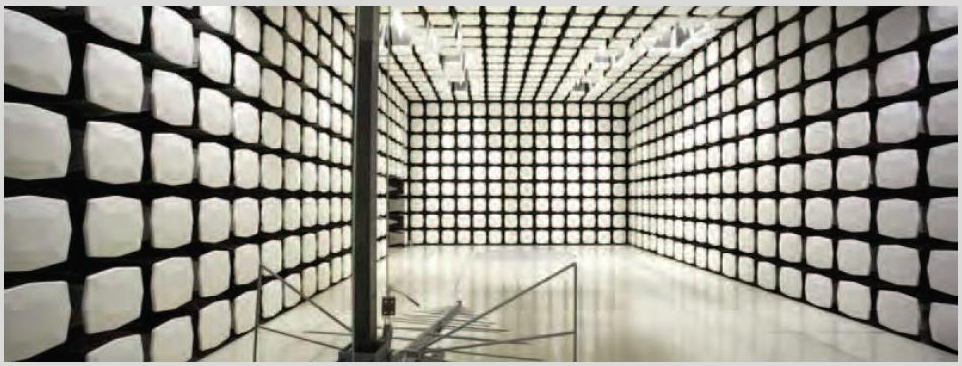
A-dec, Inc.

A-dec Gateway

FCC 15.407:2022

802.11 radio

Report: A-DE0169 Rev. 1, Issue Date: March 8, 2022



CERT #3310.02

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CERTIFICATE OF TEST

Last Date of Test: March 7, 2022
A-dec, Inc.
EUT: A-dec Gateway

Radio Equipment Testing

Standards

Specification	Method
FCC 15.207:2021	ANSI C63.10:2013
FCC 15.407:2021	
FCC 15.407:2022	

Results

Method Clause	Test Description	Applied	Results	Comments
3.2	Duty Cycle	Yes	Pass	
3.2	Maximum Power Spectral Density	Yes	Pass	
6.7	Band Edge	Yes	Pass	
6.7	Emission Bandwidth	Yes	Pass	
6.7	Occupied Bandwidth	Yes	Pass	
6.11	Frequency Stability	Yes	Pass	
6.12	Maximum Conducted Output Power	Yes	Pass	
6.12	Equivalent Isotropic Radiated Power (EIRP)	Yes	Pass	
6.13	Spurious Radiated Emissions	Yes	Pass	
8.8	Powerline Conducted Emissions	Yes	Pass	

Deviations From Test Standards

None

Approved By:

Kyle Holgate, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY

Revision Number	Description	Date (yyyy-mm-dd)	Page Number
01	Updated to show 15.407:2022	2022-03-08	1, 2
	Photos removed	2022-03-08	N/A
	Updated captures with larger RBW, this also triggered updated OP and EI measurements for the 80 MHz wide channels--updated those measurements also.	2022-03-08	257, 273-275
	Updated last dates of test	2022-03-08	2, 9, 16
	Photos have been removed from OB and EBW in the 5.8 GHz band	2022-03-08	N/A
	Photos removed from PSD	2022-03-08	N/A

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Each laboratory is accredited by A2LA to ISO / IEC 17025, and as a product certifier to ISO / IEC 17065 which allows Element to certify transmitters to FCC and IC specifications.

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

European Union

European Commission – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

United Kingdom

BEIS – Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIT / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

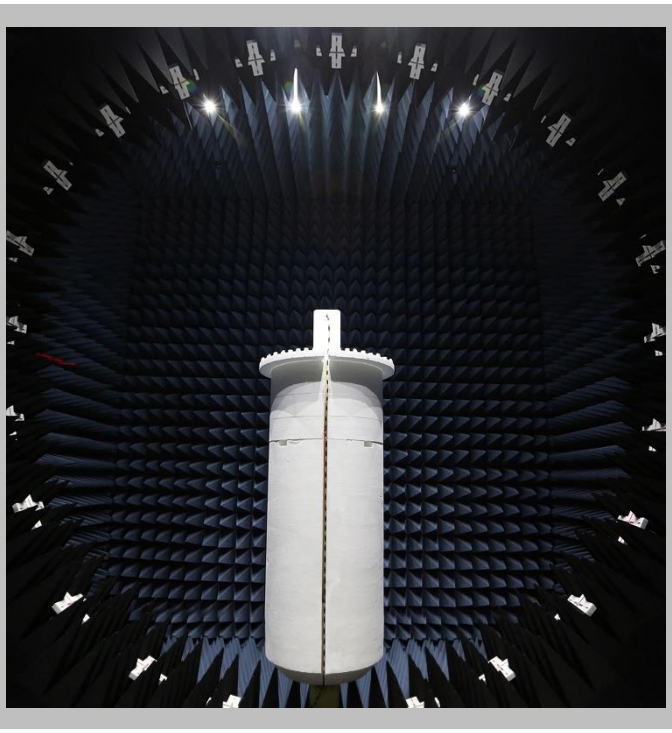
SCOPE

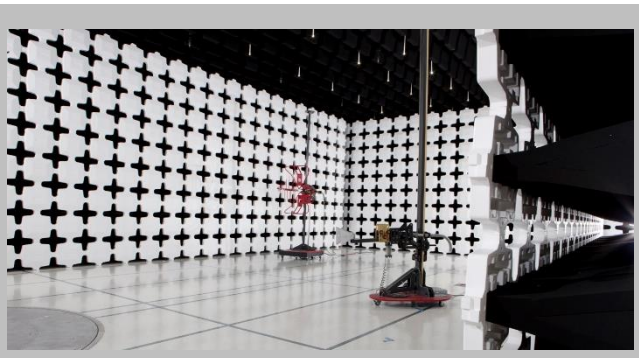
For details on the Scopes of our Accreditations, please visit:

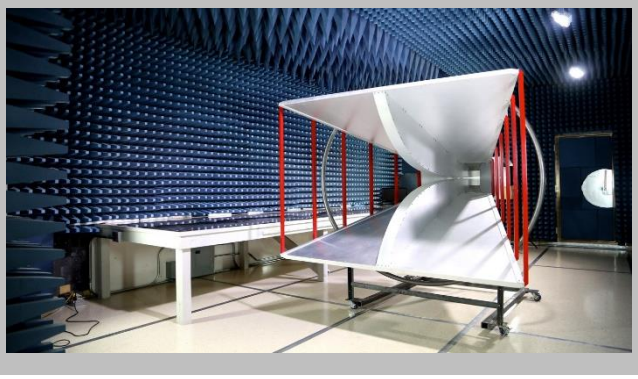
California Minnesota Oregon Texas Washington

FACILITIES

California	Minnesota	Oregon	Texas	Washington
Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-11 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th Ave NE Bothell, WA 98011 (425)984-6600
A2LA				
Lab Code: 3310.04	Lab Code: 3310.05	Lab Code: 3310.02	Lab Code: 3310.03	Lab Code: 3310.06
Innovation, Science and Economic Development Canada				
2834B-1, 2834B-3	2834E-1, 2834E-3	2834D-1	2834G-1	2834F-1
BSMI				
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI				
A-0029	A-0109	A-0108	A-0201	A-0110
Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA				
US0158	US0175	US0017	US0191	US0157







MEASUREMENT UNCERTAINTY

element
TMU.2015.07.10

Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found in the table below. A lab specific value may also be found in the applicable test description section. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.6 dB	-2.6 dB

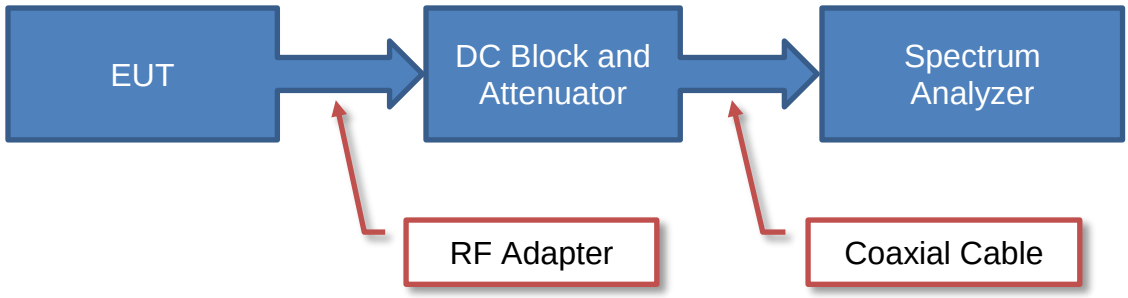
TEST SETUP BLOCK DIAGRAMS

Measurement Bandwidths

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

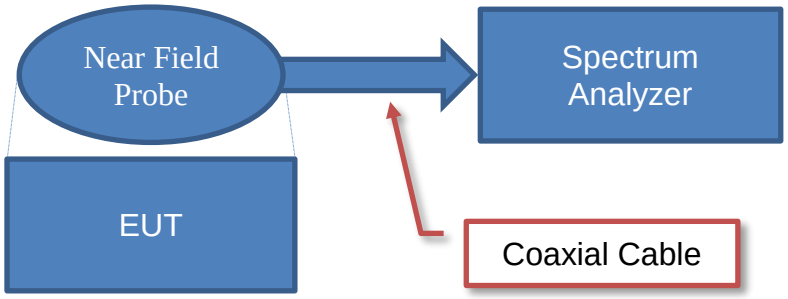
Antenna Port Conducted Measurements



Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

Near Field Test Fixture Measurements

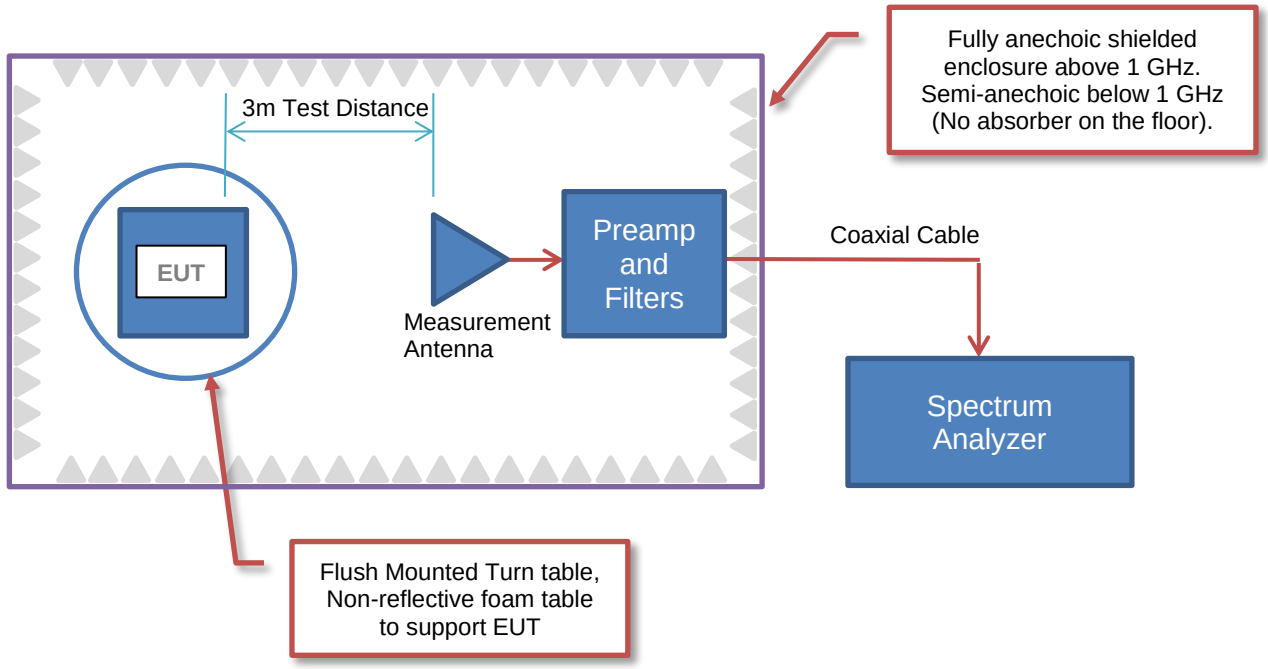


Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

TEST SETUP BLOCK DIAGRAMS

Emissions Measurements



Sample Calculation (logarithmic units)

Radiated Emissions:

Measured Level (Amplitude)		Factor: Antenna Factor		Factor: Cable Factor		Factor: Amplifier Gain		Distance Adjustment Factor		External Attenuation		Field Strength
42.6	+	28.6	+	3.1	-	40.8	+	0.0	+	0.0	=	**33.5**

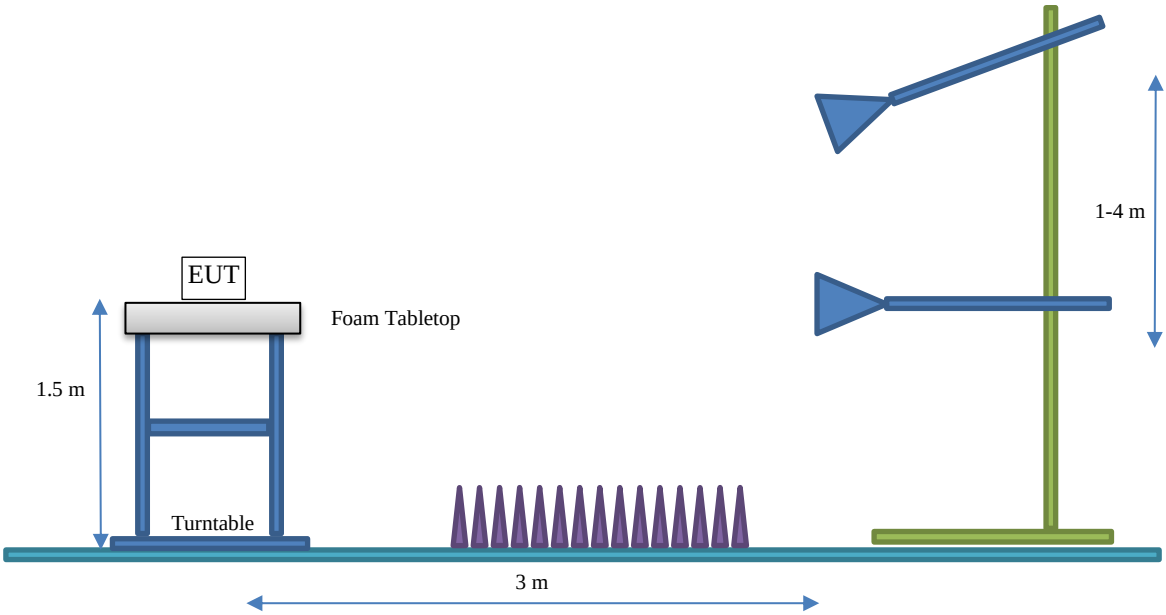
Conducted Emissions:

Measured Level (Amplitude)		Factor: Transducer Factor		Factor: Cable Factor		External Attenuation		Adjusted Level
26.7	+	0.3	+	0.1	+	20.0	=	**47.1**

TEST SETUP BLOCK DIAGRAMS

Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	A-dec, Inc.
Address:	2601 Crestview Dr Building 4
City, State, Zip:	Newberg, OR 97132-9528
Test Requested By:	Russell Perkins
EUT:	A-dec Gateway
First Date of Test:	November 22, 2021
Last Date of Test:	March 7, 2022
Receipt Date of Samples:	November 22, 2021
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
A small network gateway that connects to our products data networks, and rolls system information up to the cloud using Ethernet or WiFi.

Testing Objective:
To demonstrate compliance of the 802.11 radio under FCC 15.407 for operation in the 5.3 GHz, 5.6 GHz and 5.8 GHz band(s).

POWER SETTINGS AND ANTENNAS

The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information.

ANTENNA GAIN (dBi)

Type	Provided by:	Frequency Range (MHz)	Gain (dBi)
Ceramic Chip	Manufacturer	5150 - 5850	5.2

The EUT was tested using the power settings provided by the manufacturer:

SETTINGS FOR ALL TESTS IN THIS REPORT

Band	Modulation Types	Channel Bandwidths	Channel	Position	Frequency (MHz)	Power Setting (dBm)
5250 – 5350 MHz	6 Mbps	20	52	Low Channel	5260	13
			64	High Channel	5320	13
	36 Mbps	20	52	Low Channel	5260	13
			64	High Channel	5320	13
	54 Mbps	20	52	Low Channel	5260	13
			64	High Channel	5320	13
	MCS0	20	52	Low Channel	5260	13
			64	High Channel	5320	13
	MCS7	20	52	Low Channel	5260	13
			64	High Channel	5320	13
	MCS8 (256-QAM)	20	52	Low Channel	5260	10
			64	High Channel	5320	10
	MCS0	40	52/56	Low Channel	5270	8
			60/64	High Channel	5310	8
	MCS7	40	52/56	Low Channel	5270	8
			60/64	High Channel	5310	8
	MCS9 (256-QAM)	40	52/56	Low Channel	5270	9
			60/64	High Channel	5310	9
	MCS0	80	52-64	Low Channel	5290	7
	MCS9 (256-QAM)	80	52-64	Low Channel	5290	7
5470 – 5725 MHz	6 Mbps	20	100	Low Channel	5500	13
			116	Mid Channel	5580	13
			140	High Channel	5700	13
	36 Mbps	20	100	Low Channel	5500	13
			116	Mid Channel	5580	13
			140	High Channel	5700	13
	54 Mbps	20	100	Low Channel	5500	13
			116	Mid Channel	5580	13
			140	High Channel	5700	13
	MCS0	20	100	Low Channel	5500	13
			116	Mid Channel	5580	13
			140	High Channel	5700	13
	MCS7	20	100	Low Channel	5500	13
			116	Mid Channel	5580	13
			140	High Channel	5700	13
	MCS8 (256-QAM)	20	100	Low Channel	5500	10
			116	Mid Channel	5580	10
			140	High Channel	5700	10
	MCS0	40	100/104	Low Channel	5510	8
			116/120	Mid Channel	5590	8
			132/136	High Channel	5670	8
	MCS7	40	100/104	Low Channel	5510	8
			116/120	Mid Channel	5590	8
			132/136	High Channel	5670	8
	MCS9 (256-QAM)	40	100/104	Low Channel	5510	9
			116/120	Mid Channel	5590	9
			132/136	High Channel	5670	9
	MCS0	80	100-112	Low Channel	5530	7
			116-128	High Channel	5610	7

	MCS9 (256-QAM)	80	100-112	Low Channel	5530	7
			116-128	High Channel	5610	7
5725 – 5825 MHz	6 Mbps	20	149	Low Channel	5745	9
			157	Mid Channel	5785	9
			165	High Channel	5825	9
	36 Mbps	20	149	Low Channel	5745	9
			157	Mid Channel	5785	9
			165	High Channel	5825	9
	54 Mbps	20	149	Low Channel	5745	9
			157	Mid Channel	5785	9
			165	High Channel	5825	9
	MCS0	20	149	Low Channel	5745	9
			157	Mid Channel	5785	9
			165	High Channel	5825	9
	MCS7	20	149	Low Channel	5745	9
			157	Mid Channel	5785	9
			165	High Channel	5825	9
	MCS8 (256-QAM)	20	149	Low Channel	5745	9
			157	Mid Channel	5785	9
			165	High Channel	5825	9
	MCS0	40	149/153	Low Channel	5755	8
			157/161	High Channel	5795	8
	MCS7	40	149/153	Low Channel	5755	8
			157/161	High Channel	5795	8
	MCS9 (256-QAM)	40	149/153	Low Channel	5755	9
			157/161	High Channel	5795	9
	MCS0	80	149-161	Low Channel	5775	7
	MCS9 (256-QAM)	80	149-161	Low Channel	5775	7

CONFIGURATIONS

Configuration A-DE0169- 1

Software/Firmware Running During Test	
Description	**Version**
Murata Test Firmware	None

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Access Point / IoT Device	A-dec, Inc.	43.0531.00	521A000100

Peripherals in Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
ITE Power Supply	GlobTek, Inc.	GTM96180-1130-6-0	None
Laptop	Lenovo	N585	CB17045996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Access Point / IoT Device (Remote)	A-dec, Inc.	43.0531.00	
Laptop (remote)	Dell	Latitude 7490	8NQWPV2

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	1.5 m	No	ITE Power Supply	Wireless Access Point / IoT Device
Serial to USB	Yes	2.0 m	No	Laptop	Wireless Access Point / IoT Device
Ethernet	Yes	5.5 m	No	Wireless Access Point / IoT Device	Laptop (remote)
CAN	No	7.6 m	No	Wireless Access Point / IoT Device	Wireless Access Point / IoT Device (Remote)
Can FD	No	7.6 m	No	Wireless Access Point / IoT Device	Wireless Access Point / IoT Device (Remote)

CONFIGURATIONS

Configuration A-DE0169- 2

Software/Firmware Running During Test	
Description	**Version**
Murata Test Firmware	None

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Access Point / IoT Device	A-dec, Inc.	43.0531.00	521A000100

Peripherals in Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Lenovo	N585	CB17045996
Power Supply, 300W, 120VAC	A-dec, Inc.	28.1436.00	None

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Access Point / IoT Device (Remote)	A-dec, Inc.	43.0531.00	
Laptop (remote)	Dell	Latitude 7490	8NQWPV2

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Serial to USB	Yes	2.0 m	No	Laptop	Wireless Access Point / IoT Device
Ethernet	Yes	5.5 m	No	Wireless Access Point / IoT Device	Laptop (remote)
CAN	No	7.6 m	No	Wireless Access Point / IoT Device	Wireless Access Point / IoT Device (Remote)
Can FD	No	7.6 m	No	Wireless Access Point / IoT Device	Wireless Access Point / IoT Device (Remote)
AC Power	No	0.8 m	No	Power Supply, 300W, 120VAC	AC Power
DC Power	No	1.4 m	No	Wireless Access Point / IoT Device	Power Supply, 300W, 120VAC

CONFIGURATIONS

Configuration A-DE0169- 3

Software/Firmware Running During Test	
Description	**Version**
Murata Test Firmware	None

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Access Point / IoT Device	A-dec, Inc.	43.0531.00	521A000118

Peripherals in Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
ITE Power Supply	GlobTek, Inc.	GTM96180-1130-6-0	None
Laptop	Lenovo	N585	CB17045996

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Serial to USB	Yes	2.0 m	No	Laptop	Wireless Access Point / IoT Device

Configuration A-DE0169- 4

Software/Firmware Running During Test	
Description	**Version**
Murata Test Firmware	None

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Access Point / IoT Device	A-dec, Inc.	43.0531.00	521A000122

Peripherals in Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Lenovo	N585	CB17045996

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Serial to USB	Yes	2.0 m	No	Laptop	Wireless Access Point / IoT Device
DC Power	No	1.4 m	No	Wireless Access Point / IoT Device	Lab DC Power Supply

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2021-11-22	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
2	2021-11-29	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
3	2021-11-30	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
4	2021-12-03	Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
5	2021-12-03	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2021-12-03	Maximum Conducted Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	2021-12-03	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	2021-12-03	Emission Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
9	2021-12-03	Band Edge	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
10	2021-12-03	Maximum Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.
11	2022-02-14	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
12	2022-02-14	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
13	2022-02-14	Emission Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.

MODIFICATIONS

Item	Date	Test	Modification	Note	Disposition of EUT
14	2022-02-14	Maximum Conducted Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
15	2022-02-14	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
16	2022-02-14	Maximum Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
17	2022-03-07	Emission Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
18	2022-03-07	Maximum Conducted Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
19	2022-03-07	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Gauss Instruments	TDEMI 30M	ARN	2021-04-06	2022-04-06
LISN	Solar Electronics	9252-50-R-24-BNC	LIP	2021-09-10	2022-09-10
Cable - Conducted Cable Assembly	Northwest EMC	EVG, HHD, RKT	EVGA	2021-01-05	2022-01-05

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	3.2 dB	-3.2 dB

CONFIGURATIONS INVESTIGATED

A-DE0169-2

MODES INVESTIGATED

Tx, 802.11ac/an, Ch. 64 = 5320 MHz, 6 Mbps
Tx, 802.11ac/an, Ch. 116 = 5580 MHz, 6 Mbps
Tx, 802.11ac/an, Ch. 157 = 5785 MHz, 6 Mbps

POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

EUT:	A-dec Gateway	Work Order:	A-DE0169
Serial Number:	521A000100	Date:	2021-11-29
Customer:	A-dec, Inc.	Temperature:	19.9°C
Attendees:	None	Relative Humidity:	53.3%
Customer Project:	None	Bar. Pressure (PMSL):	1027 mb
Tested By:	Jeff Alcoke	Job Site:	EV07
Power:	24 VDC via 110VAC/60Hz	Configuration:	A-DE0169-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	18	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

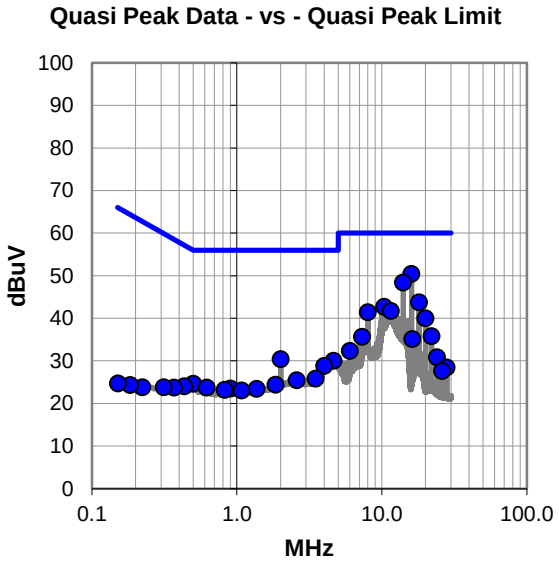
None

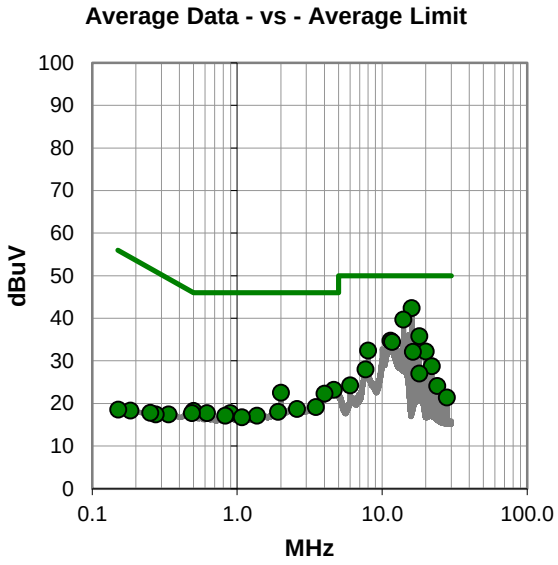
EUT OPERATING MODES

Tx, 802.11ac/an, Ch. 64 = 5320 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None





POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

RESULTS - Run #18

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	29.9	20.5	50.4	60.0	-9.6
14.033	27.9	20.5	48.4	60.0	-11.6
18.043	23.1	20.6	43.7	60.0	-16.3
10.408	22.5	20.2	42.7	60.0	-17.3
11.571	21.3	20.4	41.7	60.0	-18.3
8.020	21.2	20.2	41.4	60.0	-18.6
20.048	19.3	20.7	40.0	60.0	-20.0
22.053	15.0	20.8	35.8	60.0	-24.2
7.305	15.4	20.2	35.6	60.0	-24.4
16.290	14.5	20.6	35.1	60.0	-24.9
2.005	10.4	20.0	30.4	56.0	-25.6
4.656	9.9	20.1	30.0	56.0	-26.0
4.010	8.8	20.0	28.8	56.0	-27.2
6.015	12.1	20.2	32.3	60.0	-27.7
24.058	9.9	20.9	30.8	60.0	-29.2
3.496	5.8	20.0	25.8	56.0	-30.2
2.594	5.4	20.0	25.4	56.0	-30.6
0.501	4.6	20.0	24.6	56.0	-31.4
28.068	7.3	21.1	28.4	60.0	-31.6
1.851	4.4	20.0	24.4	56.0	-31.6
0.620	3.7	20.0	23.7	56.0	-32.3
26.063	6.6	21.0	27.6	60.0	-32.4
0.902	3.5	20.0	23.5	56.0	-32.5
1.371	3.4	20.0	23.4	56.0	-32.6
0.826	3.2	20.0	23.2	56.0	-32.8

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	21.9	20.5	42.4	50.0	-7.6
14.033	19.2	20.5	39.7	50.0	-10.3
18.043	15.2	20.6	35.8	50.0	-14.2
11.420	14.3	20.4	34.7	50.0	-15.3
11.722	14.0	20.4	34.4	50.0	-15.6
8.019	12.2	20.2	32.4	50.0	-17.6
20.048	11.5	20.7	32.2	50.0	-17.8
16.296	11.5	20.6	32.1	50.0	-17.9
22.053	7.9	20.8	28.7	50.0	-21.3
7.703	7.8	20.2	28.0	50.0	-22.0
4.654	3.1	20.1	23.2	46.0	-22.8
18.119	6.4	20.6	27.0	50.0	-23.0
2.005	2.5	20.0	22.5	46.0	-23.5
4.010	2.3	20.0	22.3	46.0	-23.7
6.014	4.0	20.2	24.2	50.0	-25.8
24.058	3.2	20.9	24.1	50.0	-25.9
3.501	-0.9	20.0	19.1	46.0	-26.9
2.588	-1.3	20.0	18.7	46.0	-27.3
0.501	-1.8	20.0	18.2	46.0	-27.8
1.921	-2.0	20.0	18.0	46.0	-28.0
0.618	-2.3	20.0	17.7	46.0	-28.3
0.901	-2.3	20.0	17.7	46.0	-28.3
0.487	-2.3	20.0	17.7	46.2	-28.5
28.068	0.3	21.1	21.4	50.0	-28.6
0.827	-2.9	20.0	17.1	46.0	-28.9

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

EUT:	A-dec Gateway	Work Order:	A-DE0169
Serial Number:	521A000100	Date:	2021-11-29
Customer:	A-dec, Inc.	Temperature:	19.8°C
Attendees:	None	Relative Humidity:	53.7%
Customer Project:	None	Bar. Pressure (PMSL):	1028 mb
Tested By:	Jeff Alcoke	Job Site:	EV07
Power:	24 VDC via 110VAC/60Hz	Configuration:	A-DE0169-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	19	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

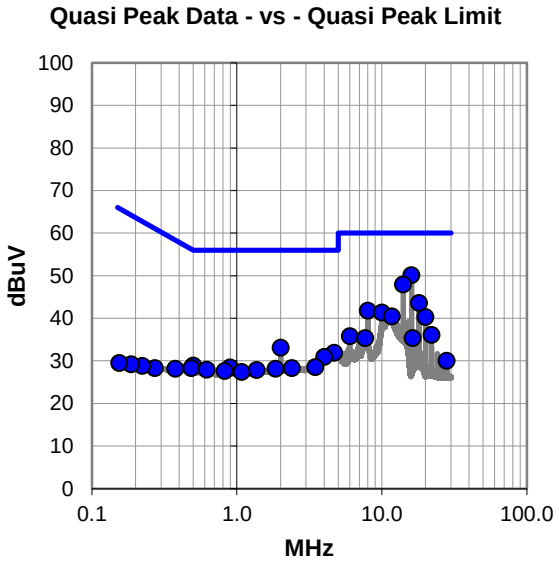
None

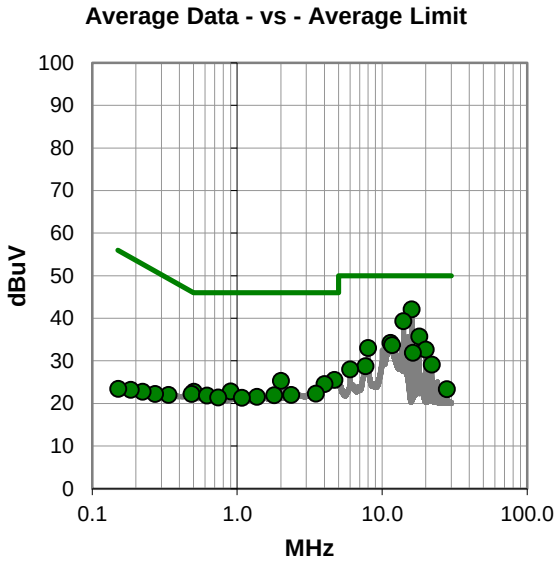
EUT OPERATING MODES

Tx, 802.11ac/an, Ch. 64 = 5320 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None





POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

RESULTS - Run #19

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	29.6	20.5	50.1	60.0	-9.9
14.033	27.4	20.5	47.9	60.0	-12.1
18.043	23.0	20.6	43.6	60.0	-16.4
8.019	21.6	20.2	41.8	60.0	-18.2
10.023	21.1	20.2	41.3	60.0	-18.7
11.725	20.0	20.4	40.4	60.0	-19.6
20.048	19.6	20.7	40.3	60.0	-19.7
2.004	13.1	20.0	33.1	56.0	-22.9
22.053	15.3	20.8	36.1	60.0	-23.9
4.686	11.8	20.1	31.9	56.0	-24.1
6.014	15.6	20.2	35.8	60.0	-24.2
16.304	14.7	20.6	35.3	60.0	-24.7
7.687	15.1	20.2	35.3	60.0	-24.7
4.009	10.9	20.0	30.9	56.0	-25.1
0.499	8.9	20.0	28.9	56.0	-27.1
3.472	8.5	20.0	28.5	56.0	-27.5
0.901	8.4	20.0	28.4	56.0	-27.6
2.396	8.3	20.0	28.3	56.0	-27.7
1.848	8.1	20.0	28.1	56.0	-27.9
0.486	8.3	20.0	28.3	56.2	-27.9
0.618	7.9	20.0	27.9	56.0	-28.1
1.368	7.8	20.0	27.8	56.0	-28.2
0.826	7.6	20.0	27.6	56.0	-28.4
1.078	7.4	20.0	27.4	56.0	-28.6
28.068	8.9	21.1	30.0	60.0	-30.0

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	21.6	20.5	42.1	50.0	-7.9
14.033	18.8	20.5	39.3	50.0	-10.7
18.043	15.1	20.6	35.7	50.0	-14.3
11.427	13.8	20.4	34.2	50.0	-15.8
11.734	13.3	20.4	33.7	50.0	-16.3
8.019	12.8	20.2	33.0	50.0	-17.0
20.048	11.9	20.7	32.6	50.0	-17.4
16.304	11.3	20.6	31.9	50.0	-18.1
4.689	5.4	20.1	25.5	46.0	-20.5
2.004	5.3	20.0	25.3	46.0	-20.7
22.051	8.3	20.8	29.1	50.0	-20.9
7.692	8.5	20.2	28.7	50.0	-21.3
4.009	4.5	20.0	24.5	46.0	-21.5
6.014	7.8	20.2	28.0	50.0	-22.0
0.902	2.8	20.0	22.8	46.0	-23.2
0.502	2.7	20.0	22.7	46.0	-23.3
3.504	2.3	20.0	22.3	46.0	-23.7
2.367	2.0	20.0	22.0	46.0	-24.0
0.486	2.2	20.0	22.2	46.2	-24.0
1.802	1.9	20.0	21.9	46.0	-24.1
0.618	1.8	20.0	21.8	46.0	-24.2
1.371	1.5	20.0	21.5	46.0	-24.5
0.740	1.4	20.0	21.4	46.0	-24.6
1.079	1.3	20.0	21.3	46.0	-24.7
28.068	2.2	21.1	23.3	50.0	-26.7

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

EUT:	A-dec Gateway	Work Order:	A-DE0169
Serial Number:	521A000100	Date:	2021-11-29
Customer:	A-dec, Inc.	Temperature:	19.8°C
Attendees:	None	Relative Humidity:	53.7%
Customer Project:	None	Bar. Pressure (PMSL):	1028 mb
Tested By:	Jeff Alcoke	Job Site:	EV07
Power:	24 VDC via 110VAC/60Hz	Configuration:	A-DE0169-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	20	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

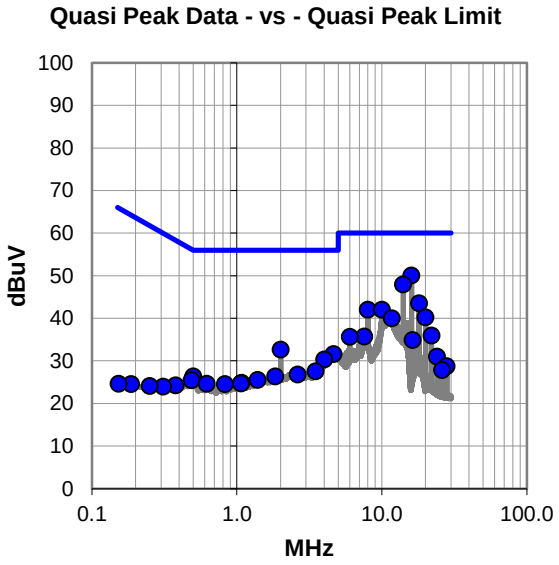
None

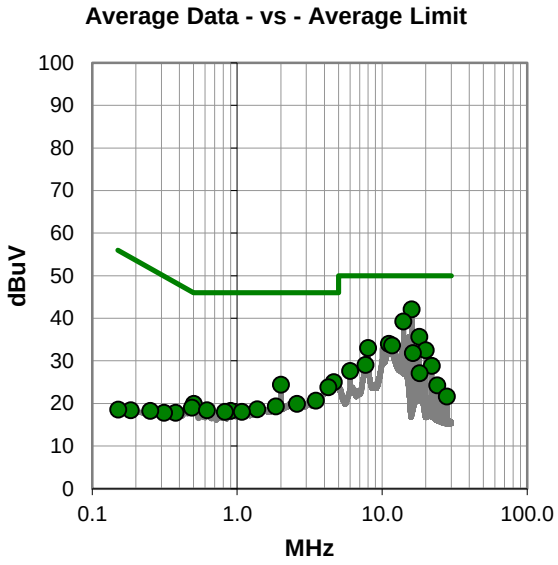
EUT OPERATING MODES

Tx, 802.11ac/an, Ch. 116 = 5580 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None





POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

RESULTS - Run #20

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	29.5	20.5	50.0	60.0	-10.0
14.033	27.4	20.5	47.9	60.0	-12.1
18.043	22.9	20.6	43.5	60.0	-16.5
8.019	21.8	20.2	42.0	60.0	-18.0
10.025	21.8	20.2	42.0	60.0	-18.0
20.048	19.5	20.7	40.2	60.0	-19.8
11.735	19.6	20.4	40.0	60.0	-20.0
2.004	12.6	20.0	32.6	56.0	-23.4
22.053	15.1	20.8	35.9	60.0	-24.1
7.573	15.5	20.2	35.7	60.0	-24.3
6.015	15.4	20.2	35.6	60.0	-24.4
4.648	11.5	20.1	31.6	56.0	-24.4
16.308	14.3	20.6	34.9	60.0	-25.1
4.010	10.3	20.0	30.3	56.0	-25.7
3.504	7.5	20.0	27.5	56.0	-28.5
24.058	10.1	20.9	31.0	60.0	-29.0
2.629	6.8	20.0	26.8	56.0	-29.2
0.499	6.3	20.0	26.3	56.0	-29.7
1.842	6.3	20.0	26.3	56.0	-29.7
1.394	5.5	20.0	25.5	56.0	-30.5
0.489	5.4	20.0	25.4	56.2	-30.8
1.081	4.8	20.0	24.8	56.0	-31.2
28.068	7.6	21.1	28.7	60.0	-31.3
1.070	4.7	20.0	24.7	56.0	-31.3
0.620	4.6	20.0	24.6	56.0	-31.4

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	21.6	20.5	42.1	50.0	-7.9
14.033	18.7	20.5	39.2	50.0	-10.8
18.043	15.0	20.6	35.6	50.0	-14.4
11.127	13.7	20.3	34.0	50.0	-16.0
11.737	13.2	20.4	33.6	50.0	-16.4
8.019	12.8	20.2	33.0	50.0	-17.0
20.048	11.8	20.7	32.5	50.0	-17.5
16.308	11.2	20.6	31.8	50.0	-18.2
4.653	4.9	20.1	25.0	46.0	-21.0
7.704	8.8	20.2	29.0	50.0	-21.0
22.053	8.0	20.8	28.8	50.0	-21.2
2.005	4.4	20.0	24.4	46.0	-21.6
4.262	3.8	20.0	23.8	46.0	-22.2
6.015	7.4	20.2	27.6	50.0	-22.4
18.138	6.5	20.6	27.1	50.0	-22.9
3.504	0.6	20.0	20.6	46.0	-25.4
24.058	3.3	20.9	24.2	50.0	-25.8
0.502	-0.1	20.0	19.9	46.0	-26.1
2.596	-0.1	20.0	19.9	46.0	-26.1
1.847	-0.7	20.0	19.3	46.0	-26.7
0.489	-1.0	20.0	19.0	46.2	-27.2
1.375	-1.4	20.0	18.6	46.0	-27.4
0.620	-1.6	20.0	18.4	46.0	-27.6
0.902	-1.8	20.0	18.2	46.0	-27.8
0.826	-2.0	20.0	18.0	46.0	-28.0

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

EUT:	A-dec Gateway	Work Order:	A-DE0169
Serial Number:	521A000100	Date:	2021-11-29
Customer:	A-dec, Inc.	Temperature:	19.8°C
Attendees:	None	Relative Humidity:	53.7%
Customer Project:	None	Bar. Pressure (PMSL):	1028 mb
Tested By:	Jeff Alcoke	Job Site:	EV07
Power:	24 VDC via 110VAC/60Hz	Configuration:	A-DE0169-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	21	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

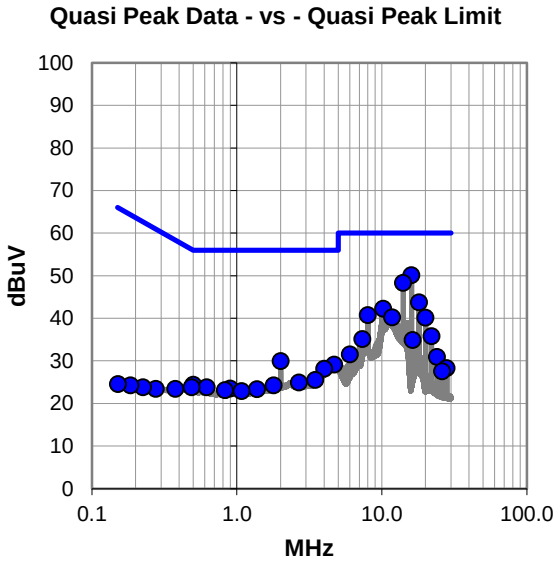
None

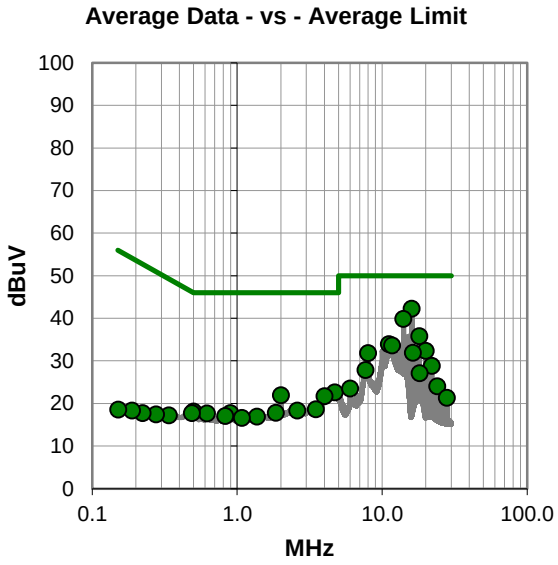
EUT OPERATING MODES

Tx, 802.11ac/an, Ch. 116 = 5580 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None





POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

RESULTS - Run #21

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	29.6	20.5	50.1	60.0	-9.9
14.033	27.8	20.5	48.3	60.0	-11.7
18.043	23.1	20.6	43.7	60.0	-16.3
10.231	22.0	20.2	42.2	60.0	-17.8
8.019	20.5	20.2	40.7	60.0	-19.3
11.775	19.8	20.4	40.2	60.0	-19.8
20.048	19.4	20.7	40.1	60.0	-19.9
22.053	15.0	20.8	35.8	60.0	-24.2
7.366	14.9	20.2	35.1	60.0	-24.9
16.311	14.3	20.6	34.9	60.0	-25.1
2.005	9.9	20.0	29.9	56.0	-26.1
4.689	9.0	20.1	29.1	56.0	-26.9
4.009	8.1	20.0	28.1	56.0	-27.9
6.015	11.3	20.2	31.5	60.0	-28.5
24.058	10.0	20.9	30.9	60.0	-29.1
3.479	5.5	20.0	25.5	56.0	-30.5
2.678	4.9	20.0	24.9	56.0	-31.1
0.499	4.4	20.0	24.4	56.0	-31.6
28.066	7.2	21.1	28.3	60.0	-31.7
1.796	4.2	20.0	24.2	56.0	-31.8
0.620	3.8	20.0	23.8	56.0	-32.2
0.487	3.8	20.0	23.8	56.2	-32.4
26.061	6.5	21.0	27.5	60.0	-32.5
0.901	3.5	20.0	23.5	56.0	-32.5
1.375	3.3	20.0	23.3	56.0	-32.7

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	21.7	20.5	42.2	50.0	-7.8
14.033	19.3	20.5	39.8	50.0	-10.2
18.043	15.2	20.6	35.8	50.0	-14.2
11.128	13.6	20.3	33.9	50.0	-16.1
11.738	13.2	20.4	33.6	50.0	-16.4
20.048	11.6	20.7	32.3	50.0	-17.7
16.310	11.3	20.6	31.9	50.0	-18.1
8.019	11.6	20.2	31.8	50.0	-18.2
22.053	8.0	20.8	28.8	50.0	-21.2
7.695	7.6	20.2	27.8	50.0	-22.2
18.141	6.5	20.6	27.1	50.0	-22.9
4.717	2.5	20.1	22.6	46.0	-23.4
2.005	1.9	20.0	21.9	46.0	-24.1
4.010	1.7	20.0	21.7	46.0	-24.3
24.056	3.1	20.9	24.0	50.0	-26.0
6.014	3.3	20.2	23.5	50.0	-26.5
3.504	-1.4	20.0	18.6	46.0	-27.4
2.602	-1.7	20.0	18.3	46.0	-27.7
0.499	-1.9	20.0	18.1	46.0	-27.9
1.851	-2.2	20.0	17.8	46.0	-28.2
0.901	-2.3	20.0	17.7	46.0	-28.3
0.620	-2.4	20.0	17.6	46.0	-28.4
0.489	-2.3	20.0	17.7	46.2	-28.5
28.066	0.2	21.1	21.3	50.0	-28.7
0.827	-3.0	20.0	17.0	46.0	-29.0

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

EUT:	A-dec Gateway	Work Order:	A-DE0169
Serial Number:	521A000100	Date:	2021-11-29
Customer:	A-dec, Inc.	Temperature:	19.8°C
Attendees:	None	Relative Humidity:	53.7%
Customer Project:	None	Bar. Pressure (PMSL):	1028 mb
Tested By:	Jeff Alcoke	Job Site:	EV07
Power:	24 VDC via 110VAC/60Hz	Configuration:	A-DE0169-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	22	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

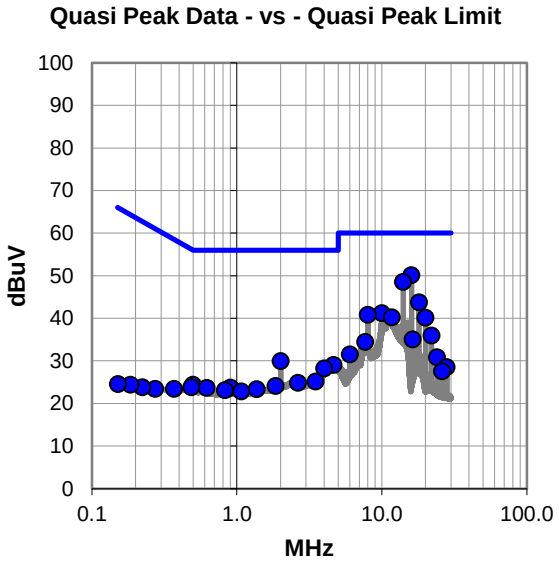
None

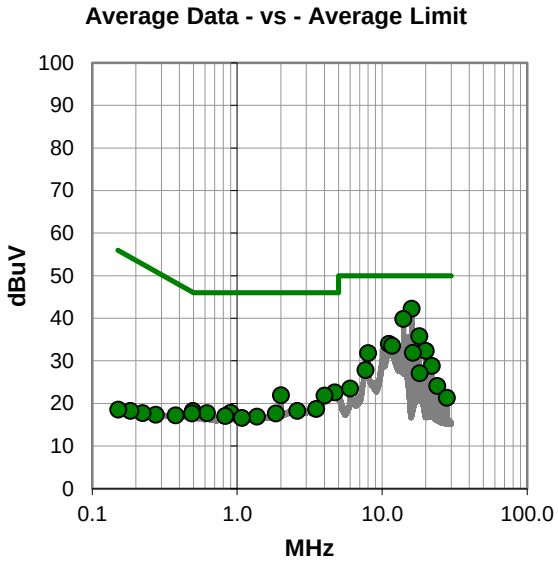
EUT OPERATING MODES

Tx, 802.11ac/an, Ch. 157 = 5785 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None





POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

RESULTS - Run #22

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	29.6	20.5	50.1	60.0	-9.9
14.033	28.0	20.5	48.5	60.0	-11.5
18.043	23.1	20.6	43.7	60.0	-16.3
10.025	21.0	20.2	41.2	60.0	-18.8
8.020	20.6	20.2	40.8	60.0	-19.2
11.742	19.8	20.4	40.2	60.0	-19.8
20.048	19.4	20.7	40.1	60.0	-19.9
22.053	15.1	20.8	35.9	60.0	-24.1
16.314	14.4	20.6	35.0	60.0	-25.0
7.694	14.2	20.2	34.4	60.0	-25.6
2.005	9.9	20.0	29.9	56.0	-26.1
4.656	8.9	20.1	29.0	56.0	-27.0
4.010	8.2	20.0	28.2	56.0	-27.8
6.015	11.3	20.2	31.5	60.0	-28.5
24.058	9.9	20.9	30.8	60.0	-29.2
3.488	5.1	20.0	25.1	56.0	-30.9
2.642	4.8	20.0	24.8	56.0	-31.2
28.068	7.4	21.1	28.5	60.0	-31.5
0.498	4.4	20.0	24.4	56.0	-31.6
1.847	4.1	20.0	24.1	56.0	-31.9
0.902	3.7	20.0	23.7	56.0	-32.3
0.620	3.6	20.0	23.6	56.0	-32.4
0.486	3.8	20.0	23.8	56.2	-32.4
26.063	6.5	21.0	27.5	60.0	-32.5
1.374	3.3	20.0	23.3	56.0	-32.7

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	21.7	20.5	42.2	50.0	-7.8
14.033	19.3	20.5	39.8	50.0	-10.2
18.043	15.2	20.6	35.8	50.0	-14.2
11.128	13.7	20.3	34.0	50.0	-16.0
11.737	13.1	20.4	33.5	50.0	-16.5
20.048	11.6	20.7	32.3	50.0	-17.7
16.313	11.3	20.6	31.9	50.0	-18.1
8.019	11.6	20.2	31.8	50.0	-18.2
22.053	8.0	20.8	28.8	50.0	-21.2
7.707	7.6	20.2	27.8	50.0	-22.2
18.141	6.5	20.6	27.1	50.0	-22.9
4.715	2.5	20.1	22.6	46.0	-23.4
2.005	1.9	20.0	21.9	46.0	-24.1
4.010	1.8	20.0	21.8	46.0	-24.2
24.058	3.2	20.9	24.1	50.0	-25.9
6.014	3.3	20.2	23.5	50.0	-26.5
3.507	-1.3	20.0	18.7	46.0	-27.3
2.600	-1.8	20.0	18.2	46.0	-27.8
0.496	-1.8	20.0	18.2	46.1	-27.9
0.902	-2.2	20.0	17.8	46.0	-28.2
0.620	-2.3	20.0	17.7	46.0	-28.3
1.848	-2.4	20.0	17.6	46.0	-28.4
0.487	-2.4	20.0	17.6	46.2	-28.6
28.068	0.2	21.1	21.3	50.0	-28.7
0.829	-3.0	20.0	17.0	46.0	-29.0

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

EUT:	A-dec Gateway	Work Order:	A-DE0169
Serial Number:	521A000100	Date:	2021-11-29
Customer:	A-dec, Inc.	Temperature:	19.8°C
Attendees:	None	Relative Humidity:	53.7%
Customer Project:	None	Bar. Pressure (PMSL):	1028 mb
Tested By:	Jeff Alcoke	Job Site:	EV07
Power:	24 VDC via 110VAC/60Hz	Configuration:	A-DE0169-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	23	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

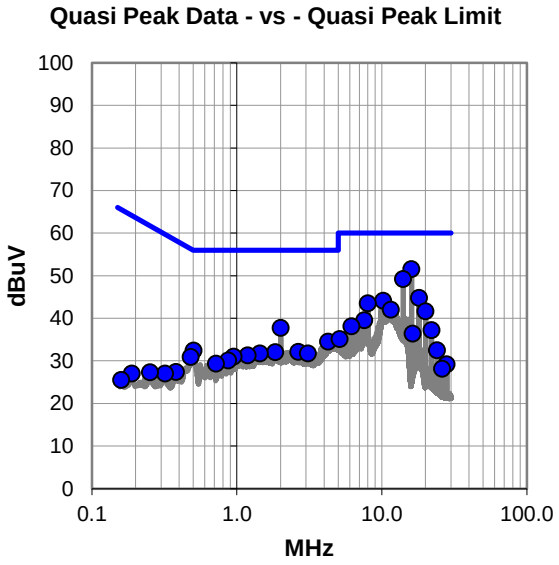
None

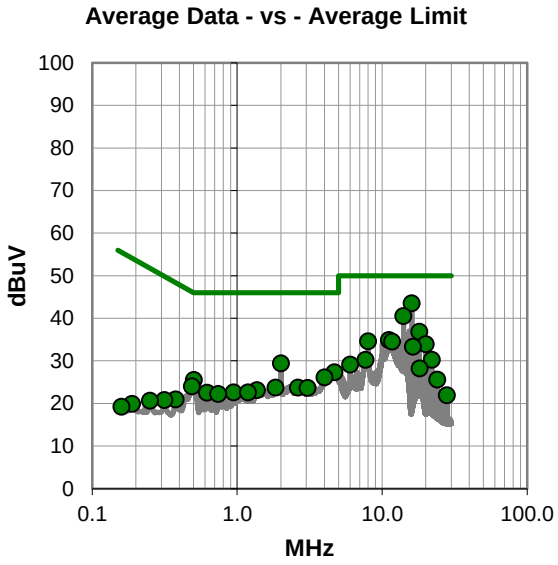
EUT OPERATING MODES

Tx, 802.11ac/an, Ch. 157 = 5785 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None





POWERLINE CONDUCTED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2021.09.09.0
PSA-ESCI 2021.03.17.0

RESULTS - Run #23

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	31.0	20.5	51.5	60.0	-8.5
14.033	28.7	20.5	49.2	60.0	-10.8
18.043	24.2	20.6	44.8	60.0	-15.2
10.228	23.9	20.2	44.1	60.0	-15.9
8.019	23.3	20.2	43.5	60.0	-16.5
11.537	21.6	20.4	42.0	60.0	-18.0
2.004	17.7	20.0	37.7	56.0	-18.3
20.048	20.9	20.7	41.6	60.0	-18.4
7.564	19.3	20.2	39.5	60.0	-20.5
4.264	14.5	20.0	34.5	56.0	-21.5
6.177	17.9	20.2	38.1	60.0	-21.9
22.051	16.4	20.8	37.2	60.0	-22.8
0.502	12.4	20.0	32.4	56.0	-23.6
16.314	15.8	20.6	36.4	60.0	-23.6
2.661	12.1	20.0	32.1	56.0	-23.9
1.839	12.0	20.0	32.0	56.0	-24.0
1.441	11.7	20.0	31.7	56.0	-24.3
3.087	11.7	20.0	31.7	56.0	-24.3
1.189	11.3	20.0	31.3	56.0	-24.7
5.115	14.9	20.2	35.1	60.0	-24.9
0.951	11.0	20.0	31.0	56.0	-25.0
0.480	10.9	20.0	30.9	56.3	-25.4
0.873	10.1	20.0	30.1	56.0	-25.9
0.718	9.3	20.0	29.3	56.0	-26.7
24.058	11.6	20.9	32.5	60.0	-27.5

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
16.038	23.0	20.5	43.5	50.0	-6.5
14.033	20.0	20.5	40.5	50.0	-9.5
18.043	16.2	20.6	36.8	50.0	-13.2
11.133	14.6	20.3	34.9	50.0	-15.1
8.019	14.4	20.2	34.6	50.0	-15.4
11.742	14.1	20.4	34.5	50.0	-15.5
20.048	13.2	20.7	33.9	50.0	-16.1
2.004	9.4	20.0	29.4	46.0	-16.6
16.316	12.7	20.6	33.3	50.0	-16.7
4.686	7.2	20.1	27.3	46.0	-18.7
22.053	9.4	20.8	30.2	50.0	-19.8
7.707	10.0	20.2	30.2	50.0	-19.8
4.010	6.1	20.0	26.1	46.0	-19.9
0.502	5.5	20.0	25.5	46.0	-20.5
6.014	8.9	20.2	29.1	50.0	-20.9
18.145	7.6	20.6	28.2	50.0	-21.8
0.489	4.0	20.0	24.0	46.2	-22.2
1.844	3.7	20.0	23.7	46.0	-22.3
2.626	3.7	20.0	23.7	46.0	-22.3
3.070	3.6	20.0	23.6	46.0	-22.4
1.374	3.1	20.0	23.1	46.0	-22.9
0.946	2.6	20.0	22.6	46.0	-23.4
1.189	2.6	20.0	22.6	46.0	-23.4
0.620	2.5	20.0	22.5	46.0	-23.5
0.742	2.2	20.0	22.2	46.0	-23.8

CONCLUSION

Pass

Tested By