FCC Test Report

Equipment	:	WiFi 5G Module
Brand Name	:	UBIQUITI
Model No.	:	4x4-5GH
FCC ID	:	SWX-M445GH
Standard	:	47 CFR FCC Part 15.407
Operating Band	:	5470 MHz – 5725 MHz 5725 MHz – 5850 MHz
Applicant	:	Ubiquiti Networks, Inc. 685 Third Avenue, 27th Floor New York, New York 10017 USA
Manufacturer	:	Ubiquiti Networks, Inc. 685 Third Avenue, 27th Floor New York, New York 10017 USA
Function	:	☒ Outdoor; ☒ Indoor; ☐ Fixed P2P ☐ Client
TPC Function	:	☒ With TPC ☐ Without TPC

The product sample received on Oct. 30, 2017 and completely tested on Dec. 01, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Cliff Chang
SPORTON INTERNATIONAL INC.

Testing Laboratory
1190

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Summary of Test Result

Conformance Test Specifications			
Report Clause	**Ref. Std. Clause**	**Description**	**Result**
1.1.2	15.203	Antenna Requirement	Complied
2.1	15.207	AC Power-line Conducted Emissions	Complied
2.2	15.407(b)	Unwanted Emissions	Complied

Revision History

Report No.	Version	Description	Issued Date
FR661623-18	Rev. 01	Initial issue of report	Dec. 19, 2017

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5470-5725	a, n (HT20), ac (VHT20)	5500-5720	100-144 [12]
5725-5850		5745-5825	149-165 [5]
5470-5725	n (HT40), ac (VHT40)	5510-5710	102-142 [6]
5725-5850		5755-5795	151-159 [2]
5470-5725	ac (VHT80)	5530-5690	106-138 [3]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5470-5725 MHz	11a	20	4
5470-5725 MHz	VHT20	20	4
5470-5725 MHz	VHT40	40	4
5470-5725 MHz	VHT80	80	4
5470-5725 MHz	VHT80+80	80	4
5725-5850 MHz	11a	20	4
5725-5850 MHz	VHT20	20	4
5725-5850 MHz	VHT40	40	4
5725-5850 MHz	VHT80	80	4
5725-5850 MHz	VHT80+80	80	4

Note:
- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Table for 80+80 MHz Mode

Type	Channel No.	Frequency
1	106+138	5530+5690 MHz
2	106+155	5530+5775 MHz
3	122+155	5610+5775 MHz
4	138+155	5690+5775 MHz
5	106+122	5530+5610 MHz
6	122+138	5610+5690 MHz

Note: Client without radar detection function supports type 1-6, and the master function supports type 5 only.

1.1.3 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	-	PIFA Antenna	N/A	8
2	-	-	PIFA Antenna	N/A	8
3	-	-	PIFA Antenna	N/A	8
4	-	-	PIFA Antenna	N/A	8

Note: Ant. 1~Ant. 4 Connect to chain 1~chain 4.

For IEEE 802.11a/n/ac mode (4TX/4RX):

Chain 1, Chain 2, Chain 3 and Chain 4 can be used as transmitting/receiving antenna.

Chain 1, Chain 2, Chain 3 and Chain 4 could transmit/receive simultaneously.

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Beamforming Function	☐	With beamforming	☒	Without beamforming
Weather Band	☒	With 5600~5650MHz	☐	Without 5600~5650MHz
Test Software Version	QRCT Version3.0.197.0			

1.1.5 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR661623-16

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Changing the filter to “Vendor: Cirocomm Technology Corp., Part No.: 01157101J41B110”.	Unwanted Emissions Above 1 GHz for 802.11 a 5745 MHz only, and it is max power channel of original test report. (The test results are based on original output power to re-test.)
2. Changing the PoE (Model No.: GP-C500-120G) for measurement.	1. AC Power-line Conducted Emissions. 2. Unwanted Emissions Below 1 GHz.
3. Adding the master function for DFS band, and it supports type 5530+5610 MHz for 80+80 MHz mode.	It doesn't need to verify RF test.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 789033 D02 v01r04
- FCC KDB 644545 D03 v01
- FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location							
☐	HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.			
		TEL	:	886-3-327-3456	FAX	:	886-3-318-0055
☒	JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.			
		TEL	:	886-3-656-9065	FAX	:	886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH01-CB	Cola Fan	22°C / 54%	Nov. 27, 2017~Dec. 01, 2017
AC Conduction	CO01-CB	Rick Yeh	25°C / 57%	Nov. 24, 2017

Test site Designation No. TW0006 with FCC
Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%

1.5 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	CTX mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
According to the original test report, there are two modes of EUT, one is EUT Y axis, the other is EUT Z axis, and the EUT Y axis has been evaluated to be the worst case. So the measurement will follow this same test configuration.	
1	CTX mode - EUT Y axis
Operating Mode > 1GHz	CTX
According to the original test report, there are two modes of EUT, one is EUT Y axis, the other is EUT Z axis, and the EUT Z axis has been evaluated to be the worst case. So the measurement will follow this same test configuration.	
1	CTX mode - EUT Z axis

Note: The PoE was for measurement only, would not be marketed, and its information as below:

Equipment	Brand Name	Model Name	FCC ID
PoE	UBIQUITI	GP-C500-120G	DoC

1.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

1.7 Accessories

N/A

1.8 Support Equipment

For Test Site No: CO01-CB

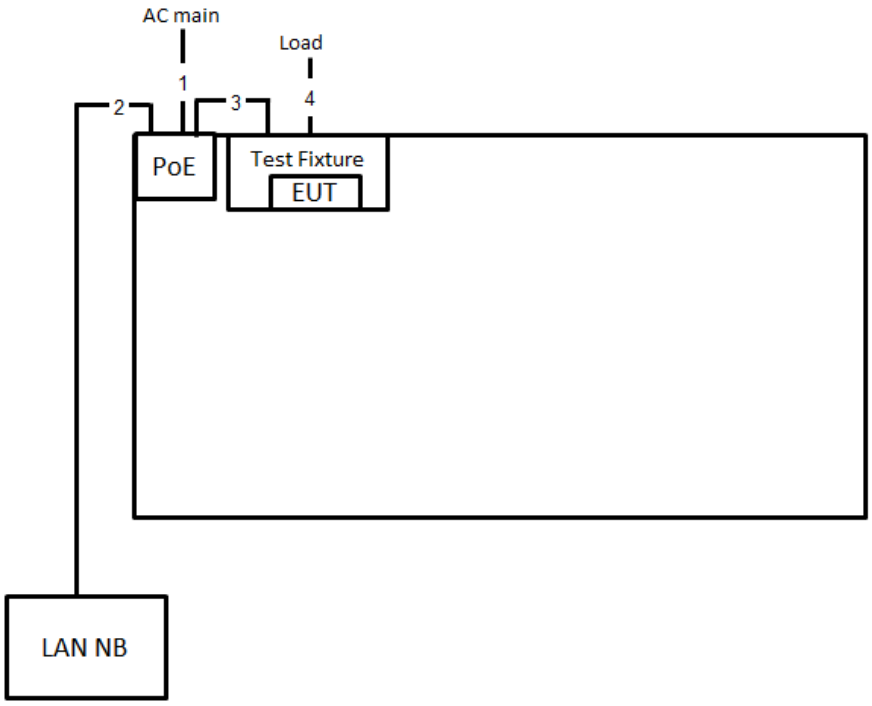
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E6430	DoC
2	Test Fixture	UBIQUITI	UAP-AC-SHD	N/A
3	PoE	UBIQUITI	GP-C500-120G	DoC

For Test Site No: 03CH01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E4300	DoC
2	Test Fixture	UBIQUITI	UAP-AC-SHD	N/A
3	PoE	UBIQUITI	GP-C500-120G	DoC

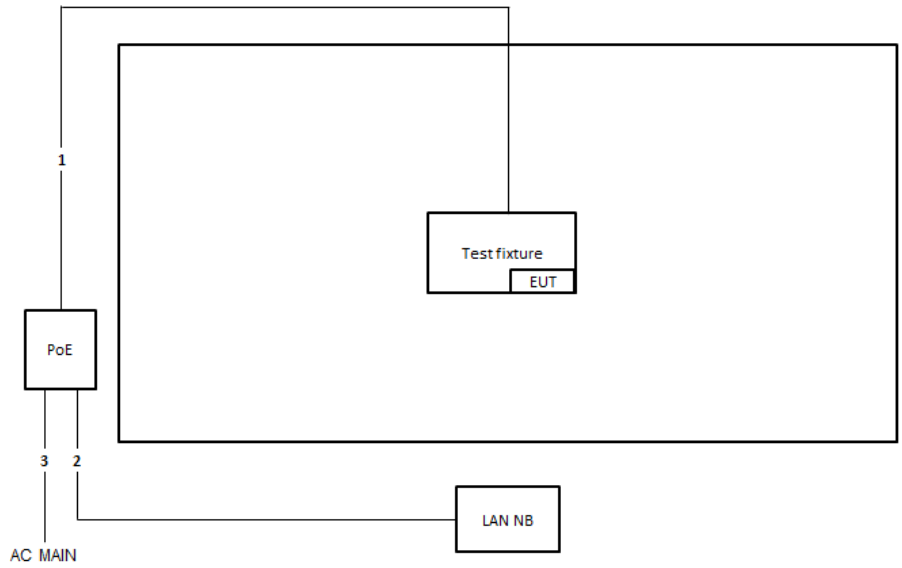
1.9 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length
1	Power cable	No	0.7m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m
4	RJ-45 cable	No	1.5m

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m
3	Power cable	No	0.7m

2 Transmitter Test Result

2.1 AC Power-line Conducted Emissions

2.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

2.1.2 Measuring Instruments

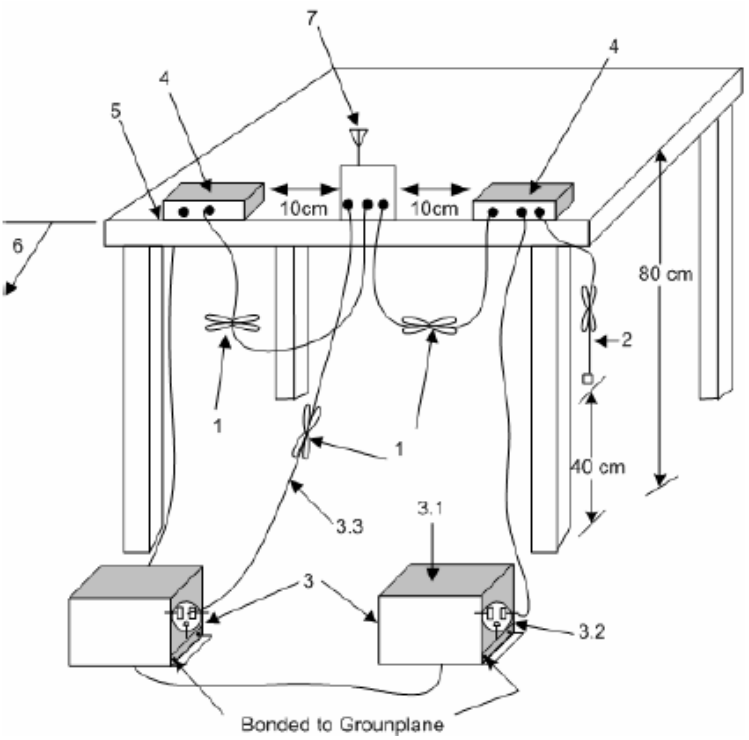
Refer a test equipment and calibration data table in this test report.

2.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

2.1.4 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

2.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

2.2 Unwanted Emissions

2.2.1 Transmitter Radiated Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

Un-restricted band emissions above 1GHz Limit	
Operating Band	**Limit**
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

2.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

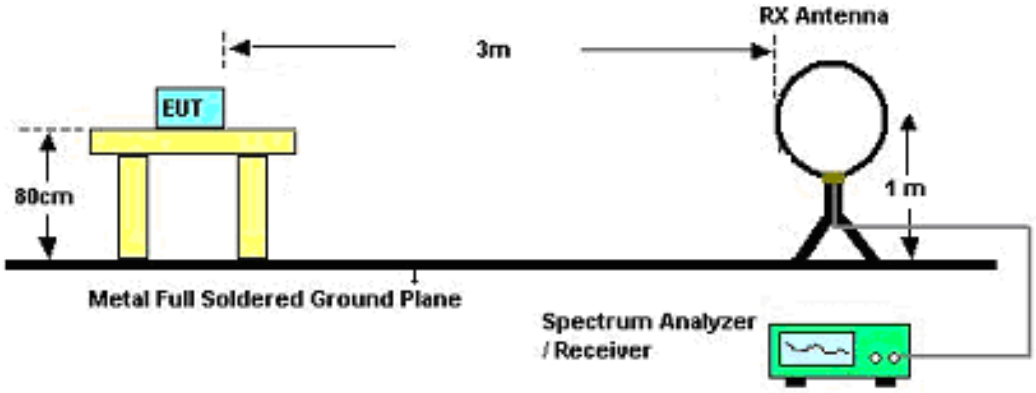
2.2.3 Test Procedures

Test Method		
▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).		
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
▪ For the transmitter unwanted emissions shall be measured using following options below:		
	▪ Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.	
	▪ Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.	
		☐ Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
		☒ Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
		☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒ Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
▪ For radiated measurement.		
	▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.	
▪ The any unwanted emissions level shall not exceed the fundamental emission level.		
▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.		

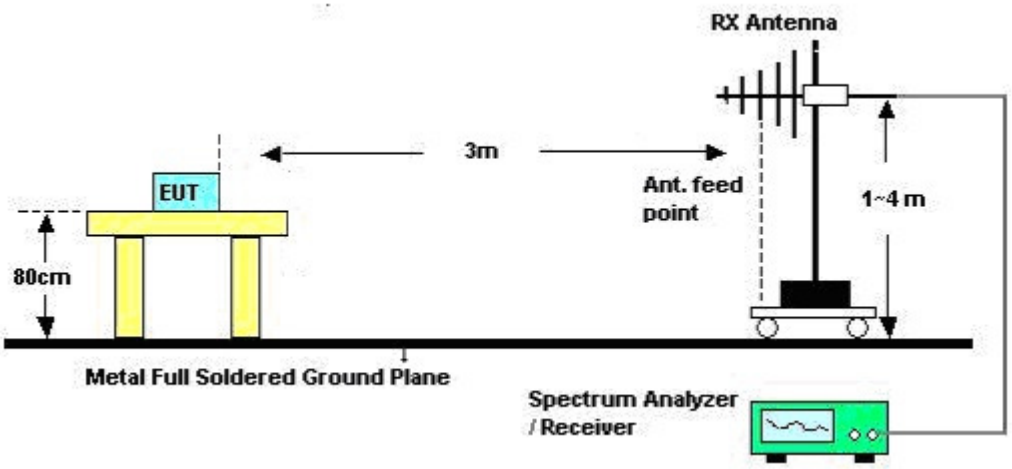
2.2.4 Test Setup

Transmitter Radiated Unwanted Emissions

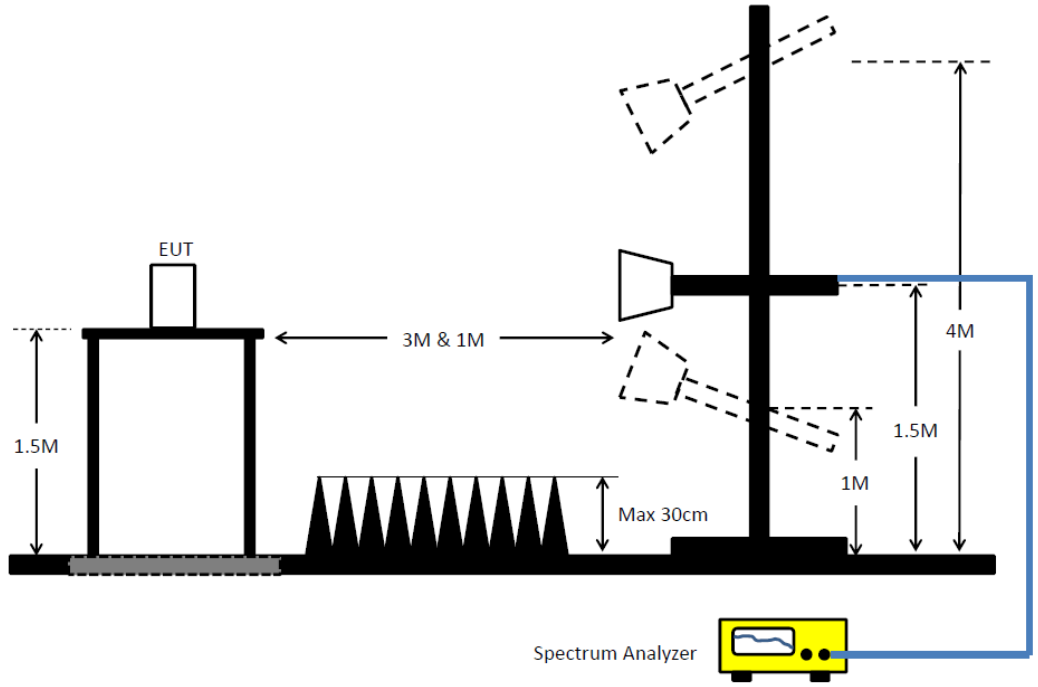
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



2.2.5 Transmitter Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

2.2.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix B

3 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 23, 2017	Jan. 22, 2018	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Dec. 13, 2017	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Dec. 20, 2017	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	May 22, 2018	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2017	Aug. 29, 2018	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 20, 2017	Nov. 19, 2018	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 05, 2017	Jul. 04, 2018	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	May 01, 2018	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Jan. 15, 2018	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 10, 2017	Jul. 09, 2018	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 23, 2017	Nov. 22, 2018	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	May 05, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)

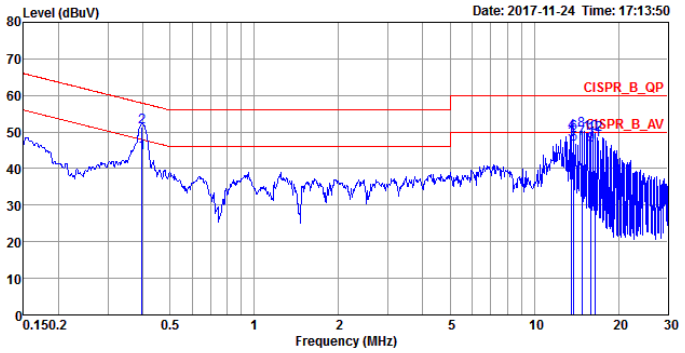
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Mar. 15, 2018*	Radiation (03CH01-CB)

Note: Calibration Interval of instruments listed above is one year.

"*" Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.

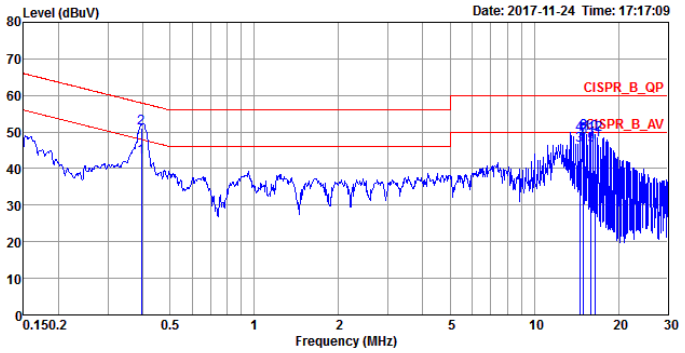
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.3977	44.18	-3.72	47.90	34.21	9.94	0.03	Average	NEUTRAL
2	0.3977	51.33	-6.57	57.90	41.36	9.94	0.03	QP	NEUTRAL
3	13.5823	47.88	-2.12	50.00	37.59	10.20	0.09	Average	NEUTRAL
4	13.5823	49.84	-10.16	60.00	39.55	10.20	0.09	QP	NEUTRAL
5	13.8201	46.59	-3.41	50.00	36.30	10.20	0.09	Average	NEUTRAL
6	13.8201	49.56	-10.44	60.00	39.27	10.20	0.09	QP	NEUTRAL
7	14.7728	48.18	-1.82	50.00	37.86	10.22	0.10	Average	NEUTRAL
8	14.7728	50.45	-9.55	60.00	40.13	10.22	0.10	QP	NEUTRAL
9	15.9653	46.34	-3.66	50.00	36.01	10.23	0.10	Average	NEUTRAL
10	15.9653	49.56	-10.44	60.00	39.23	10.23	0.10	QP	NEUTRAL
11	16.4411	47.94	-2.06	50.00	37.59	10.24	0.11	Average	NEUTRAL
12	16.4411	49.26	-10.74	60.00	38.91	10.24	0.11	QP	NEUTRAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

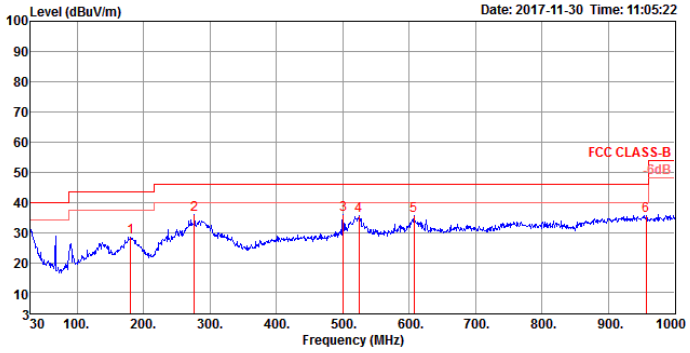
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.3945	43.09	-4.88	47.97	33.19	9.87	0.03	Average	LINE
2	0.3945	50.94	-7.03	57.97	41.04	9.87	0.03	QP	LINE
3	14.5371	46.21	-3.79	50.00	35.97	10.14	0.10	Average	LINE
4	14.5371	49.30	-10.70	60.00	39.06	10.14	0.10	QP	LINE
5	15.0121	48.32	-1.68	50.00	38.08	10.14	0.10	Average	LINE
6	15.0121	50.00	-10.00	60.00	39.76	10.14	0.10	QP	LINE
7	15.0160	48.34	-1.66	50.00	38.10	10.14	0.10	Average	LINE
8	15.0160	50.02	-9.98	60.00	39.78	10.14	0.10	QP	LINE
9	15.9649	46.27	-3.73	50.00	36.01	10.16	0.10	Average	LINE
10	15.9649	49.47	-10.53	60.00	39.21	10.16	0.10	QP	LINE
11	16.4426	47.80	-2.20	50.00	37.53	10.16	0.11	Average	LINE
12	16.4426	49.29	-10.71	60.00	39.02	10.16	0.11	QP	LINE

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

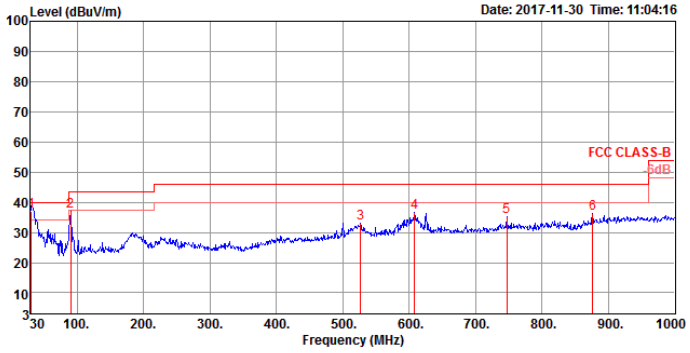
RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Horizontal
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	180.35	28.47	43.50	-15.03	43.68	1.51	15.60	32.32	125	282	Peak	HORIZONTAL
2	276.38	35.79	46.00	-10.21	46.26	2.51	19.30	32.28	125	319	Peak	HORIZONTAL
3	500.45	35.76	46.00	-10.24	41.33	2.94	23.82	32.33	150	0	Peak	HORIZONTAL
4	524.70	35.46	46.00	-10.54	40.82	2.84	24.15	32.35	150	0	Peak	HORIZONTAL
5	607.15	35.55	46.00	-10.45	40.80	2.15	24.99	32.39	125	13	Peak	HORIZONTAL
6	956.35	35.54	46.00	-10.46	34.72	3.97	27.94	31.09	125	238	Peak	HORIZONTAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Vertical
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.97	36.99	40.00	-3.01	43.43	0.98	25.01	32.43	100	354	QP	VERTICAL
2	90.14	36.87	43.50	-6.63	53.23	0.77	15.26	32.39	150	108	Peak	VERTICAL
3	526.64	33.13	46.00	-12.87	38.48	2.83	24.17	32.35	100	0	Peak	VERTICAL
4	608.12	36.53	46.00	-9.47	41.78	2.15	24.99	32.39	100	172	Peak	VERTICAL
5	746.83	35.06	46.00	-10.94	37.48	3.75	26.07	32.24	100	7	Peak	VERTICAL
6	875.84	36.39	46.00	-9.61	37.14	3.60	27.35	31.70	125	179	Peak	VERTICAL

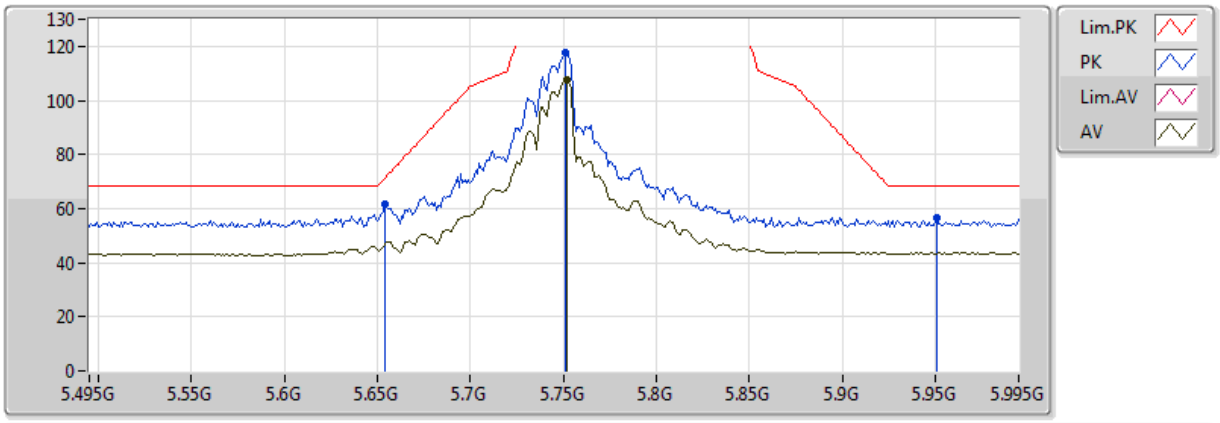
Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	Pass	AV	11.49288G	53.51	54.00	-0.49	14.79	3	Vertical	268	1.07	-

802.11a_Nss1,(6Mbps)_4TX

5745MHz_TX

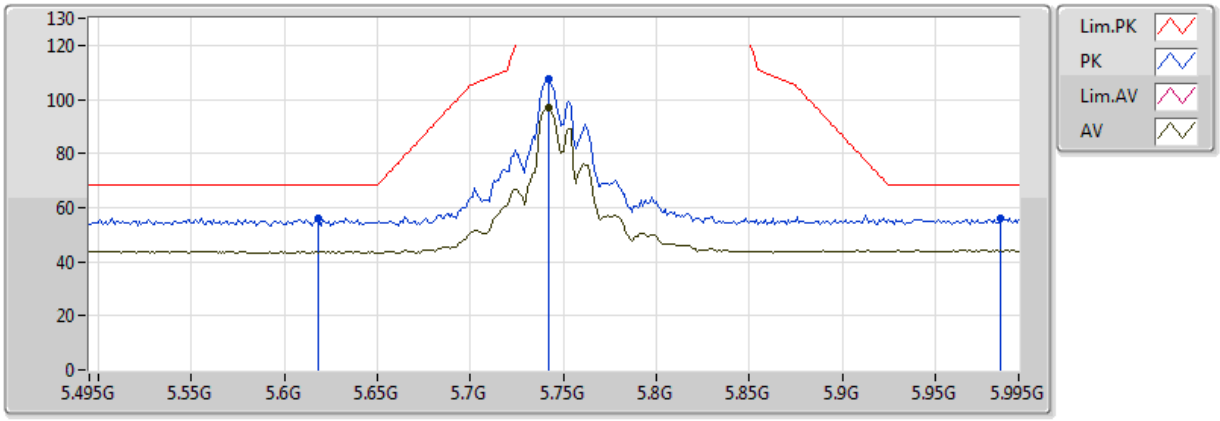


20171201
EUT Z_4TX
Setting 19.5
03-C-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.752G	107.42	Inf	-Inf	4.07	3	Vertical	82	2.41
PK	5.654G	61.57	71.16	-9.59	3.81	3	Vertical	82	2.41
PK	5.751G	117.94	Inf	-Inf	4.06	3	Vertical	82	2.41
PK	5.951G	56.50	68.20	-11.70	4.24	3	Vertical	82	2.41

802.11a_Nss1,(6Mbps)_4TX

5745MHz_TX

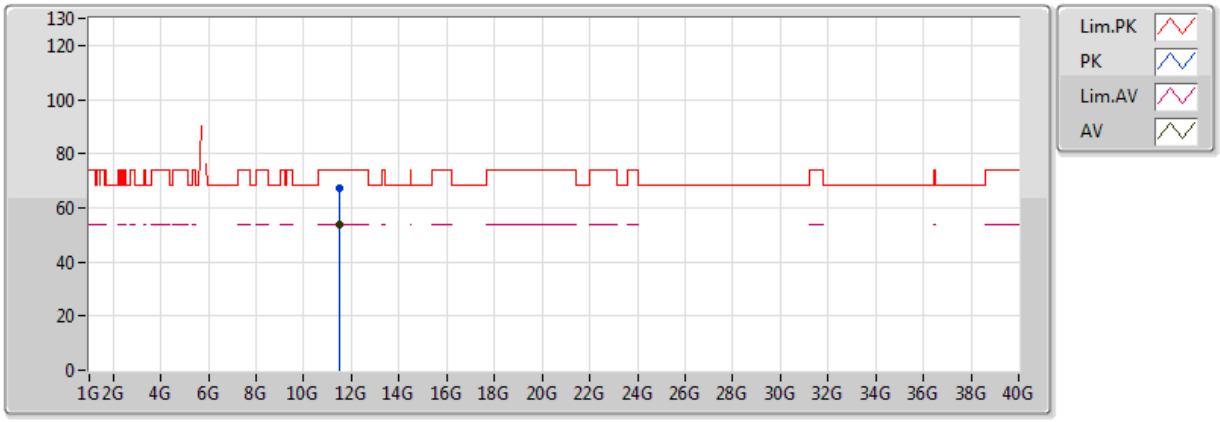


20171201
EUT Z_4TX
Setting 19.5
03-C-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.742G	96.82	Inf	-Inf	4.59	3	Horizontal	89	1.12
PK	5.618G	56.02	68.20	-12.18	4.53	3	Horizontal	89	1.12
PK	5.742G	107.85	Inf	-Inf	4.59	3	Horizontal	89	1.12
PK	5.985G	56.27	68.20	-11.93	5.00	3	Horizontal	89	1.12

802.11a_Nss1,(6Mbps)_4TX

5745MHz_TX

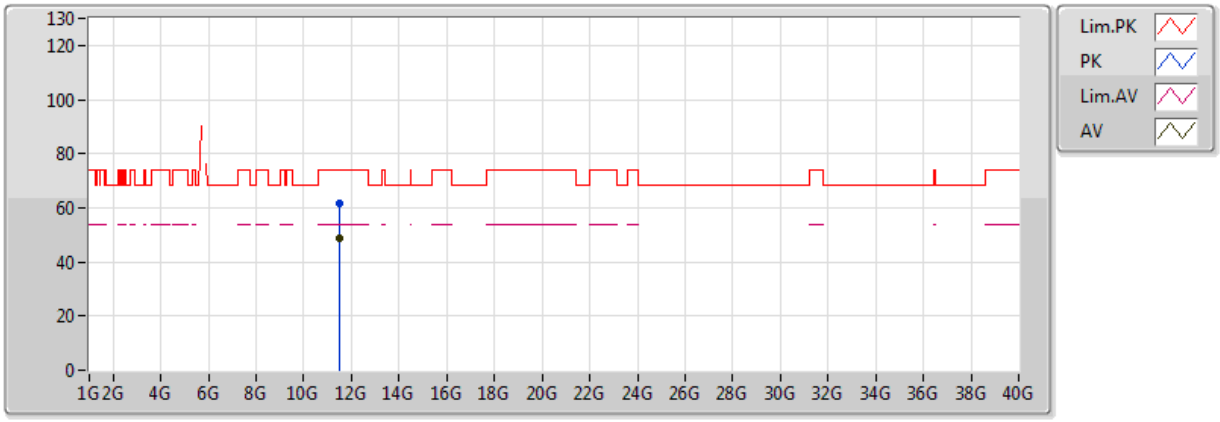


20171201
EUT Z_4TX
Setting 19.5
03-C-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.49288G	53.95	54.00	-0.05	14.79	3	Vertical	268	1.07
PK	11.49232G	67.27	74.00	-6.73	14.79	3	Vertical	268	1.07

802.11a_Nss1,(6Mbps)_4TX

5745MHz_TX



20171201
EUT Z_4TX
Setting 19.5
03-C-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.49368G	48.59	54.00	-5.41	14.79	3	Horizontal	20	2.13
PK	11.49352G	61.90	74.00	-12.10	14.79	3	Horizontal	20	2.13