



FCC RADIO TEST REPORT

FCC ID : UIDW31
Equipment : Wireless Router
Brand Name : ARRIS
Model Name : W31, W30
Applicant : ARRIS
3871 Lakefield Drive Suite 300, Suwanee, Georgia,
30024 United States
Manufacturer : ARRIS
3871 Lakefield Drive Suite 300, Suwanee, Georgia,
30024 United States
Standard : 47 CFR FCC Part 15.247

The product was received on Sep. 03, 2019, and testing was started from Sep. 26, 2019 and completed on Dec. 31, 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 variant 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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History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_10 Ver1.1

Page Number : 3 of 30
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Report Version : 01



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	15.247(a)	DTS Bandwidth	PASS	-
3.2	15.247(b)	Maximum Conducted Output Power	PASS	-
3.3	15.247(e)	Power Spectral Density	PASS	-
3.4	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.5	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:

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: Emily Chen



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), VHT20, ax (HEW20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), VHT40, ax (HEW40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	4TX
2.4-2.4835GHz	802.11g	20	4TX
2.4-2.4835GHz	802.11n HT20	20	4TX
2.4-2.4835GHz	802.11n HT20-BF	20	4TX
2.4-2.4835GHz	VHT20	20	4TX
2.4-2.4835GHz	VHT20-BF	20	4TX
2.4-2.4835GHz	802.11ax HEW20	20	4TX
2.4-2.4835GHz	802.11ax HEW20-BF	20	4TX
2.4-2.4835GHz	802.11n HT40	40	4TX
2.4-2.4835GHz	802.11n HT40-BF	40	4TX
2.4-2.4835GHz	VHT40	40	4TX
2.4-2.4835GHz	VHT40-BF	40	4TX
2.4-2.4835GHz	802.11ax HEW40	40	4TX
2.4-2.4835GHz	802.11ax HEW40-BF	40	4TX

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.
- ♦ VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	PEGATRON	1415-07GT000	Dual band PCB dipole antenna	I-PEX	Note
2	PEGATRON	1415-07GS000	Dual band PCB dipole antenna	I-PEX	
3	PEGATRON	1415-06WH000	Dual band PCB dipole antenna	I-PEX	
4	PEGATRON	1415-07GW000	Dual band PCB dipole antenna	I-PEX	
5	PEGATRON	1415-07GU000	PCB dipole antenna	I-PEX	
6	PEGATRON	1415-07JP000	PCB dipole antenna	I-PEX	
7	PEGATRON	1415-07JN000	PCB dipole antenna	I-PEX	
8	PEGATRON	1415-07GX000	PCB dipole antenna	I-PEX	
9	PEGATRON	1415-07JQ000	PCB antenna	I-PEX	
10	PEGATRON	1415-06MM000	PCB dipole antenna	I-PEX	

Note:

Ant.	Port	Uncorrelated (dBi)			Correlated (dBi)			(dBi)
		2.4GHz	5GHz Band 1~2	5GHz Band 3~4	2.4GHz	5GHz Band 1~2	5GHz Band 3~4	Bluetooth
1	1	4.73	4.35	-	6.55	6.83		-
2	2	4.73	4.35	-	6.55	6.83		-
3	3	4.73	4.35	-	6.55	6.83		-
4	4	4.73	4.35	-	6.55	6.83		-
5	1	-	-	5.11	-	-	7.15	-
6	2	-	-	5.11	-	-	7.15	-
7	3	-	-	5.11	-	-	7.15	-
8	4	-	-	5.11	-	-	7.15	-
9	1	-	-	-	-	-	-	4.03
10	-	-	5.00	5.00	-	-	-	-

Note 1: The above information was declared by manufacturer.

Note 2: The EUT has ten antennas.

For Radio 1

WLAN 2.4GHz Functions

For IEEE 802.11b/g/n/ac/ax mode (4TX, 4RX):

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

WLAN 5GHz Functions (1RX):

Ant. 10 only supports the antenna receive function.

For Radio 3
WLAN 5GHz Band 1~2 Functions
For IEEE 802.11a/n/ac/ax mode (4TX, 4RX):

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

For Radio 2
WLAN 5GHz Band 3~4 Functions
For IEEE 802.11a/n/ac/ax mode (4TX, 4RX):

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

For Radio 4
Bluetooth Functions (1TX, 1RX):

Only Port 1 could transmit/receive simultaneously.

1.1.3 Table for Radio Type

Radio No.	2.4GHz	5GHz Band 1~2	5GHz Band 3~4	Bluetooth
Radio 1	V	Only RX function	Only RX function	-
Radio 2	-	-	V	-
Radio 3	-	V	-	-
Radio 4	-	-	-	V

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b	0.983	0.074	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11g	0.969	0.137	2.068m	1k
VHT20	0.965	0.155	1.933m	1k
VHT20-BF	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
VHT40	0.93	0.315	955u	3k
VHT40-BF	0.971	0.13	953.125u	3k
802.11ax HEW20	0.980	0.088	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW20-BF	0.946	0.24	3.153m	1k
802.11ax HEW40	0.965	0.155	775u	3k
802.11ax HEW40-BF	0.958	0.19	3.32m	1k

Note:

- ◆ DC is Duty Cycle.
- ◆ DCF is Duty Cycle Factor.

**1.1.5 EUT Operational Condition**

EUT Power Type	From power adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz.			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	accessMTool(version 3.0.0.6)			

Note: The above information was declared by manufacturer.

1.1.6 Table for EUT Functions

Type of Function	2.4GHz	5GHz Band 1~2	5GHz Band 3~4
Master (AP Router)	V	V	V
Master (Extender)	-	-	V
Bridge (Client without radar detection)	-	-	V
Client without radar detection	-	-	V

1.1.7 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Color of Device's Bottom
W31	Matte Black
W30	Silver

From the above models, model name "W30" was selected as representative model for the test and its data was recorded in this report.

1.1.8 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR842742-03AA

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

Modifications	Performance Checking
1. Change the antenna and antenna models (all internal). 2. Changing the antenna location: antenna 2/5/6/7/8/9/10. For the detail antenna information please refer to the section 1.1.2.	For Non-Beamforming Mode: 1. Maximum Conducted Output Power. 2. Power Spectral Density. 3. Emissions in Restricted Frequency Bands (verified the worst case)
	For Beamforming Mode: 1. DTS Bandwidth. 2. Maximum Conducted Output Power. 3. Power Spectral Density. 4. Emissions in Non-restricted Frequency Bands. 5. Emissions in Restricted Frequency Bands above 1GHz



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

The following reference test guidance is not within the scope of accreditation of TAF.

- ♦ 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	TH02-CB	Owen Hsu	24.7~25.9°C / 59~64%	Sep. 26, 2019~ Dec. 31, 2019
Radiated below 1GHz	03CH05-CB	KJ Chang	23.9~24.7°C / 57~59%	Oct. 17, 2019~ Oct. 29, 2019
Radiated Above 1GHz	03CH05-CB	KJ Chang	23.8~25.7°C / 55~58%	Oct. 17, 2019~ Oct. 29, 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
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	Power Setting
802.11b_Nss1,(1Mbps)_4TX	-
2412MHz	88
2417MHz	88
2422MHz	88
2427MHz	88
2432MHz	88
2437MHz	89
2447MHz	88
2452MHz	89
2457MHz	89
2462MHz	89
802.11g_Nss1,(6Mbps)_4TX	-
2412MHz	83
2417MHz	95
2422MHz	96
2427MHz	96
2432MHz	96
2437MHz	96
2442MHz	96
2447MHz	96
2452MHz	96
2457MHz	96
2462MHz	87
VHT20_Nss1,(MCS0)_4TX	-
2412MHz	81
2417MHz	87
2422MHz	95
2427MHz	97
2432MHz	97
2437MHz	96
2442MHz	97
2447MHz	97
2452MHz	97
2457MHz	94
2462MHz	89



Mode	Power Setting
VHT40_Nss1,(MCS0)_4TX	-
2422MHz	67
2427MHz	72
2432MHz	77
2437MHz	84
2452MHz	84
802.11ax HEW20_Nss1,(MCS0)_4TX	-
2412MHz	79
2417MHz	90
2422MHz	92
2427MHz	97
2432MHz	97
2437MHz	97
2442MHz	97
2447MHz	97
2452MHz	92
2457MHz	90
2462MHz	78
802.11ax HEW40_Nss1,(MCS0)_4TX	-
2422MHz	69
2427MHz	74
2432MHz	75
2437MHz	81
2452MHz	81
VHT20-BF_Nss1,(MCS0)_4TX	-
2412MHz	77
2417MHz	85
2437MHz	89
2457MHz	88
2462MHz	78
VHT40-BF_Nss1,(MCS0)_4TX	-
2422MHz	70
2427MHz	75
2437MHz	86
2452MHz	77
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
2412MHz	77
2417MHz	85
2437MHz	89
2457MHz	88



Mode	Power Setting
2462MHz	78
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
2422MHz	70
2427MHz	75
2437MHz	86
2452MHz	77

Note:

- ♦ VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.
- ♦ There are two modes of EUT, one is beamforming mode, and the other is Non-beamforming mode for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz, Beamforming mode and Non-beamforming mode have been testes and recorded in this test report.

2.2 The Worst Case Measurement Configuration

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
	There are two adapters (adapter 1 and adapter 2) The worst case was found as Adapter 1 from testing result of previously. So the measurement will follow this same test configuration.
1	EUT - Radio 1 (WLAN 2.4GHz) + Adapter 1
2	EUT - Radio 3 (WLAN 5GHz Band 1~2) + Adapter 1
3	EUT - Radio 2 (WLAN 5GHz Band 3~4) + Adapter 1
4	EUT - Radio 4 (Bluetooth) + Adapter 1
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	Radio 1 (WLAN 2.4GHz) + Radio 3 (WLAN 5GHz Band 1~2) + Radio 2 (WLAN 5GHz Band 3~4) + Radio 4 (Bluetooth)
Refer to Sporton Test Report No.: FA842742-05 for Co-location RF Exposure Evaluation.	

Note: The EUT can only be use in Y axis position.



2.3 EUT Operation during Test

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 RX Device and transmit duty cycle no less than 98%.

2.4 Accessories

Accessories					
No.	Equipment Name	Brand Name	Model Name	P/N	Rating
1	Adapter 1	APD	WA-36L12FU	AREP05681	INPUT: 100-120V ~, 60Hz, 0.9A Max OUTPUT: 12V, 3A
2	Adapter 2	NetBit	NBS42D120 350VU	AREP05751	INPUT: 100-120V ~, 50/60Hz, 1.0A OUTPUT: 12.0V, 3.5A



2.5 Support Equipment

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 Beamforming Mode:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	RX Device	ASUS	RT-AX88U	MSQ-RTAXHP00
C	NB	DELL	E4300	N/A

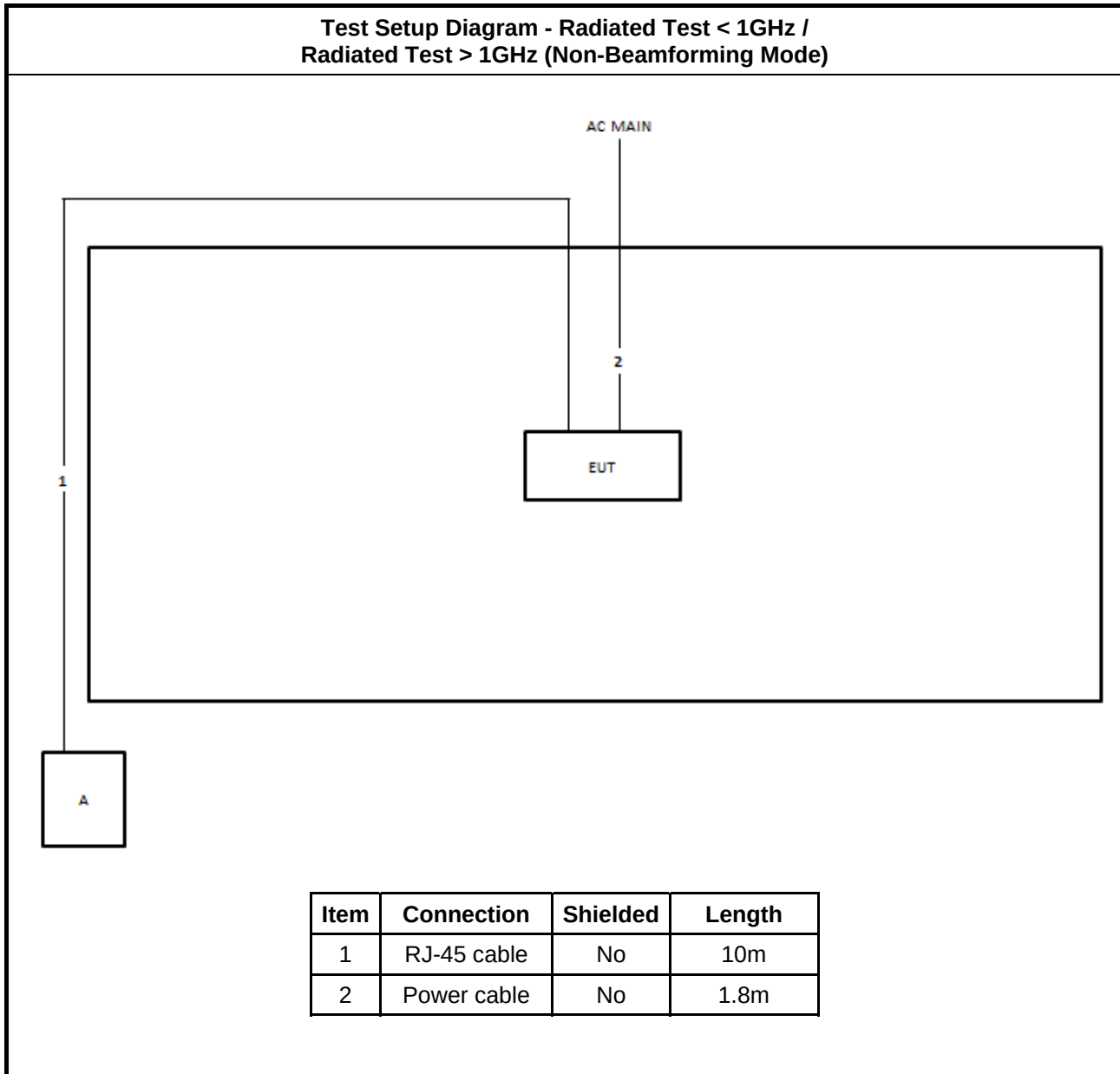
For Non-Beamforming Mode:

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

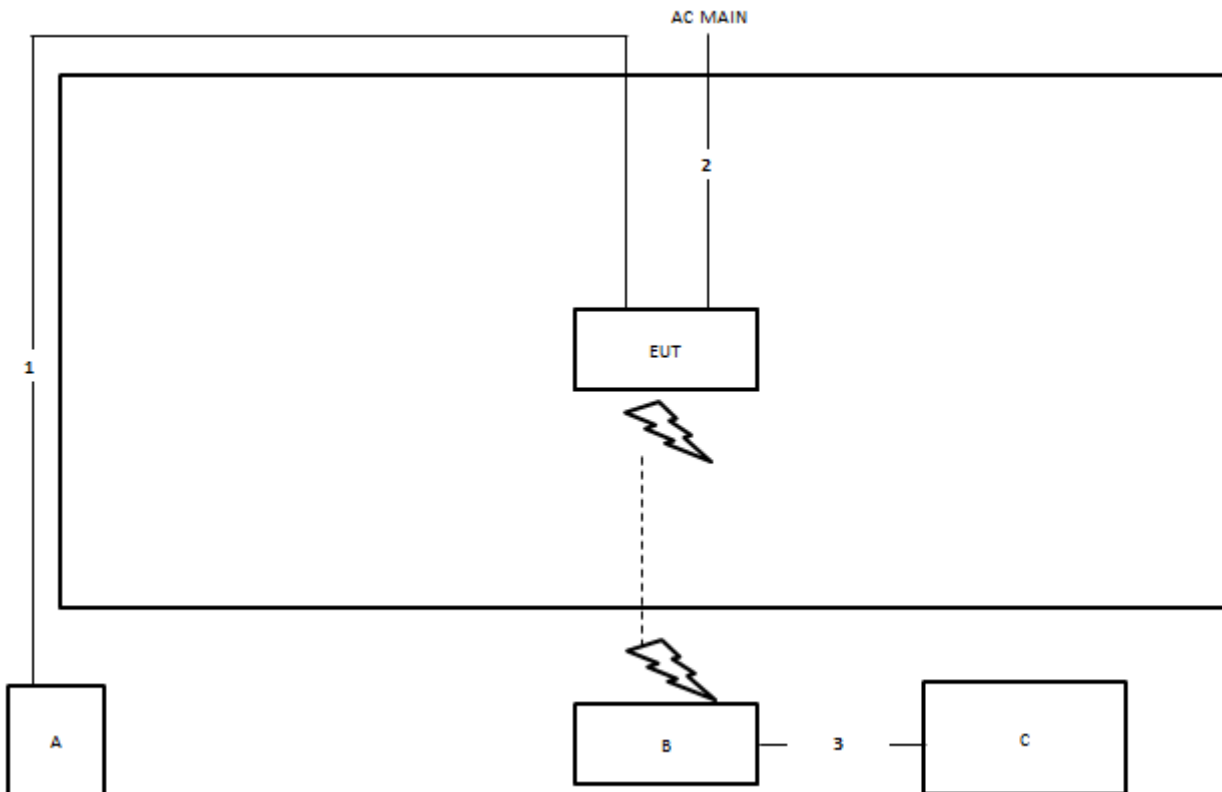
For RF Conducted:

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

2.6 Test Setup Diagram



**Test Setup Diagram - Radiated Test > 1GHz
(Beamforming Mode)**



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	1.8m
3	RJ-45 cable	No	1.5m

3 Transmitter Test Result

3.1 DTS Bandwidth

3.1.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
6 dB bandwidth $\geq$ 500 kHz.

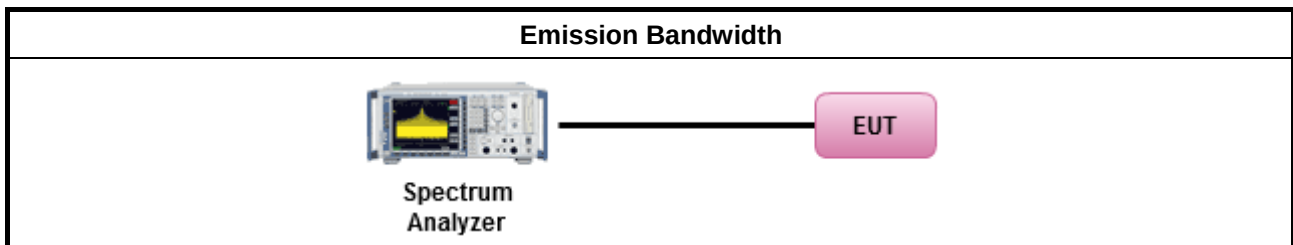
3.1.2 Measuring Instruments

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

3.1.3 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.

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A



3.2 Maximum Conducted Output Power

3.2.1 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.	

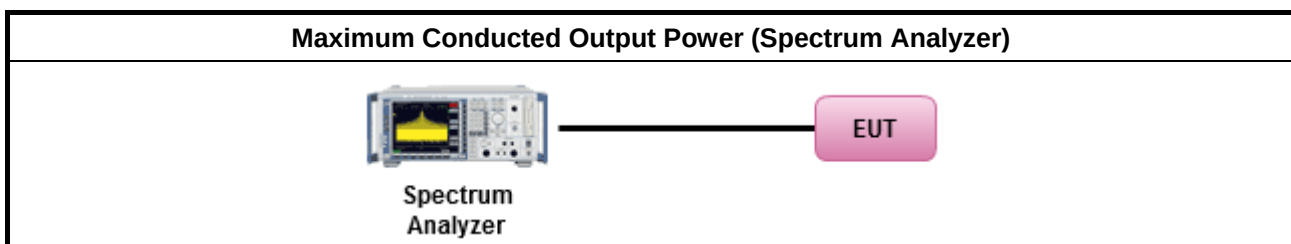
3.2.2 Measuring Instruments

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

3.2.3 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: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.2.4 Test Setup





3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B



3.3 Power Spectral Density

3.3.1 Power Spectral Density Limit

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

3.3.2 Measuring Instruments

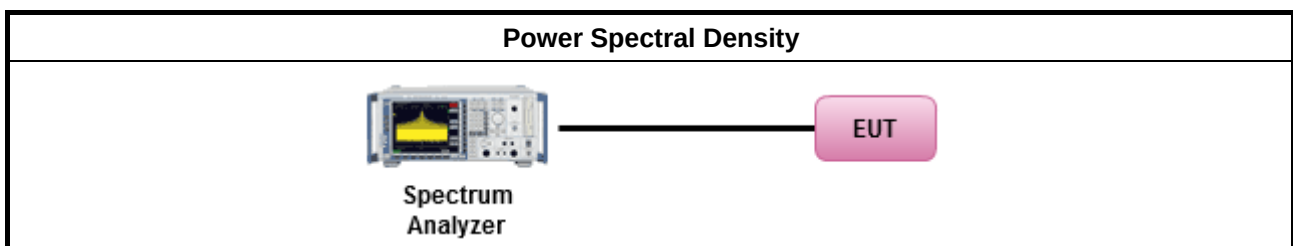
Refer a test equipment and calibration data table in this test report.

3.3.3 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 $\geq 98\%$ or external video / power trigger]
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPS-1.
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPS-2.
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPS-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 AVGPS-1A. (alternative).
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPS-2A. (alternative)
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPS-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.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Refer as Appendix C

3.4 Emissions in Non-restricted Frequency Bands

3.4.1 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.	

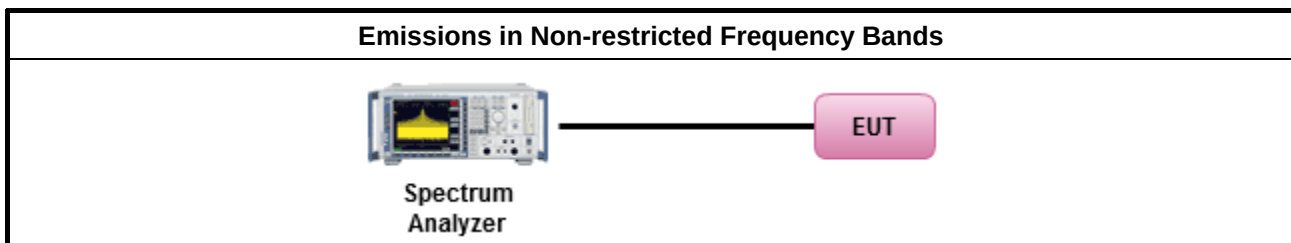
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.4.4 Test Setup



3.4.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix D

3.5 Emissions in Restricted Frequency Bands

3.5.1 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.

3.5.2 Measuring Instruments

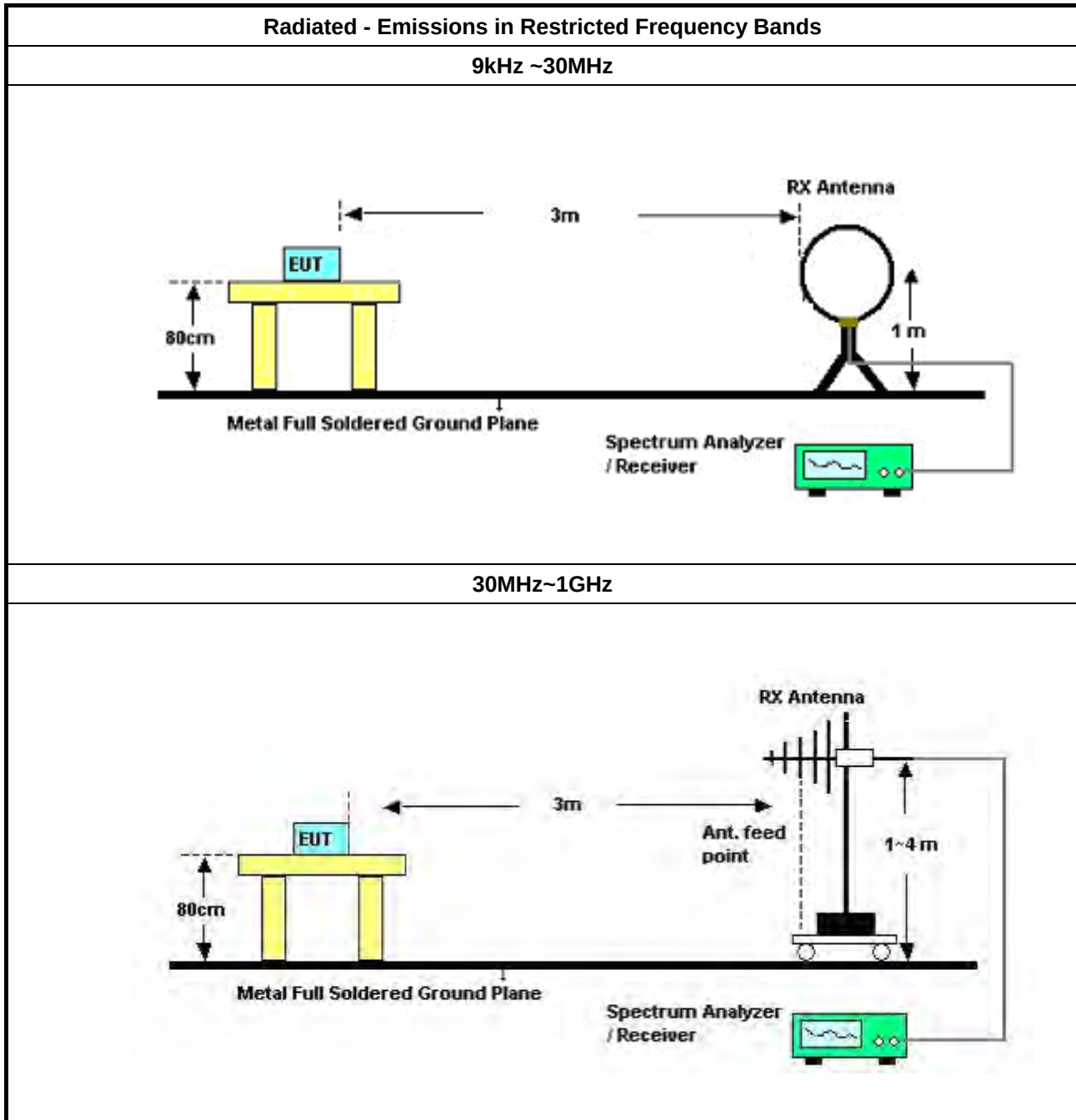
Refer a test equipment and calibration data table in this test report.

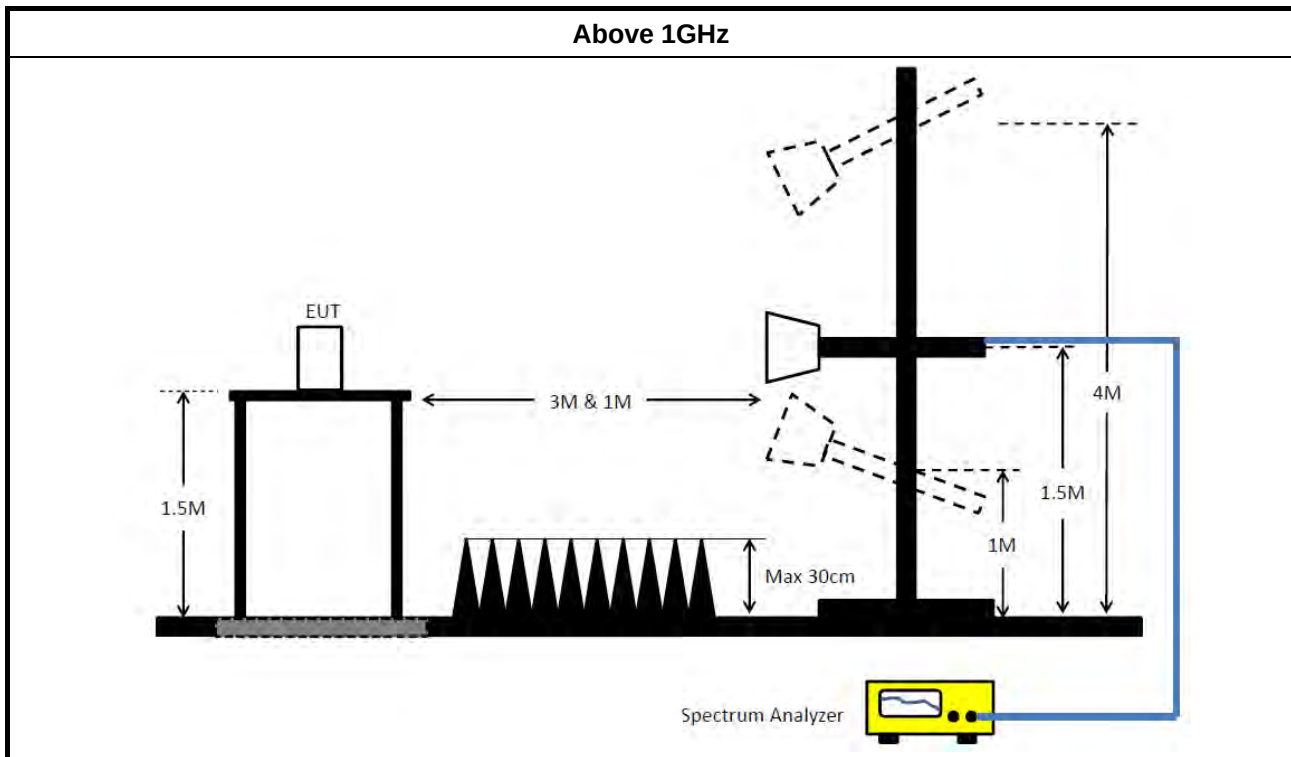


3.5.3 Test Procedures

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 $\geq 98\%$).
☐	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 $\geq 1/T$).
☐	Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, 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.

3.5.4 Test Setup





3.5.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.5.6 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.

3.5.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix E



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Bilog Antenna with 6dB Attenuator	TESE & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 28, 2019	Mar. 27, 2020	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1291	1GHz~18GHz	Oct. 05, 2019	Oct. 04, 2020	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 01, 2019	Apr. 30, 2020	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz – 26.5GHz	Apr. 16, 2019	Apr. 15, 2020	Radiation (03CH05-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Aug. 15, 2019	Aug. 14, 2020	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	LOW Cable-04+23	30MHz~1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-28	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH05-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jul. 02, 2019	Jul. 01, 2020	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Sep. 11, 2019	Sep. 10, 2020	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Sep. 11, 2019	Sep. 10, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 24, 2018	Oct. 23, 2019	Conducted (TH02-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)

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

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_4TX	17.6M	17.816M	17M8D1D	17.55M	17.666M
VHT40-BF_Nss1,(MCS0)_4TX	36.35M	36.432M	36M4D1D	36.05M	36.132M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	18.975M	19.1M	19M1D1D	18.75M	18.975M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	37.6M	37.95M	37M9D1D	36.45M	37.481M

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;

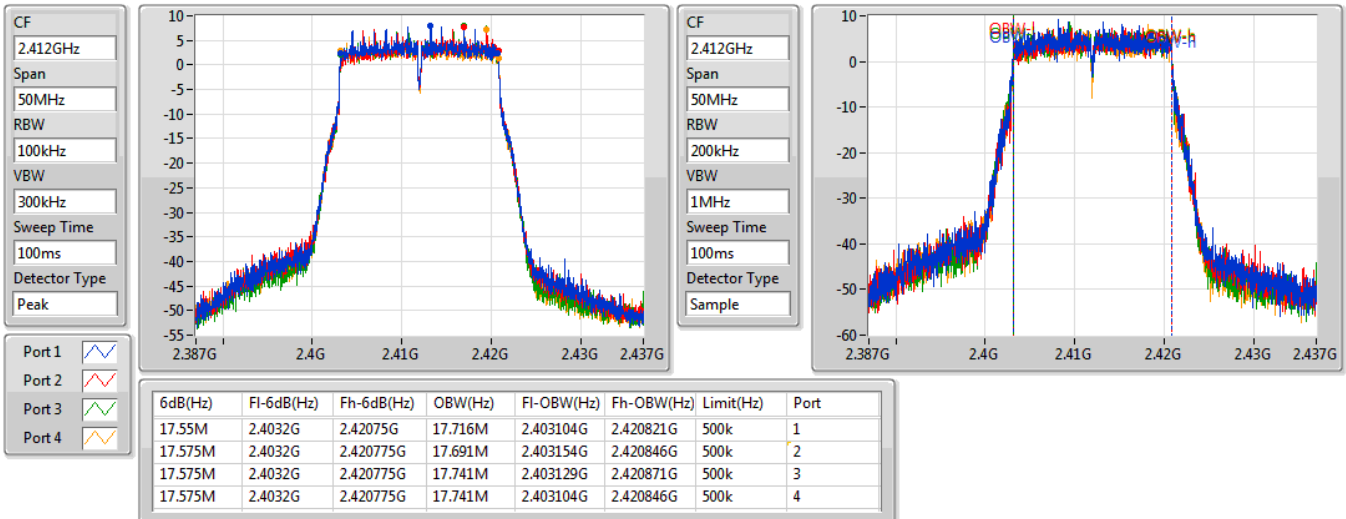
Result

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)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.716M	17.575M	17.691M	17.575M	17.741M	17.575M	17.741M
2437MHz	Pass	500k	17.55M	17.816M	17.575M	17.741M	17.6M	17.691M	17.575M	17.741M
2462MHz	Pass	500k	17.55M	17.666M	17.575M	17.741M	17.575M	17.741M	17.55M	17.741M
VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.3M	36.182M	36.05M	36.132M	36.05M	36.182M	36.3M	36.282M
2437MHz	Pass	500k	36.35M	36.282M	36.3M	36.282M	36.35M	36.232M	36.3M	36.182M
2452MHz	Pass	500k	36.3M	36.132M	36.35M	36.432M	36.35M	36.282M	36.35M	36.232M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.9M	19M	18.8M	19.025M	18.75M	19M	18.925M	19.05M
2437MHz	Pass	500k	18.925M	19.05M	18.95M	19M	18.9M	19.075M	18.875M	19.05M
2462MHz	Pass	500k	18.9M	19M	18.975M	19.1M	18.9M	19.025M	18.975M	18.975M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	37M	37.481M	36.6M	37.481M	37.2M	37.481M	36.8M	37.531M
2437MHz	Pass	500k	37.6M	37.95M	37.55M	37.85M	37.2M	37.75M	36.85M	37.9M
2452MHz	Pass	500k	37.25M	37.481M	37.5M	37.681M	37.3M	37.581M	36.45M	37.481M

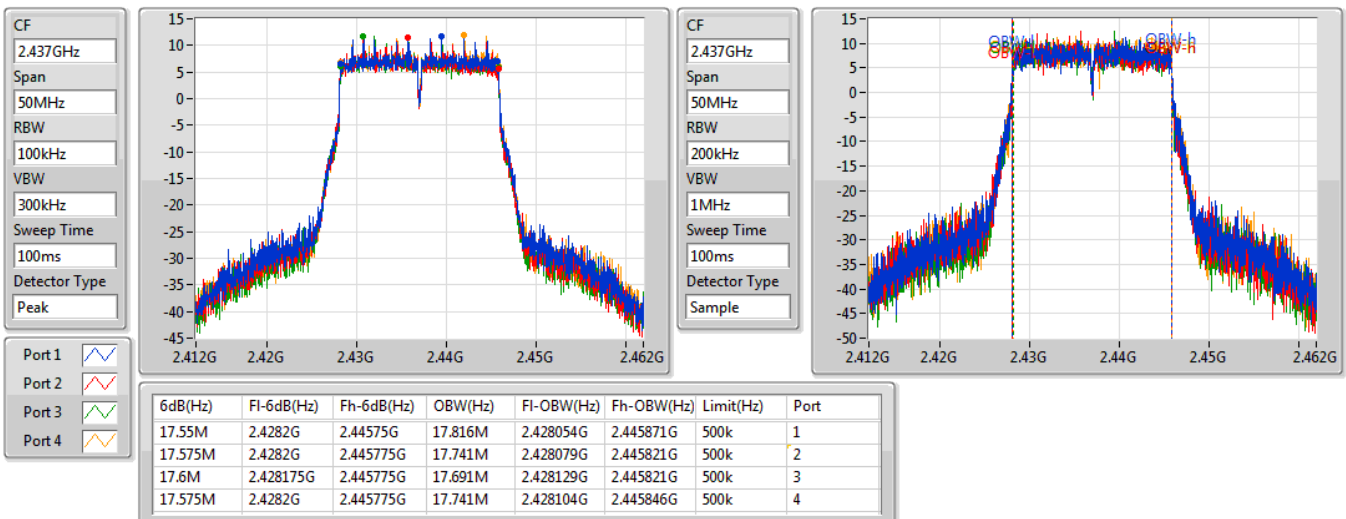
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss1,(MCS0)_4TX
EBW
2412MHz

29/10/2019

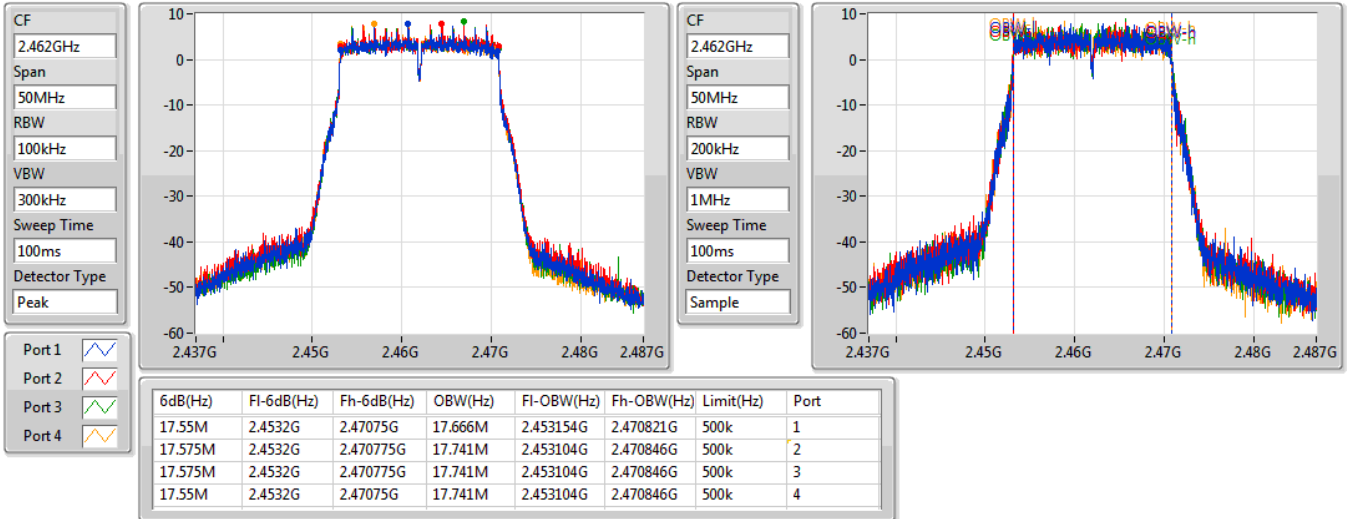

VHT20-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

29/10/2019

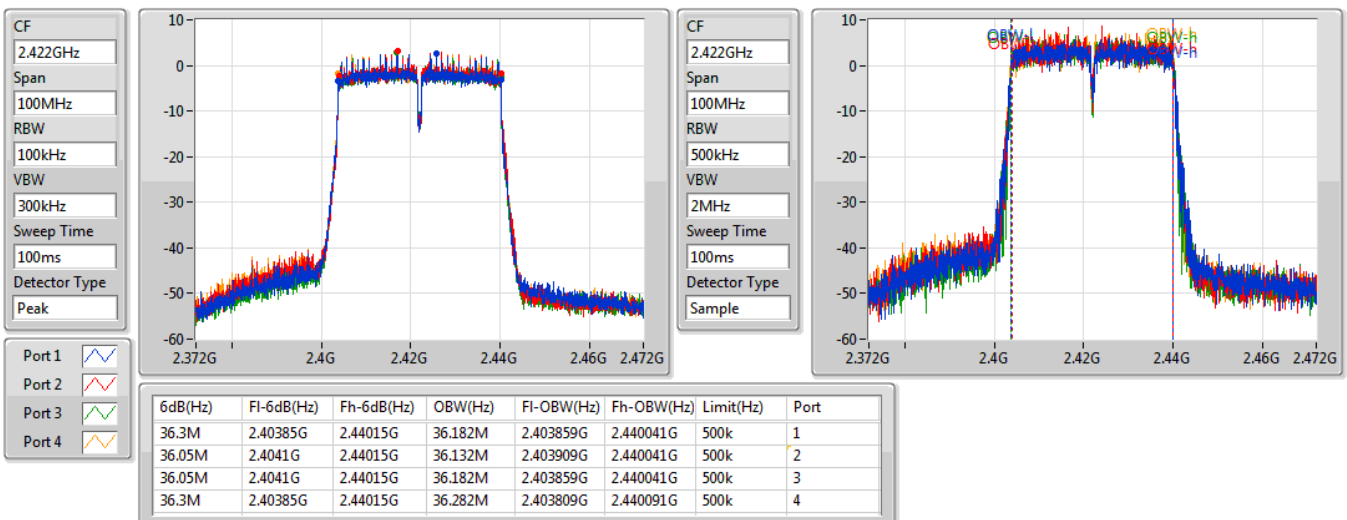


VHT20-BF_Nss1,(MCS0)_4TX
EBW
2462MHz

29/10/2019

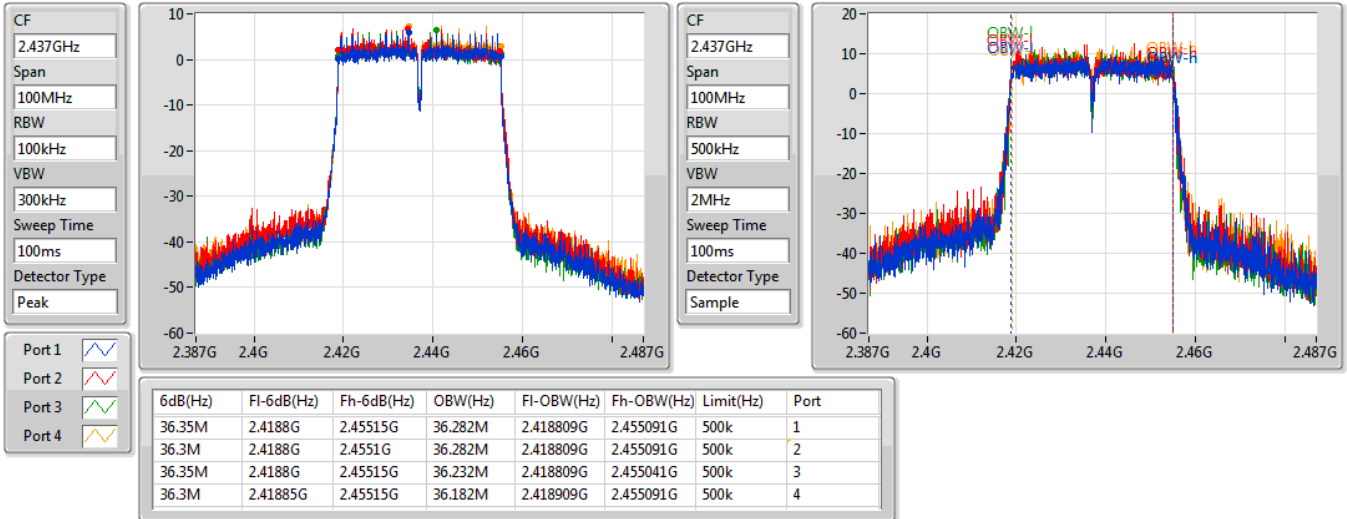

VHT40-BF_Nss1,(MCS0)_4TX
EBW
2422MHz

29/10/2019

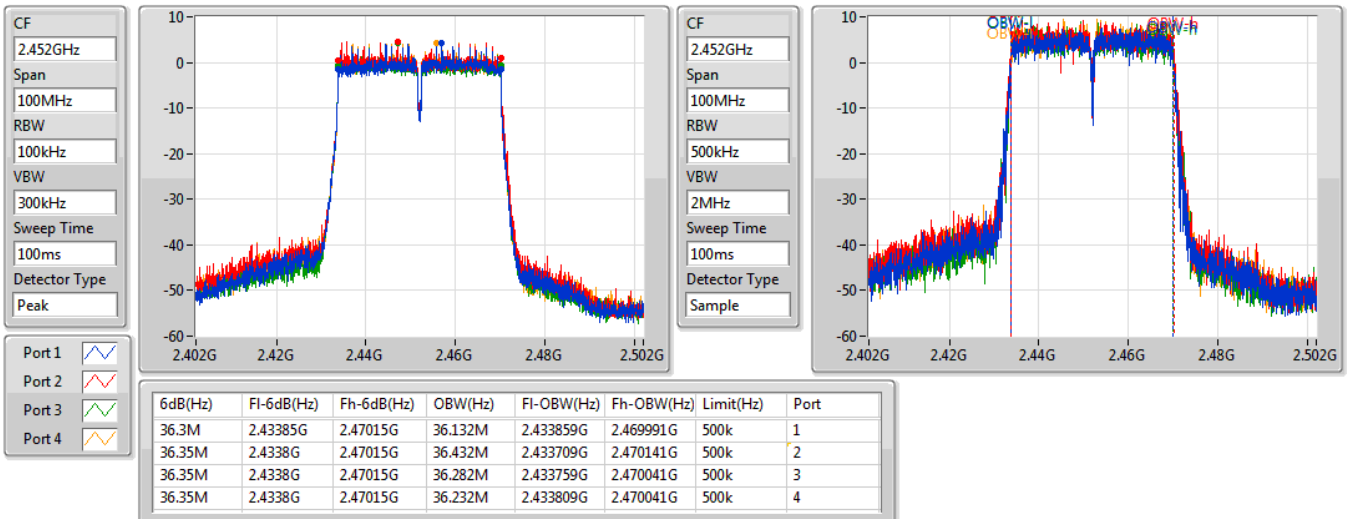


VHT40-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

29/10/2019

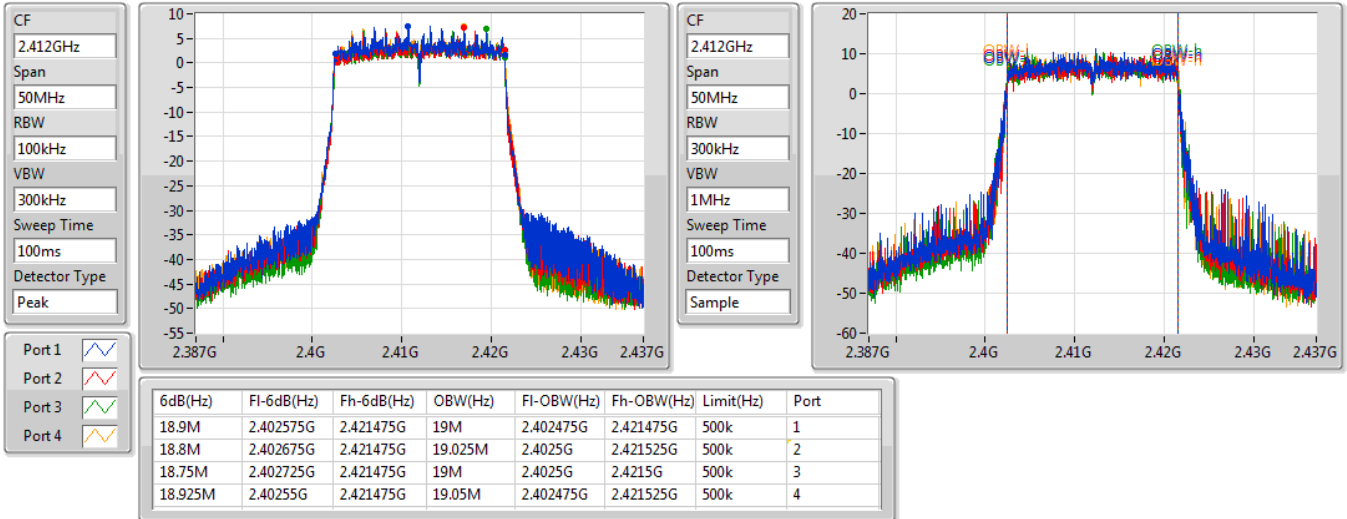

VHT40-BF_Nss1,(MCS0)_4TX
EBW
2452MHz

29/10/2019

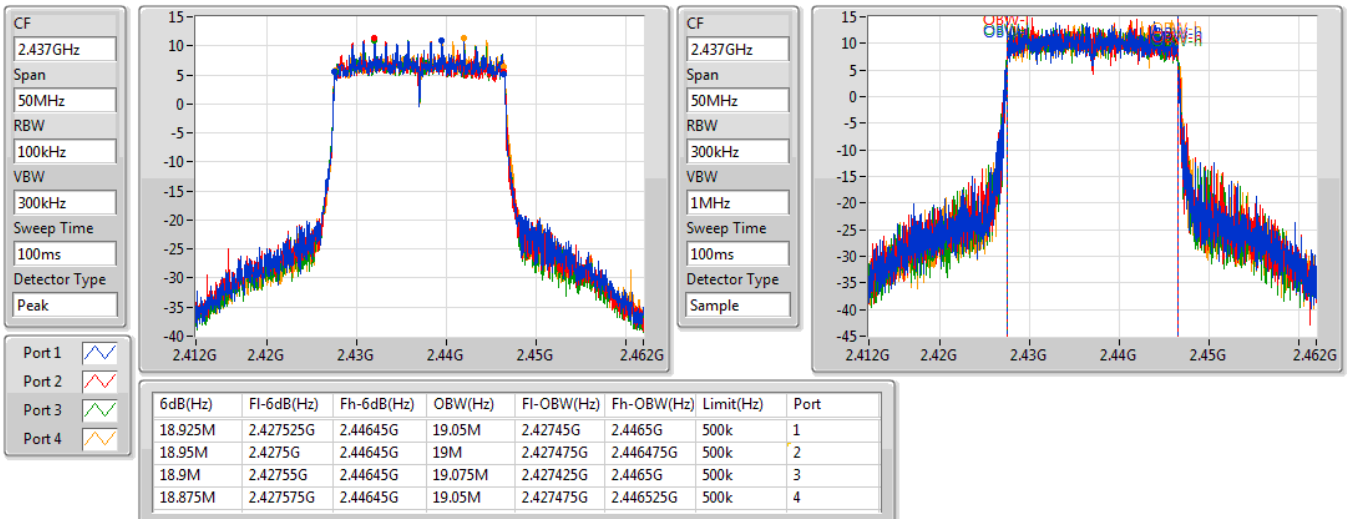


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
2412MHz

29/10/2019


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

29/10/2019

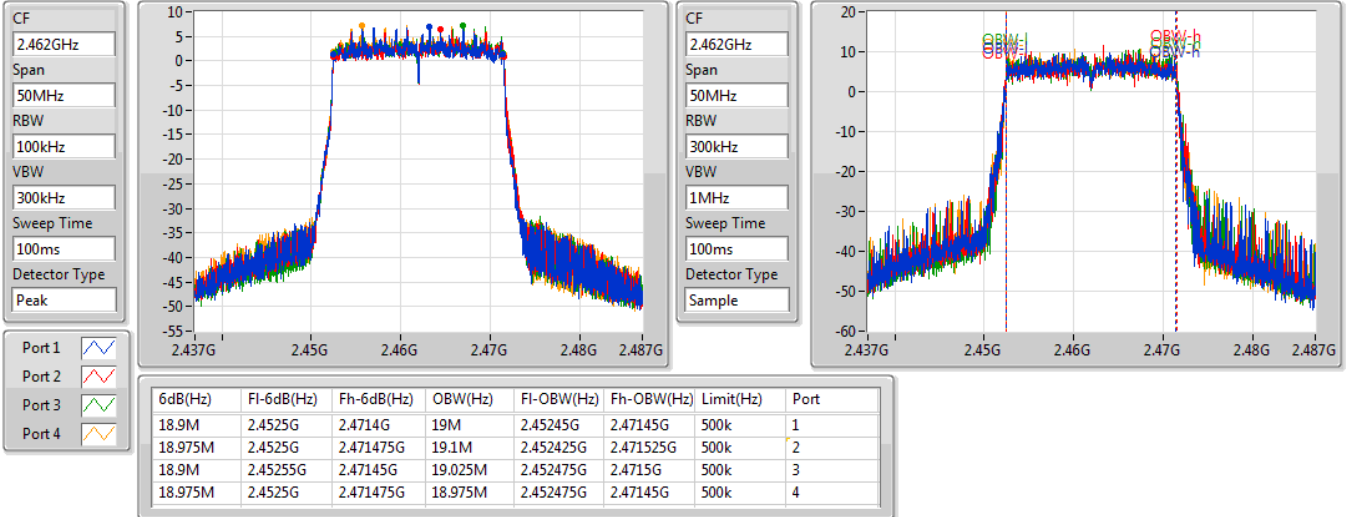


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

2462MHz

29/10/2019

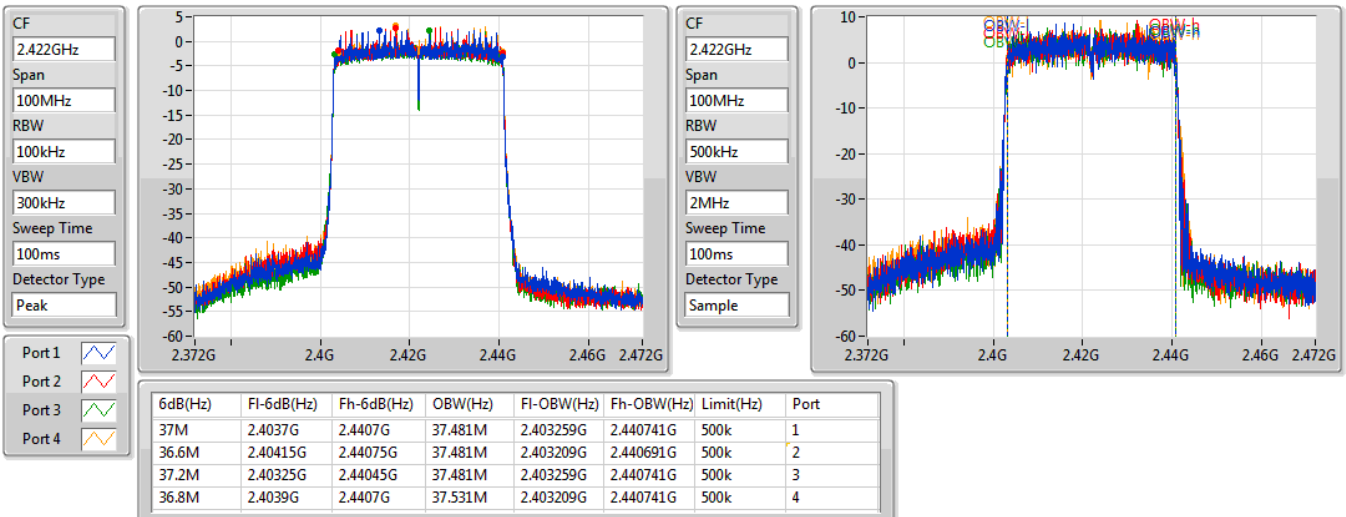


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

2422MHz

29/10/2019

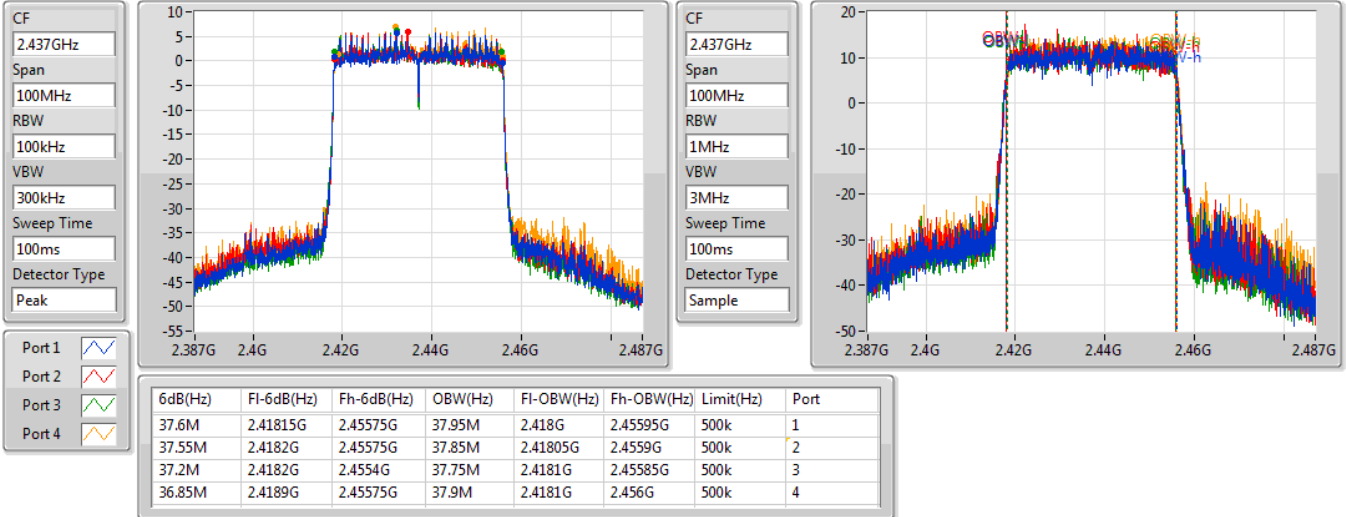


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

2437MHz

29/10/2019

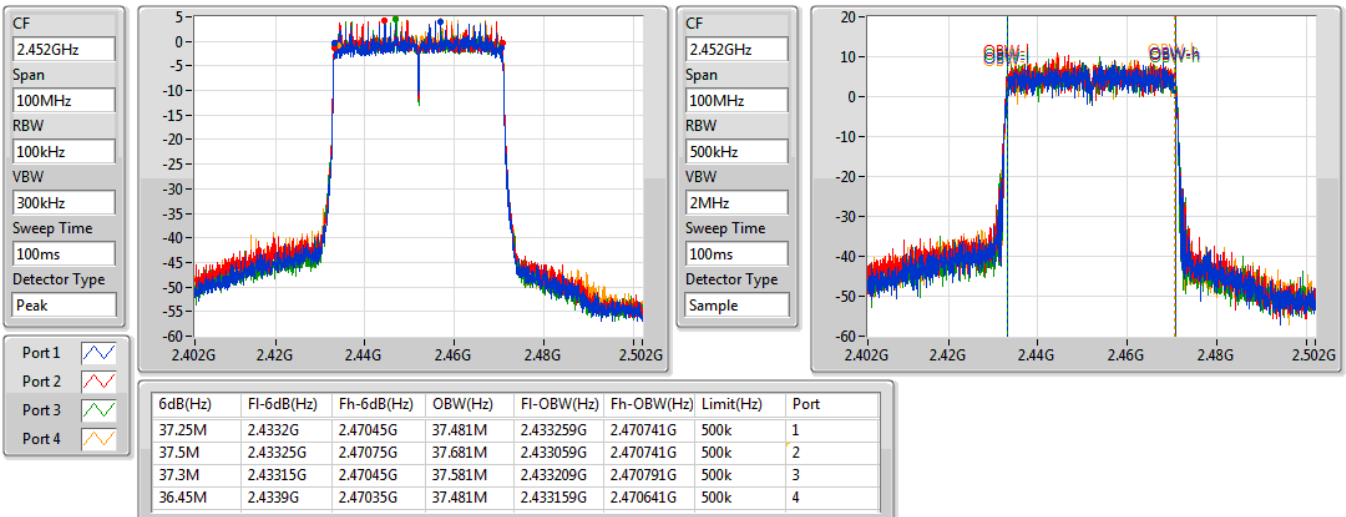


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

2452MHz

29/10/2019





Average Power_Non Beamforming Mode

Appendix B.1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_4TX	29.97	0.99312
802.11g_Nss1,(6Mbps)_4TX	29.86	0.96828
VHT20_Nss1,(MCS0)_4TX	29.97	0.99312
VHT40_Nss1,(MCS0)_4TX	26.49	0.44566

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.73	24.46	22.17	24.13	24.04	29.81	30.00
2417MHz	Pass	4.73	24.59	22.01	24.10	24.28	29.87	30.00
2422MHz	Pass	4.73	24.52	22.02	24.42	24.02	29.87	30.00
2427MHz	Pass	4.73	24.57	21.90	24.05	24.30	29.84	30.00
2432MHz	Pass	4.73	24.69	21.92	24.07	24.09	29.83	30.00
2437MHz	Pass	4.73	24.54	22.41	24.12	24.30	29.94	30.00
2447MHz	Pass	4.73	24.76	22.06	23.89	24.05	29.82	30.00
2452MHz	Pass	4.73	24.63	22.27	23.94	24.18	29.86	30.00
2457MHz	Pass	4.73	24.71	22.28	24.07	24.21	29.93	30.00
2462MHz	Pass	4.73	24.68	22.61	24.10	24.13	29.97	30.00
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.73	21.08	18.49	20.64	20.60	26.33	30.00
2417MHz	Pass	4.73	23.87	22.17	23.78	23.66	29.44	30.00
2422MHz	Pass	4.73	24.35	22.60	23.94	24.02	29.80	30.00
2427MHz	Pass	4.73	24.30	22.67	24.07	23.86	29.79	30.00
2432MHz	Pass	4.73	24.30	22.88	24.02	23.97	29.85	30.00
2437MHz	Pass	4.73	24.20	22.96	23.89	23.96	29.80	30.00
2442MHz	Pass	4.73	24.38	22.97	24.05	23.83	29.86	30.00
2447MHz	Pass	4.73	24.30	23.09	23.91	23.74	29.80	30.00
2452MHz	Pass	4.73	24.35	22.91	23.84	23.75	29.76	30.00
2457MHz	Pass	4.73	24.20	22.86	23.83	23.58	29.67	30.00
2462MHz	Pass	4.73	22.05	19.98	21.49	21.24	27.27	30.00
VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.73	20.38	17.96	20.50	20.12	25.87	30.00
2417MHz	Pass	4.73	21.90	19.57	21.59	21.48	27.24	30.00
2422MHz	Pass	4.73	23.86	22.19	23.76	23.43	29.38	30.00
2427MHz	Pass	4.73	24.40	23.10	23.99	24.21	29.97	30.00
2432MHz	Pass	4.73	24.70	23.28	24.09	23.51	29.95	30.00
2437MHz	Pass	4.73	24.31	22.95	23.93	23.89	29.82	30.00
2442MHz	Pass	4.73	24.40	23.16	24.04	24.06	29.96	30.00
2447MHz	Pass	4.73	24.37	23.08	24.25	23.79	29.92	30.00
2452MHz	Pass	4.73	24.38	23.25	24.09	23.85	29.93	30.00
2457MHz	Pass	4.73	23.51	22.00	23.06	22.99	28.94	30.00



Average Power_Non Beamforming Mode

Appendix B.1

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
2462MHz	Pass	4.73	22.47	20.36	21.93	21.83	27.73	30.00
VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.73	16.91	17.09	15.52	16.44	22.55	30.00
2427MHz	Pass	4.73	17.97	18.02	16.59	17.51	23.58	30.00
2432MHz	Pass	4.73	19.06	19.23	18.07	18.65	24.80	30.00
2437MHz	Pass	4.73	20.68	21.05	19.76	20.30	26.49	30.00
2452MHz	Pass	4.73	20.50	21.00	19.76	20.24	26.42	30.00

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



Average Power_Non Beamforming Mode

Appendix B.2

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	29.93	0.98401
802.11ax HEW40_Nss1,(MCS0)_4TX	25.77	0.37757

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.73	19.79	17.49	19.89	19.52	25.29	30.00
2417MHz	Pass	4.73	22.47	20.25	22.28	22.18	27.90	30.00
2422MHz	Pass	4.73	23.16	21.38	23.02	22.71	28.64	30.00
2427MHz	Pass	4.73	23.55	23.08	24.18	24.65	29.93	30.00
2432MHz	Pass	4.73	23.49	22.82	23.79	24.81	29.81	30.00
2437MHz	Pass	4.73	23.58	22.93	24.26	24.65	29.92	30.00
2442MHz	Pass	4.73	23.42	23.13	24.13	24.68	29.90	30.00
2447MHz	Pass	4.73	23.58	22.93	24.26	24.65	29.92	30.00
2452MHz	Pass	4.73	22.20	22.03	22.91	23.44	28.70	30.00
2457MHz	Pass	4.73	22.56	21.11	22.08	21.85	27.95	30.00
2462MHz	Pass	4.73	19.56	17.98	19.19	19.21	25.05	30.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.73	17.55	17.61	16.11	16.82	23.09	30.00
2427MHz	Pass	4.73	18.41	18.64	17.02	17.94	24.07	30.00
2432MHz	Pass	4.73	18.52	18.79	17.33	18.21	24.27	30.00
2437MHz	Pass	4.73	20.06	20.28	19.11	19.45	25.77	30.00
2452MHz	Pass	4.73	20.08	20.23	19.07	19.41	25.74	30.00

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



Average Power_Beamforming Mode

Appendix B.3

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20-BF_Nss1,(MCS0)_4TX	28.19	0.65917
VHT40-BF_Nss1,(MCS0)_4TX	27.31	0.53827
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	28.21	0.66221
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	27.09	0.51168



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	19.29	18.91	19.24	18.79	25.08	29.45
2417MHz	Pass	6.55	21.20	21.52	20.79	21.70	27.34	29.45
2437MHz	Pass	6.55	22.19	22.18	22.12	22.17	28.19	29.45
2457MHz	Pass	6.55	21.82	21.92	21.41	21.98	27.81	29.45
2462MHz	Pass	6.55	19.01	19.19	19.22	19.21	25.18	29.45
VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	6.55	16.76	17.20	17.08	17.54	23.17	29.45
2427MHz	Pass	6.55	17.77	18.24	18.35	18.86	24.34	29.45
2437MHz	Pass	6.55	20.95	21.37	20.93	21.86	27.31	29.45
2452MHz	Pass	6.55	18.67	18.97	18.64	19.12	24.88	29.45
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	19.71	19.13	19.19	19.44	25.39	29.45
2417MHz	Pass	6.55	21.18	21.25	21.41	21.73	27.42	29.45
2437MHz	Pass	6.55	22.21	22.19	22.14	22.21	28.21	29.45
2457MHz	Pass	6.55	21.85	22.36	21.70	22.18	28.05	29.45
2462MHz	Pass	6.55	19.11	19.14	19.33	19.41	25.27	29.45
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	6.55	16.94	17.04	17.16	17.31	23.14	29.45
2427MHz	Pass	6.55	18.26	18.20	18.43	18.66	24.41	29.45
2437MHz	Pass	6.55	20.96	21.05	20.87	21.38	27.09	29.45
2452MHz	Pass	6.55	19.07	18.84	18.25	18.80	24.77	29.45

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_4TX	-0.65
802.11g_Nss1,(6Mbps)_4TX	0.97
VHT20_Nss1,(MCS0)_4TX	0.02
VHT40_Nss1,(MCS0)_4TX	-8.67

RBW=3 kHz.

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	-6.85	-8.32	-1.89	-6.95	-0.67	7.45
2437MHz	Pass	6.55	-5.98	-8.90	-2.30	-7.16	-0.92	7.45
2462MHz	Pass	6.55	-7.04	-8.94	-2.09	-7.30	-0.65	7.45
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	-12.54	-12.93	-2.99	-12.85	-2.11	7.45
2437MHz	Pass	6.55	-9.49	-10.51	-0.02	-9.28	0.97	7.45
2462MHz	Pass	6.55	-11.12	-14.02	-5.04	-12.11	-4.17	7.45
VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	-12.09	-15.19	-4.55	-11.56	-3.01	7.45
2437MHz	Pass	6.55	-8.80	-9.81	-1.42	-8.76	0.02	7.45
2462MHz	Pass	6.55	-10.13	-11.31	-4.17	-11.38	-2.62	7.45
VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	6.55	-18.14	-17.97	-19.04	-18.26	-12.89	7.45
2437MHz	Pass	6.55	-13.36	-13.30	-15.03	-13.82	-8.67	7.45
2452MHz	Pass	6.55	-14.39	-14.43	-14.15	-14.50	-8.83	7.45

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;

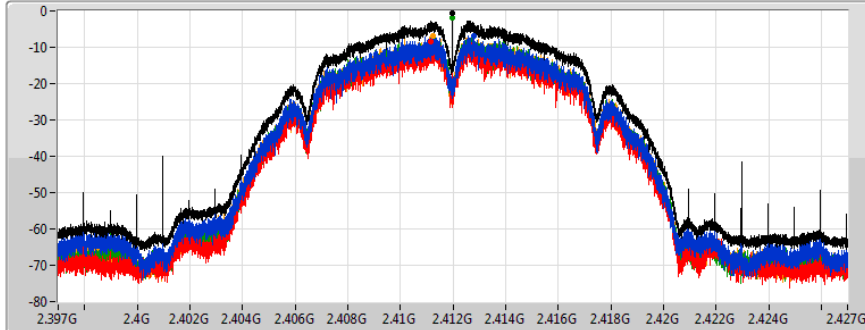
802.11b_Nss1,(1Mbps)_4TX

PSD

2412MHz

27/03/2018

Ch Freq
2.412GHz
Span
30MHz
RBW
3kHz
VBW
10kHz
Sweep Time
334ms
Detector Type
RMS



Sum ☒
Port 1 ☐
Port 2 ☐
Port 3 ☐
Port 4 ☐

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.67	-0.67	-6.85	-8.32	-1.89	-6.95

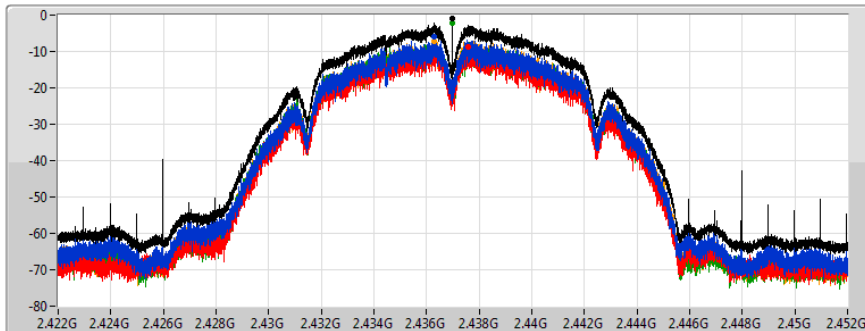
802.11b_Nss1,(1Mbps)_4TX

PSD

2437MHz

27/03/2018

Ch Freq
2.437GHz
Span
30MHz
RBW
3kHz
VBW
10kHz
Sweep Time
334ms
Detector Type
RMS



Sum ☒
Port 1 ☐
Port 2 ☐
Port 3 ☐
Port 4 ☐

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.92	-0.92	-5.98	-8.90	-2.30	-7.16

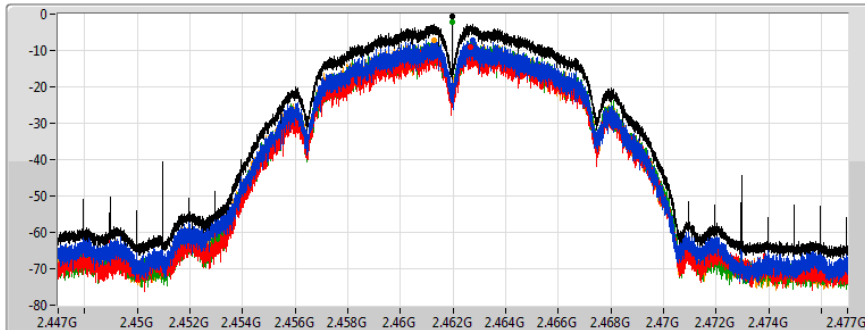
802.11b_Nss1,(1Mbps)_4TX

PSD

2462MHz

27/03/2018

Ch Freq
2.462GHz
Span
30MHz
RBW
3kHz
VBW
10kHz
Sweep Time
334ms
Detector Type
RMS



Sum ☒
Port 1 ☐
Port 2 ☐
Port 3 ☐
Port 4 ☐

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.65	-0.65	-7.04	-8.94	-2.09	-7.30

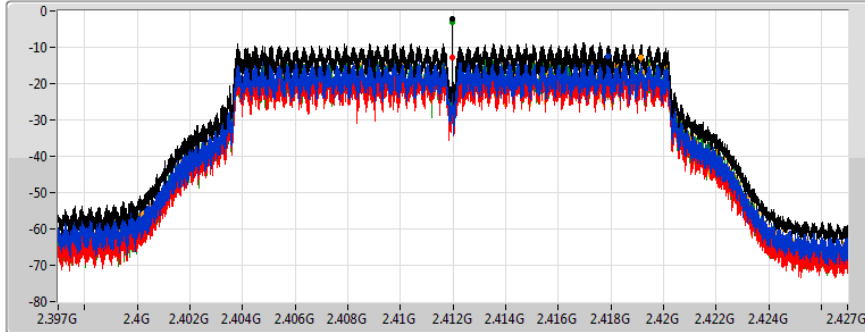
802.11g_Nss1,(6Mbps)_4TX

2412MHz

PSD

27/03/2018

Ch Freq
2.412GHz
Span
30MHz
RBW
3kHz
VBW
10kHz
Sweep Time
334ms
Detector Type
RMS



Sum ☒
Port 1 ☐
Port 2 ☐
Port 3 ☐
Port 4 ☐

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.11	-2.11	-12.54	-12.93	-2.99	-12.85

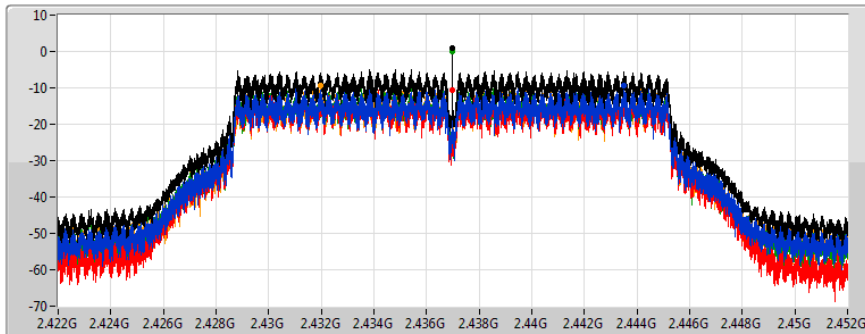
802.11g_Nss1,(6Mbps)_4TX

2437MHz

PSD

27/03/2018

Ch Freq
2.437GHz
Span
30MHz
RBW
3kHz
VBW
10kHz
Sweep Time
334ms
Detector Type
RMS



Sum ☒
Port 1 ☐
Port 2 ☐
Port 3 ☐
Port 4 ☐

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.97	0.97	-9.49	-10.51	-0.02	-9.28

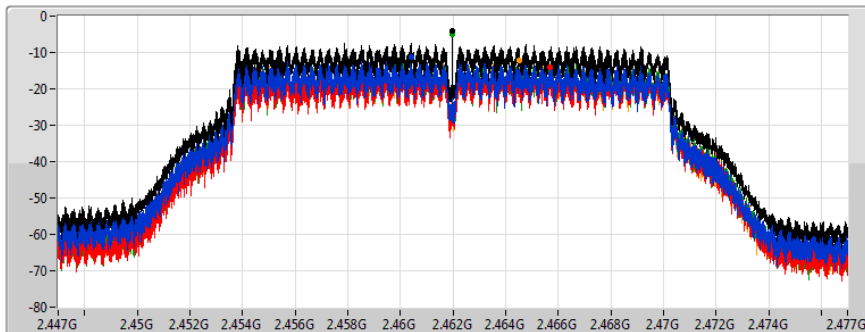
802.11g_Nss1,(6Mbps)_4TX

2462MHz

PSD

27/03/2018

Ch Freq
2.462GHz
Span
30MHz
RBW
3kHz
VBW
10kHz
Sweep Time
334ms
Detector Type
RMS



Sum ☒
Port 1 ☐
Port 2 ☐
Port 3 ☐
Port 4 ☐

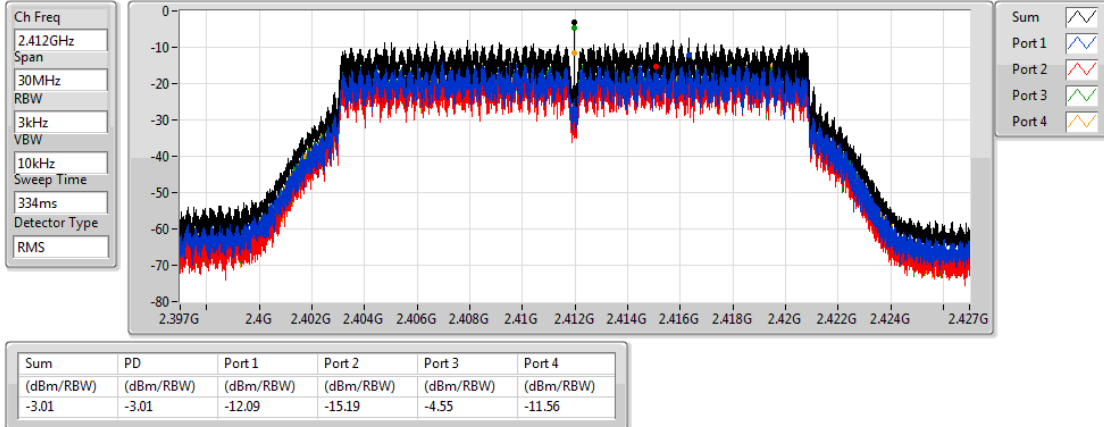
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.17	-4.17	-11.12	-14.02	-5.04	-12.11

802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

2412MHz

27/03/2018

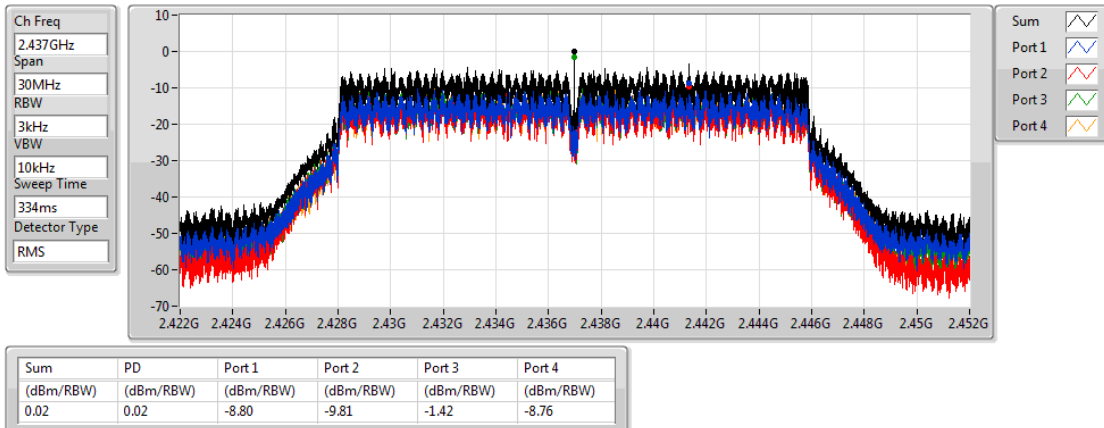


802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

2437MHz

27/03/2018

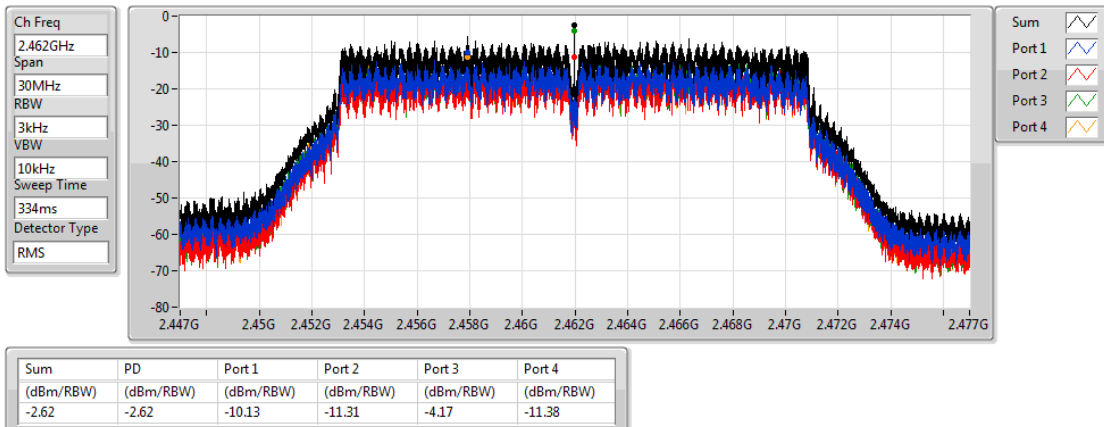


802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

2462MHz

27/03/2018

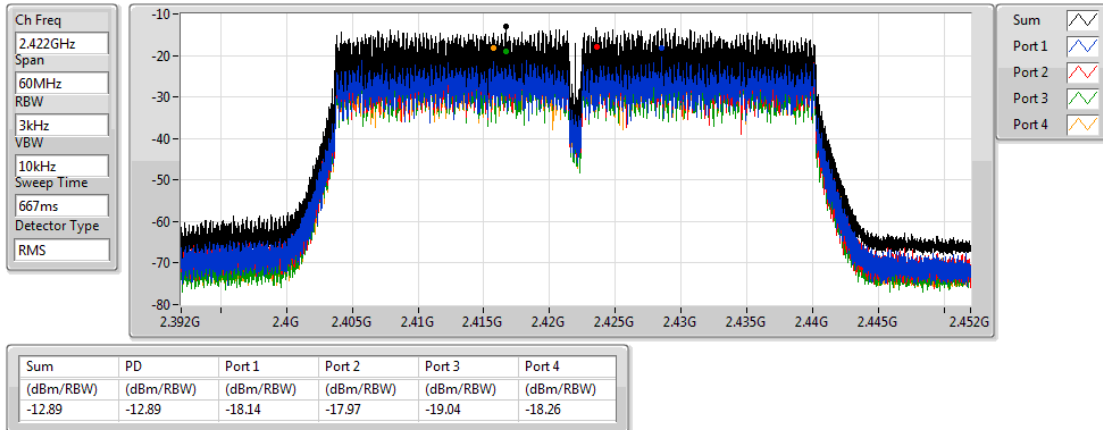


802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

2422MHz

27/03/2018

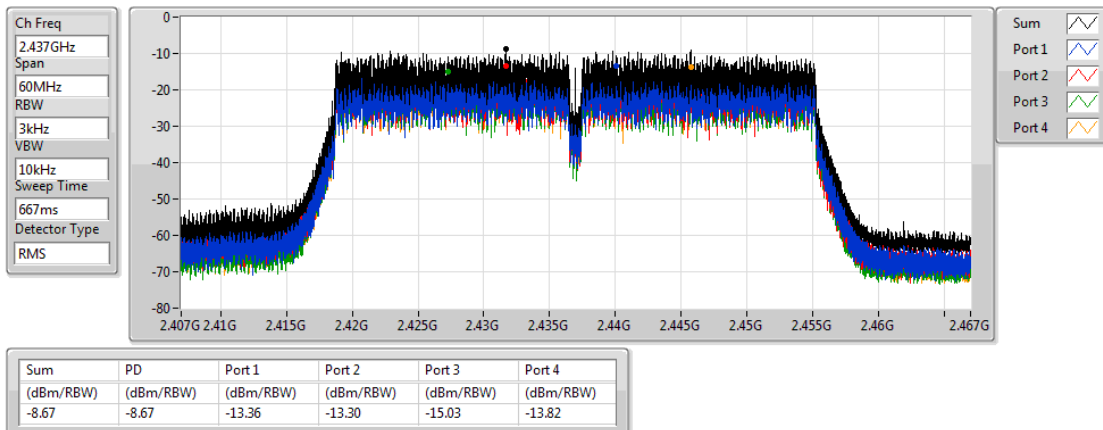


802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

2437MHz

27/03/2018

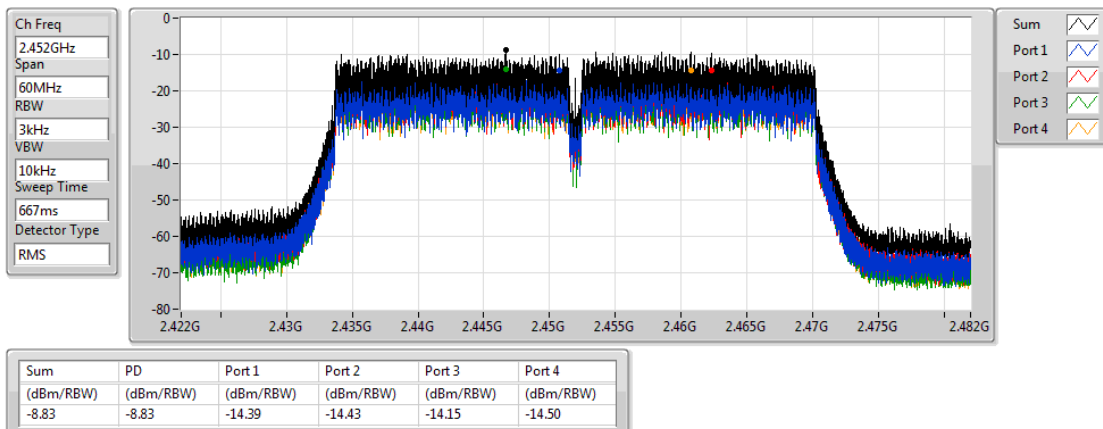


802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

2452MHz

27/03/2018





Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11ax HEW20_Nss1,(MCS0)_4TX	3.22
802.11ax HEW40_Nss1,(MCS0)_4TX	-3.42

RBW=3 kHz.

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	-2.37	-5.86	-4.88	-4.15	0.56	7.45
2437MHz	Pass	6.55	1.02	-3.84	-2.42	0.07	3.22	7.45
2462MHz	Pass	6.55	-3.02	-7.74	-4.22	-6.04	-0.90	7.45
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	6.55	-11.91	-12.76	-9.95	-10.57	-6.81	7.45
2437MHz	Pass	6.55	-8.83	-9.09	-8.40	-6.96	-3.42	7.45
2452MHz	Pass	6.55	-9.04	-8.23	-7.91	-8.22	-3.99	7.45

DG = Directional Gain; RBW=3 kHz;

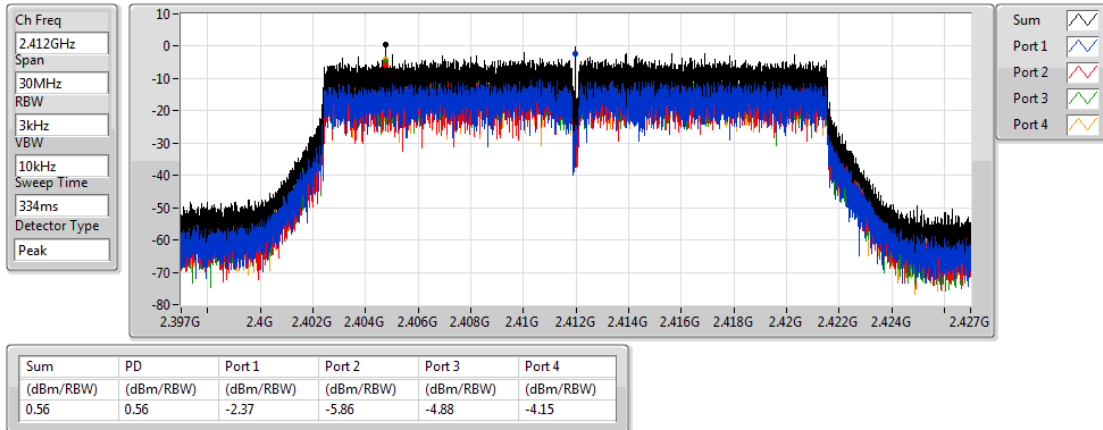
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

802.11ax HEW20_Nss1,(MCS0)_4TX

PSD

2412MHz

31/07/2018

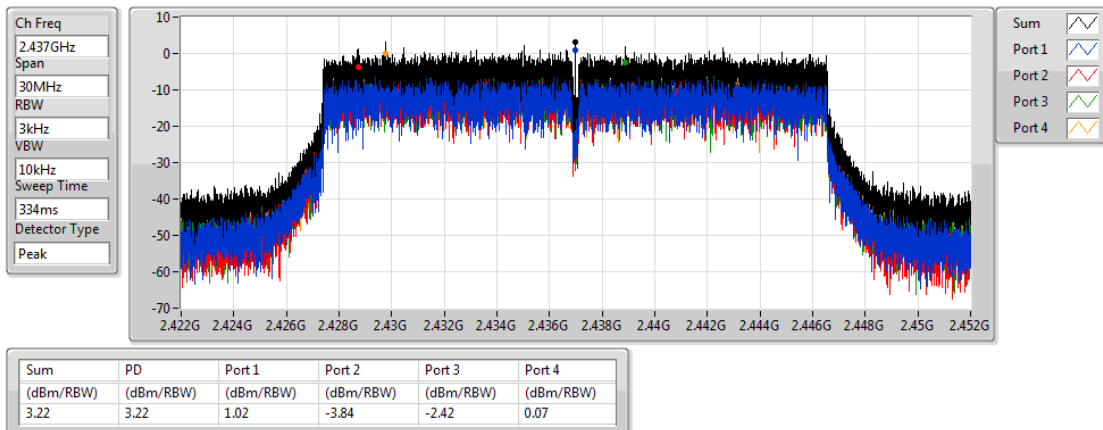


802.11ax HEW20_Nss1,(MCS0)_4TX

PSD

2437MHz

31/07/2018

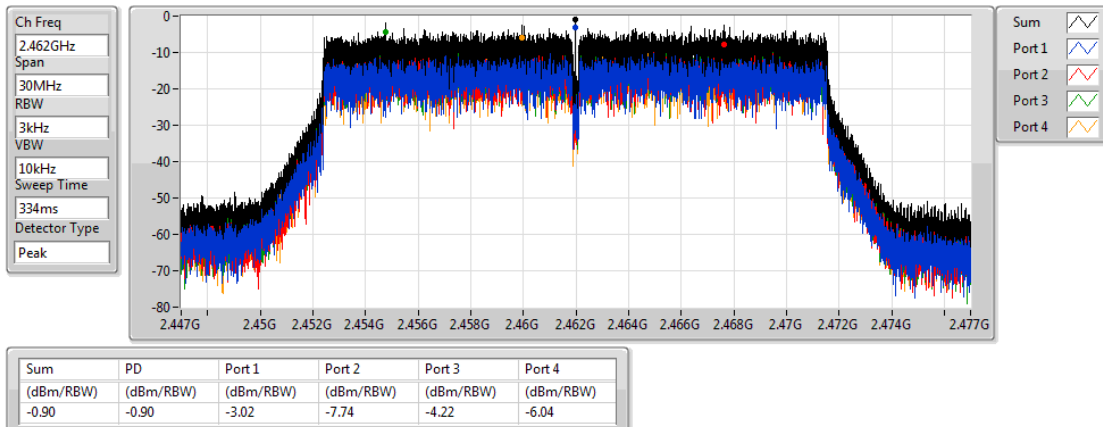


802.11ax HEW20_Nss1,(MCS0)_4TX

PSD

2462MHz

31/07/2018

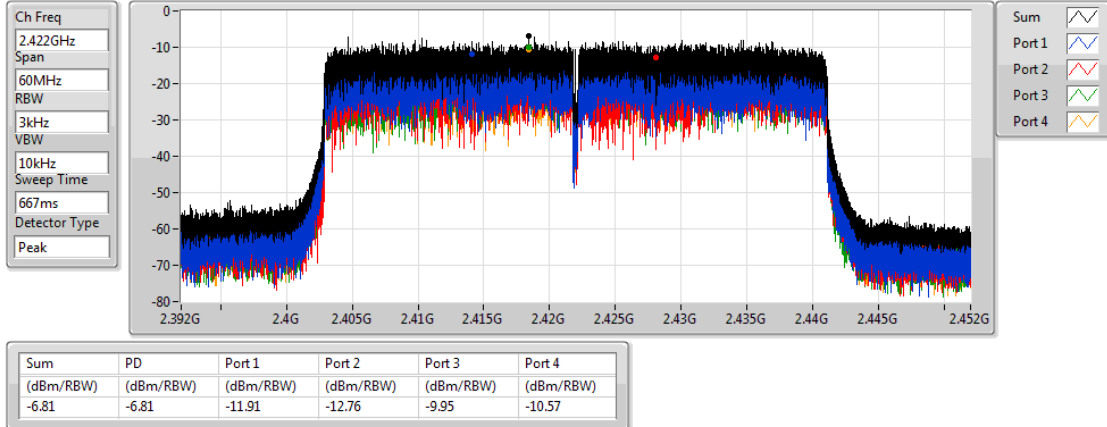


802.11ax HEW40_Nss1,(MCS0)_4TX

PSD

2422MHz

31/07/2018

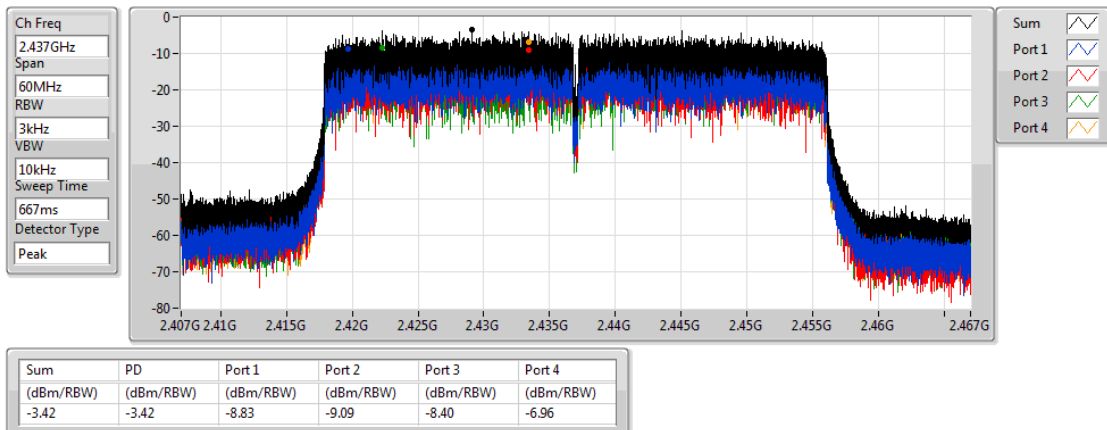


802.11ax HEW40_Nss1,(MCS0)_4TX

PSD

2437MHz

31/07/2018

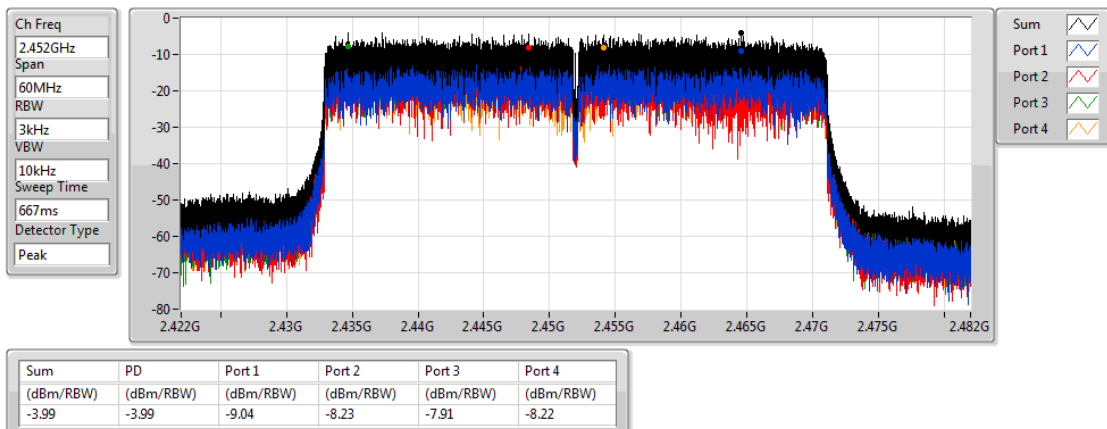


802.11ax HEW40_Nss1,(MCS0)_4TX

PSD

2452MHz

31/07/2018





Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
VHT20-BF_Nss1,(MCS0)_4TX	2.69
VHT40-BF_Nss1,(MCS0)_4TX	-1.46
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	3.14
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-1.90

RBW=3 kHz.

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	-6.23	-7.22	-6.44	-6.37	-0.98	7.45
2437MHz	Pass	6.55	-2.12	-2.82	-2.50	-1.93	2.69	7.45
2462MHz	Pass	6.55	-6.67	-6.36	-6.51	-6.14	-1.20	7.45
VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	6.55	-10.69	-9.95	-11.97	-11.48	-6.62	7.45
2437MHz	Pass	6.55	-6.88	-5.75	-7.77	-6.74	-1.46	7.45
2452MHz	Pass	6.55	-9.10	-9.12	-8.61	-8.82	-3.64	7.45
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	6.55	-5.95	-6.10	-6.76	-5.34	0.01	7.45
2437MHz	Pass	6.55	-1.48	-2.32	-2.32	-1.71	3.14	7.45
2462MHz	Pass	6.55	-6.35	-6.00	-5.83	-5.14	0.21	7.45
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	6.55	-11.11	-10.91	-11.20	-10.92	-5.02	7.45
2437MHz	Pass	6.55	-8.69	-8.02	-7.65	-7.40	-1.90	7.45
2452MHz	Pass	6.55	-10.49	-9.76	-9.87	-9.01	-3.73	7.45

DG = Directional Gain; RBW=3 kHz;

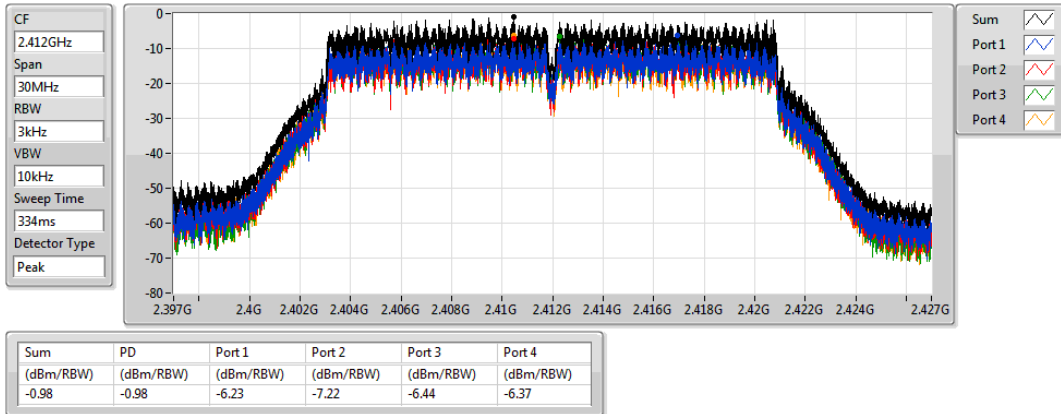
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

VHT20-BF_Nss1,(MCS0)_4TX

2412MHz

PSD

29/10/2019

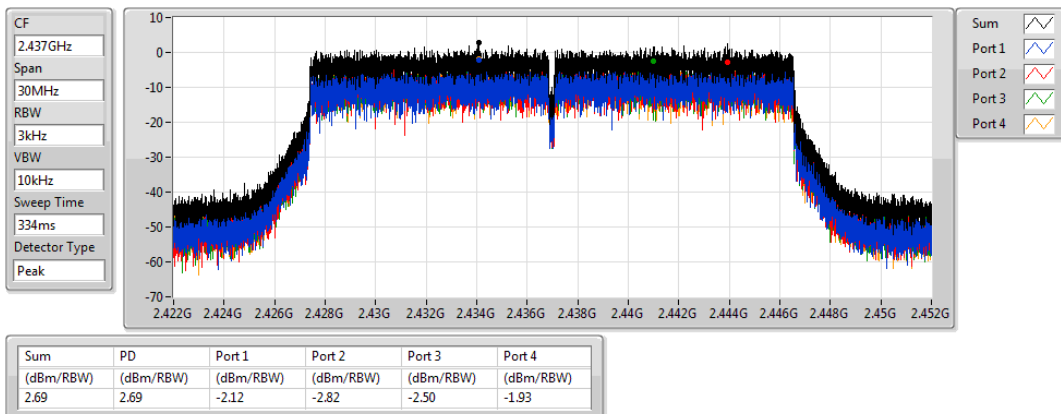


VHT20-BF_Nss1,(MCS0)_4TX

2437MHz

PSD

31/12/2019

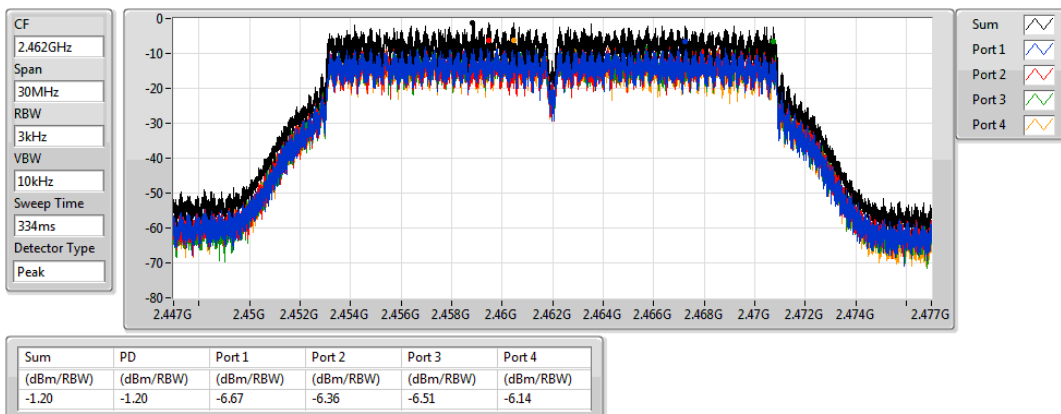


VHT20-BF_Nss1,(MCS0)_4TX

2462MHz

PSD

29/10/2019

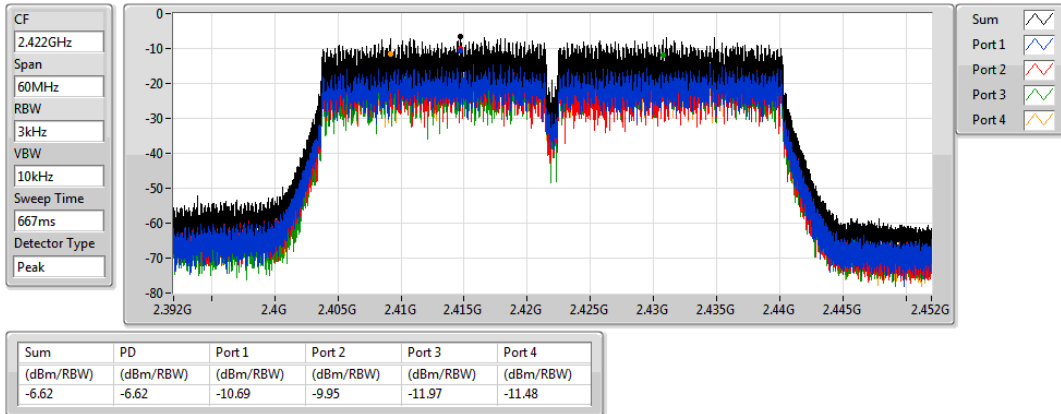


VHT40-BF_Nss1,(MCS0)_4TX

PSD

2422MHz

29/10/2019

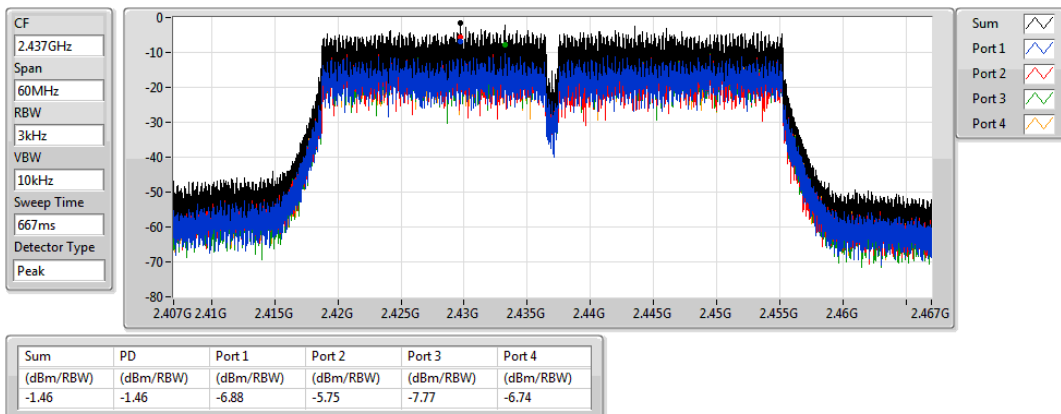


VHT40-BF_Nss1,(MCS0)_4TX

PSD

2437MHz

29/10/2019

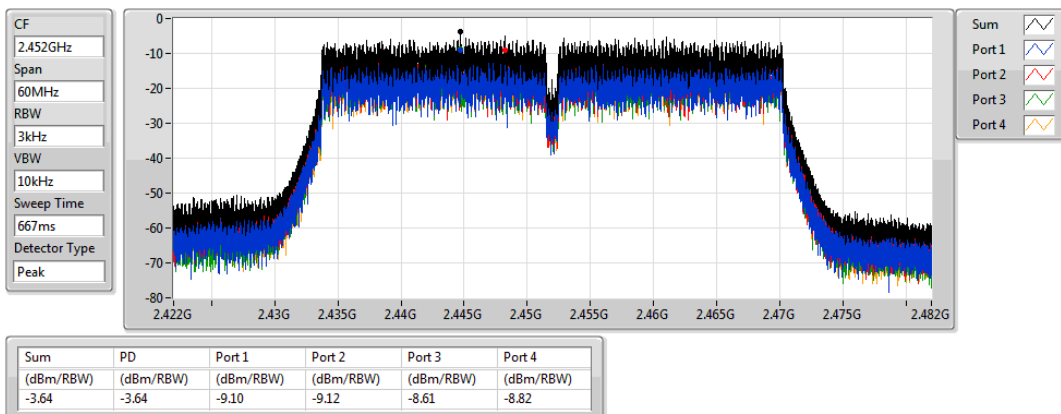


VHT40-BF_Nss1,(MCS0)_4TX

PSD

2452MHz

29/10/2019

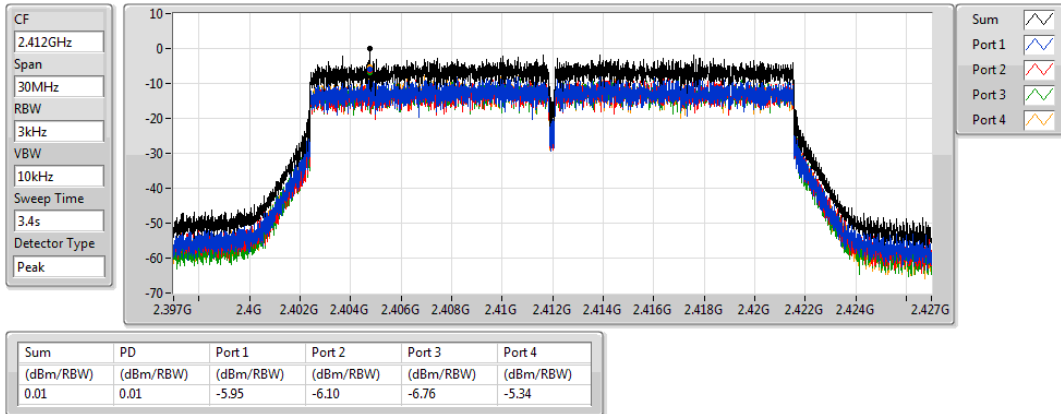


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

PSD

2412MHz

29/10/2019

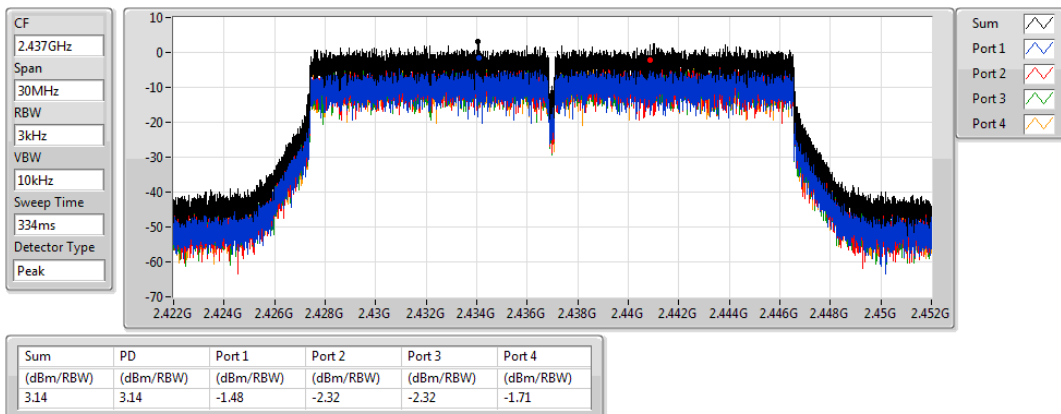


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

PSD

2437MHz

31/12/2019

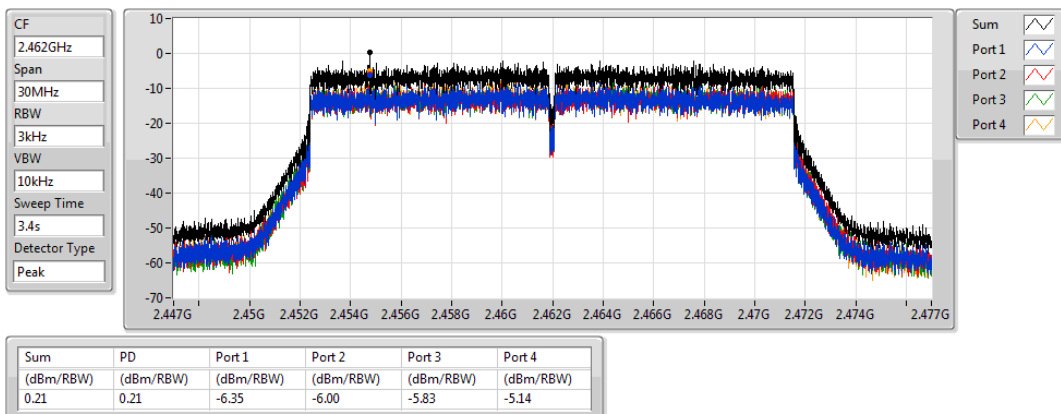


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

PSD

2462MHz

29/10/2019

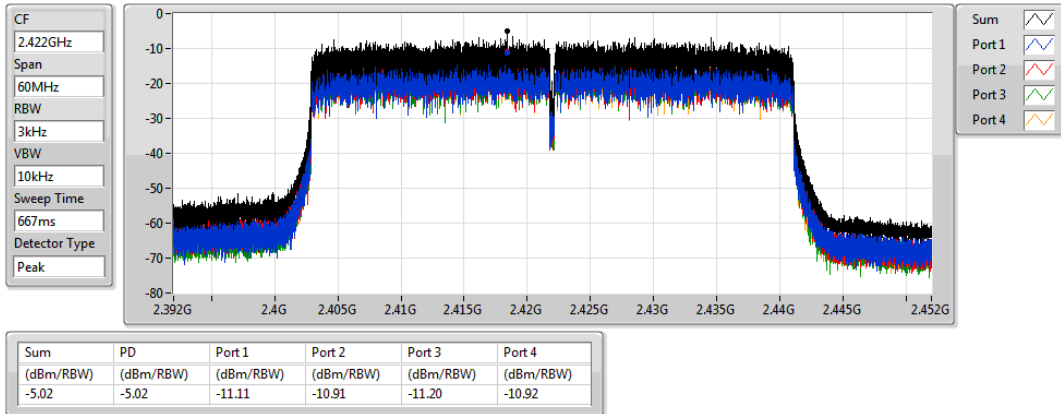


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

PSD

2422MHz

29/10/2019

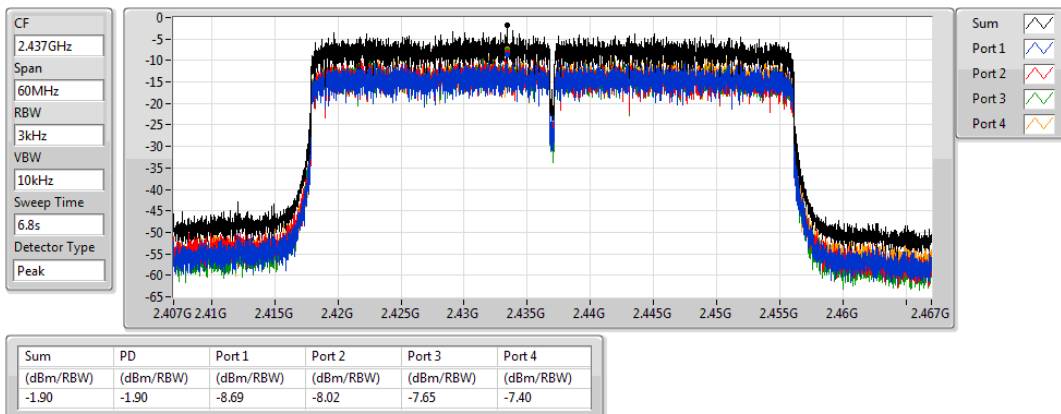


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

PSD

2437MHz

29/10/2019

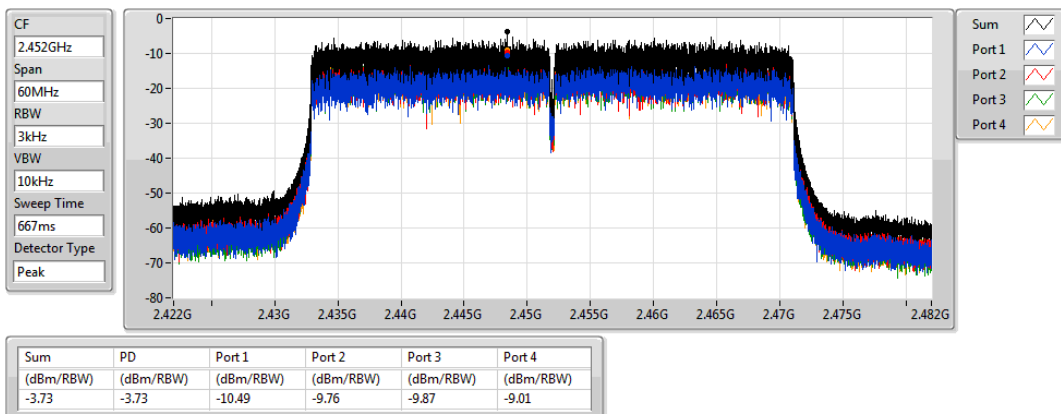


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

PSD

2452MHz

29/10/2019



**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	-	-	-	-	-	-	-	-	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_4TX	Pass	2.442G	12.17	-17.83	800.65M	-52.99	2.39976G	-34.45	2.50884G	-51.73	16.88036G	-41.13	2
VHT40-BF_Nss1,(MCS0)_4TX	Pass	2.43198G	7.47	-22.53	705.84M	-52.30	2.39948G	-33.61	2.4843G	-44.79	16.21611G	-42.22	2
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	Pass	2.44442G	9.32	-20.68	2.04662G	-46.12	2.39712G	-44.34	2.48566G	-46.09	24.98314G	-27.16	4
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	Pass	2.43198G	7.61	-22.39	2.30626G	-52.98	2.39956G	-30.55	2.48382G	-43.76	16.49096G	-41.50	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
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.442G	12.17	-17.83	948.31M	-52.72	2.39998G	-35.37	2.4836G	-51.27	16.75393G	-42.58	1
2412MHz	Pass	2.442G	12.17	-17.83	800.65M	-52.99	2.39976G	-34.45	2.50884G	-51.73	16.88036G	-41.13	2
2412MHz	Pass	2.442G	12.17	-17.83	785.79M	-52.57	2.39988G	-35.97	2.4994G	-51.32	24.3819G	-41.73	3
2412MHz	Pass	2.442G	12.17	-17.83	793.66M	-52.84	2.39984G	-34.82	2.48404G	-51.04	16.3325G	-41.63	4
2437MHz	Pass	2.442G	12.17	-17.83	928.8M	-52.34	2.39952G	-46.98	2.48388G	-49.68	17.64176G	-41.64	1
2437MHz	Pass	2.442G	12.17	-17.83	737.74M	-52.86	2.3958G	-46.90	2.48906G	-50.33	24.40999G	-41.03	2
2437MHz	Pass	2.442G	12.17	-17.83	777.35M	-52.39	2.39962G	-46.75	2.48542G	-49.68	16.54603G	-41.38	3
2437MHz	Pass	2.442G	12.17	-17.83	2.14011G	-52.27	2.39514G	-45.13	2.48356G	-48.20	17.63614G	-41.57	4
2462MHz	Pass	2.442G	12.17	-17.83	861.81M	-52.84	2.39826G	-50.79	2.48512G	-48.04	17.60523G	-41.17	1
2462MHz	Pass	2.442G	12.17	-17.83	2.30583G	-52.12	2.39596G	-50.28	2.48382G	-46.42	16.86351G	-41.87	2
2462MHz	Pass	2.442G	12.17	-17.83	508.52M	-52.53	2.39994G	-50.38	2.48354G	-48.83	16.57412G	-41.11	3
2462MHz	Pass	2.442G	12.17	-17.83	870.84M	-52.93	2.39192G	-51.31	2.48358G	-47.91	16.51512G	-40.72	4
VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.43198G	7.47	-22.53	481.42M	-52.86	2.397G	-40.36	2.48482G	-51.42	16.64801G	-42.47	1
2422MHz	Pass	2.43198G	7.47	-22.53	1.99024G	-53.61	2.39516G	-39.09	2.48374G	-51.49	16.65082G	-42.17	2
2422MHz	Pass	2.43198G	7.47	-22.53	497.45M	-52.76	2.3996G	-42.75	2.52118G	-50.92	16.3956G	-41.73	3
2422MHz	Pass	2.43198G	7.47	-22.53	2.0764G	-52.80	2.39696G	-38.84	2.4851G	-51.33	24.27081G	-42.10	4
2437MHz	Pass	2.43198G	7.47	-22.53	876.73M	-52.58	2.39948G	-36.66	2.48426G	-47.53	17.21734G	-42.29	1
2437MHz	Pass	2.43198G	7.47	-22.53	705.84M	-52.30	2.39948G	-33.61	2.4843G	-44.79	16.21611G	-42.22	2
2437MHz	Pass	2.43198G	7.47	-22.53	941.99M	-52.92	2.39952G	-35.53	2.48418G	-46.67	16.80226G	-41.17	3
2437MHz	Pass	2.43198G	7.47	-22.53	2.1388G	-51.77	2.39948G	-34.28	2.4873G	-43.14	21.64013G	-42.08	4
2452MHz	Pass	2.43198G	7.47	-22.53	802.59M	-52.79	2.3998G	-49.77	2.48554G	-45.69	16.53863G	-41.87	1
2452MHz	Pass	2.43198G	7.47	-22.53	879.59M	-52.75	2.39576G	-48.19	2.48358G	-45.26	24.3858G	-42.15	2
2452MHz	Pass	2.43198G	7.47	-22.53	885.03M	-51.97	2.39536G	-48.47	2.48442G	-49.42	16.49657G	-41.61	3
2452MHz	Pass	2.43198G	7.47	-22.53	872.72M	-51.66	2.39824G	-48.09	2.48946G	-46.83	17.65205G	-41.98	4
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.44442G	9.32	-20.68	1.72974G	-46.54	2.39992G	-34.41	2.4911G	-45.80	24.92414G	-28.47	1
2412MHz	Pass	2.44442G	9.32	-20.68	1.84158G	-46.28	2.39968G	-34.50	2.50974G	-45.77	21.95443G	-27.75	2
2412MHz	Pass	2.44442G	9.32	-20.68	2.03147G	-47.50	2.39888G	-33.38	2.50422G	-45.39	13.9528G	-28.19	3
2412MHz	Pass	2.44442G	9.32	-20.68	787.25M	-47.35	2.3996G	-34.10	2.49614G	-45.44	24.98876G	-27.90	4
2437MHz	Pass	2.44442G	9.32	-20.68	2.02914G	-46.34	2.39912G	-44.49	2.49846G	-45.77	21.90386G	-27.92	1
2437MHz	Pass	2.44442G	9.32	-20.68	1.86954G	-45.79	2.39976G	-44.30	2.48878G	-46.78	24.91852G	-27.91	2
2437MHz	Pass	2.44442G	9.32	-20.68	1.8742G	-46.89	2.39776G	-45.51	2.50398G	-45.80	24.02508G	-28.47	3
2437MHz	Pass	2.44442G	9.32	-20.68	2.04662G	-46.12	2.39712G	-44.34	2.48566G	-46.09	24.98314G	-27.16	4
2462MHz	Pass	2.44442G	9.32	-20.68	2.10137G	-46.47	2.39496G	-46.73	2.48358G	-40.21	21.85329G	-28.55	1
2462MHz	Pass	2.44442G	9.32	-20.68	1.99652G	-46.42	2.39352G	-46.62	2.48414G	-40.06	24.98314G	-28.31	2
2462MHz	Pass	2.44442G	9.32	-20.68	1.80546G	-46.78	2.39736G	-44.73	2.48414G	-42.28	24.83143G	-27.82	3
2462MHz	Pass	2.44442G	9.32	-20.68	1.81595G	-46.68	2.3964G	-46.22	2.48494G	-40.25	24.74714G	-27.56	4
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.43198G	7.61	-22.39	909.65M	-53.20	2.3996G	-41.04	2.49878G	-51.83	16.52461G	-42.14	1
2422MHz	Pass	2.43198G	7.61	-22.39	854.97M	-52.40	2.39888G	-39.95	2.4837G	-51.58	24.36056G	-41.81	2
2422MHz	Pass	2.43198G	7.61	-22.39	818.91M	-52.80	2.39676G	-43.20	2.4883G	-51.40	16.50778G	-42.08	3
2422MHz	Pass	2.43198G	7.61	-22.39	2.12993G	-52.79	2.397G	-39.53	2.48494G	-51.25	16.54144G	-42.21	4
2437MHz	Pass	2.43198G	7.61	-22.39	773.11M	-52.60	2.39828G	-35.25	2.48542G	-47.21	24.6915G	-41.44	1
2437MHz	Pass	2.43198G	7.61	-22.39	2.30626G	-52.98	2.39956G	-30.55	2.48382G	-43.76	16.49096G	-41.50	2
2437MHz	Pass	2.43198G	7.61	-22.39	1.9078G	-52.60	2.39824G	-34.10	2.4859G	-45.90	24.35495G	-41.97	3
2437MHz	Pass	2.43198G	7.61	-22.39	886.75M	-52.94	2.39956G	-32.94	2.48538G	-43.48	17.29587G	-41.44	4

**CSE(Non-restricted Band) _Beamforming Mode****Appendix D**

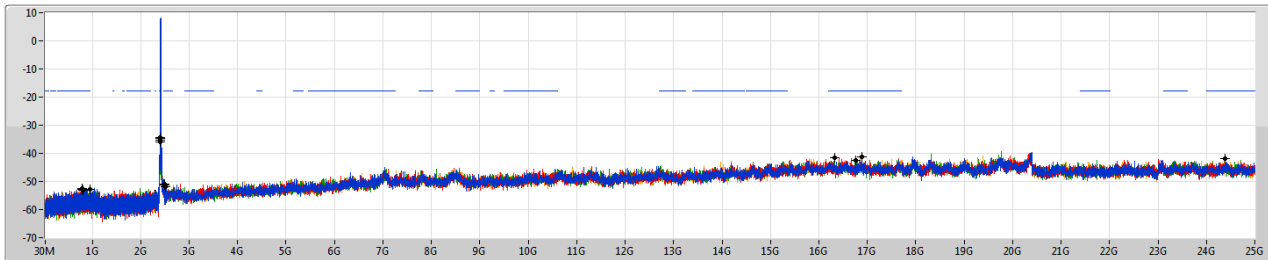
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2452MHz	Pass	2.43198G	7.61	-22.39	952.58M	-52.96	2.39932G	-49.62	2.48482G	-47.59	17.60717G	-41.09	1
2452MHz	Pass	2.43198G	7.61	-22.39	889.61M	-52.82	2.39932G	-47.25	2.48774G	-46.64	17.63522G	-41.97	2
2452MHz	Pass	2.43198G	7.61	-22.39	863.85M	-52.74	2.3992G	-48.50	2.48618G	-47.73	17.63522G	-41.99	3
2452MHz	Pass	2.43198G	7.61	-22.39	517.77M	-51.87	2.3998G	-47.95	2.48534G	-45.41	16.56107G	-42.24	4

VHT20-BF_Nss1,(MCS0)_4TX

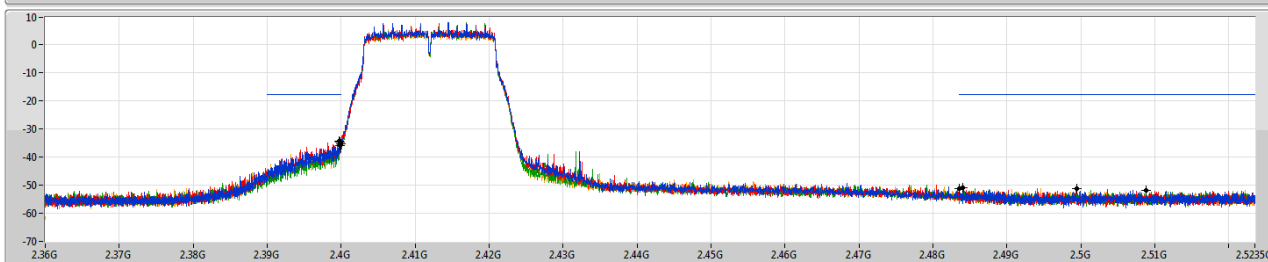
2412MHz

CSE NdB

29/10/2019



Port 1
Port 2
Port 3
Port 4



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

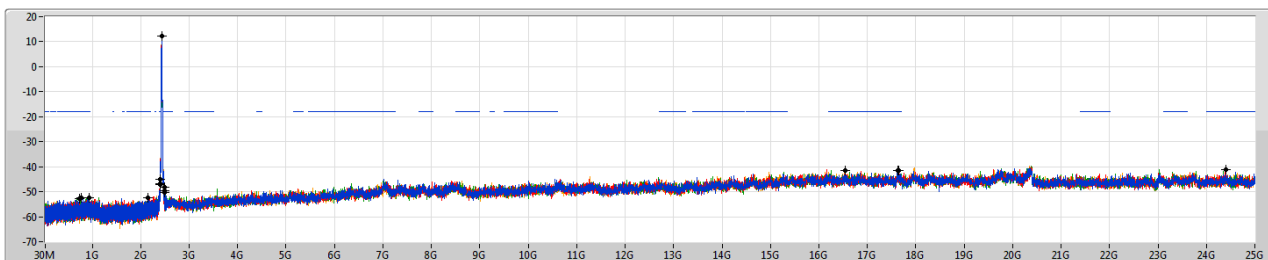
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.442G	12.17	-17.83	948.31M	-52.72	2.39998G	-35.37	2.4836G	-51.27	16.75393G	-42.58	1
2.442G	12.17	-17.83	800.65M	-52.99	2.39976G	-34.45	2.50884G	-51.73	16.88036G	-41.13	2
2.442G	12.17	-17.83	785.79M	-52.57	2.39988G	-35.97	2.4994G	-51.32	24.3819G	-41.73	3
2.442G	12.17	-17.83	793.66M	-52.84	2.39984G	-34.82	2.48404G	-51.04	16.3325G	-41.63	4

VHT20-BF_Nss1,(MCS0)_4TX

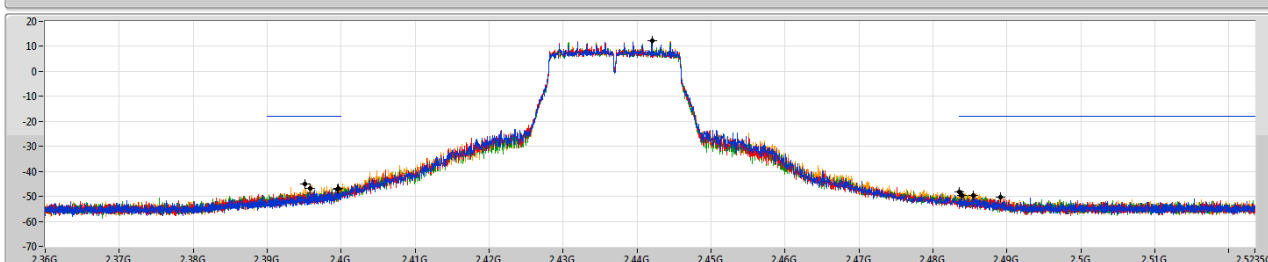
2437MHz

CSE NdB

29/10/2019



Port 1
Port 2
Port 3
Port 4



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

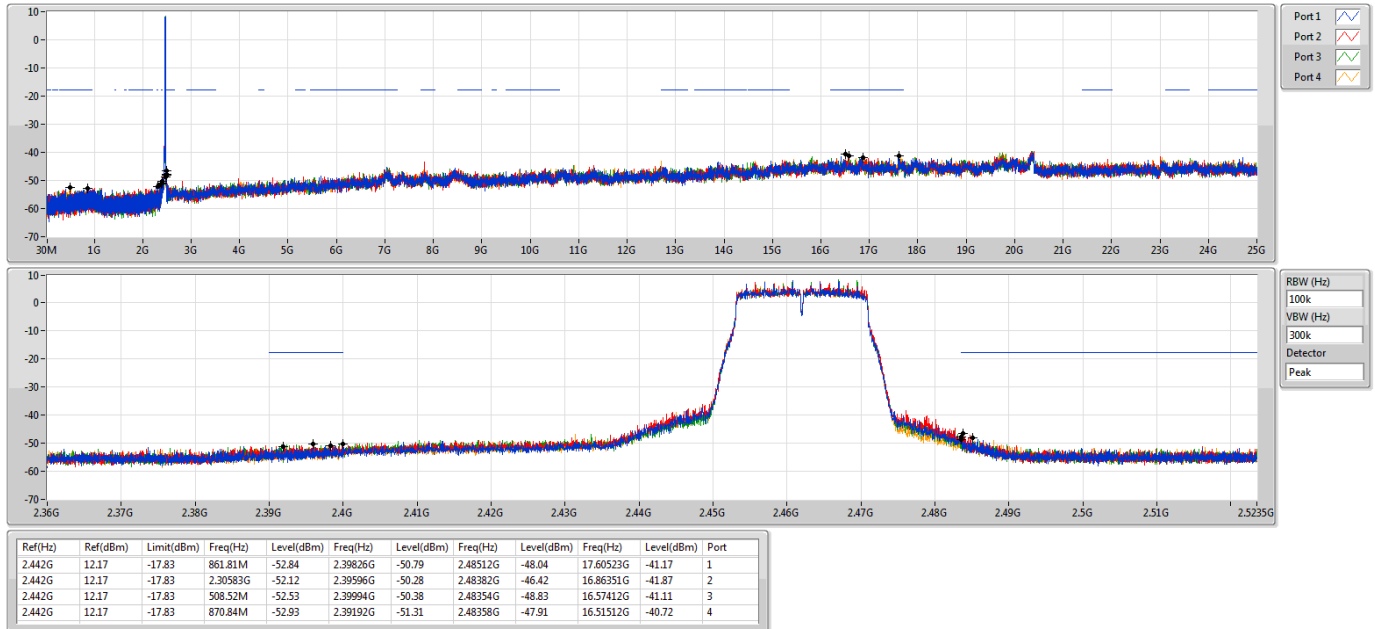
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.442G	12.17	-17.83	928.8M	-52.34	2.39952G	-46.98	2.48388G	-49.68	17.64176G	-41.64	1
2.442G	12.17	-17.83	737.74M	-52.86	2.3958G	-46.90	2.48906G	-50.33	24.40999G	-41.03	2
2.442G	12.17	-17.83	777.35M	-52.39	2.39962G	-46.75	2.48542G	-49.68	16.54603G	-41.38	3
2.442G	12.17	-17.83	2.14011G	-52.27	2.39514G	-45.13	2.48356G	-48.20	17.63614G	-41.57	4

VHT20-BF_Nss1,(MCS0)_4TX

2462MHz

CSE NdB

29/10/2019

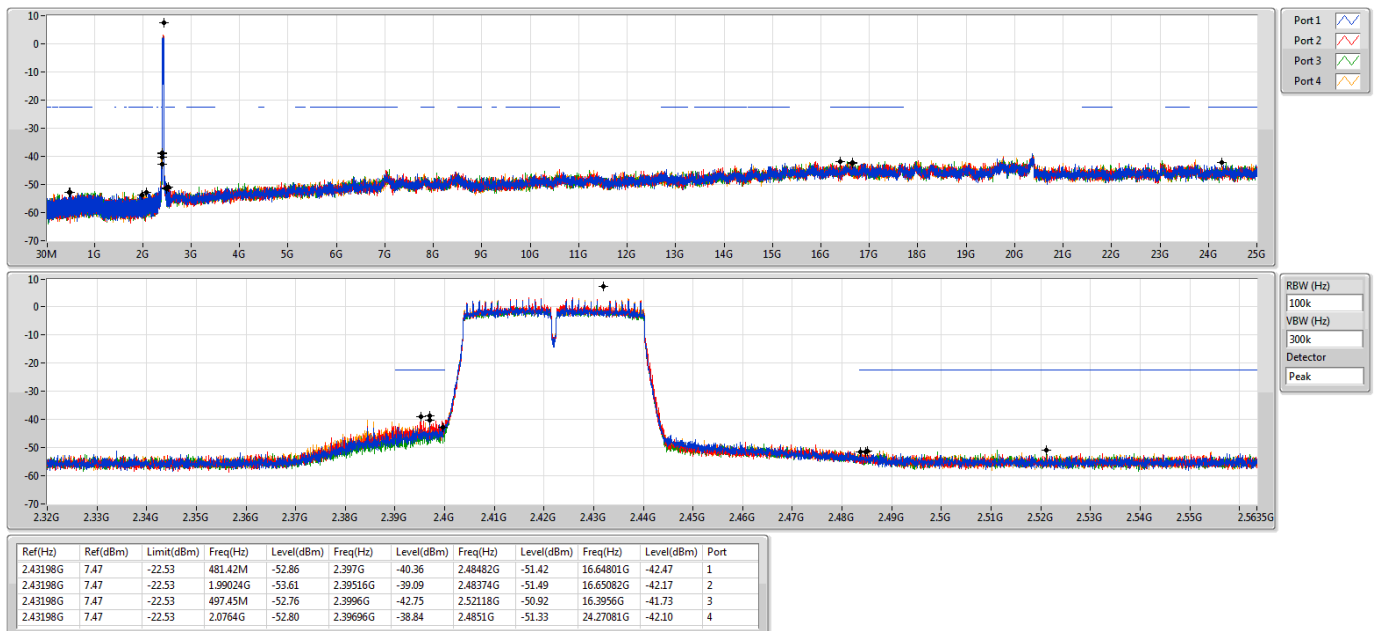


VHT40-BF_Nss1,(MCS0)_4TX

2422MHz

CSE NdB

29/10/2019

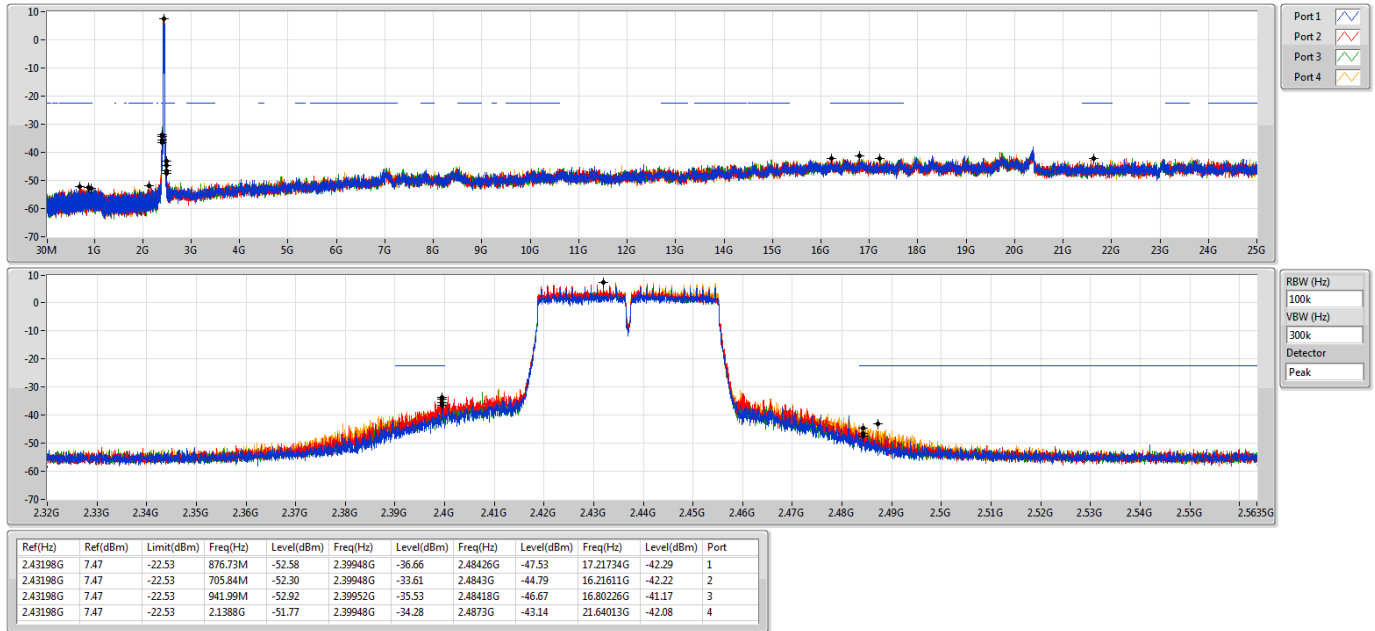


VHT40-BF_Nss1,(MCS0)_4TX

2437MHz

CSE NdB

29/10/2019

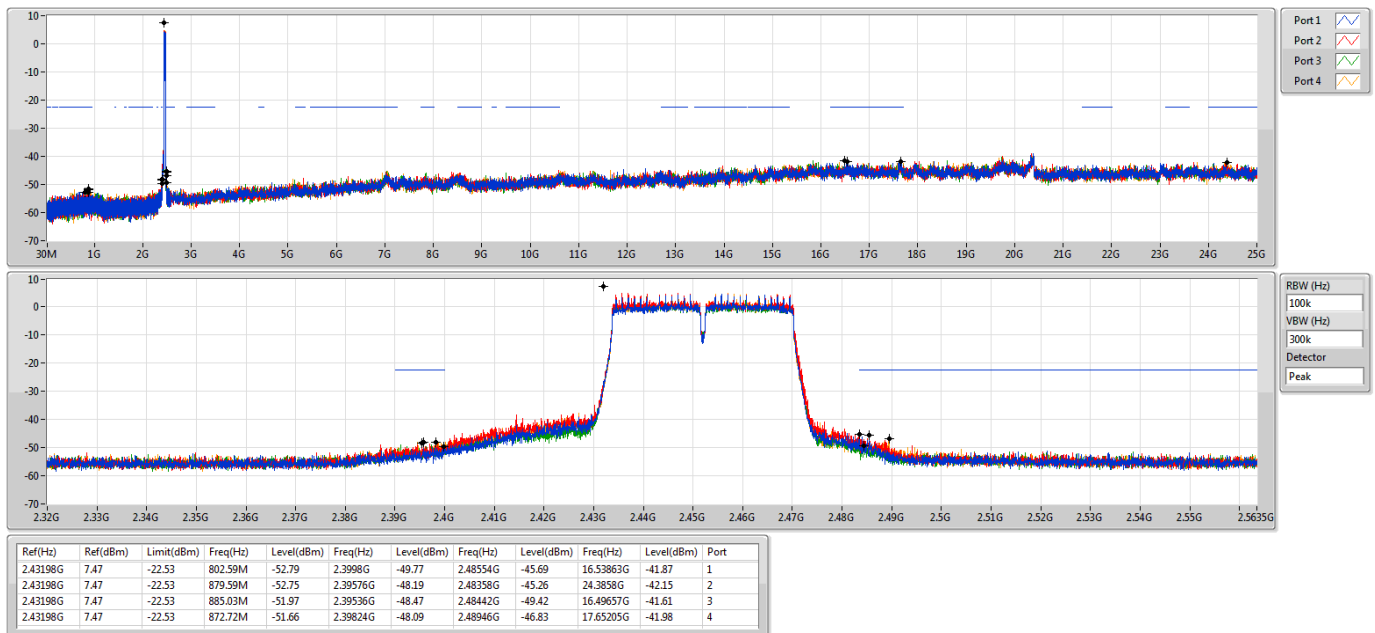


VHT40-BF_Nss1,(MCS0)_4TX

2452MHz

CSE NdB

29/10/2019

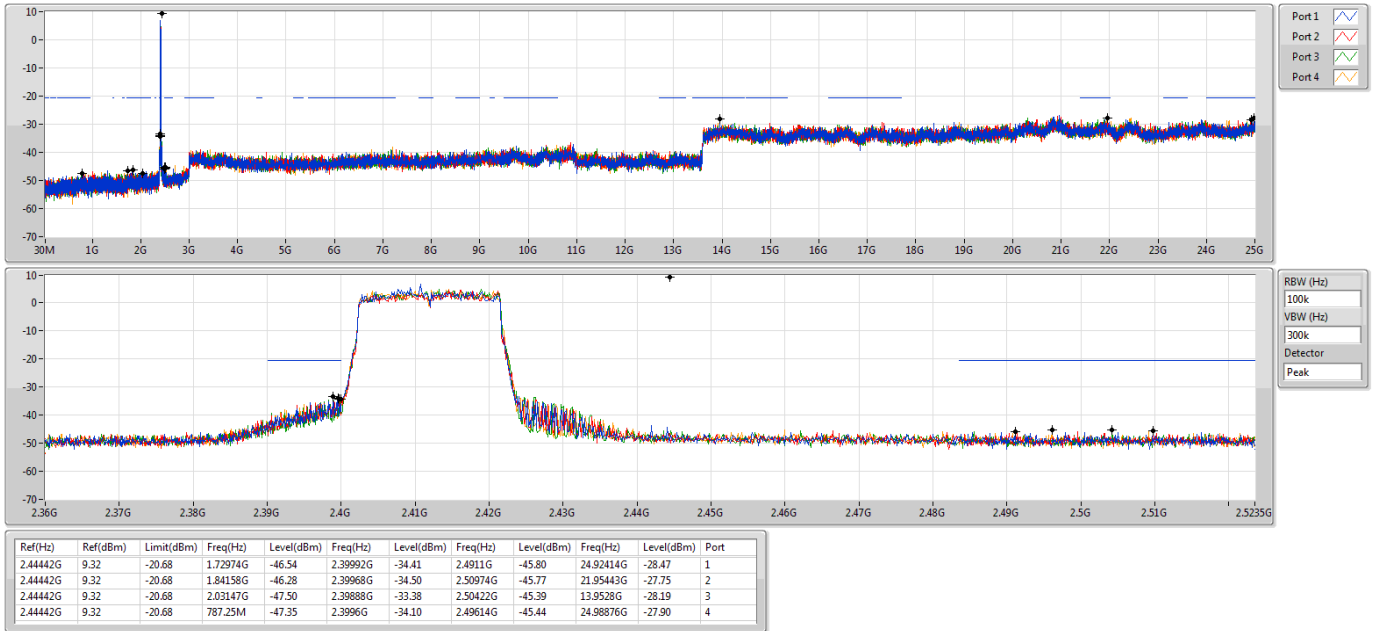


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

2412MHz

CSE NdB

29/10/2019

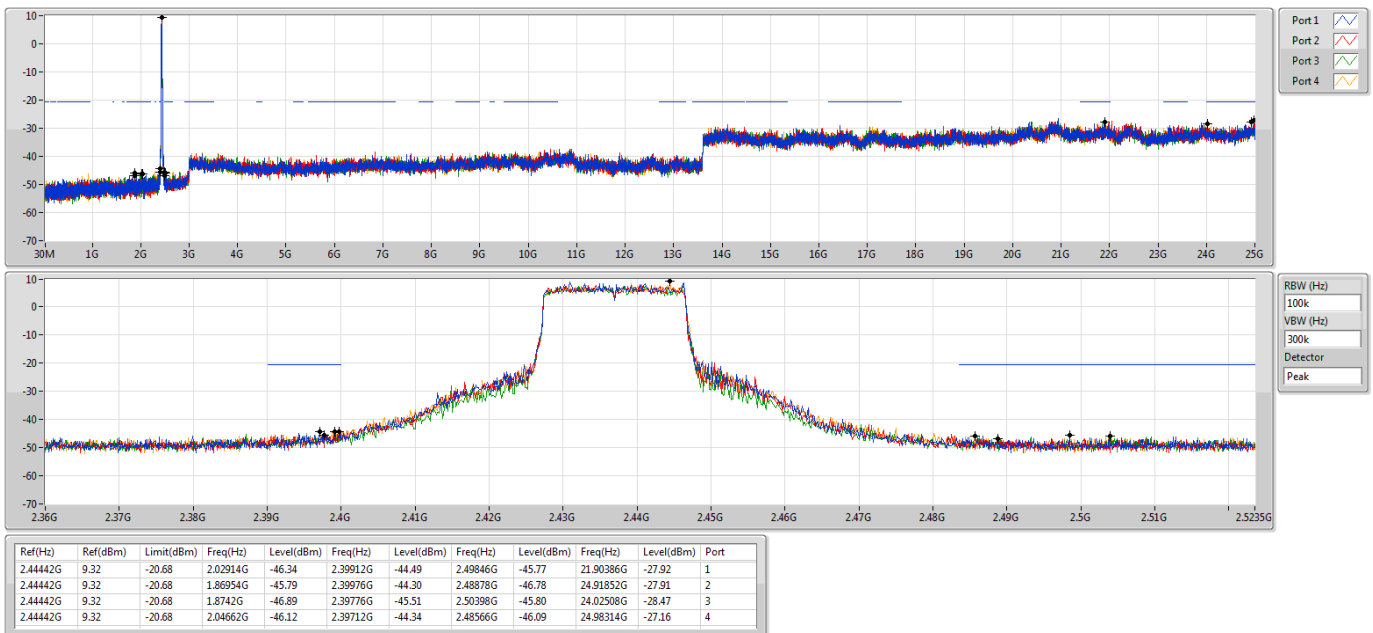


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

2437MHz

CSE NdB

29/10/2019

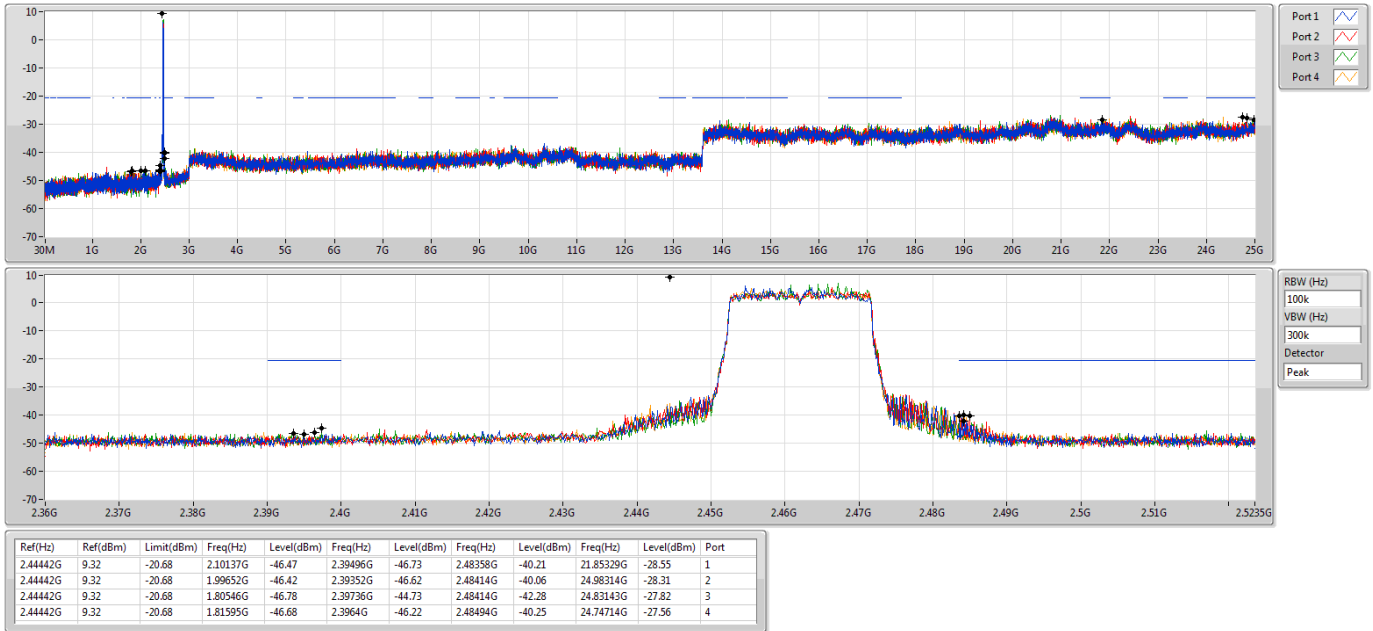


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

2462MHz

CSE NdB

29/10/2019

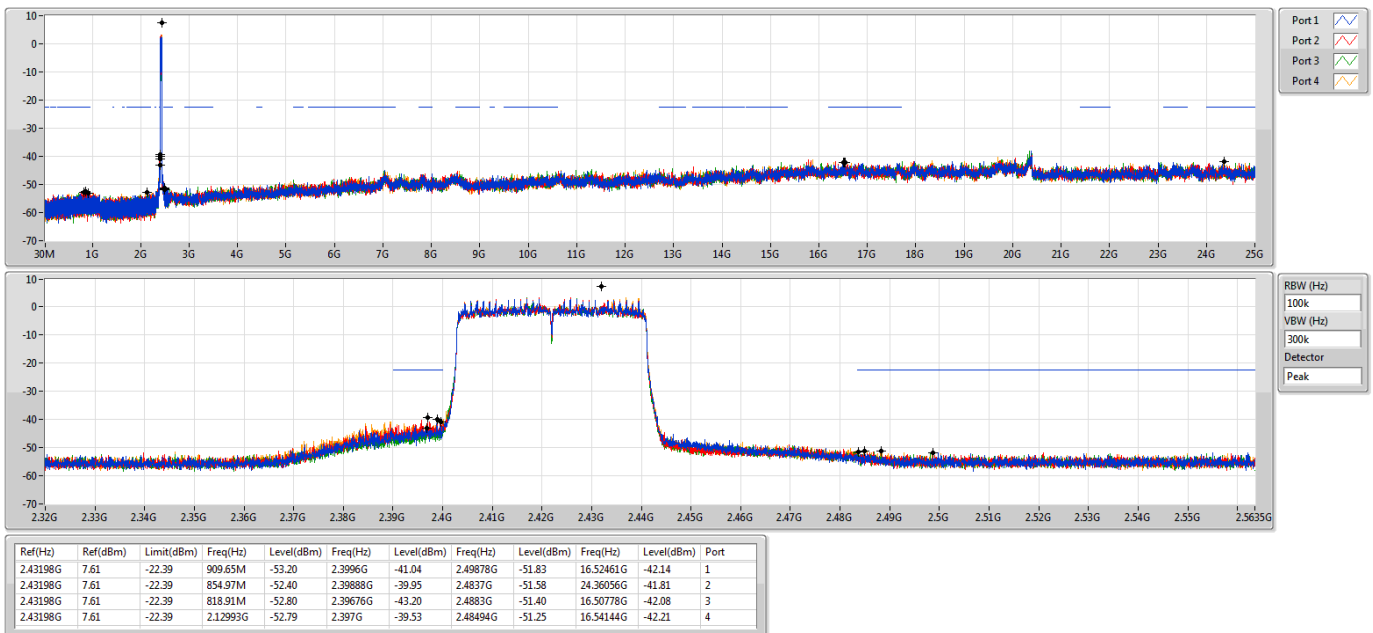


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

2422MHz

CSE NdB

29/10/2019

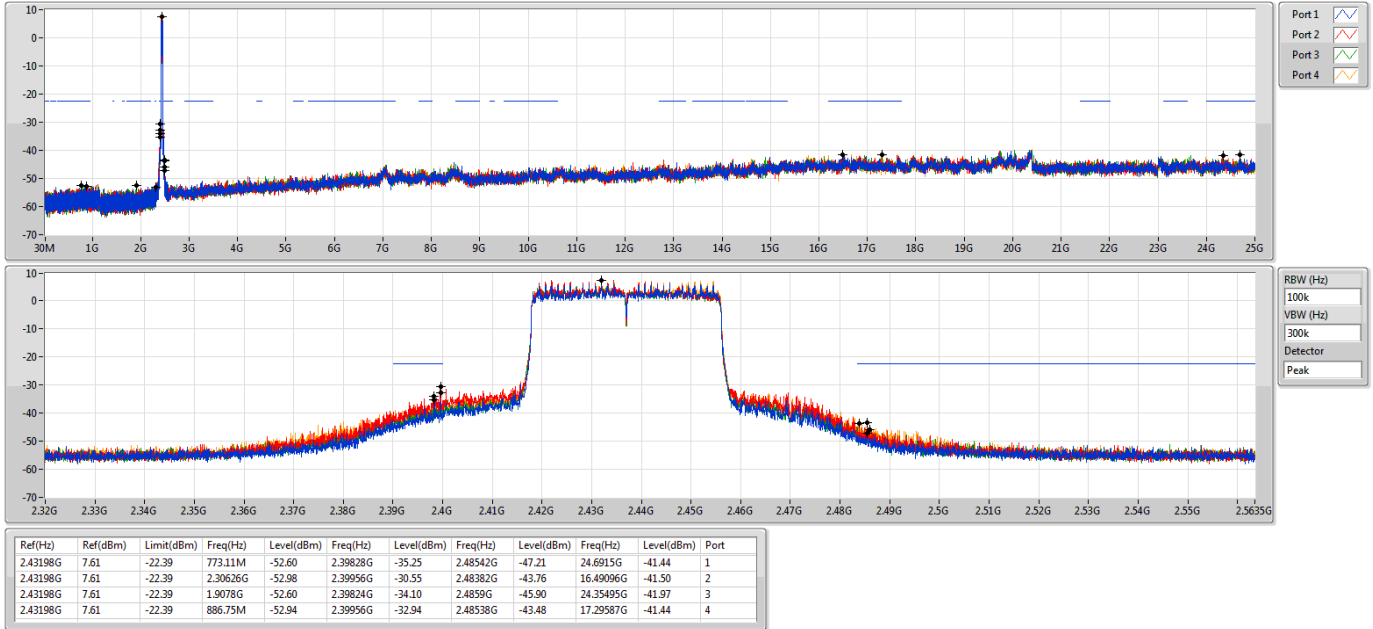


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

2437MHz

CSE NdB

29/10/2019

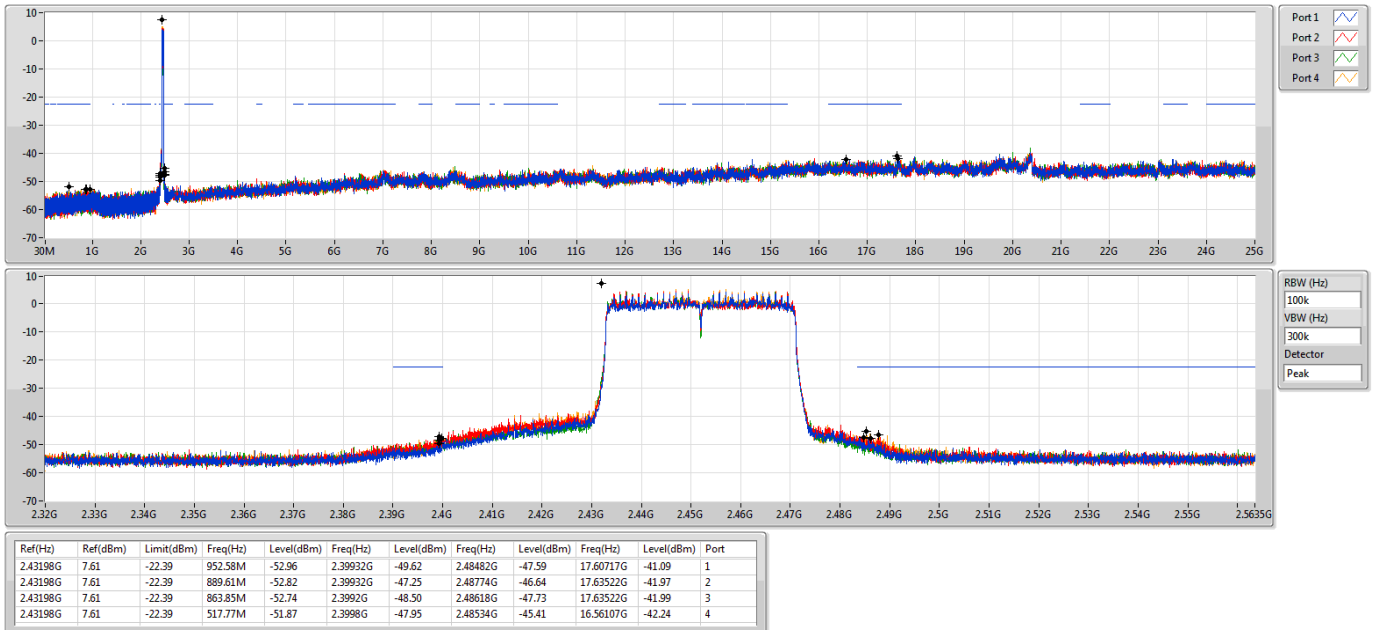


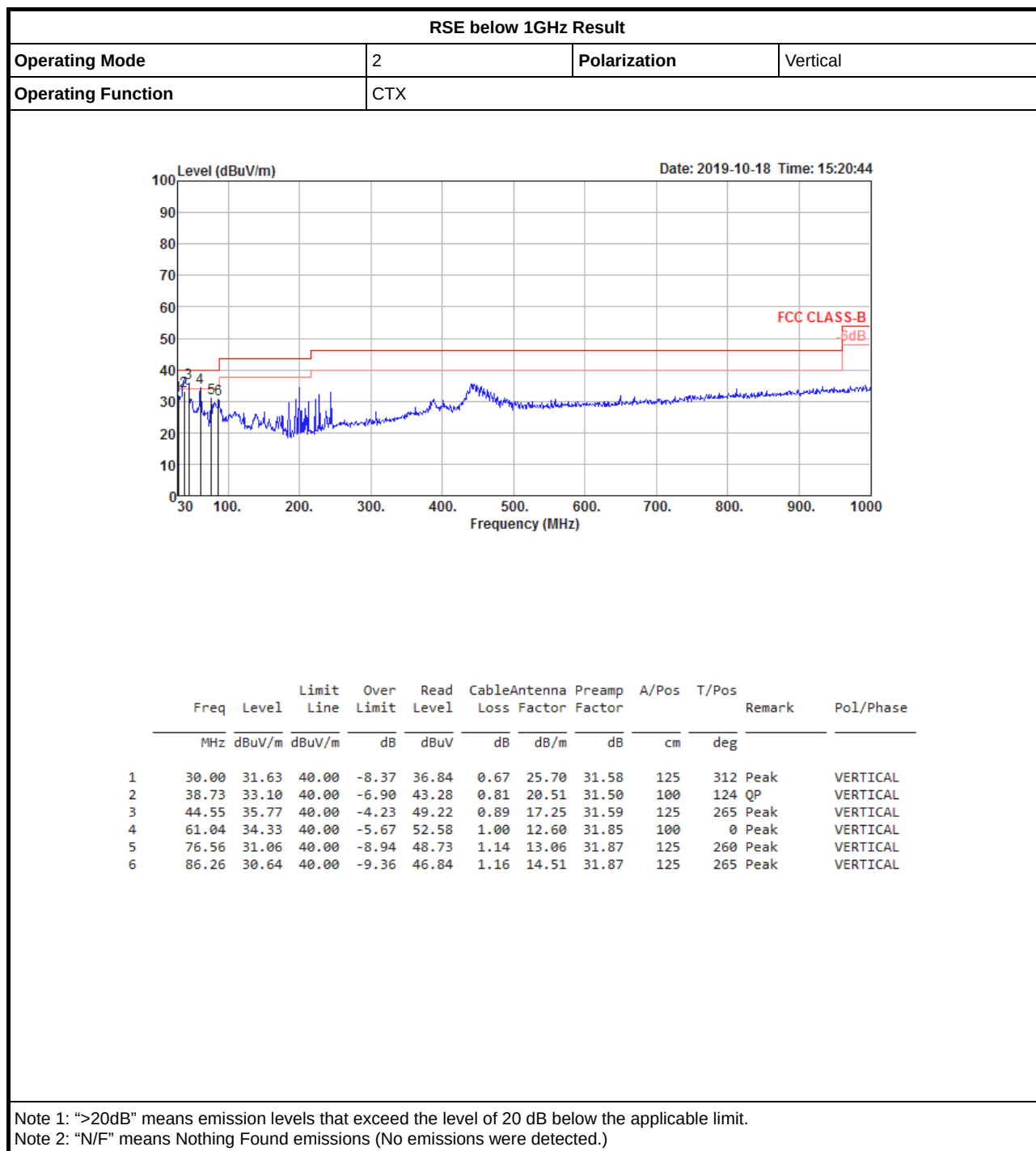
802.11ax HEW40-BF_Nss1,(MCS0)_4TX

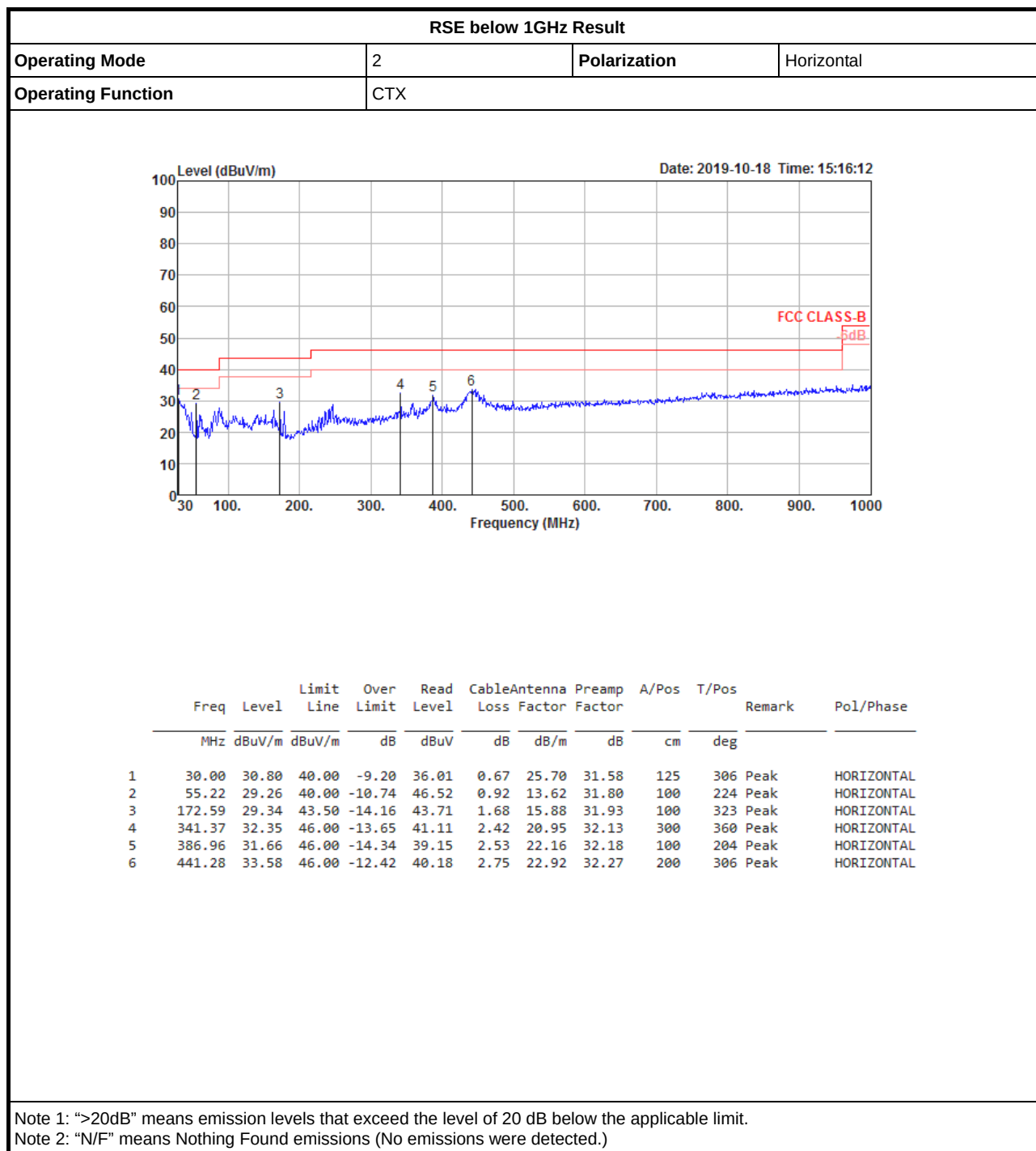
2452MHz

CSE NdB

29/10/2019









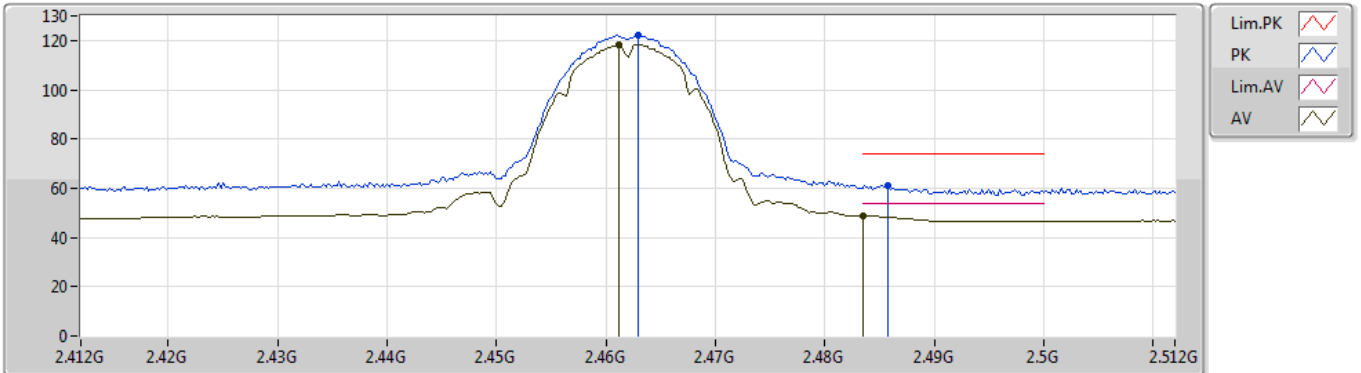
Summary

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	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	Pass	PK	2.4836G	73.18	74.00	-0.82	31.39	3	Horizontal	139	1.81	-

802.11b_Nss1,(1Mbps)_4TX

18/10/2019

2462MHz_TX



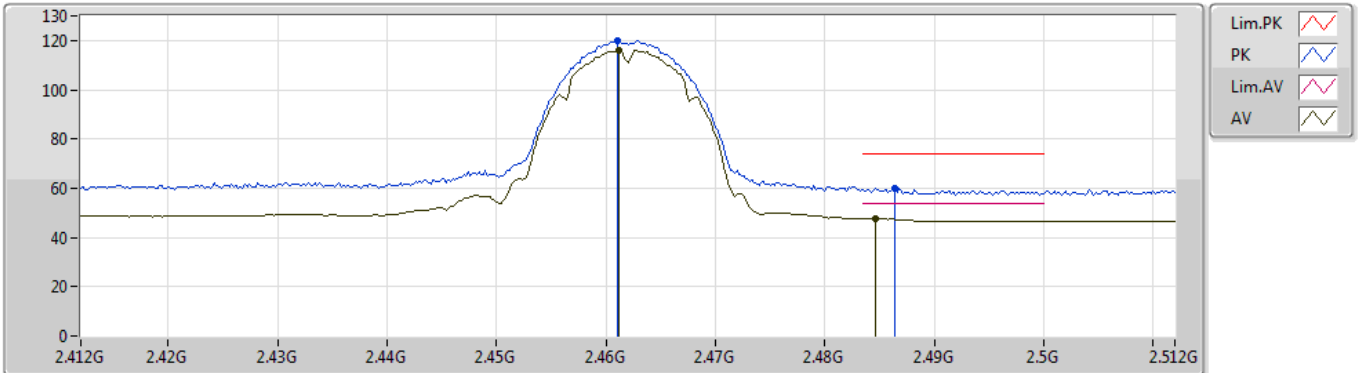
EUT Y_4TX
Setting 91
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.463G	122.22	Inf	-Inf	31.36	3	Vertical	304	2.15	-	90.86
AV	2.4612G	118.33	Inf	-Inf	31.35	3	Vertical	304	2.15	-	86.98
PK	2.4858G	61.27	74.00	-12.73	31.40	3	Vertical	304	2.15	-	29.87
AV	2.4835G	48.69	54.00	-5.31	31.39	3	Vertical	304	2.15	-	17.30

802.11b_Nss1,(1Mbps)_4TX

18/10/2019

2462MHz_TX



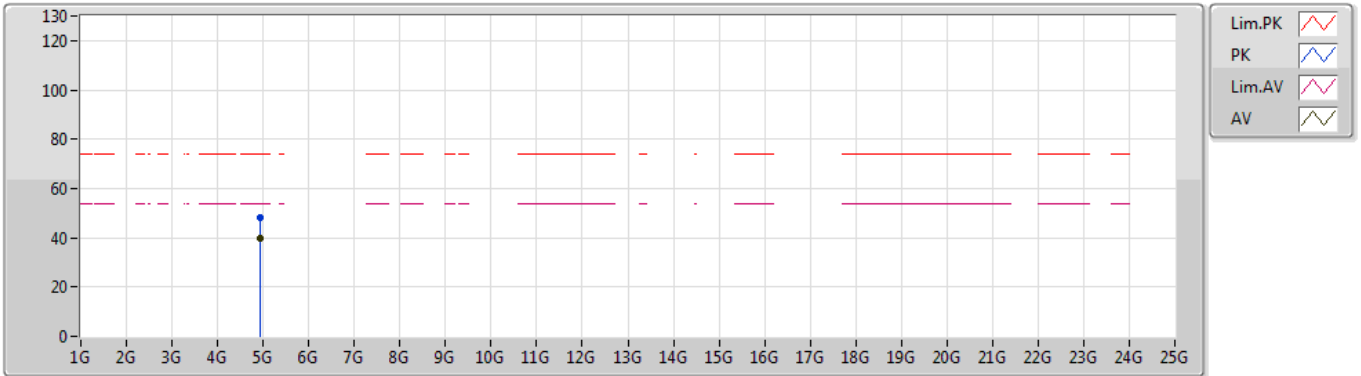
EUT Y_4TX
Setting 91
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.461G	119.89	Inf	-Inf	31.35	3	Horizontal	174	1.47	-	88.54
AV	2.4612G	116.18	Inf	-Inf	31.35	3	Horizontal	174	1.47	-	84.83
PK	2.4864G	60.17	74.00	-13.83	31.40	3	Horizontal	174	1.47	-	28.77
AV	2.4846G	47.53	54.00	-6.47	31.40	3	Horizontal	174	1.47	-	16.13

802.11b_Nss1,(1Mbps)_4TX

18/10/2019

2462MHz_TX



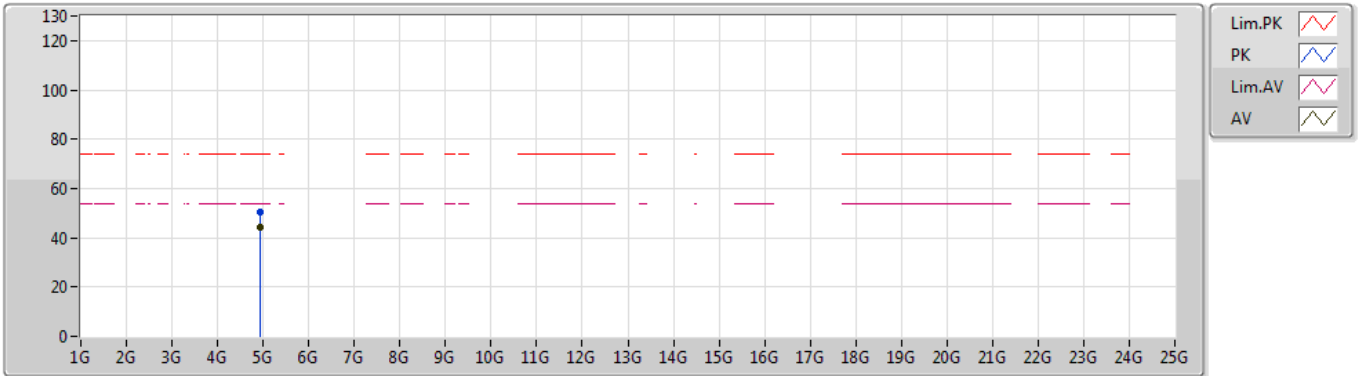
EUT Y_4TX
Setting 91
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.92389G	48.39	74.00	-25.61	7.40	3	Vertical	216	1.09	-	40.99			
AV	4.92393G	39.89	54.00	-14.11	7.40	3	Vertical	216	1.09	-	32.49			

802.11b_Nss1,(1Mbps)_4TX

18/10/2019

2462MHz_TX



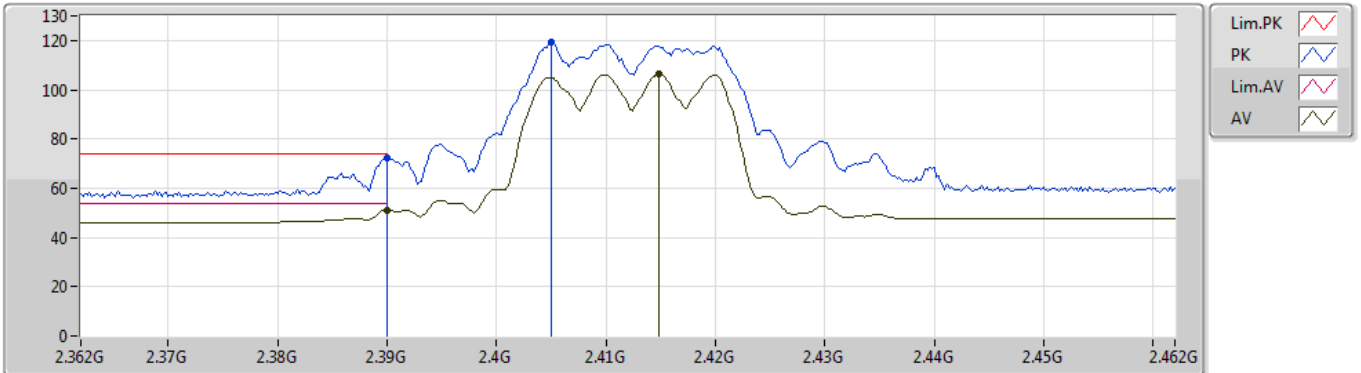
EUT Y_4TX
Setting 91
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.92387G	50.16	74.00	-23.84	7.40	3	Horizontal	177	1.09	-	42.76			
AV	4.92397G	44.35	54.00	-9.65	7.40	3	Horizontal	177	1.09	-	36.95			

802.11ax HEW20_Nss1,(MCS0)_4TX

18/10/2019

2412MHz_TX



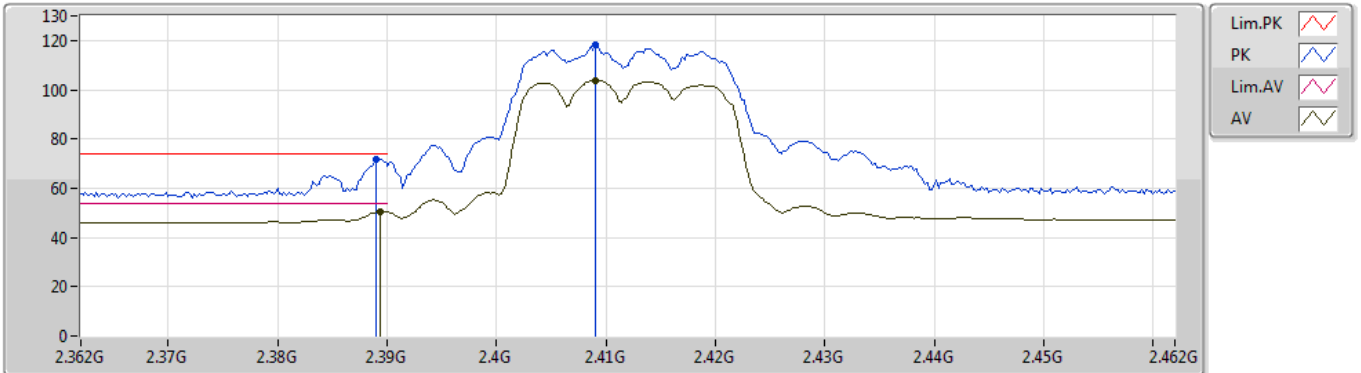
EUT Y_4TX
Setting 75
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.39G	72.04	74.00	-1.96	31.20	3	Vertical	337	1.43	-	40.84
AV	2.39G	51.04	54.00	-2.96	31.20	3	Vertical	337	1.43	-	19.84
PK	2.405G	119.29	Inf	-Inf	31.24	3	Vertical	337	1.43	-	88.05
AV	2.4148G	106.46	Inf	-Inf	31.26	3	Vertical	337	1.43	-	75.20

802.11ax HEW20_Nss1,(MCS0)_4TX

18/10/2019

2412MHz_TX



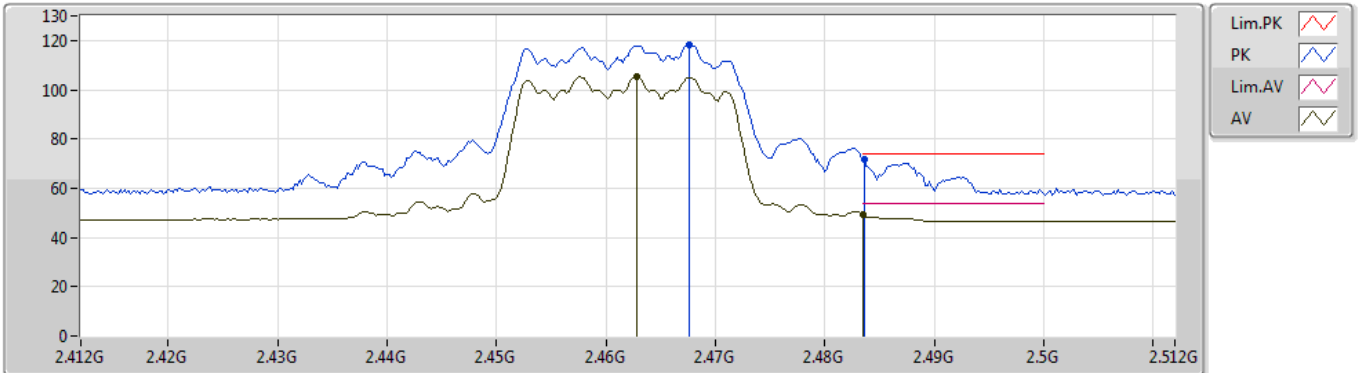
EUT Y_4TX
Setting 75
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.389G	71.85	74.00	-2.15	31.20	3	Horizontal	195	1.69	-	40.65
AV	2.3894G	50.70	54.00	-3.30	31.20	3	Horizontal	195	1.69	-	19.50
PK	2.409G	118.08	Inf	-Inf	31.24	3	Horizontal	195	1.69	-	86.84
AV	2.409G	103.69	Inf	-Inf	31.24	3	Horizontal	195	1.69	-	72.45

802.11ax HEW20_Nss1,(MCS0)_4TX

18/10/2019

2462MHz_TX



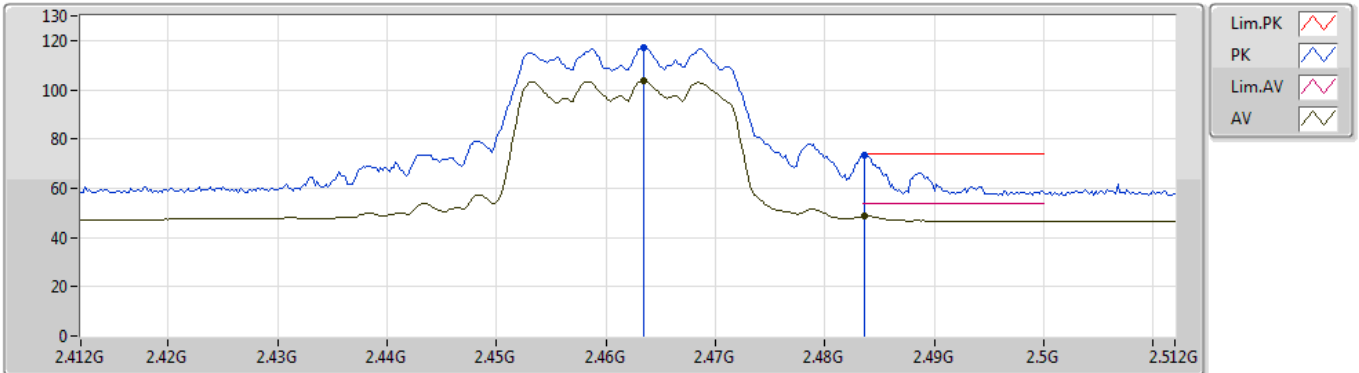
EUT Y_4TX
Setting 75
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.4676G	118.36	Inf	-Inf	31.37	3	Vertical	309	2.20	-	86.99
AV	2.4628G	105.41	Inf	-Inf	31.36	3	Vertical	309	2.20	-	74.05
PK	2.4836G	72.00	74.00	-2.00	31.39	3	Vertical	309	2.20	-	40.61
AV	2.4835G	49.46	54.00	-4.54	31.39	3	Vertical	309	2.20	-	18.07

802.11ax HEW20_Nss1,(MCS0)_4TX

18/10/2019

2462MHz_TX



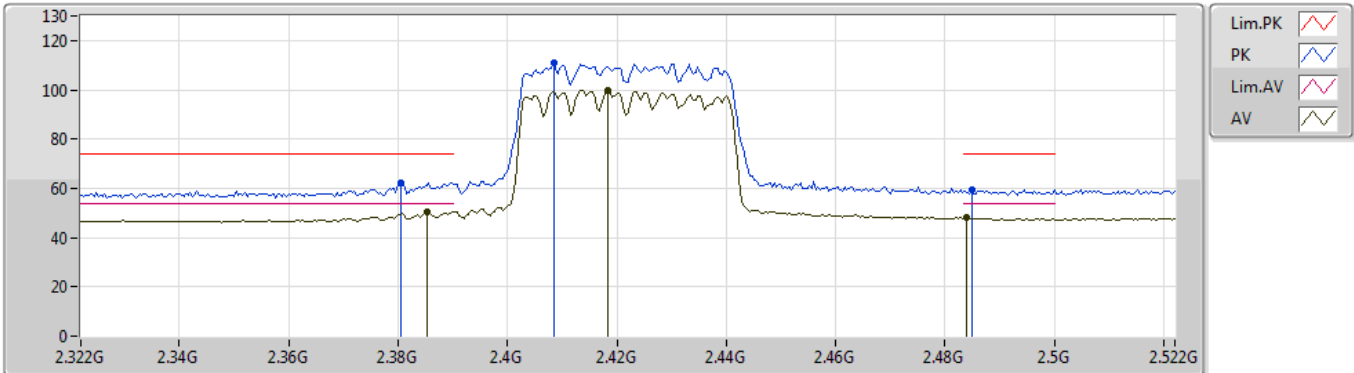
EUT Y_4TX
Setting 75
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.4634G	117.12	Inf	-Inf	31.36	3	Horizontal	139	1.81	-	85.76
AV	2.4634G	103.65	Inf	-Inf	31.36	3	Horizontal	139	1.81	-	72.29
PK	2.4836G	73.18	74.00	-0.82	31.39	3	Horizontal	139	1.81	-	41.79
AV	2.4836G	48.76	54.00	-5.24	31.39	3	Horizontal	139	1.81	-	17.37

802.11ax HEW40_Nss1,(MCS0)_4TX

17/10/2019

2422MHz_TX



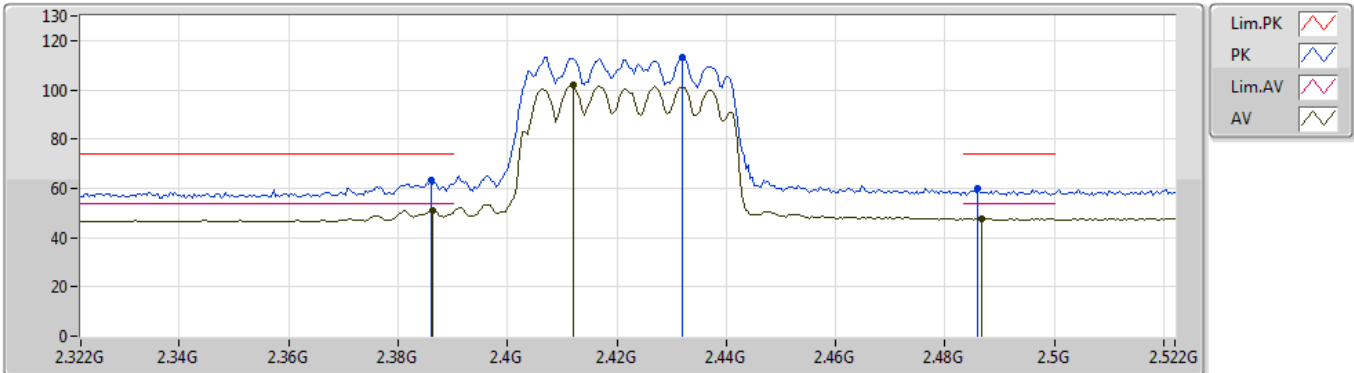
EUT Y_4TX
Setting 66
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3804G	62.23	74.00	-11.77	31.18	3	Vertical	312	1.82	-	31.05
AV	2.3852G	50.22	54.00	-3.78	31.19	3	Vertical	312	1.82	-	19.03
PK	2.4084G	110.86	Inf	-Inf	31.24	3	Vertical	312	1.82	-	79.62
AV	2.4184G	99.72	Inf	-Inf	31.27	3	Vertical	312	1.82	-	68.45
PK	2.4848G	59.23	74.00	-14.77	31.40	3	Vertical	312	1.82	-	27.83
AV	2.484G	47.96	54.00	-6.04	31.39	3	Vertical	312	1.82	-	16.57

802.11ax HEW40_Nss1,(MCS0)_4TX

17/10/2019

2422MHz_TX



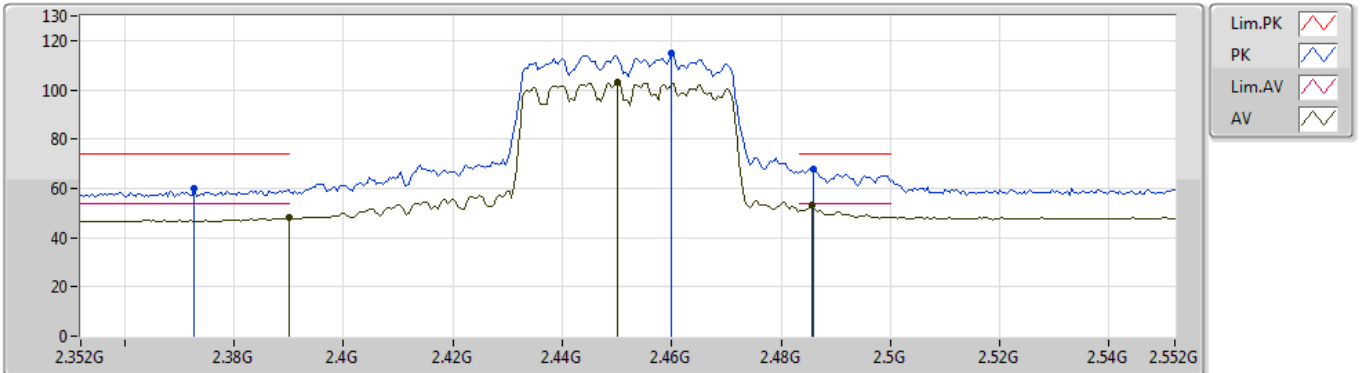
EUT Y_4TX
Setting 66
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.386G	63.09	74.00	-10.91	31.19	3	Horizontal	184	1.50	-	31.90
AV	2.3864G	51.14	54.00	-2.86	31.20	3	Horizontal	184	1.50	-	19.94
PK	2.432G	113.29	Inf	-Inf	31.29	3	Horizontal	184	1.50	-	82.00
AV	2.412G	101.71	Inf	-Inf	31.25	3	Horizontal	184	1.50	-	70.46
PK	2.486G	59.78	74.00	-14.22	31.40	3	Horizontal	184	1.50	-	28.38
AV	2.4868G	47.68	54.00	-6.32	31.40	3	Horizontal	184	1.50	-	16.28

802.11ax HEW40_Nss1,(MCS0)_4TX

17/10/2019

2452MHz_TX



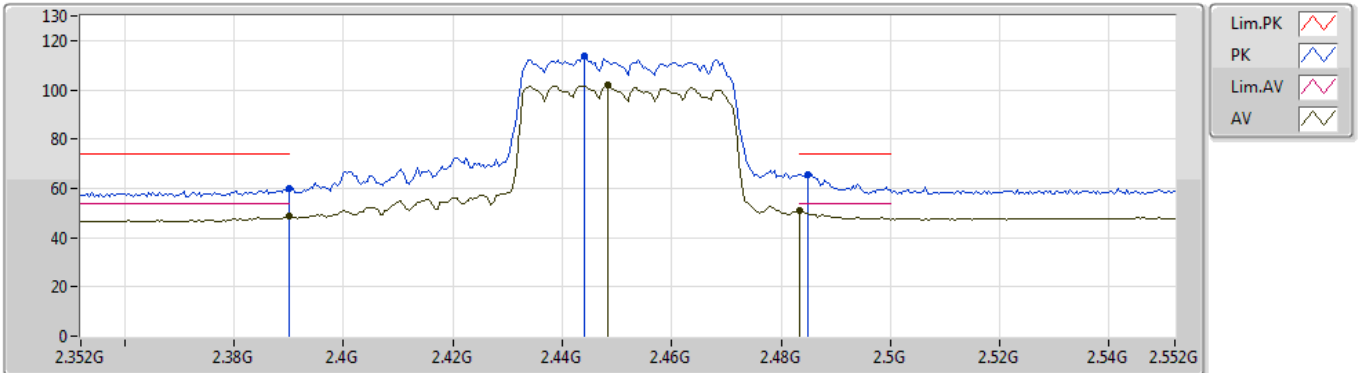
EUT Y_4TX
Setting 77
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3728G	59.81	74.00	-14.19	31.16	3	Vertical	306	2.36	-	28.65
AV	2.39G	47.93	54.00	-6.07	31.20	3	Vertical	306	2.36	-	16.73
PK	2.46G	114.82	Inf	-Inf	31.35	3	Vertical	306	2.36	-	83.47
AV	2.45G	102.83	Inf	-Inf	31.33	3	Vertical	306	2.36	-	71.50
PK	2.486G	67.75	74.00	-6.25	31.40	3	Vertical	306	2.36	-	36.35
AV	2.4856G	52.98	54.00	-1.02	31.40	3	Vertical	306	2.36	-	21.58

802.11ax HEW40_Nss1,(MCS0)_4TX

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2452MHz_TX



EUT Y_4TX
Setting 77
02-W-3
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.39G	59.86	74.00	-14.14	31.20	3	Horizontal	169	1.47	-	28.66			
AV	2.39G	48.59	54.00	-5.41	31.20	3	Horizontal	169	1.47	-	17.39			
PK	2.444G	114.02	Inf	-Inf	31.32	3	Horizontal	169	1.47	-	82.70			
AV	2.4484G	101.82	Inf	-Inf	31.33	3	Horizontal	169	1.47	-	70.49			
PK	2.4848G	65.82	74.00	-8.18	31.40	3	Horizontal	169	1.47	-	34.42			
AV	2.4835G	50.95	54.00	-3.05	31.39	3	Horizontal	169	1.47	-	19.56			



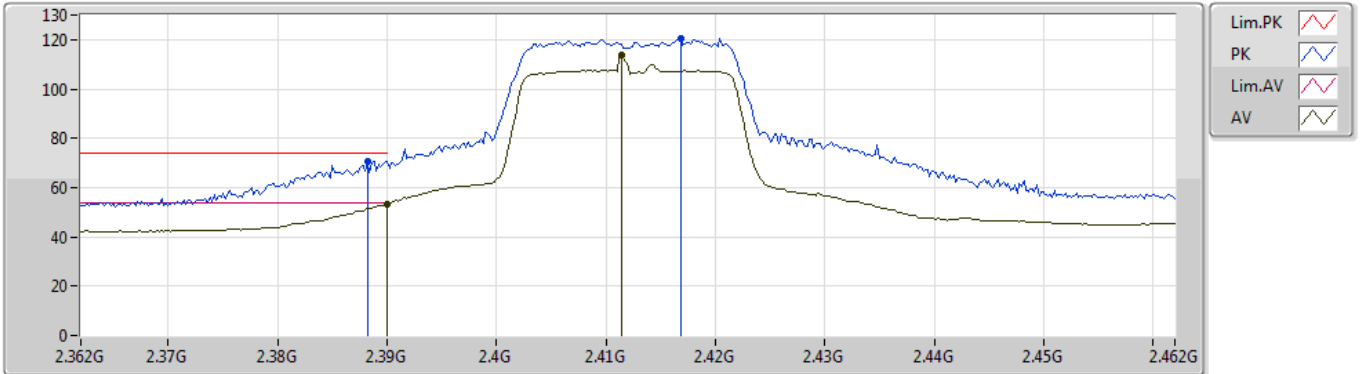
Summary

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	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	Pass	PK	2.4835G	73.93	74.00	-0.07	30.05	3	Vertical	305	1.80	-

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2412MHz_TX



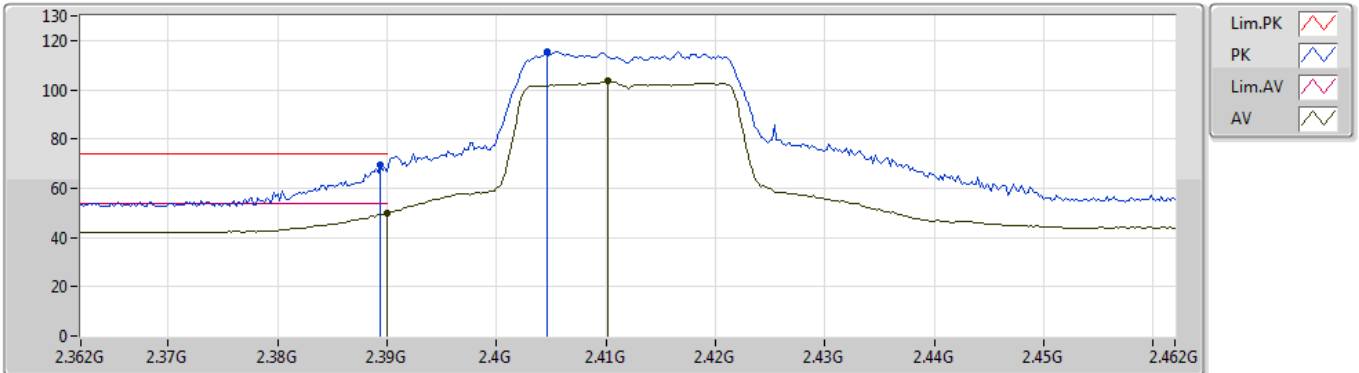
EUT_Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.3882G	70.72	74.00	-3.28	29.84	3	Vertical	315	1.94	-	40.88			
AV	2.39G	53.51	54.00	-0.49	29.84	3	Vertical	315	1.94	-	23.67			
PK	2.4168G	120.62	Inf	-Inf	29.88	3	Vertical	315	1.94	-	90.74			
AV	2.4114G	113.80	Inf	-Inf	29.87	3	Vertical	315	1.94	-	83.93			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2412MHz_TX



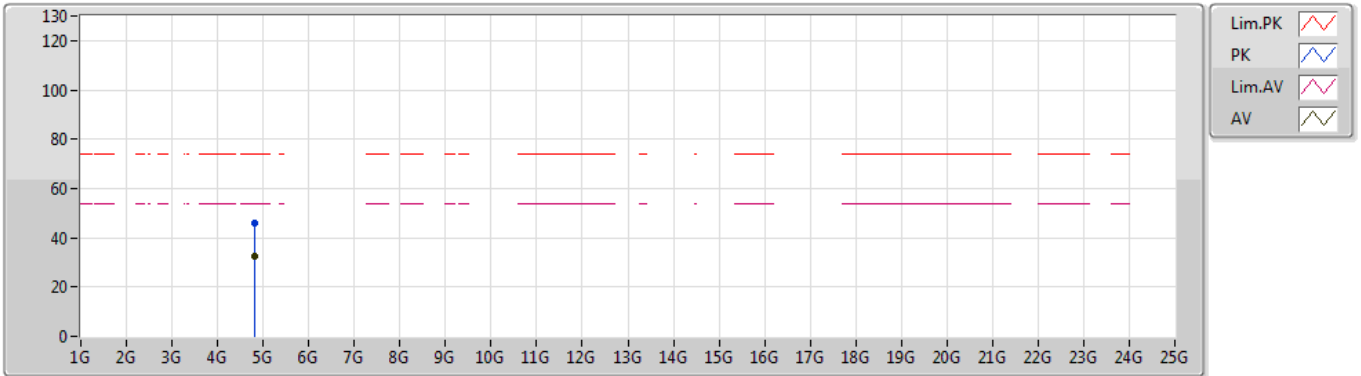
EUT Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.3894G	69.68	74.00	-4.32	29.84	3	Horizontal	184	1.80	-	39.84			
AV	2.39G	49.94	54.00	-4.06	29.84	3	Horizontal	184	1.80	-	20.10			
PK	2.4046G	115.61	Inf	-Inf	29.85	3	Horizontal	184	1.80	-	85.76			
AV	2.4102G	103.60	Inf	-Inf	29.87	3	Horizontal	184	1.80	-	73.73			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2412MHz_TX



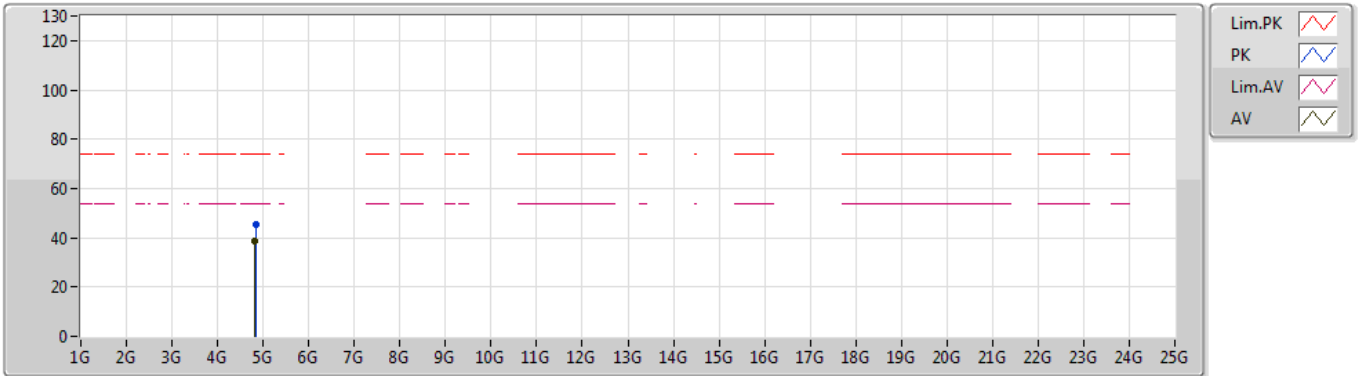
EUT Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.81848G	46.17	74.00	-27.83	2.95	3	Vertical	186	2.75	-	43.22			
AV	4.818G	32.29	54.00	-21.71	2.94	3	Vertical	186	2.75	-	29.35			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2412MHz_TX



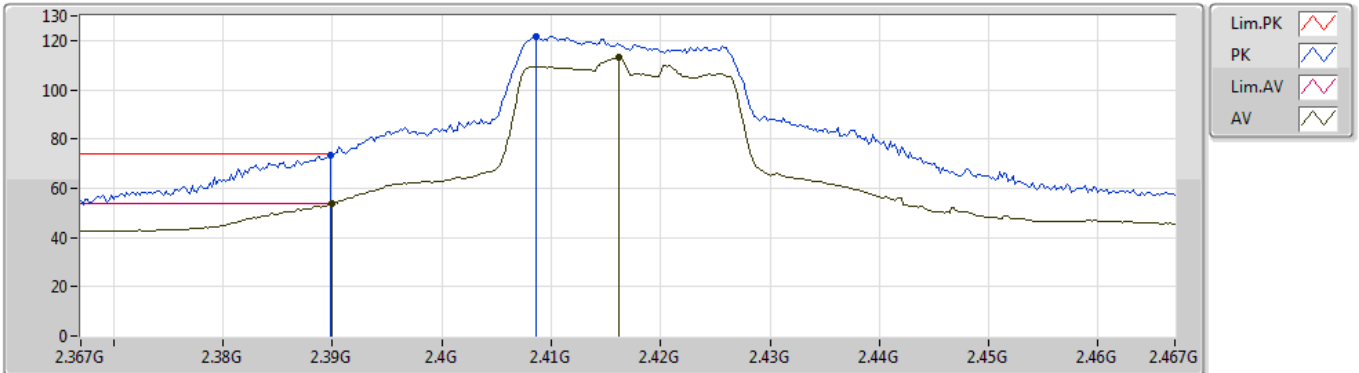
EUT Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.83678G	45.64	74.00	-28.36	3.00	3	Horizontal	345	2.89	-	42.64			
AV	4.82394G	38.50	54.00	-15.50	2.96	3	Horizontal	345	2.89	-	35.54			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2417MHz_TX



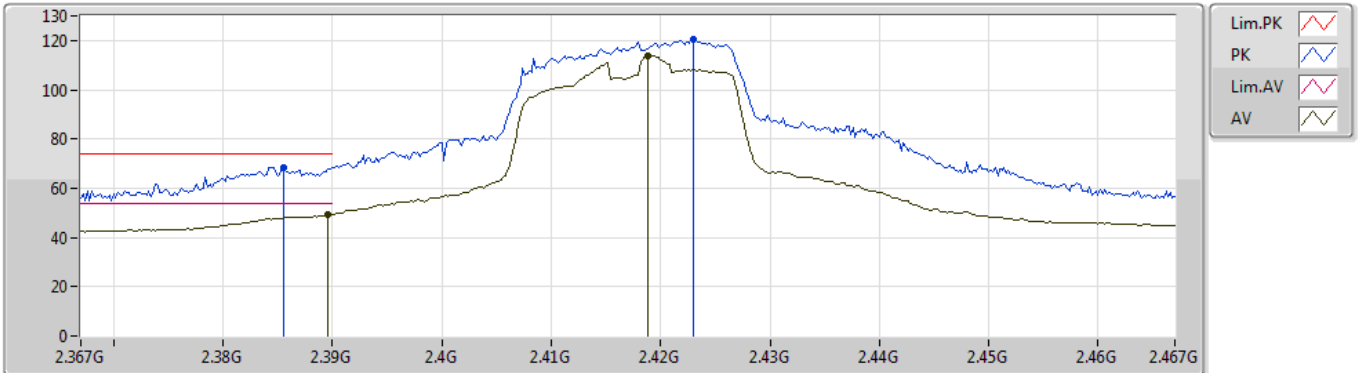
EUT Y_4TX
Setting 89
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3898G	73.26	74.00	-0.74	29.84	3	Vertical	315	1.50	-	43.42
AV	2.39G	53.68	54.00	-0.32	29.84	3	Vertical	315	1.50	-	23.84
PK	2.4086G	121.47	Inf	-Inf	29.86	3	Vertical	315	1.50	-	91.61
AV	2.4162G	113.09	Inf	-Inf	29.88	3	Vertical	315	1.50	-	83.21

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2417MHz_TX



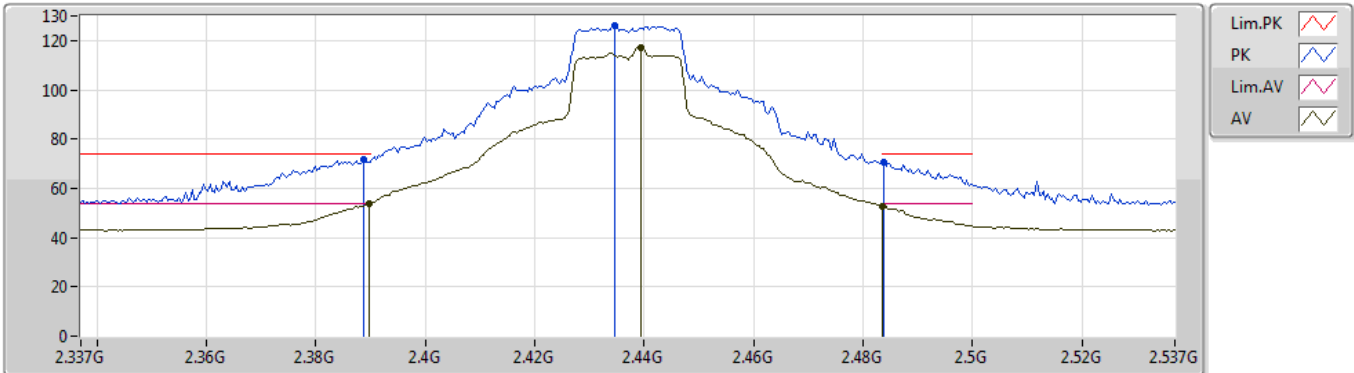
EUT Y_4TX
Setting 89
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3856G	68.42	74.00	-5.58	29.84	3	Horizontal	170	1.50	-	38.58
AV	2.3896G	49.37	54.00	-4.63	29.84	3	Horizontal	170	1.50	-	19.53
PK	2.423G	120.27	Inf	-Inf	29.90	3	Horizontal	170	1.50	-	90.37
AV	2.4188G	113.72	Inf	-Inf	29.89	3	Horizontal	170	1.50	-	83.83

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



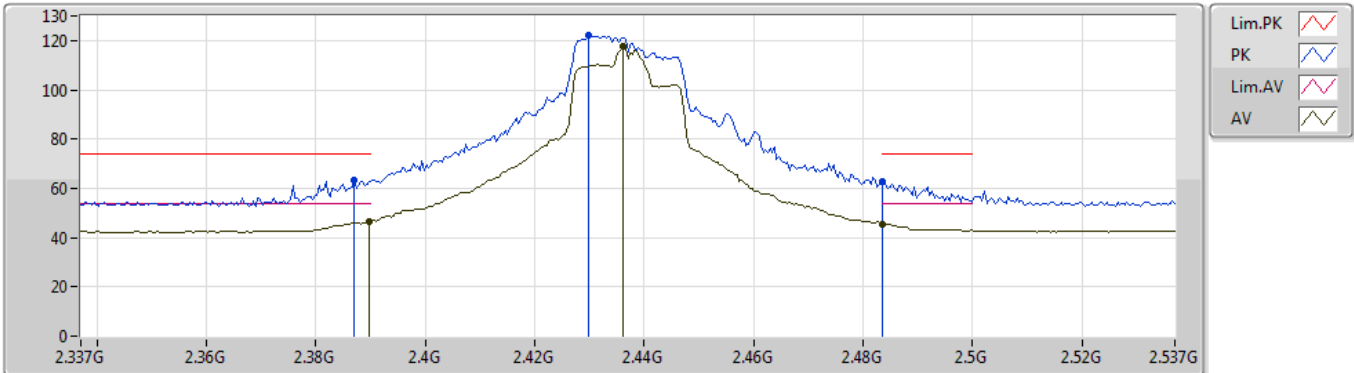
EUT Y_4TX
Setting 107
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3886G	71.45	74.00	-2.55	29.84	3	Vertical	304	1.96	-	41.61
AV	2.3898G	53.82	54.00	-0.18	29.84	3	Vertical	304	1.96	-	23.98
PK	2.4346G	126.30	Inf	-Inf	29.93	3	Vertical	304	1.96	-	96.37
AV	2.4394G	117.39	Inf	-Inf	29.94	3	Vertical	304	1.96	-	87.45
PK	2.4838G	70.60	74.00	-3.40	30.05	3	Vertical	304	1.96	-	40.55
AV	2.4835G	52.82	54.00	-1.18	30.05	3	Vertical	304	1.96	-	22.77

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



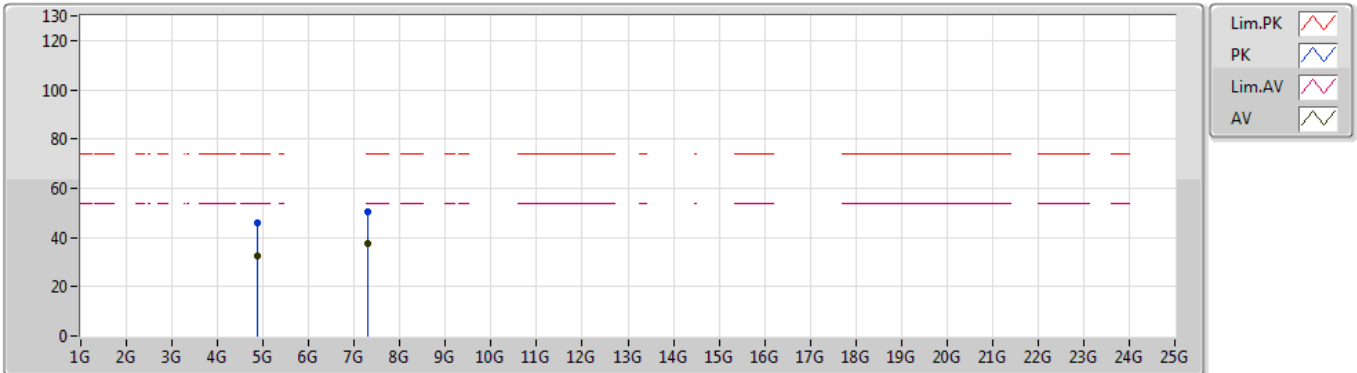
EUT Y_4TX
Setting 107
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.387G	63.21	74.00	-10.79	29.84	3	Horizontal	235	2.18	-	33.37
AV	2.3898G	46.54	54.00	-7.46	29.84	3	Horizontal	235	2.18	-	16.70
PK	2.4298G	121.90	Inf	-Inf	29.91	3	Horizontal	235	2.18	-	91.99
AV	2.4362G	117.40	Inf	-Inf	29.93	3	Horizontal	235	2.18	-	87.47
PK	2.4835G	62.70	74.00	-11.30	30.05	3	Horizontal	235	2.18	-	32.65
AV	2.4835G	45.53	54.00	-8.47	30.05	3	Horizontal	235	2.18	-	15.48

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



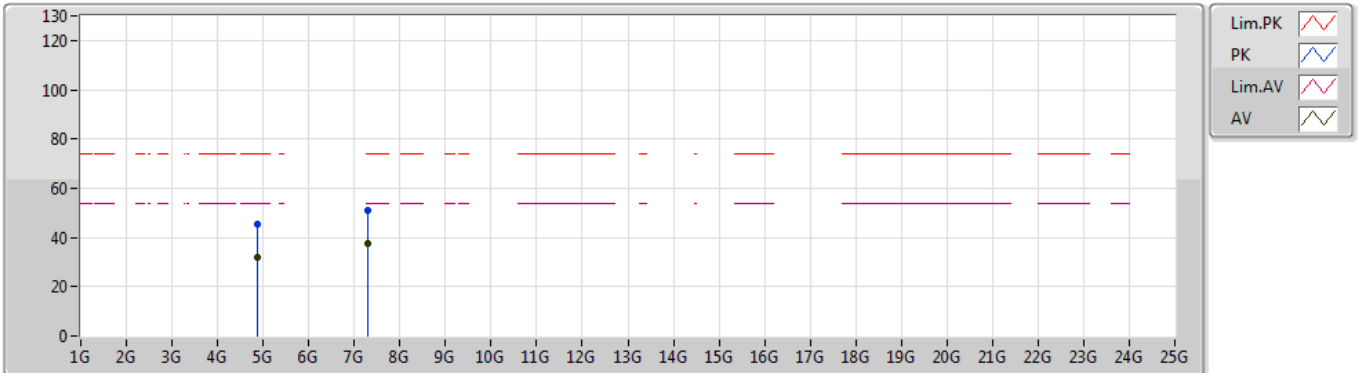
EUT Y_4TX
Setting 107
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.87862G	45.76	74.00	-28.24	3.14	3	Vertical	83	1.05	-	42.62			
AV	4.88138G	32.33	54.00	-21.67	3.14	3	Vertical	83	1.05	-	29.19			
PK	7.30362G	50.33	74.00	-23.67	8.48	3	Vertical	57	1.19	-	41.85			
AV	7.29972G	37.37	54.00	-16.63	8.48	3	Vertical	57	1.19	-	28.89			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



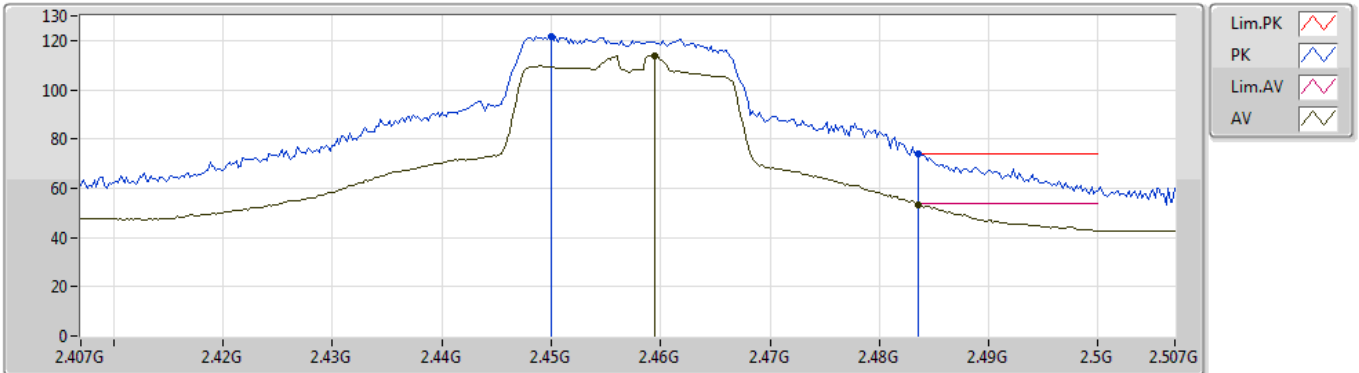
EUT Y_4TX
Setting 107
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.87628G	45.16	74.00	-28.84	3.13	3	Horizontal	180	1.13	-	42.03			
AV	4.86686G	32.16	54.00	-21.84	3.10	3	Horizontal	180	1.13	-	29.06			
PK	7.29942G	51.02	74.00	-22.98	8.48	3	Horizontal	1	1.64	-	42.54			
AV	7.29786G	37.67	54.00	-16.33	8.47	3	Horizontal	1	1.64	-	29.20			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2457MHz_TX



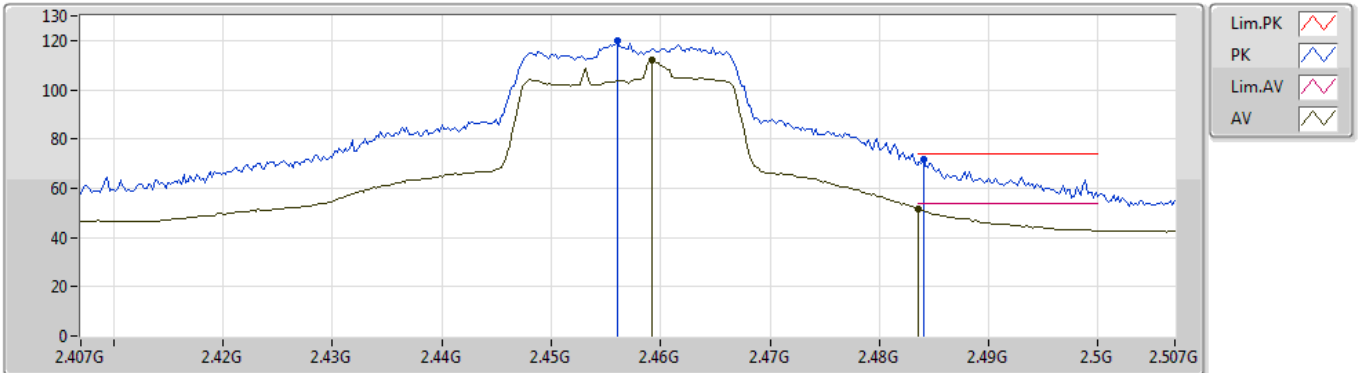
EUT Y_4TX
Setting 92
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.45G	121.81	Inf	-Inf	29.97	3	Vertical	346	1.29	-	91.84			
AV	2.4594G	114.01	Inf	-Inf	29.99	3	Vertical	346	1.29	-	84.02			
PK	2.4836G	73.69	74.00	-0.31	30.05	3	Vertical	346	1.29	-	43.64			
AV	2.4835G	53.50	54.00	-0.50	30.05	3	Vertical	346	1.29	-	23.45			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2457MHz_TX



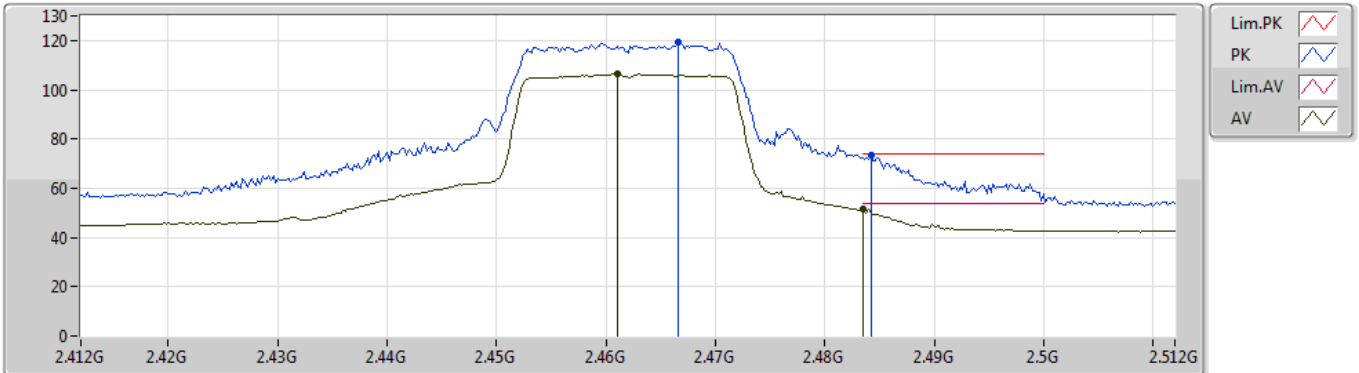
EUT Y_4TX
Setting 92
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.456G	119.82	Inf	-Inf	29.98	3	Horizontal	175	1.50	-	89.84
AV	2.4592G	111.82	Inf	-Inf	29.99	3	Horizontal	175	1.50	-	81.83
PK	2.484G	71.61	74.00	-2.39	30.05	3	Horizontal	175	1.50	-	41.56
AV	2.4835G	51.75	54.00	-2.25	30.05	3	Horizontal	175	1.50	-	21.70

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2462MHz_TX



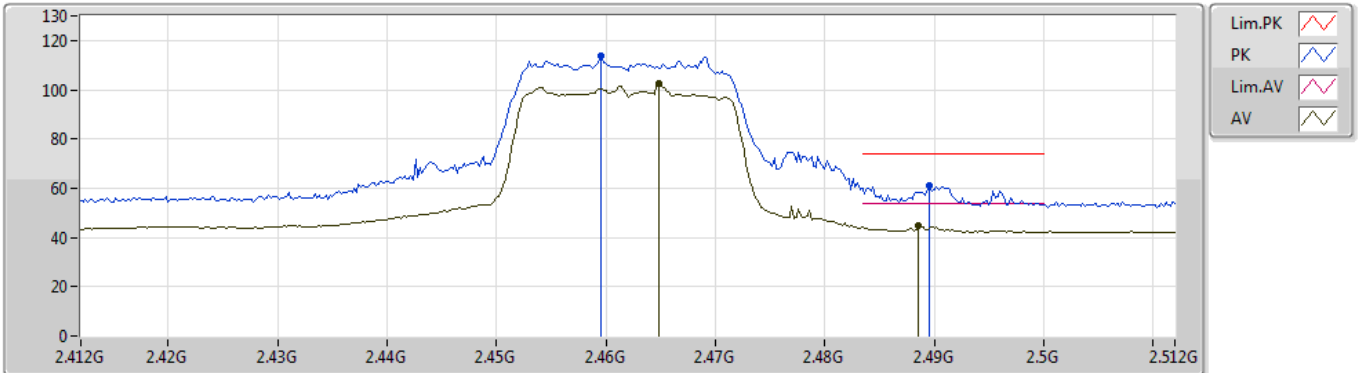
EUT Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.4666G	119.24	Inf	-Inf	30.00	3	Vertical	312	1.16	-	89.24			
AV	2.461G	106.28	Inf	-Inf	29.99	3	Vertical	312	1.16	-	76.29			
PK	2.4842G	73.46	74.00	-0.54	30.05	3	Vertical	312	1.16	-	43.41			
AV	2.4835G	51.48	54.00	-2.52	30.05	3	Vertical	312	1.16	-	21.43			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2462MHz_TX



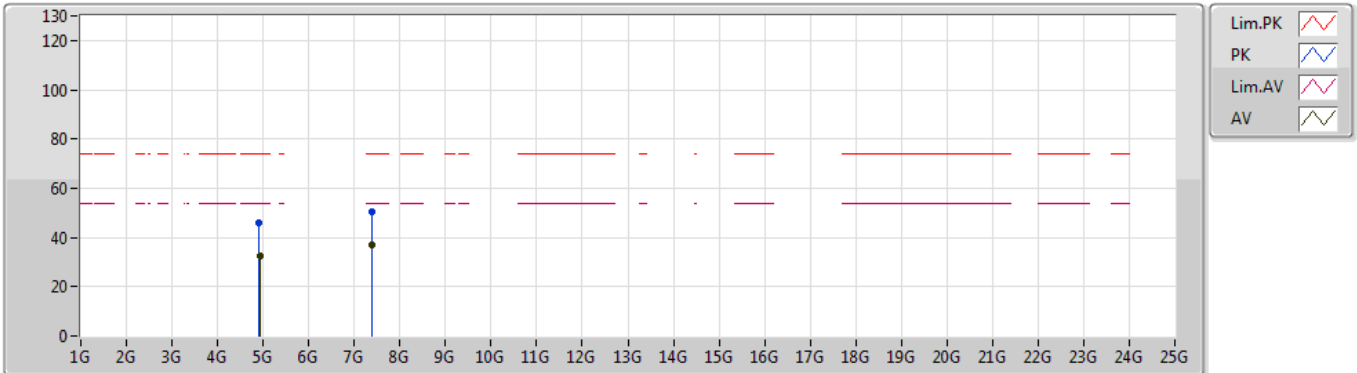
EUT Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.4596G	113.92	Inf	-Inf	29.99	3	Horizontal	137	2.86	-	83.93
AV	2.4648G	102.43	Inf	-Inf	30.00	3	Horizontal	137	2.86	-	72.43
PK	2.4896G	60.81	74.00	-13.19	30.06	3	Horizontal	137	2.86	-	30.75
AV	2.4886G	44.65	54.00	-9.35	30.06	3	Horizontal	137	2.86	-	14.59

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2462MHz_TX



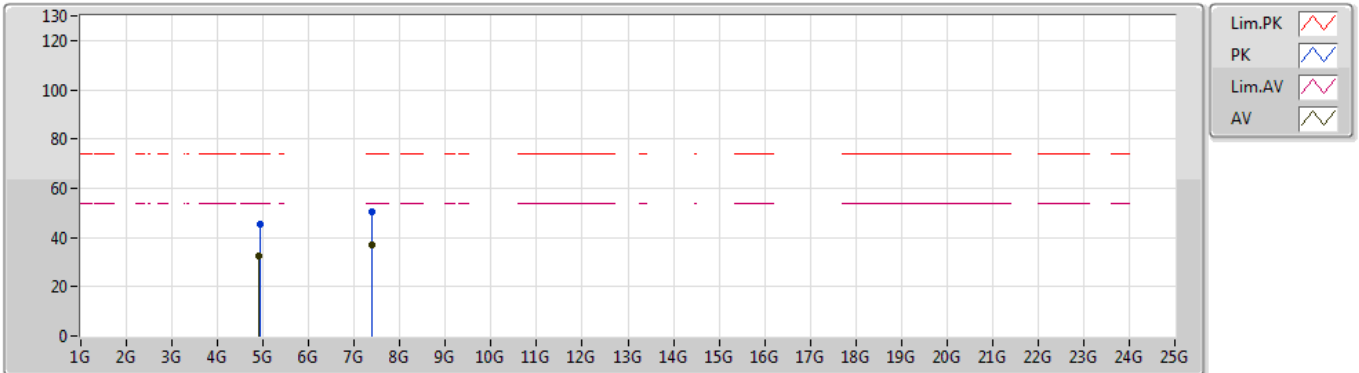
EUT Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.9162G	45.72	74.00	-28.28	3.24	3	Vertical	19	1.68	-	42.48			
AV	4.92988G	32.38	54.00	-21.62	3.26	3	Vertical	19	1.68	-	29.12			
PK	7.37346G	50.34	74.00	-23.66	8.51	3	Vertical	33	1.90	-	41.83			
AV	7.37178G	36.92	54.00	-17.08	8.51	3	Vertical	33	1.90	-	28.41			

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

29/10/2019

2462MHz_TX



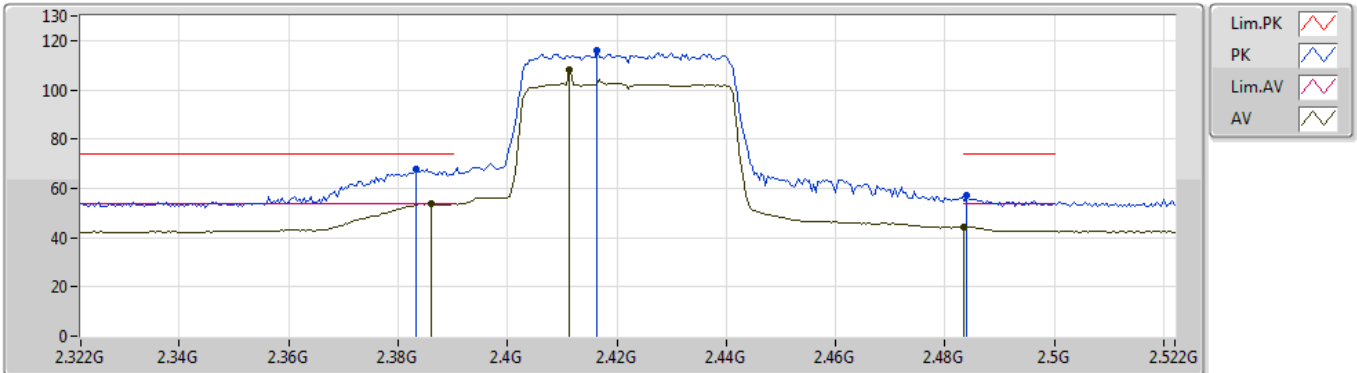
EUT Y_4TX
Setting 80
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.92652G	45.56	74.00	-28.44	3.25	3	Horizontal	85	1.86	-	42.31			
AV	4.91614G	32.53	54.00	-21.47	3.24	3	Horizontal	85	1.86	-	29.29			
PK	7.374G	50.68	74.00	-23.32	8.51	3	Horizontal	10	2.28	-	42.17			
AV	7.37172G	36.98	54.00	-17.02	8.51	3	Horizontal	10	2.28	-	28.47			

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2422MHz_TX



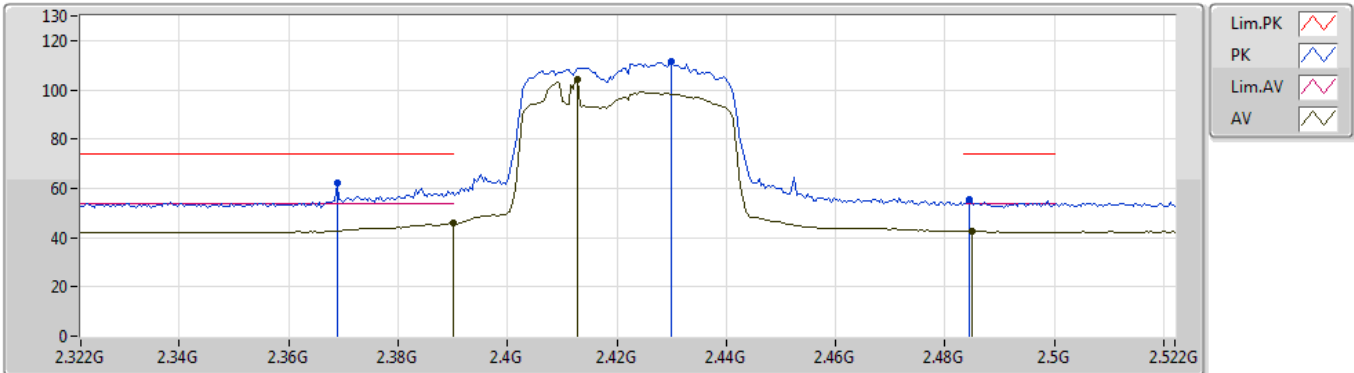
EUT Y_4TX
Setting 70
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3832G	67.62	74.00	-6.38	29.85	3	Vertical	317	2.05	-	37.77
AV	2.386G	53.73	54.00	-0.27	29.84	3	Vertical	317	2.05	-	23.89
PK	2.4164G	115.85	Inf	-Inf	29.88	3	Vertical	317	2.05	-	85.97
AV	2.4112G	108.00	Inf	-Inf	29.87	3	Vertical	317	2.05	-	78.13
PK	2.484G	57.28	74.00	-16.72	30.05	3	Vertical	317	2.05	-	27.23
AV	2.4835G	44.48	54.00	-9.52	30.05	3	Vertical	317	2.05	-	14.43

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2422MHz_TX



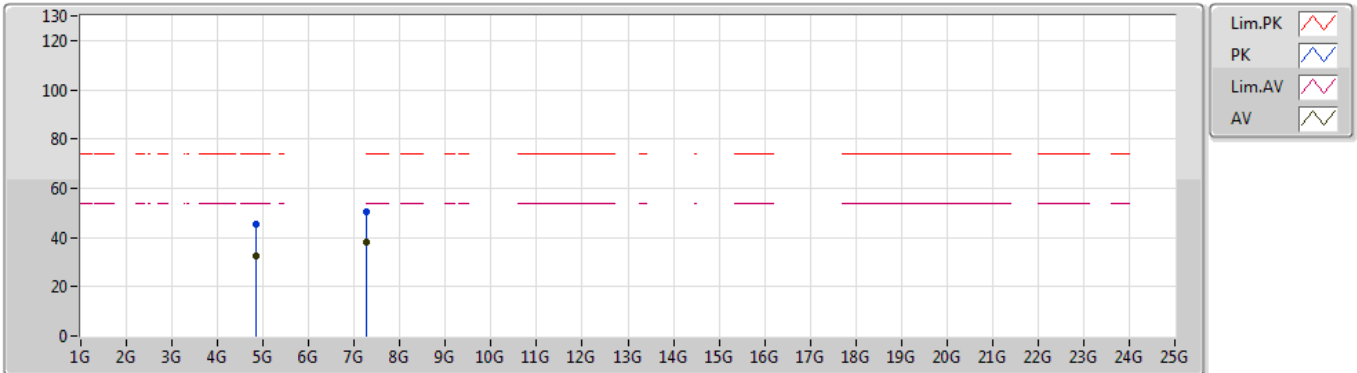
EUT Y_4TX
Setting 70
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3688G	62.04	74.00	-11.96	29.85	3	Horizontal	202	1.96	-	32.19
AV	2.39G	45.74	54.00	-8.26	29.84	3	Horizontal	202	1.96	-	15.90
PK	2.43G	111.34	Inf	-Inf	29.91	3	Horizontal	202	1.96	-	81.43
AV	2.4128G	104.48	Inf	-Inf	29.88	3	Horizontal	202	1.96	-	74.60
PK	2.4844G	55.32	74.00	-18.68	30.05	3	Horizontal	202	1.96	-	25.27
AV	2.4848G	42.71	54.00	-11.29	30.05	3	Horizontal	202	1.96	-	12.66

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2422MHz_TX



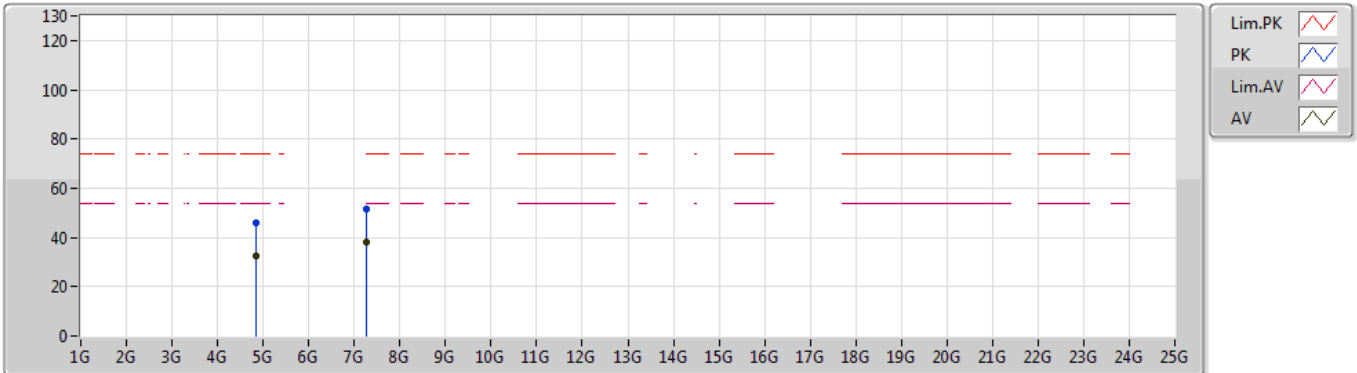
EUT Y_4TX
Setting 70
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.83002G	45.49	74.00	-28.51	2.98	3	Vertical	193	2.40	-	42.51			
AV	4.85594G	32.45	54.00	-21.55	3.06	3	Vertical	193	2.40	-	29.39			
PK	7.25226G	50.52	74.00	-23.48	8.31	3	Vertical	55	1.29	-	42.21			
AV	7.25214G	37.84	54.00	-16.16	8.31	3	Vertical	55	1.29	-	29.53			

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2422MHz_TX



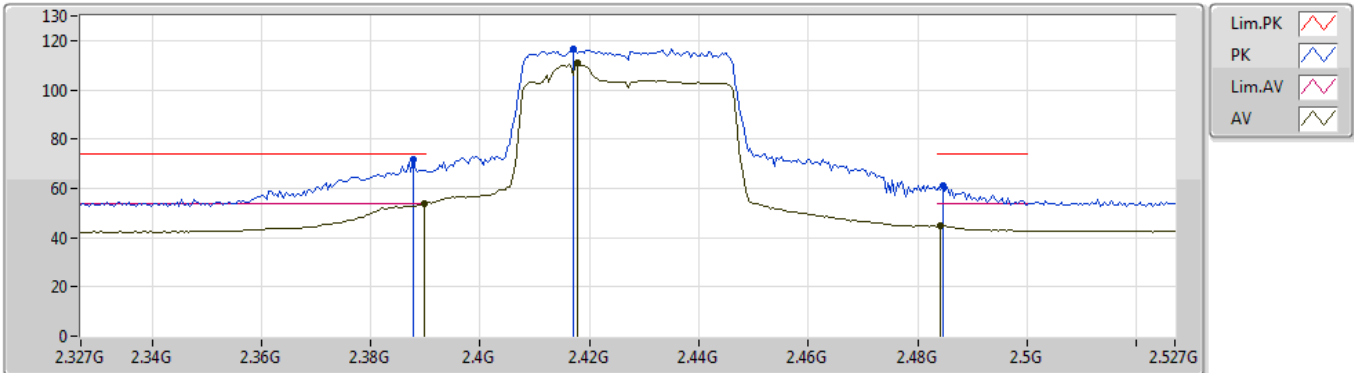
EUT Y_4TX
Setting 70
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.85642G	45.83	74.00	-28.17	3.06	3	Horizontal	104	1.71	-	42.77			
AV	4.84274G	32.36	54.00	-21.64	3.03	3	Horizontal	104	1.71	-	29.33			
PK	7.2654G	51.60	74.00	-22.40	8.36	3	Horizontal	175	2.47	-	43.24			
AV	7.25124G	37.97	54.00	-16.03	8.30	3	Horizontal	175	2.47	-	29.67			

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2427MHz_TX



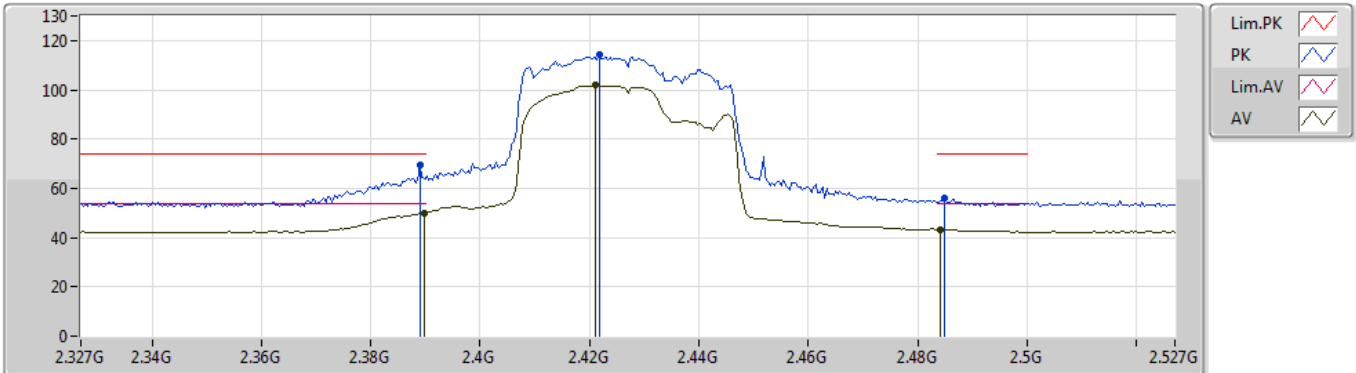
EUT Y_4TX
Setting 75
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.3878G	71.81	74.00	-2.19	29.84	3	Vertical	299	1.98	-	41.97			
AV	2.3898G	53.53	54.00	-0.47	29.84	3	Vertical	299	1.98	-	23.69			
PK	2.417G	116.44	Inf	-Inf	29.88	3	Vertical	299	1.98	-	86.56			
AV	2.4178G	110.91	Inf	-Inf	29.89	3	Vertical	299	1.98	-	81.02			
PK	2.4846G	61.02	74.00	-12.98	30.05	3	Vertical	299	1.98	-	30.97			
AV	2.4842G	44.70	54.00	-9.30	30.05	3	Vertical	299	1.98	-	14.65			

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2427MHz_TX



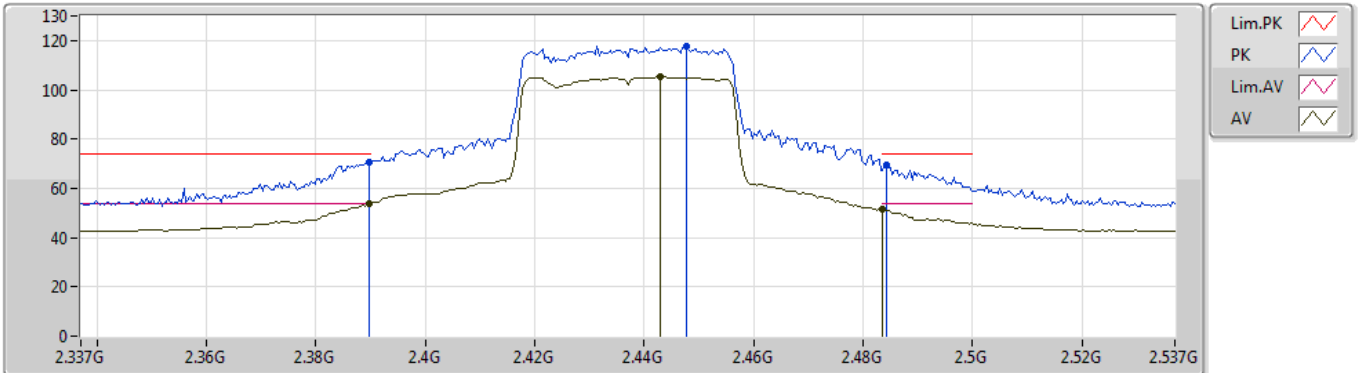
EUT Y_4TX
Setting 75
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.389G	69.21	74.00	-4.79	29.84	3	Horizontal	159	1.49	-	39.37
AV	2.3898G	50.15	54.00	-3.85	29.84	3	Horizontal	159	1.49	-	20.31
PK	2.4218G	114.46	Inf	-Inf	29.89	3	Horizontal	159	1.49	-	84.57
AV	2.421G	101.93	Inf	-Inf	29.89	3	Horizontal	159	1.49	-	72.04
PK	2.485G	56.11	74.00	-17.89	30.05	3	Horizontal	159	1.49	-	26.06
AV	2.4842G	43.37	54.00	-10.63	30.05	3	Horizontal	159	1.49	-	13.32

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



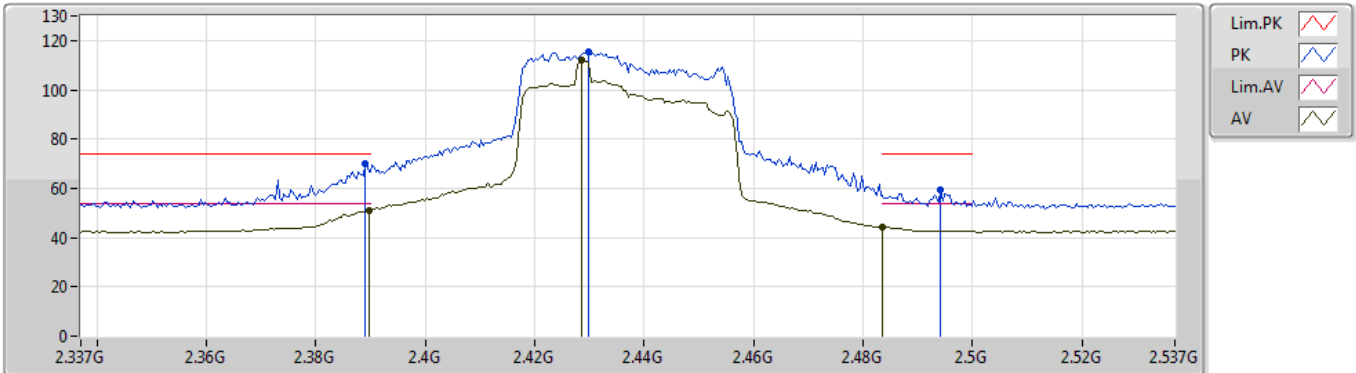
EUT Y_4TX
Setting 86
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3898G	70.71	74.00	-3.29	29.84	3	Vertical	308	1.35	-	40.87
AV	2.3898G	53.61	54.00	-0.39	29.84	3	Vertical	308	1.35	-	23.77
PK	2.4478G	117.76	Inf	-Inf	29.96	3	Vertical	308	1.35	-	87.80
AV	2.443G	105.19	Inf	-Inf	29.95	3	Vertical	308	1.35	-	75.24
PK	2.4842G	69.61	74.00	-4.39	30.05	3	Vertical	308	1.35	-	39.56
AV	2.4835G	51.33	54.00	-2.67	30.05	3	Vertical	308	1.35	-	21.28

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



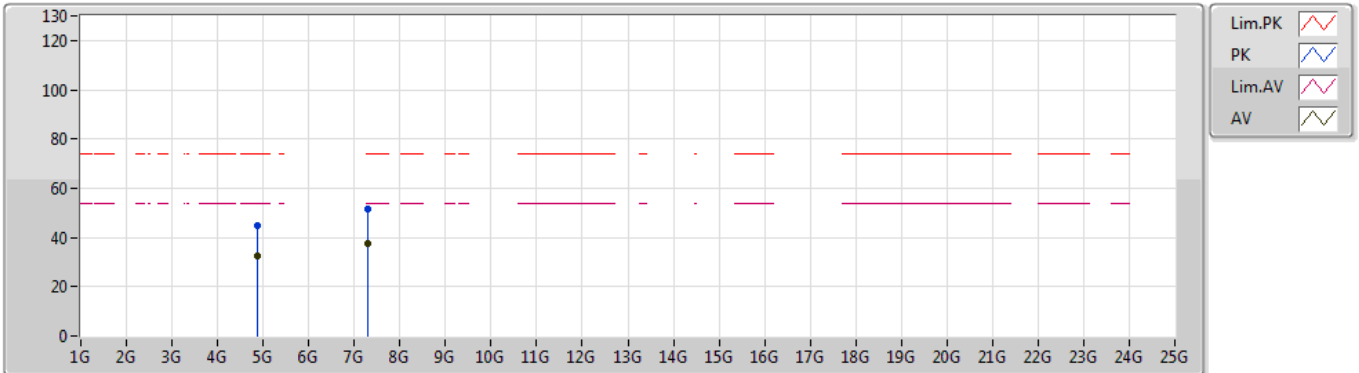
EUT Y_4TX
Setting 86
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.389G	69.99	74.00	-4.01	29.84	3	Horizontal	172	2.39	-	40.15
AV	2.3898G	50.73	54.00	-3.27	29.84	3	Horizontal	172	2.39	-	20.89
PK	2.4298G	115.20	Inf	-Inf	29.91	3	Horizontal	172	2.39	-	85.29
AV	2.4286G	112.11	Inf	-Inf	29.91	3	Horizontal	172	2.39	-	82.20
PK	2.4942G	59.39	74.00	-14.61	30.08	3	Horizontal	172	2.39	-	29.31
AV	2.4835G	44.13	54.00	-9.87	30.05	3	Horizontal	172	2.39	-	14.08

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



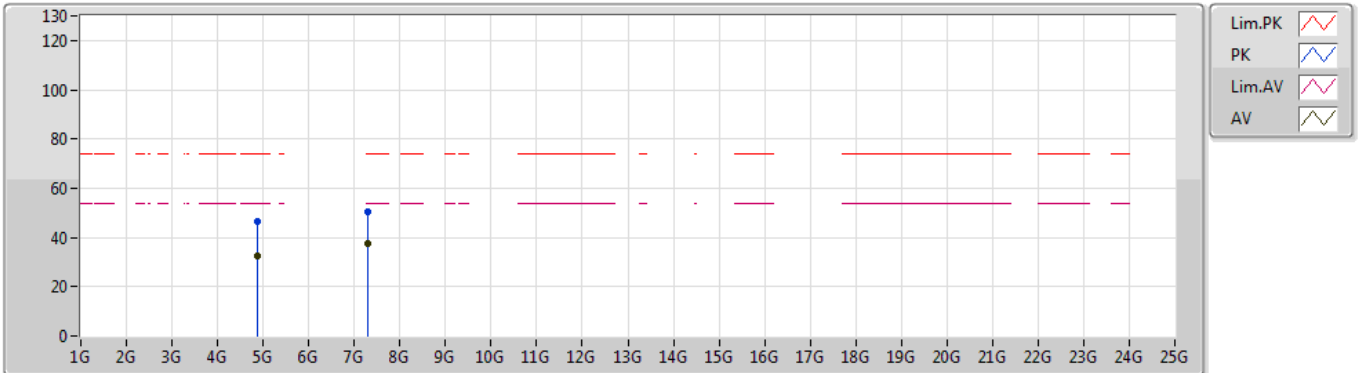
EUT Y_4TX
Setting 86
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.87436G	45.02	74.00	-28.98	3.12	3	Vertical	57	2.67	-	41.90			
AV	4.86404G	32.24	54.00	-21.76	3.09	3	Vertical	57	2.67	-	29.15			
PK	7.29684G	51.43	74.00	-22.57	8.47	3	Vertical	351	2.23	-	42.96			
AV	7.3017G	37.48	54.00	-16.52	8.48	3	Vertical	351	2.23	-	29.00			

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2437MHz_TX



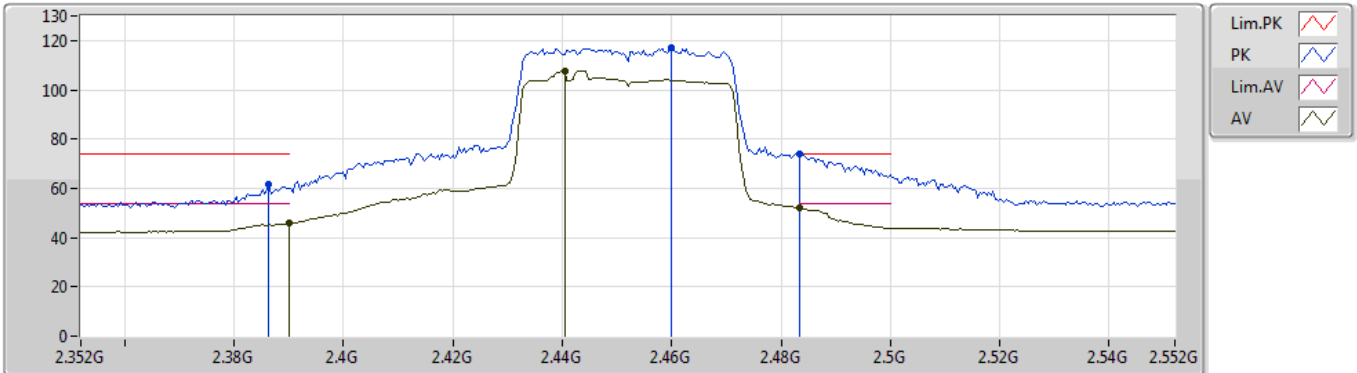
EUT Y_4TX
Setting 86
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.8833G	46.25	74.00	-27.75	3.15	3	Horizontal	39	1.83	-	43.10			
AV	4.8791G	32.59	54.00	-21.41	3.14	3	Horizontal	39	1.83	-	29.45			
PK	7.30464G	50.57	74.00	-23.43	8.48	3	Horizontal	229	2.70	-	42.09			
AV	7.29786G	37.70	54.00	-16.30	8.47	3	Horizontal	229	2.70	-	29.23			

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2452MHz_TX



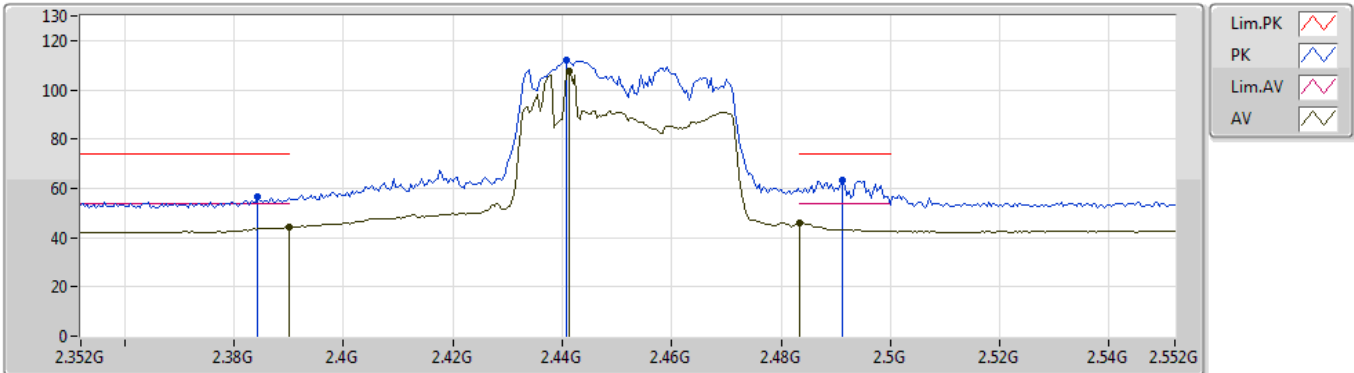
EUT Y_4TX
Setting 77
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3864G	61.50	74.00	-12.50	29.84	3	Vertical	305	1.80	-	31.66
AV	2.39G	45.70	54.00	-8.30	29.84	3	Vertical	305	1.80	-	15.86
PK	2.46G	117.13	Inf	-Inf	29.99	3	Vertical	305	1.80	-	87.14
AV	2.4404G	107.75	Inf	-Inf	29.94	3	Vertical	305	1.80	-	77.81
PK	2.4835G	73.93	74.00	-0.07	30.05	3	Vertical	305	1.80	-	43.88
AV	2.4835G	51.85	54.00	-2.15	30.05	3	Vertical	305	1.80	-	21.80

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2452MHz_TX



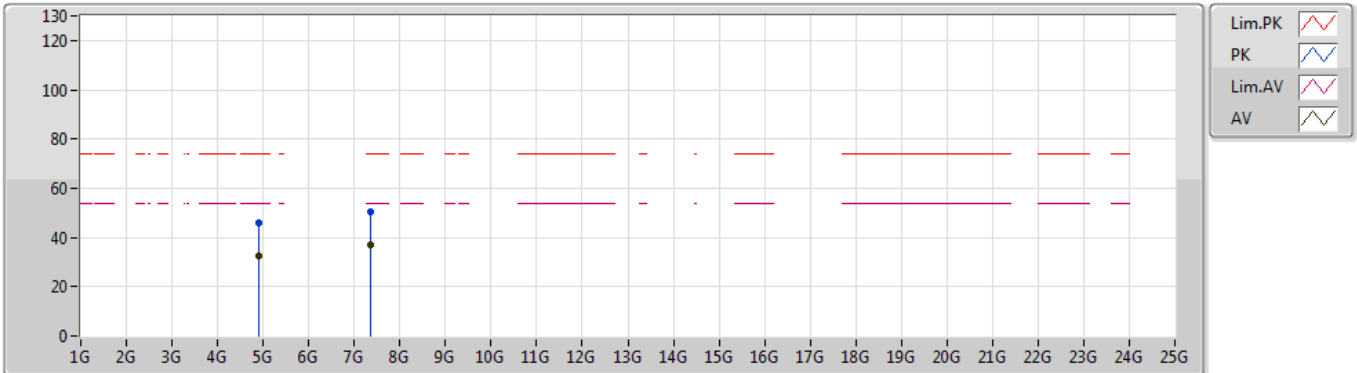
EUT Y_4TX
Setting 77
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3844G	56.69	74.00	-17.31	29.85	3	Horizontal	150	1.80	-	26.84
AV	2.39G	44.21	54.00	-9.79	29.84	3	Horizontal	150	1.80	-	14.37
PK	2.4408G	111.99	Inf	-Inf	29.94	3	Horizontal	150	1.80	-	82.05
AV	2.4412G	107.74	Inf	-Inf	29.94	3	Horizontal	150	1.80	-	77.80
PK	2.4912G	63.04	74.00	-10.96	30.07	3	Horizontal	150	1.80	-	32.97
AV	2.4835G	46.12	54.00	-7.88	30.05	3	Horizontal	150	1.80	-	16.07

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

29/10/2019

2452MHz_TX



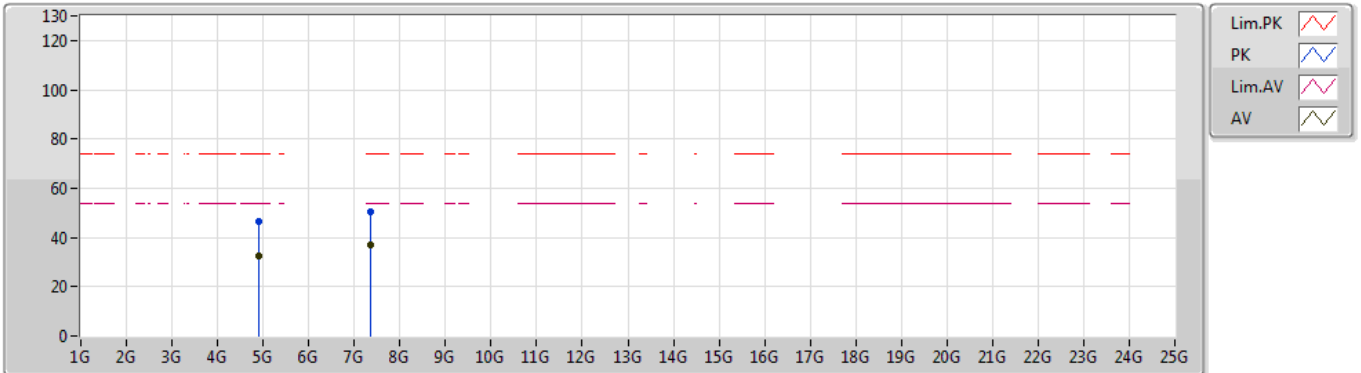
EUT Y_4TX
Setting 77
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.91672G	45.80	74.00	-28.20	3.23	3	Vertical	212	2.58	-	42.57			
AV	4.90394G	32.68	54.00	-21.32	3.21	3	Vertical	212	2.58	-	29.47			
PK	7.35468G	50.43	74.00	-23.57	8.50	3	Vertical	257	1.25	-	41.93			
AV	7.36146G	37.15	54.00	-16.85	8.51	3	Vertical	257	1.25	-	28.64			

802.11ax HEW40-BF_Nss1,(MCS0)_4TX

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2452MHz_TX



EUT Y_4TX
Setting 77
04-C-4
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.91666G	46.26	74.00	-27.74	3.24	3	Horizontal	302	1.11	-	43.02			
AV	4.91314G	32.65	54.00	-21.35	3.24	3	Horizontal	302	1.11	-	29.41			
PK	7.36608G	50.19	74.00	-23.81	8.50	3	Horizontal	126	2.42	-	41.69			
AV	7.36956G	37.09	54.00	-16.91	8.51	3	Horizontal	126	2.42	-	28.58			