FCC RADIO TEST REPORT

FCC ID	:	Q87-03459
Equipment	:	LINKSYS MAX-STREAM AC1900 MU-MIMO GIGABIT ROUTER, LINKSYS MAX-STREAM AC1750 MU-MIMO GIGABIT ROUTER
Brand Name	:	LINKSYS
Model Name	:	EA7500 V3, EA7430, EA7250, EA7500S
Applicant	:	Linksys LLC 121 Theory Drive, Irvine, CA 92617, USA
Standard	:	47 CFR FCC Part 15.247

The product was received on Jun. 17, 2019, and testing was started from Jul. 08, 2019 and completed on Sep. 04, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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Appendix H. Test Photos

Photographs of EUT v01

History of this test report

Report No.	Version	Description	Issued Date
FR971025AA	01	Initial issue of report	Oct. 04, 2019
FR971025AA	02	Revise the information on section 2.5 support equipment.	Nov. 07, 2019

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
2. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen
Report Producer: Viola Huang

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)	2412-2462	1-11 [11]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	3TX
2.4-2.4835GHz	802.11g	20	3TX
2.4-2.4835GHz	802.11n HT20	20	3TX
2.4-2.4835GHz	802.11n HT20-BF	20	3TX
2.4-2.4835GHz	802.11n HT40	40	3TX
2.4-2.4835GHz	802.11n HT40-BF	40	3TX

Note:
- 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.
- 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	P/N	Antenna Type	Connector	Gain (dBi)		
	2.4G	5G					2.4GHz	5GHz Band 1	5GHz Band 4
1	3	1	FIT	4TS4009-A0007-JH	Dipole Antenna	I-PEX	3.17	3.22	2.77
2	2	2	FIT	4TS4009-A0008-JH	Dipole Antenna	I-PEX	3.12	2.90	2.87
3	1	3	FIT	4TS4009-A0009-JH	Dipole Antenna	I-PEX	2.54	3.15	3.06

Note 1: The above information was declared by manufacturer.

Note 2: The EUT has three antennas.

For 2.4GHz WLAN function

IEEE 802.11b/g/n mode (3TX/3RX):

Port 1, Port 2 and port 3 can be used as transmitting/receiving antenna.

Port 1, Port 2 and port 3 could transmit/receive simultaneously.

For 5GHz WLAN function

IEEE 802.11a/n/ac mode (3TX/3RX):

Port 1, port 2 and port 3 can be used as transmitting/receiving antenna.

Port 1, port 2 and port 3 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	0.03	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.96	0.18	1.4m	1k
802.11n HT20-BF	0.979	0.09	4.97m	300
802.11n HT40-BF	0.949	0.23	2.414m	1k

Note:
- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	For IEEE802.11n in 2.4GHz and 11n/ac in 5GHz.			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	QATool:v 0.0.2.5			

Note: The above information was declared by manufacturer.

1.1.5 EUT Supports Type

The EUT supports master (AP router, bridge, repeater) functions, only the master (AP router) was performed for all the tests, and it was based on manufacturer's request.

1.1.6 Table for Multiple Listing

Equipment Name	Model Name	Description
LINKSYS MAX-STREAM AC1900 MU-MIMO GIGABIT ROUTER	EA7500 V3	All the equipment names/model names are identical, the different equipment names/model names served as marketing strategy.
	EA7430	
	EA7500S	
LINKSYS MAX-STREAM AC1750 MU-MIMO GIGABIT ROUTER	EA7250	

From the above list, equipment name: LINKSYS MAX-STREAM AC1900 MU-MIMO GIGABIT ROUTER and model name: EA7500 V3 was selected as representative model for the test and its data was recorded in this report.

1.2 Applicable 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 v05r02
- FCC KDB 662911 D01 v02r01
- FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location							
☐	HWA YA	ADD	:	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)			
		TEL	:	886-3-327-3456	FAX	:	886-3-327-0973
☒	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	Eddie Weng	25.4~26.9°C / 62~66%	Jul. 11, 2019 ~ Aug. 13, 2019
Radiated below 1GHz	03CH06-CB	KJ Chang	23.8~25.5°C / 59~63%	Aug. 08, 2019 ~ Sep. 04, 2019
Radiated above 1GHz	03CH04-CB	KJ Chang	25.3~25.7°C / 60~65%	Jul. 08, 2019 ~ Aug. 12, 2019
AC Conduction	CO01-CB	Max Lin	23.2~24.1°C / 55~56%	Jul. 08, 2019 ~ Jul. 09, 2019

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)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	PowerSetting
802.11b_Nss1,(1Mbps)_3TX	-
2412MHz	28
2437MHz	29
2462MHz	24
802.11g_Nss1,(6Mbps)_3TX	-
2412MHz	20
2417MHz	24
2437MHz	2B
2457MHz	23
2462MHz	1E
802.11n HT20-BF_Nss1,(MCS0)_3TX	-
2412MHz	30
2417MHz	34
2437MHz	43
2457MHz	34
2462MHz	32
802.11n HT40-BF_Nss1,(MCS0)_3TX	-
2422MHz	24
2427MHz	28
2437MHz	33
2447MHz	29
2452MHz	27

Note:

- There are two modes of EUT for 802.11n in 2.4GHz. One is beamforming mode, and the other is non-beamforming mode, after evaluating, beamforming mode has been evaluated to be the worst case, so it was selected to test and record in this test 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	Normal Link-EUT + Adapter 1
2	Normal Link-EUT + Adapter 2
3	Normal Link-EUT + Adapter 3
4	Normal Link-EUT + Adapter 4
For operating mode 3 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	CTX
	The EUT was performed at Y axis and Z axis position for emissions in restricted frequency bands above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	EUT in Y axis-2.4G + Adapter 1
2	EUT in Y axis-2.4G + Adapter 2
3	EUT in Y axis-2.4G + Adapter 3
4	EUT in Y axis-2.4G + Adapter 4
Mode 4 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5 will follow this same test mode.	
5	EUT in Y axis-5G + Adapter 4
For operating mode 4 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, and the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	EUT in Y 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 G 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.: FA971025 for Co-location RF Exposure Evaluation.	

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 Telnet.
3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by Client and transmit duty cycle no less than 98%.

For Normal Link:
During the test, the EUT operation to normal function.

2.4 Accessories

Accessories			
Equipment Name	**Brand Name**	**Model Name**	**Rating**
Adapter 1 (Interchangeable plug)	Ktec	KSA-24W-120200D5	INPUT: 100-240V~50/60Hz, 0.6A OUTPUT: 12V, 2.0A
Adapter 2 (Fixed plug)	Ktec	KSA-24W-120200HU	INPUT: 100-240V~50/60Hz, 0.6A OUTPUT: 12V, 2.0A
Adapter 3 (Fixed plug)	APD	WB-24J12FU	INPUT: 100-240V~50-60Hz, 0.7A Max. OUTPUT: 12V, 2A
Adapter 4 (Interchangeable plug)	APD	WB-24J12R	INPUT: 100-240V~50-60Hz, 0.7A Max. OUTPUT: 12V, 2A
Others			
Plug of Ktec*1 (Use for Adapter 1)			
Plug of APD*1 (Use for Adapter 4)			
RJ-45 cable*1: Non-shielded, 0.9m			

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Flash disk3.0	Transcend	JetFlash-700	N/A
B	LAN NB	DELL	E6430	N/A
C	WAN NB	DELL	E6430	N/A
D	2.4G NB	DELL	E6430	N/A
E	5G NB	DELL	E6430	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	NB	DELL	E4300	N/A

For Radiated (above 1GHz):
(For non-beamforming mode)

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	NB	DELL	E4300	N/A

(For beamforming mode)

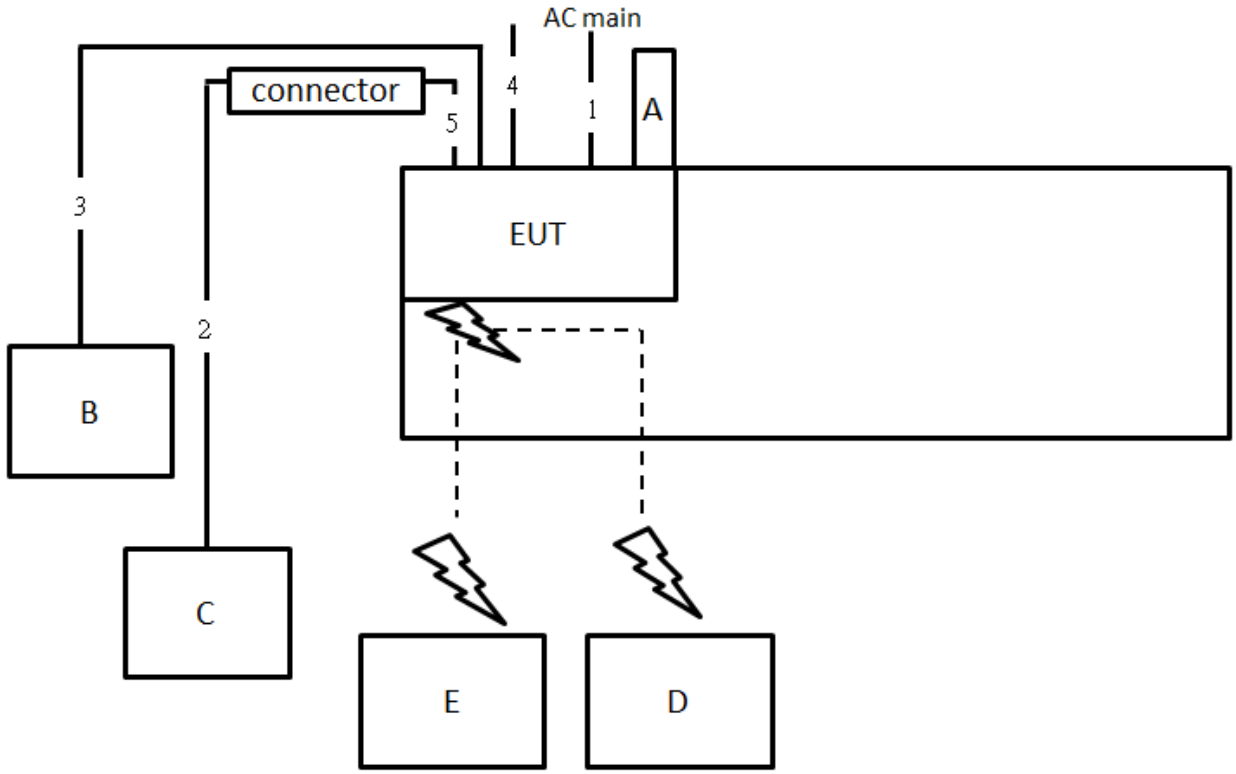
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	NB	DELL	E4300	N/A
B	Client	LINKSYS	EA7500 V3	Q87-03459
C	NB	DELL	E4300	N/A

For RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	NB	DELL	E4300	N/A

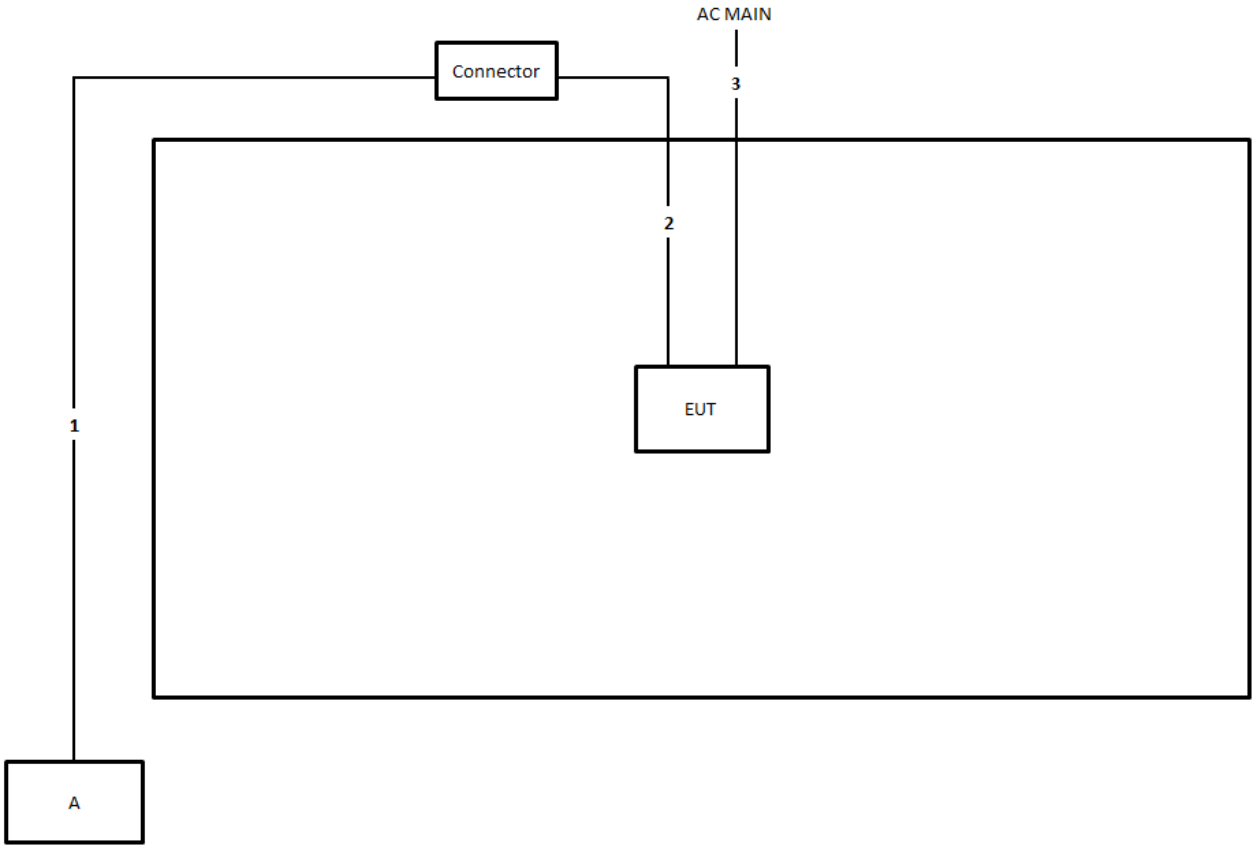
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



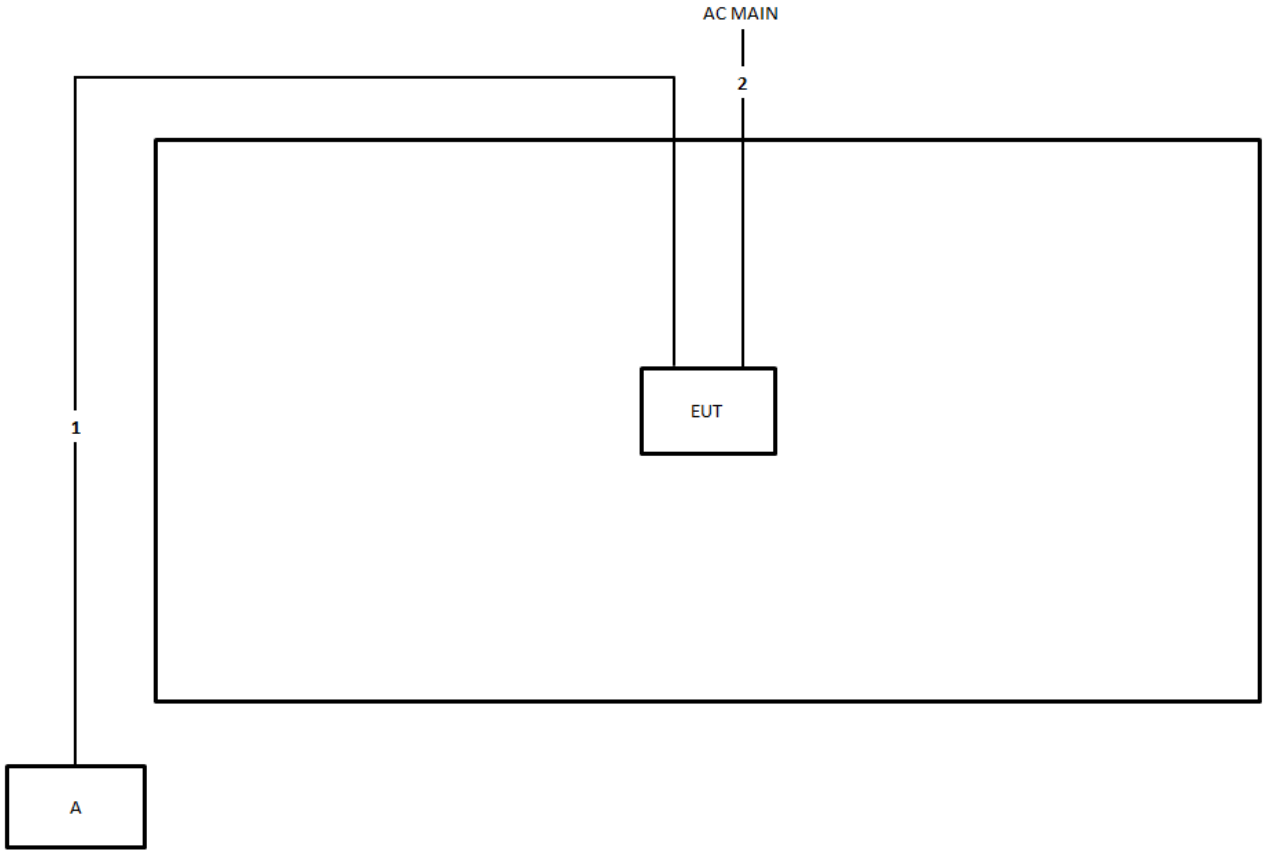
Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	10m
4	RJ-45 cable*3	No	1.5m
5	RJ-45 cable	No	0.9m

Test Setup Diagram - Radiated Test < 1GHz



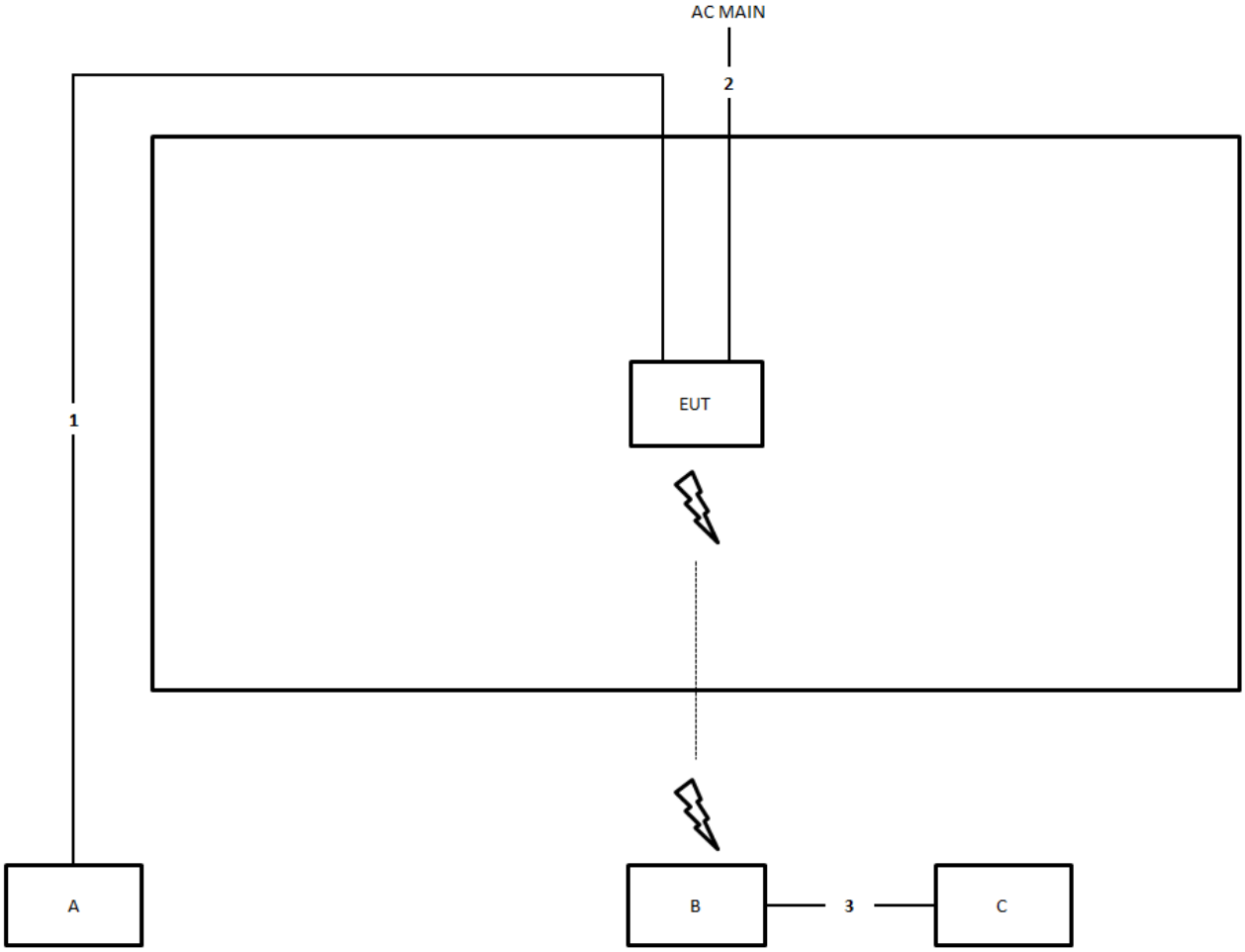
Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	0.9m
3	Power cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz / for non-beamforming mode



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

Test Setup Diagram - Radiated Test > 1GHz / for beamforming mode



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

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

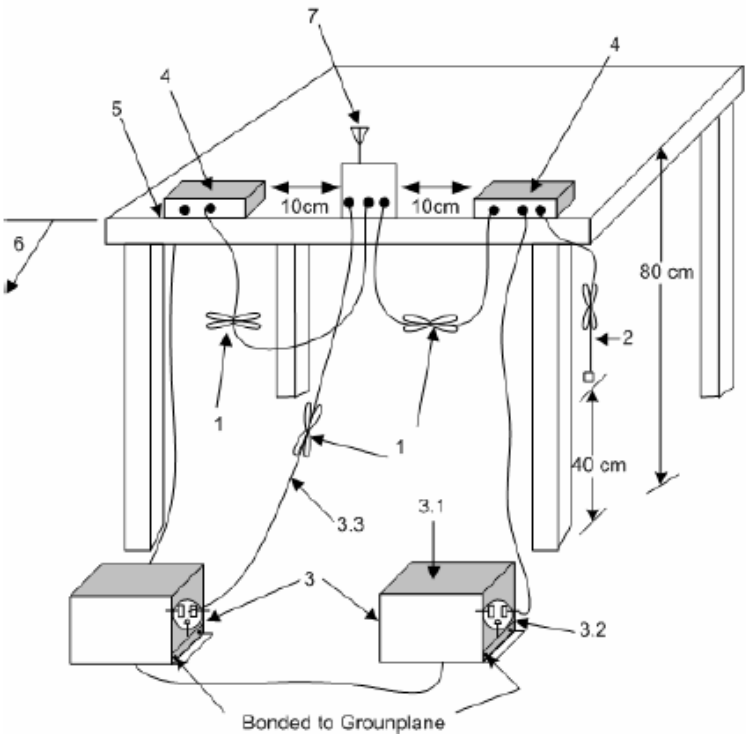
Refer a test equipment and calibration data table in this test report.

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



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

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

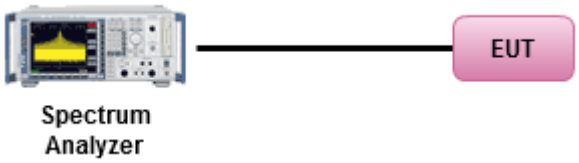
3.2.2 Measuring Instruments

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 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
	☐ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 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

Refer as Appendix B

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 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
	☐ Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
	Measurement using a power meter (PM)
	☒ Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
	☐ Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
▪ 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

Refer as Appendix C

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.

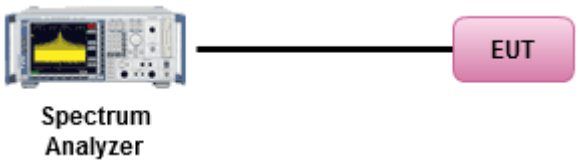
3.4.3 Test Procedures

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 8.4 & C63.10 clause 11.10.2 Method PKPSD.
	[duty cycle ≥ 98% or external video / power trigger]	
	☐	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.
	☐	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.
	☐	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPSD-3.
	duty cycle < 98% and average over on/off periods with duty factor	
	☐	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).
	☐	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)
	☐	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPSD-3A. (alternative)
▪ 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

Refer as Appendix D

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 (dBc)**
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

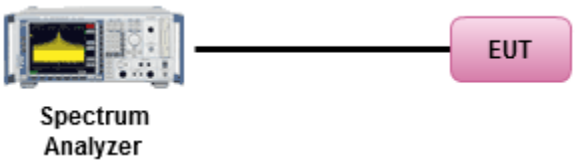
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method
▪ Refer as FCC KDB 558074, clause 8.5 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

Refer as Appendix E

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.

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

3.6.2 Measuring Instruments

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

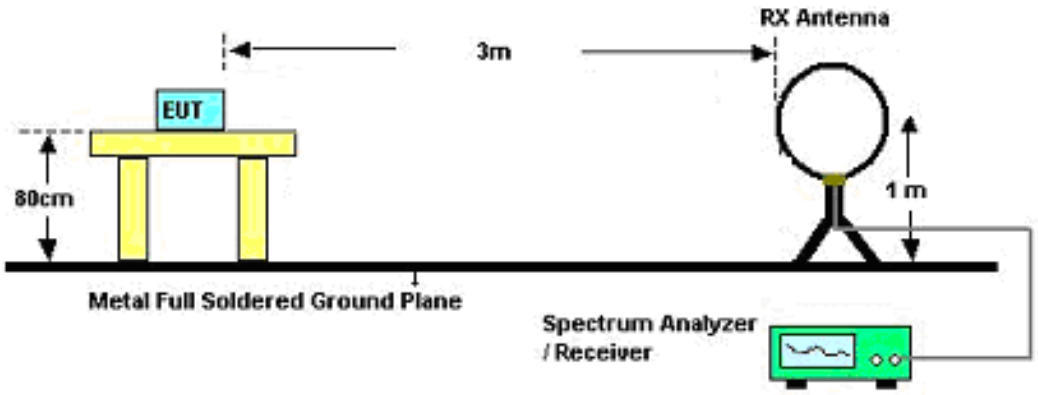
3.6.3 Test Procedures

Test Method			
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].			
▪ Refer as ANSI C63.10, clause 6.10.3 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 8.6 for unwanted emissions into restricted bands.		
		☐	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle ≥98%).
		☐	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
		☒	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).
		☐	Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐	Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
		☒	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:			
	▪ Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, 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 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.		
	▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).		
	▪ 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.		

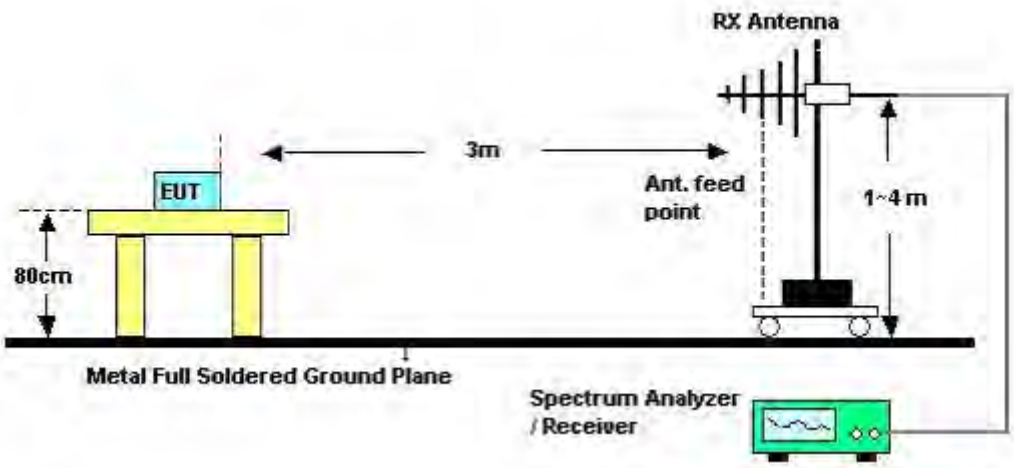
3.6.4 Test Setup

Radiated - Emissions in Restricted Frequency Bands

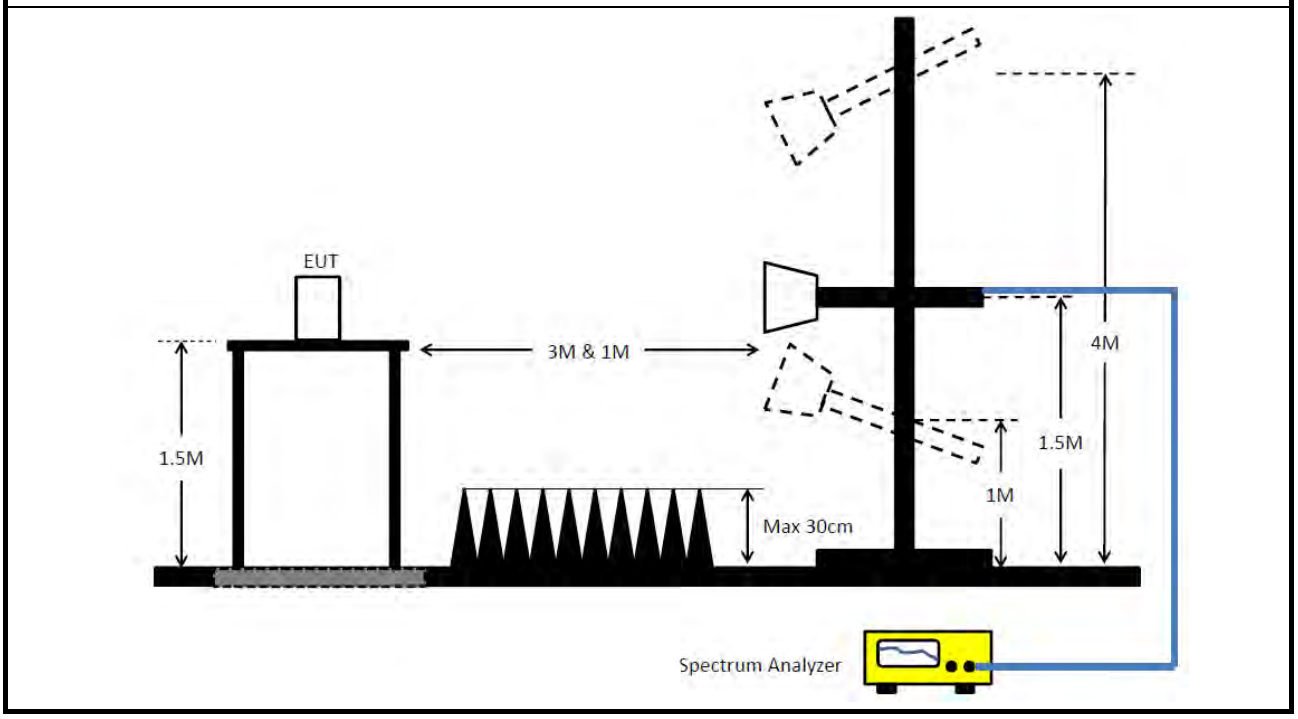
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.6.5 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

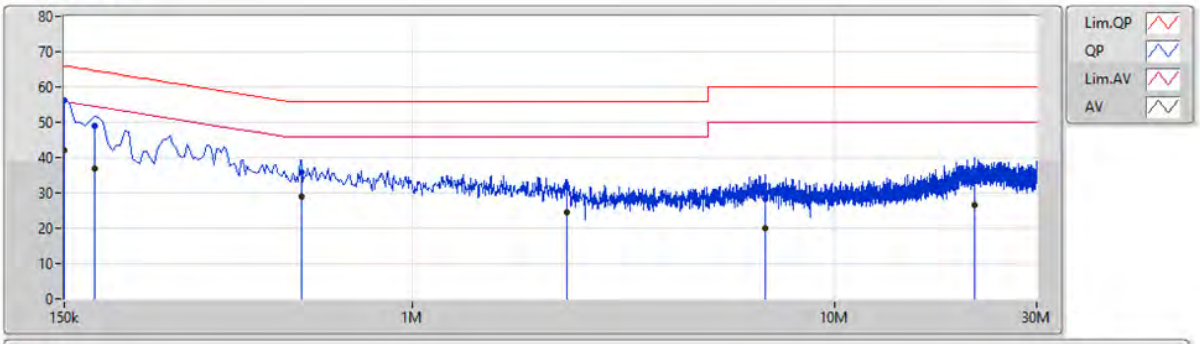
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-1 6-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Bilog Antenna with 6 dB attenuator	Schaffner	CBL6112B & N-6-06	2928 & AT-N0607	20MHz ~ 2GHz	Jan. 02, 2019	Jan. 01, 2020	Radiation (03CH06-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	May 07, 2019	May 06, 2020	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH06-CB)
RF Cable-low	HUBER+SUH NER	RG402	Low Cable-05+24	30MHz~1GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH06-CB)
Horn Antenna	ETS・Lindgren	3115	00143147	750MHz~18GHz	Oct. 26, 2018	Oct. 25, 2019	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH04-CB
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	May 30, 2019	May 29, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)

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

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

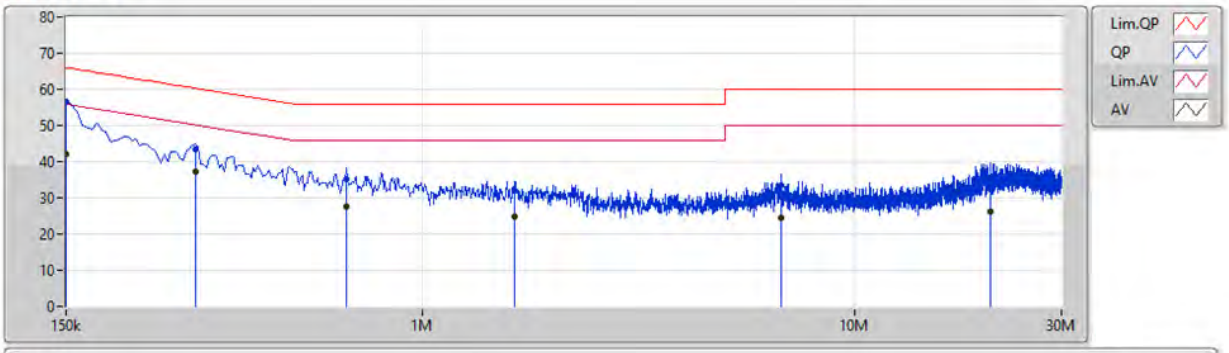
AC Power-line Conducted Emissions Result			
Operating Mode	3	**Power Phase**	Line
Operating Function	Normal Link		



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	AF (dB)	CL (dB)	AT (dB)
QP	150k	56.31	66.00	-9.69	9.90	Line	"Worst"	46.41	0.05	0.06	9.79
AV	150k	42.09	56.00	-13.91	9.90	Line	-	32.19	0.05	0.06	9.79
QP	177k	48.88	64.62	-15.74	9.91	Line	-	38.97	0.06	0.06	9.79
AV	177k	37.06	54.62	-17.56	9.91	Line	-	27.15	0.06	0.06	9.79
QP	546k	35.81	56.00	-20.19	9.94	Line	-	25.87	0.06	0.07	9.81
AV	546k	28.92	46.00	-17.08	9.94	Line	-	18.98	0.06	0.07	9.81
QP	2.324M	31.68	56.00	-24.32	10.06	Line	-	21.62	0.10	0.13	9.83
AV	2.324M	24.55	46.00	-21.45	10.06	Line	-	14.49	0.10	0.13	9.83
QP	6.833M	28.23	60.00	-31.77	10.25	Line	-	17.98	0.17	0.21	9.87
AV	6.833M	19.86	50.00	-30.14	10.25	Line	-	9.61	0.17	0.21	9.87
QP	21.368M	33.52	60.00	-26.48	10.58	Line	-	22.94	0.30	0.28	10.00
AV	21.368M	26.57	50.00	-23.43	10.58	Line	-	15.99	0.30	0.28	10.00

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	3	**Power Phase**	Neutral
Operating Function	Normal Link		



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	AF (dB)	CL (dB)	AT (dB)
QP	150k	56.56	66.00	-9.44	9.89	Neutral	"Worst"	46.67	0.04	0.06	9.79
AV	150k	42.04	56.00	-13.96	9.89	Neutral	-	32.15	0.04	0.06	9.79
QP	298.5k	43.54	60.28	-16.74	9.90	Neutral	-	33.64	0.04	0.06	9.80
AV	298.5k	37.20	50.28	-13.08	9.90	Neutral	-	27.30	0.04	0.06	9.80
QP	667.5k	35.26	56.00	-20.74	9.95	Neutral	-	25.31	0.05	0.08	9.82
AV	667.5k	27.67	46.00	-18.33	9.95	Neutral	-	17.72	0.05	0.08	9.82
QP	1.635M	32.05	56.00	-23.95	10.01	Neutral	-	22.04	0.07	0.11	9.83
AV	1.635M	24.95	46.00	-21.05	10.01	Neutral	-	14.94	0.07	0.11	9.83
QP	6.761M	33.35	60.00	-26.65	10.22	Neutral	-	23.13	0.15	0.20	9.87
AV	6.761M	24.39	50.00	-25.61	10.22	Neutral	-	14.17	0.15	0.20	9.87
QP	20.544M	33.37	60.00	-26.63	10.51	Neutral	-	22.86	0.26	0.26	9.99
AV	20.544M	26.29	50.00	-23.71	10.51	Neutral	-	15.78	0.26	0.26	9.99

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

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_3TX	9.525M	14.893M	14M9G1D	9.025M	13.293M
802.11g_Nss1,(6Mbps)_3TX	16.25M	17.791M	17M8D1D	15M	16.367M
802.11n HT20-BF_Nss1,(MCS0)_3TX	16.875M	18.466M	18M5D1D	15.05M	17.541M
802.11n HT40-BF_Nss1,(MCS0)_3TX	35.1M	36.032M	36M0D1D	32.55M	35.832M

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)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
802.11b_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	9.05M	14.018M	9.525M	14.618M	9.05M	14.068M
2437MHz	Pass	500k	9.075M	14.118M	9.525M	14.893M	9.1M	14.118M
2462MHz	Pass	500k	9.075M	13.643M	9.05M	13.843M	9.025M	13.293M
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	15M	16.392M	15.075M	16.392M	15.05M	16.367M
2437MHz	Pass	500k	15M	16.667M	15.025M	17.791M	16.25M	16.842M
2462MHz	Pass	500k	15.075M	16.392M	15.075M	16.392M	15.025M	16.367M
802.11n HT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	15.05M	17.566M	15.65M	17.541M	16.875M	17.566M
2437MHz	Pass	500k	15.05M	17.741M	16.275M	18.466M	15.05M	17.841M
2462MHz	Pass	500k	15.1M	17.541M	15.675M	17.566M	15.05M	17.566M
802.11n HT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	35.05M	35.832M	35.1M	35.882M	32.55M	35.932M
2437MHz	Pass	500k	35.05M	36.032M	35M	35.932M	34.95M	35.932M
2452MHz	Pass	500k	35.1M	35.932M	35.05M	35.882M	35.1M	35.932M

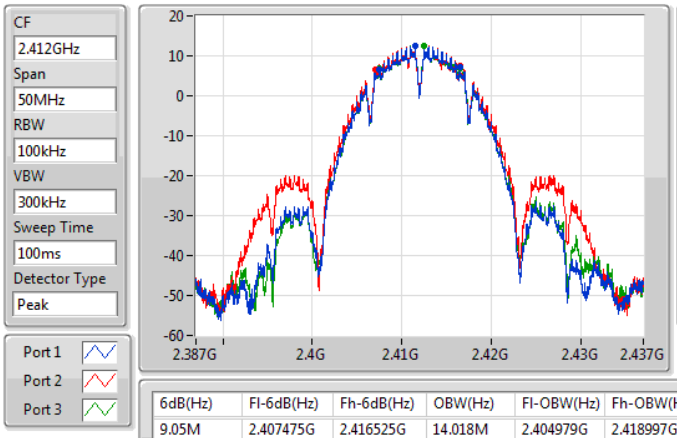
Port X-N dB = Port **X** 6dB down bandwidth; **Port X-OBW** = Port **X** 99% occupied bandwidth;

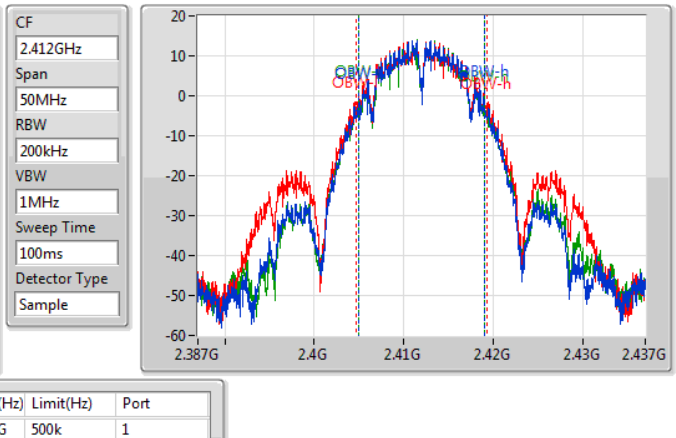
802.11b_Nss1,(1Mbps)_3TX

EBW

2412MHz

11/07/2019





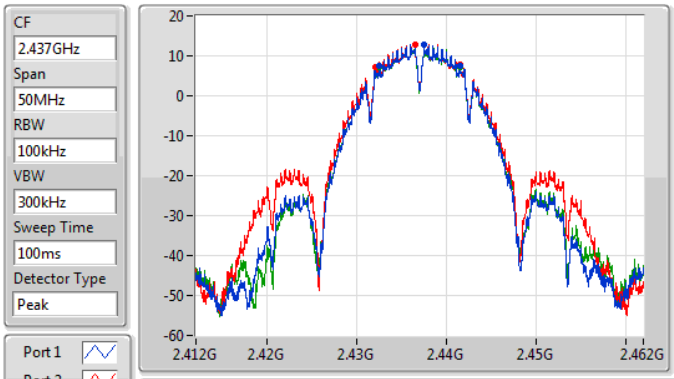
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.05M	2.407475G	2.416525G	14.018M	2.404979G	2.418997G	500k	1
9.525M	2.407G	2.416525G	14.618M	2.404679G	2.419296G	500k	2
9.05M	2.407475G	2.416525G	14.068M	2.404954G	2.419021G	500k	3

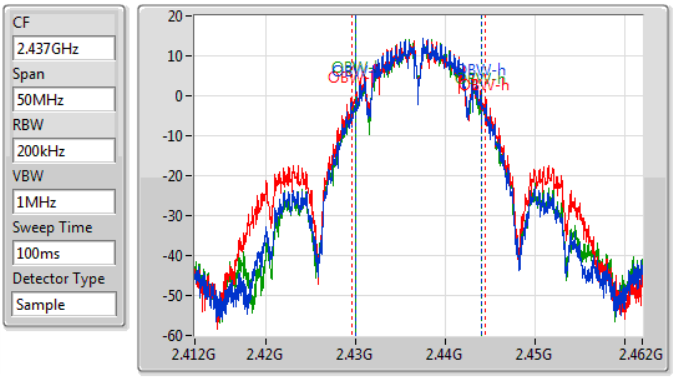
802.11b_Nss1,(1Mbps)_3TX

EBW

2437MHz

11/07/2019





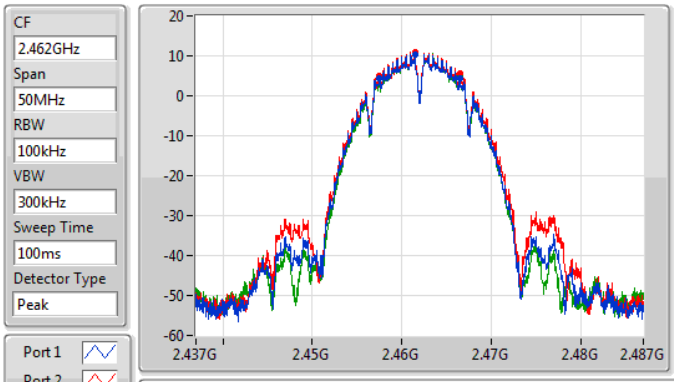
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.075M	2.432475G	2.44155G	14.118M	2.429929G	2.444046G	500k	1
9.525M	2.432G	2.441525G	14.893M	2.429504G	2.444396G	500k	2
9.1M	2.43245G	2.44155G	14.118M	2.429954G	2.444071G	500k	3

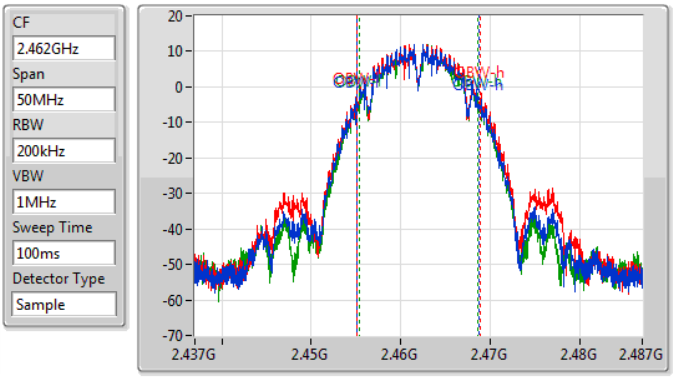
802.11b_Nss1,(1Mbps)_3TX

EBW

2462MHz

11/07/2019





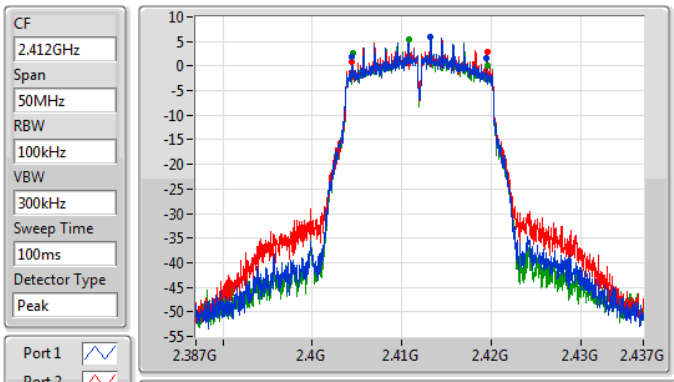
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.075M	2.45745G	2.466525G	13.643M	2.455128G	2.468772G	500k	1
9.05M	2.457475G	2.466525G	13.843M	2.455103G	2.468947G	500k	2
9.025M	2.457475G	2.4665G	13.293M	2.455353G	2.468647G	500k	3

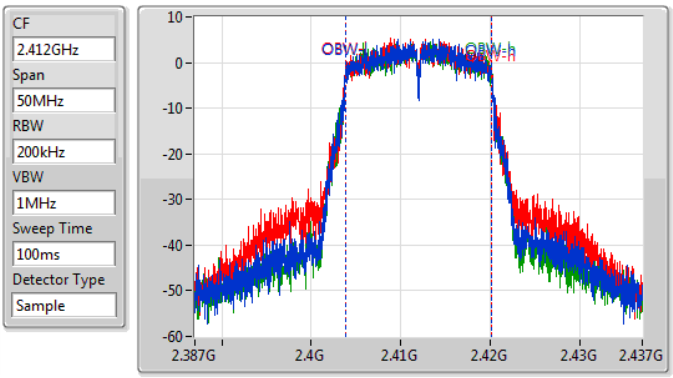
802.11g_Nss1,(6Mbps)_3TX

EBW

2412MHz

11/07/2019





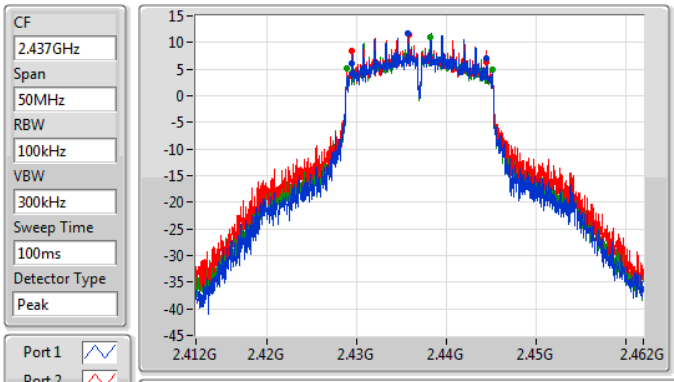
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15M	2.404475G	2.419475G	16.392M	2.403804G	2.420196G	500k	1
15.075M	2.40445G	2.419525G	16.392M	2.403804G	2.420196G	500k	2
15.05M	2.4045G	2.41955G	16.367M	2.403804G	2.420171G	500k	3

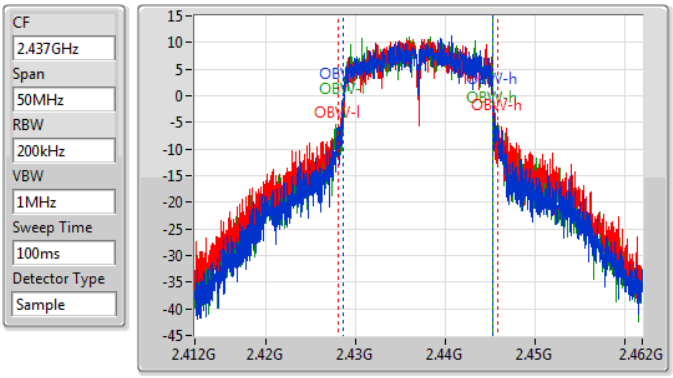
802.11g_Nss1,(6Mbps)_3TX

EBW

2437MHz

11/07/2019





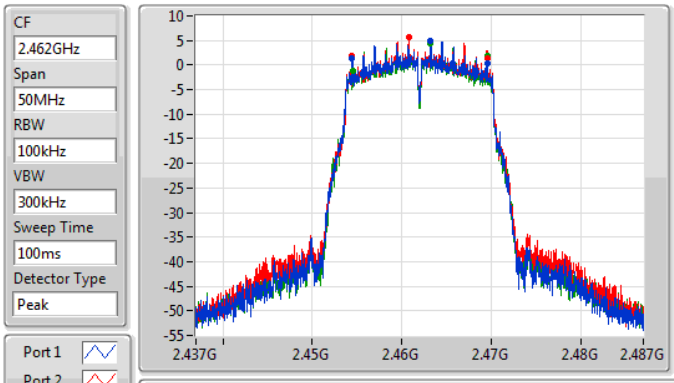
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15M	2.42945G	2.44445G	16.667M	2.428629G	2.445296G	500k	1
15.025M	2.429475G	2.4445G	17.791M	2.428054G	2.445846G	500k	2
16.25M	2.428875G	2.445125G	16.842M	2.428504G	2.445346G	500k	3

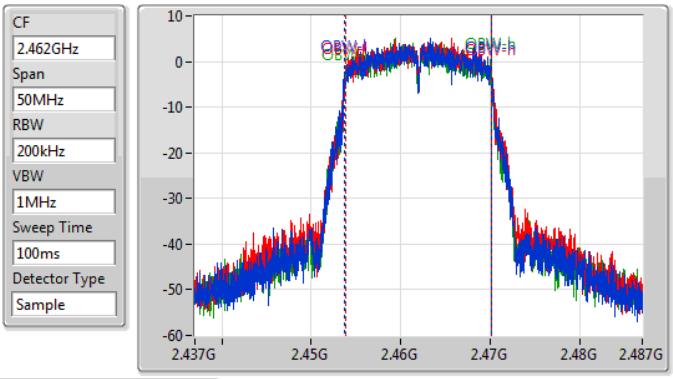
802.11g_Nss1,(6Mbps)_3TX

EBW

2462MHz

11/07/2019





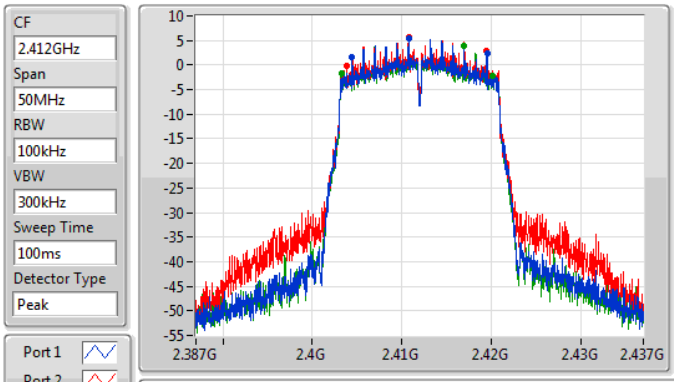
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.075M	2.454475G	2.46955G	16.392M	2.453779G	2.470171G	500k	1
15.075M	2.454475G	2.46955G	16.392M	2.453804G	2.470196G	500k	2
15.025M	2.4545G	2.469525G	16.367M	2.453804G	2.470171G	500k	3

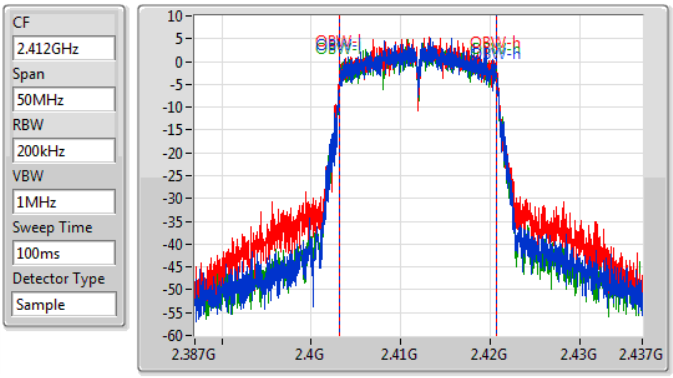
802.11n HT20-BF_Nss1,(MCS0)_3TX

EBW

2412MHz

11/07/2019





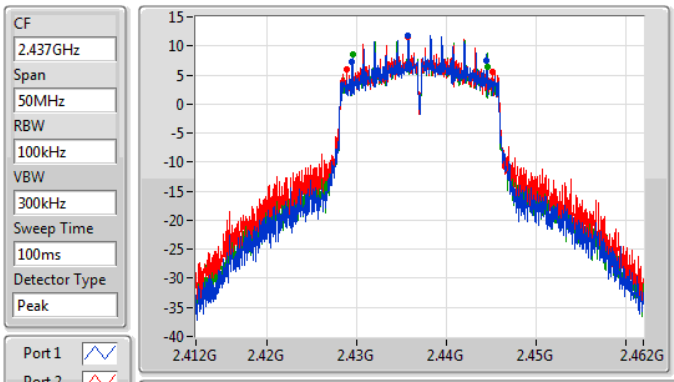
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.05M	2.404475G	2.419525G	17.566M	2.403204G	2.420771G	500k	1
15.65M	2.40385G	2.4195G	17.541M	2.403204G	2.420746G	500k	2
16.875M	2.40325G	2.420125G	17.566M	2.403204G	2.420771G	500k	3

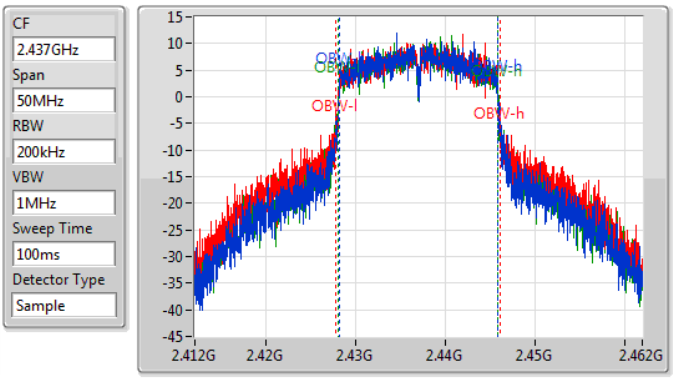
802.11n HT20-BF_Nss1,(MCS0)_3TX

EBW

2437MHz

11/07/2019





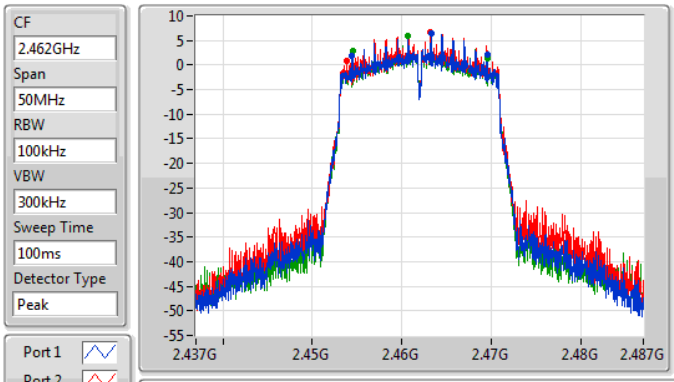
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.05M	2.42945G	2.4445G	17.741M	2.428129G	2.445871G	500k	1
16.275M	2.42885G	2.445125G	18.466M	2.427705G	2.44617G	500k	2
15.05M	2.4295G	2.44455G	17.841M	2.428054G	2.445896G	500k	3

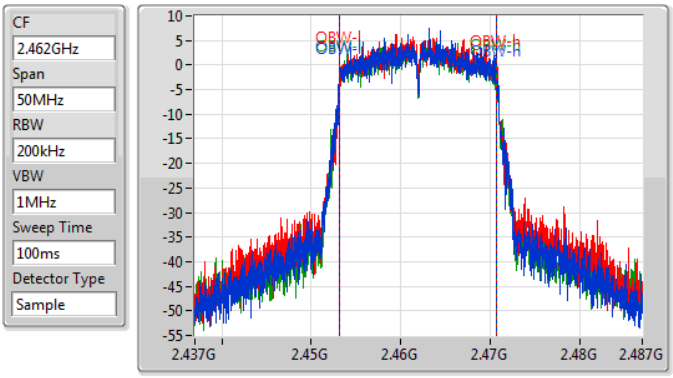
802.11n HT20-BF_Nss1,(MCS0)_3TX

EBW

2462MHz

11/07/2019





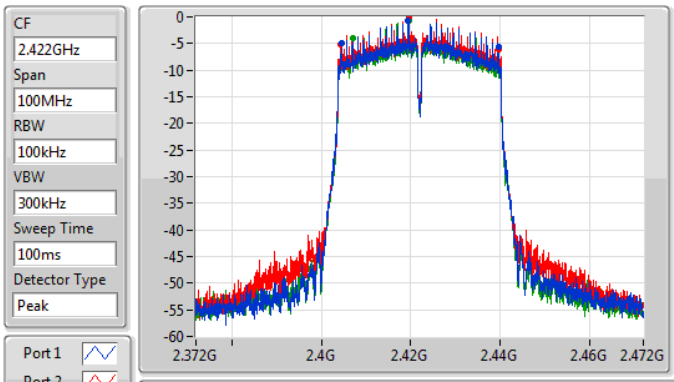
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.1M	2.45445G	2.46955G	17.541M	2.453204G	2.470746G	500k	1
15.675M	2.45385G	2.469525G	17.566M	2.453204G	2.470771G	500k	2
15.05M	2.4545G	2.46955G	17.566M	2.453204G	2.470771G	500k	3

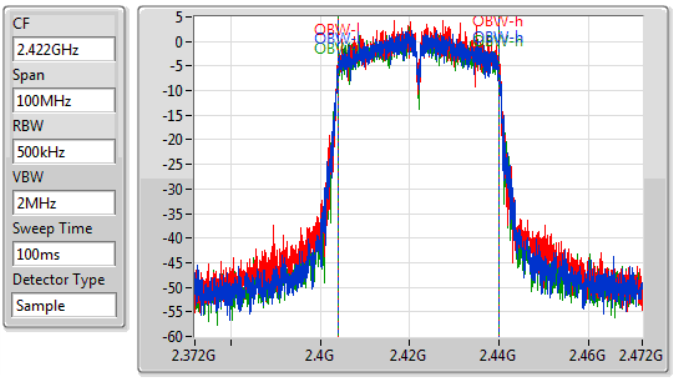
802.11n HT40-BF_Nss1,(MCS0)_3TX

EBW

2422MHz

11/07/2019



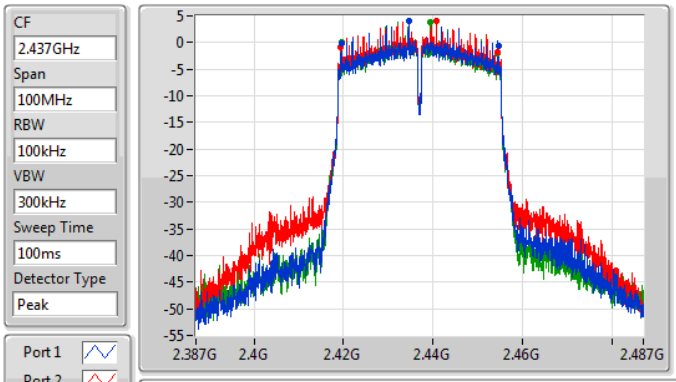


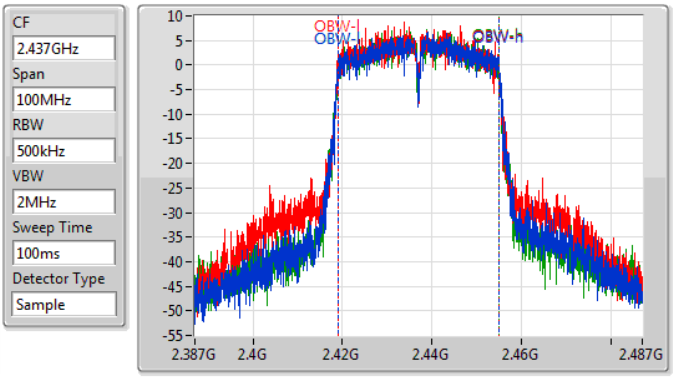
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.05M	2.4045G	2.43955G	35.832M	2.404059G	2.439891G	500k	1
35.1M	2.40445G	2.43955G	35.882M	2.404059G	2.439941G	500k	2
32.55M	2.407G	2.43955G	35.932M	2.404009G	2.439941G	500k	3

802.11n HT40-BF_Nss1,(MCS0)_3TX EBW

2437MHz

11/07/2019



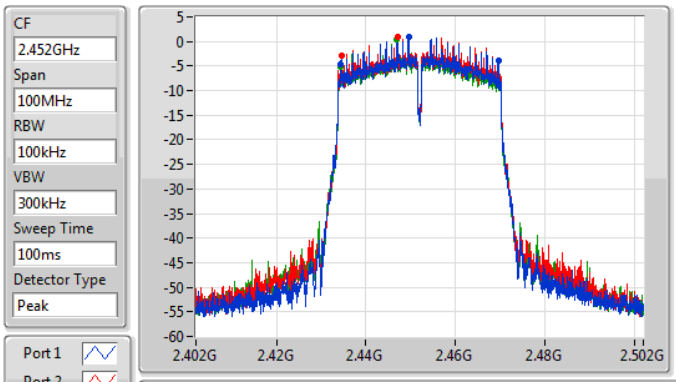


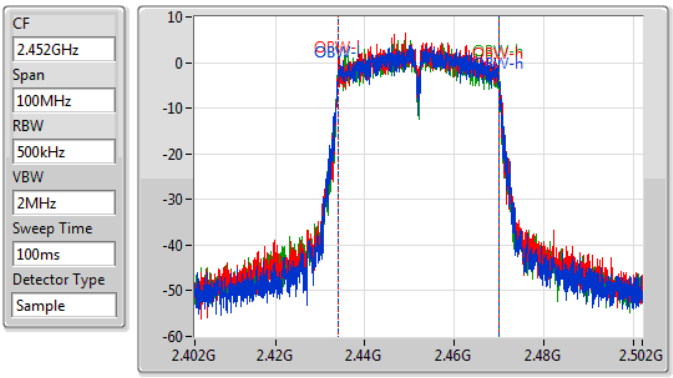
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.05M	2.4195G	2.45455G	36.032M	2.418959G	2.454991G	500k	1
35M	2.41945G	2.45445G	35.932M	2.418959G	2.454891G	500k	2
34.95M	2.4195G	2.45445G	35.932M	2.418959G	2.454891G	500k	3

802.11n HT40-BF_Nss1,(MCS0)_3TX EBW

2452MHz

11/07/2019





6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.1M	2.43445G	2.46955G	35.932M	2.434009G	2.469941G	500k	1
35.05M	2.4345G	2.46955G	35.882M	2.434009G	2.469891G	500k	2
35.1M	2.43445G	2.46955G	35.932M	2.433959G	2.469891G	500k	3

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_3TX	27.78	0.59979
802.11g_Nss1,(6Mbps)_3TX	26.88	0.48753
802.11n HT20-BF_Nss1,(MCS0)_3TX	26.54	0.45082
802.11n HT40-BF_Nss1,(MCS0)_3TX	21.68	0.14723

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.17	22.38	22.70	22.43	27.28	30.00
2437MHz	Pass	3.17	22.90	23.17	22.96	27.78	30.00
2462MHz	Pass	3.17	20.59	21.08	20.48	25.50	30.00
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.17	17.00	17.40	17.01	21.91	30.00
2417MHz	Pass	3.17	19.02	19.41	18.98	23.91	30.00
2437MHz	Pass	3.17	22.06	22.24	22.03	26.88	30.00
2457MHz	Pass	3.17	18.46	18.70	18.33	23.27	30.00
2462MHz	Pass	3.17	16.01	16.44	15.77	20.85	30.00
802.11n HT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	7.72	15.56	16.11	15.48	20.50	28.28
2417MHz	Pass	7.72	17.42	17.99	17.32	22.36	28.28
2437MHz	Pass	7.72	21.67	21.92	21.72	26.54	28.28
2457MHz	Pass	7.72	17.62	17.65	17.59	22.39	28.28
2462MHz	Pass	7.72	16.57	17.08	16.47	21.49	28.28
802.11n HT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	7.72	12.55	12.95	12.25	17.36	28.28
2427MHz	Pass	7.72	14.28	14.62	14.15	19.13	28.28
2437MHz	Pass	7.72	16.80	17.13	16.78	21.68	28.28
2447MHz	Pass	7.72	14.76	14.93	14.94	19.65	28.28
2452MHz	Pass	7.72	13.99	14.12	13.55	18.66	28.28

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_3TX	-3.62
802.11g_Nss1,(6Mbps)_3TX	-4.86
802.11n HT20-BF_Nss1,(MCS0)_3TX	-6.00
802.11n HT40-BF_Nss1,(MCS0)_3TX	-12.34

RBW=3 kHz.

Result

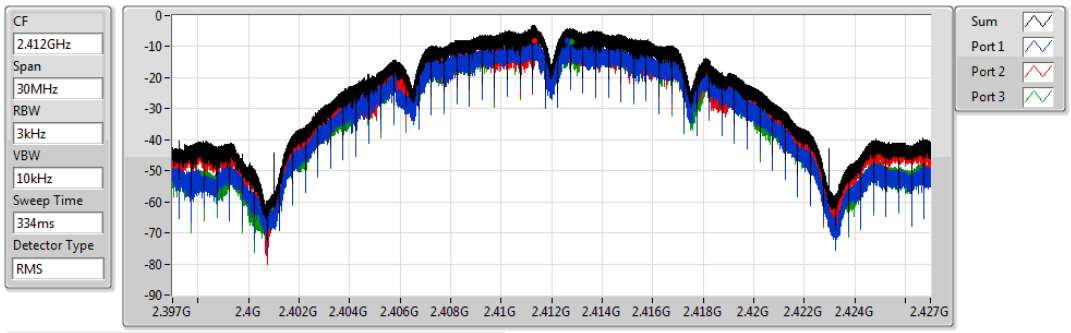
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	7.72	-8.26	-8.17	-8.40	-3.90	6.28
2437MHz	Pass	7.72	-8.16	-8.11	-7.94	-3.62	6.28
2462MHz	Pass	7.72	-10.27	-10.23	-9.42	-5.79	6.28
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	7.72	-15.10	-14.10	-14.67	-10.61	6.28
2437MHz	Pass	7.72	-9.14	-8.78	-8.93	-4.86	6.28
2462MHz	Pass	7.72	-15.64	-15.35	-16.04	-11.62	6.28
802.11n HT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	7.72	-16.04	-14.53	-15.59	-11.93	6.28
2437MHz	Pass	7.72	-9.46	-10.16	-10.04	-6.00	6.28
2462MHz	Pass	7.72	-14.95	-14.96	-15.19	-10.73	6.28
802.11n HT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	7.72	-21.60	-21.75	-21.93	-18.01	6.28
2437MHz	Pass	7.72	-16.70	-17.02	-17.01	-12.34	6.28
2452MHz	Pass	7.72	-20.11	-18.61	-19.93	-15.79	6.28

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

802.11b_Nss1,(1Mbps)_3TX PSD

2412MHz

11/07/2019

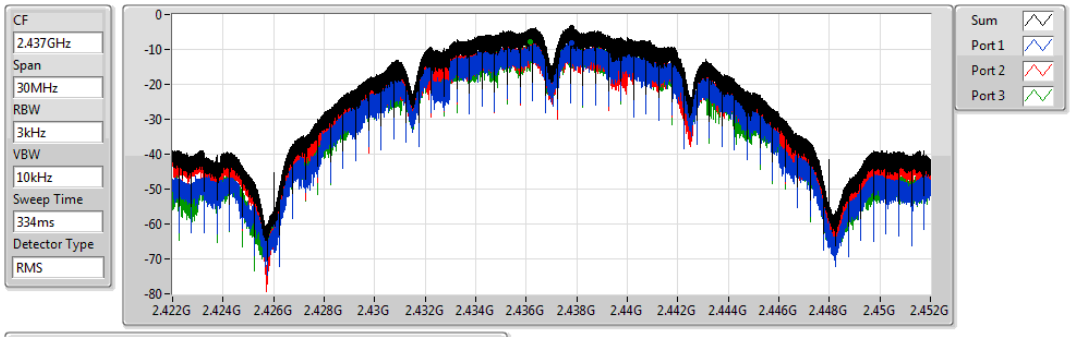


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.90	-3.90	-8.26	-8.17	-8.40

802.11b_Nss1,(1Mbps)_3TX PSD

2437MHz

11/07/2019

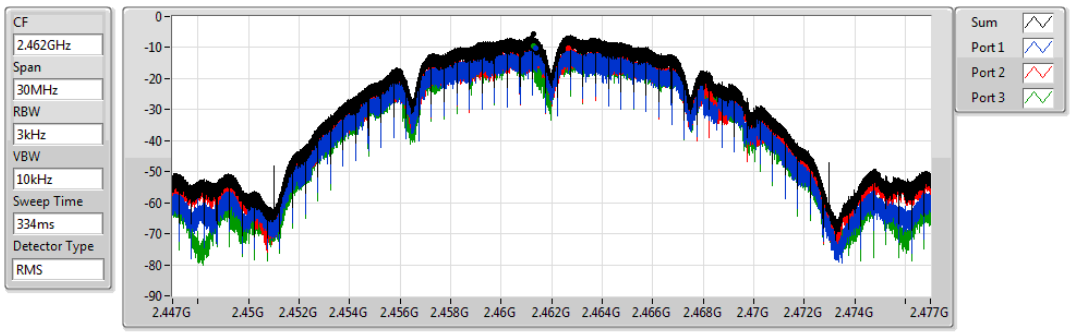


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.62	-3.62	-8.16	-8.11	-7.94

802.11b_Nss1,(1Mbps)_3TX PSD

2462MHz

11/07/2019

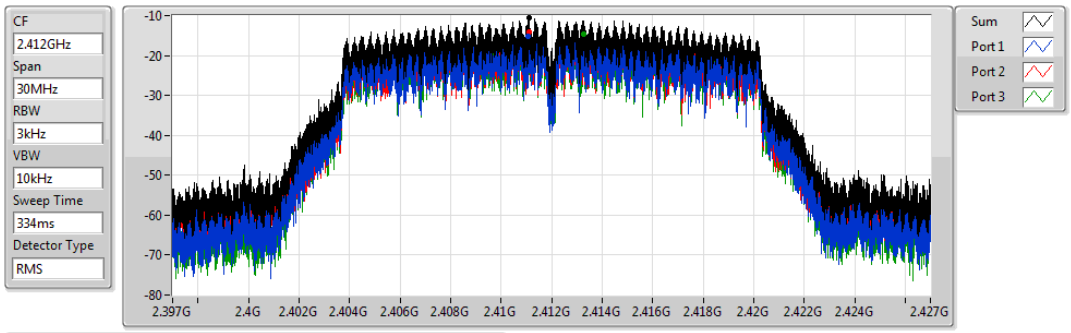


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.79	-5.79	-10.27	-10.23	-9.42

802.11g_Nss1,(6Mbps)_3TX PSD

2412MHz

06/08/2019

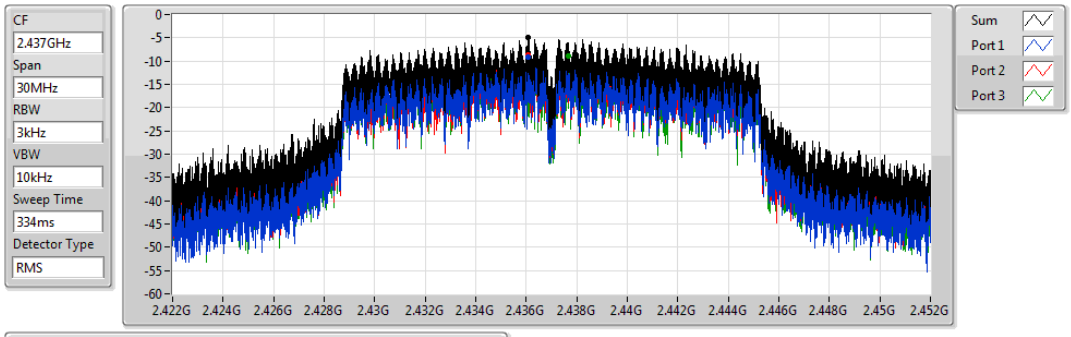


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.61	-10.61	-15.10	-14.10	-14.67

802.11g_Nss1,(6Mbps)_3TX PSD

2437MHz

11/07/2019

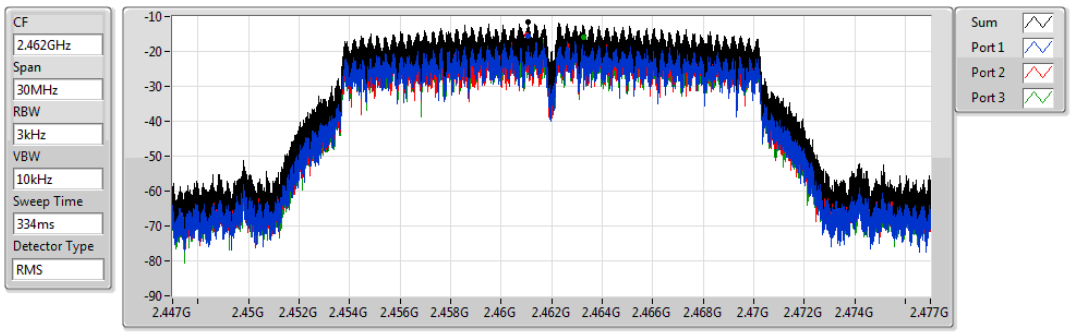


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.86	-4.86	-9.14	-8.78	-8.93

802.11g_Nss1,(6Mbps)_3TX PSD

2462MHz

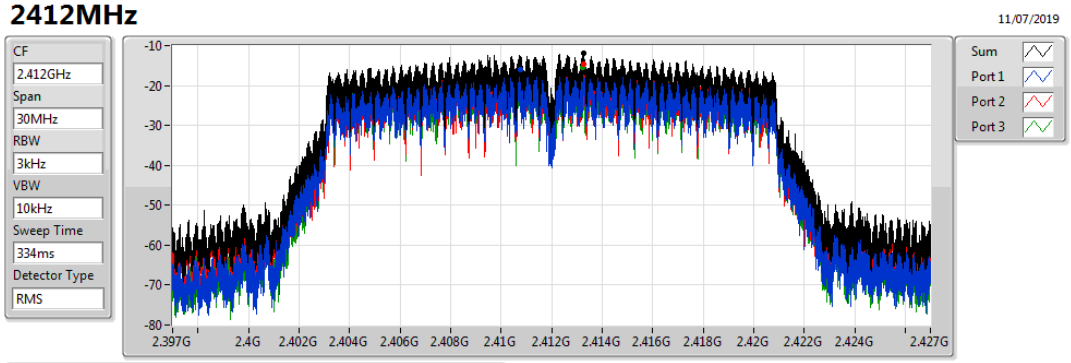
11/07/2019



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.62	-11.62	-15.64	-15.35	-16.04

802.11n HT20-BF_Nss1,(MCS0)_3TX PSD

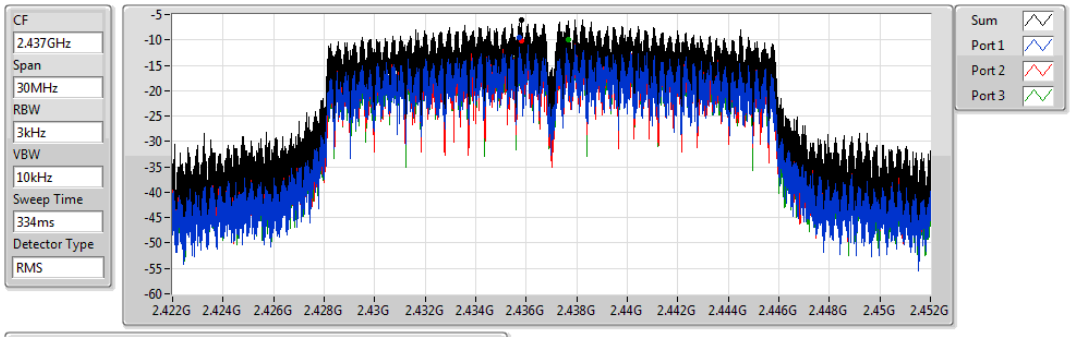
2412MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.93	-11.93	-16.04	-14.53	-15.59

802.11n HT20-BF_Nss1,(MCS0)_3TX PSD

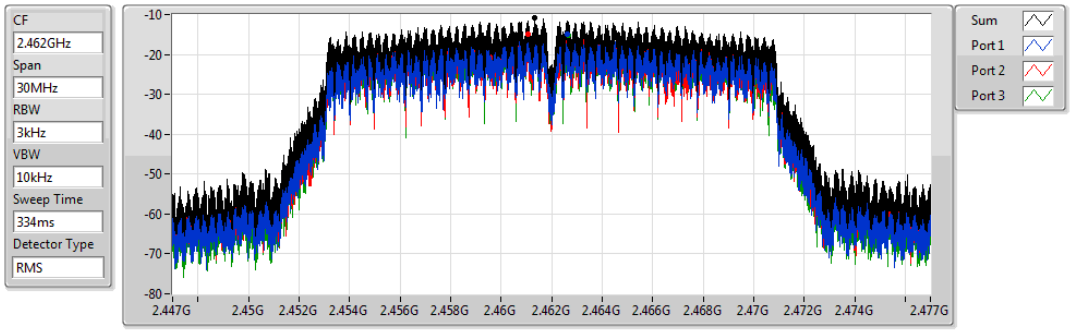
2437MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.00	-6.00	-9.46	-10.16	-10.04

802.11n HT20-BF_Nss1,(MCS0)_3TX PSD

2462MHz

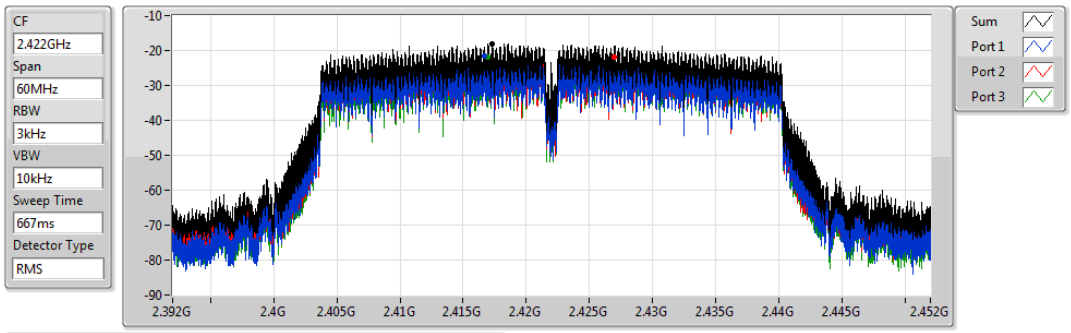


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.73	-10.73	-14.95	-14.96	-15.19

802.11n HT40-BF_Nss1,(MCS0)_3TX PSD

2422MHz

11/07/2019

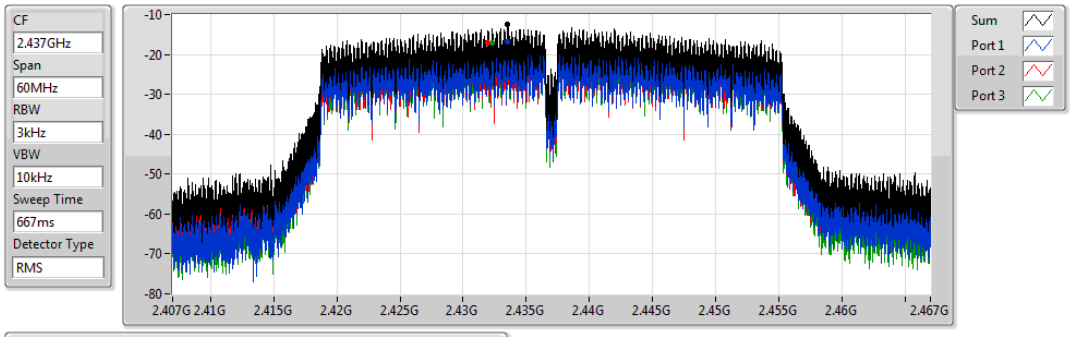


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-18.01	-18.01	-21.60	-21.75	-21.93

802.11n HT40-BF_Nss1,(MCS0)_3TX PSD

2437MHz

11/07/2019

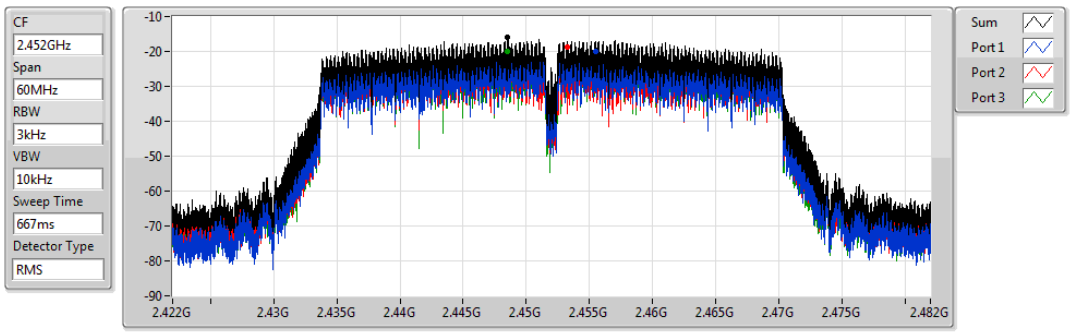


Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.34	-12.34	-16.70	-17.02	-17.01

802.11n HT40-BF_Nss1,(MCS0)_3TX PSD

2452MHz

11/07/2019



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-15.79	-15.79	-20.11	-18.61	-19.93

Summary

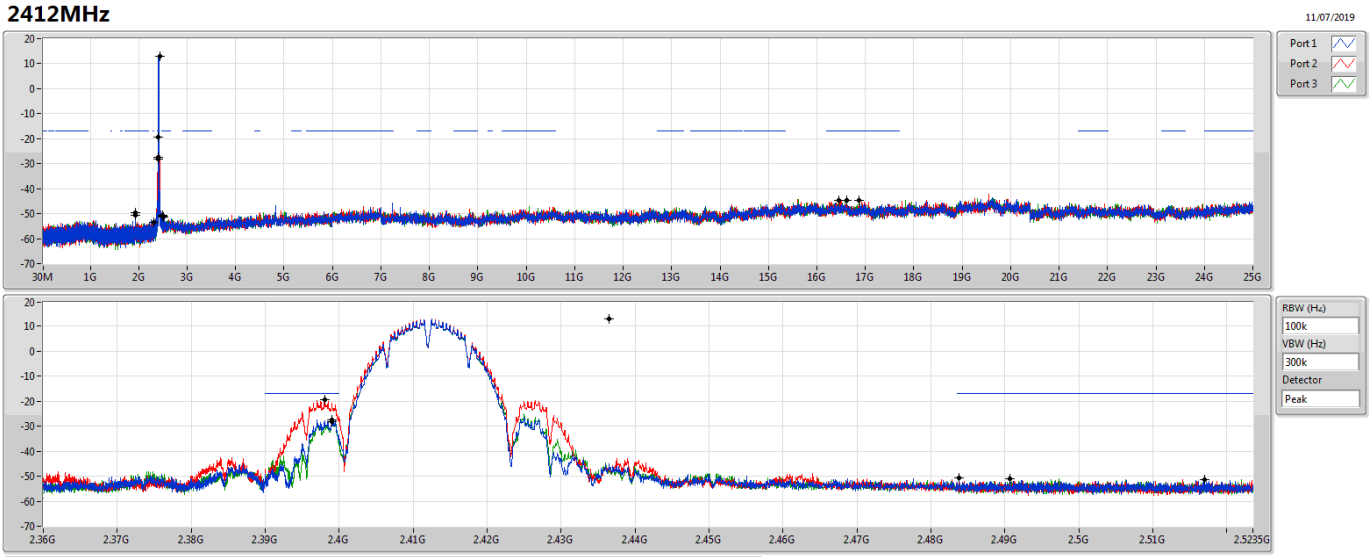
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_3TX	Pass	2.43649G	13.03	-16.97	2.30379G	-53.32	2.39802G	-19.52	2.48374G	-50.69	16.61065G	-44.83	2
802.11g_Nss1,(6Mbps)_3TX	Pass	2.43574G	11.76	-18.24	753.76M	-52.24	2.39856G	-30.78	2.49806G	-50.45	16.60784G	-45.43	2
802.11n HT20-BF_Nss1,(MCS0)_3TX	Pass	2.43824G	11.87	-18.13	2.30204G	-52.99	2.39886G	-30.29	2.49648G	-50.53	16.60222G	-45.06	2
802.11n HT40-BF_Nss1,(MCS0)_3TX	Pass	2.43453G	4.37	-25.63	801.16M	-52.85	2.39956G	-35.36	2.4845G	-42.52	16.4545G	-43.95	2

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_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43649G	13.03	-16.97	1.92982G	-50.80	2.39902G	-27.46	2.51702G	-51.36	16.45893G	-44.77	1
2412MHz	Pass	2.43649G	13.03	-16.97	2.30379G	-53.32	2.39802G	-19.52	2.48374G	-50.69	16.61065G	-44.83	2
2412MHz	Pass	2.43649G	13.03	-16.97	1.92982G	-49.48	2.39902G	-28.11	2.4906G	-50.92	16.86913G	-44.52	3
2437MHz	Pass	2.43649G	13.03	-16.97	2.10166G	-53.08	2.39698G	-49.43	2.48398G	-49.23	16.47298G	-45.22	1
2437MHz	Pass	2.43649G	13.03	-16.97	347.75M	-53.35	2.39948G	-47.64	2.4844G	-49.25	16.49264G	-43.42	2
2437MHz	Pass	2.43649G	13.03	-16.97	1.94963G	-47.98	2.39952G	-47.67	2.48742G	-50.23	15.14405G	-44.55	3
2462MHz	Pass	2.43649G	13.03	-16.97	2.11622G	-52.54	2.39902G	-51.80	2.489G	-50.01	15.20867G	-44.55	1
2462MHz	Pass	2.43649G	13.03	-16.97	2.30466G	-53.40	2.3975G	-52.08	2.48352G	-47.85	24.91571G	-44.70	2
2462MHz	Pass	2.43649G	13.03	-16.97	1.96973G	-48.67	2.3976G	-52.33	2.489G	-45.99	24.77524G	-44.82	3
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43574G	11.76	-18.24	2.16952G	-52.35	2.3999G	-35.50	2.51492G	-50.34	24.64319G	-43.94	1
2412MHz	Pass	2.43574G	11.76	-18.24	753.76M	-52.24	2.39856G	-30.78	2.49806G	-50.45	16.60784G	-45.43	2
2412MHz	Pass	2.43574G	11.76	-18.24	1.92953G	-49.89	2.3999G	-35.28	2.49104G	-50.78	24.90447G	-45.54	3
2437MHz	Pass	2.43574G	11.76	-18.24	783.76M	-53.39	2.39956G	-44.54	2.48566G	-48.45	16.55726G	-44.05	1
2437MHz	Pass	2.43574G	11.76	-18.24	1.94963G	-48.91	2.39978G	-42.83	2.48568G	-45.95	16.60784G	-44.43	2
2437MHz	Pass	2.43574G	11.76	-18.24	1.94963G	-42.03	2.39856G	-40.26	2.48578G	-46.57	16.59098G	-44.98	3
2462MHz	Pass	2.43574G	11.76	-18.24	474.16M	-51.65	2.39942G	-50.60	2.4838G	-46.41	16.23697G	-45.28	1
2462MHz	Pass	2.43574G	11.76	-18.24	891.81M	-52.71	2.39928G	-50.81	2.48362G	-44.44	16.52074G	-45.32	2
2462MHz	Pass	2.43574G	11.76	-18.24	1.96973G	-50.35	2.39722G	-52.11	2.4842G	-46.32	16.5095G	-44.40	3
802.11n HT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43824G	11.87	-18.13	633.18M	-53.25	2.39986G	-38.00	2.50976G	-51.29	24.89324G	-45.14	1
2412MHz	Pass	2.43824G	11.87	-18.13	2.30204G	-52.99	2.39886G	-30.29	2.49648G	-50.53	16.60222G	-45.06	2
2412MHz	Pass	2.43824G	11.87	-18.13	1.92982G	-50.70	2.3999G	-35.94	2.51494G	-50.64	24.61228G	-44.28	3
2437MHz	Pass	2.43824G	11.87	-18.13	1.94963G	-51.54	2.39948G	-43.04	2.48356G	-46.06	16.56569G	-44.96	1
2437MHz	Pass	2.43824G	11.87	-18.13	1.94963G	-48.31	2.39952G	-39.62	2.48388G	-43.61	16.4786G	-44.58	2
2437MHz	Pass	2.43824G	11.87	-18.13	1.94963G	-41.66	2.3998G	-39.95	2.48414G	-41.29	16.60784G	-44.57	3
2462MHz	Pass	2.43824G	11.87	-18.13	2.19428G	-53.03	2.39518G	-50.76	2.4848G	-40.44	16.34936G	-43.91	1
2462MHz	Pass	2.43824G	11.87	-18.13	802.98M	-52.50	2.3967G	-51.17	2.48474G	-38.06	24.76119G	-44.89	2
2462MHz	Pass	2.43824G	11.87	-18.13	1.96973G	-48.71	2.39572G	-51.65	2.4848G	-38.41	24.73309G	-44.45	3
802.11n HT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.43453G	4.37	-25.63	779.98M	-52.59	2.39928G	-42.72	2.48834G	-51.39	21.64855G	-44.33	1
2422MHz	Pass	2.43453G	4.37	-25.63	797.44M	-52.84	2.39704G	-40.22	2.48498G	-51.52	24.98317G	-45.05	2
2422MHz	Pass	2.43453G	4.37	-25.63	818.33M	-53.05	2.39952G	-43.01	2.56198G	-52.18	16.87799G	-44.67	3
2437MHz	Pass	2.43453G	4.37	-25.63	2.30597G	-52.79	2.39888G	-41.99	2.48458G	-45.13	16.62838G	-44.79	1
2437MHz	Pass	2.43453G	4.37	-25.63	801.16M	-52.85	2.39956G	-35.36	2.4845G	-42.52	16.4545G	-43.95	2
2437MHz	Pass	2.43453G	4.37	-25.63	1.94959G	-48.97	2.39888G	-41.26	2.48458G	-43.37	16.32829G	-44.01	3
2452MHz	Pass	2.43453G	4.37	-25.63	662.04M	-51.77	2.39228G	-51.54	2.4895G	-47.53	16.50498G	-44.69	1
2452MHz	Pass	2.43453G	4.37	-25.63	769.38M	-53.46	2.39632G	-50.14	2.48402G	-44.44	24.89062G	-44.54	2
2452MHz	Pass	2.43453G	4.37	-25.63	1.96162G	-51.40	2.39912G	-51.68	2.48946G	-43.22	15.24573G	-44.88	3

802.11b_Nss1,(1Mbps)_3TX **CSE NdB**

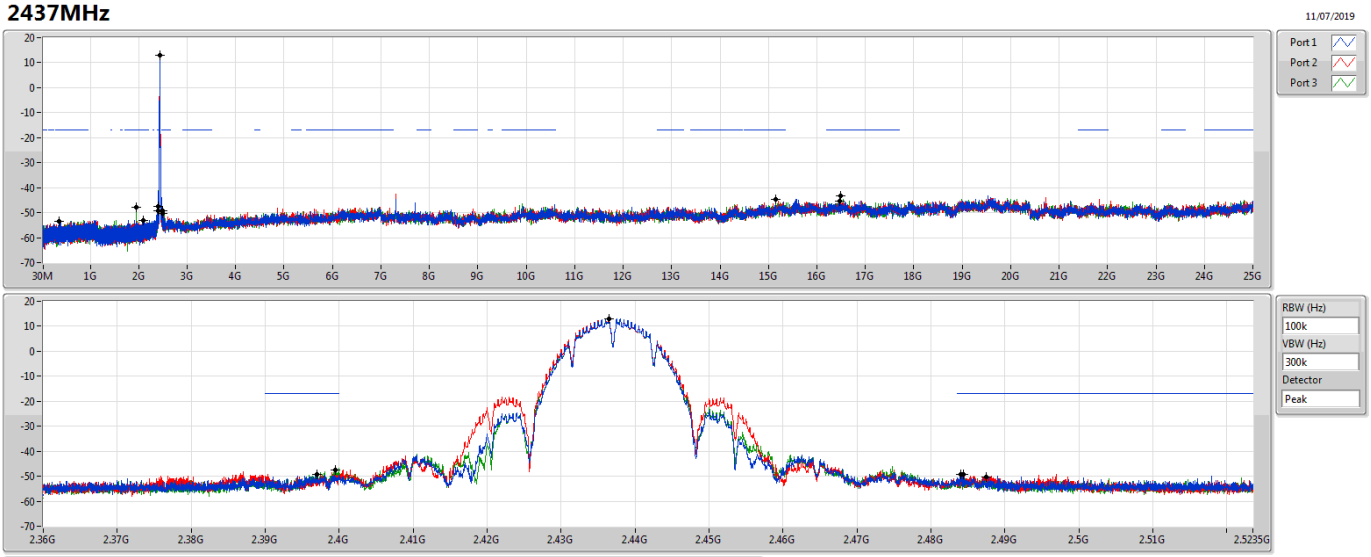
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43649G	13.03	-16.97	1.92982G	-50.80	2.39902G	-27.46	2.51702G	-51.36	16.45893G	-44.77	1
2.43649G	13.03	-16.97	2.30379G	-53.32	2.39802G	-19.52	2.48374G	-50.69	16.61065G	-44.83	2
2.43649G	13.03	-16.97	1.92982G	-49.48	2.39902G	-28.11	2.4906G	-50.92	16.86913G	-44.52	3

802.11b_Nss1,(1Mbps)_3TX **CSE NdB**

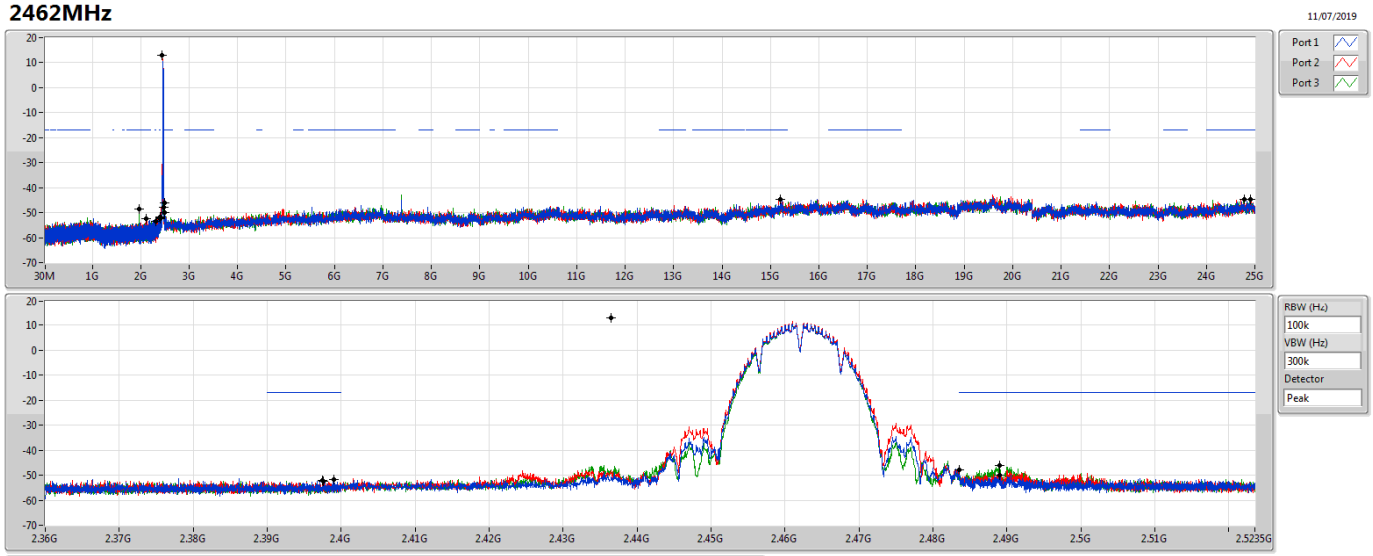
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43649G	13.03	-16.97	2.10166G	-53.08	2.39698G	-49.43	2.48398G	-49.23	16.47298G	-45.22	1
2.43649G	13.03	-16.97	347.75M	-53.35	2.39948G	-47.64	2.4844G	-49.25	16.49264G	-43.42	2
2.43649G	13.03	-16.97	1.94963G	-47.98	2.39952G	-47.67	2.48742G	-50.23	15.14405G	-44.55	3

802.11b_Nss1,(1Mbps)_3TX **CSE NdB**

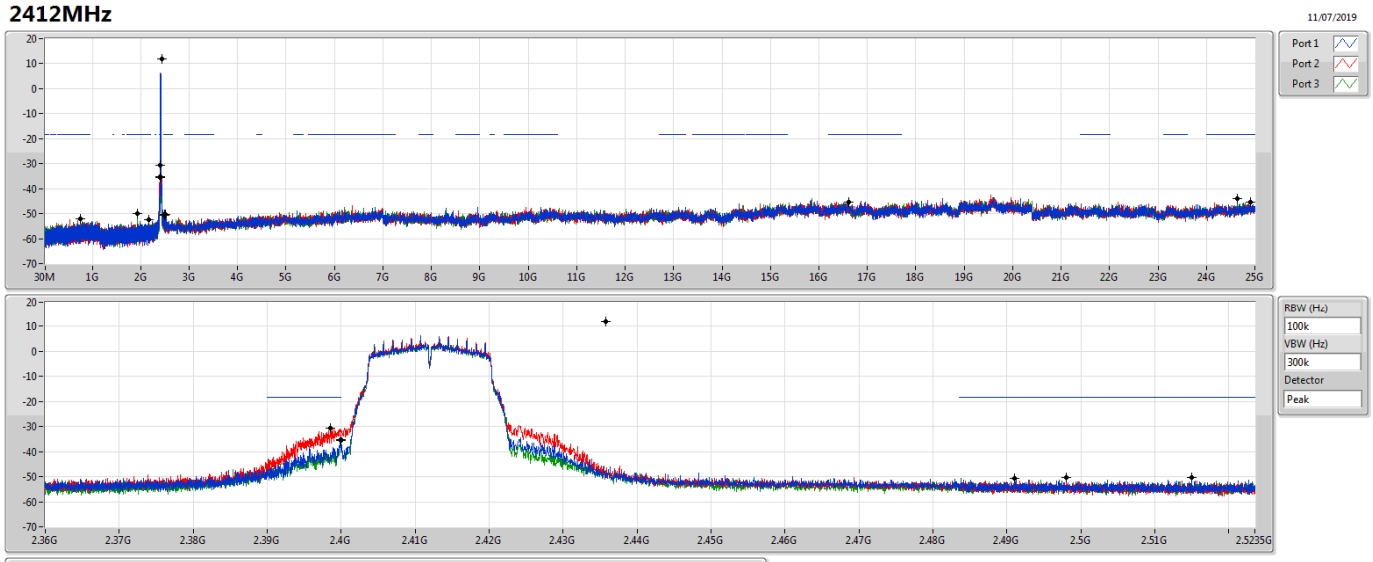
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43649G	13.03	-16.97	2.11622G	-52.54	2.39902G	-51.80	2.489G	-50.01	15.20867G	-44.55	1
2.43649G	13.03	-16.97	2.30466G	-53.40	2.3975G	-52.08	2.48352G	-47.85	24.91571G	-44.70	2
2.43649G	13.03	-16.97	1.96973G	-48.67	2.3976G	-52.33	2.489G	-45.99	24.77524G	-44.82	3

802.11g_Nss1,(6Mbps)_3TX **CSE NdB**

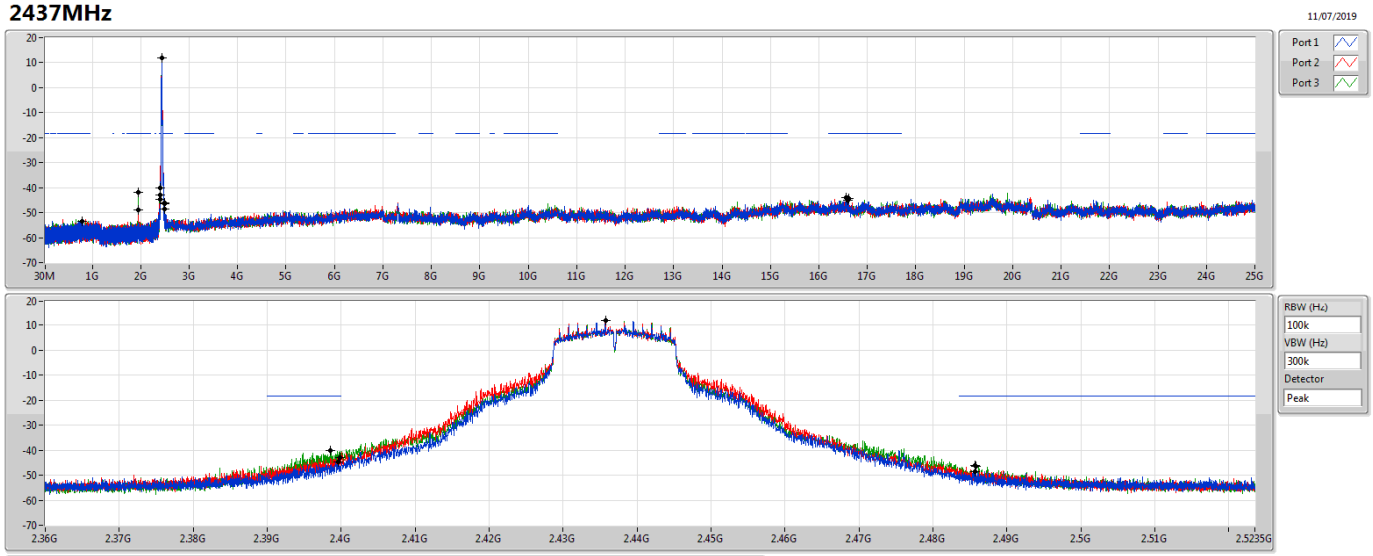
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43574G	11.76	-18.24	2.16952G	-52.35	2.3999G	-35.50	2.51492G	-50.34	24.64319G	-43.94	1
2.43574G	11.76	-18.24	753.76M	-52.24	2.39856G	-30.78	2.49806G	-50.45	16.60784G	-45.43	2
2.43574G	11.76	-18.24	1.92953G	-49.89	2.3999G	-35.28	2.49104G	-50.78	24.90447G	-45.54	3

802.11g_Nss1,(6Mbps)_3TX **CSE NdB**

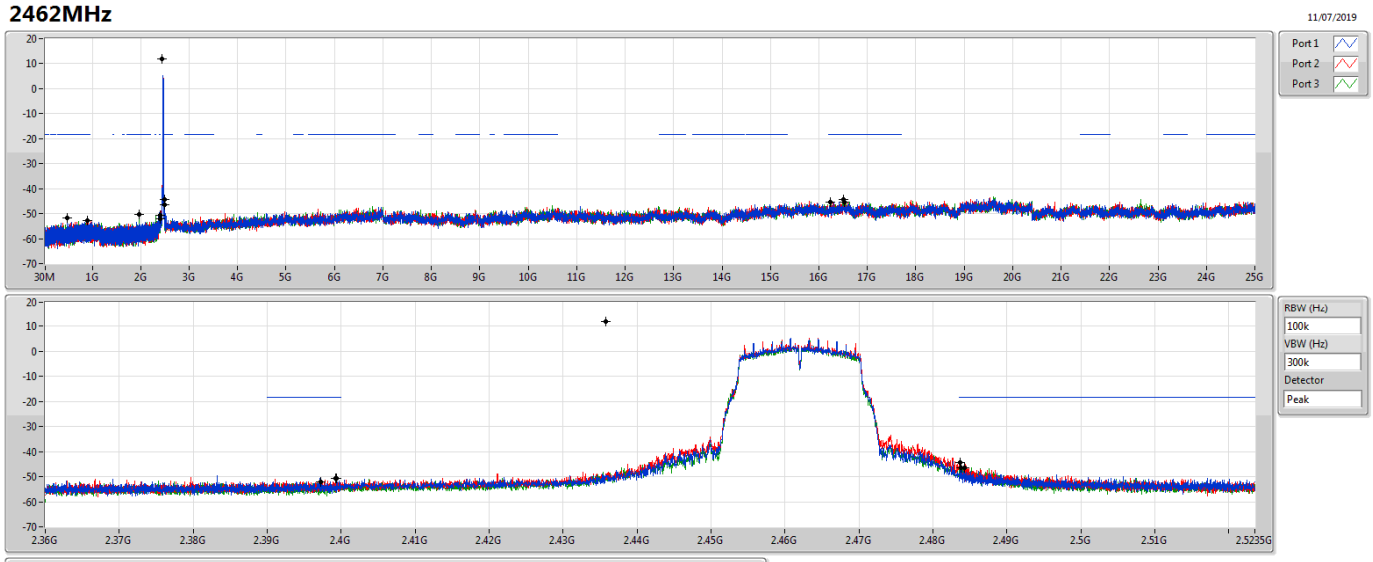
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43574G	11.76	-18.24	783.76M	-53.39	2.39956G	-44.54	2.48566G	-48.45	16.55726G	-44.05	1
2.43574G	11.76	-18.24	1.94963G	-48.91	2.39978G	-42.83	2.48568G	-45.95	16.60784G	-44.43	2
2.43574G	11.76	-18.24	1.94963G	-42.03	2.39856G	-40.26	2.48578G	-46.57	16.59098G	-44.98	3

802.11g_Nss1,(6Mbps)_3TX **CSE NdB**

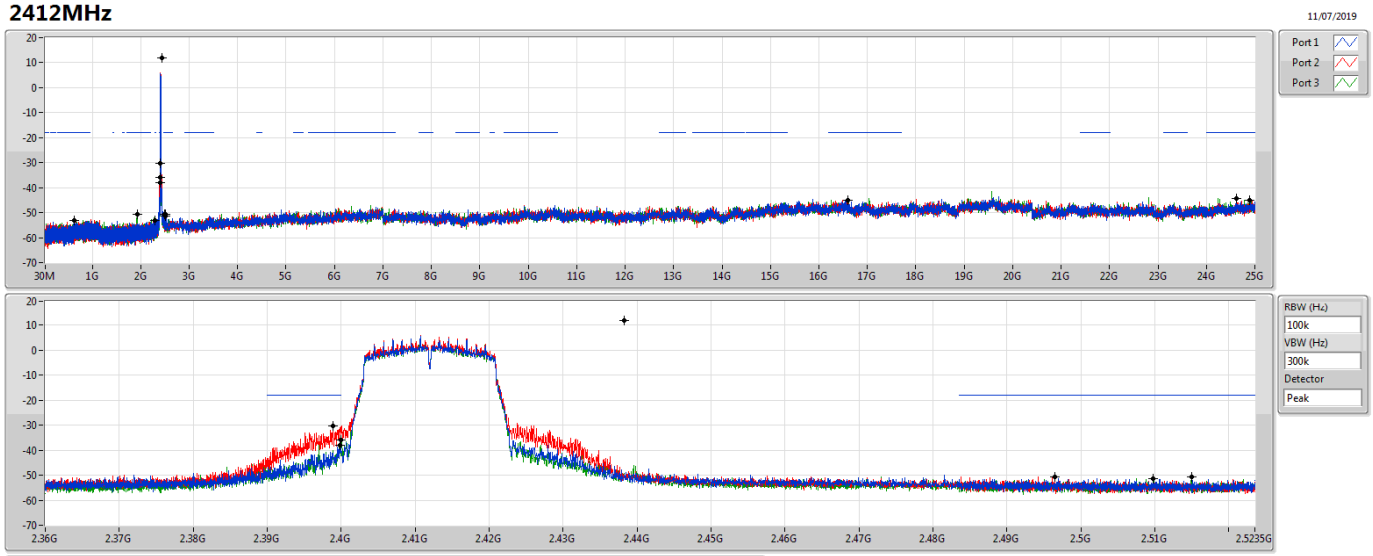
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43574G	11.76	-18.24	474.16M	-51.65	2.39942G	-50.60	2.4838G	-46.41	16.23697G	-45.28	1
2.43574G	11.76	-18.24	891.81M	-52.71	2.39928G	-50.81	2.48362G	-44.44	16.52074G	-45.32	2
2.43574G	11.76	-18.24	1.96973G	-50.35	2.39722G	-52.11	2.4842G	-46.32	16.5095G	-44.40	3

802.11n HT20-BF_Nss1,(MCS0)_3TX **CSE NdB**

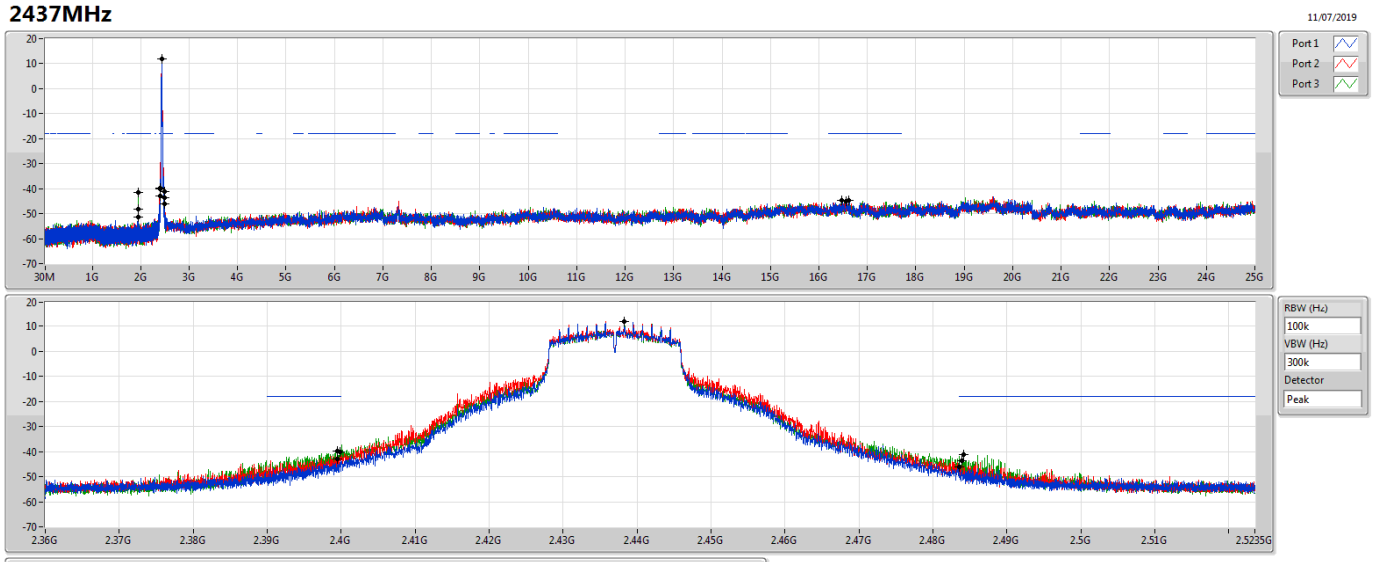
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43824G	11.87	-18.13	633.18M	-53.25	2.39986G	-38.00	2.50976G	-51.29	24.89324G	-45.14	1
2.43824G	11.87	-18.13	2.30204G	-52.99	2.39886G	-30.29	2.49648G	-50.53	16.60222G	-45.06	2
2.43824G	11.87	-18.13	1.92982G	-50.70	2.3999G	-35.94	2.51494G	-50.64	24.61228G	-44.28	3

802.11n HT20-BF_Nss1,(MCS0)_3TX **CSE NdB**

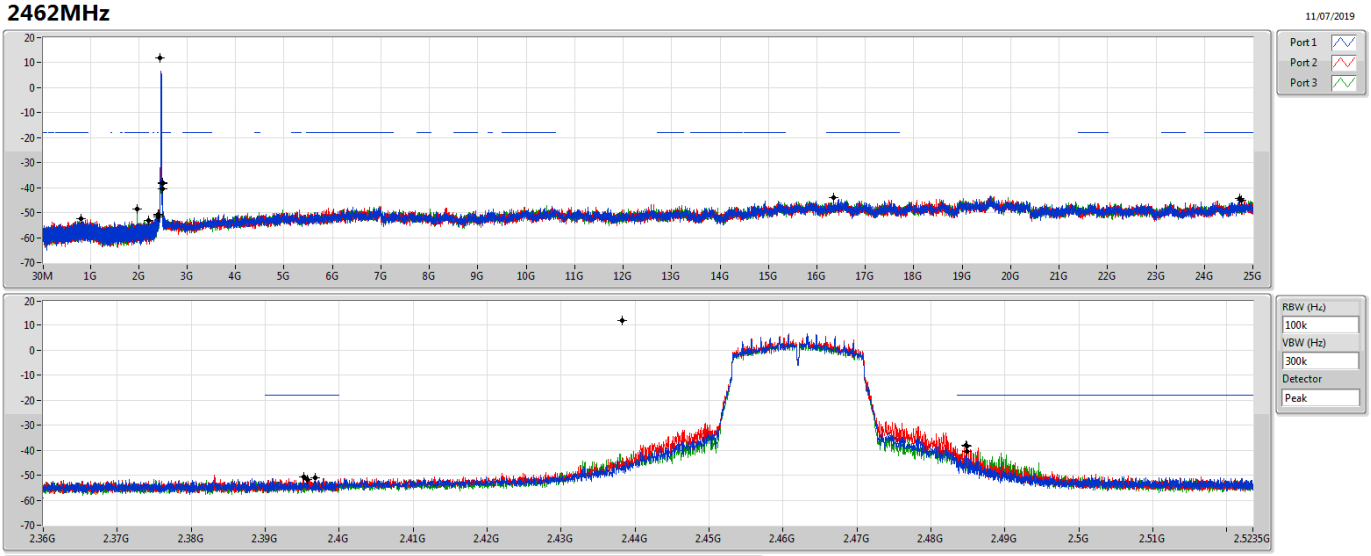
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43824G	11.87	-18.13	1.94963G	-51.54	2.39948G	-43.04	2.48356G	-46.06	16.56569G	-44.96	1
2.43824G	11.87	-18.13	1.94963G	-48.31	2.39952G	-39.62	2.48388G	-43.61	16.4786G	-44.58	2
2.43824G	11.87	-18.13	1.94963G	-41.66	2.3998G	-39.95	2.48414G	-41.29	16.60784G	-44.57	3

802.11n HT20-BF_Nss1,(MCS0)_3TX **CSE NdB**

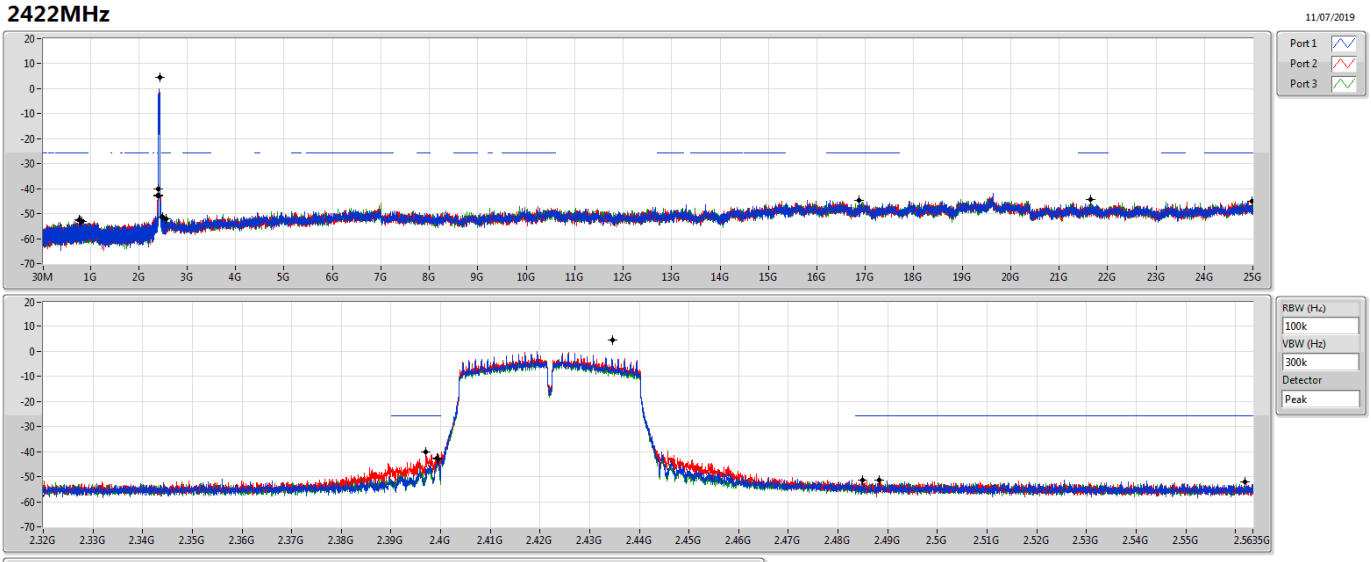
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43824G	11.87	-18.13	2.19428G	-53.03	2.39518G	-50.76	2.4848G	-40.44	16.34936G	-43.91	1
2.43824G	11.87	-18.13	802.98M	-52.50	2.3967G	-51.17	2.48474G	-38.06	24.76119G	-44.89	2
2.43824G	11.87	-18.13	1.96973G	-48.71	2.39572G	-51.65	2.4848G	-38.41	24.73309G	-44.45	3

802.11n HT40-BF_Nss1,(MCS0)_3TX **CSE NdB**

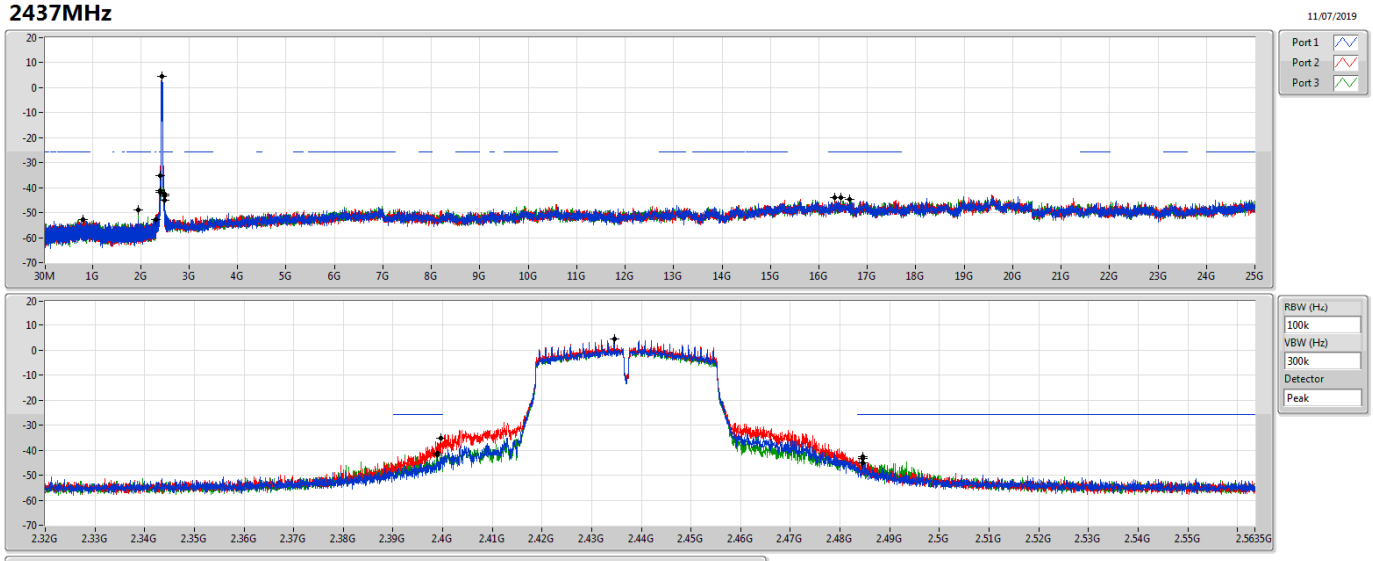
2422MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43453G	4.37	-25.63	779.98M	-52.59	2.39928G	-42.72	2.48834G	-51.39	21.64855G	-44.33	1
2.43453G	4.37	-25.63	797.44M	-52.84	2.39704G	-40.22	2.48498G	-51.52	24.98317G	-45.05	2
2.43453G	4.37	-25.63	818.33M	-53.05	2.39952G	-43.01	2.56198G	-52.18	16.87799G	-44.67	3

802.11n HT40-BF_Nss1,(MCS0)_3TX **CSE NdB**

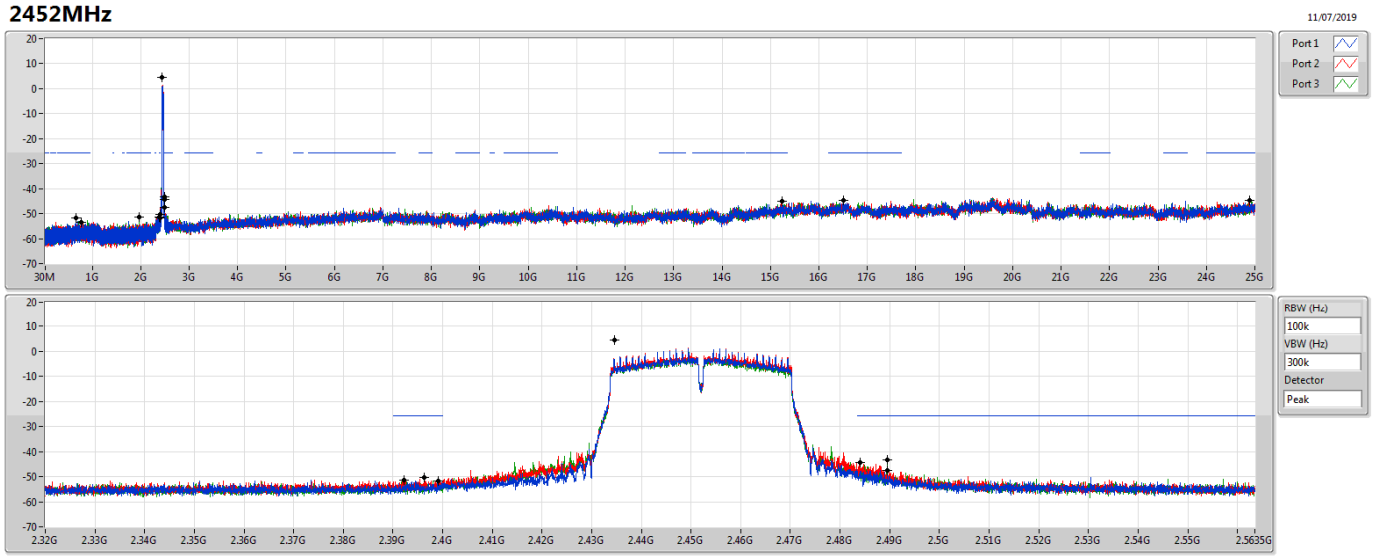
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43453G	4.37	-25.63	2.30597G	-52.79	2.39888G	-41.99	2.48458G	-45.13	16.62838G	-44.79	1
2.43453G	4.37	-25.63	801.16M	-52.85	2.39956G	-35.36	2.4845G	-42.52	16.4545G	-43.95	2
2.43453G	4.37	-25.63	1.94959G	-48.97	2.39888G	-41.26	2.48458G	-43.37	16.32829G	-44.01	3

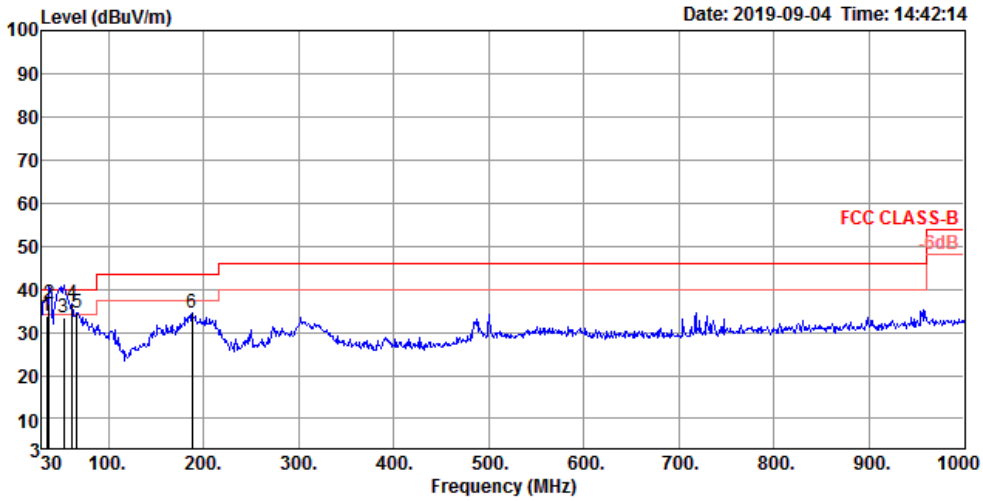
802.11n HT40-BF_Nss1,(MCS0)_3TX **CSE NdB**

2452MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43453G	4.37	-25.63	662.04M	-51.77	2.39228G	-51.54	2.4895G	-47.53	16.50498G	-44.69	1
2.43453G	4.37	-25.63	769.38M	-53.46	2.39632G	-50.14	2.48402G	-44.44	24.89062G	-44.54	2
2.43453G	4.37	-25.63	1.96162G	-51.40	2.39912G	-51.68	2.48946G	-43.22	15.24573G	-44.88	3

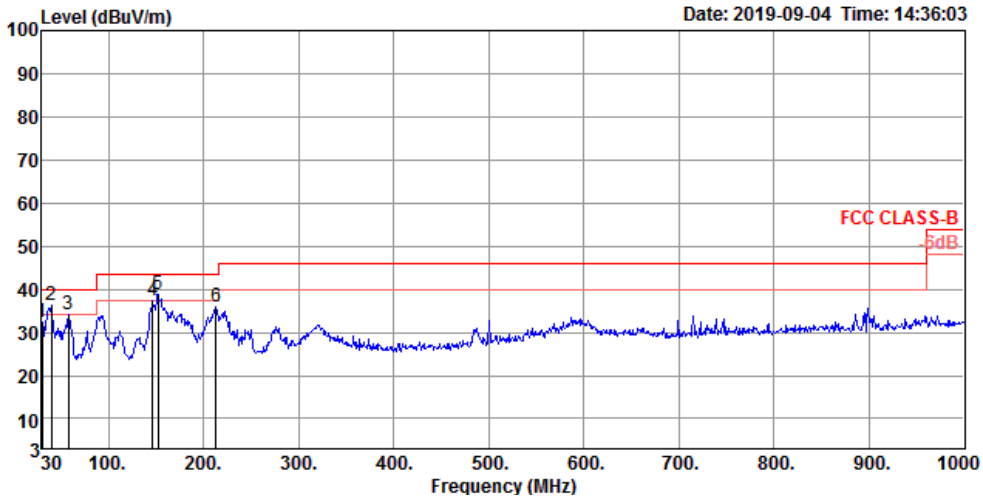
RSE below 1GHz Result			
Operating Mode	4	**Polarization**	Vertical
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	34.85	33.96	40.00	-6.04	39.96	0.69	21.88	28.57	100	330	QP	VERTICAL
2	37.76	36.68	40.00	-3.32	44.25	0.72	20.28	28.57	100	347	QP	VERTICAL
3	53.28	33.49	40.00	-6.51	48.14	0.85	13.05	28.55	100	360	QP	VERTICAL
4	62.01	36.81	40.00	-3.19	52.36	0.92	12.06	28.53	200	280	Peak	VERTICAL
5	66.86	34.56	40.00	-5.44	50.02	0.95	12.11	28.52	150	330	Peak	VERTICAL
6	188.11	34.39	43.50	-9.11	46.08	1.60	14.82	28.11	100	93	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 below 1GHz Result			
Operating Mode	4	**Polarization**	Horizontal
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	32.42	40.00	-7.58	35.95	0.64	24.40	28.57	300	113	Peak	HORIZONTAL
2	39.70	36.18	40.00	-3.82	44.87	0.74	19.13	28.56	150	121	Peak	HORIZONTAL
3	58.13	33.96	40.00	-6.04	49.42	0.89	12.19	28.54	300	313	Peak	HORIZONTAL
4	146.40	37.36	43.50	-6.14	47.54	1.40	16.69	28.27	200	278	Peak	HORIZONTAL
5	152.22	38.73	43.50	-4.77	49.32	1.43	16.23	28.25	200	139	Peak	HORIZONTAL
6	213.33	36.00	43.50	-7.50	47.37	1.71	14.96	28.04	100	140	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.)

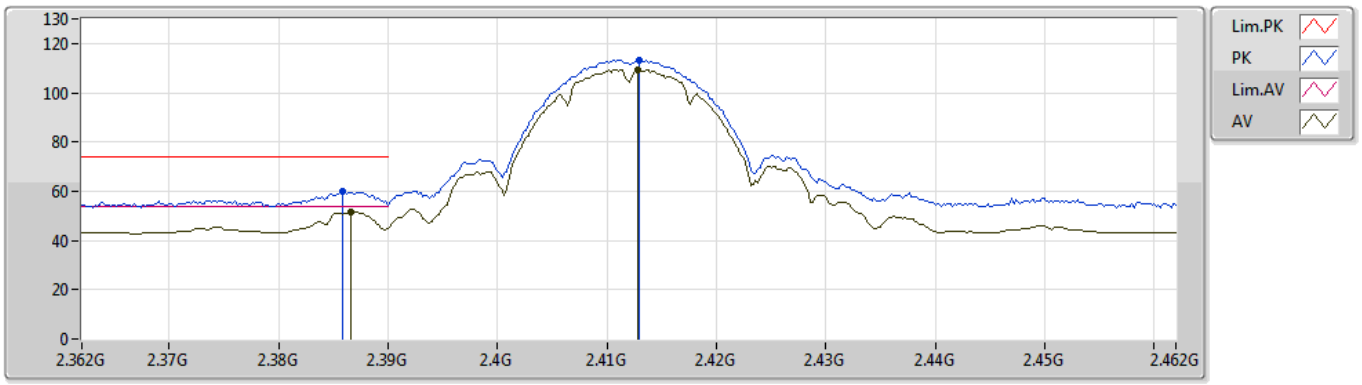
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11g_Nss1,(6Mbps)_3TX	Pass	AV	2.39G	52.97	54.00	-1.03	32.62	3	Vertical	9	2.11	-

802.11b_Nss1,(1Mbps)_3TX

2412MHz_TX

23/07/2019



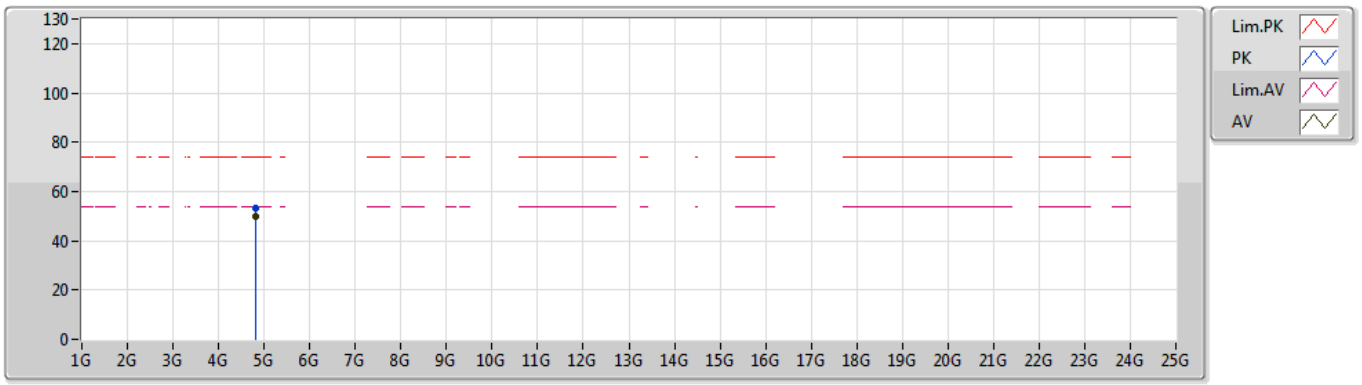
EUT Y_3TX
Setting 28
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3858G	59.70	74.00	-14.30	29.84	3	Vertical	160	1.50	-
AV	2.3866G	51.47	54.00	-2.53	29.84	3	Vertical	160	1.50	-
PK	2.413G	113.39	Inf	-Inf	29.88	3	Vertical	160	1.50	-
AV	2.4128G	109.41	Inf	-Inf	29.88	3	Vertical	160	1.50	-

802.11b_Nss1,(1Mbps)_3TX

2412MHz_TX

08/07/2019



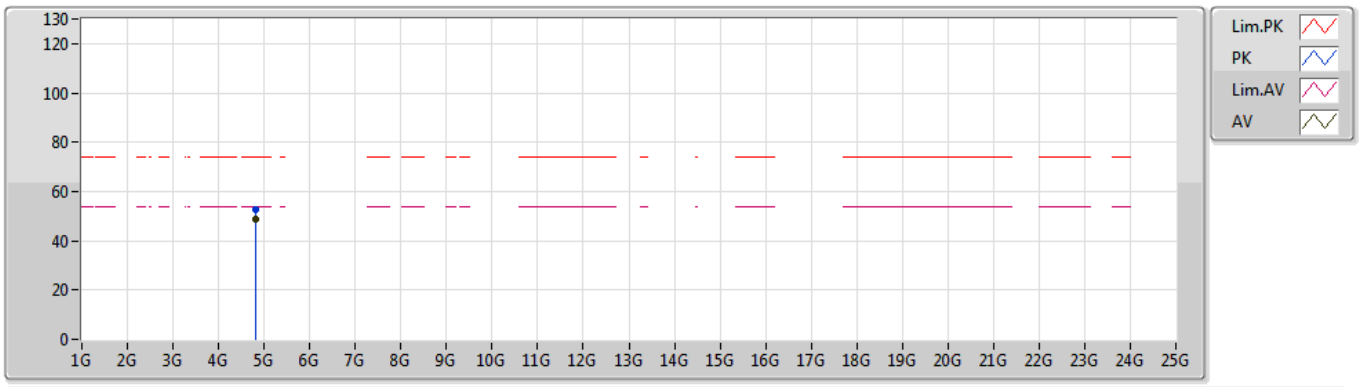
EUT Y_3TX
Setting 28
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.82398G	53.20	74.00	-20.80	2.96	3	Vertical	172	1.42	-
AV	4.82399G	49.79	54.00	-4.21	2.96	3	Vertical	172	1.42	-

802.11b_Nss1,(1Mbps)_3TX

2412MHz_TX

08/07/2019



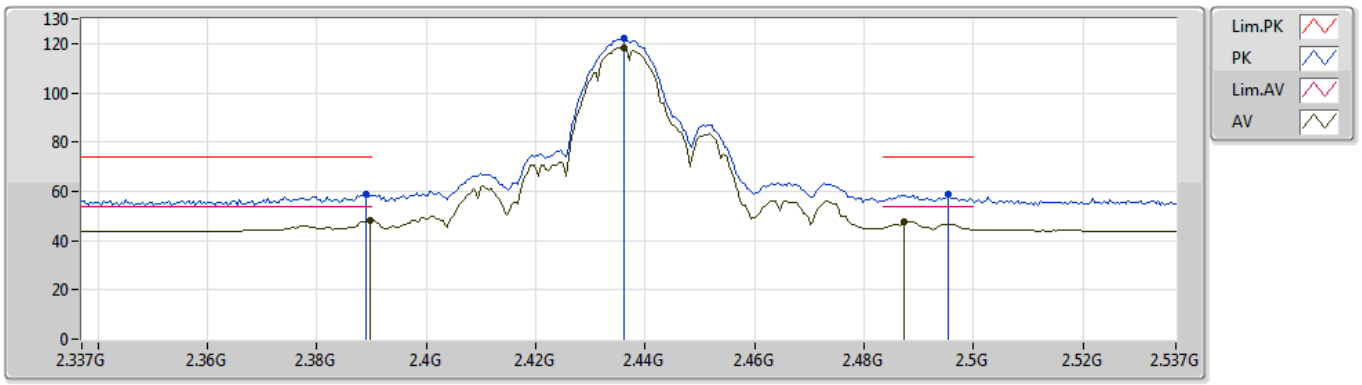
EUT Y_3TX
Setting 28
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.824G	52.92	74.00	-21.08	2.96	3	Horizontal	232	1.89	-
AV	4.82396G	48.96	54.00	-5.04	2.96	3	Horizontal	232	1.89	-

802.11b_Nss1,(1Mbps)_3TX

2437MHz_TX

08/07/2019



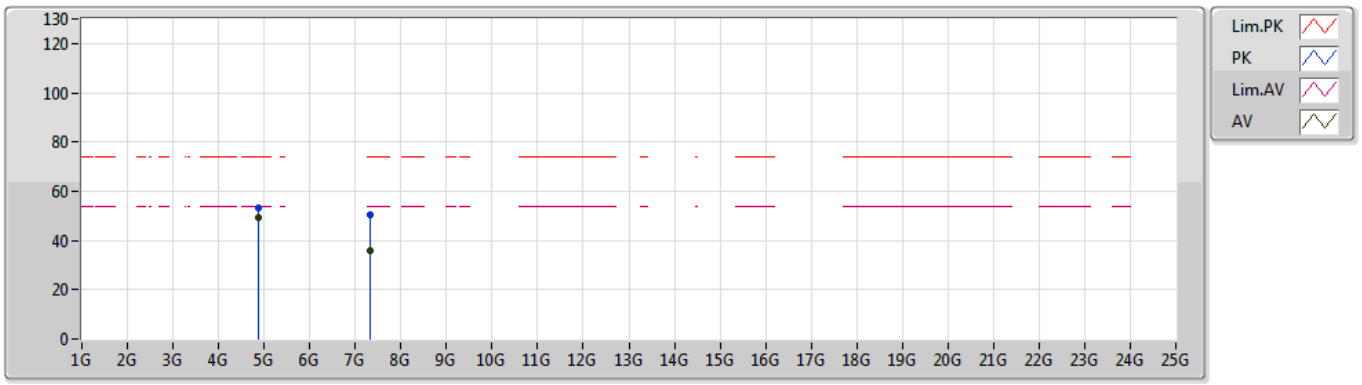
EUT Y_3TX
Setting 29
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.389G	58.56	74.00	-15.44	29.84	3	Vertical	6	1.66	-
AV	2.3898G	47.91	54.00	-6.09	29.84	3	Vertical	6	1.66	-
PK	2.4362G	122.19	Inf	-Inf	29.93	3	Vertical	6	1.66	-
AV	2.4362G	118.27	Inf	-Inf	29.93	3	Vertical	6	1.66	-
PK	2.4954G	58.90	74.00	-15.10	30.08	3	Vertical	6	1.66	-
AV	2.4874G	47.68	54.00	-6.32	30.05	3	Vertical	6	1.66	-

802.11b_Nss1,(1Mbps)_3TX

2437MHz_TX

08/07/2019



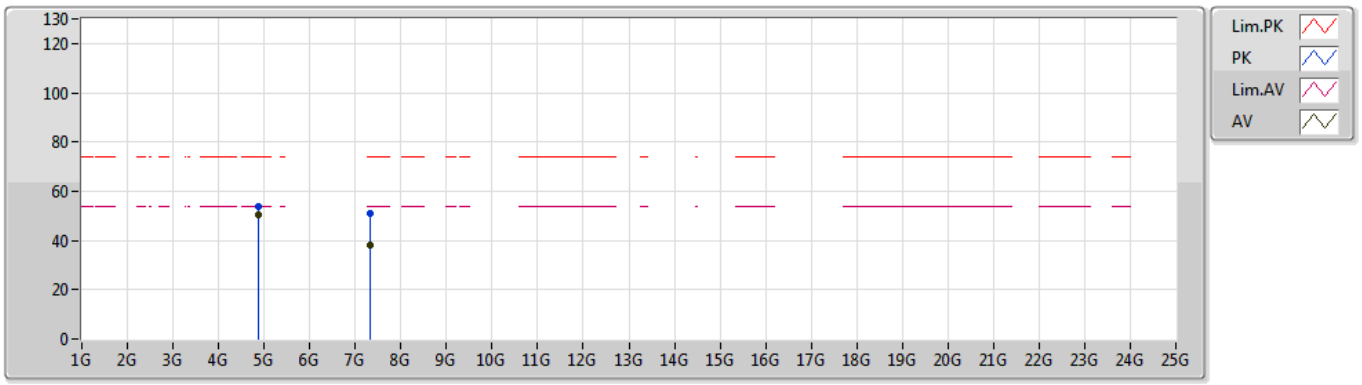
EUT Y_3TX
Setting 29
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.874G	53.12	74.00	-20.88	3.12	3	Vertical	171	1.50	-
AV	4.87397G	49.35	54.00	-4.65	3.12	3	Vertical	171	1.50	-
PK	7.31067G	50.55	74.00	-23.45	8.49	3	Vertical	289	1.21	-
AV	7.31176G	36.13	54.00	-17.87	8.49	3	Vertical	289	1.21	-

802.11b_Nss1,(1Mbps)_3TX

2437MHz_TX

08/07/2019



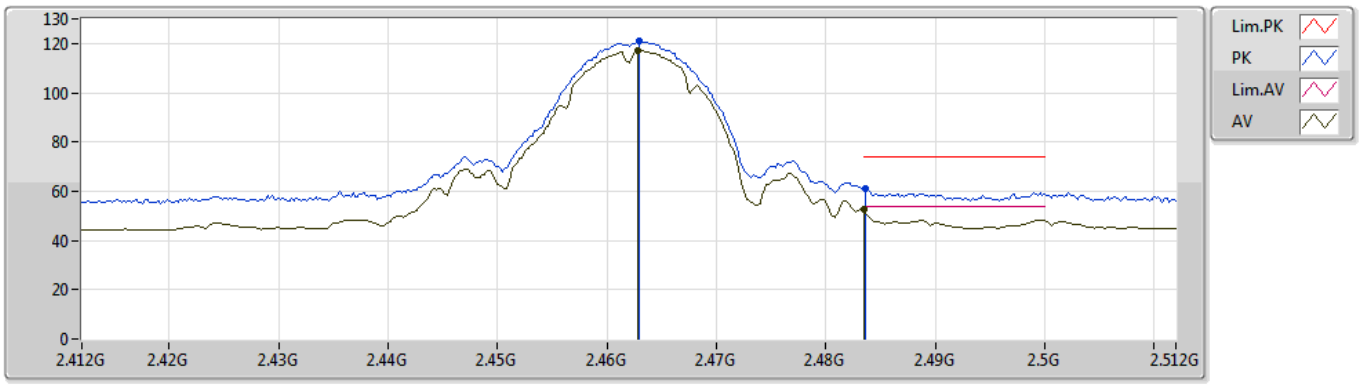
EUT Y_3TX
Setting 29
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.874G	53.67	74.00	-20.33	3.12	3	Horizontal	231	2.13	-
AV	4.87398G	50.24	54.00	-3.76	3.12	3	Horizontal	231	2.13	-
PK	7.31173G	51.16	74.00	-22.84	8.49	3	Horizontal	227	1.02	-
AV	7.31173G	38.12	54.00	-15.88	8.49	3	Horizontal	227	1.02	-

802.11b_Nss1,(1Mbps)_3TX

2462MHz_TX

08/07/2019



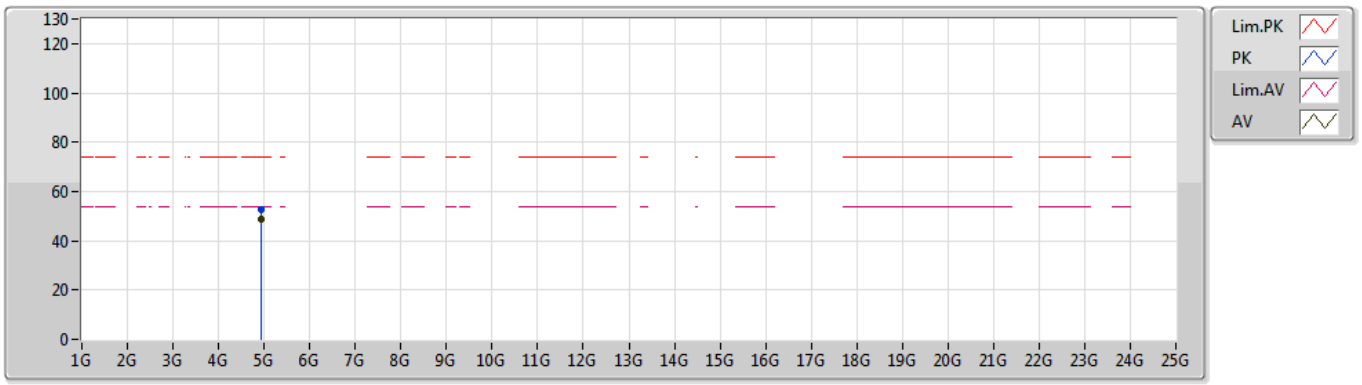
EUT Y_3TX
Setting 24
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.463G	121.15	Inf	-Inf	30.00	3	Vertical	348	1.86	-
AV	2.4628G	116.99	Inf	-Inf	30.00	3	Vertical	348	1.86	-
PK	2.4836G	60.89	74.00	-13.11	30.05	3	Vertical	348	1.86	-
AV	2.4835G	52.52	54.00	-1.48	30.05	3	Vertical	348	1.86	-

802.11b_Nss1,(1Mbps)_3TX

2462MHz_TX

08/07/2019



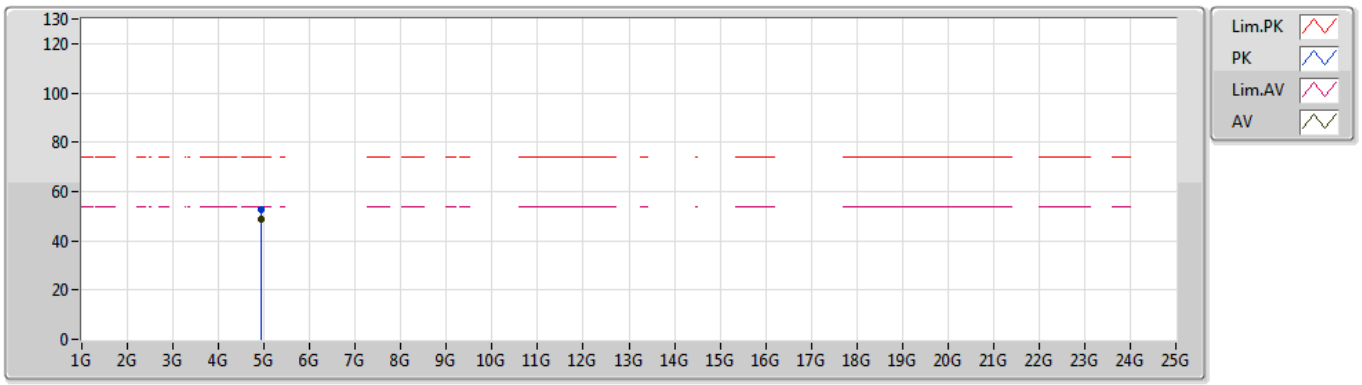
EUT Y_3TX
Setting 24
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.92388G	52.63	74.00	-21.37	3.25	3	Vertical	225	1.67	-
AV	4.92397G	48.60	54.00	-5.40	3.25	3	Vertical	225	1.67	-

802.11b_Nss1,(1Mbps)_3TX

2462MHz_TX

08/07/2019



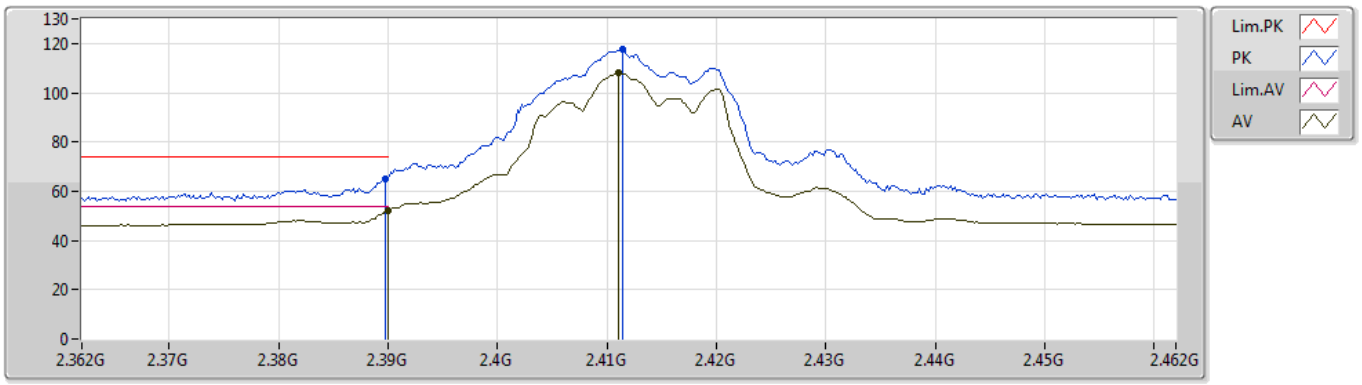
EUT Y_3TX
Setting 24
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.924G	52.78	74.00	-21.22	3.25	3	Horizontal	231	2.25	-
AV	4.92397G	48.71	54.00	-5.29	3.25	3	Horizontal	231	2.25	-

802.11g_Nss1,(6Mbps)_3TX

2412MHz_TX

19/07/2019



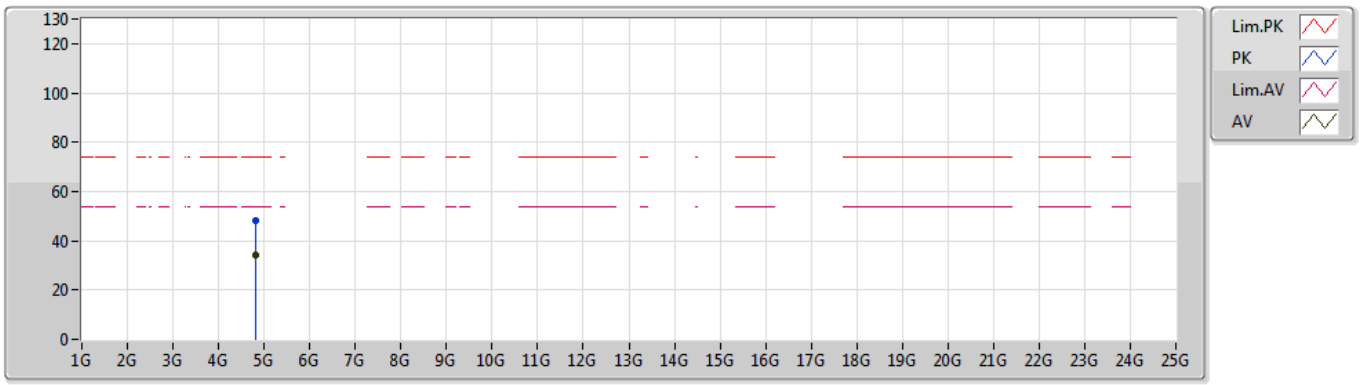
EUT Y_3TX
Setting 20
03-M-1
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3898G	65.28	74.00	-8.72	31.93	3	Vertical	31	1.95	-
AV	2.39G	52.19	54.00	-1.81	31.93	3	Vertical	31	1.95	-
PK	2.4114G	117.41	Inf	-Inf	32.00	3	Vertical	31	1.95	-
AV	2.411G	107.93	Inf	-Inf	32.00	3	Vertical	31	1.95	-

802.11g_Nss1,(6Mbps)_3TX

2412MHz_TX

23/07/2019



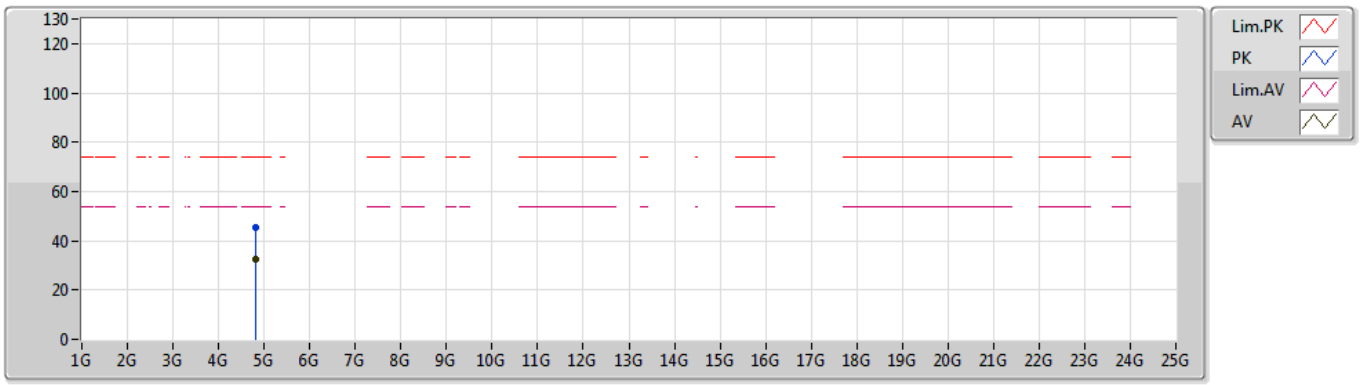
EUT Y_3TX
Setting 20
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.82406G	47.92	74.00	-26.08	2.96	3	Vertical	48	1.50	-
AV	4.82398G	33.94	54.00	-20.06	2.96	3	Vertical	48	1.50	-

802.11g_Nss1,(6Mbps)_3TX

2412MHz_TX

23/07/2019



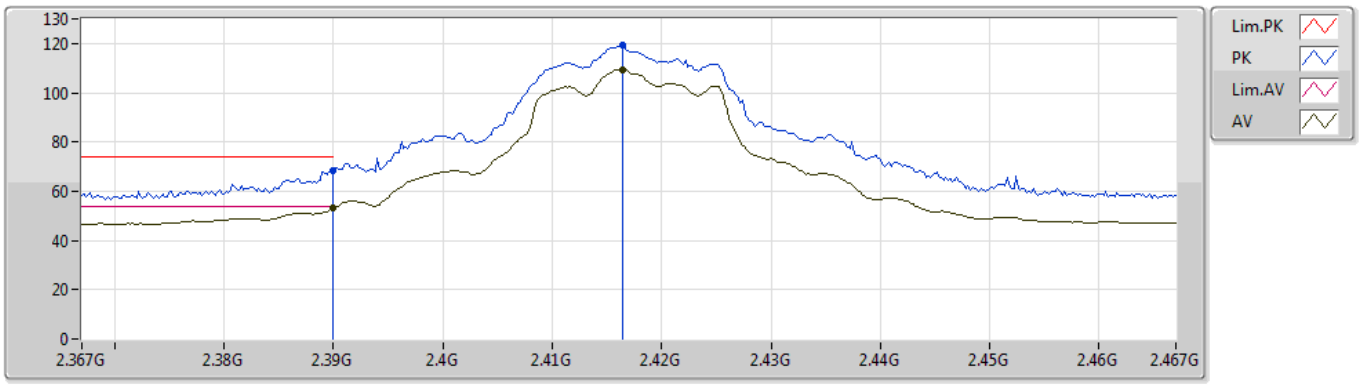
EUT Y_3TX
Setting 20
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8247G	45.54	74.00	-28.46	2.96	3	Horizontal	237	1.30	-
AV	4.82588G	32.59	54.00	-21.41	2.97	3	Horizontal	237	1.30	-

802.11g_Nss1,(6Mbps)_3TX

2417MHz_TX

10/07/2019



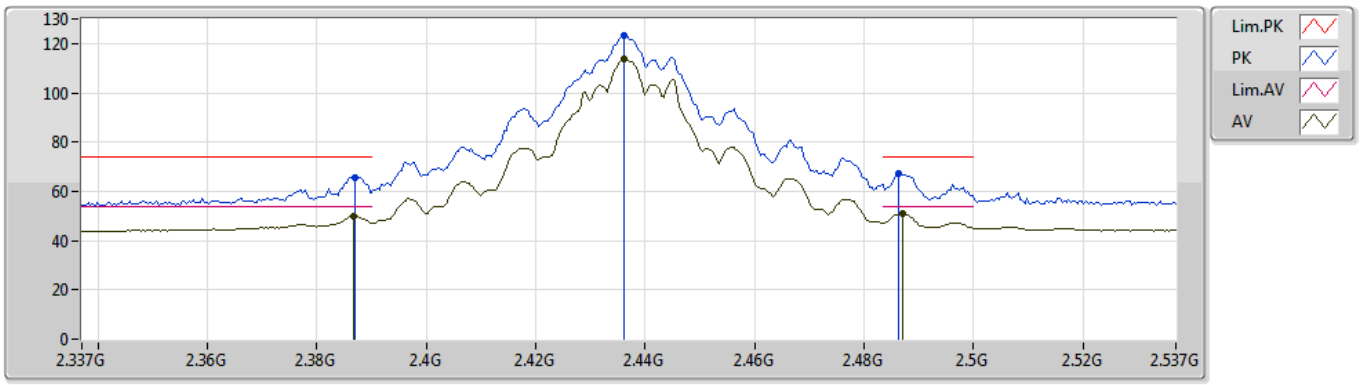
EUT Y_3TX
Setting 24
06-K-3
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.39G	68.61	74.00	-5.39	32.62	3	Vertical	9	2.11	-
AV	2.39G	52.97	54.00	-1.03	32.62	3	Vertical	9	2.11	-
PK	2.4164G	119.13	Inf	-Inf	32.56	3	Vertical	9	2.11	-
AV	2.4164G	109.38	Inf	-Inf	32.56	3	Vertical	9	2.11	-

802.11g_Nss1,(6Mbps)_3TX

2437MHz_TX

08/07/2019



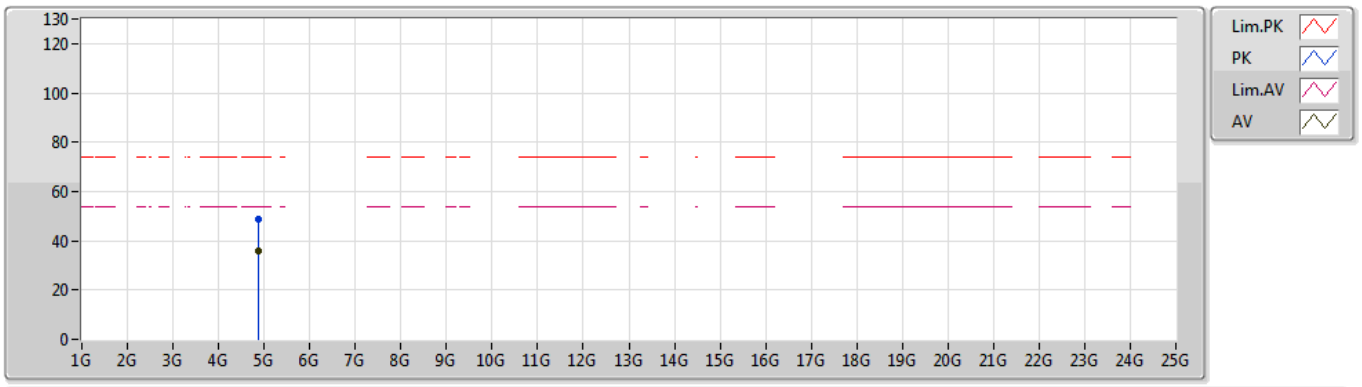
EUT Y_3TX
Setting 2B
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.387G	65.76	74.00	-8.24	29.84	3	Vertical	341	1.00	-
AV	2.3866G	49.96	54.00	-4.04	29.84	3	Vertical	341	1.00	-
PK	2.4362G	123.42	Inf	-Inf	29.93	3	Vertical	341	1.00	-
AV	2.4362G	113.77	Inf	-Inf	29.93	3	Vertical	341	1.00	-
PK	2.4862G	66.98	74.00	-7.02	30.05	3	Vertical	341	1.00	-
AV	2.487G	51.11	54.00	-2.89	30.05	3	Vertical	341	1.00	-

802.11g_Nss1,(6Mbps)_3TX

2437MHz_TX

08/07/2019



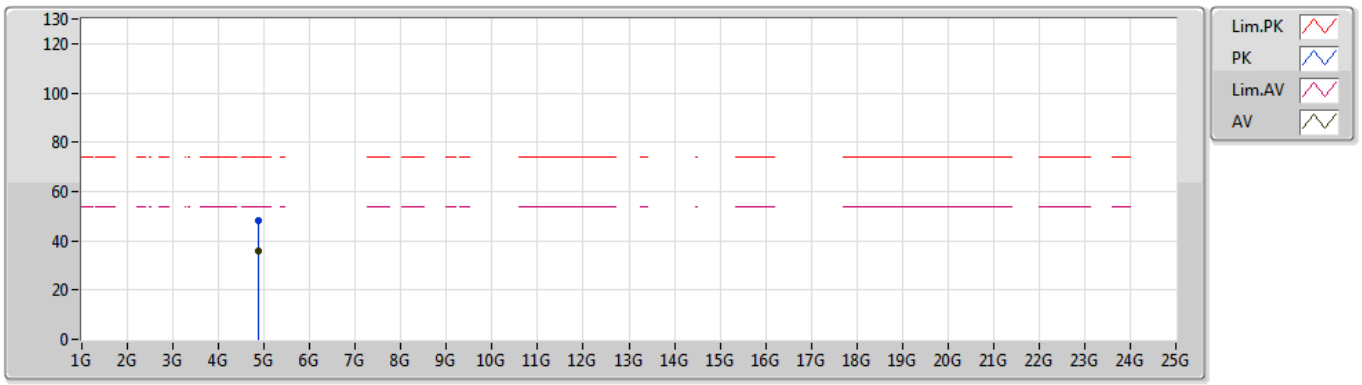
EUT Y_3TX
Setting 2B
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.874G	48.90	74.00	-25.10	3.12	3	Vertical	172	1.50	-
AV	4.87396G	35.95	54.00	-18.05	3.12	3	Vertical	172	1.50	-

802.11g_Nss1,(6Mbps)_3TX

2437MHz_TX

08/07/2019



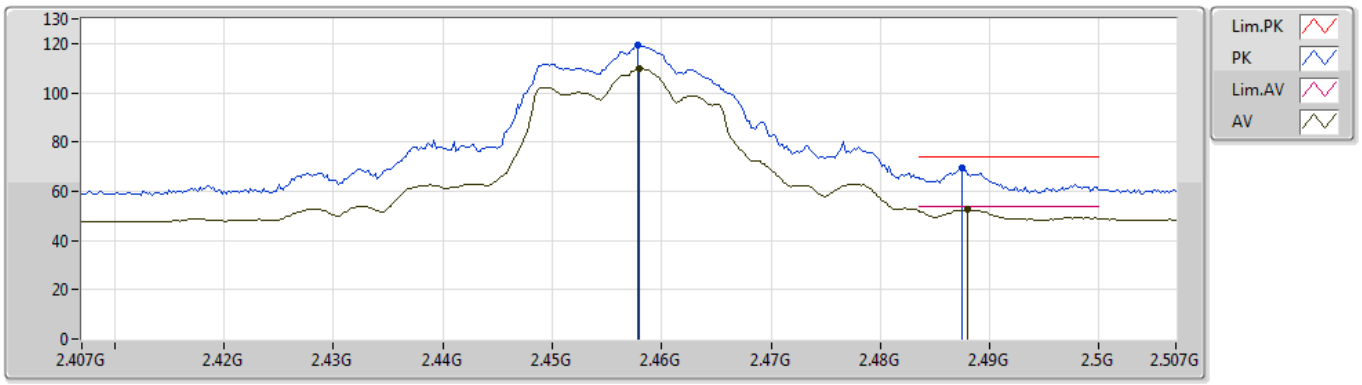
EUT Y_3TX
Setting 2B
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.87384G	48.40	74.00	-25.60	3.12	3	Horizontal	233	2.14	-
AV	4.87412G	35.90	54.00	-18.10	3.12	3	Horizontal	233	2.14	-

802.11g_Nss1,(6Mbps)_3TX

2457MHz_TX

19/07/2019



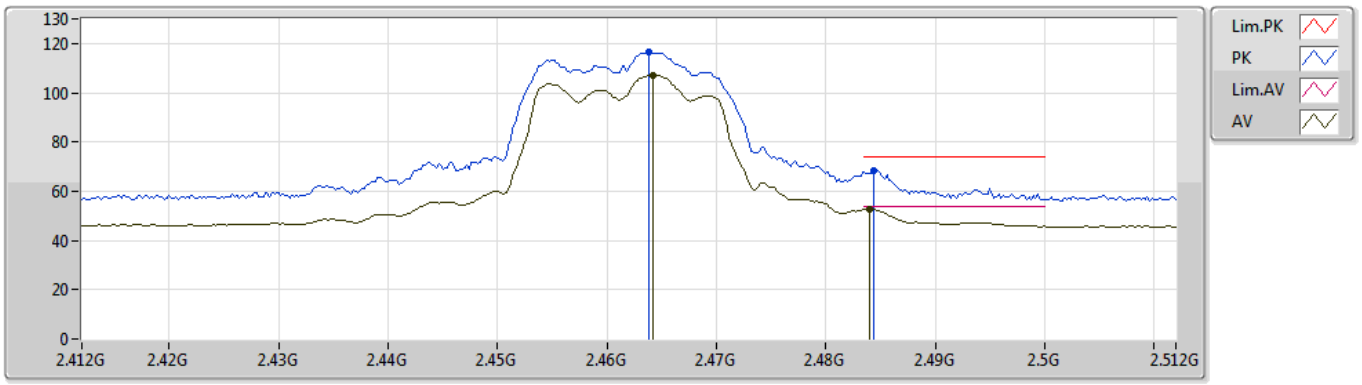
EUT Y_3TX
Setting 23
02-M-1
FSU

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4578G	119.32	Inf	-Inf	31.34	3	Vertical	9	1.73	-
AV	2.458G	109.73	Inf	-Inf	31.34	3	Vertical	9	1.73	-
PK	2.4874G	69.31	74.00	-4.69	31.40	3	Vertical	9	1.73	-
AV	2.488G	52.55	54.00	-1.45	31.41	3	Vertical	9	1.73	-

802.11g_Nss1,(6Mbps)_3TX

2462MHz_TX

08/07/2019



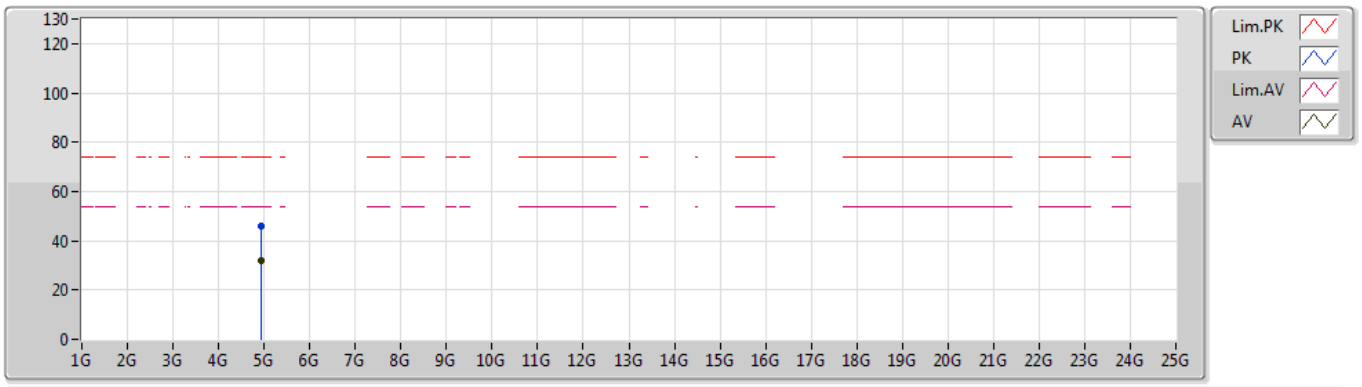
EUT Y_3TX
Setting 1E
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4638G	116.46	Inf	-Inf	30.00	3	Vertical	343	1.29	-
AV	2.4642G	107.10	Inf	-Inf	30.00	3	Vertical	343	1.29	-
PK	2.4844G	68.45	74.00	-5.55	30.05	3	Vertical	343	1.29	-
AV	2.484G	52.94	54.00	-1.06	30.05	3	Vertical	343	1.29	-

802.11g_Nss1,(6Mbps)_3TX

2462MHz_TX

02/08/2019



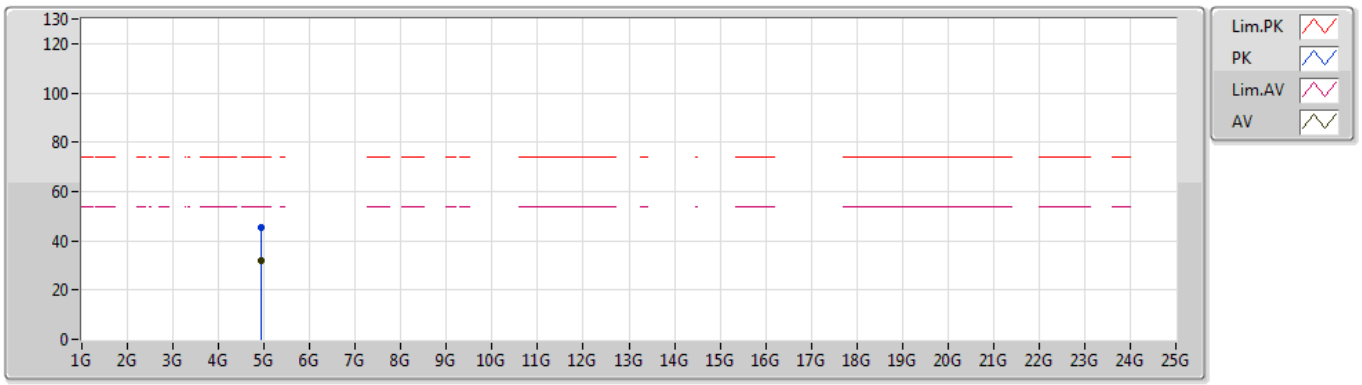
EUT Y_3TX
Setting 1E
02-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.93522G	45.90	74.00	-28.10	7.44	3	Vertical	67	2.78	-
AV	4.92898G	32.00	54.00	-22.00	7.43	3	Vertical	67	2.78	-

802.11g_Nss1,(6Mbps)_3TX

2462MHz_TX

02/08/2019



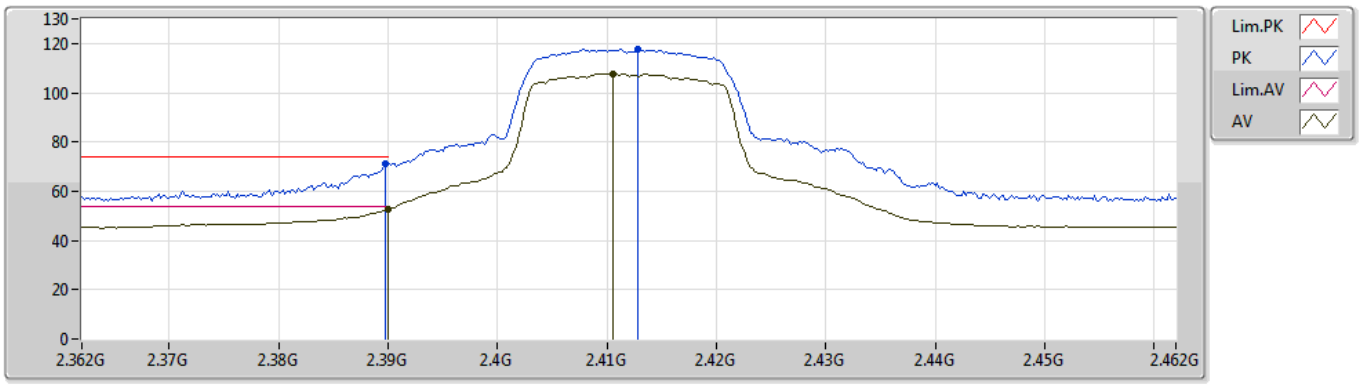
EUT Y_3TX
Setting 1E
02-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.93492G	45.30	74.00	-28.70	7.44	3	Horizontal	151	1.75	-
AV	4.92928G	31.85	54.00	-22.15	7.43	3	Horizontal	151	1.75	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2412MHz_TX

08/07/2019



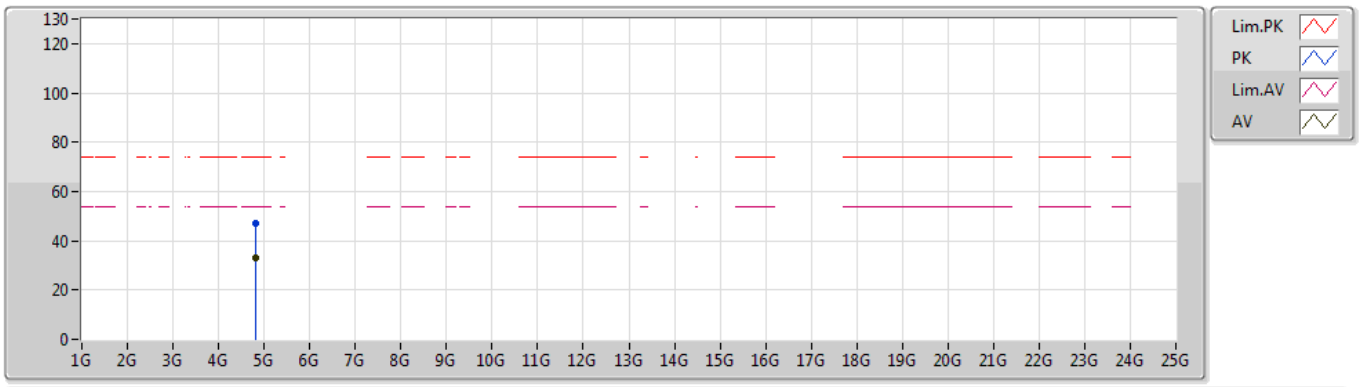
EUT Y_3TX
Setting 30
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3898G	71.30	74.00	-2.70	29.84	3	Vertical	342	1.50	-
AV	2.39G	52.71	54.00	-1.29	29.84	3	Vertical	342	1.50	-
PK	2.4128G	117.63	Inf	-Inf	29.88	3	Vertical	342	1.50	-
AV	2.4106G	107.52	Inf	-Inf	29.87	3	Vertical	342	1.50	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2412MHz_TX

02/08/2019



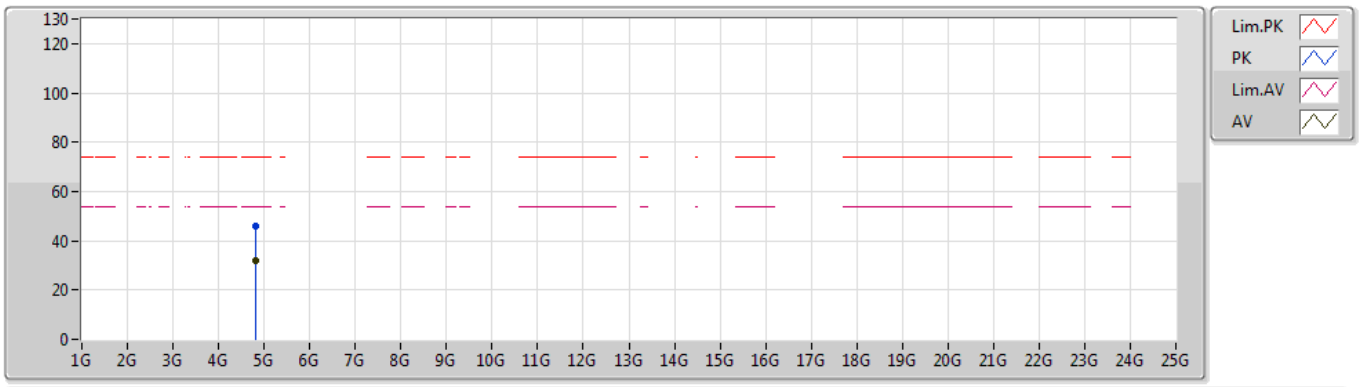
EUT Y_3TX
Setting 30
04-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8264G	46.84	74.00	-27.16	7.18	3	Vertical	116	1.44	-
AV	4.82388G	32.84	54.00	-21.16	7.17	3	Vertical	116	1.44	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2412MHz_TX

02/08/2019



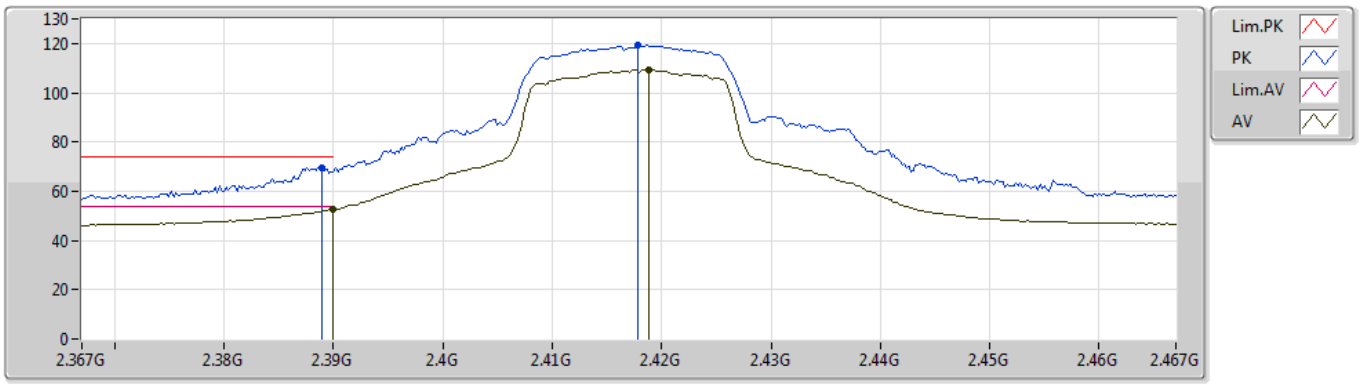
EUT Y_3TX
Setting 30
04-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8228G	45.70	74.00	-28.30	7.16	3	Horizontal	243	1.47	-
AV	4.82562G	31.89	54.00	-22.11	7.18	3	Horizontal	243	1.47	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2417MHz_TX

10/07/2019



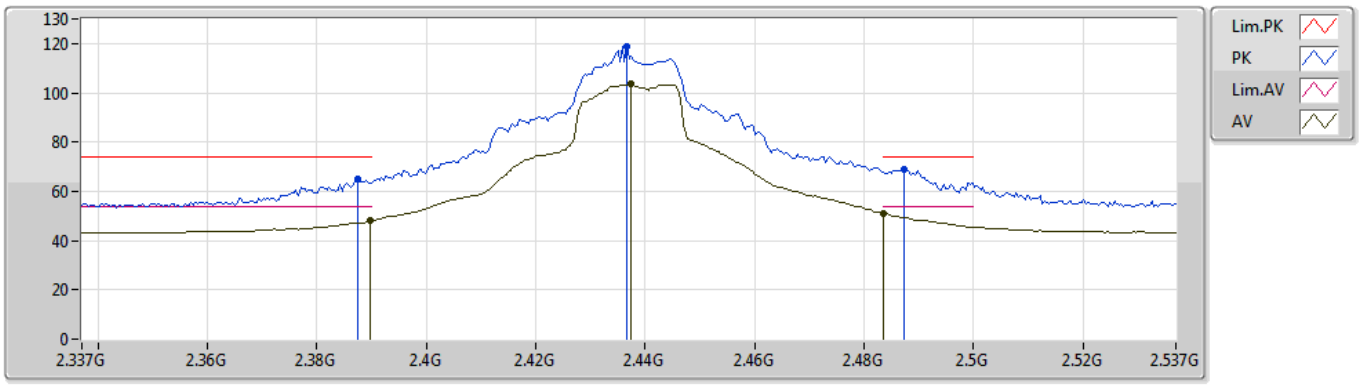
EUT Y_3TX
Setting 34
06-K-3
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.389G	69.51	74.00	-4.49	32.63	3	Vertical	0	2.11	-
AV	2.39G	52.89	54.00	-1.11	32.62	3	Vertical	0	2.11	-
PK	2.4178G	119.19	Inf	-Inf	32.55	3	Vertical	0	2.11	-
AV	2.4188G	109.19	Inf	-Inf	32.56	3	Vertical	0	2.11	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2437MHz_TX

08/07/2019



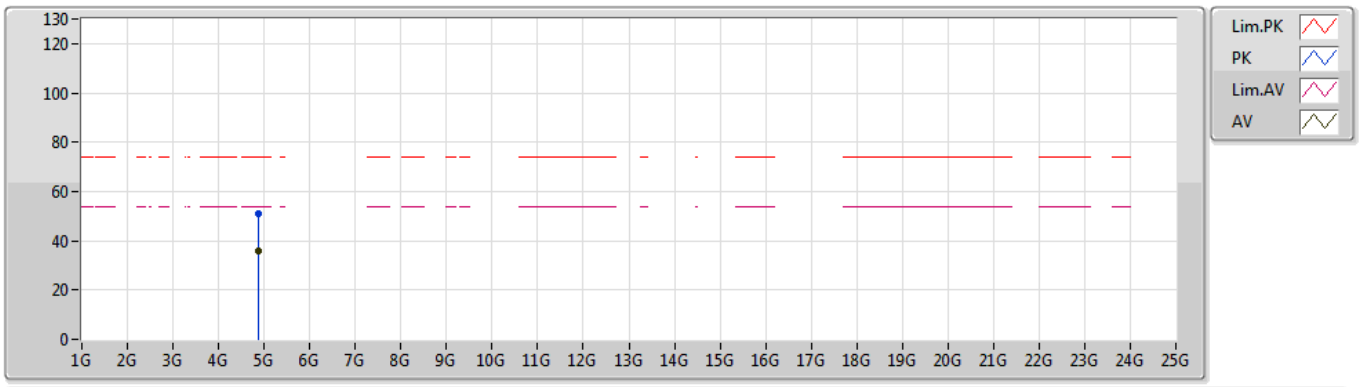
EUT Y_3TX
Setting 43
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3874G	64.80	74.00	-9.20	29.84	3	Vertical	54	1.59	-
AV	2.3898G	47.99	54.00	-6.01	29.84	3	Vertical	54	1.59	-
PK	2.4366G	119.01	Inf	-Inf	29.93	3	Vertical	54	1.59	-
AV	2.4374G	103.48	Inf	-Inf	29.93	3	Vertical	54	1.59	-
PK	2.4874G	68.87	74.00	-5.13	30.05	3	Vertical	54	1.59	-
AV	2.4835G	50.89	54.00	-3.11	30.05	3	Vertical	54	1.59	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

23/07/2019

2437MHz_TX



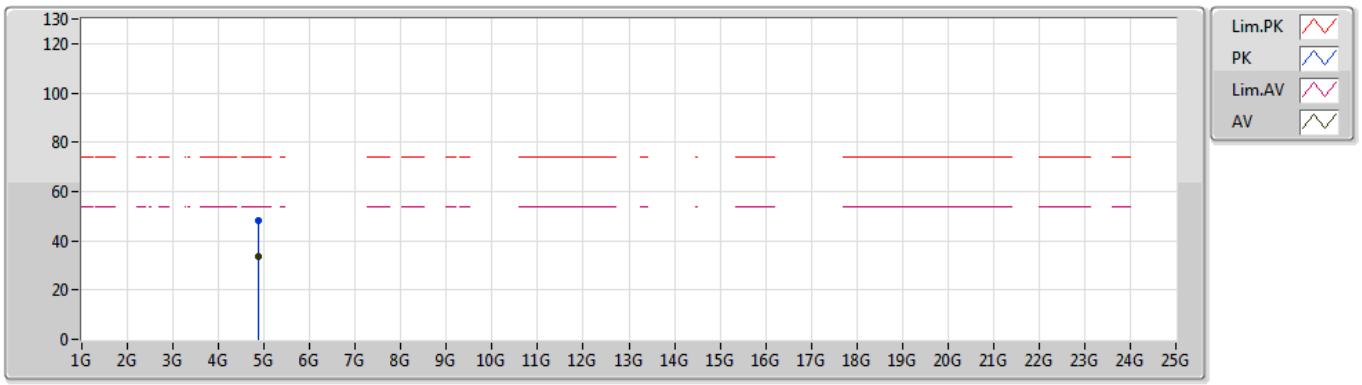
EUT Y_3TX
Setting 43
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.87454G	50.74	74.00	-23.26	3.12	3	Vertical	43	1.40	-
AV	4.87396G	35.97	54.00	-18.03	3.12	3	Vertical	43	1.40	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2437MHz_TX

23/07/2019



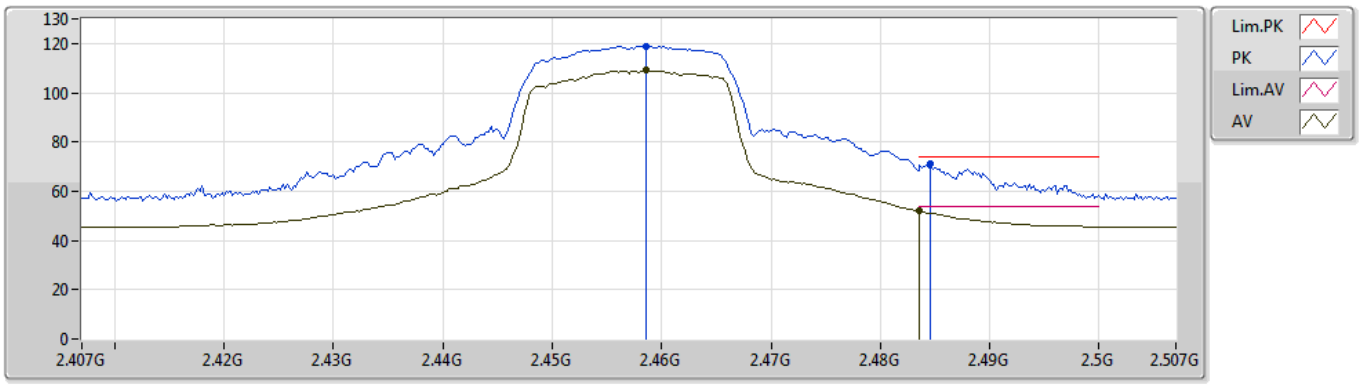
EUT Y_3TX
Setting 43
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.87481G	48.39	74.00	-25.61	3.12	3	Horizontal	225	1.50	-
AV	4.8735G	33.52	54.00	-20.48	3.12	3	Horizontal	225	1.50	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2457MHz_TX

23/07/2019



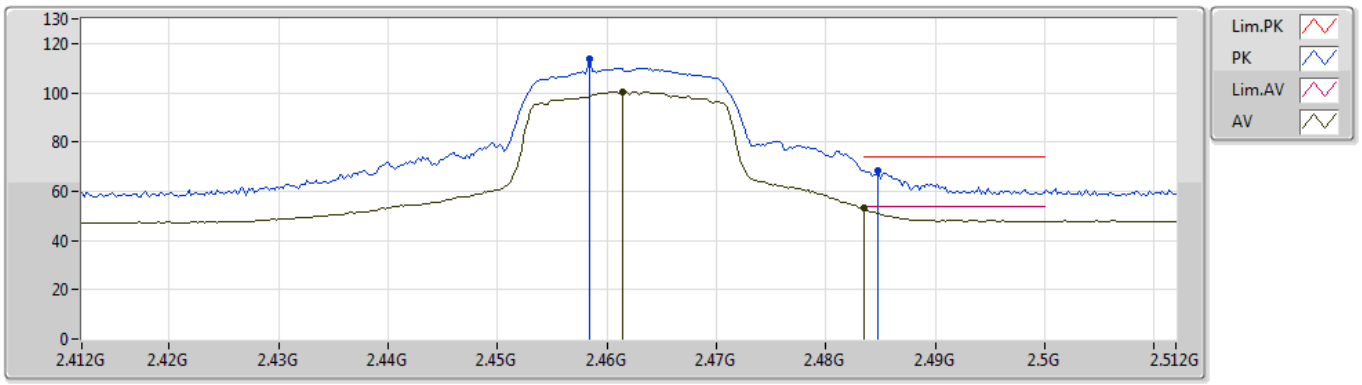
EUT Y_3TX
Setting 34
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4586G	118.83	Inf	-Inf	29.99	3	Vertical	180	1.47	-
AV	2.4586G	109.02	Inf	-Inf	29.99	3	Vertical	180	1.47	-
PK	2.4846G	70.92	74.00	-3.08	30.05	3	Vertical	180	1.47	-
AV	2.4835G	52.01	54.00	-1.99	30.05	3	Vertical	180	1.47	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2462MHz_TX

19/07/2019



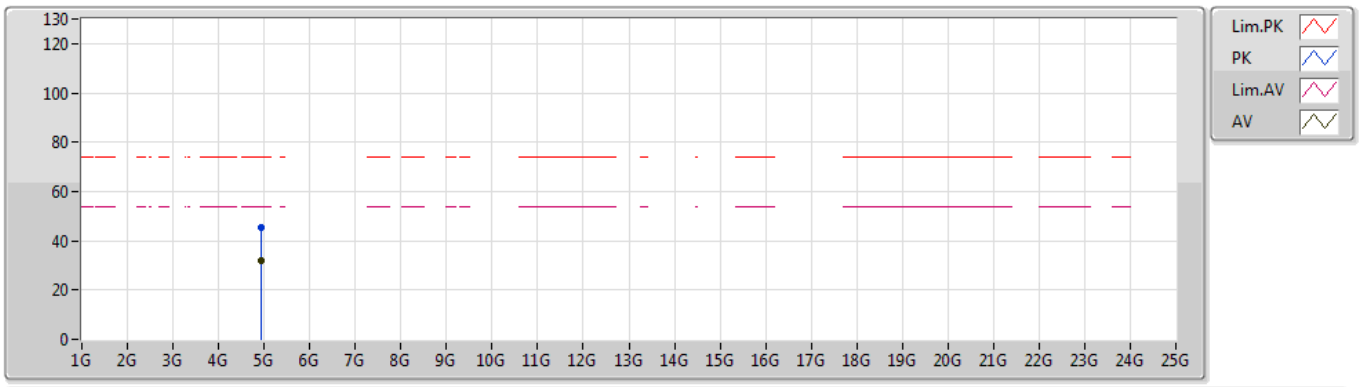
EUT Y_3TX
Setting 32
02-M-1
FSU

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4584G	113.94	Inf	-Inf	31.34	3	Vertical	15	2.84	-
AV	2.4614G	100.27	Inf	-Inf	31.35	3	Vertical	15	2.84	-
PK	2.4848G	68.58	74.00	-5.42	31.40	3	Vertical	15	2.84	-
AV	2.4835G	52.96	54.00	-1.04	31.39	3	Vertical	15	2.84	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2462MHz_TX

02/08/2019



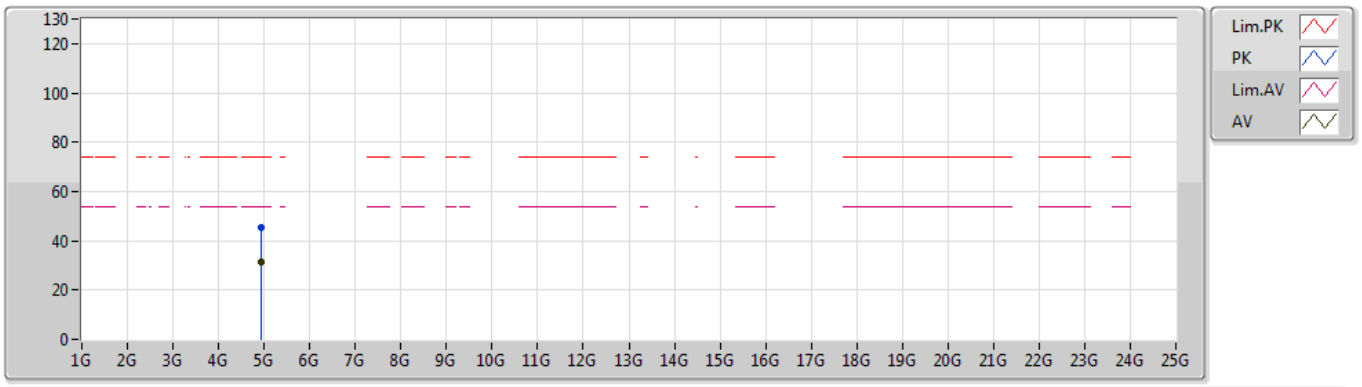
EUT Y_3TX
Setting 32
02-C-4
FSU

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.93588G	45.44	74.00	-28.56	7.44	3	Vertical	133	1.07	-
AV	4.92904G	31.66	54.00	-22.34	7.43	3	Vertical	133	1.07	-

802.11n HT20-BF_Nss1,(MCS0)_3TX

2462MHz_TX

02/08/2019



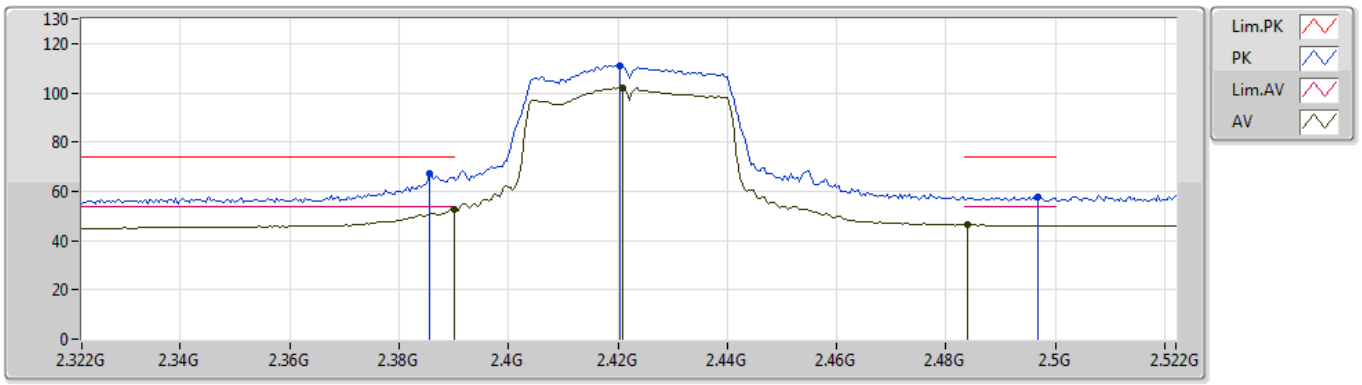
EUT Y_3TX
Setting 32
02-C-4
FSU

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.9264G	45.55	74.00	-28.45	7.42	3	Horizontal	227	1.46	-
AV	4.9372G	31.65	54.00	-22.35	7.44	3	Horizontal	227	1.46	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2422MHz_TX

19/07/2019



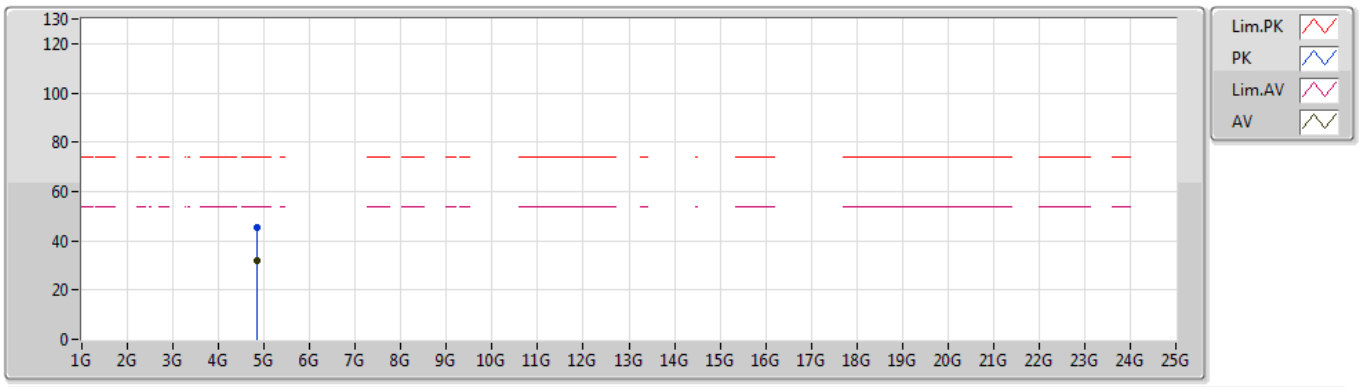
EUT Y_3TX
Setting 24
03-M-1
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3856G	66.97	74.00	-7.03	31.92	3	Vertical	351	2.52	-
AV	2.39G	52.95	54.00	-1.05	31.93	3	Vertical	351	2.52	-
PK	2.4204G	111.08	Inf	-Inf	32.03	3	Vertical	351	2.52	-
AV	2.4208G	102.01	Inf	-Inf	32.03	3	Vertical	351	2.52	-
PK	2.4968G	57.94	74.00	-16.06	32.30	3	Vertical	351	2.52	-
AV	2.484G	46.54	54.00	-7.46	32.25	3	Vertical	351	2.52	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2422MHz_TX

02/08/2019



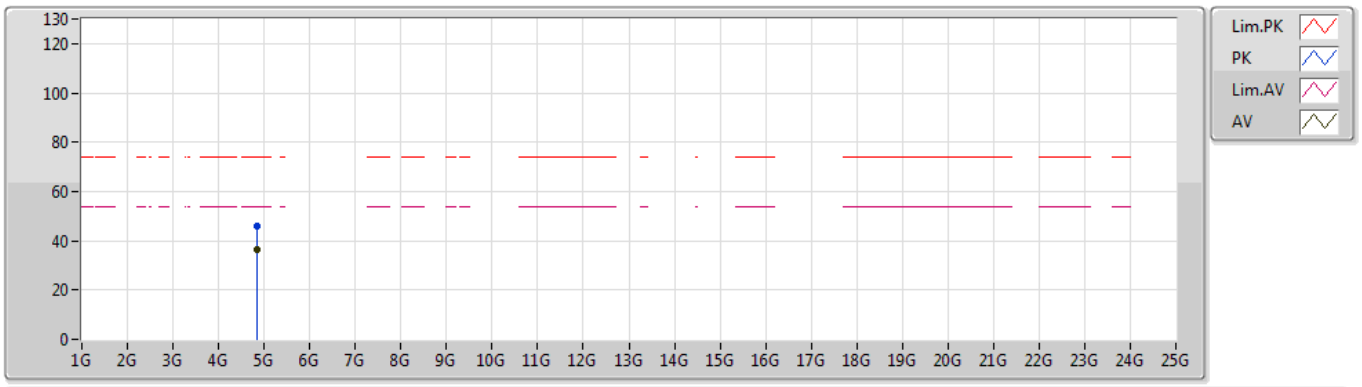
EUT Y_3TX
Setting 24
02-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.83194G	45.54	74.00	-28.46	7.19	3	Vertical	41	1.44	-
AV	4.84598G	31.76	54.00	-22.24	7.22	3	Vertical	41	1.44	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2422MHz_TX

02/08/2019



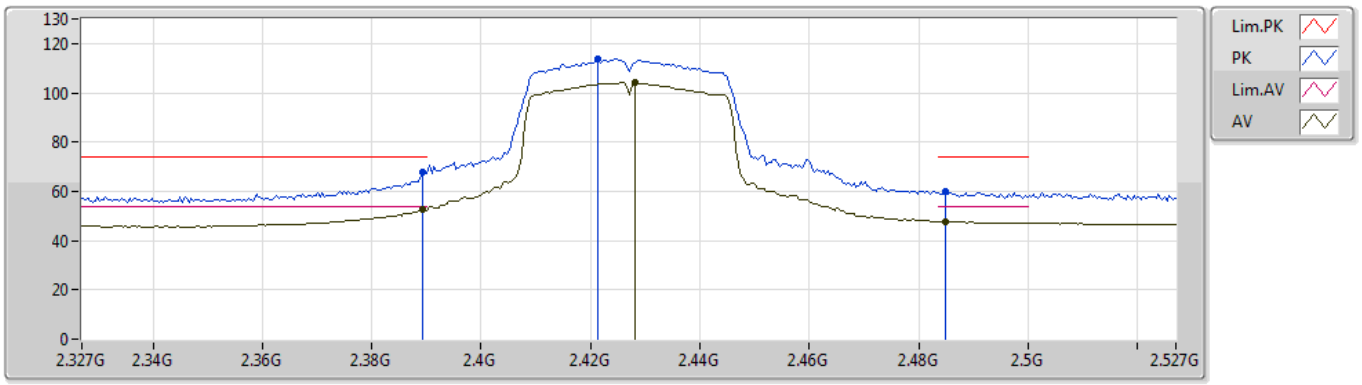
EUT Y_3TX
Setting 24
02-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.84352G	46.14	74.00	-27.86	7.21	3	Horizontal	221	2.24	-
AV	4.8437G	36.68	54.00	-17.32	7.21	3	Horizontal	221	2.24	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2427MHz_TX

10/07/2019



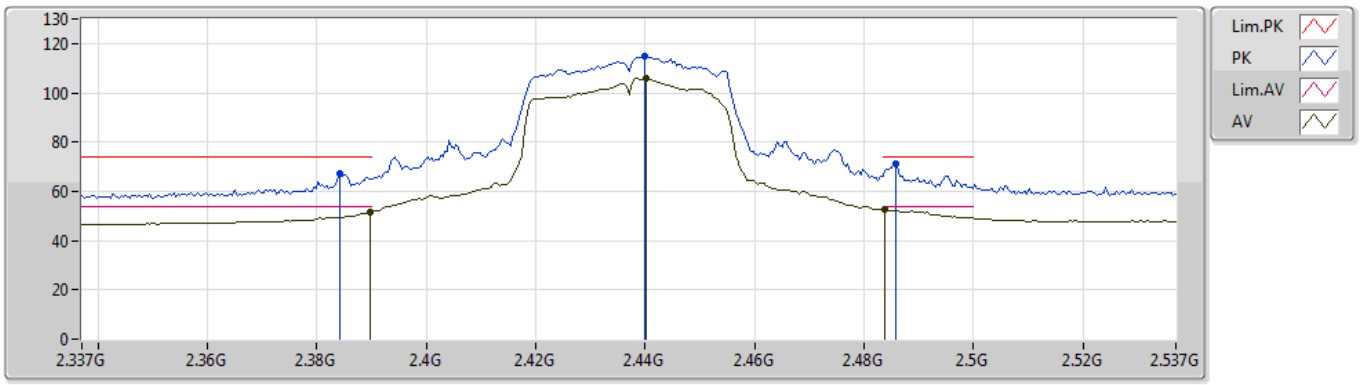
EUT Y_3TX
Setting 28
06-K-3
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3894G	67.68	74.00	-6.32	32.62	3	Vertical	359	1.64	-
AV	2.3894G	52.83	54.00	-1.17	32.62	3	Vertical	359	1.64	-
PK	2.4214G	113.81	Inf	-Inf	32.56	3	Vertical	359	1.64	-
AV	2.4282G	104.37	Inf	-Inf	32.54	3	Vertical	359	1.64	-
PK	2.485G	59.81	74.00	-14.19	32.48	3	Vertical	359	1.64	-
AV	2.485G	47.82	54.00	-6.18	32.48	3	Vertical	359	1.64	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2437MHz_TX

19/07/2019



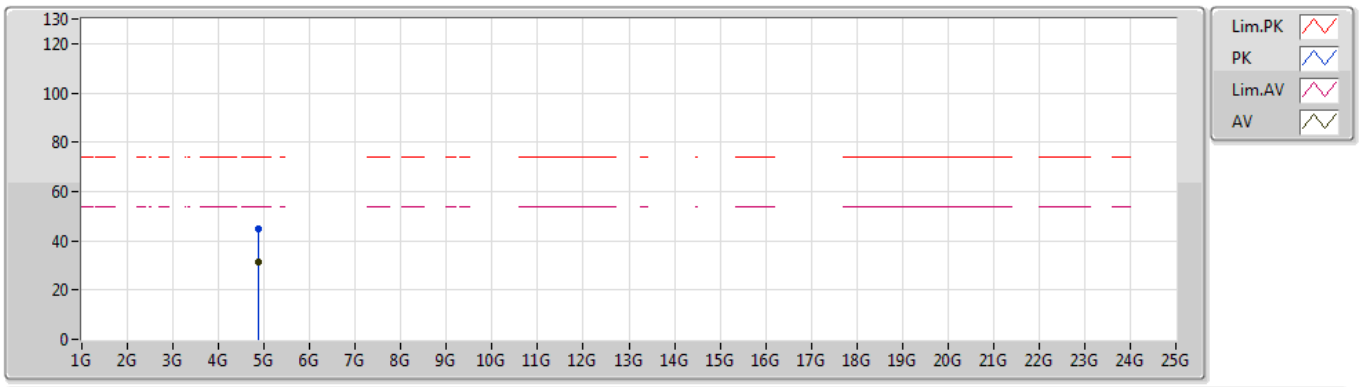
EUT Y_3TX
Setting 33
02-M-1
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3842G	67.25	74.00	-6.75	31.19	3	Vertical	14	1.82	-
AV	2.3898G	51.46	54.00	-2.54	31.20	3	Vertical	14	1.82	-
PK	2.4398G	114.88	Inf	-Inf	31.31	3	Vertical	14	1.82	-
AV	2.4402G	105.83	Inf	-Inf	31.31	3	Vertical	14	1.82	-
PK	2.4858G	71.08	74.00	-2.92	31.40	3	Vertical	14	1.82	-
AV	2.4838G	52.64	54.00	-1.36	31.39	3	Vertical	14	1.82	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2437MHz_TX

02/08/2019



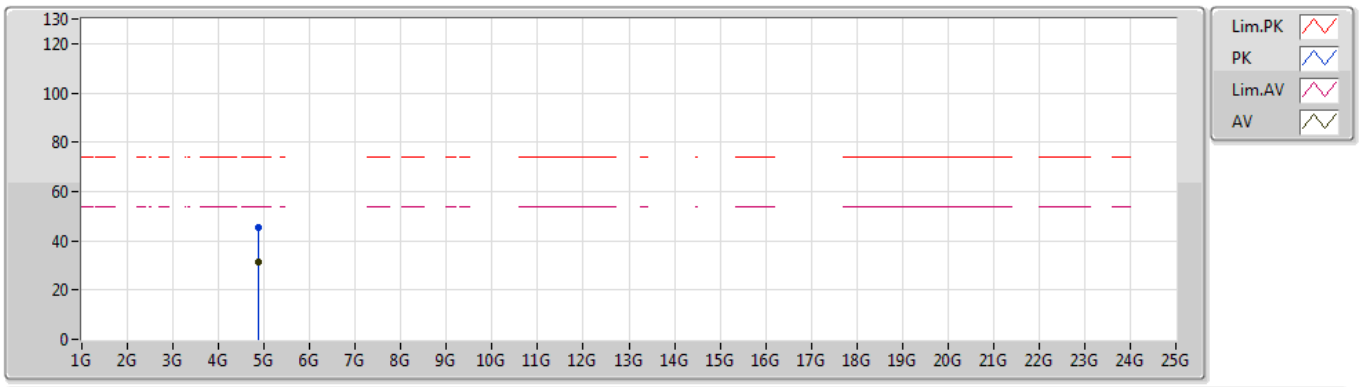
EUT Y_3TX
Setting 33
02-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.87814G	45.05	74.00	-28.95	7.30	3	Vertical	65	1.25	-
AV	4.8782G	31.37	54.00	-22.63	7.30	3	Vertical	65	1.25	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2437MHz_TX

02/08/2019



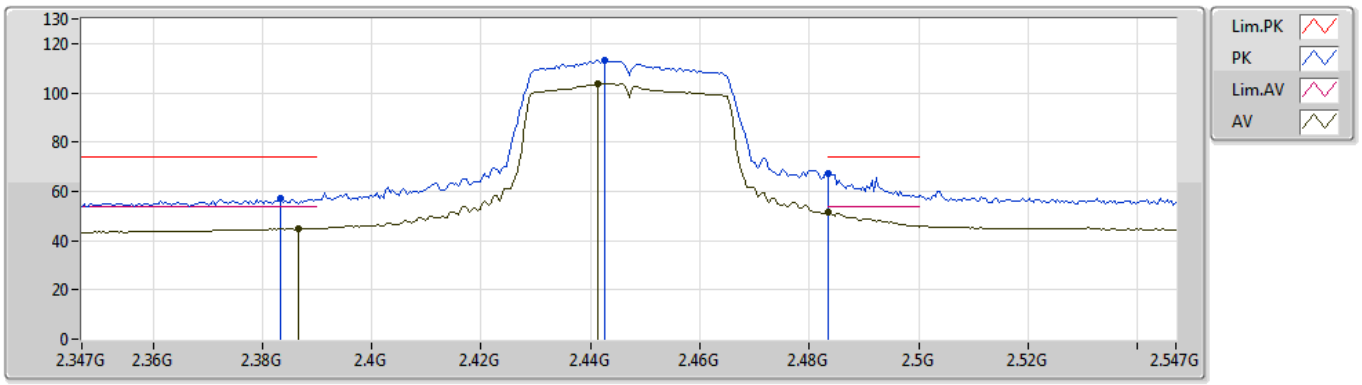
EUT Y_3TX
Setting 33
02-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8815G	45.34	74.00	-28.66	7.30	3	Horizontal	307	1.90	-
AV	4.86368G	31.31	54.00	-22.69	7.26	3	Horizontal	307	1.90	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2447MHz_TX

23/07/2019



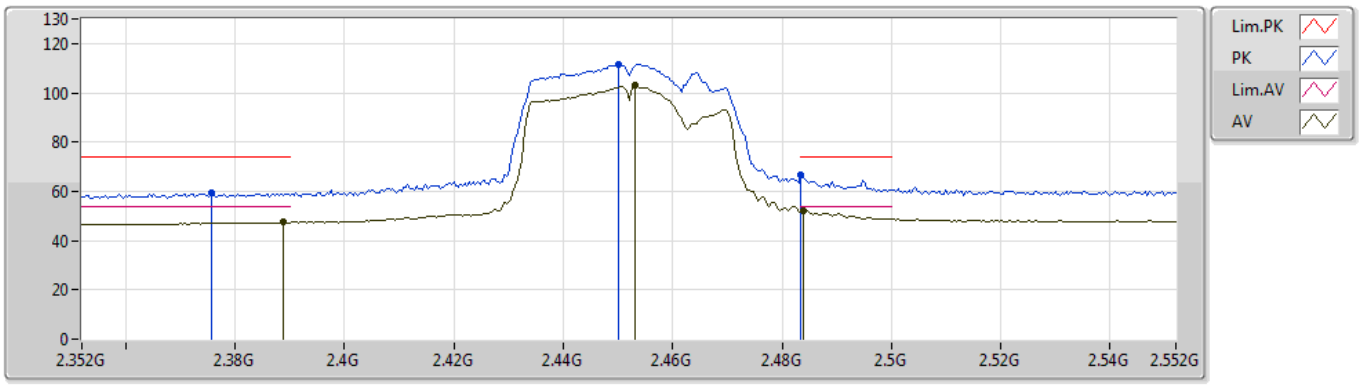
EUT Y_3TX
Setting 29
04-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3834G	57.08	74.00	-16.92	29.85	3	Vertical	346	2.52	-
AV	2.3866G	44.91	54.00	-9.09	29.84	3	Vertical	346	2.52	-
PK	2.4426G	113.13	Inf	-Inf	29.95	3	Vertical	346	2.52	-
AV	2.4414G	103.67	Inf	-Inf	29.94	3	Vertical	346	2.52	-
PK	2.4835G	67.34	74.00	-6.66	30.05	3	Vertical	346	2.52	-
AV	2.4835G	51.82	54.00	-2.18	30.05	3	Vertical	346	2.52	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2452MHz_TX

19/07/2019



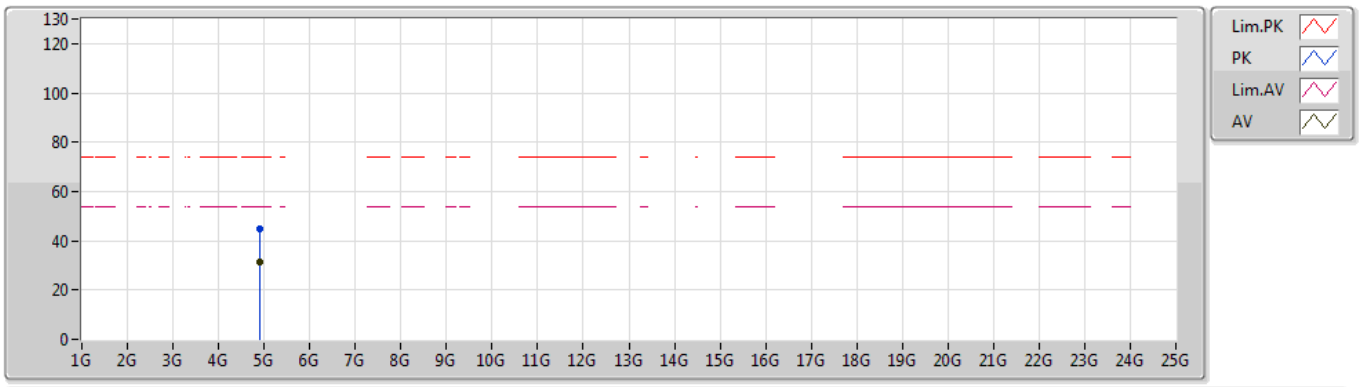
EUT Y_3TX
Setting 27
01-M-1
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3756G	59.33	74.00	-14.67	31.17	3	Vertical	341	1.98	-
AV	2.3888G	47.41	54.00	-6.59	31.20	3	Vertical	341	1.98	-
PK	2.45G	111.65	Inf	-Inf	31.33	3	Vertical	341	1.98	-
AV	2.4532G	102.83	Inf	-Inf	31.34	3	Vertical	341	1.98	-
PK	2.4835G	66.50	74.00	-7.50	31.39	3	Vertical	341	1.98	-
AV	2.484G	52.21	54.00	-1.79	31.39	3	Vertical	341	1.98	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2452MHz_TX

02/08/2019



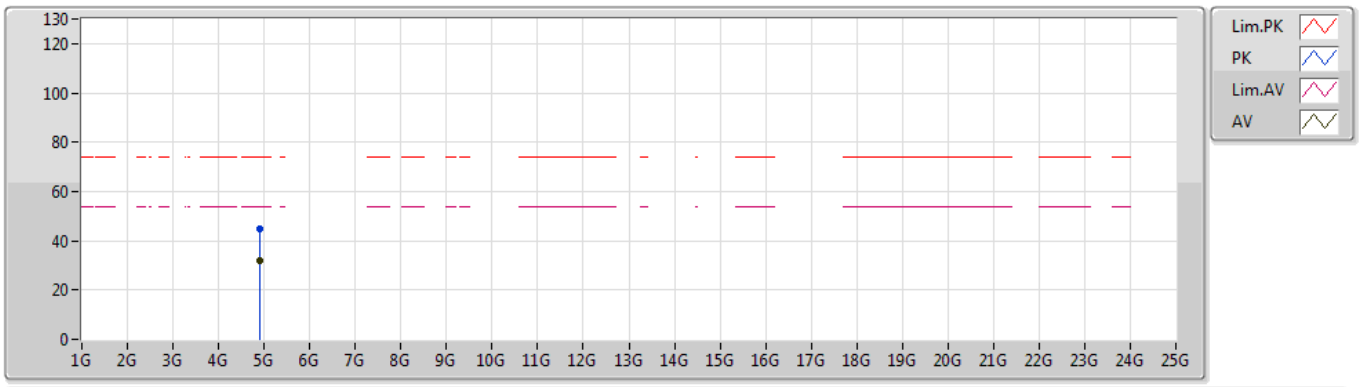
EUT Y_3TX
Setting 27
02-C-4
FSU(100015)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.9049G	44.67	74.00	-29.33	7.36	3	Vertical	127	1.70	-
AV	4.8893G	31.39	54.00	-22.61	7.33	3	Vertical	127	1.70	-

802.11n HT40-BF_Nss1,(MCS0)_3TX

2452MHz_TX

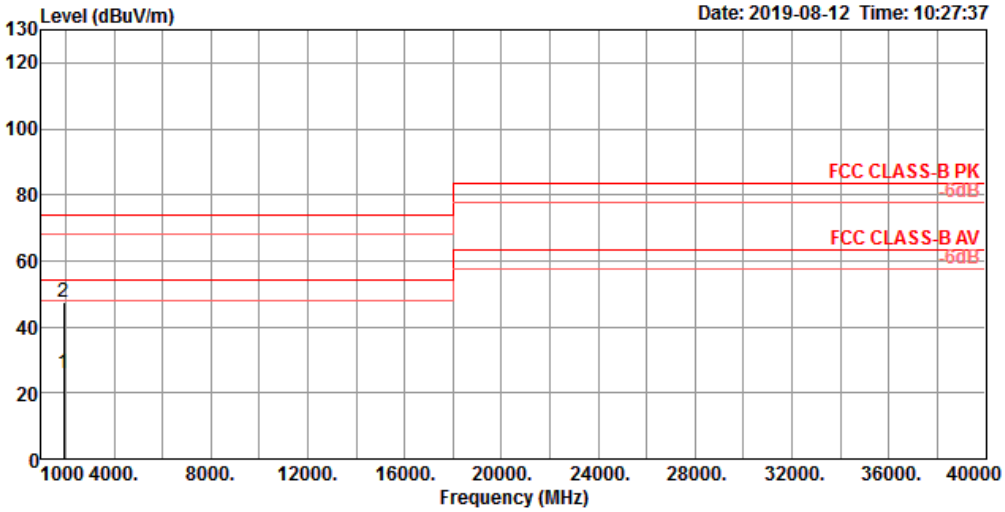
02/08/2019



EUT Y_3TX
Setting 27
02-C-4
FSU(100015)

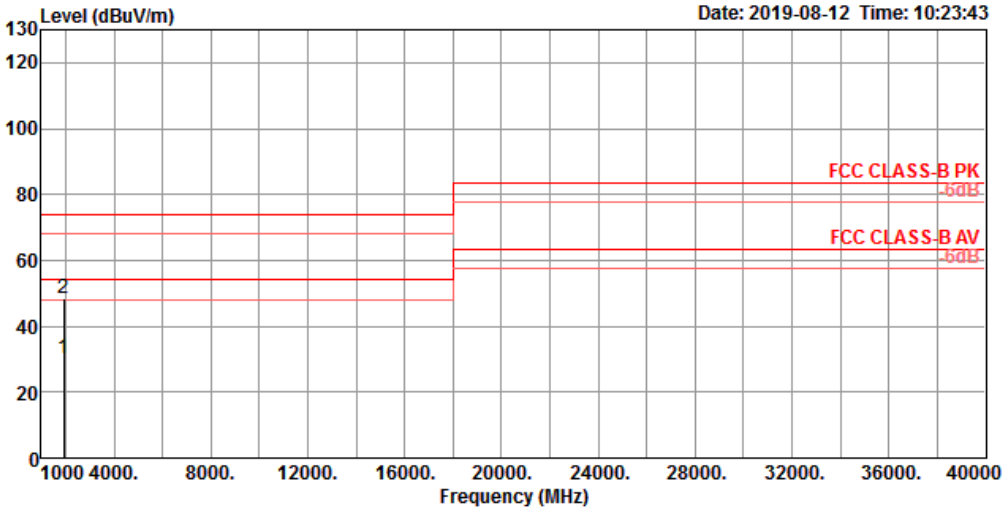
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.90322G	45.02	74.00	-28.98	7.36	3	Horizontal	219	1.80	-
AV	4.8896G	31.70	54.00	-22.30	7.33	3	Horizontal	219	1.80	-

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	1937.60	25.93	54.00	-28.07	30.86	3.04	25.63	33.60	123	158	Average	HORIZONTAL
2	1937.63	47.62	74.00	-26.38	52.55	3.04	25.63	33.60	123	158	Peak	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	1937.58	30.07	54.00	-23.93	35.00	3.04	25.63	33.60	127	192	Average	VERTICAL
2	1937.60	48.31	74.00	-25.69	53.24	3.04	25.63	33.60	127	192	Peak	VERTICAL