



FCC RADIO TEST REPORT

FCC ID : PPQ-O105ER
Equipment : 802.11 a/n/ac + b/g/n Access Point
Brand Name : ARISTA
Model Name : O-105ER
Applicant : LITE-ON TECHNOLOGY CORP.
Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City,
23585 Taiwan
Manufacturer(1) : LITE-ON Technology Corp. Networking Plant
No. 101, Neihuan N. Rd., Nanzi Processing Export,
Nanzi Dist., Kaohsiung City 811, Taiwan (R.O.C.)
Manufacturer(2) : Lite-On Network Communication (Dongguan) Limited
30# QingXi Keji Road, QingXi Town, DongGuan City,
Guangdong Province, China
Standard : 47 CFR FCC Part 15.247

The product was received on Feb. 17, 2020, and testing was started from Feb. 17, 2020 and completed on Mar. 09, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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History of this test report



Summary of Test Result

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

Declaration of Conformity:

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

Comments and Explanations:

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: Cliff Chang

Report Producer: Vicky Huang



1 General Description

1.1 Information

1.1.1 RF General Information

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

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

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 modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.



1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
						2.4GHz	5GHz
1	1	Walsin	RFDPA172500ABLB801	Dipole Antenna	N-type	3.07	4.05
2	2	Walsin	RFDPA172500ABLB801	Dipole Antenna	N-type	3.07	4.05

Note: The above information was declared by manufacturer.

For 2.4GHz function:

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

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

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:

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

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

Port 1 and Port 2 could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.993	0.03	n/a (DC≥=0.98)	n/a (DC≥=0.98)
802.11g	0.965	0.15	2.067m	1k
VHT20	0.985	0.07	n/a (DC≥=0.98)	n/a (DC≥=0.98)
VHT40	0.966	0.15	2.438m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From PoE			
Beamforming Function	<input type="checkbox"/>	With beamforming	<input checked="" type="checkbox"/>	Without beamforming
Function	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/>	Point-to-point
Test Software Version	QRCT V3.0.210.0			

Note: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ FCC KDB 558074 D01 v05r02
- ◆ FCC KDB 662911 D01 v02r01
- ◆ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location				
<input type="checkbox"/>	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	
<input checked="" type="checkbox"/>	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	20.6~21.3°C / 60~62%	Feb. 19, 2020~ Mar. 09, 2020
Radiated (Below 1GHz)	03CH05-CB	Stim Sung	20.3~21°C / 60~61%	Feb. 21, 2020
Radiated (Above 1GHz- Radiated Emission Co-location)	03CH05-CB	Stim Sung	20.3~21°C / 60~61%	Feb. 21, 2020
Radiated (Above 1GHz- Emissions in Restricted Frequency Bands)	03CH04-CB	Stim Sung	18.7~19.3°C / 56~59%	Feb. 17, 2020~ Feb. 18, 2020
AC Conduction	CO02-CB	Peter Wu	24~25°C / 54~55%	Feb. 24, 2020

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	22
2437MHz	23.5
2462MHz	23.5
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	19
2417MHz	21
2437MHz	26
2457MHz	20.5
2462MHz	19.5
VHT20_Nss1,(MCS0)_2TX	-
2412MHz	17.5
2417MHz	21
2437MHz	25.5
2457MHz	21.5
2462MHz	20
VHT40_Nss1,(MCS0)_2TX	-
2422MHz	19.5
2437MHz	20
2452MHz	18

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 VHT20 and VHT40.



2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests

Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	Normal Link
1	EUT + PoE

The Worst Case Mode for Following Conformance Tests

Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests

Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	EUT at X-axis + PoE
2	EUT at Y-axis + PoE
3	EUT at Z-axis + PoE

For operating mode 2 is the worst case and it was record in this test report.

Operating Mode > 1GHz

1	CTX
The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at X axis. So the measurement will follow this same test configuration.	
1	EUT at X-axis + PoE

The Worst Case Mode for Following Conformance Tests

Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	EUT at Y-axis-WLAN 2.4GHz+WLAN 5GHz

The EUT was performed at X axis, Y axis and Z axis position for Radiated emission below 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.

Refer to Appendix G for Radiated Emission Co-location.



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz+WLAN 5GHz

Refer to Sporton Test Report No.: FA790613-07 for Co-location RF Exposure Evaluation.

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

PoE information as below:

Power	Brand	Model
PoE	PHIHONG	POE20U-560(G)
PoE	CARRIER	UBI-POE-48-5G

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.



2.4 Accessories

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	LAN1	DELL	E6430	N/A
B	PoE	PHIHONG	POE20U-560(G)	N/A
C	5G NB	DELL	E6430	N/A
D	2.4G NB	DELL	E6430	N/A
E	LAN2	DELL	E6430	N/A

For Radiated (below 1GHz) and Radiated (co-location above 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PoE	PHIHONG	POE20U-560(G)	N/A
B	NB	DELL	E4300	N/A
C	NB	DELL	E4300	N/A
D	NB	DELL	E4300	N/A
E	NB	DELL	E4300	N/A

For Radiated (above 1GHz others):

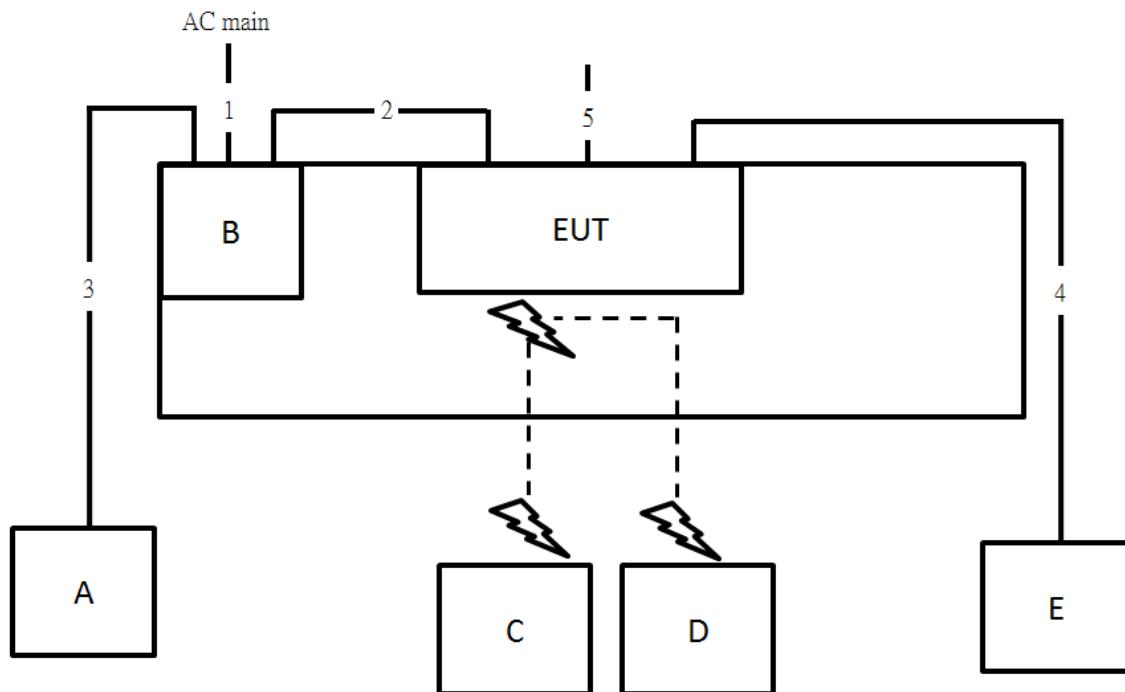
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PoE	CARRIER	UBI-POE-48-5G	N/A
B	NB	DELL	E4300	N/A

For RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	PoE	CARRIER	UBI-POE-48-5G	N/A

2.6 Test Setup Diagram

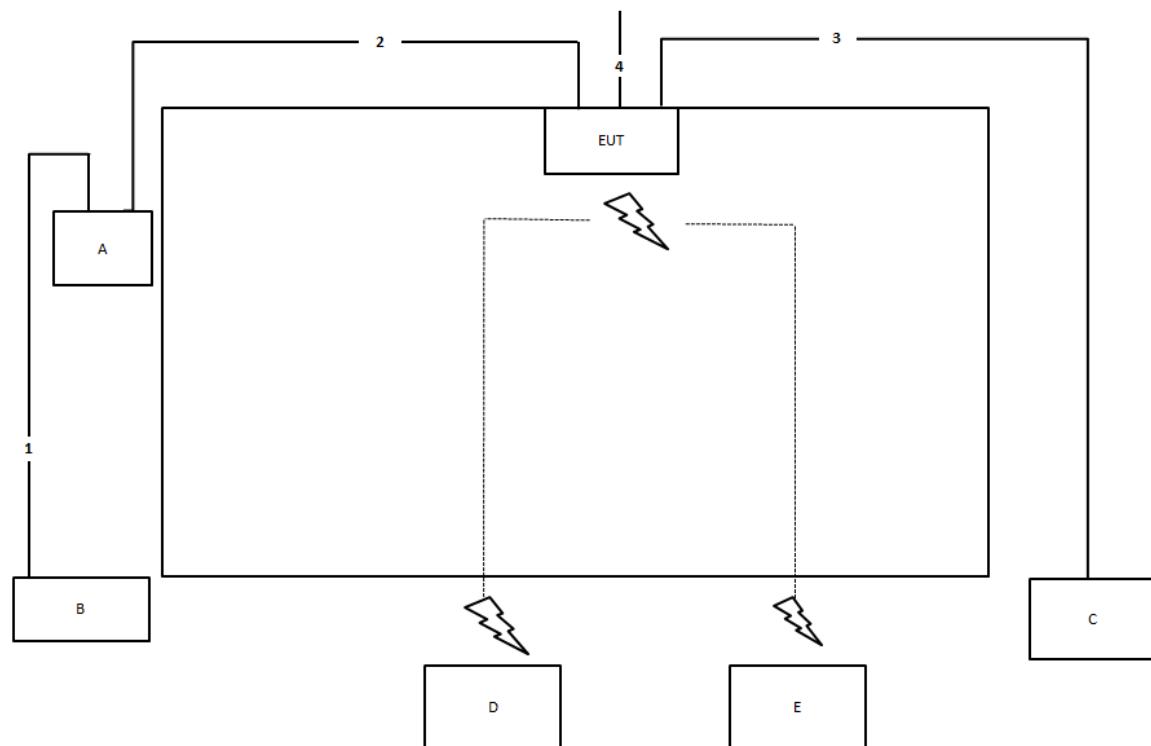
Test Setup Diagram – AC Line Conducted Emission Test



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



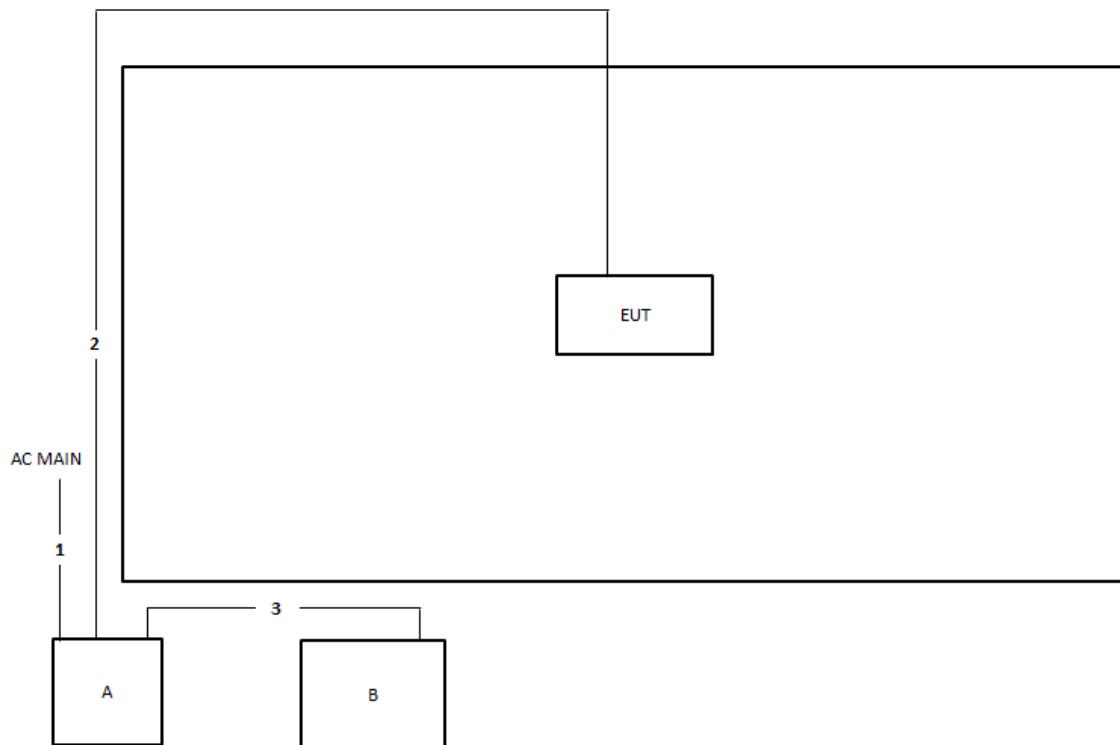
Test Setup Diagram - Radiated Test < 1GHz



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



Test Setup Diagram - Radiated Test > 1GHz



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



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

3.1.2 Measuring Instruments

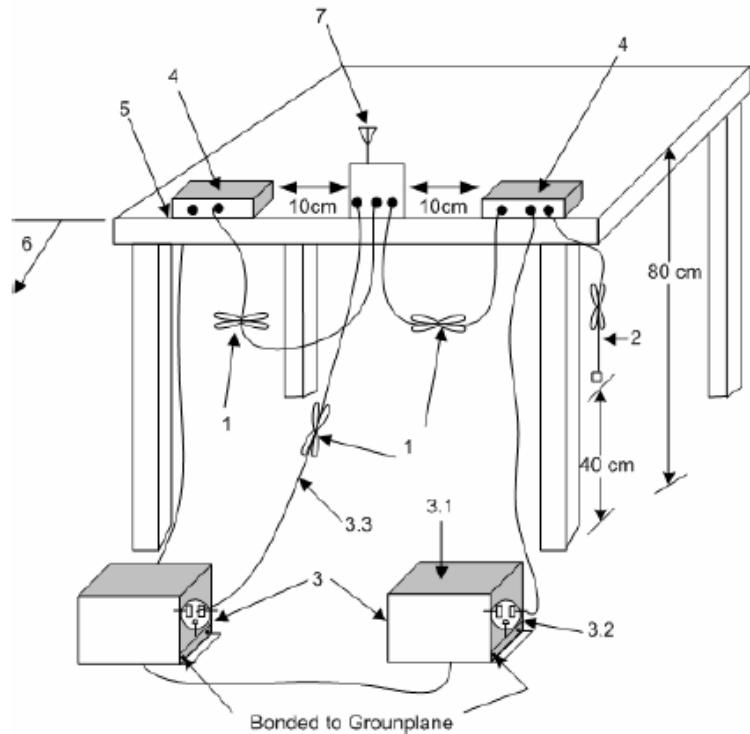
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



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

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A



3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

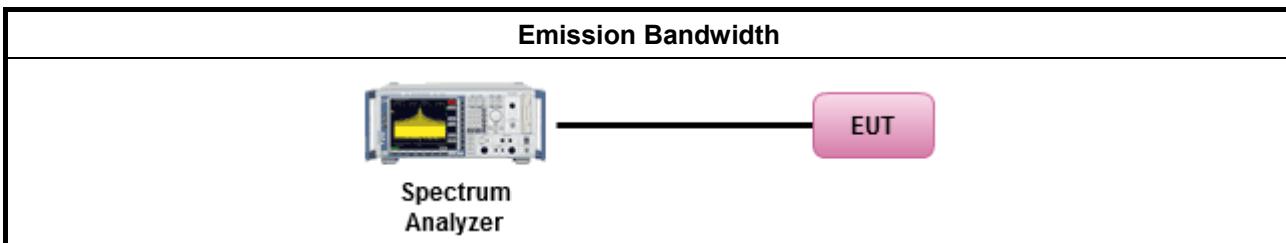
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
▪ For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	<ul style="list-style-type: none">▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	<ul style="list-style-type: none">▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	<ul style="list-style-type: none">▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none">▪ Smart antenna system (SAS):<ul style="list-style-type: none">- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm

P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm,

G_{TX} = the maximum transmitting antenna directional gain in dBi.

3.3.2 Measuring Instruments

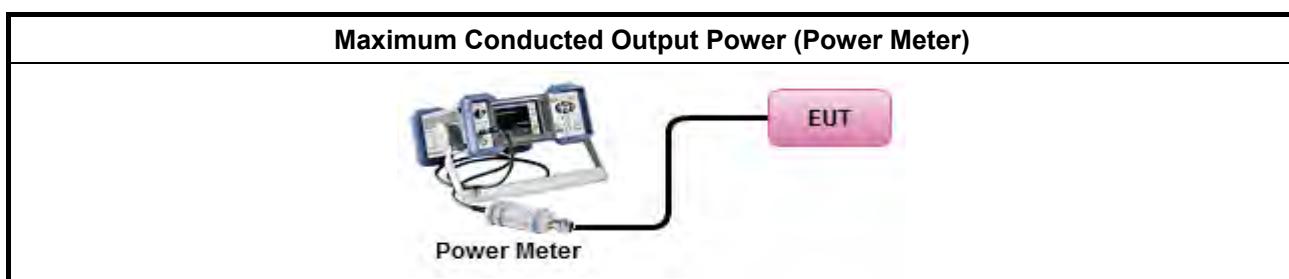
Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW \geq EBW method). <input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	<p>[duty cycle \geq 98% or external video / power trigger]</p> <input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1. <input type="checkbox"/> 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
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2. <input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative) <input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3 <input type="checkbox"/> 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)
	<input type="checkbox"/> 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). <input checked="" type="checkbox"/> 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.	<ul style="list-style-type: none">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]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup





3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

3.4.2 Measuring Instruments

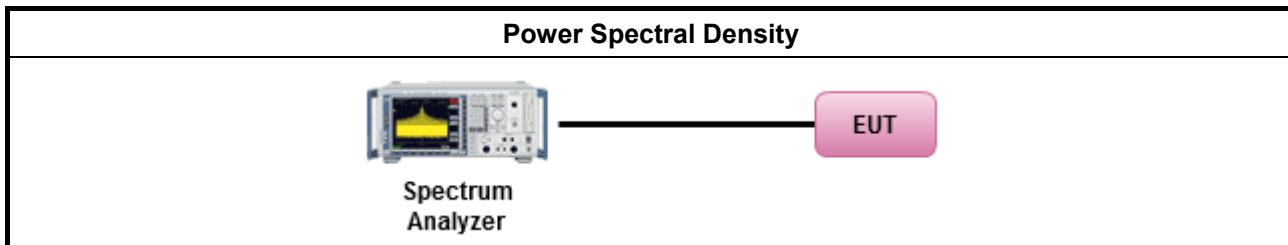
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.
▪ For conducted measurement.
<ul style="list-style-type: none">▪ If The EUT supports multiple transmit chains using options given below:<ul style="list-style-type: none"><input checked="" type="checkbox"/> 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.<input type="checkbox"/> 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,<input type="checkbox"/> Option 3: Measure and add $10 \log(N)$ dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with $10 \log(N)$. Or each transmit chains shall be add $10 \log(N)$ to compared with the limit.



3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D



3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

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

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

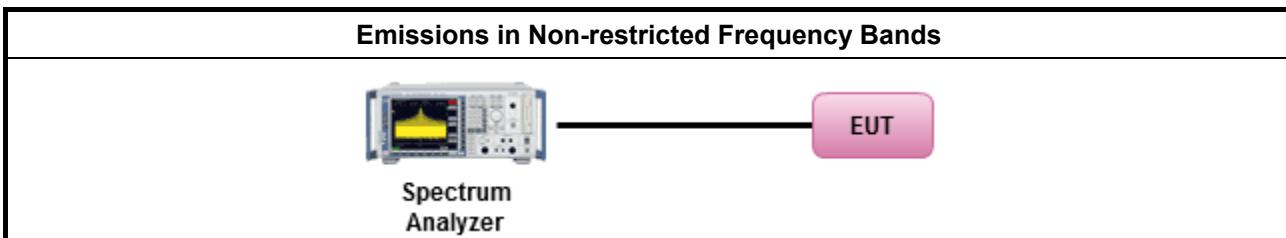
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E



3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

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

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

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

3.6.2 Measuring Instruments

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

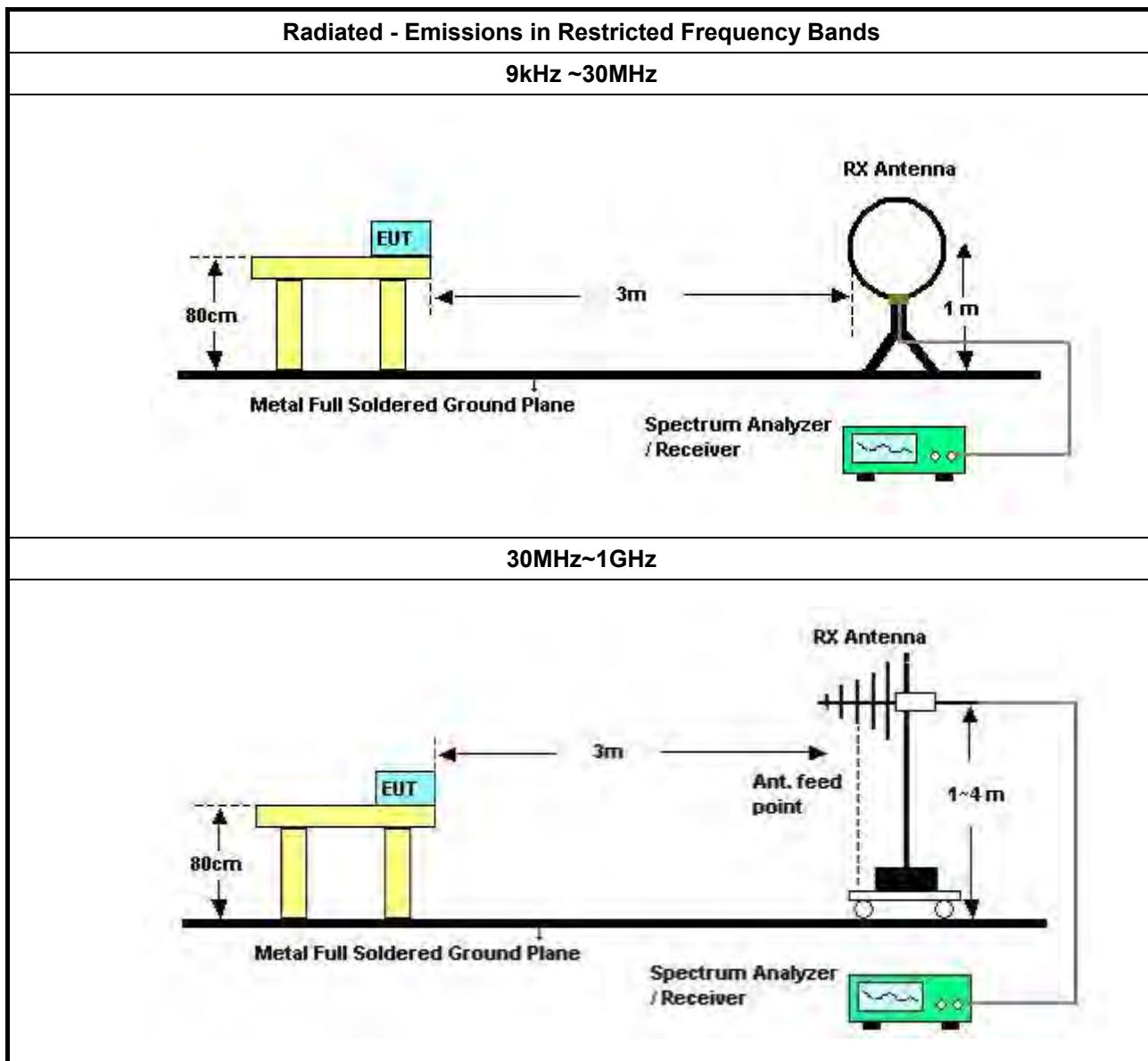


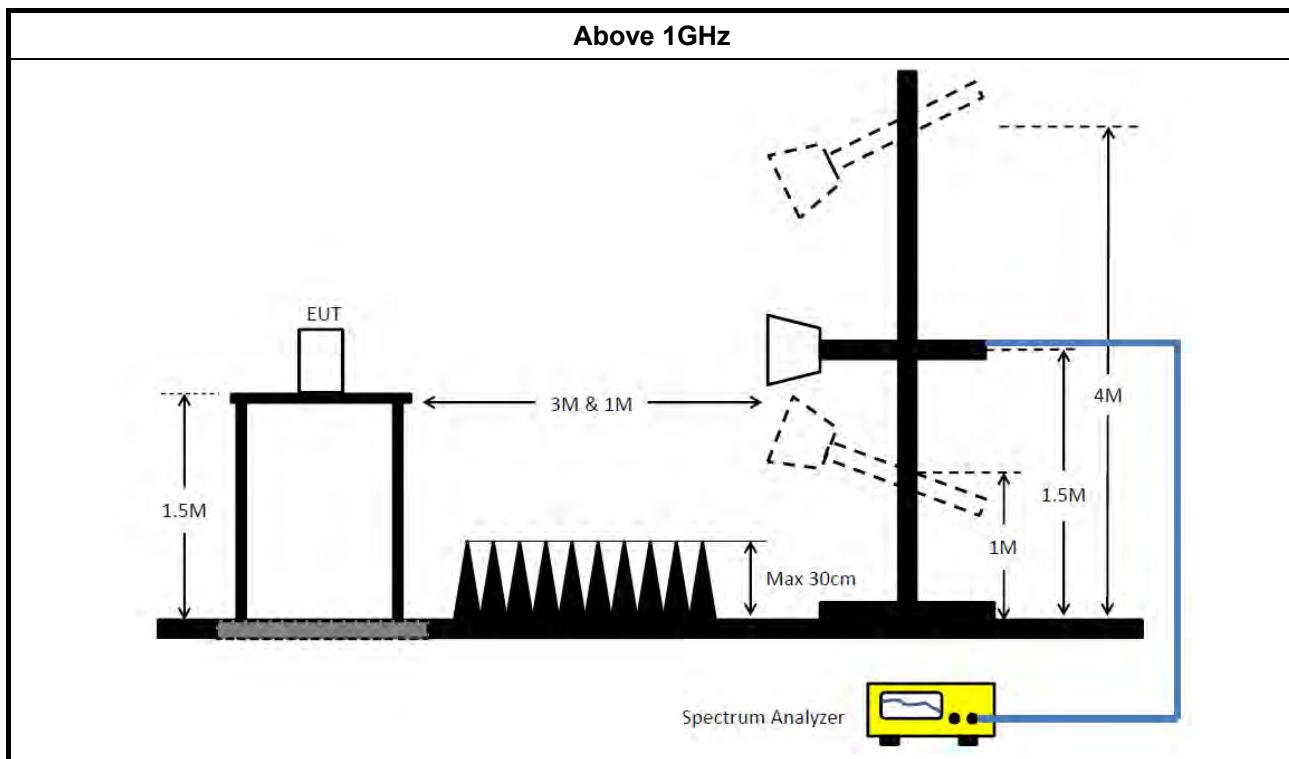
3.6.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [duty cycle \geq 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.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle \geq 98%).
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced $VBW \geq 1/T$).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). $VBW \geq 1/T$, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:	
	▪ Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	▪ Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
	▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add $10 \log(N)$ dB
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.



3.6.4 Test Setup





3.6.5 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 21, 2019	Nov. 20, 2020	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Oct. 30, 2019	Oct. 29, 2020	Conduction (CO02-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 26, 2019	Jul. 26, 2020	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 21, 2019	Oct. 20, 2020	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & 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	BBHA9120D-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)
Horn Antenna	ETS • Lindgren	3115	00143147	750MHz~18GHz	Oct. 22, 2019	Oct. 21, 2020	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)

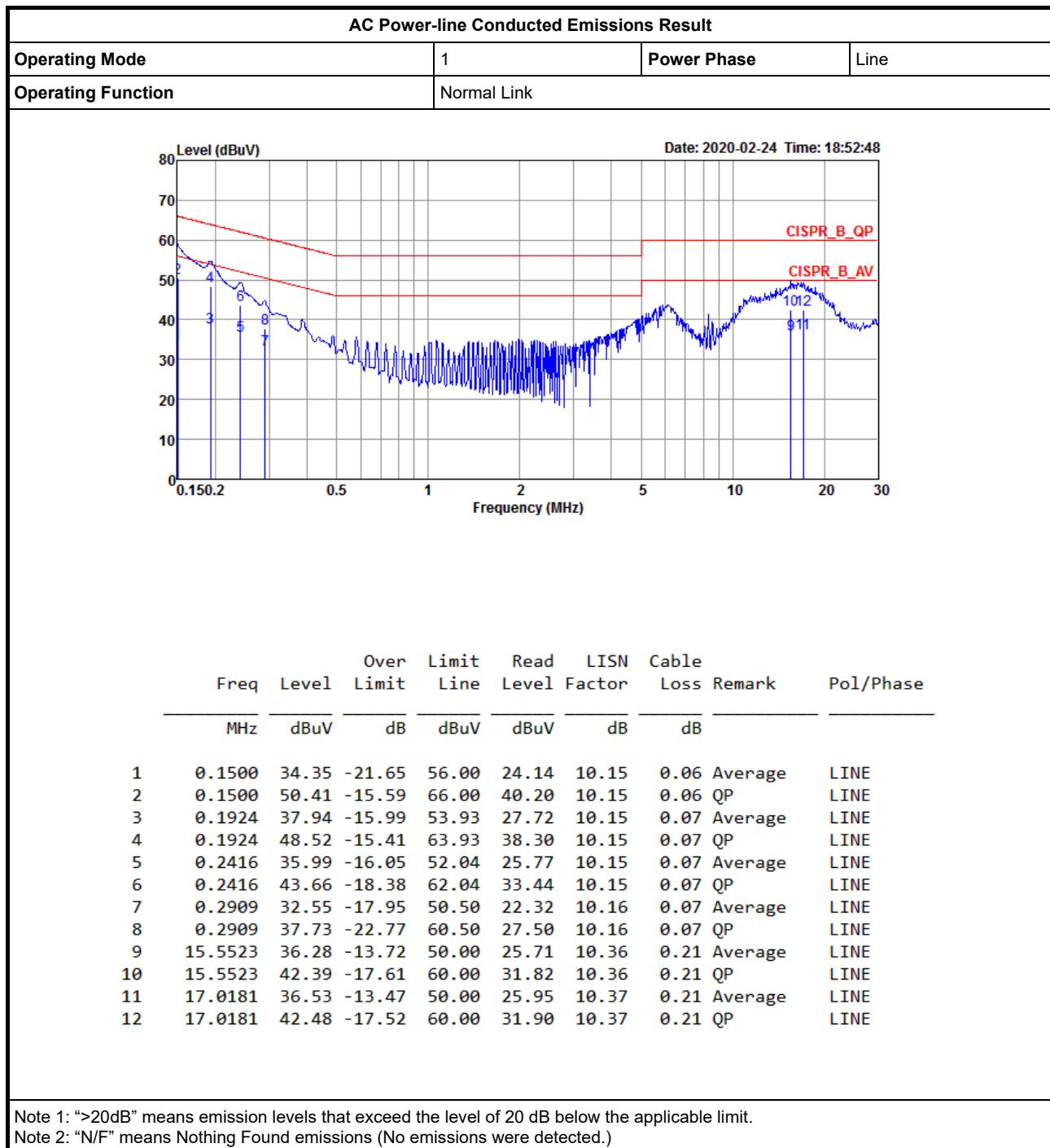
**FCC RADIO TEST REPORT**

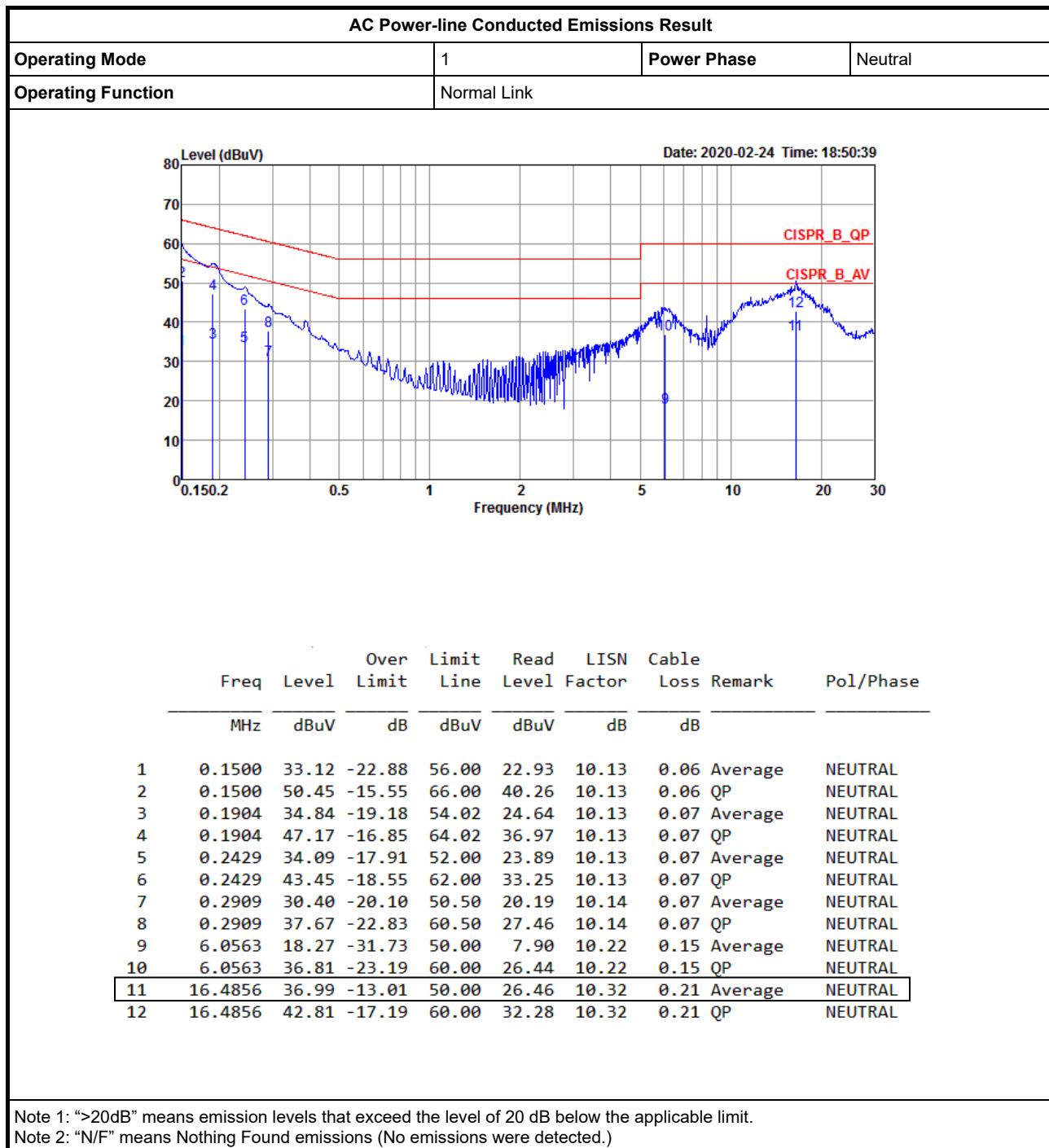
Report No. : FR790613-07AA

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 18, 2019	Dec. 17, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-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. 07, 2019	Oct. 06, 2020	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. 07, 2019	Oct. 06, 2020	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. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)

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

NCR means Non-Calibration required.





**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	8.525M	13.077M	13M1G1D	7.65M	12.844M
802.11g_Nss1,(6Mbps)_2TX	16.325M	19.745M	19M7D1D	16.05M	16.375M
VHT20_Nss1,(MCS0)_2TX	17.625M	18.722M	18M7D1D	17.15M	17.56M
VHT40_Nss1,(MCS0)_2TX	35.2M	35.86M	35M9D1D	31.3M	35.714M

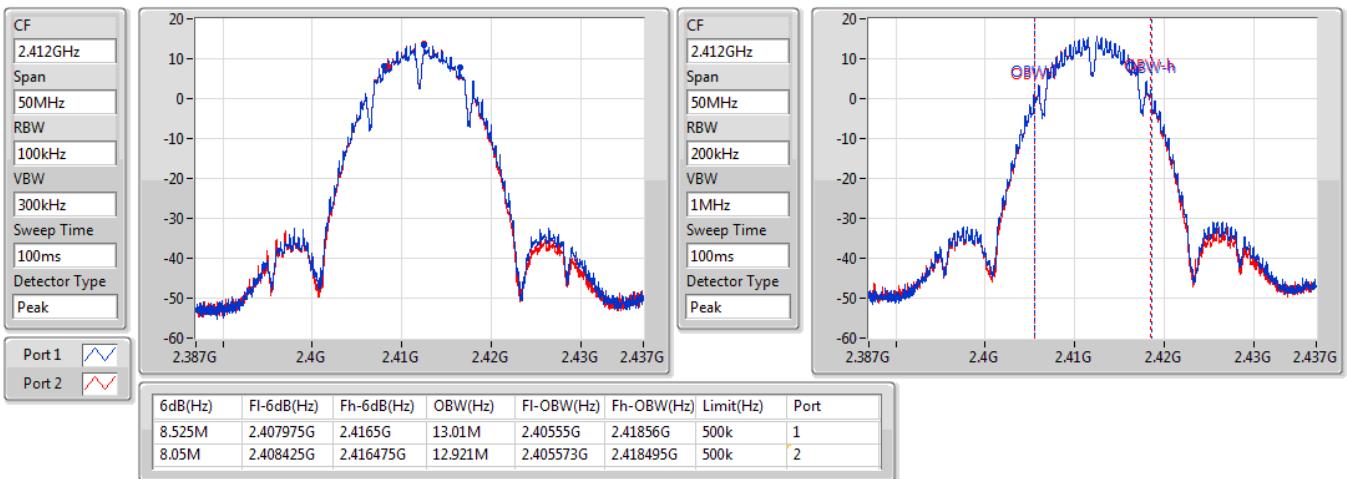
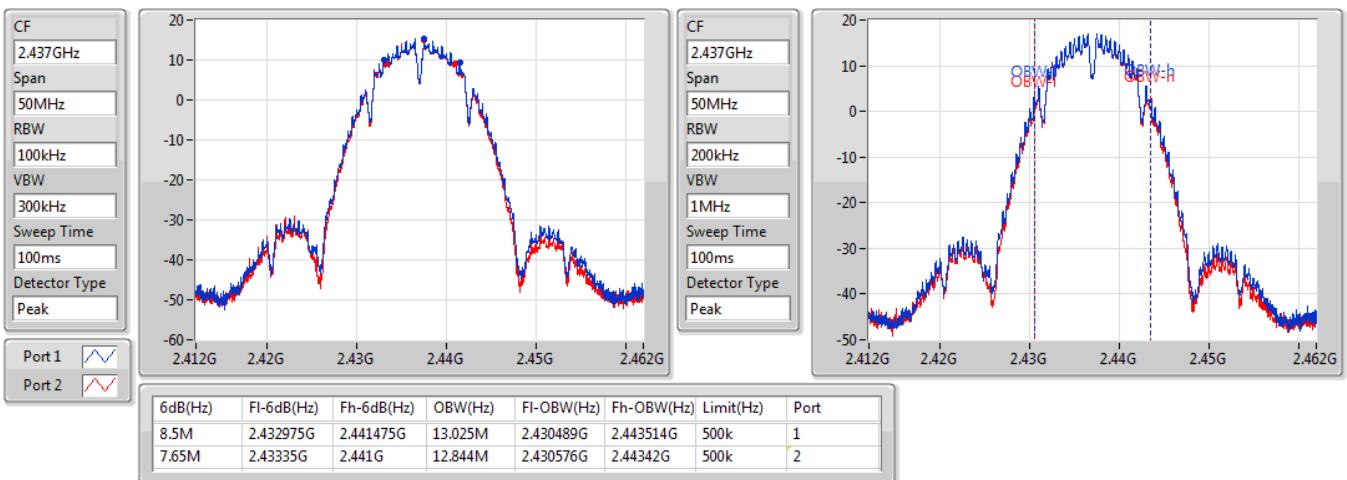
Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

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

**Result**

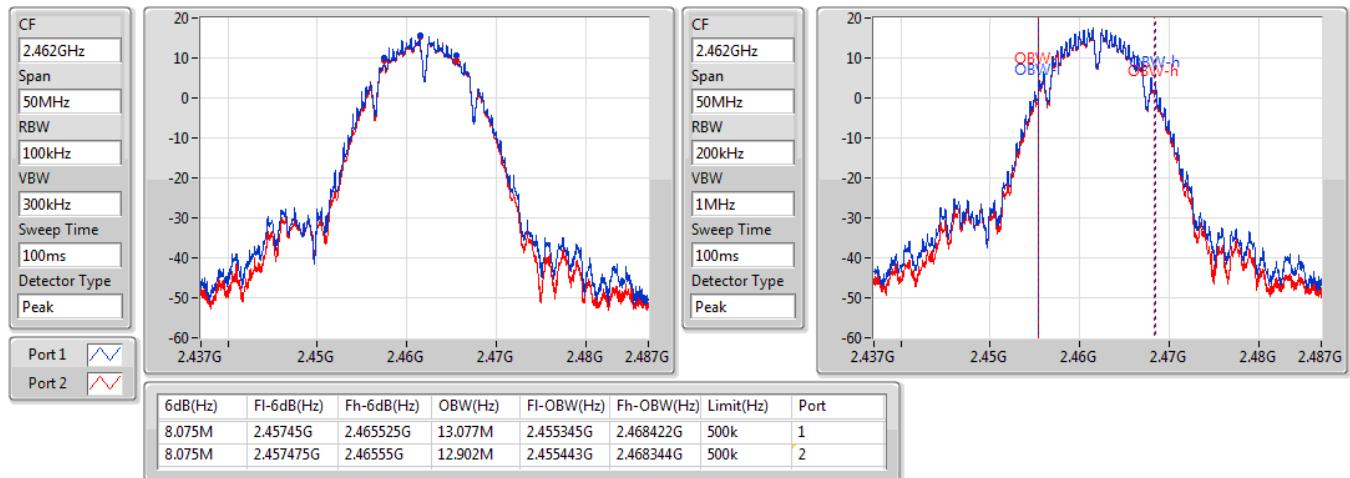
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	8.525M	13.01M	8.05M	12.921M
2437MHz	Pass	500k	8.5M	13.025M	7.65M	12.844M
2462MHz	Pass	500k	8.075M	13.077M	8.075M	12.902M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.325M	16.406M	16.325M	16.375M
2437MHz	Pass	500k	16.325M	19.745M	16.325M	17.878M
2462MHz	Pass	500k	16.05M	16.386M	16.325M	16.378M
VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.525M	17.583M	17.575M	17.56M
2437MHz	Pass	500k	17.55M	18.722M	17.625M	18.068M
2462MHz	Pass	500k	17.15M	17.56M	17.2M	17.566M
VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	35.05M	35.819M	33.9M	35.782M
2437MHz	Pass	500k	35.05M	35.86M	34.65M	35.85M
2452MHz	Pass	500k	31.3M	35.727M	35.2M	35.714M

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

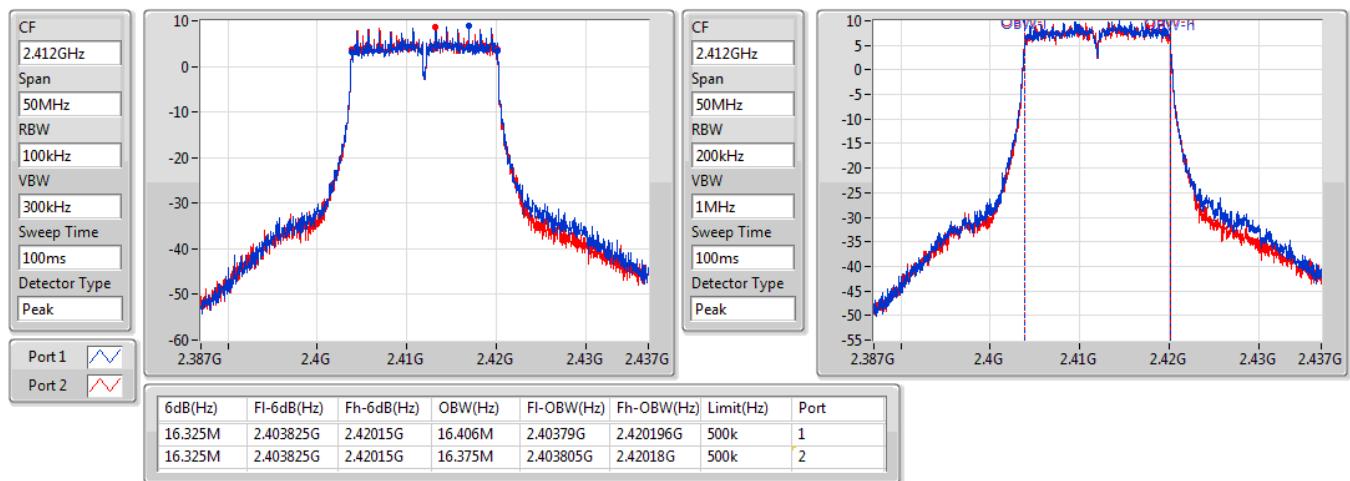
802.11b_Nss1,(1Mbps)_2TX
EBW
2412MHz

802.11b_Nss1,(1Mbps)_2TX
EBW
2437MHz


802.11b_Nss1,(1Mbps)_2TX
EBW
2462MHz

20/02/2020

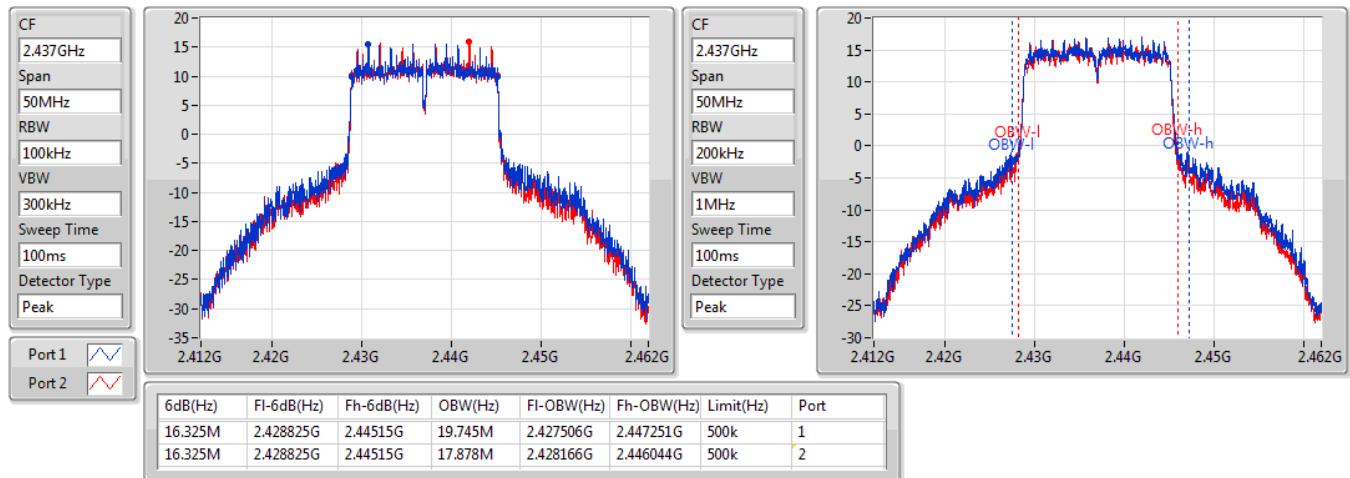

802.11g_Nss1,(6Mbps)_2TX
EBW
2412MHz

20/02/2020

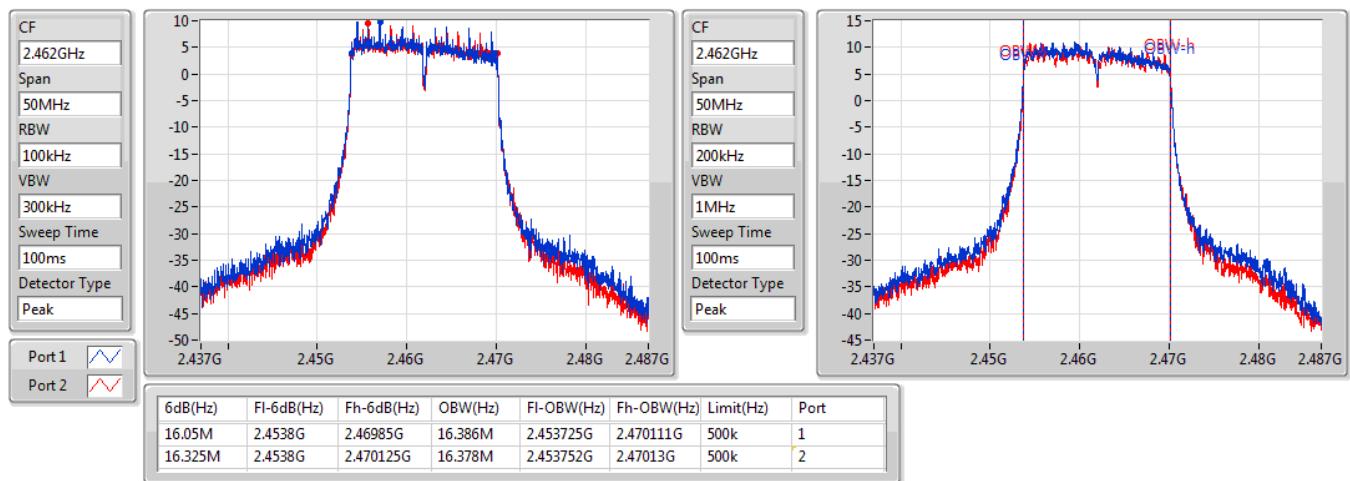


802.11g_Nss1,(6Mbps)_2TX
EBW
2437MHz

20/02/2020

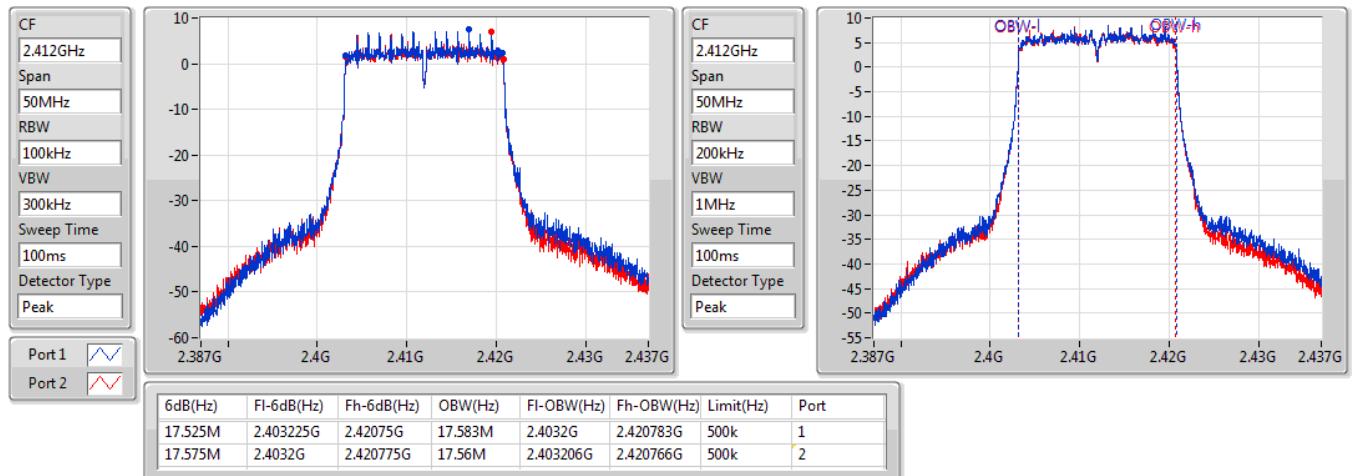

802.11g_Nss1,(6Mbps)_2TX
EBW
2462MHz

20/02/2020

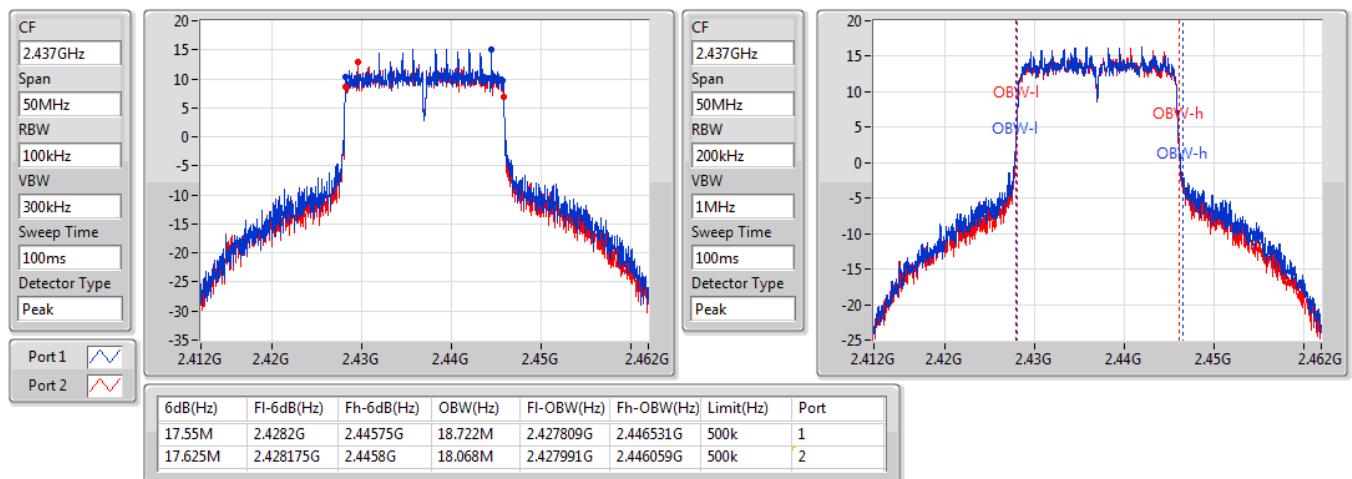


VHT20_Nss1,(MCS0)_2TX
EBW
2412MHz

20/02/2020

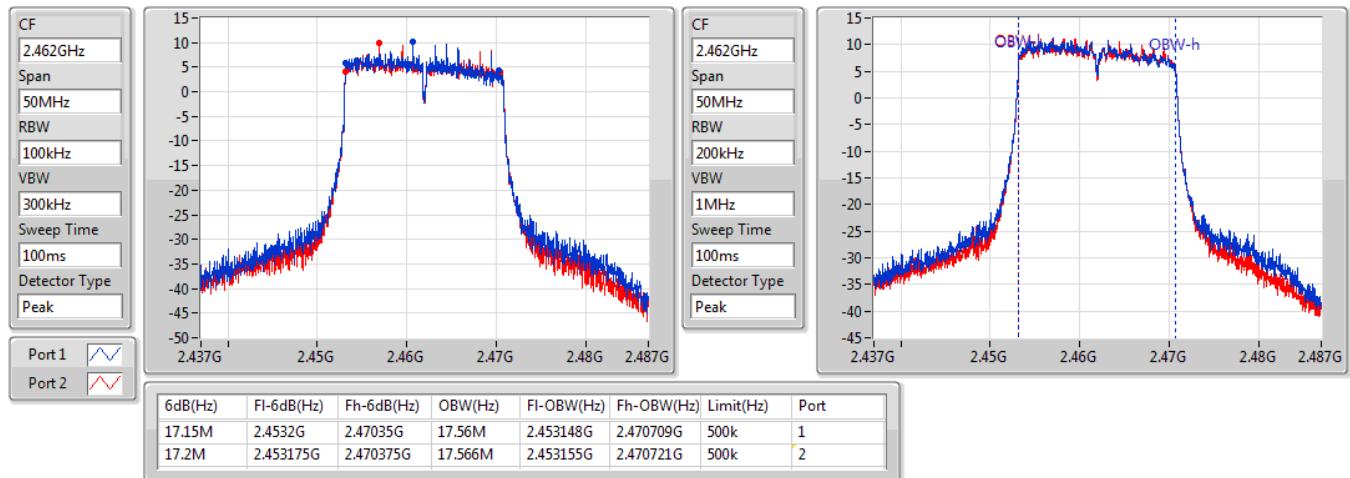

VHT20_Nss1,(MCS0)_2TX
EBW
2437MHz

20/02/2020

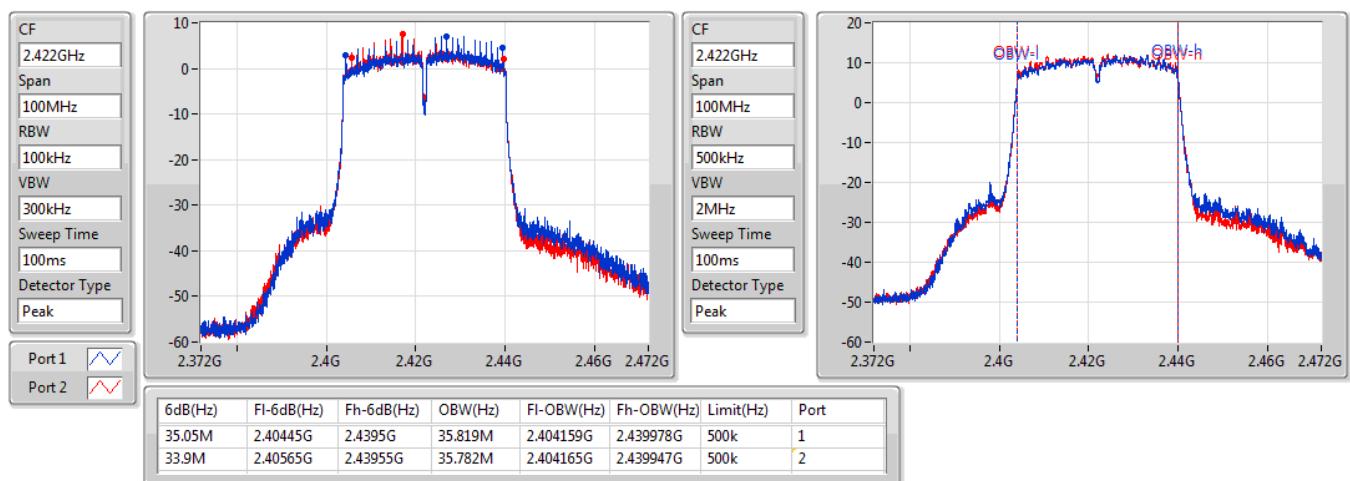


VHT20_Nss1,(MCS0)_2TX
EBW
2462MHz

20/02/2020

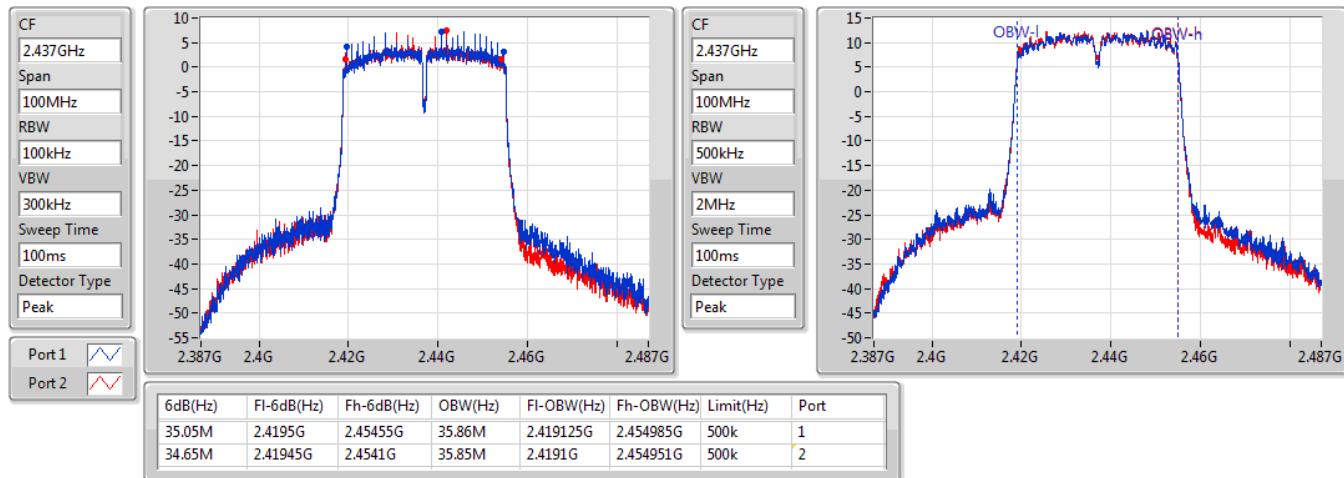

VHT40_Nss1,(MCS0)_2TX
EBW
2422MHz

20/02/2020

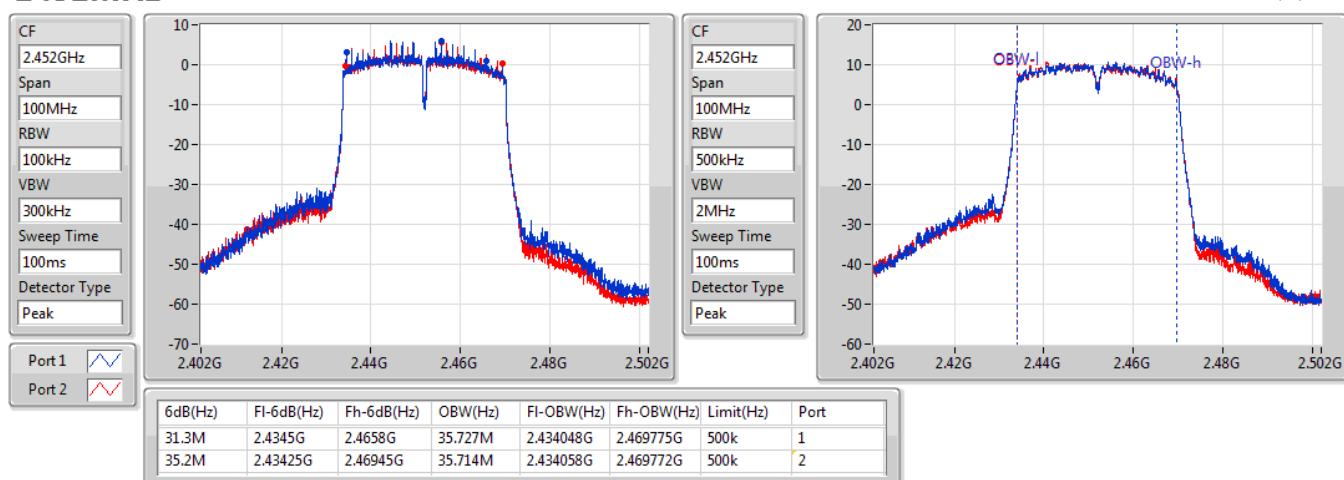


VHT40_Nss1,(MCS0)_2TX
EBW
2437MHz

20/02/2020


VHT40_Nss1,(MCS0)_2TX
EBW
2452MHz

20/02/2020



**Summary**

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
2.4-2.4835GHz	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	27.73	0.59293	30.80	1.20226
802.11g_Nss1,(6Mbps)_2TX	29.66	0.92470	32.73	1.87499
VHT20_Nss1,(MCS0)_2TX	29.21	0.83368	32.28	1.69044
VHT40_Nss1,(MCS0)_2TX	24.33	0.27102	27.40	0.54954

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	3.07	23.21	23.26	26.25	30.00	29.32	36.00
2437MHz	Pass	3.07	24.79	24.64	27.73	30.00	30.80	36.00
2462MHz	Pass	3.07	24.88	24.43	27.67	30.00	30.74	36.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	3.07	20.16	20.14	23.16	30.00	26.23	36.00
2417MHz	Pass	3.07	22.02	22.11	25.08	30.00	28.15	36.00
2437MHz	Pass	3.07	26.69	26.60	29.66	30.00	32.73	36.00
2457MHz	Pass	3.07	21.74	21.61	24.69	30.00	27.76	36.00
2462MHz	Pass	3.07	20.66	20.51	23.60	30.00	26.67	36.00
VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	3.07	18.73	18.68	21.72	30.00	24.79	36.00
2417MHz	Pass	3.07	22.09	22.27	25.19	30.00	28.26	36.00
2437MHz	Pass	3.07	26.28	26.11	29.21	30.00	32.28	36.00
2457MHz	Pass	3.07	22.49	22.54	25.53	30.00	28.60	36.00
2462MHz	Pass	3.07	21.21	21.11	24.17	30.00	27.24	36.00
VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	3.07	20.82	20.93	23.89	30.00	26.96	36.00
2437MHz	Pass	3.07	21.35	21.29	24.33	30.00	27.40	36.00
2452MHz	Pass	3.07	19.45	19.21	22.34	30.00	25.41	36.00

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

**Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_2TX	-4.24
802.11g_Nss1,(6Mbps)_2TX	-5.58
VHT20_Nss1,(MCS0)_2TX	-5.65
VHT40_Nss1,(MCS0)_2TX	-14.41

RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;



Result

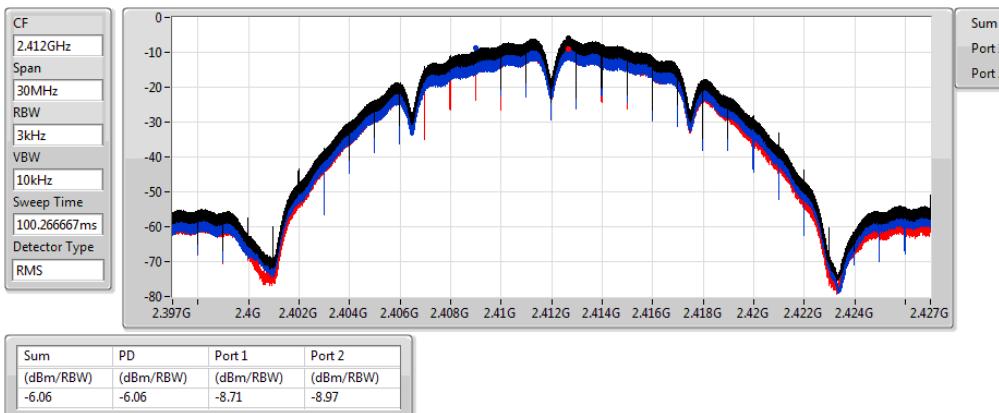
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.08	-8.71	-8.97	-6.06	7.92
2437MHz	Pass	6.08	-4.45	-7.44	-4.40	7.92
2462MHz	Pass	6.08	-5.44	-7.36	-4.24	7.92
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.08	-14.52	-13.91	-11.87	7.92
2437MHz	Pass	6.08	-7.88	-8.22	-5.58	7.92
2462MHz	Pass	6.08	-12.77	-13.52	-10.74	7.92
VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.08	-15.58	-15.78	-12.96	7.92
2437MHz	Pass	6.08	-8.16	-7.90	-5.65	7.92
2462MHz	Pass	6.08	-12.63	-12.77	-10.03	7.92
VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	6.08	-17.27	-17.12	-14.44	7.92
2437MHz	Pass	6.08	-16.87	-16.71	-14.41	7.92
2452MHz	Pass	6.08	-18.58	-18.37	-15.94	7.92

DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

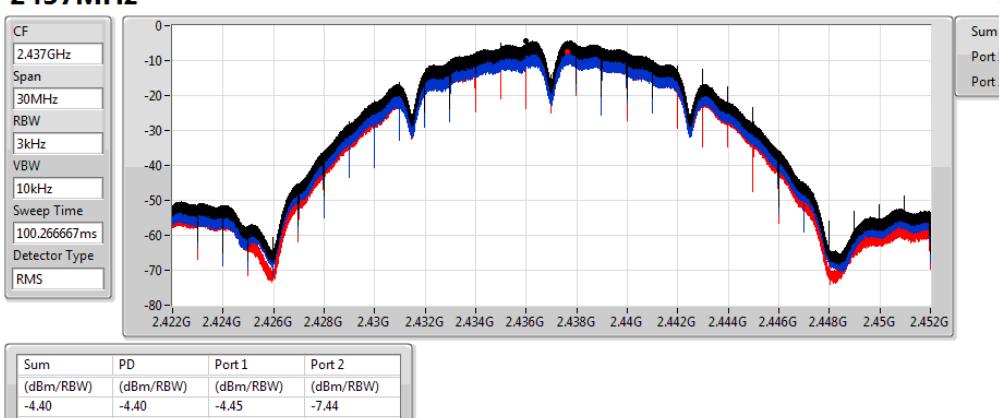
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11b_Nss1,(1Mbps)_2TX
PSD
2412MHz

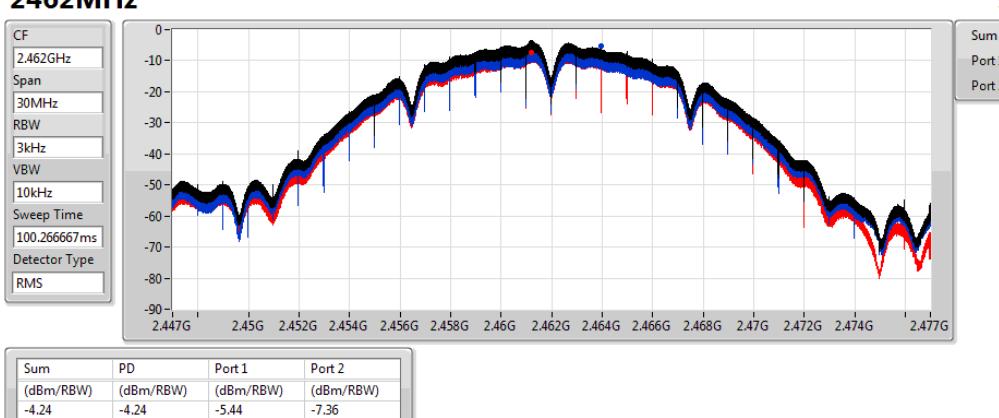
20/02/2020

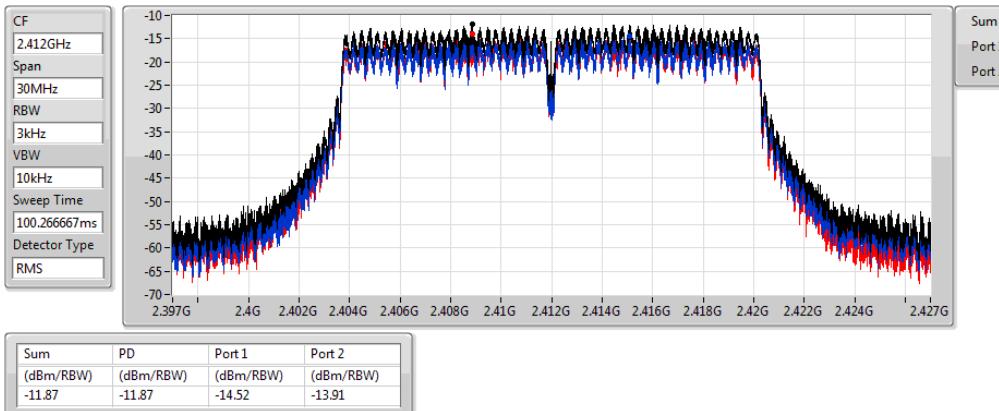
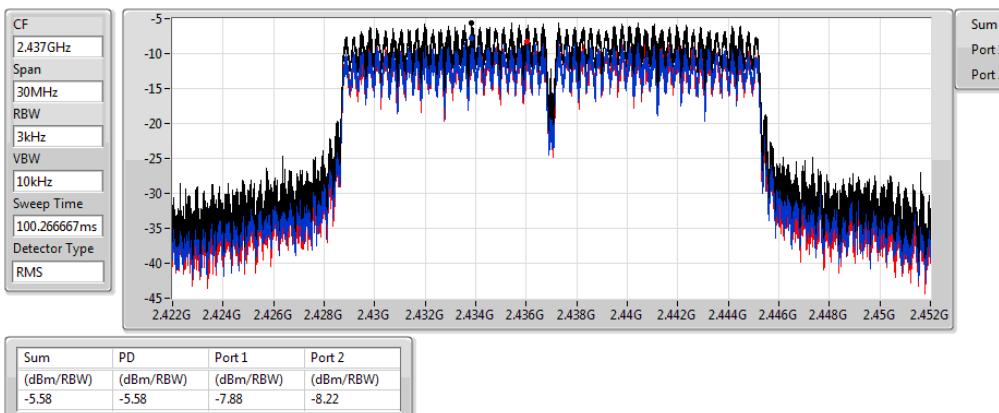
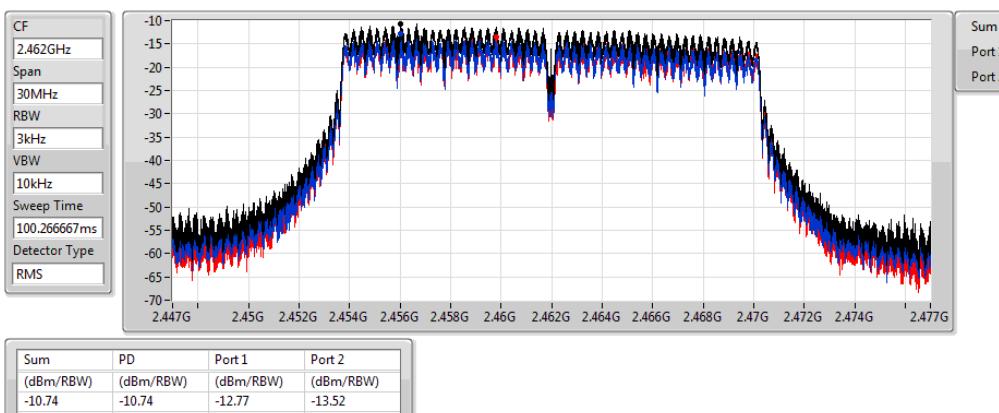

802.11b_Nss1,(1Mbps)_2TX
PSD
2437MHz

20/02/2020


802.11b_Nss1,(1Mbps)_2TX
PSD
2462MHz

20/02/2020

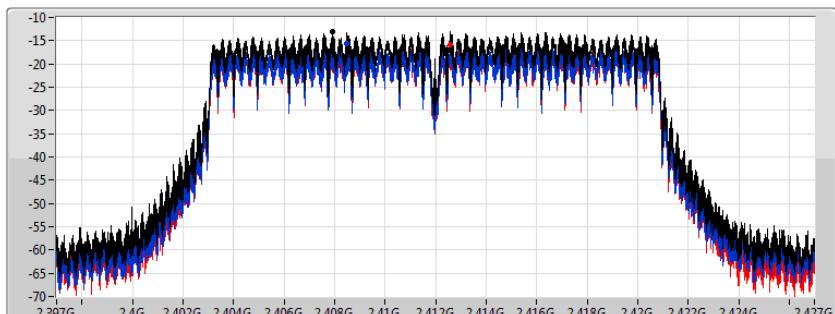


802.11g_Nss1,(6Mbps)_2TX
2412MHz

PSD
802.11g_Nss1,(6Mbps)_2TX
2437MHz

PSD
802.11g_Nss1,(6Mbps)_2TX
2462MHz

PSD

VHT20_Nss1,(MCS0)_2TX
PSD
2412MHz

20/02/2020

CF	2.412GHz
Span	30MHz
RBW	3kHz
VBW	10kHz
Sweep Time	100.266667ms
Detector Type	RMS

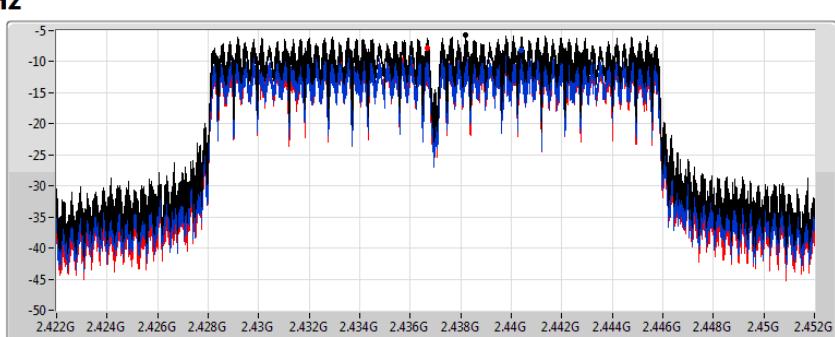


Sum	<input checked="" type="checkbox"/>
Port 1	<input type="checkbox"/>
Port 2	<input type="checkbox"/>

VHT20_Nss1,(MCS0)_2TX
PSD
2437MHz

20/02/2020

CF	2.437GHz
Span	30MHz
RBW	3kHz
VBW	10kHz
Sweep Time	100.266667ms
Detector Type	RMS

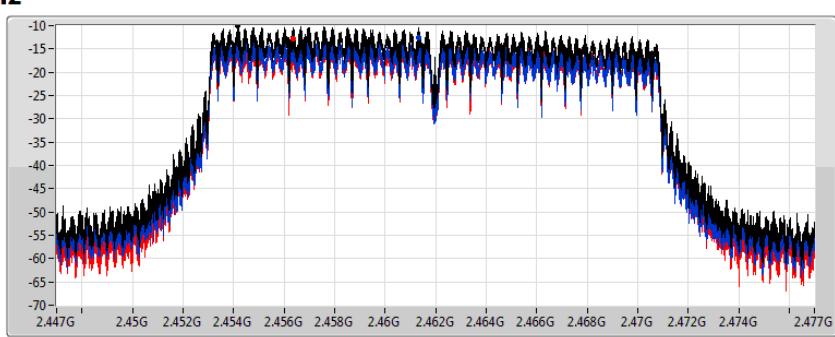


Sum	<input checked="" type="checkbox"/>
Port 1	<input type="checkbox"/>
Port 2	<input type="checkbox"/>

VHT20_Nss1,(MCS0)_2TX
PSD
2462MHz

20/02/2020

CF	2.462GHz
Span	30MHz
RBW	3kHz
VBW	10kHz
Sweep Time	100.266667ms
Detector Type	RMS



Sum	<input checked="" type="checkbox"/>
Port 1	<input type="checkbox"/>
Port 2	<input type="checkbox"/>

VHT40_Nss1,(MCS0)_2TX
2422MHz

CF	2.422GHz
Span	60MHz
RBW	3kHz
VBW	10kHz
Sweep Time	100.266667ms
Detector Type	RMS

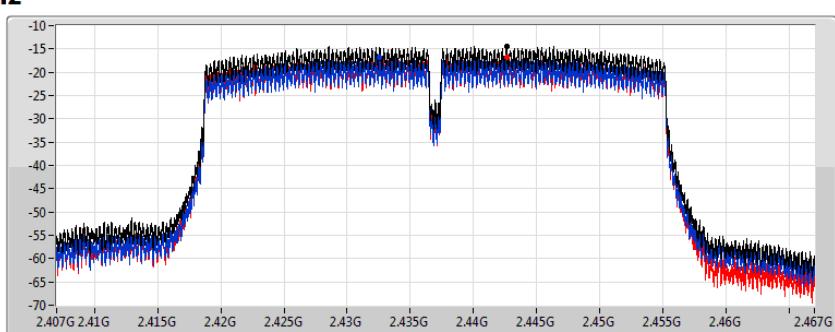

PSD

20/02/2020

Sum	<input checked="" type="checkbox"/>
Port 1	<input type="checkbox"/>
Port 2	<input type="checkbox"/>

VHT40_Nss1,(MCS0)_2TX
2437MHz

CF	2.437GHz
Span	60MHz
RBW	3kHz
VBW	10kHz
Sweep Time	100.266667ms
Detector Type	RMS

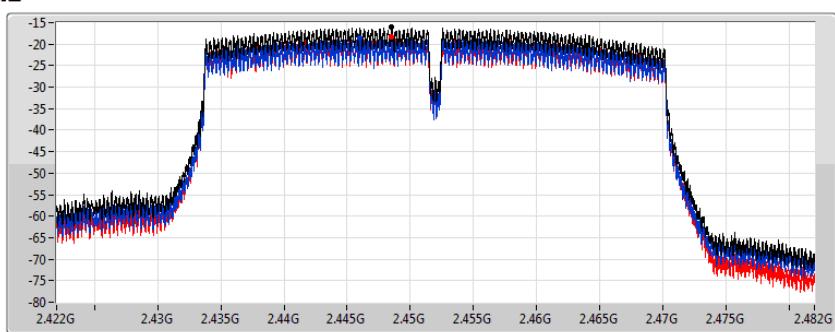

PSD

20/02/2020

Sum	<input checked="" type="checkbox"/>
Port 1	<input type="checkbox"/>
Port 2	<input type="checkbox"/>

VHT40_Nss1,(MCS0)_2TX
2452MHz

CF	2.452GHz
Span	60MHz
RBW	3kHz
VBW	10kHz
Sweep Time	100.266667ms
Detector Type	RMS


PSD

20/02/2020

Sum	<input checked="" type="checkbox"/>
Port 1	<input type="checkbox"/>
Port 2	<input type="checkbox"/>



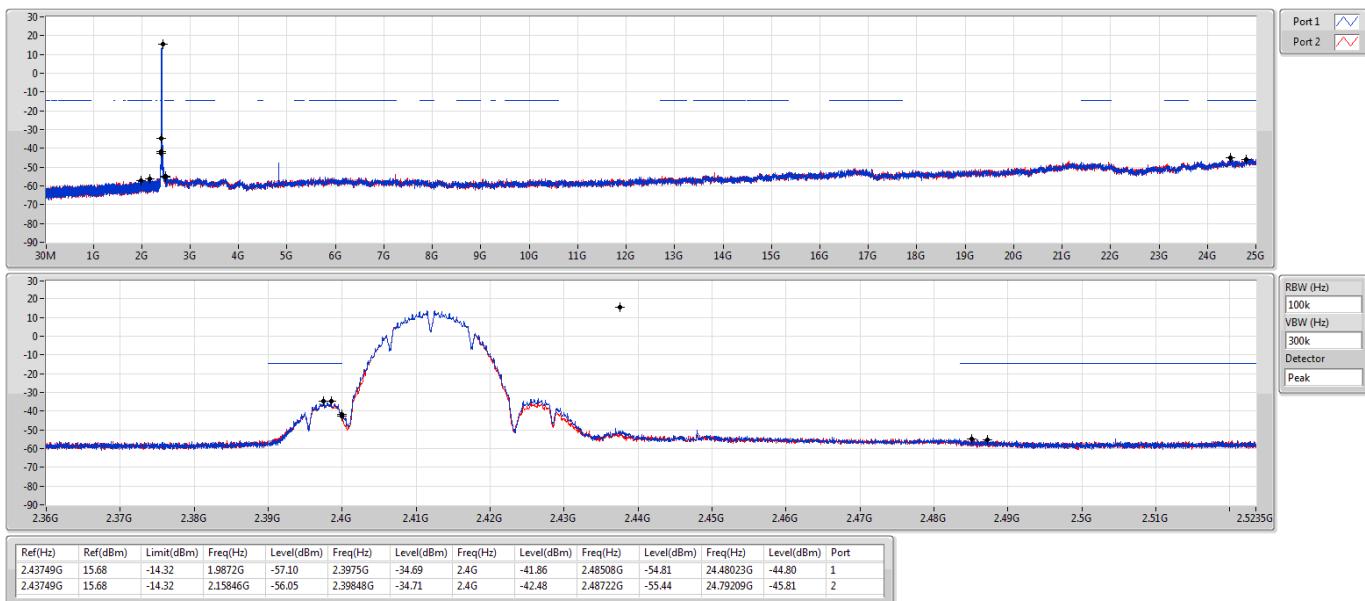
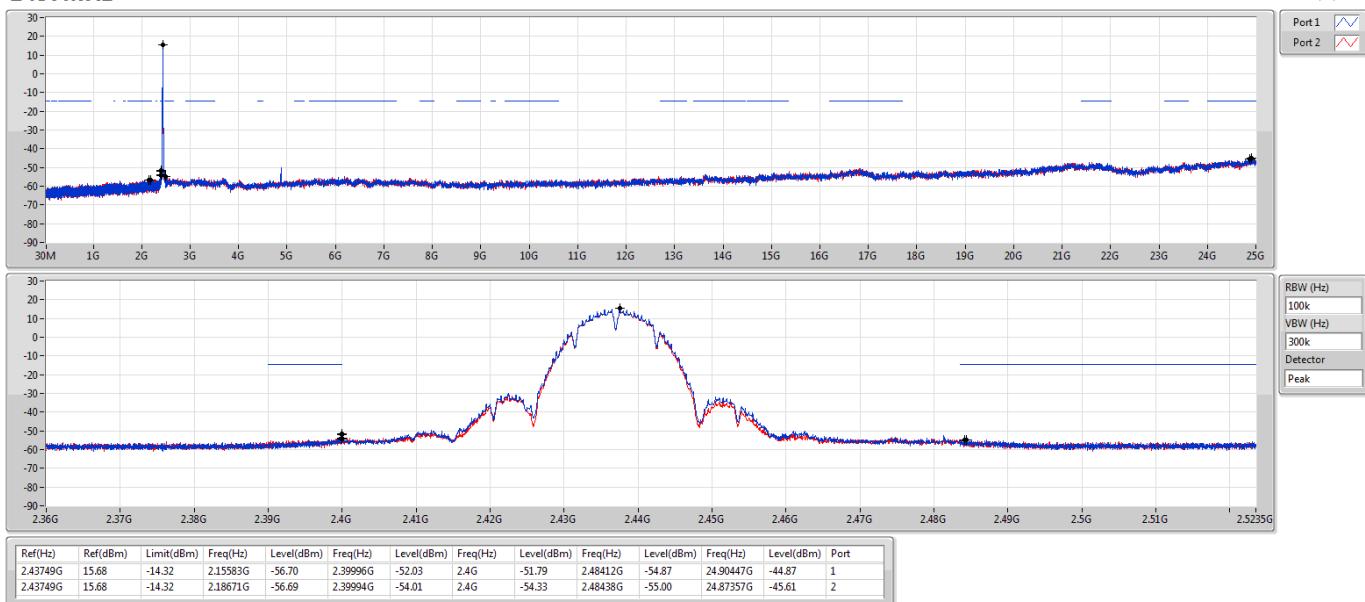
Summary

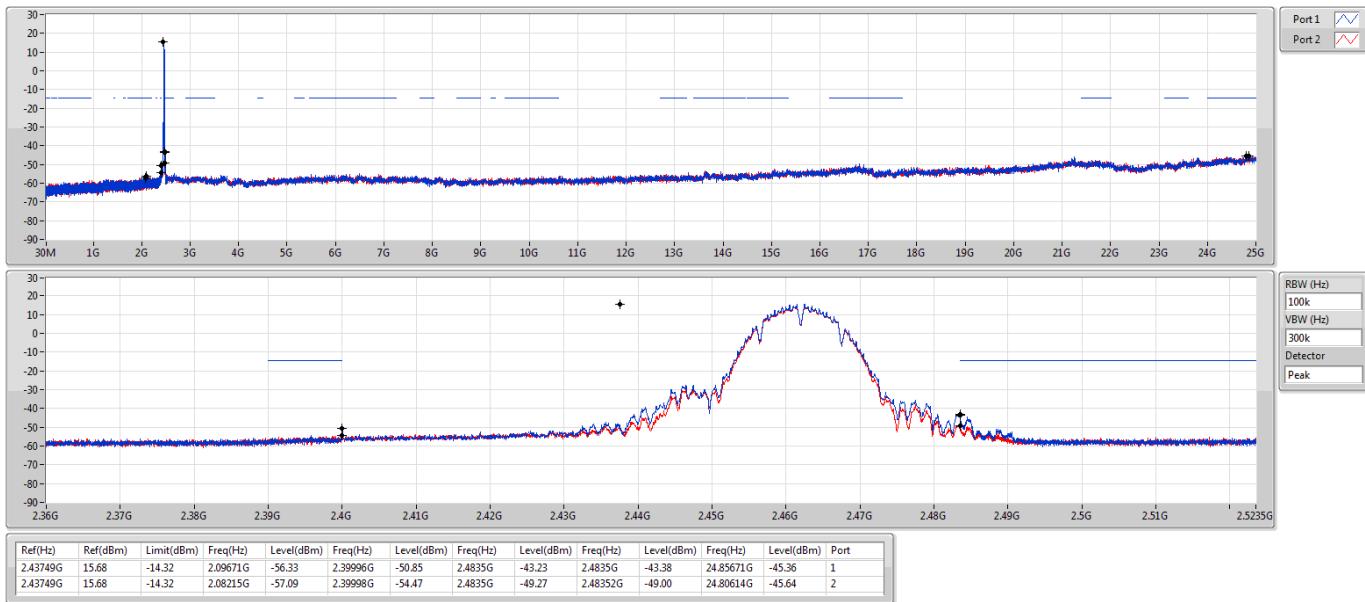
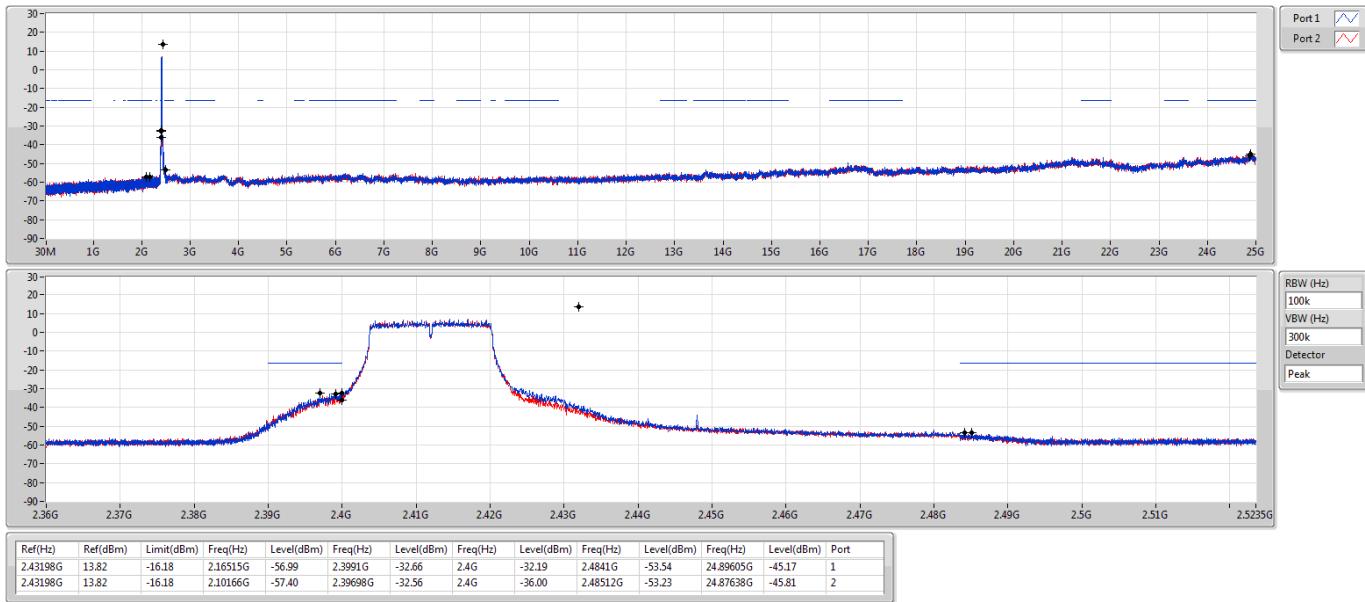
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Port								
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	2.43749G	15.68	-14.32	1.9872G	-57.10	2.3975G	-34.69	2.4G	-41.86	2.48508G	-54.81	24.48023G	-44.80	1
802.11g_Nss1,(6Mbps)_2TX	Pass	2.43198G	13.82	-16.18	2.16515G	-56.99	2.3991G	-32.66	2.4G	-32.19	2.4841G	-53.54	24.89605G	-45.17	1
VHT20_Nss1,(MCS0)_2TX	Pass	2.44196G	13.32	-16.68	2.30991G	-57.06	2.39986G	-34.72	2.4G	-35.32	2.48412G	-53.37	24.82862G	-45.66	1
VHT40_Nss1,(MCS0)_2TX	Pass	2.44075G	6.23	-23.77	2.07612G	-56.80	2.3988G	-31.88	2.4G	-34.50	2.48454G	-50.90	24.91586G	-45.03	1

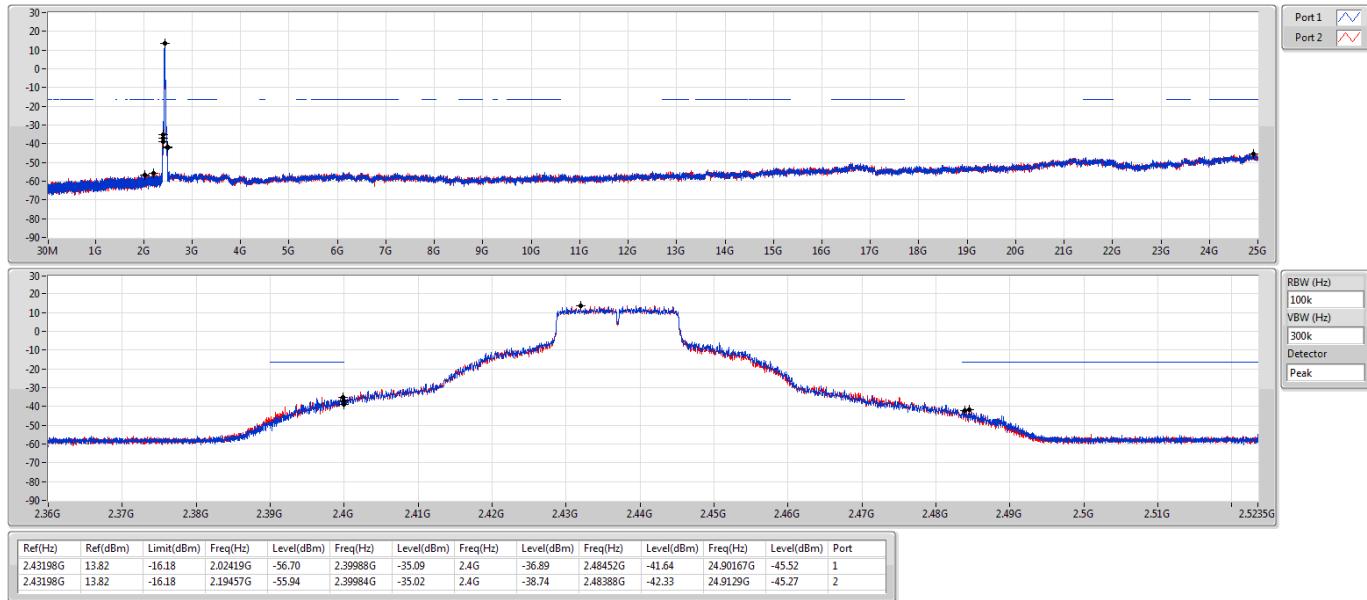
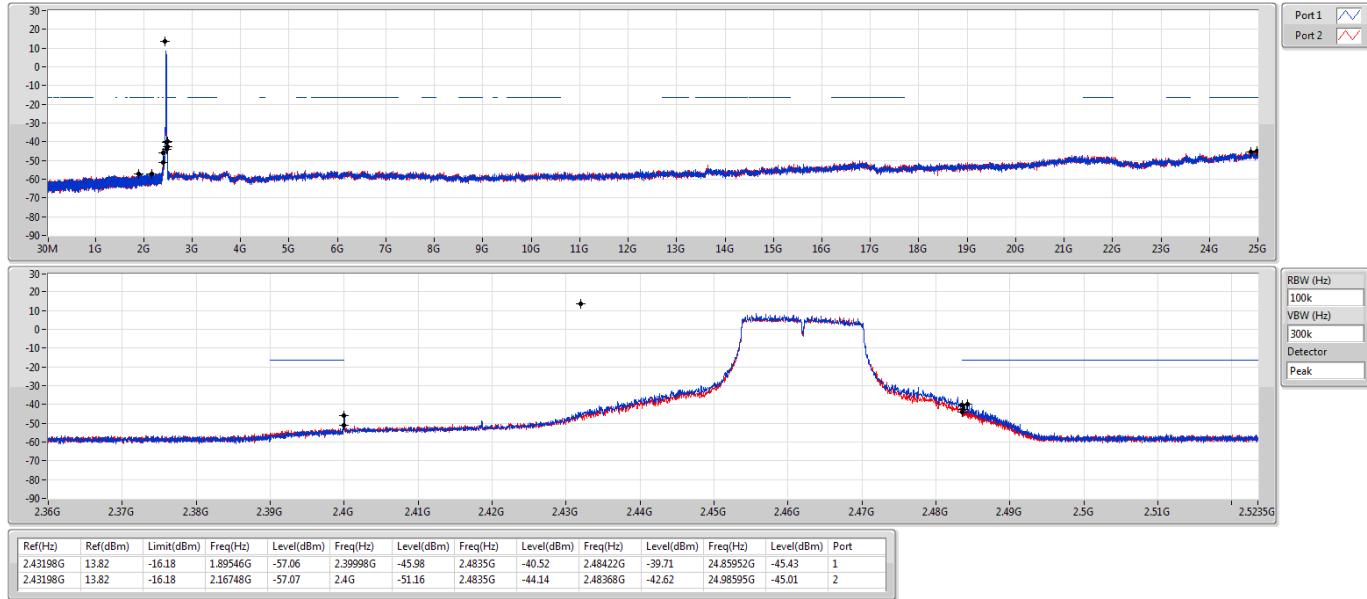


Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Port								
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43749G	15.68	-14.32	1.9872G	-57.10	2.3975G	-34.69	2.4G	-41.86	2.48508G	-54.81	24.48023G	-44.80	1
2412MHz	Pass	2.43749G	15.68	-14.32	2.15846G	-56.05	2.39848G	-34.71	2.4G	-42.48	2.48722G	-55.44	24.79209G	-45.81	2
2437MHz	Pass	2.43749G	15.68	-14.32	2.15583G	-56.70	2.39996G	-52.03	2.4G	-51.79	2.48412G	-54.87	24.90447G	-44.87	1
2437MHz	Pass	2.43749G	15.68	-14.32	2.18671G	-56.69	2.39994G	-54.01	2.4G	-54.33	2.48438G	-55.00	24.87357G	-45.61	2
2462MHz	Pass	2.43749G	15.68	-14.32	2.09671G	-56.33	2.39996G	-50.85	2.4835G	-43.23	2.4835G	-43.38	24.85671G	-45.36	1
2462MHz	Pass	2.43749G	15.68	-14.32	2.08215G	-57.09	2.39998G	-54.47	2.4835G	-49.27	2.48352G	-49.00	24.80614G	-45.64	2
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43198G	13.82	-16.18	2.16515G	-56.99	2.3991G	-32.66	2.4G	-32.19	2.4841G	-53.54	24.89605G	-45.17	1
2412MHz	Pass	2.43198G	13.82	-16.18	2.10166G	-57.40	2.39698G	-32.56	2.4G	-36.00	2.48512G	-53.23	24.87638G	-45.81	2
2437MHz	Pass	2.43198G	13.82	-16.18	2.02419G	-56.70	2.39988G	-35.09	2.4G	-36.89	2.48452G	-41.64	24.90167G	-45.52	1
2437MHz	Pass	2.43198G	13.82	-16.18	2.19457G	-55.94	2.39984G	-35.02	2.4G	-38.74	2.48388G	-42.33	24.9129G	-45.27	2
2462MHz	Pass	2.43198G	13.82	-16.18	1.89546G	-57.06	2.39998G	-45.98	2.4835G	-40.52	2.48422G	-39.71	24.85952G	-45.43	1
2462MHz	Pass	2.43198G	13.82	-16.18	2.16748G	-57.07	2.4G	-51.16	2.4835G	-44.14	2.48368G	-42.62	24.98595G	-45.01	2
VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.44196G	13.32	-16.68	2.30991G	-57.06	2.39986G	-34.72	2.4G	-35.32	2.48412G	-53.37	24.82862G	-45.66	1
2412MHz	Pass	2.44196G	13.32	-16.68	2.19661G	-56.45	2.39886G	-35.78	2.4G	-37.21	2.48504G	-53.46	24.91571G	-45.50	2
2437MHz	Pass	2.44196G	13.32	-16.68	2.16923G	-56.88	2.3995G	-35.16	2.4G	-36.40	2.48384G	-42.52	24.95505G	-45.85	1
2437MHz	Pass	2.44196G	13.32	-16.68	2.04632G	-56.59	2.39888G	-35.63	2.4G	-37.89	2.48476G	-42.76	24.92133G	-45.52	2
2462MHz	Pass	2.44196G	13.32	-16.68	2.08797G	-56.84	2.39998G	-46.33	2.4835G	-36.96	2.48386G	-36.27	24.76681G	-45.24	1
2462MHz	Pass	2.44196G	13.32	-16.68	2.30466G	-56.25	2.39998G	-51.76	2.4835G	-39.07	2.4835G	-39.50	24.92976G	-45.19	2
VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.44075G	6.23	-23.77	2.07612G	-56.80	2.3988G	-31.88	2.4G	-34.50	2.48454G	-50.90	24.91586G	-45.03	1
2422MHz	Pass	2.44075G	6.23	-23.77	2.19233G	-56.81	2.39696G	-32.94	2.4G	-37.23	2.48354G	-52.38	24.8149G	-45.75	2
2437MHz	Pass	2.44075G	6.23	-23.77	2.1972G	-57.41	2.39976G	-36.09	2.4G	-37.48	2.4851G	-44.27	24.82892G	-45.22	1
2437MHz	Pass	2.44075G	6.23	-23.77	2.19262G	-56.55	2.39976G	-36.31	2.4G	-39.24	2.48382G	-46.98	24.85416G	-45.46	2
2452MHz	Pass	2.44075G	6.23	-23.77	2.19663G	-55.54	2.39996G	-49.79	2.4835G	-46.66	2.4845G	-45.63	24.91867G	-45.31	1
2452MHz	Pass	2.44075G	6.23	-23.77	2.16228G	-56.24	2.4G	-51.59	2.4835G	-49.91	2.48446G	-49.70	24.48957G	-45.25	2

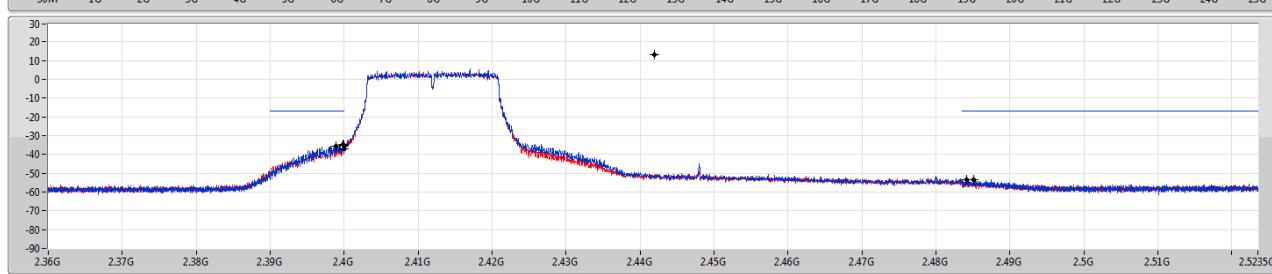
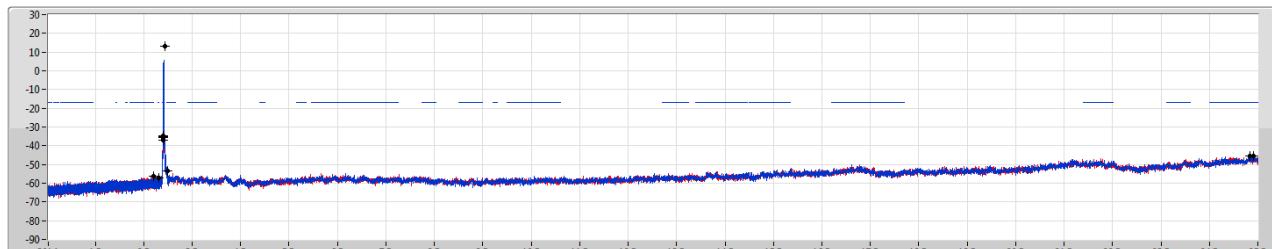
802.11b_Nss1,(1Mbps)_2TX
2412MHz

802.11b_Nss1,(1Mbps)_2TX
2437MHz


802.11b_Nss1,(1Mbps)_2TX
2462MHz

802.11g_Nss1,(6Mbps)_2TX
2412MHz


802.11g_Nss1,(6Mbps)_2TX
2437MHz

802.11g_Nss1,(6Mbps)_2TX
2462MHz


VHT20_Nss1,(MCS0)_2TX
2412MHz
CSE NdB

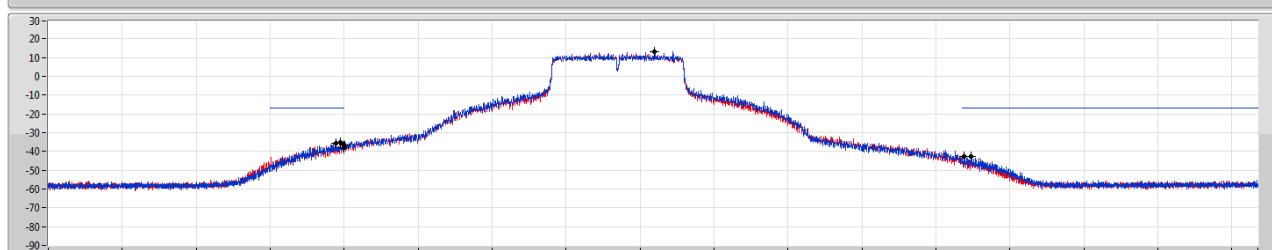
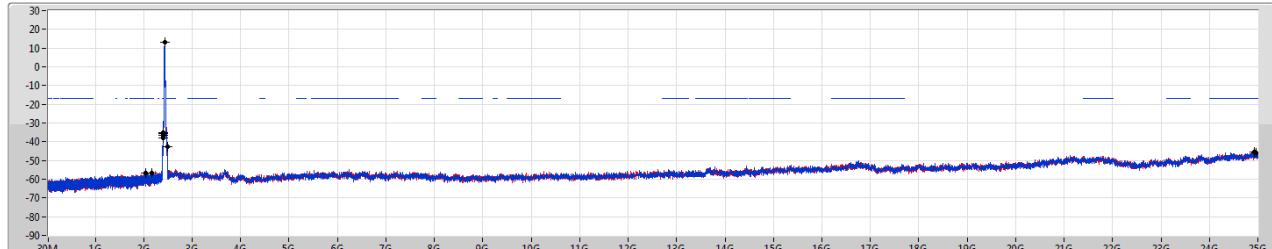
20/02/2020

 Port 1
 Port 2

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)	Freq(Hz)	Level(dBm)	Port
2.44196G	13.32	-16.68	2.30991G	-57.06	2.39986G	-34.72	2.4G	-35.32	2.48412G	-53.37	24.82862G	-45.66	1
2.44196G	13.32	-16.68	2.19661G	-56.45	2.39886G	-35.78	2.4G	-37.21	2.48504G	-53.46	24.91571G	-45.50	2

VHT20_Nss1,(MCS0)_2TX
2437MHz
CSE NdB

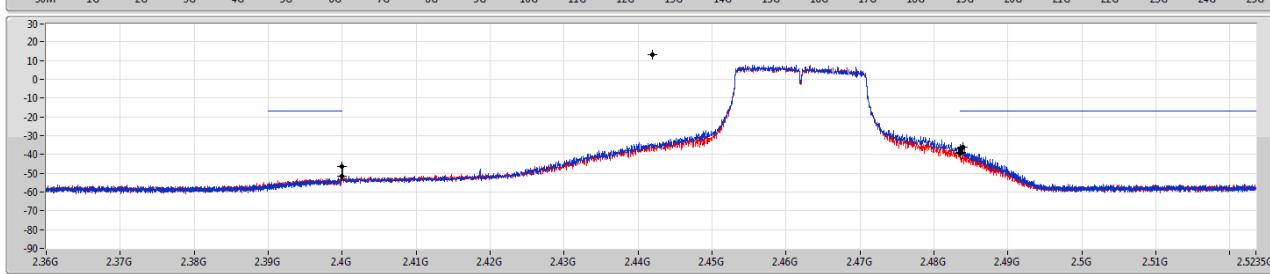
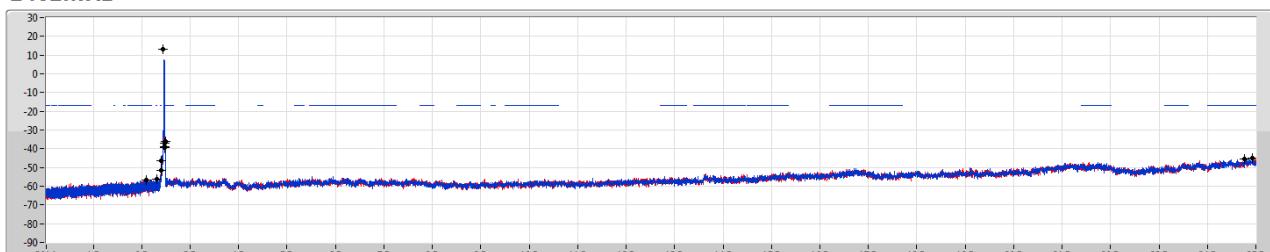
20/02/2020

 Port 1
 Port 2

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)	Freq(Hz)	Level(dBm)	Port
2.44196G	13.32	-16.68	2.16923G	-56.88	2.3995G	-35.16	2.4G	-36.40	2.48384G	-42.52	24.95505G	-45.85	1
2.44196G	13.32	-16.68	2.04632G	-56.59	2.39888G	-35.63	2.4G	-37.89	2.48476G	-42.76	24.92133G	-45.52	2

VHT20_Nss1,(MCS0)_2TX
2462MHz
CSE NdB

20/02/2020

 Port 1
 Port 2


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44196G	13.32	-16.68	2.08797G	-56.84	2.39998G	-46.33	2.4835G	-36.96	2.48386G	-36.27	24.76681G	-45.24	1
2.44196G	13.32	-16.68	2.30466G	-56.25	2.39998G	-51.76	2.4835G	-39.07	2.4835G	-39.50	24.92976G	-45.19	2

VHT40_Nss1,(MCS0)_2TX
2422MHz
CSE NdB

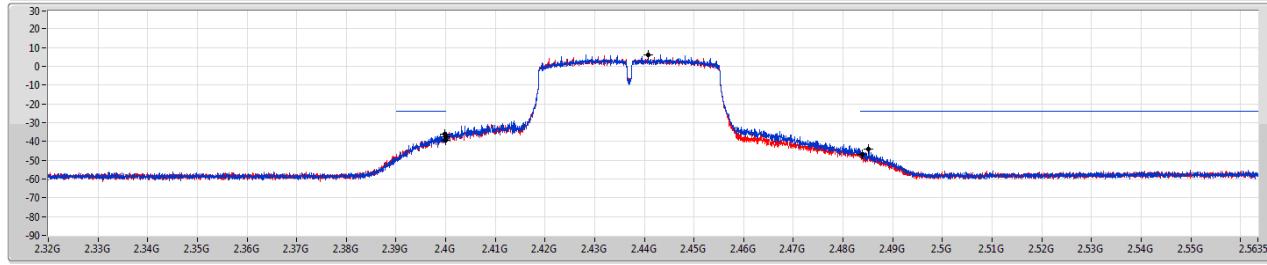
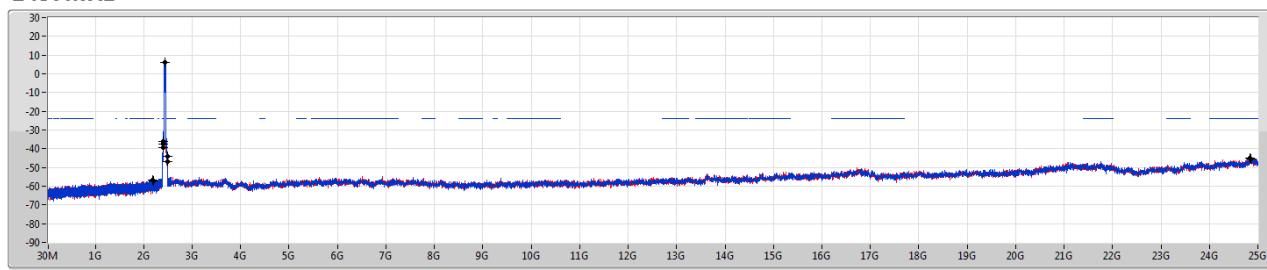
20/02/2020

 Port 1
 Port 2


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44075G	6.23	-23.77	2.07612G	-56.80	2.3988G	-31.88	2.4G	-34.50	2.48454G	-50.90	24.91586G	-45.03	1
2.44075G	6.23	-23.77	2.19233G	-56.81	2.39696G	-32.94	2.4G	-37.23	2.48354G	-52.38	24.8149G	-45.75	2

VHT40_Nss1,(MCS0)_2TX
2437MHz
CSE NdB

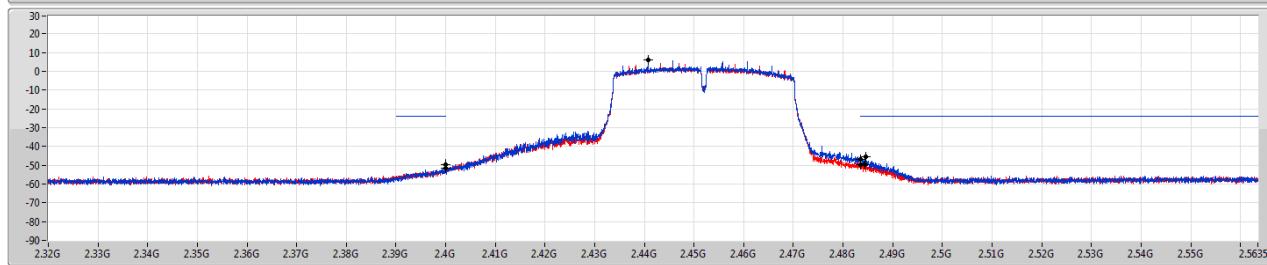
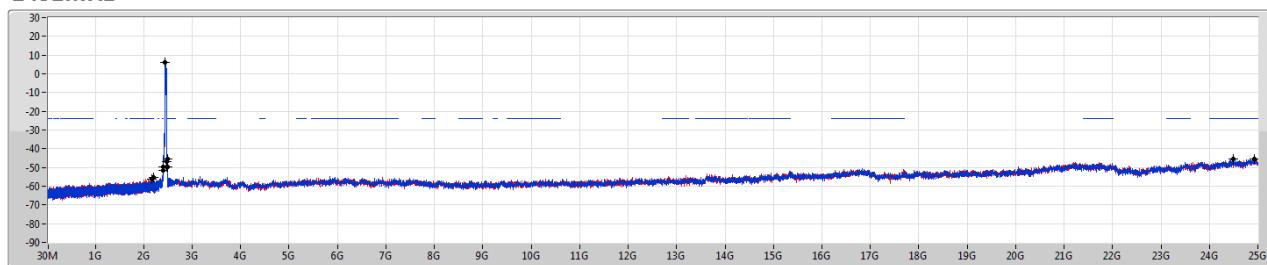
20/02/2020

 Port 1
 Port 2

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)	Freq(Hz)	Level(dBm)	Port
2.44075G	6.23	-23.77	2.1972G	-57.41	2.39976G	-36.09	2.4G	-37.48	2.4851G	-44.27	24.82892G	-45.22	1
2.44075G	6.23	-23.77	2.19262G	-56.55	2.39976G	-36.31	2.4G	-39.24	2.48382G	-46.98	24.85416G	-45.46	2

VHT40_Nss1,(MCS0)_2TX
2452MHz
CSE NdB

20/02/2020

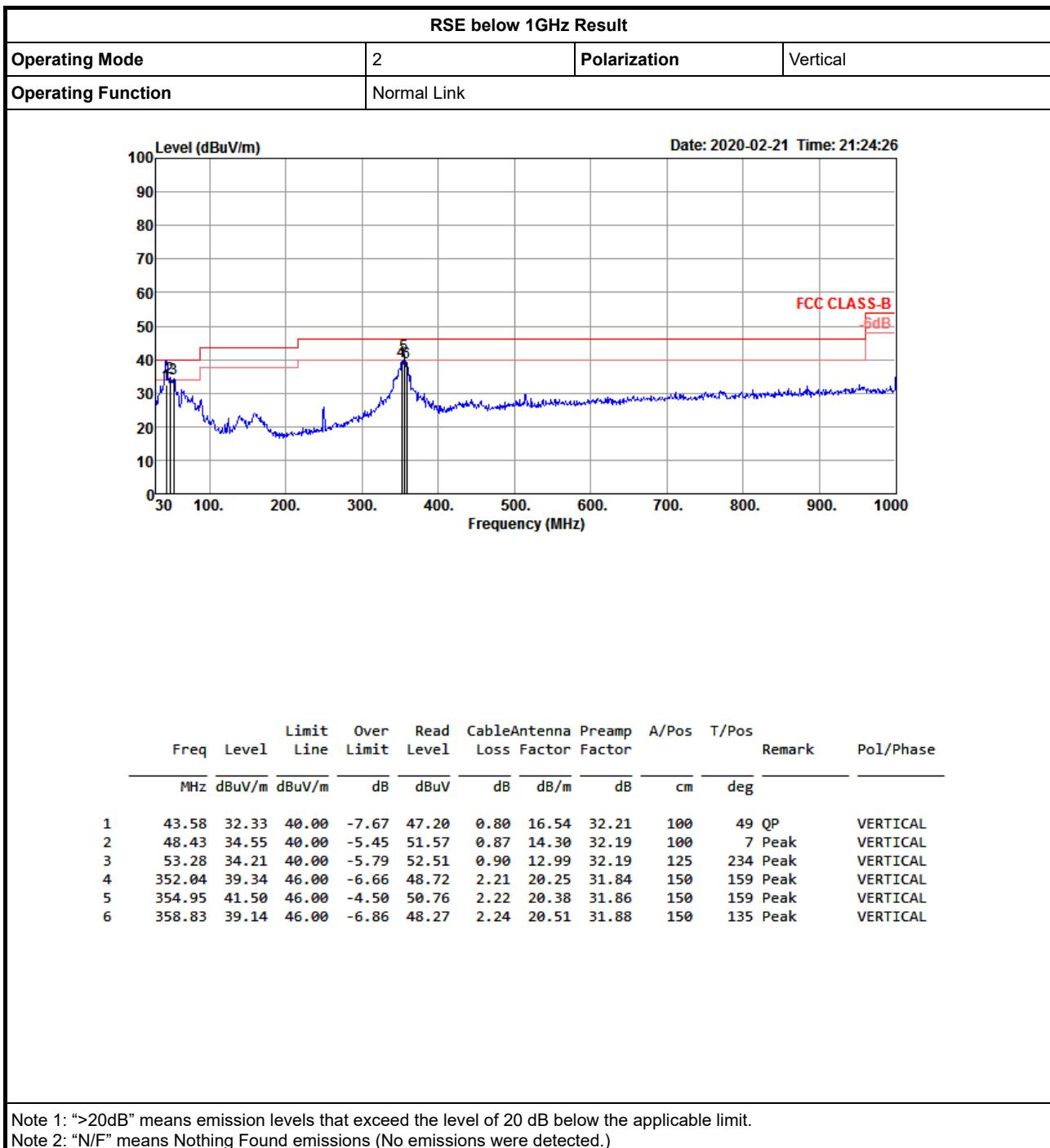
 Port 1
 Port 2

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)	Freq(Hz)	Level(dBm)	Port
2.44075G	6.23	-23.77	2.19663G	-55.54	2.39996G	-49.79	2.4835G	-46.66	2.4845G	-45.63	24.91867G	-45.31	1
2.44075G	6.23	-23.77	2.16228G	-56.24	2.4G	-51.59	2.4835G	-49.91	2.48446G	-49.70	24.48957G	-45.25	2



RSE below 1GHz Result

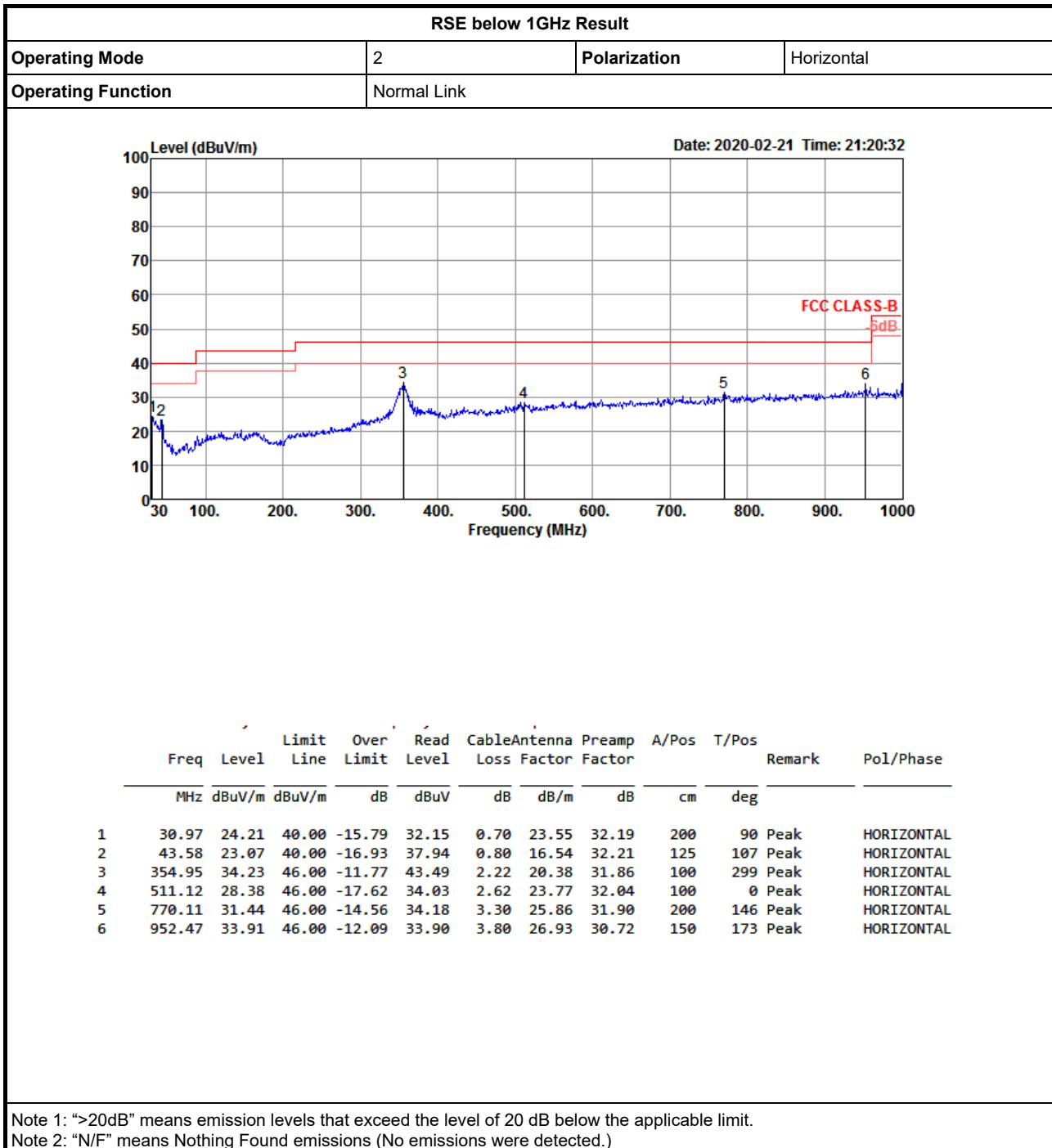
Appendix F.1





RSE below 1GHz Result

Appendix F.1

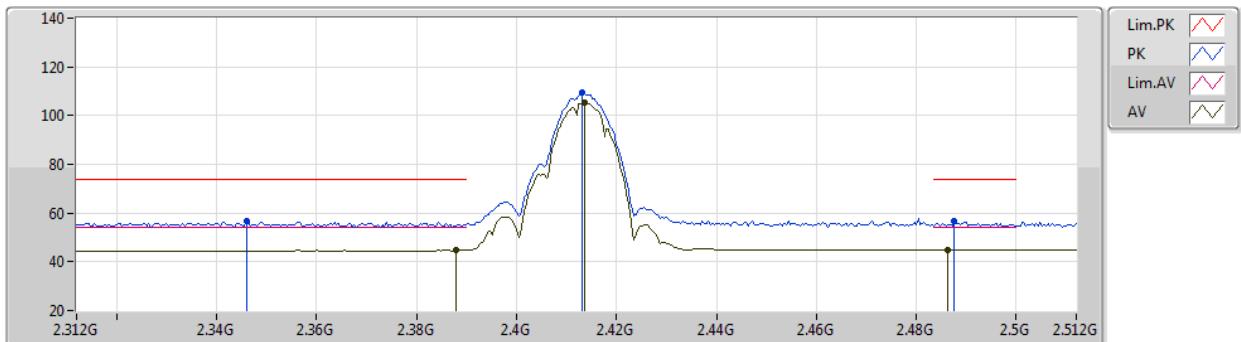


**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	AV	4.82397G	53.99	54.00	-0.01	3	Horizontal	20	2.00	-

802.11b_Nss1,(1Mbps)_2TX

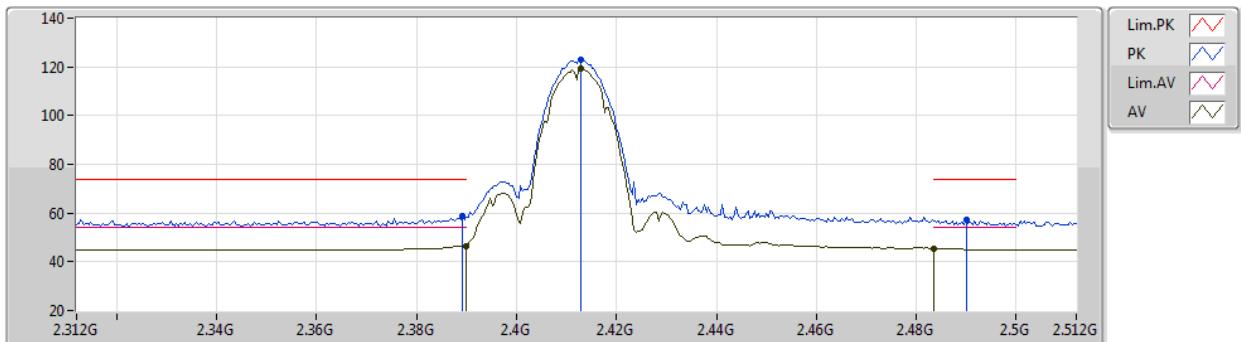
17/02/2020

2412MHz_TX

 EUT X_2TX
 Setting 22
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.346G	56.50	74.00	-17.50	24.77	3	Vertical	139	1.00	-	28.23	3.50	-	
AV	2.388G	44.69	54.00	-9.31	12.75	3	Vertical	139	1.00	-	28.44	3.50	-	
PK	2.4132G	109.23	Inf	-Inf	77.22	3	Vertical	139	1.00	-	28.50	3.51	-	
AV	2.4136G	105.33	Inf	-Inf	73.32	3	Vertical	139	1.00	-	28.50	3.51	-	
PK	2.4876G	56.67	74.00	-17.33	24.58	3	Vertical	139	1.00	-	28.50	3.59	-	
AV	2.4864G	44.73	54.00	-9.27	12.64	3	Vertical	139	1.00	-	28.50	3.59	-	

802.11b_Nss1,(1Mbps)_2TX

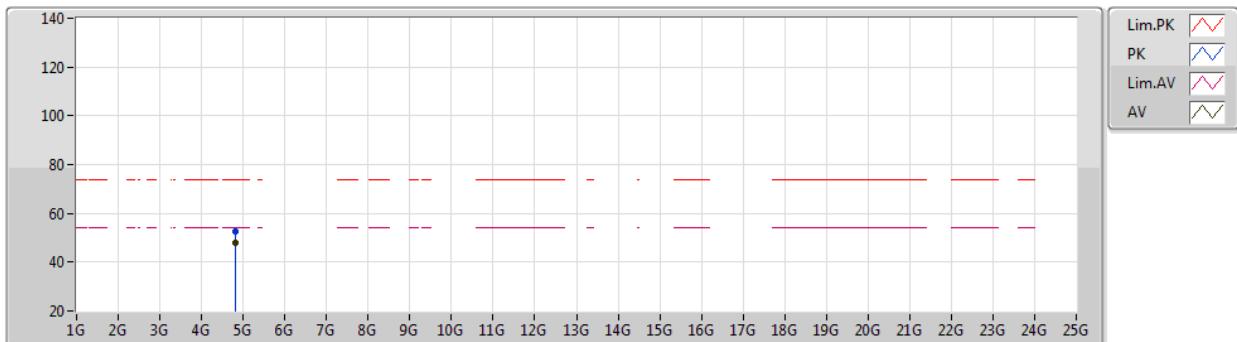
17/02/2020

2412MHz_TX

 EUT X_2TX
 Setting 22
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3892G	59.04	74.00	-14.96	27.09	3	Horizontal	198	1.76	-	28.45	3.50	-	
AV	2.39G	46.60	54.00	-7.40	14.65	3	Horizontal	198	1.76	-	28.45	3.50	-	
PK	2.4128G	123.14	Inf	-Inf	91.13	3	Horizontal	198	1.76	-	28.50	3.51	-	
AV	2.4128G	119.12	Inf	-Inf	87.11	3	Horizontal	198	1.76	-	28.50	3.51	-	
PK	2.49G	57.25	74.00	-16.75	25.16	3	Horizontal	198	1.76	-	28.50	3.59	-	
AV	2.4835G	45.53	54.00	-8.47	13.45	3	Horizontal	198	1.76	-	28.50	3.58	-	

802.11b_Nss1,(1Mbps)_2TX

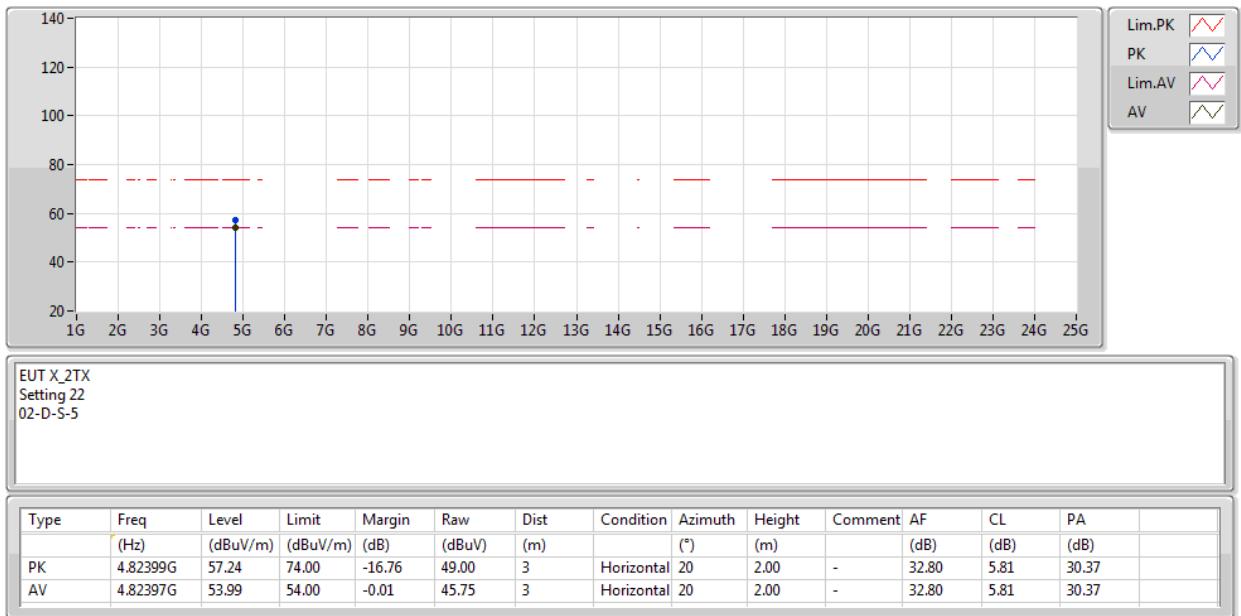
17/02/2020

2412MHz_TX

 EUT X_2TX
 Setting 22
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment (dB)	AF (dB)	CL (dB)	PA (dB)	
PK	4.824G	52.69	74.00	-21.31	44.45	3	Vertical	6	2.17	-	32.80	5.81	30.37	
AV	4.82398G	47.75	54.00	-6.25	39.51	3	Vertical	6	2.17	-	32.80	5.81	30.37	

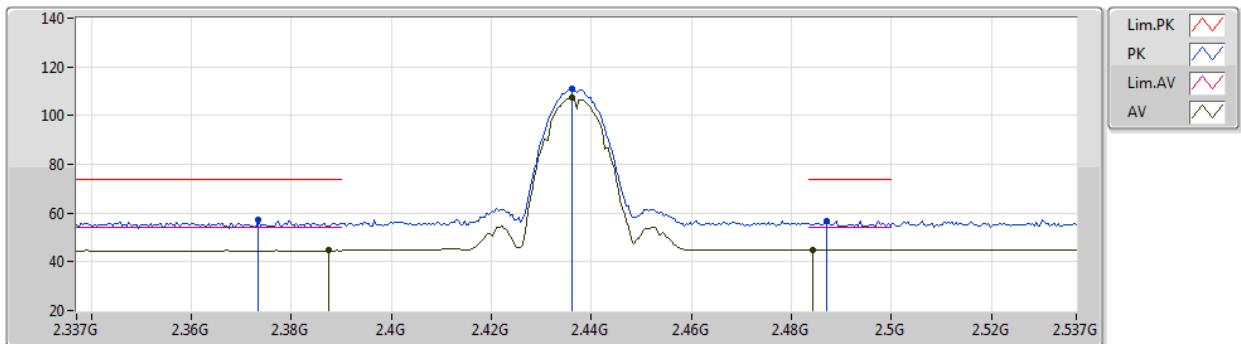
802.11b_Nss1,(1Mbps)_2TX

17/02/2020

2412MHz_TX


802.11b_Nss1,(1Mbps)_2TX

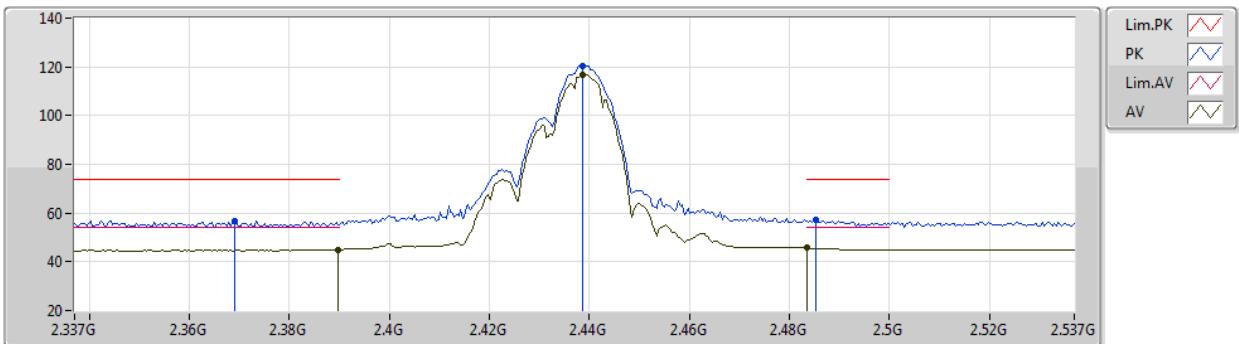
17/02/2020

2437MHz_TX

 EUT X_2TX
 Setting 23.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment (dB)	AF (dB)	CL (dB)	PA (dB)	
PK	2.3734G	57.00	74.00	-17.00	25.13	3	Vertical	66	1.80	-	28.37	3.50	-	
AV	2.3874G	44.61	54.00	-9.39	12.67	3	Vertical	66	1.80	-	28.44	3.50	-	
PK	2.4362G	111.11	Inf	-Inf	79.07	3	Vertical	66	1.80	-	28.50	3.54	-	
AV	2.4362G	107.36	Inf	-Inf	75.32	3	Vertical	66	1.80	-	28.50	3.54	-	
PK	2.487G	56.91	74.00	-17.09	24.82	3	Vertical	66	1.80	-	28.50	3.59	-	
AV	2.4842G	44.75	54.00	-9.25	12.67	3	Vertical	66	1.80	-	28.50	3.58	-	

802.11b_Nss1,(1Mbps)_2TX

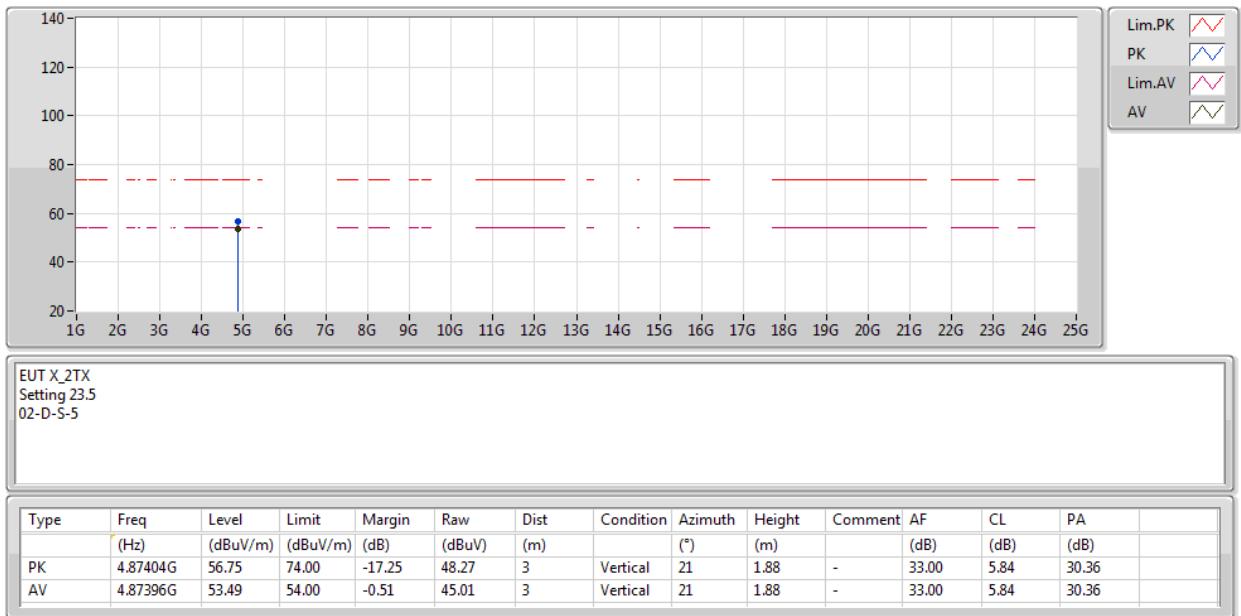
17/02/2020

2437MHz_TX

 EUT X_2TX
 Setting 23.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.369G	56.94	74.00	-17.06	25.10	3	Horizontal	200	1.09	-	28.34	3.50	-	
AV	2.3898G	45.00	54.00	-9.00	13.05	3	Horizontal	200	1.09	-	28.45	3.50	-	
PK	2.4386G	120.36	Inf	-Inf	88.32	3	Horizontal	200	1.09	-	28.50	3.54	-	
AV	2.4386G	116.85	Inf	-Inf	84.81	3	Horizontal	200	1.09	-	28.50	3.54	-	
PK	2.4854G	57.33	74.00	-16.67	25.24	3	Horizontal	200	1.09	-	28.50	3.59	-	
AV	2.4835G	45.73	54.00	-8.27	13.65	3	Horizontal	200	1.09	-	28.50	3.58	-	

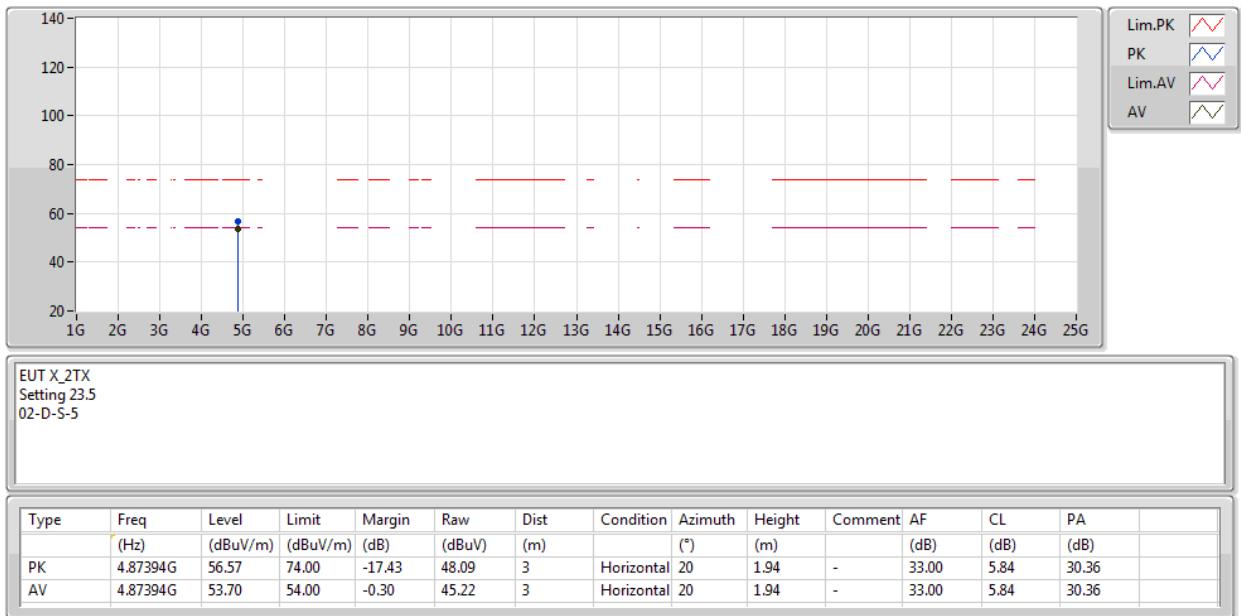
802.11b_Nss1,(1Mbps)_2TX

17/02/2020

2437MHz_TX


802.11b_Nss1,(1Mbps)_2TX

17/02/2020

2437MHz_TX


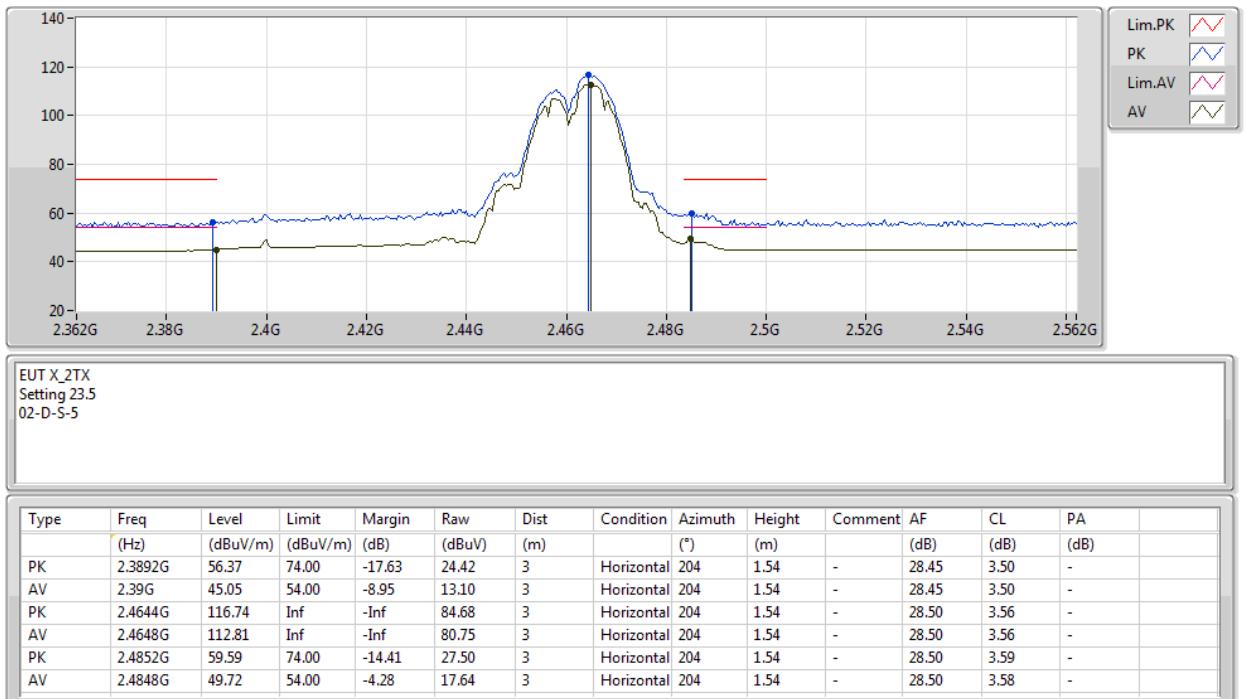
802.11b_Nss1,(1Mbps)_2TX

17/02/2020

2462MHz_TX

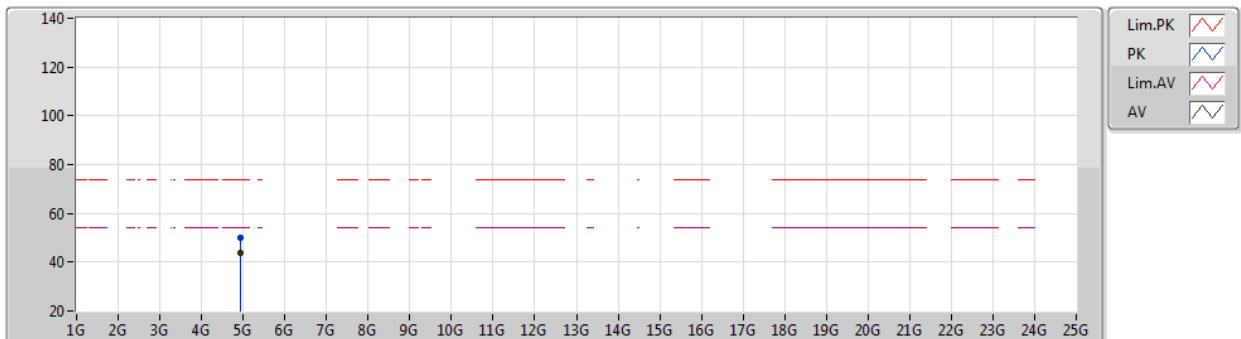

802.11b_Nss1,(1Mbps)_2TX

17/02/2020

2462MHz_TX


802.11b_Nss1,(1Mbps)_2TX

17/02/2020

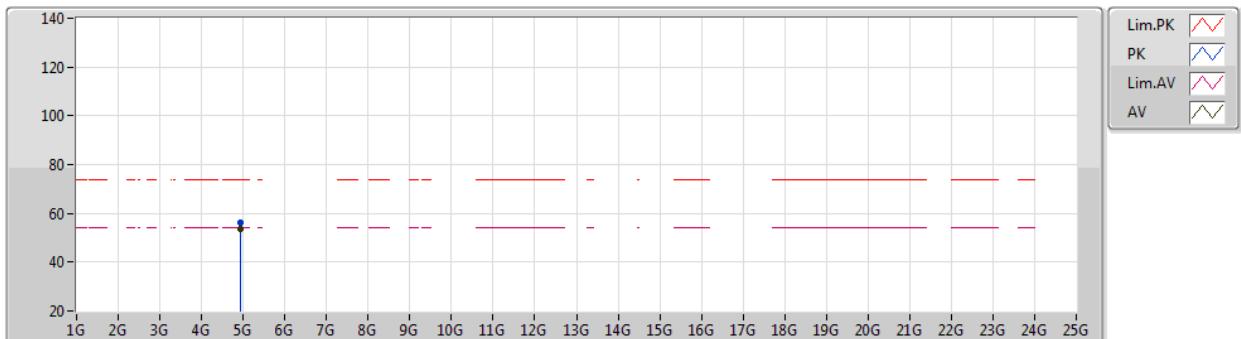
2462MHz_TX


EUT X_2TX
Setting 23.5
02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment (dB)	AF (dB)	CL (dB)	PA (dB)
PK	4.92392G	50.19	74.00	-22.81	42.53	3	Vertical	20	1.31	-	33.15	5.86	30.35
AV	4.92394G	43.79	54.00	-9.21	36.13	3	Vertical	20	1.31	-	33.15	5.86	30.35

802.11b_Nss1,(1Mbps)_2TX

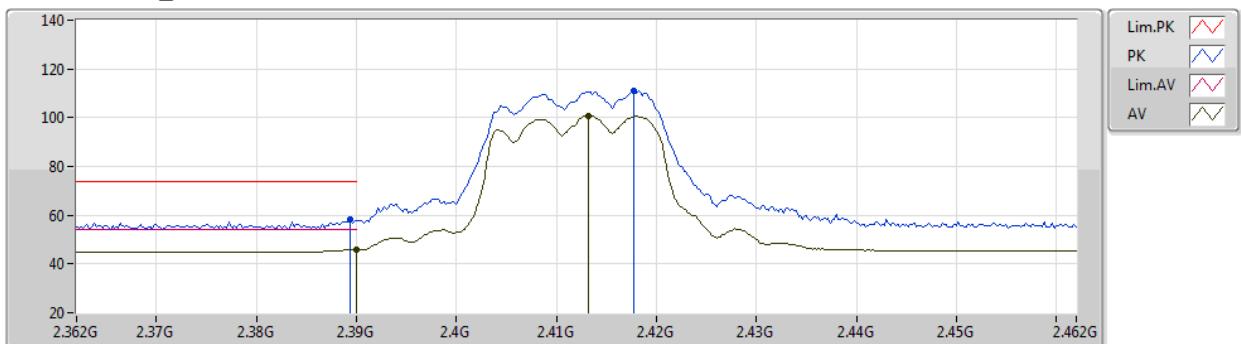
18/02/2020

2462MHz_TX

 EUT X_2TX
 Setting 23.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment (dB)	AF (dB)	CL (dB)	PA (dB)	
PK	4.92396G	56.08	74.00	-17.92	47.42	3	Horizontal	27	1.91	-	33.15	5.86	30.35	
AV	4.924G	53.65	54.00	-0.35	44.99	3	Horizontal	27	1.91	-	33.15	5.86	30.35	

802.11g_Nss1,(6Mbps)_2TX

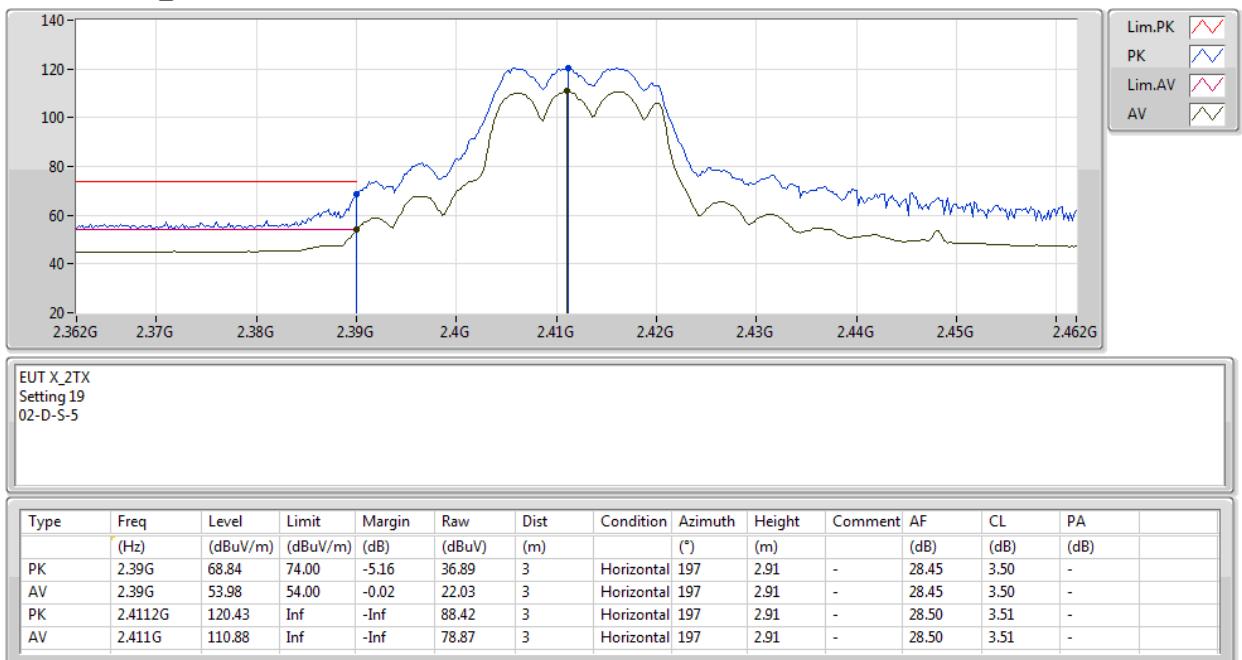
17/02/2020

2412MHz_TX

 EUT_X_2TX
 Setting 19
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (*)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3894G	58.18	74.00	-15.82	26.23	3	Vertical	135	2.33	-	28.45	3.50	-	
AV	2.39G	45.83	54.00	-8.17	13.88	3	Vertical	135	2.33	-	28.45	3.50	-	
PK	2.4178G	111.05	Inf	-Inf	79.03	3	Vertical	135	2.33	-	28.50	3.52	-	
AV	2.4132G	100.87	Inf	-Inf	68.86	3	Vertical	135	2.33	-	28.50	3.51	-	

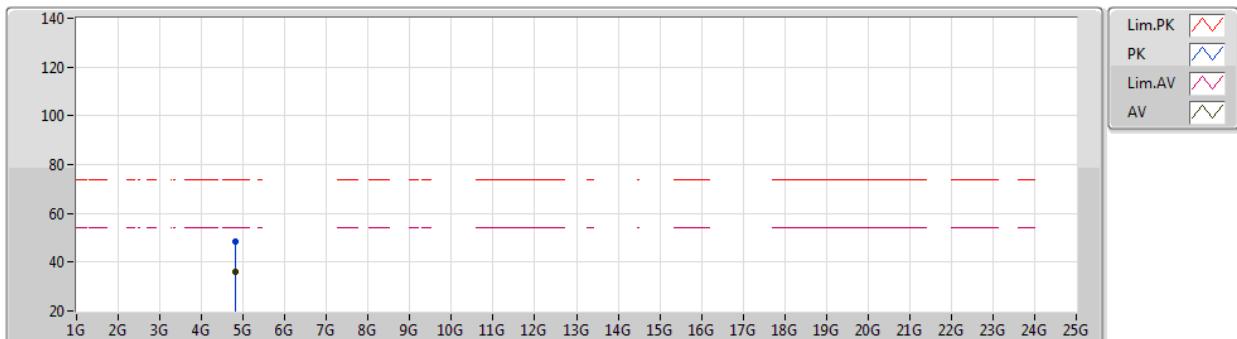
802.11g_Nss1,(6Mbps)_2TX

17/02/2020

2412MHz_TX


802.11g_Nss1,(6Mbps)_2TX

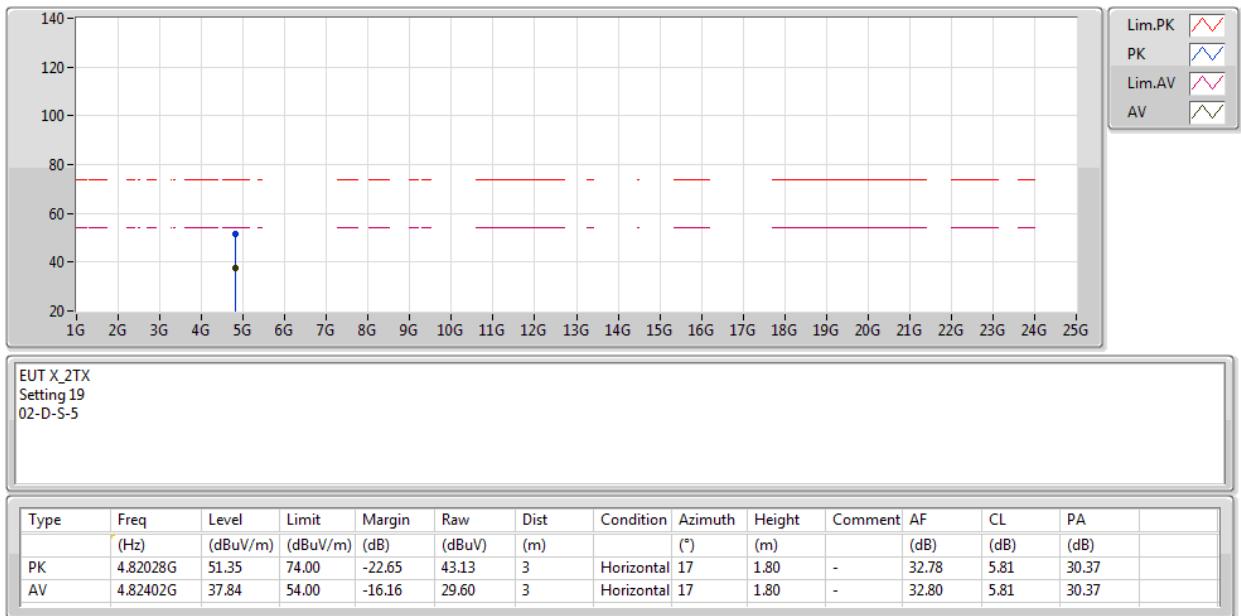
18/02/2020

2412MHz_TX

 EUT X_2TX
 Setting 19
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment (dB)	AF (dB)	CL (dB)	PA (dB)
PK	4.82474G	48.63	74.00	-25.37	40.39	3	Vertical	17	2.09	-	32.80	5.81	30.37
AV	4.82402G	36.28	54.00	-17.72	28.04	3	Vertical	17	2.09	-	32.80	5.81	30.37

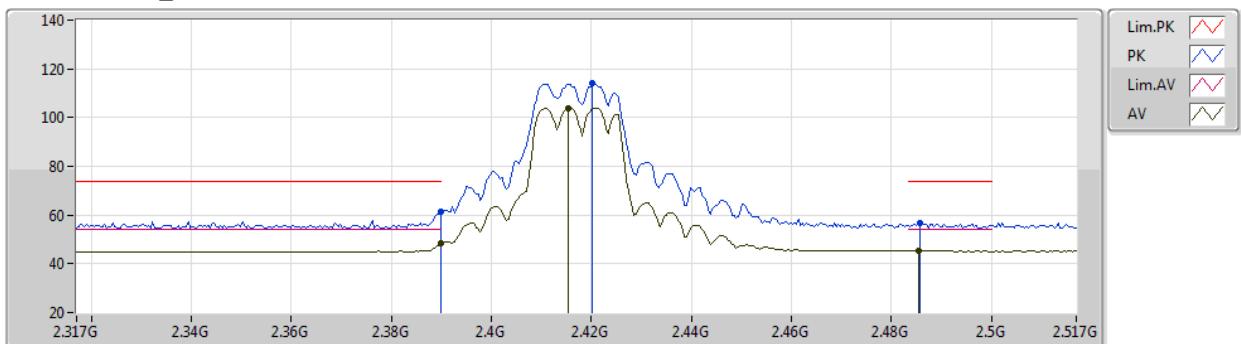
802.11g_Nss1,(6Mbps)_2TX

18/02/2020

2412MHz_TX


802.11g_Nss1,(6Mbps)_2TX

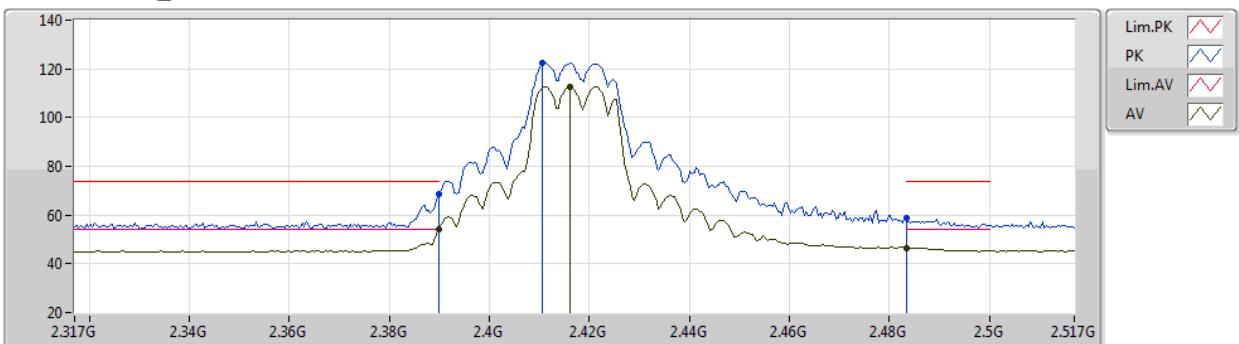
17/02/2020

2417MHz_TX

 EUT X_2TX
 Setting 21
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3898G	61.30	74.00	-12.70	29.35	3	Vertical	91	2.86	-	28.45	3.50	-	
AV	2.3898G	48.33	54.00	-5.67	16.38	3	Vertical	91	2.86	-	28.45	3.50	-	
PK	2.4202G	113.90	Inf	-Inf	81.88	3	Vertical	91	2.86	-	28.50	3.52	-	
AV	2.4154G	104.03	Inf	-Inf	72.01	3	Vertical	91	2.86	-	28.50	3.52	-	
PK	2.4858G	56.47	74.00	-17.53	24.38	3	Vertical	91	2.86	-	28.50	3.59	-	
AV	2.4854G	45.56	54.00	-8.44	13.47	3	Vertical	91	2.86	-	28.50	3.59	-	

802.11g_Nss1,(6Mbps)_2TX

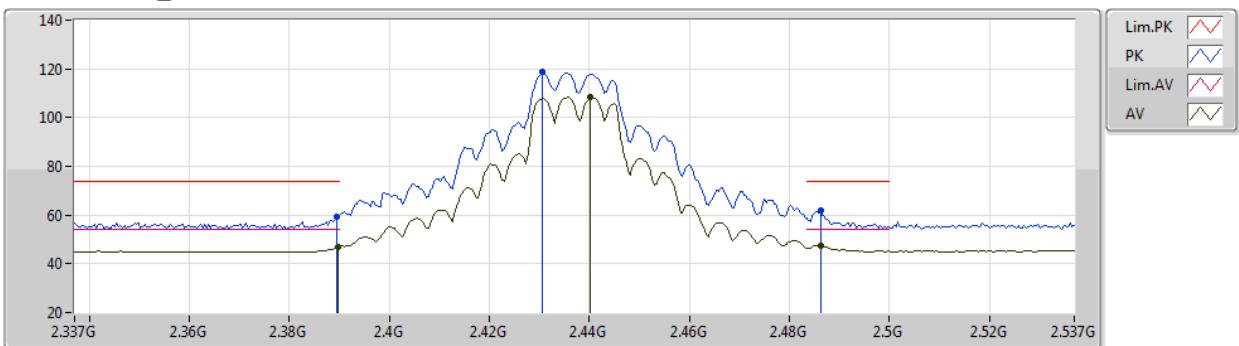
17/02/2020

2417MHz_TX

 EUT X_2TX
 Setting 21
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3898G	68.49	74.00	-5.51	36.54	3	Horizontal	197	2.89	-	28.45	3.50	-	
AV	2.3898G	53.95	54.00	-0.05	22.00	3	Horizontal	197	2.89	-	28.45	3.50	-	
PK	2.4106G	122.52	Inf	-Inf	90.51	3	Horizontal	197	2.89	-	28.50	3.51	-	
AV	2.4162G	112.72	Inf	-Inf	80.70	3	Horizontal	197	2.89	-	28.50	3.52	-	
PK	2.4835G	58.98	74.00	-15.02	26.90	3	Horizontal	197	2.89	-	28.50	3.58	-	
AV	2.4835G	46.49	54.00	-7.51	14.41	3	Horizontal	197	2.89	-	28.50	3.58	-	

802.11g_Nss1,(6Mbps)_2TX

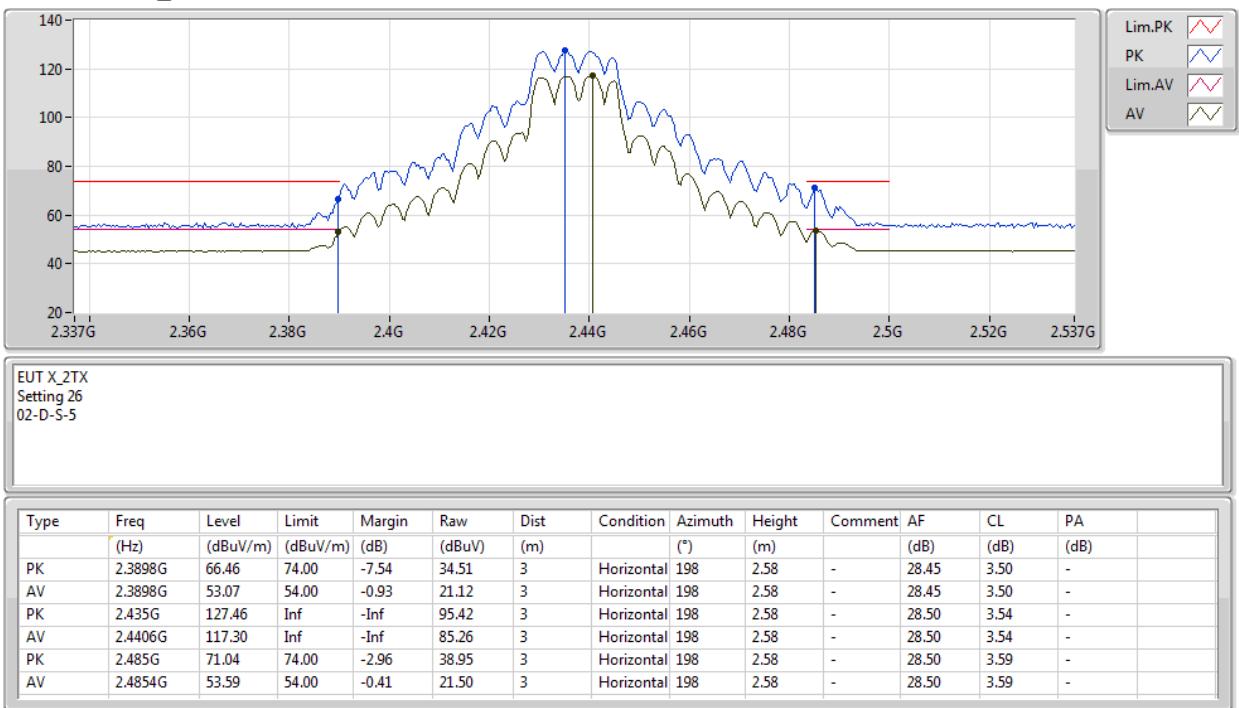
17/02/2020

2437MHz_TX

 EUT_X_2TX
 Setting 26
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3894G	59.44	74.00	-14.56	27.49	3	Vertical	93	2.83	-	28.45	3.50	-	
AV	2.3898G	47.04	54.00	-6.96	15.09	3	Vertical	93	2.83	-	28.45	3.50	-	
PK	2.4306G	118.56	Inf	-Inf	86.53	3	Vertical	93	2.83	-	28.50	3.53	-	
AV	2.4402G	108.25	Inf	-Inf	76.21	3	Vertical	93	2.83	-	28.50	3.54	-	
PK	2.4862G	61.92	74.00	-12.08	29.83	3	Vertical	93	2.83	-	28.50	3.59	-	
AV	2.4862G	47.38	54.00	-6.62	15.29	3	Vertical	93	2.83	-	28.50	3.59	-	

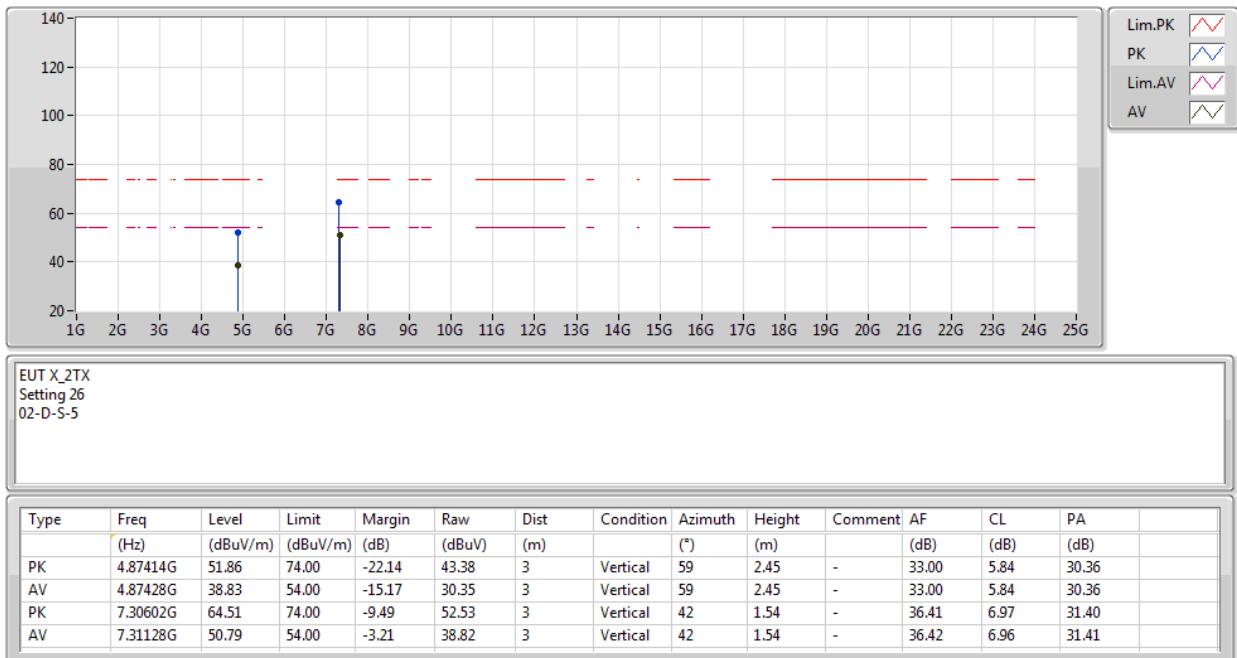
802.11g_Nss1,(6Mbps)_2TX

17/02/2020

2437MHz_TX


802.11g_Nss1,(6Mbps)_2TX

18/02/2020

2437MHz_TX


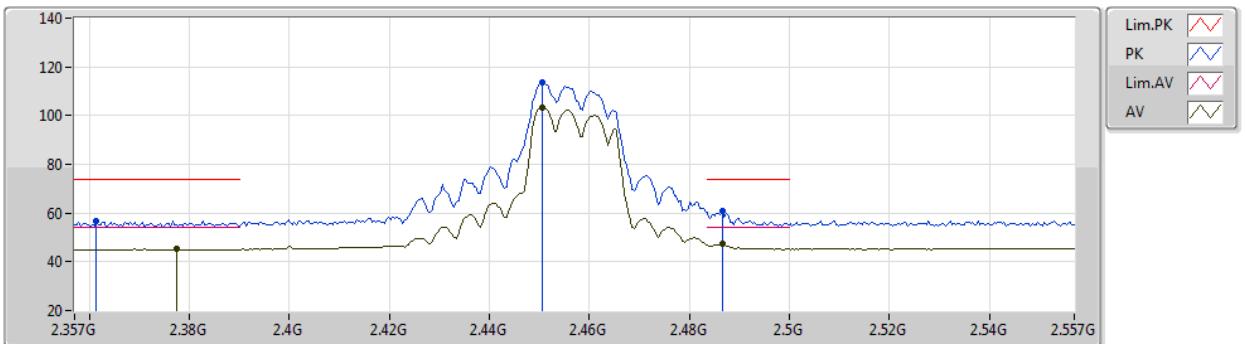
802.11g_Nss1,(6Mbps)_2TX

18/02/2020

2437MHz_TX


802.11g_Nss1,(6Mbps)_2TX

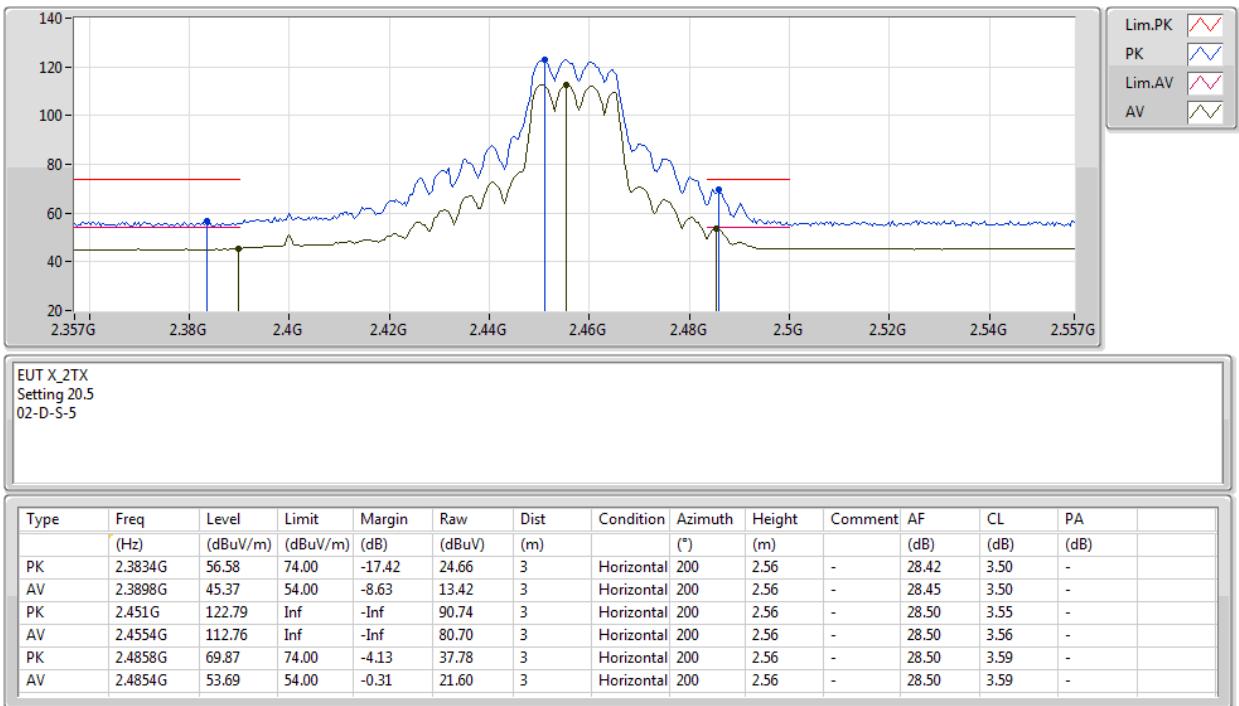
17/02/2020

2457MHz_TX

 EUT X_2TX
 Setting 20.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3614G	56.76	74.00	-17.24	24.95	3	Vertical	92	2.83	-	28.31	3.50	-	
AV	2.3774G	45.12	54.00	-8.88	13.23	3	Vertical	92	2.83	-	28.39	3.50	-	
PK	2.4506G	113.59	Inf	-Inf	81.54	3	Vertical	92	2.83	-	28.50	3.55	-	
AV	2.4506G	103.27	Inf	-Inf	71.22	3	Vertical	92	2.83	-	28.50	3.55	-	
PK	2.4866G	60.87	74.00	-13.13	28.78	3	Vertical	92	2.83	-	28.50	3.59	-	
AV	2.4866G	47.21	54.00	-6.79	15.12	3	Vertical	92	2.83	-	28.50	3.59	-	

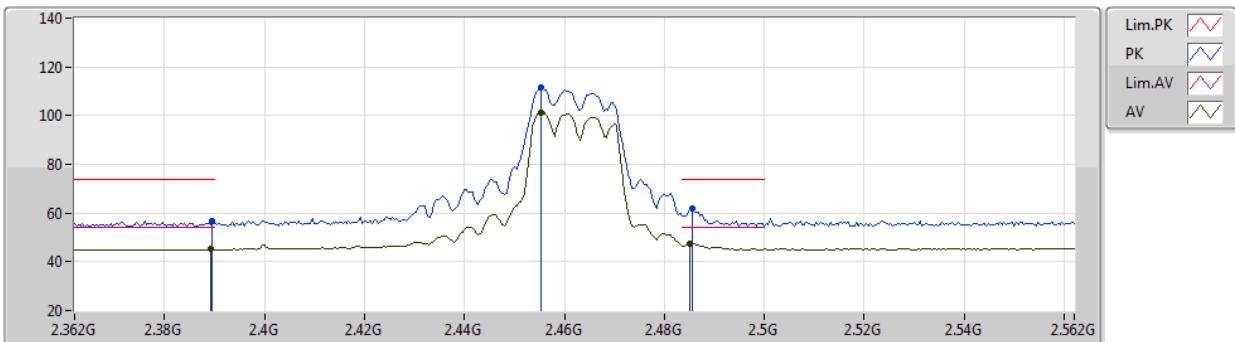
802.11g_Nss1,(6Mbps)_2TX

17/02/2020

2457MHz_TX


802.11g_Nss1,(6Mbps)_2TX

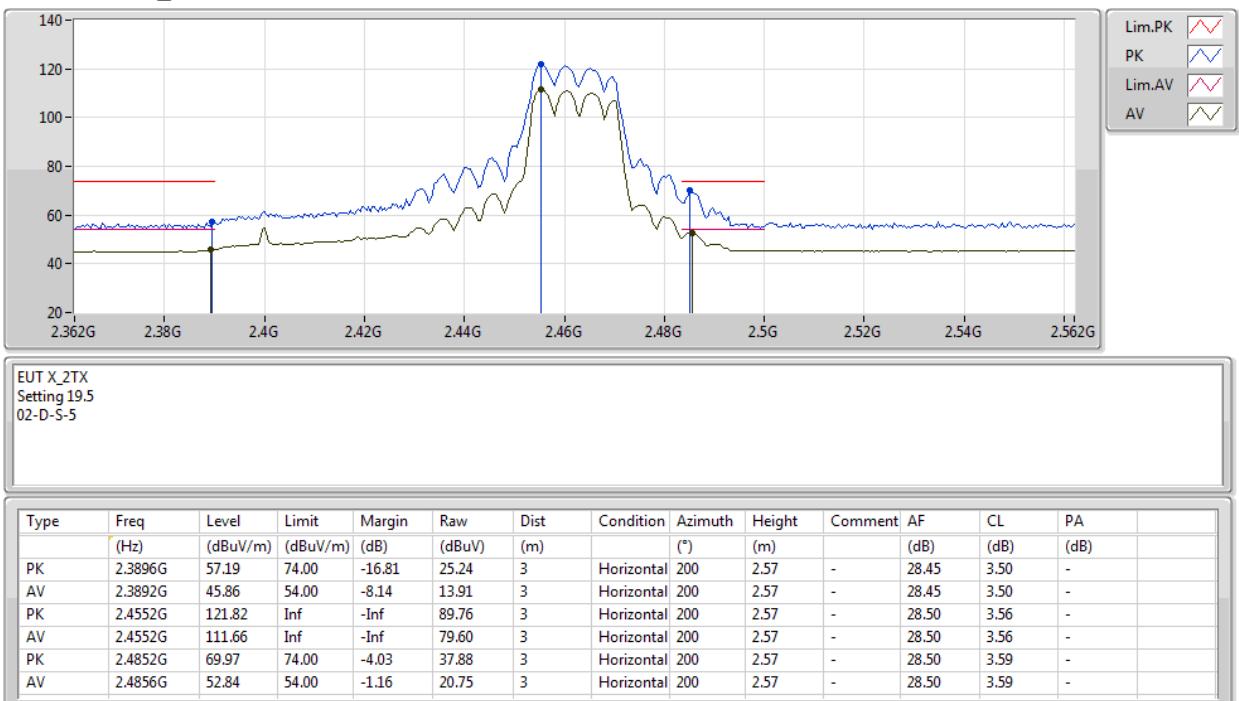
17/02/2020

2462MHz_TX

 EUT_X_2TX
 Setting 19.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment (dB)	AF (dB)	CL (dB)	PA (dB)	
PK	2.3896G	56.62	74.00	-17.38	24.67	3	Vertical	92	2.78	-	28.45	3.50	-	
AV	2.3892G	45.17	54.00	-8.83	13.22	3	Vertical	92	2.78	-	28.45	3.50	-	
PK	2.4552G	111.63	Inf	-Inf	79.57	3	Vertical	92	2.78	-	28.50	3.56	-	
AV	2.4552G	101.45	Inf	-Inf	69.39	3	Vertical	92	2.78	-	28.50	3.56	-	
PK	2.4856G	62.03	74.00	-11.97	29.94	3	Vertical	92	2.78	-	28.50	3.59	-	
AV	2.4852G	47.44	54.00	-6.56	15.35	3	Vertical	92	2.78	-	28.50	3.59	-	

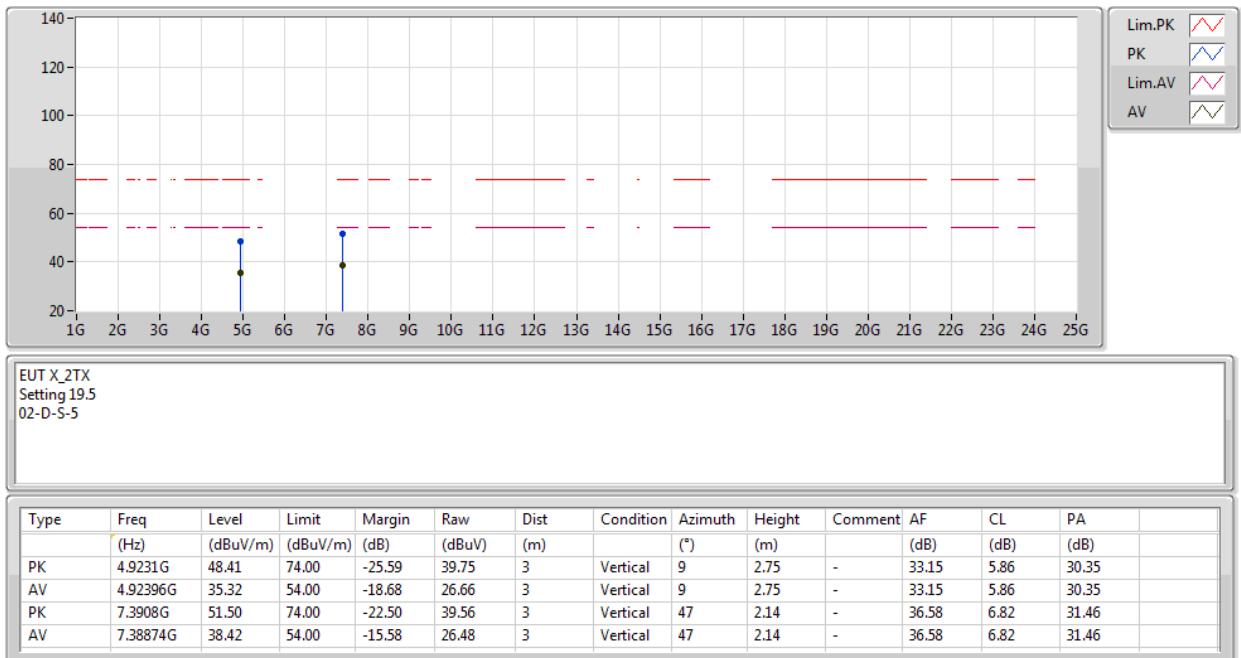
802.11g_Nss1,(6Mbps)_2TX

17/02/2020

2462MHz_TX


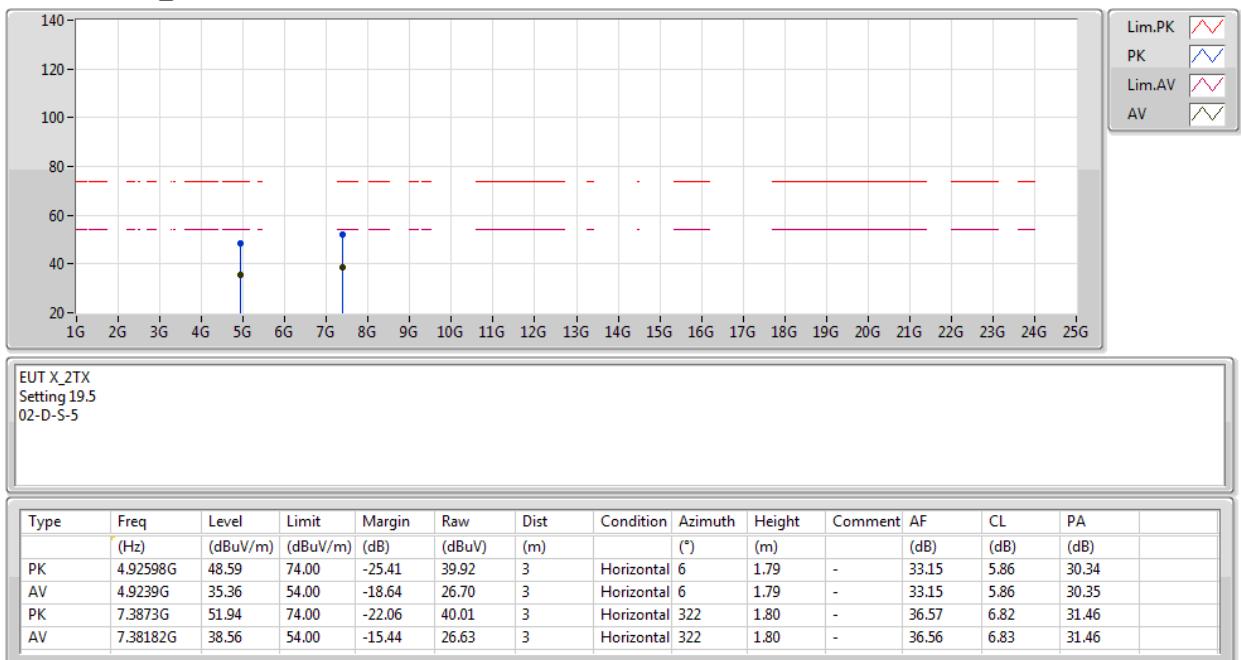
802.11g_Nss1,(6Mbps)_2TX

18/02/2020

2462MHz_TX


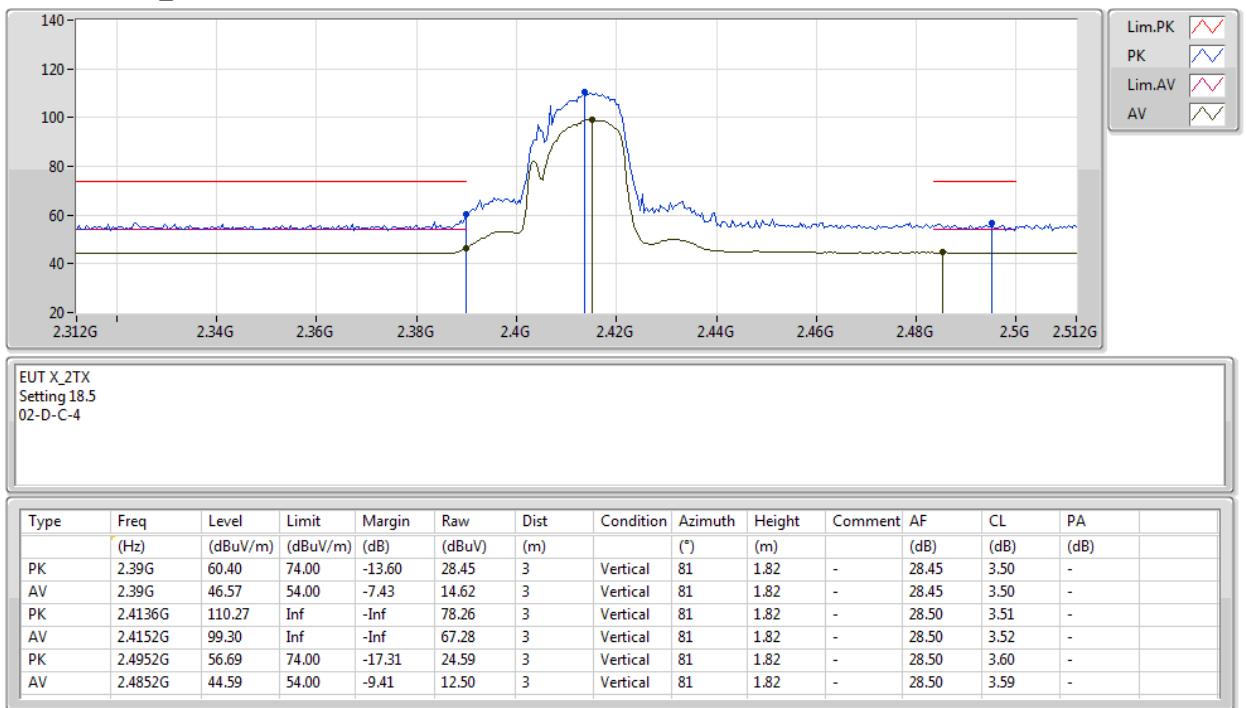
802.11g_Nss1,(6Mbps)_2TX

18/02/2020

2462MHz_TX


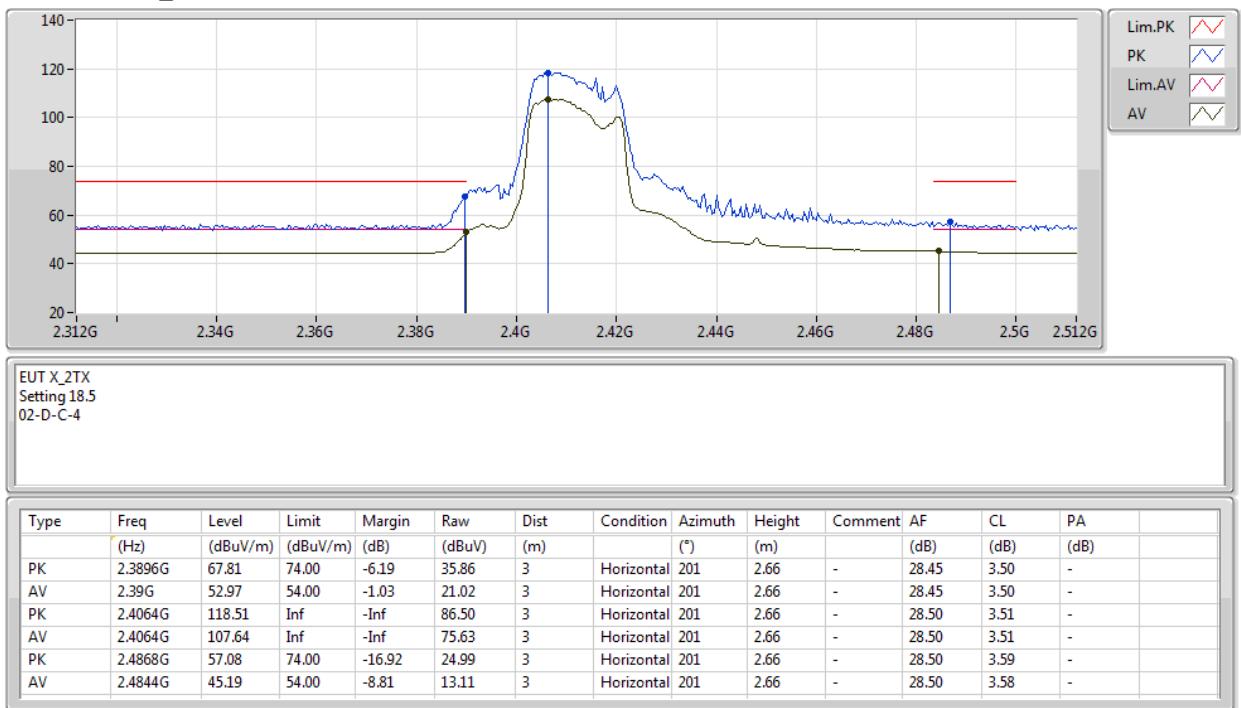
VHT20_Nss1,(MCS0)_2TX

19/02/2020

2412MHz_TX


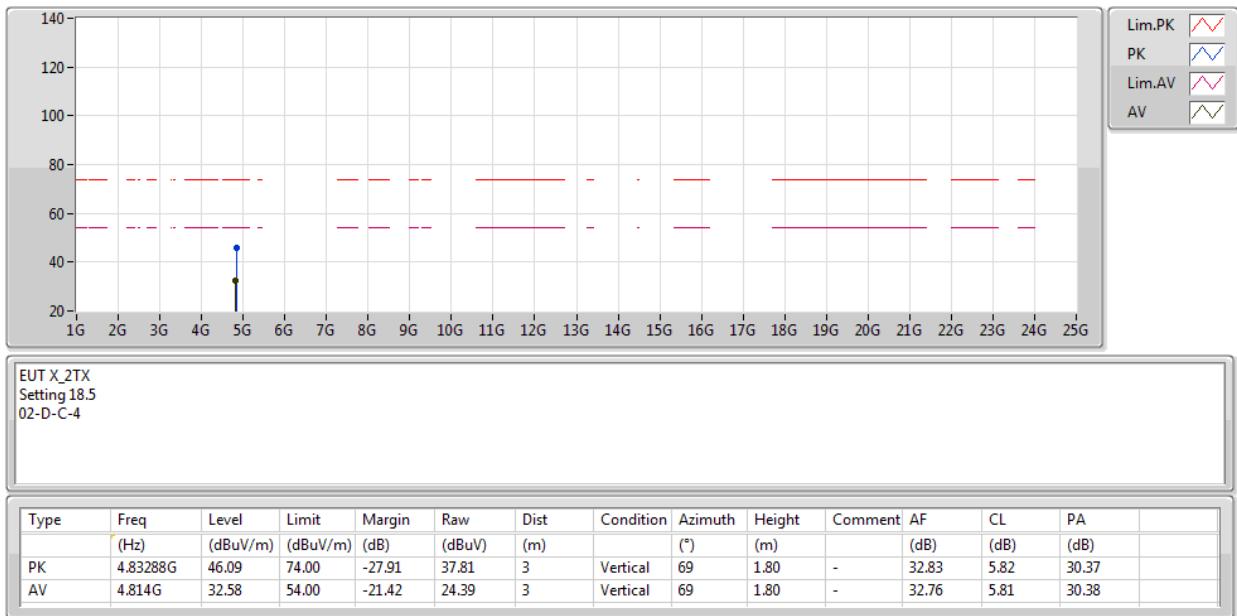
VHT20_Nss1,(MCS0)_2TX

19/02/2020

2412MHz_TX


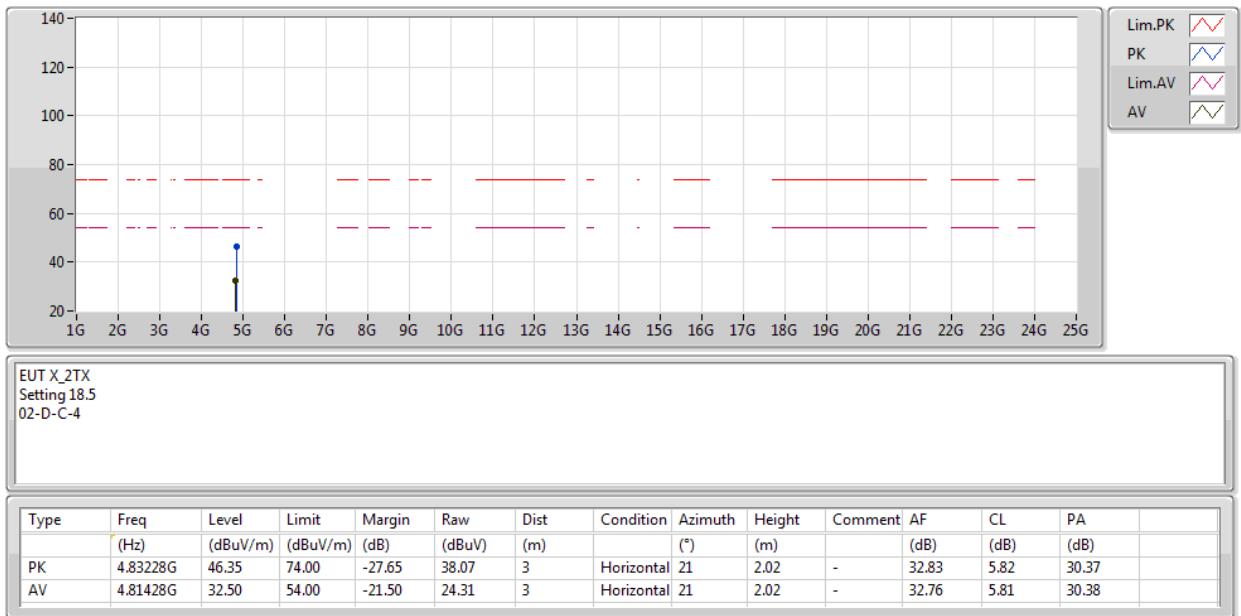
VHT20_Nss1,(MCS0)_2TX

19/02/2020

2412MHz_TX


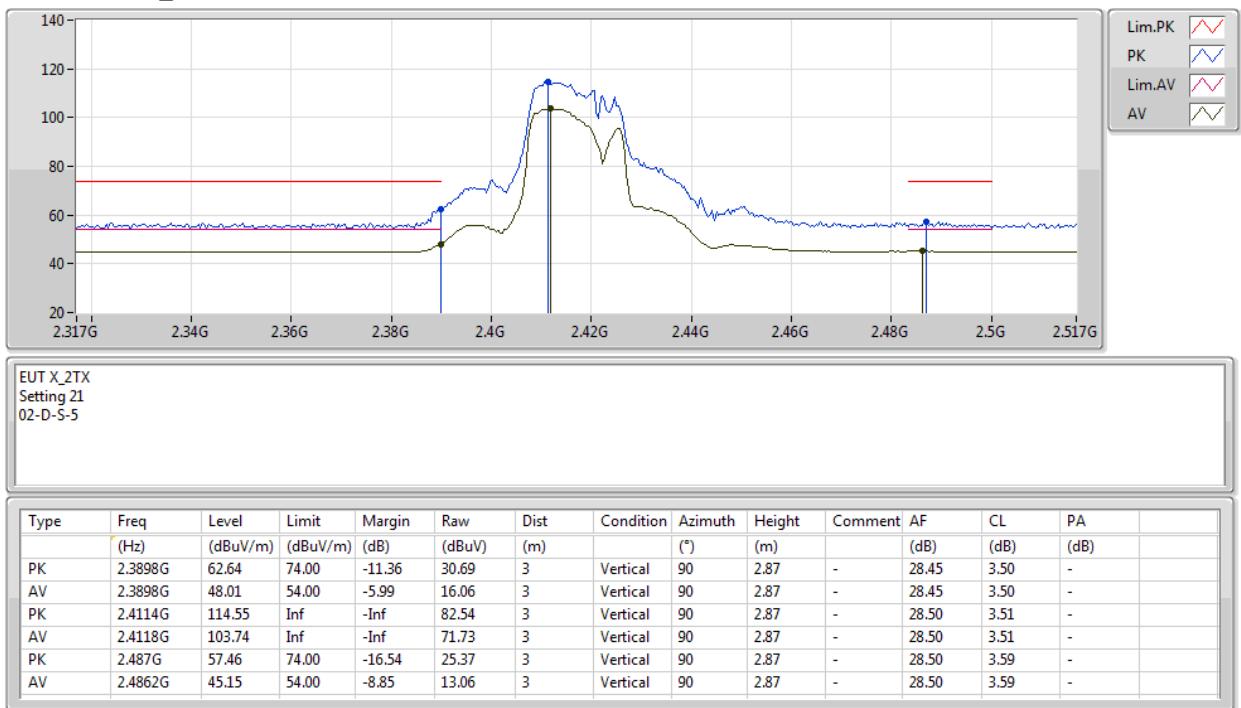
VHT20_Nss1,(MCS0)_2TX

19/02/2020

2412MHz_TX


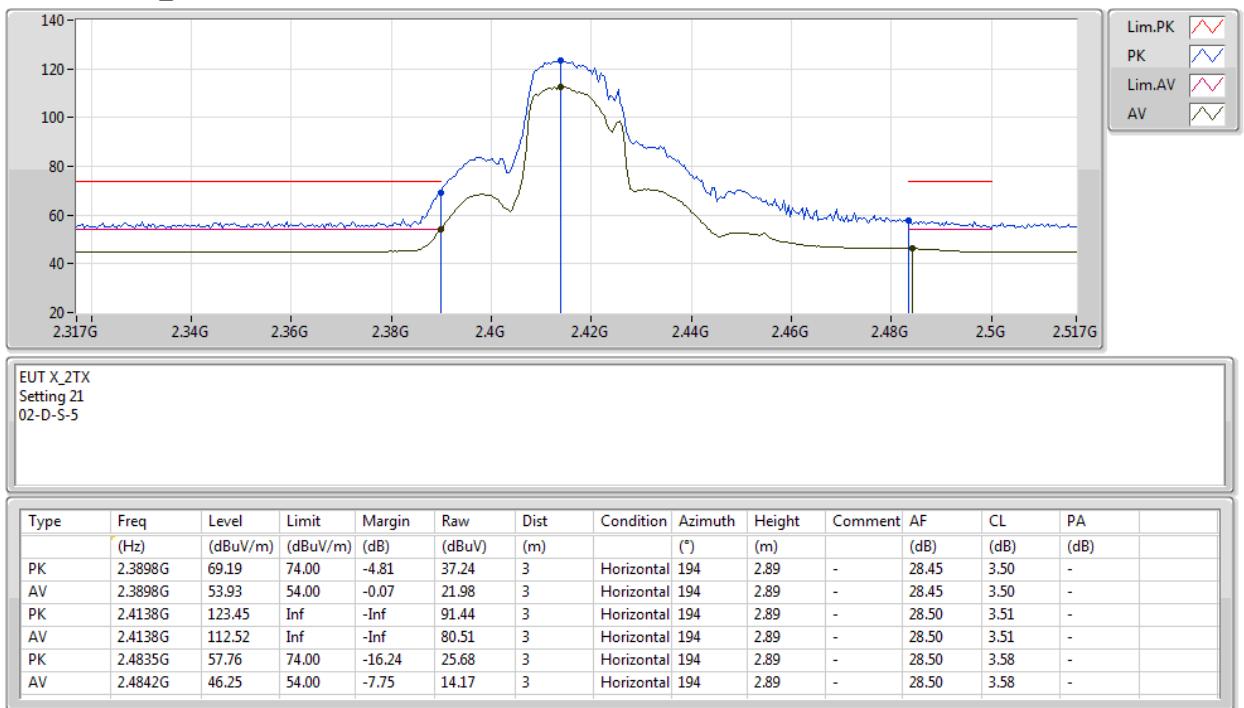
VHT20_Nss1,(MCS0)_2TX

18/02/2020

2417MHz_TX


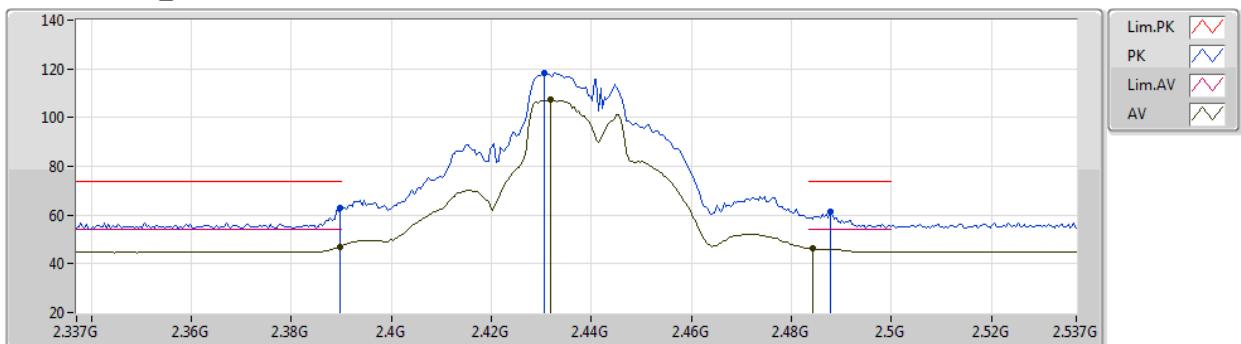
VHT20_Nss1,(MCS0)_2TX

18/02/2020

2417MHz_TX


VHT20_Nss1,(MCS0)_2TX

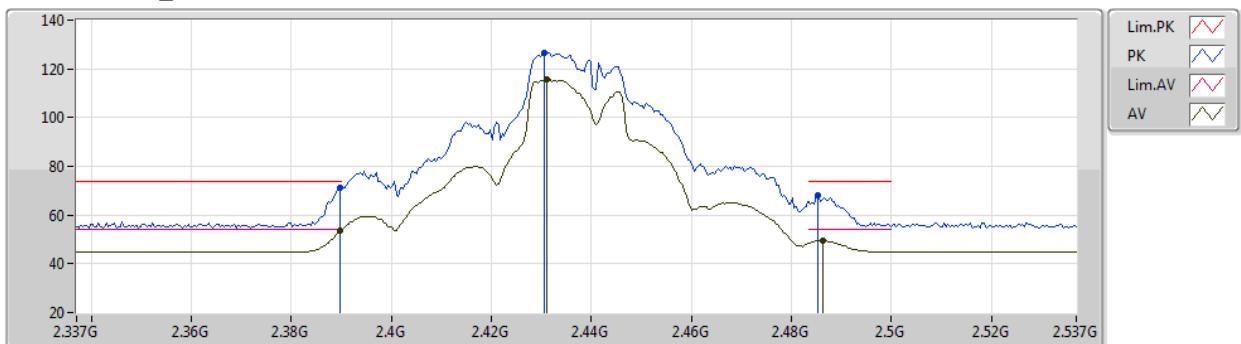
17/02/2020

2437MHz_TX

 EUT X_2TX
 Setting 25.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3898G	62.72	74.00	-11.28	30.77	3	Vertical	92	2.84	-	28.45	3.50	-	
AV	2.3898G	47.13	54.00	-6.87	15.18	3	Vertical	92	2.84	-	28.45	3.50	-	
PK	2.4306G	118.14	Inf	-Inf	86.11	3	Vertical	92	2.84	-	28.50	3.53	-	
AV	2.4318G	107.32	Inf	-Inf	75.29	3	Vertical	92	2.84	-	28.50	3.53	-	
PK	2.4878G	61.19	74.00	-12.81	29.10	3	Vertical	92	2.84	-	28.50	3.59	-	
AV	2.4842G	46.27	54.00	-7.73	14.19	3	Vertical	92	2.84	-	28.50	3.58	-	

VHT20_Nss1,(MCS0)_2TX

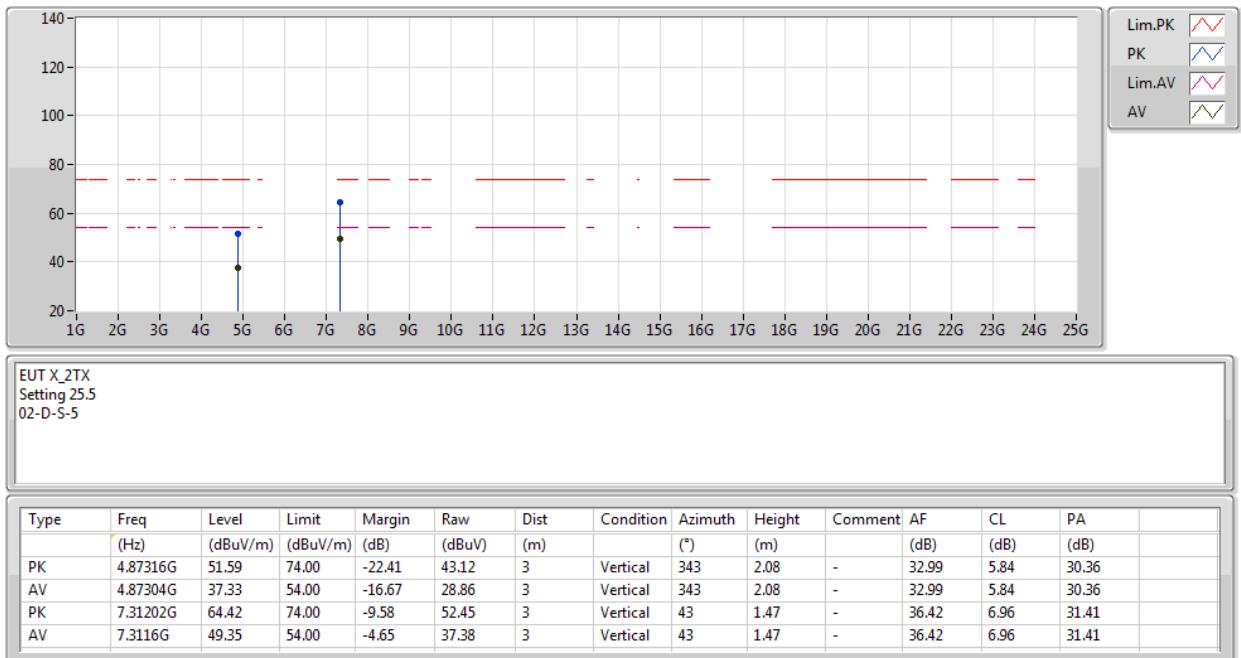
17/02/2020

2437MHz_TX

 EUT X_2TX
 Setting 25.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3898G	71.23	74.00	-2.77	39.28	3	Horizontal	202	2.59	-	28.45	3.50	-	
AV	2.3898G	53.71	54.00	-0.29	21.76	3	Horizontal	202	2.59	-	28.45	3.50	-	
PK	2.4306G	126.79	Inf	-Inf	94.76	3	Horizontal	202	2.59	-	28.50	3.53	-	
AV	2.431G	115.62	Inf	-Inf	83.59	3	Horizontal	202	2.59	-	28.50	3.53	-	
PK	2.4854G	68.15	74.00	-5.85	36.06	3	Horizontal	202	2.59	-	28.50	3.59	-	
AV	2.4862G	49.51	54.00	-4.49	17.42	3	Horizontal	202	2.59	-	28.50	3.59	-	

VHT20_Nss1,(MCS0)_2TX

18/02/2020

2437MHz_TX


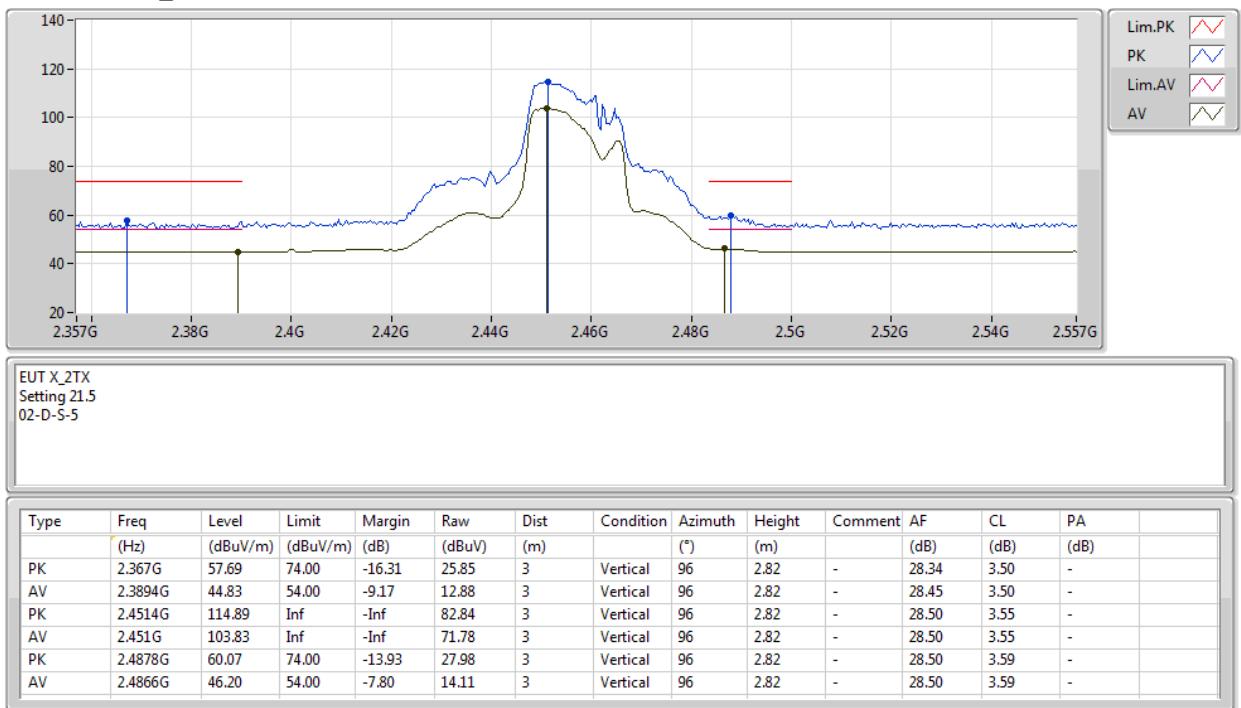
VHT20_Nss1,(MCS0)_2TX

18/02/2020

2437MHz_TX

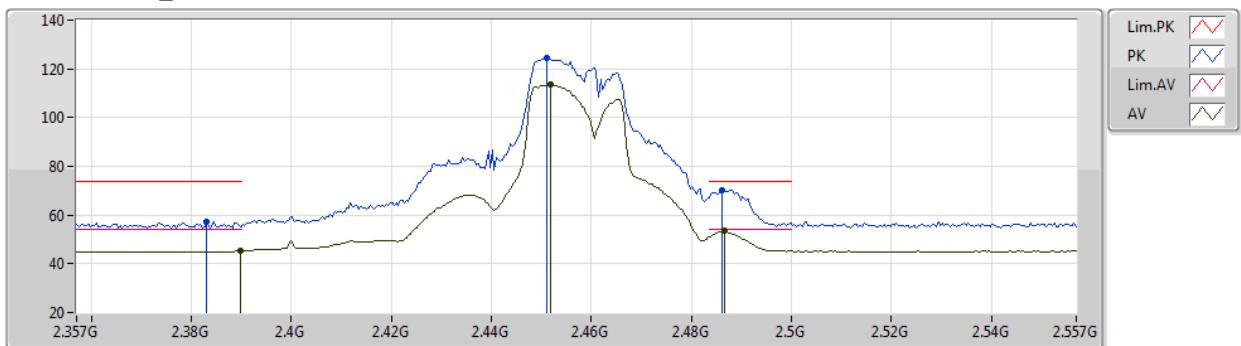

VHT20_Nss1,(MCS0)_2TX

18/02/2020

2457MHz_TX


VHT20_Nss1,(MCS0)_2TX

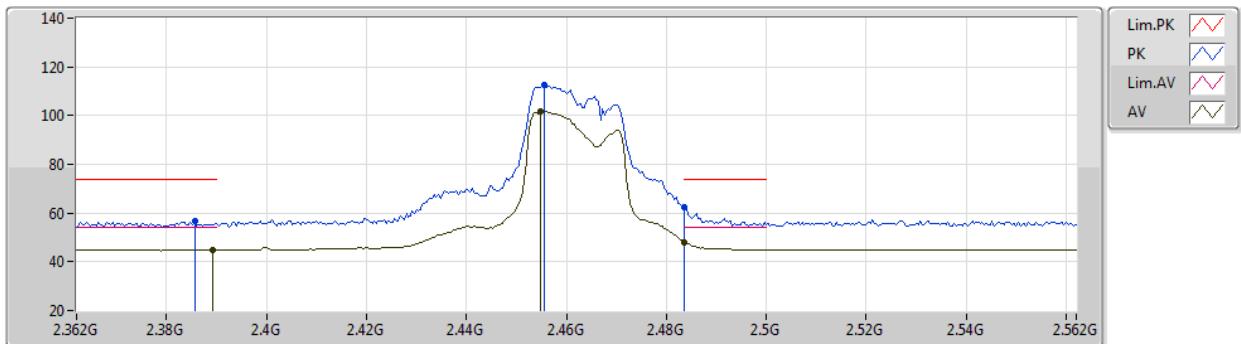
18/02/2020

2457MHz_TX

 EUT X_2TX
 Setting 21.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.383G	57.20	74.00	-16.80	25.29	3	Horizontal	198	2.55	-	28.41	3.50	-	
AV	2.3898G	45.19	54.00	-8.81	13.24	3	Horizontal	198	2.55	-	28.45	3.50	-	
PK	2.451G	124.57	Inf	-Inf	92.52	3	Horizontal	198	2.55	-	28.50	3.55	-	
AV	2.4518G	113.42	Inf	-Inf	81.37	3	Horizontal	198	2.55	-	28.50	3.55	-	
PK	2.4862G	70.38	74.00	-3.62	38.29	3	Horizontal	198	2.55	-	28.50	3.59	-	
AV	2.4866G	53.53	54.00	-0.47	21.44	3	Horizontal	198	2.55	-	28.50	3.59	-	

VHT20_Nss1,(MCS0)_2TX

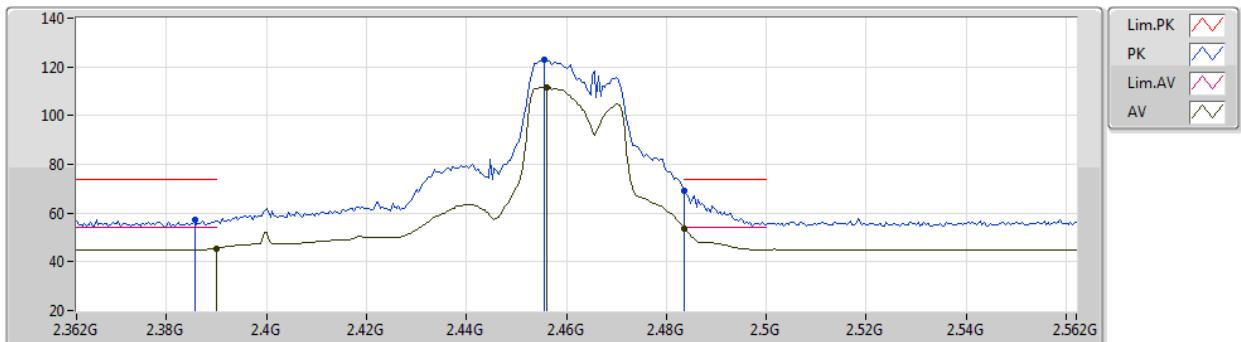
17/02/2020

2462MHz_TX

 EUT_X_2TX
 Setting 20
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3856G	56.97	74.00	-17.03	25.04	3	Vertical	95	2.77	-	28.43	3.50	-	
AV	2.3892G	44.78	54.00	-9.22	12.83	3	Vertical	95	2.77	-	28.45	3.50	-	
PK	2.4556G	112.63	Inf	-Inf	80.57	3	Vertical	95	2.77	-	28.50	3.56	-	
AV	2.4548G	101.65	Inf	-Inf	69.60	3	Vertical	95	2.77	-	28.50	3.55	-	
PK	2.4835G	62.21	74.00	-11.79	30.13	3	Vertical	95	2.77	-	28.50	3.58	-	
AV	2.4835G	48.15	54.00	-5.85	16.07	3	Vertical	95	2.77	-	28.50	3.58	-	

VHT20_Nss1,(MCS0)_2TX

17/02/2020

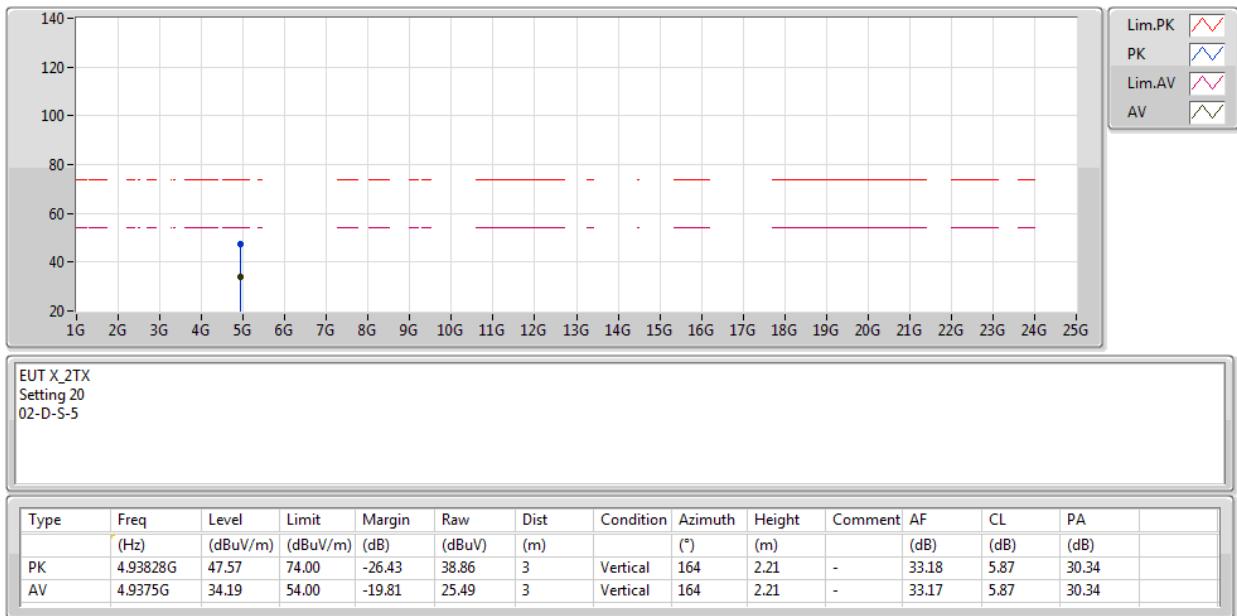
2462MHz_TX


EUT_X_2TX
Setting 20
02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3856G	57.41	74.00	-16.59	25.48	3	Horizontal	200	2.56	-	28.43	3.50	-	
AV	2.39G	45.56	54.00	-8.44	13.61	3	Horizontal	200	2.56	-	28.45	3.50	-	
PK	2.4556G	122.88	Inf	-Inf	90.82	3	Horizontal	200	2.56	-	28.50	3.56	-	
AV	2.456G	111.67	Inf	-Inf	79.61	3	Horizontal	200	2.56	-	28.50	3.56	-	
PK	2.4835G	69.30	74.00	-4.70	37.22	3	Horizontal	200	2.56	-	28.50	3.58	-	
AV	2.4835G	53.77	54.00	-0.23	21.69	3	Horizontal	200	2.56	-	28.50	3.58	-	

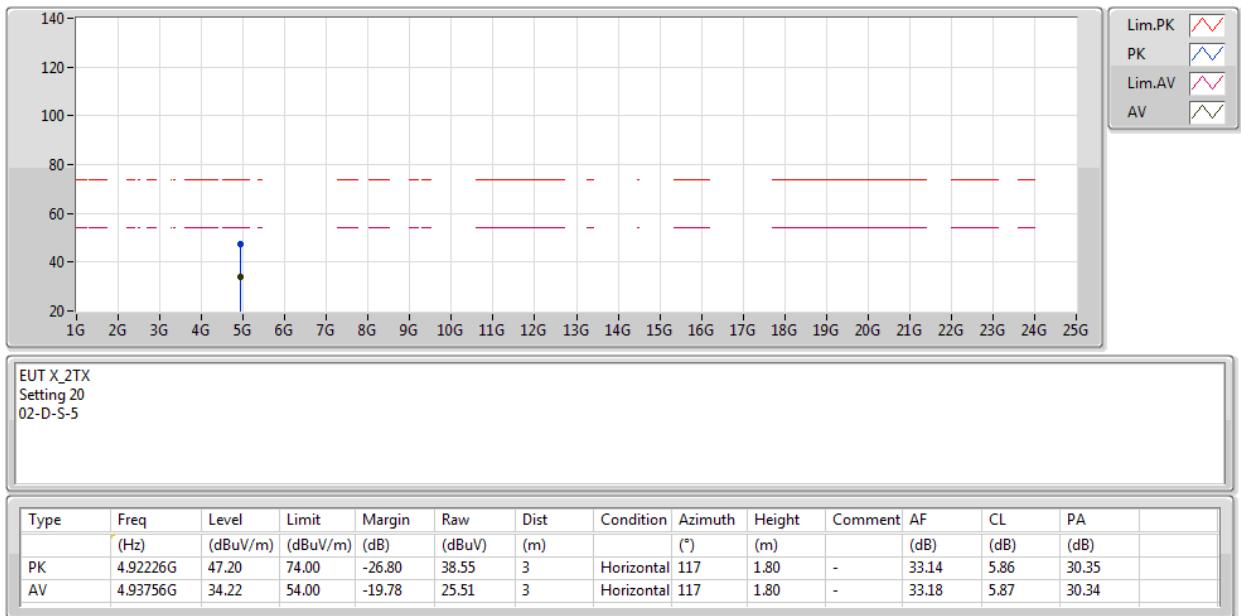
VHT20_Nss1,(MCS0)_2TX

18/02/2020

2462MHz_TX


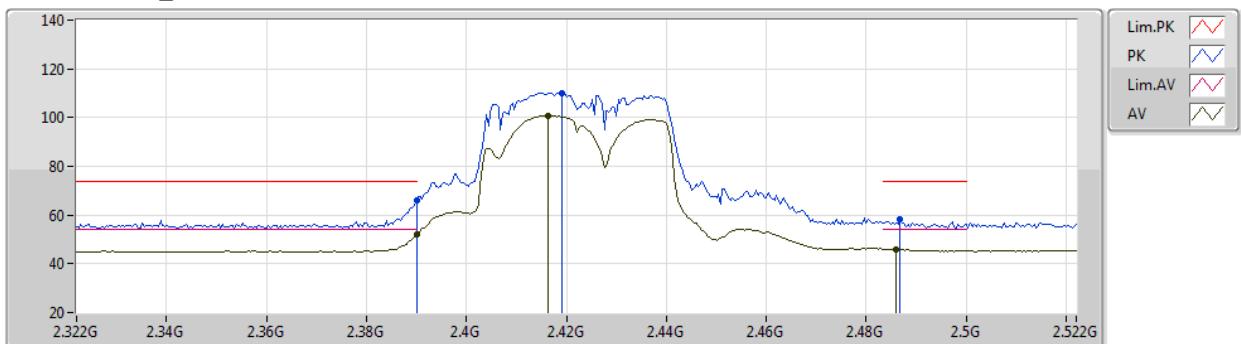
VHT20_Nss1,(MCS0)_2TX

18/02/2020

2462MHz_TX


VHT40_Nss1,(MCS0)_2TX

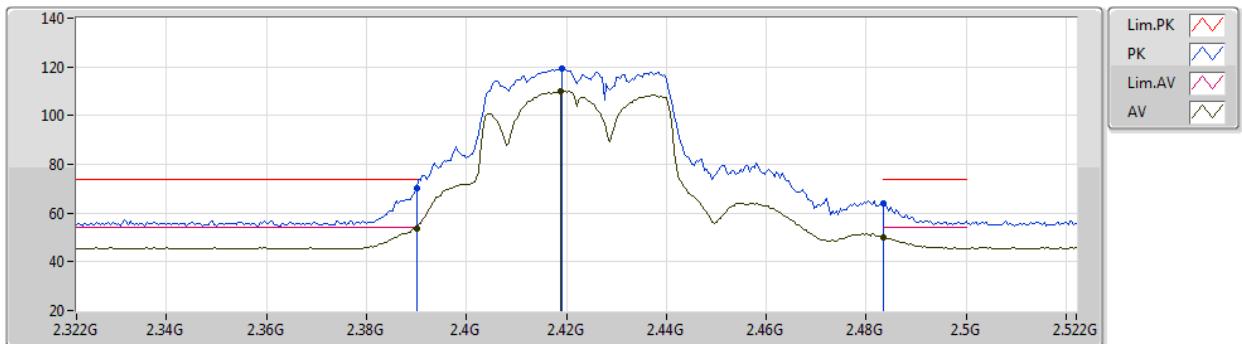
17/02/2020

2422MHz_TX

 EUT_X_2TX
 Setting 19.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment (dB)	AF (dB)	CL (dB)	PA (dB)	
PK	2.39G	65.83	74.00	-8.17	33.88	3	Vertical	90	2.86	-	28.45	3.50	-	
AV	2.39G	51.93	54.00	-2.07	19.98	3	Vertical	90	2.86	-	28.45	3.50	-	
PK	2.4192G	110.09	Inf	-Inf	78.07	3	Vertical	90	2.86	-	28.50	3.52	-	
AV	2.4164G	100.76	Inf	-Inf	68.74	3	Vertical	90	2.86	-	28.50	3.52	-	
PK	2.4868G	58.16	74.00	-15.84	26.07	3	Vertical	90	2.86	-	28.50	3.59	-	
AV	2.486G	46.06	54.00	-7.94	13.97	3	Vertical	90	2.86	-	28.50	3.59	-	

VHT40_Nss1,(MCS0)_2TX

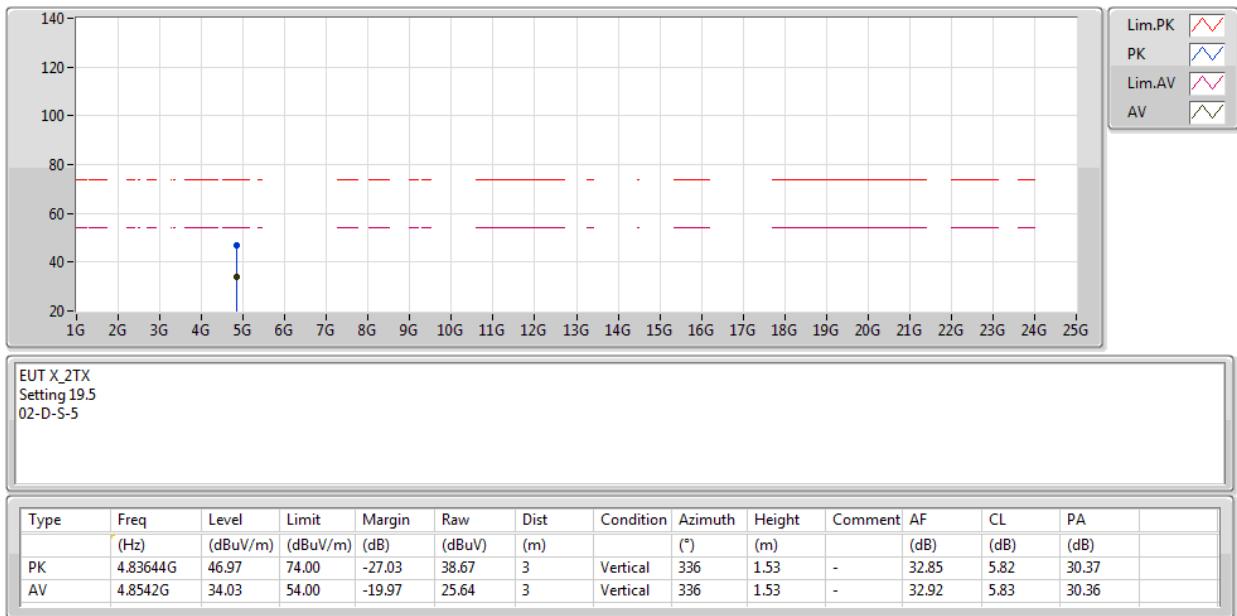
17/02/2020

2422MHz_TX

 EUT_X_2TX
 Setting 19.5
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.39G	70.31	74.00	-3.69	38.36	3	Horizontal	196	2.87	-	28.45	3.50	-	
AV	2.39G	53.73	54.00	-0.27	21.78	3	Horizontal	196	2.87	-	28.45	3.50	-	
PK	2.4192G	119.42	Inf	-Inf	87.40	3	Horizontal	196	2.87	-	28.50	3.52	-	
AV	2.4188G	109.96	Inf	-Inf	77.94	3	Horizontal	196	2.87	-	28.50	3.52	-	
PK	2.4835G	63.95	74.00	-10.05	31.87	3	Horizontal	196	2.87	-	28.50	3.58	-	
AV	2.4835G	50.09	54.00	-3.91	18.01	3	Horizontal	196	2.87	-	28.50	3.58	-	

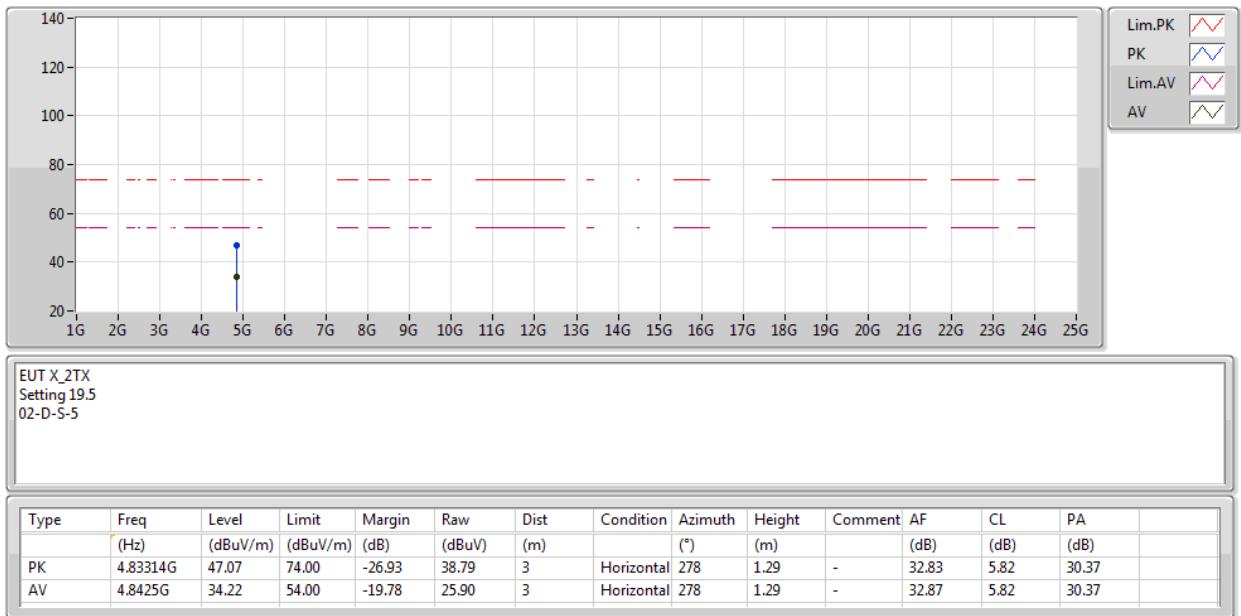
VHT40_Nss1,(MCS0)_2TX

18/02/2020

2422MHz_TX


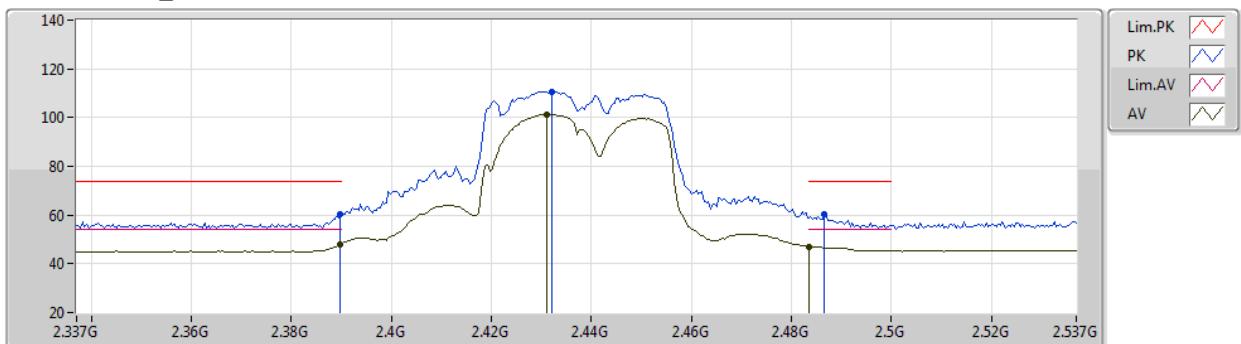
VHT40_Nss1,(MCS0)_2TX

18/02/2020

2422MHz_TX


VHT40_Nss1,(MCS0)_2TX

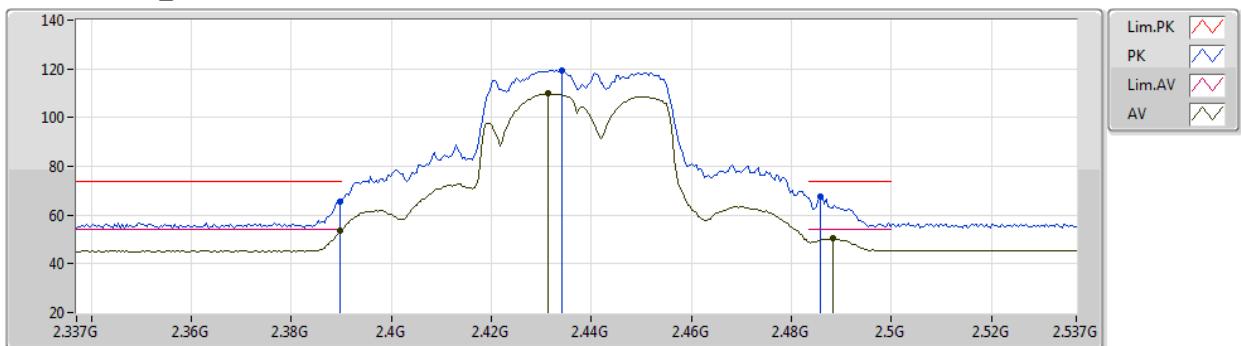
17/02/2020

2437MHz_TX

 EUT X_2TX
 Setting 20
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3898G	60.09	74.00	-13.91	28.14	3	Vertical	91	2.84	-	28.45	3.50	-	
AV	2.3898G	47.75	54.00	-6.25	15.80	3	Vertical	91	2.84	-	28.45	3.50	-	
PK	2.4322G	110.73	Inf	-Inf	78.70	3	Vertical	91	2.84	-	28.50	3.53	-	
AV	2.431G	101.44	Inf	-Inf	69.41	3	Vertical	91	2.84	-	28.50	3.53	-	
PK	2.4866G	60.42	74.00	-13.58	28.33	3	Vertical	91	2.84	-	28.50	3.59	-	
AV	2.4835G	46.93	54.00	-7.07	14.85	3	Vertical	91	2.84	-	28.50	3.58	-	

VHT40_Nss1,(MCS0)_2TX

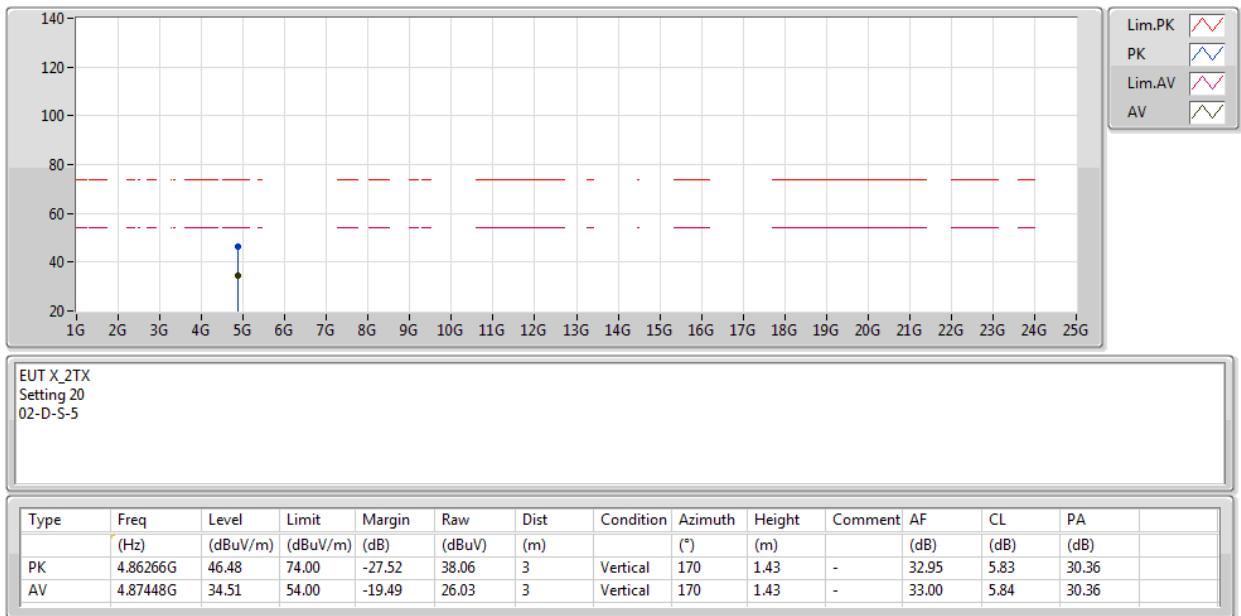
17/02/2020

2437MHz_TX

 EUT X_2TX
 Setting 20
 02-D-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3898G	65.33	74.00	-8.67	33.38	3	Horizontal	197	2.84	-	28.45	3.50	-	
AV	2.3898G	53.67	54.00	-0.33	21.72	3	Horizontal	197	2.84	-	28.45	3.50	-	
PK	2.4342G	119.24	Inf	-Inf	87.21	3	Horizontal	197	2.84	-	28.50	3.53	-	
AV	2.4314G	109.94	Inf	-Inf	77.91	3	Horizontal	197	2.84	-	28.50	3.53	-	
PK	2.4858G	67.49	74.00	-6.51	35.40	3	Horizontal	197	2.84	-	28.50	3.59	-	
AV	2.4882G	50.30	54.00	-3.70	18.21	3	Horizontal	197	2.84	-	28.50	3.59	-	

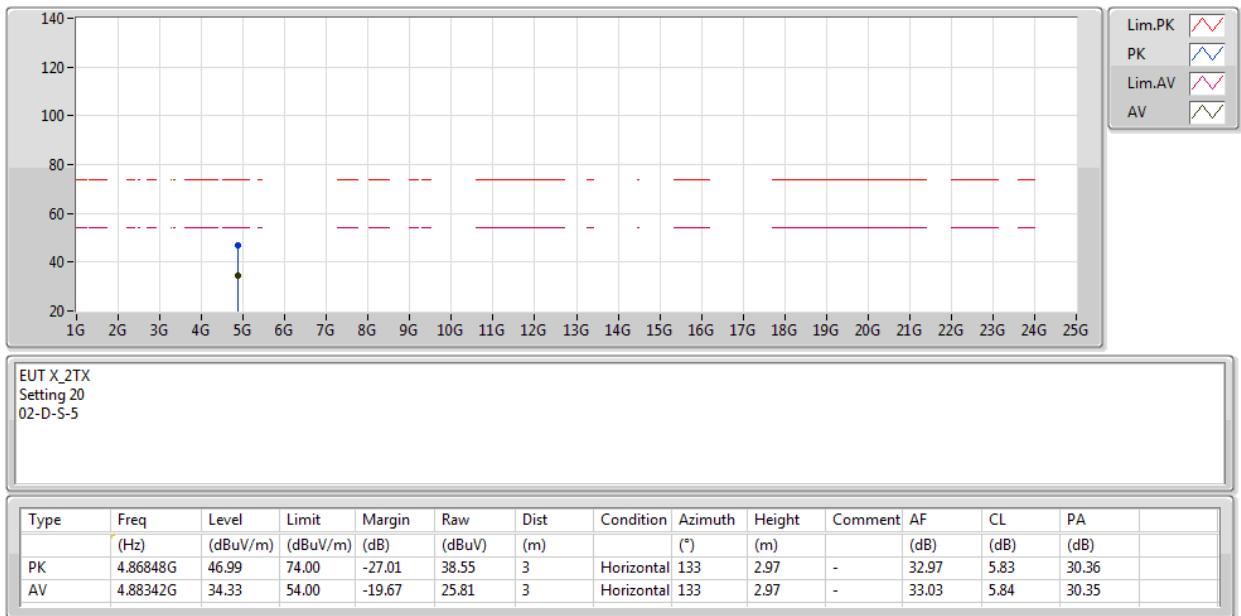
VHT40_Nss1,(MCS0)_2TX

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2437MHz_TX


VHT40_Nss1,(MCS0)_2TX

18/02/2020

2437MHz_TX


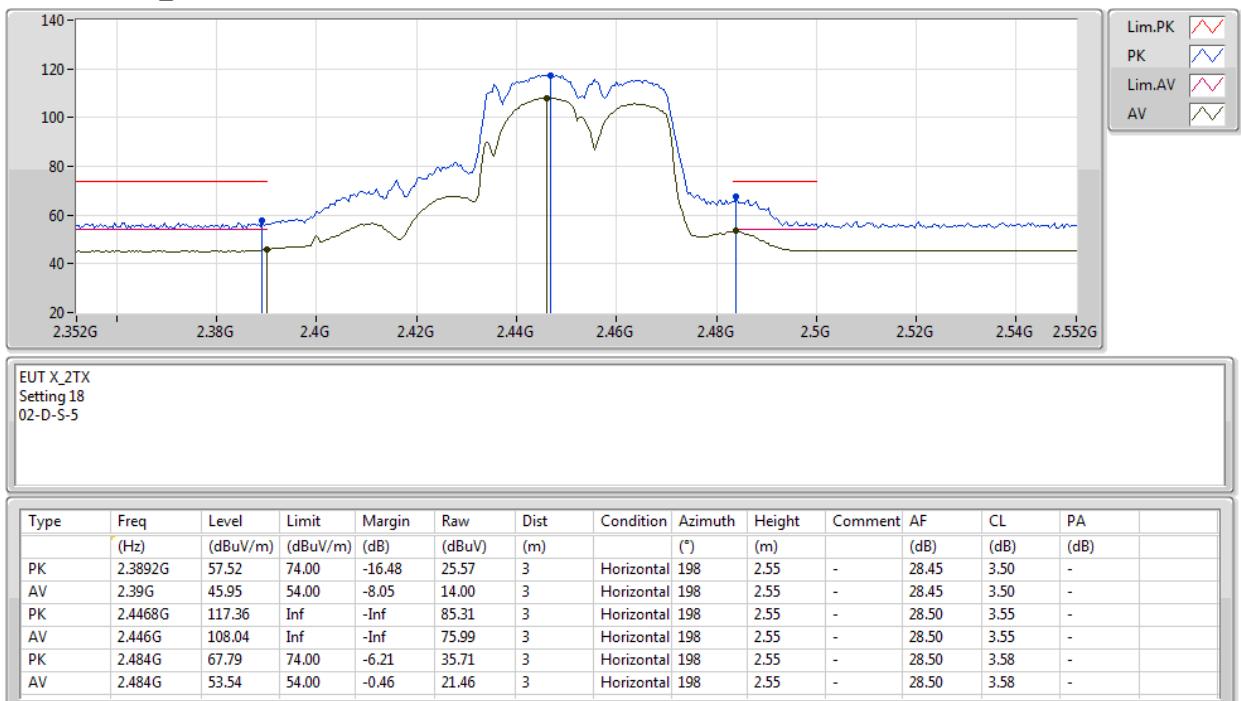
VHT40_Nss1,(MCS0)_2TX

17/02/2020

2452MHz_TX

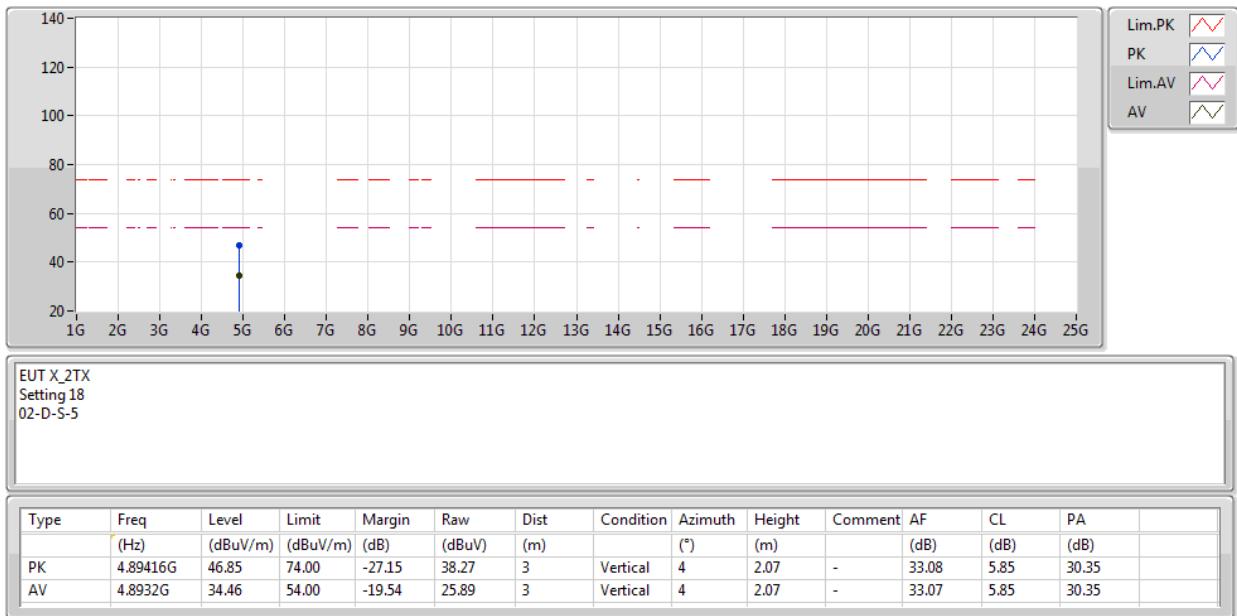

VHT40_Nss1,(MCS0)_2TX

17/02/2020

2452MHz_TX


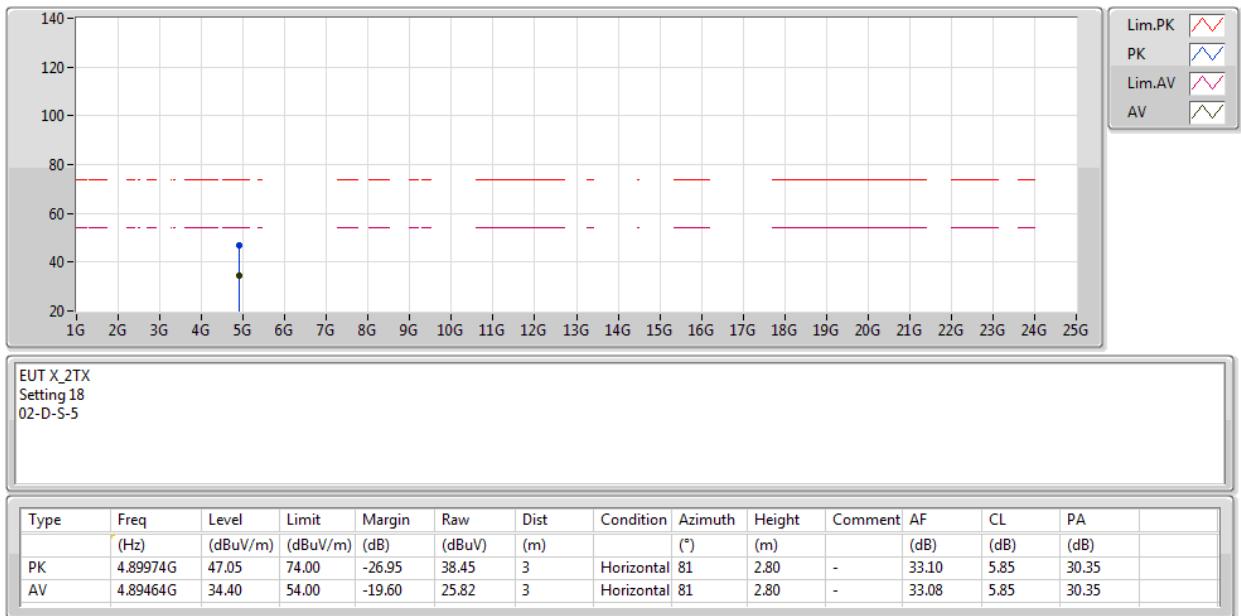
VHT40_Nss1,(MCS0)_2TX

18/02/2020

2452MHz_TX


VHT40_Nss1,(MCS0)_2TX

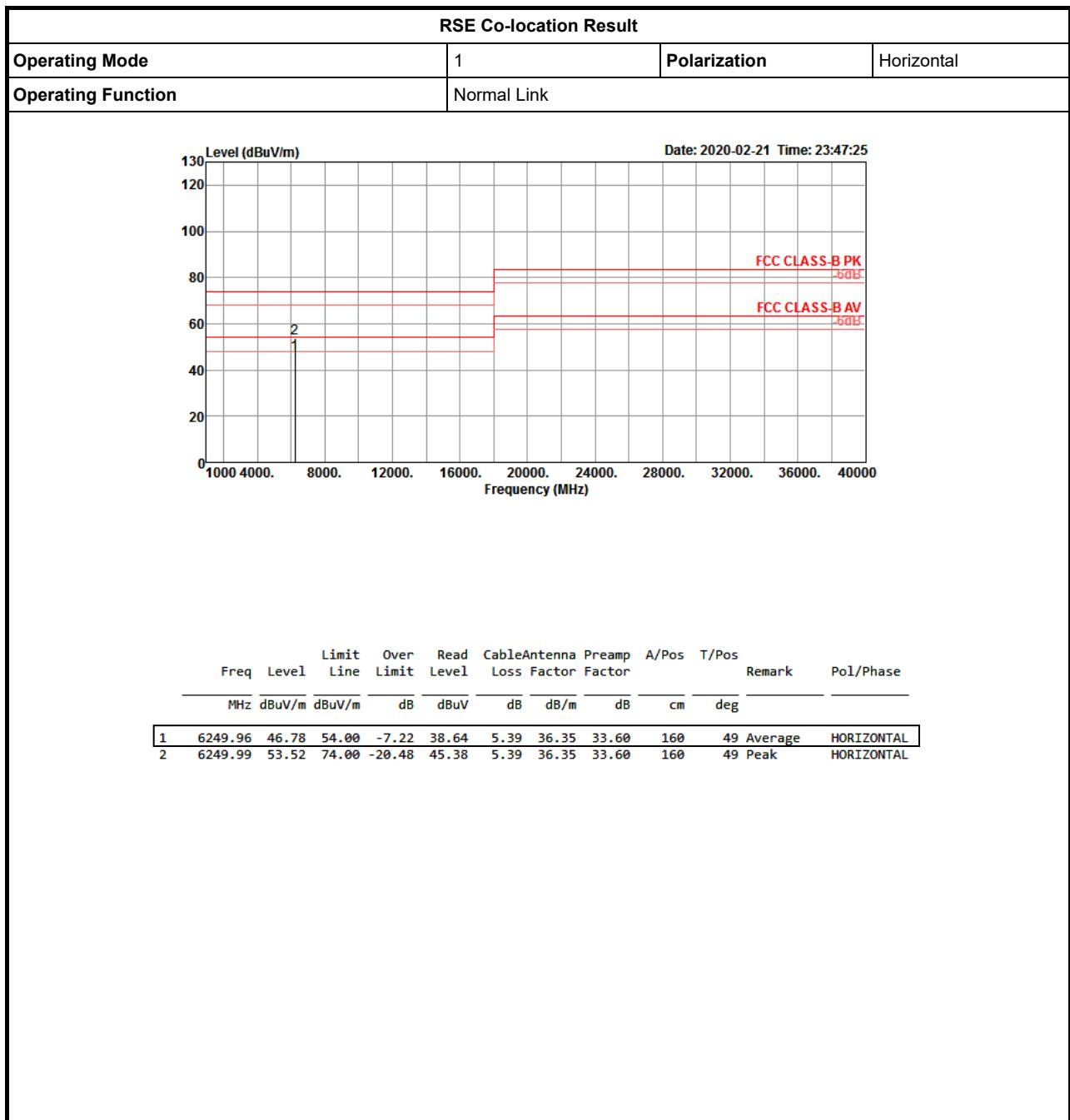
18/02/2020

2452MHz_TX




RSE Co-location Result

Appendix G





RSE Co-location Result

Appendix G

