FCC Test Report

Equipment	:	**802.11a/b/g/n/ac Wireless Access Point**
Brand Name	:	**CISCO**
Model No.	:	**MR20-HW**
FCC ID	:	**UDX-60066010**
Standard	:	**47 CFR FCC Part 15.247**
Operating Band	:	**2400 MHz – 2483.5 MHz**
Function	:	**☒ Point-to-multipoint; ☐ Point-to-point**
Applicant	:	**Cisco Systems, Inc.** **170 West Tasman Drive, San Jose, CA 95134 USA**
Manufacturer	:	**Cisco Systems, Inc.** **170 West Tasman Drive, San Jose, CA 95134 USA**

The product sample received on May 23, 2017 and completely tested on Jul. 04, 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**	**Limit**	**Result**
1.1.2	15.203	Antenna Requirement	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	FCC 15.207	Complied
3.2	15.247(a)	DTS Bandwidth	≥500kHz	Complied
3.3	15.247(b)	Maximum Conducted Output Power	Power [dBm]:30	Complied
3.4	15.247(e)	Power Spectral Density	PSD [dBm/3kHz]:8	Complied
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	Non-Restricted Bands: > 30 dBc	Complied
3.6	15.247(d)	Emissions in Restricted Frequency Bands	Restricted Bands: FCC 15.209	Complied

Revision History

Report No.	Version	Description	Issued Date
FR760620AA	Rev. 01	Initial issue of report	Aug. 31, 2017
FR760620AA	Rev. 02	1. Revising the Model Name and FCC ID. 2. Revising the Photographs of EUT. 3. Adding duty cycle plots and test procedure.	Jan. 11, 2018
FR760620AA	Rev. 03	Revising the FCC ID	Jan. 12, 2018

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), ac (VHT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), ac (VHT40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	2TX
2.4-2.4835GHz	802.11g	20	2TX
2.4-2.4835GHz	802.11n HT20	20	2TX
2.4-2.4835GHz	802.11n HT20-BF	20	2TX
2.4-2.4835GHz	802.11ac VHT20	20	2TX
2.4-2.4835GHz	802.11ac VHT20-BF	20	2TX
2.4-2.4835GHz	802.11n HT40	40	2TX
2.4-2.4835GHz	802.11n HT40-BF	40	2TX
2.4-2.4835GHz	802.11ac VHT40	40	2TX
2.4-2.4835GHz	802.11ac VHT40-BF	40	2TX

Note:
- 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 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 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
						2.4GHz	5GHz
1	1	WNC	95XKAA15.GDX	PIFA Antenna	I-PEX	5.63	5.31
2	2	WNC	95XKAA15.GDX	PIFA Antenna	I-PEX	3.29	5.08
Composite Gain Un-Correlated (dBi)						3.43	4.26
Composite Gain Correlated (dBi)						5.70	7.27

Note: The EUT has two antennas.

For 2.4GHz function:

For IEEE 802.11b/g/n/ac mode (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac mode (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

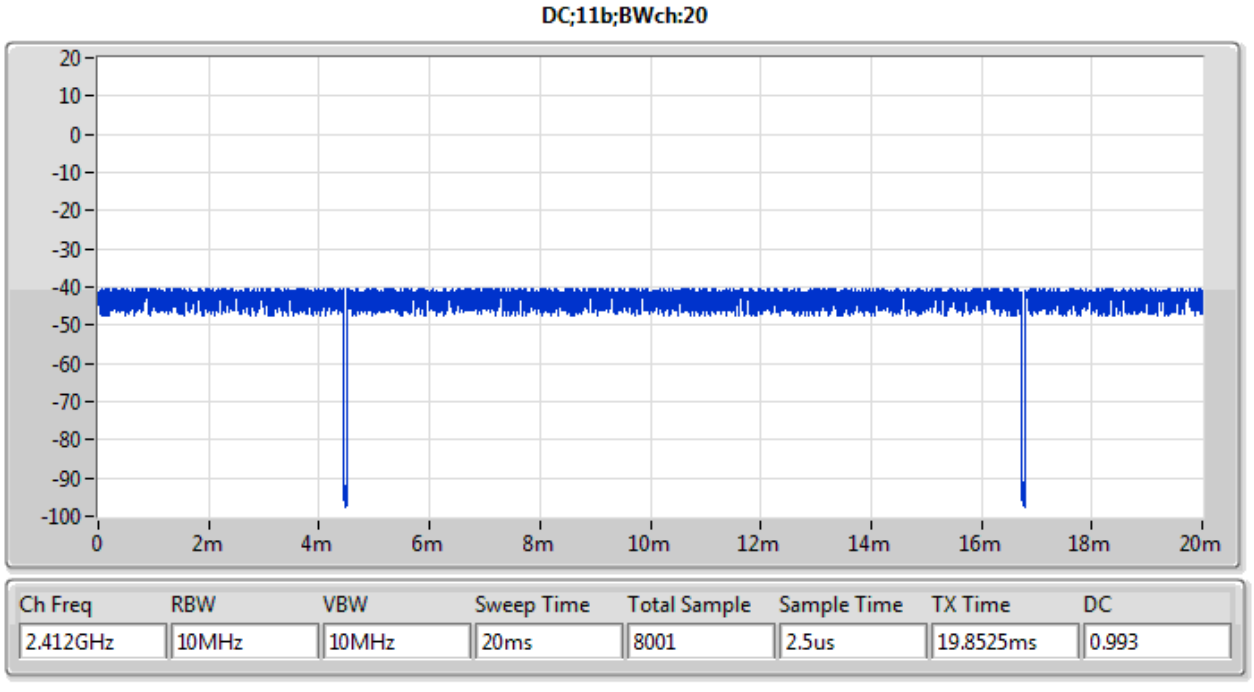
Port 1 and Port 2 could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

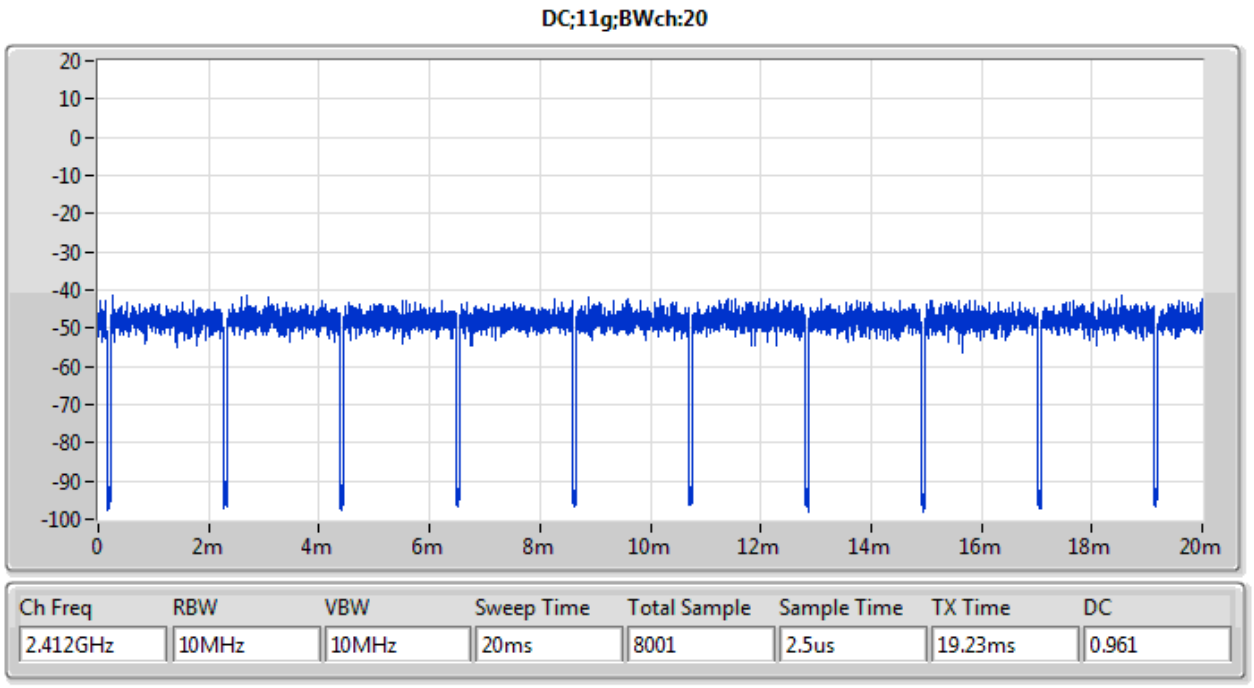
Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.993	0.031	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.961	0.173	2.033m	1k
802.11ac VHT20	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20-BF	0.484	3.152	8.315m	300
802.11ac VHT40	0.968	0.141	2.418m	1k
802.11ac VHT40-BF	0.56	2.518	2.04m	1k

Note:
The test procedure refers to ANSI C63.10:2013 clause 11.6 b). The ON and OFF times of the transmitted signal is measured by spectrum analyzer and the setting as follows:
1) Set the center frequency of the instrument to the center frequency of the transmission.
2) Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.
3) Set VBW ≥ RBW. Set detector = peak or average.
The measured result and plots are recorded in 1.1.3.

Mode
802.11b

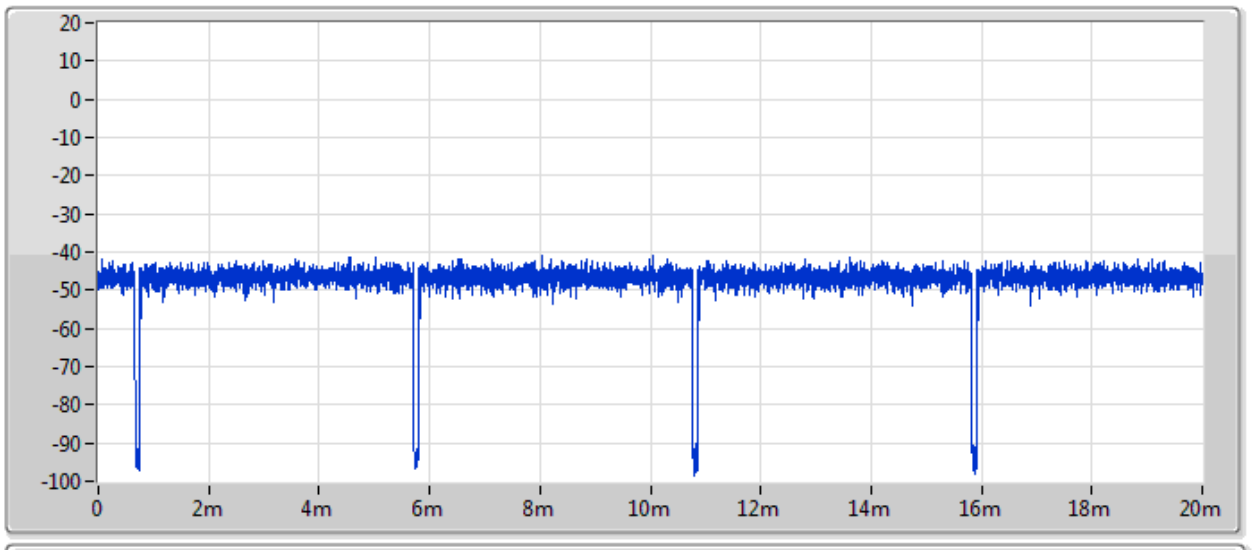


Mode
802.11g



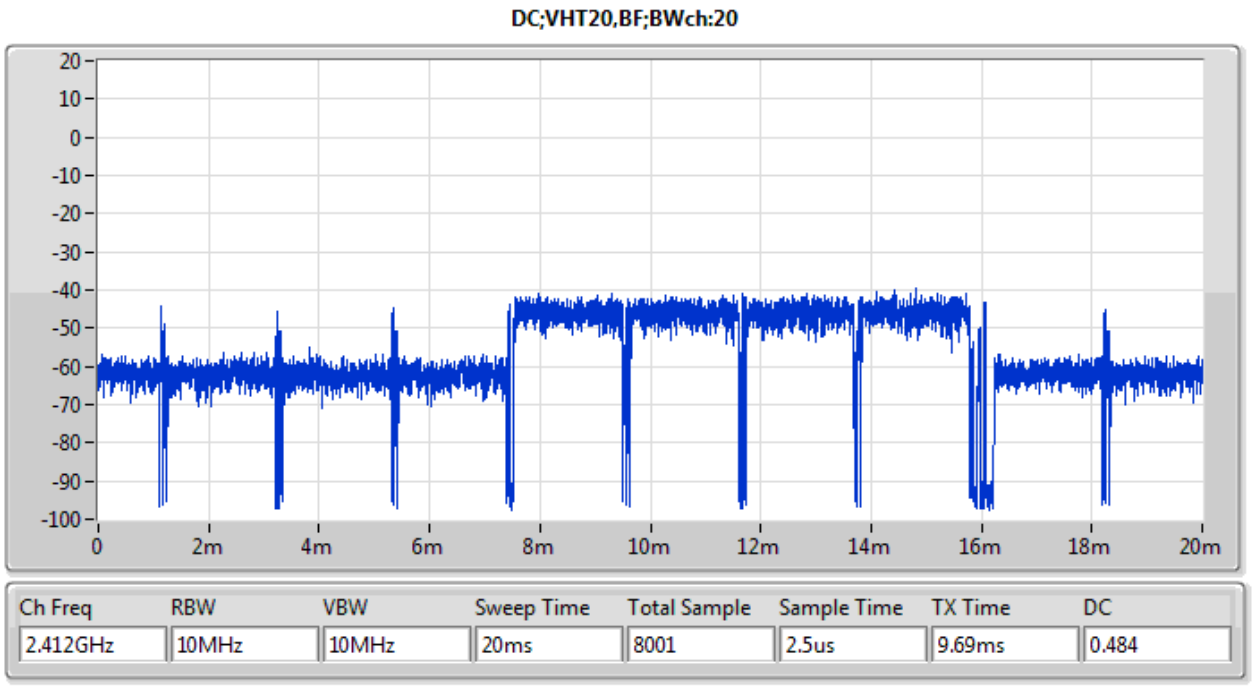
Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
2.412GHz	10MHz	10MHz	20ms	8001	2.5us	19.23ms	0.961

Mode
802.11ac VHT20



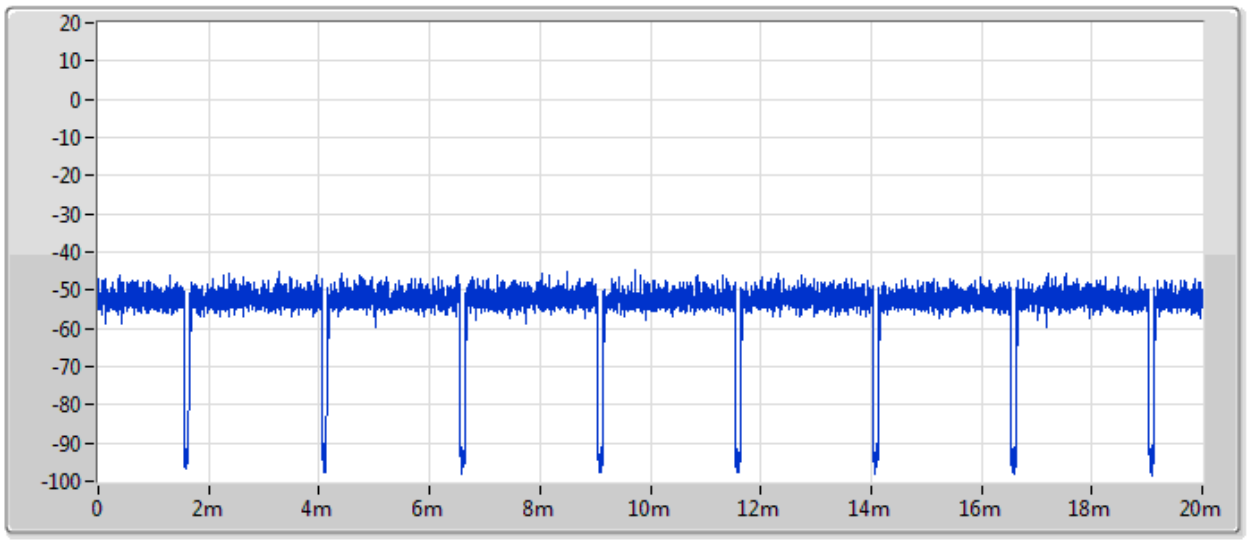
Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
2.412GHz	10MHz	10MHz	20ms	8001	2.5us	19.6775ms	0.984

Mode
802.11ac VHT20-BF



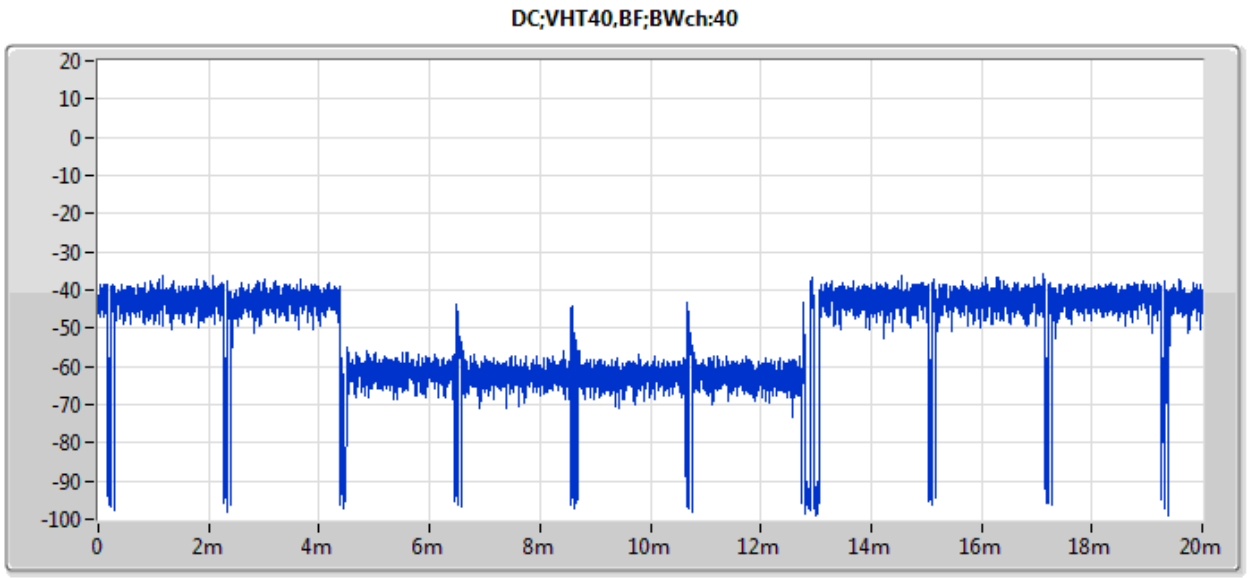
Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
2.412GHz	10MHz	10MHz	20ms	8001	2.5us	9.69ms	0.484

Mode
802.11ac VHT40



Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
2.422GHz	10MHz	10MHz	20ms	8001	2.5us	19.3525ms	0.968

Mode
802.11ac VHT40-BF



Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
2.417GHz	10MHz	10MHz	20ms	8001	2.5us	11.2ms	0.56

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter or PoE			
Beamforming Function	☒	With beamforming for 802.11n/ac in 2.4GHz/5GHz.	☐	Without beamforming

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 558074 D01 v04
- FCC KDB 662911 D01 v02r01
- FCC KDB 412172 D01 v01r01

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
RF Conducted	TH01-CB	Gino Huang, Gary Chu	23°C / 55%	Jun. 27, 2017 ~ Jun. 30, 2017
Radiated	03CH01-CB	Justin Lin	22°C / 54%	Jun. 20, 2017 ~ Jul. 04, 2017
AC Conduction	CO01-CB	Ryo Fan	23°C / 55%	Jun. 23, 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%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_(1Mbps)_2TX	-
2412MHz	19
2437MHz	21.5
2462MHz	21.5
802.11g_(6Mbps)_2TX	-
2412MHz	16
2437MHz	22.5
2462MHz	16
802.11ac VHT20_Nss1,(MCS0)_2TX	-
2412MHz	16
2437MHz	22.5
2462MHz	16
802.11ac VHT40_Nss1,(MCS0)_2TX	-
2422MHz	15.5
2437MHz	16
2452MHz	14
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
2412MHz	24
2437MHz	24
2462MHz	21
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
2422MHz	18
2437MHz	20
2452MHz	19

Note: 1.VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.
2.There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11n/ac. All test results were recorded in the report.

2.2 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	Normal Link
1	EUT 1 - Normal Link with Adapter
2	EUT 1 - Normal Link with PoE
For operating mode 1 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
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	Normal Link
1	EUT 1 in Z axis - Normal Link with Adapter
2	EUT 1 in Y axis - Normal Link with Adapter
Mode 2 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT 1 in Y axis - Normal Link with PoE
For operating mode 3 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The EUT was performed at Y axis and Z axis position for Radiated emission test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.	
1	EUT 1 in Z axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	WLAN 2.4GHz +WLAN 5GHz
Refer to Appendix A for Radiated Emission Co-location.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz +WLAN 5GHz
Refer to Sporton Test Report No.: FA760620 for Co-location RF Exposure Evaluation.	

Note: The PoE is for measurement only, would not be marketed.

PoE information as below:

Power	Brand	Model
PoE	Meraki	POE20U-560(G)

2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN 7 were executed.
The program was executed as follows:
1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less 98%.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories					
No.	**Equipment Name**	**Brand Name**	**PSU Vendor P/N**	**Meraki Model**	**Rating**
1	Adapter	CISCO	KSAS0361200250HU	MA-PWR-30W-US	Input: 100-240V ~ 50/60Hz, 1.0A Output: 12V, 2.5A
Other					
Wall-mounted rack*1					

2.5 Support Equipment

For Test Site No: CO01-CB
For Adapter Mode:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*3	DELL	E6430	DoC

For PoE Mode:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*3	DELL	E6430	DoC
2	PoE	Meraki	POE20U-560 (G)	DoC

For Test Site No: 03CH01-CB (below 1GHz)
For Adapter Mode:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC
2	NB	Apple	Mac Book	DoC
3	NB	Apple	Mac Book	DoC

For PoE Mode:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC
2	NB	Apple	Mac Book	DoC
3	NB	Apple	Mac Book	DoC
4	PoE	Meraki	POE20U-560 (G)	DoC

For Test Site No: 03CH01-CB (above 1GHz)
<For Non-Beamforming Mode>

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC

<For Beamforming Mode>

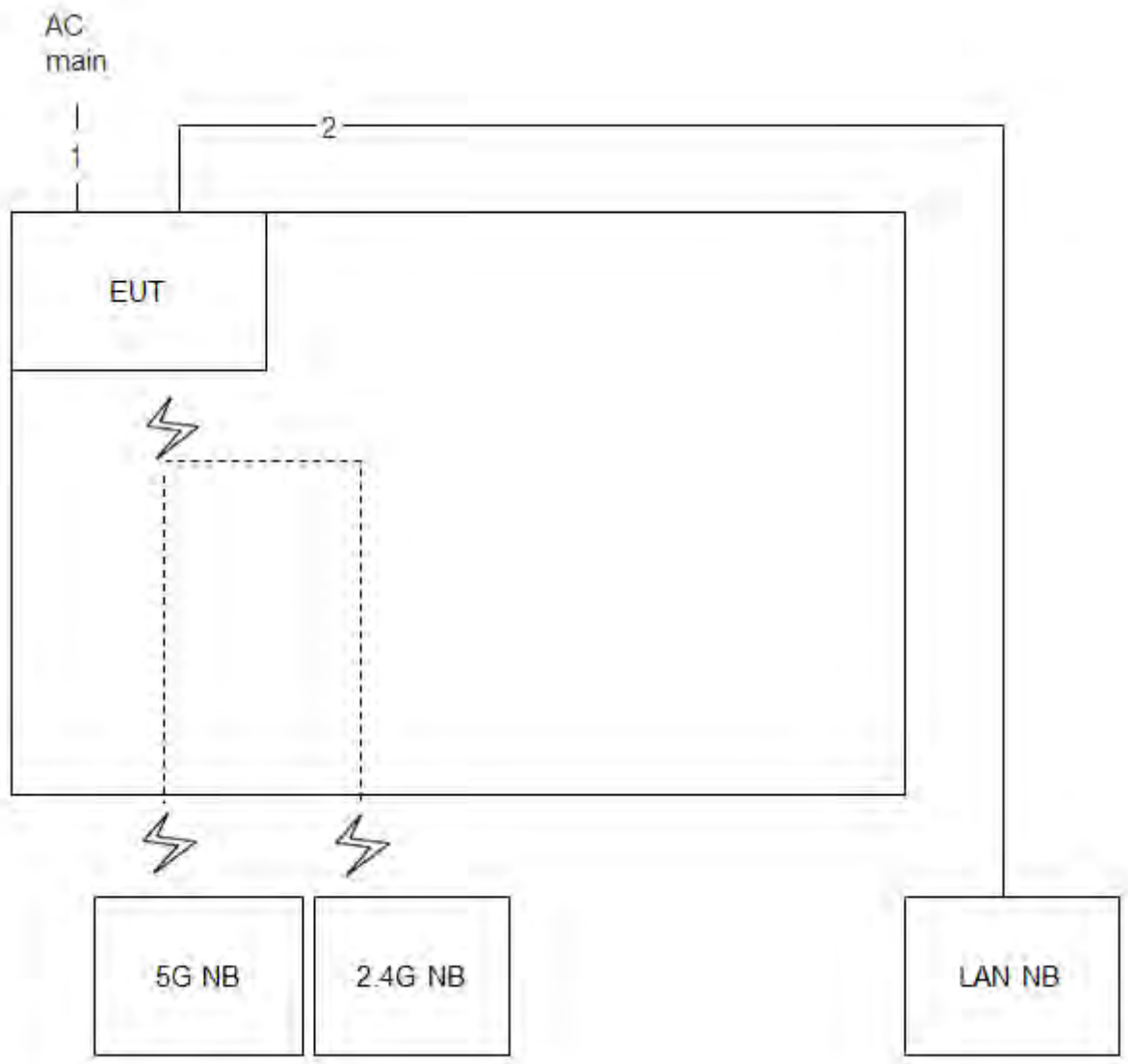
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC
2	NB	DELL	E4300	DoC
3	RX Device	CISCO	Maggot	DoC

For Test Site No: TH01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC

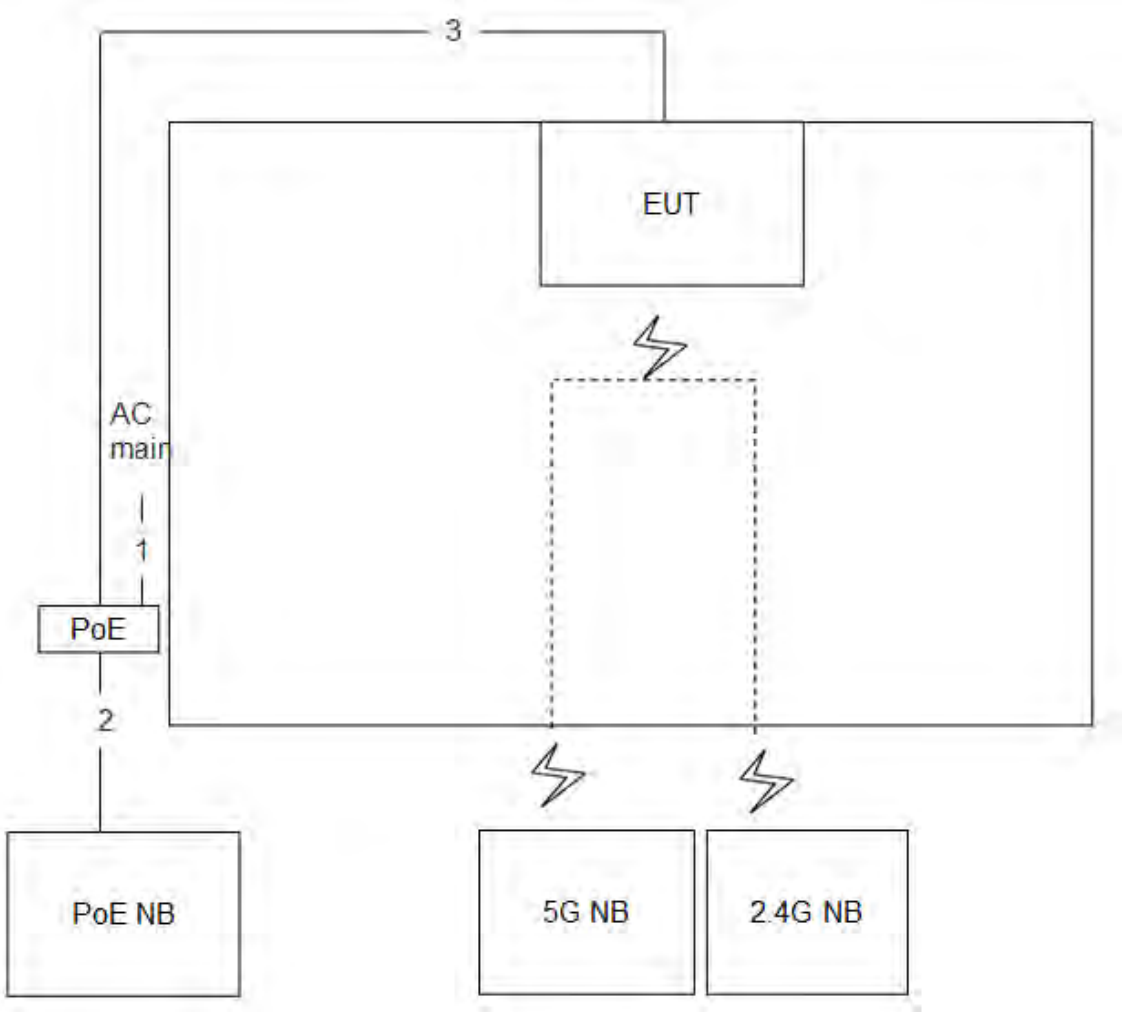
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



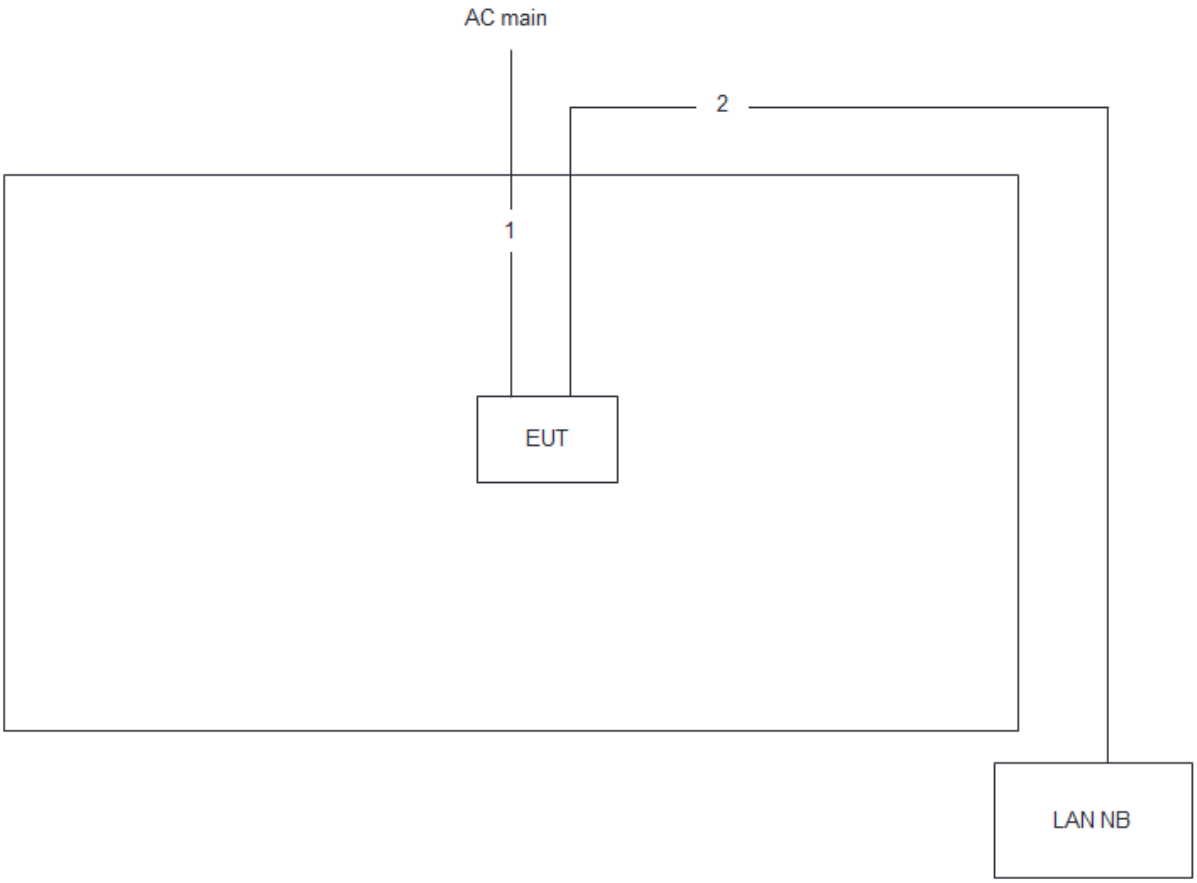
Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m

Test Setup Diagram - Radiated Test < 1GHz



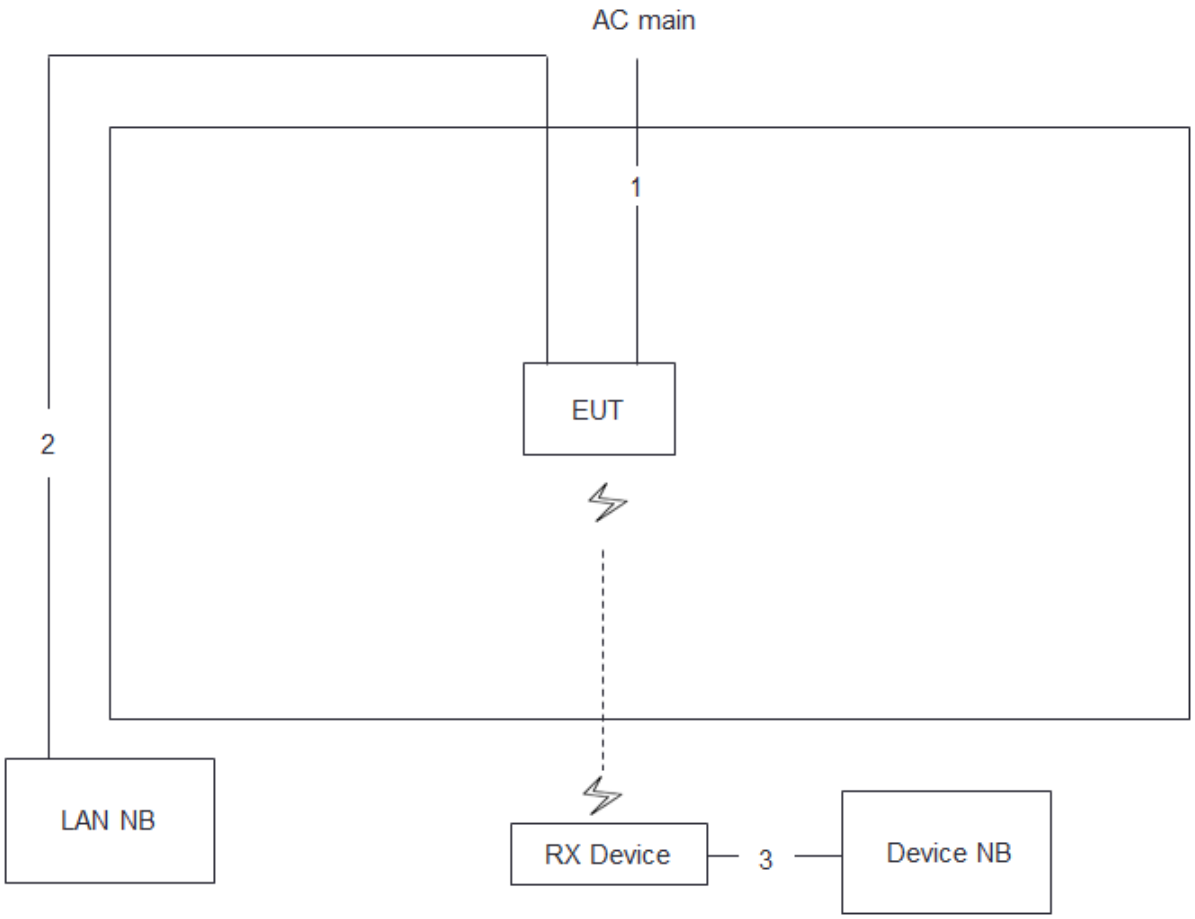
Item	Connection	Shielded	Length
1	Power cable	No	1.8m
2	RJ-45 cable	No	1m
3	RJ-45 cable	No	10m

Test Setup Diagram - Radiated Test > 1GHz / Non-Beamforming Mode



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

Test Setup Diagram - Radiated Test > 1GHz / Beamforming Mode



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

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 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.		

3.1.2 Measuring Instruments

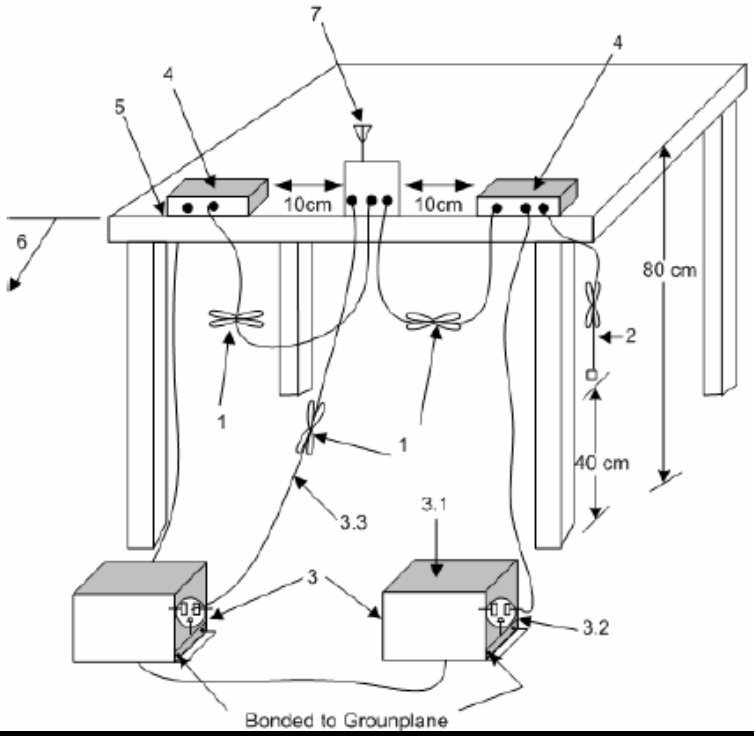
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

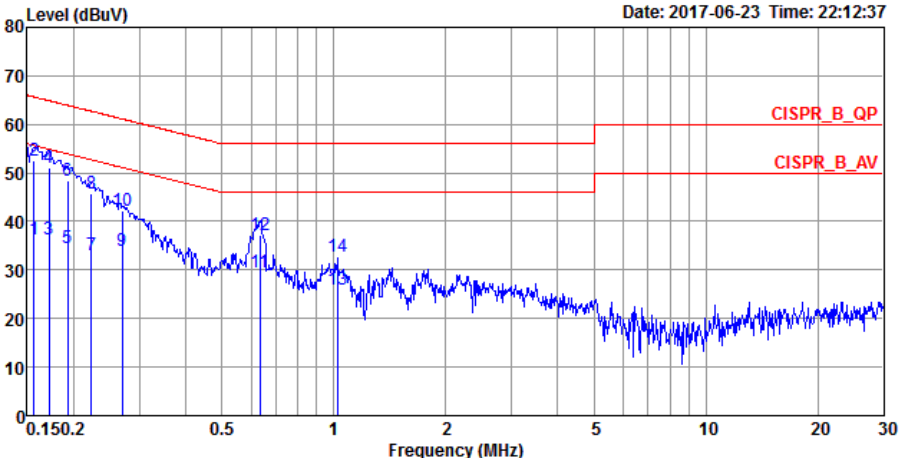
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

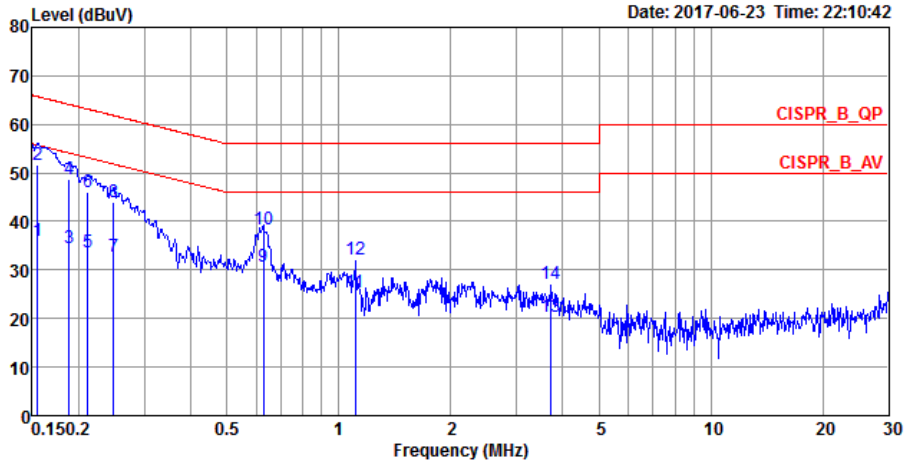
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1565	36.28	-19.37	55.65	26.29	9.95	0.04	Average	NEUTRAL
2	0.1565	52.64	-13.01	65.65	42.65	9.95	0.04	QP	NEUTRAL
3	0.1712	36.35	-18.55	54.90	26.35	9.96	0.04	Average	NEUTRAL
4	0.1712	51.07	-13.83	64.90	41.07	9.96	0.04	QP	NEUTRAL
5	0.1924	34.49	-19.44	53.93	24.46	9.98	0.05	Average	NEUTRAL
6	0.1924	48.41	-15.52	63.93	38.38	9.98	0.05	QP	NEUTRAL
7	0.2232	33.06	-19.64	52.70	23.03	9.98	0.05	Average	NEUTRAL
8	0.2232	45.83	-16.87	62.70	35.80	9.98	0.05	QP	NEUTRAL
9	0.2701	33.97	-17.15	51.12	23.95	9.97	0.05	Average	NEUTRAL
10	0.2701	42.34	-18.78	61.12	32.32	9.97	0.05	QP	NEUTRAL
11	0.6338	29.61	-16.39	46.00	19.59	9.97	0.05	Average	NEUTRAL
12	0.6338	37.17	-18.83	56.00	27.15	9.97	0.05	QP	NEUTRAL
13	1.0211	26.02	-19.98	46.00	15.97	9.99	0.06	Average	NEUTRAL
14	1.0211	32.85	-23.15	56.00	22.80	9.99	0.06	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	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1548	35.96	-19.78	55.74	25.97	9.95	0.04	Average	LINE
2	0.1548	51.65	-14.09	65.74	41.66	9.95	0.04	QP	LINE
3	0.1884	34.57	-19.54	54.11	24.59	9.93	0.05	Average	LINE
4	0.1884	48.82	-15.29	64.11	38.84	9.93	0.05	QP	LINE
5	0.2117	33.77	-19.37	53.14	23.79	9.93	0.05	Average	LINE
6	0.2117	46.09	-17.05	63.14	36.11	9.93	0.05	QP	LINE
7	0.2481	32.63	-19.19	51.82	22.66	9.92	0.05	Average	LINE
8	0.2481	43.89	-17.93	61.82	33.92	9.92	0.05	QP	LINE
9	0.6271	30.66	-15.34	46.00	20.68	9.93	0.05	Average	LINE
10	0.6271	38.42	-17.58	56.00	28.44	9.93	0.05	QP	LINE
11	1.1056	25.29	-20.71	46.00	15.25	9.98	0.06	Average	LINE
12	1.1056	32.26	-23.74	56.00	22.22	9.98	0.06	QP	LINE
13	3.7198	20.50	-25.50	46.00	10.42	9.96	0.12	Average	LINE
14	3.7198	27.15	-28.85	56.00	17.07	9.96	0.12	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.)

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
▪ 6 dB bandwidth ≥ 500 kHz.

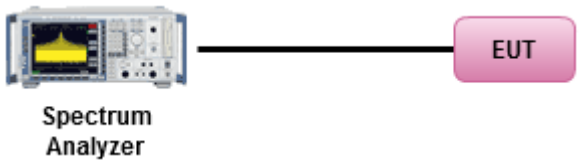
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
	☒ Refer as FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
	☐ Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
	☐ Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth


3.2.5 Test Result of Emission Bandwidth

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11b_(1Mbps)_2TX	-	-	-	-	-
2.4-2.4835GHz	9.025M	14.168M	14M2G1D	7.5M	12.794M
802.11g_(6Mbps)_2TX	-	-	-	-	-
2.4-2.4835GHz	16.35M	24.288M	24M3D1D	16.3M	16.392M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-
2.4-2.4835GHz	17.575M	25.687M	25M7D1D	17.575M	17.591M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-
2.4-2.4835GHz	35.65M	36.032M	36M0D1D	34.65M	35.882M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-
2.4-2.4835GHz	17.55M	17.741M	17M7D1D	15.1M	17.666M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-
2.4-2.4835GHz	35M	36.882M	36M9D1D	28.75M	36.182M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

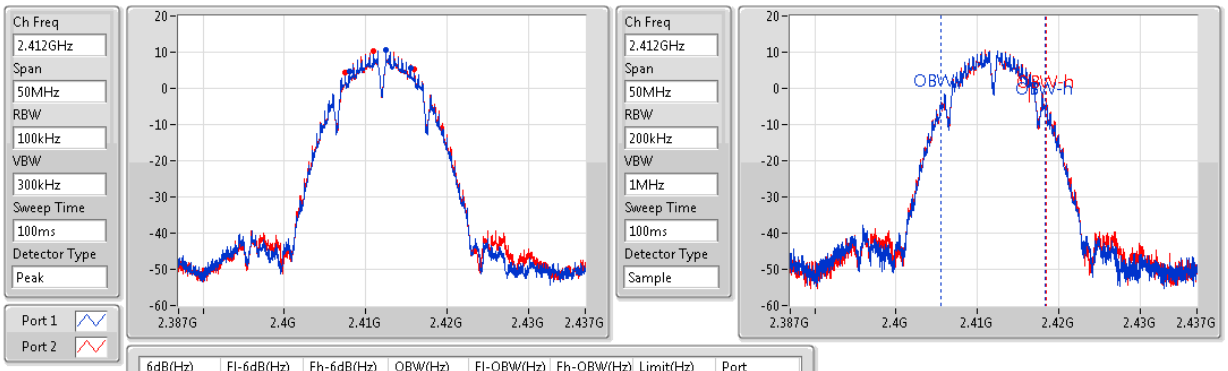
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	7.5M	12.794M	8.5M	12.969M
2437MHz	Pass	500k	8.5M	13.968M	9.025M	14.168M
2462MHz	Pass	500k	8.55M	13.918M	8.475M	14.018M
802.11g_(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.325M	16.417M	16.325M	16.417M
2437MHz	Pass	500k	16.35M	24.138M	16.3M	24.288M
2462MHz	Pass	500k	16.325M	16.392M	16.3M	16.392M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.575M	17.616M	17.575M	17.616M
2437MHz	Pass	500k	17.575M	24.613M	17.575M	25.687M
2462MHz	Pass	500k	17.575M	17.616M	17.575M	17.591M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	35.65M	35.982M	34.95M	35.882M
2437MHz	Pass	500k	34.8M	36.032M	34.65M	36.032M
2452MHz	Pass	500k	35.05M	35.932M	35.25M	35.982M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.95M	17.716M	15.1M	17.741M
2437MHz	Pass	500k	17.55M	17.716M	15.375M	17.716M
2462MHz	Pass	500k	17.55M	17.666M	16.875M	17.716M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	32.55M	36.232M	35M	36.232M
2437MHz	Pass	500k	33.75M	36.882M	28.75M	36.332M
2452MHz	Pass	500k	31.25M	36.182M	31.3M	36.282M

Port X-N dB = Port **X** 6dB down bandwidth; **Port X-OBW** = Port **X** 99% occupied bandwidth;

802.11b_(1Mbps)_2TX EBW

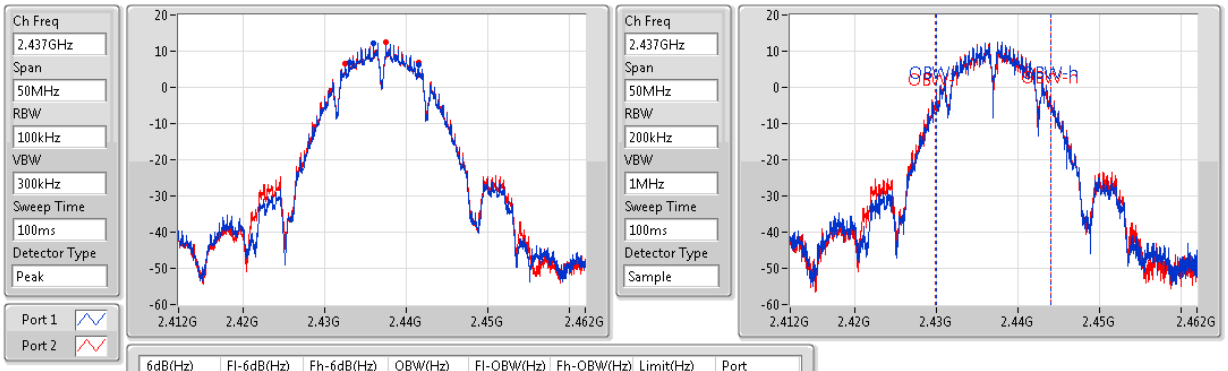
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.5M	2.408G	2.4155G	12.794M	2.405528G	2.418322G	500k	1
8.5M	2.4075G	2.416G	12.969M	2.405503G	2.418472G	500k	2

802.11b_(1Mbps)_2TX EBW

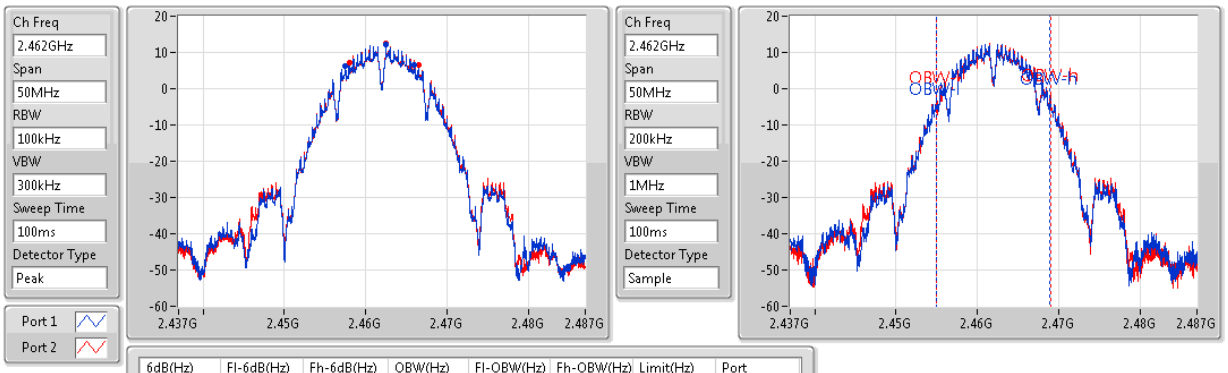
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.5M	2.432975G	2.441475G	13.968M	2.430003G	2.443972G	500k	1
9.025M	2.432475G	2.4415G	14.168M	2.429879G	2.444046G	500k	2

802.11b_(1Mbps)_2TX EBW

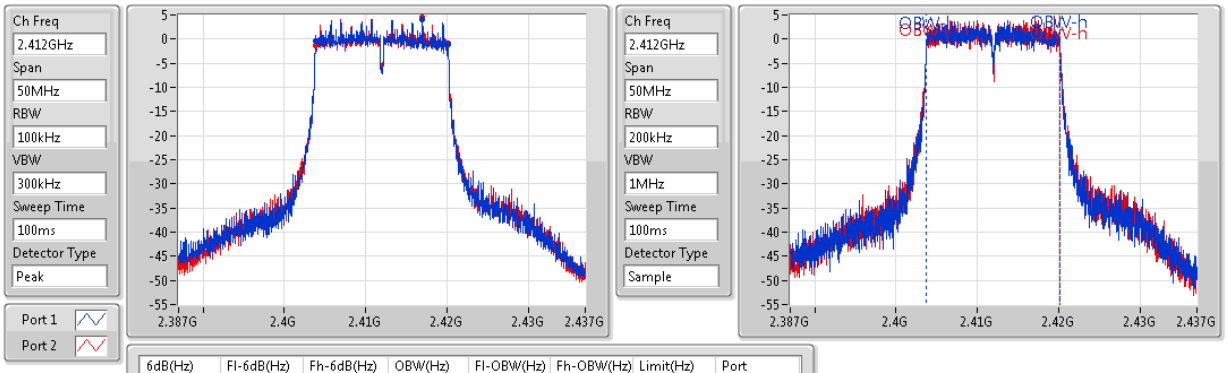
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.55M	2.457475G	2.466025G	13.918M	2.455028G	2.468947G	500k	1
8.475M	2.458025G	2.4665G	14.018M	2.455003G	2.469021G	500k	2

802.11g_(6Mbps)_2TX EBW

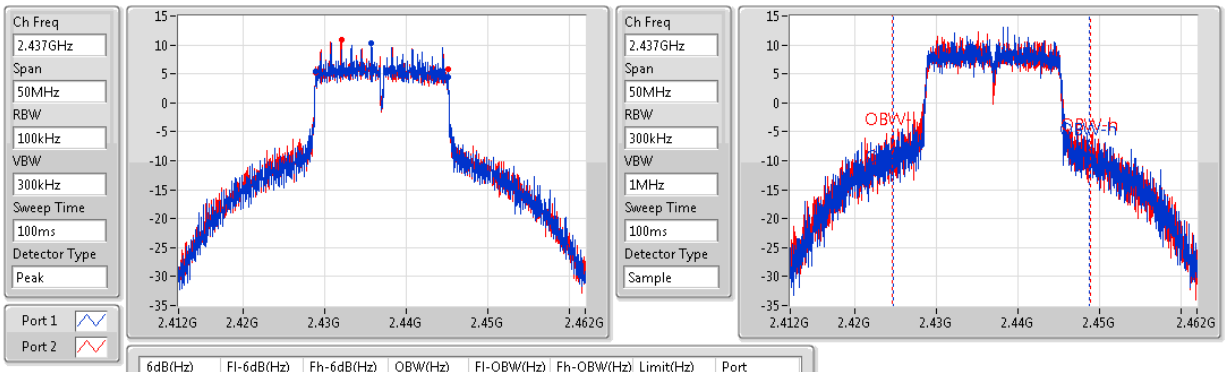
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.325M	2.403825G	2.42015G	16.417M	2.403754G	2.420171G	500k	1
16.325M	2.403825G	2.42015G	16.417M	2.403754G	2.420171G	500k	2

802.11g_(6Mbps)_2TX EBW

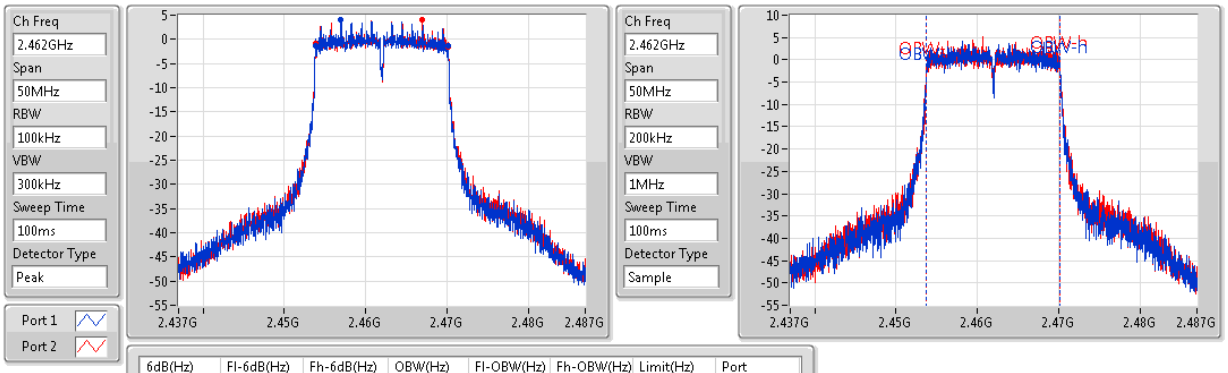
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.35M	2.428825G	2.445175G	24.138M	2.424681G	2.448819G	500k	1
16.3M	2.428825G	2.445125G	24.288M	2.424581G	2.448869G	500k	2

802.11g_(6Mbps)_2TX EBW

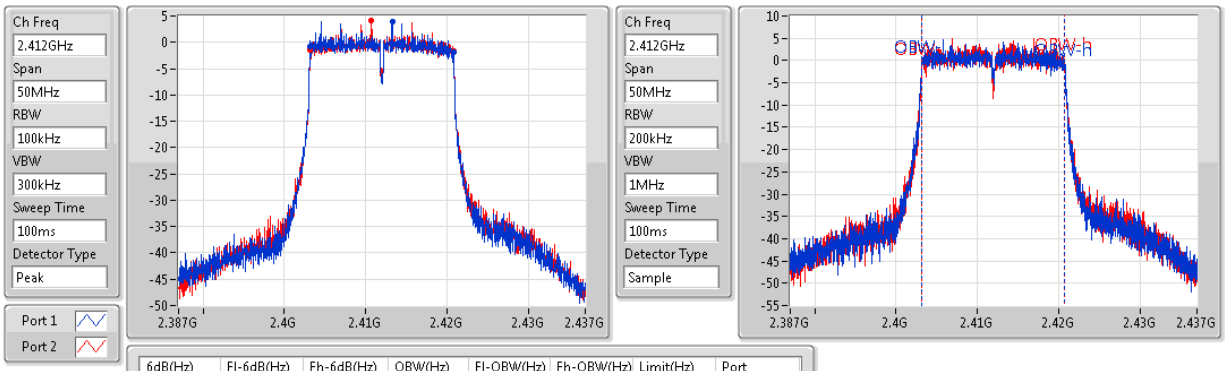
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.325M	2.453825G	2.47015G	16.392M	2.453779G	2.470171G	500k	1
16.3M	2.45385G	2.47015G	16.392M	2.453779G	2.470171G	500k	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

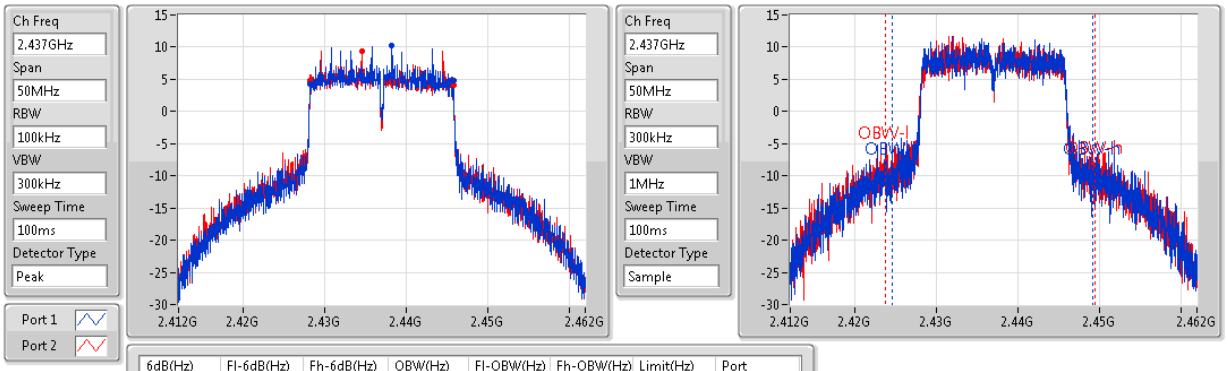
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	2.4032G	2.420775G	17.616M	2.403154G	2.420771G	500k	1
17.575M	2.4032G	2.420775G	17.616M	2.403154G	2.420771G	500k	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

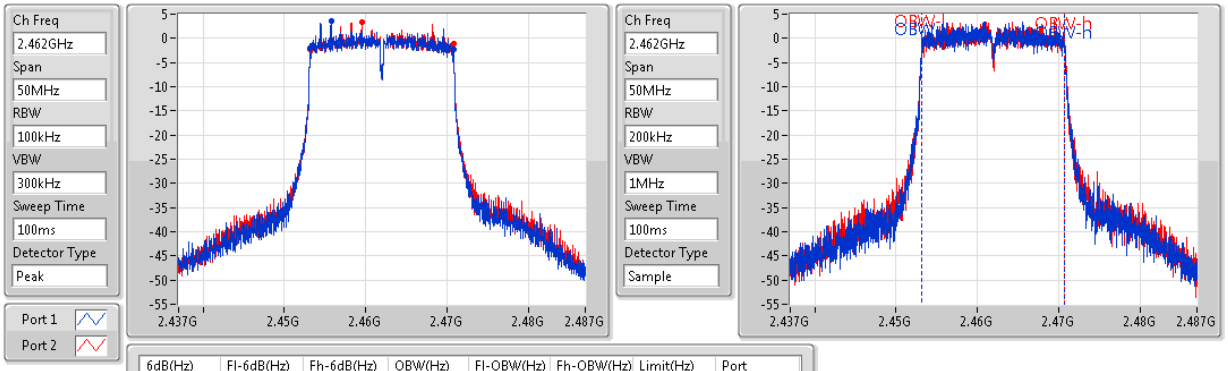
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	2.4282G	2.445775G	24.613M	2.424556G	2.449169G	500k	1
17.575M	2.4282G	2.445775G	25.687M	2.423757G	2.449444G	500k	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

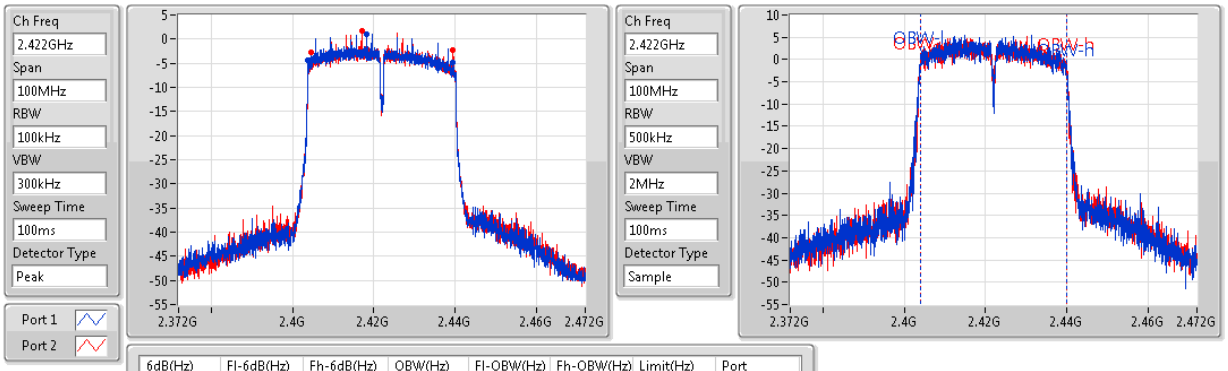
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	2.4532G	2.470775G	17.616M	2.453154G	2.470771G	500k	1
17.575M	2.4532G	2.470775G	17.591M	2.453179G	2.470771G	500k	2

802.11ac VHT40_Nss1,(MCS0)_2TX EBW

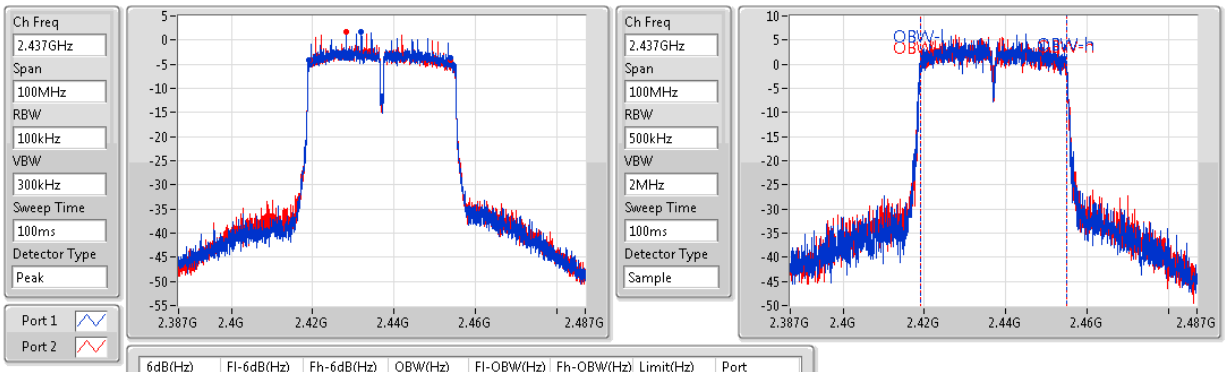
2422MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.65M	2.40385G	2.4395G	35.982M	2.403909G	2.439891G	500k	1
34.95M	2.40455G	2.4395G	35.882M	2.403959G	2.439841G	500k	2

802.11ac VHT40_Nss1,(MCS0)_2TX EBW

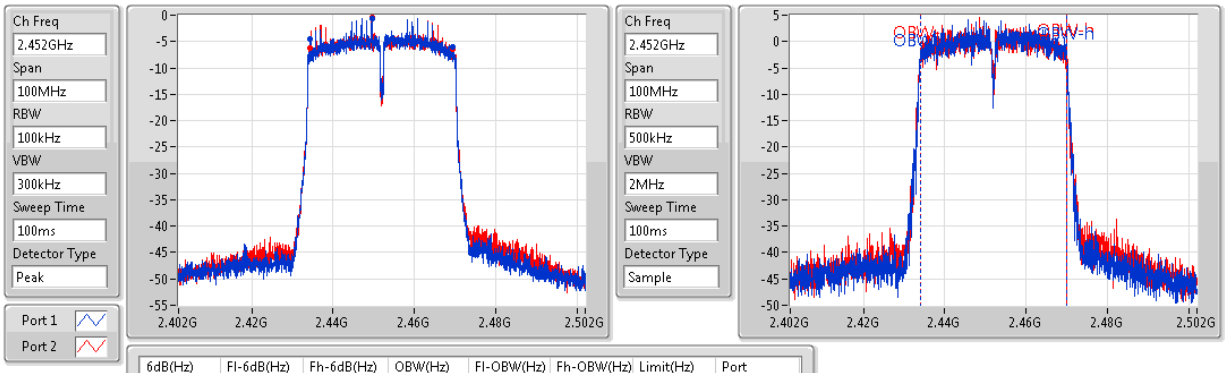
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
34.8M	2.4191G	2.4539G	36.032M	2.418909G	2.454941G	500k	1
34.65M	2.41925G	2.4539G	36.032M	2.418909G	2.454941G	500k	2

802.11ac VHT40_Nss1,(MCS0)_2TX EBW

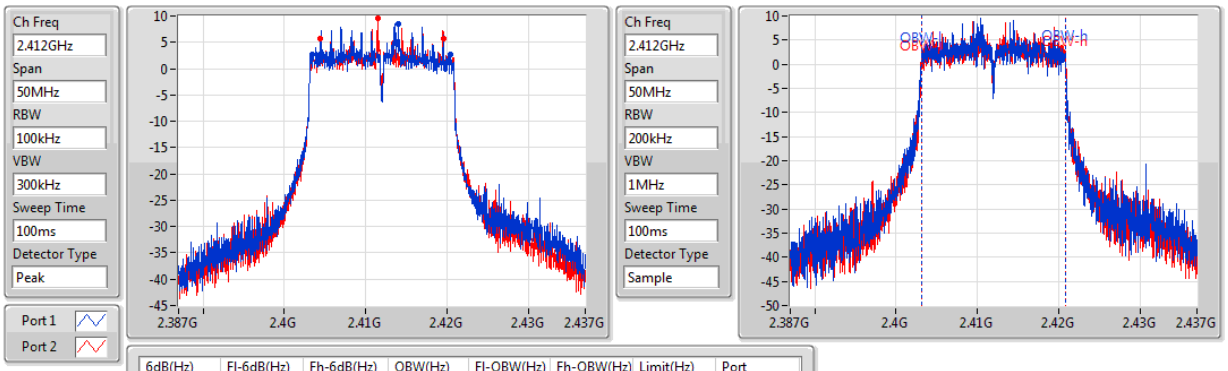
2452MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.05M	2.43445G	2.4695G	35.932M	2.434009G	2.469941G	500k	1
35.25M	2.43425G	2.4695G	35.982M	2.433959G	2.469941G	500k	2

802.11ac VHT20-BF_Nss1,(MCS0)_2TX EBW

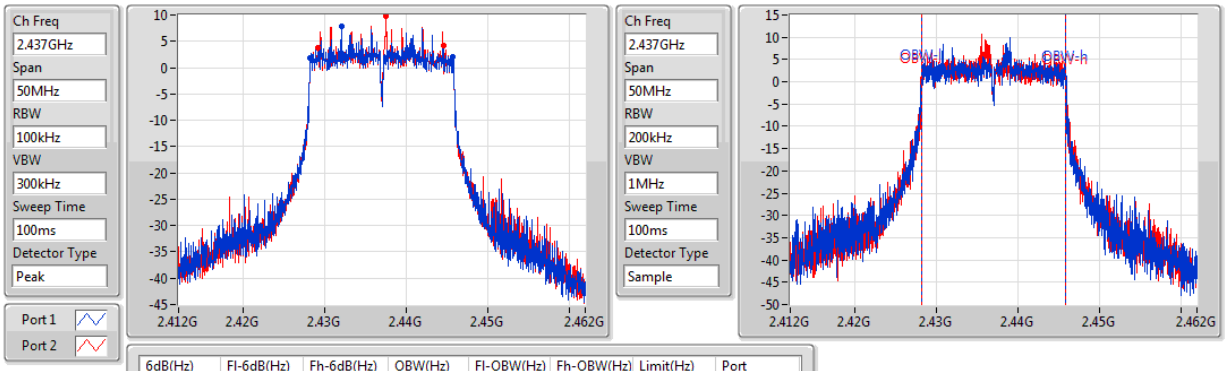
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.95M	2.4035G	2.42045G	17.716M	2.403104G	2.420821G	500k	1
15.1M	2.40445G	2.41955G	17.741M	2.403104G	2.420846G	500k	2

802.11ac VHT20-BF_Nss1,(MCS0)_2TX EBW

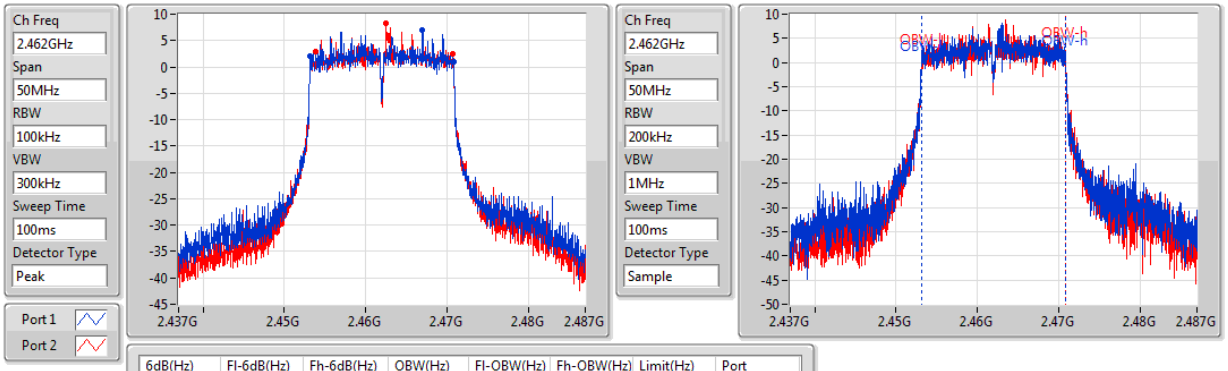
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	2.4282G	2.44575G	17.716M	2.428129G	2.445846G	500k	1
15.375M	2.42915G	2.444525G	17.716M	2.428104G	2.445821G	500k	2

802.11ac VHT20-BF_Nss1,(MCS0)_2TX EBW

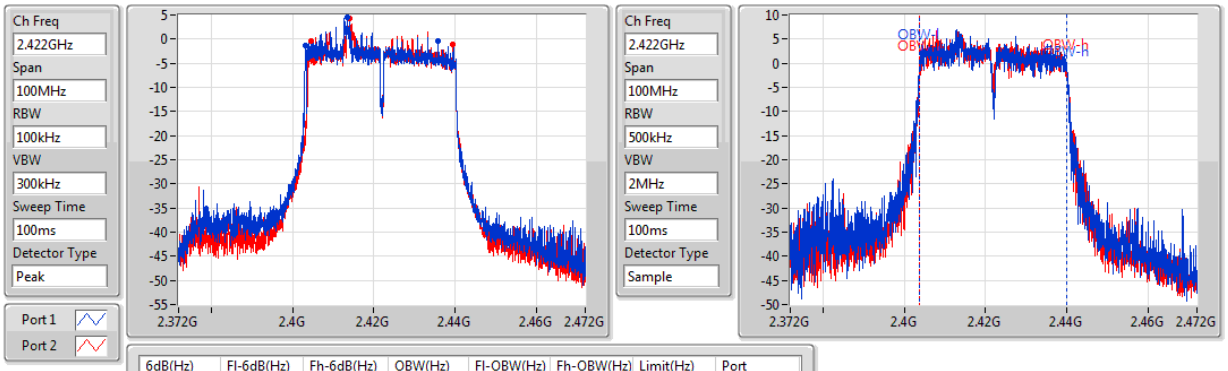
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	2.453225G	2.470775G	17.666M	2.453154G	2.470821G	500k	1
16.875M	2.45385G	2.470725G	17.716M	2.453154G	2.470871G	500k	2

802.11ac VHT40-BF_Nss1,(MCS0)_2TX EBW

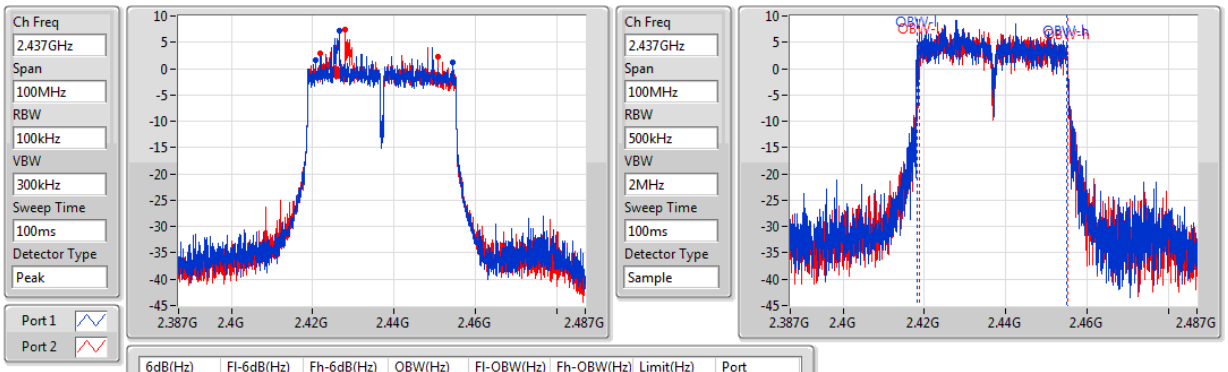
2422MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
32.55M	2.40325G	2.4358G	36.232M	2.403809G	2.440041G	500k	1
35M	2.4045G	2.4395G	36.232M	2.403809G	2.440041G	500k	2

802.11ac VHT40-BF_Nss1,(MCS0)_2TX EBW

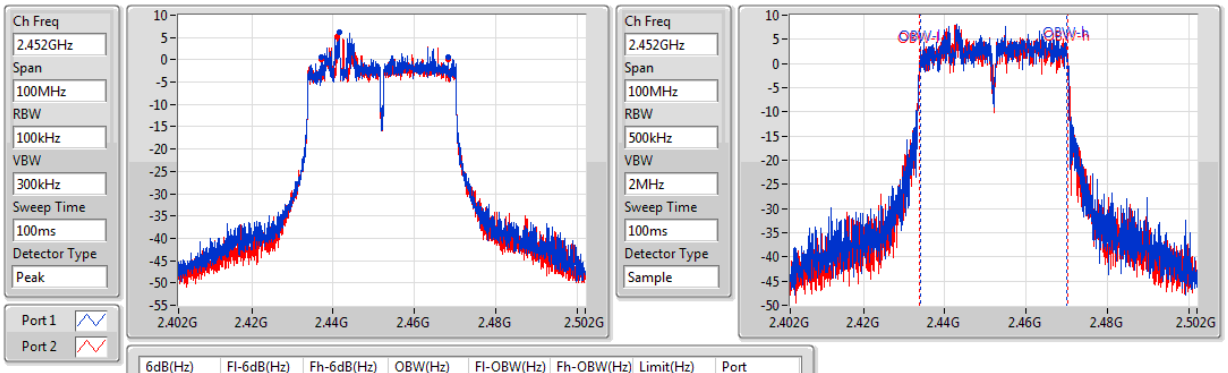
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
33.75M	2.42075G	2.4545G	36.882M	2.418209G	2.455091G	500k	1
28.75M	2.42195G	2.4507G	36.332M	2.418809G	2.455141G	500k	2

802.11ac VHT40-BF_Nss1,(MCS0)_2TX EBW

2452MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
31.25M	2.437G	2.46825G	36.182M	2.433909G	2.470091G	500k	1
31.3M	2.437G	2.4683G	36.282M	2.433859G	2.470141G	500k	2

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit		
	▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)	
	▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)$ dBm	
	▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm	
	▪ Smart antenna system (SAS):	
		- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3 + 8$dB dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.		

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	
	☐ Refer as FCC KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
	☐ Refer as FCC KDB 558074, clause 9.1.2 Option 2 (peak power meter for VBW ≥ DTS BW)
▪ Maximum Conducted Output Power	
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 558074, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).
	☐ Refer as FCC KDB 558074, clause 9.2.2.3 Method AVGSA-1 Alt. (slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)
	RF power meter and average over on/off periods with duty factor or gated trigger
	☒ Refer as FCC KDB 558074, clause 9.2.3 Method AVGPM-G (using an RF average power meter).
	☐ Refer as FCC KDB 558074, clause 9.1.2 PKPM1 Peak power meter method.
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)

3.3.5 Test Result of Maximum Conducted Output Power

Summary

Mode	Total Power (dBm)	Total Power (W)
802.11b_(1Mbps)_2TX	-	-
2.4-2.4835GHz	24.58	0.28708
802.11g_(6Mbps)_2TX	-	-
2.4-2.4835GHz	24.74	0.29785
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-
2.4-2.4835GHz	24.77	0.29992
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-
2.4-2.4835GHz	19.40	0.08710
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-
2.4-2.4835GHz	21.13	0.12972
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-
2.4-2.4835GHz	20.02	0.10046

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.63	19.17	19.21	22.20	30.00
2437MHz	Pass	5.63	21.52	21.62	24.58	30.00
2462MHz	Pass	5.63	21.51	21.58	24.56	30.00
802.11g_(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.63	16.32	16.24	19.29	30.00
2437MHz	Pass	5.63	21.74	21.71	24.74	30.00
2462MHz	Pass	5.63	16.18	16.31	19.26	30.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.63	16.33	16.35	19.35	30.00
2437MHz	Pass	5.63	21.80	21.71	24.77	30.00
2462MHz	Pass	5.63	16.06	16.24	19.16	30.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.63	16.02	15.84	18.94	30.00
2437MHz	Pass	5.63	16.37	16.40	19.40	30.00
2452MHz	Pass	5.63	14.34	14.48	17.42	30.00
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.70	17.18	17.20	20.20	30.00
2437MHz	Pass	5.70	17.15	18.91	21.13	30.00
2462MHz	Pass	5.70	17.34	16.67	20.03	30.00
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.70	15.07	15.14	18.12	30.00
2437MHz	Pass	5.70	16.93	17.09	20.02	30.00
2452MHz	Pass	5.70	15.77	15.68	18.73	30.00

DG = Directional Gain; **Port X** = Port X output power

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
▪ Power Spectral Density (PSD) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

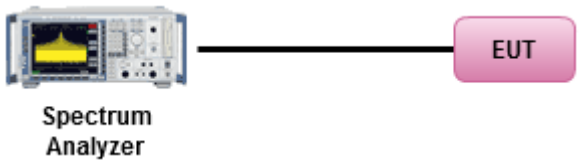
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method		
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).		
	☒ Refer as FCC KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).	
	[duty cycle ≥ 98% or external video / power trigger]	
	☐ Refer as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).	
	☐ Refer as FCC KDB 558074, clause 10.4 Method AVGPSD-2 (slow sweep speed)	
	duty cycle < 98% and average over on/off periods with duty factor	
	☐ Refer as FCC KDB 558074, clause 10.5 Method AVGPSD-1 Alt (spectral trace averaging).	
	☐ Refer as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)	
▪ For conducted measurement.		
	▪ If The EUT supports multiple transmit chains using options given below:	
		☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
		☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

3.4.4 Test Setup

Power Spectral Density



3.4.5 Test Result of Power Spectral Density

Summary

Mode	PD (dBm/RBW)
802.11b_(1Mbps)_2TX	-
2.4-2.4835GHz	-0.92
802.11g_(6Mbps)_2TX	-
2.4-2.4835GHz	-2.56
802.11ac VHT20_Nss1,(MCS0)_2TX	-
2.4-2.4835GHz	-3.44
802.11ac VHT40_Nss1,(MCS0)_2TX	-
2.4-2.4835GHz	-10.11
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
2.4-2.4835GHz	-3.74
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
2.4-2.4835GHz	-8.49

RBW=3kHz.

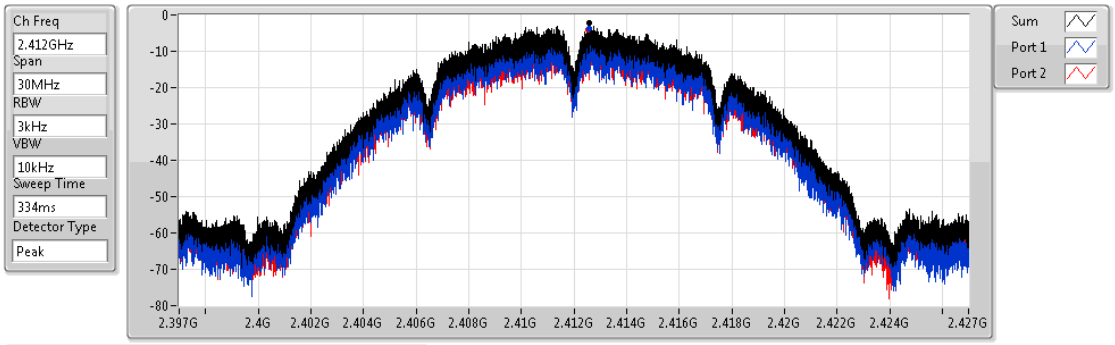
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.70	-3.79	-3.95	-2.32	8.00
2437MHz	Pass	5.70	-2.03	-2.93	-0.92	8.00
2462MHz	Pass	5.70	-3.37	-2.68	-1.41	8.00
802.11g_(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.70	-7.58	-9.44	-5.40	8.00
2437MHz	Pass	5.70	-3.23	-4.09	-2.56	8.00
2462MHz	Pass	5.70	-9.75	-7.91	-7.39	8.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.70	-10.21	-10.19	-8.48	8.00
2437MHz	Pass	5.70	-4.23	-4.48	-3.44	8.00
2462MHz	Pass	5.70	-10.94	-10.61	-8.79	8.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.70	-11.53	-11.33	-10.11	8.00
2437MHz	Pass	5.70	-12.60	-12.68	-10.57	8.00
2452MHz	Pass	5.70	-14.72	-15.70	-12.58	8.00
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.70	-6.08	-5.62	-5.22	8.00
2437MHz	Pass	5.70	-4.00	-6.90	-3.74	8.00
2462MHz	Pass	5.70	-7.73	-7.31	-6.60	8.00
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.70	-10.84	-10.04	-9.44	8.00
2437MHz	Pass	5.70	-9.61	-10.57	-8.52	8.00
2452MHz	Pass	5.70	-8.75	-10.10	-8.49	8.00

DG = Directional Gain; RBW=3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11b_(1Mbps)_2TX **PSD**

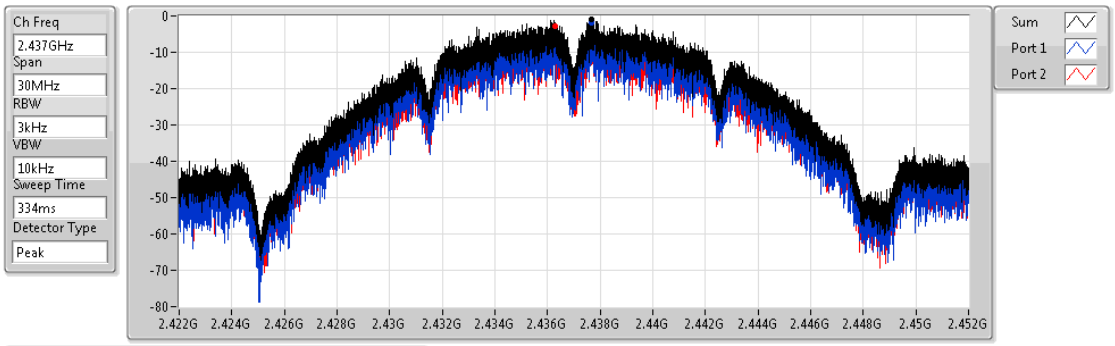
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.32	-2.32	-3.79	-3.95

802.11b_(1Mbps)_2TX **PSD**

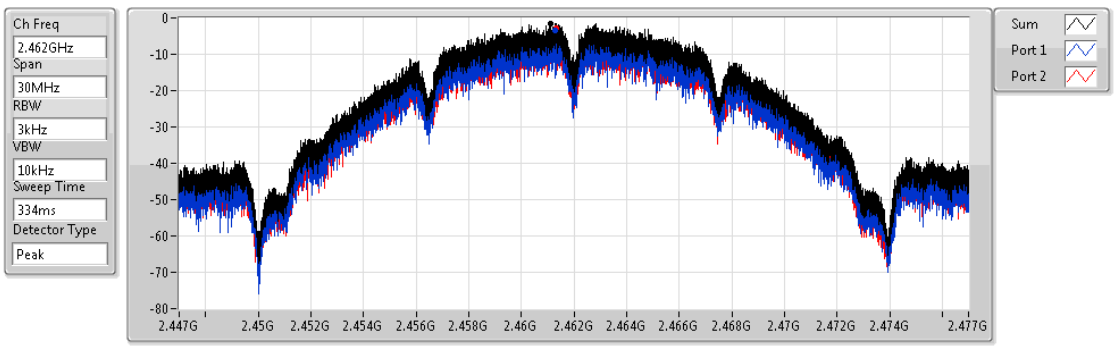
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.92	-0.92	-2.03	-2.93

802.11b_(1Mbps)_2TX **PSD**

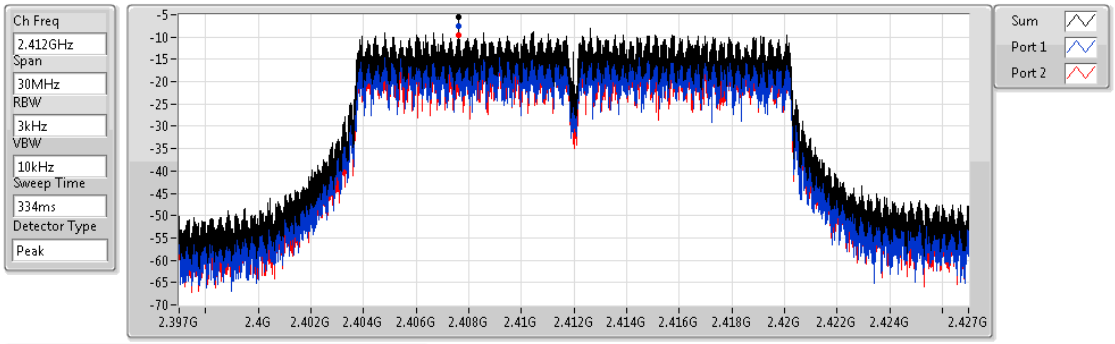
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.41	-1.41	-3.37	-2.68

802.11g_(6Mbps)_2TX PSD

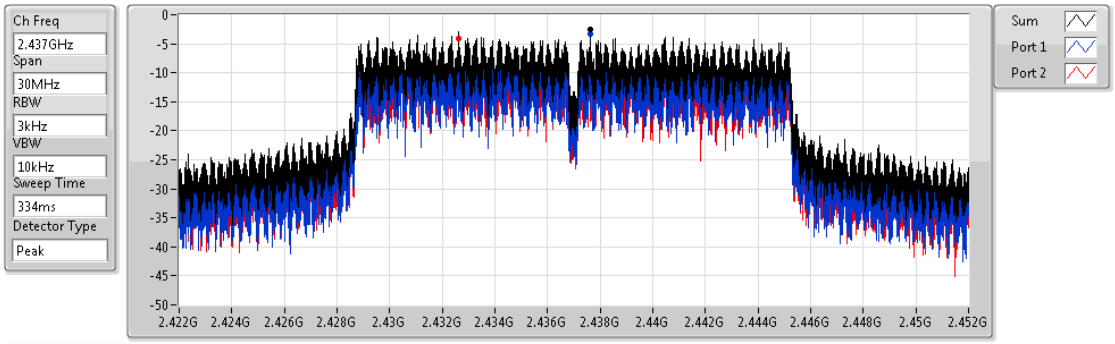
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.40	-5.40	-7.58	-9.44

802.11g_(6Mbps)_2TX PSD

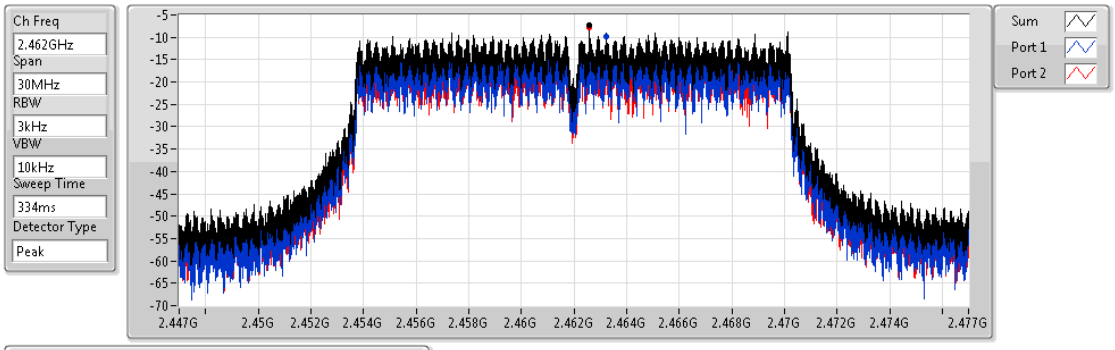
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.56	-2.56	-3.23	-4.09

802.11g_(6Mbps)_2TX PSD

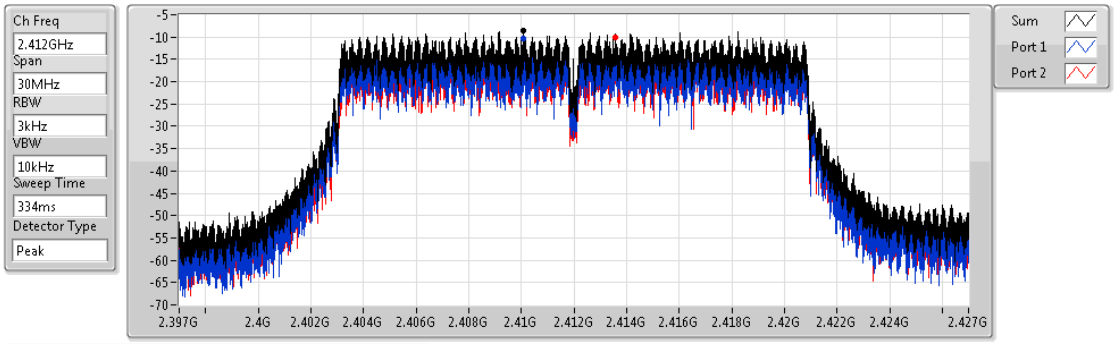
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.39	-7.39	-9.75	-7.91

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

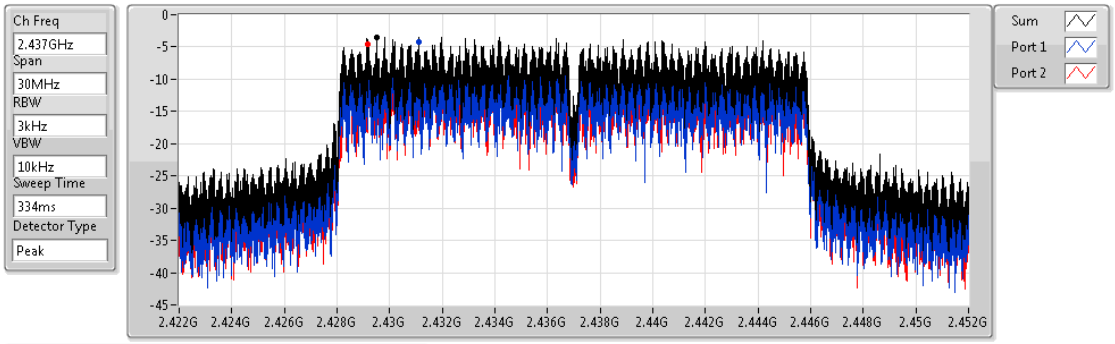
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.48	-8.48	-10.21	-10.19

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

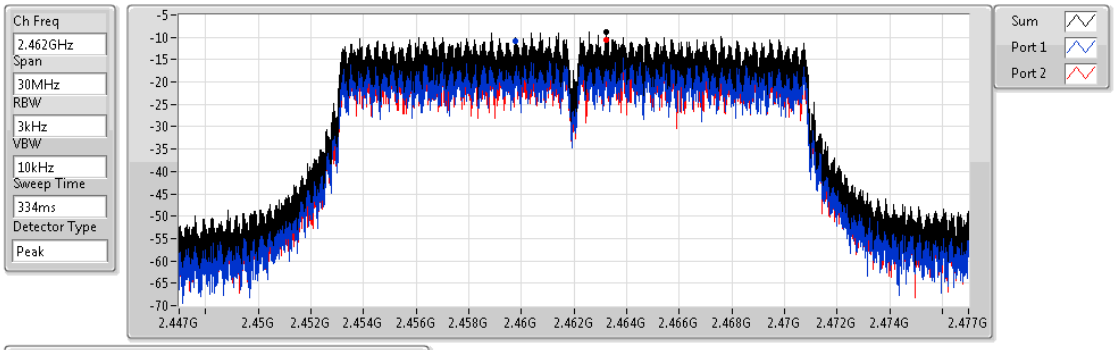
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.44	-3.44	-4.23	-4.48

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

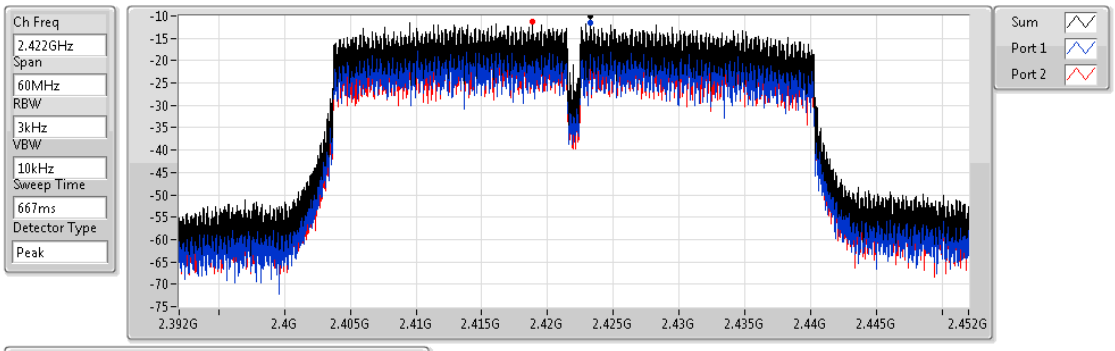
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.79	-8.79	-10.94	-10.61

802.11ac VHT40_Nss1,(MCS0)_2TX PSD

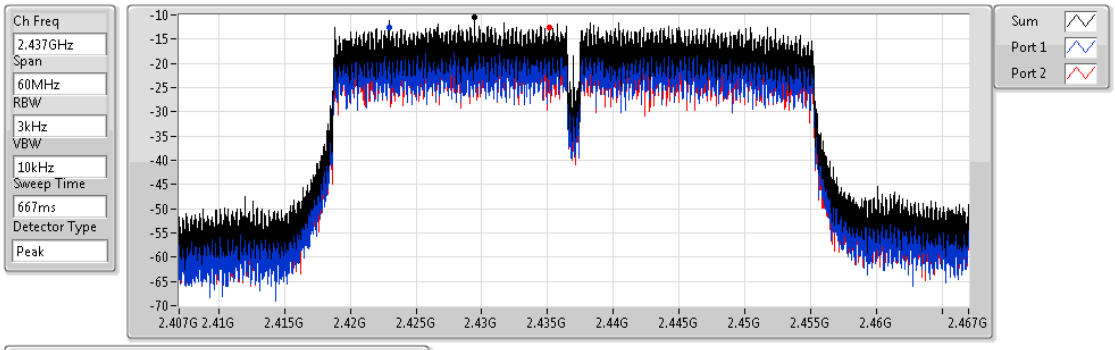
2422MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.11	-10.11	-11.53	-11.33

802.11ac VHT40_Nss1,(MCS0)_2TX PSD

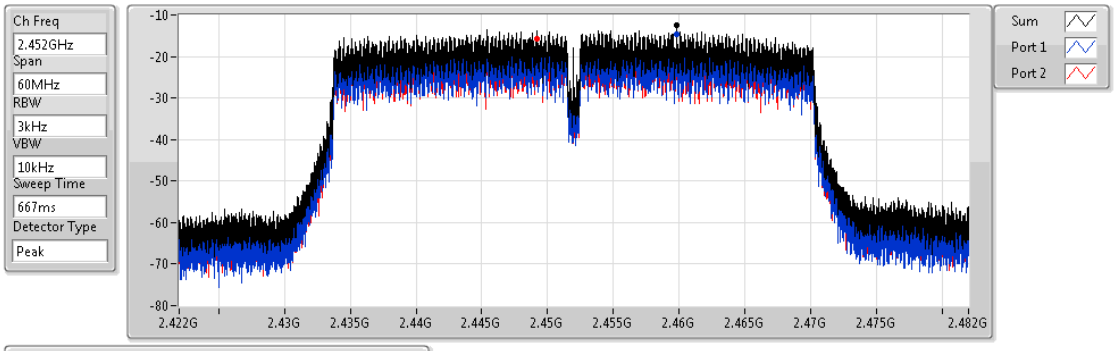
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.57	-10.57	-12.60	-12.68

802.11ac VHT40_Nss1,(MCS0)_2TX PSD

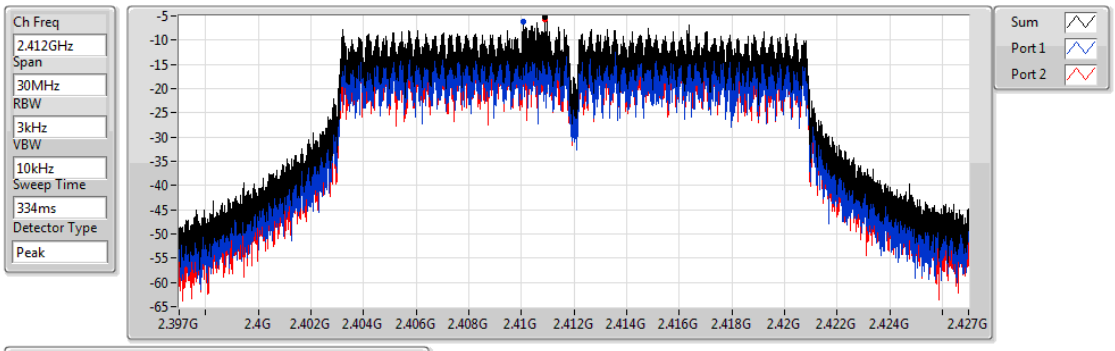
2452MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.58	-12.58	-14.72	-15.70

802.11ac VHT20-BF_Nss1,(MCS0)_2TX PSD

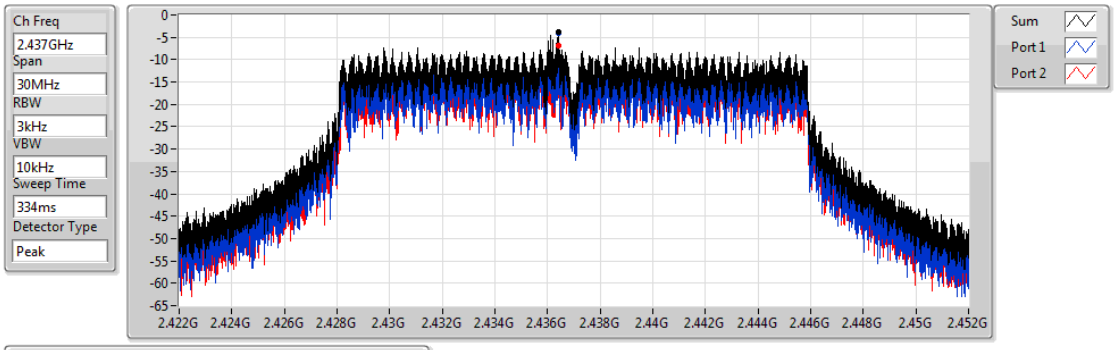
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.22	-5.22	-6.08	-5.62

802.11ac VHT20-BF_Nss1,(MCS0)_2TX PSD

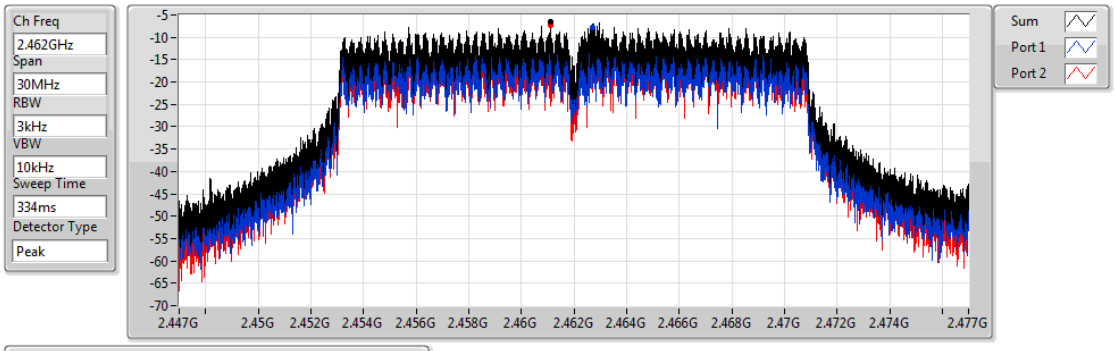
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.74	-3.74	-4.00	-6.90

802.11ac VHT20-BF_Nss1,(MCS0)_2TX PSD

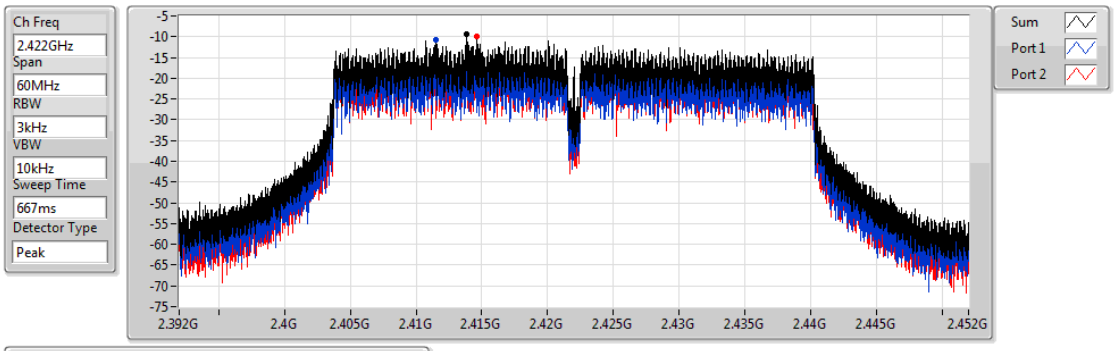
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.60	-6.60	-7.73	-7.31

802.11ac VHT40-BF_Nss1,(MCS0)_2TX PSD

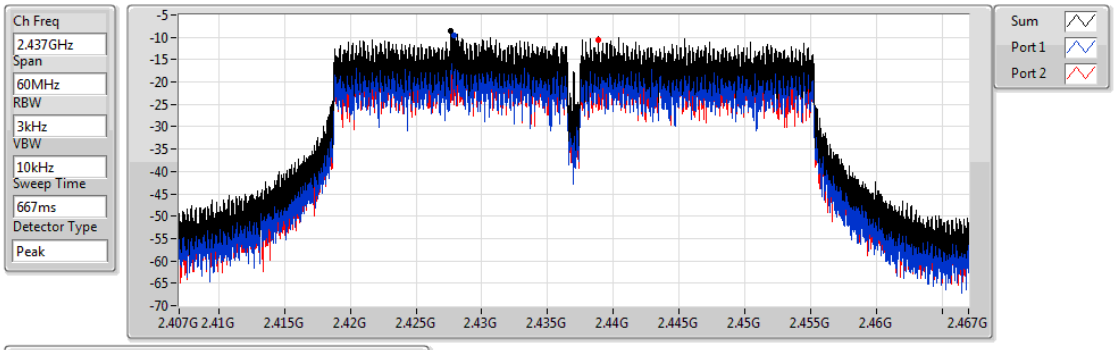
2422MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.44	-9.44	-10.84	-10.04

802.11ac VHT40-BF_Nss1,(MCS0)_2TX PSD

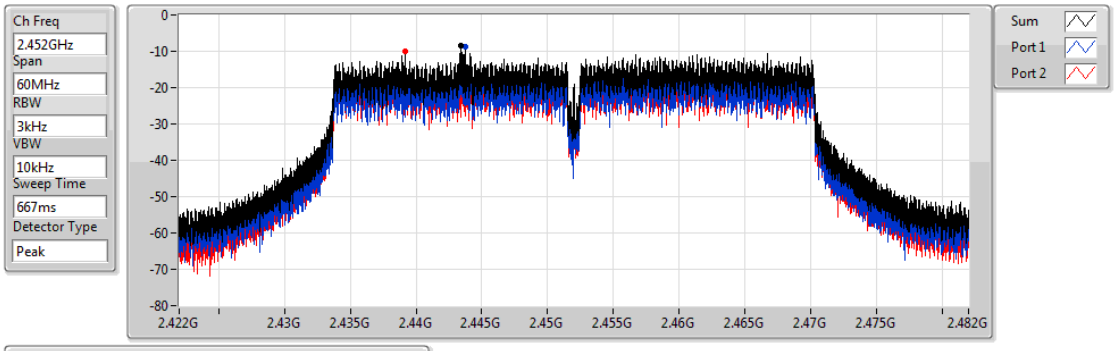
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.52	-8.52	-9.61	-10.57

802.11ac VHT40-BF_Nss1,(MCS0)_2TX PSD

2452MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.49	-8.49	-8.75	-10.10

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dB)**
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

3.5.2 Measuring Instruments

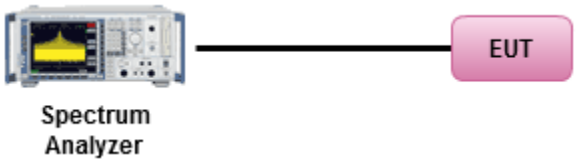
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method
▪ Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup

Emissions in Non-restricted Frequency Bands



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Summary

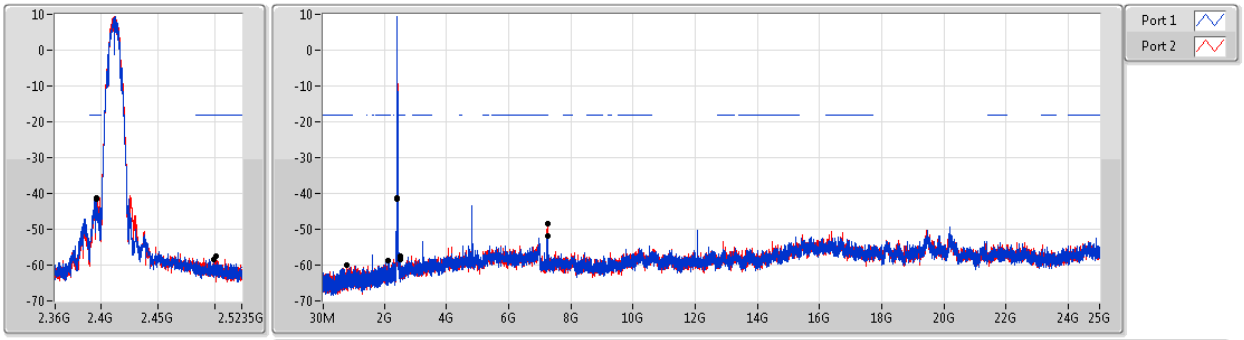
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	2.444422G	7.06	-22.94	1.98953G	-61.06	2.39976G	-24.38	2.4839G	-57.45	3.214652G	-51.12	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11b_(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.435905G	11.91	-18.09	2.128165G	-58.69	2.39608G	-41.50	2.49862G	-58.29	7.235136G	-51.73	1
2412MHz	Pass	2.435905G	11.91	-18.09	798.9M	-59.86	2.396G	-41.19	2.5011G	-57.49	7.235136G	-48.57	2
2437MHz	Pass	2.435905G	11.91	-18.09	2.309905G	-58.88	2.398G	-48.84	2.48726G	-57.39	16.377453G	-52.19	1
2437MHz	Pass	2.435905G	11.91	-18.09	2.132825G	-59.09	2.39952G	-48.00	2.4839G	-56.20	16.703362G	-51.77	2
2462MHz	Pass	2.435905G	11.91	-18.09	1.641195G	-56.87	2.3996G	-57.01	2.48598G	-46.24	16.605027G	-51.95	1
2462MHz	Pass	2.435905G	11.91	-18.09	2.30175G	-58.85	2.39848G	-56.98	2.49094G	-45.81	16.751125G	-52.13	2
802.11g_(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.435738G	9.01	-20.99	1.965065G	-59.52	2.39768G	-33.50	2.49878G	-57.29	16.371834G	-51.19	1
2412MHz	Pass	2.435738G	9.01	-20.99	2.172435G	-59.66	2.3992G	-32.11	2.48902G	-57.80	16.349357G	-52.30	2
2437MHz	Pass	2.435738G	9.01	-20.99	2.30874G	-59.39	2.39576G	-41.36	2.4839G	-49.89	24.648805G	-51.82	1
2437MHz	Pass	2.435738G	9.01	-20.99	1.93594G	-59.48	2.39952G	-40.97	2.48422G	-50.20	16.335309G	-52.08	2
2462MHz	Pass	2.435738G	9.01	-20.99	1.99419G	-59.20	2.39848G	-53.67	2.4839G	-44.60	3.282082G	-52.16	1
2462MHz	Pass	2.435738G	9.01	-20.99	1.976715G	-58.58	2.39728G	-54.96	2.48358G	-42.94	16.310023G	-51.28	2
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.430728G	10.09	-19.91	2.302915G	-59.72	2.39832G	-35.30	2.48526G	-56.65	16.377453G	-51.27	1
2412MHz	Pass	2.430728G	10.09	-19.91	2.17127G	-59.53	2.3992G	-33.71	2.4959G	-57.30	16.900031G	-52.39	2
2437MHz	Pass	2.430728G	10.09	-19.91	1.99419G	-59.65	2.39992G	-37.93	2.48382G	-45.81	15.335105G	-52.45	1
2437MHz	Pass	2.430728G	10.09	-19.91	2.095545G	-58.06	2.39824G	-38.87	2.48534G	-46.27	16.694933G	-52.00	2
2462MHz	Pass	2.430728G	10.09	-19.91	2.15496G	-59.79	2.3976G	-54.39	2.4839G	-42.24	15.219913G	-52.24	1
2462MHz	Pass	2.430728G	10.09	-19.91	2.307575G	-59.14	2.39696G	-53.16	2.48358G	-42.87	16.377453G	-51.18	2
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.428223G	1.69	-28.31	2.12306G	-59.62	2.3968G	-38.70	2.48366G	-55.18	3.228181G	-51.20	1
2422MHz	Pass	2.428223G	1.69	-28.31	1.72918G	-59.45	2.39488G	-37.77	2.48414G	-53.90	16.342316G	-52.25	2
2437MHz	Pass	2.428223G	1.69	-28.31	2.188325G	-58.63	2.39968G	-39.95	2.48398G	-48.30	16.698495G	-51.88	1
2437MHz	Pass	2.428223G	1.69	-28.31	2.10474G	-59.44	2.39984G	-38.64	2.48382G	-44.49	16.667645G	-51.50	2
2452MHz	Pass	2.428223G	1.69	-28.31	1.895205G	-58.88	2.39792G	-52.06	2.4843G	-46.04	6.963859G	-52.36	1
2452MHz	Pass	2.428223G	1.69	-28.31	1.91238G	-59.61	2.39584G	-49.63	2.4843G	-44.91	16.381579G	-51.78	2
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.444422G	7.06	-22.94	1.98953G	-61.06	2.39976G	-24.38	2.4839G	-57.45	3.214652G	-51.12	1
2412MHz	Pass	2.444422G	7.06	-22.94	2.158455G	-60.57	2.39568G	-25.47	2.49966G	-56.26	16.220117G	-55.10	2
2437MHz	Pass	2.444422G	7.06	-22.94	499.495M	-47.12	2.3964G	-43.71	2.48366G	-44.38	3.248367G	-55.52	1
2437MHz	Pass	2.444422G	7.06	-22.94	32.33M	-41.08	2.3992G	-44.05	2.48406G	-50.52	5.625257G	-53.34	2
2462MHz	Pass	2.444422G	7.06	-22.94	43.98M	-61.05	2.39584G	-53.56	2.48446G	-30.37	3.282082G	-52.26	1
2462MHz	Pass	2.444422G	7.06	-22.94	2.11535G	-61.03	2.39576G	-53.08	2.4839G	-30.34	23.319882G	-55.35	2
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.448263G	3.98	-26.02	34.58M	-61.14	2.39984G	-30.97	2.4891G	-53.86	3.228181G	-51.54	1
2422MHz	Pass	2.448263G	3.98	-26.02	34.58M	-61.15	2.39968G	-32.01	2.48718G	-54.54	6.938618G	-55.80	2
2437MHz	Pass	2.448263G	3.98	-26.02	49.465M	-59.96	2.39328G	-34.32	2.4851G	-36.62	3.247813G	-53.57	1
2437MHz	Pass	2.448263G	3.98	-26.02	44.885M	-60.36	2.3976G	-33.98	2.4851G	-38.40	17.696919G	-54.15	2
2452MHz	Pass	2.448263G	3.98	-26.02	812.035M	-61.58	2.3984G	-48.89	2.48446G	-37.23	3.267445G	-53.95	1
2452MHz	Pass	2.448263G	3.98	-26.02	49.465M	-59.00	2.39808G	-48.06	2.48878G	-34.45	16.24696G	-54.78	2

802.11b_(1Mbps)_2TX CSE NdB

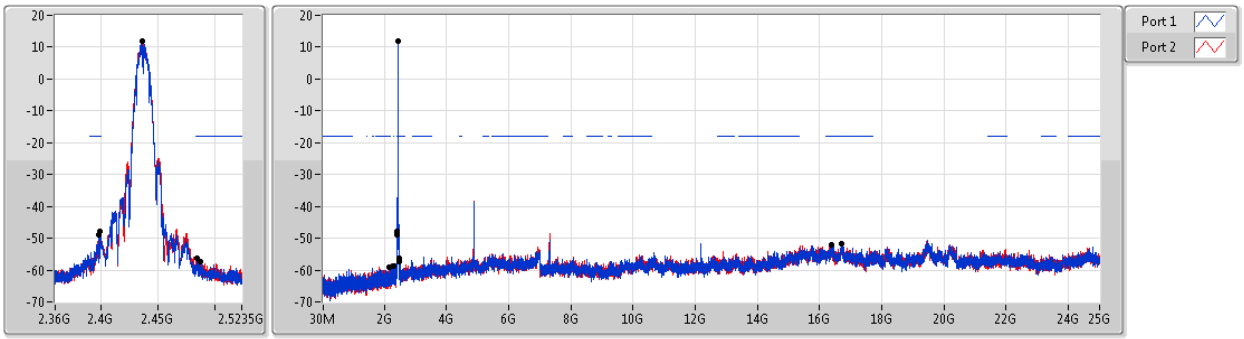
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435905G	11.91	-18.09	2.128165G	-58.69	2.39608G	-41.50	2.49862G	-58.29	7.235136G	-51.73	1
2.435905G	11.91	-18.09	798.9M	-59.86	2.396G	-41.19	2.5011G	-57.49	7.235136G	-48.57	2

802.11b_(1Mbps)_2TX CSE NdB

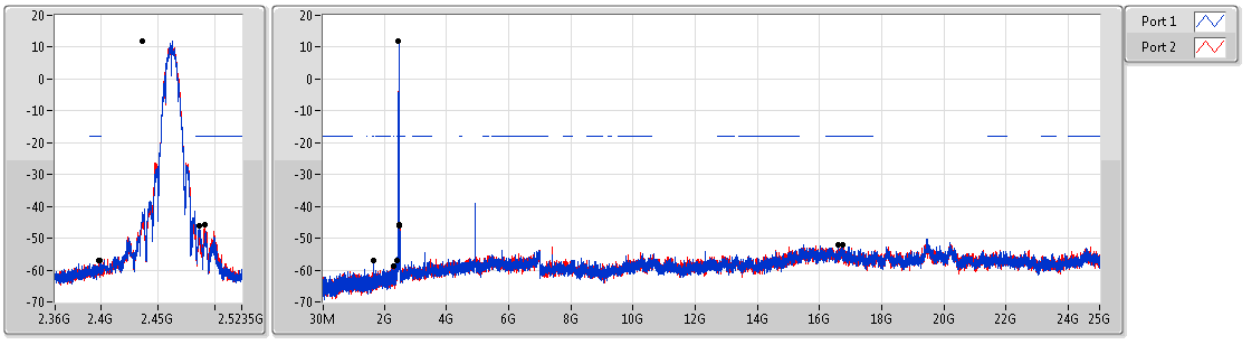
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435905G	11.91	-18.09	2.309905G	-58.88	2.398G	-48.84	2.48726G	-57.39	16.377453G	-52.19	1
2.435905G	11.91	-18.09	2.132825G	-59.09	2.39952G	-48.00	2.4839G	-56.20	16.703362G	-51.77	2

802.11b_(1Mbps)_2TX CSE NdB

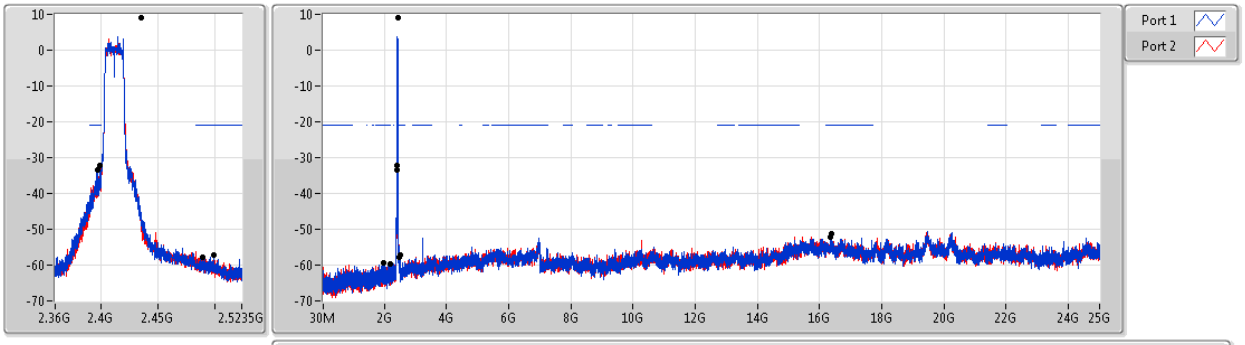
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435905G	11.91	-18.09	1.641195G	-56.87	2.3996G	-57.01	2.48598G	-46.24	16.605027G	-51.95	1
2.435905G	11.91	-18.09	2.30175G	-58.85	2.39848G	-56.98	2.49094G	-45.81	16.751125G	-52.13	2

802.11g_(6Mbps)_2TX **CSE NdB**

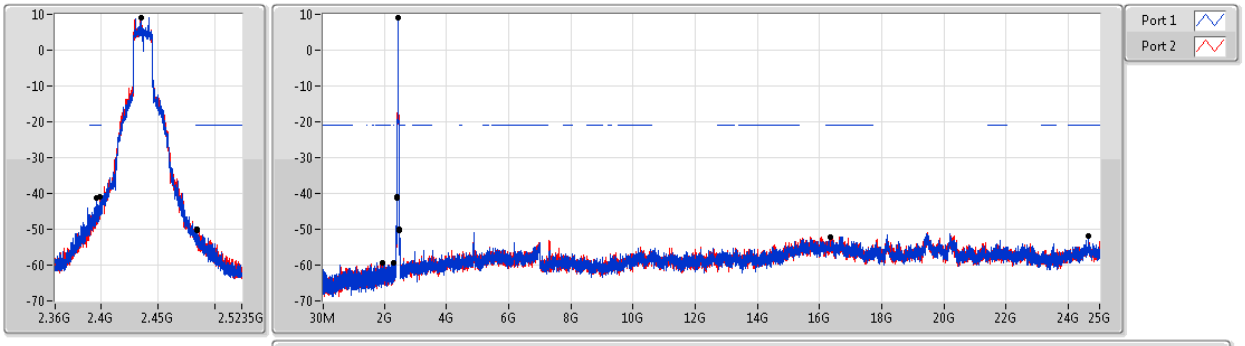
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435738G	9.01	-20.99	1.965065G	-59.52	2.39768G	-33.50	2.49878G	-57.29	16.371834G	-51.19	1
2.435738G	9.01	-20.99	2.172435G	-59.66	2.3992G	-32.11	2.48902G	-57.80	16.349357G	-52.30	2

802.11g_(6Mbps)_2TX **CSE NdB**

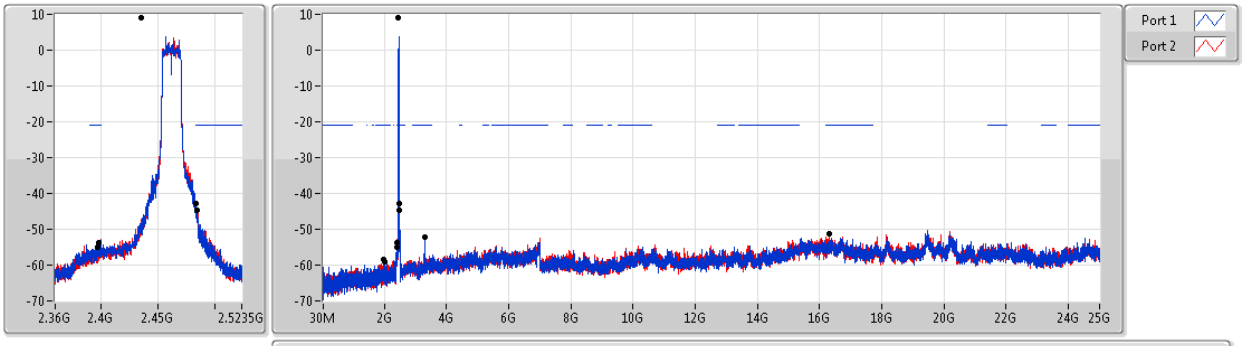
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435738G	9.01	-20.99	2.30874G	-59.39	2.39576G	-41.36	2.4839G	-49.89	24.648805G	-51.82	1
2.435738G	9.01	-20.99	1.93594G	-59.48	2.39952G	-40.97	2.48422G	-50.20	16.335309G	-52.08	2

802.11g_(6Mbps)_2TX **CSE NdB**

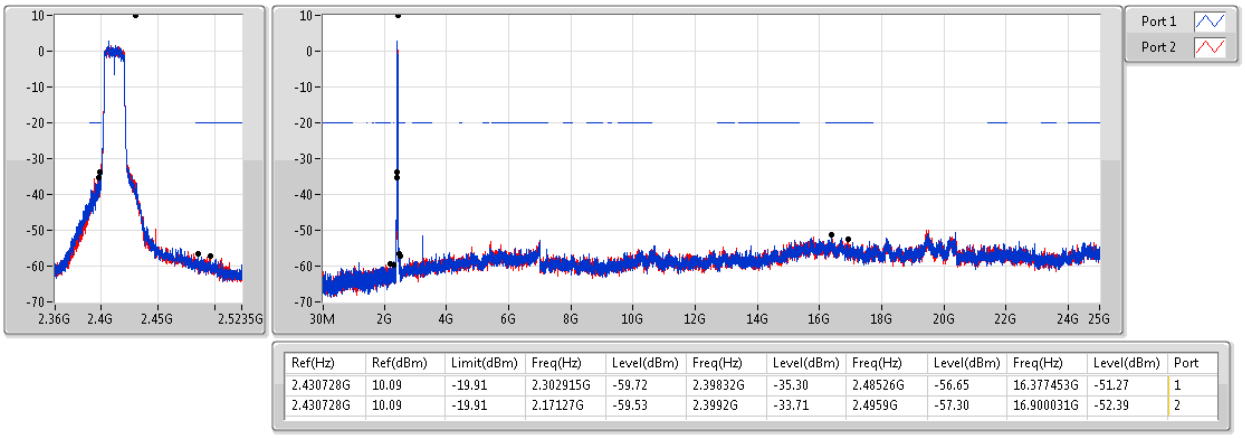
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435738G	9.01	-20.99	1.99419G	-59.20	2.39848G	-53.67	2.4839G	-44.60	3.282082G	-52.16	1
2.435738G	9.01	-20.99	1.976715G	-58.58	2.39728G	-54.96	2.48358G	-42.94	16.310023G	-51.28	2

802.11ac VHT20_Nss1,(MCS0)_2TX **CSE NdB**

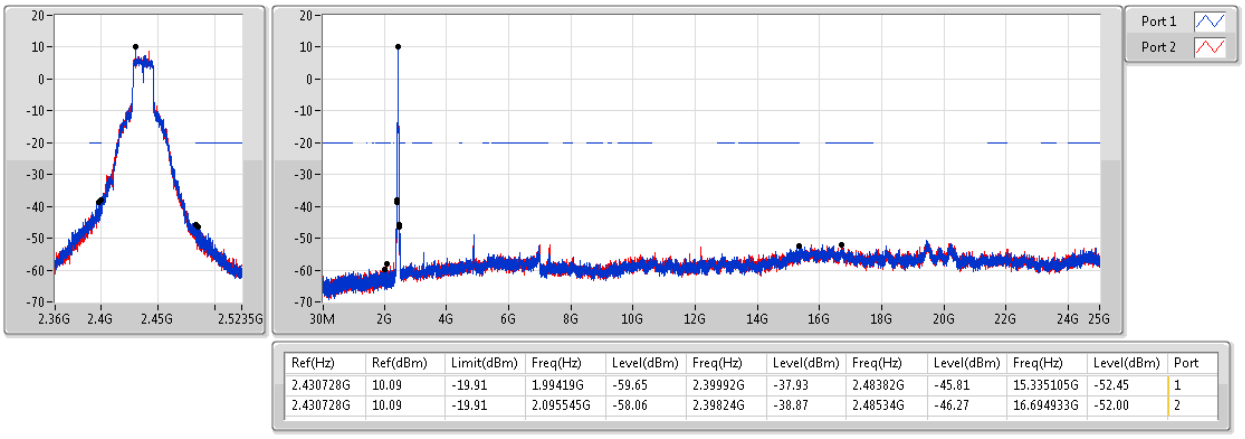
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.430728G	10.09	-19.91	2.302915G	-59.72	2.39832G	-35.30	2.48526G	-56.65	16.377453G	-51.27	1
2.430728G	10.09	-19.91	2.17127G	-59.53	2.3992G	-33.71	2.4959G	-57.30	16.900031G	-52.39	2

802.11ac VHT20_Nss1,(MCS0)_2TX **CSE NdB**

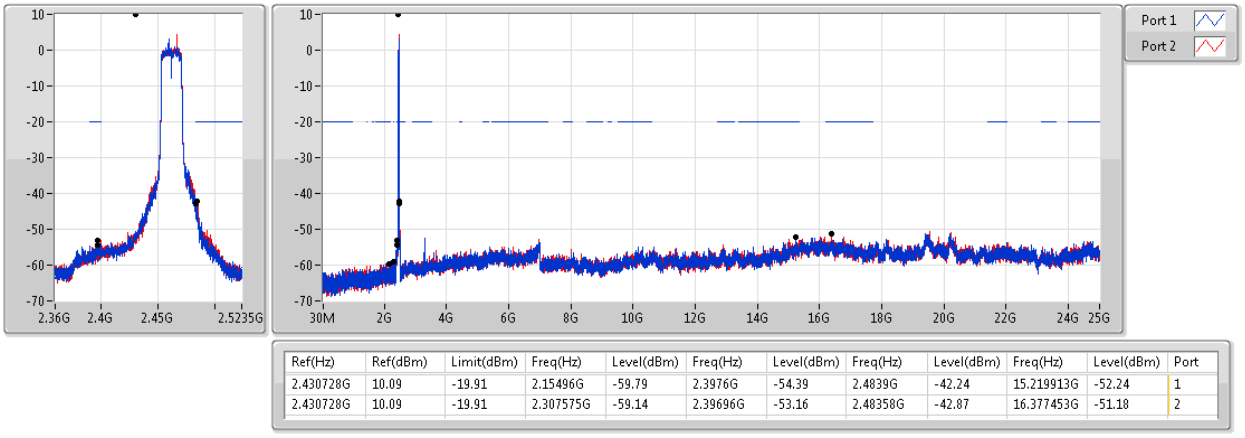
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.430728G	10.09	-19.91	1.99419G	-59.65	2.39992G	-37.93	2.48382G	-45.81	15.335105G	-52.45	1
2.430728G	10.09	-19.91	2.095545G	-58.06	2.39824G	-38.87	2.48534G	-46.27	16.694933G	-52.00	2

802.11ac VHT20_Nss1,(MCS0)_2TX **CSE NdB**

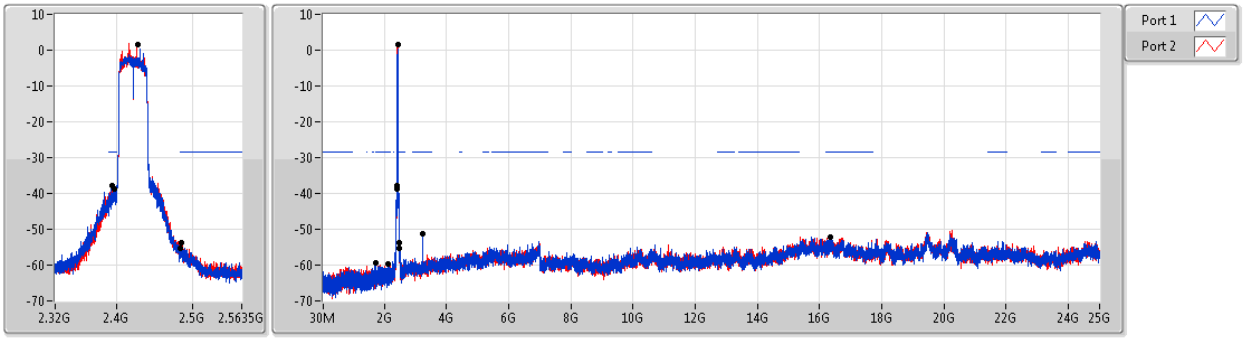
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.430728G	10.09	-19.91	2.15496G	-59.79	2.3976G	-54.39	2.4839G	-42.24	15.219913G	-52.24	1
2.430728G	10.09	-19.91	2.307575G	-59.14	2.39696G	-53.16	2.48358G	-42.87	16.377453G	-51.18	2

802.11ac VHT40_Nss1,(MCS0)_2TX **CSE NdB**

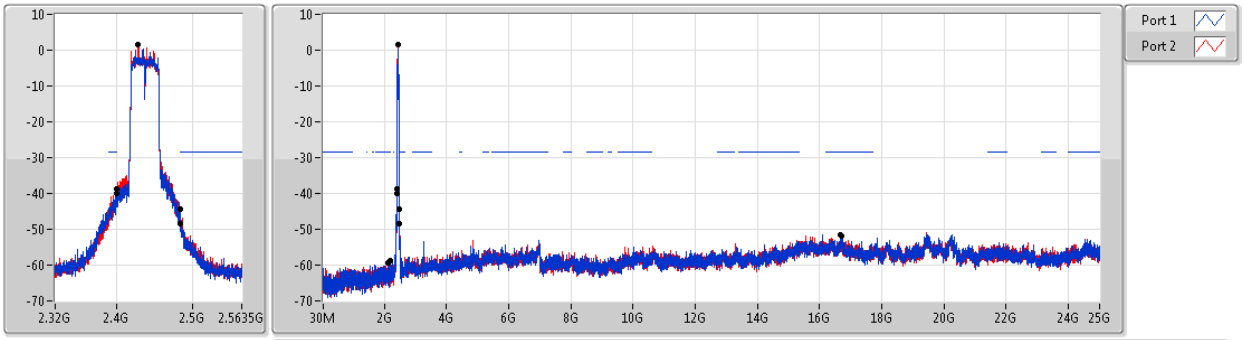
2422MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.428223G	1.69	-28.31	2.12306G	-59.62	2.3968G	-38.70	2.48366G	-55.18	3.228181G	-51.20	1
2.428223G	1.69	-28.31	1.72918G	-59.45	2.39488G	-37.77	2.48414G	-53.90	16.342316G	-52.25	2

802.11ac VHT40_Nss1,(MCS0)_2TX **CSE NdB**

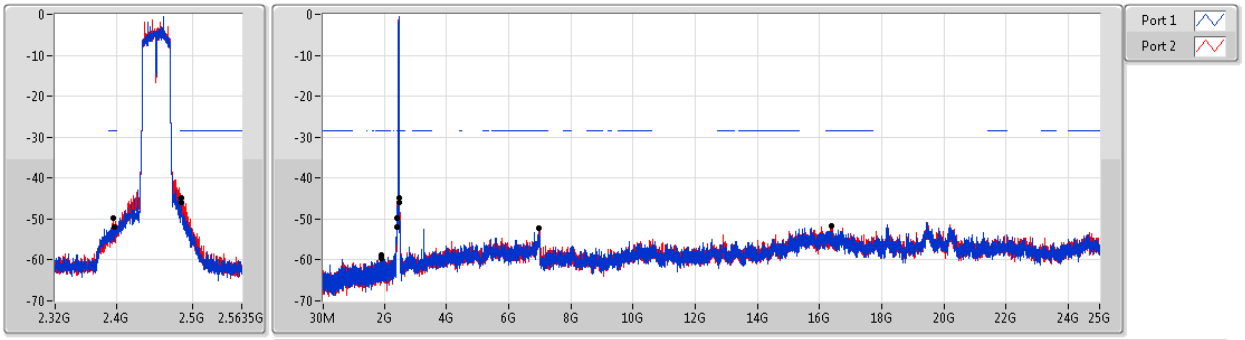
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.428223G	1.69	-28.31	2.188325G	-58.63	2.39968G	-39.95	2.48398G	-48.30	16.698495G	-51.88	1
2.428223G	1.69	-28.31	2.10474G	-59.44	2.39984G	-38.64	2.48382G	-44.49	16.667645G	-51.50	2

802.11ac VHT40_Nss1,(MCS0)_2TX **CSE NdB**

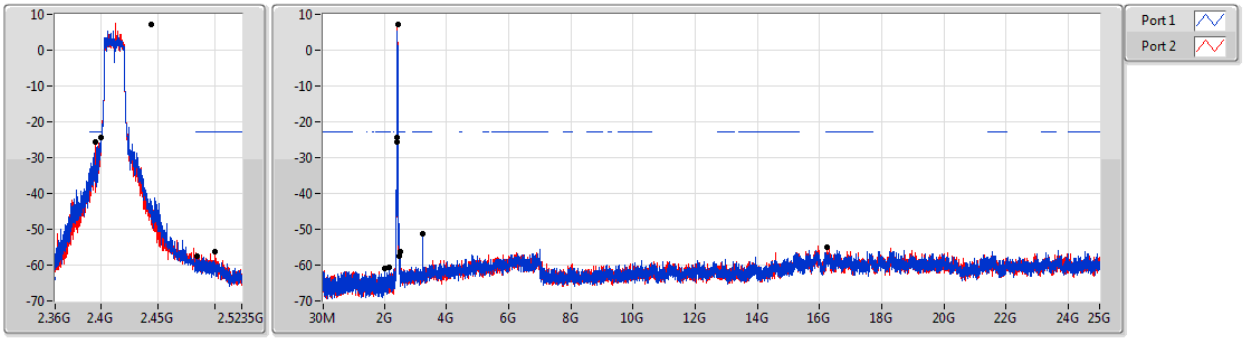
2452MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.428223G	1.69	-28.31	1.895205G	-58.88	2.39792G	-52.06	2.4843G	-46.04	6.963859G	-52.36	1
2.428223G	1.69	-28.31	1.91238G	-59.61	2.39584G	-49.63	2.4843G	-44.91	16.381579G	-51.78	2

802.11ac VHT20-BF_Nss1,(MCS0)_2TX **CSE NdB**

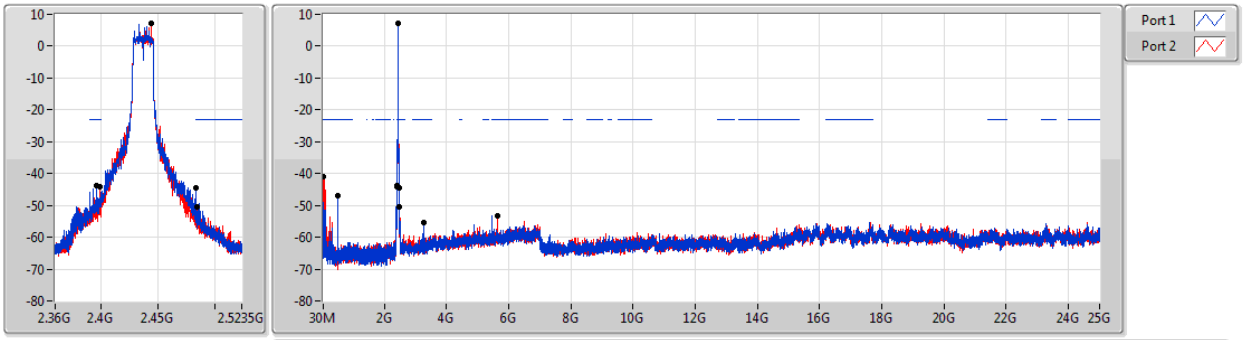
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.444422G	7.06	-22.94	1.98953G	-61.06	2.39976G	-24.38	2.4839G	-57.45	3.214652G	-51.12	1
2.444422G	7.06	-22.94	2.158455G	-60.57	2.39568G	-25.47	2.49966G	-56.26	16.220117G	-55.10	2

802.11ac VHT20-BF_Nss1,(MCS0)_2TX **CSE NdB**

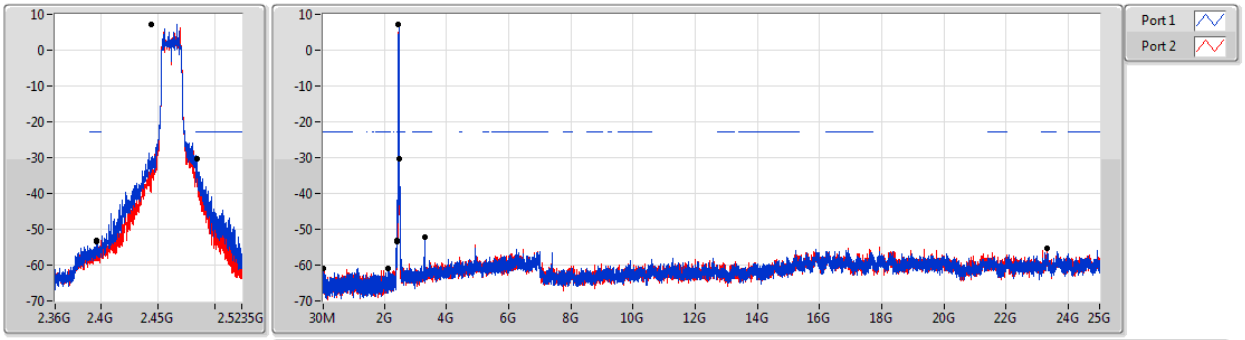
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.444422G	7.06	-22.94	499.495M	-47.12	2.3964G	-43.71	2.48366G	-44.38	3.248367G	-55.52	1
2.444422G	7.06	-22.94	32.33M	-41.08	2.3992G	-44.05	2.48406G	-50.52	5.625257G	-53.34	2

802.11ac VHT20-BF_Nss1,(MCS0)_2TX **CSE NdB**

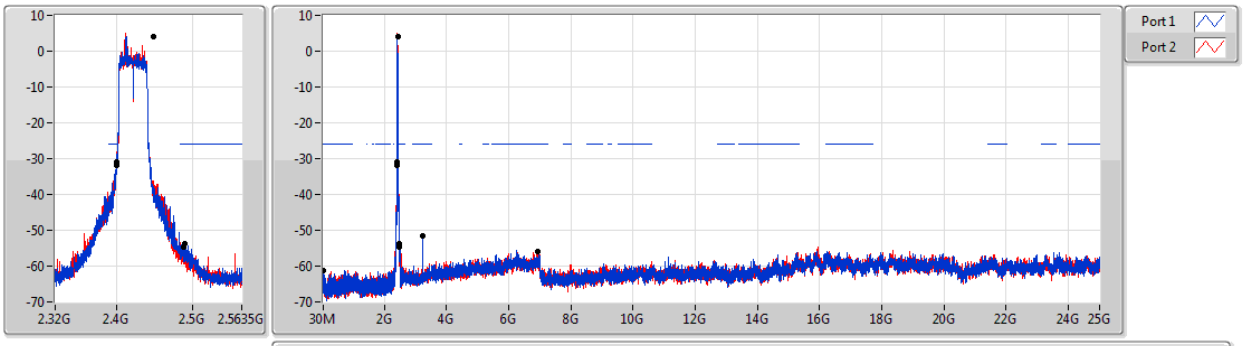
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.444422G	7.06	-22.94	43.98M	-61.05	2.39584G	-53.56	2.48446G	-30.37	3.282082G	-52.26	1
2.444422G	7.06	-22.94	2.11535G	-61.03	2.39576G	-53.08	2.4839G	-30.34	23.319882G	-55.35	2

802.11ac VHT40-BF_Nss1,(MCS0)_2TX **CSE NdB**

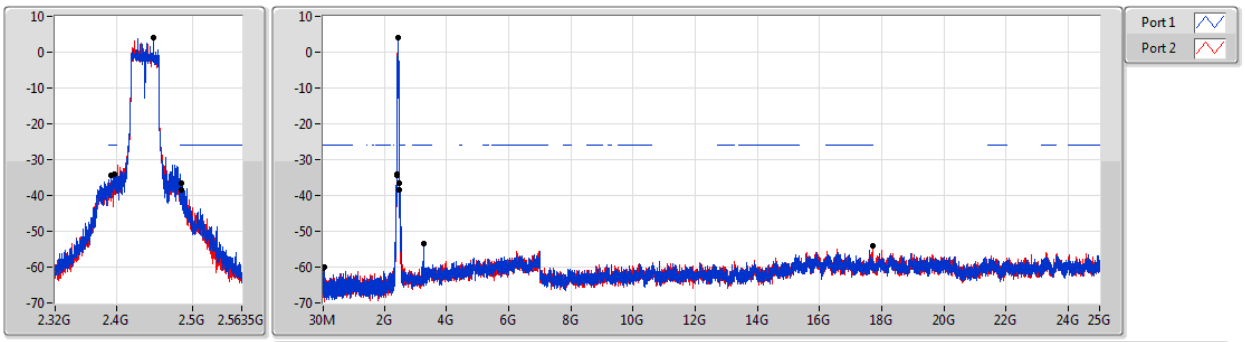
2422MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.448263G	3.98	-26.02	34.58M	-61.14	2.39984G	-30.97	2.4891G	-53.86	3.228181G	-51.54	1
2.448263G	3.98	-26.02	34.58M	-61.15	2.39968G	-32.01	2.48718G	-54.54	6.938618G	-55.80	2

802.11ac VHT40-BF_Nss1,(MCS0)_2TX **CSE NdB**

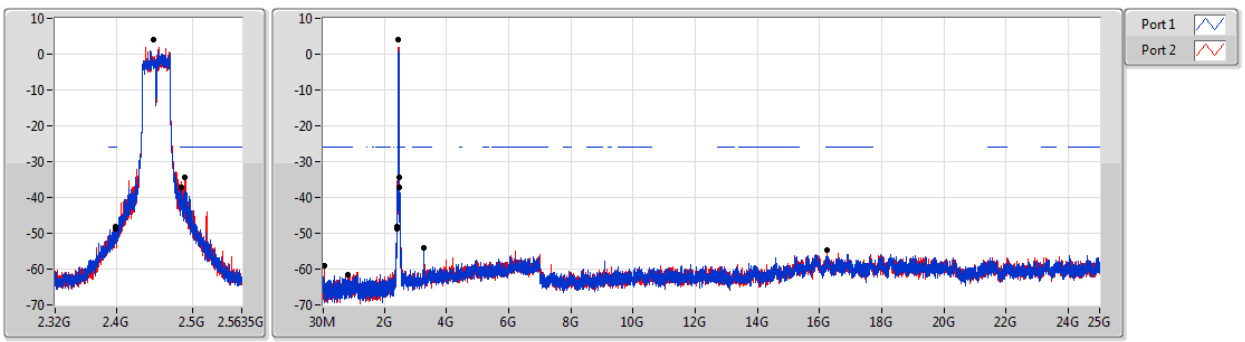
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.448263G	3.98	-26.02	49.465M	-59.96	2.39328G	-34.32	2.4851G	-36.62	3.247813G	-53.57	1
2.448263G	3.98	-26.02	44.885M	-60.36	2.3976G	-33.98	2.4851G	-38.40	17.696919G	-54.15	2

802.11ac VHT40-BF_Nss1,(MCS0)_2TX **CSE NdB**

2452MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.448263G	3.98	-26.02	812.035M	-61.58	2.3984G	-48.89	2.48446G	-37.23	3.267445G	-53.95	1
2.448263G	3.98	-26.02	49.465M	-59.00	2.39808G	-48.06	2.48878G	-34.45	16.24696G	-54.78	2

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions 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.

3.6.2 Measuring Instruments

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

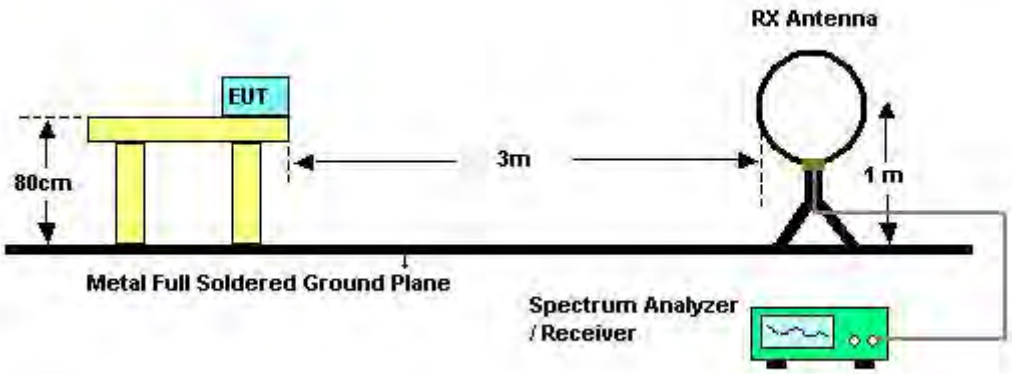
3.6.3 Test Procedures

Test Method		
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
▪ Refer as ANSI C63.10, clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.		
▪ For the transmitter unwanted emissions shall be measured using following options below:		
	▪ Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.	
		☐ Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle ≥98%)
		☐ Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
		☒ Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW≥1/T).
		☐ 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 558074, clause 12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:		
	▪ Refer as FCC KDB 558074 clause 13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.	
	▪ Refer as FCC KDB 558074, clause 13.2 (ANSI C63.10, clause 6.9.3) for marker-delta method for band-edge measurements.	
	▪ Refer as FCC KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).	
▪ For conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 12.2.2.		
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB	
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.	

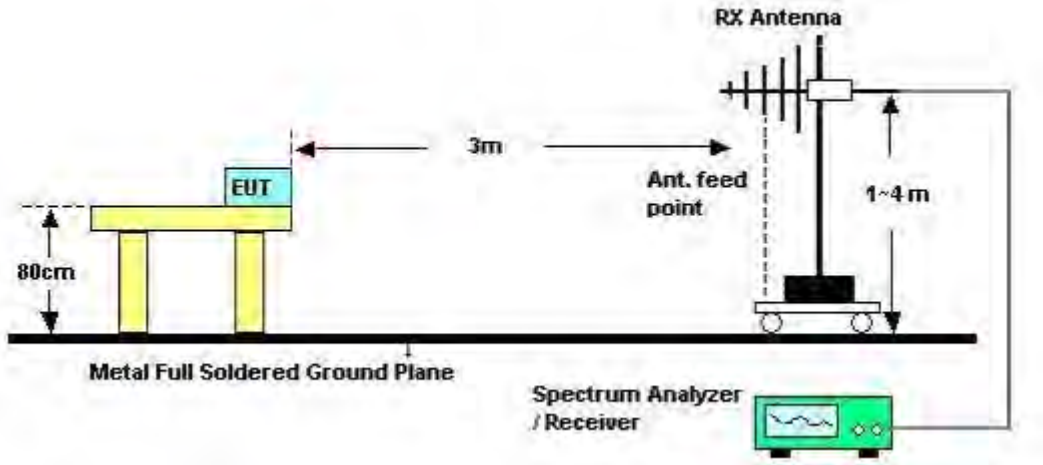
3.6.4 Test Setup

Transmitter Radiated Emissions

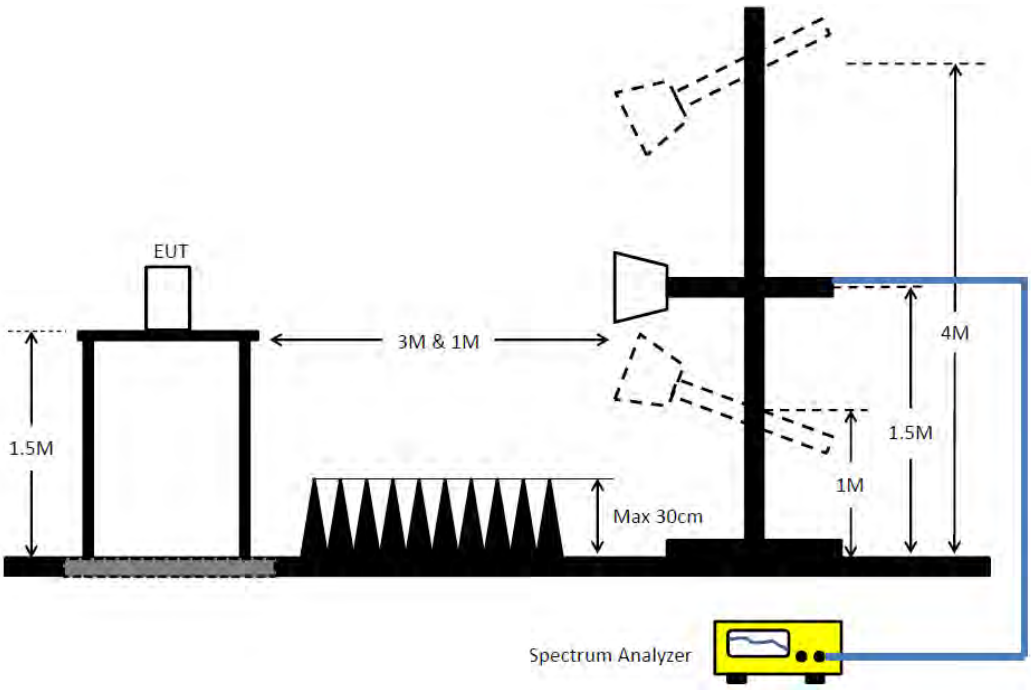
9kHz ~30MHz



30MHz~1GHz



Above 1GHz

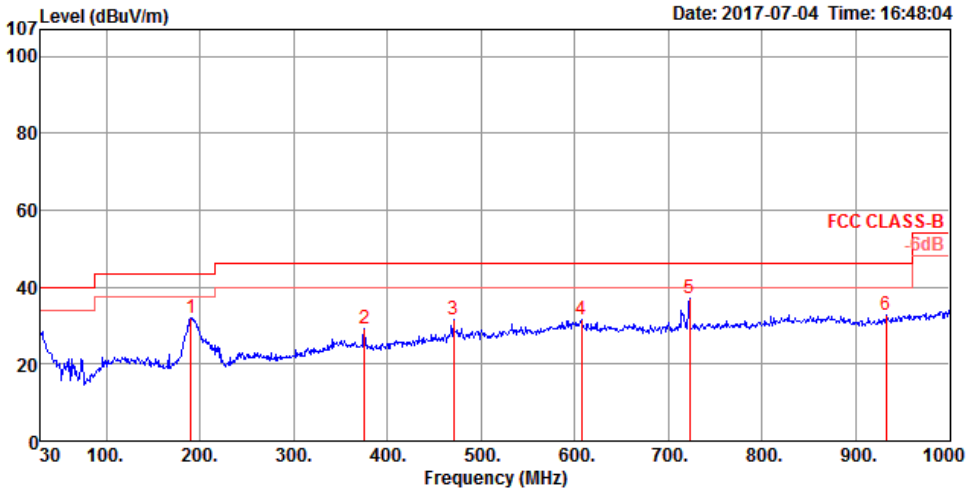


3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

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

3.6.6 Test Result of Transmitter Radiated Unwanted Emissions

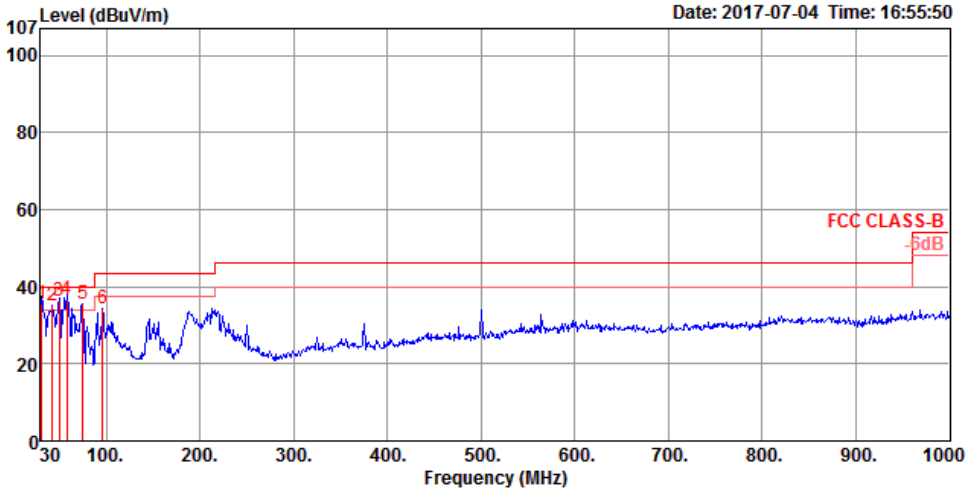
RSE below 1GHz Result			
Operating Mode	3	**Polarization**	Horizontal
Operating Function	Normal Link		



	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	190.05	32.09	43.50	-11.41	48.33	1.10	15.15	32.49	100	0	Peak	HORIZONTAL
2	375.32	29.40	46.00	-16.60	39.59	1.50	20.76	32.45	100	0	Peak	HORIZONTAL
3	470.38	31.72	46.00	-14.28	39.49	1.70	23.01	32.48	100	0	Peak	HORIZONTAL
4	607.15	31.49	46.00	-14.51	37.27	1.94	24.84	32.56	100	0	Peak	HORIZONTAL
5	722.58	37.02	46.00	-8.98	41.97	2.13	25.38	32.46	100	0	Peak	HORIZONTAL
6	932.10	32.59	46.00	-13.41	35.02	2.42	26.68	31.53	100	0	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	3	**Polarization**	Vertical
Operating Function	Normal Link		



	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	35.52	40.00	-4.48	43.70	0.53	23.82	32.53	102	188	QP	VERTICAL
2	42.61	35.19	40.00	-4.81	49.94	0.57	17.19	32.51	300	360	Peak	VERTICAL
3	49.40	36.40	40.00	-3.60	54.20	0.61	14.09	32.50	113	156	QP	VERTICAL
4	58.13	36.82	40.00	-3.18	56.20	0.61	12.52	32.51	127	214	QP	VERTICAL
5	74.62	35.59	40.00	-4.41	55.21	0.75	12.16	32.53	300	360	Peak	VERTICAL
6	95.96	34.48	43.50	-9.02	49.96	0.87	16.21	32.56	300	360	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.)

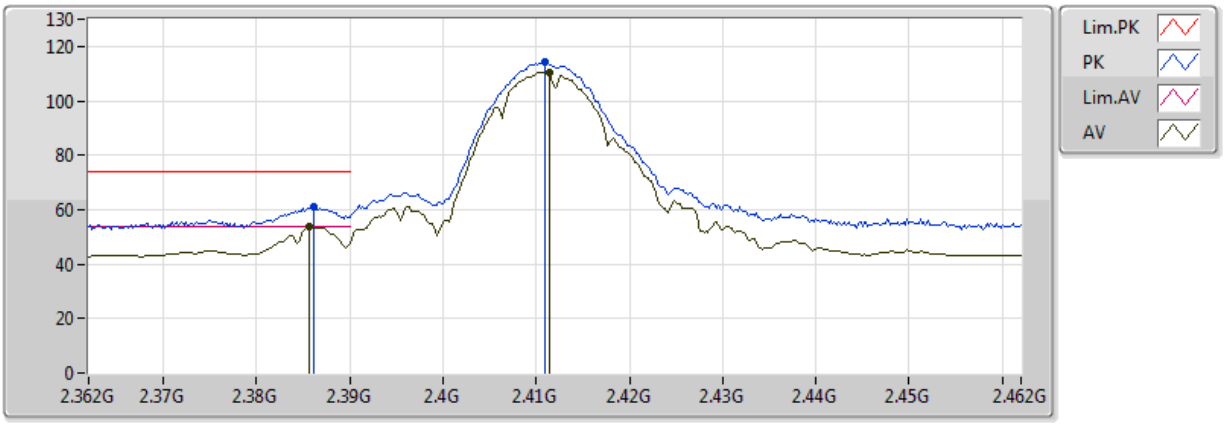
RSE Above 1GHz Result

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	PK	2.4854G	73.98	74.00	-0.02	33.19	3	Vertical	137	2.27	-

802.11b_(1Mbps)_2TX

2412MHz_TX

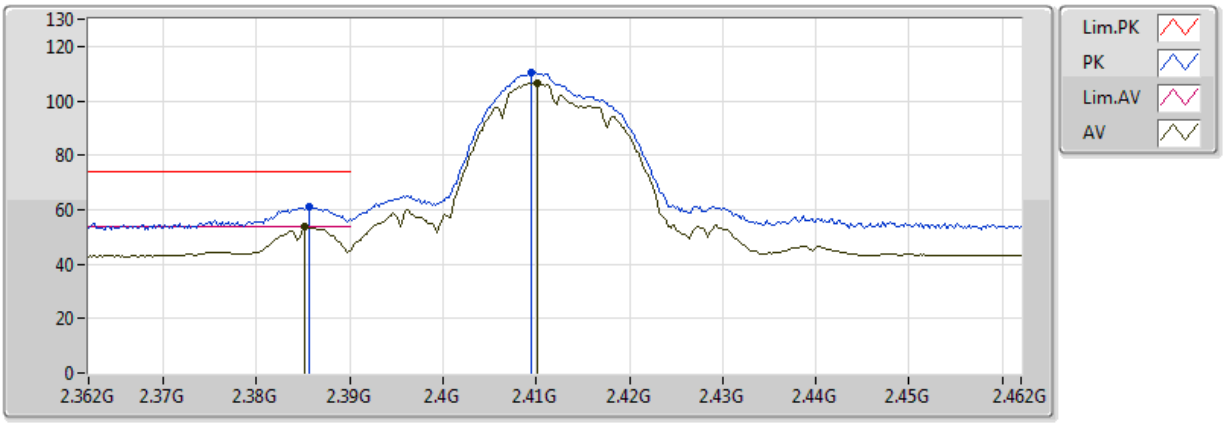


20170620
EUT Z_2TX
Setting 19
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3856G	53.62	54.00	-0.38	31.04	3	Vertical	124	1.98
AV	2.4114G	110.46	Inf	-Inf	31.01	3	Vertical	124	1.98
PK	2.3862G	61.29	74.00	-12.71	31.04	3	Vertical	124	1.98
PK	2.411G	114.33	Inf	-Inf	31.01	3	Vertical	124	1.98

802.11b_(1Mbps)_2TX

2412MHz_TX

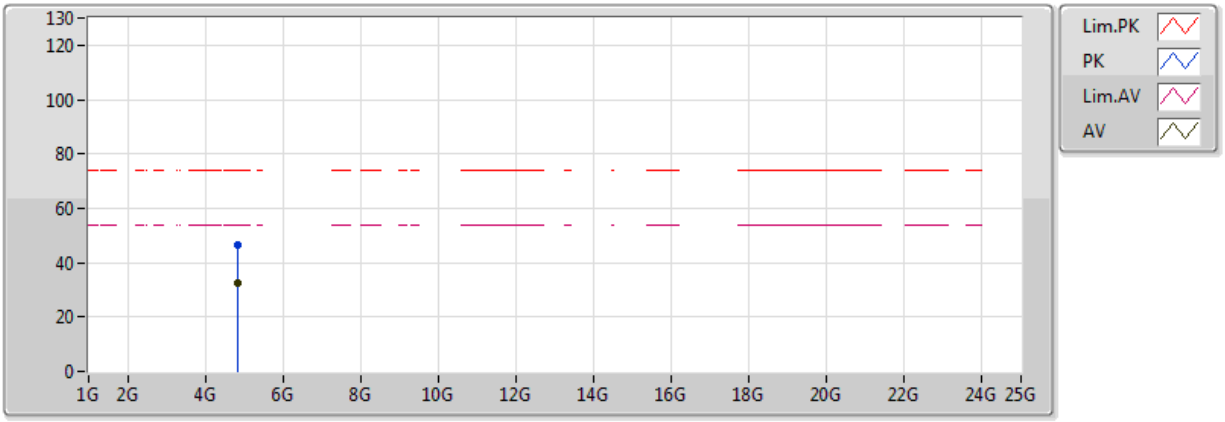


20170620
EUT Z_2TX
Setting 19
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3852G	53.64	54.00	-0.36	31.04	3	Horizontal	45	1.00
AV	2.4102G	106.60	Inf	-Inf	31.01	3	Horizontal	45	1.00
PK	2.3856G	61.01	74.00	-12.99	31.04	3	Horizontal	45	1.00
PK	2.4094G	110.30	Inf	-Inf	31.01	3	Horizontal	45	1.00

802.11b_(1Mbps)_2TX

2412MHz_TX

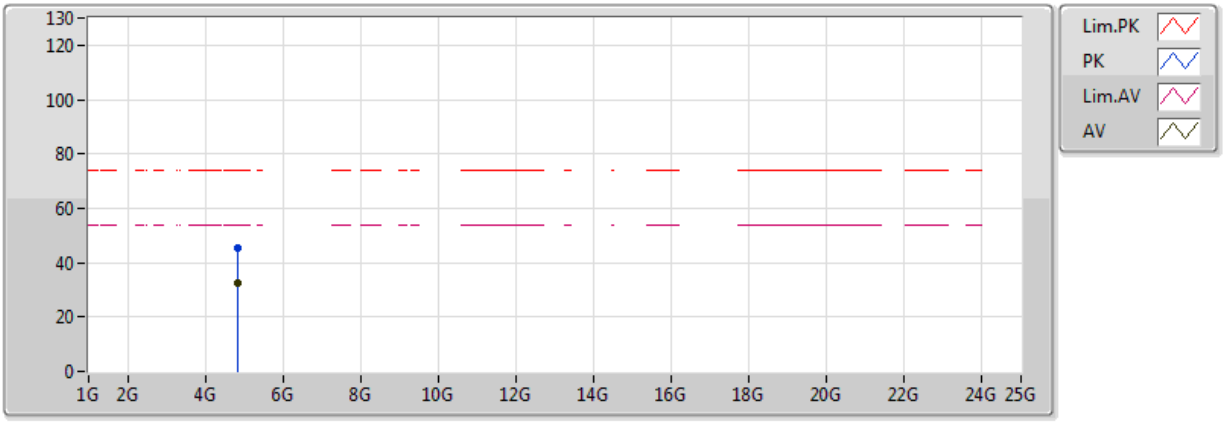


20170620
EUT Z_2TX
Setting 19
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.824024G	32.76	54.00	-21.24	3.40	3	Vertical	112	1.23
PK	4.823892G	46.28	74.00	-27.72	3.40	3	Vertical	112	1.23

802.11b_(1Mbps)_2TX

2412MHz_TX

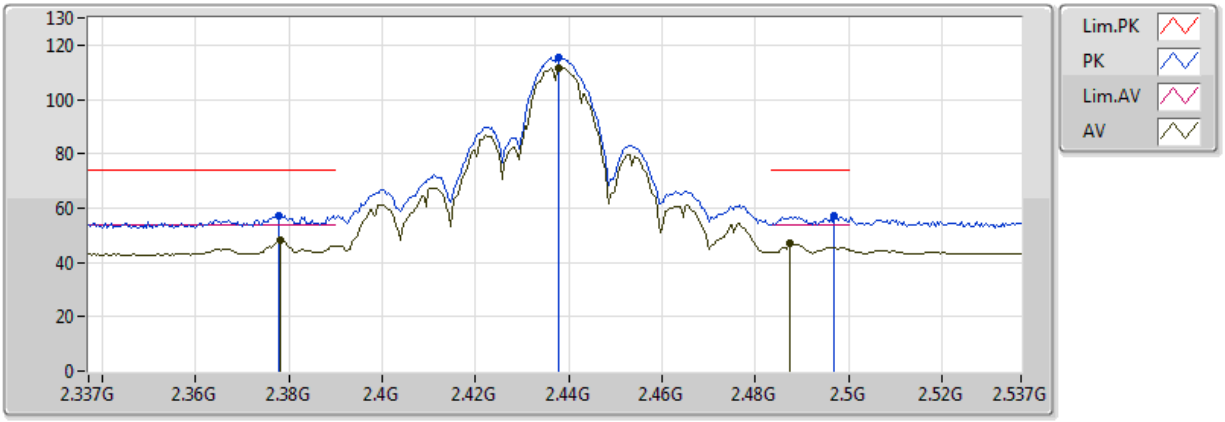


20170620
EUT Z_2TX
Setting 19
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.82388G	32.58	54.00	-21.42	3.40	3	Horizontal	313	1.50
PK	4.824064G	45.51	74.00	-28.49	3.40	3	Horizontal	313	1.50

802.11b_(1Mbps)_2TX

2437MHz_TX

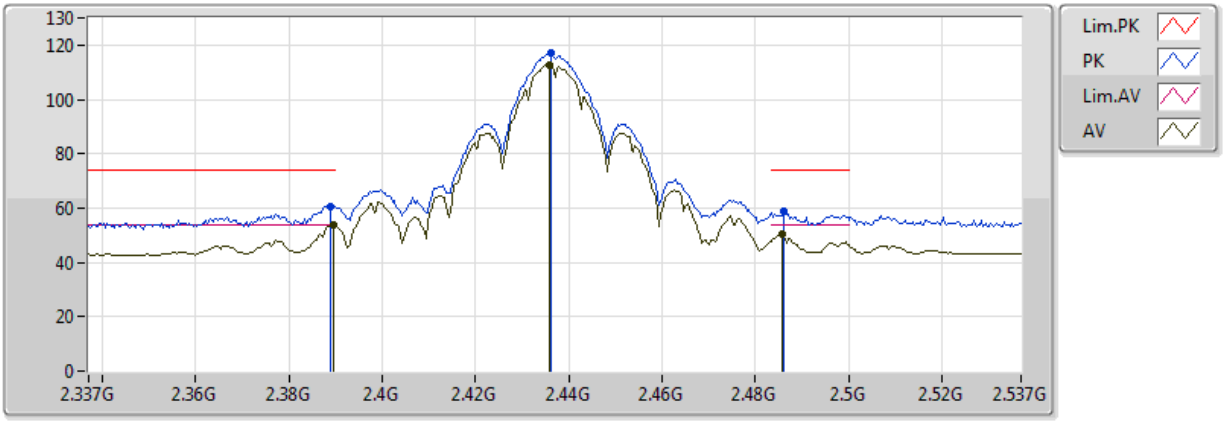


20170620
EUT Z_2TX
Setting 23
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3782G	47.93	54.00	-6.07	31.05	3	Vertical	115	1.99
AV	2.4378G	111.59	Inf	-Inf	30.97	3	Vertical	115	1.99
AV	2.4874G	46.98	54.00	-7.02	30.92	3	Vertical	115	1.99
PK	2.3778G	57.30	74.00	-16.70	31.05	3	Vertical	115	1.99
PK	2.4378G	115.68	Inf	-Inf	30.97	3	Vertical	115	1.99
PK	2.497G	56.89	74.00	-17.11	30.90	3	Vertical	115	1.99

802.11b_(1Mbps)_2TX

2437MHz_TX

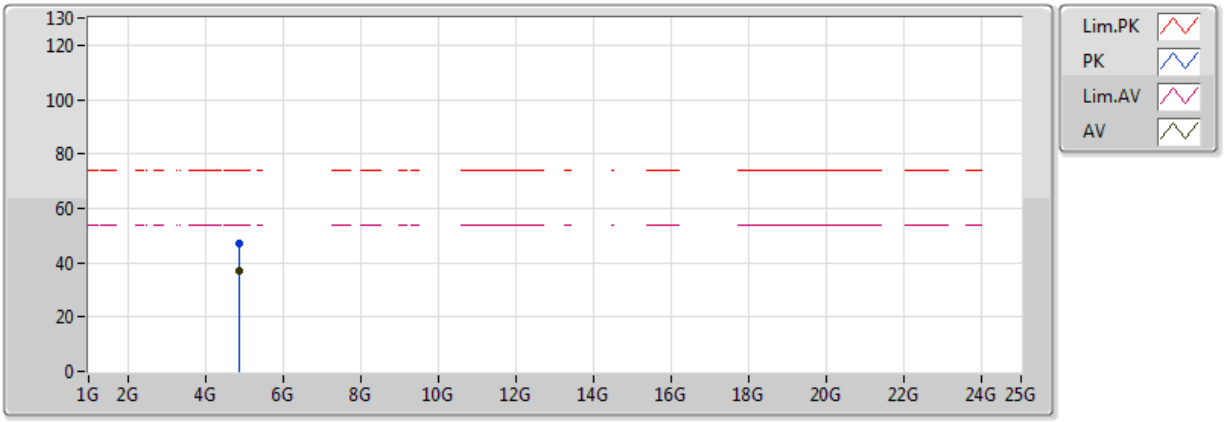


20170620
EUT Z_2TX
Setting 23
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3894G	53.66	54.00	-0.34	31.04	3	Horizontal	307	1.16
AV	2.4358G	112.74	Inf	-Inf	30.98	3	Horizontal	307	1.16
AV	2.4858G	50.48	54.00	-3.52	30.92	3	Horizontal	307	1.16
PK	2.389G	60.73	74.00	-13.27	31.04	3	Horizontal	307	1.16
PK	2.4362G	116.84	Inf	-Inf	30.98	3	Horizontal	307	1.16
PK	2.4862G	59.09	74.00	-14.91	30.92	3	Horizontal	307	1.16

802.11b_(1Mbps)_2TX

2437MHz_TX

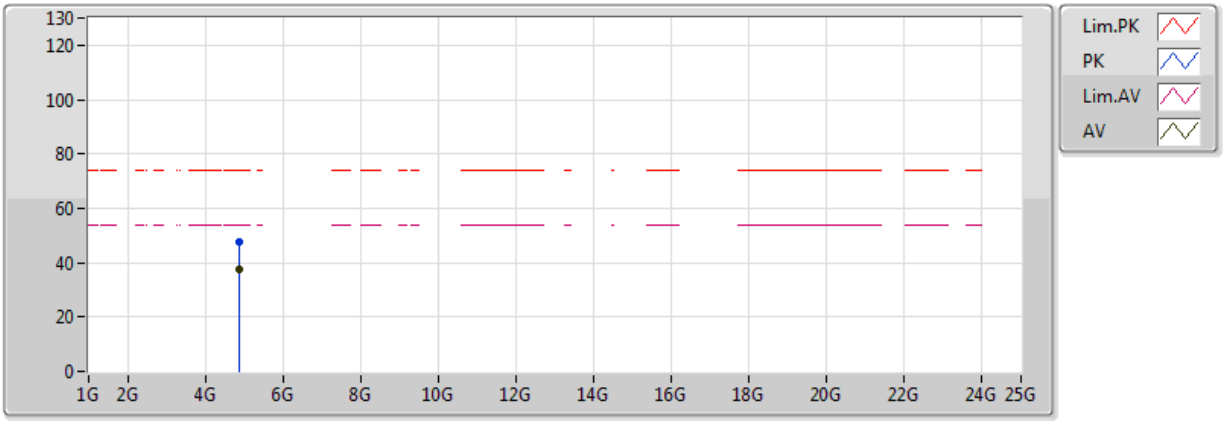


20170620
EUT Z_2TX
Setting 23
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.873948G	37.02	54.00	-16.98	3.55	3	Vertical	25	1.29
PK	4.873704G	47.09	74.00	-26.91	3.55	3	Vertical	25	1.29

802.11b_(1Mbps)_2TX

2437MHz_TX

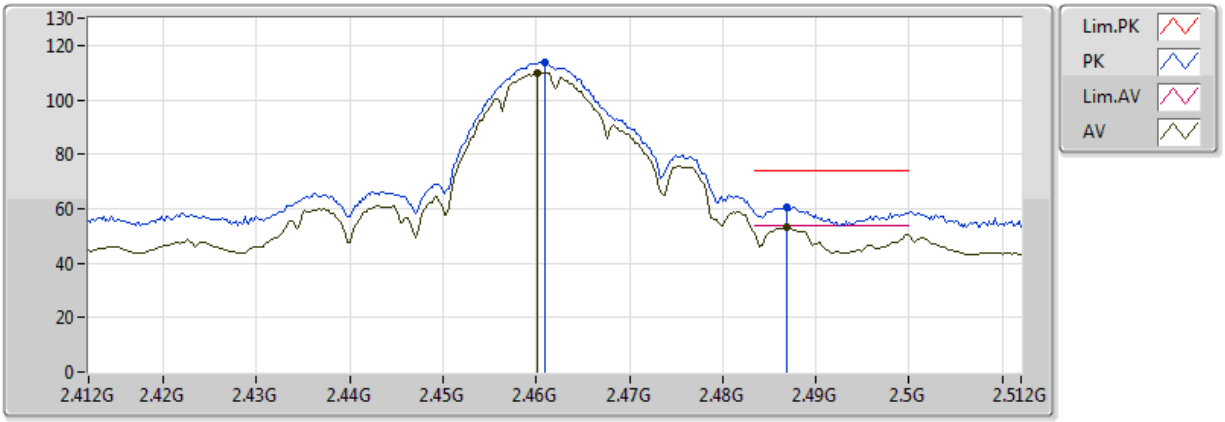


20170620
EUT Z_2TX
Setting 23
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.874028G	37.79	54.00	-16.21	3.55	3	Horizontal	269	1.00
PK	4.8739G	47.67	74.00	-26.33	3.55	3	Horizontal	269	1.00

802.11b_(1Mbps)_2TX

2462MHz_TX

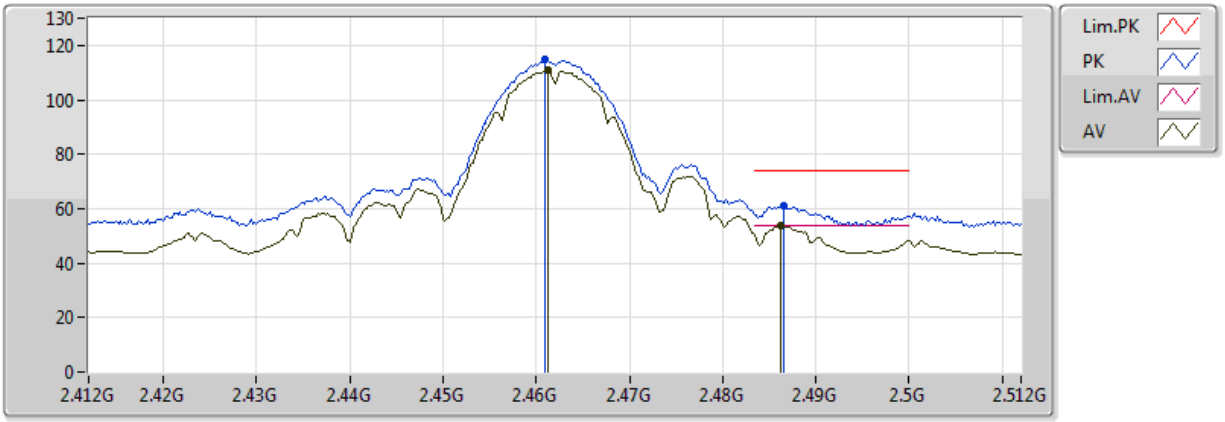


20170620
EUT Z_2TX
Setting 21.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.4602G	110.04	Inf	-Inf	30.95	3	Vertical	124	1.99
AV	2.4868G	53.08	54.00	-0.92	30.92	3	Vertical	124	1.99
PK	2.461G	113.81	Inf	-Inf	30.95	3	Vertical	124	1.99
PK	2.4868G	60.48	74.00	-13.52	30.92	3	Vertical	124	1.99

802.11b_(1Mbps)_2TX

2462MHz_TX

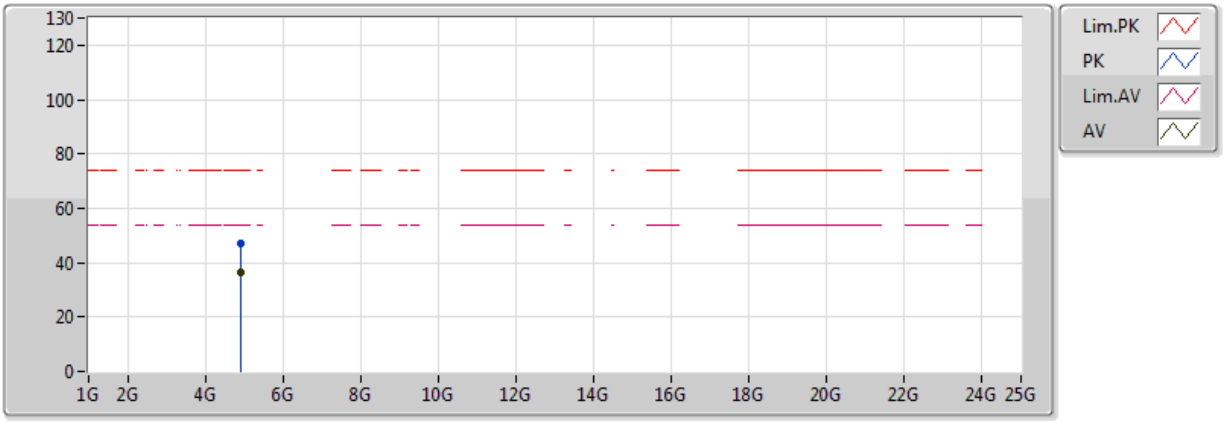


20170620
EUT Z_2TX
Setting 21.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.4612G	110.84	Inf	-Inf	30.95	3	Horizontal	46	1.37
AV	2.4862G	53.77	54.00	-0.23	30.92	3	Horizontal	46	1.37
PK	2.461G	114.60	Inf	-Inf	30.95	3	Horizontal	46	1.37
PK	2.4866G	61.30	74.00	-12.70	30.92	3	Horizontal	46	1.37

802.11b_(1Mbps)_2TX

2462MHz_TX

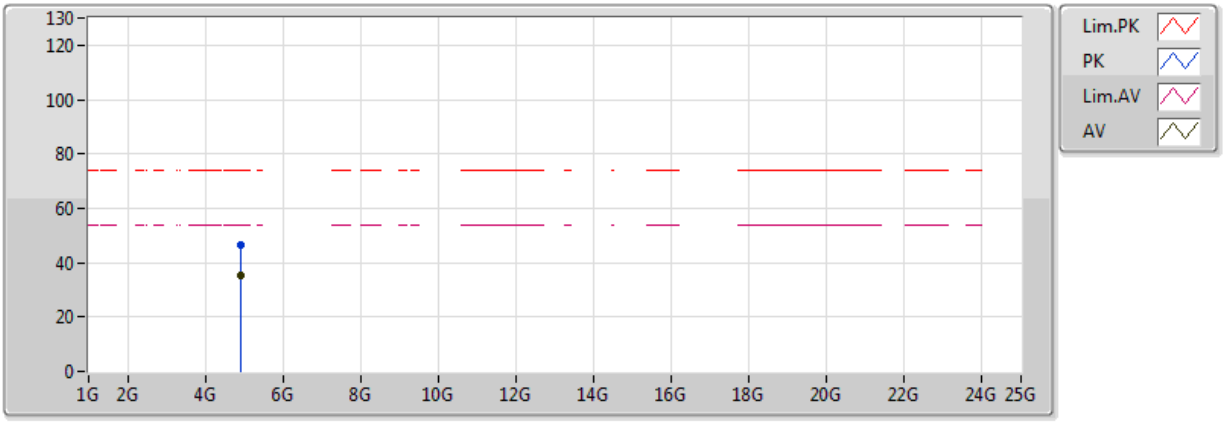


20170620
EUT Z_2TX
Setting 21.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.923988G	36.37	54.00	-17.63	3.70	3	Vertical	14	1.25
PK	4.924008G	47.16	74.00	-26.84	3.70	3	Vertical	14	1.25

802.11b_(1Mbps)_2TX

2462MHz_TX

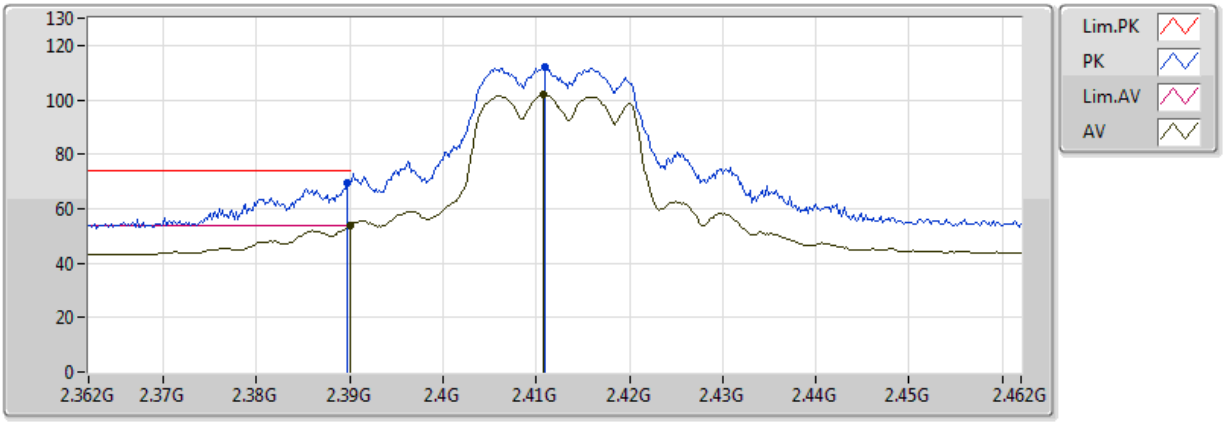


20170620
EUT Z_2TX
Setting 21.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.924G	35.39	54.00	-18.61	3.70	3	Horizontal	294	1.14
PK	4.923912G	46.61	74.00	-27.39	3.70	3	Horizontal	294	1.14

802.11g_(6Mbps)_2TX

2412MHz_TX

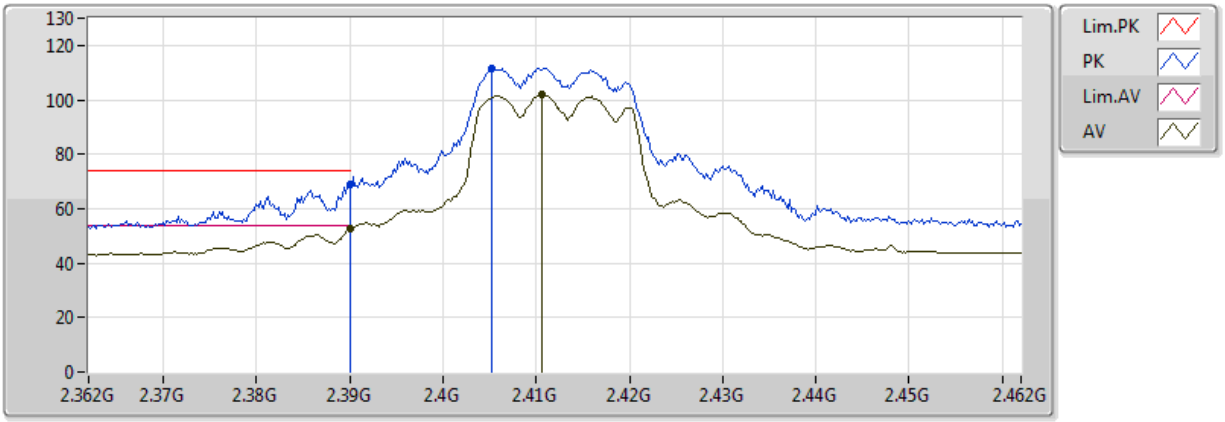


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	53.97	54.00	-0.03	31.04	3	Vertical	120	1.86
AV	2.4108G	101.78	Inf	-Inf	31.01	3	Vertical	120	1.86
PK	2.3898G	69.63	74.00	-4.37	31.04	3	Vertical	120	1.86
PK	2.411G	111.84	Inf	-Inf	31.01	3	Vertical	120	1.86

802.11g_(6Mbps)_2TX

2412MHz_TX

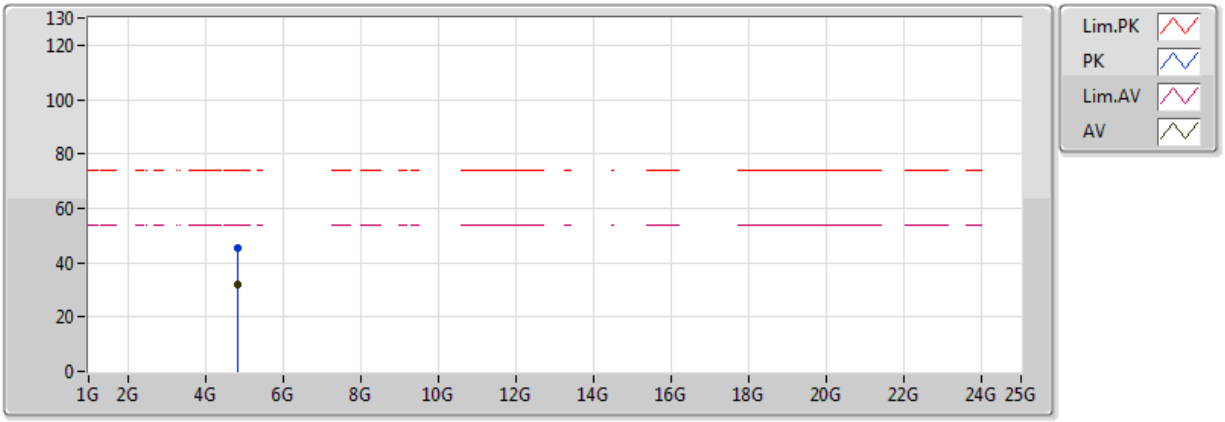


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	52.63	54.00	-1.37	31.04	3	Horizontal	286	1.26
AV	2.4106G	101.71	Inf	-Inf	31.01	3	Horizontal	286	1.26
PK	2.389998G	68.89	74.00	-5.11	31.04	3	Horizontal	286	1.26
PK	2.4052G	111.51	Inf	-Inf	31.01	3	Horizontal	286	1.26

802.11g_(6Mbps)_2TX

2412MHz_TX

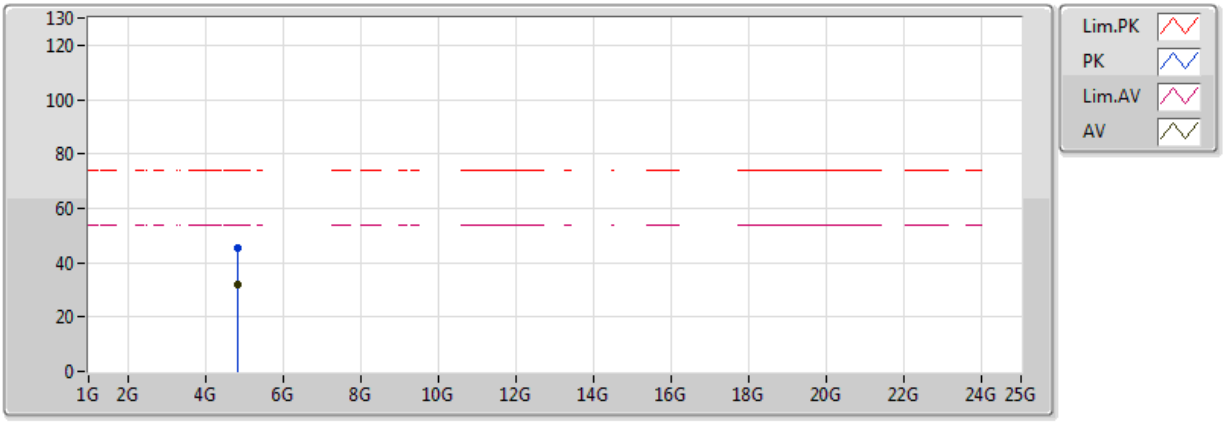


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.823836G	32.15	54.00	-21.85	3.40	3	Vertical	284	1.50
PK	4.823176G	45.31	74.00	-28.69	3.40	3	Vertical	284	1.50

802.11g_(6Mbps)_2TX

2412MHz_TX

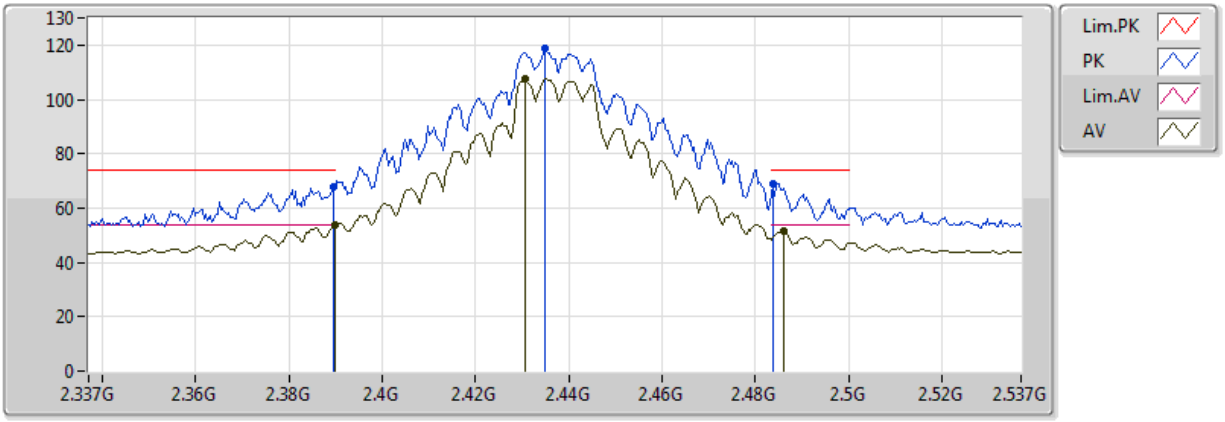


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.824692G	32.12	54.00	-21.88	3.40	3	Horizontal	176	1.50
PK	4.823956G	45.19	74.00	-28.81	3.40	3	Horizontal	176	1.50

802.11g_(6Mbps)_2TX

2437MHz_TX

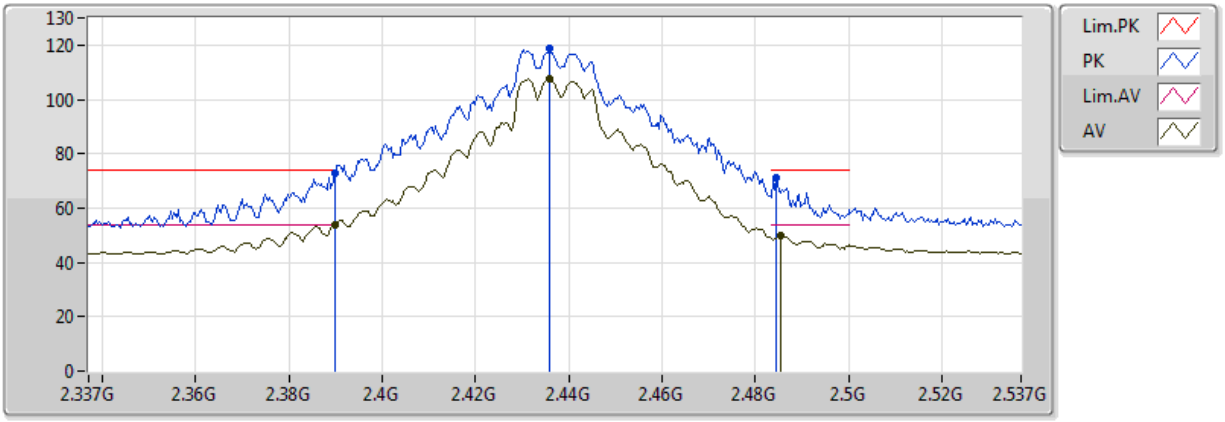


20170620
EUT Z_2TX
Setting 23.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3898G	53.68	54.00	-0.32	31.04	3	Vertical	120	1.99
AV	2.4306G	107.35	Inf	-Inf	30.98	3	Vertical	120	1.99
AV	2.4862G	51.59	54.00	-2.41	30.92	3	Vertical	120	1.99
PK	2.3894G	67.83	74.00	-6.17	31.04	3	Vertical	120	1.99
PK	2.435G	118.63	Inf	-Inf	30.98	3	Vertical	120	1.99
PK	2.4838G	69.01	74.00	-4.99	30.92	3	Vertical	120	1.99

802.11g_(6Mbps)_2TX

2437MHz_TX

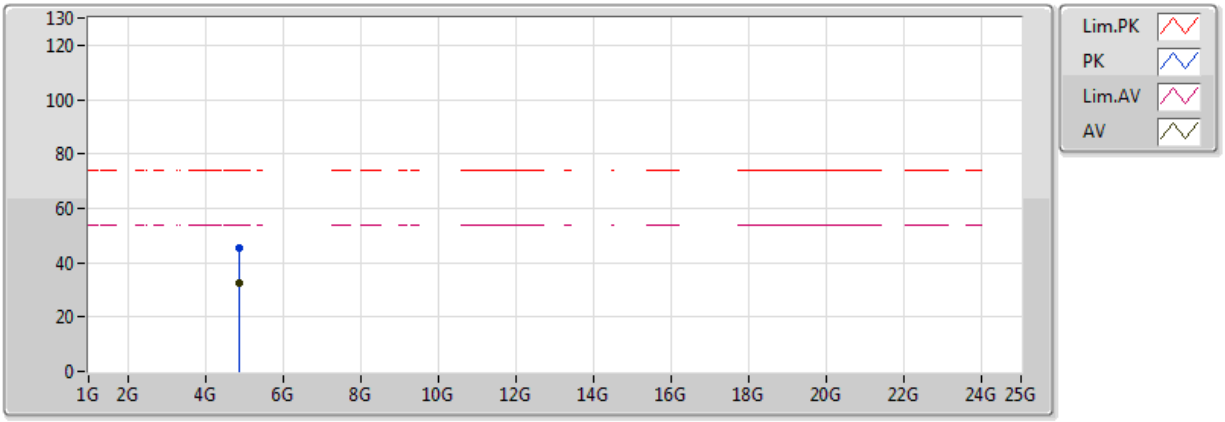


20170620
EUT Z_2TX
Setting 23.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3898G	53.97	54.00	-0.03	31.04	3	Horizontal	284	1.50
AV	2.4358G	107.44	Inf	-Inf	30.98	3	Horizontal	284	1.50
AV	2.4854G	49.67	54.00	-4.33	30.92	3	Horizontal	284	1.50
PK	2.3898G	72.96	74.00	-1.04	31.04	3	Horizontal	284	1.50
PK	2.4358G	118.73	Inf	-Inf	30.98	3	Horizontal	284	1.50
PK	2.4846G	71.41	74.00	-2.59	30.92	3	Horizontal	284	1.50

802.11g_(6Mbps)_2TX

2437MHz_TX

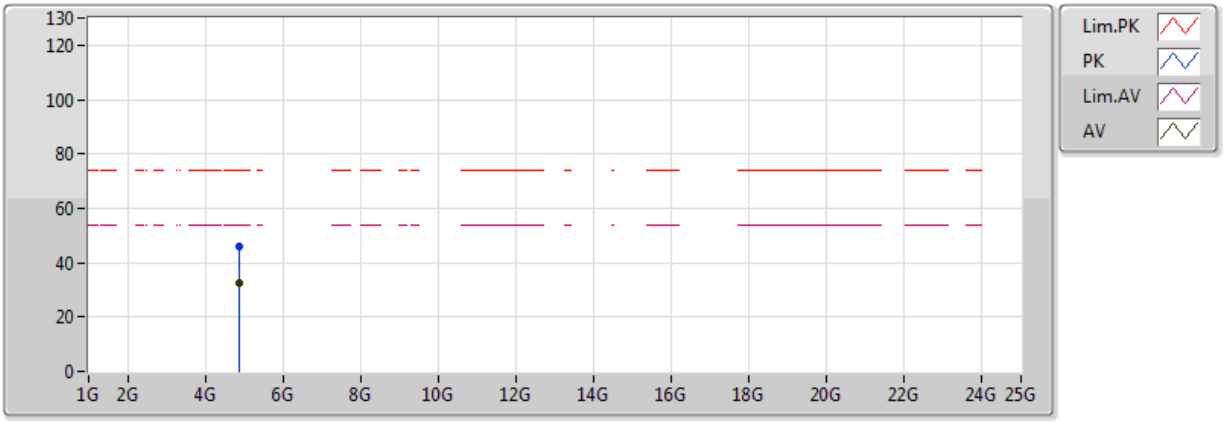


20170620
EUT Z_2TX
Setting 23.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.87494G	32.36	54.00	-21.64	3.55	3	Vertical	192	1.50
PK	4.87462G	45.36	74.00	-28.64	3.55	3	Vertical	192	1.50

802.11g_(6Mbps)_2TX

2437MHz_TX

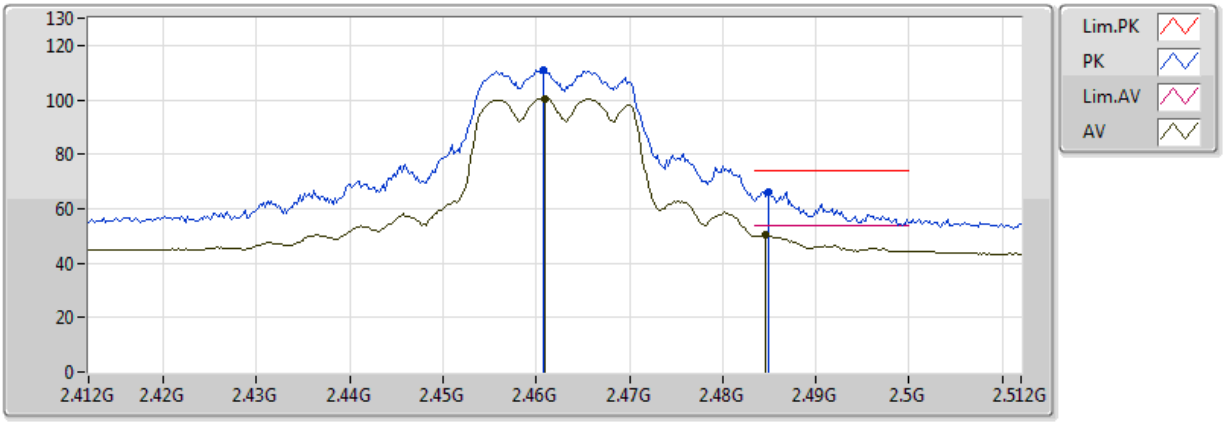


20170620
EUT Z_2TX
Setting 23.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.87408G	32.24	54.00	-21.76	3.55	3	Horizontal	184	1.50
PK	4.87334G	45.69	74.00	-28.31	3.55	3	Horizontal	184	1.50

802.11g_(6Mbps)_2TX

2462MHz_TX

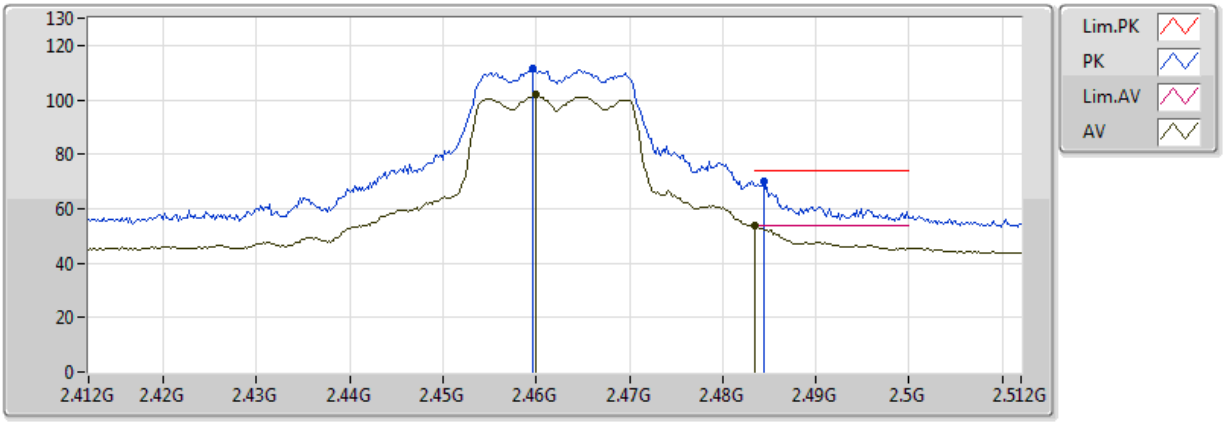


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.461G	100.50	Inf	-Inf	30.95	3	Vertical	124	1.98
AV	2.4846G	50.29	54.00	-3.71	30.92	3	Vertical	124	1.98
PK	2.4608G	110.86	Inf	-Inf	30.95	3	Vertical	124	1.98
PK	2.485G	66.20	74.00	-7.80	30.92	3	Vertical	124	1.98

802.11g_(6Mbps)_2TX

2462MHz_TX

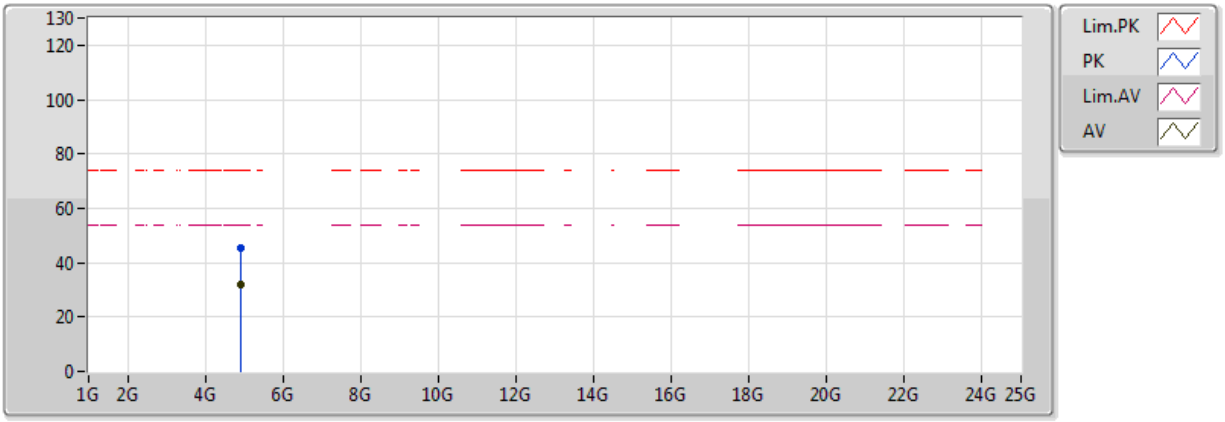


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.46G	101.87	Inf	-Inf	30.95	3	Horizontal	297	1.31
AV	2.483502G	53.61	54.00	-0.39	30.92	3	Horizontal	297	1.31
PK	2.4596G	111.27	Inf	-Inf	30.95	3	Horizontal	297	1.31
PK	2.4844G	70.05	74.00	-3.95	30.92	3	Horizontal	297	1.31

802.11g_(6Mbps)_2TX

2462MHz_TX

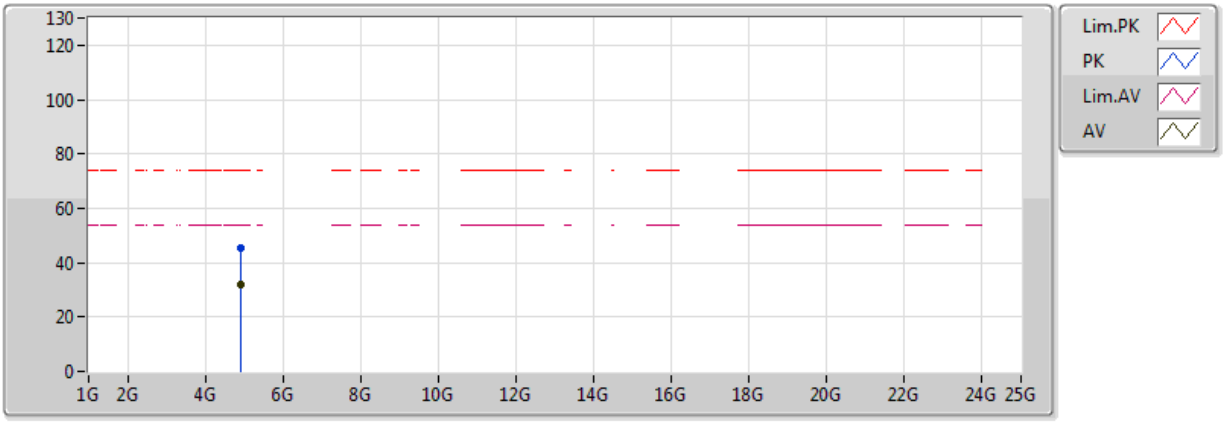


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.924816G	31.79	54.00	-22.21	3.70	3	Vertical	192	1.50
PK	4.924372G	45.44	74.00	-28.56	3.70	3	Vertical	192	1.50

802.11g_(6Mbps)_2TX

2462MHz_TX

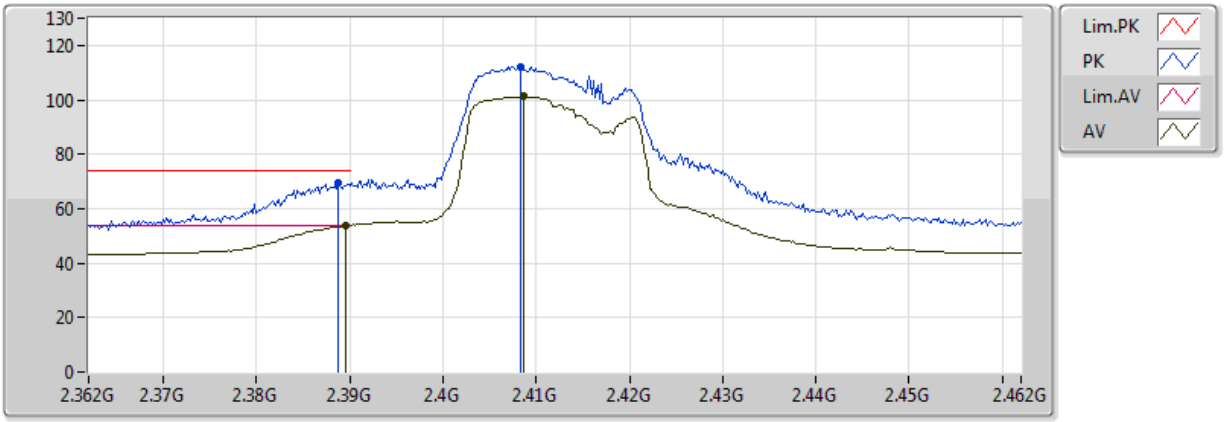


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.9244G	31.68	54.00	-22.32	3.70	3	Horizontal	186	1.50
PK	4.923932G	45.38	74.00	-28.62	3.70	3	Horizontal	186	1.50

802.11ac VHT20_Nss1,(MCS0)_2TX

2412MHz_TX

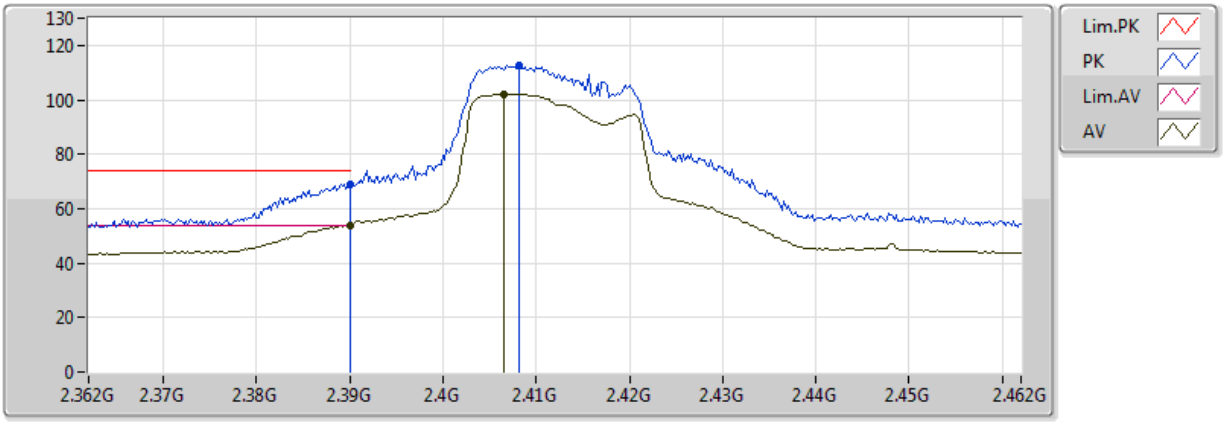


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3896G	53.96	54.00	-0.04	31.04	3	Vertical	121	1.83
AV	2.4086G	101.19	Inf	-Inf	31.01	3	Vertical	121	1.83
PK	2.3888G	69.76	74.00	-4.24	31.04	3	Vertical	121	1.83
PK	2.4084G	112.07	Inf	-Inf	31.01	3	Vertical	121	1.83

802.11ac VHT20_Nss1,(MCS0)_2TX

2412MHz_TX

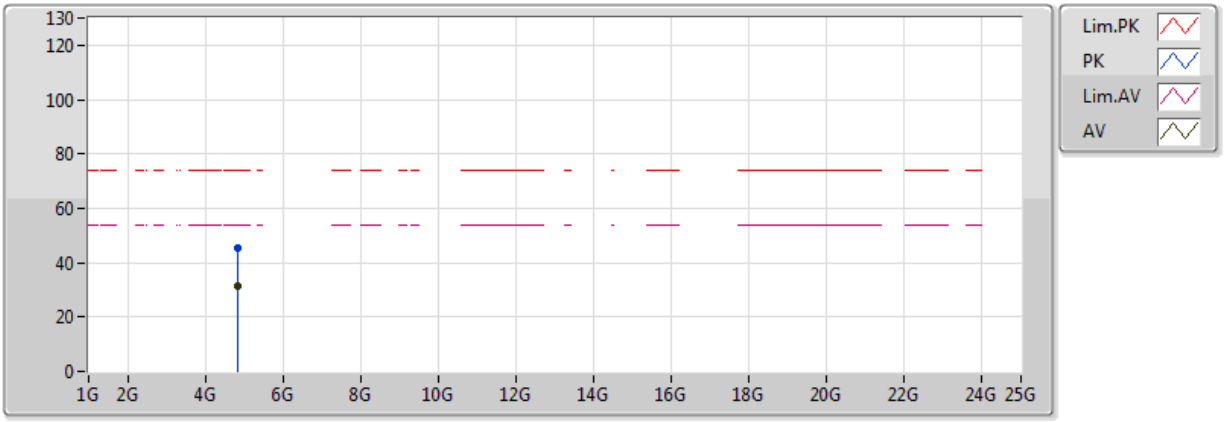


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	53.97	54.00	-0.03	31.04	3	Horizontal	289	1.26
AV	2.4066G	102.17	Inf	-Inf	31.01	3	Horizontal	289	1.26
PK	2.389998G	69.10	74.00	-4.90	31.04	3	Horizontal	289	1.26
PK	2.4082G	112.63	Inf	-Inf	31.01	3	Horizontal	289	1.26

802.11ac VHT20_Nss1,(MCS0)_2TX

2412MHz_TX

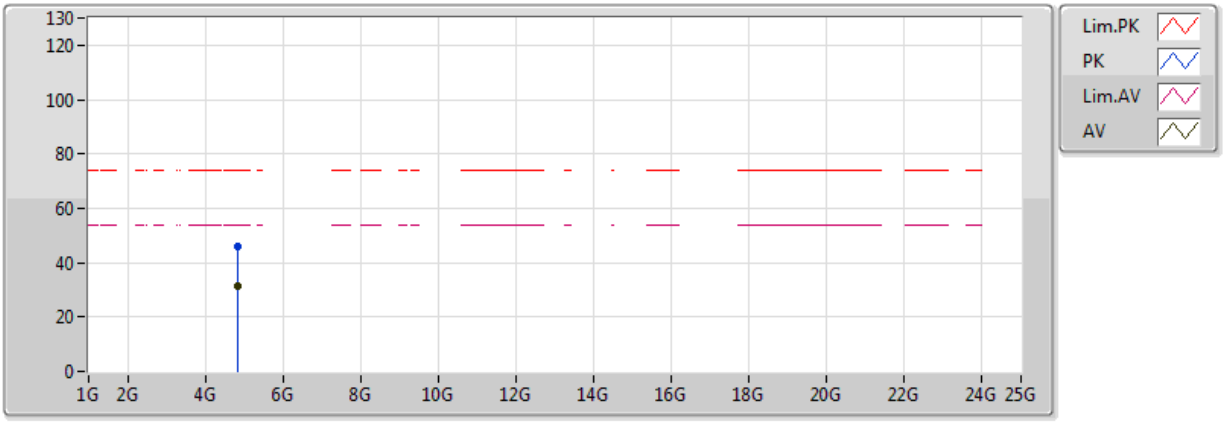


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.823608G	31.60	54.00	-22.40	3.40	3	Vertical	174	1.50
PK	4.823808G	45.51	74.00	-28.49	3.40	3	Vertical	174	1.50

802.11ac VHT20_Nss1,(MCS0)_2TX

2412MHz_TX

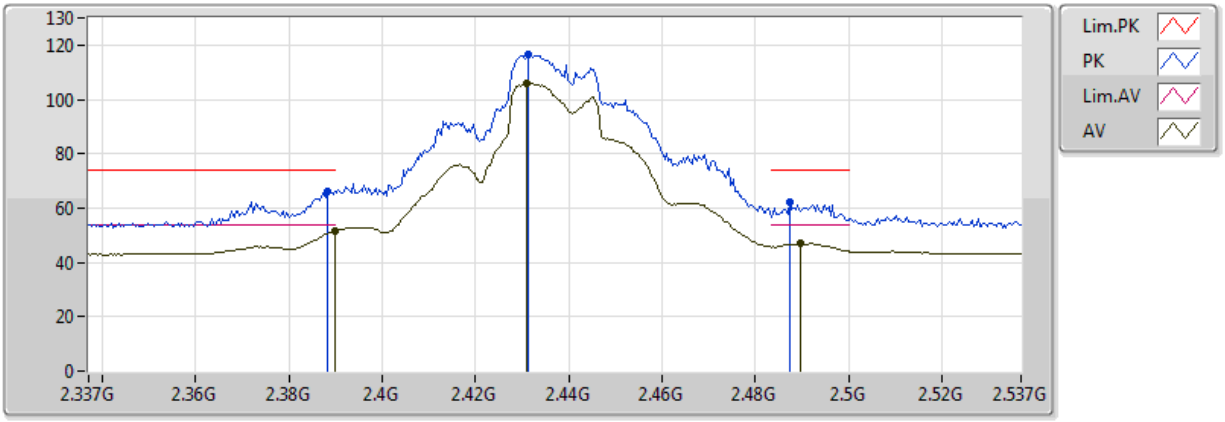


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.823092G	31.58	54.00	-22.42	3.40	3	Horizontal	186	1.50
PK	4.823344G	46.13	74.00	-27.87	3.40	3	Horizontal	186	1.50

802.11ac VHT20_Nss1,(MCS0)_2TX

2437MHz_TX

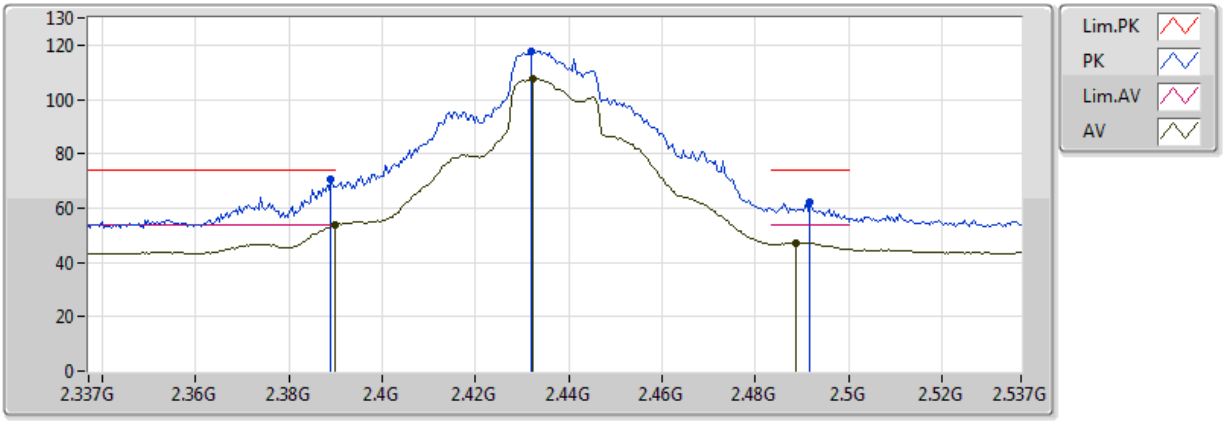


20170620
EUT Z_2TX
Setting 22.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3898G	51.42	54.00	-2.58	31.04	3	Vertical	122	1.78
AV	2.431G	105.91	Inf	-Inf	30.98	3	Vertical	122	1.78
AV	2.4898G	47.06	54.00	-6.94	30.91	3	Vertical	122	1.78
PK	2.3882G	66.25	74.00	-7.75	31.04	3	Vertical	122	1.78
PK	2.4314G	116.50	Inf	-Inf	30.98	3	Vertical	122	1.78
PK	2.4874G	61.92	74.00	-12.08	30.92	3	Vertical	122	1.78

802.11ac VHT20_Nss1,(MCS0)_2TX

2437MHz_TX

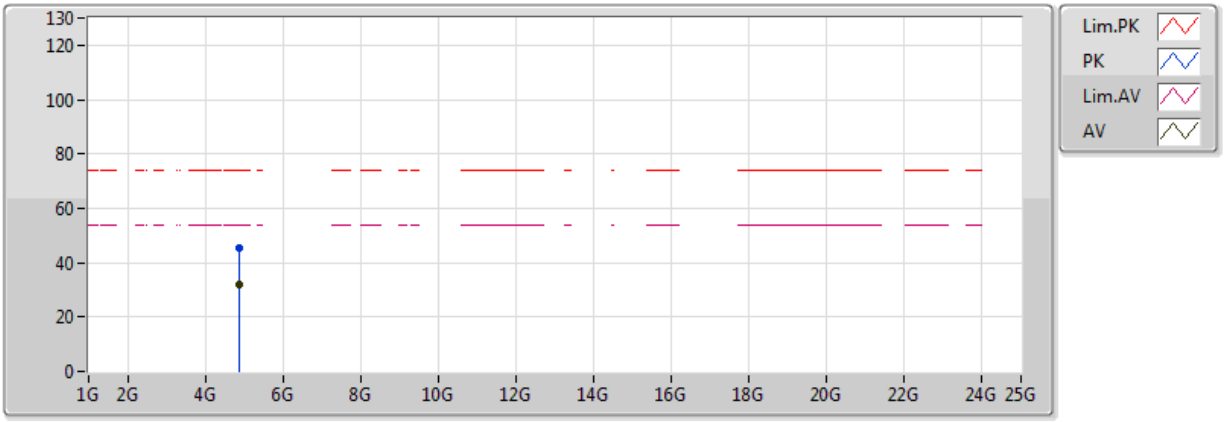


20170620
EUT Z_2TX
Setting 22.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3898G	53.62	54.00	-0.38	31.04	3	Horizontal	286	1.51
AV	2.4322G	107.37	Inf	-Inf	30.98	3	Horizontal	286	1.51
AV	2.4886G	47.07	54.00	-6.93	30.91	3	Horizontal	286	1.51
PK	2.389G	70.64	74.00	-3.36	31.04	3	Horizontal	286	1.51
PK	2.4318G	117.83	Inf	-Inf	30.98	3	Horizontal	286	1.51
PK	2.4918G	62.26	74.00	-11.74	30.91	3	Horizontal	286	1.51

802.11ac VHT20_Nss1,(MCS0)_2TX

2437MHz_TX

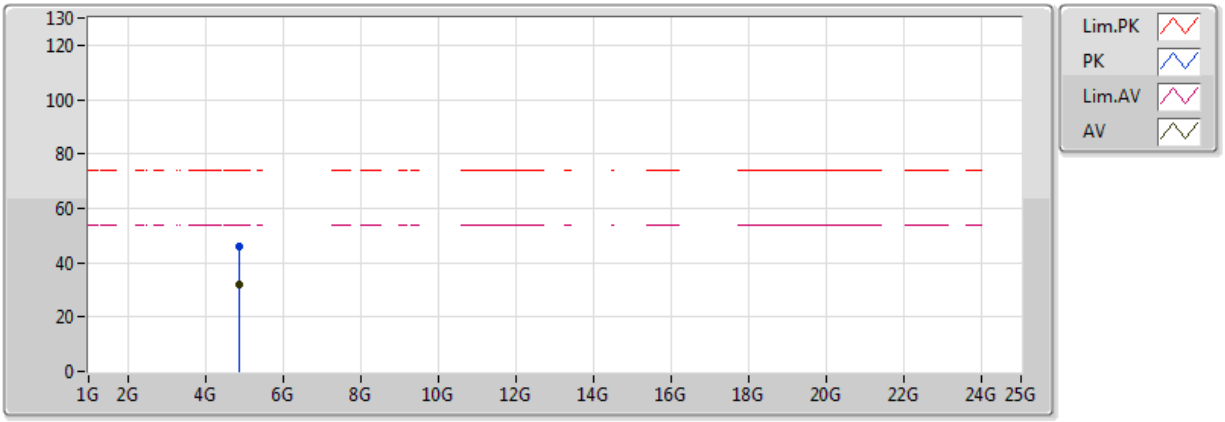


20170620
EUT Z_2TX
Setting 22.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.87458G	31.79	54.00	-22.21	3.55	3	Vertical	168	1.50
PK	4.873756G	45.54	74.00	-28.46	3.55	3	Vertical	168	1.50

802.11ac VHT20_Nss1,(MCS0)_2TX

2437MHz_TX

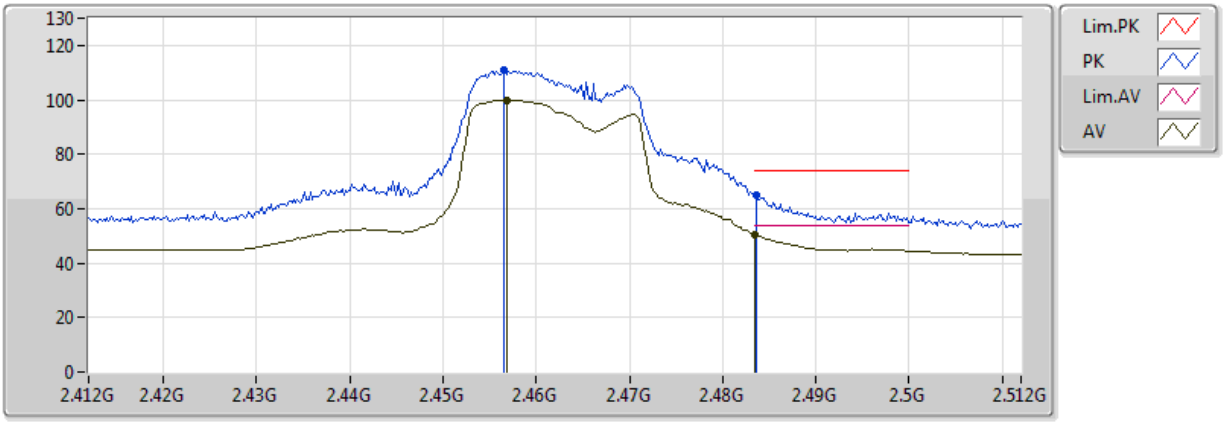


20170620
EUT Z_2TX
Setting 22.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.873284G	31.73	54.00	-22.27	3.55	3	Horizontal	174	1.50
PK	4.874268G	45.92	74.00	-28.08	3.55	3	Horizontal	174	1.50

802.11ac VHT20_Nss1,(MCS0)_2TX

2462MHz_TX

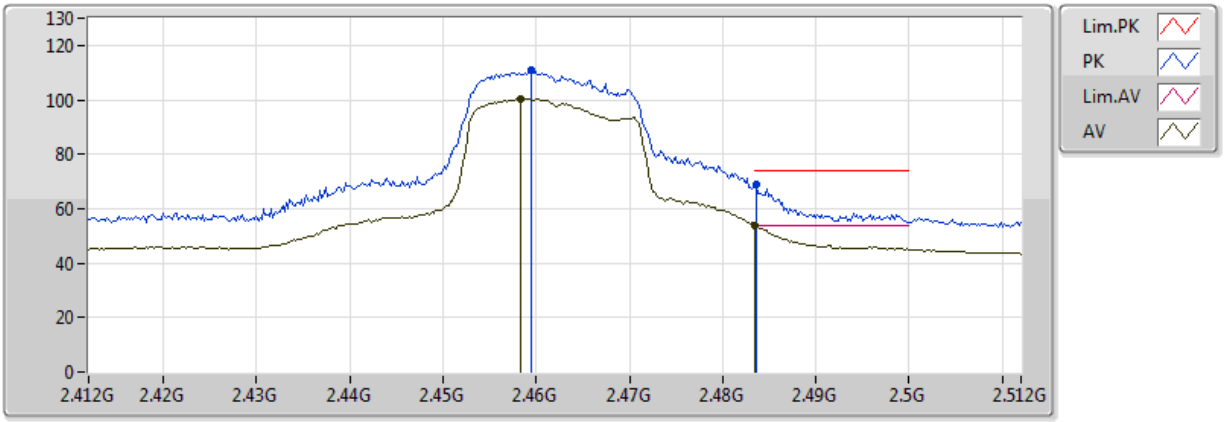


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.4568G	99.80	Inf	-Inf	30.95	3	Vertical	122	1.98
AV	2.483502G	50.48	54.00	-3.52	30.92	3	Vertical	122	1.98
PK	2.4566G	111.00	Inf	-Inf	30.95	3	Vertical	122	1.98
PK	2.4836G	65.28	74.00	-8.72	30.92	3	Vertical	122	1.98

802.11ac VHT20_Nss1,(MCS0)_2TX

2462MHz_TX

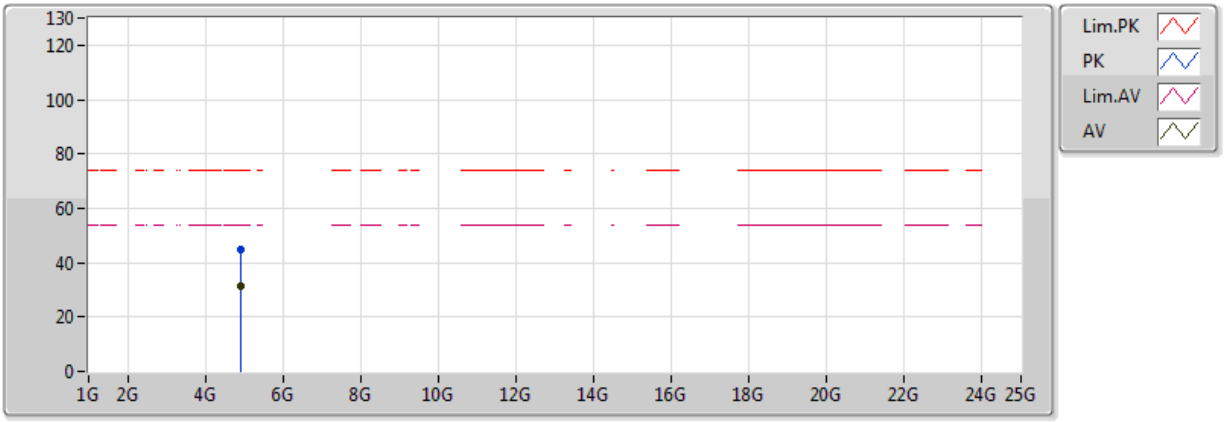


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.4584G	100.29	Inf	-Inf	30.95	3	Horizontal	281	1.69
AV	2.483502G	53.95	54.00	-0.05	30.92	3	Horizontal	281	1.69
PK	2.4594G	110.90	Inf	-Inf	30.95	3	Horizontal	281	1.69
PK	2.4836G	68.78	74.00	-5.22	30.92	3	Horizontal	281	1.69

802.11ac VHT20_Nss1,(MCS0)_2TX

2462MHz_TX

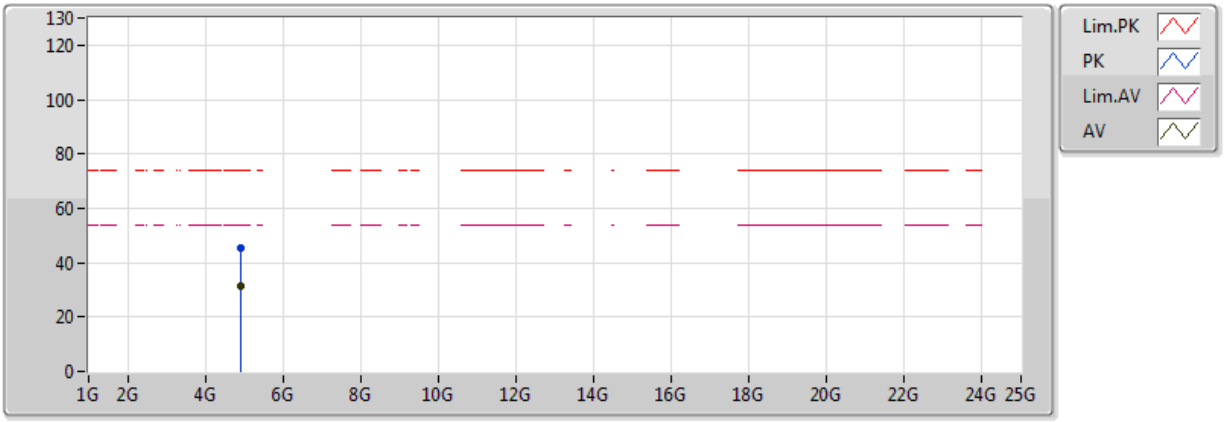


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.924608G	31.34	54.00	-22.66	3.70	3	Vertical	168	1.50
PK	4.923888G	45.05	74.00	-28.95	3.70	3	Vertical	168	1.50

802.11ac VHT20_Nss1,(MCS0)_2TX

2462MHz_TX

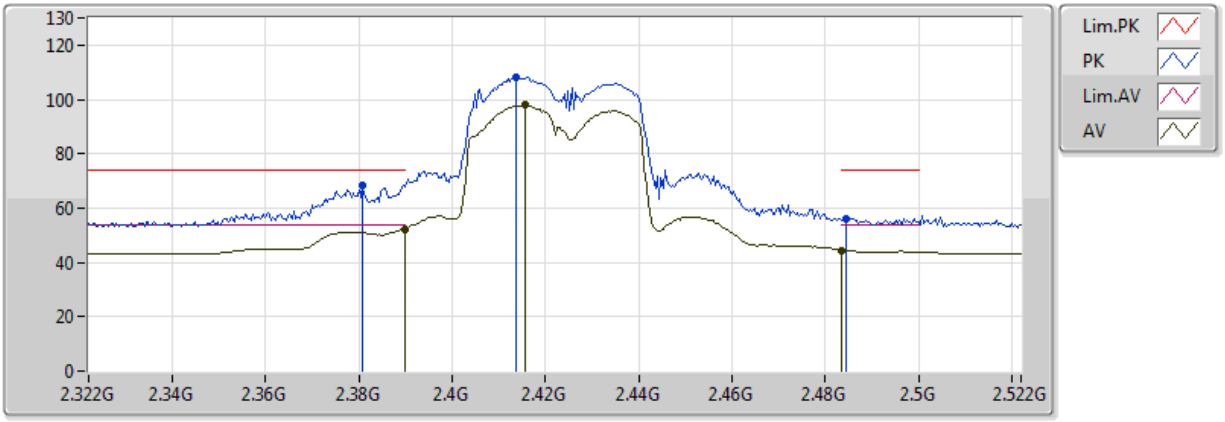


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.924352G	31.37	54.00	-22.63	3.70	3	Horizontal	176	1.50
PK	4.923232G	45.30	74.00	-28.70	3.70	3	Horizontal	176	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2422MHz_TX

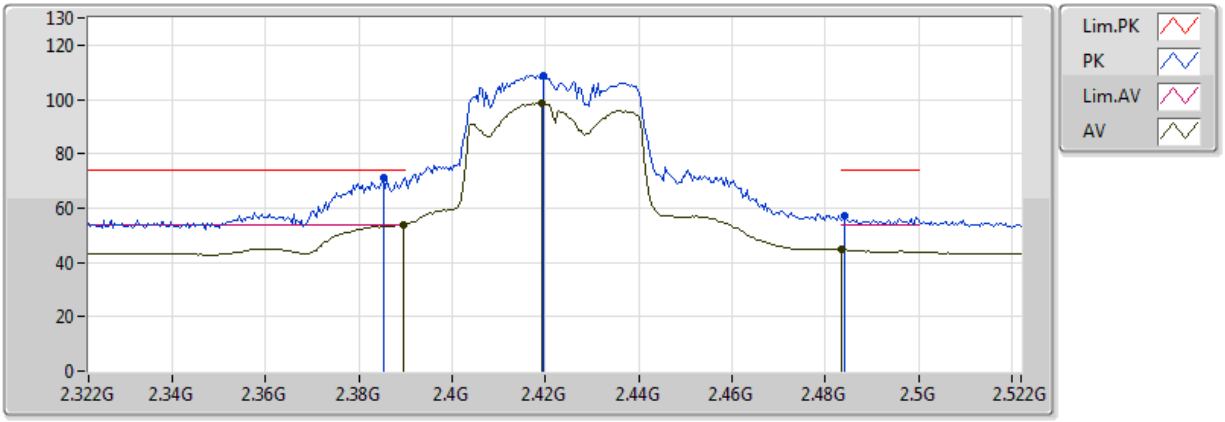


20170620
EUT Z_2TX
Setting 15.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	52.26	54.00	-1.74	31.04	3	Vertical	110	1.99
AV	2.4156G	97.80	Inf	-Inf	31.00	3	Vertical	110	1.99
AV	2.483502G	44.49	54.00	-9.51	30.92	3	Vertical	110	1.99
PK	2.3808G	68.58	74.00	-5.42	31.05	3	Vertical	110	1.99
PK	2.4136G	108.13	Inf	-Inf	31.00	3	Vertical	110	1.99
PK	2.4844G	56.29	74.00	-17.71	30.92	3	Vertical	110	1.99

802.11ac VHT40_Nss1,(MCS0)_2TX

2422MHz_TX

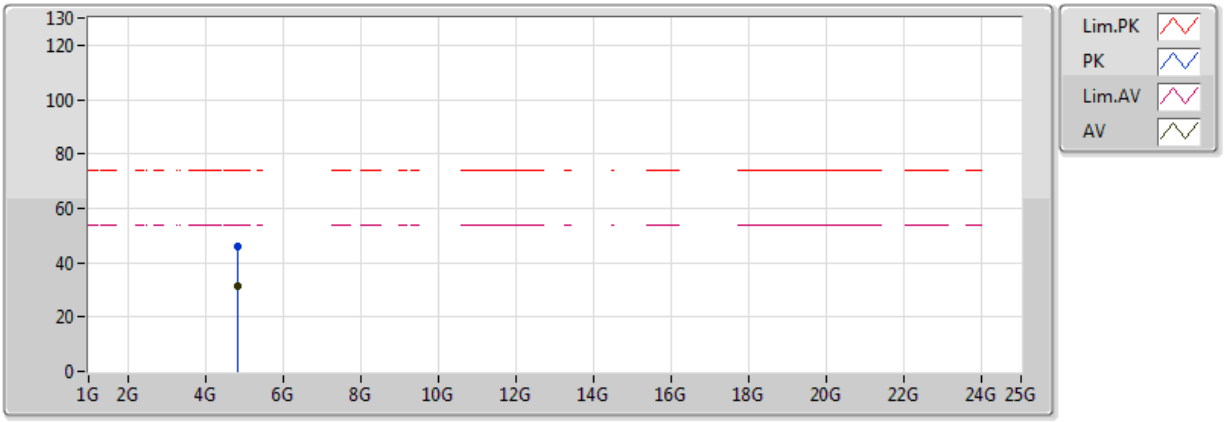


20170620
EUT Z_2TX
Setting 15.5
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3896G	53.95	54.00	-0.05	31.04	3	Horizontal	285	1.50
AV	2.4192G	98.53	Inf	-Inf	31.00	3	Horizontal	285	1.50
AV	2.483502G	44.70	54.00	-9.30	30.92	3	Horizontal	285	1.50
PK	2.3852G	71.01	74.00	-2.99	31.04	3	Horizontal	285	1.50
PK	2.4196G	108.72	Inf	-Inf	31.00	3	Horizontal	285	1.50
PK	2.484G	57.06	74.00	-16.94	30.92	3	Horizontal	285	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2422MHz_TX

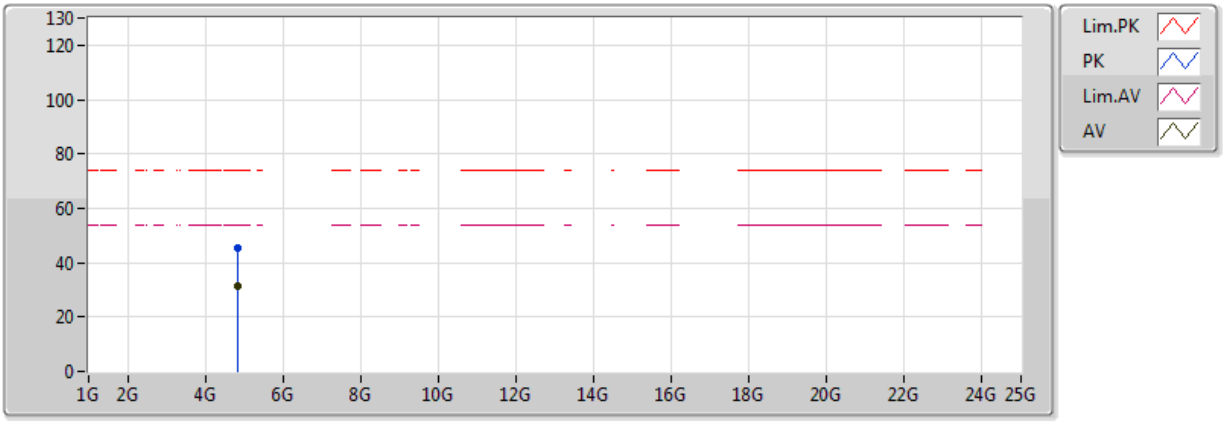


20170620
EUT Z_2TX
Setting 15.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.843732G	31.57	54.00	-22.43	3.46	3	Vertical	145	1.50
PK	4.844524G	46.12	74.00	-27.88	3.46	3	Vertical	145	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2422MHz_TX

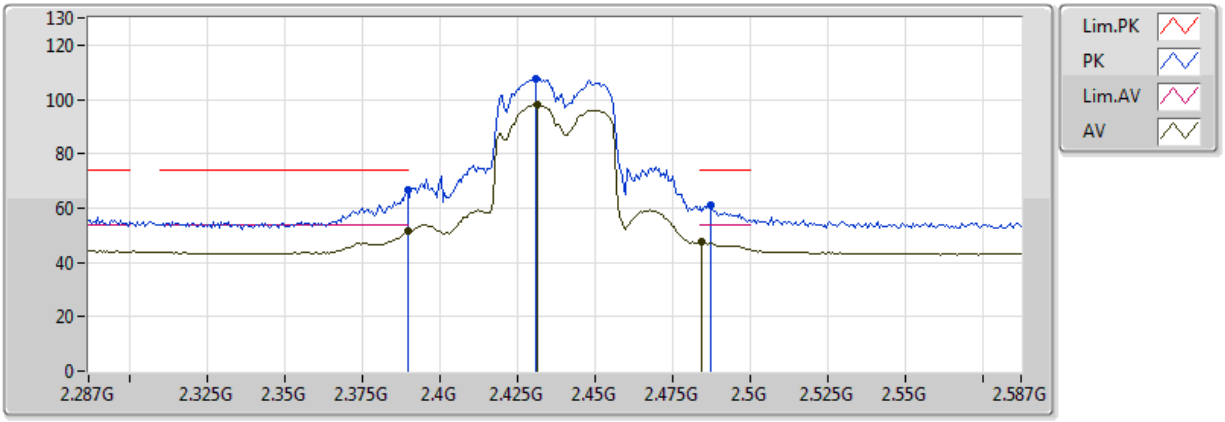


20170620
EUT Z_2TX
Setting 15.5
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.844324G	31.53	54.00	-22.47	3.46	3	Horizontal	176	1.50
PK	4.844756G	45.37	74.00	-28.63	3.46	3	Horizontal	176	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2437MHz_TX

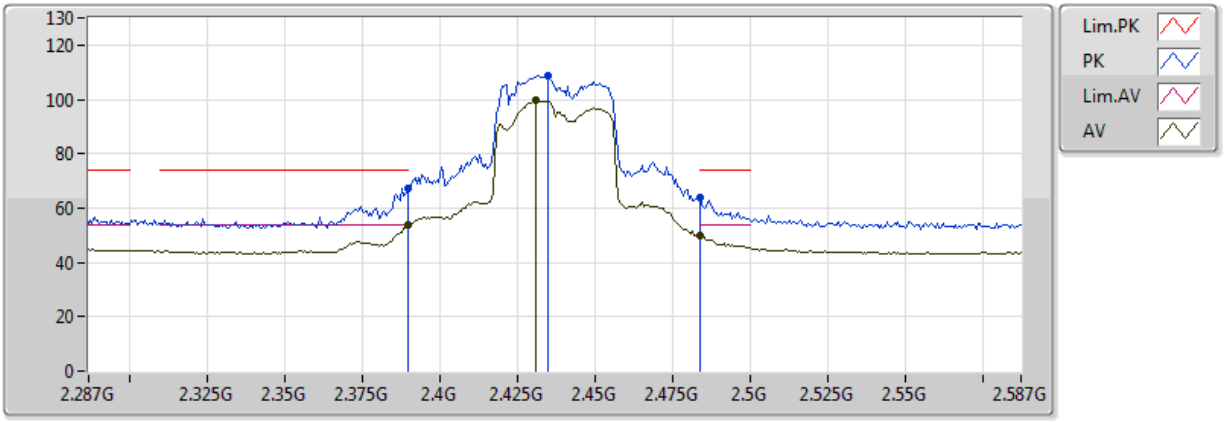


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	51.50	54.00	-2.50	31.04	3	Vertical	121	1.78
AV	2.4316G	97.92	Inf	-Inf	30.98	3	Vertical	121	1.78
AV	2.4844G	47.41	54.00	-6.59	30.92	3	Vertical	121	1.78
PK	2.3896G	66.70	74.00	-7.30	31.04	3	Vertical	121	1.78
PK	2.431G	107.63	Inf	-Inf	30.98	3	Vertical	121	1.78
PK	2.4874G	61.35	74.00	-12.65	30.92	3	Vertical	121	1.78

802.11ac VHT40_Nss1,(MCS0)_2TX

2437MHz_TX

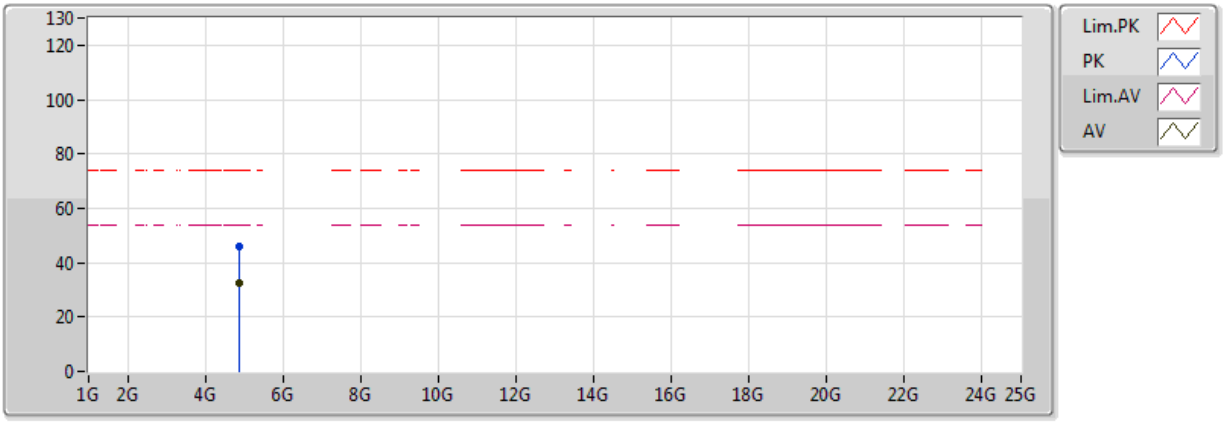


20170620
EUT Z_2TX
Setting 16
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	53.78	54.00	-0.22	31.04	3	Horizontal	286	1.50
AV	2.431G	99.58	Inf	-Inf	30.98	3	Horizontal	286	1.50
AV	2.483502G	49.80	54.00	-4.20	30.92	3	Horizontal	286	1.50
PK	2.389998G	67.49	74.00	-6.51	31.04	3	Horizontal	286	1.50
PK	2.4346G	108.51	Inf	-Inf	30.98	3	Horizontal	286	1.50
PK	2.4838G	63.95	74.00	-10.05	30.92	3	Horizontal	286	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2437MHz_TX

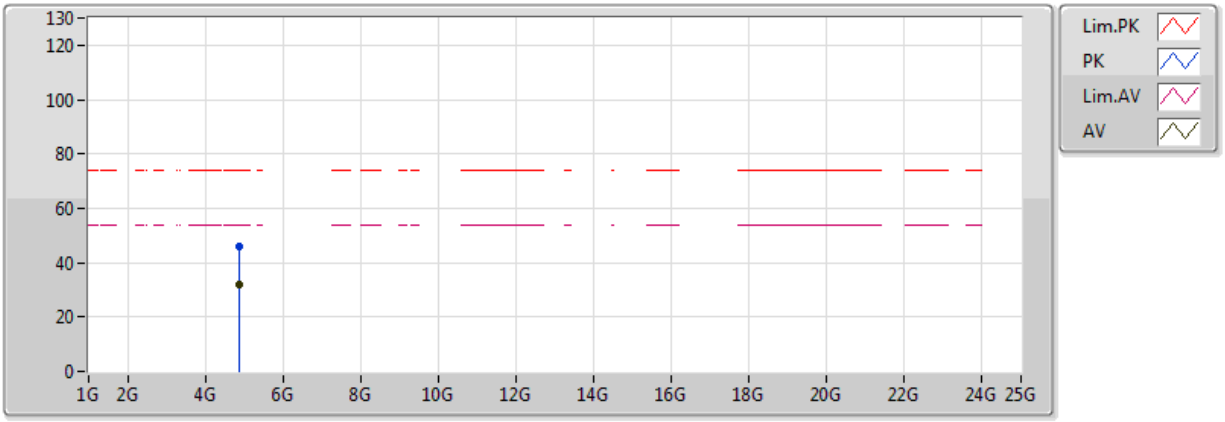


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.874636G	32.26	54.00	-21.74	3.55	3	Vertical	152	1.50
PK	4.87446G	45.87	74.00	-28.13	3.55	3	Vertical	152	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2437MHz_TX

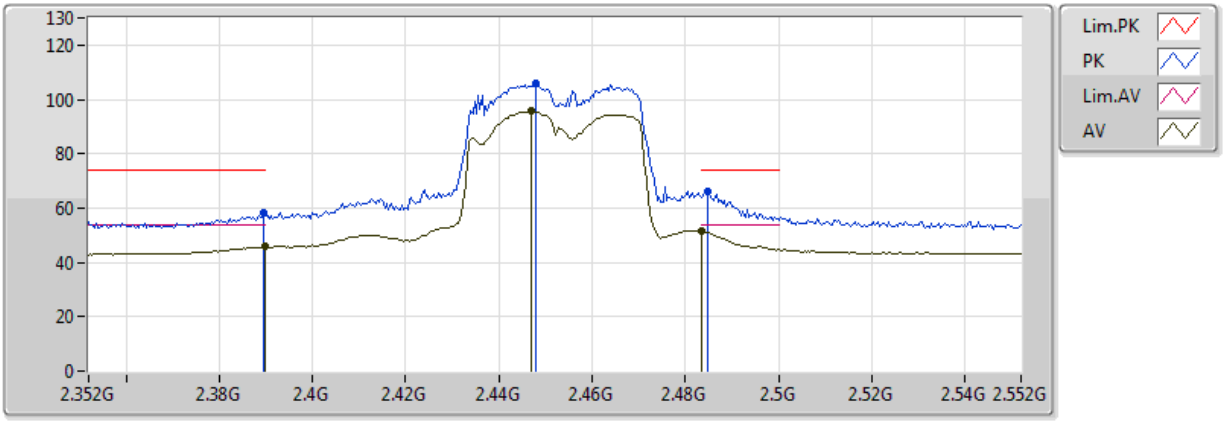


20170620
EUT Z_2TX
Setting 16
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.874752G	32.21	54.00	-21.79	3.55	3	Horizontal	145	1.50
PK	4.874396G	45.70	74.00	-28.30	3.55	3	Horizontal	145	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2452MHz_TX

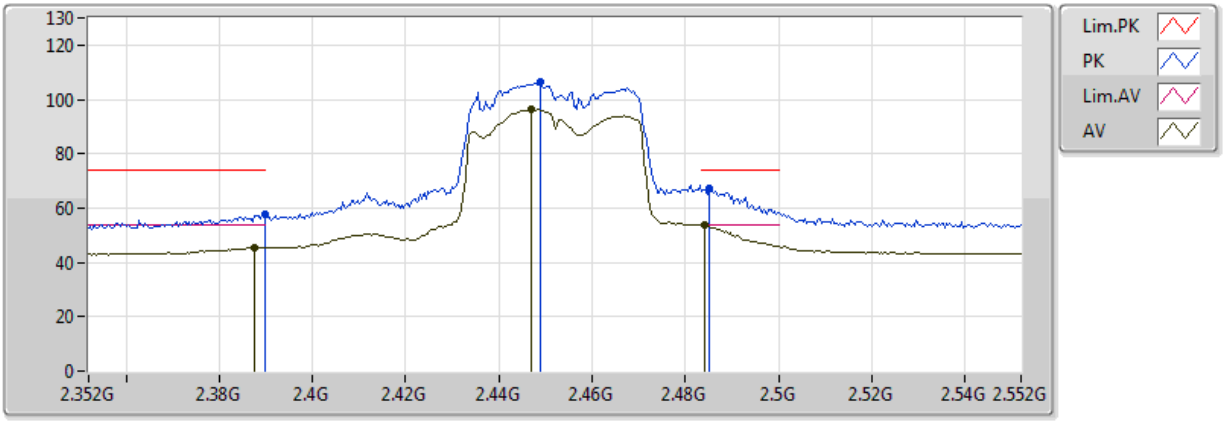


20170620
EUT Z_2TX
Setting 14
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	45.68	54.00	-8.32	31.04	3	Vertical	122	1.80
AV	2.4468G	95.62	Inf	-Inf	30.96	3	Vertical	122	1.80
AV	2.483502G	51.28	54.00	-2.72	30.92	3	Vertical	122	1.80
PK	2.3896G	58.29	74.00	-15.71	31.04	3	Vertical	122	1.80
PK	2.448G	105.77	Inf	-Inf	30.96	3	Vertical	122	1.80
PK	2.4848G	66.31	74.00	-7.69	30.92	3	Vertical	122	1.80

802.11ac VHT40_Nss1,(MCS0)_2TX

2452MHz_TX

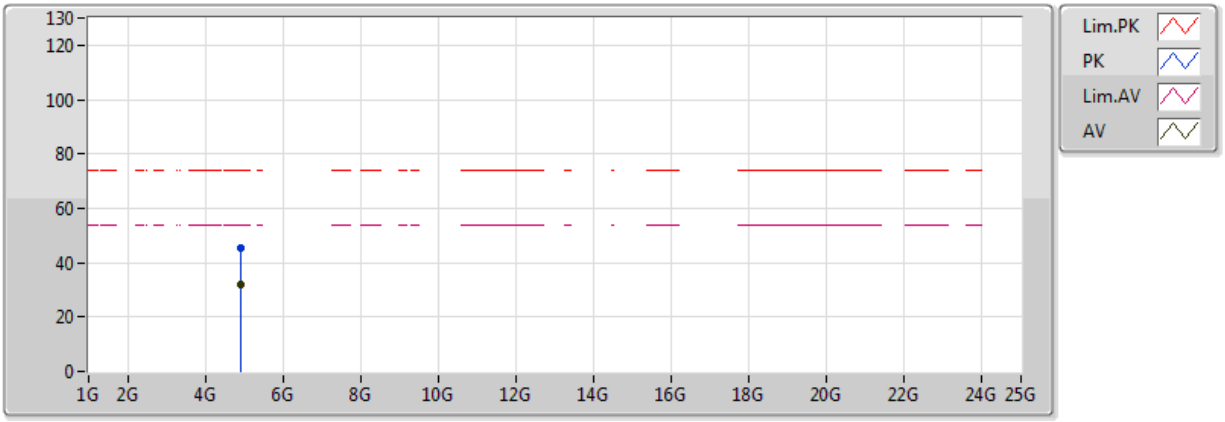


20170620
EUT Z_2TX
Setting 14
01-W-3
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3876G	45.62	54.00	-8.38	31.04	3	Horizontal	284	1.42
AV	2.4468G	96.17	Inf	-Inf	30.96	3	Horizontal	284	1.42
AV	2.484G	53.71	54.00	-0.29	30.92	3	Horizontal	284	1.42
PK	2.389998G	57.50	74.00	-16.50	31.04	3	Horizontal	284	1.42
PK	2.4488G	106.62	Inf	-Inf	30.96	3	Horizontal	284	1.42
PK	2.4852G	67.03	74.00	-6.97	30.92	3	Horizontal	284	1.42

802.11ac VHT40_Nss1,(MCS0)_2TX

2452MHz_TX

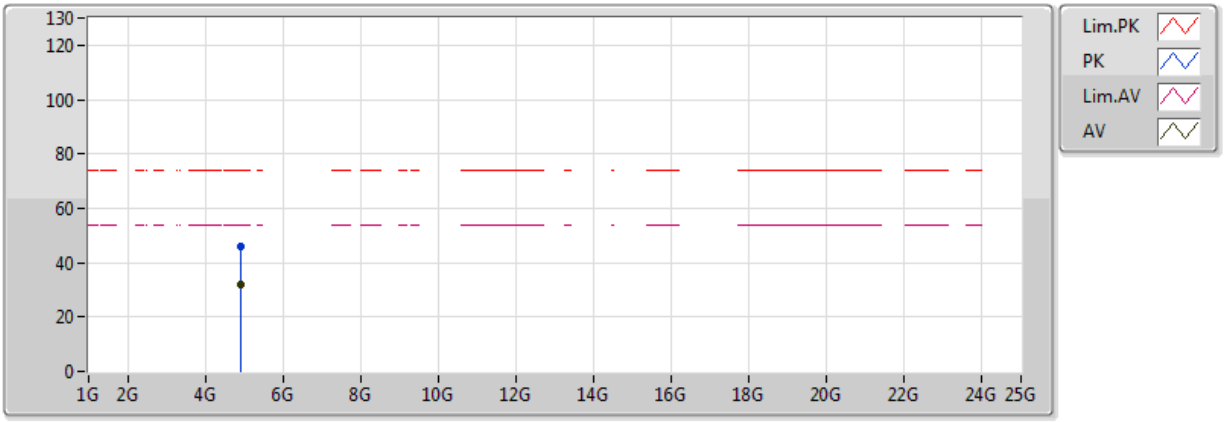


20170620
EUT Z_2TX
Setting 14
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.90422G	32.02	54.00	-21.98	3.64	3	Vertical	149	1.50
PK	4.904868G	45.11	74.00	-28.89	3.64	3	Vertical	149	1.50

802.11ac VHT40_Nss1,(MCS0)_2TX

2452MHz_TX

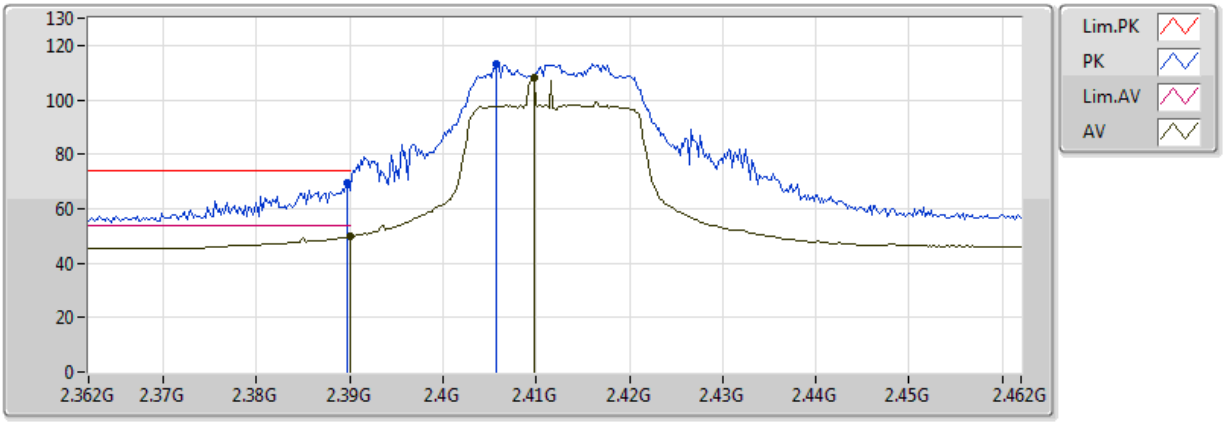


20170620
EUT Z_2TX
Setting 14
01-M-0
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.903596G	32.04	54.00	-21.96	3.64	3	Horizontal	152	1.50
PK	4.90454G	45.71	74.00	-28.29	3.64	3	Horizontal	152	1.50

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2412MHz_TX

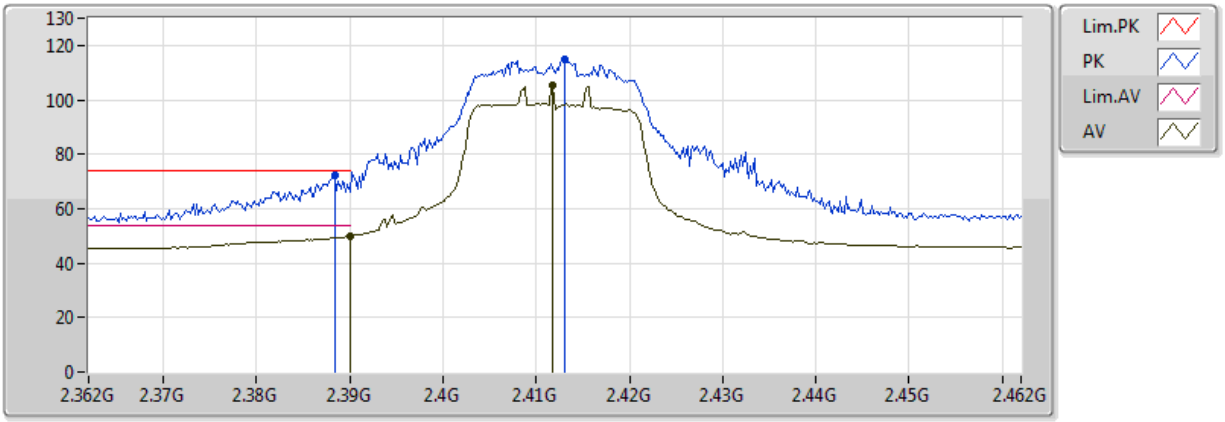


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	49.66	54.00	-4.34	33.15	3	Vertical	135	2.87
AV	2.4098G	108.30	Inf	-Inf	33.15	3	Vertical	135	2.87
PK	2.3898G	69.70	74.00	-4.30	33.15	3	Vertical	135	2.87
PK	2.4058G	113.09	Inf	-Inf	33.14	3	Vertical	135	2.87

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2412MHz_TX

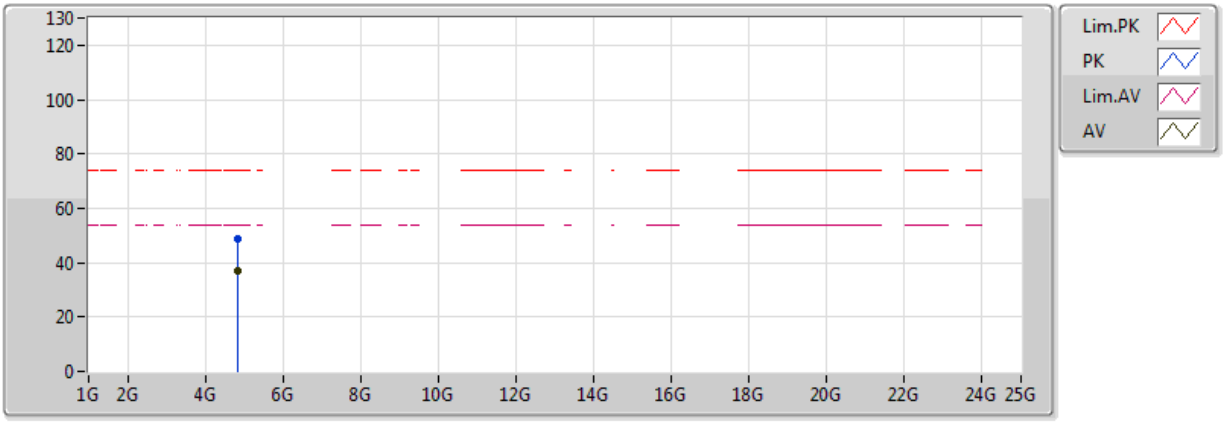


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	49.93	54.00	-4.07	33.15	3	Horizontal	44	1.04
AV	2.4118G	105.42	Inf	-Inf	33.15	3	Horizontal	44	1.04
PK	2.3884G	72.28	74.00	-1.72	33.15	3	Horizontal	44	1.04
PK	2.413G	114.71	Inf	-Inf	33.15	3	Horizontal	44	1.04

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2412MHz_TX

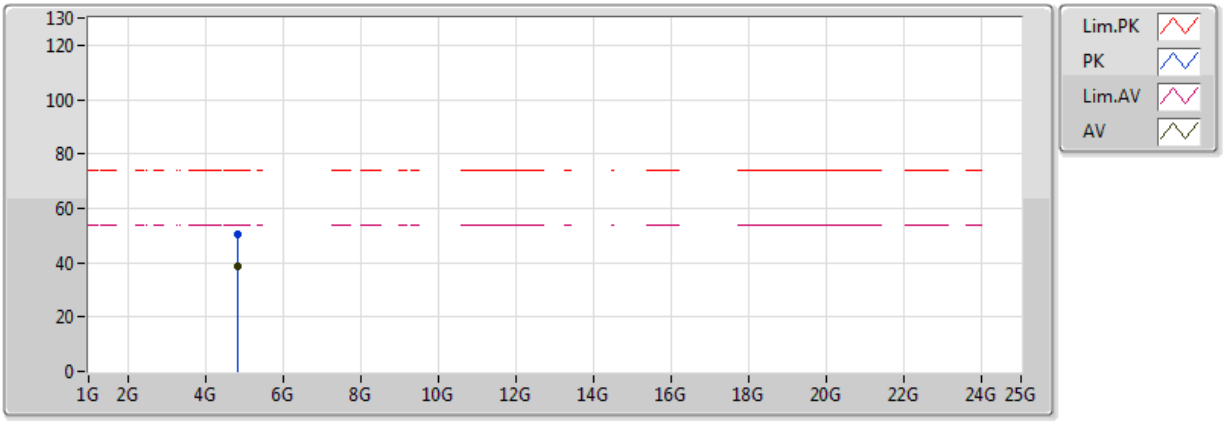


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.824G	37.11	54.00	-16.89	4.18	3	Vertical	97	1.44
PK	4.824G	48.66	74.00	-25.34	4.18	3	Vertical	97	1.44

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2412MHz_TX

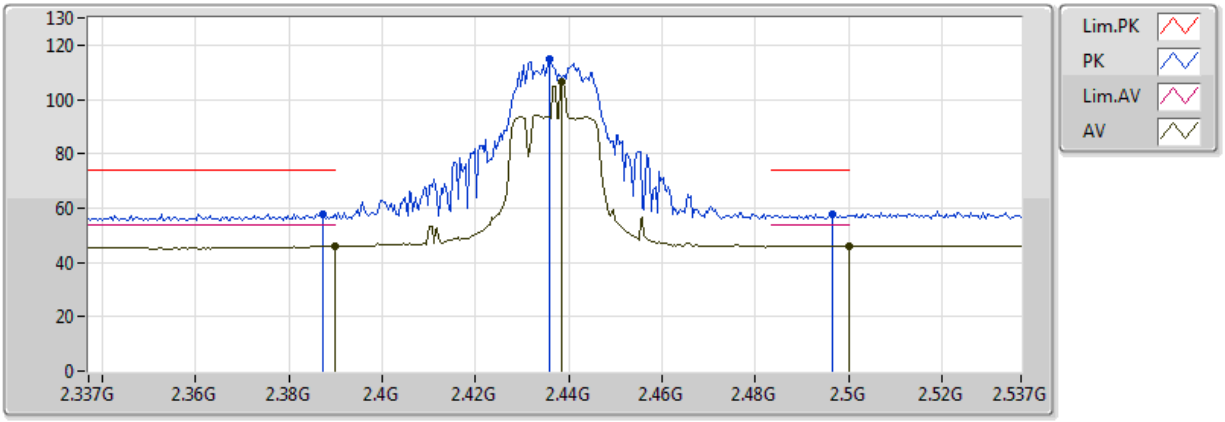


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.824G	38.65	54.00	-15.35	4.18	3	Horizontal	282	1.01
PK	4.824G	50.26	74.00	-23.74	4.18	3	Horizontal	282	1.01

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2437MHz_TX

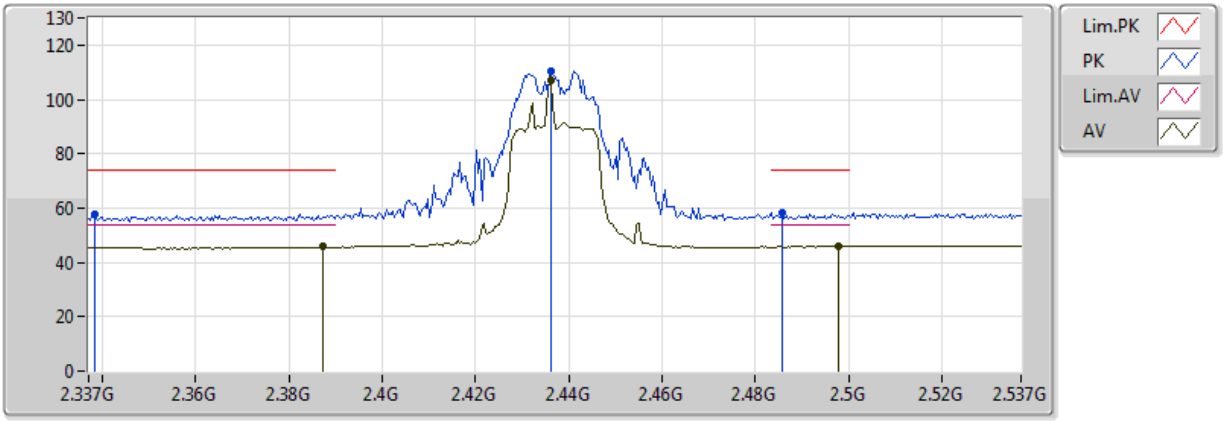


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3898G	45.90	54.00	-8.10	33.15	3	Vertical	123	2.95
AV	2.4386G	106.31	Inf	-Inf	33.16	3	Vertical	123	2.95
AV	2.499998G	46.09	54.00	-7.91	33.20	3	Vertical	123	2.95
PK	2.3874G	57.98	74.00	-16.02	33.15	3	Vertical	123	2.95
PK	2.4358G	114.91	Inf	-Inf	33.16	3	Vertical	123	2.95
PK	2.4966G	57.57	74.00	-16.43	33.20	3	Vertical	123	2.95

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2437MHz_TX

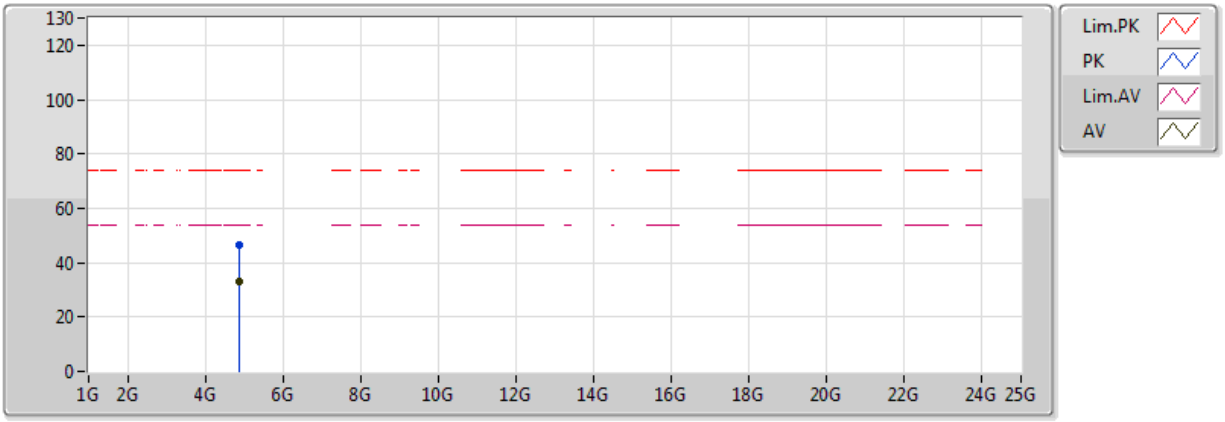


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3874G	45.67	54.00	-8.33	33.15	3	Horizontal	264	1.48
AV	2.4362G	107.26	Inf	-Inf	33.16	3	Horizontal	264	1.48
AV	2.4978G	45.87	54.00	-8.13	33.20	3	Horizontal	264	1.48
PK	2.3382G	57.99	74.00	-16.01	33.17	3	Horizontal	264	1.48
PK	2.4362G	110.33	Inf	-Inf	33.16	3	Horizontal	264	1.48
PK	2.4858G	58.14	74.00	-15.86	33.19	3	Horizontal	264	1.48

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2437MHz_TX

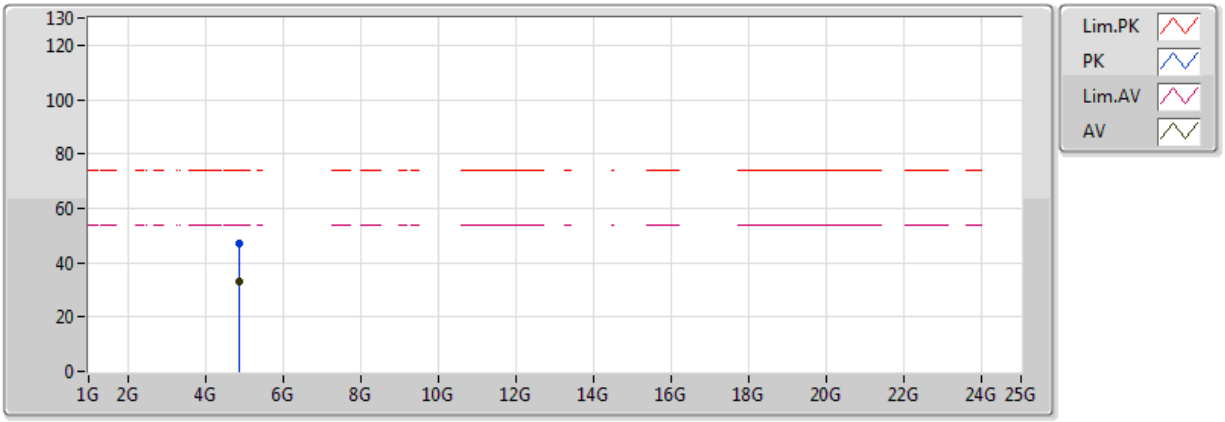


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.873484G	33.03	54.00	-20.97	4.34	3	Vertical	196	1.50
PK	4.87316G	46.61	74.00	-27.39	4.34	3	Vertical	196	1.50

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2437MHz_TX

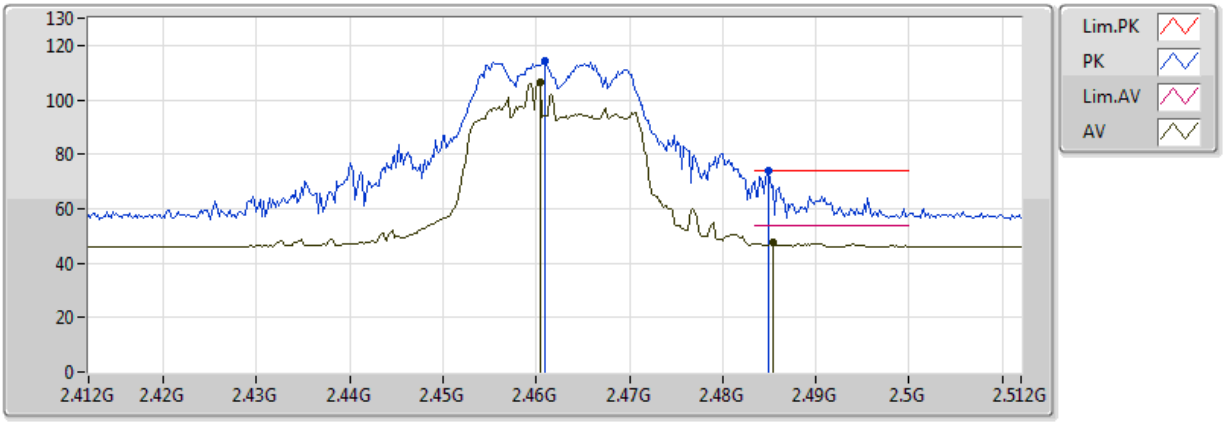


20170621
EUT Z_2TX
Setting 24
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.875G	32.95	54.00	-21.05	4.34	3	Horizontal	219	1.50
PK	4.873112G	47.20	74.00	-26.80	4.34	3	Horizontal	219	1.50

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2462MHz_TX

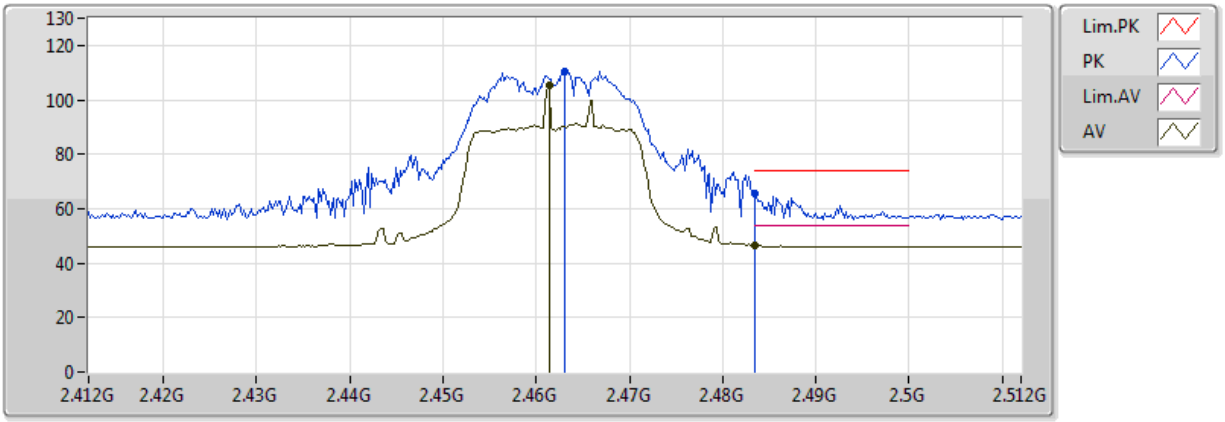


20170621
EUT Z_2TX
Setting 21
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.4604G	106.50	Inf	-Inf	33.18	3	Vertical	108	2.78
AV	2.4854G	47.62	54.00	-6.38	33.19	3	Vertical	108	2.78
PK	2.461G	114.07	Inf	-Inf	33.18	3	Vertical	108	2.78
PK	2.485G	73.81	74.00	-0.19	33.19	3	Vertical	108	2.78

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2462MHz_TX

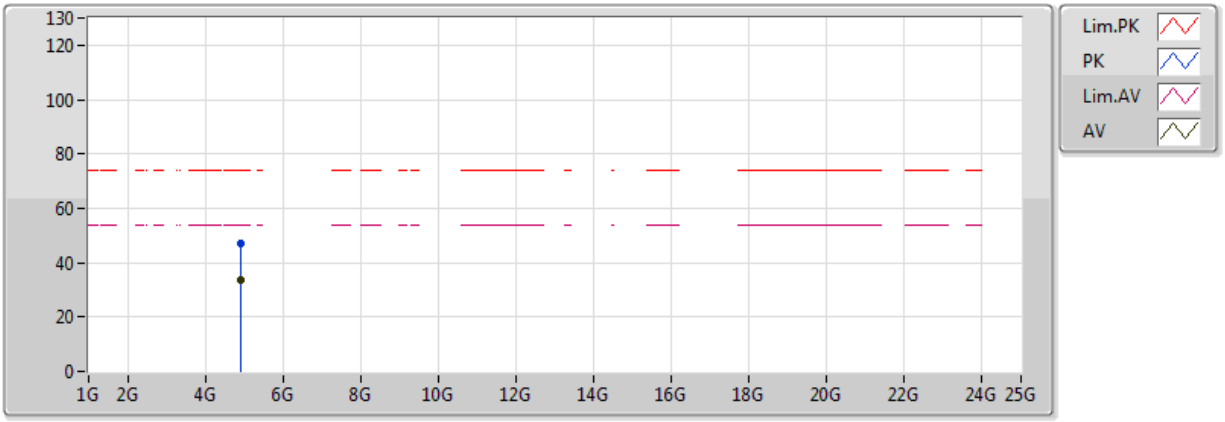


20170621
EUT Z_2TX
Setting 21
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.4614G	105.49	Inf	-Inf	33.18	3	Horizontal	45	1.02
AV	2.483502G	46.59	54.00	-7.41	33.19	3	Horizontal	45	1.02
PK	2.463G	110.50	Inf	-Inf	33.18	3	Horizontal	45	1.02
PK	2.483502G	65.69	74.00	-8.31	33.19	3	Horizontal	45	1.02

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2462MHz_TX

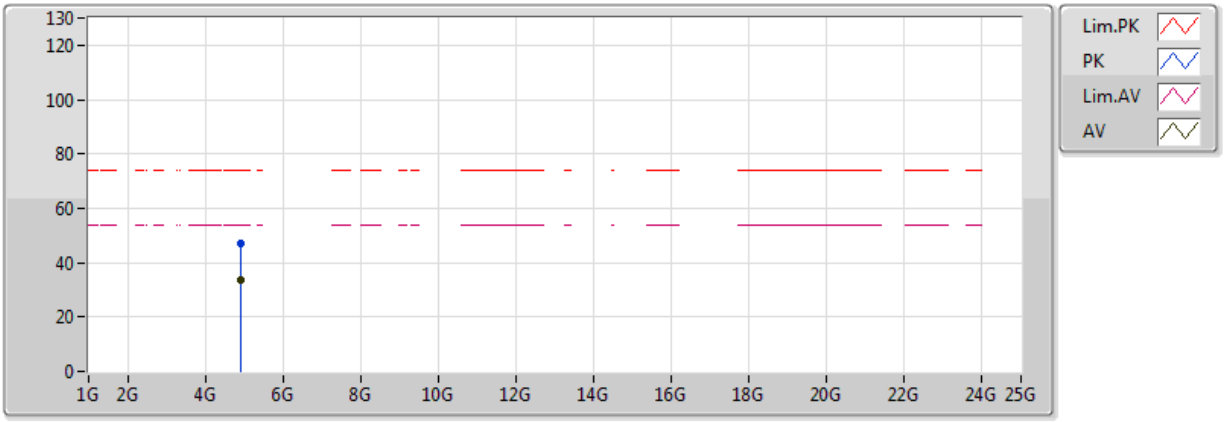


20170621
EUT Z_2TX
Setting 21
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.924636G	33.46	54.00	-20.54	4.50	3	Vertical	174	1.50
PK	4.923352G	47.32	74.00	-26.68	4.49	3	Vertical	174	1.50

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

2462MHz_TX

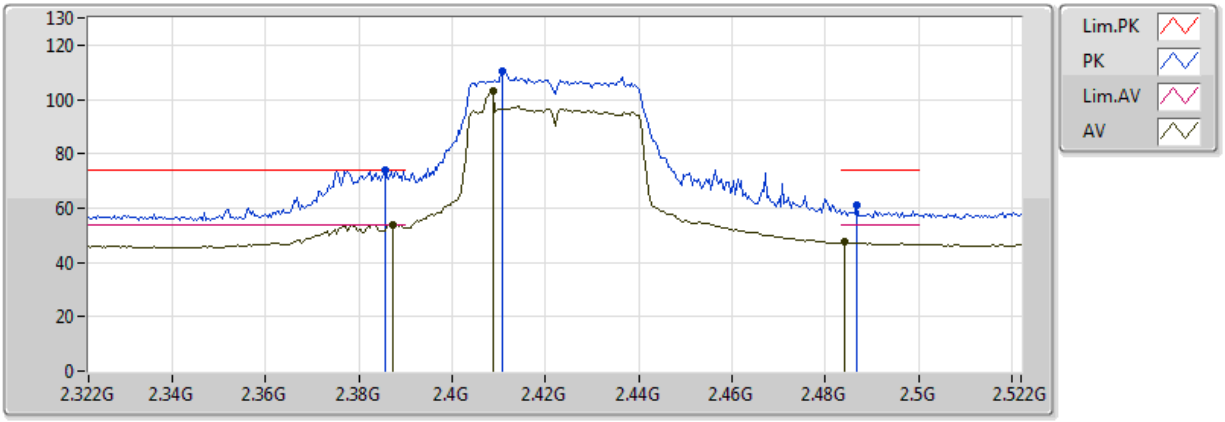


20170621
EUT Z_2TX
Setting 21
04-J-5
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.923784G	33.40	54.00	-20.60	4.49	3	Horizontal	196	1.50
PK	4.924752G	47.33	74.00	-26.67	4.50	3	Horizontal	196	1.50

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2422MHz_TX

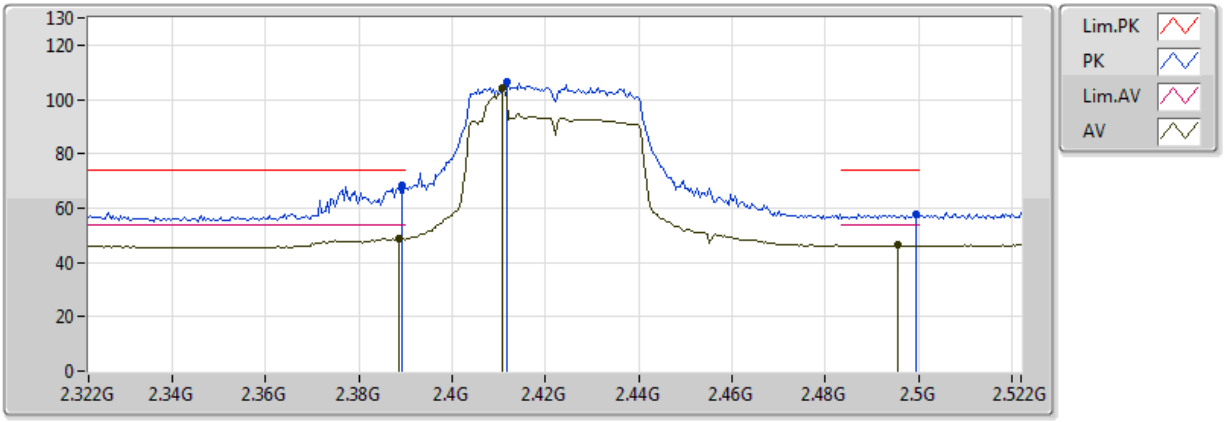


20170621
EUT Z_2TX
Setting 18
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3872G	53.96	54.00	-0.04	33.15	3	Vertical	126	2.50
AV	2.4088G	103.16	Inf	-Inf	33.15	3	Vertical	126	2.50
AV	2.484G	47.37	54.00	-6.63	33.19	3	Vertical	126	2.50
PK	2.4108G	110.28	Inf	-Inf	33.15	3	Vertical	126	2.50
PK	2.4868G	61.03	74.00	-12.97	33.19	3	Vertical	126	2.50
PK	2.3856G	73.96	74.00	-0.04	33.15	3	Vertical	126	2.50

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2422MHz_TX

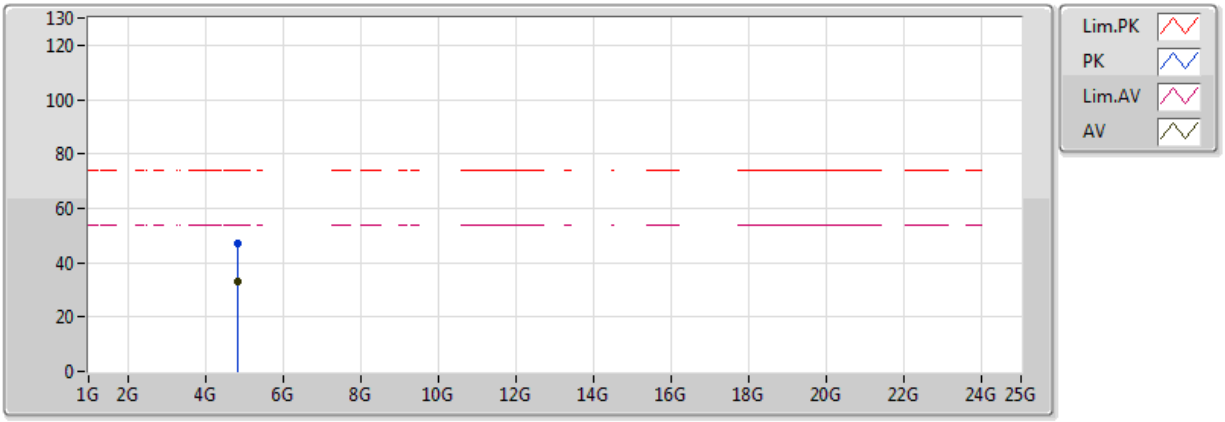


20170621
EUT Z_2TX
Setting 18
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3884G	48.91	54.00	-5.09	33.15	3	Horizontal	286	2.00
AV	2.4108G	103.95	Inf	-Inf	33.15	3	Horizontal	286	2.00
AV	2.4956G	46.31	54.00	-7.69	33.20	3	Horizontal	286	2.00
PK	2.3892G	68.09	74.00	-5.91	33.15	3	Horizontal	286	2.00
PK	2.4116G	106.38	Inf	-Inf	33.15	3	Horizontal	286	2.00
PK	2.4996G	57.79	74.00	-16.21	33.20	3	Horizontal	286	2.00

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2422MHz_TX

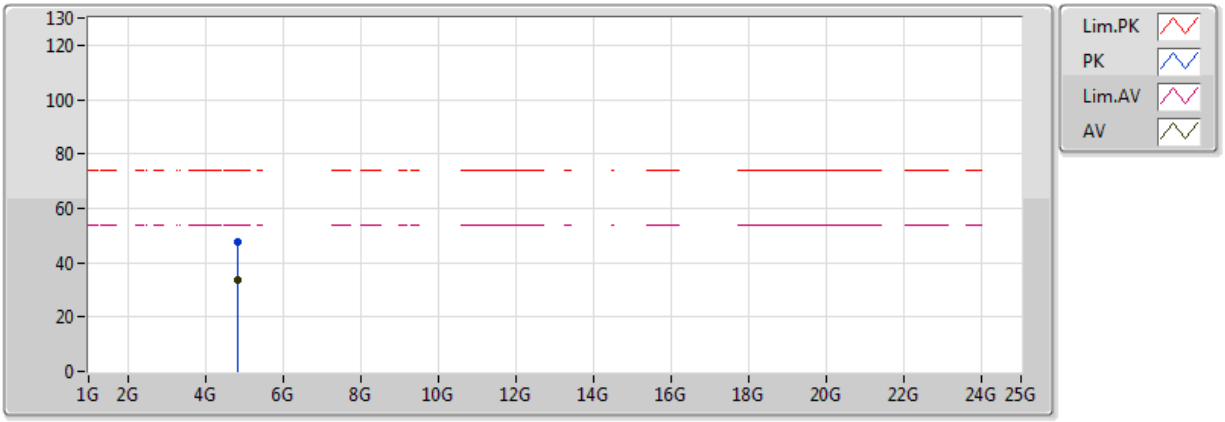


20170621
EUT Z_2TX
Setting 18
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.844268G	33.34	54.00	-20.66	4.25	3	Vertical	143	1.50
PK	4.843004G	46.95	74.00	-27.05	4.24	3	Vertical	143	1.50

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2422MHz_TX

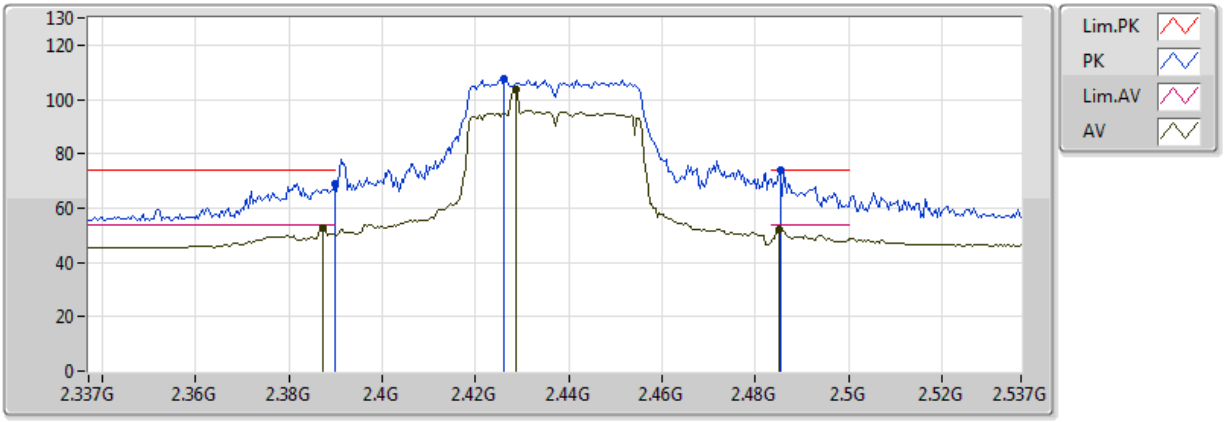


20170621
EUT Z_2TX
Setting 18
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.8448G	33.39	54.00	-20.61	4.25	3	Horizontal	174	1.50
PK	4.843116G	47.62	74.00	-26.38	4.24	3	Horizontal	174	1.50

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2437MHz_TX

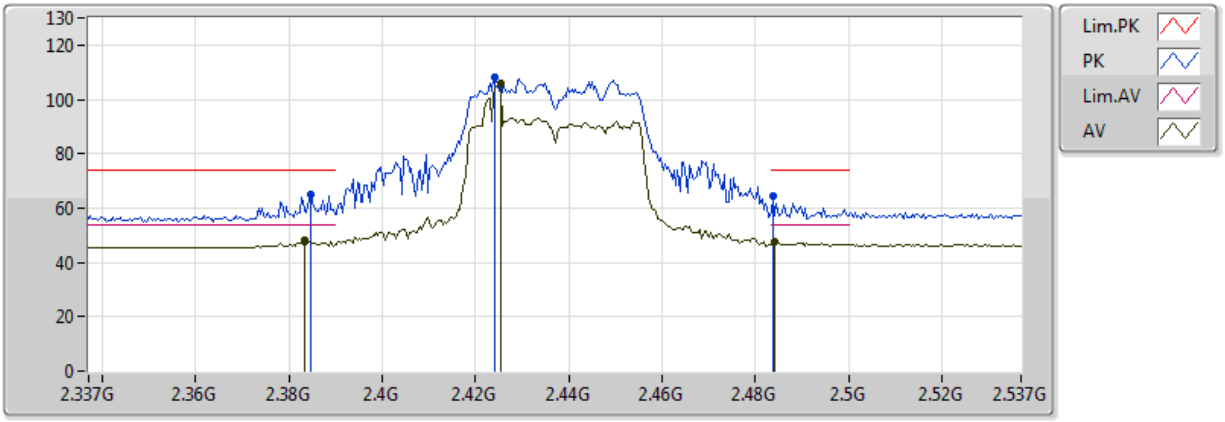


20170621
EUT Z_2TX
Setting 20
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3874G	52.54	54.00	-1.46	33.15	3	Vertical	137	2.27
AV	2.4286G	103.49	Inf	-Inf	33.16	3	Vertical	137	2.27
AV	2.485G	52.01	54.00	-1.99	33.19	3	Vertical	137	2.27
PK	2.3898G	69.15	74.00	-4.85	33.15	3	Vertical	137	2.27
PK	2.4262G	107.80	Inf	-Inf	33.16	3	Vertical	137	2.27
PK	2.4854G	73.98	74.00	-0.02	33.19	3	Vertical	137	2.27

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2437MHz_TX

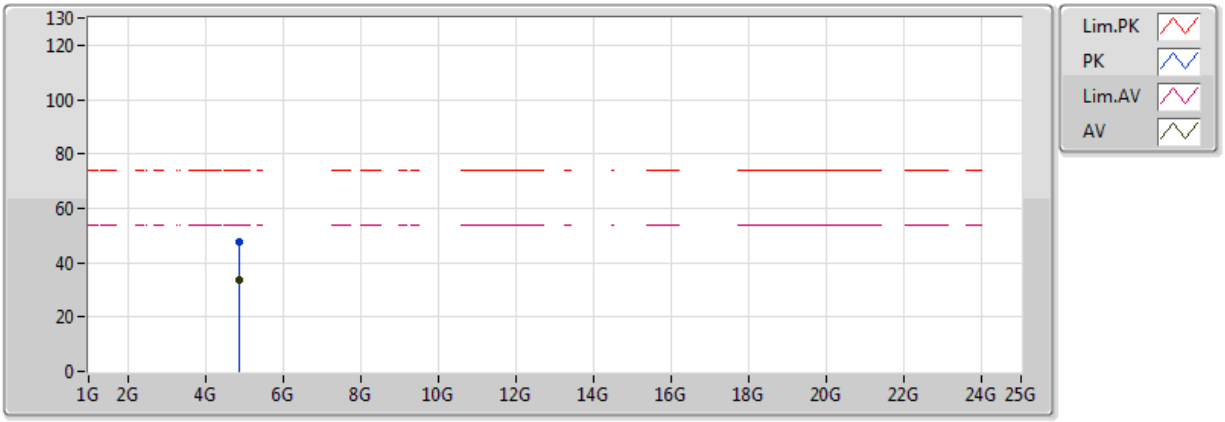


20170621
EUT Z_2TX
Setting 20
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.3834G	48.08	54.00	-5.92	33.15	3	Horizontal	303	1.12
AV	2.4254G	105.91	Inf	-Inf	33.16	3	Horizontal	303	1.12
AV	2.4842G	47.50	54.00	-6.50	33.19	3	Horizontal	303	1.12
PK	2.3846G	64.99	74.00	-9.01	33.15	3	Horizontal	303	1.12
PK	2.4242G	108.39	Inf	-Inf	33.15	3	Horizontal	303	1.12
PK	2.4838G	64.18	74.00	-9.82	33.19	3	Horizontal	303	1.12

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2437MHz_TX

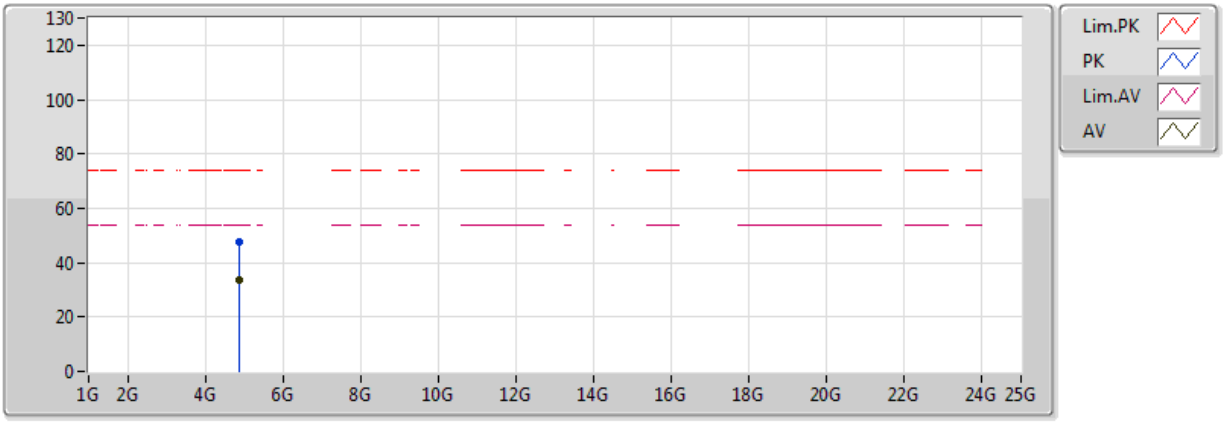


20170621
EUT Z_2TX
Setting 20
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.8735G	33.55	54.00	-20.45	4.34	3	Vertical	186	1.50
PK	4.873696G	47.44	74.00	-26.56	4.34	3	Vertical	186	1.50

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2437MHz_TX

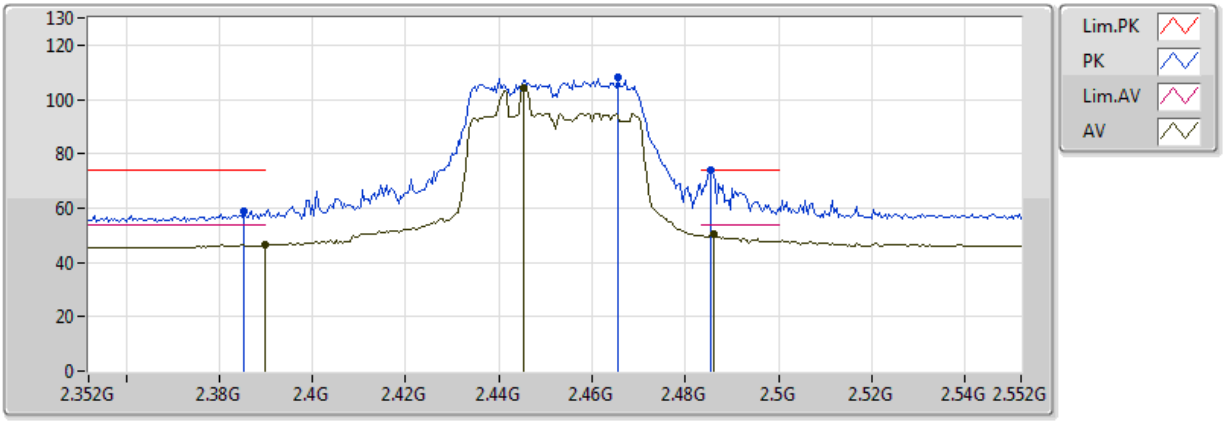


20170621
EUT Z_2TX
Setting 20
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.87328G	33.48	54.00	-20.52	4.34	3	Horizontal	143	1.50
PK	4.87478G	47.44	74.00	-26.56	4.34	3	Horizontal	143	1.50

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2452MHz_TX

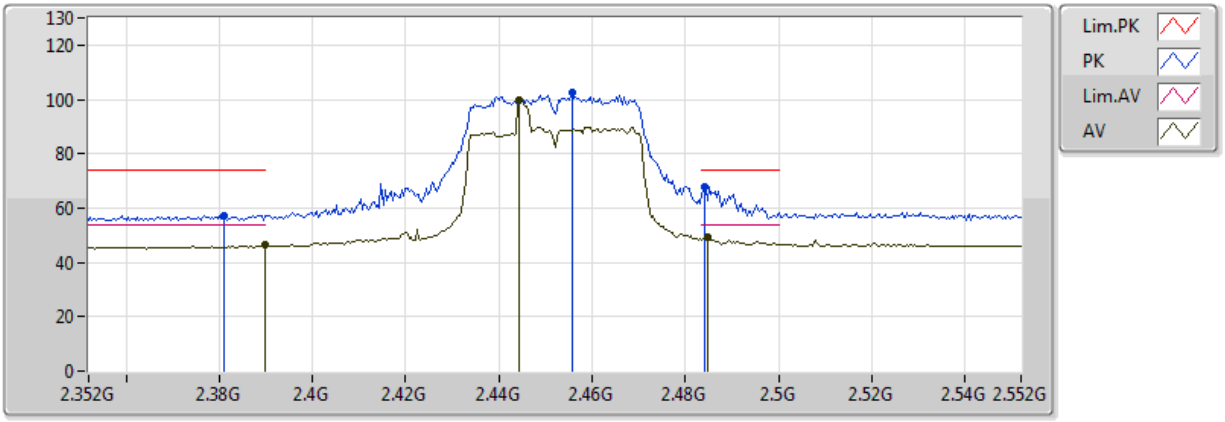


20170621
EUT Z_2TX
Setting 19
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	46.56	54.00	-7.44	33.15	3	Vertical	132	2.74
AV	2.4452G	103.97	Inf	-Inf	33.17	3	Vertical	132	2.74
AV	2.486G	50.21	54.00	-3.79	33.19	3	Vertical	132	2.74
PK	2.3852G	59.02	74.00	-14.98	33.15	3	Vertical	132	2.74
PK	2.4656G	107.98	Inf	-Inf	33.18	3	Vertical	132	2.74
PK	2.4856G	73.97	74.00	-0.03	33.19	3	Vertical	132	2.74

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2452MHz_TX

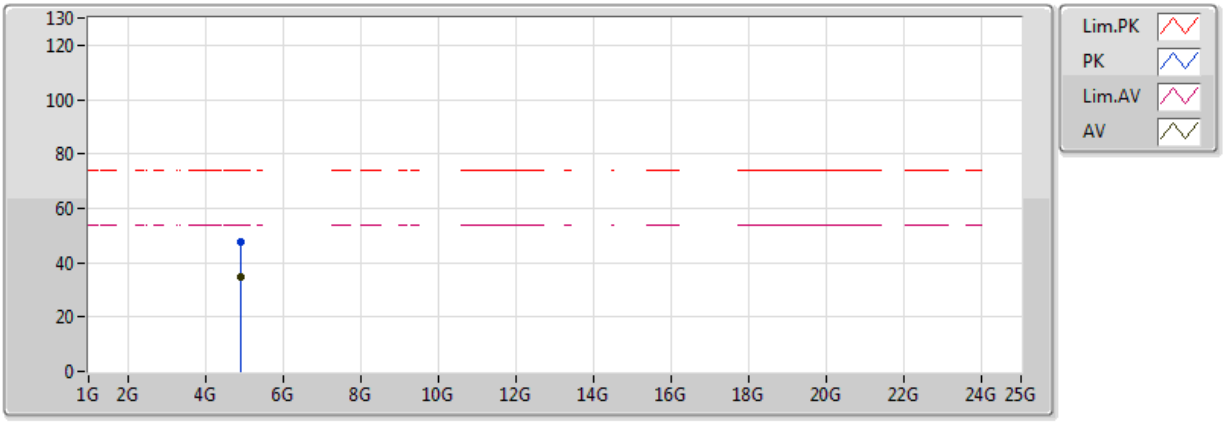


20170621
EUT Z_2TX
Setting 19
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	2.389998G	46.51	54.00	-7.49	33.15	3	Horizontal	138	1.17
AV	2.4444G	99.74	Inf	-Inf	33.17	3	Horizontal	138	1.17
AV	2.4848G	49.24	54.00	-4.76	33.19	3	Horizontal	138	1.17
PK	2.3812G	57.42	74.00	-16.58	33.15	3	Horizontal	138	1.17
PK	2.4556G	102.41	Inf	-Inf	33.17	3	Horizontal	138	1.17
PK	2.484G	67.89	74.00	-6.11	33.19	3	Horizontal	138	1.17

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2452MHz_TX

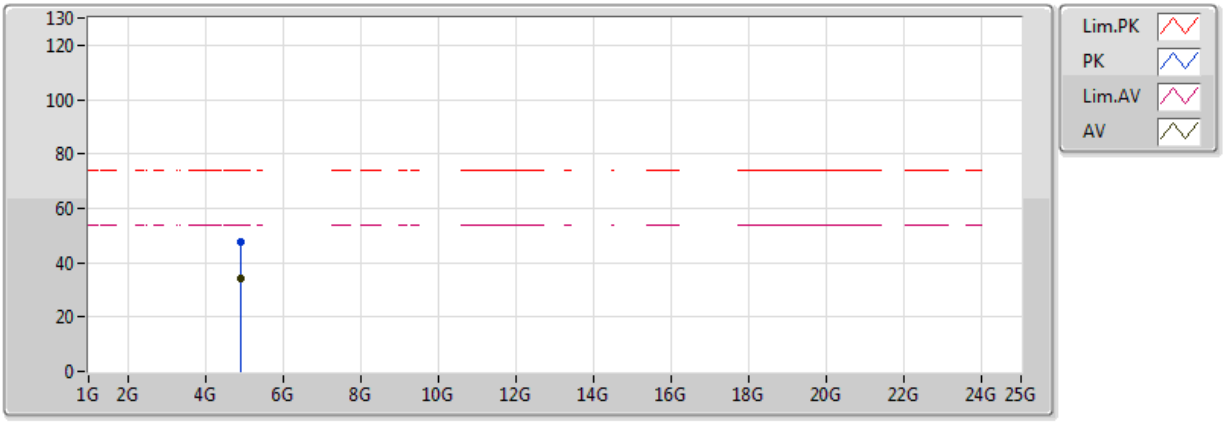


20170621
EUT Z_2TX
Setting 19
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.903752G	35.02	54.00	-18.98	4.43	3	Vertical	138	1.50
PK	4.904924G	47.35	74.00	-26.65	4.44	3	Vertical	138	1.50

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

2452MHz_TX



20170621
EUT Z_2TX
Setting 19
04-M-0
FSP(100304)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	4.903836G	34.10	54.00	-19.90	4.43	3	Horizontal	186	1.50
PK	4.904116G	47.43	74.00	-26.57	4.43	3	Horizontal	186	1.50

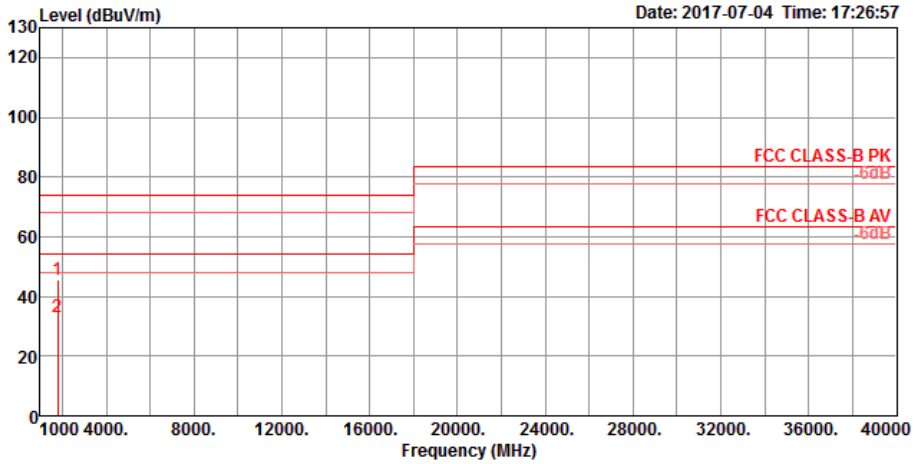
4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 23, 2017	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Radiation (03CH01-CB)
Amplifier	-	-	TF-130N-R1	26GHz ~ 40GHz	Jun. 20, 2017	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Test Software	Audix	E3	6.2009-l0-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Conducted (TH01-CB)

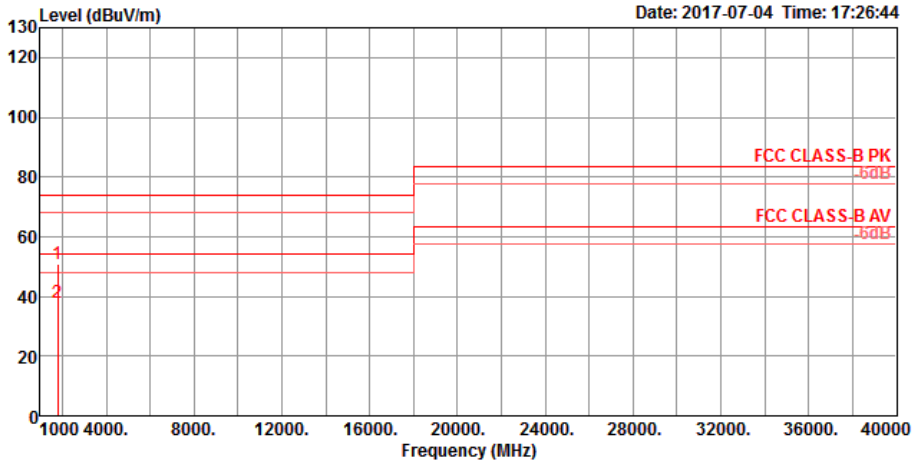
Note: Calibration Interval of instruments listed above is one year.
"*" Calibration Interval of instruments listed above is two years.
N.C.R. means Non-Calibration required.

RSE Co-location Result			
Operating Mode	1	**Polarization**	Horizontal
Operating Function	Normal Link		



	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	1798.26	45.72	74.00	-28.28	50.76	4.56	27.80	37.40	172	210	Peak	HORIZONTAL
2	1809.32	33.02	54.00	-20.98	37.98	4.57	27.87	37.40	172	210	Average	HORIZONTAL

RSE Co-location Result			
Operating Mode	1	**Polarization**	Vertical
Operating Function	Normal Link		



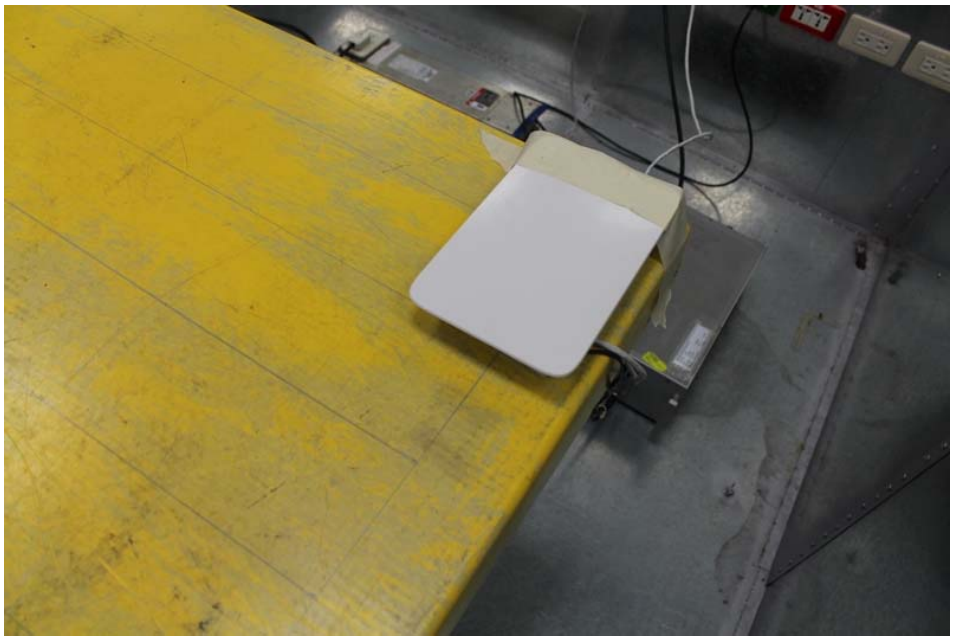
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1802.10	50.98	74.00	-23.02	55.97	4.57	27.84	37.40	137	259	Peak	VERTICAL
2	1810.00	37.78	54.00	-16.22	42.74	4.57	27.87	37.40	137	259	Average	VERTICAL

1. Photographs of Conducted Emissions Test Configuration

Test Mode: Mode 1

FRONT VIEW

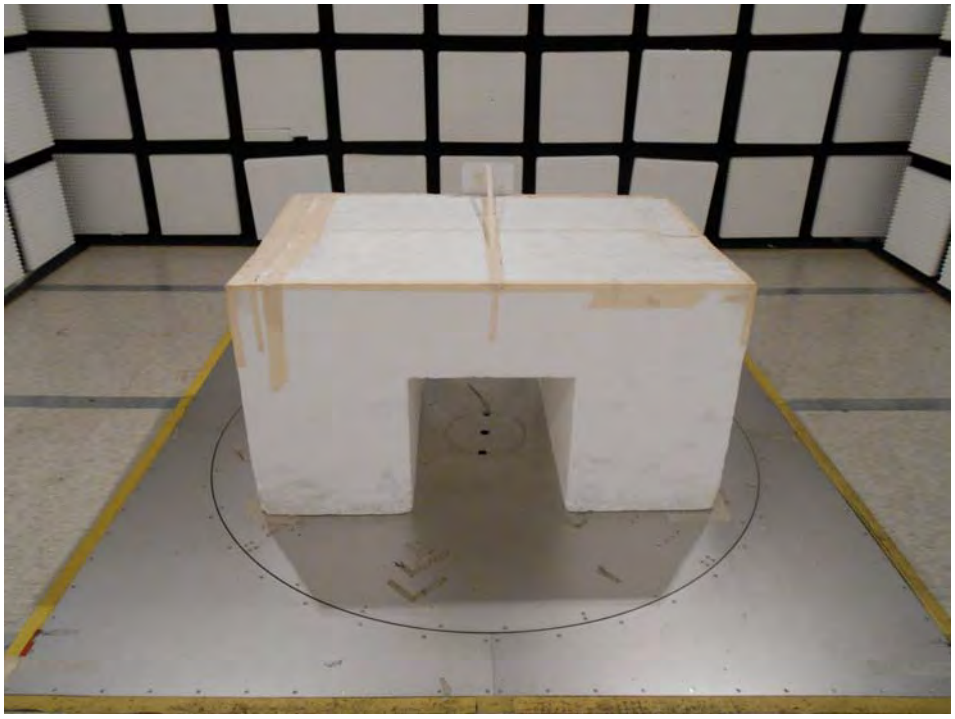
REAR VIEW



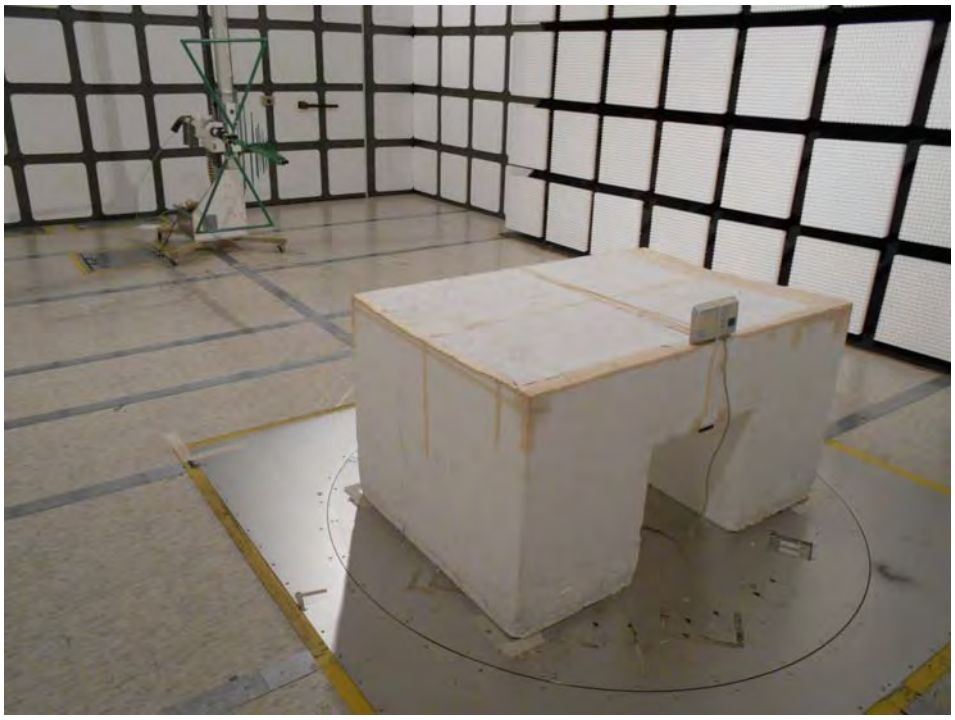
2. Photographs of Radiated Emissions Test Configuration

Test Configuration: 30MHz~1GHz / Test Mode: Mode 3

FRONT VIEW

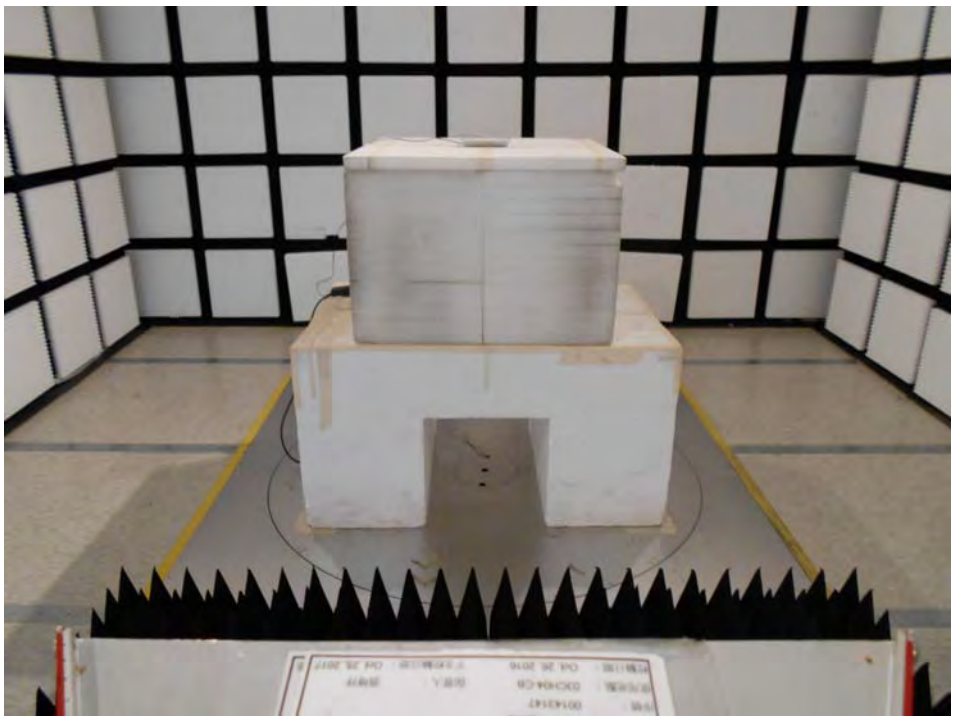


REAR VIEW



Test Configuration: Above 1GHz

FRONT VIEW



REAR VIEW