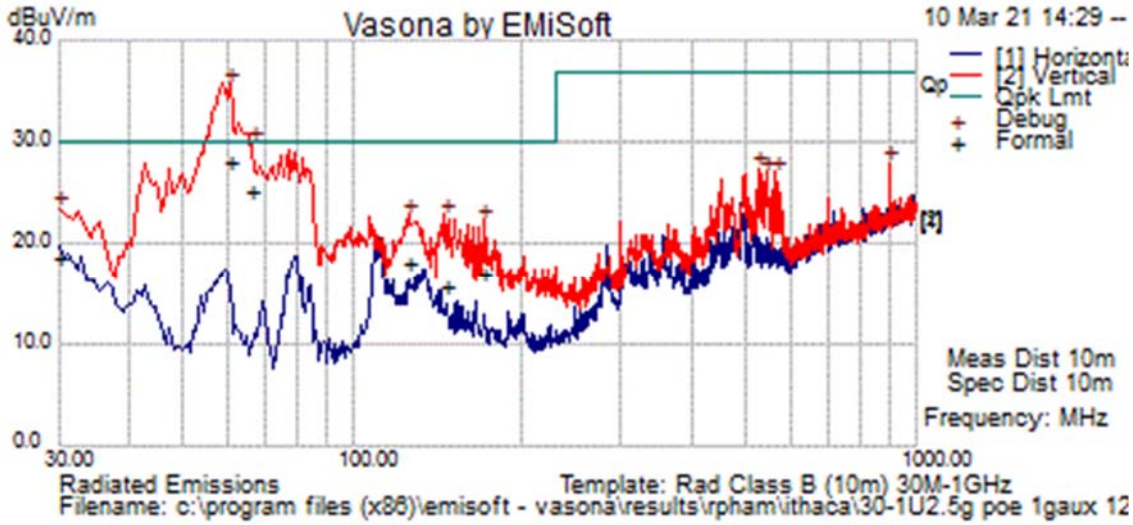
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Rypham
Lab Used	BP-10m-chamber
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:30, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.673	29.0	1.2	-14.6	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.2	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.3	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

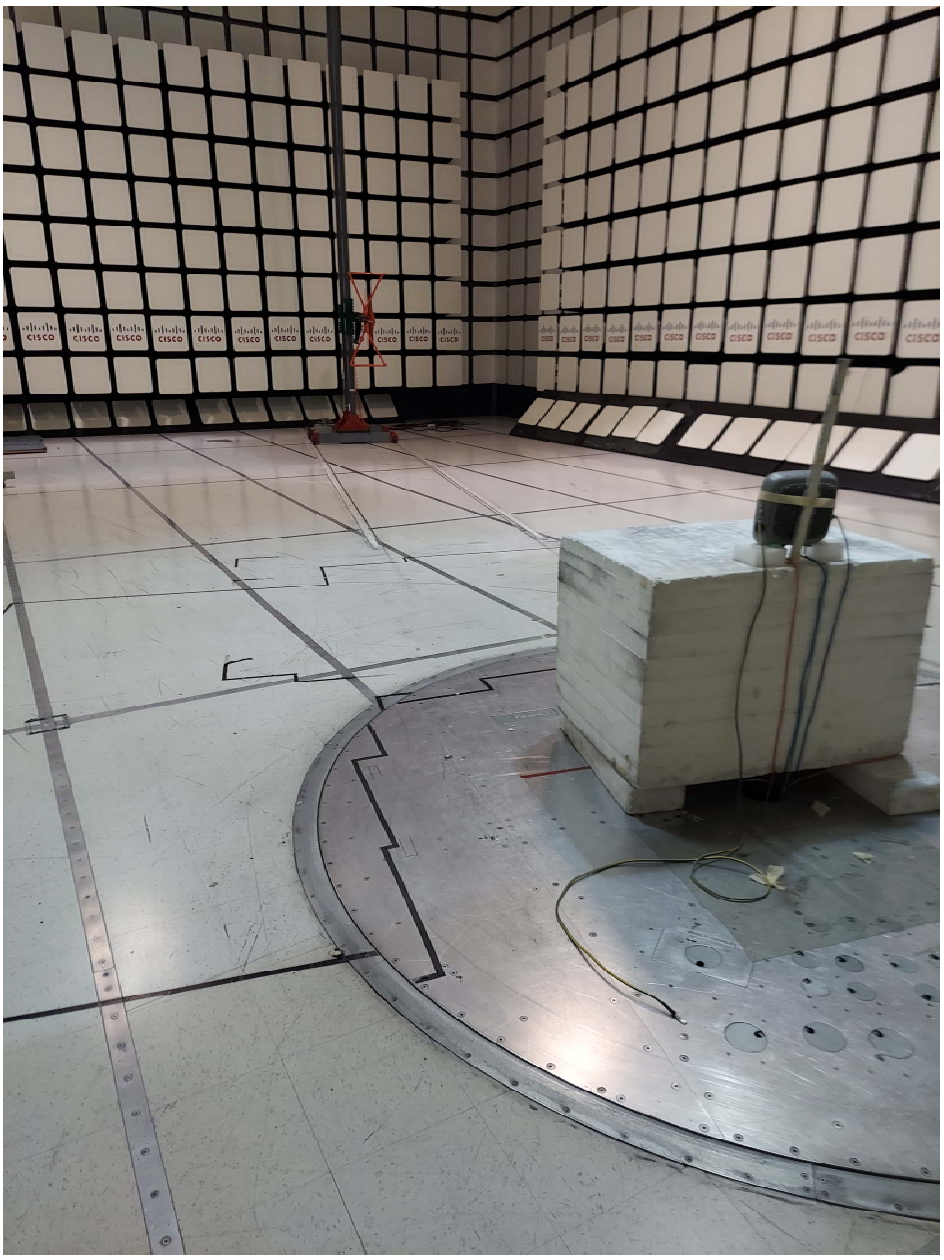
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 4621 Test Type: Radiated Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 40000MHz AC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m. 110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)
Basic Standard	ANSI C63.4:2014		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 4621-1 Subtest Date : 3/7/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4621-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	118.4	
Subtest Result	Pass	
Comments on the above Test Results	EUT tested in wall/pole mount configuration Test mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	75.8	
Humidity: (10 to 75)%	30.6	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re1-6g 120v w2.5gl1g sh [7-3-2021 18.55]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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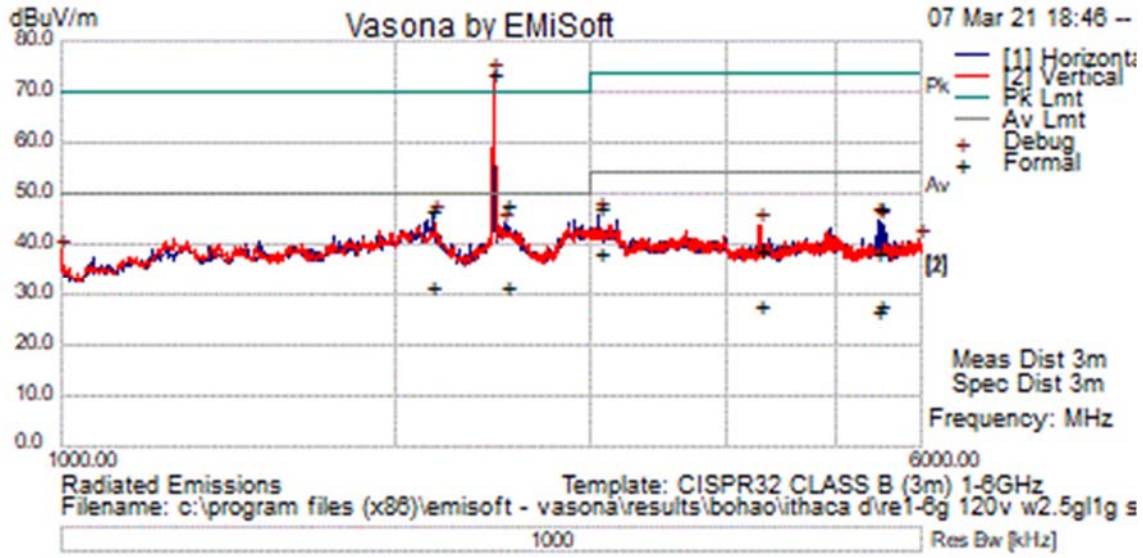
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re1-6g 120v w2.5gl1g sh [7-3-2021 18.55]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / cispr32 b 1-6ghz peak
Range	1000 - 6000MHz
Engineer	rypham, dthai
Lab Used	Bldg P 10m Chamber.
Template	CISPR32 CLASS B (3m) 1-6GHz
Date/Time	07 Mar 21/18:55, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data													
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments

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1	2462.500	85.8	4.7	-16.9	73.6	Peak [Scan]	V	100	352	50.0	23.6	Fail	WIFI Signal
2	3062.528	48.7	5.4	-15.6	38.4	Average Max	H	100	221	54.0	-15.6	Pass	
3	2519.840	43.5	4.8	-16.8	31.6	Average Max	H	100	40	50.0	-18.5	Pass	
4	2167.458	44.3	4.4	-17.4	31.3	Average Max	H	100	11	50.0	-18.7	Pass	
5	2519.840	59.8	4.8	-16.8	47.9	Peak Max	H	100	40	70.0	-22.2	Pass	
6	2167.458	59.9	4.4	-17.4	46.9	Peak Max	H	100	11	70.0	-23.1	Pass	
7	5511.080	36.7	7.7	-16.6	27.7	Average Max	H	100	0	54.0	-26.3	Pass	
8	4278.685	38.6	6.5	-17.6	27.5	Average Max	V	100	192	54.0	-26.5	Pass	
9	5511.080	56.1	7.7	-16.6	47.2	Peak Max	H	100	0	74.0	-26.8	Pass	
10	3062.528	57.3	5.4	-15.6	47.1	Peak Max	H	100	221	74.0	-27.0	Pass	
11	5471.020	35.7	7.6	-16.6	26.8	Average Max	H	100	134	54.0	-27.2	Pass	
12	4278.685	50.1	6.5	-17.6	39.1	Peak Max	V	100	192	74.0	-34.9	Pass	
13	5471.020	47.2	7.6	-16.6	38.2	Peak Max	H	100	134	74.0	-35.8	Pass	

Test Result-Attachments

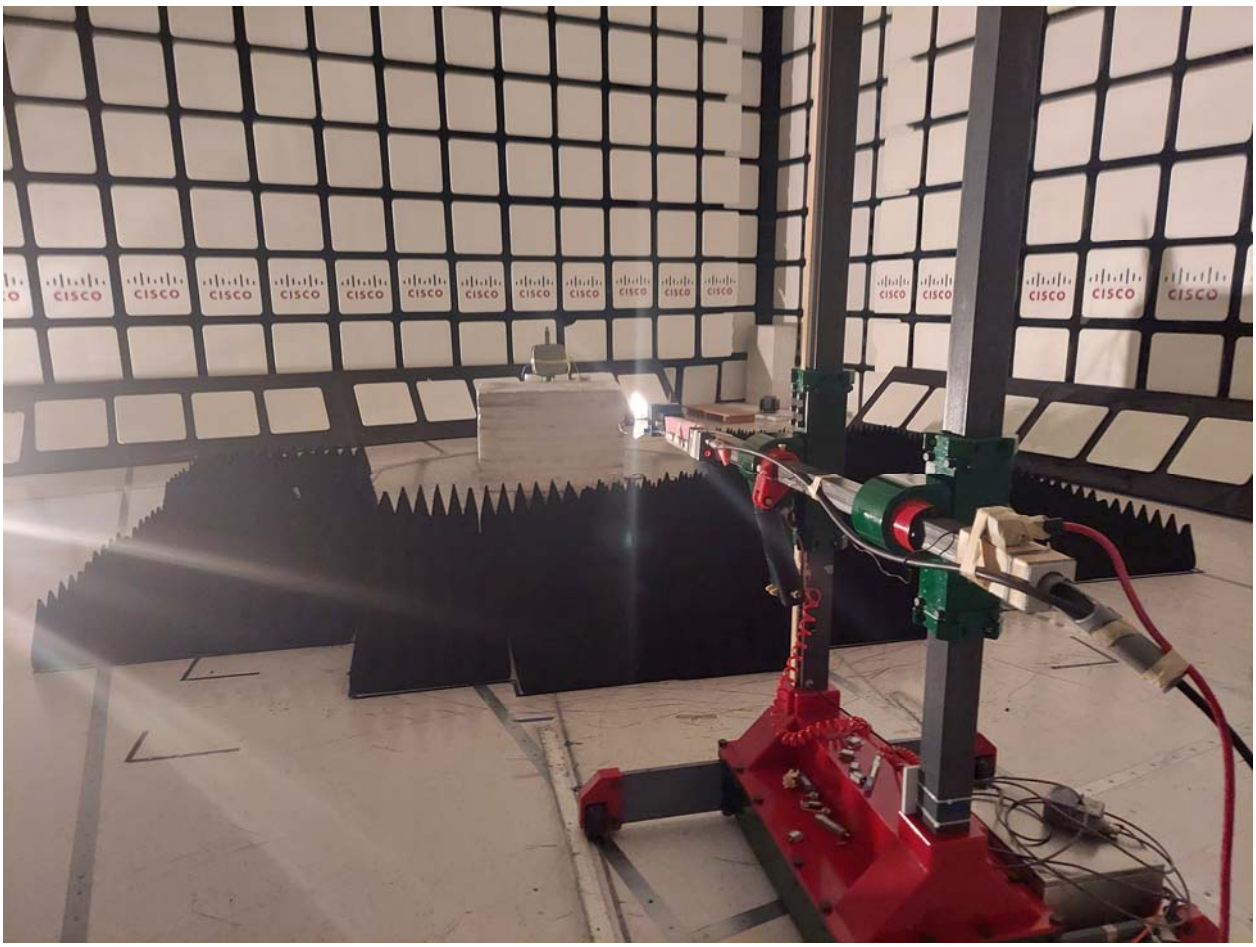
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

Photographs

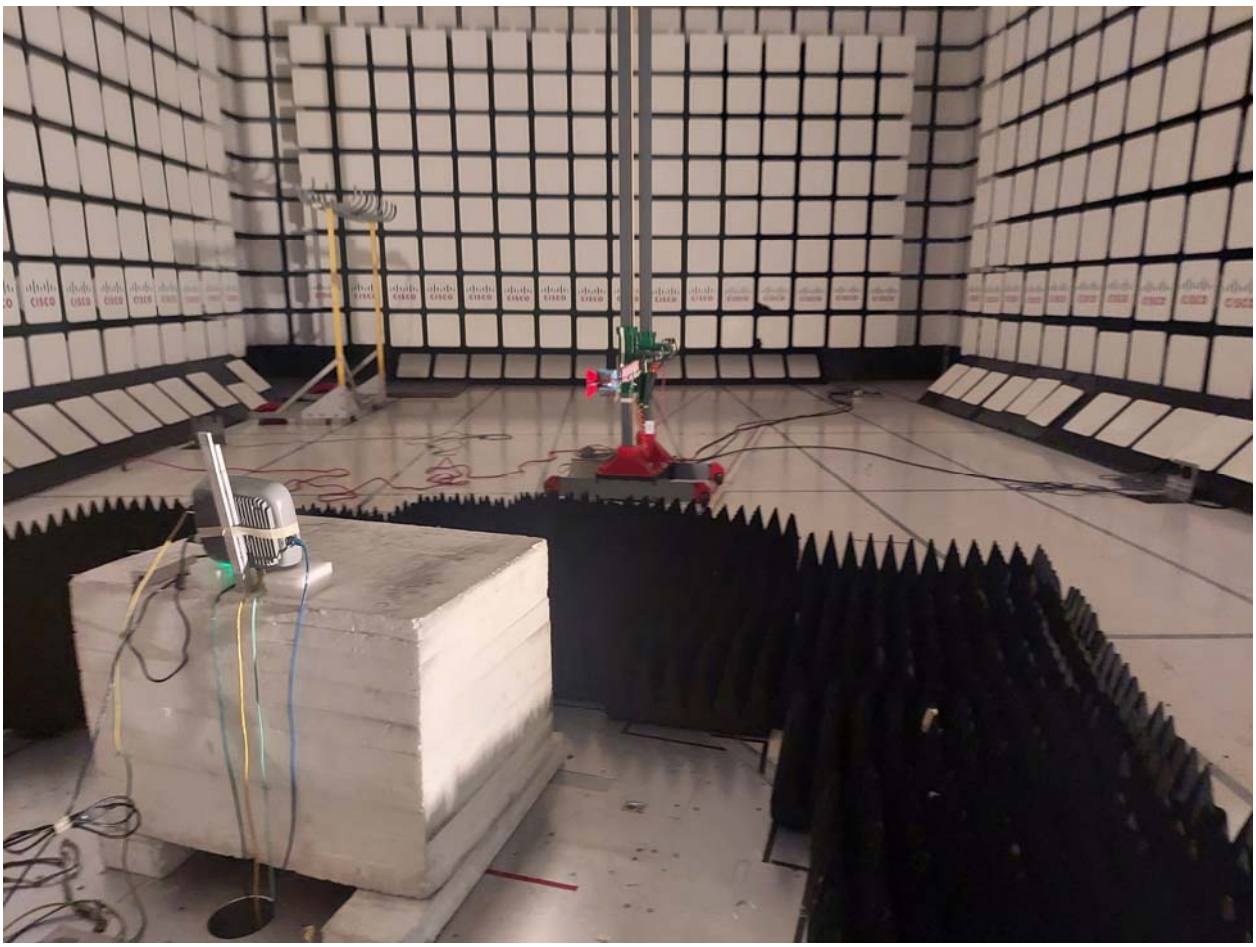
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Test Case Details

TestCase ID: 4622 Test Type: Radiated Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 40000MHz DC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m.
Basic Standard	ANSI C63.4:2014		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 4622-1 Subtest Date : 3/14/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4622-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	POE	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	75.7	
Humidity: (10 to 75)%	25.8	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re 1-10g 115v50h 2.5g1g sh [13-3-2021 19.0]	1000	10000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

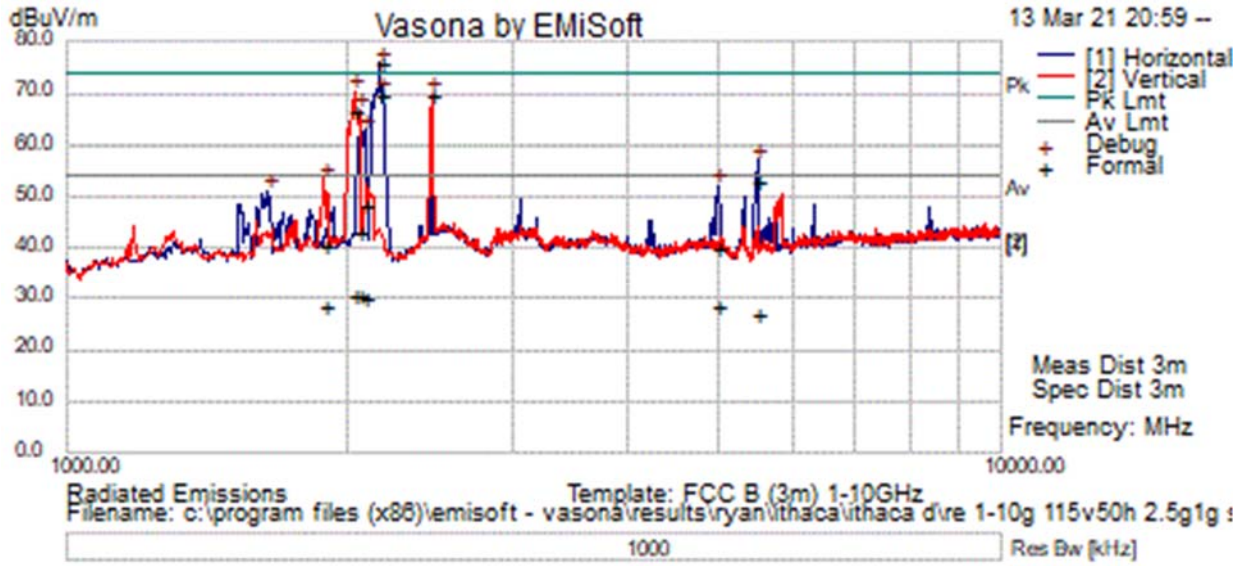
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re 1-10g 115v50h 2.5g1g sh [13-3-2021 19.0]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / b re fcc 1-18ghz peak
Range	1000 - 10000MHz
Engineer	ryapham
Lab Used	Bldg P 10m Chamber.
Template	FCC B (3m) 1-10GHz
Date/Time	14 Mar 21/11:19, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB/m**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	2170.000	88.8	4.4	-17.4	75.8	Peak [Scan]	H	100	303	54.0	21.8	Fail	Wfi

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2	2181.250	82.9	4.4	-17.4	70.0	Peak [Scan]	H	150	40	54.0	16.0	Fail	Wifi
3	2462.500	81.9	4.7	-16.9	69.7	Peak [Scan]	V	125	11	54.0	15.7	Fail	Wifi
4	2040.680	79.5	4.3	-17.0	66.8	Peak Max	V	215	320	74.0	-7.2	Pass	
5	5493.743	62.0	7.6	-16.6	53.0	Peak Max	H	211	351	74.0	-21.0	Pass	
6	2064.868	43.6	4.3	-17.1	30.9	Average Max	V	274	355	54.0	-23.1	Pass	
7	2040.680	43.5	4.3	-17.0	30.8	Average Max	V	215	320	54.0	-23.2	Pass	
8	2089.750	43.1	4.3	-17.2	30.3	Average Max	H	390	270	54.0	-23.7	Pass	
9	5000.030	37.5	7.2	-15.9	28.8	Average Max	H	222	347	54.0	-25.2	Pass	
10	1890.290	43.4	4.1	-18.9	28.6	Average Max	V	310	44	54.0	-25.4	Pass	
11	2089.750	61.2	4.3	-17.2	48.4	Peak Max	H	390	270	74.0	-25.6	Pass	
12	5493.743	35.8	7.6	-16.6	26.9	Average Max	H	211	351	54.0	-27.1	Pass	
13	2064.868	56.1	4.3	-17.1	43.3	Peak Max	V	274	355	74.0	-30.7	Pass	
14	1890.290	55.2	4.1	-18.9	40.4	Peak Max	V	310	44	74.0	-33.6	Pass	
15	5000.030	49.0	7.2	-15.9	40.3	Peak Max	H	222	347	74.0	-33.7	Pass	

Test Result-Attachments

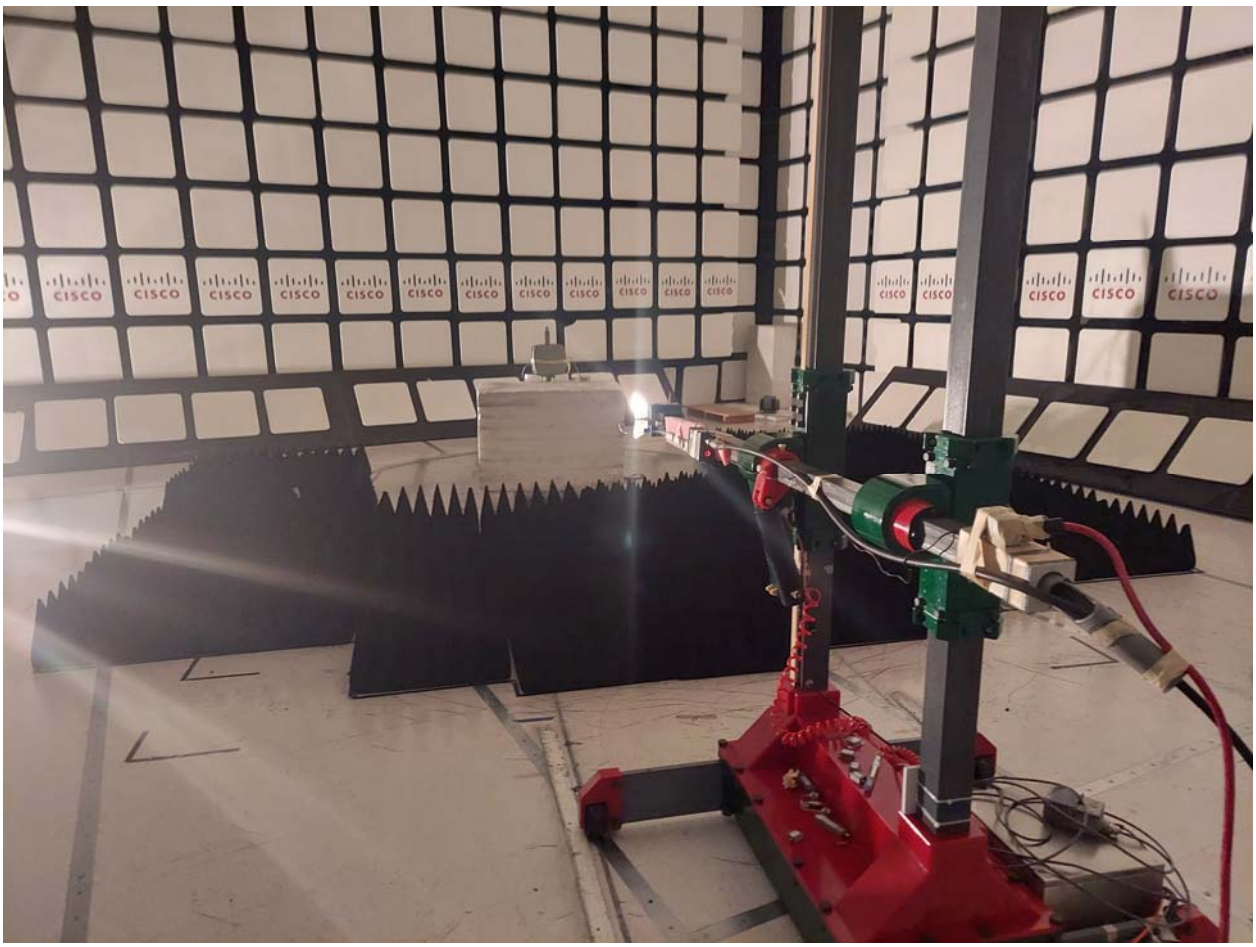
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

Photographs

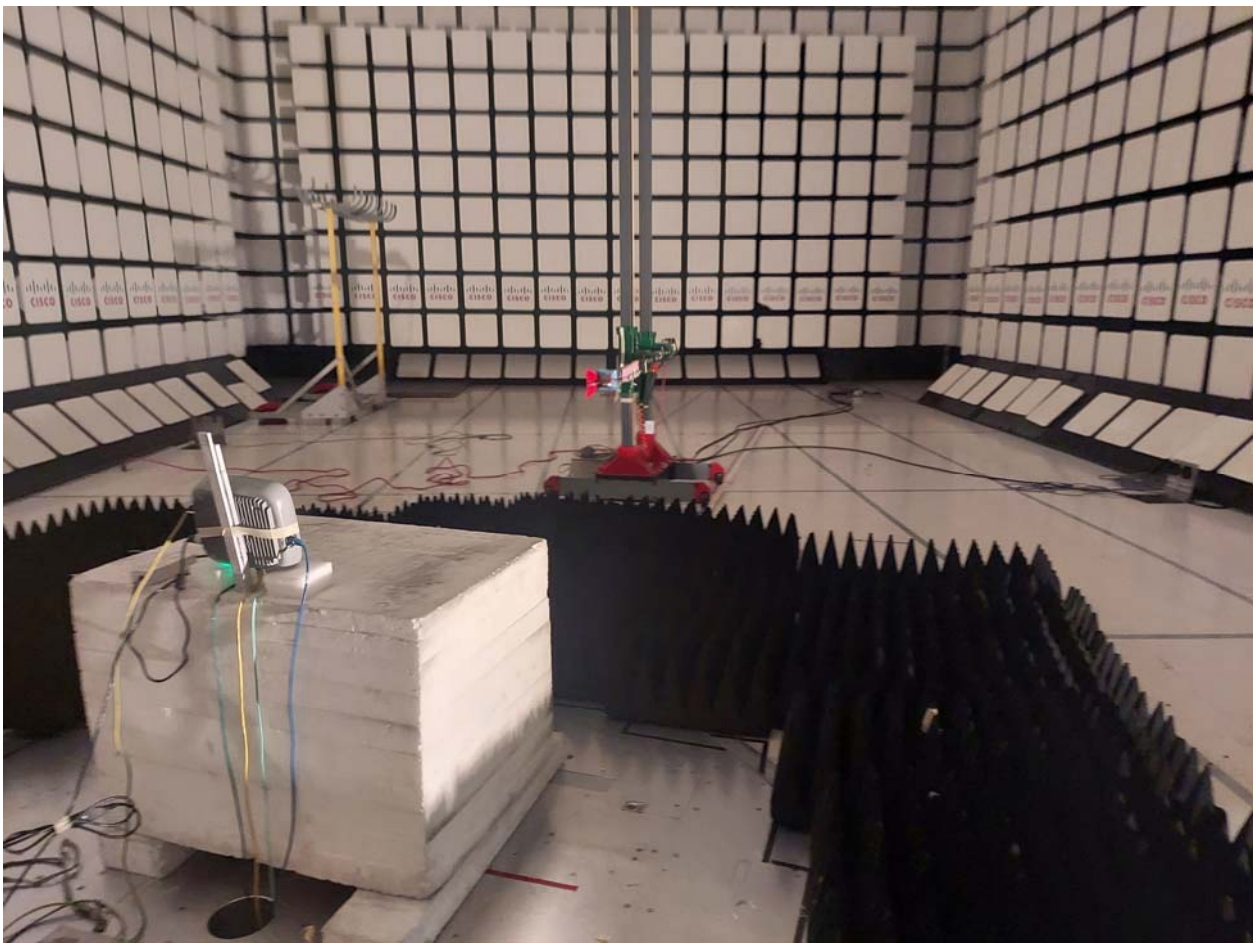
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Subtest Details

Subtest Number : 4622-2 Subtest Date : 3/14/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4622-2	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	POE	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	75.7	
Humidity: (10 to 75)%	25.8	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re 1-10g 115v50h 2.5g1g sh [13-3-2021 19.0]	1000	10000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

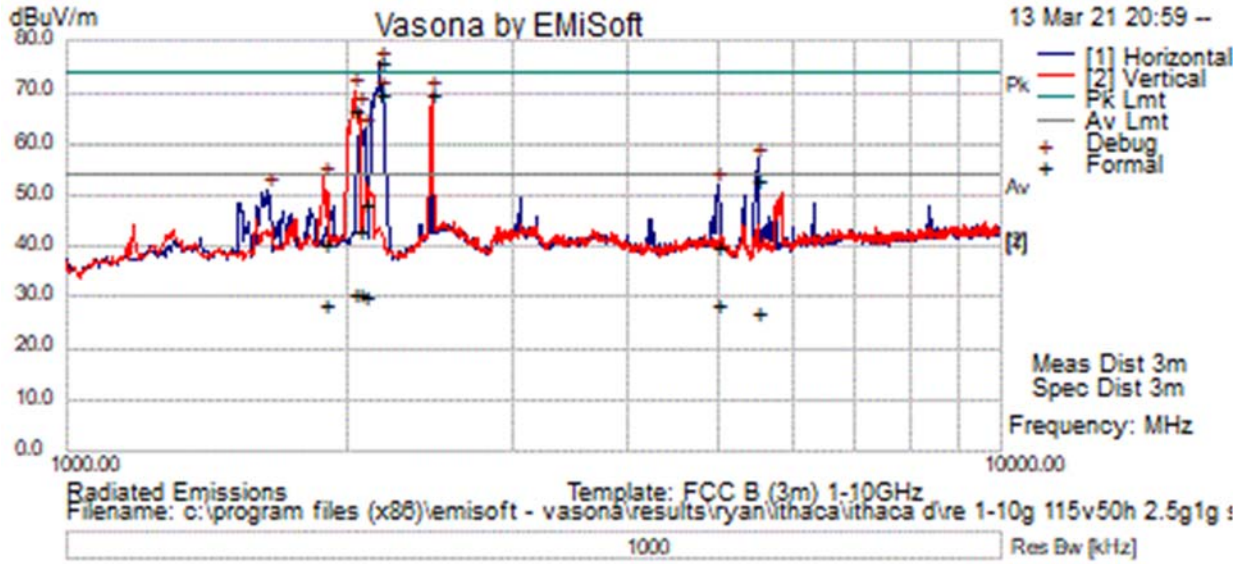
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re 1-10g 115v50h 2.5g1g sh [13-3-2021 19.0]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / b re fcc 1-18ghz peak
Range	1000 - 10000MHz
Engineer	ryapham
Lab Used	Bldg P 10m Chamber.
Template	FCC B (3m) 1-10GHz
Date/Time	14 Mar 21/11:19, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	2170.000	88.8	4.4	-17.4	75.8	Peak [Scan]	H	100	303	54.0	21.8	Fail	Wfi
2	2181.250	82.9	4.4	-17.4	70.0	Peak [Scan]	H	150	40	54.0	16.0	Fail	Wifi
3	2462.500	81.9	4.7	-16.9	69.7	Peak [Scan]	V	125	11	54.0	15.7	Fail	Wifi
4	2040.680	79.5	4.3	-17.0	66.8	Peak Max	V	215	320	74.0	-7.2	Pass	
5	5493.743	62.0	7.6	-16.6	53.0	Peak Max	H	211	351	74.0	-21.0	Pass	
6	2064.868	43.6	4.3	-17.1	30.9	Average Max	V	274	355	54.0	-23.1	Pass	
7	2040.680	43.5	4.3	-17.0	30.8	Average Max	V	215	320	54.0	-23.2	Pass	
8	2089.750	43.1	4.3	-17.2	30.3	Average Max	H	390	270	54.0	-23.7	Pass	
9	5000.030	37.5	7.2	-15.9	28.8	Average Max	H	222	347	54.0	-25.2	Pass	
10	1890.290	43.4	4.1	-18.9	28.6	Average Max	V	310	44	54.0	-25.4	Pass	
11	2089.750	61.2	4.3	-17.2	48.4	Peak Max	H	390	270	74.0	-25.6	Pass	
12	5493.743	35.8	7.6	-16.6	26.9	Average Max	H	211	351	54.0	-27.1	Pass	
13	2064.868	56.1	4.3	-17.1	43.3	Peak Max	V	274	355	74.0	-30.7	Pass	
14	1890.290	55.2	4.1	-18.9	40.4	Peak Max	V	310	44	74.0	-33.6	Pass	

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15	5000.030	49.0	7.2	-15.9	40.3	Peak Max	H	222	347	74.0	-33.7	Pass	

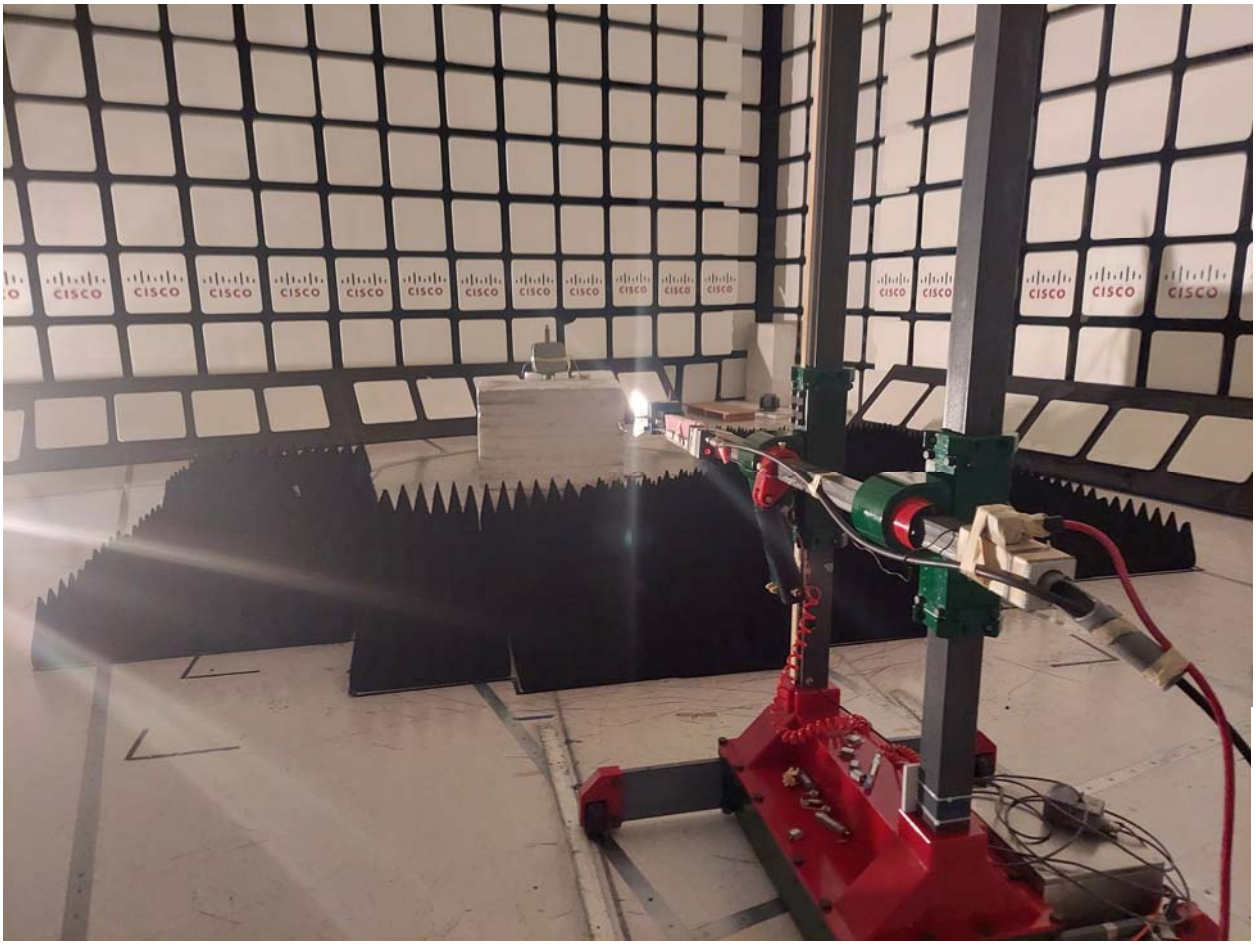
Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

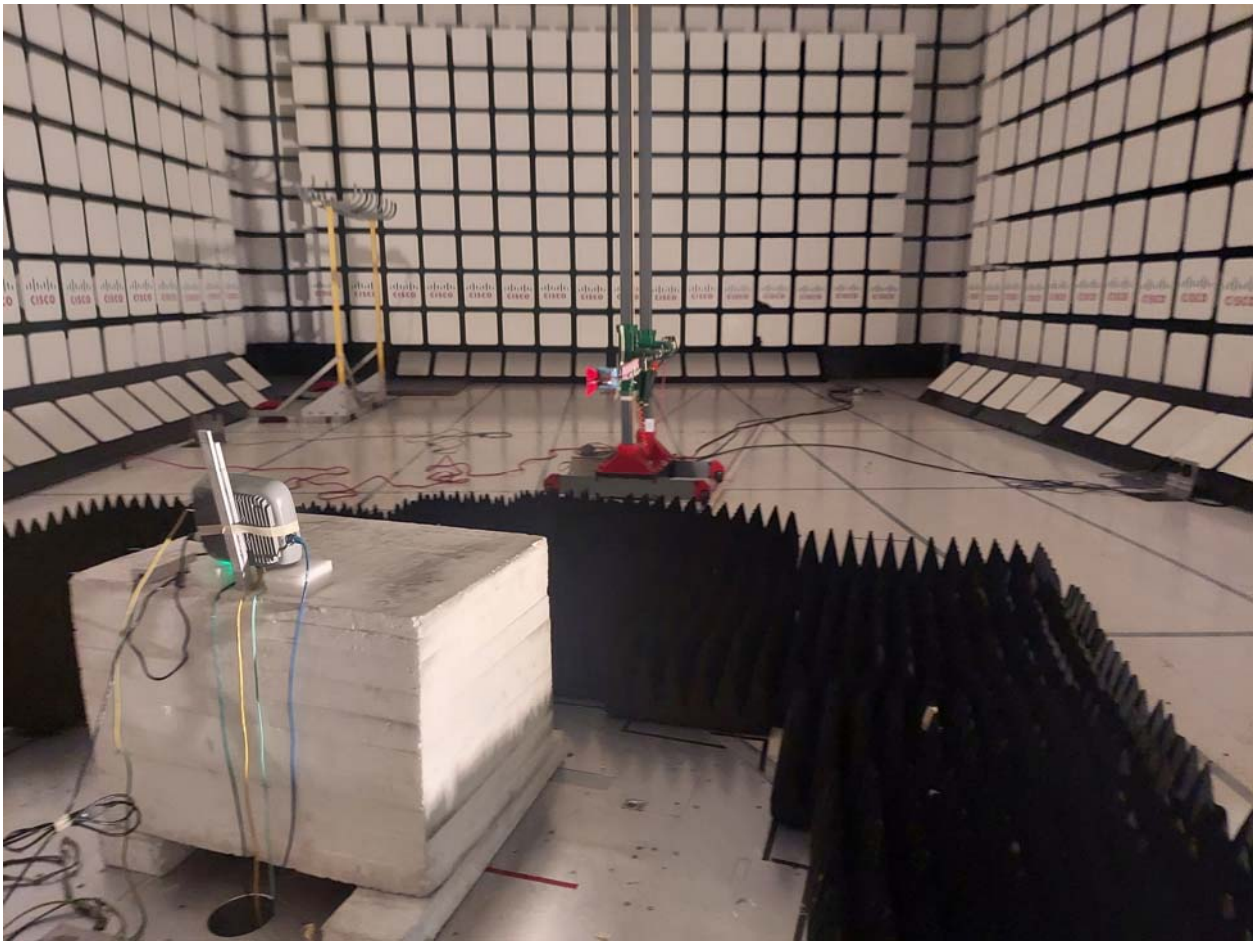
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 4622-3 Subtest Date : 3/15/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4622-3	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	POE	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	75.7	
Humidity: (10 to 75)%	25.8	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re18-26g formal [15-3-2021 15.38]	18000	26499.999

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

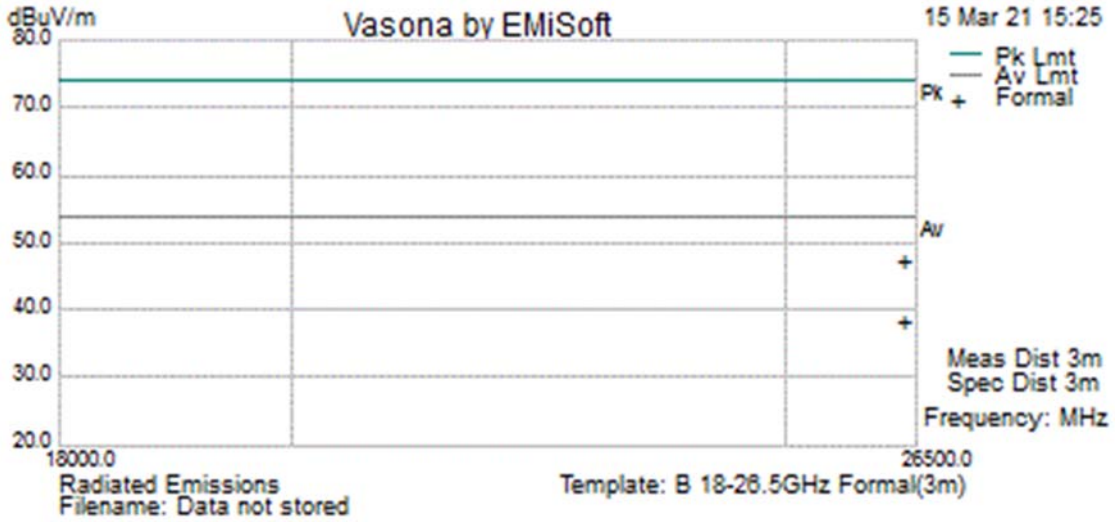
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re18-26g formal [15-3-2021 15.38]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / b re fcc 10-40ghz peak
Range	18000 - 26499.999MHz
Engineer	Bohao
Lab Used	Building P-10m
Template	B 18-26.5GHz Formal(3m)
Date/Time	15 Mar 21/15:38, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB/m**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	26345.080	20.0	.0	18.5	38.5	Average.	V	100	0	54.0	-15.5	Pass	
2	26345.750	29.2	.0	18.5	47.7	Peak.	V	100	0	74.0	-26.3	Pass	

Test Result-Attachments

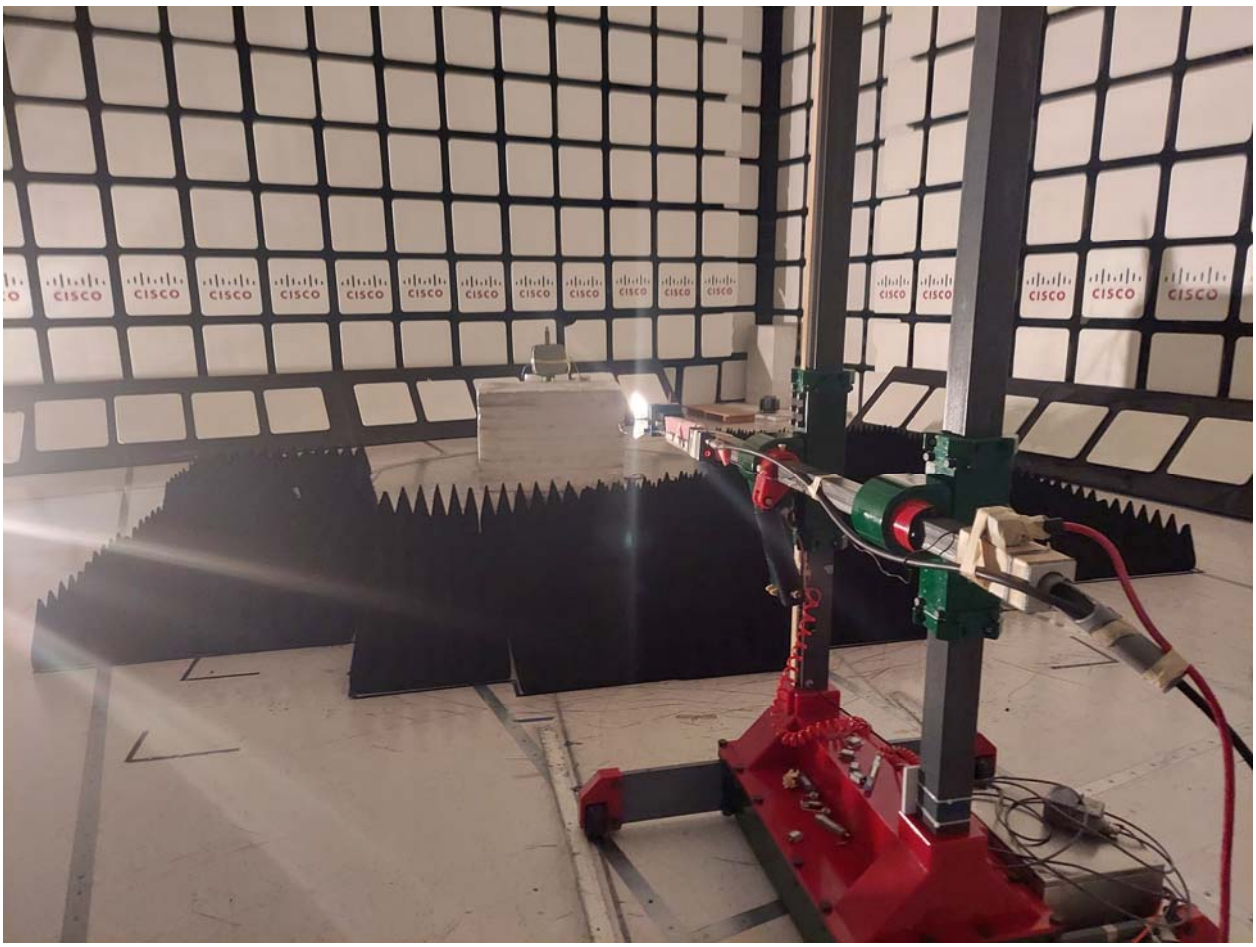
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

Photographs

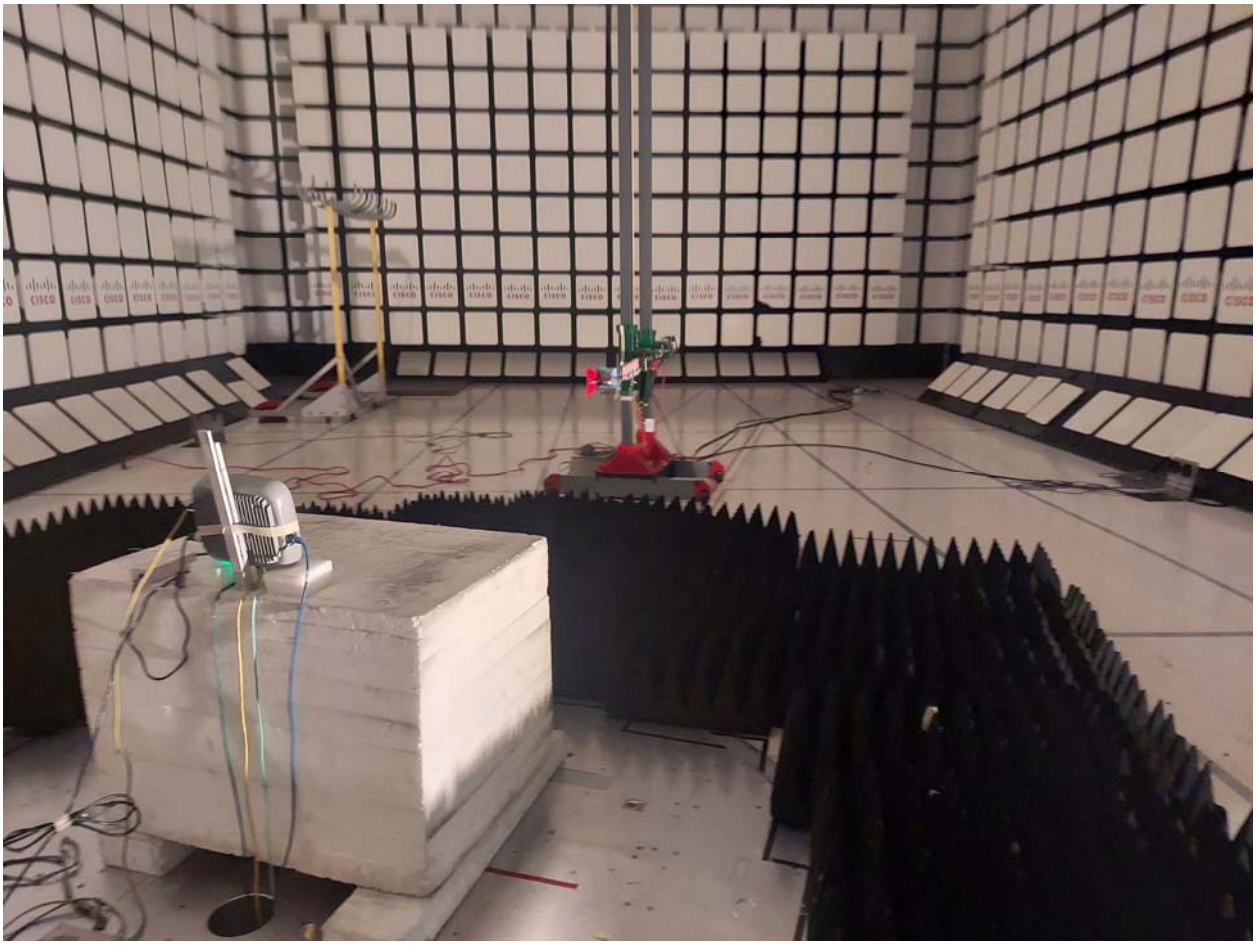
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DESCRIPTION: NA

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DESCRIPTION: NA

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Subtest Details

Subtest Number : 4622-4 Subtest Date : 3/15/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	4622-4	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	POE	
Subtest Result	Pass	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	75.7	
Humidity: (10 to 75)%	25.8	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re26-40g formal [15-3-2021 15.48]	26500	40000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

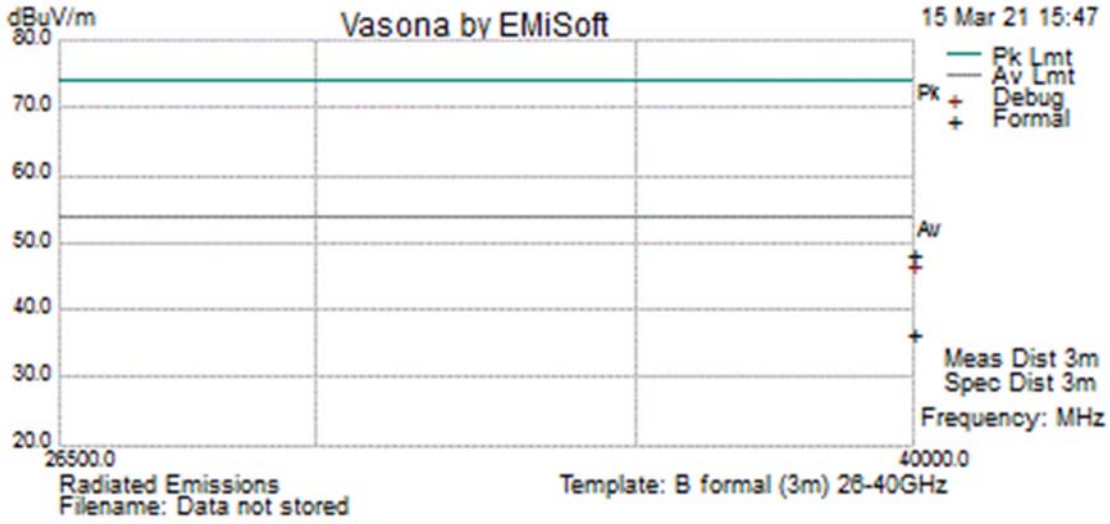
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re26-40g formal [15-3-2021 15.48]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / b re fcc 10-40ghz peak
Range	26500 - 40000MHz
Engineer	Bohao
Lab Used	Building P-10m
Template	B formal (3m) 26-40GHz
Date/Time	15 Mar 21/15:48, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB/m**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	39974.500	26.4	.0	10.2	36.6	Average		100	0	54.0	-17.4	Pass	
2	39974.302	38.3	.0	10.2	48.5	Peak		100	0	74.0	-25.5	Pass	

Test Result-Attachments

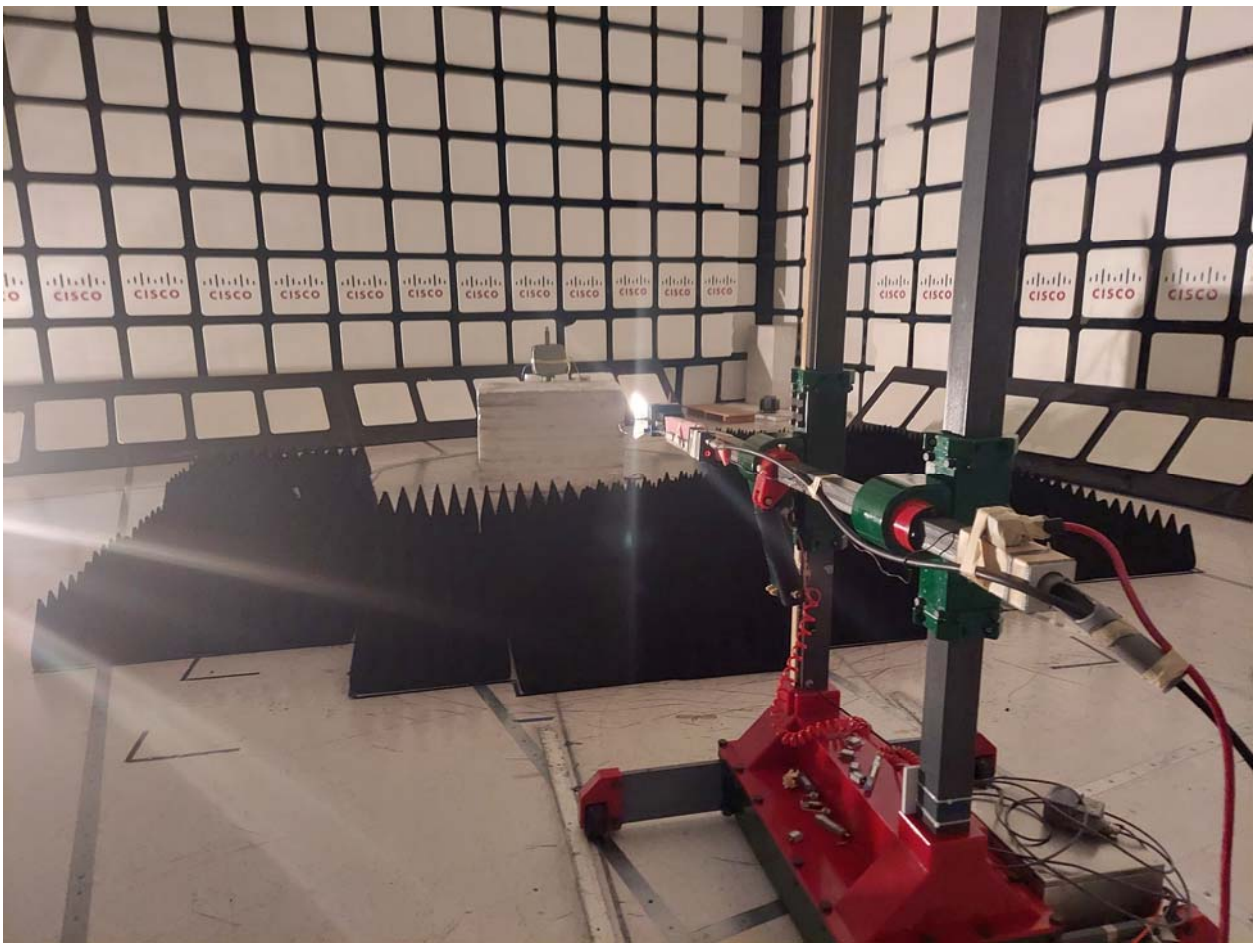
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

Photographs

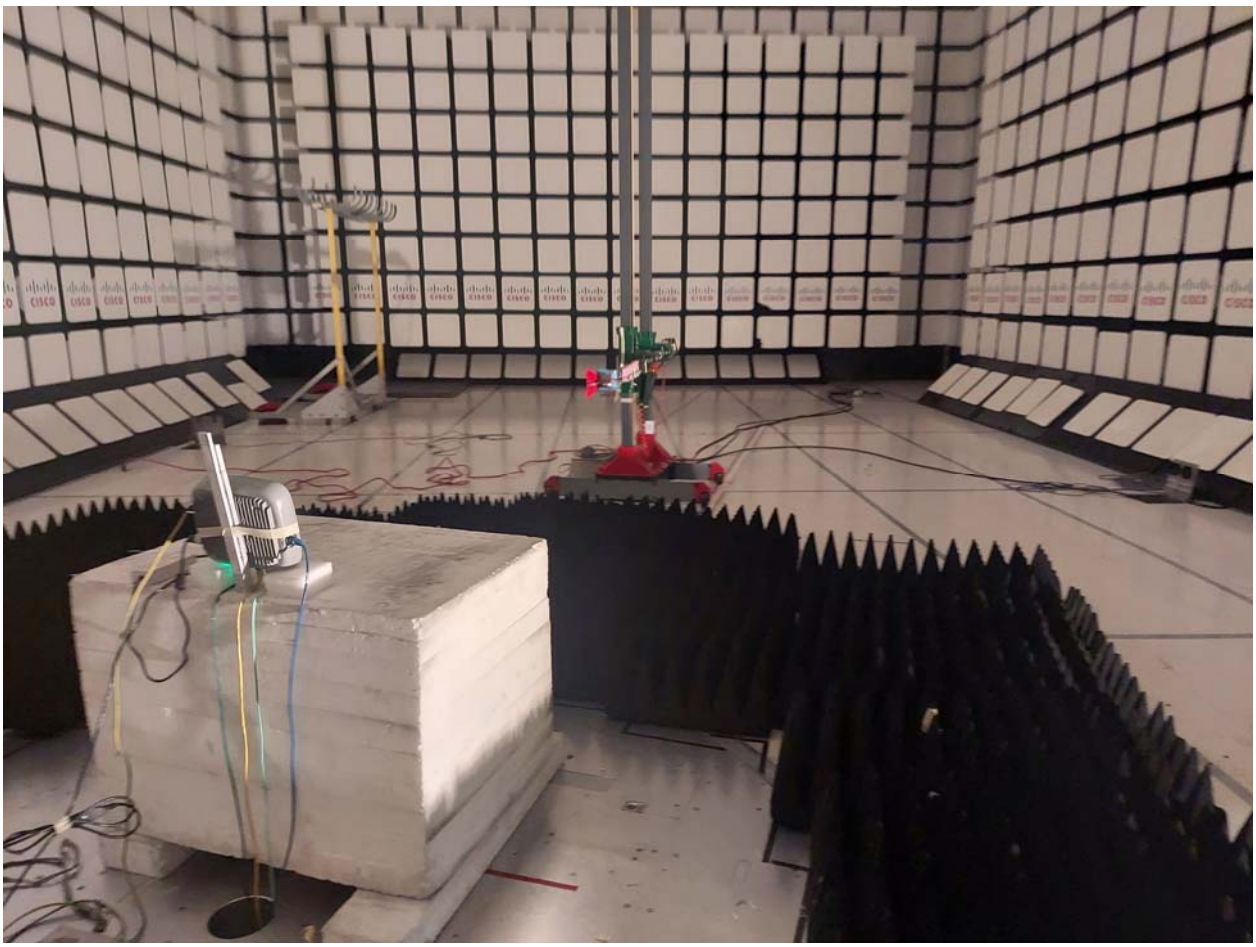
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Test Case Details

TestCase ID: 5600	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CNS13438:2006	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. Taiwan : Assess All ethernet rates.
Basic Standard	CISPR16 Series		
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 5600-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5600-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8V	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 poe2.5gaux1g208 60 pol [18-2-2021 13.13]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

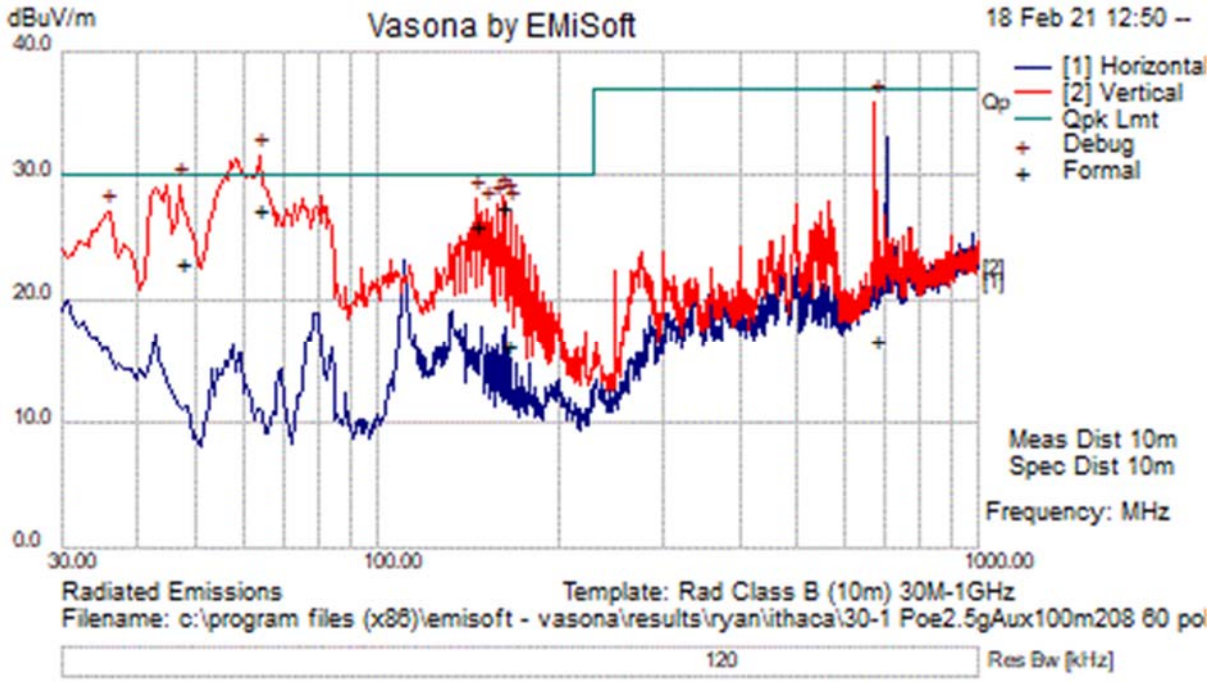
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	Yes

Test Results Details

File Name: 30-1 poe2.5gaux1g208 60 pol [18-2-2021 13.13]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/13:13, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data

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No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	145.917	39.4	1.2	-14.6	26.0	Quasi Max	V	371	23	30.0	-4.0	Pass	
2	161.092	41.4	1.3	-15.2	27.5	Quasi Max	V	171	40	30.0	-2.5	Pass	
3	672.746	22.6	2.8	-8.6	16.8	Quasi Max	V	260	110	37.0	-20.2	Pass	
4	63.876	46.4	.8	-19.9	27.3	Quasi Max	V	118	228	30.0	-2.7	Pass	
5	47.188	40.9	.8	-18.8	22.9	Quasi Max	V	329	258	30.0	-7.1	Pass	
6	164.187	30.3	1.3	-15.3	16.3	Quasi Max	V	259	258	30.0	-13.7	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

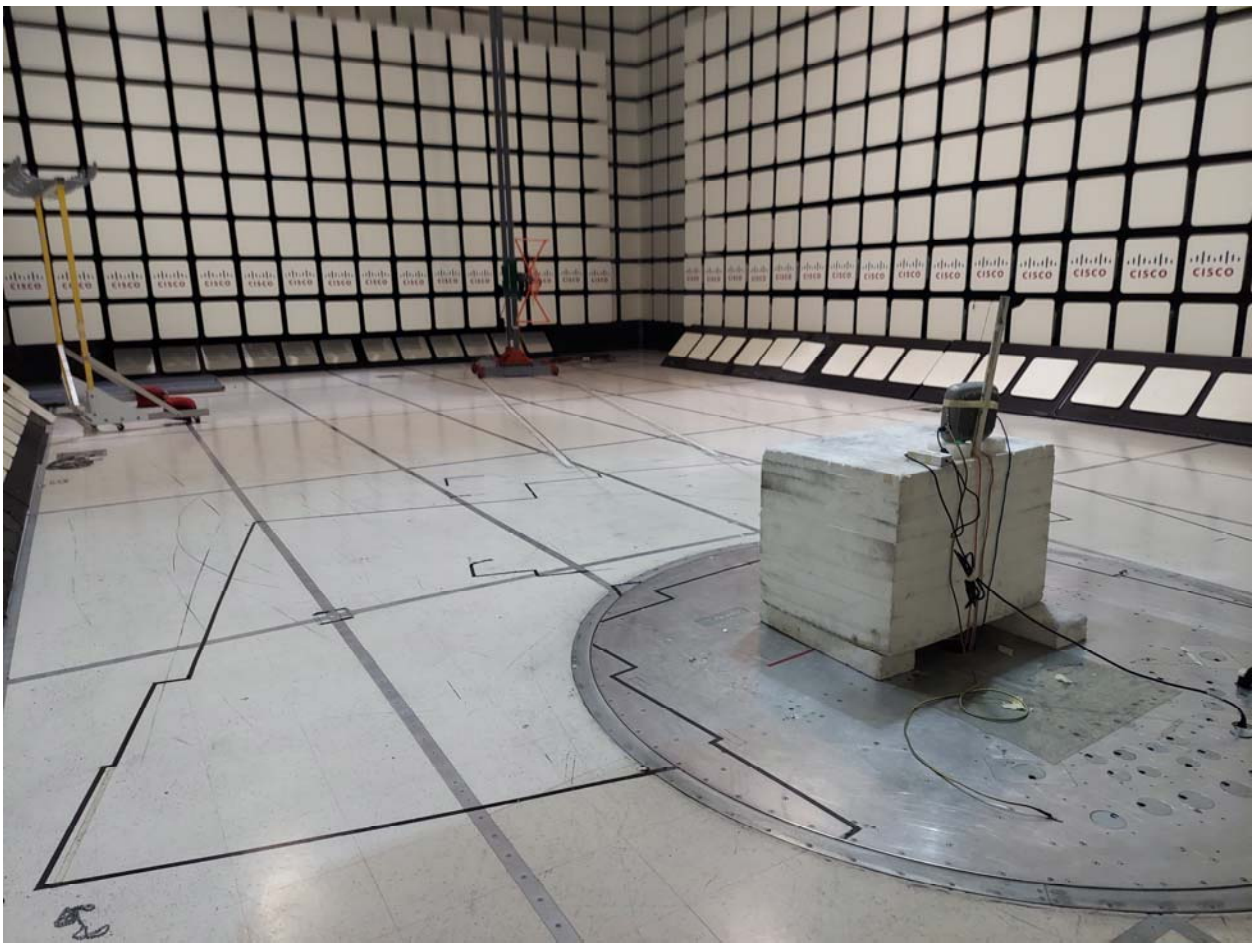
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DESCRIPTION: NA

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Subtest Details

Subtest Number : 5600-2 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5600-2	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8V	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position WAN 100M , LAN 100M	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 poe100maux100m208 60 pol2 [18-2-2021 15.8]	30	1000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

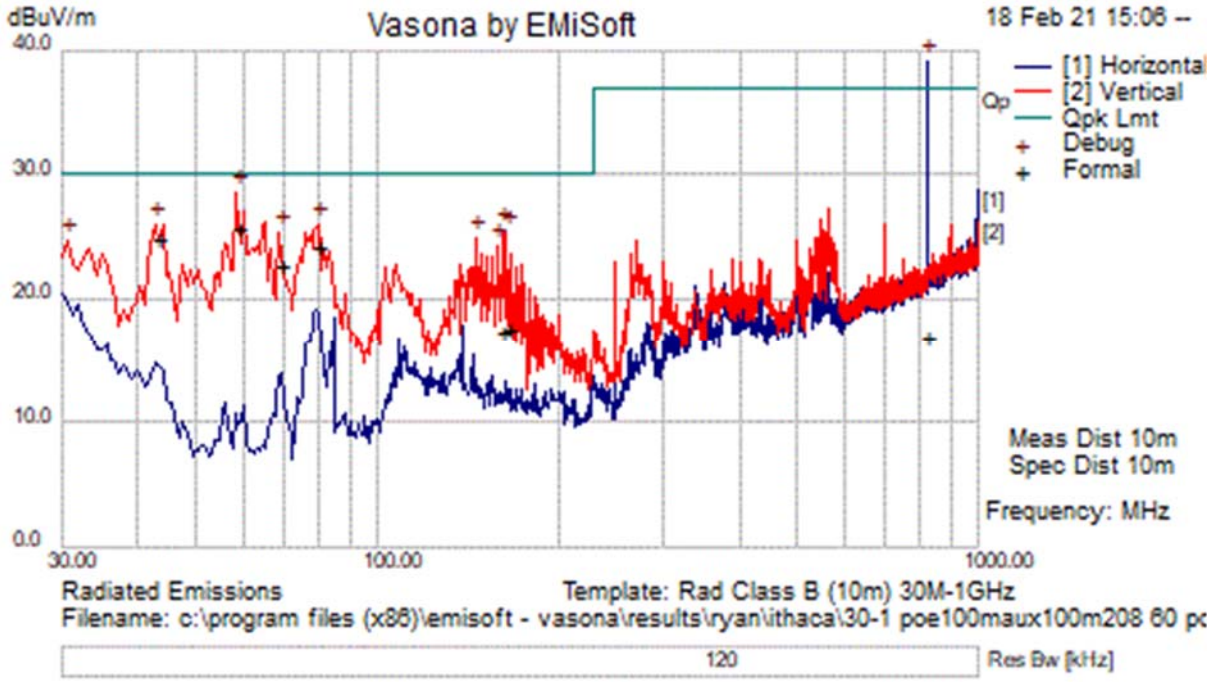
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	Yes

Test Results Details

File Name: 30-1 poe100maux100m208 60 pol2 [18-2-2021 15.8]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/15:08, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	58.703	45.3	.8	-20.3	25.8	Quasi Max	V	105	285	30.0	-4.2	Pass	
2	42.958	40.2	.8	-16.1	24.9	Quasi Max	V	128	254	30.0	-5.1	Pass	
3	79.465	43.5	.9	-20.1	24.3	Quasi Max	V	145	301	30.0	-5.7	Pass	
4	68.974	41.5	.8	-19.6	22.7	Quasi Max	V	217	228	30.0	-7.3	Pass	
5	164.136	31.5	1.3	-15.3	17.5	Quasi Max	V	256	16	30.0	-12.5	Pass	
6	161.110	31.3	1.3	-15.2	17.4	Quasi Max	V	126	56	30.0	-12.6	Pass	
7	819.136	20.5	3.1	-6.6	17.0	Quasi Max	H	287	234	37.0	-20.0	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

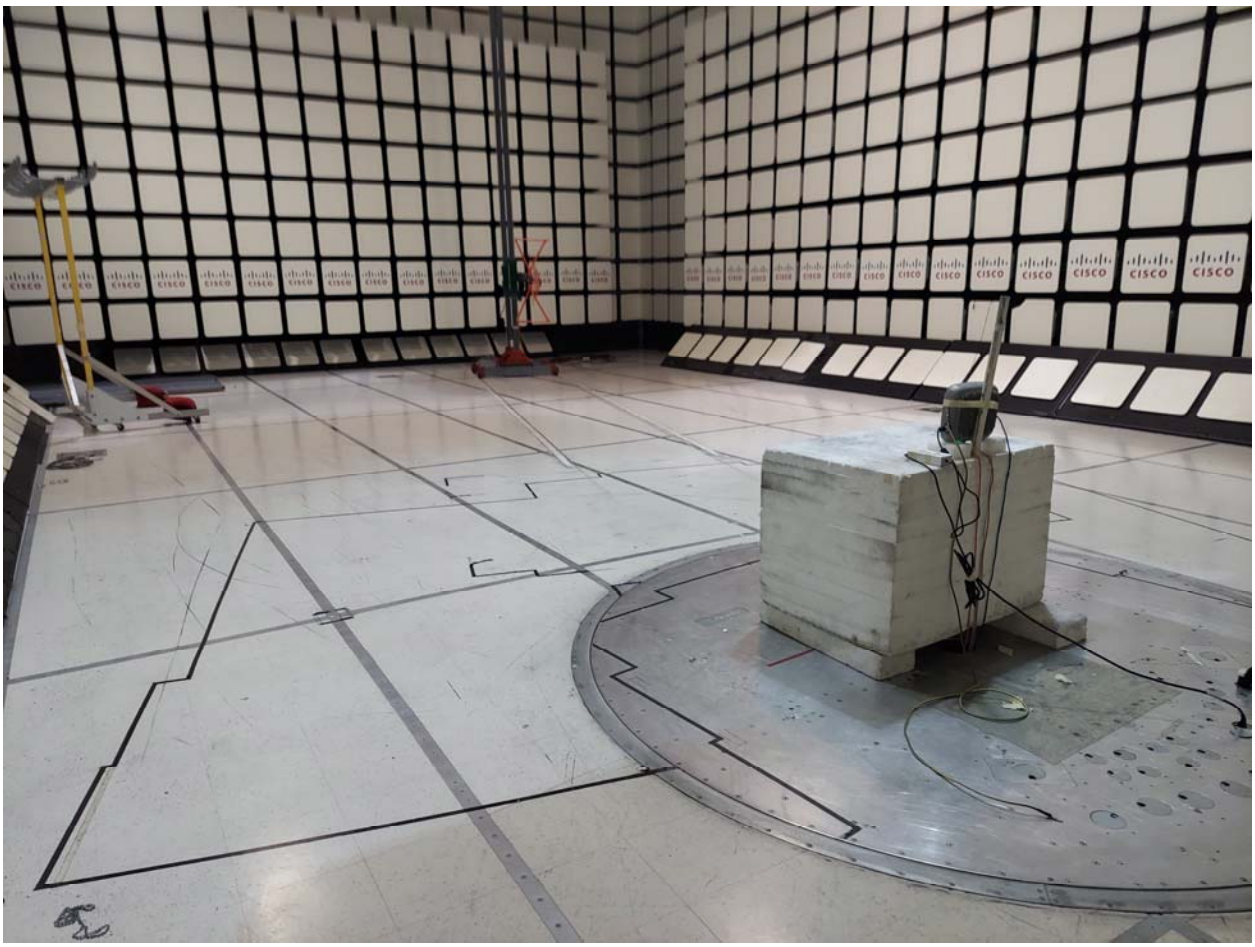
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TITLE: NA
DESCRIPTION: NA



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Subtest Details

Subtest Number : 5600-3 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5600-3	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8V	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position WAN 100M , LAN 10M	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 poe100maux10m208 60 pol [18-2-2021 14.8]	30	1000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

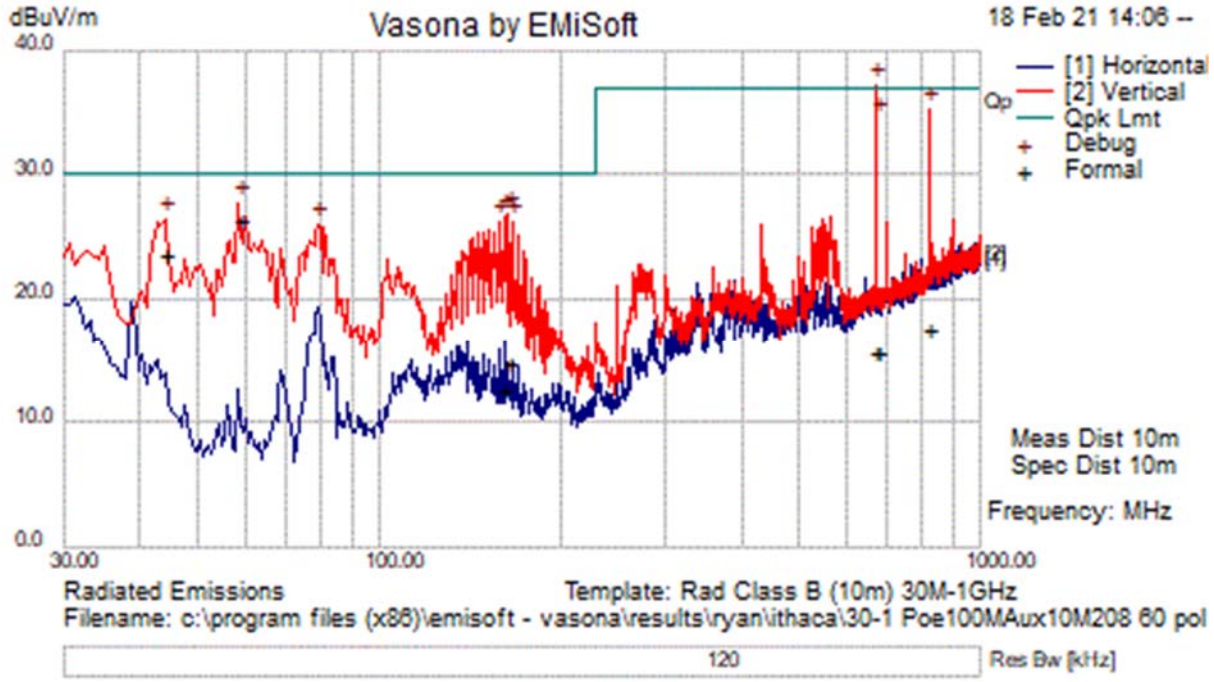
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	Yes

Test Results Details

File Name: 30-1 poe100maux10m208 60 pol [18-2-2021 14.8]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/14:08, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB/m**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	58.716	45.9	.8	-20.3	26.4	Quasi Max	V	180	288	30.0	-3.6	Pass	
2	43.822	39.6	.8	-16.7	23.7	Quasi Max	V	355	196	30.0	-6.3	Pass	
3	164.138	28.7	1.3	-15.3	14.8	Quasi Max	V	351	346	30.0	-15.2	Pass	
4	160.922	26.5	1.3	-15.2	12.6	Quasi Max	V	131	333	30.0	-17.4	Pass	
5	819.976	21.1	3.1	-6.6	17.6	Quasi Max	V	230	205	37.0	-19.4	Pass	
6	671.356	21.6	2.8	-8.6	15.8	Quasi Max	V	116	27	37.0	-21.2	Pass	
7	669.215	21.6	2.8	-8.7	15.7	Quasi Max	V	213	30	37.0	-21.3	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

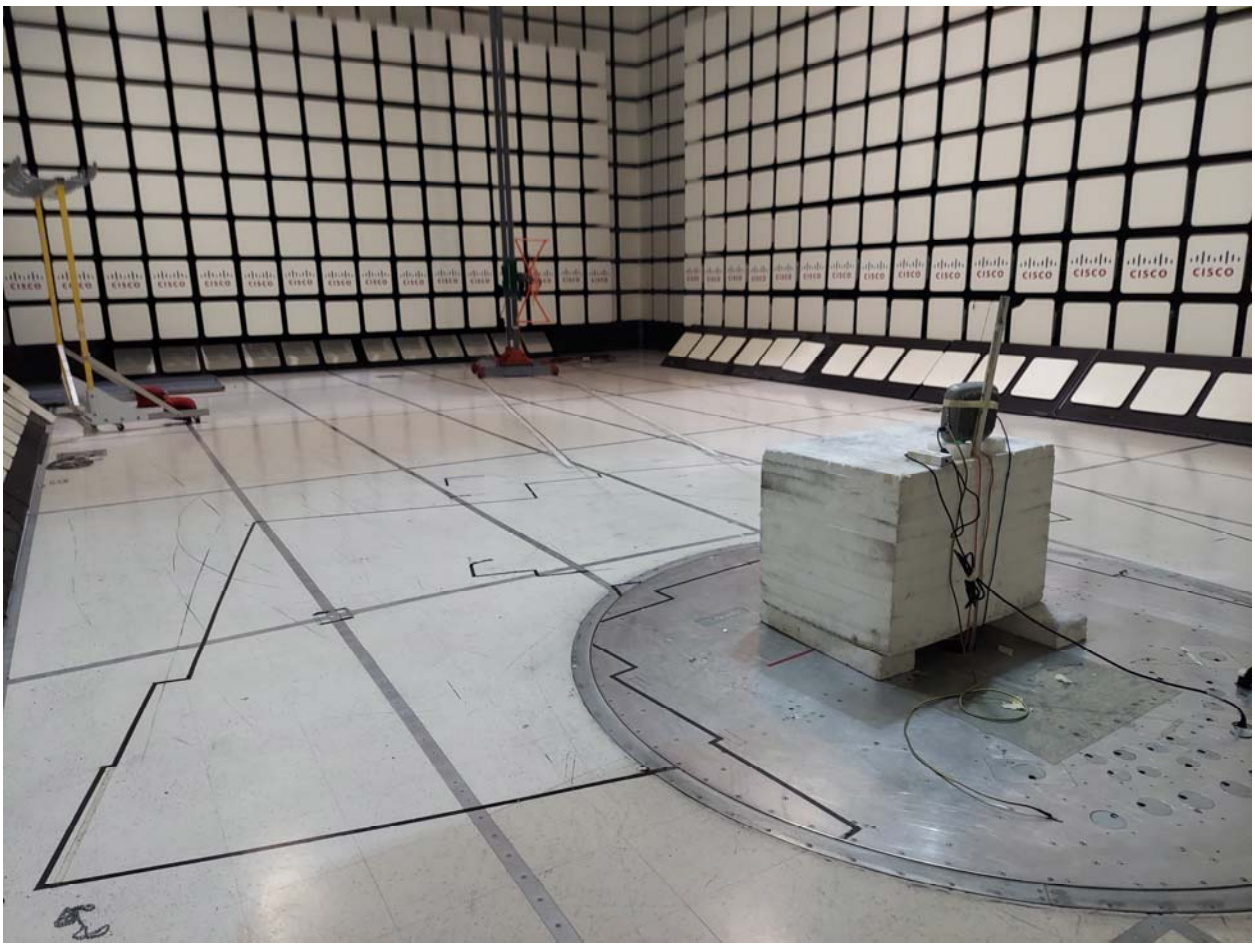
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DESCRIPTION: NA



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DESCRIPTION: NA

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Subtest Details

Subtest Number : 5600-4 Subtest Date : 3/11/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5600-4	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1upoe2.5gaux1g208 60 pol [10-3-2021 14.39]	30	1000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

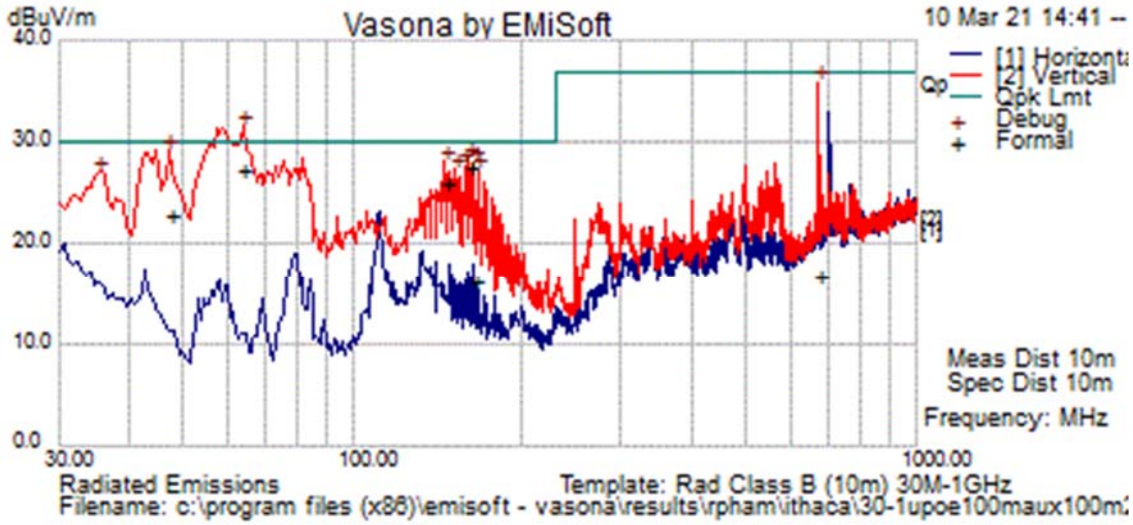
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	Yes
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1upoe2.5gaux1g208 60 pol [10-3-2021 14.39]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:47, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.917	39.4	1.2	-14.6	26.0	Quasi Max	V	371	23	30.0	-4.0	Pass	
2	161.092	41.4	1.3	-15.2	27.5	Quasi Max	V	171	40	30.0	-2.5	Pass	
3	672.746	22.6	2.8	-8.6	16.8	Quasi Max	V	260	110	37.0	-20.2	Pass	
4	63.876	46.4	.8	-19.9	27.3	Quasi Max	V	118	228	30.0	-2.7	Pass	
5	47.188	40.9	.8	-18.8	22.9	Quasi Max	V	329	258	30.0	-7.1	Pass	
6	164.187	30.3	1.3	-15.3	16.3	Quasi Max	V	259	258	30.0	-13.7	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

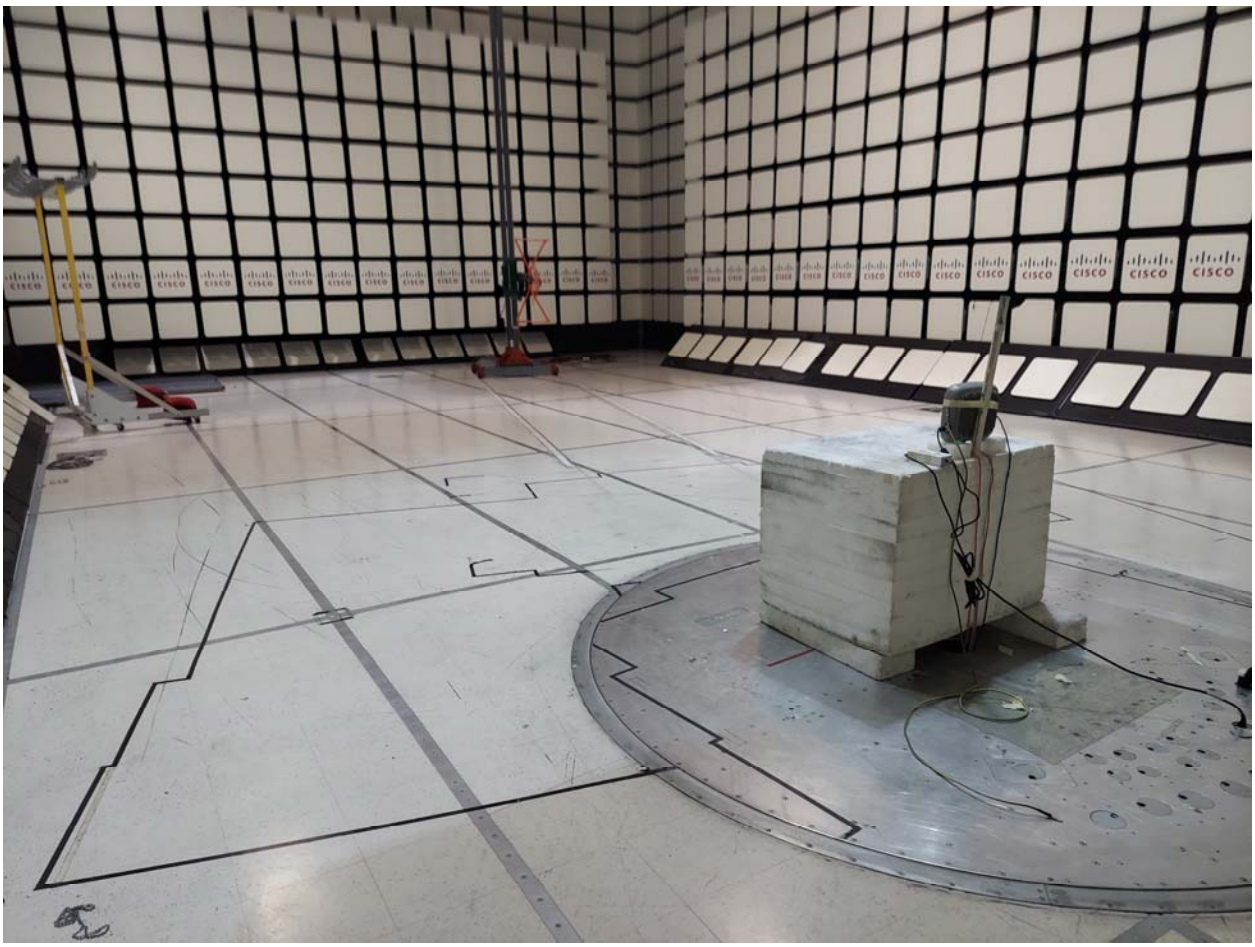
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Subtest Details

Subtest Number : 5600-5 Subtest Date : 3/11/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5600-5	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1upoe100maux100m208 60 pol2 [10-3-2021 14.20]	30	1000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

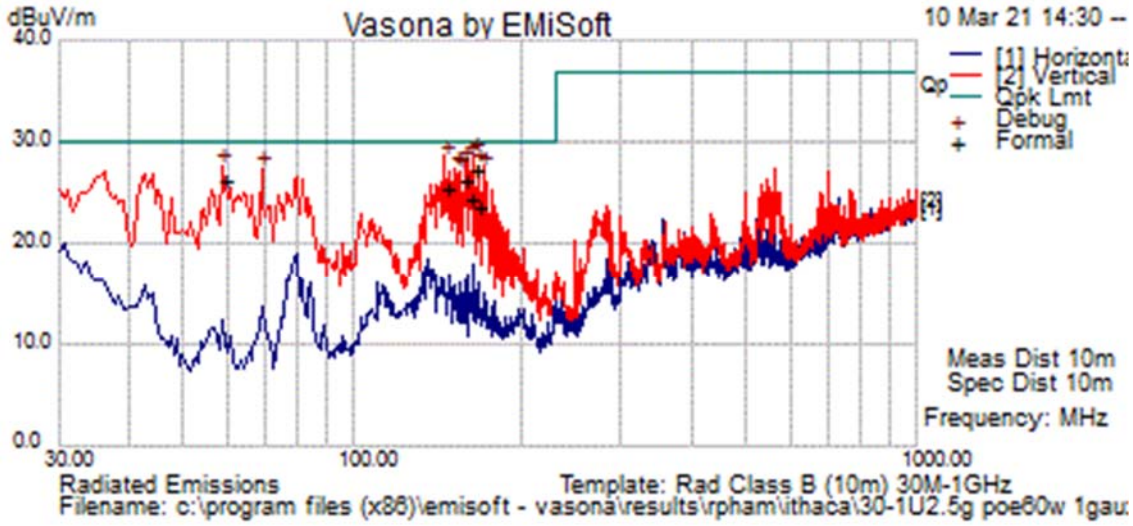
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	Yes
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1upoe100maux100m208 60 pol2 [10-3-2021 14.20]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Rypham
Lab Used	BP-10m-chamber
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:31, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	164.155	41.4	1.3	-15.3	27.4	Quasi Max	V	135	358	30.0	-2.6	Pass	
2	58.705	45.9	.8	-20.3	26.3	Quasi Max	V	219	342	30.0	-3.7	Pass	
3	158.071	40.2	1.3	-15.1	26.3	Quasi Max	V	274	332	30.0	-3.7	Pass	
4	145.917	38.8	1.2	-14.6	25.4	Quasi Max	V	144	174	30.0	-4.6	Pass	
5	161.118	38.4	1.3	-15.2	24.5	Quasi Max	V	144	353	30.0	-5.5	Pass	
6	167.178	37.8	1.3	-15.5	23.6	Quasi Max	V	284	336	30.0	-6.4	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

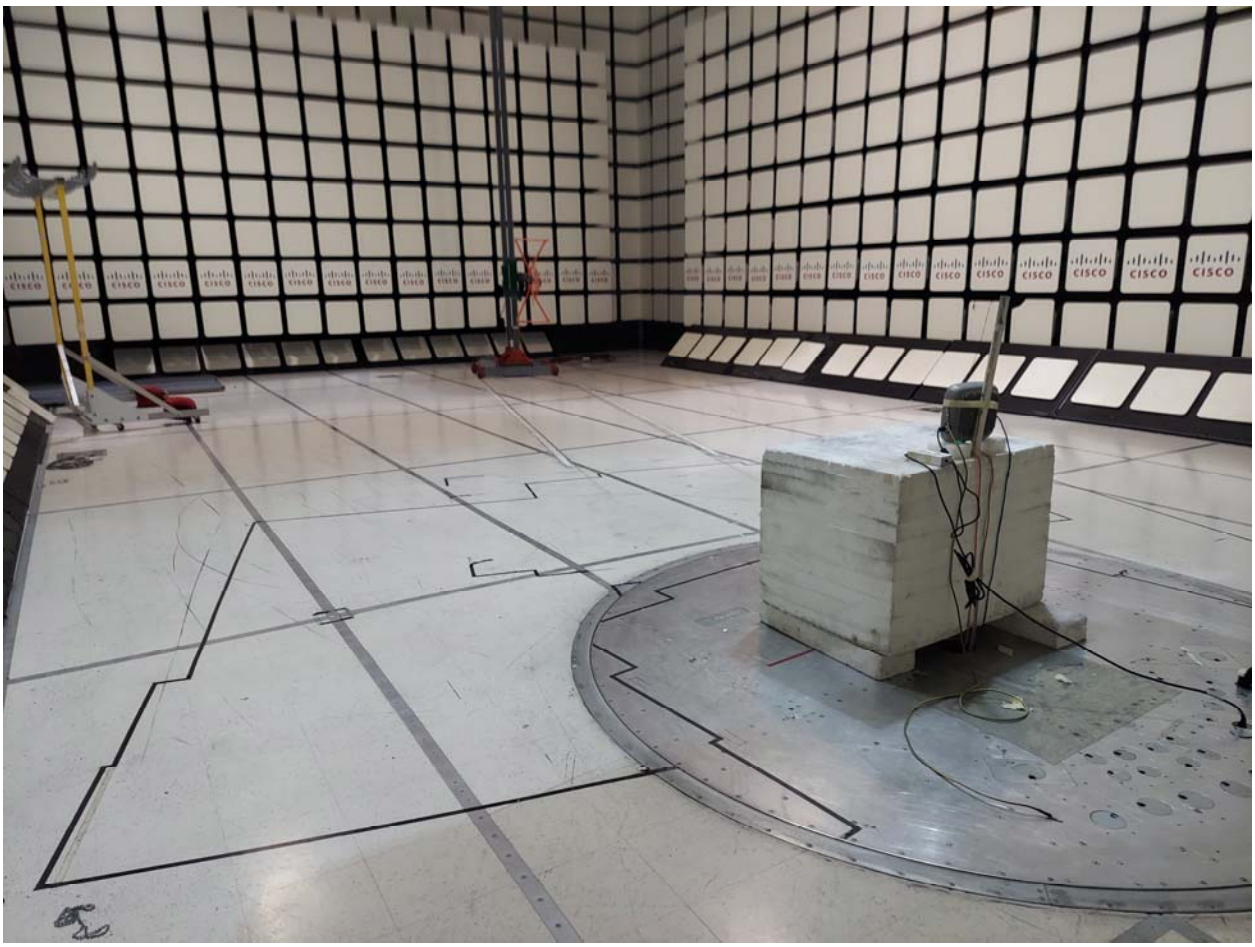
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Subtest Details

Subtest Number : 5600-6 Subtest Date : 3/11/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5600-6	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	109.8	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1upoe100maux10m208 60 pol [10-3-2021 14.39]	30	1000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

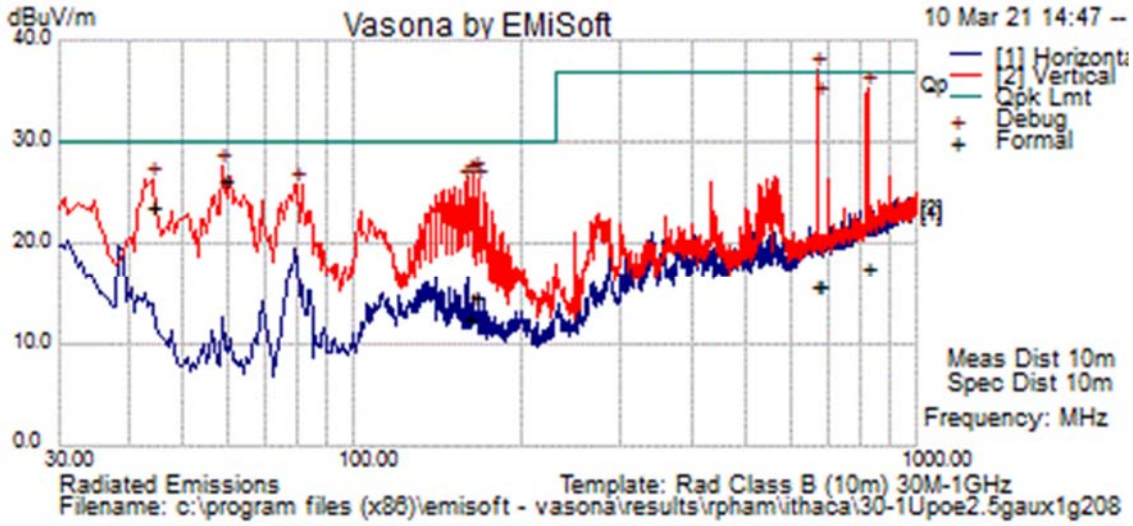
System Number	Description	Samples	System under Test
c	Support Equipment	6, 7, 3, 4, 5, 8, 9	Yes
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1upoe100maux10m208 60 pol [10-3-2021 14.39]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Bohao
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:48, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	58.716	45.9	.8	-20.3	26.4	Quasi Max	V	180	288	30.0	-3.6	Pass	
2	43.822	39.6	.8	-16.7	23.7	Quasi Max	V	355	196	30.0	-6.3	Pass	
3	164.138	28.7	1.3	-15.3	14.8	Quasi Max	V	351	346	30.0	-15.2	Pass	
4	160.922	26.5	1.3	-15.2	12.6	Quasi Max	V	131	333	30.0	-17.4	Pass	
5	819.976	21.1	3.1	-6.6	17.6	Quasi Max	V	230	205	37.0	-19.4	Pass	
6	671.356	21.6	2.8	-8.6	15.8	Quasi Max	V	116	27	37.0	-21.2	Pass	
7	669.215	21.6	2.8	-8.7	15.7	Quasi Max	V	213	30	37.0	-21.3	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

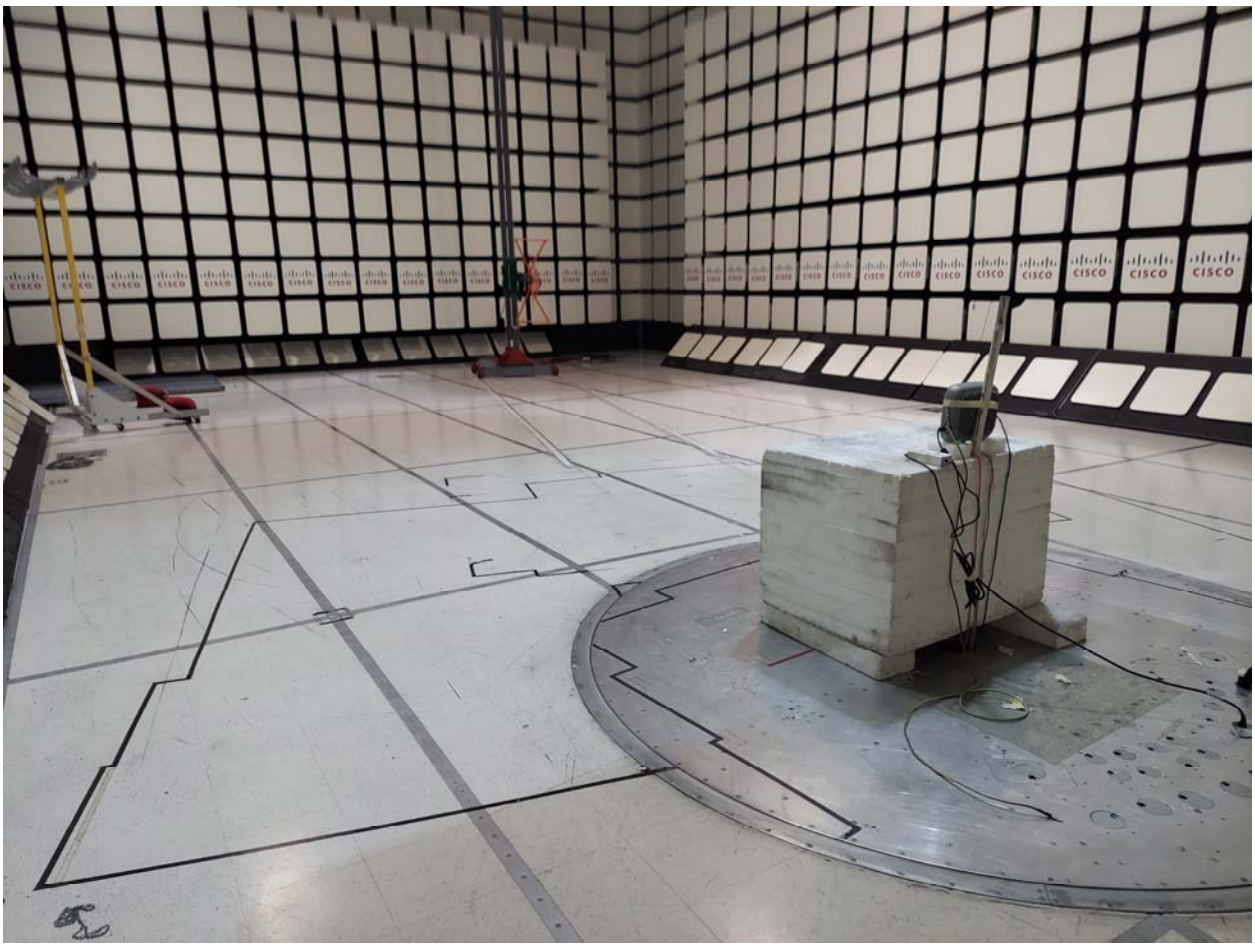
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Test Case Details

TestCase ID: 5601 Test Type: Radiated Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
KN32:2015	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Korea 220V 60Hz +/-20%. Perform @ 10m only.
Basic Standard	KN16 Series		
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 5601-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5601-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	211.1V	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Wall position WAN2.5G LAN1G	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 2.5g poe 1gaux 120 60 pol [18-2-2021 8.54]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

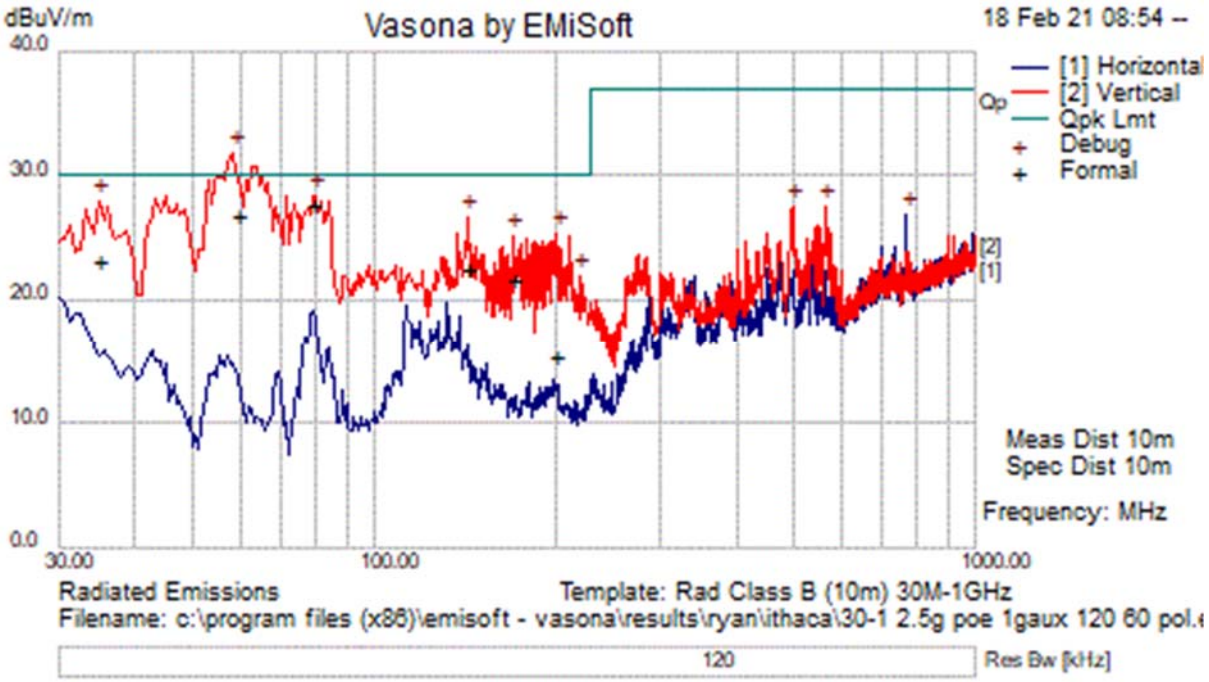
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: 30-1 2.5g poe 1gaux 120 60 pol [18-2-2021 8.54]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/08:54, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data

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No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	79.011	46.9	.9	-20.0	27.7	Quasi Max	V	100	341	30.0	-2.3	Pass	
2	59.133	46.3	.8	-20.3	26.8	Quasi Max	V	104	266	30.0	-3.2	Pass	
3	34.713	32.4	.7	-10.0	23.1	Quasi Max	V	141	40	30.0	-6.9	Pass	
4	143.250	35.6	1.2	-14.4	22.5	Quasi Max	V	112	9	30.0	-7.5	Pass	
5	170.233	35.9	1.3	-15.5	21.8	Quasi Max	V	244	321	30.0	-8.2	Pass	
6	200.732	28.7	1.5	-14.7	15.4	Quasi Max	V	221	321	30.0	-14.6	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

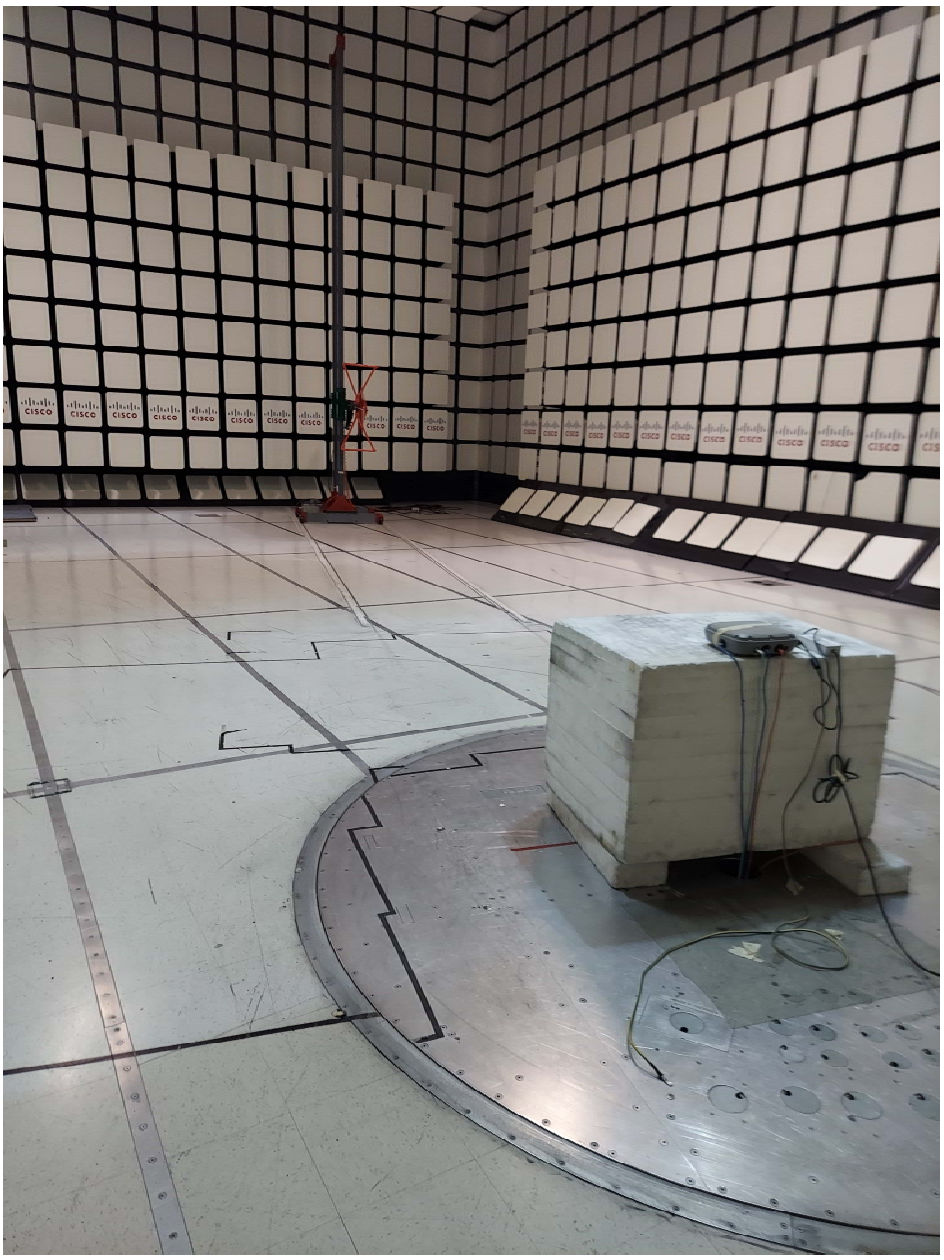
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DESCRIPTION: NA

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Subtest Details

Subtest Number : 5601-2 Subtest Date : 2/17/2021	
Engineer	Ryan Pham
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	5601-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	211.1
Subtest Result	Pass - Uncertain

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Comments on the above Test Results	Wall position WAN2.5G LAN1G Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	74.5	
Humidity: (10 to 75)%	39.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1u2.5g poe 1gaux 120 60 pol [10-3-2021 14.20]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

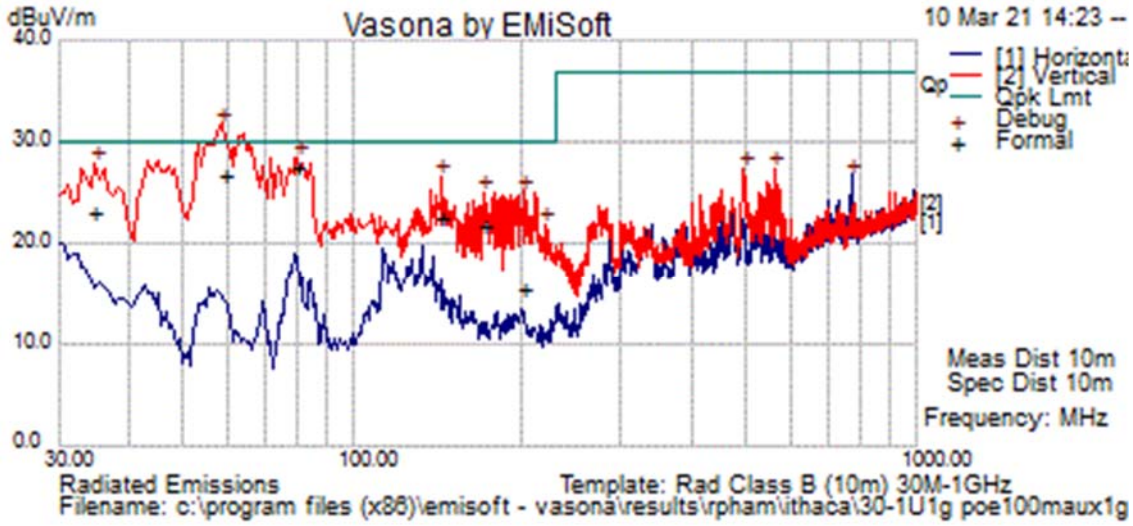
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1u2.5g poe 1gaux 120 60 pol [10-3-2021 14.20]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Rypham
Lab Used	BP-10m-chamber
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:24, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	79.011	46.9	.9	-20.0	27.7	Quasi Max	V	100	341	30.0	-2.3	Pass	
2	59.133	46.3	.8	-20.3	26.8	Quasi Max	V	104	266	30.0	-3.2	Pass	
3	34.713	32.4	.7	-10.0	23.1	Quasi Max	V	141	40	30.0	-6.9	Pass	
4	143.250	35.6	1.2	-14.4	22.5	Quasi Max	V	112	9	30.0	-7.5	Pass	
5	170.233	35.9	1.3	-15.5	21.8	Quasi Max	V	244	321	30.0	-8.2	Pass	
6	200.732	28.7	1.5	-14.7	15.4	Quasi Max	V	221	321	30.0	-14.6	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

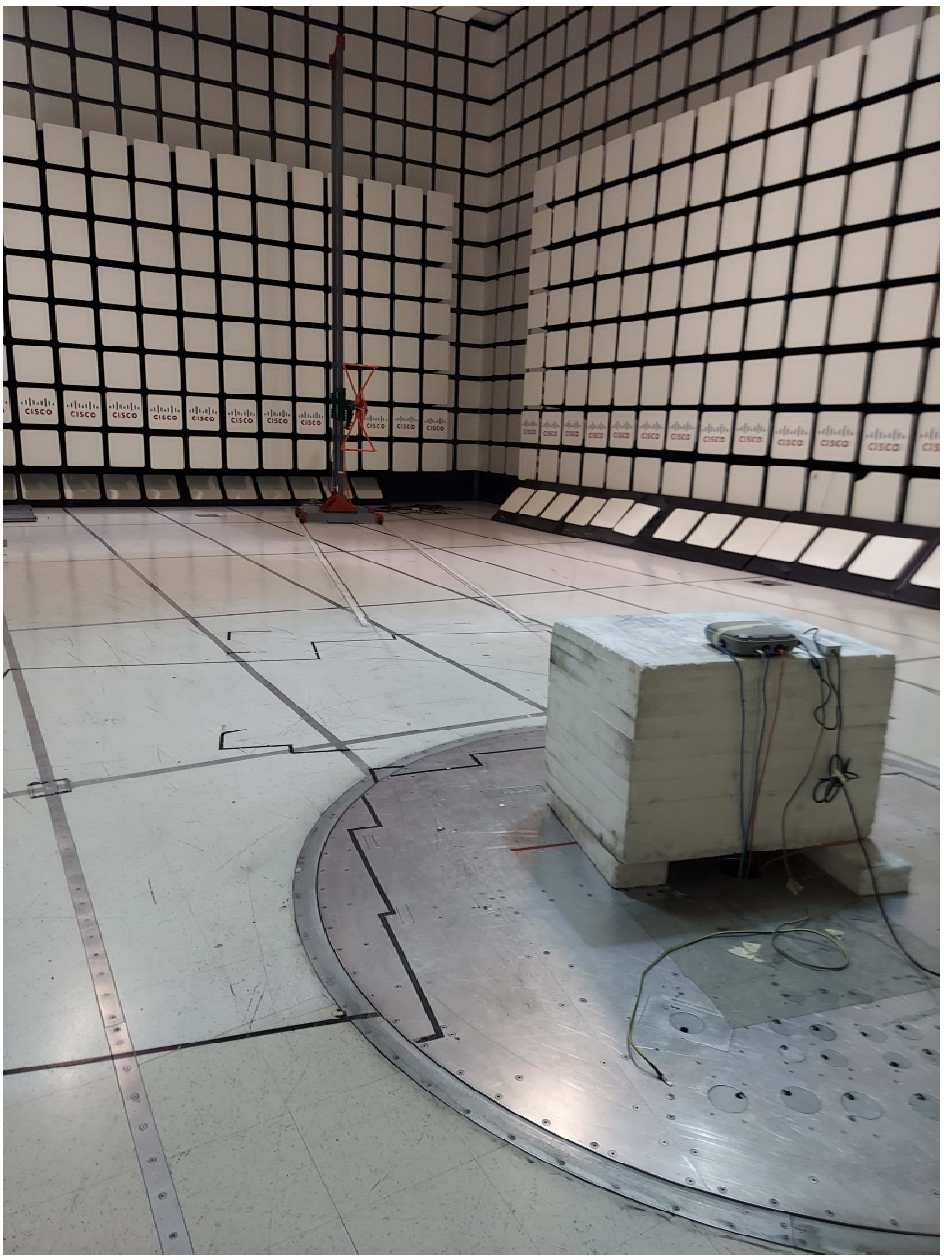
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Test Case Details

TestCase ID: 5602	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CNS13438:2006	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. Taiwan : Assess All ethernet rates.
Basic Standard	CISPR16 Series		
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 5602-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5602-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	60W	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

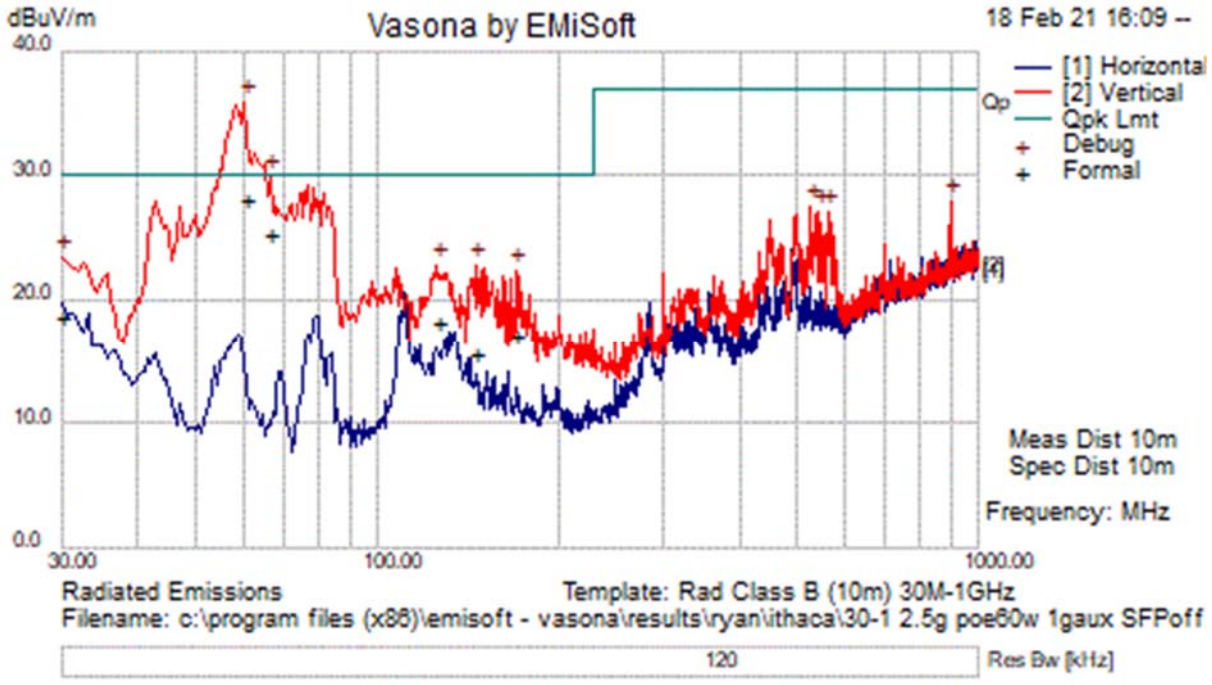
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: 30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/16:09, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



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No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	145.673	29.0	1.2	-14.5	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.1	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.2	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

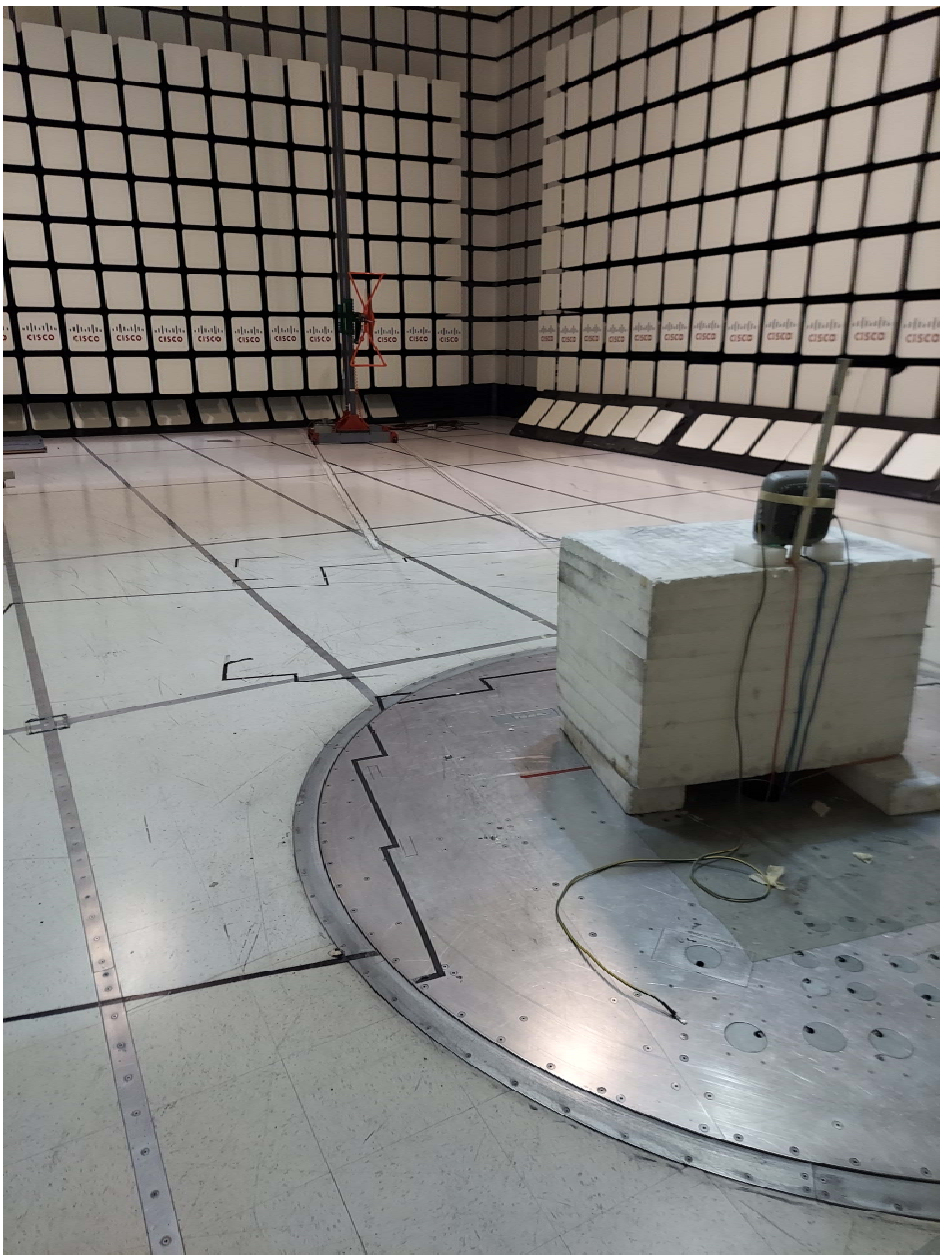
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5602-2 Subtest Date : 2/19/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	5602-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	POE
Subtest Result	Pass - Uncertain

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Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

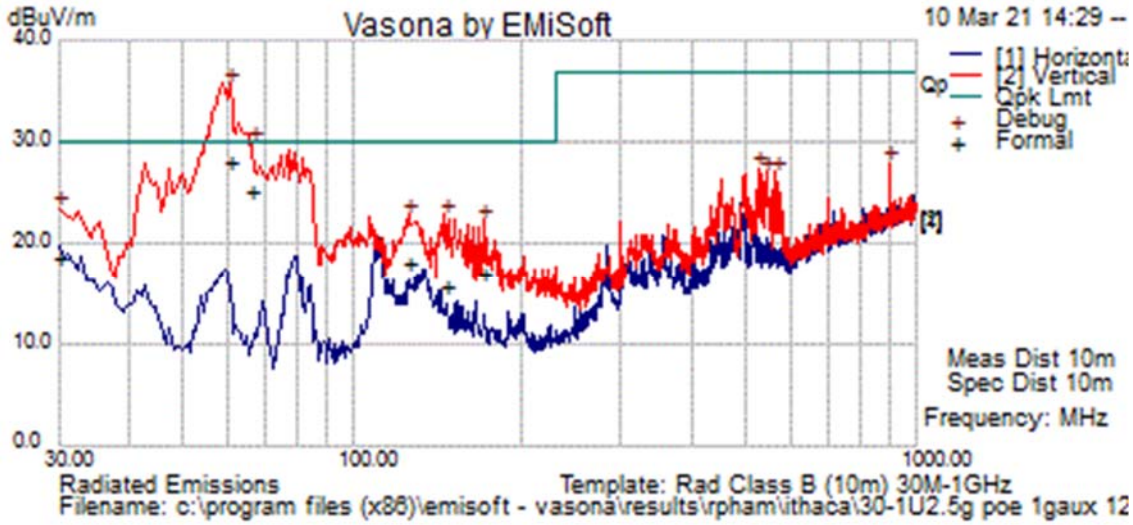
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Rypham
Lab Used	BP-10m-chamber
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:30, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.673	29.0	1.2	-14.6	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.2	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.3	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

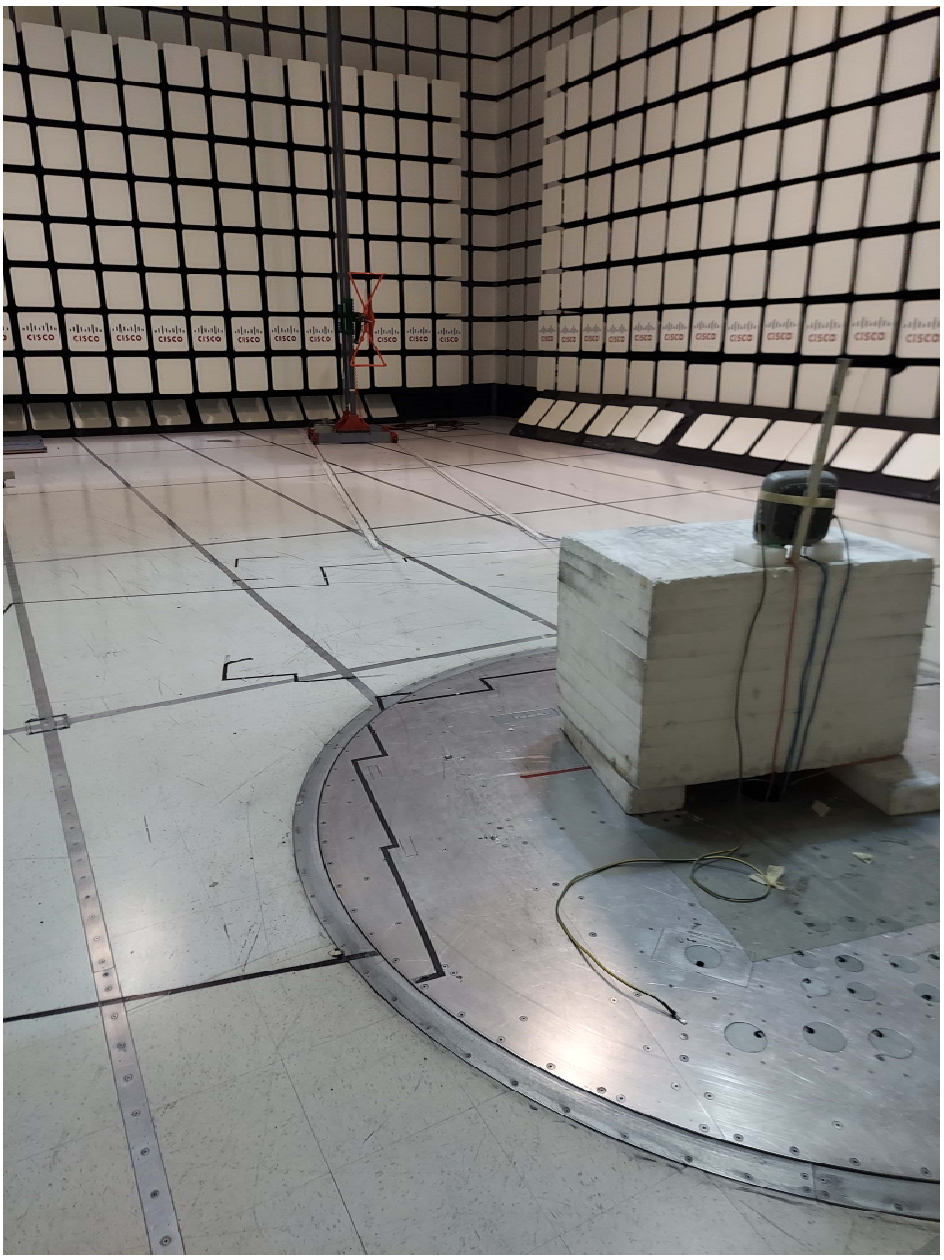
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5603	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CNS13438:2006 KN32:2015	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. As Appropriate: Korea Test at Fastest Ethernet Rate Taiwan Assess All Ethernet Rates
Basic Standard	CISPR16 Series KN16 Series		
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 5603-1 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5603-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	POE 60W	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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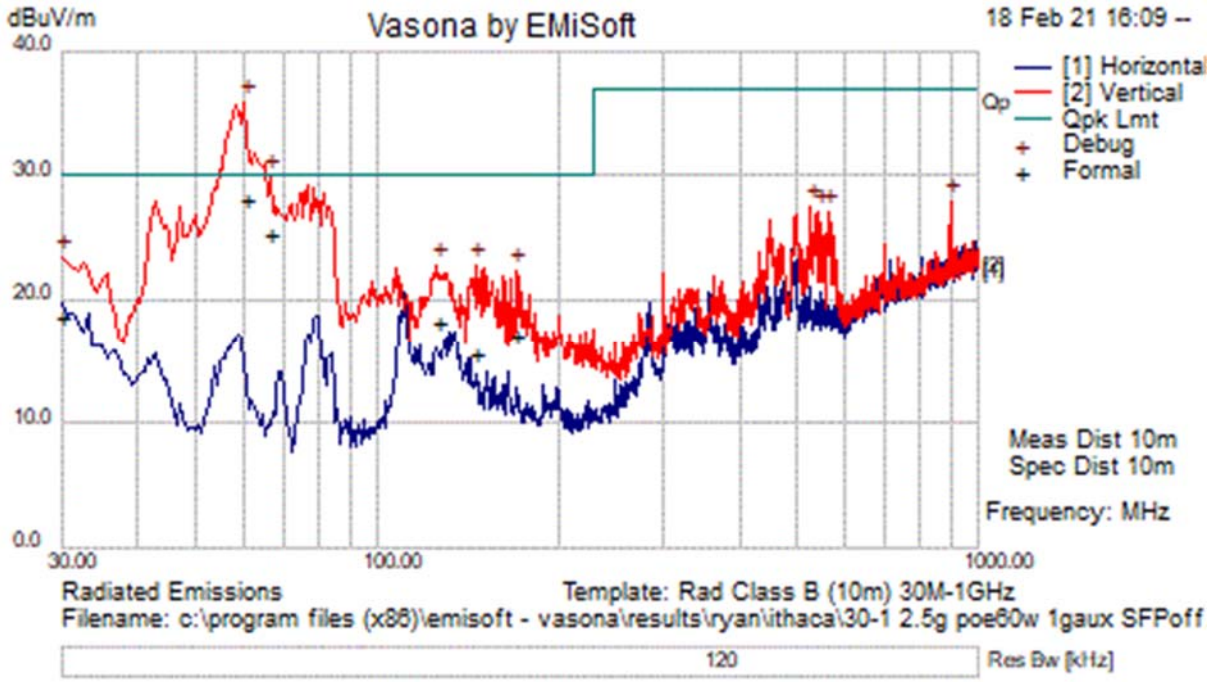
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: 30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/16:09, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB/m**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.673	29.0	1.2	-14.5	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.1	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.2	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

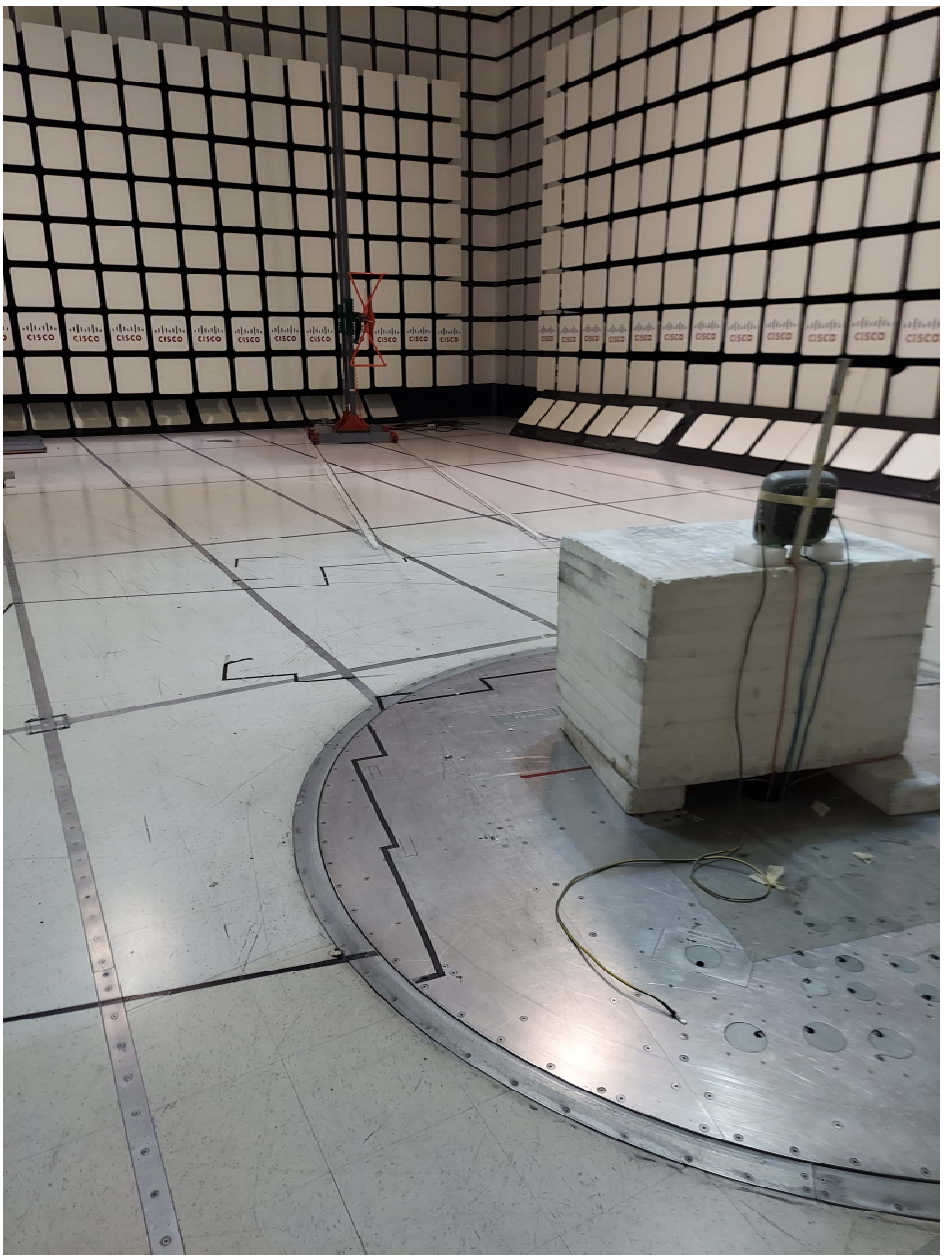
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5603-2 Subtest Date : 2/19/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	5603-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	POE
Subtest Result	Pass - Uncertain

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Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

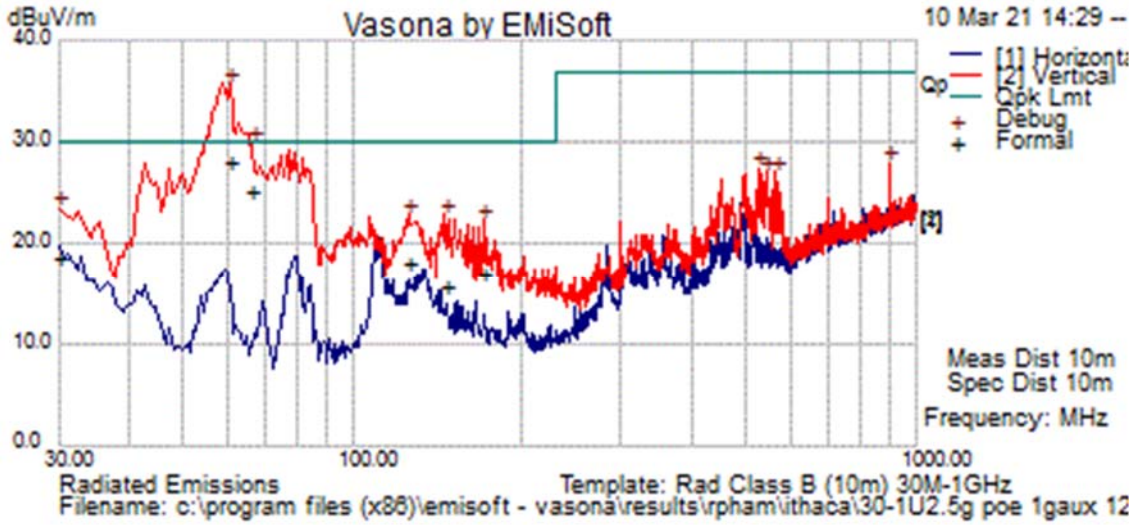
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Rypham
Lab Used	BP-10m-chamber
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:30, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.673	29.0	1.2	-14.6	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.2	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.3	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

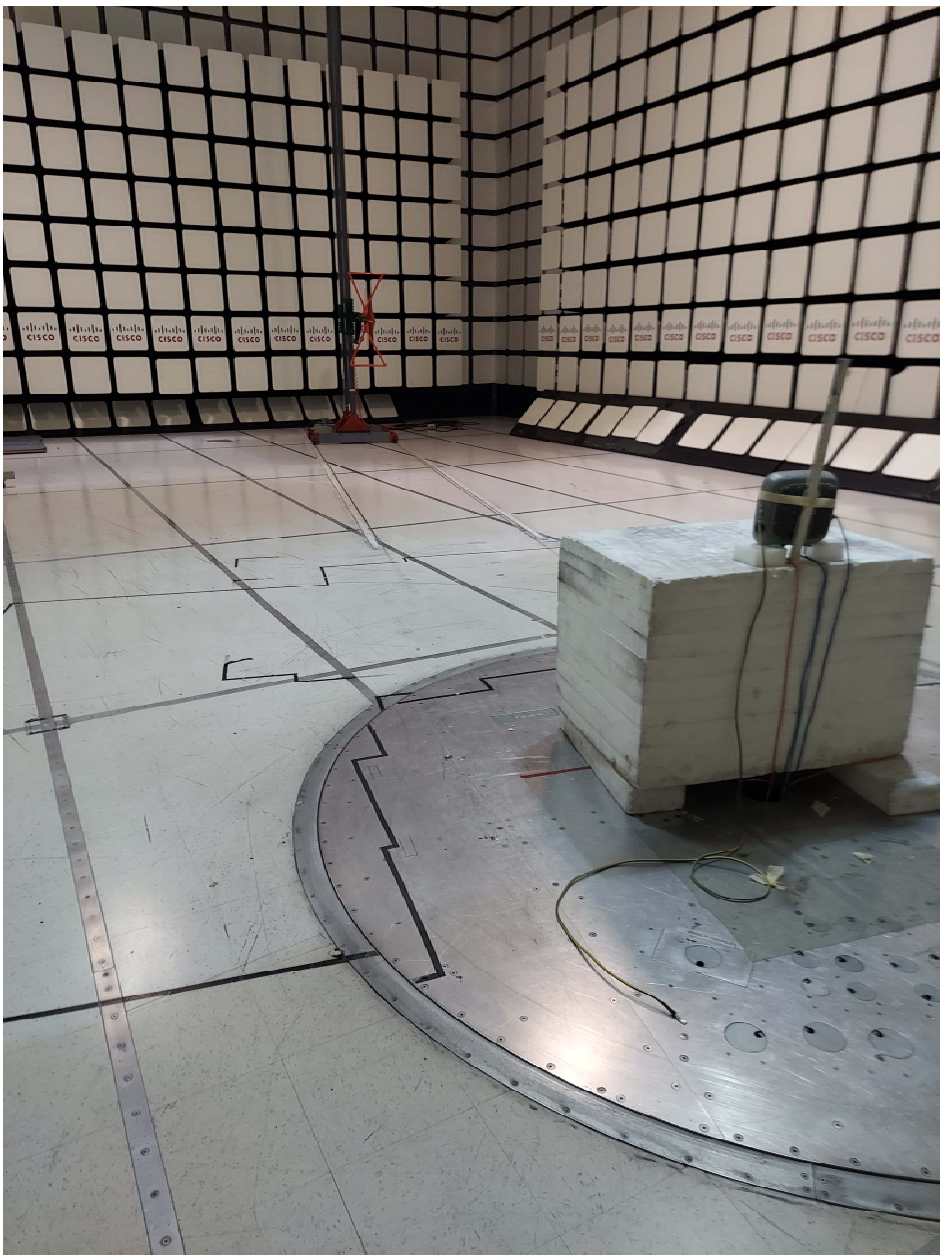
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5606 Test Type: Radiated Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
KN32:2015	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Korea 220V 60Hz +/- 20%
Basic Standard	KN16 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5606-1 Subtest Date : 3/8/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5606-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	207.4	
Subtest Result	Pass	
Comments on the above Test Results	EUT tested in wall/pole mount configuration Test mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	75.8	
Humidity: (10 to 75)%	30.6	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re1-6g 220v w2.5gl1g sh [7-3-2021 18.7]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

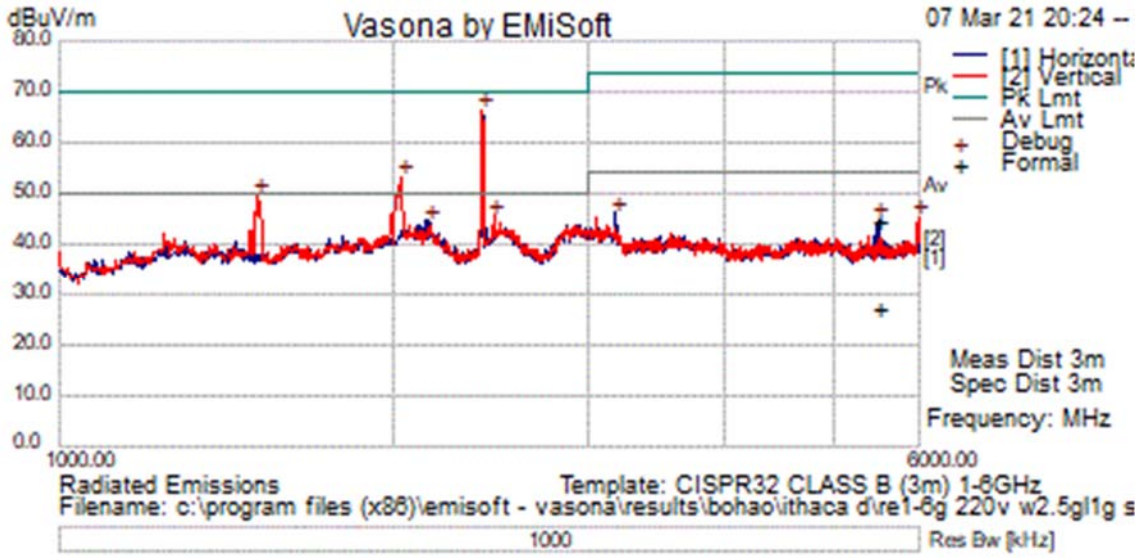
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re1-6g 220v w2.5gl1g sh [7-3-2021 18.7]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / cispr32 b 1-6ghz peak
Range	1000 - 6000MHz
Engineer	rypham, dthai
Lab Used	Bldg P 10m Chamber.
Template	CISPR32 CLASS B (3m) 1-6GHz
Date/Time	07 Mar 21/20:25, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB/m**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	3187.670	50.9	5.5	-15.5	40.9	Average Max	H	100	61	54.0	-13.1	Pass	

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2	1514.173	69.0	3.6	-20.7	51.9	Peak Max	V	100	332	70.0	-18.1	Pass	
3	2039.068	64.5	4.3	-17.0	51.8	Peak Max	V	100	119	70.0	-18.2	Pass	
4	2039.068	43.9	4.3	-17.0	31.2	Average Max	V	100	119	50.0	-18.8	Pass	
5	2472.883	43.0	4.8	-16.9	30.9	Average Max	V	100	357	50.0	-19.1	Pass	
6	1514.173	44.1	3.6	-20.7	27.0	Average Max	V	100	332	50.0	-23.0	Pass	
7	3187.670	58.0	5.5	-15.5	47.9	Peak Max	H	100	61	74.0	-26.1	Pass	
8	5980.328	35.2	8.0	-15.7	27.5	Average Max	V	100	339	54.0	-26.5	Pass	
9	5497.128	36.4	7.6	-16.6	27.5	Average Max	H	100	6	54.0	-26.5	Pass	
10	2472.883	55.2	4.8	-16.9	43.1	Peak Max	V	100	357	70.0	-26.9	Pass	
11	5980.328	53.0	8.0	-15.7	45.3	Peak Max	V	100	339	74.0	-28.7	Pass	
12	5497.128	53.8	7.6	-16.6	44.8	Peak Max	H	100	6	74.0	-29.2	Pass	

Test Result-Attachments

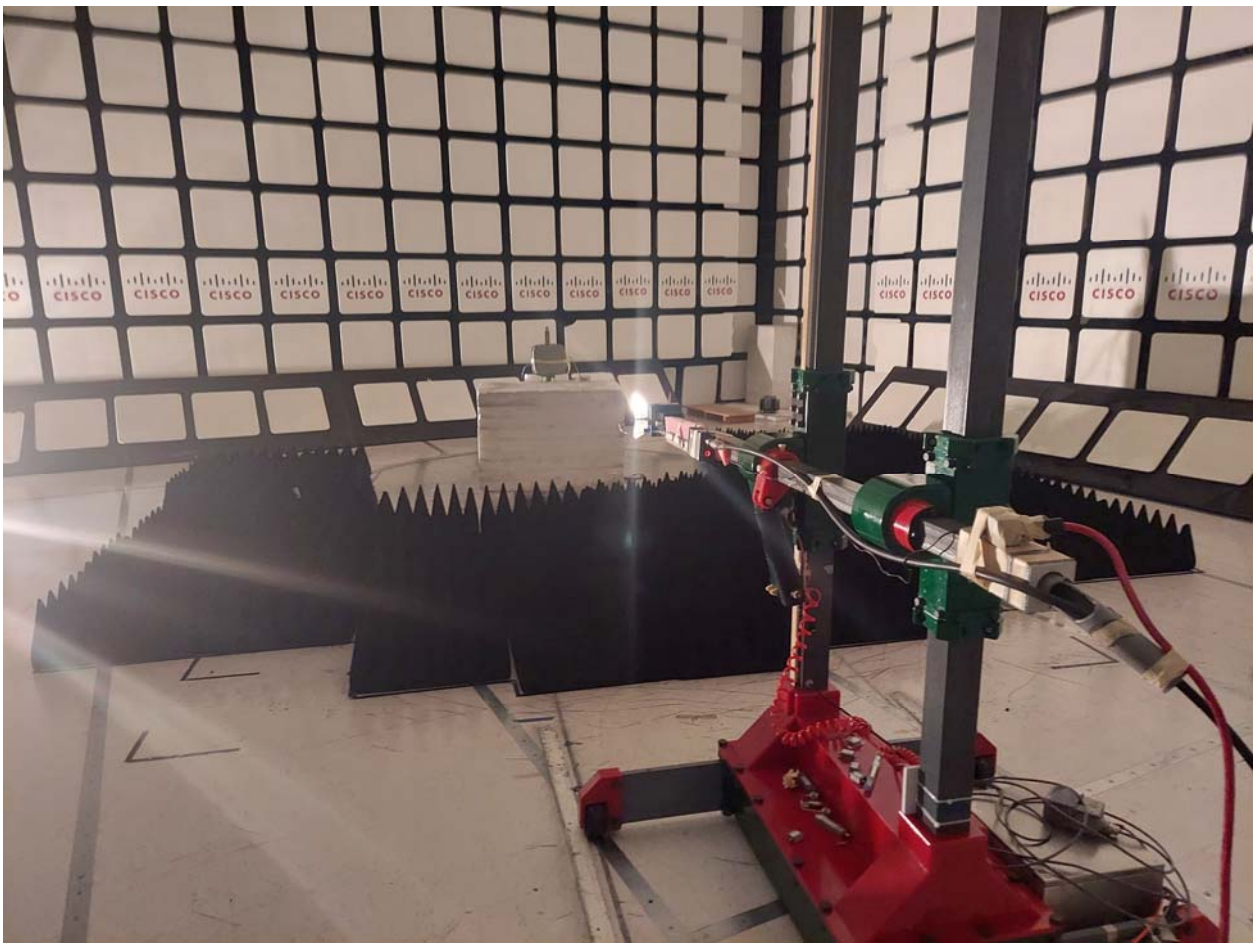
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

Photographs

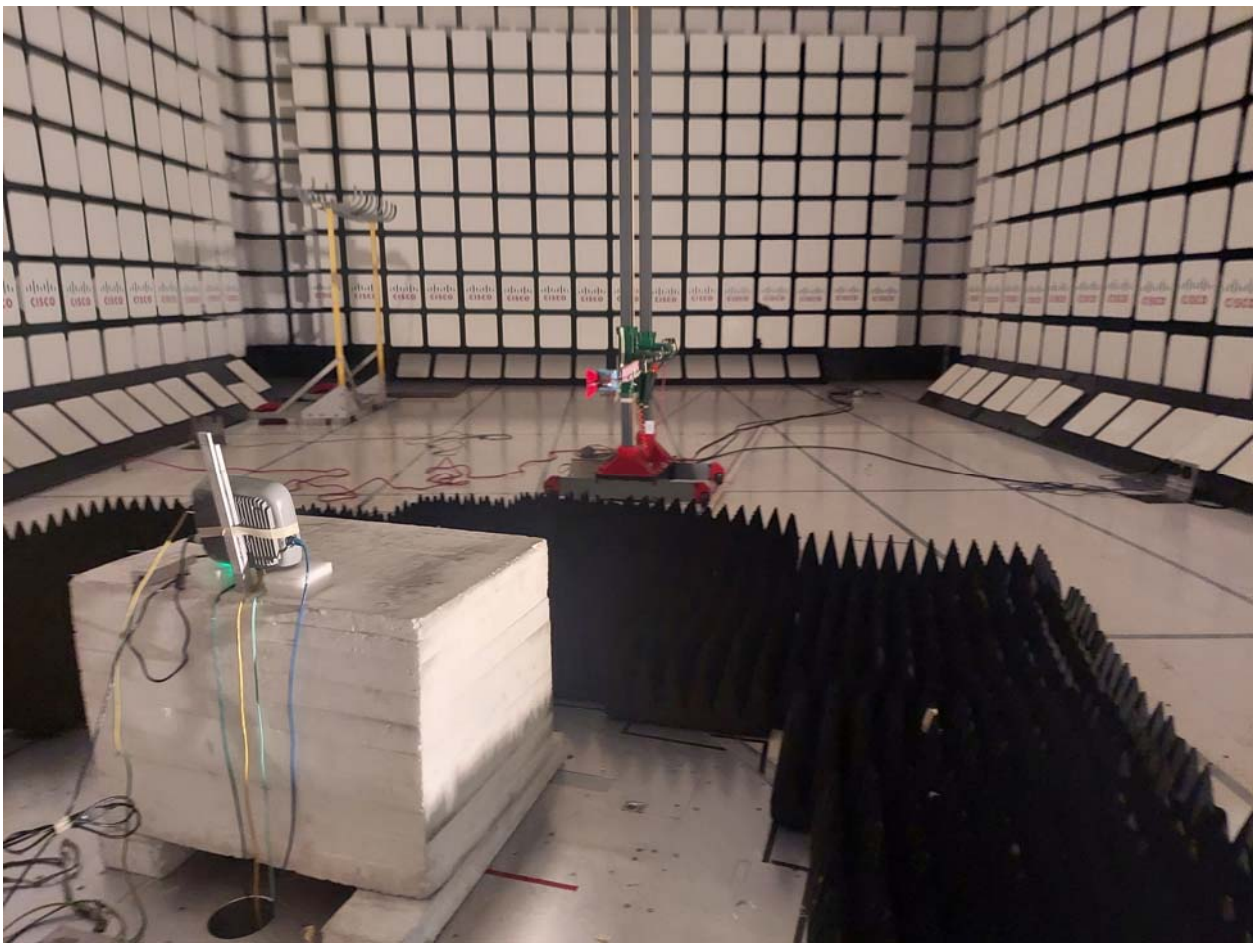
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Test Case Details

TestCase ID: 5631	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CNS13438:2006	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz AC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Taiwan : Assess All Ethernet rates.
Basic Standard	CISPR16 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5631-1 Subtest Date : 3/8/2021	
Engineer	Ryan Pham
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	5631-1
Port Reference	[Encl] Enclosure Port
Measured Voltage	207.4
Subtest Result	Pass
Comments on the above Test Results	EUT tested in wall/pole mount configuration All voltages tested for 120V/60Hz, no significant difference observed Test mentored by Dennis Thai
Environmental Conditions	
Temperature: (59 to 95)°F	75.8
Humidity: (10 to 75)%	30.6

Test Result File	Start Freq[MHz]	Stop Freq[MHz]
re1-6g 220v w2.5gl1g sh [7-3-2021 18.7]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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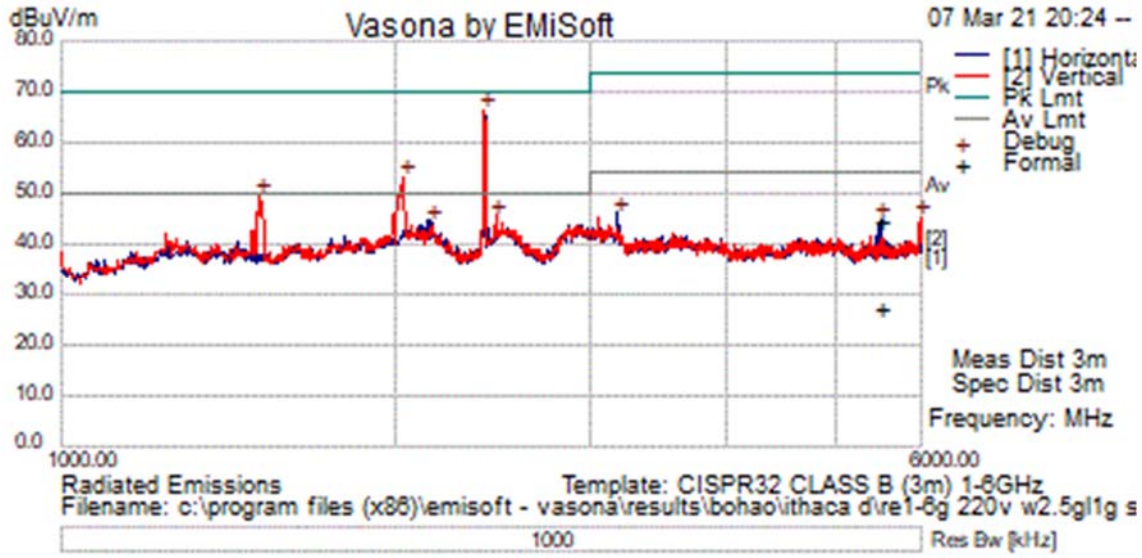
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re1-6g 220v w2.5gl1g sh [7-3-2021 18.7]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / cispr32 b 1-6ghz peak
Range	1000 - 6000MHz
Engineer	rypham, dthai
Lab Used	Bldg P 10m Chamber.
Template	CISPR32 CLASS B (3m) 1-6GHz
Date/Time	07 Mar 21/20:25, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data													
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments

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1	3187.670	50.9	5.5	-15.5	40.9	Average Max	H	100	61	54.0	-13.1	Pass	
2	1514.173	69.0	3.6	-20.7	51.9	Peak Max	V	100	332	70.0	-18.1	Pass	
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4	2039.068	43.9	4.3	-17.0	31.2	Average Max	V	100	119	50.0	-18.8	Pass	
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7	3187.670	58.0	5.5	-15.5	47.9	Peak Max	H	100	61	74.0	-26.1	Pass	
8	5980.328	35.2	8.0	-15.7	27.5	Average Max	V	100	339	54.0	-26.5	Pass	
9	5497.128	36.4	7.6	-16.6	27.5	Average Max	H	100	6	54.0	-26.5	Pass	
10	2472.883	55.2	4.8	-16.9	43.1	Peak Max	V	100	357	70.0	-26.9	Pass	
11	5980.328	53.0	8.0	-15.7	45.3	Peak Max	V	100	339	74.0	-28.7	Pass	
12	5497.128	53.8	7.6	-16.6	44.8	Peak Max	H	100	6	74.0	-29.2	Pass	

Test Result-Attachments

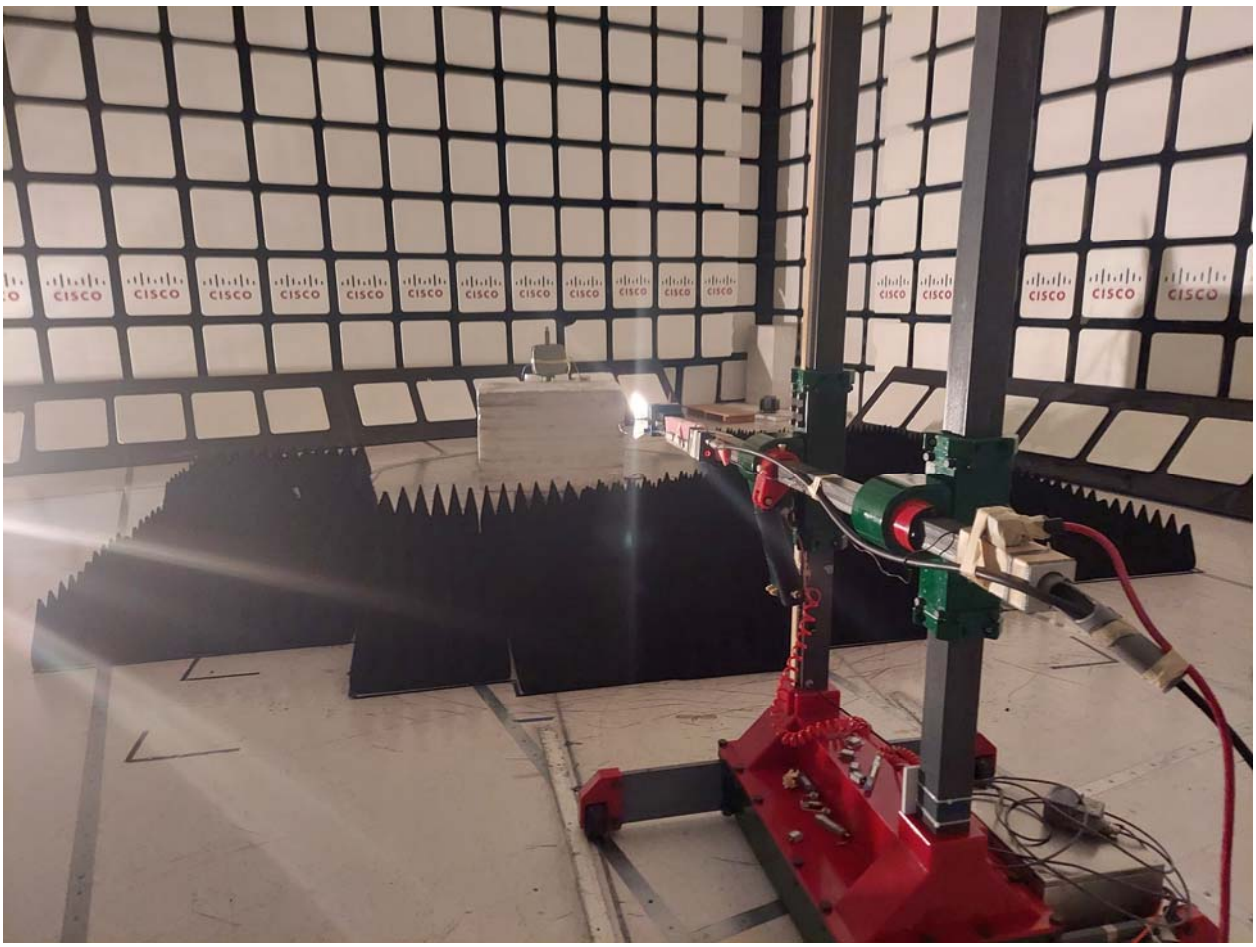
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

Photographs

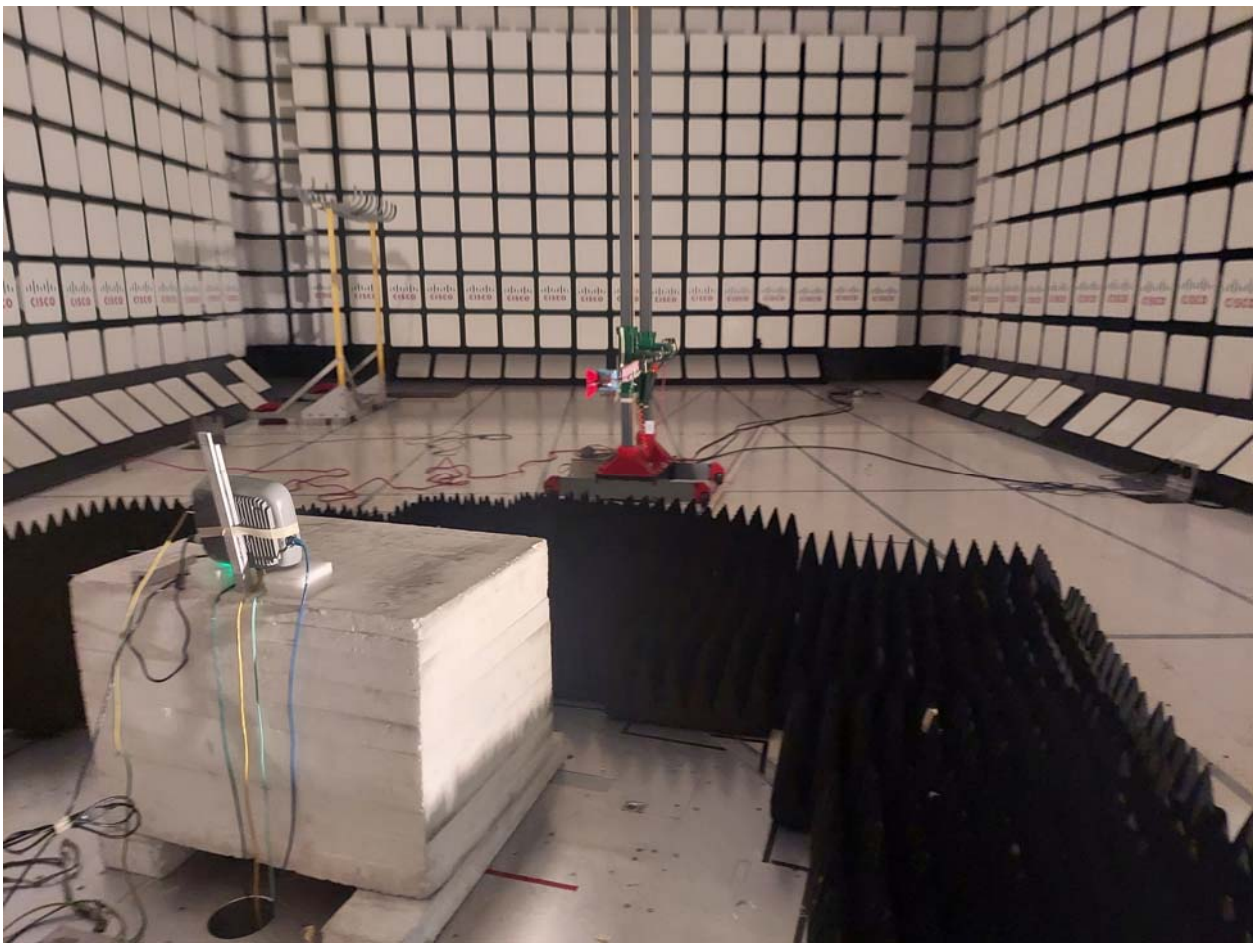
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Test Case Details

TestCase ID: 5695	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz AC Power Class: B Range: Above 1GHz Detector: Peak & Average Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
Basic Standard			
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5695-2 Subtest Date : 2/19/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	5695-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	115.4
Subtest Result	Pass
Comments on the above Test Results	Mentored by Dennis Thai Notch filters at 2.4 ghz and 5.2 ghz used Mentored by Dennis Thai
Environmental Conditions	
Temperature: (59 to 95)°F	74.1
Humidity: (10 to 75)%	34.9

Test Result File	Start Freq[MHz]	Stop Freq[MHz]
re 1-6g 115v50h 2.5g1g sh [19-3-2021 17.10]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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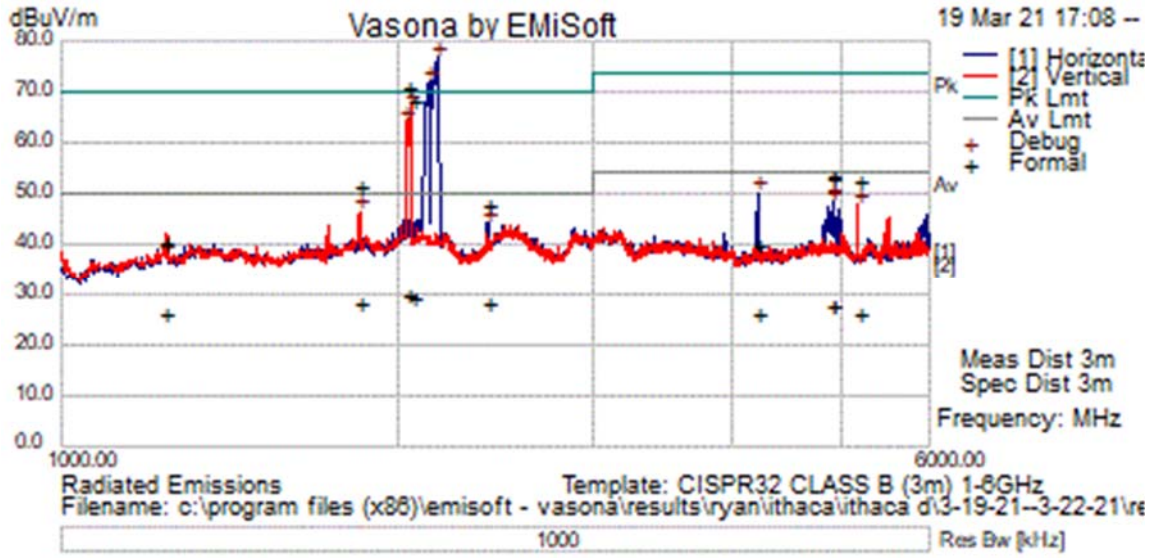
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re 1-6g 115v50h 2.5g1g sh [19-3-2021 17.10]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / cispr32 b 1-6ghz peak
Range	1000 - 6000MHz
Engineer	csulva
Lab Used	Bldg P 10m Chamber.
Template	CISPR32 CLASS B (3m) 1-6GHz
Date/Time	19 Mar 21/17:10, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data													
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments

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1	2177.500	89.6	4.4	-17.4	76.7	Peak [Scan]	H	100	61	50.0	26.7	Fail	Wifi
2	2140.000	85.0	4.4	-17.5	71.9	Peak [Scan]	H	100	234	50.0	21.9	Fail	Wifi
3	2060.000	79.9	4.3	-17.0	67.2	Peak [Scan]	V	100	56	50.0	17.2	Fail	Wifi
4	2037.500	76.8	4.3	-17.0	64.1	Peak [Scan]	V	100	56	50.0	14.1	Fail	Wifi
5	1850.619	66.0	4.1	-18.7	51.3	Peak Max	V	100	105	70.0	-18.7	Pass	
6	4915.542	62.2	7.1	-15.8	53.5	Peak Max	H	100	22	74.0	-20.5	Pass	
7	4928.236	61.5	7.1	-15.8	52.8	Peak Max	H	100	304	74.0	-21.2	Pass	
8	5180.683	60.8	7.4	-15.5	52.7	Peak Max	V	100	39	74.0	-21.3	Pass	
9	1850.619	43.1	4.1	-18.7	28.4	Average Max	V	100	105	50.0	-21.6	Pass	
10	2408.655	40.8	4.7	-17.1	28.4	Average Max	H	100	299	50.0	-21.6	Pass	
11	2408.655	60.4	4.7	-17.1	48.0	Peak Max	H	100	299	70.0	-22.0	Pass	
12	4928.236	36.4	7.1	-15.8	27.7	Average Max	H	100	304	54.0	-26.3	Pass	
13	4915.542	36.4	7.1	-15.8	27.6	Average Max	H	100	22	54.0	-26.4	Pass	
14	4222.122	37.6	6.5	-17.8	26.2	Average Max	H	100	339	54.0	-27.8	Pass	
15	5180.683	34.0	7.4	-15.5	25.9	Average Max	V	100	39	54.0	-28.1	Pass	
16	4222.122	51.1	6.5	-17.8	39.7	Peak Max	H	100	339	74.0	-34.3	Pass	

Test Result-Attachments

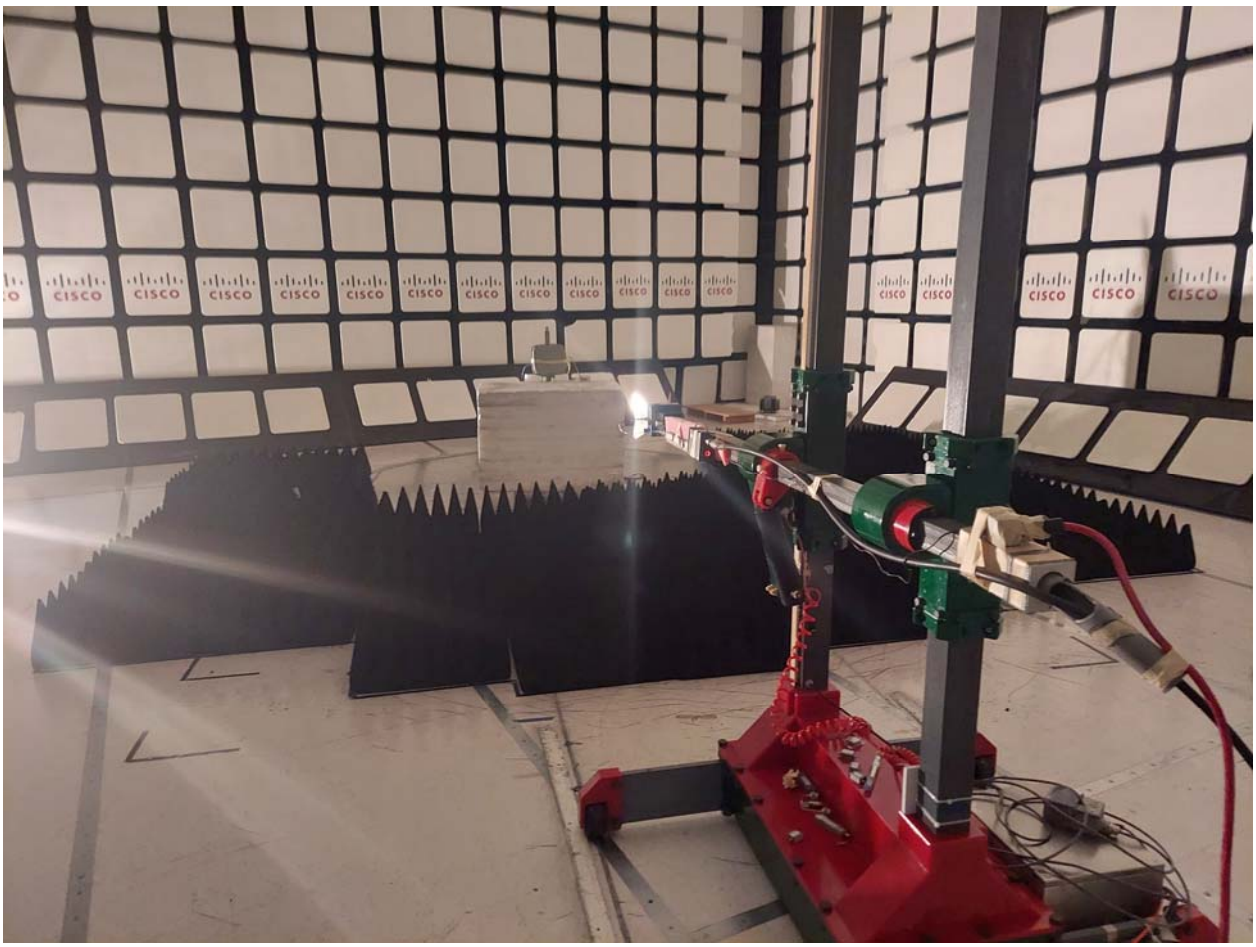
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	Horn

Photographs

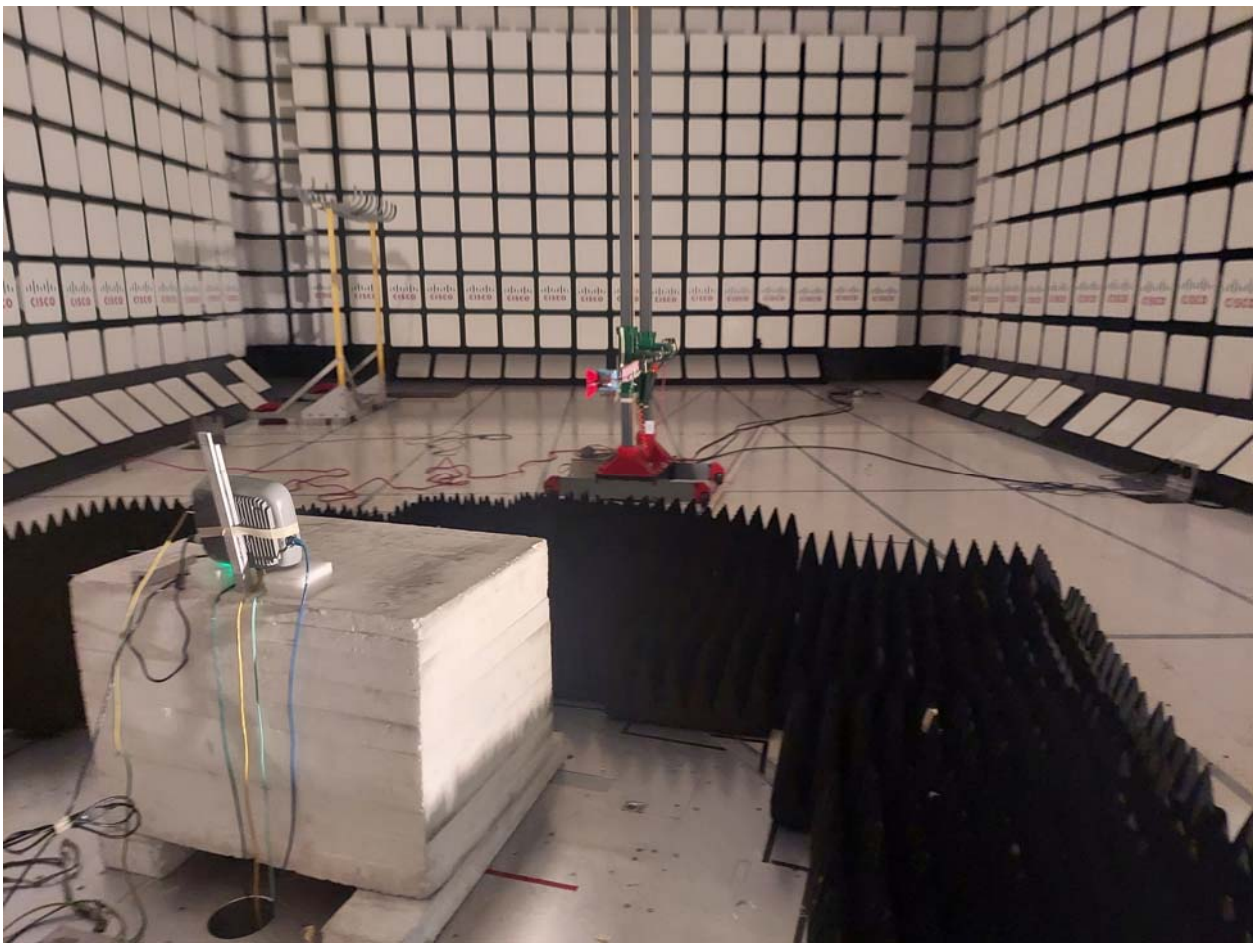
TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5697 Test Type: Radiated Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
Basic Standard			
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 5697-3 Subtest Date : 3/6/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5697-3	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	115.4	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	74.6	
Humidity: (10 to 75)%	31	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re30m-1g 115v w2.5gl1g sh [6-3-2021 14.7]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

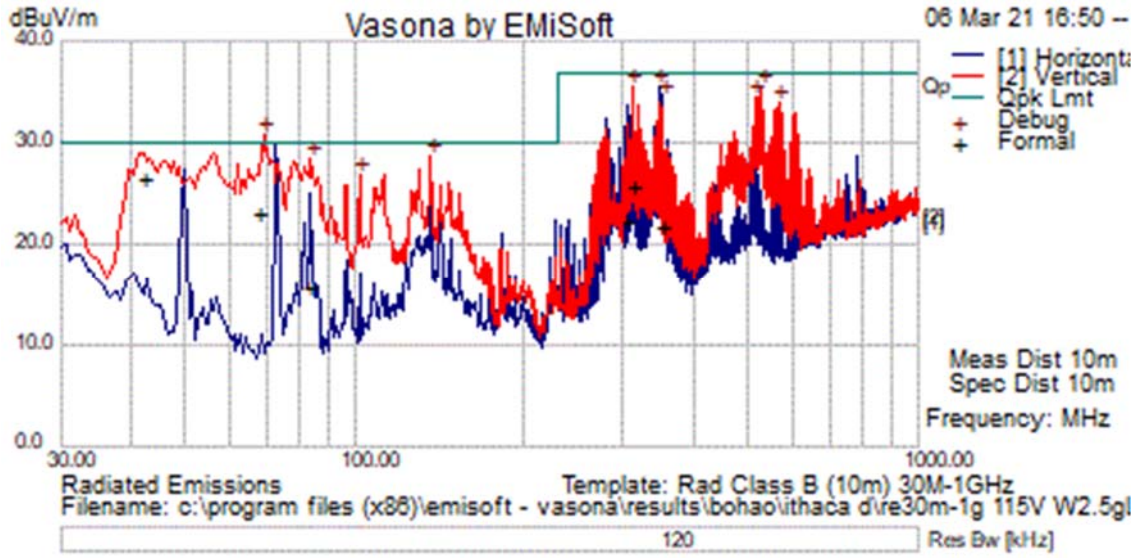
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re30m-1g 115v w2.5gl1g sh [6-3-2021 14.7]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	csulva trung jhuaman
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	06 Mar 21/17:24, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data													
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	346.330	45.8	2.0	-13.1	34.6	Quasi Max	H	287	64	37.0	-2.4	Pass	

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2	68.876	40.9	.8	-19.6	22.1	Quasi Max	V	123	209	30.0	-7.9	Pass	
3	83.160	46.1	.9	-20.2	26.8	Quasi Max	V	206	217	30.0	-3.2	Pass	
4	136.207	37.6	1.2	-13.9	24.8	Quasi Max	V	142	281	30.0	-5.2	Pass	
5	311.857	44.2	1.9	-13.4	32.7	Quasi Max	V	400	346	37.0	-4.3	Pass	
6	527.133	39.8	2.5	-10.6	31.7	Quasi Max	V	295	351	37.0	-5.3	Pass	

Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BILOG

Photographs

TITLE: NA
DESCRIPTION: NA



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TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 7554	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	
Basic Standard	EN55016 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7554-1 Subtest Date : 3/7/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	7554-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	230.4	
Subtest Result	Pass	
Comments on the above Test Results	EUT tested in wall/pole mount configuration Test mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	75.8	
Humidity: (10 to 75)%	30.6	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re1-6g 230v w2.5gl1g sh [7-3-2021 18.7]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

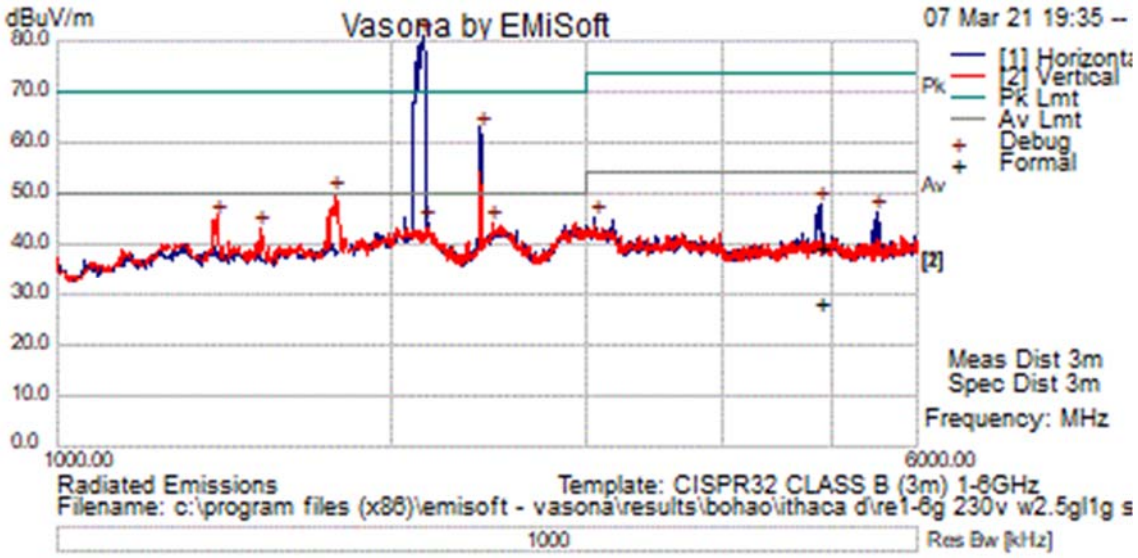
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System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re1-6g 230v w2.5gl1g sh [7-3-2021 18.7]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / cispr32 b 1-6ghz peak
Range	1000 - 6000MHz
Engineer	rypham, dthai
Lab Used	Bldg P 10m Chamber.
Template	CISPR32 CLASS B (3m) 1-6GHz
Date/Time	07 Mar 21/19:36, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data													
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	2412.500	75.4	4.7	-17.1	62.9	Peak [Scan]	H	100	302	50.0	12.9	Fail	WiFi

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2	2136.838	44.4	4.4	-17.4	31.3	Average Max	H	100	9	50.0	-18.7	Pass	
3	2154.373	44.2	4.4	-17.5	31.1	Average Max	H	100	360	50.0	-18.9	Pass	
4	2476.995	43.1	4.8	-16.8	31.0	Average Max	V	100	24	50.0	-19.0	Pass	
5	2154.373	62.7	4.4	-17.5	49.7	Peak Max	H	100	360	70.0	-20.3	Pass	
6	1783.798	43.5	4.0	-19.4	28.1	Average Max	V	100	68	50.0	-21.9	Pass	
7	1391.780	44.4	3.4	-20.2	27.7	Average Max	V	100	196	50.0	-22.3	Pass	
8	2136.838	60.5	4.4	-17.4	47.4	Peak Max	H	100	9	70.0	-22.6	Pass	
9	4901.228	37.1	7.1	-15.9	28.2	Average Max	H	100	262	54.0	-25.8	Pass	
10	2476.995	56.1	4.8	-16.8	44.0	Peak Max	V	100	24	70.0	-26.0	Pass	
11	1783.798	55.6	4.0	-19.4	40.1	Peak Max	V	100	68	70.0	-29.9	Pass	
12	1391.780	56.2	3.4	-20.2	39.4	Peak Max	V	100	196	70.0	-30.6	Pass	
13	4901.228	48.3	7.1	-15.9	39.5	Peak Max	H	100	262	74.0	-34.5	Pass	

Test Result-Attachments

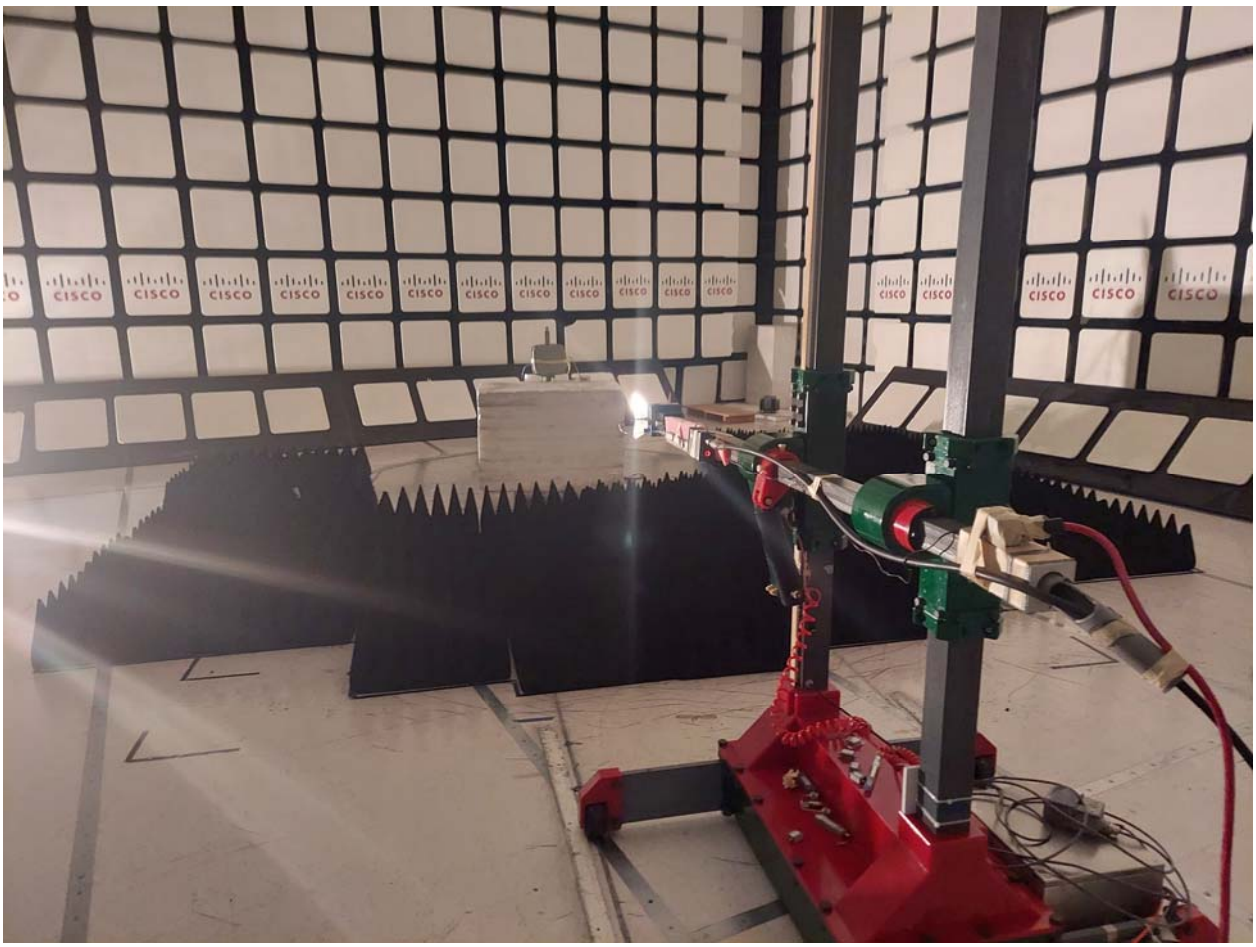
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

Photographs

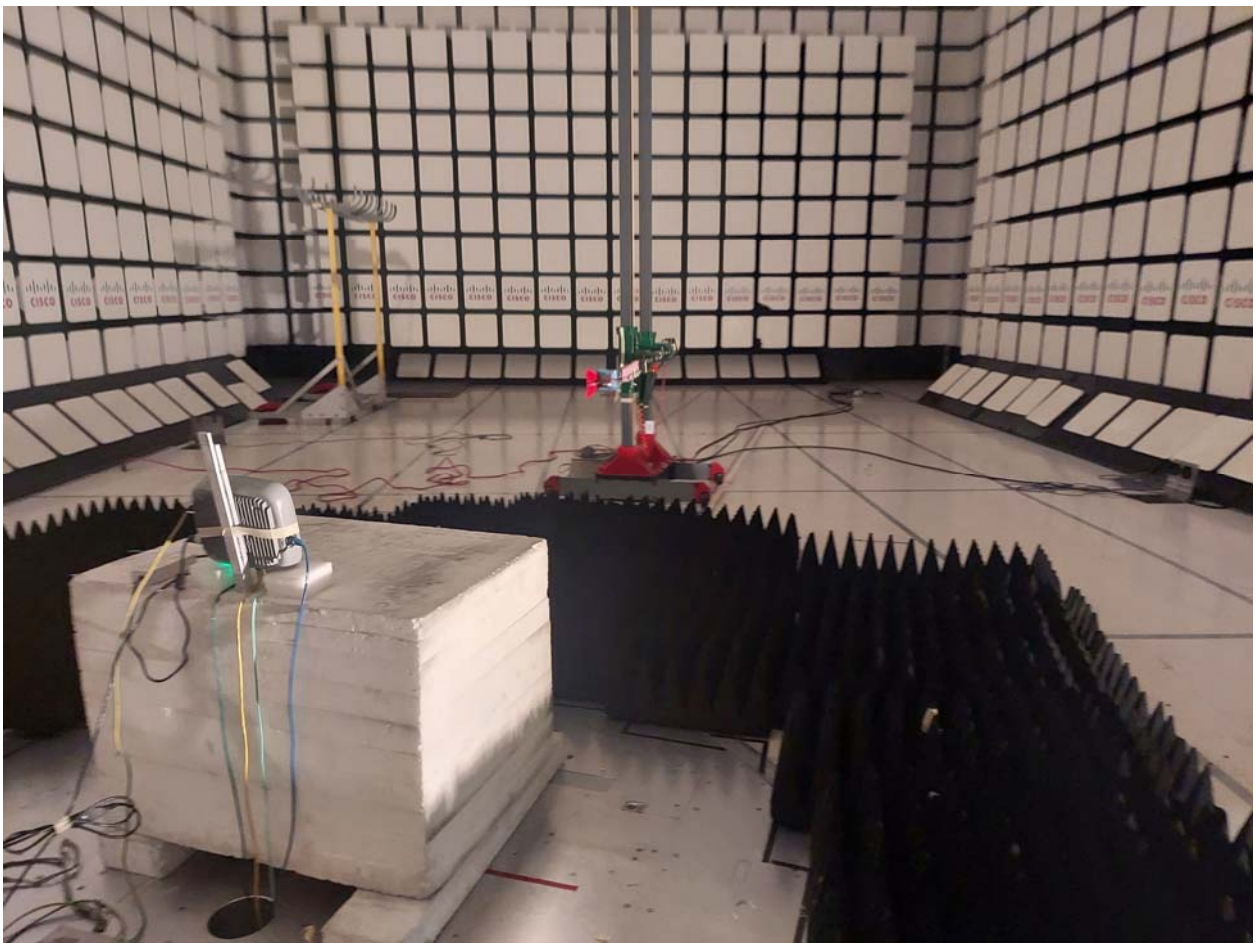
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Test Case Details

TestCase ID: 7560 Test Type: Radiated Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC or POE Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.
Basic Standard	EN55016 Series		
Overall Result	Pass - Uncertain		
Deviation	NA		

Subtest Details

Subtest Number : 7560-1 Subtest Date : 2/22/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	7560-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	60W	
Subtest Result	Pass - Uncertain	
Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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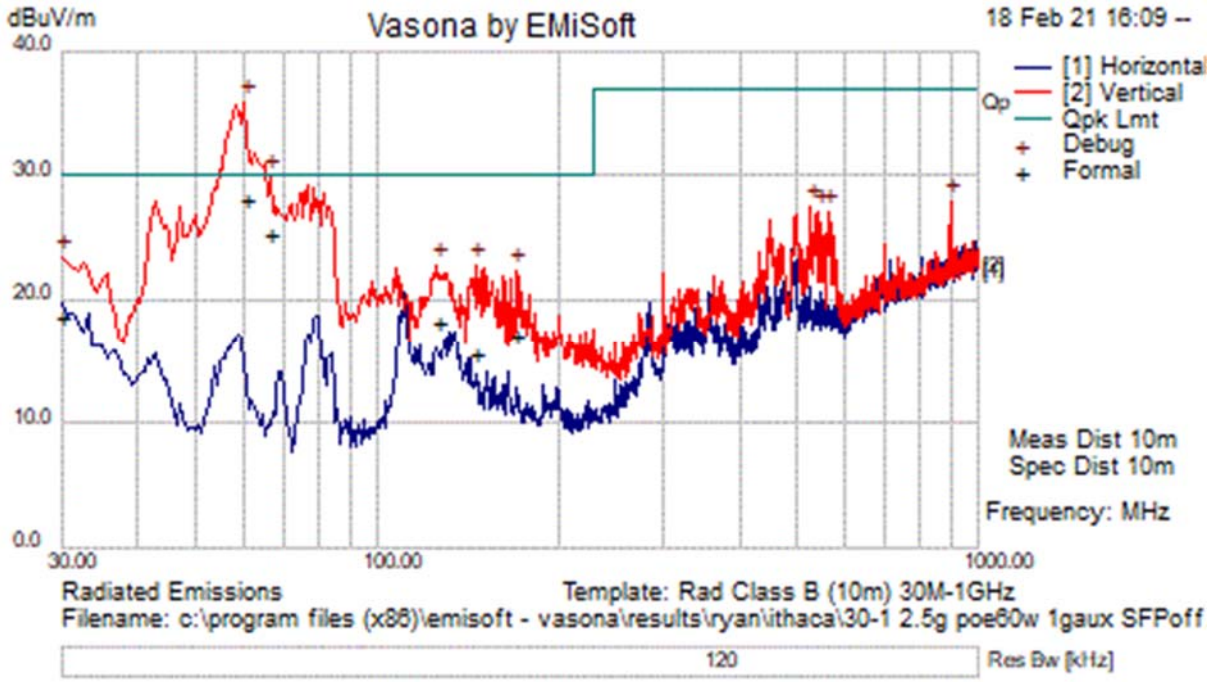
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: 30-1 2.5g poe60w 1gaux sfpoff [18-2-2021 16.9]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Ryan
Lab Used	Bldg P 10m Chamber.
Template	Rad Class B (10m) 30M-1GHz
Date/Time	18 Feb 21/16:09, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB/m**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.673	29.0	1.2	-14.5	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.1	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.2	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

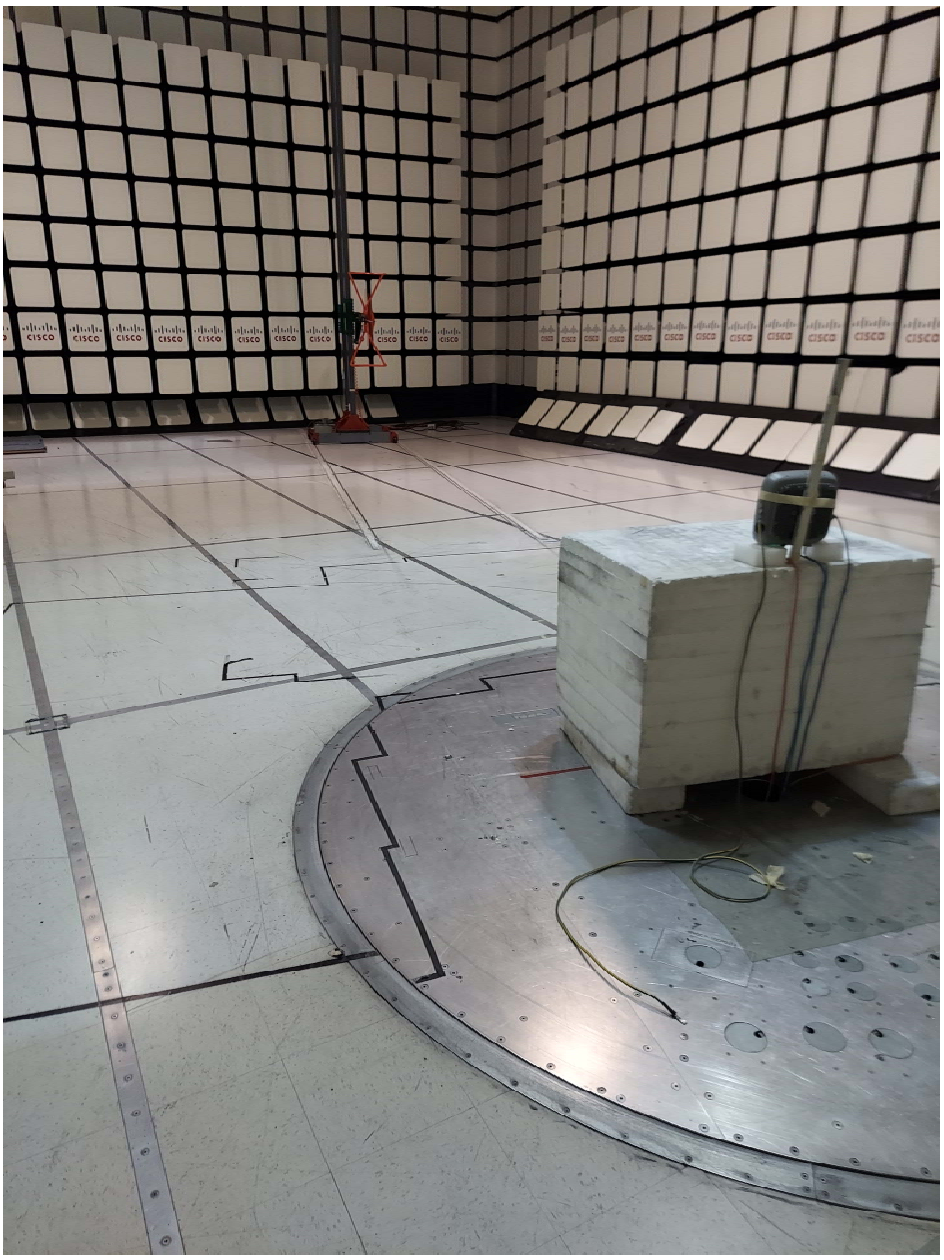
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7560-2 Subtest Date : 2/19/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	7560-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	POE
Subtest Result	Pass - Uncertain

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Comments on the above Test Results	WALL position POE60W WAN2.5g LAN1G Mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	76.5	
Humidity: (10 to 75)%	37.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

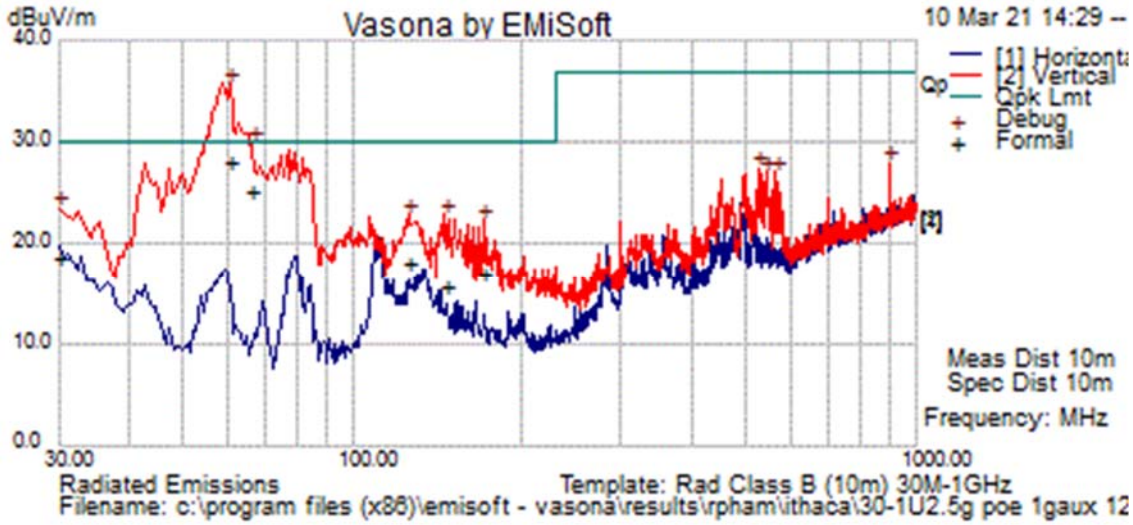
System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1u2.5g poe60w 1gaux sfpoff [10-3-2021 14.20]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Rypham
Lab Used	BP-10m-chamber
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:30, Status: Filed on
Graphical Data	

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Formal Data													
No	**Frequency MHz**	**Raw dBuV**	**Cable Loss**	**AF dB**	**Level dBuV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBuV/m**	**Margin dB**	**Pass /Fail**	**Comments**
1	145.673	29.0	1.2	-14.6	15.6	Quasi Max	V	107	18	30.0	-14.4	Pass	
2	170.250	31.3	1.3	-15.5	17.2	Quasi Max	V	108	100	30.0	-12.9	Pass	
3	30.008	24.8	.7	-6.7	18.8	Quasi Max	V	249	186	30.0	-11.2	Pass	
4	66.151	44.3	.8	-19.8	25.3	Quasi Max	V	158	210	30.0	-4.7	Pass	
5	60.529	47.4	.8	-20.1	28.1	Quasi Max	V	255	217	30.0	-1.9	Pass	
6	125.781	30.6	1.1	-13.5	18.2	Quasi Max	V	290	245	30.0	-11.8	Pass	

Test Result-Attachments

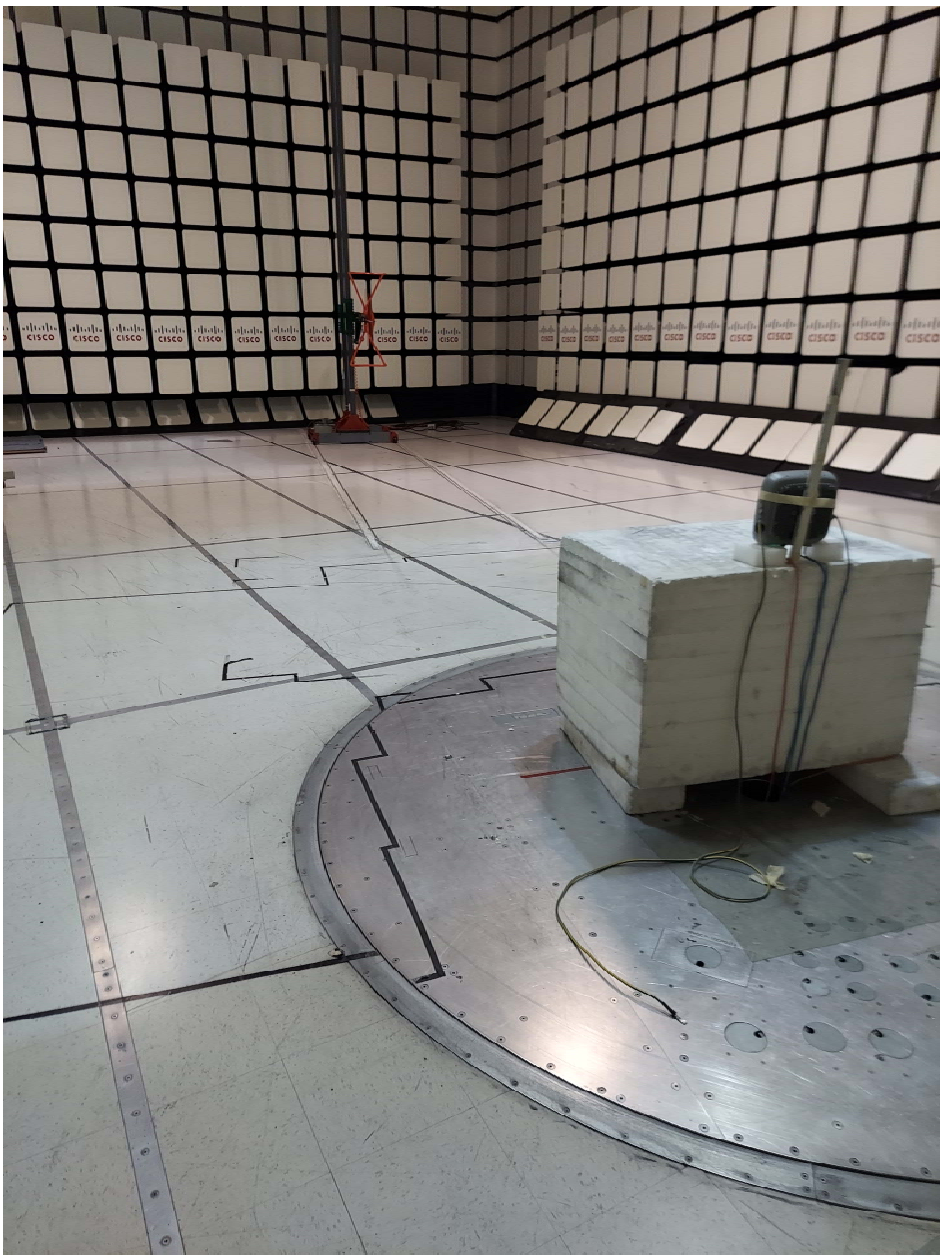
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	BICON

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7574	Test Type: Radiated Emissions		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.
Basic Standard			
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7574-3 Subtest Date : 3/23/2021		
Engineer	Ryan Pham	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	7574-3	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	207.4	
Subtest Result	Pass	
Comments on the above Test Results	EUT tested in wall/pole mount configuration Test mentored by Dennis Thai	
Environmental Conditions		
Temperature: (59 to 95)°F	75.8	
Humidity: (10 to 75)%	30.6	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
30-1u2.5g poe 1gaux 120 60 [10-3-2021 14.20]	30	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

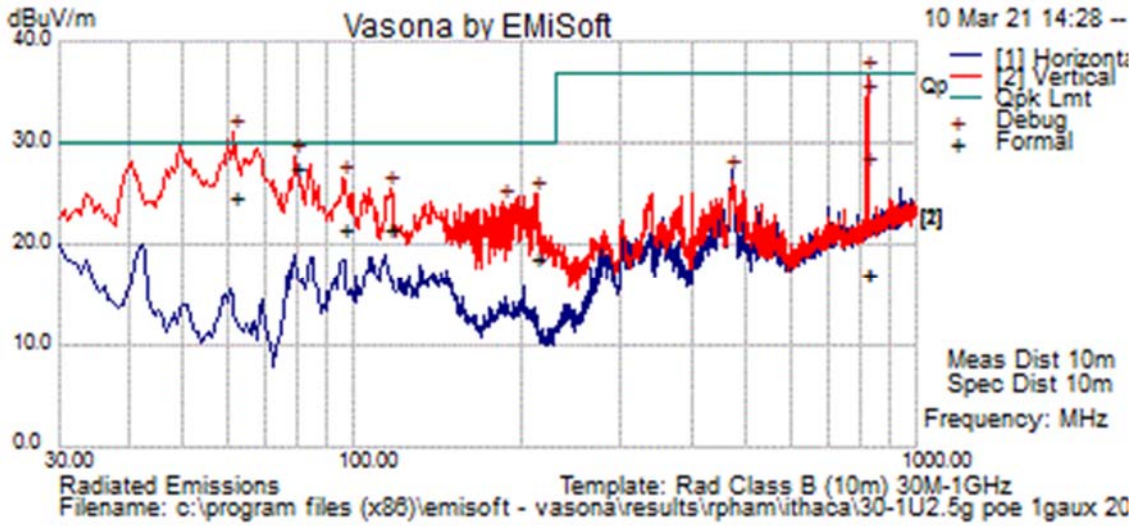
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System Number	Description	Samples	System under Test
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No
3	C9124AXI-X Ithaca I	10	Yes

Test Results Details

File Name: 30-1u2.5g poe 1gaux 120 60 [10-3-2021 14.20]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / BSMI RE B (10m)
Range	30 - 1000MHz
Engineer	Rypham
Lab Used	BP-10m-chamber
Template	Rad Class B (10m) 30M-1GHz
Date/Time	10 Mar 21/14:29, Status: Filed on
Graphical Data	



Formal Data													
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	78.922	46.7	.9	-20.0	27.6	Quasi Max	V	159	326	30.0	-2.4	Pass	
2	61.677	43.9	.8	-20.0	24.7	Quasi Max	V	170	290	30.0	-5.3	Pass	
3	116.711	34.2	1.1	-13.8	21.5	Quasi Max	V	115	55	30.0	-8.5	Pass	

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4	96.115	38.8	1.0	-18.3	21.5	Quasi Max	V	132	308	30.0	-8.6	Pass	
5	211.943	33.7	1.5	-16.7	18.6	Quasi Max	V	142	46	30.0	-11.4	Pass	
6	819.580	20.6	3.1	-6.6	17.1	Quasi Max	V	286	317	37.0	-19.9	Pass	
7	820.732	20.6	3.1	-6.6	17.1	Quasi Max	V	376	186	37.0	-19.9	Pass	

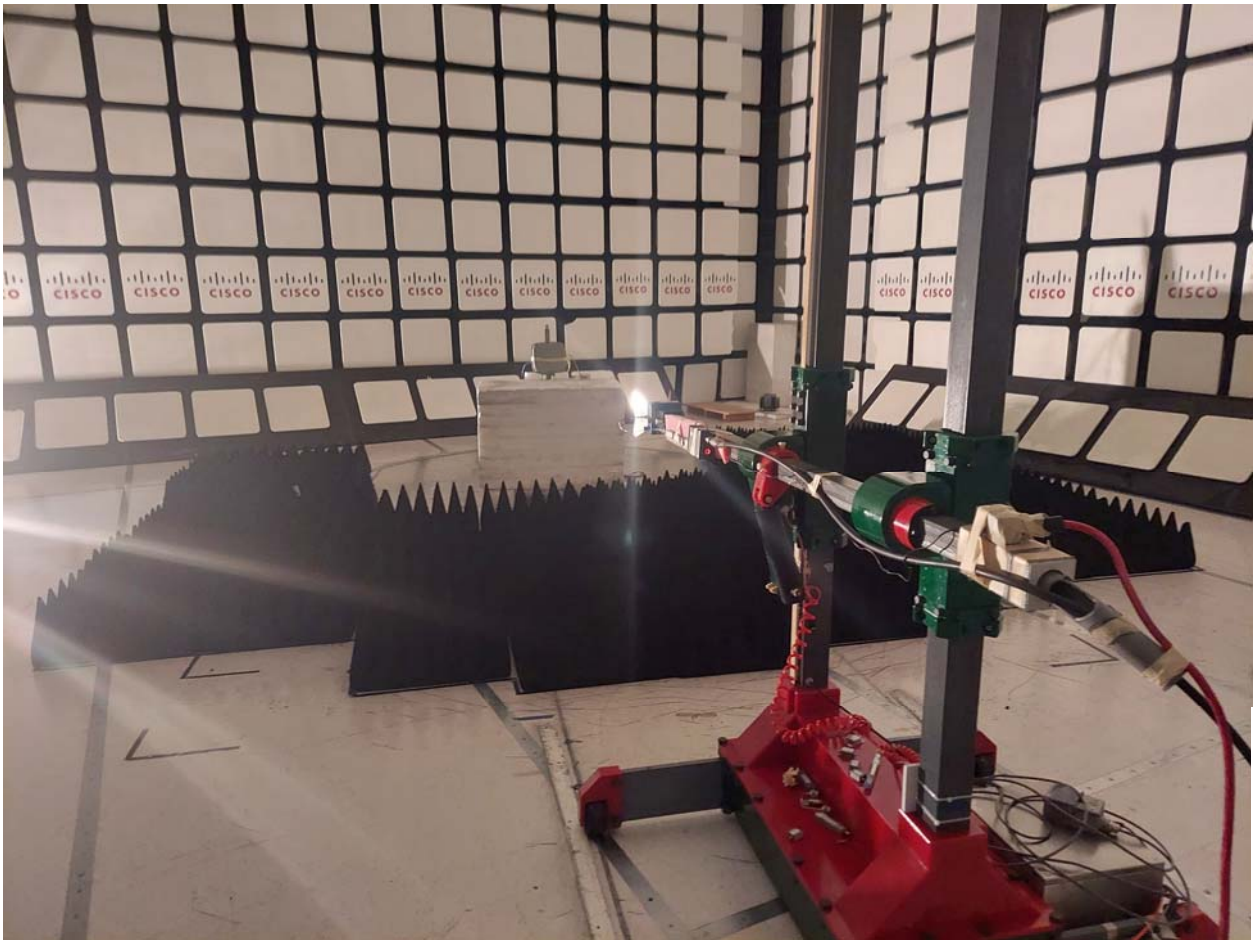
Test Result-Attachments

Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	HORN

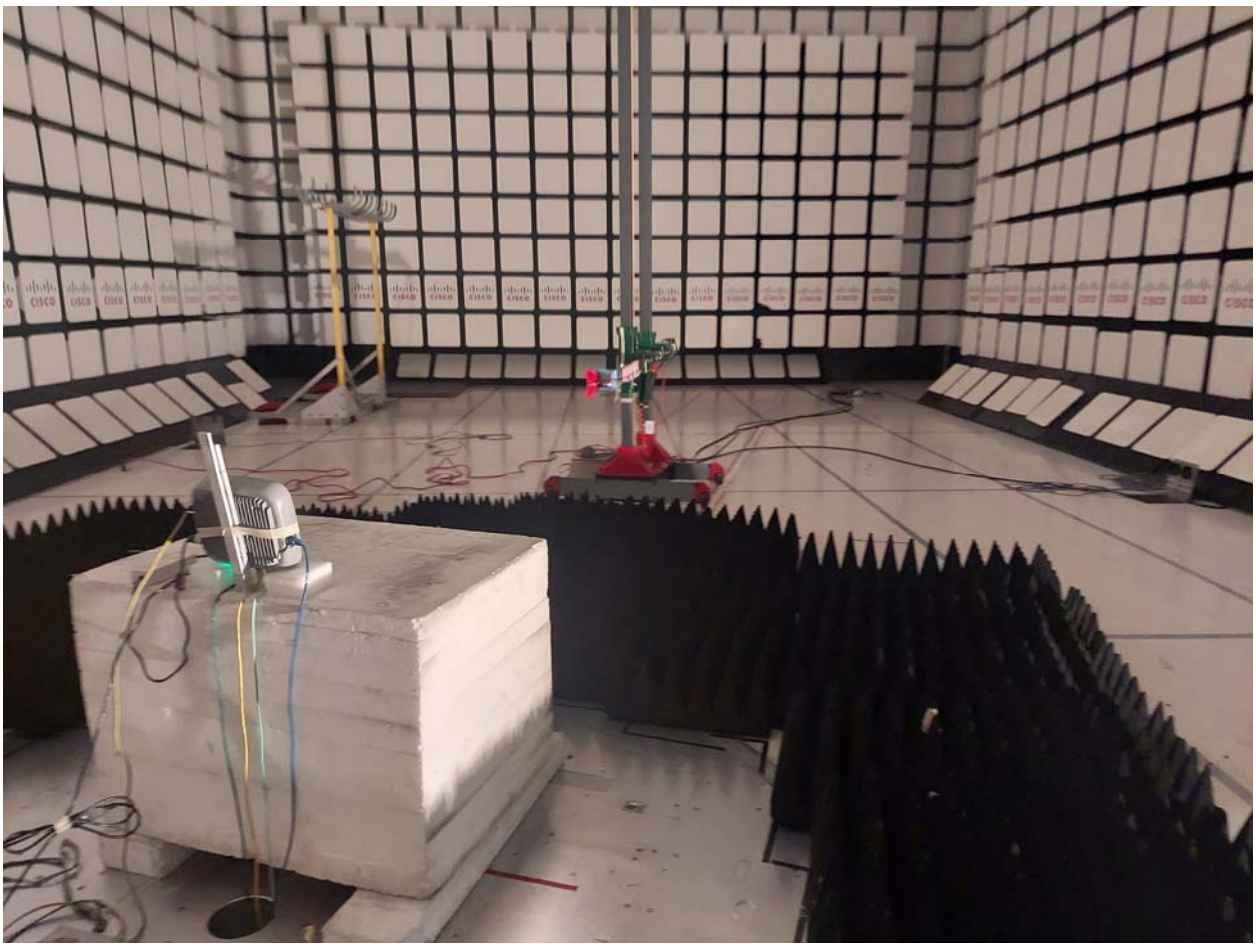
Photographs

TITLE: NA
DESCRIPTION: NA



TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7582 Test Type: Radiated Emissions			
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR32:2015:Ed:2 CNS13438:2006 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : DC or POE Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	As Appropriate: Test at Fastest Ethernet Rate except for : Taiwan : Assess All Ethernet rates.
Basic Standard	EN55016 Series		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7582-2 Subtest Date : 2/19/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	7582-2	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	POE	
Subtest Result	Pass	
Comments on the above Test Results	Mentored by Dennis Thai Notch filters at 2.4 ghz and 5.2 ghz used 2.2 ghz and 2.4 ghz are wifi signals	
Environmental Conditions		
Temperature: (59 to 95)°F	74.1	
Humidity: (10 to 75)%	34.9	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
re 1-6g poe 2.5g1g sh [22-3-2021 9.58]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

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Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

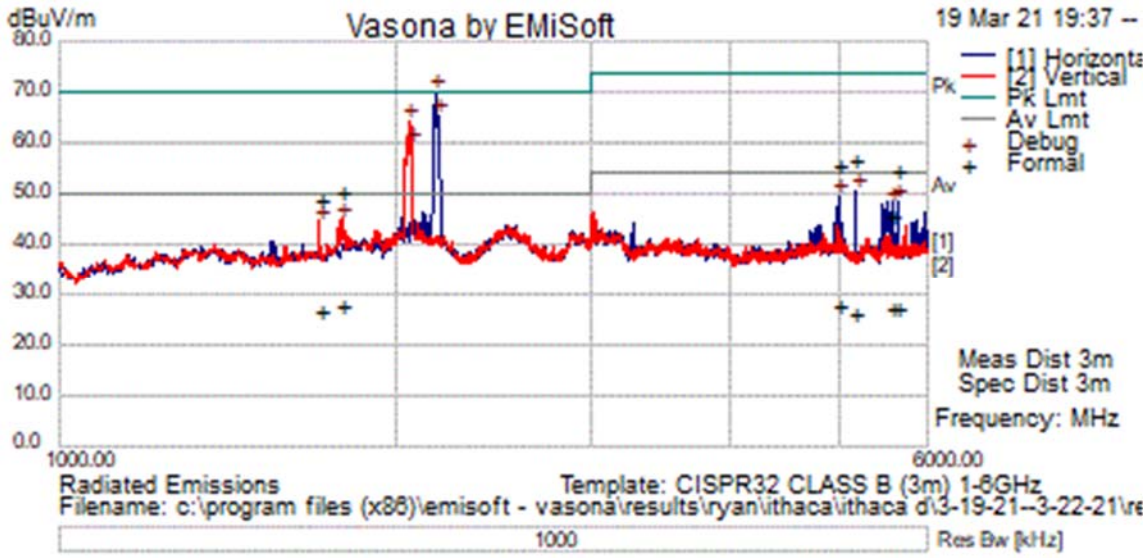
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: re 1-6g poe 2.5g1g sh [22-3-2021 9.58]

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / cispr32 b 1-6ghz peak
Range	1000 - 6000MHz
Engineer	csulva
Lab Used	Bldg P 10m Chamber.
Template	CISPR32 CLASS B (3m) 1-6GHz
Date/Time	19 Mar 21/19:37, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	



Formal Data

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No	Frequency MHz	Raw dBuV	Cable Loss	AF dB/m	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	5178.347	64.7	7.3	-15.4	56.6	Peak Max	H	100	309	74.0	-17.4	Pass	
2	4995.667	64.2	7.2	-15.9	55.6	Peak Max	H	100	286	74.0	-18.4	Pass	
3	1793.775	65.8	4.0	-19.3	50.5	Peak Max	V	100	253	70.0	-19.5	Pass	
4	1709.706	65.4	3.9	-20.2	49.1	Peak Max	V	100	53	70.0	-20.9	Pass	
5	5640.995	63.6	7.8	-16.5	54.9	Peak Max	H	100	289	74.0	-19.1	Pass	
6	5580.621	54.5	7.7	-16.5	45.7	Peak Max	H	100	355	74.0	-28.3	Pass	
7	5178.347	34.2	7.3	-15.4	26.1	Average Max	H	100	309	54.0	-27.9	Pass	
8	4995.667	36.2	7.2	-15.9	27.6	Average Max	H	100	286	54.0	-26.4	Pass	
9	1793.775	42.9	4.0	-19.3	27.5	Average Max	V	100	253	50.0	-22.5	Pass	
10	1709.706	42.8	3.9	-20.2	26.5	Average Max	V	100	53	50.0	-23.5	Pass	
11	5640.995	36.0	7.8	-16.5	27.3	Average Max	H	100	289	54.0	-26.7	Pass	
12	5580.621	35.9	7.7	-16.5	27.1	Average Max	H	100	355	54.0	-26.9	Pass	

Test Result-Attachments

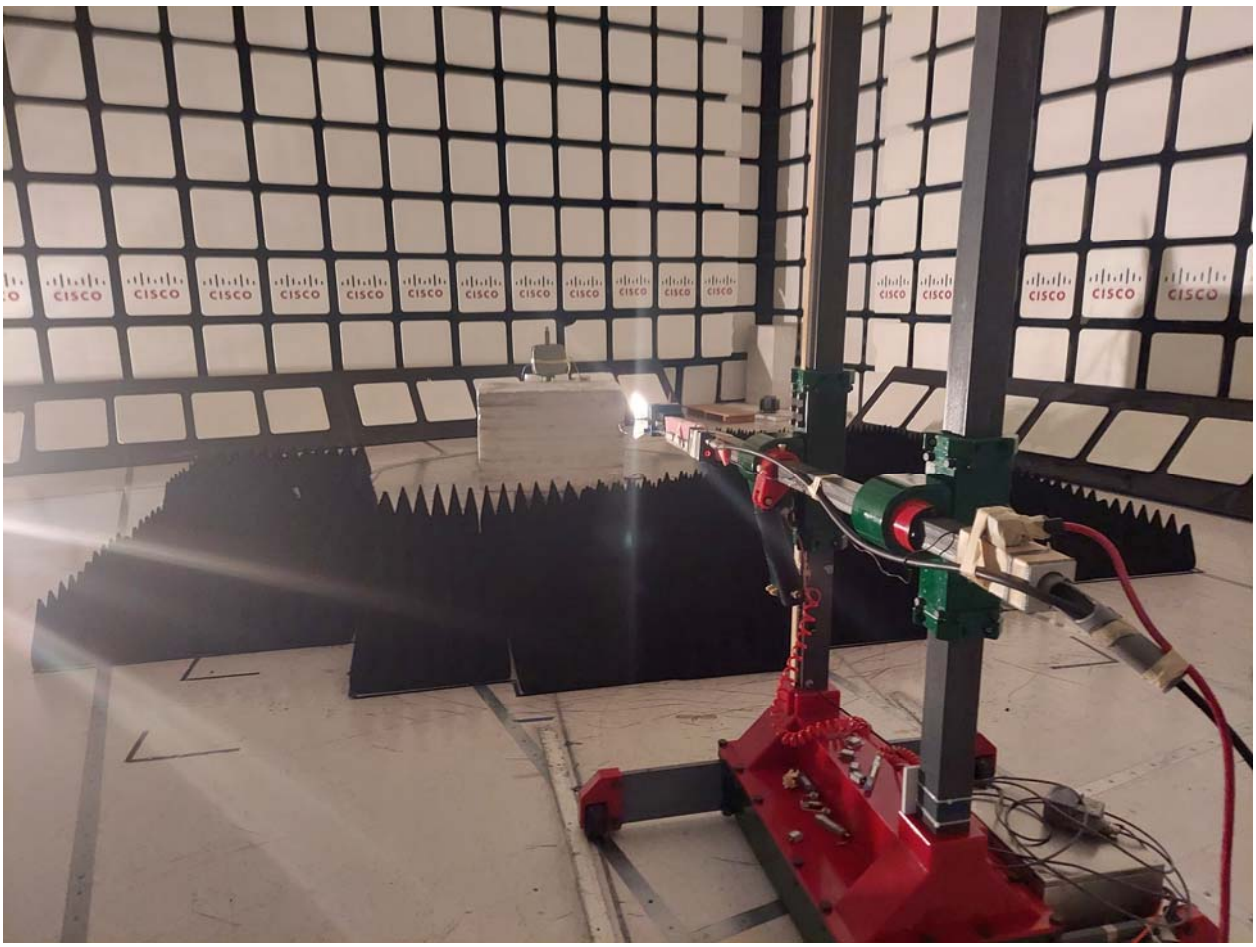
Questions & Answers

Antenna : BICON, LOGPC, BILOG, or HORN	Horn

Photographs

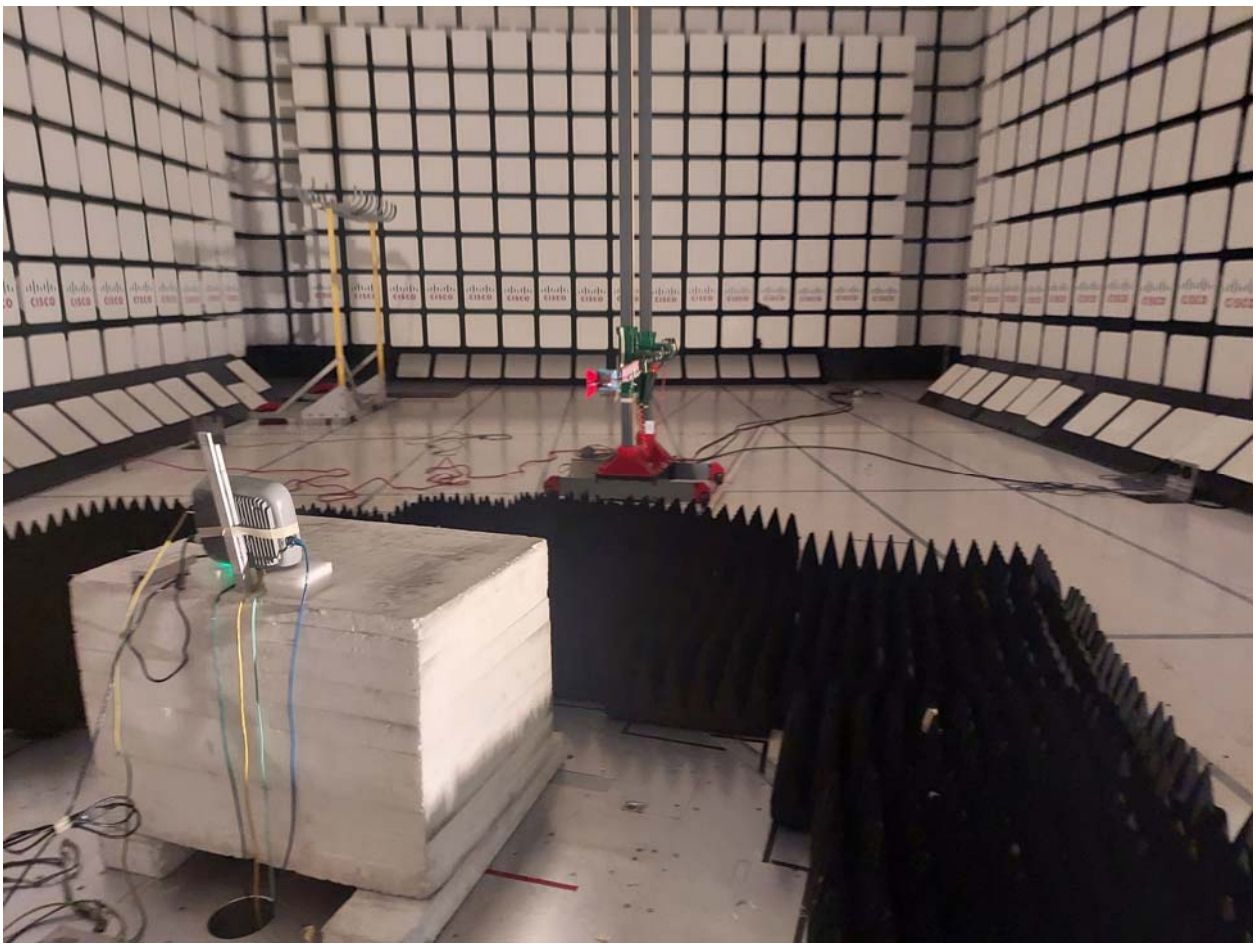
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5.2 Appendix B: Formal Immunity Test Results

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Conducted RF Immunity

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Conducted Immunity Sensitive Frequencies Evaluated Summary

Frequency[MHz]	Port Reference
0.2	[A] shielded rj45 wan port , 2.5G/1G/100M, [E] shielded rj45 AUX port , 1G/100M/10M, [D] AC-DC power supply
1	[A] shielded rj45 wan port , 2.5G/1G/100M, [E] shielded rj45 AUX port , 1G/100M/10M, [D] AC-DC power supply
7.1	[A] shielded rj45 wan port , 2.5G/1G/100M, [E] shielded rj45 AUX port , 1G/100M/10M, [D] AC-DC power supply
13.56	[A] shielded rj45 wan port , 2.5G/1G/100M, [E] shielded rj45 AUX port , 1G/100M/10M, [D] AC-DC power supply
21	[A] shielded rj45 wan port , 2.5G/1G/100M, [E] shielded rj45 AUX port , 1G/100M/10M, [D] AC-DC power supply
27.12	[A] shielded rj45 wan port , 2.5G/1G/100M, [E] shielded rj45 AUX port , 1G/100M/10M, [D] AC-DC power supply
40.68	[D] AC-DC power supply
52	[D] AC-DC power supply
80	[D] AC-DC power supply

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Test Case Details

TestCase ID: 5288	Test Type: Conducted RF Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN55035:2017 KN35:2015	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 80MHz Power : AC Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.
Basic Standard	EN61000-4-6:2014 IEC61000-4-6:2013:Ed:4 KN61000-4-6		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5288-1 Subtest Date : 3/10/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 3	
Subtest Results		
Subtest Title	5288-1	
Port Reference	[D] AC-DC power supply	
Measured Voltage	230.8V	
Coupling Method	CDN	
Subtest Result	Pass	
Susceptibility Details	No susceptibility observed.	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	64.8	
Humidity: (10 to 75)%	48.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plci 3v 230v [10-3-2021 10.49]	.15	80

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor

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Mode#	Title	Description
		traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

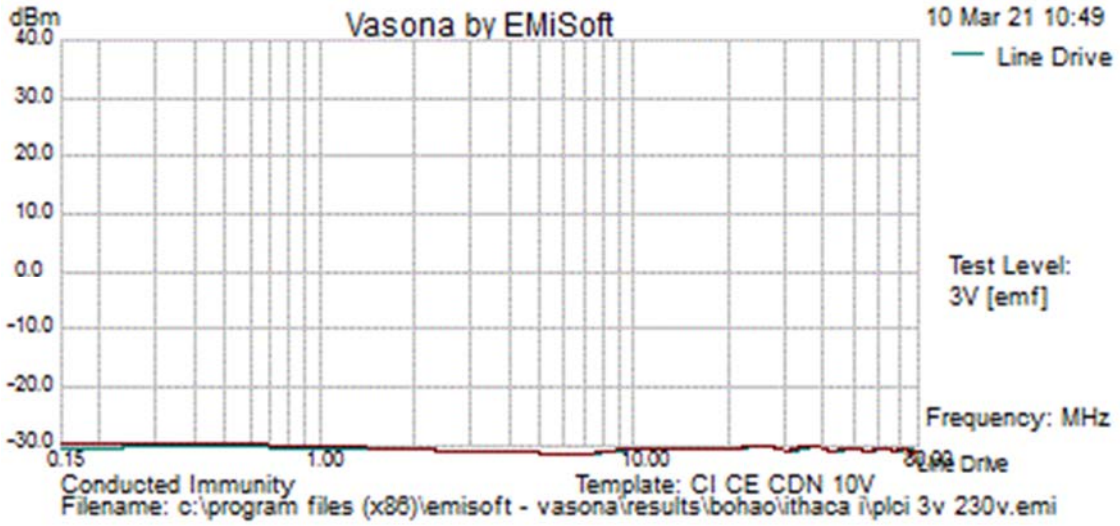
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plci 3v 230v [10-3-2021 10.49]

EMiSoft - Vasona Results	
Test	
Class/Spec	10 / ci ce cdn m5 10v
Range	0.15 - 80MHz
Engineer	Bohao
Lab Used	building P shield room 3
Template	CI CE CDN 10V
Date/Time	10 Mar 21/11:20, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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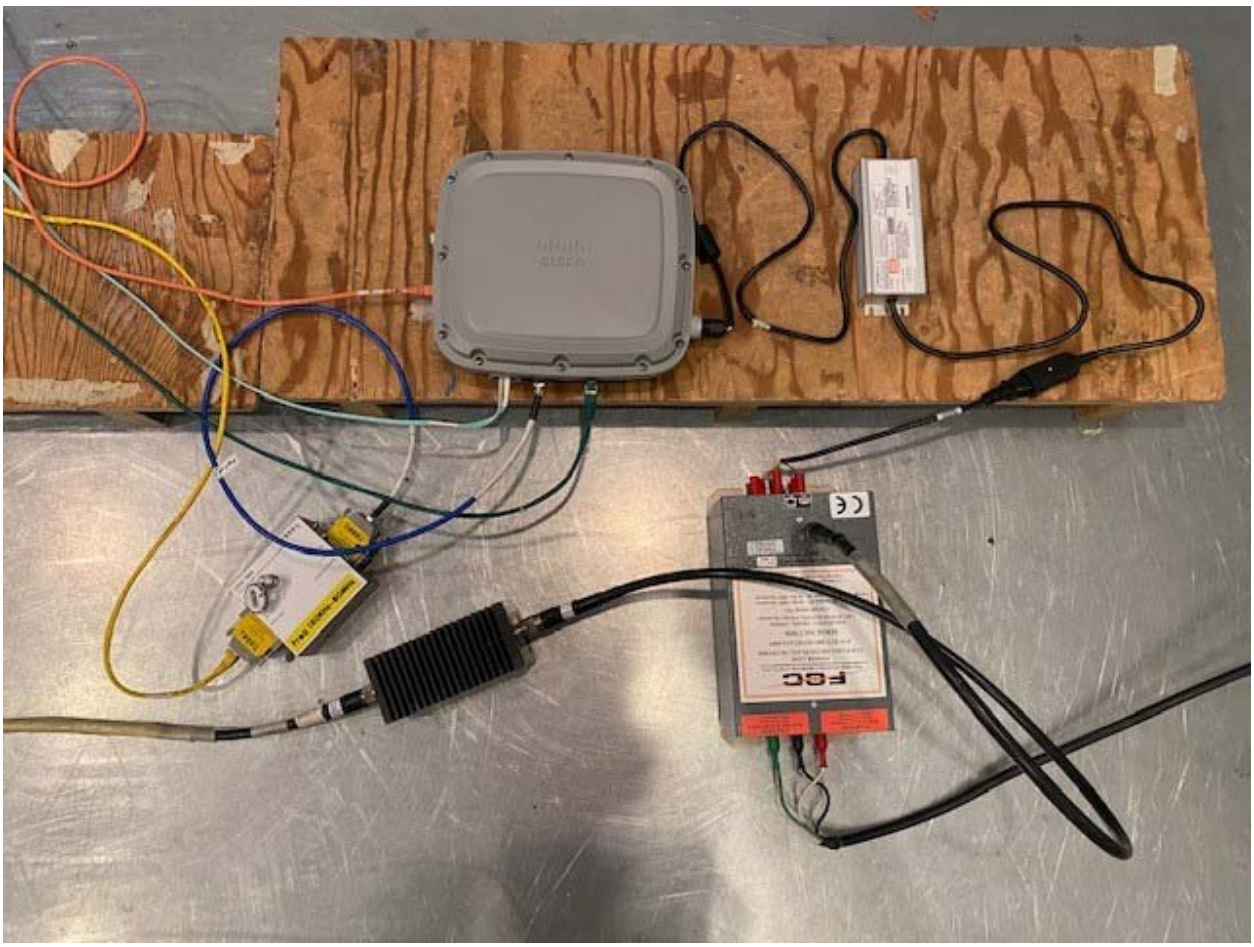
Questions & Answers

Forward Power Monitored : Yes/No	YES
Which additional decoupling device was terminated in 50 Ω (Detail exactly what port was terminated)	T-800 CDN

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5290	Test Type: Conducted RF Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN55035:2017 KN35:2015	Signal Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 80MHz AC or DC Power: Telecom Line Test. Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.
Basic Standard	EN61000-4-6:2014 IEC61000-4-6:2013:Ed:4 KN61000-4-6		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5290-3 Subtest Date : 2/26/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 3	
Subtest Results		
Subtest Title	5290-3	
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M	
Measured Voltage	230.9V	
Coupling Method	CDN	
Subtest Result	Pass	
Susceptibility Details	No susceptibility observed.	
Comments on the above Test Results	Tested at 3/10	
Environmental Conditions		
Temperature: (59 to 95)°F	64.4	
Humidity: (10 to 75)%	40.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slci 3v 230v wan 2.5g [10-3-2021 10.49]	.15	80

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access

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Mode#	Title	Description
		point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

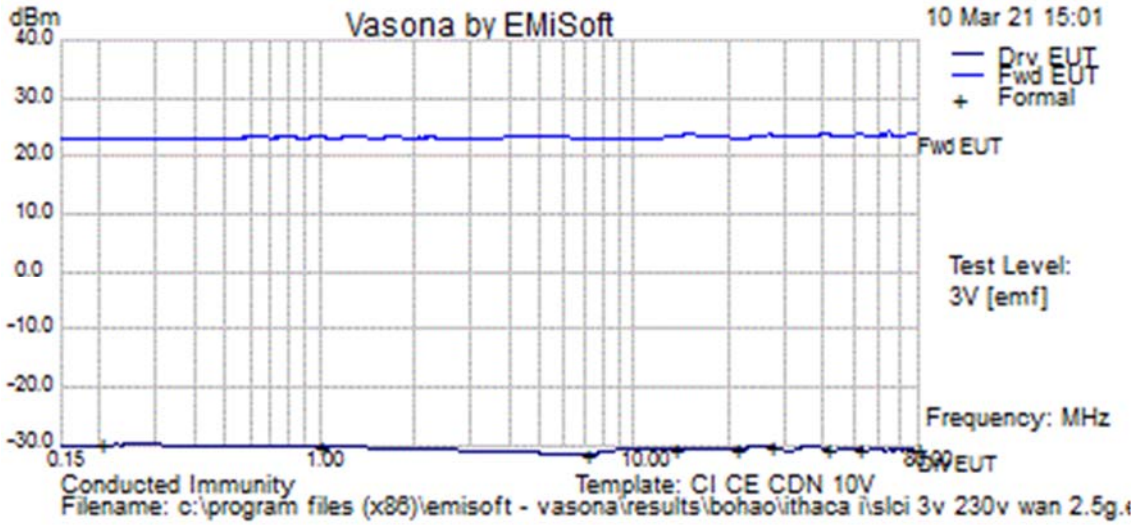
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slci 3v 230v wan 2.5g [10-3-2021 10.49]

EMiSoft - Vasona Results	
Test	
Class/Spec	10 / ci ce cdn m5 10v
Range	0.15 - 80MHz
Engineer	Bohao
Lab Used	building P shield room 3
Template	CI CE CDN 10V
Date/Time	10 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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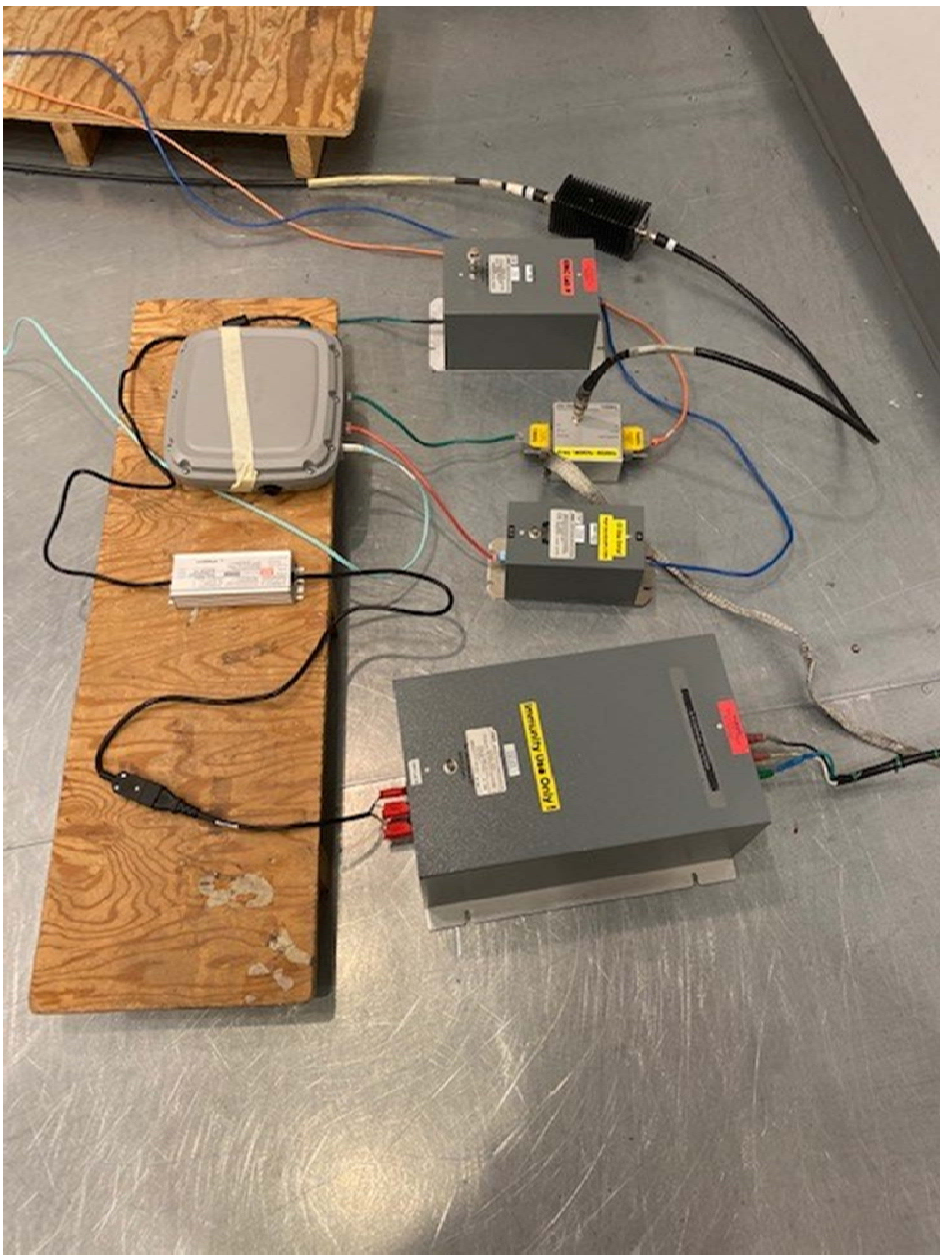
Questions & Answers

Forward Power Monitored : Yes/No	YES
Which additional decoupling device was terminated in 50 Ω (Detail exactly what port was terminated)	CDN M3

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 5290-4 Subtest Date : 3/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	5290-4
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.9V
Coupling Method	CDN
Subtest Result	Pass

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Susceptibility Details	No susceptibility observed.	
Comments on the above Test Results	Tested at 3/10	
Environmental Conditions		
Temperature: (59 to 95)°F	64.4	
Humidity: (10 to 75)%	40.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slci 3v 230v wan 2.5g [10-3-2021 10.49]	.15	80

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

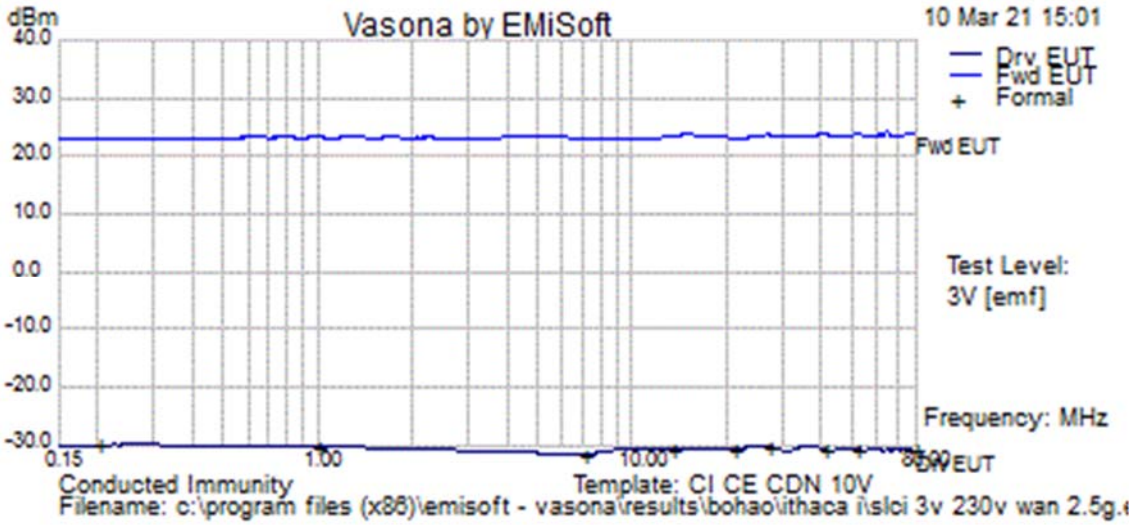
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slci 3v 230v wan 2.5g [10-3-2021 10.49]

EMiSoft - Vasona Results	
Test	
Class/Spec	10 / ci ce cdn m5 10v
Range	0.15 - 80MHz
Engineer	Bohao
Lab Used	building P shield room 3
Template	CI CE CDN 10V
Date/Time	10 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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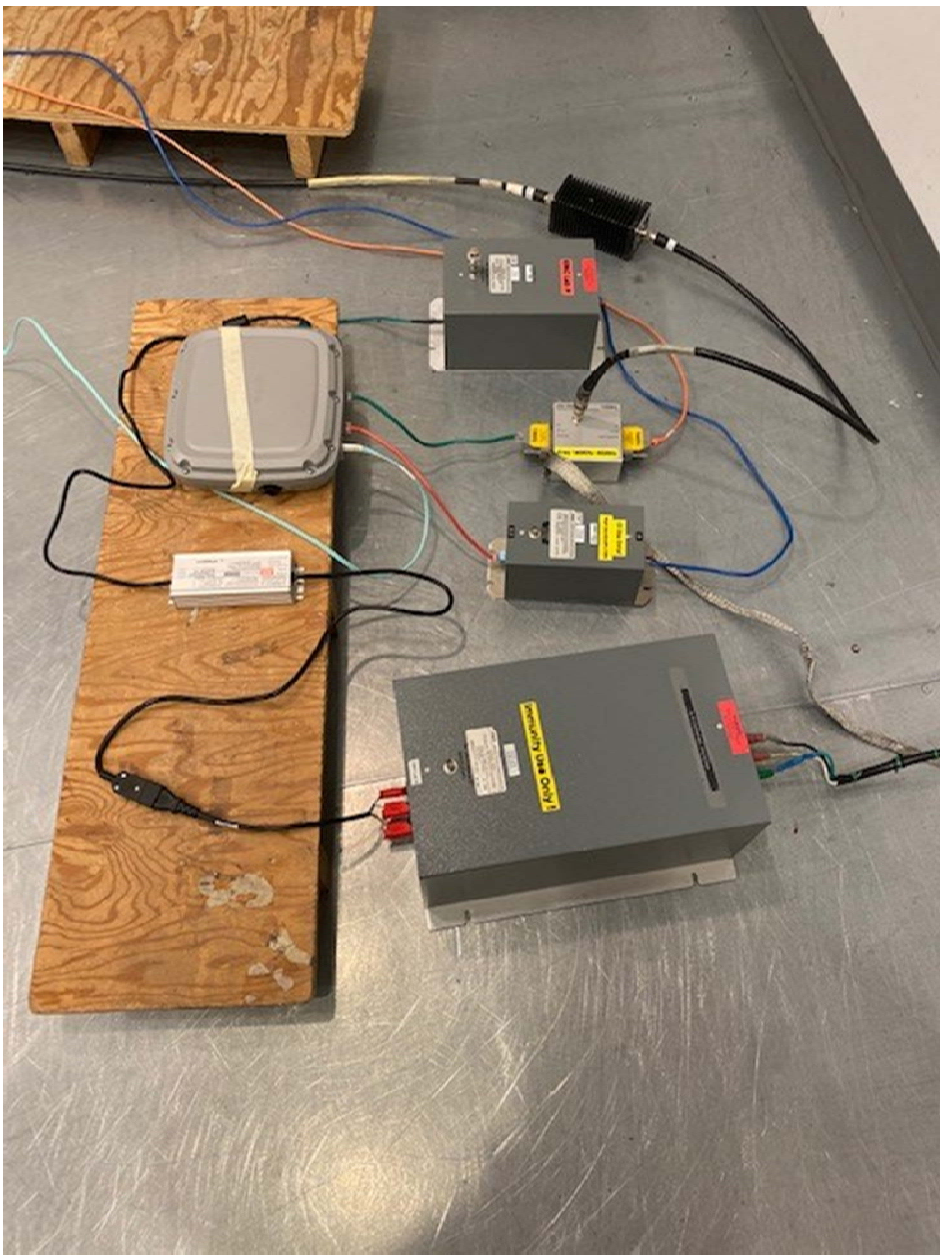
Questions & Answers

Forward Power Monitored : Yes/No	YES
Which additional decoupling device was terminated in 50 Ω (Detail exactly what port was terminated)	CDN M3

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7599	Test Type: Conducted RF Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 80MHz Power : AC Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN61131-2 Zone A.
Basic Standard	EN61000-4-6:2014 IEC61000-4-11:2004:Ed:2 IEC61000-4-3:2010:Ed:3.2 IEC61000-4-4:2012:Ed:3 IEC61000-4-6:2013:Ed:4		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7599-1 Subtest Date : 3/10/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 3	
Subtest Results		
Subtest Title	7599-1	
Port Reference	[D] AC-DC power supply	
Measured Voltage	230V	
Coupling Method	CDN	
Subtest Result	Pass	
Susceptibility Details	No susceptibility observed.	
Comments on the above Test Results	NA	
Environmental Conditions		
Temperature: (59 to 95)°F	64.8	
Humidity: (10 to 75)%	48.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
plci 3v 230v [10-3-2021 10.49]	.15	80

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client

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Mode#	Title	Description
		laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

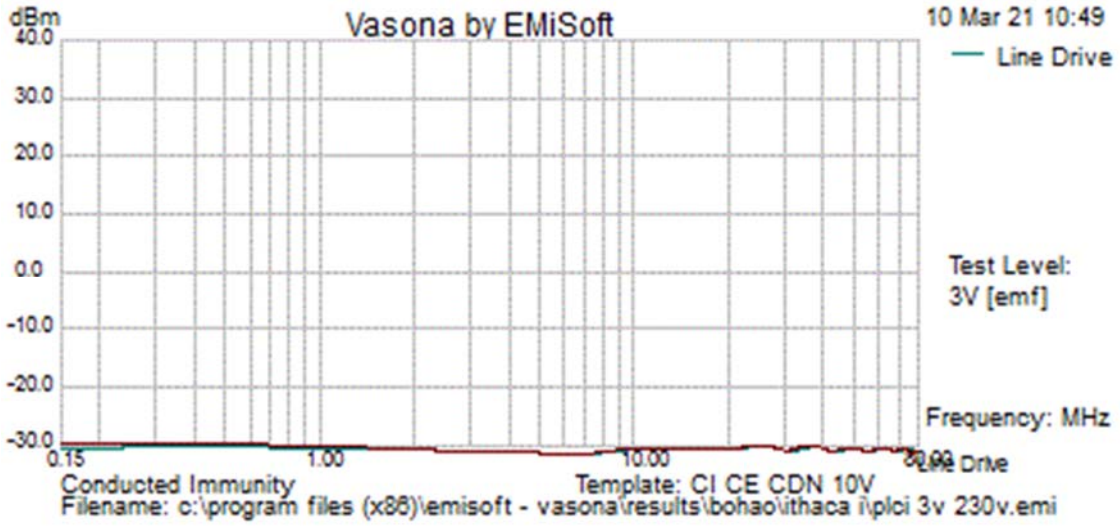
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: plci 3v 230v [10-3-2021 10.49]

EMiSoft - Vasona Results	
Test	
Class/Spec	10 / ci ce cdn m5 10v
Range	0.15 - 80MHz
Engineer	Bohao
Lab Used	building P shield room 3
Template	CI CE CDN 10V
Date/Time	10 Mar 21/11:20, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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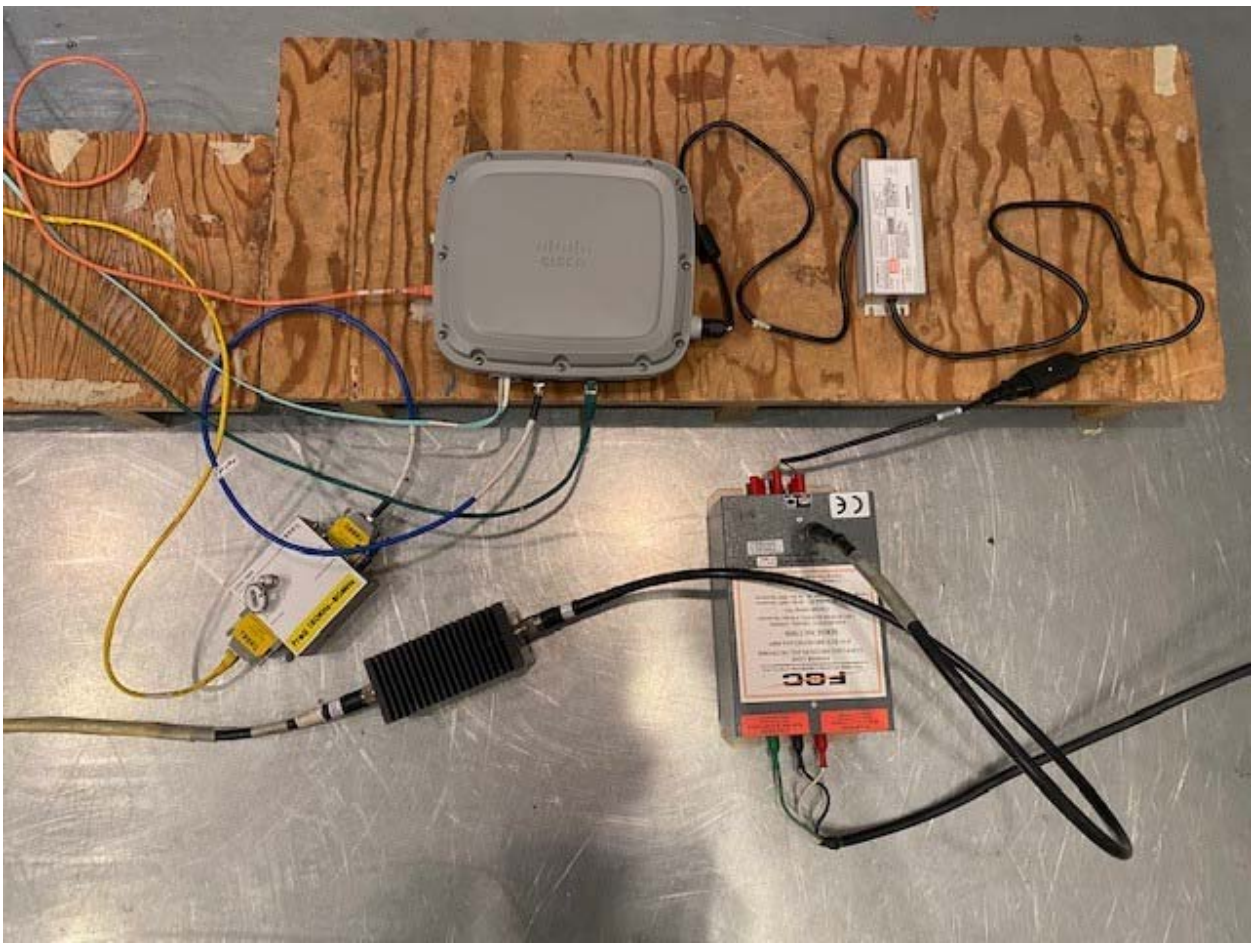
Questions & Answers

Forward Power Monitored : Yes/No	YES
Which additional decoupling device was terminated in 50 Ω (Detail exactly what port was terminated)	T-800 CDN

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7627 Test Type: Conducted RF Immunity			
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	Signal Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz AC or DC Power Range : 0.15 MHz to 80MHz Telecom Line Test Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN 61131-2 : Zone A
Basic Standard	EN61000-4-6:2014 IEC61000-4-6:2013:Ed:4		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7627-3 Subtest Date : 3/26/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - Shield Room 3	
Subtest Results		
Subtest Title	7627-3	
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M	
Measured Voltage	230.9V	
Coupling Method	CDN	
Subtest Result	Pass	
Susceptibility Details	No susceptibility observed.	
Comments on the above Test Results	Tested at 3/10	
Environmental Conditions		
Temperature: (59 to 95)°F	64.4	
Humidity: (10 to 75)%	40.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slci 3v 230v wan 2.5g [10-3-2021 10.49]	.15	80

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor

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Mode#	Title	Description
		traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

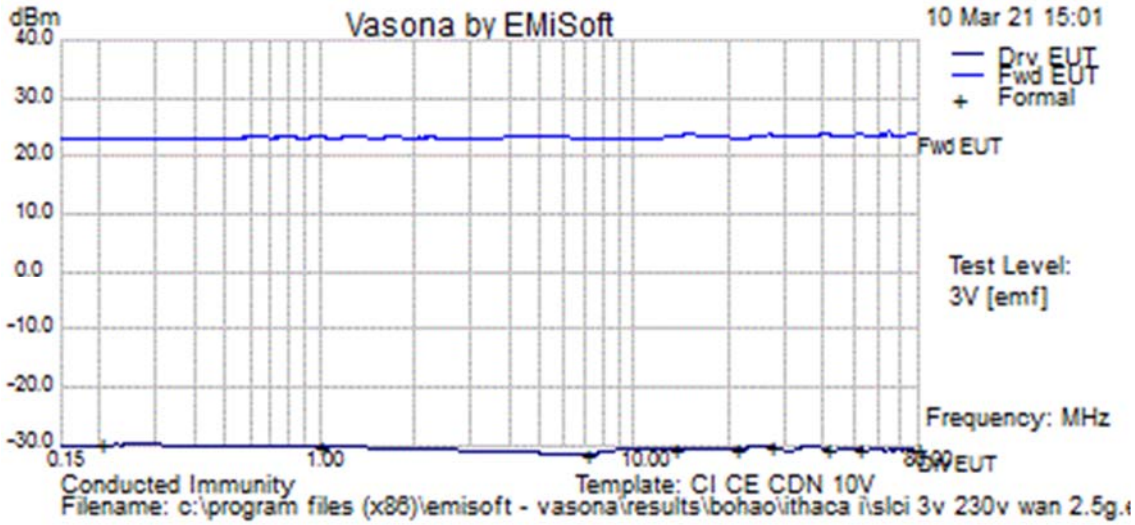
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slci 3v 230v wan 2.5g [10-3-2021 10.49]

EMiSoft - Vasona Results	
Test	
Class/Spec	10 / ci ce cdn m5 10v
Range	0.15 - 80MHz
Engineer	Bohao
Lab Used	building P shield room 3
Template	CI CE CDN 10V
Date/Time	10 Mar 21/15:02, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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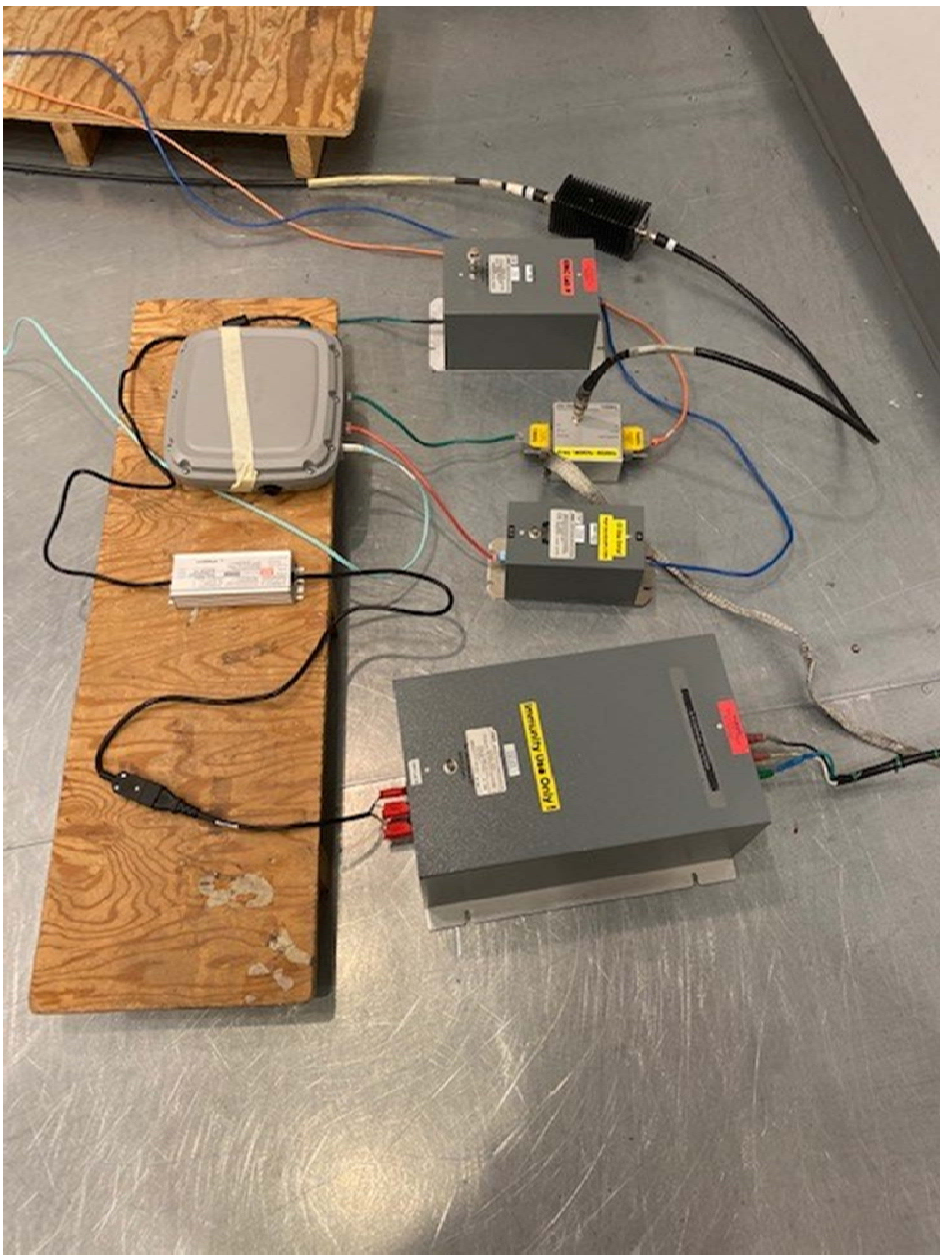
Questions & Answers

Forward Power Monitored : Yes/No	YES
Which additional decoupling device was terminated in 50 Ω (Detail exactly what port was terminated)	CDN M3

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7627-4 Subtest Date : 3/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7627-4
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.9V
Coupling Method	CDN
Subtest Result	Pass

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Susceptibility Details	No susceptibility observed.	
Comments on the above Test Results	Tested at 3/10	
Environmental Conditions		
Temperature: (59 to 95)°F	64.4	
Humidity: (10 to 75)%	40.4	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
slci 3v 230v aux 1g [10-3-2021 10.49]	.15	80

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

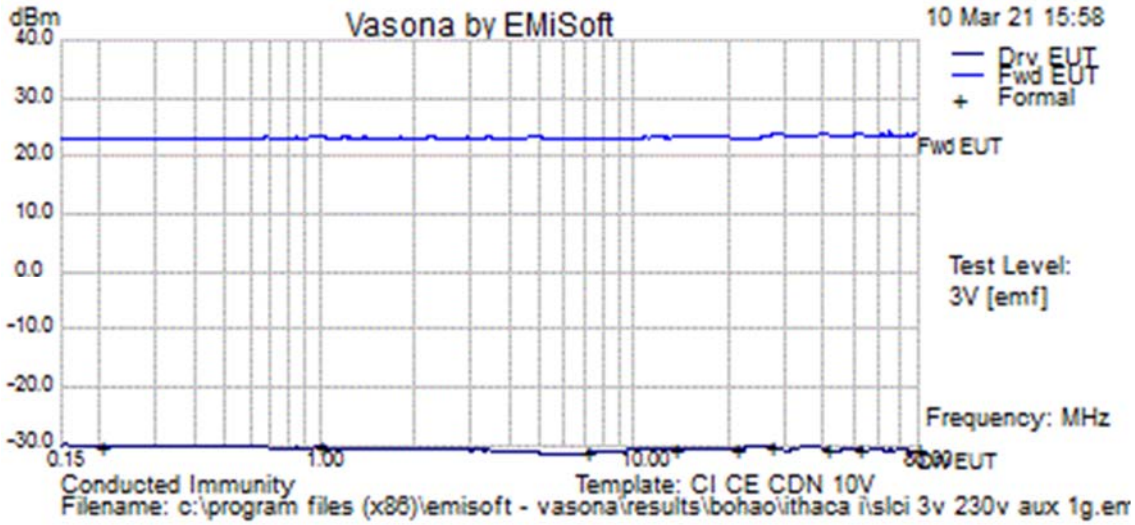
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: slci 3v 230v aux 1g [10-3-2021 10.49]

EMiSoft - Vasona Results	
Test	
Class/Spec	10 / ci ce cdn m5 10v
Range	0.15 - 80MHz
Engineer	Bohao
Lab Used	building P shield room 3
Template	CI CE CDN 10V
Date/Time	10 Mar 21/16:23, Status: Filed on
Manufacturer	
EUT	
Config	
Graphical Data	

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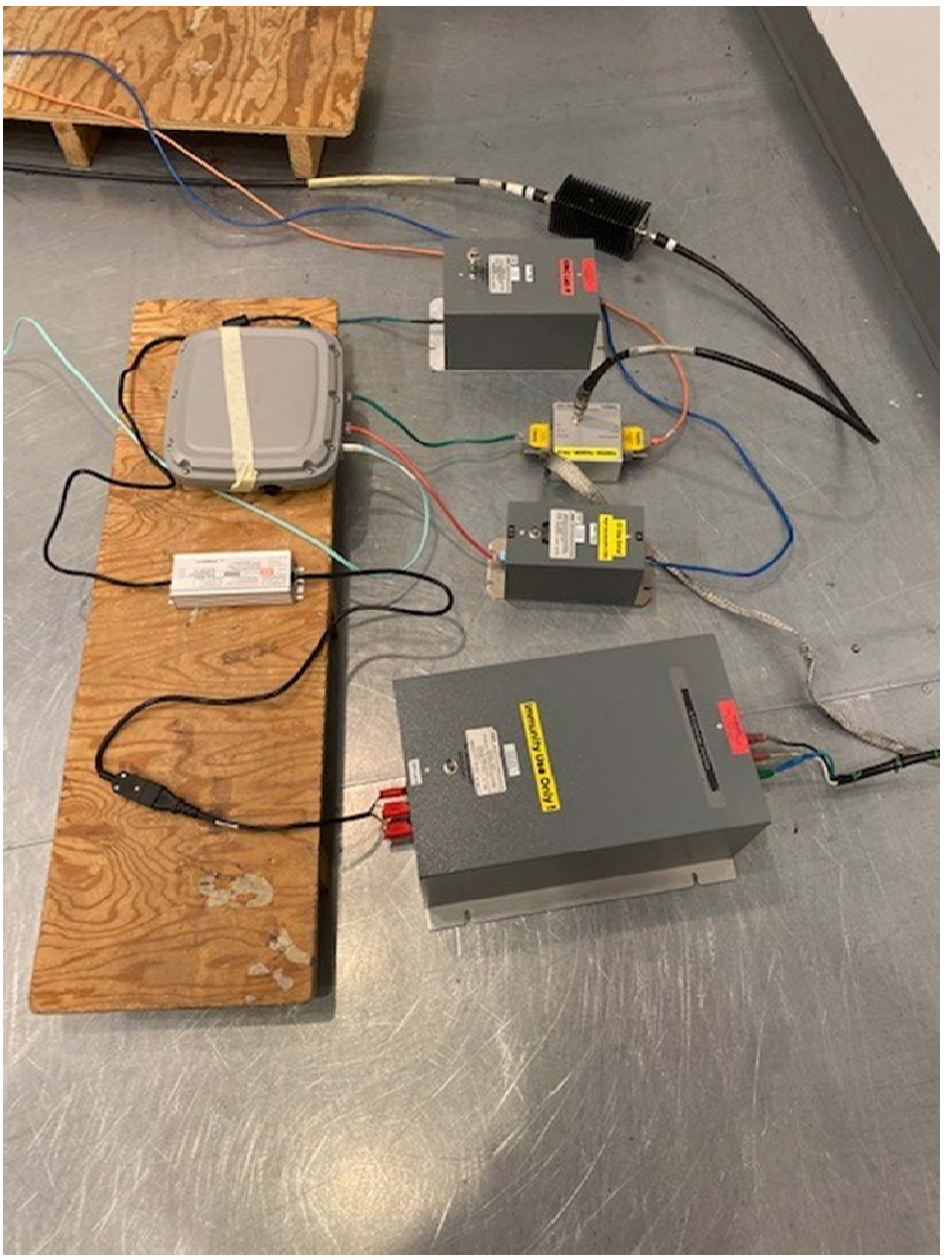
Questions & Answers

Forward Power Monitored : Yes/No	YES
Which additional decoupling device was terminated in 50 Ω (Detail exactly what port was terminated)	M3 CDN

Photographs

TITLE: NA
DESCRIPTION: NA

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Radiated RF Immunity

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Radiated Immunity Sensitive Frequencies Evaluated Summary

Frequency[MHz]	Polarity	Azimuth Degrees
80	H,V	0,180,270,90
120	H,V	0,180,270,90
133	H,V	0,180,270,90
145	H,V	0,180,270,90
160	H,V	0,180,270,90
230	H,V	0,180,270,90
375	H,V	0,180,270,90
434	H,V	0,180,270,90
435	H,V	0,180,270,90
450	H,V	0,180,270,90
460	H,V	0,180,270,90
600	H,V	0,180,270,90
625	H,V	0,180,270,90
814	H,V	0,180,270,90
835	H,V	0,180,270,90
850	H,V	0,180,270,90
863	H,V	0,180,270,90
900	H,V	0,180,270,90
1750	H,V	0,180,270,90
1800	H,V	0,180,270,90
1950	H,V	0,180,270,90
2100	H,V	0,180,270,90
2400	H,V	0,180,270,90
2402	H,V	0,180,270,90
2480	H,V	0,180,270,90
2482	H,V	0,180,270,90
2600	H,V	0,180,270,90
3500	H,V	0,180,270,90
5000	H,V	0,180,270,90
5170	H,V	0,180,270,90
5865	H,V	0,180,270,90

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Test Case Details

TestCase ID: 3328	Test Type: Radiated RF Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Enclosure Port	Start Freq: 80MHz - Stop Freq: 1000MHz Power : AC or DC Range: 80 - 1000MHz Level: 3V/m Mod: 1kHz 80% AM Step Size: 1% Criteria: A Distance: EDCS-15663086	For EN55024, spot freq applicable to TTE.For KN35/EN55035, spot freq applicable to TTE supporting emergency calls.
Basic Standard	IEC61000-4-3:2010:Ed:3.2 EN61000-4-3:2006 EN61000-4-3:2006:A1 EN61000-4-3:2006:A2 KN61000-4-2 KN61000-4-8		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 3328-1 Subtest Date : 3/16/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	3328-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	230.8V	
Subtest Result	Pass	
Comments on the above Test Results	Ceiling, four sides	
Environmental Conditions		
Temperature: (59 to 95)°F	72.5	
Humidity: (10 to 75)%	26.1	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
ri 80-1gceiling four sides 3v [16-3-2021 12.0]	80	1000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server.

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Mode#	Title	Description
		EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

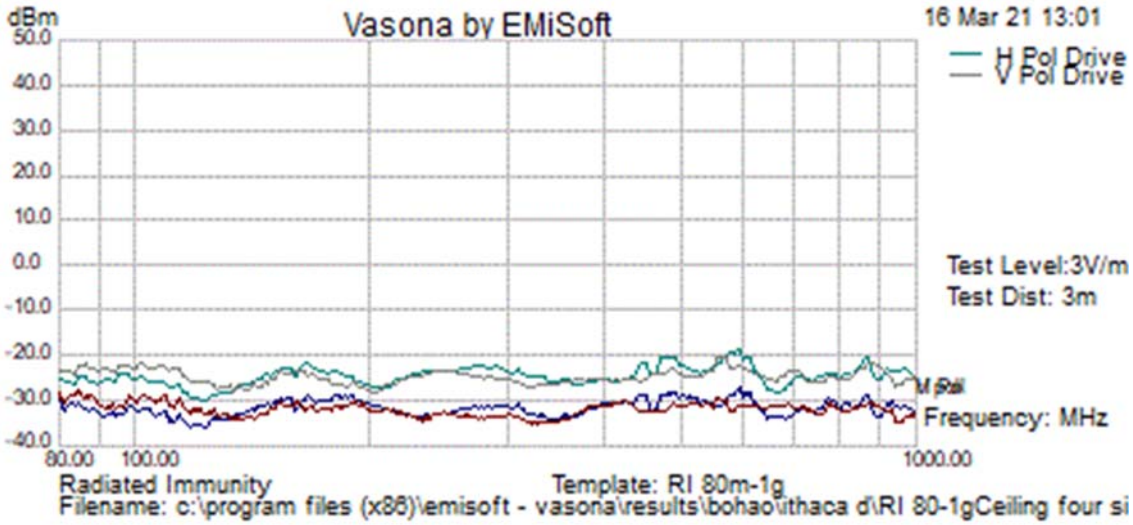
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: ri 80-1gceiling four sides 3v [16-3-2021 12.0]

EMiSoft - Vasona Results		
Test	Radiated Immunity	
Class/Spec	10 / ri_ce_80m-1h_h	
Range	80 - 1000MHz	
Engineer	Bohao and Ryan	
Lab Used	Bldg P 10m Chamber.	
Template	RI 80m-1g	
Date/Time	16 Mar 21/14:45, Status: Filed on	
Manufacturer		
EUT		
Config		
Graphical Data		

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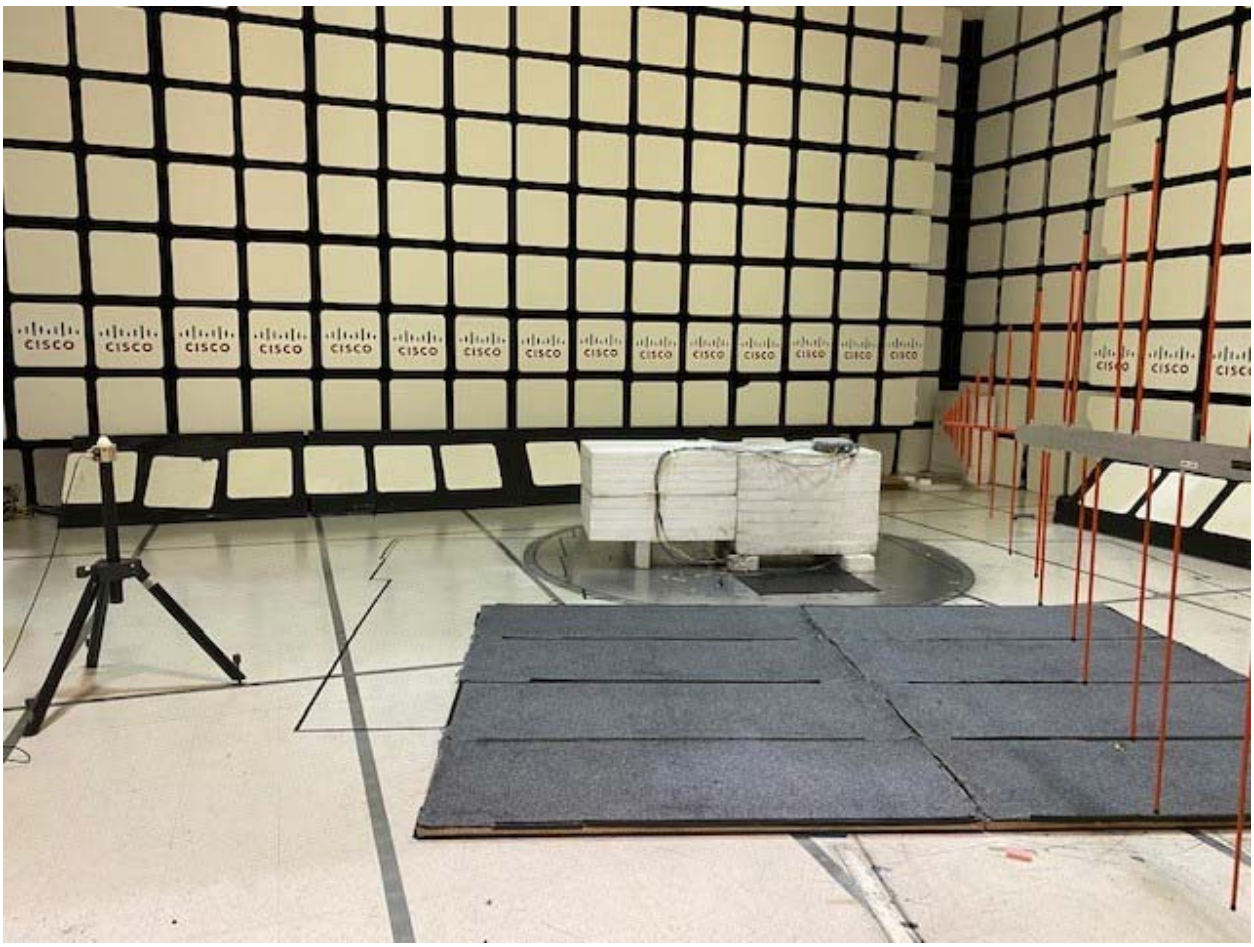
Questions & Answers

Antenna : BICON, LOGPC, EFG3, BILOG, AT 3000 or HORN	LOGPC
Forward Power Monitored : Yes/No	Yes

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 3328-2 Subtest Date : 3/17/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	3328-2	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	230.8V	
Subtest Result	Pass	
Comments on the above Test Results	Wall, top and bottom	
Environmental Conditions		
Temperature: (59 to 95)°F	72.5	
Humidity: (10 to 75)%	26.1	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
ri 80-1gceiling four sides 3v [16-3-2021 12.0]	80	1000

Operation Mode

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Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

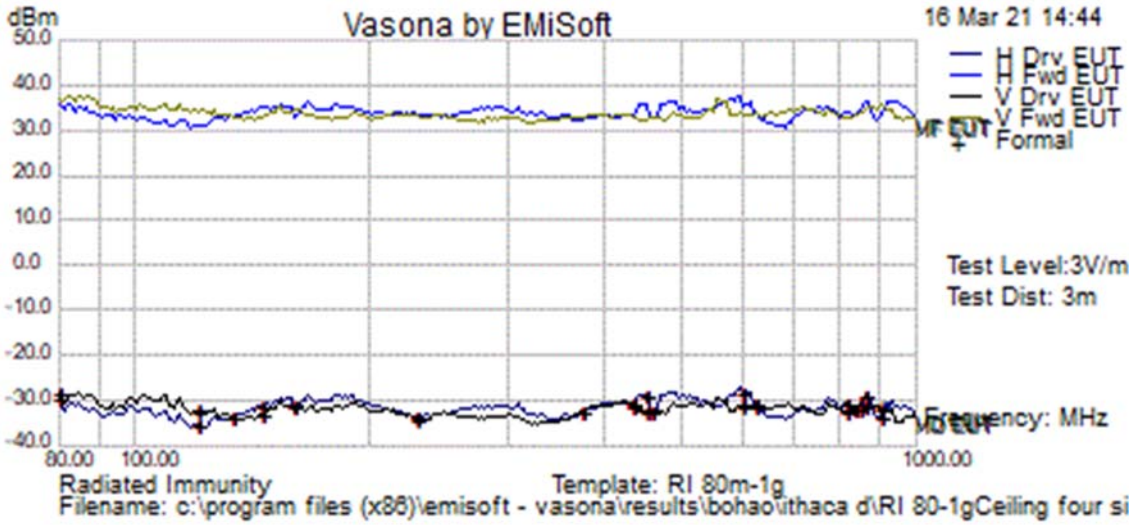
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: ri 80-1gceiling four sides 3v [16-3-2021 12.0]

EMiSoft - Vasona Results		
Test	Radiated Immunity	
Class/Spec	10 / ri_ce_80m-1h_h	
Range	80 - 1000MHz	
Engineer	Bohao and Ryan	
Lab Used	Bldg P 10m Chamber.	
Template	RI 80m-1g	
Date/Time	16 Mar 21/14:45, Status: Filed on	
Manufacturer		
EUT		
Config		
Graphical Data		

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Questions & Answers

Antenna : BICON, LOGPC, EFG3, BILOG, AT 3000 or HORN	LOGPC
Forward Power Monitored : Yes/No	Yes

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 5296	Test Type: Radiated RF Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Enclosure Port	Start Freq: 1400MHz - Stop Freq: 6000MHz Power ; AC or DC Range: 1.4GHz-6.0GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086	
Basic Standard	IEC61000-4-3:2010:Ed:3.2		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5296-1 Subtest Date : 3/17/2021		
Engineer	Bohao Li	
Lab Information	Bldg. P - 10m Anechoic	
Subtest Results		
Subtest Title	5296-1	
Port Reference	[Encl] Enclosure Port	
Measured Voltage	230.8V	
Subtest Result	Pass	
Comments on the above Test Results	Wall, top and bottom	
Environmental Conditions		
Temperature: (59 to 95)°F	75.1	
Humidity: (10 to 75)%	25.3	
Test Result File	**Start Freq[MHz]**	**Stop Freq[MHz]**
ri 1-6g wall top bottom 3v [16-3-2021 16.49]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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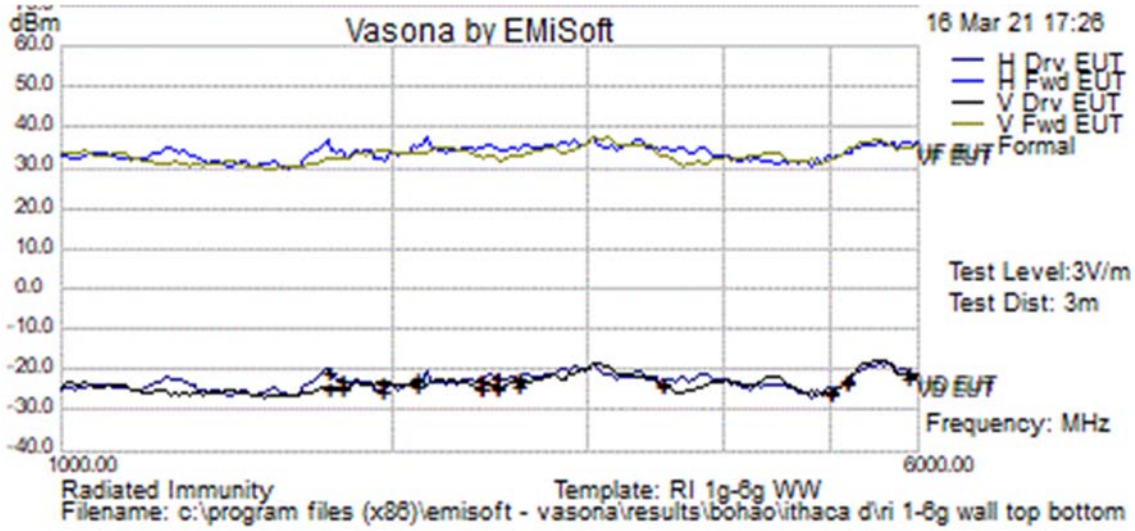
Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: ri 1-6g wall top bottom 3v [16-3-2021 16.49]

EMiSoft - Vasona Results		
Test	Radiated Immunity	
Class/Spec	10 / ri_ce_1g_6g_h	
Range	1000 - 6000MHz	
Engineer	Bohao and Ryan	
Lab Used	Bldg P 10m Chamber.	
Template	RI 1g-6g WW	
Date/Time	16 Mar 21/17:26, Status: Filed on	
Manufacturer		
EUT		
Config		
Graphical Data		



Questions & Answers

Antenna : BICON, LOGPC, EFG3, BILOG, AT 3000 or HORN	HORN
Forward Power Monitored : Yes/No	Yes

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Photographs

TITLE: NA
DESCRIPTION: NA



Subtest Details

Subtest Number : 5296-2 Subtest Date : 3/17/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - 10m Anechoic
Subtest Results	
Subtest Title	5296-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	230.8V
Subtest Result	Pass
Comments on the above Test Results	Table four sides
Environmental Conditions	
Temperature: (59 to 95)°F	75.1
Humidity: (10 to 75)%	25.3

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Test Result File	Start Freq[MHz]	Stop Freq[MHz]
ri 1-6g wall four sides 3v [16-3-2021 18.41]	1000	6000

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

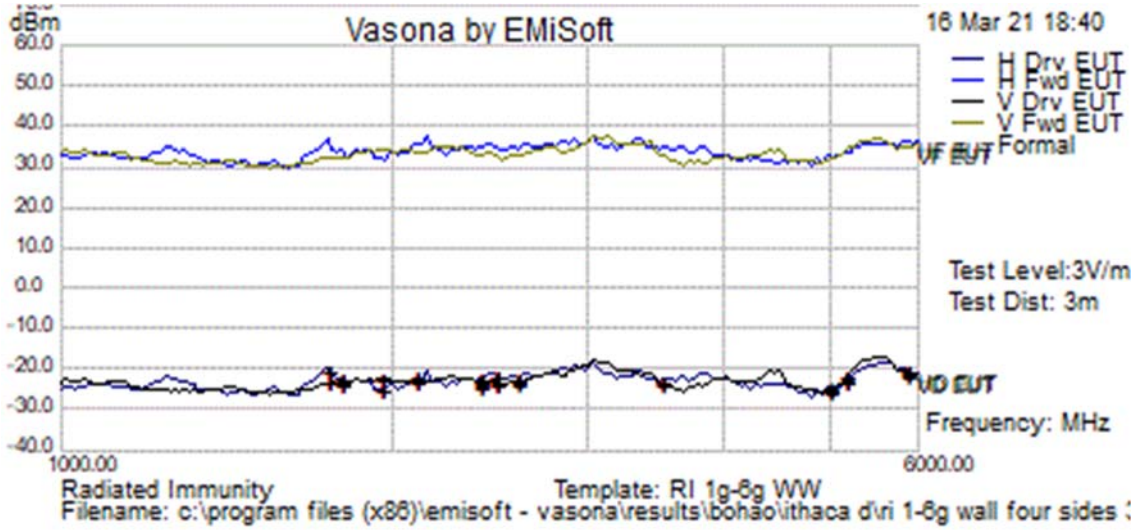
System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

File Name: ri 1-6g wall four sides 3v [16-3-2021 18.41]

EMiSoft - Vasona Results		
Test	Radiated Immunity	
Class/Spec	10 / ri_ce_1g_6g_h	
Range	1000 - 6000MHz	
Engineer	Bohao and Ryan	
Lab Used	Bldg P 10m Chamber.	
Template	RI 1g-6g WW	
Date/Time	16 Mar 21/18:41, Status: Filed on	
Manufacturer		
EUT		
Config		
Graphical Data		

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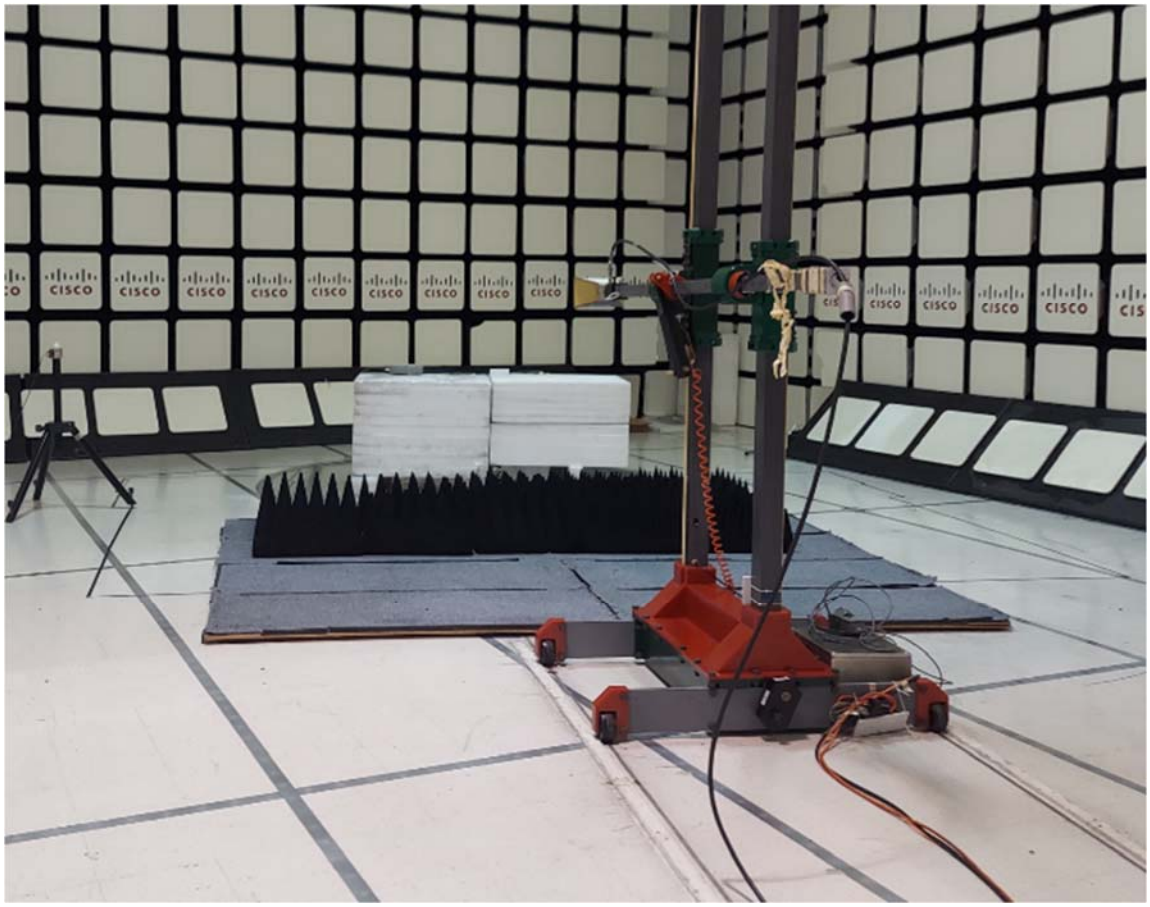
Questions & Answers

Antenna : BICON, LOGPC, EFG3, BILOG, AT 3000 or HORN	HORN
Forward Power Monitored : Yes/No	Yes

Photographs

TITLE: NA
DESCRIPTION: NA

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EFT/B Immunity

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Test Case Details

TestCase ID: 7594	Test Type: EFT/B Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Signal Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Not applicable to DSL ports. I TR 9 Level 1
Basic Standard	EN61000-4-4:2012 IEC61000-4-4:2012:Ed:3 KN61000-4-4		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7594-1 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7594-1
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	PoE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, WAN port 2.5G under test
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor

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Mode#	Title	Description
		traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7594-2 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7594-2
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	PoE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, WAN port 1G under test
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7594-3 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7594-3
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	PoE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, WAN port 100M under test
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7594-4 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7594-4
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	PoE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, rj45 AUX port 1G under test
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7594-5 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7594-5
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	PoE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, rj45 AUX port 100M under test
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7594-6 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7594-6
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	PoE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, rj45 AUX port 10M under test
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7596	Test Type: EFT/B Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	AC Power: Coupling: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B	1 TR9 Level 1
Basic Standard	EN61000-4-4:2012 IEC61000-4-4:2012:Ed:3		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7596-1 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7596-1
Port Reference	[D] AC-DC power supply
Measured Voltage	230.8V
Coupling Method	CDN (Capacitive)
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE. Shielded cable only, Passed up to 2kV.
Environmental Conditions	
Temperature: (59 to 95)°F	64.7
Humidity: (25 to 75)%	39.8

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

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Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	CDN
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

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DESCRIPTION: NA

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Test Case Details

TestCase ID: 7615	Test Type: EFT/B Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Signal Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS.. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.
Basic Standard	IEC61000-4-3:2010:Ed:3.2		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7615-1 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7615-1
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	POE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, WAN port 2.5G under test
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

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Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7615-2 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7615-2
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	PoE
Coupling Method	Capactive Coupling Clamp
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed
Comments on the above Test Results	EUT powered by PoE, shielded rj45 AUX port , 1G
Environmental Conditions	
Temperature: (59 to 95)°F	64.1
Humidity: (25 to 75)%	30.2

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	Capacitive Coupling Clamp
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 7619 Test Type: EFT/B Immunity			
Product Standard	**Port Type**	**Test Details**	**Comments**
EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	AC (<16A)	AC Power: Coupling: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.
Basic Standard	IEC61000-4-4:2012:Ed:3		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7619-1 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7619-1
Port Reference	[D] AC-DC power supply
Measured Voltage	230.8V
Coupling Method	CDN (Capacitive)
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE. Shielded cable only, Passed up to 2kV.
Environmental Conditions	
Temperature: (59 to 95)°F	64.7
Humidity: (25 to 75)%	39.8

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

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Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Each conductor in turn with respect to ground : Yes/No	No
All conductors simultaneously with respect to ground: Yes /No	Yes
Transverse Mode Live & Neutral (Smart Grid): Yes/No	No
Transducer : CDN or Capacitive Coupling Clamp	CDN
Number of Lines Tested Simultaneously (e.g a single Ethernet Cable = 1) :	1
Test Duration (Mins) :	1

Photographs

TITLE: NA
DESCRIPTION: NA

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ESD Immunity

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Test Case Details

TestCase ID: 7621 Test Type: ESD Immunity			
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Enclosure Port	AC or DC Power. Level: 8kV Air Level: 4kV Contact Criteria: B	
Basic Standard	IEC61000-4-2:2008:Ed:2 EN61000-4-2:2009 KN61000-4-2		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7621-1 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7621-1
Port Reference	[Encl] Enclosure Port
Measured Voltage	230.9V
Subtest Result	Pass
Comments on the above Test Results	No susceptibility observed. Grounded
Environmental Conditions	
Temperature: (59 to 95)°F	59.9
Humidity: (30 to 60)%	51.6

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

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Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

ESD Points

ESD Point - Description	Air/Contact	Normal/Maintenance	Notes	Pass/Fail
E1	Contact	Normal	Top	Pass
E7	Air	Maintenace	Left side	Pass
E8	Contact	Normal	Back	Pass
E9	Contact	Normal	VCP/HCP	Pass
E4	Air	Normal	Front / WAN port	Pass
E5	Air	Normal	Front / Aux port	Pass
E6	Air	Normal	Right / AC-DC connector	Pass
E3	Air	Normal	Front / 1G SFP	Pass
E2	Contact	Normal	Bottom	Pass

ESD Point-Description: E1

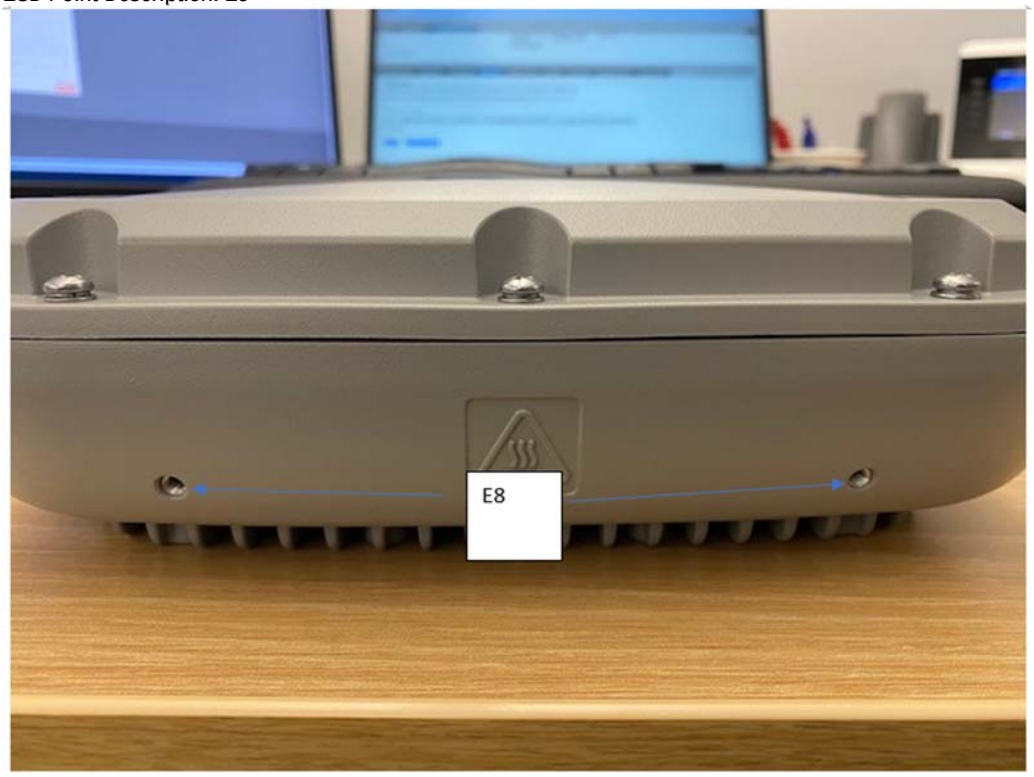


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ESD Point-Description: E7

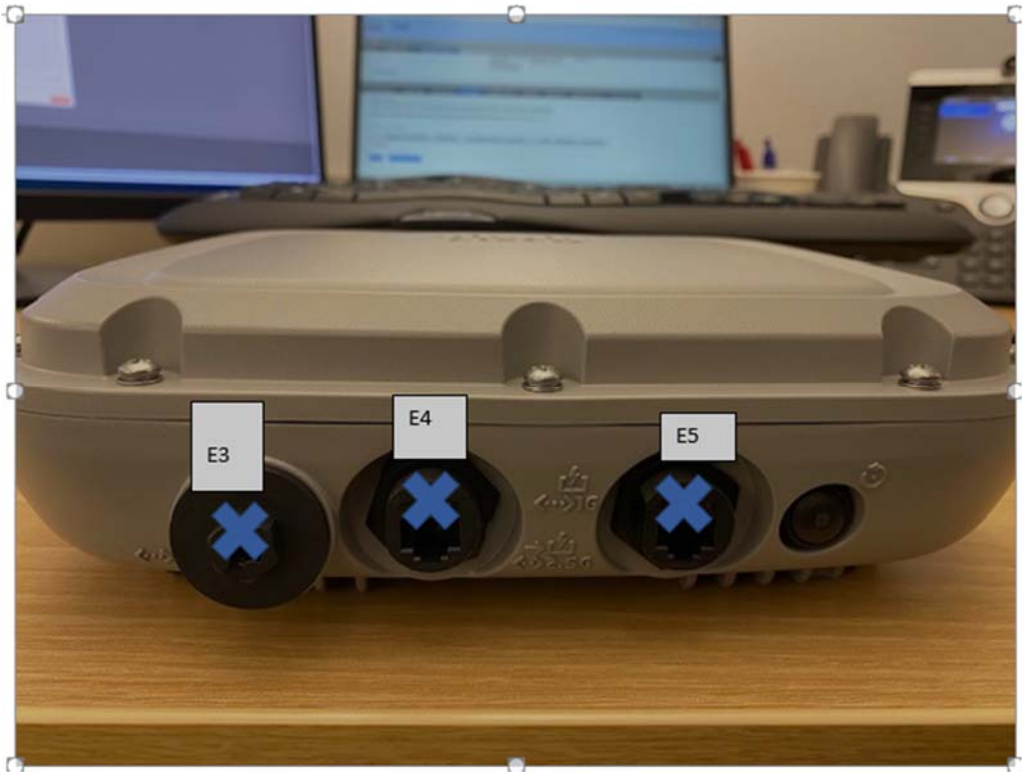


ESD Point-Description: E8



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ESD Point-Description: E4



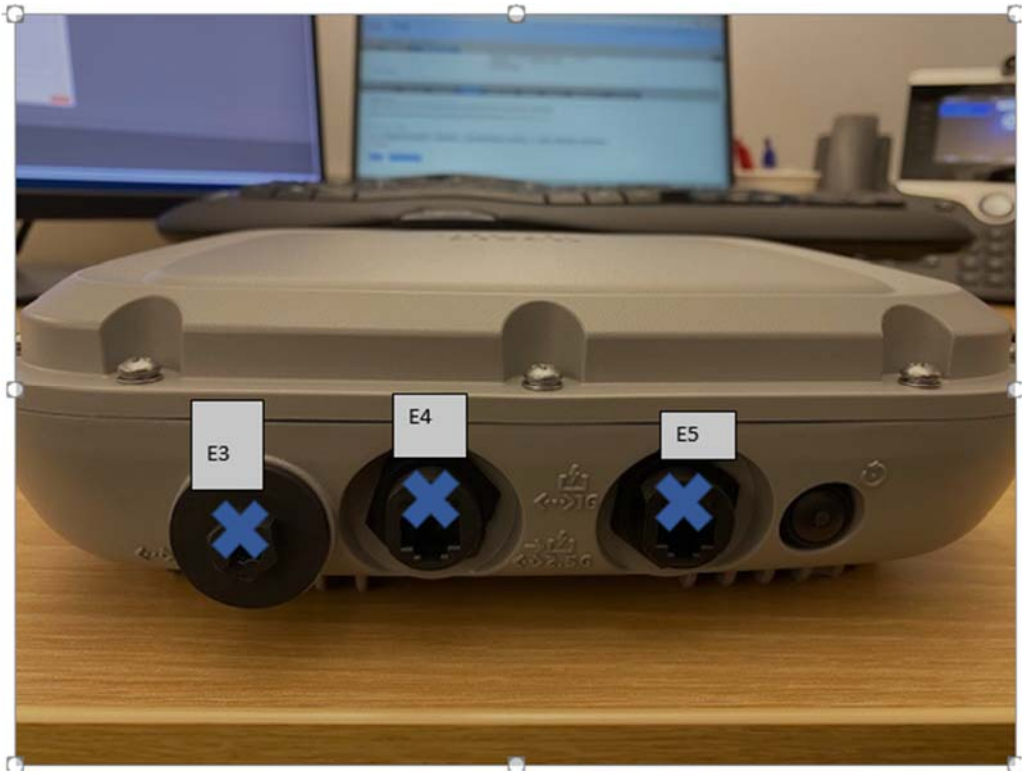
ESD Point-Description: E5

ESD Point-Description: E6

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ESD Point-Description: E3



ESD Point-Description: E2

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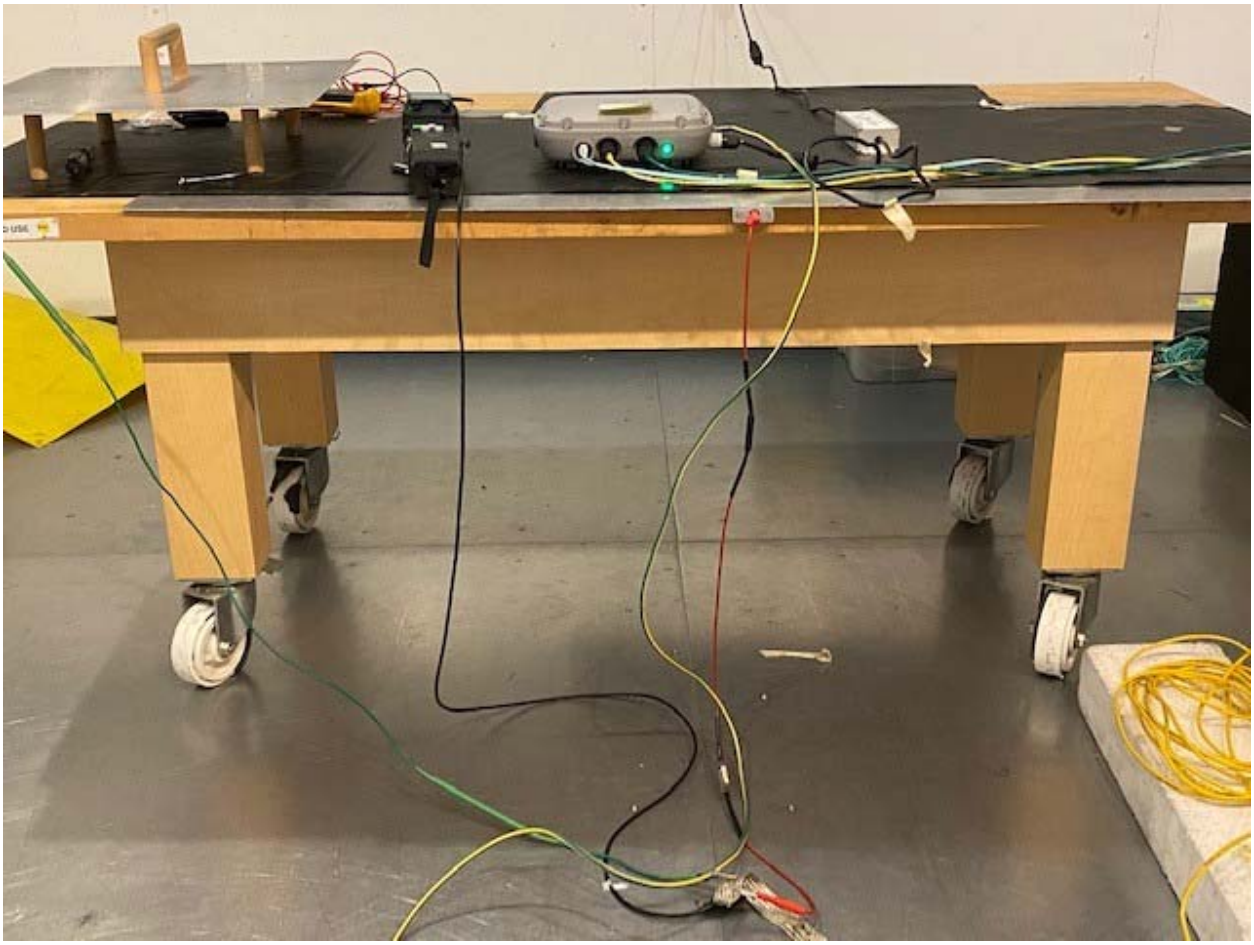
Questions & Answers

Lower Levels Assessed : Yes/No	Yes
Time between Discharges	1 pulse/sec.

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7621-2 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7621-2
Port Reference	[Encl] Enclosure Port
Measured Voltage	230.8V
Subtest Result	Pass
Comments on the above Test Results	No susceptibility observed. Ungrounded, Shielded Cable
Environmental Conditions	
Temperature: (59 to 95)°F	59.9
Humidity: (30 to 60)%	51.6

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client

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Mode#	Title	Description
		laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description
1	Internal Antennas	EUT with earth. shielded cables.

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

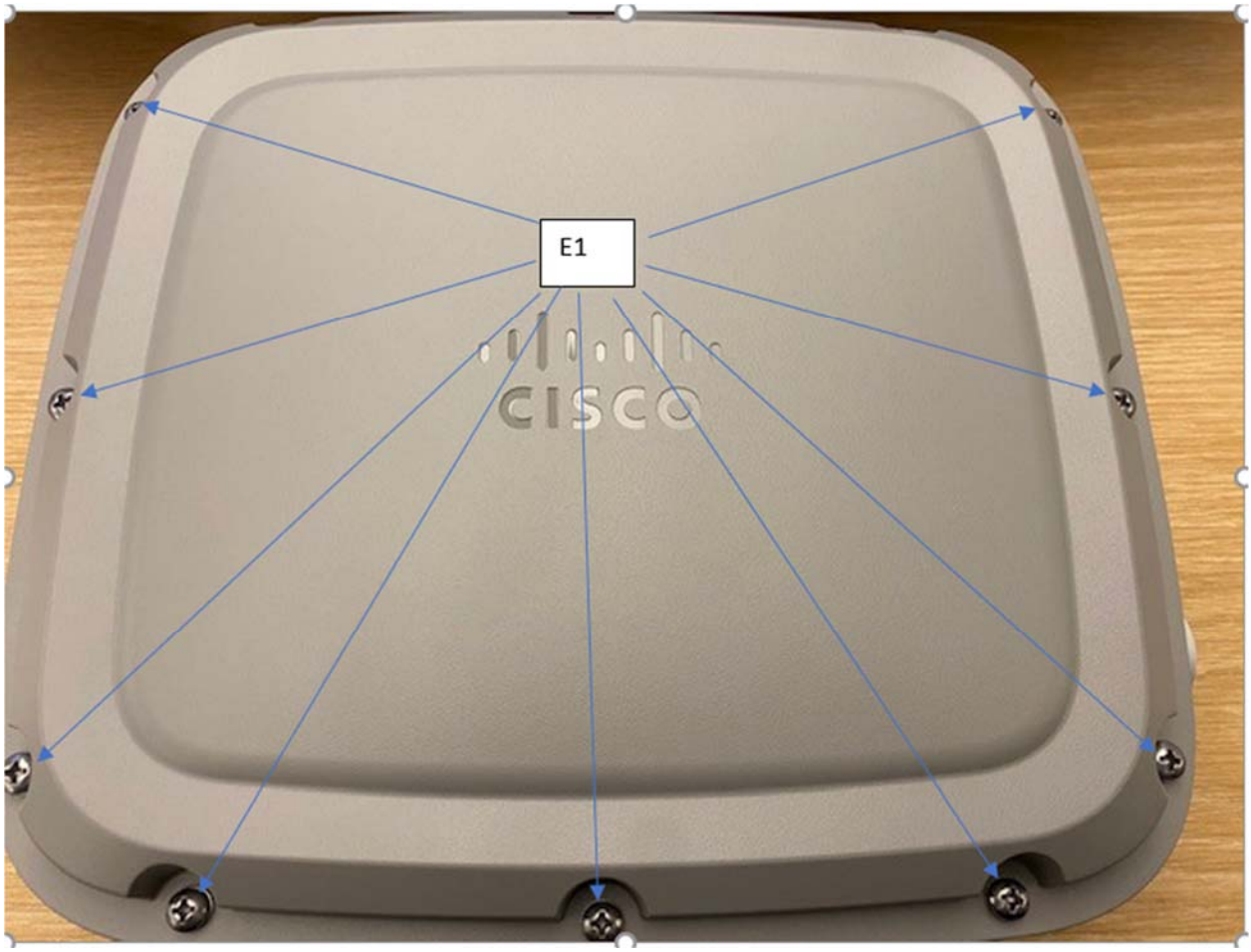
NA

ESD Points

ESD Point - Description	Air/Contact	Normal/Maintenance	Notes	Pass/Fail
E1	Contact	Normal	Top	Pass
E7	Air	Maintenace	Left side	Pass
E8	Contact	Normal	Back	Pass
E9	Contact	Normal	VCP/HCP	Pass
E4	Air	Normal	Front / WAN port	Pass
E5	Air	Normal	Front / Aux port	Pass
E6	Air	Normal	Right / AC-DC connector	Pass
E3	Air	Normal	Front / 1G SFP	Pass
E2	Contact	Normal	Bottom	Pass

ESD Point-Description: E1

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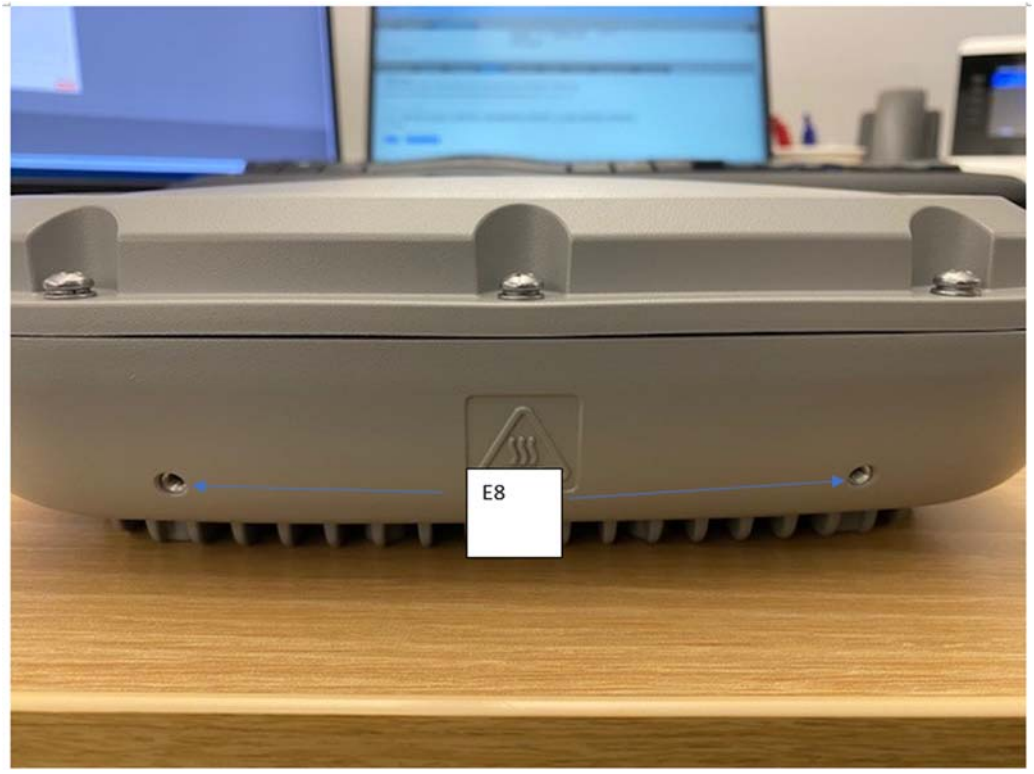


ESD Point-Description: E7

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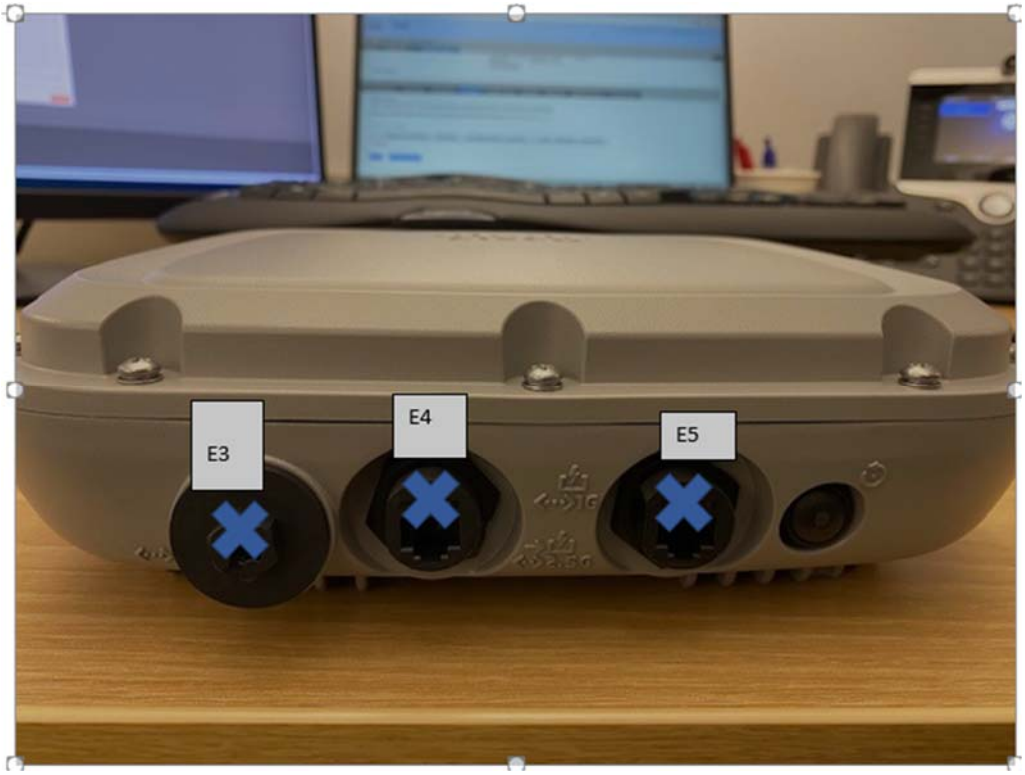


ESD Point-Description: E8

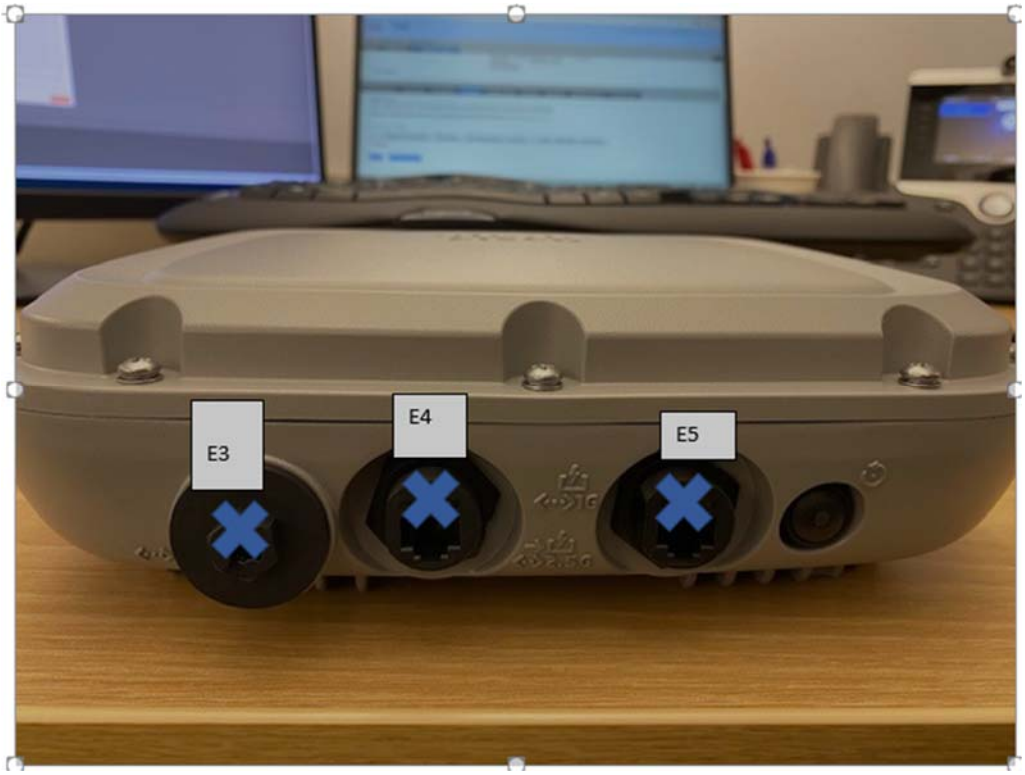


ESD Point-Description: E4

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ESD Point-Description: E5

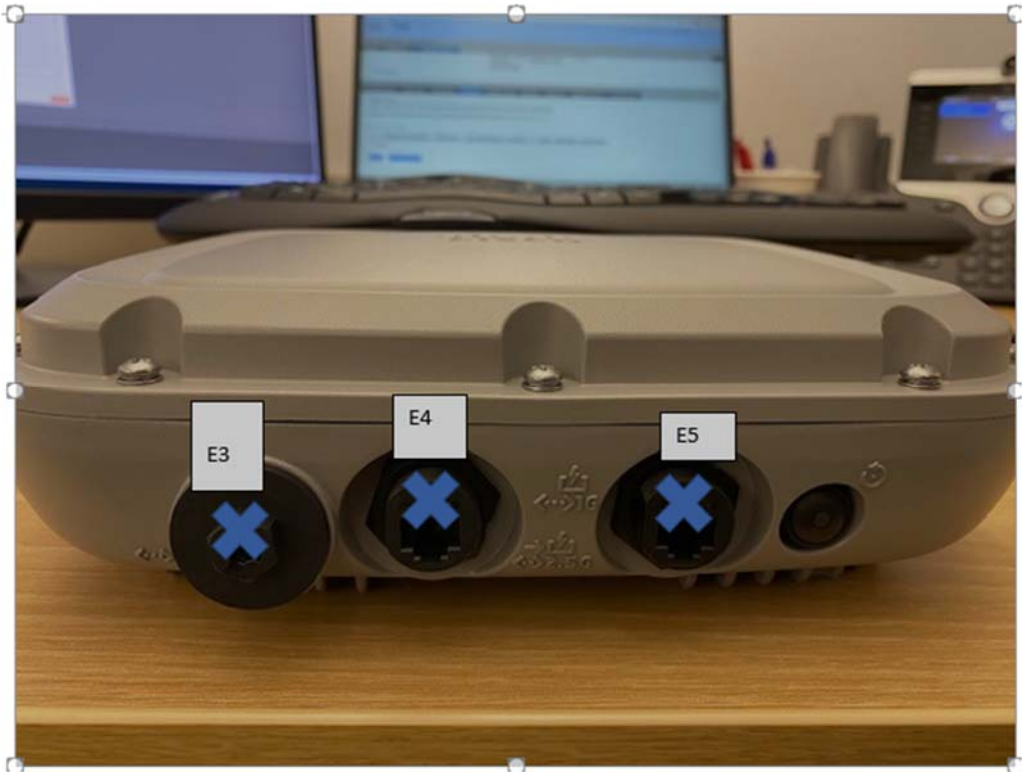


ESD Point-Description: E6

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ESD Point-Description: E3



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ESD Point-Description: E2



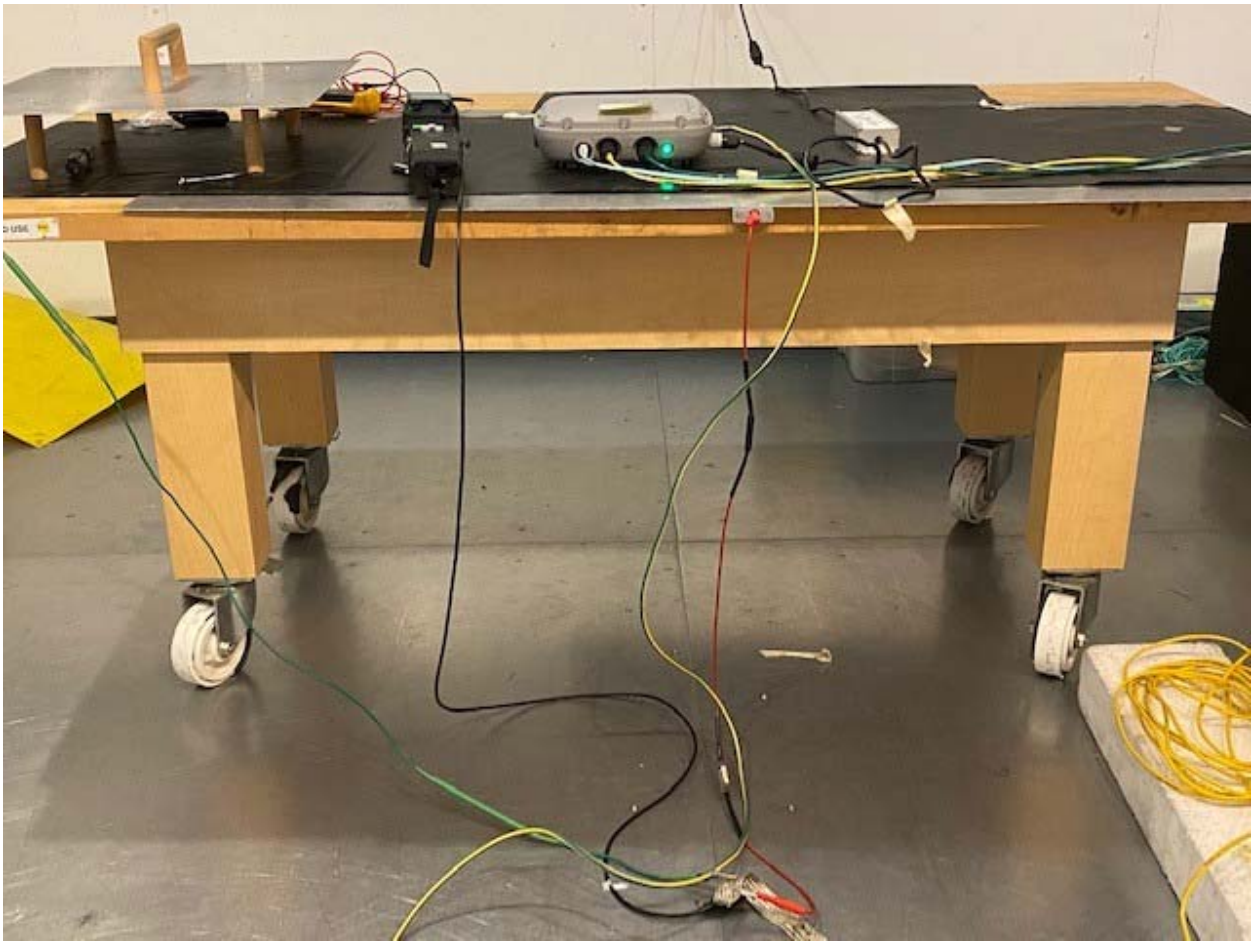
Questions & Answers

Lower Levels Assessed : Yes/No	Yes
Time between Discharges	1 pulse/sec.

Photographs

TITLE: NA
DESCRIPTION: NA

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Surge Impulse/Immunity

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Test Case Details

TestCase ID: 3390 Test Type: Surge Impulse/Immunity			
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Protection : No Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Without Primary Protection. Telecommunication Centers or Other than Telecommunication Centers.
Basic Standard	EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017 KN61000-4-5		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 3390-2 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	3390-2
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, WAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server.

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Mode#	Title	Description
		EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

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TITLE: NA
DESCRIPTION: NA



Subtest Details

Subtest Number : 3390-3 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	3390-3
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.9V
Coupling Method	Direct Injection

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Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, rj45 AUX port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall	N/A

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include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 3413	Test Type: Surge Impulse/Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN55035:2017 KN35:2015	Telecomm (Outdoor)	AC or DC Power: Protection : No Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Level: 500V Surge: 1.2/50 uS Criteria: B	
Basic Standard	EN61000-4-5:2014 IEC61000-4-5:2014:Ed:3 IEC61000-4-5:2014+A1:2017 KN61000-4-5		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 3413-1 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	3413-1
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass
Comments on the above Test Results	EUT powered by POE, WAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

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Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 3413-2 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	3413-2
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass

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Comments on the above Test Results	EUT powered by POE, rj45 AUX port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated	N/A

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“retrain/sync times,” those approximate times shall be included in the equipment documentation.	
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 3426	Test Type: Surge Impulse/Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1.5kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Without protection. Uses ITU-T for the test methods.
Basic Standard			
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 3426-1 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	3426-1
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass
Comments on the above Test Results	EUT powered by POE, WAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

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Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 3426-2 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	3426-2
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.8V
Coupling Method	Direct Injection
Subtest Result	Pass

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Comments on the above Test Results	EUT powered by POE, rj45 AUX port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated	N/A

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“retrain/sync times,” those approximate times shall be included in the equipment documentation.	
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 4066 Test Type: Surge Impulse/Immunity			
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	Power: AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: C	Alternative Test where 10/700 CDN wont allow the EUT to operate. Applied without primary protection in place. Common Mode test.
Basic Standard	EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017 KN61000-4-5		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 4066-1 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	4066-1
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, WAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access

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Mode#	Title	Description
		point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 4066-2 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	4066-2
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, rj45 AUX port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot	N/A

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time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 4908 Test Type: Surge Impulse/Immunity			
Product Standard	**Port Type**	**Test Details**	**Comments**
EN55035:2017 KN35:2015	Telecomm (Outdoor)	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Protection : Yes Level: 0.5kV Surge: 1.2/50 uS Criteria: B	
Basic Standard	EN61000-4-5:2014 IEC61000-4-5:2014:Ed:3 IEC61000-4-5:2014+A1:2017 KN61000-4-5		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 4908-1 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	4908-1
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, WAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

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Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 4908-2 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	4908-2
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, rj45 AUX port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot	N/A

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time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 7573	Test Type: Surge Impulse/Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Signal Telecomm (Outdoor)	Power : AC or DC Protection : No Telecom/ Signal Lines: Apply To: Long Distance Lines Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Lines Greater than 30m or cables connecting to outdoors.
Basic Standard	IEC61000-4-5:2014:Ed:3 EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7573-1 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7573-1
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	230.9
Coupling Method	Direct Injection
Subtest Result	Pass
Comments on the above Test Results	EUT powered by POE, WAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	37.5

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

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Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	N/A
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60S
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7573-2 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7573-2
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.9V
Coupling Method	Direct Injection
Subtest Result	Pass

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Comments on the above Test Results	EUT powered by AC/DC adaptor, LAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	37.5

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	N/A
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated	N/A

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“retrain/sync times,” those approximate times shall be included in the equipment documentation.	
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60S
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA



Subtest Details

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Subtest Number : 7573-3 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7573-3
Port Reference	[A] shielded rj45 wan port , 2.5G/1G/100M
Measured Voltage	230.8V
Coupling Method	Direct Injection
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, WAN port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No

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GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7573-4 Subtest Date : 3/9/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7573-4
Port Reference	[E] shielded rj45 AUX port , 1G/100M/10M
Measured Voltage	230.8V
Coupling Method	Direct Injection
Subtest Result	Pass

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Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by POE, rj45 AUX port is under test
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	27.4

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot	N/A

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time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA



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Test Case Details

TestCase ID: 7602	Test Type: Surge Impulse/Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	Power: AC Protection : No Level: 1kV Apply To: Line to Line Surge: 1.2/50 uS Criteria: B Level: 2kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	TNE Non Central Office. EN 51131-2 Zones A and B
Basic Standard	IEC61000-4-5:2014:Ed:3 EN61000-4-5:2014 IEC61000-4-5:2014+A1:2017 KN61000-4-5		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7602-1 Subtest Date : 2/26/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 3
Subtest Results	
Subtest Title	7602-1
Port Reference	[D] AC-DC power supply
Measured Voltage	230.9V
Coupling Method	CDN
Subtest Result	Pass
Susceptibility Details	No Susceptibility Observed.
Comments on the above Test Results	EUT powered by 230V/50Hz.
Environmental Conditions	
Temperature: (59 to 95)°F	64
Humidity: (10 to 75)%	42.5

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

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Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

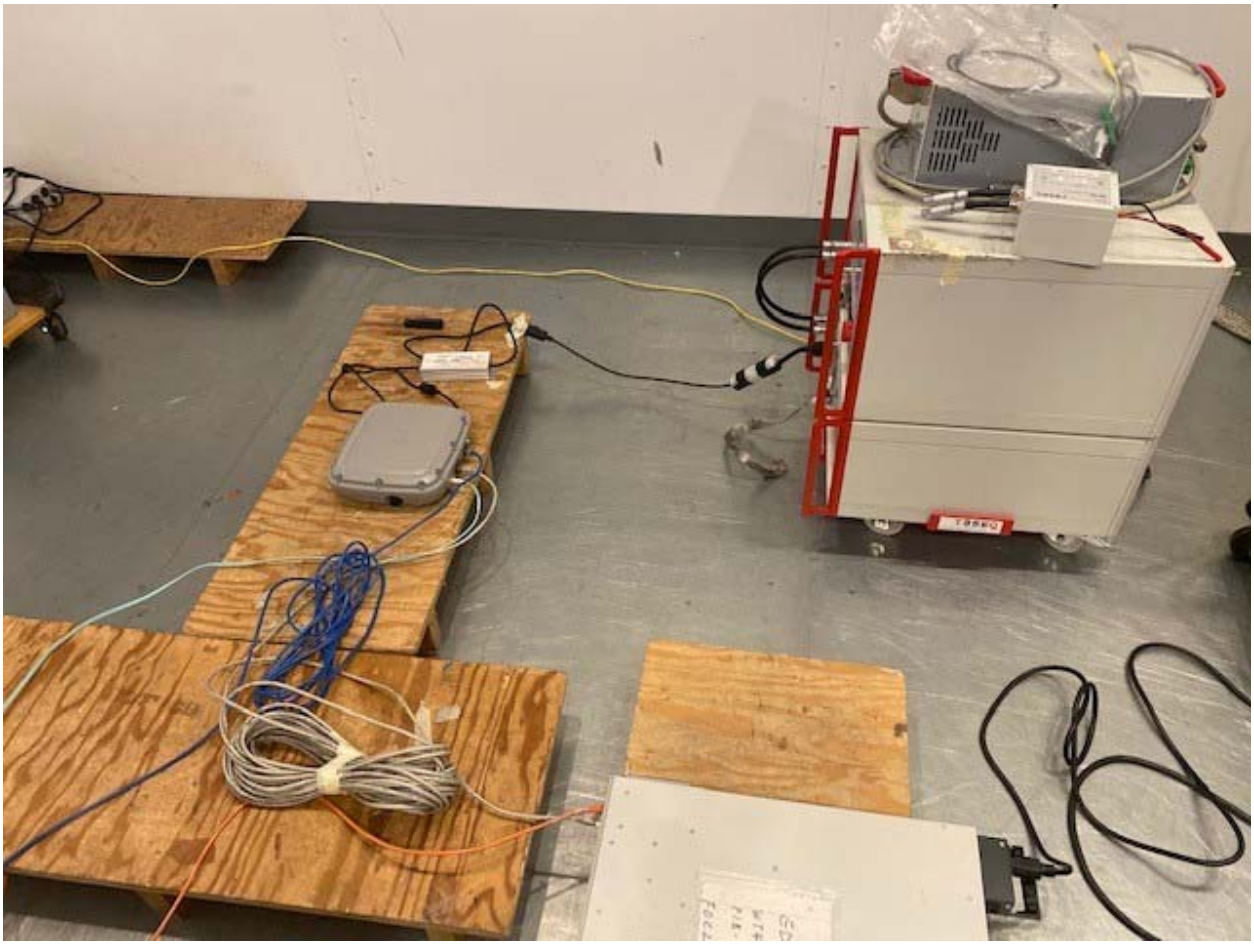
Questions & Answers

Secondary Protection : Device Removed for test : Yes/No/NA	N/A
Secondary Protection : Test voltage (kV) :	N/A
Secondary Protection : Does the EUT use secondary protection ? Yes/No	No
GR1089 Issue 7 : R4-6 :The recovery time for all services affected by each test sequence is :	N/A
GR1089 Issue 7 R4-7 : On the system provided for evaluation to Section 4, the test lab shall also force a system reboot and retrain/resync(s) of any applicable ports under test, and the approximate times to recover shall be documented in the test report. Time :	N/A
Primary Protection : Was Primary Protection fitted for the test ? Yes/No/N/A	N/A
Primary Protection : Rated Voltage (kV) ? : [Value] or N/A	N/A
GR1089 Issue 7 : R4-7 : Verify : For equipment that has a port(s) that is tested in Section 4, the equipment documentation shall include information regarding typical approximate “system boot time.” Additionally, if there are any telecommunications or antenna ports that are part of equipment under test that have associated “retrain/sync times,” those approximate times shall be included in the equipment documentation.	N/A
Primary Protection : Does the product use Primary Protection ? Yes/No	No
Time Between Surges	60s
Number of repetitions	5 positive and 5 negative

Photographs

TITLE: NA
DESCRIPTION: NA

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Voltage Disturbance Immunity

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Test Case Details

TestCase ID: 3372	Test Type: Voltage Disturbance Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	AC Power: <16A Mains Frequency : 50Hz Reductions : 0% Ut (100% Reduction) 0.5 cycle (B) 70% Ut (30% Reduction) 25 Cycle (B) 0% Ut (100% Reduction) 250 Cycles (C)	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;
Basic Standard	EN61000-4-11:2004 IEC61000-4-11:2004:Ed:2		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 3372-1 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	3372-1
Port Reference	[D] AC-DC power supply
Measured Voltage	230.5V
Subtest Result	Pass
Comments on the above Test Results	EUT powered by 230/50Hz. Passed as per criteria-A except that 100% reduction 250 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

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Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

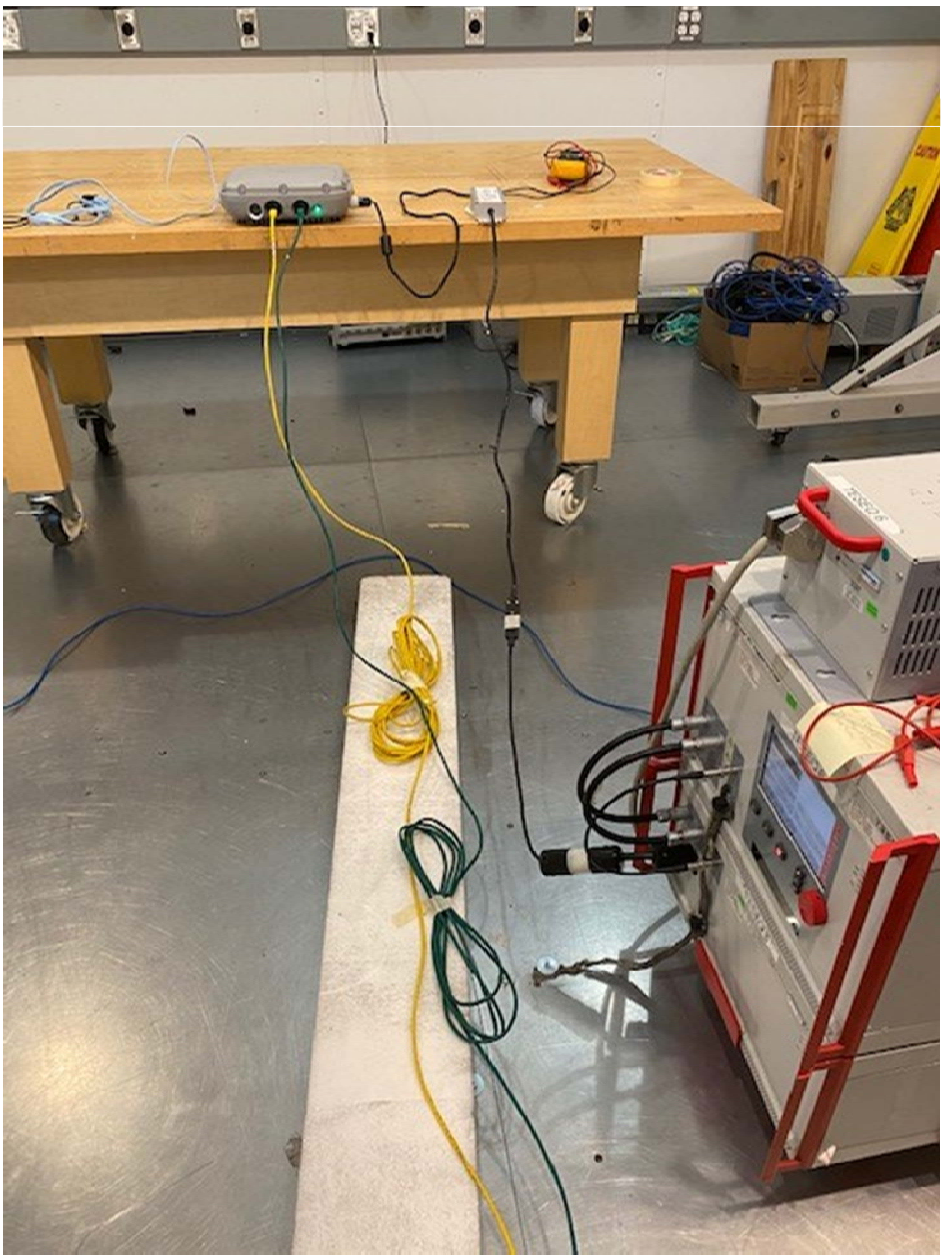
Questions & Answers

NA

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 3372-2 Subtest Date : 3/2/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	3372-2
Port Reference	[D] AC-DC power supply
Measured Voltage	115.3V
Subtest Result	Pass

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Comments on the above Test Results	EUT powered by 230/50Hz. Passed as per criteria-A except that 100% reduction 250 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

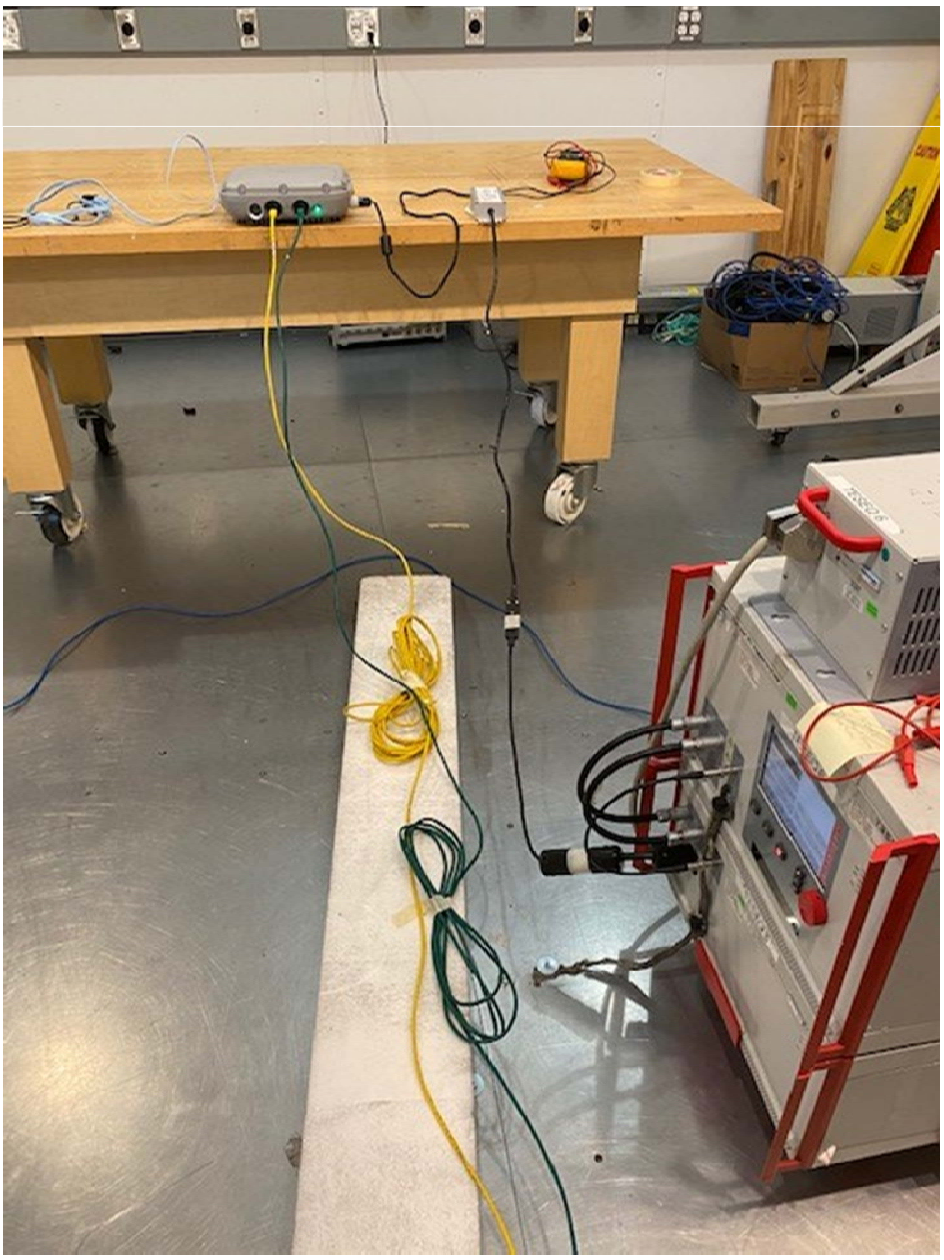
Questions & Answers

NA

Photographs

TITLE: NA
DESCRIPTION: NA

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Test Case Details

TestCase ID: 4729	Test Type: Voltage Disturbance Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
KN35:2015	AC (<16A)	AC Power: Mains Frequency : 60Hz Voltage Reductions : >95% for 0.5 Cycles [B] 30% for 30 Cycles[C] >=95% for 300 Cycles [C]	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;
Basic Standard	KN61000-4-11		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 4729-1 Subtest Date : 3/2/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	4729-1
Port Reference	[D] AC-DC power supply
Measured Voltage	209.3V/60Hz
Subtest Result	Pass
Comments on the above Test Results	EUT powered by 208/60Hz. Passed as per criteria-A except that >=95% for 300 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

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Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

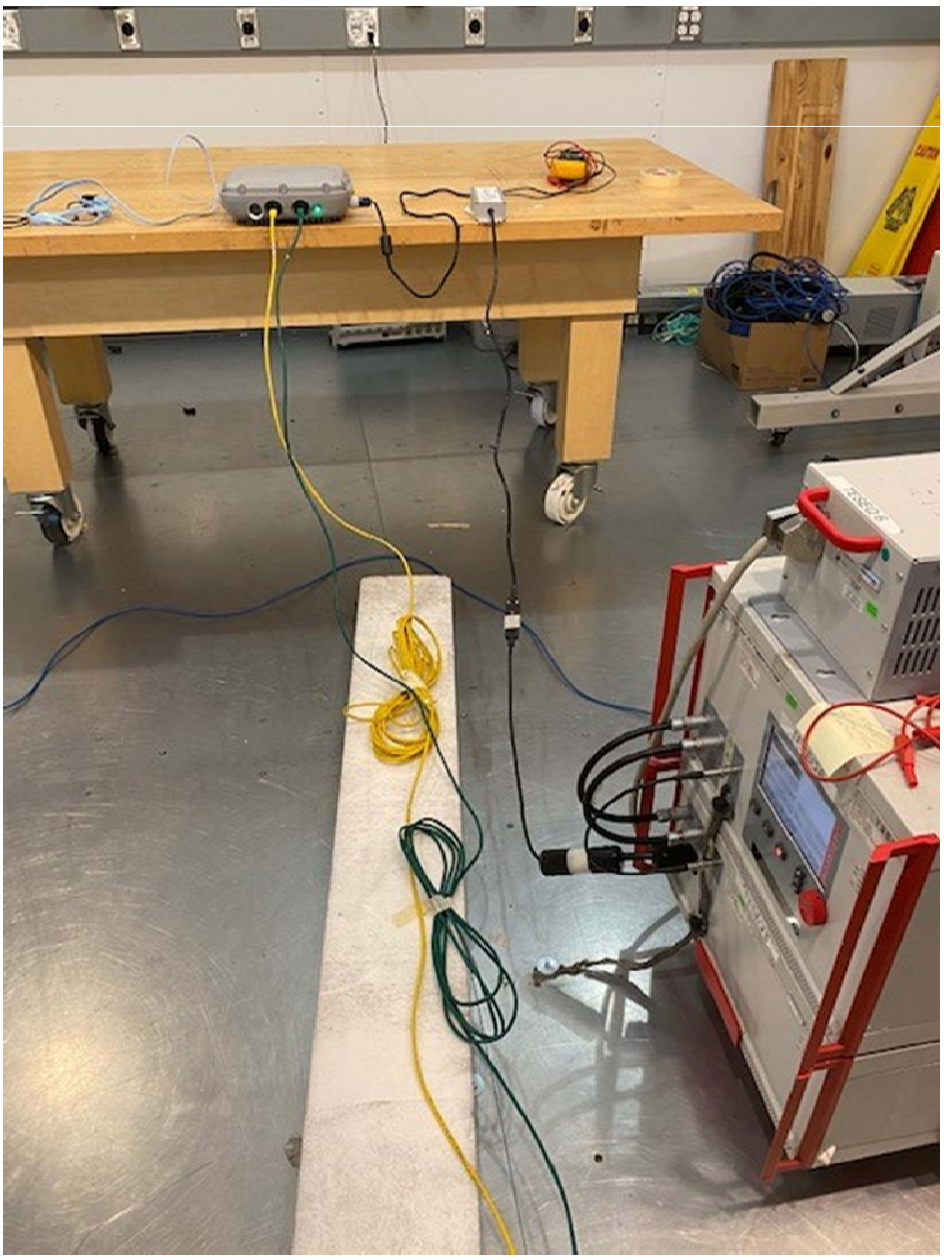
Questions & Answers

NA

Photographs

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DESCRIPTION: NA

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Subtest Details

Subtest Number : 4729-2 Subtest Date : 3/2/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	4729-2
Port Reference	[D] AC-DC power supply
Measured Voltage	118.6V/60Hz
Subtest Result	Pass

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Comments on the above Test Results	EUT powered by 120/60Hz. Passed as per criteria-A except that >=95% for 300 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

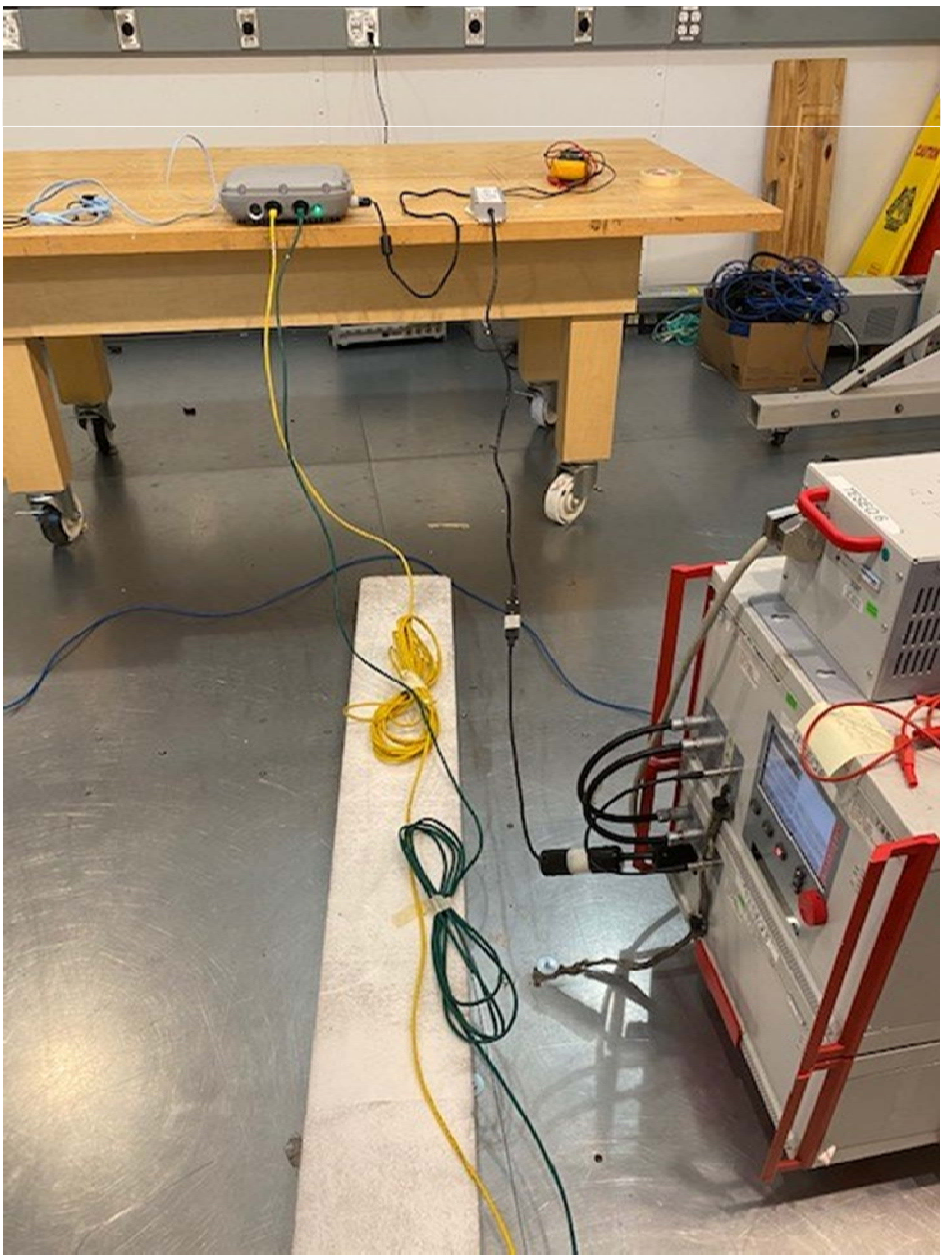
Questions & Answers

NA

Photographs

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Test Case Details

TestCase ID: 5980	Test Type: Voltage Disturbance Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
KN35:2015	AC (<16A)	AC Power: Mains Frequency : 60Hz Reductions : >= 95% for 0.5 cycle[B] 30% for 30 cycle[C] > = 95% for 300 cycle[C]	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;
Basic Standard	KN61000-4-11		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 5980-1 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5980-1
Port Reference	[D] AC-DC power supply
Measured Voltage	118.6V
Subtest Result	Pass
Comments on the above Test Results	EUT powered by 120/60Hz. Passed as per criteria-A except that >=95% for 300 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

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Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

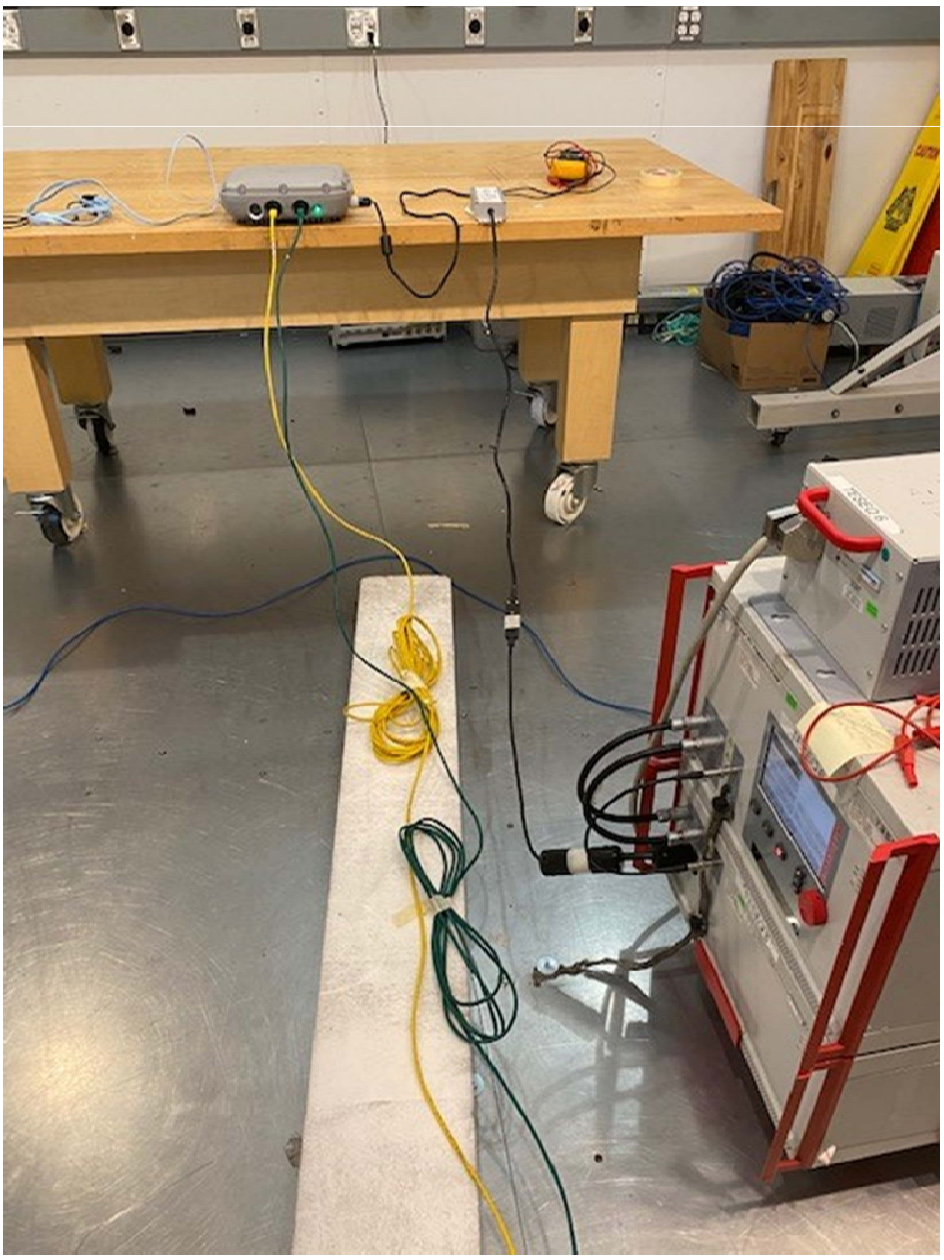
Questions & Answers

NA

Photographs

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DESCRIPTION: NA

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Subtest Details

Subtest Number : 5980-2 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	5980-2
Port Reference	[D] AC-DC power supply
Measured Voltage	209.3V
Subtest Result	Pass

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Comments on the above Test Results	EUT powered by 208/60Hz. Passed as per criteria-A except that >=95% for 300 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

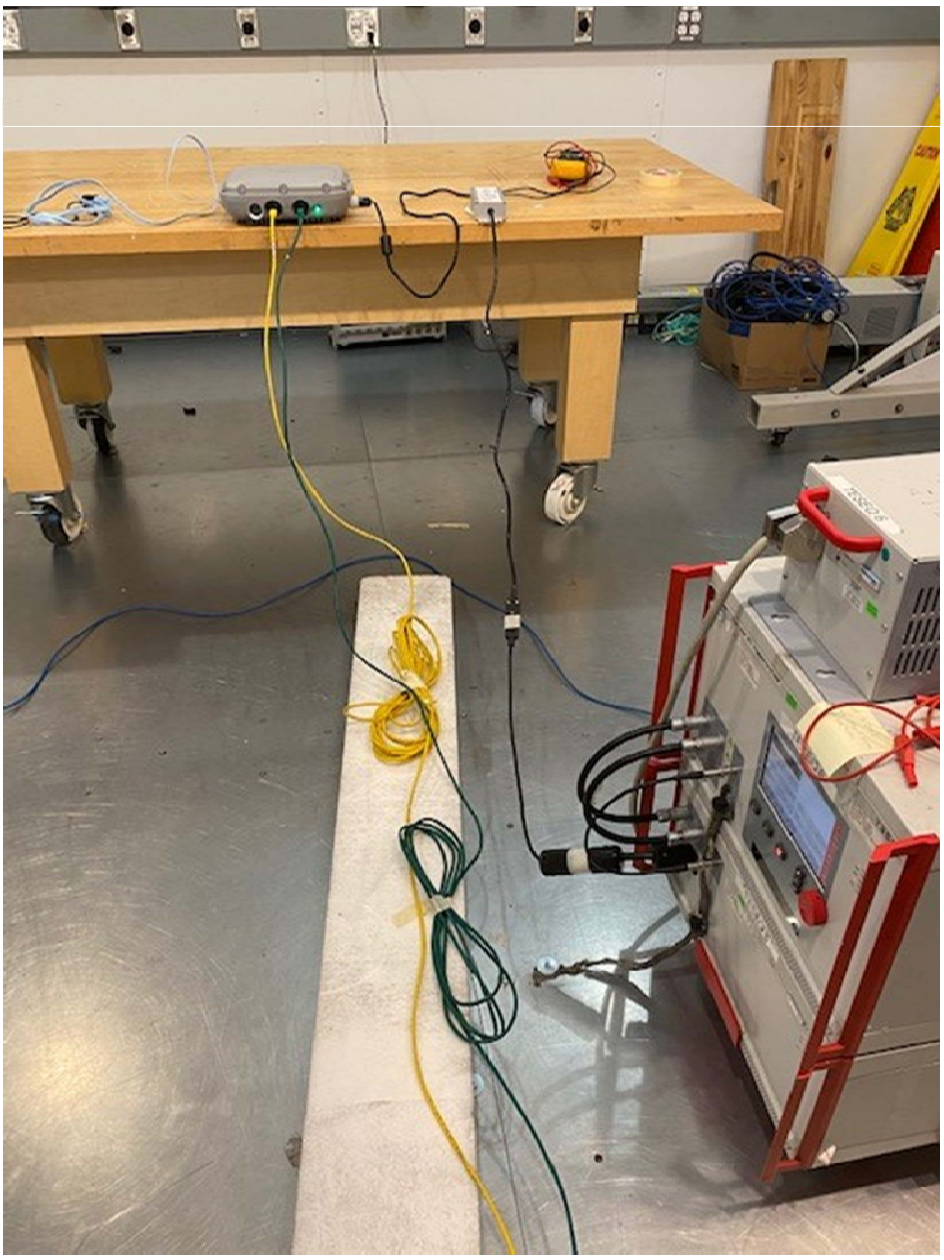
Questions & Answers

NA

Photographs

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DESCRIPTION: NA

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Test Case Details

TestCase ID: 7624	Test Type: Voltage Disturbance Immunity		
Product Standard	**Port Type**	**Test Details**	**Comments**
EN IEC61000-6-1:2019 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3	AC (<16A)	AC Power: <16A Mains Frequency : 50Hz 0% Ut (100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycles (C) 0% Ut (100% Reduction) 250 Cycles (C)	Basic Immunity (Table 1). Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;
Basic Standard	IEC61000-4-11:2004:Ed:2 EN61000-4-11:2004		
Overall Result	Pass		
Deviation	NA		

Subtest Details

Subtest Number : 7624-1 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7624-1
Port Reference	[D] AC-DC power supply
Measured Voltage	232.1V
Subtest Result	Pass
Comments on the above Test Results	EUT powered by 230/50Hz. Passed as per criteria-A except that 100% reduction 250 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor

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Mode#	Title	Description
		traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

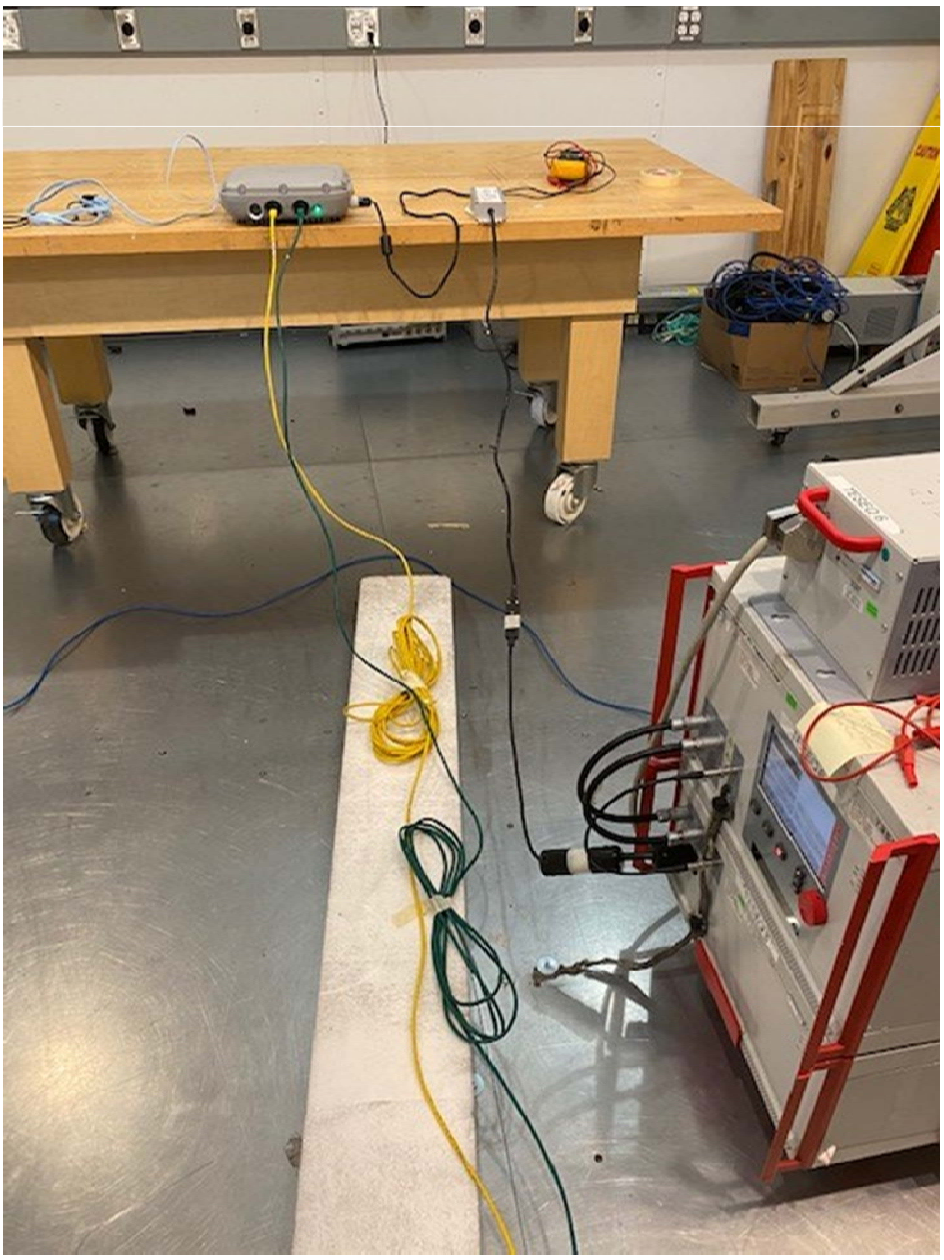
Questions & Answers

NA

Photographs

TITLE: NA
DESCRIPTION: NA

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Subtest Details

Subtest Number : 7624-2 Subtest Date : 3/3/2021	
Engineer	Bohao Li
Lab Information	Bldg. P - Shield Room 2
Subtest Results	
Subtest Title	7624-2
Port Reference	[D] AC-DC power supply
Measured Voltage	115.3V
Subtest Result	Pass

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Comments on the above Test Results	EUT powered by 115/50Hz. Passed as per criteria-A except that 100% reduction 250 cycles
Environmental Conditions	
Temperature: (59 to 95)°F	59
Humidity: (10 to 75)%	53

Operation Mode

Mode#	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

Hardware Configuration

Config#	Title	Description

Systems Details

System Number	Description	Samples	System under Test
1	C9124AXI-X Ithaca D	1	Yes
2	Support Equipment	6, 7, 3, 4, 5, 8, 9	No

Test Results Details

NA

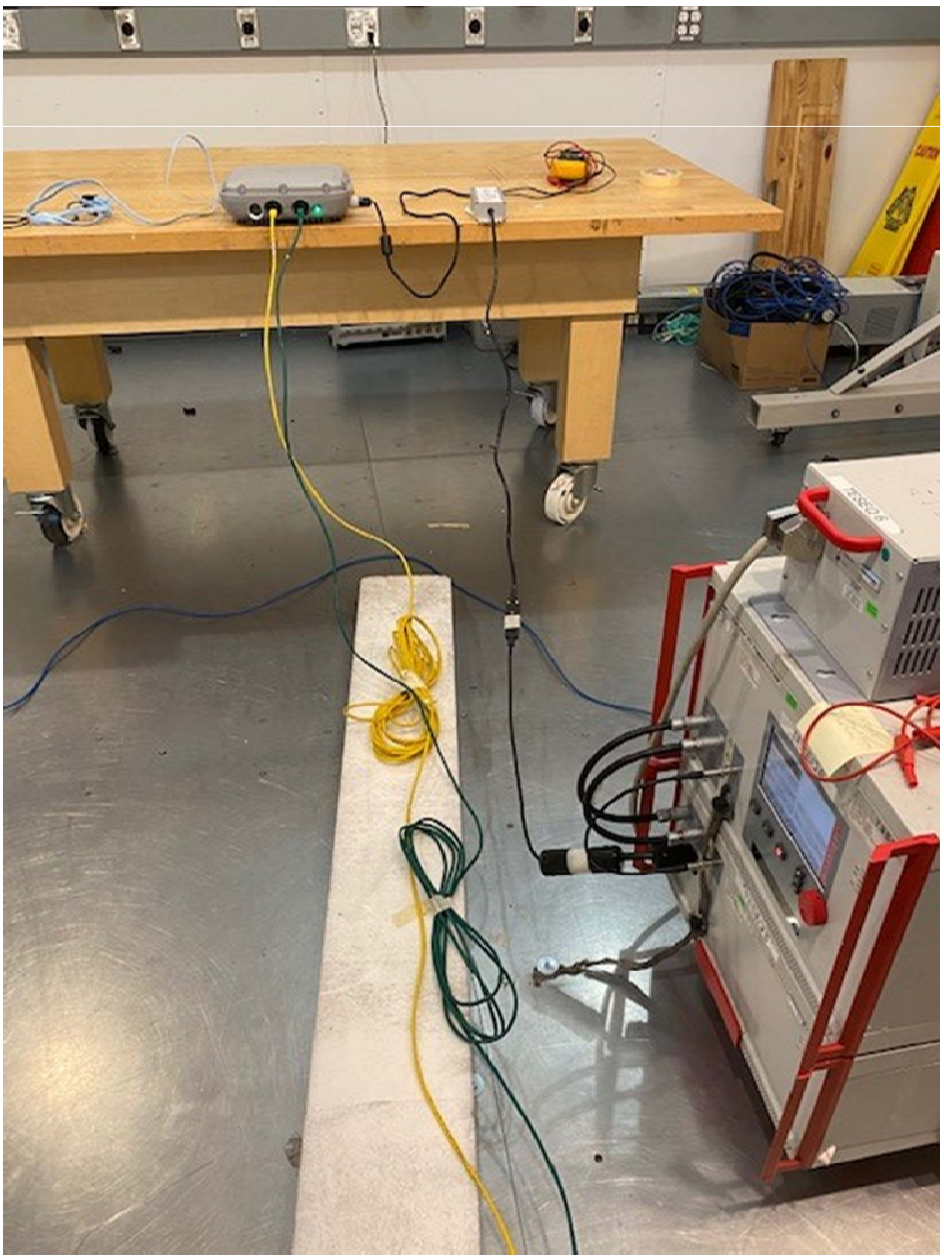
Questions & Answers

NA

Photographs

TITLE: NA
DESCRIPTION: NA

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5.3 Appendix C: Abbreviation Key and Definitions

The following table defines abbreviations used within this test report.

Abbreviation	Description	Abbreviation	Description
EMC	Electro Magnetic Compatibility	°F	Degrees Fahrenheit
EMI	Electro Magnetic Interference	°C	Degrees Celsius
EUT	Equipment Under Test	Temp	Temperature
ITE	Information Technology Equipment	S/N	Serial Number
TAP	Test Assessment Schedule	Qty	Quantity
ESD	Electro Static Discharge	emf	Electromotive force
EFT	Electric Fast Transient	RMS	Root mean square
EDCS	Engineering Document Control System	Qp	Quasi Peak
Config	Configuration	Av	Average
CIS#	Cisco Number (unique identification number for Cisco test equipment)	Pk	Peak
Cal	Calibration	kHz	Kilohertz ($1x10^3$)
EN	European Norm	MHz	MegaHertz ($1x10^6$)
IEC	International Electro technical Commission	GHz	Gigahertz ($1x10^9$)
CISPR	International Special Committee on Radio Interference	H	Horizontal
CDN	Coupling/Decoupling Network	V	Vertical
LISN	Line Impedance Stabilization Network	dB	decibel
PE	Protective Earth	V	
GND	Ground	kV	Kilovolt ($1x10^3$)
L1	Line 1	mV	Microvolt ($1x10^{-6}$)
L2	Line2	A	Amp
L3	Line 3	mA	Micro Amp ($1x10^{-6}$)
DC	Direct Current	mS	Milli Second ($1x10^3$)
RAW	Uncorrected measurement value, as indicated by the measuring device	mS	Micro Second ($1x10^{-6}$)
RF	Radio Frequency	mS	Micro Second ($1x10^{-6}$)
SLCE	Signal Line Conducted Emissions	m	Meter
Meas dist	Measurement distance	Spec dist	Specification distance
N/A or NA	Not Applicable	SL	Signal Line (or Telecom Line)
P	Power Line	L	Live Line
N	Neutral Line	R	Return
S	Supply	AC	Alternating Current

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5.4 Appendix D: Radiated Emissions Test Procedure

The following is a summary of the actual test procedure used by Cisco Systems (**Doc No:** ENG-36583)

Pre-Assessment
The object of the Pre-Assessment Testing is to identify emissions that must be evaluated against the specification limit, under conditions called out in the applicable specification. During this type of testing the repeatability of the test setup and the worst-case layout of the EUT are also determined.

1. Arrange the EUT in the chamber as defined in the configuration section of ENG-36583, the TAP and the appropriate specification.
2. Where the EUT cannot be configured in accordance with the specification then carry out the following:
    a. Set the equipment up as close as possible to the requirements.
    b. Note within the logbook any deviations from the standard.
    c. Use only non-metallic supports.
    d. Ensure that the set up used is repeatable.
    e. Evaluate the effect of the configuration upon the test results.
3. Set the antenna to EUT distance to the appropriate test distance.
4. An initial scan of the frequency ranges should be undertaken to ensure that all emissions emanate from the EUT and are not ambient (from mobile phones, support equipment etc.).
5. The EUT should be evaluated in the mode(s) of operation defined in the TAP.
6. Measure the emissions profile of the EUT over the required frequency range using the Automated test software
7. Once an initial preview scan has been performed the emissions profile of the EUT should be maximized in accordance with the specification.
8. Repeat the preview scan after maximizing (unless the overhead cable rack has been utilized). Compare the results with the initial scan to ensure that the worst-case profile has been obtained. *IMPORTANT* If the obtained profiles are considerably different an investigation should be undertaken to ensure that there is not an intermittent problem with the EUT or its cabling.
9. If the obtained profiles are similar all emissions within 6dB of the test specification should be identified for formal measurements. If the test software is used to do this, then the results must be confirmed manually. Where there are < 6 emissions within 6dB of the specification, the worst six emissions should be identified.
10. Where the frequencies of emissions are close together care must be taken to ensure that the actual worst case emission has been chosen for the formal measurement. This can usually only be confirmed by maximizing the emission profile. If in doubt identify both (or all) suspect emissions near the center frequency identified by the preview software.
11. During testing the overload indicator of the test Rx should be monitored to ensure that the testing is valid, where an overload condition is suspected this can normally be confirmed by the use of an external attenuator or the Rx linearity function.
12. If no signals are within 20dB of the specification limit no formal measurements are required. If this happens the equipment setup should be re-checked to ensure that that it has not developed a fault. When testing to CNS13438 the worst 6 emissions should be recorded regardless
13. Repeat the preceding for the remaining Modes and Configurations defined by the TAP or until a worst-case configuration has been obtained. Plots must be made of the worst case emission profile for inclusion in the test report. Plots may also be taken of other representative profiles.

Formal Testing:
The object of Formal/Final measurements is to formally measure the emissions highlighted during the pre-assessment phase against the appropriate specification limits. Maximization of the configuration of the EUT should not be performed during this phase as maximizing the profile at one frequency may change the profile at another and as such invalidate the preview results

1. In the **worst case configuration** each emission identified in the pre-assessment phase should be measured against the appropriate specification limit with the appropriate detector:
    a. Quasi-Peak detector for emissions from 30 MHz to 1GHz
    b. Peak detector and average detector for emissions above 1GHz
2. Fine Tune the frequency of the emission.
3. The emissions should be observed for a sufficient period of time to allow the EUT to undergo a full exercising routine.

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4. Maximize the amplitude of the emission by rotating the EUT, changing the antenna polarity and scanning the receive antenna height.
5. If the emission varies in amplitude with respect to the specification limit, the emission should be observed for at least 15 seconds and the highest reading shall be recorded, with the exception of any brief isolated high reading.
6. During testing the overload indicator of the test Rx should be monitored to ensure that the testing is valid., where an overload condition is suspected this can normally be confirmed by the use of external attenuation or the Rx linearity function.
7. If the EUT fails to meet the specification, investigations should be undertaken to ensure that the EUT has sufficient isolation from its support equipment and/ or ambient interference.
8. Above 1GHz Emissions that do not meet the average specification limit with a peak detector should be compared against the peak limit and re-measured with an Average detector.
9. Repeat steps 2 to 8 on the remaining emissions identified in the pre-assessment phase.
10. Record all relevant data in the eRAT.

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5.5 Appendix E: Conducted Emissions Test Procedure

The following is a summary of the actual test procedure used by Cisco Systems (**Doc No:** ENG-36541)

Pre-Assessment

The object of the Pre-Assessment Testing is to identify emissions that must be evaluated against the specification limit, under conditions called out in the applicable standard. During this type of testing the repeatability of the test setup and the worst-case layout of the EUT are also determined.

1. Arrange the EUT in the chamber as defined in the configuration section of ENG-36541, the TAP and the appropriate Specification
2. If drive/support equipment is located outside of the shielded enclosure, care must be taken to adequately filter cables coming into the chamber to reduce any potential ambient noise.
3. An initial investigation should be undertaken to ensure that ambient interference from external sources or support equipment are not affecting the measured results of the EUT.
4. The EUT should be connected to the LISN via an appropriate length of mains power cord as defined in the Specification.
5. Investigations should be made to assess possible effects of I/O cables on the measured emission profile. Such investigations should remain within the boundaries of acceptable configurations defined in the Specification. The main purpose of this investigation is to check for cabling problems and for repeatability. I/O cables should not come within 80cm of the LISN (AMN). This information should be recorded in JLS.
6. Ensure that there is a pulse limiter in the measurement path to the input of the spectrum analyzer. Ensure that unused ports of the LISN are terminated in 50 ohms.
7. The emission profile of the EUT should be measured across the required frequency range.
8. Maximize the emission profile of the EUT over the entire frequency range. The following issues should be considered during the maximization process:
   a. Cable placement and EUT location (within the boundaries of the Specification)
   b. EUT operating modes (allow for full EUT Cycle times)
9. Once the maximum configuration has been discovered, the emission profile should be compared with the most stringent limit from the appropriate Specification.
10. If no signals are within 20dB of the Specification limit no formal measurements are required. If this happens the equipment setup should be re-checked to ensure that that it has not developed a fault. When testing to CNS13438 the worst 6 emissions should be recorded regardless.
11. Make a Plot of the entire emission profile.
12. Repeat steps 9 to 11on the remaining lines.
13. Identify all emissions that fail to meet the most stringent limit. These emissions should be formally measured.
14. Where the emission profile meets the most stringent limit, the six worst-case emissions should be identified for formal measurements. If the emission profile is broadband in Nature (i.e. switch mode PSU noise) it may be necessary to identify more than 6 emissions to adequately assess the EUT.

Formal Testing:

The object of Formal/Final measurements is to formally measure the emissions highlighted during the pre-assessment phase against the appropriate Specification limits.

1. Each emission identified in the pre-assessment phase should be measured against the appropriate Specification limit with a Quasi-Peak detector.
2. The emissions should be observed for a sufficient period of time to allow the EUT to undergo a full exercising routine.
3. Where the emission varies in amplitude with respect to the Specification limit the emission should be observed for an extended time period (normally 15 seconds). The highest level observed within this 15 second period should be recorded with the exception of any brief isolated transients.
4. If the EUT meets the most stringent limit (e.g. the average limit) with the Quasi-Peak detector, measurements with an average detector are not necessary.
5. If the EUT fails to meet the most stringent limit with the Quasi-Peak detector the emission should be measured with an Average detector.
6. Repeat the measurements on all available power supply conductors.
7. If the results are within 3dB of the Specification when measured at 120V 60HZ AC measurements should also be performed at 100V 60/50Hz AC to satisfy VCCI requirements.

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8. If the EUT fails to meet the Specification, investigations should be undertaken to ensure that the EUT has sufficient isolation from its support equipment and/ or ambient interference.
9. If the EUT fails to meet the CFR47 limit, investigations should be undertaken to determine if the emission is a broadband in nature. If the difference between the results obtained with the average detector and the results obtained with quasi peak detector are >6dB the emission is deemed to be broadband and the quasi peak reading can be reduced by a factor of 13dB.

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5.6 Appendix F: Scope of Accreditation: A2LA certificate number 1178-01

The current Cisco Systems Scope of Accreditation for EMC testing can be found at:
http://www.a2la.org/scopepdf/1178-01.pdf
Previous versions of the scope of accreditation are achieved under Doc Central 1010411. The actual scope of accreditation that was current at the time of the testing performed under this report can be obtained upon request

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

CISCO SYSTEMS, INC.
170 West Tasman Drive
San Jose, CA 95134-1706
Mr. Donald Chan donachan@cisco.com
Phone: 408 424 2372

ELECTRICAL

Valid to: November 30, 2020 Certificate Number: 1178.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following product safety, telecommunications, environmental simulation, radio, and electromagnetic compatibility (EMC/EMI) tests:

EMC/EMI (Buildings P, 7, I, 16)	
EMC/EMI: Emissions	
Worldwide	CISPR 16-1-4:2010; CISPR 22:2008; EN 55022:2010; CISPR 32:2015; EN 55032:2015; EN 50083-2:2012+A1:2015 EN 61000-3-2: 2019; EN 61000-3-3: 2013+AMD1:2019; EN 61000-3-11: 2019; EN 61000-3-12: 2011; FCC CFR 47, Part 15 B (using ANSI C63.4:2014)
Korea	KN 32
Taiwan *	CNS 13438:2006 (up to 6 GHz)
Japan	VCCI-CISPR 32:2016

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Vietnam	QCVN 118:2018/BTTTT (CISPR 32:2015 RLV and CISPR 32:2015 / COR1:2016)
EMC/EMI: Immunity	
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008/ EN 61000-4-2:2009
Radiated Immunity	IEC/EN 61000-4-3:2006+AMD1:2007+AMD2:2010
Electrical Fast Transient/Burst	IEC/EN 61000-4-4:2012
Surge Immunity	IEC/EN 61000-4-5:2014+A1:2017
Conducted Immunity	IEC 61000-4-6:2013, EN 61000-4-6 : 2014
Power Frequency Magnetic Field Immunity	IEC 61000-4-8:2009, EN 61000-4-8:2010
Pulsed Magnetic Field Immunity	IEC/EN 61000-4-9:2016
Damped Oscillatory Magnetic Field Immunity	IEC 61000-4-10:2015, EN 61000-4-10:2016
Voltage Dips, Short Interruptions, and Line Voltage Variations	IEC/EN 61000-4-11:2004 +A1:2011
Conducted, Common Mode Disturbances in the Frequency Range 0 Hz to 150 kHz	IEC 61000-4-16:2015, EN 61000-4-16:2016
Ripple on D.C. Input Power Port	IEC 61000-4-17:1999+AMD1:2001+AMD2:2008, EN 61000-4-17:1999+AMD1:2004+AMD2:2009
Damped Oscillatory Wave	IEC 61000-4-18:2006+AMD1:2010; EN 61000-4-18:2007+A1:2010
Voltage Dips, Short Interruptions and Voltage Variations on D.C. Input Power Port	IEC/EN 61000-4-29:2000
Korea	KN 35
Vietnam	TCVN 7317:2003 (CISPR 24:1997)

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EMC/EMI: Wireless

Worldwide	EN 301 489-1:(excluding section 9.6) 2019:V2.2.3; EN 301 489-3:2019:V2.1.1; EN 301 489-6:2019:V2.2.1; EN EN 301 489-17:2017:V3.1.1; EN 301 489-19:2019:V2.1.1; EN 301 489-50:2019:V2.1.1
Korea	KN 301 489-1 (excluding section 9.6); KN 301 489-3; KN 301 489-6; KN 301 489-17; KN 301 489-50; KN 301 489-52
Vietnam	QCVN 18:2014/BTTTT (EN 301 489-1); QCVN 112:2017/BTTTT (EN 301 489-17); QCVN 86:2019/BTTTT (EN 301 489-52)

EMC/EMI:Emissions and Immunity

EMC/EMI: Service Provider **	GR-3108, Issue 3 (2013); GR-3108, Issue 4 (2018); GR-1089, Issue 6 (2011), sections 2, 3, 4, and 10 (excluding sections 4.6.1.3.2, 4.6.2.1.2, 4.7, and 10.7); GR-1089, Issue 7 (2017), sections 2, 3, 4, and 10 (excluding Surge 1.3, clause 4.6.2.1.2.7, 4.7, and 10.7)
EMC/EMI: Medical	EN 60601-1-2:2015 (clauses 7 & 8)

* Radiated Emissions Building P 10m Only.
** Building P only

SmartGrid (Building P)

Test Technology:	Test Method(s) [1]:
SmartGrid	IEC 61850-3:2013; IEEE 1613.1:2013; IEEE 1613:2009 ~~+ A1;~~ IEEE 1613A:2011

Marine (Building P)

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Test Technology:	Test Method(s) [1]:
EMC/EMI: Marine	EN 60945:2002 (sections 9 and 10); IEC 60533:2015 (excluding special power distribution zone)
Product Safety: Marine	IEC 60945:2002 (sections 4.3.2, 5.2.3 [excessive voltage, reversed polarity, improper phase sequence], and 7.2); IACS Req. 1991/Rev.7 2018 E10 (Cl. 9, Cl. 10); DNVGL-CG-0339 (Cl. 12, Cl. 13)

Railway (Building P)

Test Technology:	Test Method(s) [1]:
EMC/EMI: Railway	EN 50121-3-2:2016+A1:2019 EN 50121-4:2016+A1:2019 EN 50155:2017
Product Safety/ Environmental: Railway	IEC 60571:2012:Ed.3; EN 50155:2017 (excluding sub clauses 13.4.10, 13.4.12, and 13.4.14); EN 50153:2014 AREMA Part 11.5.1: 2016 Cl. 7

On the following products or types of products:
Information Technology Equipment (ITE), Telecommunications Network Equipment (TNE), Intentional Radiators

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5.7 Appendix G: Test Equipment Details

Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
001564	KeyTek	MZ15/EC	ESD Simulator	9/11/2020	9/11/2021	7621-1,7621-2
004003	Fischer Custom Communications	FCC-801-M2-32A	CDN, 2-LINE, 32A	3/9/2020	3/9/2021	3407-1,3407-2,4053-1,4053-2,4053-3,5594-1
004003	Fischer Custom Communications	FCC-801-M2-32A	CDN, 2-LINE, 32A	3/11/2021	3/11/2022	5691-2,7556-2
004141	Fischer Custom Communications	FCC-801-M2-32A	CDN, 2-LINE, 32A	1/27/2021	1/27/2022	5290-3,5290-4,7627-3,7627-4
008036	Coleman	RG-214	3 ft RG214 Cable	11/13/2019	5/13/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
004883	EMC Test Systems	3115	Double Ridged Guide Horn Antenna	NA	NA	4621-1,5606-1,5631-1,5695-2,7554-1,7582-2
008171	HP	8491B Opt 010	10dB Attenuator	1/6/2021	1/6/2022	4621-1,5606-1,5631-1,5695-2,7554-1,7582-2
008176	HP	8491B Opt 020	20dB Attenuator	11/15/2019	5/15/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
008191	Fischer Custom Communications	FCC-450B-2.4-N	Instrumentation Limiter	1/26/2021	1/26/2022	5592-3,5592-4,5693-3,5693-4,5699-10,5699-5,5699-6,5699-7,5699-8,5699-9,5703-4,5703-5,5703-6,5703-7,5703-8,5703-9,7555-3,7555-4,7575-2,7575-3
005687	Fluke	73 III	Digital Multimeter	NA	NA	7597-1,7614-1,7620-1
005687	Fluke	73 III	Digital Multimeter	11/4/2020	11/4/2021	3372-1,3372-2,3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4729-1,4729-2,4908-1,4908-2,5980-1,5980-2,7454-1,7457-1,7459-1,7461-2,7573-1,7573-2,7573-3,7573-4,7594-1,7594-2,7594-3,7594-4,7594-5,7594-6,7595-1,7596-1,7602-1,7615-1,7615-2,7619-1,7624-1,7624-2,7625-1,7625-2
008320	Times Microwave Systems	RG-214	3 ft RG-214 Cable	11/13/2019	5/13/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
008327	Times Microwave Systems	RG-214	4 ft RG-214 Cable	1/11/2021	1/11/2022	4616-1,4616-2,4617-1,4617-2,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,5697-3,7560-1,7560-2,7574-3

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
008342	Times Microwave Systems	RG-214	4 ft RG-214 Cable	1/11/2021	1/11/2022	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
008414	Bird	100-SA-FFN-06	100 W Power Attenuator (6dB)	1/22/2021	1/22/2022	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
008471	Bird	5-T-MB	50 Ohm, 5W Terminator,Type BNC	9/18/2019	3/18/2021	5592-3,5592-4,5693-3,5693-4,5699-10,5699-5,5699-6,5699-7,5699-8,5699-9,5703-4,5703-5,5703-6,5703-7,5703-8,5703-9,7555-3,7555-4,7575-2,7575-3
008478	Bird	5-T-MB	5W,50 Ohm Terminator,Type BNC	2/1/2021	2/1/2022	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
007221	EMC Test Systems	3115	Double Ridged Guide Horn Antenna	NA	NA	5296-1,5296-2
008510	Fischer Custom Communications	FCC-450B-2.4-N	Instrumentation Limiter	12/15/2020	12/15/2021	3407-1,3407-2,4053-1,4053-2,4053-3,5594-1,5691-2,7556-2
018963	York	CNE V	Comparison Noise Emitter, 30 - 1000MHz	NA	NA	3407-1,3407-2,4053-1,4053-2,4053-3,5594-1,5691-2,7556-2
018962	York	CNE V	Comparison Noise Emitter, 30 - 1000MHz	NA	NA	4616-1,4616-2,4617-1,4617-2,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,5697-3,7560-1,7560-2,7574-3
018313	HP	8447D	RF Preamplifier	2/11/2021	2/11/2022	5697-3,7574-3
020890	Narda	766-20	20W 20dB Power Attenuator	2/18/2021	2/18/2022	7621-1,7621-2
021116	Micro-Coax	UFB311A-0-3540-520520	RF Coaxial Cable, to 18GHz, 354 in	2/17/2020	8/17/2021	4616-1,4616-2,4617-1,4617-2,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,5697-3,7560-1,7560-2,7574-3
020975	Micro-Coax	UFB311A-0-1344-520520	RF Coaxial Cable, to 18GHz, 134.4 in	2/17/2020	8/17/2021	3407-1,3407-2,4053-1,4053-2,4053-3,4621-1,4622-1,4622-2,5594-1,5606-1,5631-1,5691-2,5695-2,7554-1,7556-2,7582-2
023835	Colemen	RG-223	25ft BNC Cable	1/28/2021	1/28/2022	5592-3,5592-4,5693-3,5693-4,5699-10,5699-5,5699-6,5699-7,5699-8,5699-9,5703-4,5703-5,5703-6,5703-7,5703-8,5703-9,7555-3,7555-4,7575-2,7575-3

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
023880	Agilent	E9304A Opt H18	Power Sensor, 9kHz-18GHz	4/28/2020	4/28/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
023911	Fischer Custom Communications	FCC-LISN-50-2-RA-NEMA-5-20R	Power Adaptor, Polarized 120VAC	3/5/2020	3/5/2021	3407-1,3407-2,4053-1,4053-2,4053-3,5592-3,5592-4,5594-1,5691-2,5693-3,5693-4,5699-10,5699-5,5699-6,5699-7,5699-8,5699-9,5703-4,5703-5,5703-6,5703-7,5703-8,5703-9,7555-3,7555-4,7556-2,7575-2,7575-3
024479	Werlatone	C5100	Directional Couper, .01-250MHz, 500W	10/30/2019	4/30/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
029956	Agilent	E4418B	Single Channel EPM Series Power Meter	4/29/2020	4/29/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
030520	Midwest Microwave	TRM-2048-MC-BNC-10	50 Ohm Terminator, BNC w/chain	1/19/2021	1/19/2022	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
030652	Sunol Sciences	JB1	Combination Antenna	7/14/2020	7/14/2021	4616-1,4616-2,4617-1,4617-2,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,5697-3,7560-1,7560-2,7574-3
030666	Micro-Tronics	BRM50702-02	Band Reject Filter, Stop Band=2.4-2.5GHz	2/25/2021	2/25/2022	4621-1,4622-1,4622-2,5606-1,5631-1,5695-2,7554-1,7582-2
030486	Agilent	E8257C	RF Signal Generator	11/18/2020	11/18/2021	3328-1,3328-2,5296-1,5296-2
005972	HP	83712B	Synthesized CW Generator	NA	NA	4622-3,4622-4
033988	Agilent	E4446A	PSA Spectrum Analyzer	11/18/2020	11/18/2021	4622-3,4622-4
032614	California Instruments	5001i	Harmonic/Flicker Test System -AC Power Source	8/27/2020	8/27/2021	7454-1,7457-1,7459-1,7461-2
034191	Micro-Tronics	BRM50702-02	Notch Filter, SB:2.400-2.500GHz, to 18GHz	2/25/2021	2/25/2022	4621-1,4622-1,4622-2,5606-1,5631-1,5695-2,7554-1,7582-2
034075	Schaffner	RSG 2000	Reference Spectrum Generator, 1-18GHz	NA	NA	4621-1,5606-1,5631-1,5695-2,7554-1,7582-2
035242	Klein Tools	926-8ME	8 Meter Tape Measure	NA	NA	3328-1,3328-2,3407-1,3407-2,4053-1,4053-2,4053-3,4622-1,4622-2,4622-3,4622-4,5296-1,5296-2,5594-1,5691-2,7556-2

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
035245	Stanley	33-696	5 Meter Tape Measure	NA	NA	3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4616-1,4616-2,4617-1,4617-2,4908-1,4908-2,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,7560-1,7560-2,7573-1,7573-2,7573-3,7573-4,7594-1,7594-2,7594-3,7594-4,7594-5,7594-6,7595-1,7596-1,7597-1,7602-1,7614-1,7615-1,7615-2,7619-1,7620-1
035607	Micro-Tronics	BRC50703-02	Notch Filter, SB:5.150-5.350GHz, to 11GHz	9/23/2020	9/23/2021	4621-1,4622-1,4622-2,5606-1,5631-1,5695-2,7554-1,7582-2
035608	Micro-Tronics	BRC50703-02	Notch Filter, SB:5.150-5.350GHz, to 11GHz	1/15/2021	1/15/2022	4621-1,4622-1,4622-2,5606-1,5631-1,5695-2,7554-1,7582-2
035645	Agilent	E9304A Opt H18	Power Sensor, 9kHz-18GHz	6/8/2020	6/8/2021	3328-1,3328-2,5296-1,5296-2
035646	Agilent	E4418B	Power Meter	6/8/2020	6/8/2021	3328-1,3328-2,5296-1,5296-2
037020	Fluke	175	True RMS Multimeter	3/5/2020	3/5/2021	3407-1,3407-2,4053-1,4053-2,4053-3,4616-1,4616-2,4617-1,4617-2,5594-1,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,7560-1,7560-2
037020	Fluke	175	True RMS Multimeter	2/23/2021	2/23/2022	5691-2,7556-2
037194	Acme Transformer	T-3-53043-S	Isolation Transformer	NA	NA	3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4908-1,4908-2,7573-1,7573-2,7573-3,7573-4,7602-1
038401	Sunol Sciences	LP-80	Log Periodic Antenna	NA	NA	3328-1,3328-2
041979	Cisco	1840	18-40GHz EMI Test Head/Verification Fixture	9/14/2020	9/14/2021	4622-3,4622-4
043052	Cisco	BR940K	ESD Bleed Resistor	NA	NA	7621-1,7621-2
043124	Cisco	Above 1GHz Site Cal	Above 1GHz Cispr Site Verification	1/8/2021	1/8/2022	4621-1,5606-1,5631-1,5695-2,7554-1,7582-2
044033	Haefely	PDP 8000	HV Differential Probe	NA	NA	7614-1

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
044033	Haefely	PDP 8000	HV Differential Probe	5/6/2020	5/6/2021	3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4908-1,4908-2,7573-1,7573-2,7573-3,7573-4,7594-1,7594-2,7594-3,7594-4,7594-5,7594-6,7595-1,7602-1,7615-1,7615-2
044052	Fischer Custom Communications		Coupling Decaoupling Network	3/4/2020	9/4/2021	5290-3,5290-4,7627-3,7627-4
044903	Agilent	DSO7104A	4Ch, 1GHz Oscilloscope	NA	NA	7614-1
044903	Agilent	DSO7104A	4Ch, 1GHz Oscilloscope	8/5/2020	8/5/2021	3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4908-1,4908-2,7573-1,7573-2,7573-3,7573-4,7594-1,7594-2,7594-3,7594-4,7594-5,7594-6,7595-1,7602-1,7615-1,7615-2
045016	Huber + Suhner	Sucoflex 106PA	Sucoflex N Type Black 7ft cable	1/6/2020	7/6/2021	3328-1,3328-2
043998	Teseq	CDN 8015	Capacitive Coupling Clamp	NA	NA	7597-1,7620-1
043998	Teseq	CDN 8015	Capacitive Coupling Clamp	6/22/2020	6/22/2021	7596-1,7619-1
045053	Suhner	50 Ohm N Terminators	50 Ohm Type N Terminator	2/1/2021	2/1/2022	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
045755	Amplifier Research	DC6280AM1	Directional Coupler 80MHz - 1GHz 1500-3000W 63dB	10/28/2020	10/28/2021	3328-1,3328-2
045765	Teseq	INA 6502-CIB	Automatic Step Transformer	9/28/2020	9/28/2021	3328-1,3328-2
046027	ETS-Lindgren	3117	Double Ridged Waveguide Horn Antenna	6/1/2020	6/1/2021	4621-1,4622-1,4622-2,5606-1,5631-1,5695-2,7554-1,7582-2
046722	Teseq	NSG 3060	EFT-Surge-Dips generator. 10/700 and 4-9 options	NA	NA	7597-1,7614-1,7620-1
046722	Teseq	NSG 3060	EFT-Surge-Dips generator. 10/700 and 4-9 options	11/30/2020	11/30/2021	3372-1,3372-2,3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4729-1,4729-2,4908-1,4908-2,5980-1,5980-2,7573-1,7573-2,7573-3,7573-4,7594-1,7594-2,7594-3,7594-

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
						4,7594-5,7594-6,7595-1,7596-1,7602-1,7615-1,7615-2,7619-1,7624-1,7624-2,7625-1,7625-2
046723	Teseq	CDN 3061	Coupling/Decoupling Network, With PQM3403	NA	NA	7597-1,7614-1,7620-1
046723	Teseq	CDN 3061	Coupling/Decoupling Network, With PQM3403	11/30/2020	11/30/2021	3372-1,3372-2,3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4729-1,4729-2,4908-1,4908-2,5980-1,5980-2,7573-1,7573-2,7573-3,7573-4,7594-1,7594-2,7594-3,7594-4,7594-5,7594-6,7595-1,7596-1,7602-1,7615-1,7615-2,7619-1,7624-1,7624-2,7625-1,7625-2
046732	Teseq	INA 6502-04	Automatic Step Transformer	11/30/2020	11/30/2021	3372-1,3372-2,4729-1,4729-2,5980-1,5980-2,7624-1,7624-2,7625-1,7625-2
047300	Agilent Technologies	N9038A	MXE EMI Receiver 20Hz to 26.5 Ghz	7/2/2020	7/2/2021	4616-1,4616-2,4617-1,4617-2,4621-1,4622-1,4622-2,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,5606-1,5631-1,5697-3,7554-1,7560-1,7560-2,7574-3
048728	MGE UPS Systems	91005-31T	Ultra-Isolation Transformer	NA	NA	3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4908-1,4908-2,7573-1,7573-2,7573-3,7573-4,7602-1
049403	Agilent	N5171B	Signal Generator 9KHz to 1GHz	9/11/2020	9/11/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
049469	Coleman	RG223	BNC 25ft Cable	12/18/2020	12/18/2021	3407-1,3407-2,4053-1,4053-2,4053-3,5594-1,5691-2,7556-2
049443	Micro-Tronics	BRM50702-02	Notch Filter, SB:2.4-2.5GHz, to 18GHz	2/25/2021	2/25/2022	4622-1,4622-2
004729	Fluke	77 III	Digital Multimeter	5/19/2020	5/19/2021	3328-1,3328-2,4622-1,4622-2,4622-3,4622-4,5296-1,5296-2,7621-1,7621-2
049531	TTE	H785-150K-50-21378	High Pass Filter	11/13/2020	11/13/2021	3407-1,3407-2,4053-1,4053-2,4053-3,5594-1,5691-2,7556-2
049549	JFW	50CB-015	GPIB Control Box	NA	NA	4622-1,4622-2

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
049551	EM Test	CNI 508N2	High Speed CDN for Burst and Surge	11/16/2020	11/16/2021	3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4908-1,4908-2,7573-3,7573-4
051646	Amplifier Research	75A250	Power Amplifier	3/2/2020	9/2/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
051716	Cisco	BR940K	ESD Bleed Resistor	NA	NA	7621-1,7621-2
051721	Teseq	CDN ST08A	Coupling Decoupling Network	9/24/2020	9/24/2021	5592-3,5592-4,5693-3,5693-4,5699-10,5699-5,5699-6,5699-7,5699-8,5699-9,5703-4,5703-5,5703-6,5703-7,5703-8,5703-9,7555-3,7555-4,7575-2,7575-3
051797	Miteq	TTA1800-30-HG	SMA 18GHz Pre Amplifier	3/9/2020	3/9/2021	4621-1,5606-1,5631-1,7554-1
051797	Miteq	TTA1800-30-HG	SMA 18GHz Pre Amplifier	3/9/2020	9/9/2021	4622-1,4622-2,5695-2,7582-2
054404	Huber + Suhner	Sucoflex 102	K Type 40GHz Cable 30"	4/30/2020	4/30/2021	4621-1,5606-1,5631-1,5695-2,7554-1,7582-2
054405	Huber + Suhner	Sucoflex 102	K Type 40GHz Cable 30"	4/30/2020	4/30/2021	4621-1,5606-1,5631-1,5695-2,7554-1,7582-2
055103	Keysight	83017A	Pre-amp 500MHz - 26.5GHz	10/24/2019	4/24/2021	4622-1,4622-2
055179	Huber + Suhner	Sucoflex 106PA	RF Cable 2meter	1/6/2020	7/6/2021	3328-1,3328-2
055594	MegaPhase	GC12-8181-16	SMA cable	2/10/2021	2/10/2022	4621-1,4622-1,4622-2,5606-1,5631-1,5695-2,7554-1,7582-2
055936	Huber + Suhner	Sucoflex 106PA	N-type 8m 18GHz Antenna cable	10/14/2019	4/14/2021	4616-1,4616-2,4617-1,4617-2,4621-1,4622-1,4622-2,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,5606-1,5631-1,5695-2,5697-3,7554-1,7560-1,7560-2,7582-2
056024	Fischer Custom Communications	FCC-801-M2/M3-16A-500V	Power Line Coupling Decoupling Network	1/27/2021	1/27/2022	5288-1,7599-1
056069	Amplifier Research	250S1G6M4	Power Amplifier 0.7 - 6GHz 250W	9/16/2020	9/16/2021	5296-1,5296-2

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
056078	Amplifier Research	DC7210A	Directional Coupler 700MHz to 6GHz, 500W	2/26/2021	2/26/2022	5296-1,5296-2
056080	Teseq	INA 265B	50 Ohm Attenuator	NA	NA	7597-1,7614-1,7620-1
056080	Teseq	INA 265B	50 Ohm Attenuator	7/24/2020	7/24/2021	7594-1,7594-2,7594-3,7594-4,7594-5,7594-6,7595-1,7596-1,7615-1,7615-2,7619-1
056158	Huber + Suhner	Sucoflex 104PEA	RF N Type Cable 18GHz 2m	1/13/2020	7/13/2021	3328-1,3328-2,5296-1,5296-2
056159	Huber + Suhner	Sucoflex 104PEA	RF N Type Cable 18GHz 2m	1/13/2020	7/13/2021	3407-1,3407-2,4053-1,4053-2,4053-3,4616-1,4616-2,4617-1,4617-2,4621-1,4622-1,4622-2,5594-1,5600-1,5600-2,5600-3,5600-4,5600-5,5600-6,5601-1,5601-2,5602-1,5602-2,5603-1,5603-2,5606-1,5631-1,5691-2,5695-2,5697-3,7554-1,7556-2,7560-1,7560-2,7574-3,7582-2
057186	Amphenol Connex	202113	50 Ohm BNC Termination	1/26/2021	1/26/2022	5592-3,5592-4,5693-3,5693-4,5699-10,5699-5,5699-6,5699-7,5699-8,5699-9,5703-4,5703-5,5703-6,5703-7,5703-8,5703-9,7555-3,7555-4,7575-2,7575-3
057559	CNS POWAY	HFA-1	Harmonics & Flicker Analyzer	8/27/2020	8/27/2021	7454-1,7457-1,7459-1,7461-2
058199	EMC-PARTNER	ESD-TARGET 2	Pelligrini Target	NA	NA	7621-1,7621-2
042655	TESEQ	INA 3601	Surge Calibration Capacitor 18uF	11/30/2020	11/30/2021	3390-2,3390-3,3413-1,3413-2,3426-1,3426-2,4066-1,4066-2,4908-1,4908-2,7573-1,7573-2,7573-3,7573-4
058226	COMET	T7611-4	Temperature Probe & Monitor unit	9/2/2020	9/2/2021	4621-1,5606-1,5631-1,5695-2,7554-1,7582-2
058263	ROHDE & SCHWARZ	ESW44	EMI Test Receiver 2HZ to 44GHz	6/16/2020	6/16/2021	5695-2,7582-2
058269	Rohde & Schwarz	NRVS	Power meter	8/4/2020	8/4/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4
058270	ROHDE & SCHWARZ		Power Sensor	8/4/2020	8/4/2021	5288-1,5290-3,5290-4,7599-1,7627-3,7627-4

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Cis-Id	Manufacturer	Model	Description	Calibrated Date	Calibration Due Date	Sub Test where equipment was used
058276	ROHDE & SCHWARZ	ESR3	EMI Receiver	6/25/2020	6/25/2021	5592-3,5592-4,5693-3,5693-4,5699-10,5699-5,5699-6,5699-7,5699-8,5699-9,5703-4,5703-5,5703-6,5703-7,5703-8,5703-9,7555-3,7555-4,7575-2,7575-3
058716	Stanley	33-428	8m Tape Measure	NA	NA	4621-1,5606-1,5631-1,5695-2,5697-3,7554-1,7574-3,7582-2,7621-1,7621-2

Software*

Software Name	Description
Teseq WIN300 Version: 1.1 Teseq Windows based software for TESEQ transient systems.	EMC
ECAT - PQFWare Version: 3.22 Thermo Keytek Voltage Dips and Interrupts Test Software	EMC
ECAT - SurgeWare Version : 5.33 Surge Test Software	EMC
ECAT - BurstWare Version : 5.31 EFT/Burst Test Software	EMC
Smart Grid Transient Main Test Program Version 1.3 Intertek Smart Grid Transient Main Test Program	EMC
CEWare32 Version: 4.01 Thermo Keytek EMC Pro surge, EFT/B, VDI, Mag Immunity test software.	EMC
CTS WIN2100V3 and WIN 2110S11 Versions: 3.2.0.35 and 2.2.0.5 California Instruments/ Teseq Test System Software. Teseq/California Instruments.	EMC
Vasona Versions: 6.0028 & 6.0031 EMiSoft Emissions & Immunity Software.	EMC

* This table lists software for all available test equipment. Reference the individual test execution records for the actual test equipment used.

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5.8 Appendix H: Test Assessment Plan

TAP	Details
Revision:	13
Originator:	Ryan Pham
Approver	Noel Lim
Date	11/19/2020

Ithaca-I, Ithaca-D

EMC
Test Assessment Plan

For

C9124AXI-X, C9124AXD-X, C9124AXI-ROW, C9124AXD-ROW

Project Lead

Dennis Thai

Requirement Date

3/5/2021

Estimated Completion Date

3/30/2021

AdditionalDetails

Port Types

AC (<16A)
Enclosure Port
Fiber
Signal
Telecomm (Outdoor)

Exclude In-Country Testing:

Y

Internal / External:

Internal

Magnetic Sensitive Media:

N

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Standards Summary

REQUIRED	STANDARD	Country/Customer	Product Type Intended Use	JUSTIFICATION#
Y	KN61000-3-2:2014	Korea, Republic of	EMC: All Products	
N	KN61000-3-12:2014	Korea, Republic of	EMC: All Products	11
N	KN61000-3-11:2014	Korea, Republic of	EMC: All Products	11
Y	EN55024:2010:A1	EU	EMC: ITE | Home [Class B]	
N	EN61000-3-12:2011	EU	EMC: All Products	11
Y	EN61000-3-3:2013	EU	EMC: All Products	
Y	47 CFR Part 15:2016	United States	EMC: ITE | Home [Class B]	
Y	CISPR32:2015:Ed:2	New Zealand	EMC: ITE | Home [Class B]	
Y	CISPR32:2015:Ed:2	Viet Nam	EMC: ITE | Home [Class B]	
Y	CISPR32:2015:Ed:2	Australia	EMC: ITE | Home [Class B]	
Y	CISPR32:2015:Ed:2	Singapore	EMC: ITE | Home [Class B]	
Y	CISPR32:2012:Ed:1	Singapore	EMC: ITE | Home [Class B]	
Y	CNS13438:2006	Taiwan	EMC: ITE | Home [Class B]	
Y	ICES-003:2016:Iss:6	Canada	EMC: ITE | Home [Class B]	
Y	EN55024:2010	EU	EMC: ITE | Home [Class B]	
N	EN61000-3-11:2000	EU	EMC: All Products	11
Y	EN61000-6-1:2007	EU	EMC: All Products	
N	EN61000-6-2:2005	EU	EMC: All Products	12
Y	NM EN 55032:2015	Morocco	EMC: ITE | Home [Class B]	
Y	NM EN 55024:2018	Morocco	EMC: ITE | Home [Class B]	
Y	NM EN 61000-3-2:2015	Morocco	EMC: All Products	
N	NM EN 61000-3-11:2015	Morocco	EMC: All Products	11
N	NM EN 61000-3-12:2015	Morocco	EMC: All Products	11
Y	NM EN 61000-6-4:2015	Morocco	EMC: All Products	
Y	TCVN 7317:2003	Viet Nam	EMC: ITE | Home [Class B]	
Y	EN55032:2012	New Zealand	EMC: ITE | Home [Class B]	
Y	EN55032:2012	Australia	EMC: ITE | Home [Class B]	
Y	KN61000-3-3:2014	Korea, Republic of	EMC: All Products	
Y	EN IEC61000-6-1:2019	EU	EMC: All Products	
N	EN61000-6-2:2019	EU	EMC: All Products	12
Y	NM EN 61000-6-2:2015	Morocco	EMC: All Products	
Y	EN61000-3-2:2014	EU	EMC: All Products	
Y	KN32:2015	Korea, Republic of	EMC: ITE | Home [Class B]	
Y	KN35:2015	Korea, Republic of	EMC: ITE | Home [Class B]	
Y	EN55035:2017	EU	EMC: ITE | Home [Class B]	
Y	EN55032:2015	EU	EMC: ITE | Home [Class B]	

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REQUIRED	STANDARD	Country/Customer	Product Type Intended Use	JUSTIFICATION#
Y	EN55032:2015	Australia	EMC: ITE | Home [Class B]	
Y	CISPR24:2010+A1:2015	EU	EMC: ITE | Home [Class B]	
Y	NM EN 61000-3-3:2015	Morocco	EMC: All Products	
Y	IEC61000-6-1:2016:Ed:3	EU	EMC: All Products	
N	IEC61000-6-2:2016:Ed:3	EU	EMC: All Products	12
Y	NM EN 61000-6-1:2015	Morocco	EMC: All Products	
Y	VCCI-CISPR 32:2016	Japan	EMC: ITE | Home [Class B]	
Y	EN55032:2015:A11	EU	EMC: ITE | Home [Class B]	
Y	QCVN 118:2018/BTTTT	Viet Nam	EMC: ITE | Home [Class B]	

EUT Voltage Comments:
NA

Product Description
C9124AXI-X, C9124AXD-X, C9124AXI-ROW, C9124AXD-ROW

Overview
This test plan defines the requirements and test configurations for World Wide EMC Compliance for Ithaca_I and Ithaca_D

Description
Cisco C9124AXI-X, C9124AXD-X, C9124AXI-ROW, C9124AXD-ROW Access Point: (where X denotes a country code and ROW denotes rest of the world code), (X=A,B,E,I,R Q,Z and ROW=Rest of the World). Outdoor environments, with internal antennas. Outdoor Mid-Tier 802.11ax Access Point (AP), Internal Omni, Internal Directional. The difference between Internal Omni, and Internal Directional is the antenna and a couple of resistors. Powered by PoE or AC-DC adaptor input.

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EMC Test Summary

Harmonics

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
7454	220V 60Hz [+/-20%]	KN61000-3-2:2014	AC (<16A)	AC Power <16A. 60Hz Test Harmonic requirements	Annex 1-11. Korea 220V 60Hz
7457	230V 50Hz [+/-20%]	EN61000-3-2:2014 NM EN 61000-3-2:2015	AC (<16A)	AC Power <16A. 50Hz Test Harmonic requirements	

Flicker

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
7459	220V 60Hz [+/-20%]	KN61000-3-3:2014	AC (<16A)	AC Power <16A: 60Hz Test Flicker requirements	Annex 1-12
7461	230V 50Hz [+/-20%]	EN61000-3-3:2013 NM EN 61000-3-3:2015	AC (<16A)	AC Power <16A: 50Hz Test Flicker requirements	

Conducted Emissions

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
3407	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz AC Power Test: Class: B Measure: Voltage Detectors: Quasi-Peak & Average	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input).
4053	110/220V 60Hz [+/-20%]	CNS13438:2006	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.
5592	220V 60Hz [+/-20%]	KN32:2015	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/-20%
5594	220V 60Hz [+/-20%]	KN32:2015	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/-20%

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
5691	100/200V 50/60Hz [+/- 20%]	VCCI-CISPR 32:2016	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power : AC Class: B Device: AMN Measure: Voltage Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
5693	100/200V 50/60Hz [+/- 20%]	VCCI-CISPR 32:2016	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
5699	110/220V 60Hz [+/-20%]	CNS13438:2006	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Device: AAN Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.
5703	POE	CNS13438:2006	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: DC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.
7555	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: DC or POE Telecom Line Test Class: B Detectors: Quasi-Peak & Average	
7556	230V 50Hz [+/- 20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Power Line CE Class: B Device : AMN Measure: Voltage Detectors: Quasi-Peak & Average	
7575	230V 50Hz [+/- 20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	

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Radiated Emissions

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
4616	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)
4617	POE	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz DC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	
4621	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 40000MHz AC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m. 110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)
4622	POE	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 40000MHz DC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m.
5600	110/220V 60Hz [+/-20%]	CNS13438:2006	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. Taiwan : Assess All ethernet rates.
5601	220V 60Hz [+/-20%]	KN32:2015	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Korea 220V 60Hz +/-20%. Perform @ 10m only.
5602	POE	CNS13438:2006	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. Taiwan : Assess All ethernet rates.
5603	POE	CNS13438:2006 KN32:2015	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC	Perform @ 10m only. As Appropriate: Korea Test at Fastest Ethernet Rate Taiwan Assess All Ethernet Rates

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
				Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	
5606	220V 60Hz [+/-20%]	KN32:2015	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Korea 220V 60Hz +/-20%
5631	110/220V 60Hz [+/-20%]	CNS13438:2006	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz AC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Taiwan : Assess All Ethernet rates.
5695	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz AC Power Class: B Range: Above 1GHz Detector: Peak & Average Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
5697	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%
7554	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	
7560	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : DC or POE Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
7574	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Enclosure Port	Start Freq: 30MHz - Stop Freq: 1000MHz Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.
7582	POE	CISPR32:2015:Ed:2 CNS13438:2006 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Enclosure Port	Start Freq: 1000MHz - Stop Freq: 6000MHz Power : DC or POE Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	As Appropriate: Test at Fastest Ethernet Rate except for : Taiwan : Assess All Ethernet rates.

Conducted RF Immunity

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
5288	User Choice	EN55035:2017 KN35:2015	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 80MHz Power : AC Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.
5290	User Choice	EN55035:2017 KN35:2015	Signal Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 80MHz AC or DC Power: Telecom Line Test. Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.
7599	User Choice	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	Start Freq: 0.15MHz - Stop Freq: 80MHz Power : AC Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN61131-2 Zone A.

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
7627	User Choice	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	Signal Telecomm (Outdoor)	Start Freq: 0.15MHz - Stop Freq: 30MHz AC or DC Power Range : 0.15 MHz to 80MHz Telecom Line Test Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN 61131-2 : Zone A

Radiated RF Immunity

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
3328	User Choice	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Enclosure Port	Start Freq: 80MHz - Stop Freq: 1000MHz Power : AC or DC Range: 80 -1000MHz Level: 3V/m Mod: 1kHz 80% AM Step Size: 1% Criteria: A Distance: EDCS-15663086	For EN55024, spot freq applicable to TTE.For KN35/EN55035, spot freq applicable to TTE supporting emergency calls.
5296	User Choice	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Enclosure Port	Start Freq: 1400MHz - Stop Freq: 6000MHz Power ; AC or DC Range: 1.4GHz-6.0GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086	

EFT/B Immunity

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
7594	User Choice	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Signal Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Not applicable to DSL ports. I TR 9 Level 1
7596	User Choice	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019	AC (<16A)	AC Power: Coupling: Lines to Gnd	1 TR9 Level 1

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
		EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003		TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B	
7615	User Choice	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Signal Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS.. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.
7619	User Choice	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	AC (<16A)	AC Power: Coupling: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.

ESD Immunity

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
7621	User Choice	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Enclosure Port	AC or DC Power. Level: 8kV Air Level: 4kV Contact Criteria: B	

Surge Impulse/Immunity

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
3390	User Choice	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Protection : No Apply To:	Without Primary Protection. Telecommunication Centers or Other than Telecommunication Centers.

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
		KN35:2015 NM EN 55024:2018 TCVN 7317:2003		Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	
3413	User Choice	EN55035:2017 KN35:2015	Telecomm (Outdoor)	AC or DC Power: Protection : No Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Level: 500V Surge: 1.2/50 uS Criteria: B	
3426	User Choice	TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1.5kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Without protection. Uses ITU-T for the test methods.
4066	User Choice	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	Power: AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: C	Alternative Test where 10/700 CDN wont allow the EUT to operate. Applied without primary protection in place. Common Mode test.
4908	User Choice	EN55035:2017 KN35:2015	Telecomm (Outdoor)	Power : AC or DC Telecom Lines: Apply To:	

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
				Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Protection : Yes Level: 0.5kV Surge: 1.2/50 uS Criteria: B	
7573	User Choice	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Signal Telecomm (Outdoor)	Power : AC or DC Protection : No Telecom/ Signal Lines: Apply To: Long Distance Lines Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Lines Greater than 30m or cables connecting to outdoors.
7602	User Choice	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	Power: AC Protection : No Level: 1kV Apply To: Line to Line Surge: 1.2/50 uS Criteria: B Level: 2kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	TNE Non Central Office. EN 51131-2 Zones A and B

Voltage Disturbance Immunity

Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
3372	User Choice	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	AC Power: <16A Mains Frequency : 50Hz Reductions : 0% Ut (100% Reduction) 0.5 cycle (B) 70% Ut (30% Reduction) 25 Cycle (B) 0% Ut (100% Reduction) 250 Cycles (C)	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;
4729	User Choice	KN35:2015	AC (<16A)	AC Power: Mains Frequency :	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage

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Spec Id	Voltage	Product Standard	Port Type	Test Details	Comments
				60Hz Voltage Reductions : >95% for 0.5 Cycles [B] 30% for 30 Cycles[C] >=95% for 300 Cycles [C]	within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;
5980	User Choice	KN35:2015	AC (<16A)	AC Power: Mains Frequency : 60Hz Reductions : >= 95% for 0.5 cycle[B] 30% for 30 cycle[C] > = 95% for 300 cycle[C]	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;
7624	User Choice	EN IEC61000-6-1:2019 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3	AC (<16A)	AC Power: <16A Mains Frequency : 50Hz 0% Ut (100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycles (C) 0% Ut (100% Reduction) 250 Cycles (C)	Basic Immunity (Table 1). Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;

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Test Execution Per Port

Harmonics

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
7454	220V 60Hz [+/-20%]	D	AC-DC power supply	KN61000-3-2:2014	AC (<16A)	AC Power <16A. 60Hz Test Harmonic requirements	Annex 1-11. Korea 220V 60Hz	Y	
7457	230V 50Hz [+/-20%]	D	AC-DC power supply	EN61000-3-2:2014 NM EN 61000-3-2:2015	AC (<16A)	AC Power <16A. 50Hz Test Harmonic requirements		Y	

Flicker

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
7459	220V 60Hz [+/-20%]	D	AC-DC power supply	KN61000-3-3:2014	AC (<16A)	AC Power <16A: 60Hz Test Flicker requirements	Annex 1-12	Y	
7461	230V 50Hz [+/-20%]	D	AC-DC power supply	EN61000-3-3:2013 NM EN 61000-3-3:2015	AC (<16A)	AC Power <16A: 50Hz Test Flicker requirements		Y	

Conducted Emissions

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
7556	230V 50Hz [+/-20%]	D	AC-DC power supply	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	AC (<16A)	Power: AC Power Line CE Class: B Device : AMN Measure: Voltage Detectors: Quasi-Peak & Average		Y	
3407	110V 60Hz [+/-20%]	D	AC-DC power supply	47 CFR Part 15:2016 ICES-003:2016:Iss:6	AC (<16A)	AC Power Test: Class: B Measure: Voltage Detectors: Quasi-Peak & Average	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input).	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
4053	110/220V 60Hz [+/- 20%]	D	AC-DC power supply	CNS13438:2006	AC (<16A)	Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.	Y	
5592	220V 60Hz [+/- 20%]	A	shielded rj45 wan port , 2.5G/1G/100M	KN32:2015	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/-20%	Y	
5592	220V 60Hz [+/- 20%]	E	shielded rj45 AUX port , 1G/100M/10M	KN32:2015	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/-20%	Y	
5594	220V 60Hz [+/- 20%]	D	AC-DC power supply	KN32:2015	AC (<16A)	Power: AC Class: B Measure: Voltage Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/-20%	Y	
5691	100/200V 50/60Hz [+/-20%]	D	AC-DC power supply	VCCI-CISPR 32:2016	AC (<16A)	Power : AC Class: B Device: AMN Measure: Voltage Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/- 20% , 200V 50/60Hz +/- 20%	Y	
5693	100/200V 50/60Hz [+/-20%]	A	shielded rj45 wan port , 2.5G/1G/100M	VCCI-CISPR 32:2016	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/- 20% , 200V 50/60Hz +/- 20%	Y	
5693	100/200V 50/60Hz [+/-20%]	E	shielded rj45 AUX port , 1G/100M/10M	VCCI-CISPR 32:2016	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/- 20% , 200V 50/60Hz +/- 20%	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
5699	110/220V 60Hz [+/- 20%]	A	shielded rj45 wan port , 2.5G/1G/100M	CNS13438:2006	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Device: AAN Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.	Y	
5699	110/220V 60Hz [+/- 20%]	E	shielded rj45 AUX port , 1G/100M/10M	CNS13438:2006	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Device: AAN Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.	Y	
7575	230V 50Hz [+/- 20%]	A	shielded rj45 wan port , 2.5G/1G/100M	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average		Y	
7575	230V 50Hz [+/- 20%]	E	shielded rj45 AUX port , 1G/100M/10M	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Telecomm (Outdoor)	Power: AC Telecom Line Test Class: B Detectors: Quasi-Peak & Average		Y	
5703	POE	A	shielded rj45 wan port , 2.5G/1G/100M	CNS13438:2006	Telecomm (Outdoor)	Power: DC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.	Y	
5703	POE	E	shielded rj45 AUX port , 1G/100M/10M	CNS13438:2006	Telecomm (Outdoor)	Power: DC Telecom Line Test Class: B Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.	Y	
7555	POE	A	shielded rj45 wan port , 2.5G/1G/100M	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11	Telecomm (Outdoor)	Power: DC or POE Telecom Line Test Class: B Detectors:		Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
				KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016		Quasi-Peak & Average			
7555	POE	E	shielded rj45 AUX port , 1G/100M/10M	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Telecomm (Outdoor)	Power: DC or POE Telecom Line Test Class: B Detectors: Quasi-Peak & Average		Y	

Radiated Emissions

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
7560	POE	Encl	Enclosure Port	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Enclosure Port	Power : DC or POE Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.	Y	
7582	POE	Encl	Enclosure Port	CISPR32:2015:Ed:2 CNS13438:2006 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016	Enclosure Port	Power : DC or POE Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	As Appropriate: Test at Fastest Ethernet Rate except for : Taiwan : Assess All Ethernet rates.	Y	
4616	110V 60Hz [+/-20%]	Encl	Enclosure Port	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)	Y	
4621	110V 60Hz [+/-20%]	Encl	Enclosure Port	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	AC Power Class: B Range: Above 1GHz Detectors:	Freq limited by 5* highest clock. Perform @ 3m. 110V 60Hz and/or	Y	

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						Peak & Average Measurement distance: 3m	208V 60Hz (only when the product has a dedicated 208V input)		
5600	110/220V 60Hz [+/- 20%]	Encl	Enclosure Port	CNS13438:2006	Enclosure Port	Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. Taiwan : Assess All ethernet rates.	Y	
5601	220V 60Hz [+/- 20%]	Encl	Enclosure Port	KN32:2015	Enclosure Port	Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Korea 220V 60Hz +/-20%. Perform @ 10m only.	Y	
5606	220V 60Hz [+/- 20%]	Encl	Enclosure Port	KN32:2015	Enclosure Port	Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Korea 220V 60Hz +/-20%	Y	
5631	110/220V 60Hz [+/- 20%]	Encl	Enclosure Port	CNS13438:2006	Enclosure Port	AC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Taiwan : Assess All Ethernet rates.	Y	
5695	100/200V 50/60Hz [+/-20%]	Encl	Enclosure Port	VCCI-CISPR 32:2016	Enclosure Port	AC Power Class: B Range: Above 1GHz Detector: Peak & Average Measurement distance: 3m/10m	Japan 100V 50/60Hz +/- 20% , 200V 50/60Hz +/- 20%	Y	
5697	100/200V 50/60Hz [+/-20%]	Encl	Enclosure Port	VCCI-CISPR 32:2016	Enclosure Port	AC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Japan 100V 50/60Hz +/- 20% , 200V 50/60Hz +/- 20%	Y	

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7554	230V 50Hz [+/- 20%]	Encl	Enclosure Port	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Enclosure Port	Power : AC Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m		Y	
7574	230V 50Hz [+/- 20%]	Encl	Enclosure Port	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT	Enclosure Port	Power : AC Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.	Y	
5602	POE	Encl	Enclosure Port	CNS13438:2006	Enclosure Port	Power : DC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. Taiwan : Assess All ethernet rates.	Y	
5603	POE	Encl	Enclosure Port	CNS13438:2006 KN32:2015	Enclosure Port	Power : DC Class: B Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Perform @ 10m only. As Appropriate: Korea Test at Fastest Ethernet Rate Taiwan Assess All Ethernet Rates	Y	
4617	POE	Encl	Enclosure Port	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	DC Power Class: B Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m		Y	
4622	POE	Encl	Enclosure Port	47 CFR Part 15:2016 ICES-003:2016:Iss:6	Enclosure Port	DC Power Class: B Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m.	Y	

Conducted RF Immunity

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
5288	User Choice	D	AC-DC power supply	EN55035:2017 KN35:2015	AC (<16A)	Power : AC Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.	Y	
5290	User Choice	C	Management console port (RJ-45) shielded	EN55035:2017 KN35:2015	Signal	AC or DC Power: Telecom Line Test. Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.	Y	
5290	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	EN55035:2017 KN35:2015	Telecomm (Outdoor)	AC or DC Power: Telecom Line Test. Apply to: Lines > 3m	Spot frequencies only applicable to TTE supporting emergency calls.	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A			
5290	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	EN55035:2017 KN35:2015	Telecomm (Outdoor)	AC or DC Power: Telecom Line Test. Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.	Y	
7599	User Choice	D	AC-DC power supply	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	Power : AC Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN61131-2 Zone A.	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
7627	User Choice	C	Management console port (RJ-45) shielded	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	Signal	AC or DC Power Range : 0.15 MHz to 80MHz Telecom Line Test Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN 61131-2 : Zone A	Y	
7627	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power Range : 0.15 MHz to 80MHz Telecom Line Test Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN 61131-2 : Zone A	Y	
7627	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power Range : 0.15 MHz to 80MHz Telecom Line Test Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN 61131-2 : Zone A	Y	

Radiated RF Immunity

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
3328	User Choice	Encl	Enclosure Port	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Enclosure Port	Power : AC or DC Range: 80 - 1000MHz Level: 3V/m Mod: 1kHz 80% AM Step Size: 1% Criteria: A Distance: EDCS-15663086	For EN55024, spot freq applicable to TTE.For KN35/EN55035, spot freq applicable to TTE supporting emergency calls.	Y	
5296	User Choice	Encl	Enclosure Port	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Enclosure Port	Power ; AC or DC Range: 1.4GHz-6.0GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086		Y	

EFT/B Immunity

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
7594	User Choice	C	Management console port (RJ-45) shielded	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Signal	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV	Not applicable to DSL ports. I TR 9 Level 1	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						(Peak) Criteria: B			
7594	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Not applicable to DSL ports. I TR 9 Level 1	Y	
7594	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Not applicable to DSL ports. I TR 9 Level 1	Y	
7596	User Choice	D	AC-DC power supply	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-	AC (<16A)	AC Power: Coupling: Lines to Gnd TrTh : 5/50ns, Rep Freq	1 TR9 Level 1	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
				1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003		: 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B			
7615	User Choice	C	Management console port (RJ-45) shielded	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Signal	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS.. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.	Y	
7615	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS.. Testing Duration : 1 Min Voltage:	Either 5KHz or 100KHz may be Performed.	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						0.5kV (Peak) Criteria: B			
7615	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Telecomm (Outdoor)	AC or DC Power Telecom Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS.. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.	Y	
7619	User Choice	D	AC-DC power supply	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	AC (<16A)	AC Power: Coupling: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS Testing Duration : 1 Min Voltage: 1.0kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.	Y	

ESD Immunity

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
7621	User Choice	Encl	Enclosure Port	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017	Enclosure Port	AC or DC Power. Level: 8kV Air Level:		Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
				EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003		4kV Contact Criteria: B			

Surge Impulse/Immunity

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
3390	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Protection : No Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Without Primary Protection. Telecommunication Centers or Other than Telecommunication Centers.	Y	
3390	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Protection : No Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Without Primary Protection. Telecommunication Centers or Other than Telecommunication Centers.	Y	
3413	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	EN55035:2017 KN35:2015	Telecomm (Outdoor)	AC or DC Power: Protection : No Telecom		Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Level: 500V Surge: 1.2/50 uS Criteria: B			
3413	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	EN55035:2017 KN35:2015	Telecomm (Outdoor)	AC or DC Power: Protection : No Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Level: 500V Surge: 1.2/50 uS Criteria: B		Y	
3426	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1.5kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Without protection. Uses ITU-T for the test methods.	Y	
3426	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	TCVN 7317:2003	Telecomm (Outdoor)	AC or DC Power: Telecom Lines: Apply To:	Without protection. Uses ITU-T for the test methods.	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1.5kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C			
4066	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	Power: AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: C	Alternative Test where 10/700 CDN wont allow the EUT to operate. Applied without primary protection in place. Common Mode test.	Y	
4066	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	Telecomm (Outdoor)	Power: AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or shielded Protection: No Level: 1kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: C	Alternative Test where 10/700 CDN wont allow the EUT to operate. Applied without primary protection in place. Common Mode test.	Y	
4908	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	EN55035:2017 KN35:2015	Telecomm (Outdoor)	Power : AC or DC Telecom		Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Protection : Yes Level: 0.5kV Surge: 1.2/50 uS Criteria: B			
4908	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	EN55035:2017 KN35:2015	Telecomm (Outdoor)	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Protection : Yes Level: 0.5kV Surge: 1.2/50 uS Criteria: B		Y	
7573	User Choice	C	Management console port (RJ-45) shielded	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Signal	Power : AC or DC Protection : No Telecom/ Signal Lines: Apply To: Long Distance Lines Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Lines Greater than 30m or cables connecting to outdoors.	Y	
7573	User Choice	E	shielded rj45 AUX port , 1G/100M/10M	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Telecomm (Outdoor)	Power : AC or DC Protection : No Telecom/ Signal	Lines Greater than 30m or cables connecting to outdoors.	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						Lines: Apply To: Long Distance Lines Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B			
7573	User Choice	A	shielded rj45 wan port , 2.5G/1G/100M	EN IEC61000-6-1:2019 IEC61000-6-1:2016:Ed:3	Telecomm (Outdoor)	Power : AC or DC Protection : No Telecom/ Signal Lines: Apply To: Long Distance Lines Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Lines Greater than 30m or cables connecting to outdoors.	Y	
7602	User Choice	D	AC-DC power supply	CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	Power: AC Protection : No Level: 1kV Apply To: Line to Line Surge: 1.2/50 uS Criteria: B Level: 2kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	TNE Non Central Office. EN 51131-2 Zones A and B	Y	

Voltage Disturbance Immunity

Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
3372	User Choice	D	AC-DC power supply	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN55035:2017 NM EN 55024:2018 TCVN 7317:2003	AC (<16A)	AC Power: <16A Mains Frequency : 50Hz Reductions : 0% Ut	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						(100% Reduction) 0.5 cycle (B) 70% Ut (30% Reduction) 25 Cycle (B) 0% Ut (100% Reduction) 250 Cycles (C)	following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;		
4729	User Choice	D	AC-DC power supply	KN35:2015	AC (<16A)	AC Power: Mains Frequency : 60Hz Voltage Reductions : >95% for 0.5 Cycles [B] 30% for 30 Cycles[C] >=95% for 300 Cycles [C]	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;	Y	
5980	User Choice	D	AC-DC power supply	KN35:2015	AC (<16A)	AC Power: Mains Frequency : 60Hz Reductions : >= 95% for	Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage	Y	

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Spec Id	Voltage	DIAGRAM REFERENCE	UNIQUE DESCRIPTION	Product Standard	Port Type	Test Details	Comments	Reqd	Just
						0.5 cycle[B] 30% for 30 cycle[C] > = 95% for 300 cycle[C]	range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;		
7624	User Choice	D	AC-DC power supply	EN IEC61000-6-1:2019 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3	AC (<16A)	AC Power: <16A Mains Frequency : 50Hz 0% Ut (100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycles (C) 0% Ut (100% Reduction) 250 Cycles (C)	Basic Immunity (Table 1). Apply at Zero Crossing. 3 Repetitions per Interruption. Where the equipment has a rated voltage range the following shall apply: − if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); − in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;	Y	

Customer Additional Specifications

NA

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Samples

Sample	PID	Description	Serial Number	Part Number	Hardware Revision	Manufacturer	Software Revision	Firmware Revision
1	C9124AXD-X	Access Point - EUT Ithaca D	FOC25033DEA	74-125083	01	Cisco Systems, Inc.	8.10.109.41	N/A
3	C3850-24POE	POE Switch - Support	FOC2128U00Y	800-41071-03	V01	Cisco Systems, Inc.	N/A	N/A
4	5GHz Client Laptop	Laptop - Support	CB20864762	59359084	N/A	Lenovo	N/A	N/A
5	2.4GHz Client Laptop	Laptop - Support	R9YD7P5	CS0000034465	N/A	Lenovo	N/A	N/A
6	Server Laptop	Laptop - Support	PF1F37J8	20L6S4T800	N/A	Lenovo	N/A	N/A
7	SOLO 10G	10GBase-T Ethernet Adapter	A01248068002777	N/A	N/A	Sonnet	N/A	N/A
8	Poe Injector		N18226630A04912A05	AIR-PWRINJ-60RGD1		Microsemi		
9	C9300-48UN P1B	Switch	FOC2432L80H			Cisco	N/A	N/A
10	C9124AXI-X	Access Point - EUT Ithaca I	FOC24523WZ9	74-125082	01	Cisco Systems, Inc.	8.10.109.41	N/A

Sample Modifications

NA

Sample Modification Photographs

NA

Systems

System #	Sample/Traffic Generator#	Type	Description
1	1	Sample	C9124AXI-X Ithaca D
2	6, 7, 3, 4, 5, 8, 9	Sample	Support Equipment
3	10	Sample	C9124AXI-X Ithaca I

Equipment Configuration

Hardware Mode (Guidance: EDCS-1513918)

Mode	Title	Description/Title
1	Internal Antennas	EUT with earth. shielded cables.
2	Internal Antennas	EUT with earth. shielded cables.
3	Internal Antennas	EUT with earth. shielded cables.

GeneralComments

NA

Software Mode

Mode	Title	Description
1	EMC mode	IPERF software to stream packets from server to EUT then wirelessly to 2.4GHz and 5GHz client laptops and reverse direction back to server. EUT transmits data via BLE to receiving access point. Console port connected to PC to monitor traffic. USB port is terminated with a flash drive. EUT is powered by PoE from the switch.

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GeneralComments

NA

EUT Throughput

NA

Performance Criteria

Cycle or response time of equipment (in secs): 3		
Criteria	**Description**	**Monitoring Method**
Criteria A	During and after the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below 1% when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. - During the test the EUT shall not unintentionally transmit or change its actual operating state and stored data.	A server connected to the host AP will be used to monitor the status of IP connection to the EUT and Iperf traffic to client laptops. A console session will be used to monitor the status of the (EUT) BLE radio.
Criteria B	After the test, the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below 1%, when the equipment is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance. • During the EMC exposure to an electromagnetic phenomenon, a degradation of performance is, however, allowed. No change of the actual mode of operation (e.g. unintended transmission) or stored data is allowed.	A server connected to the host AP will be used to monitor the status of IP connection to the EUT and Iperf traffic to client laptops. A console session will be used to monitor the status of the (EUT) BLE radio.

GeneralComments

NA

Test Configuration Description:

The EUT series has different variations based upon the country "X". These designations impact the frequency use spectrum. For most tests these changes do not impact the EMC compliance. However for USA Radiated Emissions above 1GHz this does have an impact. FCC above 1GHz testing should be performed on the USA variant.

Justification of Worst Case Test Configuration:

During the testing, there were some radiation emission below 1GHz data gathered from Ithaca I, the rest tested data were based on Ithaca D.
The internal antenna assembly is the major difference between Ithaca I and D.
The motherboard and power PCB assemblies are identical except for resistor populates on the motherboard.
These function of these resistors is to identify the Ithaca SKU. The software image reads these four GPIOs to determine if they are high (1) or low (0).
Therefore, that Ithaca I and Ithaca D should consider as hardware equivalent. The difference will not impact EMC testing results.

Testing to be performed with C9300-24-UX-A PoE switch external to test environment.

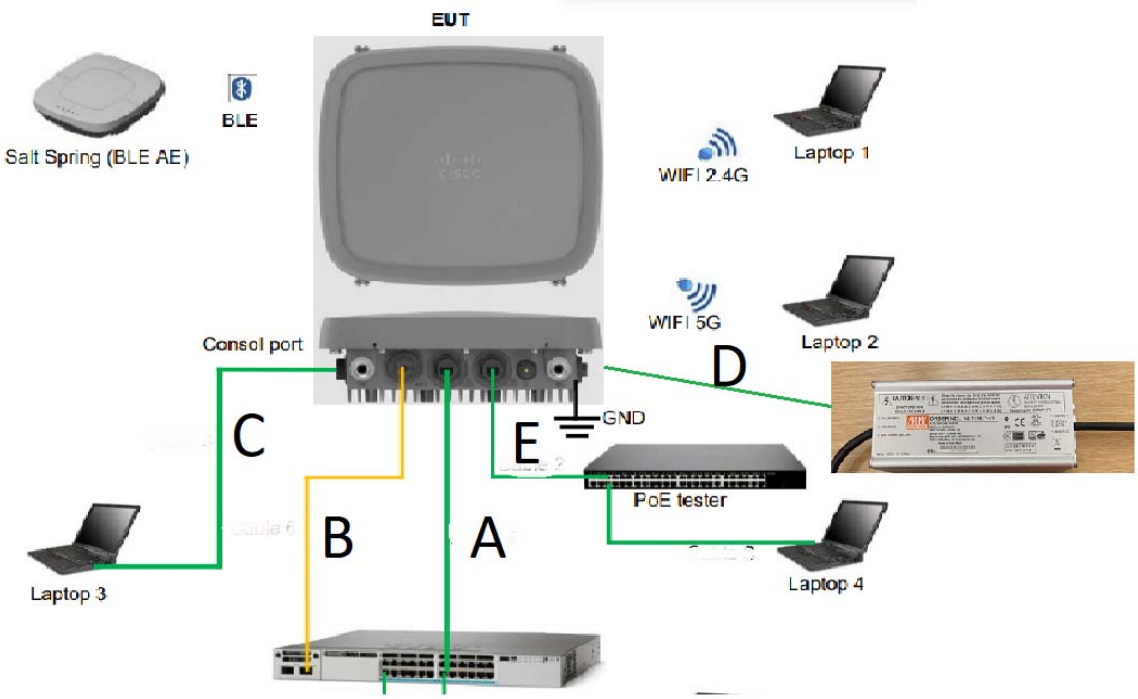
RE tested wall and ceiling mount for one testing case and pick the wall mount for the rest testing as is considered worst case.

Chassis

NA

Test Configuration Diagram (Mandatory for VCCI and Korea)

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Intentional Radiator Frequency Information

Intentional Radiator:

No

Wireless Operating Frequency and Bands of Operation:

N/A

Wireless Normal test modulation, the format, the type of error correction and any control signals:

N/A

Traffic Generator Equipment

NA

GeneralComments

NA

Ports

Diagram Reference	Port Type	Description	Manufacturer	Length	Remarks	Status	Shielded	Justification	Required
A	Telecomm (Outdoor)	shielded rj45 wan port , 2.5G/1G/100M	n/a	20m		Active	Yes		Y

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Diagram Reference	Port Type	Description	Manufacturer	Length	Remarks	Status	Shielded	Justification	Required
B	Fiber	SFP uplink port	Finisar			Active	No		Y
C	Signal	Management console port (RJ-45) shielded	n/a	20 m		Active	Yes		Y
D	AC (<16A)	AC-DC power supply	MEAN WELL			Active	No		Y
E	Telecomm (Outdoor)	shielded rj45 AUX port , 1G/100M/10M	n/a	20m		Active	Yes		Y

Test Types per Port

Diagram Ref.	Unique Desc.	Port Type	CE	CLI	CRI	DOI	RWI	EFT_B	ESD	H	F	MFI	TM FI	NF RI	PII	RE	RRI	SI	VDI
C	Management console port (RJ-45) shielded	Signal	N	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	Y	N
A	shielded rj45 wan port , 2.5G/1G/100M	Telecomm (Outdoor)	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	Y	N
D	AC-DC power supply	AC (<16A)	Y	N	Y	N	N	Y	N	Y	Y	N	N	N	N	N	N	Y	Y
E	shielded rj45 AUX port , 1G/100M/10M	Telecomm (Outdoor)	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	Y	N
Encl	Enclosure Port	Enclosure Port	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	Y	N	N

Ports Justification Summary

NA

Standards Justification Summary

Justification #	Description
11	N/A due to that Standard for the device that has AC power products >16A
12	N/A due to that Standard applies to apparatus intended to be connected to a power network supplied from a high or medium voltage transformer dedicated to the supply of an installation feeding manufacturing or similar plant, and intended to operate in or in proximity to industrial locations

Product Standard	Product Type Intended Use	Justification #
KN61000-3-12:2014	EMC: All Products	11
KN61000-3-11:2014	EMC: All Products	11
EN61000-3-12:2011	EMC: All Products	11
EN61000-3-11:2000	EMC: All Products	11
EN61000-6-2:2005	EMC: All Products	12
NM EN 61000-3-11:2015	EMC: All Products	11
NM EN 61000-3-12:2015	EMC: All Products	11

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Product Standard	Product Type Intended Use	Justification #
EN61000-6-2:2019	EMC: All Products	12
IEC61000-6-2:2016:Ed:3	EMC: All Products	12

Test Cases Justification Summary

Justification #	Description	Test Case ID or EDCS Number
1	Product Type Intended Use (PT IU) mismatch.	
2	Port Type (PT) mismatch.	
5	This test only appliesto the enclosure of devices sensitive to magnetic fields (e.g VDU, HD, Speaker, Microphone). This EUT does not have these devices	
8	This requirement is covered by an equivalent test which is included in this TAP, hence assessment is not required. See Spec Id:	5296
10	The enclosure of devices is not sensitive to magnetic fields.	
12	N/A due to that Standard applies to apparatus intended to be connected to a power network supplied from a high or medium voltage transformer dedicated to the supply of an installation feeding manufacturing or similar plant, and intended to operate in or in proximity to industrial locations	

Conducted Emissions

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3406	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6	EMC: ITE | Office EMC: Smart Grid EMC: PLC	AC Power Test: Class: A Measure: Voltage Detectors: Quasi-Peak & Average	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input).	AC (<16A)	1
4088	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	Power : AC Class: A Measure: Voltage Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 220V [60Hz] and 110V [60Hz]	AC (<16A)	1
5451	110V 60Hz [+/-20%]	47 CFR Part 15:2016	EMC: PLC	AC Power Test: Class: N/A Measure: Voltage Detectors: Quasi-Peak & Average	For all other carrier current systems: 1000 µV within the frequency band 535-1705 kHz, as measured using a 50 µH/50 ohms LISN.. 110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input).	AC (<16A)	1
5591	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	Power: AC Power Line CE Class: A Device: AMN Measure: Voltage Detectors: Quasi - Peak & Average	Korea 220V 60Hz +/-20%	AC (<16A)	1
5593	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	Power: AC Telecom Line Test Class: A Detectors: Quasi-Peak & Average	Korea 220V 60Hz +/-20%	Telecomm (Outdoor)	1
5692	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	Power: AC Class: A Device: AMN Measure: Voltage	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	AC (<16A)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
				Detectors: Quasi-Peak & Average			
5694	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	Power: AC Telecom Line Test Class: A Detectors: Quasi-Peak & Average	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	Telecomm (Outdoor)	1
5700	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	Power: AC Telecom Line Test Class: A Device: AAN Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 220V [60Hz] and 110V [60Hz]	Telecomm (Outdoor)	1
5701	POE	CNS13438:2006	EMC: ITE | Office	Power: DC Telecom Line Test Class: A Detectors: Quasi-Peak & Average	Taiwan : Assess All Ethernet rates.	Telecomm (Outdoor)	1
7558	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 EN61000-6-4:2007 NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: PLC EMC: Smart Grid EMC: ITE | Heavy Industrial	Power: AC Telecom Line Test Class: A Detectors: Quasi-Peak & Average		Telecomm (Outdoor)	1
7566	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Wired Network Port Class: B Detectors: Quasi-Peak & Average	.	Telecomm (Outdoor)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
7566	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Wired Network Port Class: B Detectors: Quasi-Peak & Average	.	Telecomm (Outdoor)	1
7579	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 EN61000-6-4:2007 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016 ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: PLC EMC: Smart Grid EMC: ITE | Heavy Industrial	Power: DC or POE Telecom Line Test Class: A Detectors: Quasi-Peak & Average		Telecomm (Outdoor)	1
7581	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN50065-1:2011 EN55032:2012 EN55032:2015 EN55032:2015:A11 EN61000-6-4:2007 IEEE 1901.2:2013+A1:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: PLC EMC: Smart Grid EMC: ITE | Heavy Industrial	Power: AC Power Line CE Class: A Device: AMN Measure: Voltage Detectors: Quasi - Peak & Average		AC (<16A)	1
7587	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-	EMC: Radio | 489-17 EMC: Radio | 489-19	Power: AC Class: B Detectors: Quasi-Peak & Average	.	AC (<16A)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6				
7587	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Class: B Detectors: Quasi-Peak & Average	.	AC (<16A)	1
7588	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power : AC Wired Network Port Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	Telecomm (Outdoor)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014					
7588	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power : AC Wired Network Port Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	Telecomm (Outdoor)	1
7589	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: DC Wired Network Port Class: B Detectors: Quasi-Peak & Average	.	Telecomm (Outdoor)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014					
7590	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power : DC: Wired Network Port Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	Telecomm (Outdoor)	1
7591	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	Power: AC Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	AC (<16A)	1
7591	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-	EMC: Radio | 489-17 EMC: Radio | 489-19	Power: AC Class: A Detectors: Quasi-Peak & Average	For equipment intended to be used in Industrial Environments or Telecommunications Centers ONLY. All other equipment must meet class B.	AC (<16A)	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6				

Radiated Emissions

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3402	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 110V [60Hz] and 220V [60Hz]	Enclosure Port	1
3402	POE	CNS13438:2006	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Taiwan : Assess All Ethernet rates. Class A products must be evaluated at both 110V [60Hz] and 220V [60Hz]	Enclosure Port	1
4071	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Meas dist:10m ONLY	Korea 220V 60Hz +/-20%. Perform @ 10m only.	Enclosure Port	1
4087	POE	CNS13438:2006 KN32:2015	EMC: ITE | Office	DC Power Class: A Range: Below 1GHz Detectors: Quasi Peak Measurement distance: 10m	As Appropriate : Korea : Fastest Ethernet Rate Taiwan : Assess All Ethernet rates.	Enclosure Port	1
4107	110/220V 60Hz [+/-20%]	CNS13438:2006	EMC: ITE | Office	AC Power Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Taiwan : Assess All Ethernet rates. AC Class A products must be evaluated at both 110V [60Hz] and 220V [60Hz]	Enclosure Port	1
4619	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m	110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
4620	POE	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	DC Power Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m or 10m		Enclosure Port	1
4623	110V 60Hz [+/-20%]	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	AC Power Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m. 110V 60Hz and/or 208V 60Hz (only when the product has a dedicated 208V input)	Enclosure Port	1
4624	POE	47 CFR Part 15:2016 ICES-003:2016:Iss:6 IEEE 1901.2:2013+A1:2015	EMC: ITE | Office EMC: PLC EMC: Smart Grid	DC Power Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Freq limited by 5* highest clock. Perform @ 3m.	Enclosure Port	1
5604	220V 60Hz [+/-20%]	KN32:2015	EMC: ITE | Office	Power : AC Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	Korea 220V 60Hz +/-20%	Enclosure Port	1
5696	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	AC Power Class: A Range: Above 1GHz Detector: Peak & Average Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	Enclosure Port	1
5698	100/200V 50/60Hz [+/-20%]	VCCI-CISPR 32:2016	EMC: ITE | Office	AC Power Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Japan 100V 50/60Hz +/-20% , 200V 50/60Hz +/-20%	Enclosure Port	1
7557	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 CNS13438:2006 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 KN32:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016 ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: Smart Grid	Power : DC or POE Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m	As Appropriate: Test at Fastest Ethernet Rate except for : Taiwan : Assess All Ethernet rates.	Enclosure Port	1
7559	POE	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015	EMC: ITE | Office EMC: TNE | Central office	Power : DC or POE Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT VCCI-CISPR 32:2016 ITU-T K.48:2006	EMC: TNE | Non central office EMC: Smart Grid				
7578	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN55032:2012 EN55032:2015 EN55032:2015:A11 NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: Smart Grid	Power : AC Class: A Range: Above 1GHz Detectors: Peak & Average Measurement distance: 3m or 10m		Enclosure Port	1
7580	230V 50Hz [+/-20%]	CISPR32:2012:Ed:1 CISPR32:2015:Ed:2 EN300 386:2012:V1.6.1 EN50065-1:2011 EN55032:2012 EN55032:2015 EN55032:2015:A11 IEEE 1901.2:2013+A1:2015 NM EN 55032:2015 QCVN 118:2018/BTTTT ITU-T K.48:2006	EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Non central office EMC: PLC EMC: Smart Grid	Power : AC Class: A Range: Below 1GHz Detector: Quasi Peak Measurement distance: 3m/10m	Perform measurements @ 3m or 10m.	Enclosure Port	1
7583	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	DC Power Class: A Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis.(Rare for Cisco) Test Cisco products to Test Method EN55032. Limits for equipment Installed in Telecommunication Centers and Industrial environments. All other equipment must meet class B.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014					
7584	POE	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	DC Power Class: B Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis. (Rare for Cisco) Test Cisco products to Test Method EN55032.	Enclosure Port	1
7585	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	AC Power Class: A Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m/10m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis. (rare for Cisco) Test Cisco products to Test Method EN55032. Limits for equipment Installed in Telecommunication Centers and Industrial locations. All other equipment must meet class B.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
7585	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2017:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	AC Power Class: A Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m/10m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis. (rare for Cisco) Test Cisco products to Test Method EN55032. Limits for equipment Installed in Telecommunication Centers and Industrial locations. All other equipment must meet class B.	Enclosure Port	1
7586	220V 60Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1 EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	EMC: Radio | 489-17 EMC: Radio | 489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	AC Power Class: B Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average >1GHz Measurement distance: 3m/10m	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis (rare for Cisco). Test Cisco products to Test Method EN55032.	Enclosure Port	1
7586	230V 50Hz [+/-20%]	CISPR32:2015:Ed:2 EN301 489-17:2017:V3.1.1 EN301 489-19:2019:V2.1.1	EMC: Radio |	AC Power Class: B Range: 30MHz to 6GHz Detectors: Quasi Peak <1GHz. Peak & Average	Applies to Ancillary Equipment not incorporated into the Radio equipment and to be tested in a stand-alone basis (rare for Cisco). Test Cisco products to Test Method EN55032.	Enclosure Port	1

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		EN301 489-1:2019:V2.2.3 EN301 489-3:2019:V2.1.1 EN301 489-50:2019:V2.2.1 EN301 489-52:2016:V1.1.0:Draft EN301 489-6:2019:V2.2.1 EN55032:2015 EN55032:2015:A11 KN301 489-1 KN301 489-17 KN301 489-3 KN301 489-50 KN301 489-52 KN301 489-6 QCVN 112:2017/BTTTT QCVN 18:2014	489-19 EMC: Radio | 489-3 EMC: Radio | 489-50 EMC: Radio | 489-52 EMC: Radio | 489-6	>1GHz Measurement distance: 3m/10m			

Conducted RF Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3412	User Choice	CISPR35:2016:Ed:1 EN55035:2017 KN35:2015	EMC: ITE | Home [Class B] EMC: ITE | Office	DC Power: Range : 0.15 MHz to 80 MHz Apply to: Lines > 3m Level: 0.15MHz to 10MHz: 3V Level: 10MHz to 30MHz: 3 to 1V Level: 30MHz to 80MHz: 1V Mod: 1kHz 80% AM Criteria: A	Spot frequencies only applicable to TTE supporting emergency calls.	DC (Indoor) DC (Outdoor)	2
3414	User Choice	CISPR35:2016:Ed:1 EMC Corporate Spec EN55035:2017	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products	AC or DC Power. Performed at : ITL DSL Test Range: 150kHz-30MHz Level: 0.15-0.5MHz 107dBuV Level: 0.5-10MHz 107-36dBuV Level: 10-30MHz 36-30dBuV Duration: 0.7ms Period: 8.3ms (for 60 Hz) Criteria A: Perform at External Lab	Broadband Impulse Noise (Repetitive) Applicable only to CPE xDSL ports.. From EN55035. Recommendation ITU-T K.9	DSL	2
3415	User Choice	CISPR35:2016:Ed:1 EMC Corporate Spec EN55035:2017	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products	AC or DC Power: Performed at : ITL DSL Test Range: 150kHz-30MHz Level: 0.15-30MHz: 110dBuV Duration [mS]: 0.24, 10, 300 Criteria: A Perform at External Lab	Broadband Impulse Noise (Isolated) Applicable only to CPE xDSL ports. from EN55035. See Recommendation ITU-T K.93	DSL	2
7598	User Choice	1TR9:2016 CISPR24:2010+A1:2015 EN IEC61000-6-1:2019 EN300 386:2012:V1.6.1 EN55024:2010 EN55024:2010:A1 EN60601-1-2:2015 EN61000-6-1:2007 IEC60601-1-2:2014:Ed:4 IEC61000-6-	EMC: TNE | Central office EMC: TNE | Non central office EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products EMC: TNE | Home [Class B] EMC: ITE |	Power : DC Range : 0.15 MHz to 80MHz Apply to: Lines > 3m Level: 3V Mod: 1kHz 80% AM Criteria: A	For EN55024/CISPR24, Spot frequencies only applicable to TTE. 1TR9 Level 1. EN 61131-2 Zone A.	DC (Indoor) DC (Outdoor)	2

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		1:2016:Ed:3 NM EN 55024:2018 TCVN 7317:2003 EN61131-2:2007	Medical Devices EMC: Programmable Logic Controllers				

Radiated RF Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3410	User Choice	EN55035:2017 KN35:2015 CISPR35:2016:Ed:1	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC. Spot Test : 1800, 2600,3500 and 5000MHz Level: 3V/m Mod: 1kHz 80% AM Step Size: n/a Criteria: A Distance: EDCS-15663086		Enclosure Port	8
3421	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	Power : AC or DC Range: 1.4GHz-2GHz Level: 10V/m Range: 2GHz-2.7GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A Distance: EDCS-15663086		Enclosure Port	1
3423	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	Power : AC or DC Range: 80 to 800MHz Level : 3V/m Range: 800-960MHz Level: 10V/m Range: 960 - 1000MHz Level: 3V/m Mod: 1kHz 80% AM Criteria: A Distance: EDCS-15663086		Enclosure Port	1
6464	User Choice	EN61000-6-1:2007 EN61131-2:2007 EN61326-1:2013	EMC: All Products EMC: Programmable Logic Controllers EMC: ITE | Scientific/Lab Use	Power : AC or DC Range: 2.0GHz-2.7GHz Level: 1V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086	EN 61131-2 : All Zones	Enclosure Port	8
6472	User Choice	EN61000-6-1:2007 EN61131-2:2007 EN61326-1:2013	EMC: All Products EMC: Programmable Logic Controllers EMC: ITE | Scientific/Lab Use	Power : AC or DC Range: 1.4GHz-2GHz Level: 3V/m Mod: 1kHz 80% AM Step Size : 1% Criteria: A. Distance: EDCS-15663086	EN 61131-2 : All Zones	Enclosure Port	8

Magnetic Field Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
7397	User Choice	CISPR35:2016:Ed:1 EN55035:2017	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: Freq: 50Hz Level: 1A/m Mod: n/a Criteria: A	Apply to the enclsoure of devices sensitive to magnetic fields.	Enclosure Port	5,10
7399	User Choice	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 NM EN 55024:2018 TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Freq: 50Hz Level: 1A/m Mod: n/a Criteria: A	Apply to the enclsoure of devices sensitive to magnetic fields.	Enclosure Port	5,10
7401	User Choice	KN35:2015	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: Freq: 60Hz Level: 1A/m Mod: n/a Criteria: A	Apply to the enclsoure of devices sensitive to magnetic fields.	Enclosure Port	5,10

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
7623	User Choice	1TR9:2016 EN61000-6-1:2007 EN61326-1:2013 IEC61000-6-1:2016:Ed:3 EN IEC61000-6-1:2019	EMC: TNE | Central office EMC: TNE | Non central office EMC: All Products EMC: ITE | Scientific/Lab Use	AC or DC Power: Freq: 50Hz & 60Hz Level: 3A/m Mod: n/a Criteria: A	Apply to the enclosure of devices sensitive to magnetic fields. Basic Immunity (Table 1)	Enclosure Port	10

EFT/B Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3370	User Choice	1TR9:2016 EN61000-6-1:2007	EMC: TNE | Central office EMC: All Products	DC Power: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	1 TR9 Level 1. Central Office	DC (Indoor) DC (Outdoor)	2
3388	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 TCVN 7317:2003 NM EN 55024:2018	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: DSL: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B		DSL	2
6514	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN IEC61000-6-1:2019 EN55024:2010 EN55024:2010:A1 EN55035:2017 EN61131-2:2007 IEC61000-6-1:2016:Ed:3 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products EMC: Programmable Logic Controllers	DC Power: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	EN61131-2 Zone A	DC (Indoor) DC (Outdoor)	2
7616	User Choice	IEC61000-6-1:2016:Ed:3 EN IEC61000-6-1:2019	EMC: All Products	DC Power: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 100kHz Burst Period : 300ms Burst Duration : 0.75mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	Either 5KHz or 100KHz may be Performed.	DC (Indoor) DC (Outdoor)	2
7644	User Choice	CISPR24:2010+A1:2015 EN55024:2010 EN55024:2010:A1 EN61000-6-1:2007 IEC61000-6-1:2016:Ed:3 EN IEC61000-6-1:2019	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: All Products	AC or DC Power DSL Line: Apply to: Lines>3m Apply to: Lines to Gnd TrTh : 5/50ns, Rep Freq : 5kHz Burst Period : 300ms Burst Duration : 15mS. Testing Duration : 1 Min Voltage: 0.5kV (Peak) Criteria: B	For IEC 61000-6-1 Either 5KHz or 100KHz can be performed	DSL	2

ESD Immunity

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3447	User Choice	1TR9:2016 EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office	AC or DC Power. Level: 4kV Air Level: 4kV Contact Criteria: B	TNE Central Office. 1 TR9 Level 1.	Enclosure Port	1
6356	User Choice	EN300 386:2012:V1.6.1 EN60945:2002 IEC60533:2015 NM EN 55024:2018 1TR9:2016	EMC: TNE | Home [Class B] EMC: TNE | Non central office EMC: ITE | Marine	AC or DC Power. Level: 8kV Air Level: 6kV Contact Criteria: B	TNE Non Central Office. With corrigendum 1 (2008): I TR 9 Level 1	Enclosure Port	1

Surge Impulse/Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3389	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN300 386:2012:V1.6.1 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 TCVN 7317:2003 NM EN 55024:2018	EMC: ITE | Home [Class B] EMC: ITE | Office EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or Shielded Protection: Yes Level: 4kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	With primary protection fitted. Telecommunication Centers or Other than Telecommunication Centers.	Telecomm (Outdoor)	12
4065	User Choice	CISPR24:2010+A1:2015 CISPR35:2016:Ed:1 EN55024:2010 EN55024:2010:A1 EN55035:2017 KN35:2015 NM EN 55024:2018 TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	AC or DC Power: Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or Shielded Protection: Yes Level: 4kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: C	Alternative Test where 10/700 CDN wont allow the EUT to operate. For ports where primary protection is intended : Test applied to all lines simultaneously to earth (ground) with primary protection fitted.	Telecomm (Outdoor)	12
4131	230V 50Hz [+/-20%]	TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or Shielded Protection: Yes Level: 4kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Primary Protection Installed. Uses ITU-T for the test methods.	Telecomm (Outdoor)	12
4131	POE	TCVN 7317:2003	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Sym Lines Apply To: Unshielded or Shielded Protection: Yes Level: 4kV Apply To: Line to Gnd Surge: 10/700 uS Criteria: C	Primary Protection Installed. Uses ITU-T for the test methods.	Telecomm (Outdoor)	12

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
4909	User Choice	EN55035:2017 KN35:2015 CISPR35:2016:Ed:1	EMC: ITE | Home [Class B] EMC: ITE | Office	Power : AC or DC Telecom Lines: Apply To: Outdoor Lines Apply To: Shielded or Coaxial Apply To: Shield to Gnd Protection : Yes Level: 0.5kV Surge: 1.2/50 uS Criteria: B		Antenna (Outdoor)	2
5291	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office	Power: AC Protection : No Level: 0.5kV Apply To: Line to Line Surge: 1.2/50 uS Criteria: B Level: 1kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Telecommunication Centers	AC (<16A)	1
5292	User Choice	EN61000-6-1:2007	EMC: All Products	Power : DC Apply to: Indoor/ Outdoor lines Level: 0.5kV Apply To: Line to Gnd Level: 0.5kV Apply To: Line to Line Surge: 1.2/50 uS Protection : No Criteria: B		DC (Indoor) DC (Outdoor)	2
5293	User Choice	EN50293:2012 EN61000-6-2:2019 IEC61000-6-1:2016:Ed:3 IEC61000-6-2:2016:Ed:3 EN IEC61000-6-1:2019	EMC: Road traffic signal systems EMC: All Products EMC: ITE | Heavy Industrial	Power : DC Apply to: Indoor/ Outdoor lines Level: 0.5kV Apply To: Line to Line Level: 1.0kV Apply To: Line to Gnd Surge: 1.2/50 uS Protection : No Criteria: B		DC (Indoor) DC (Outdoor)	2
5842	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	AC or DC Power: Protection : No Telecom Lines: Apply To: Indoor Lines Apply To: Lines >10m Level: 0.5kV Apply To: Line to Gnd Surge: 1.2/50 uS Criteria: B	Telecommunication Centers or Other than Telecommunication Centers.	Signal	1

Voltage Disturbance Immunity

TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
3425	User Choice	EN300 386:2012:V1.6.1 NM EN 55024:2018	EMC: TNE | Central office EMC: TNE | Home [Class B] EMC: TNE | Non central office	AC Power: Mains Frequency : 50Hz Reductions: 0% Ut (100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycle (B) 0% Ut (100% Reduction) 250 Cycles (C)	Apply at Zero Crossing. 3 Repetitions per Interruption. Other Than Telecom Centers. Where the equipment has a rated voltage range the following shall apply: – if the voltage range does not exceed 20 % of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification (UT); – in all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range;	AC (<16A)	1
7634	User Choice	EN IEC61000-6-1:2019	EMC: All Products	AC Power: >16A Mains Frequency : 50Hz 0% Ut	Zero Crossing	AC (>16A)	2

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TC ID	Voltage	Product Standard	PTIU	Test Details	Comments	Port Type	Just.
		IEC61000-6-1:2016:Ed:3		(100% Reduction) 0.5 cycle (B) 0% UT (100% Reduction) 1.0 cycle (B) 70% Ut (30% Reduction) 25 Cycles (C) 0% Ut (100% Reduction) 250 Cycles (C)			

Port to Test Cases Justification Summary

NA

Port Diagram

NA

EUT Clock* Frequencies (In MHz)

*** Clock frequencies may include switching frequencies------**

Frequency	Description
7.1	
40.68	
0.1	I2C clock
2402	2.4G WiFi Radio
2482	2.4G WiFi Radio
5170	5G WiFi Radio
5865	5G WiFi Radio
2480	BLE
133	PCIe clock
625	SGMII clock
1	DC-DC local switch clock
0.2	
13.56	
21	
27.12	

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Supporting Information

Supporting Info-Attachments

EUT Top



EUT Console

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EUT power

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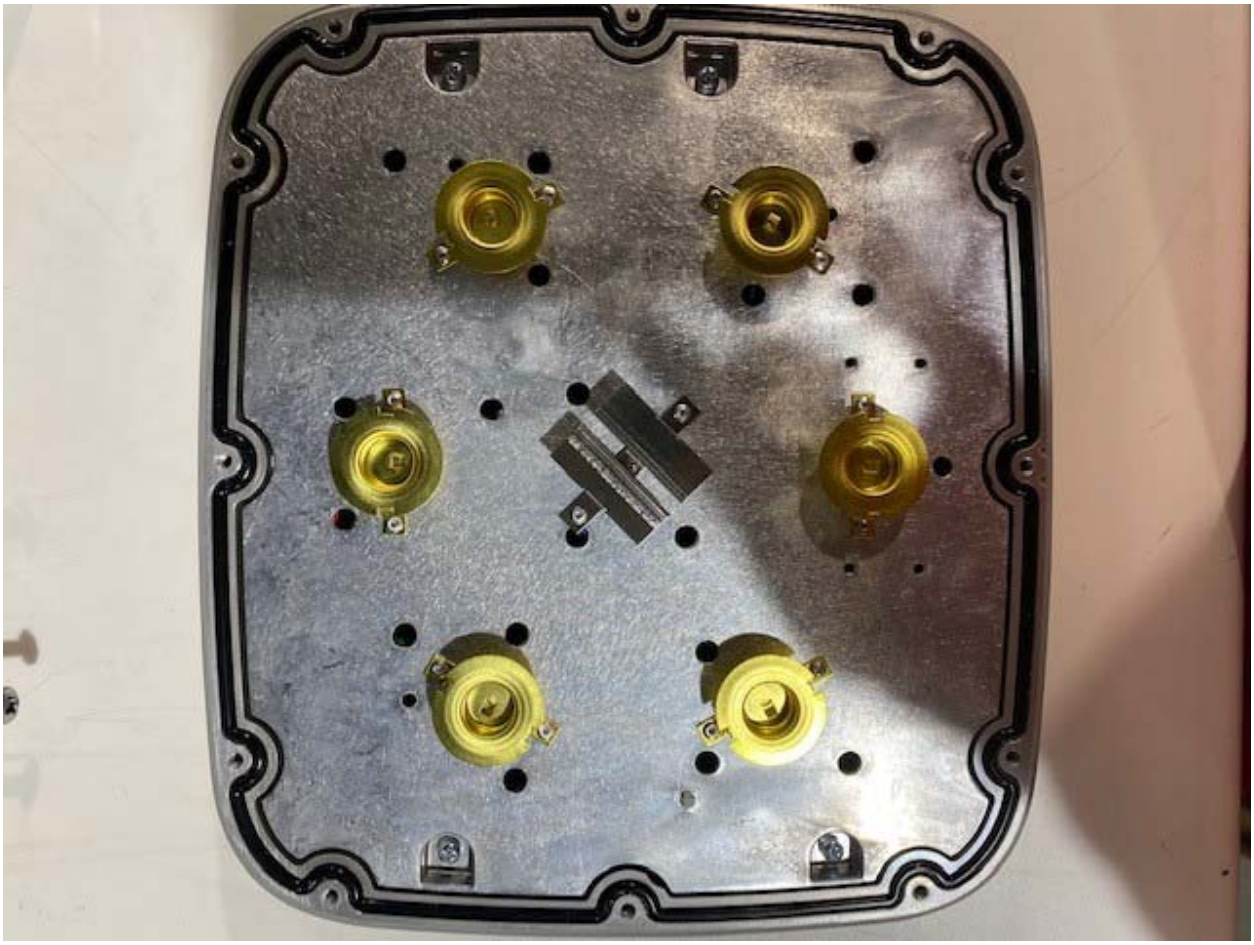
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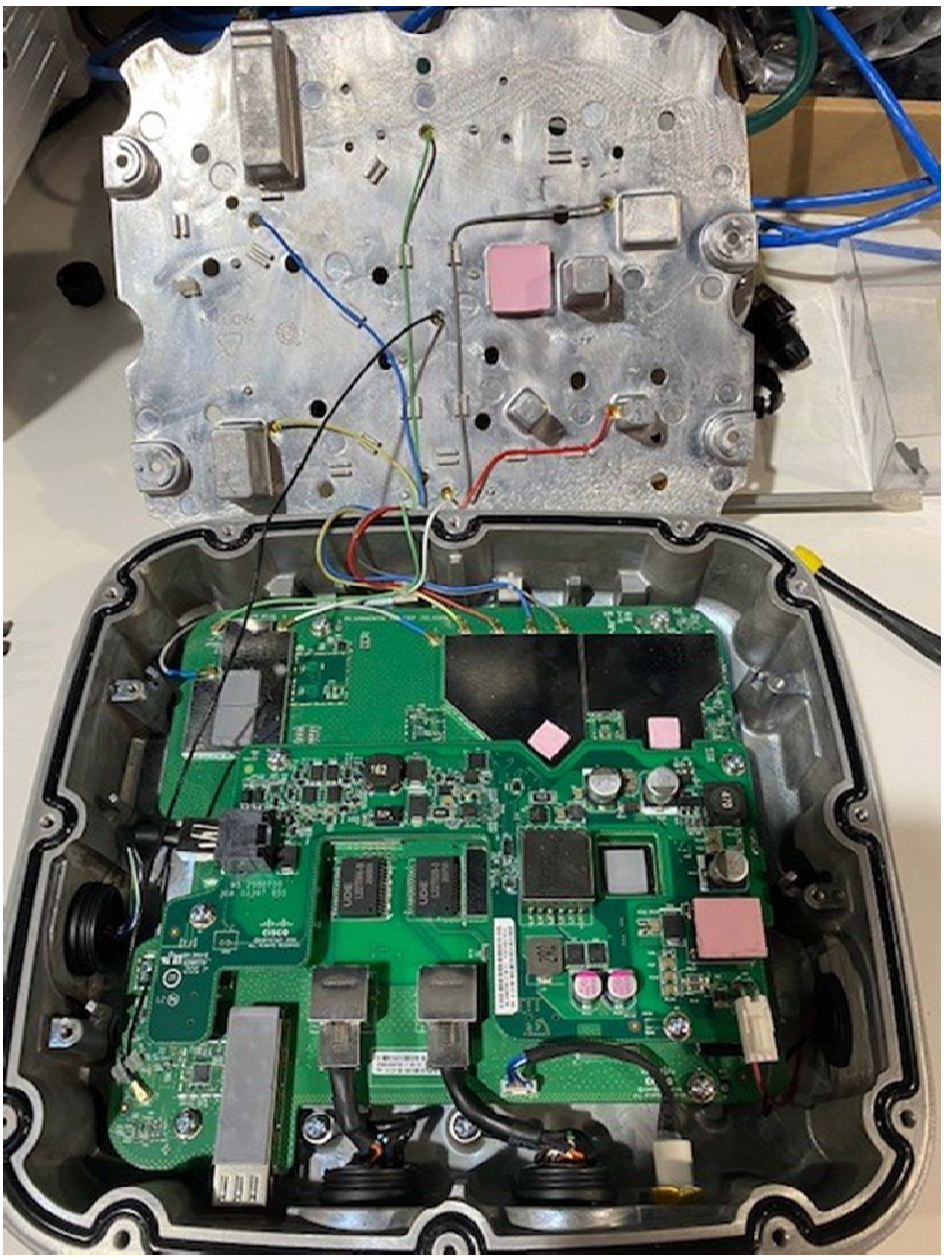


EUT Internal Antenna

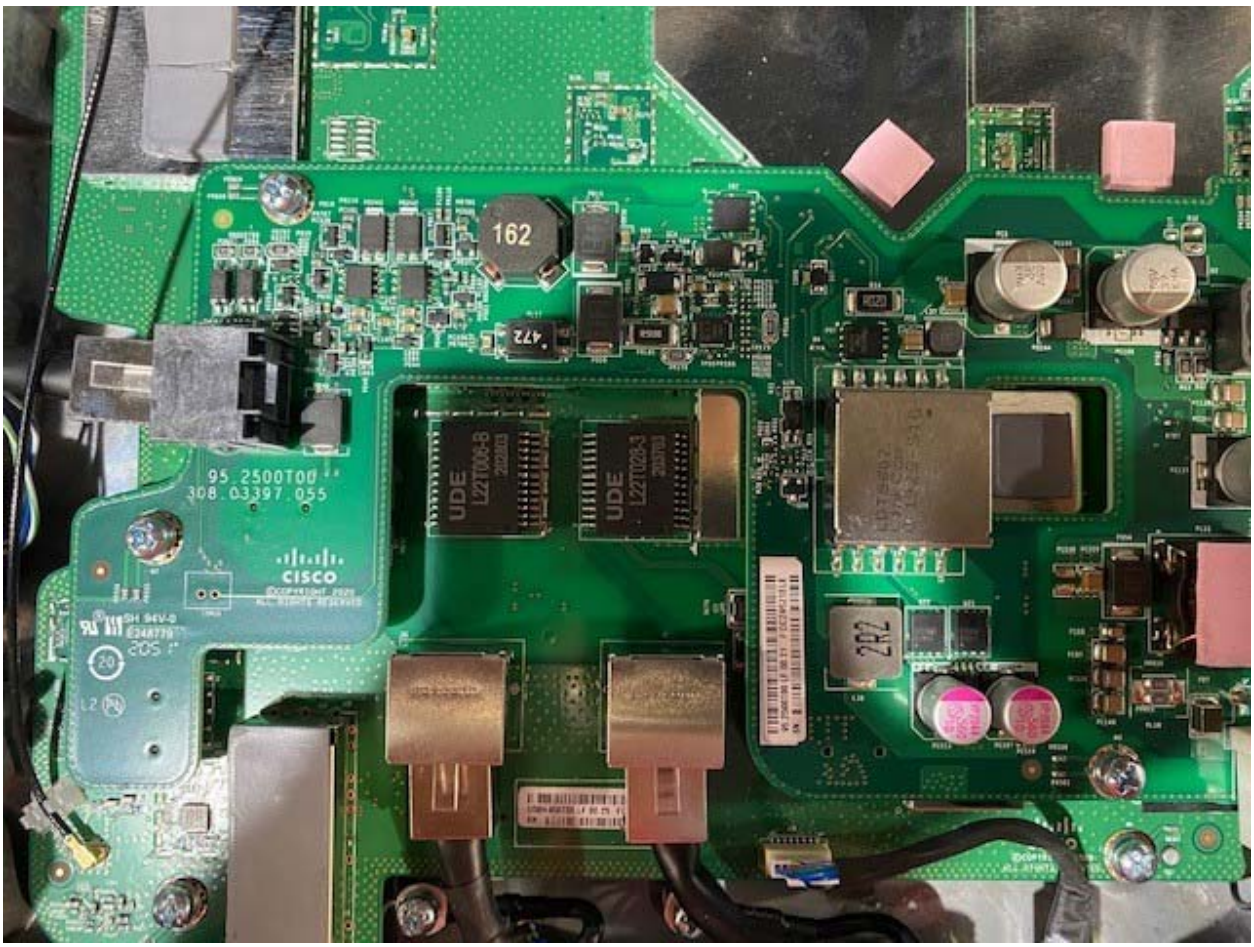
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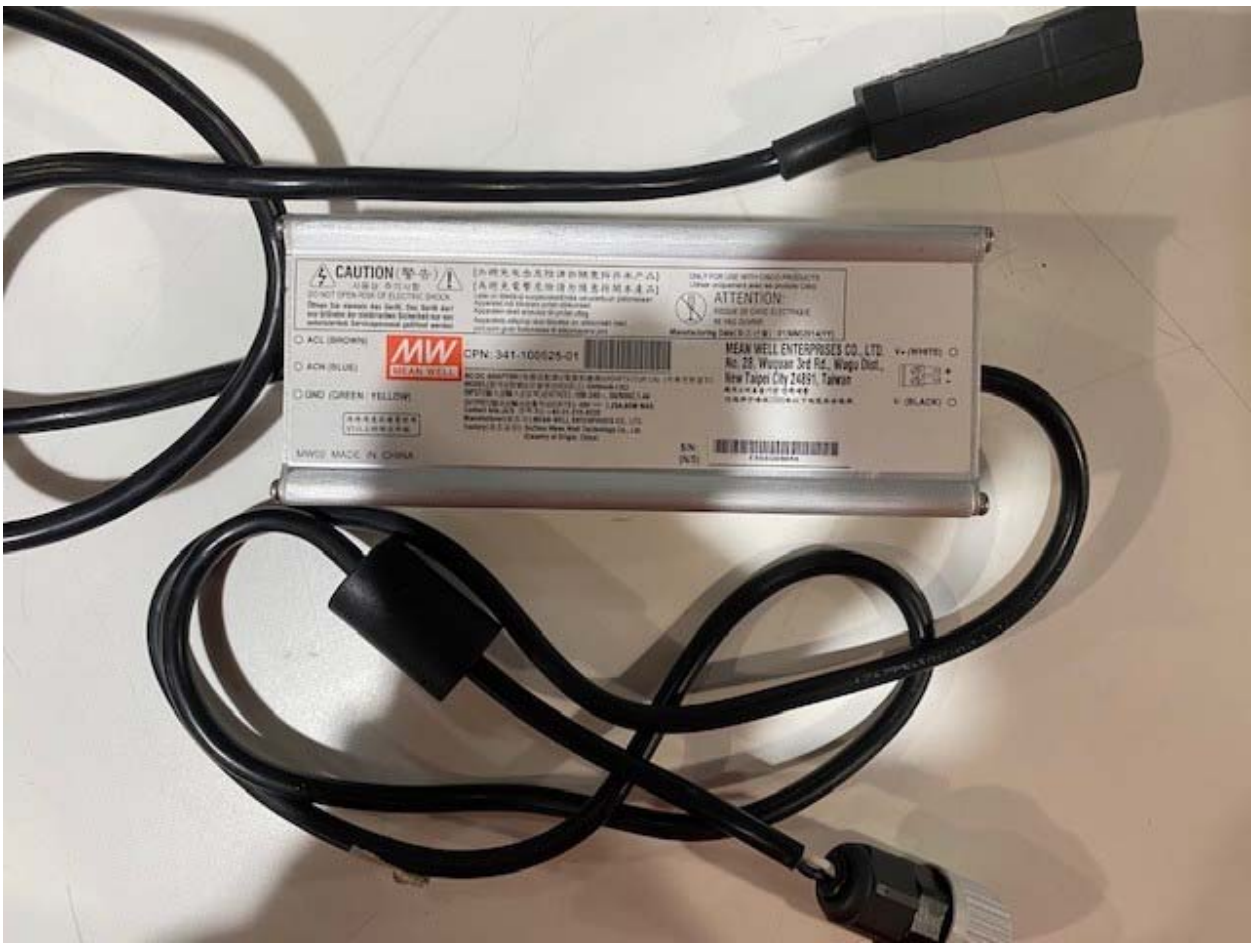
EUT PCB 

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AC-DC Adaptor

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