

FCC RADIO TEST REPORT

FCC ID : G95-CGA4233
Equipment : Cable Modem DOCSIS 3.1
Trade Name : technicolor
Model Number : CGA4233WXYZ, CGA4233TLV , CGA4233TGC,
CGA4233CLC, CGA4233XXX
(Refer to section 1.1.5 for more details)
Product Code : CGA4233WXYZ
(Refer to section 1.1.5 for more details)
Applicant : Technicolor Connected Home USA LLC
5030 Sugarloaf Parkway Building 6, Lawrenceville,
Georgia, United States
Manufacturer : Technicolor Connected Home USA LLC
5030 Sugarloaf Parkway Building 6, Lawrenceville,
Georgia, United States
Standard : 47 CFR FCC Part 15.247

The product was received on Oct. 04, 2019, and testing was started from Oct. 04, 2019 and completed on Oct. 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 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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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_10 Ver1.0



Summary of Test Result

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

Declaration of Conformity:

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

Comments and Explanations:

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

Reviewed by: Sam Chen

Report Producer: Cindy Peng



1 General Description

1.1 Information

1.1.1 RF General Information

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

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

Note:

- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ 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
1	1	-	-	-	-
2	2	-	-	-	-
3	3	-	-	-	-

Number of Transmit Antennas & Bandwidth

Number of Transmit Antennas	3TX	
Bandwidth Mode	20 MHz	40 MHz
802.11b	V	X
802.11g	V	X
802.11n	V	V

Frequency	Antenna Gain (dBi) for CDD mode					
	Ant. 1 (Port 1)		Ant. 2 (Port 2)		Ant. 3 (Port 3)	
	20 MHz	40 MHz	20 MHz	40 MHz	20 MHz	40 MHz
2412MHz	0.88	-	2.33	-	2.44	-
2417MHz	0.99	-	2.39	-	2.68	-
2422MHz	-	0.99	-	2.39	-	2.68
2437MHz	2.35	2.35	3.33	3.33	2.61	2.61
2447MHz	-	3.09	-	3.83	-	2.43
2452MHz	-	3.09	-	3.83	-	2.43
2457MHz	2.73	-	3.76	-	2.18	-
2462MHz	2.73		3.76		2.18	

Note: The above information was declared by manufacturer.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b	0.999	0.01	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11n HT20	0.989	0.05	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11n HT40	0.989	0.05	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)

Note:

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

**1.1.4 EUT Operational Condition**

EUT Power Type	From power adapter		
Beamforming Function	☒ With beamforming	☐ Without beamforming	
	The product has beamforming function for 11n/ac in 5GHz.		
Function	☒ Point-to-multipoint	☐ Point-to-point	
Test Software Version	version 10.10.122.20(r683106 WLTEST)FWID01-1c497f81		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

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

Model Number	Description	Difference
CGA4233WXYZ	where W, X, Y and Z characters can be replaced by either alphanumeric character between A and Z and between 0 and 9 or "-" or "." or "blank"	For marketing reason the same product will be covered by different name.
CGA4233TLV	-	
CGA4233TGC	-	
CGA4233CLC	-	
CGA4233XXX	where X character can be replaced by either alphanumeric character between A and Z and between 0 and 9 or "-" or "." or "blank"	

From the above, model: CGA4233TLV was selected as representative model for the test and its data was recorded in this report.



1.2 Applicable Standards

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

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

1.3 Testing Location Information

Testing Location				
☐	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	TEL : 886-3-327-3456	FAX : 886-3-327-0973
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.	TEL : 886-3-656-9065	FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Eddie Weng	24~25.4°C / 56~60%	Oct. 15, 2019~Oct. 31, 2019
Radiated below 1GHz	03CH04-CB	Stim Sung	24.4~25°C / 57~58%	Oct. 04, 2019~Oct. 22, 2019
Radiated above 1GHz	03CH03-CB	Stim Sung	24.2~25.3°C / 51~54%	Oct. 04, 2019~Oct. 22, 2019
AC Conduction	CO01-CB	Rick Yeh	25~26°C / 45~46%	Oct. 22, 2019

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

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

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



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_Nss1,(1Mbps)_3TX	-
2412MHz	90
2437MHz	90
2462MHz	87
802.11n HT20_Nss1,(MCS0)_3TX	-
2412MHz	74
2417MHz	86
2437MHz	104
2457MHz	87
2462MHz	78
802.11n HT40_Nss1,(MCS0)_3TX	-
2422MHz	70
2437MHz	81
2447MHz	71
2452MHz	66

Note:

- ♦ 11g CDD modes can be covered by 11n 20M CDD

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	CTX
1	WLAN 2.4GHz
2	WLAN 5GHz
For operating mode 1 is the worst case and it was record in this test report.	

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1	WLAN 2.4GHz
2	WLAN 5GHz
For operating mode 1 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 - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Appendix G for Radiated Emission Co-location.	



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA900421AA for Co-location RF Exposure Evaluation.	

Note: The EUT can only be used at Y axis position.

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

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Adapter	HOIOTO	ADS-36FKJ-12 12036EPBR	INPUT: 100-240V ~ 50/60Hz, Max. 1.0A OUTPUT: 12V, 3.0A

2.5 Support Equipment

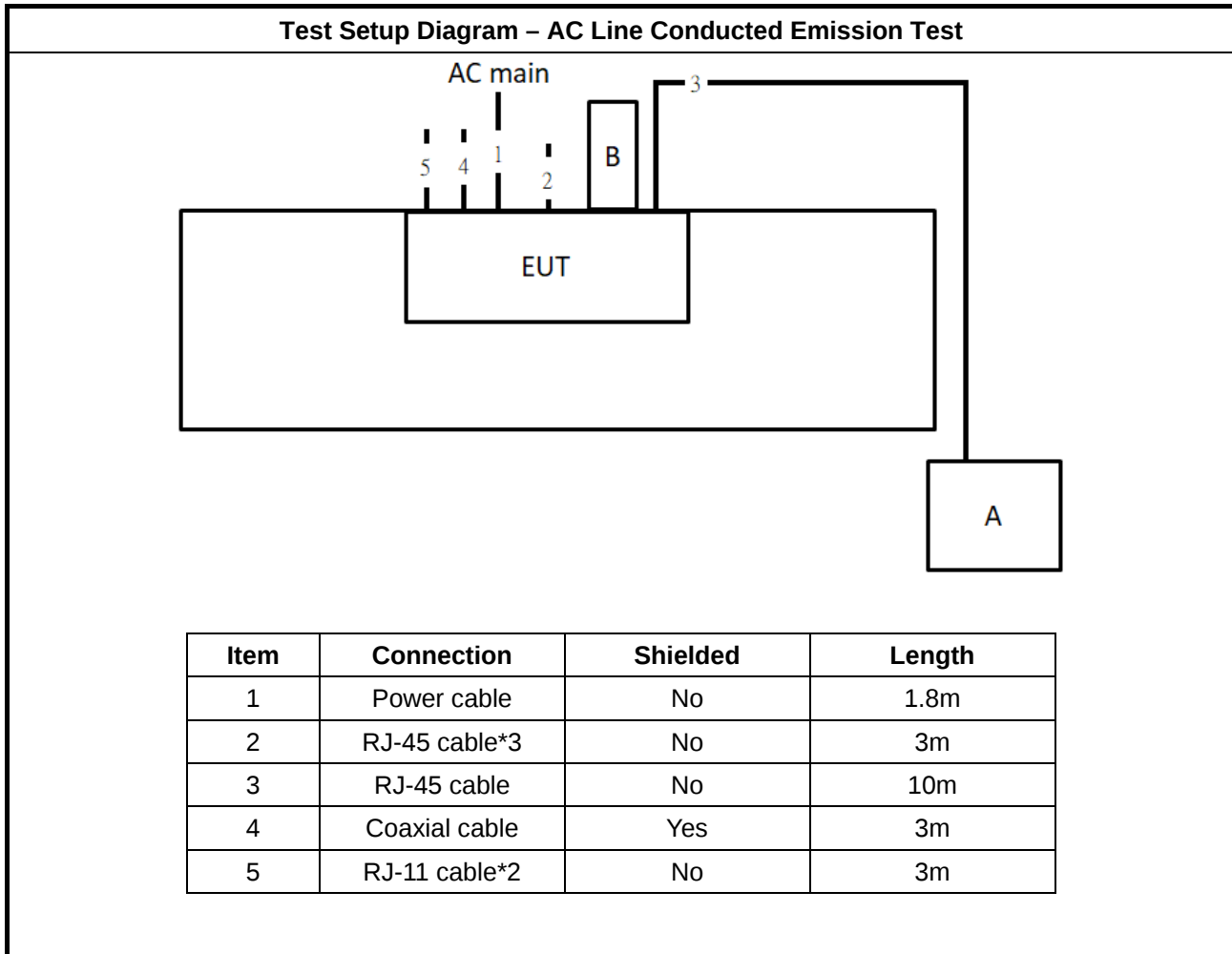
For AC Conduction:

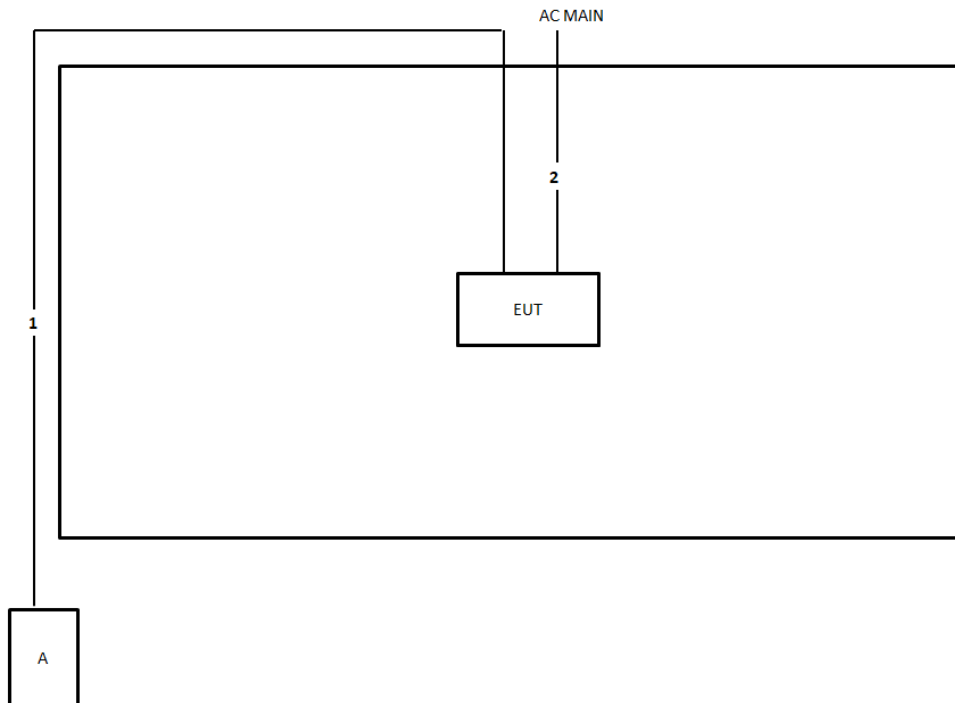
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E6430	N/A
B	Flash disk3.0	Transcend	JetFlash-700	N/A

For Radiated and RF Conducted:

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

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test


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



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

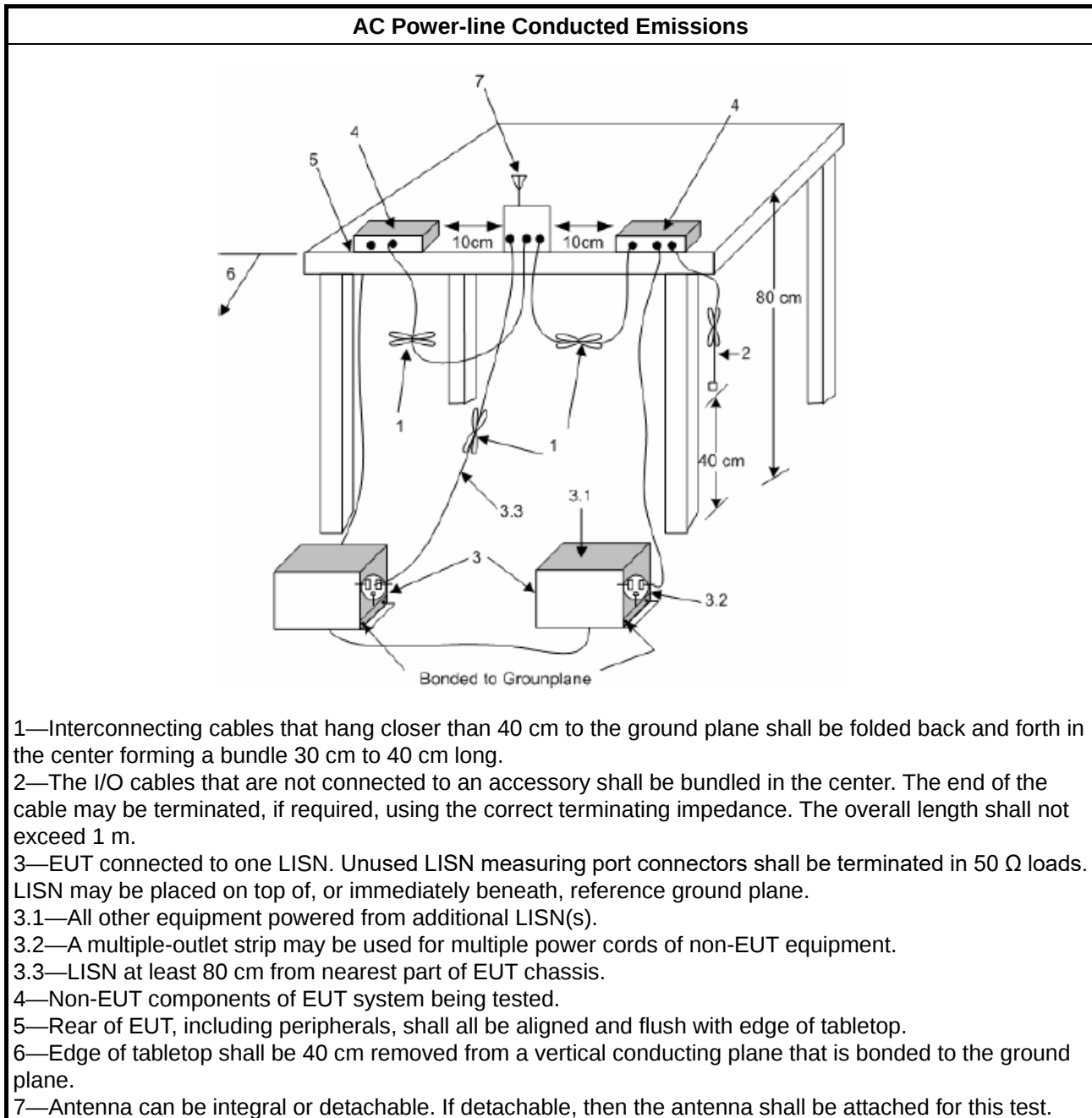
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



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.

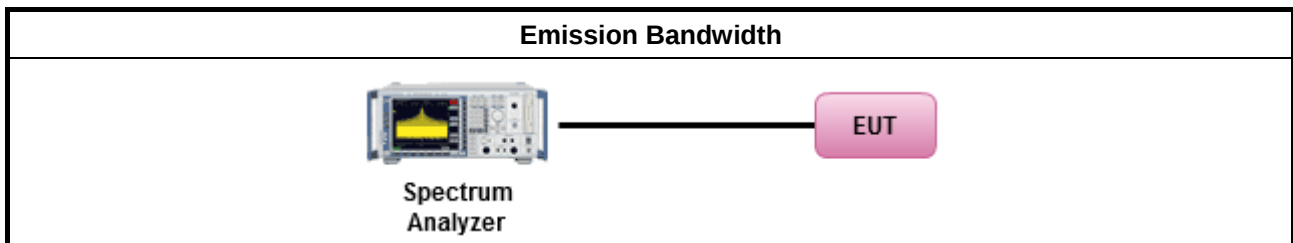
3.2.2 Measuring Instruments

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:
☒	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
☐	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

3.3.2 Measuring Instruments

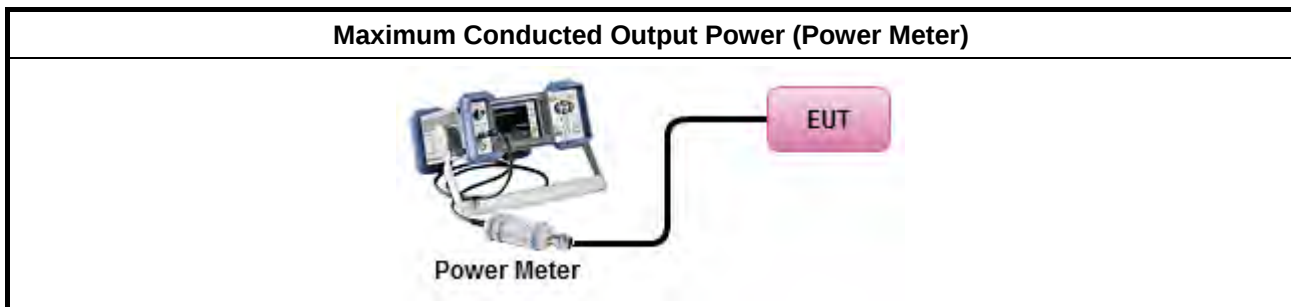
Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	
☐	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
☐	Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	
[duty cycle ≥ 98% or external video / power trigger]	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
duty cycle < 98% and average over on/off periods with duty factor	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
Measurement using a power meter (PM)	
☒	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
☐	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
▪ For conducted measurement.	
▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (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) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

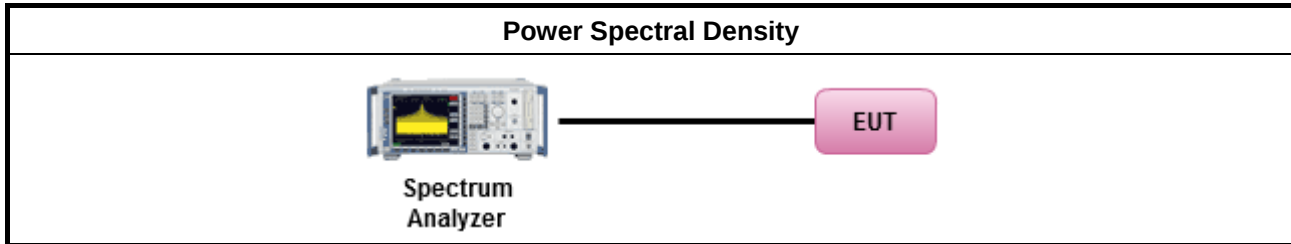
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.2 Method PKPSD. [duty cycle $\geq 98\%$ or external video / power trigger]
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPSD-3.
duty cycle $< 98\%$ and average over on/off periods with duty factor
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPSD-3A. (alternative)
▪ For conducted measurement.
▪ If The EUT supports multiple transmit chains using options given below:
☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,

- ☐ Option 3: Measure and add $10 \log(N)$ dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with $10 \log(N)$. Or each transmit chains shall be add $10 \log(N)$ to compared with the limit.

3.4.4 Test Setup



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.	

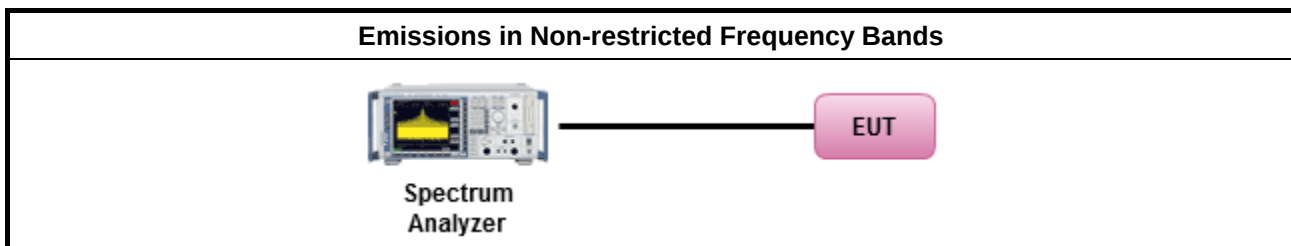
3.5.2 Measuring Instruments

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.

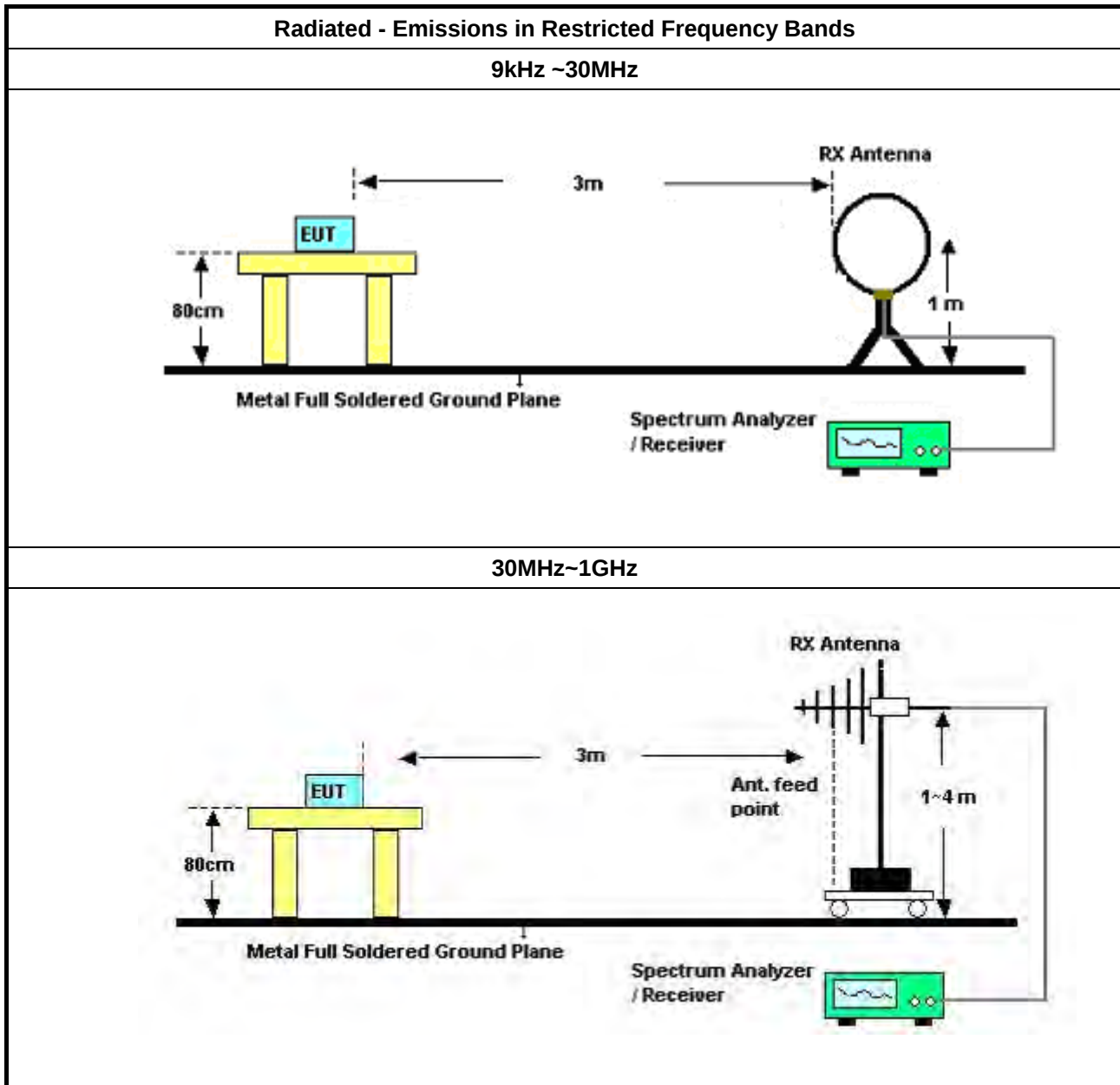
3.6.2 Measuring Instruments

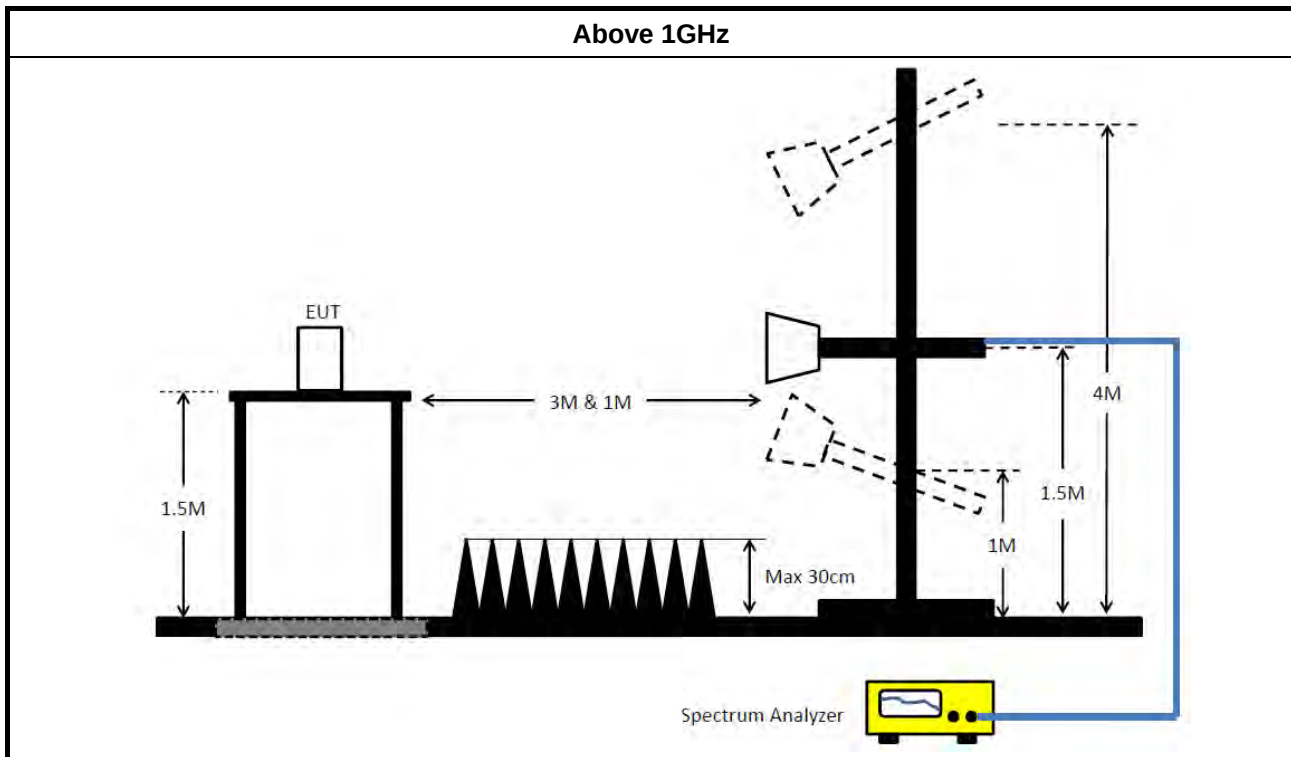
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle ≥ 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.

3.6.4 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

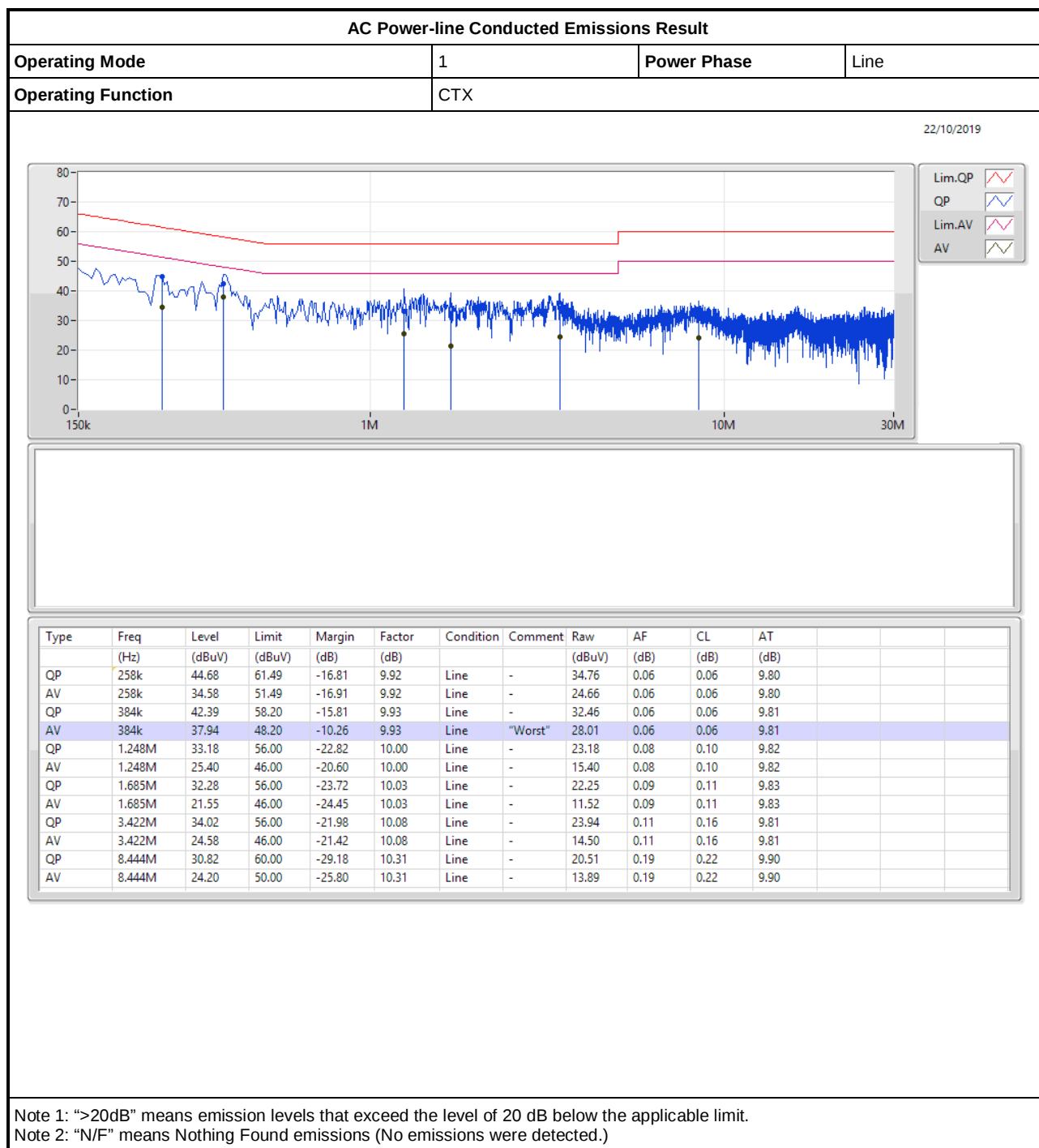
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH04-CB)
Bilog Antenna with 6 dB attenuator	Schaffner	CBL6112B & N-6-06	2928 & AT-N0607	20MHz ~ 2GHz	Jan. 02, 2019	Jan. 01, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	310N	187291	0.1MHz ~ 1GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH04-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+22	30MHz ~ 1GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+22	30MHz ~ 1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
Horn Antenna	ETS • Lindgren	3115	6821	750MHz~18GHz	Jan. 24, 2019	Jan. 23, 2020	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 27, 2019	Jun. 26, 2020	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Dec. 20, 2018	Dec. 19, 2019	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 19, 2019	Jun. 18, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+27	1GHz ~ 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+27	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-27	1GHz ~ 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-27	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH03-CB)

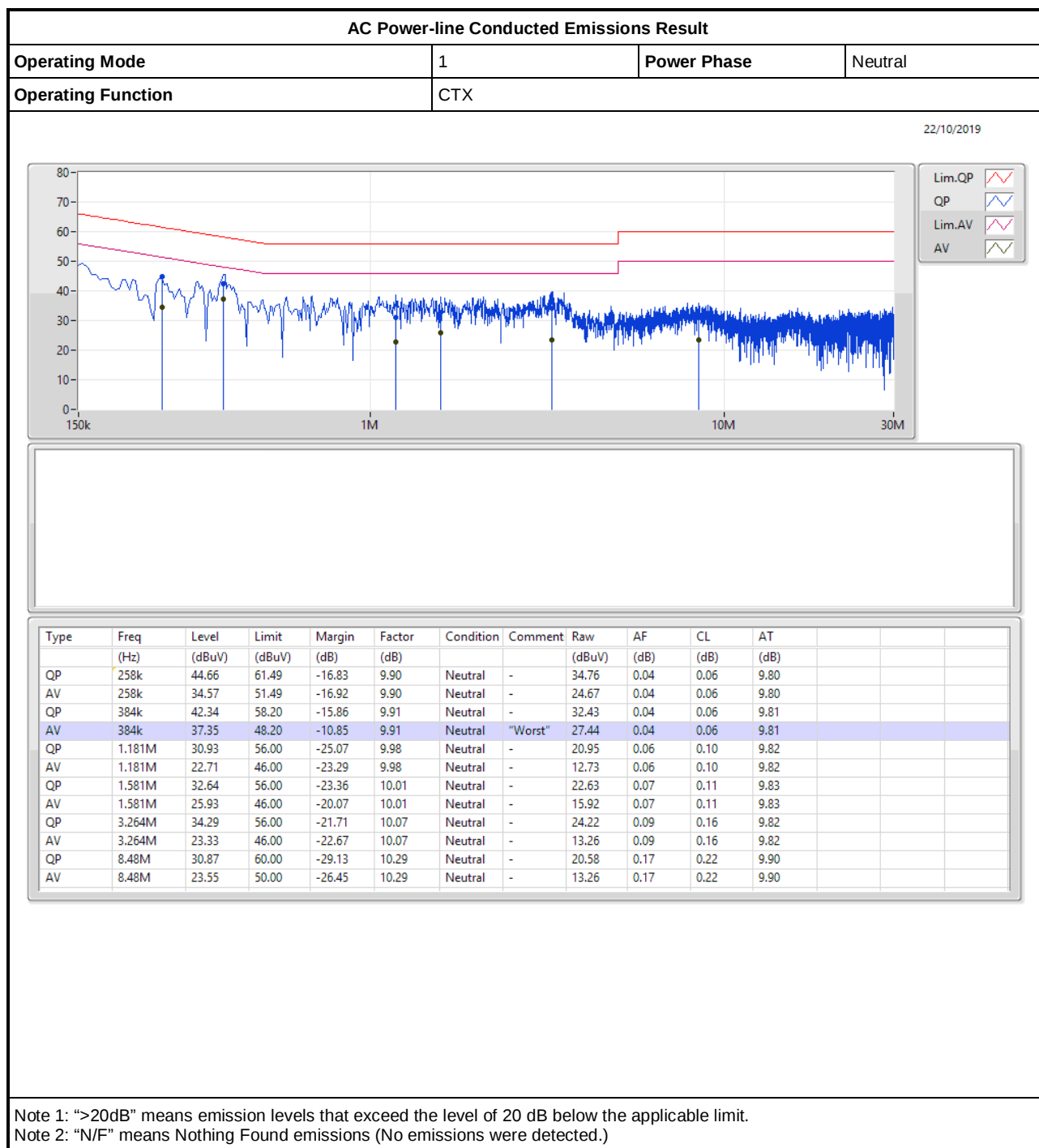


Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH03-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~ 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz ~26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz ~26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz ~26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz ~26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz ~26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)

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

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





**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_3TX	9M	11.894M	11M9G1D	8.05M	11.744M
802.11n HT20_Nss1,(MCS0)_3TX	17.575M	25.887M	25M9D1D	17.525M	17.641M
802.11n HT40_Nss1,(MCS0)_3TX	36.35M	36.332M	36M3D1D	35.05M	36.182M

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

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

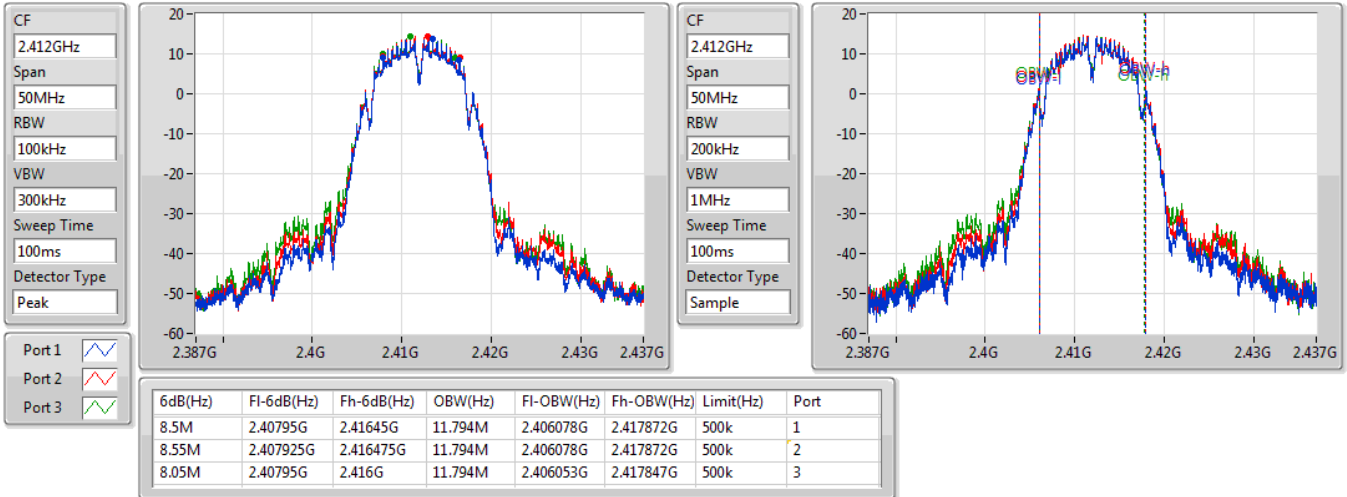
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
802.11b_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	8.5M	11.794M	8.55M	11.794M	8.05M	11.794M
2437MHz	Pass	500k	8.575M	11.744M	9M	11.794M	9M	11.894M
2462MHz	Pass	500k	8.975M	11.744M	9M	11.769M	8.55M	11.744M
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.525M	17.666M	17.575M	17.641M	17.575M	17.691M
2437MHz	Pass	500k	17.525M	17.941M	17.575M	18.291M	17.575M	25.887M
2462MHz	Pass	500k	17.575M	17.666M	17.575M	17.691M	17.55M	17.666M
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.05M	36.182M	35.9M	36.182M	35.05M	36.282M
2437MHz	Pass	500k	36.3M	36.232M	36.35M	36.282M	36.35M	36.332M
2452MHz	Pass	500k	35.95M	36.182M	36.1M	36.182M	36.3M	36.232M

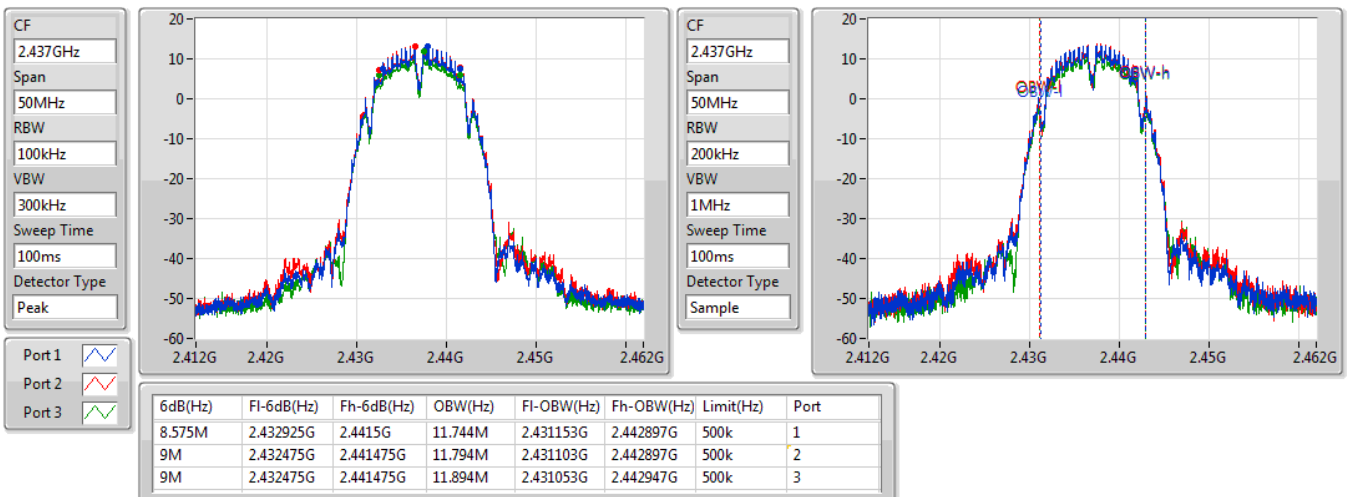
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_3TX
EBW
2412MHz

16/10/2019

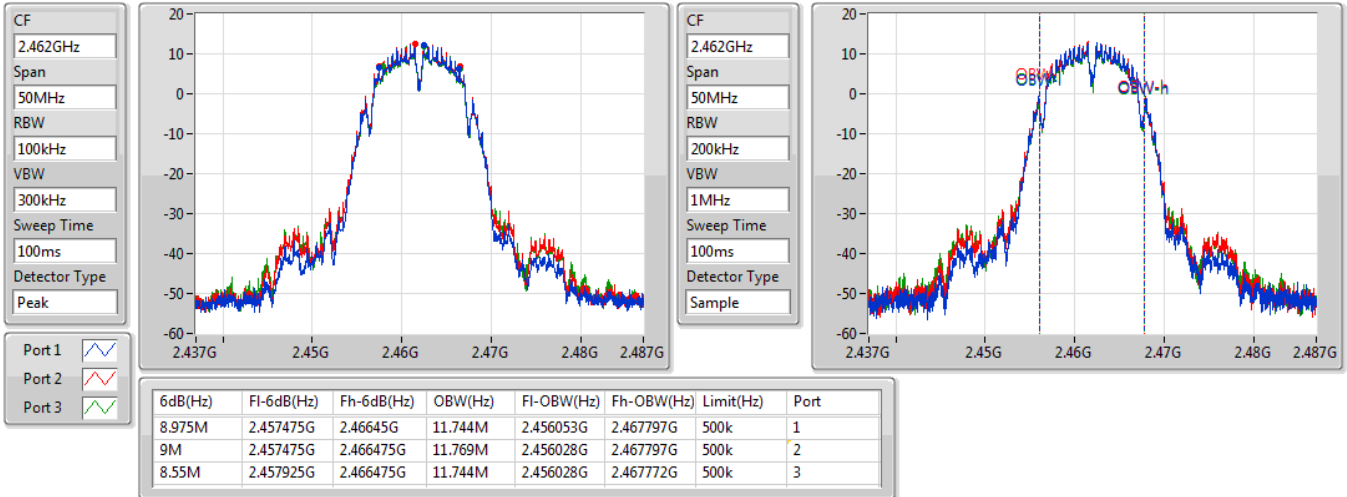

802.11b_Nss1,(1Mbps)_3TX
EBW
2437MHz

16/10/2019

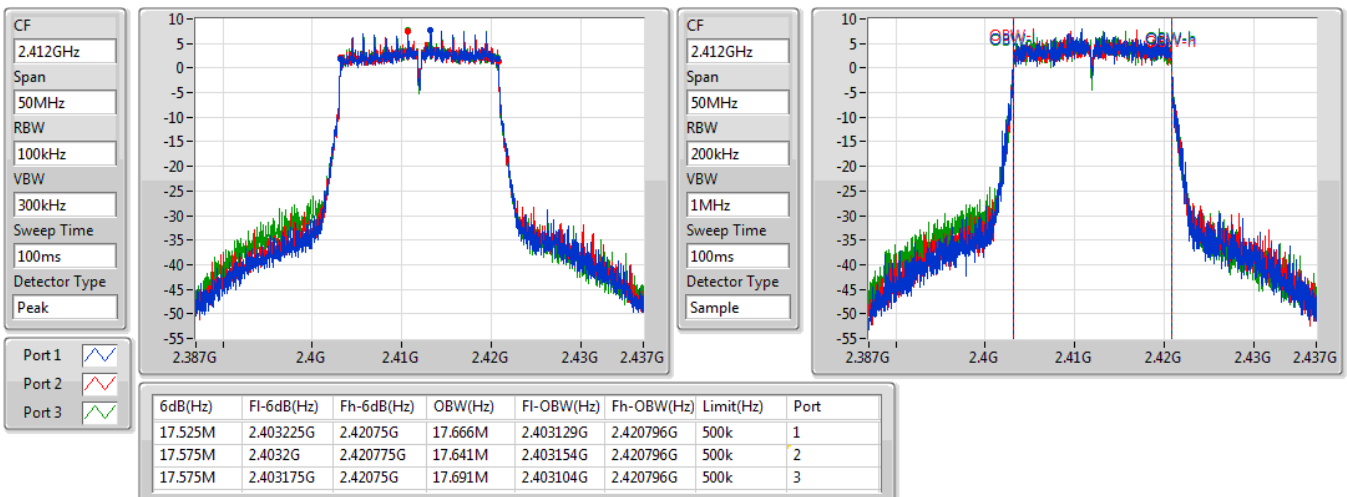


802.11b_Nss1,(1Mbps)_3TX
EBW
2462MHz

16/10/2019

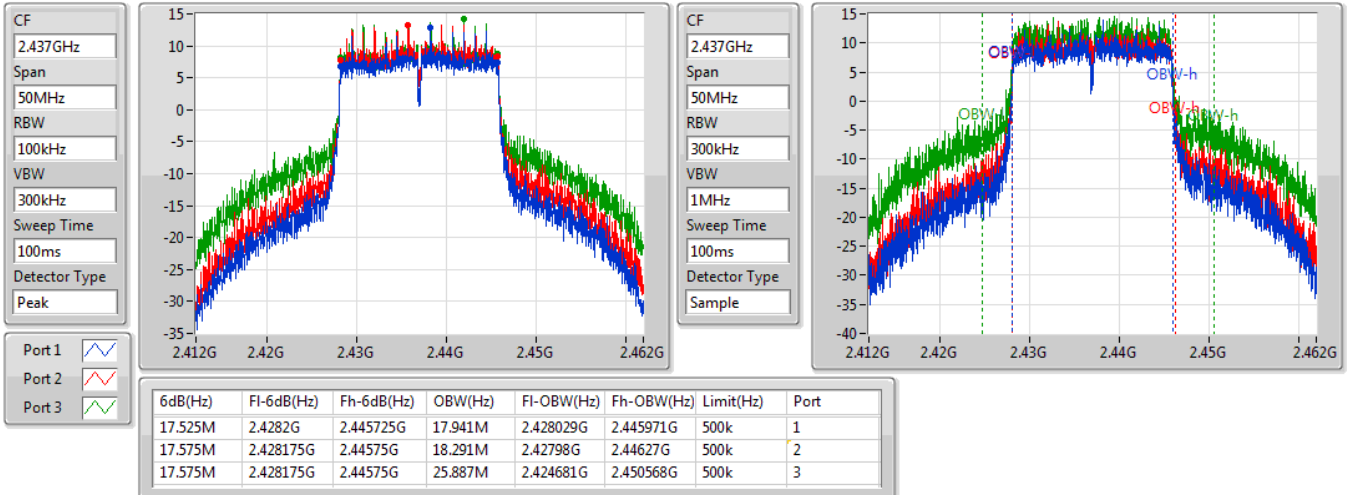

802.11n HT20_Nss1,(MCS0)_3TX
EBW
2412MHz

16/10/2019

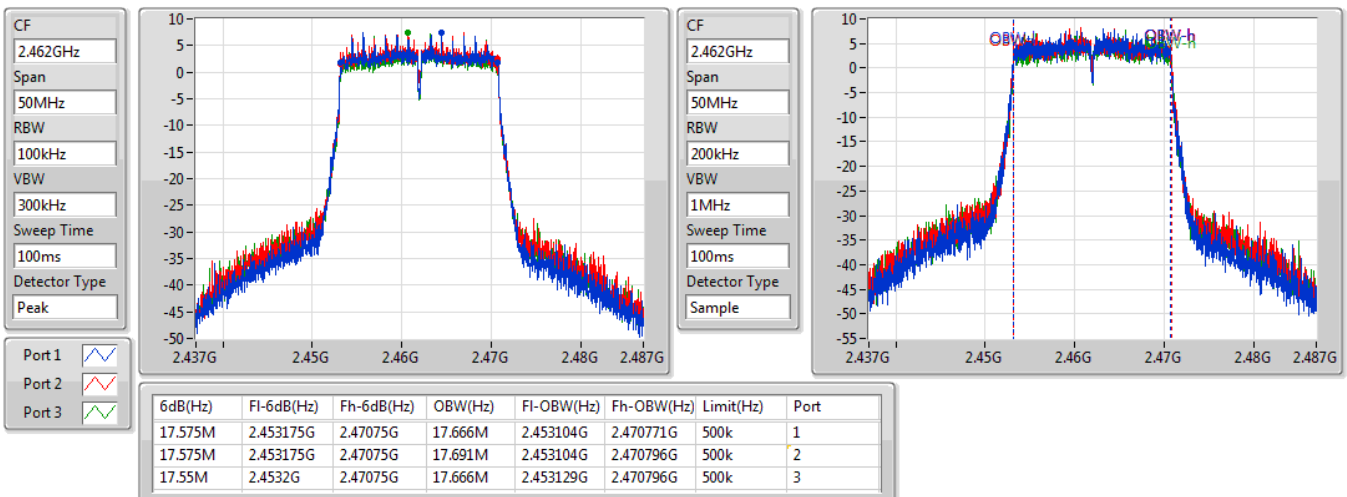


802.11n HT20_Nss1,(MCS0)_3TX
EBW
2437MHz

16/10/2019

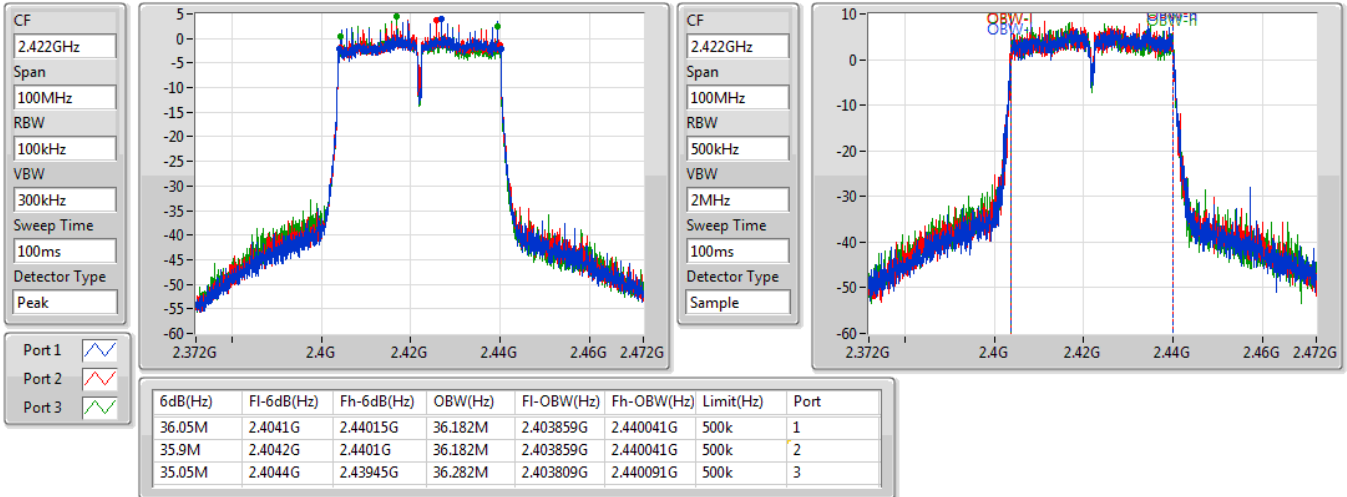

802.11n HT20_Nss1,(MCS0)_3TX
EBW
2462MHz

16/10/2019

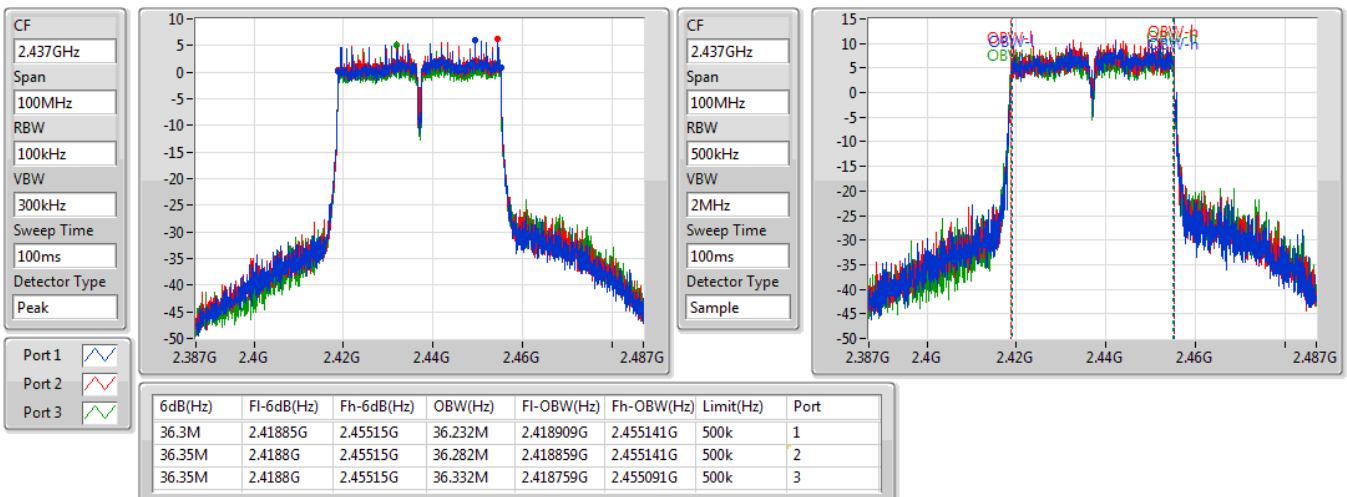


802.11n HT40_Nss1,(MCS0)_3TX
EBW
2422MHz

16/10/2019


802.11n HT40_Nss1,(MCS0)_3TX
EBW
2437MHz

16/10/2019

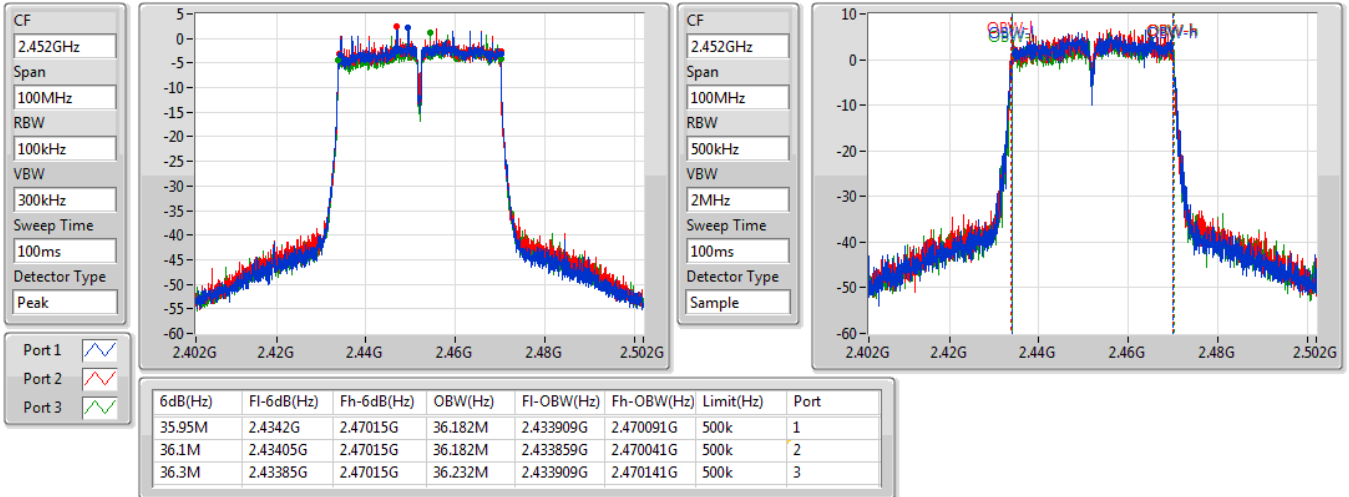


802.11n HT40_Nss1,(MCS0)_3TX

EBW

2452MHz

16/10/2019





Average Power Result

Appendix C

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_3TX	27.46	0.55719
802.11n HT20_Nss1,(MCS0)_3TX	28.55	0.71614
802.11n HT40_Nss1,(MCS0)_3TX	24.37	0.27353

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	2.44	22.48	22.79	22.78	27.46	30.00
2437MHz	Pass	3.33	21.72	22.02	20.36	26.20	30.00
2462MHz	Pass	3.76	20.89	21.18	20.62	25.67	30.00
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	2.44	18.79	18.67	19.03	23.60	30.00
2417MHz	Pass	2.68	21.51	21.78	21.69	26.43	30.00
2437MHz	Pass	3.33	23.17	23.95	24.16	28.55	30.00
2457MHz	Pass	3.76	21.33	21.47	20.68	25.94	30.00
2462MHz	Pass	3.76	18.99	19.18	18.58	23.70	30.00
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	2.68	17.64	17.60	17.43	22.33	30.00
2437MHz	Pass	3.33	19.78	19.85	19.12	24.37	30.00
2447MHz	Pass	3.83	17.47	17.24	16.80	21.95	30.00
2452MHz	Pass	3.83	16.29	16.13	15.62	20.79	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_3TX	-0.56
802.11n HT20_Nss1,(MCS0)_3TX	-1.56
802.11n HT40_Nss1,(MCS0)_3TX	-6.10

RBW=3 kHz.

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.14	-7.47	-3.13	-6.69	-0.56	8.00
2437MHz	Pass	4.93	-9.35	-4.47	-9.17	-2.29	8.00
2462MHz	Pass	4.82	-8.86	-6.33	-9.31	-3.19	8.00
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.14	-15.50	-6.30	-14.94	-6.13	8.00
2437MHz	Pass	4.93	-9.92	-1.91	-10.67	-1.56	8.00
2462MHz	Pass	4.82	-14.93	-7.01	-15.18	-6.71	8.00
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	4.33	-19.56	-9.04	-19.91	-8.60	8.00
2437MHz	Pass	4.93	-17.21	-6.20	-17.21	-6.10	8.00
2452MHz	Pass	5.10	-20.73	-11.47	-21.34	-11.18	8.00

DG = Directional Gain; RBW=3 kHz;

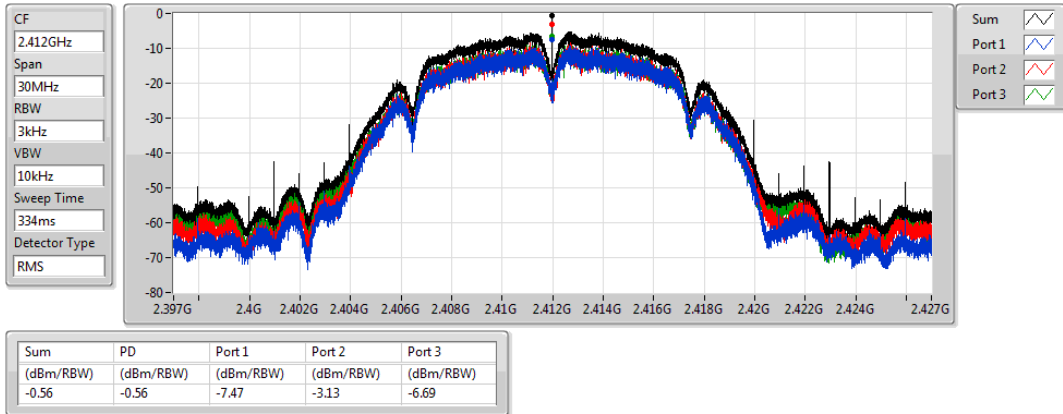
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11b_Nss1,(1Mbps)_3TX

PSD

2412MHz

17/10/2019

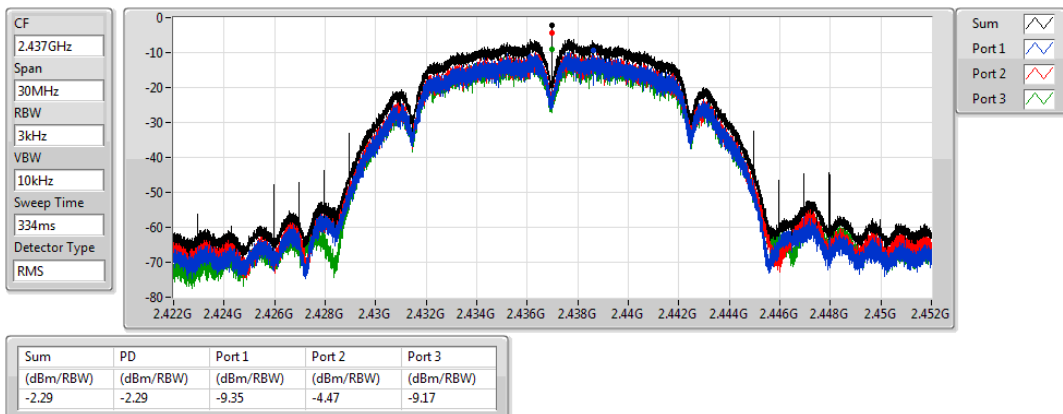


802.11b_Nss1,(1Mbps)_3TX

PSD

2437MHz

17/10/2019

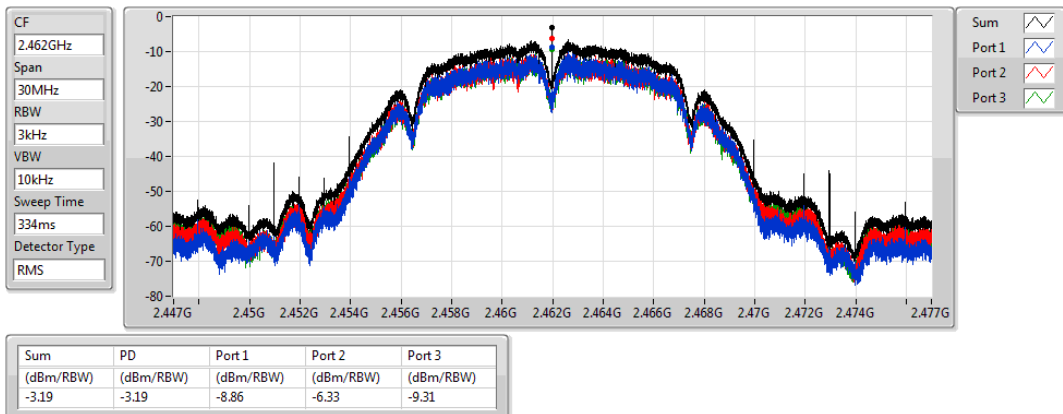


802.11b_Nss1,(1Mbps)_3TX

PSD

2462MHz

17/10/2019

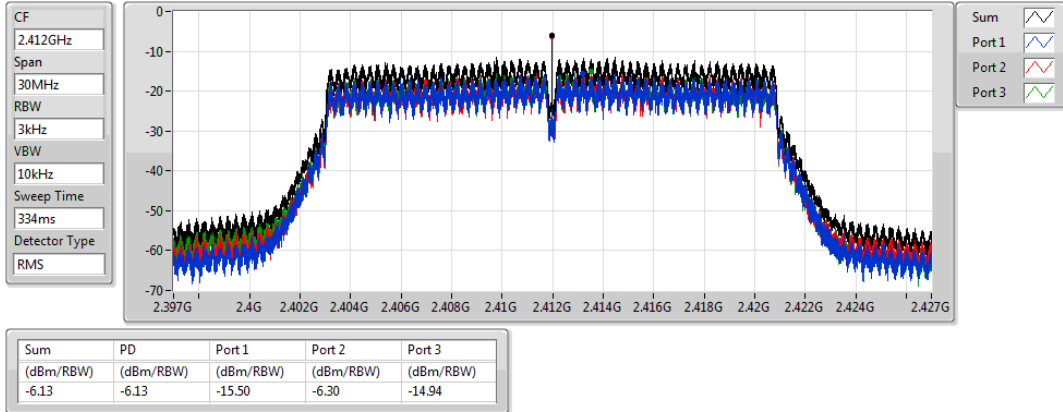


802.11n HT20_Nss1,(MCS0)_3TX

PSD

2412MHz

17/10/2019

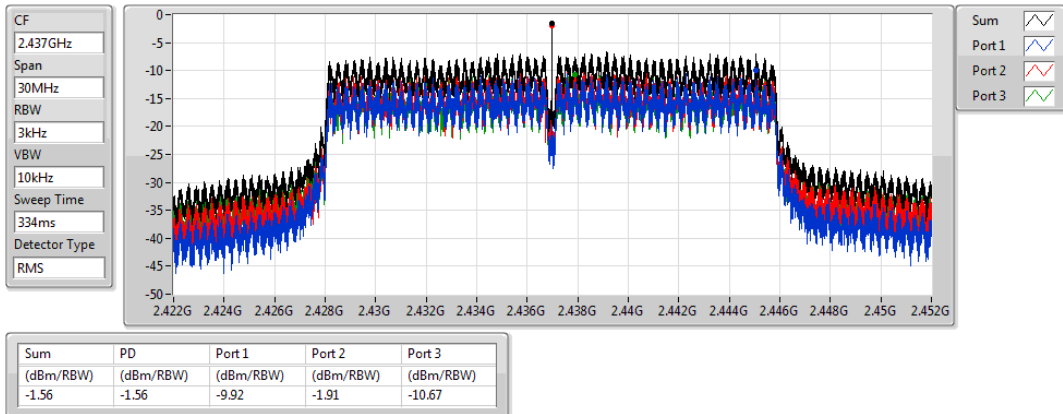


802.11n HT20_Nss1,(MCS0)_3TX

PSD

2437MHz

31/10/2019

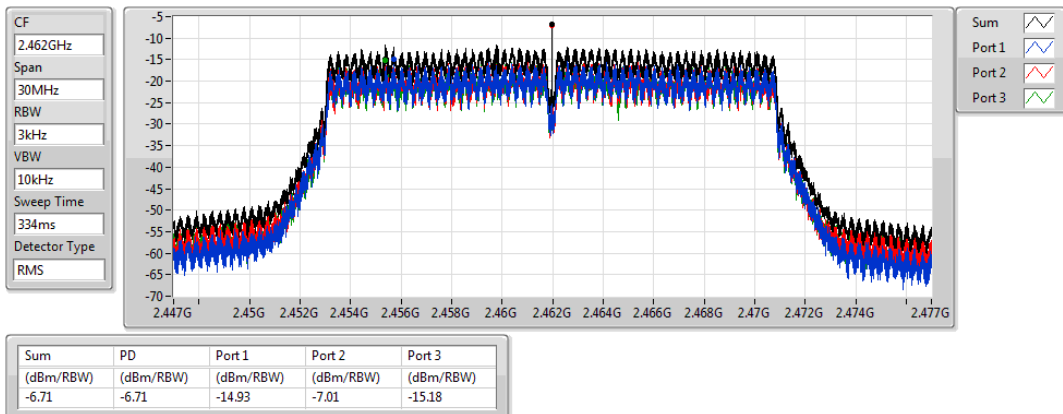


802.11n HT20_Nss1,(MCS0)_3TX

PSD

2462MHz

17/10/2019

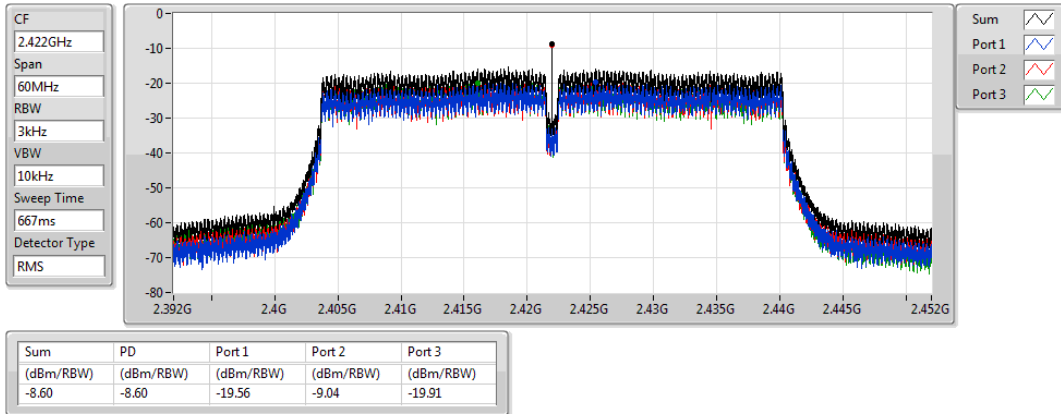


802.11n HT40_Nss1,(MCS0)_3TX

PSD

2422MHz

17/10/2019

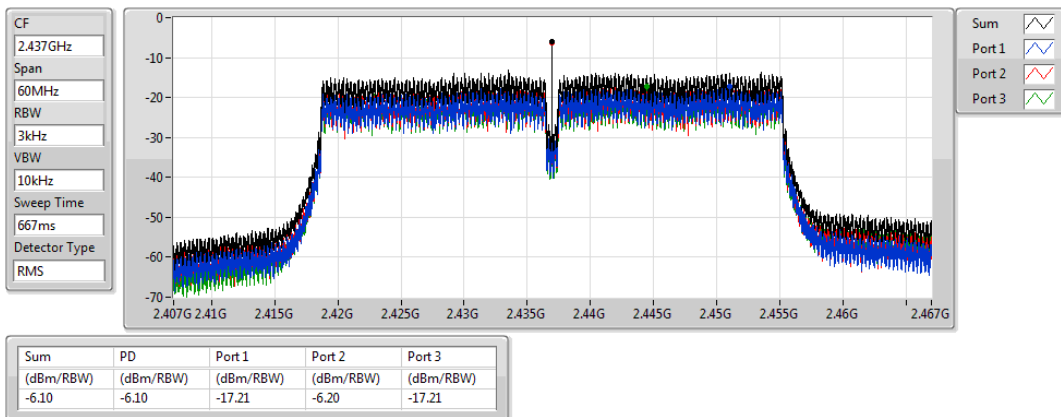


802.11n HT40_Nss1,(MCS0)_3TX

PSD

2437MHz

17/10/2019

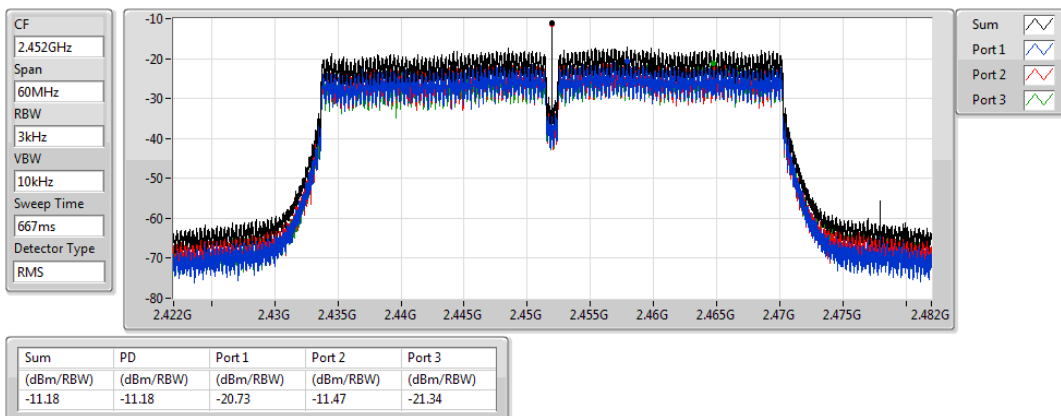


802.11n HT40_Nss1,(MCS0)_3TX

PSD

2452MHz

17/10/2019



**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	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_3TX	Pass	2.41094G	14.43	-15.57	692.01M	-52.36	2.39898G	-31.59	2.48914G	-49.86	16.63031G	-44.40	3
802.11n HT20_Nss1,(MCS0)_3TX	Pass	2.41073G	7.53	-22.47	749.1M	-52.42	2.39978G	-26.78	2.49878G	-50.92	16.54884G	-44.58	3
802.11n HT40_Nss1,(MCS0)_3TX	Pass	2.41946G	3.92	-26.08	915.66M	-53.53	2.39856G	-33.65	2.48754G	-51.33	24.00158G	-44.63	2

Result

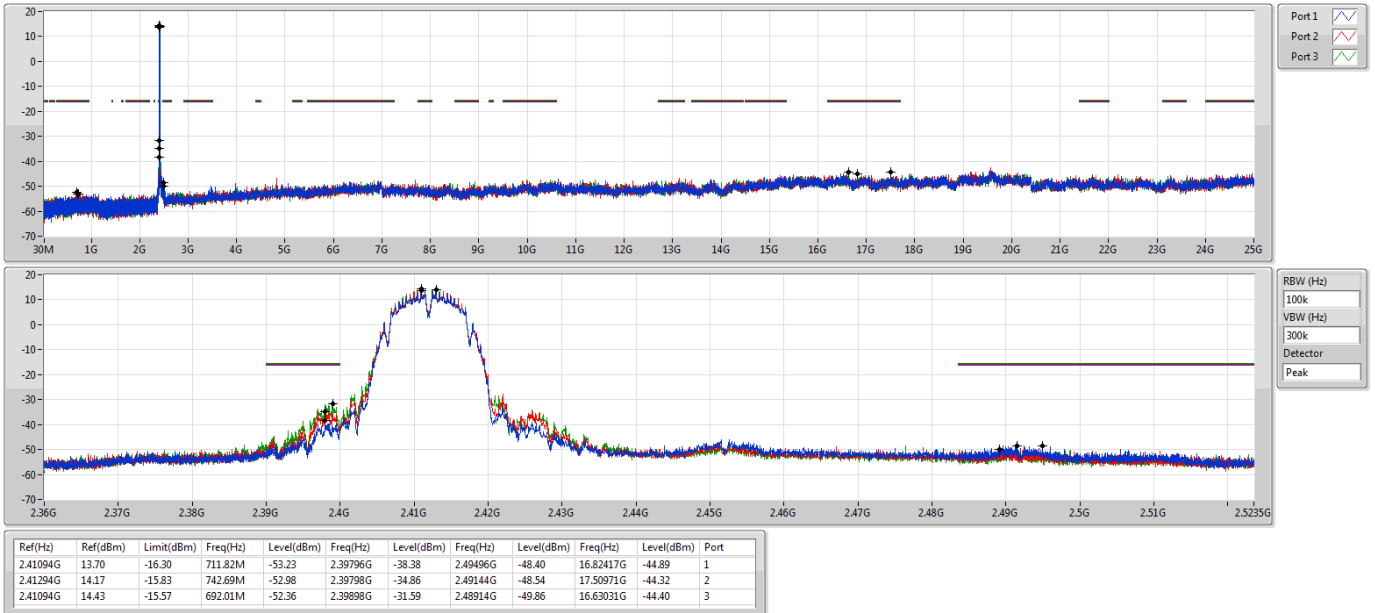
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11b_Nss1,(1Mbps)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.41094G	13.70	-16.30	711.82M	-53.23	2.39796G	-38.38	2.49496G	-48.40	16.82417G	-44.89	1
2412MHz	Pass	2.41294G	14.17	-15.83	742.69M	-52.98	2.39798G	-34.86	2.49144G	-48.54	17.50971G	-44.32	2
2412MHz	Pass	2.41094G	14.43	-15.57	692.01M	-52.36	2.39898G	-31.59	2.48914G	-49.86	16.63031G	-44.40	3
2437MHz	Pass	2.43745G	13.44	-16.56	616.87M	-53.28	2.39546G	-48.24	2.4886G	-48.43	16.44488G	-44.79	1
2437MHz	Pass	2.43645G	13.87	-16.13	788.42M	-52.75	2.39524G	-49.18	2.48632G	-48.53	24.95505G	-44.51	2
2437MHz	Pass	2.43649G	12.12	-17.88	787.25M	-52.63	2.39894G	-49.86	2.4882G	-49.60	24.57295G	-44.70	3
2462MHz	Pass	2.46146G	12.34	-17.66	750.26M	-52.31	2.39998G	-49.59	2.49296G	-47.77	24.646G	-44.49	1
2462MHz	Pass	2.4615G	12.49	-17.51	1.83459G	-52.55	2.39208G	-50.69	2.48444G	-49.56	16.43364G	-45.07	2
2462MHz	Pass	2.46296G	11.80	-18.20	804.43M	-52.84	2.39652G	-51.67	2.48358G	-48.48	24.71062G	-43.82	3
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.41069G	7.51	-22.49	2.11331G	-53.06	2.39986G	-29.86	2.48836G	-49.99	16.39431G	-45.12	1
2412MHz	Pass	2.41069G	7.52	-22.48	875.5M	-52.23	2.39884G	-30.48	2.48512G	-50.93	17.47318G	-44.42	2
2412MHz	Pass	2.41073G	7.53	-22.47	749.1M	-52.42	2.39978G	-26.78	2.49878G	-50.92	16.54884G	-44.58	3
2437MHz	Pass	2.43945G	12.95	-17.05	2.18991G	-52.93	2.39984G	-38.73	2.48374G	-43.95	16.45331G	-44.89	1
2437MHz	Pass	2.44196G	13.97	-16.03	949.19M	-53.29	2.39954G	-37.30	2.48376G	-41.84	24.62633G	-44.68	2
2437MHz	Pass	2.44196G	14.63	-15.37	2.10166G	-53.07	2.39976G	-32.21	2.48356G	-38.30	16.55726G	-44.06	3
2462MHz	Pass	2.46321G	7.85	-22.15	452.31M	-53.54	2.3929G	-51.72	2.48382G	-39.32	24.57857G	-45.36	1
2462MHz	Pass	2.4607G	8.23	-21.77	915.4M	-52.41	2.39178G	-51.65	2.48386G	-37.58	24.85109G	-44.52	2
2462MHz	Pass	2.45945G	7.01	-22.99	834.14M	-53.52	2.39604G	-51.89	2.48354G	-36.09	15.22553G	-44.50	3
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.42572G	4.11	-25.89	917.09M	-53.02	2.39828G	-37.30	2.49662G	-50.94	24.82892G	-44.55	1
2422MHz	Pass	2.41946G	3.92	-26.08	915.66M	-53.53	2.39856G	-33.65	2.48754G	-51.33	24.00158G	-44.63	2
2422MHz	Pass	2.41946G	4.06	-25.94	669.77M	-53.17	2.39856G	-34.49	2.49446G	-50.50	24.77283G	-44.78	3
2437MHz	Pass	2.44071G	6.36	-23.64	2.17058G	-53.17	2.39948G	-35.39	2.4841G	-39.13	16.99017G	-44.53	1
2437MHz	Pass	2.44196G	6.43	-23.57	2.11132G	-52.15	2.3994G	-34.98	2.48382G	-37.72	16.36195G	-44.33	2
2437MHz	Pass	2.45444G	5.64	-24.36	817.47M	-52.46	2.39984G	-38.03	2.48474G	-38.24	16.53022G	-45.15	3
2452MHz	Pass	2.45569G	2.71	-27.29	682.08M	-53.01	2.39796G	-50.85	2.48446G	-40.22	16.8836G	-44.75	1
2452MHz	Pass	2.45569G	2.70	-27.30	215.78M	-52.36	2.39996G	-51.30	2.48446G	-38.43	24.9355G	-44.34	2
2452MHz	Pass	2.46947G	1.98	-28.02	1.82565G	-53.23	2.3974G	-52.17	2.48574G	-42.91	21.70464G	-44.64	3

802.11b_Nss1,(1Mbps)_3TX

CSE NdB

2412MHz

17/10/2019

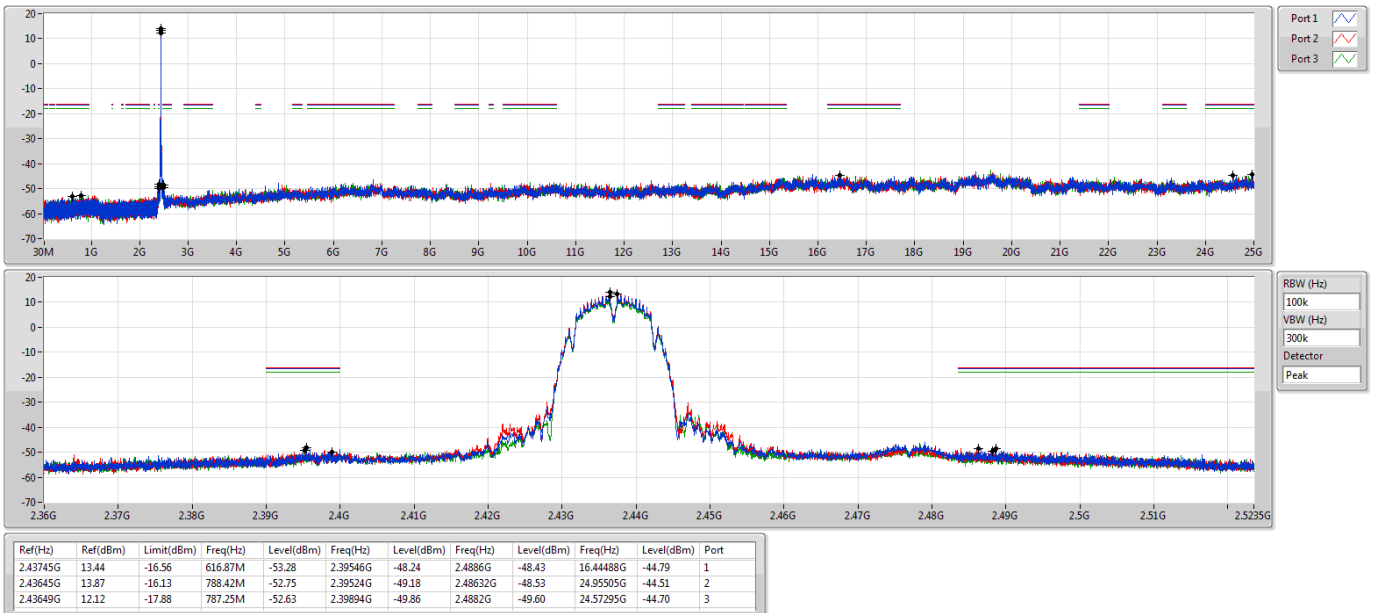


802.11b_Nss1,(1Mbps)_3TX

CSE NdB

2437MHz

17/10/2019

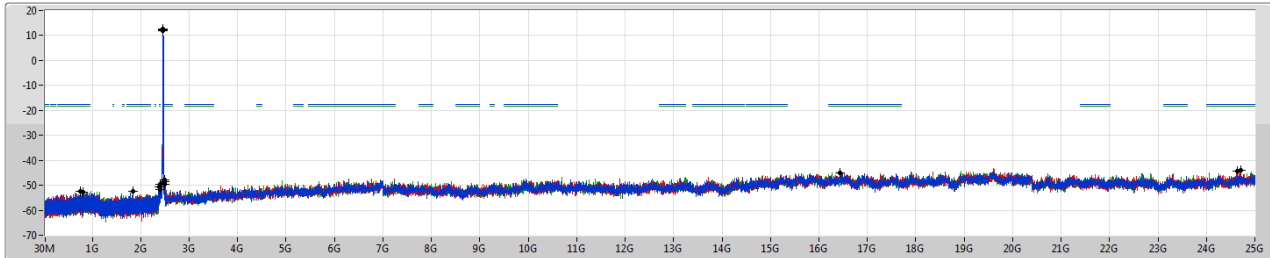


802.11b_Nss1,(1Mbps)_3TX

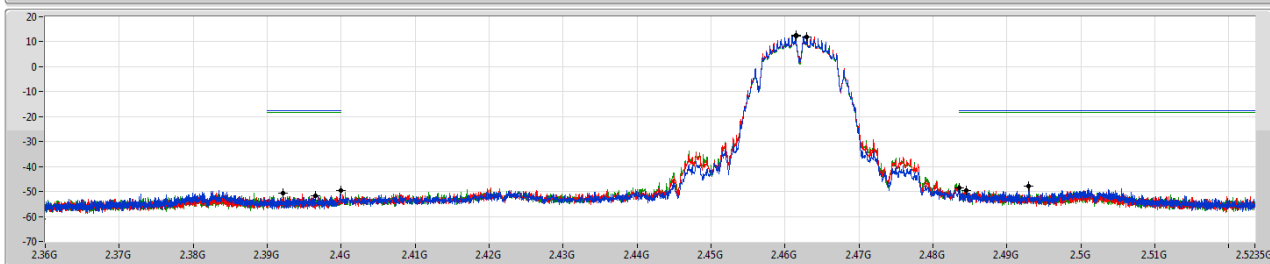
2462MHz

CSE NdB

17/10/2019



Port 1
Port 2
Port 3



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

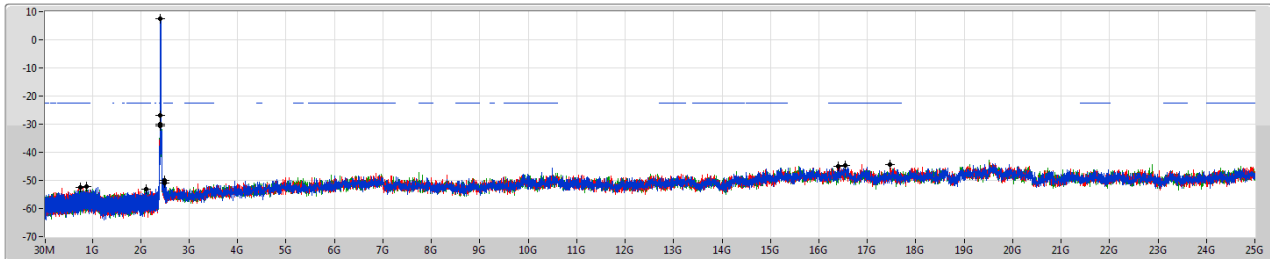
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46146G	12.34	-17.66	750.26M	-52.31	2.39998G	-49.59	2.49296G	-47.77	24.646G	-44.49	1
2.4615G	12.49	-17.51	1.83459G	-52.55	2.39208G	-50.69	2.48444G	-49.56	16.43364G	-45.07	2
2.46296G	11.80	-18.20	804.43M	-52.84	2.39652G	-51.67	2.48358G	-48.48	24.71062G	-43.82	3

802.11n HT20_Nss1,(MCS0)_3TX

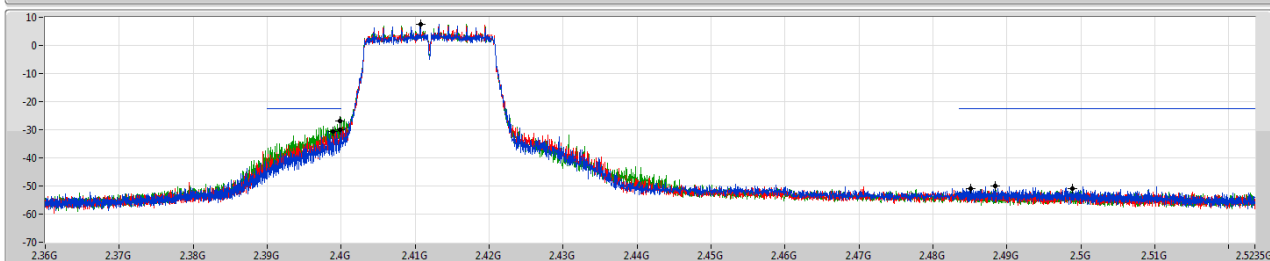
2412MHz

CSE NdB

17/10/2019



Port 1
Port 2
Port 3



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

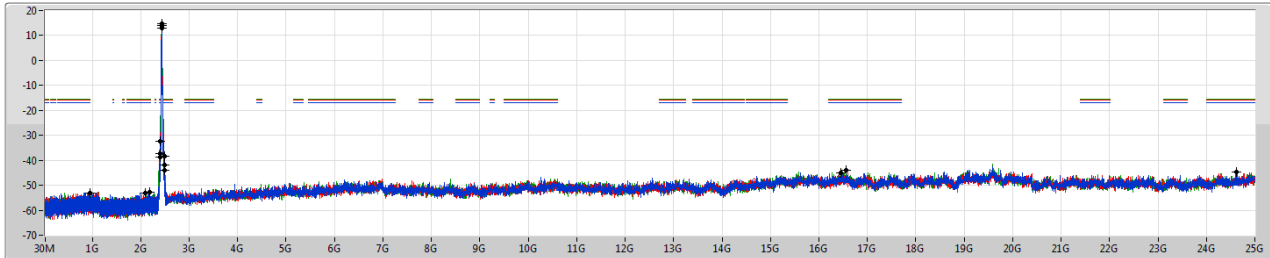
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41069G	7.51	-22.49	2.11331G	-53.06	2.39986G	-29.86	2.48836G	-49.99	16.39431G	-45.12	1
2.41069G	7.52	-22.48	875.5M	-52.23	2.39884G	-30.48	2.48512G	-50.93	17.47318G	-44.42	2
2.41073G	7.53	-22.47	749.11M	-52.42	2.39978G	-26.78	2.49878G	-50.92	16.54884G	-44.58	3

802.11n HT20_Nss1,(MCS0)_3TX

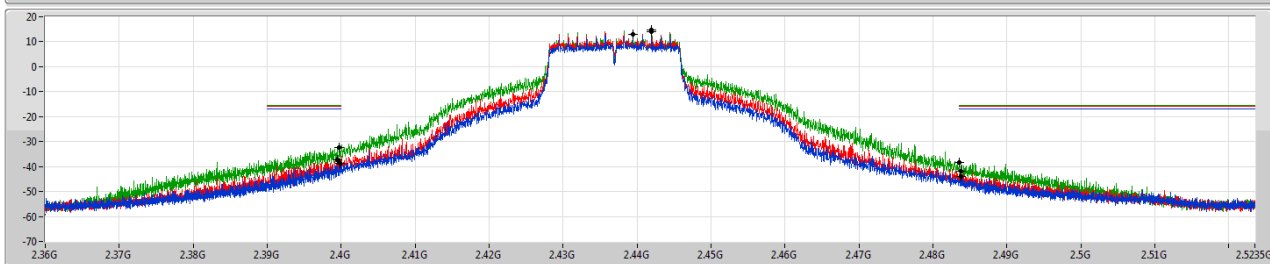
2437MHz

CSE NdB

17/10/2019



Port 1
Port 2
Port 3



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

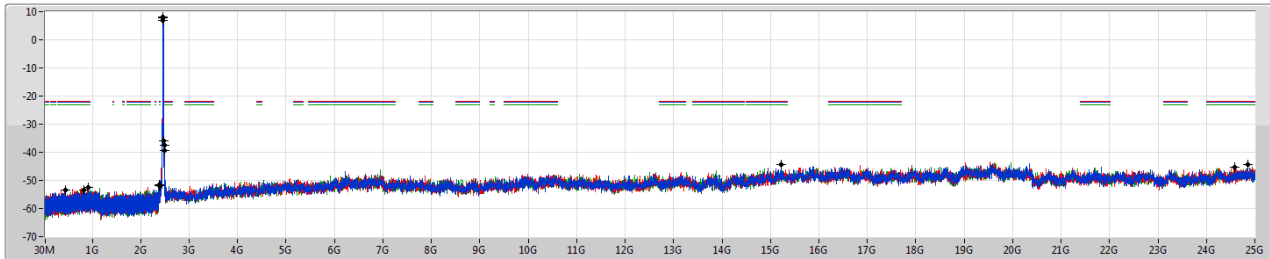
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43945G	12.95	-17.05	2.18991G	-52.93	2.39984G	-38.73	2.48374G	-43.95	16.45331G	-44.89	1
2.44196G	13.97	-16.03	949.19M	-53.29	2.39954G	-37.30	2.48376G	-41.84	24.62633G	-44.68	2
2.44196G	14.63	-15.37	2.10166G	-53.07	2.39976G	-32.21	2.48356G	-38.30	16.55726G	-44.06	3

802.11n HT20_Nss1,(MCS0)_3TX

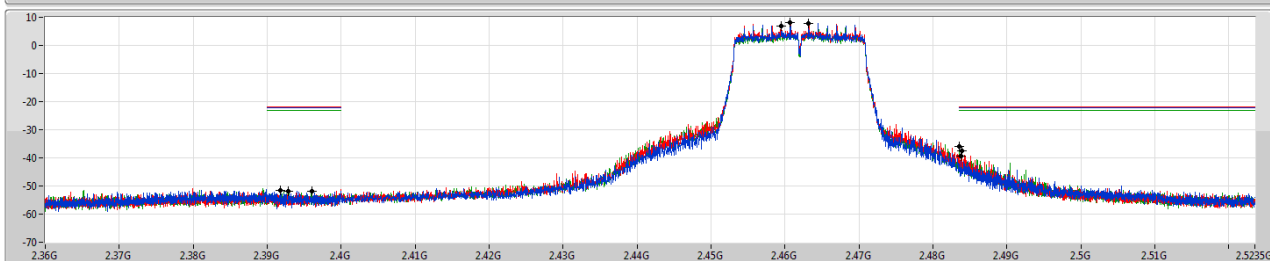
2462MHz

CSE NdB

17/10/2019



Port 1
Port 2
Port 3



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

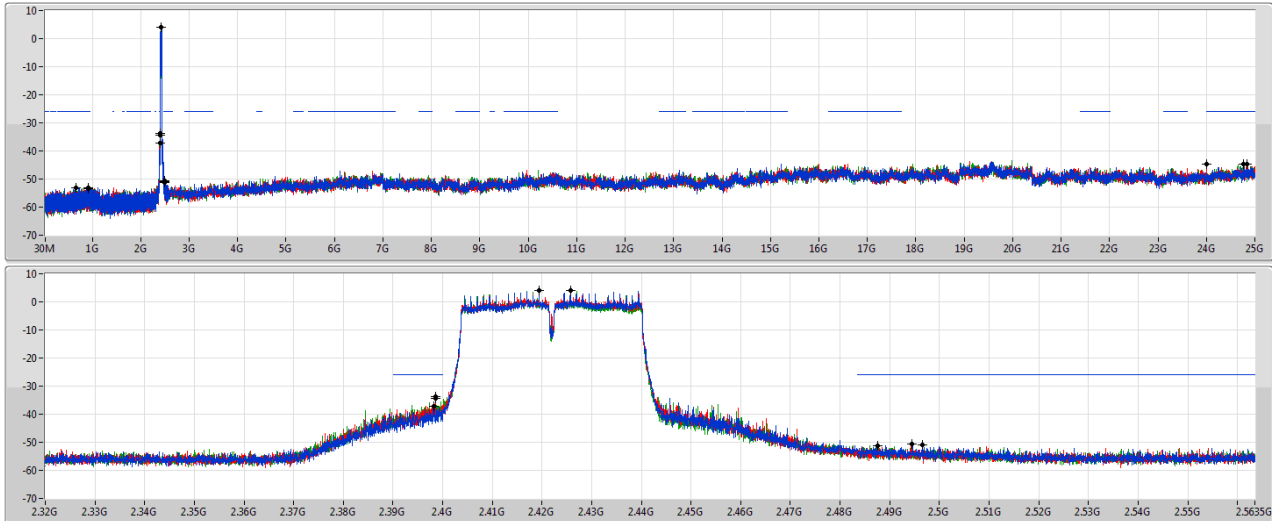
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46321G	7.85	-22.15	452.31M	-53.54	2.3929G	-51.72	2.48382G	-39.32	24.57857G	-45.36	1
2.4607G	8.23	-21.77	915.4M	-52.41	2.39178G	-51.65	2.48386G	-37.58	24.85109G	-44.52	2
2.45945G	7.01	-22.99	834.14M	-53.52	2.39604G	-51.89	2.48354G	-36.09	15.22553G	-44.50	3

802.11n HT40_Nss1,(MCS0)_3TX

2422MHz

CSE NdB

17/10/2019



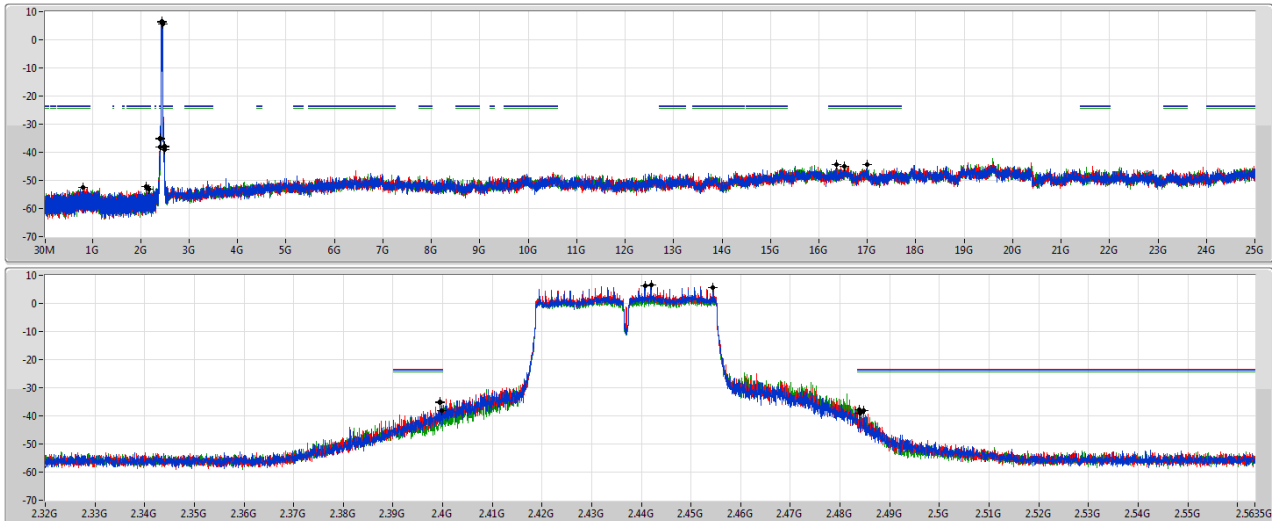
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.42572G	4.11	-25.89	917.09M	-53.02	2.39828G	-37.30	2.49662G	-50.94	24.82892G	-44.55	1
2.41946G	3.92	-26.08	915.66M	-53.53	2.39856G	-33.65	2.48754G	-51.33	24.00158G	-44.63	2
2.41946G	4.06	-25.94	669.77M	-53.17	2.39856G	-34.49	2.49446G	-50.50	24.77283G	-44.78	3

802.11n HT40_Nss1,(MCS0)_3TX

2437MHz

CSE NdB

17/10/2019



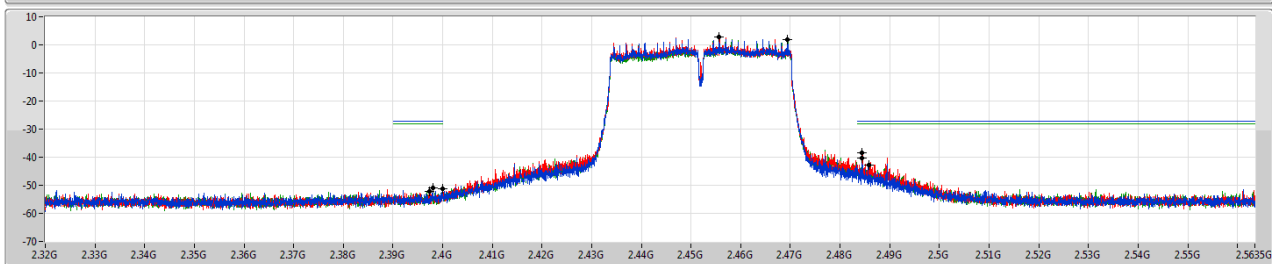
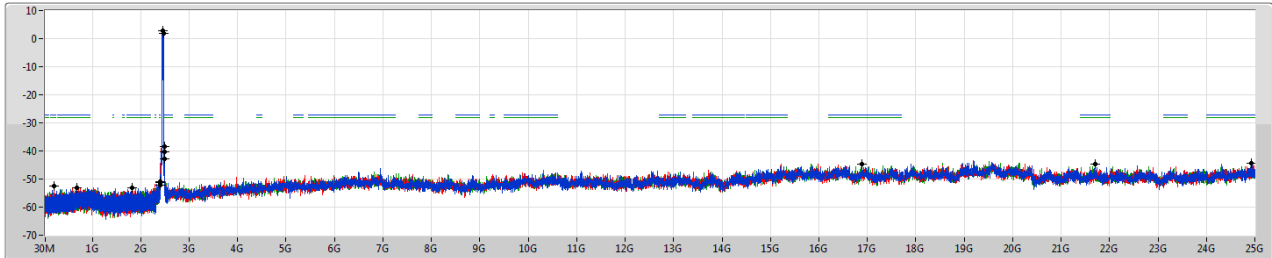
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44071G	6.36	-23.64	2.17058G	-53.17	2.39948G	-35.39	2.4841G	-39.13	16.99017G	-44.53	1
2.44196G	6.43	-23.57	2.11132G	-52.15	2.3994G	-34.98	2.48382G	-37.72	16.36195G	-44.33	2
2.45444G	5.64	-24.36	817.47M	-52.46	2.39984G	-38.03	2.48474G	-38.24	16.53022G	-45.15	3

802.11n HT40_Nss1,(MCS0)_3TX

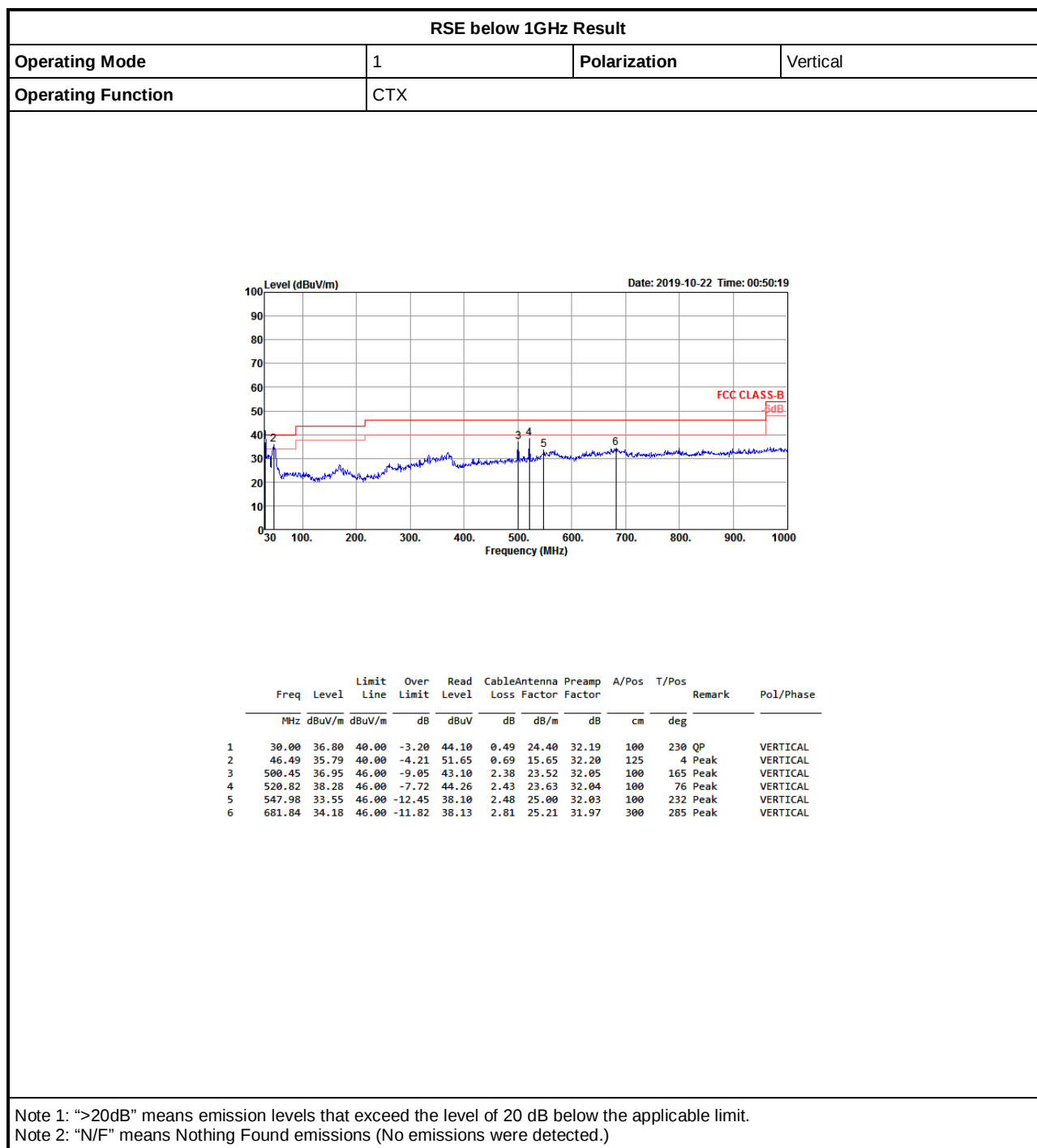
CSE NdB

2452MHz

17/10/2019



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.45569G	2.71	-27.29	682.08M	-53.01	2.39796G	-50.85	2.48446G	-40.22	16.8836G	-44.75	1
2.45569G	2.70	-27.30	215.78M	-52.36	2.39996G	-51.30	2.48446G	-38.43	24.9355G	-44.34	2
2.46947G	1.98	-28.02	1.82565G	-53.23	2.3974G	-52.17	2.48574G	-42.91	21.70464G	-44.64	3





RSE below 1GHz Result

Appendix F.1

RSE below 1GHz Result																																																																																																												
Operating Mode	1					Polarization			Horizontal																																																																																																			
Operating Function	CTX																																																																																																											
Level (dBuV/m) Date: 2019-10-22 Time: 00:47:12 FCC CLASS-B 5dB Frequency (MHz) <table><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Read</th><th>CableAntenna</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phase</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dBuV/m</th><th>dB</th><th>dBuV</th><th>dB</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>30.97</td><td>36.97</td><td>40.00</td><td>-3.03</td><td>44.79</td><td>0.51</td><td>23.86</td><td>32.19</td><td>100</td><td>69 QP</td><td>HORIZONTAL</td></tr><tr><td>2</td><td>363.68</td><td>33.49</td><td>46.00</td><td>-12.51</td><td>42.71</td><td>2.07</td><td>20.62</td><td>31.91</td><td>150</td><td>90 Peak</td><td>HORIZONTAL</td></tr><tr><td>3</td><td>500.45</td><td>34.94</td><td>46.00</td><td>-11.06</td><td>41.09</td><td>2.38</td><td>23.52</td><td>32.05</td><td>200</td><td>247 Peak</td><td>HORIZONTAL</td></tr><tr><td>4</td><td>522.76</td><td>37.19</td><td>46.00</td><td>-8.81</td><td>43.13</td><td>2.43</td><td>23.67</td><td>32.04</td><td>200</td><td>56 Peak</td><td>HORIZONTAL</td></tr><tr><td>5</td><td>533.43</td><td>37.43</td><td>46.00</td><td>-8.57</td><td>42.97</td><td>2.45</td><td>24.05</td><td>32.04</td><td>300</td><td>272 Peak</td><td>HORIZONTAL</td></tr><tr><td>6</td><td>743.92</td><td>33.94</td><td>46.00</td><td>-12.06</td><td>37.26</td><td>2.90</td><td>25.86</td><td>32.08</td><td>100</td><td>218 Peak</td><td>HORIZONTAL</td></tr></table>														Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		1	30.97	36.97	40.00	-3.03	44.79	0.51	23.86	32.19	100	69 QP	HORIZONTAL	2	363.68	33.49	46.00	-12.51	42.71	2.07	20.62	31.91	150	90 Peak	HORIZONTAL	3	500.45	34.94	46.00	-11.06	41.09	2.38	23.52	32.05	200	247 Peak	HORIZONTAL	4	522.76	37.19	46.00	-8.81	43.13	2.43	23.67	32.04	200	56 Peak	HORIZONTAL	5	533.43	37.43	46.00	-8.57	42.97	2.45	24.05	32.04	300	272 Peak	HORIZONTAL	6	743.92	33.94	46.00	-12.06	37.26	2.90	25.86	32.08	100	218 Peak	HORIZONTAL
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase																																																																																																	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg																																																																																																		
1	30.97	36.97	40.00	-3.03	44.79	0.51	23.86	32.19	100	69 QP	HORIZONTAL																																																																																																	
2	363.68	33.49	46.00	-12.51	42.71	2.07	20.62	31.91	150	90 Peak	HORIZONTAL																																																																																																	
3	500.45	34.94	46.00	-11.06	41.09	2.38	23.52	32.05	200	247 Peak	HORIZONTAL																																																																																																	
4	522.76	37.19	46.00	-8.81	43.13	2.43	23.67	32.04	200	56 Peak	HORIZONTAL																																																																																																	
5	533.43	37.43	46.00	-8.57	42.97	2.45	24.05	32.04	300	272 Peak	HORIZONTAL																																																																																																	
6	743.92	33.94	46.00	-12.06	37.26	2.90	25.86	32.08	100	218 Peak	HORIZONTAL																																																																																																	
Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)																																																																																																												



RSE TX above 1GHz Result

Appendix F.2

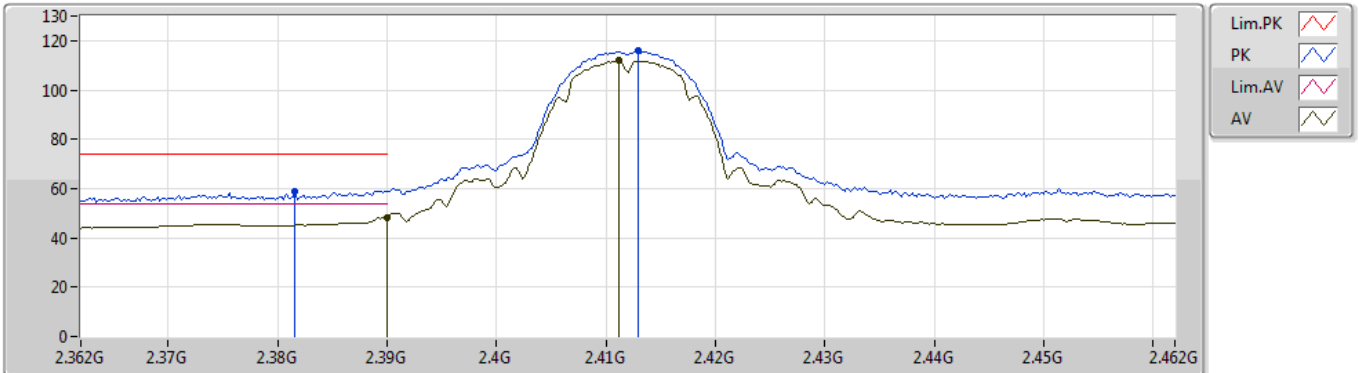
Summary

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	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_3TX	Pass	AV	7.38666G	53.95	54.00	-0.05	9.15	3	Vertical	95	1.48	-

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2412MHz_TX



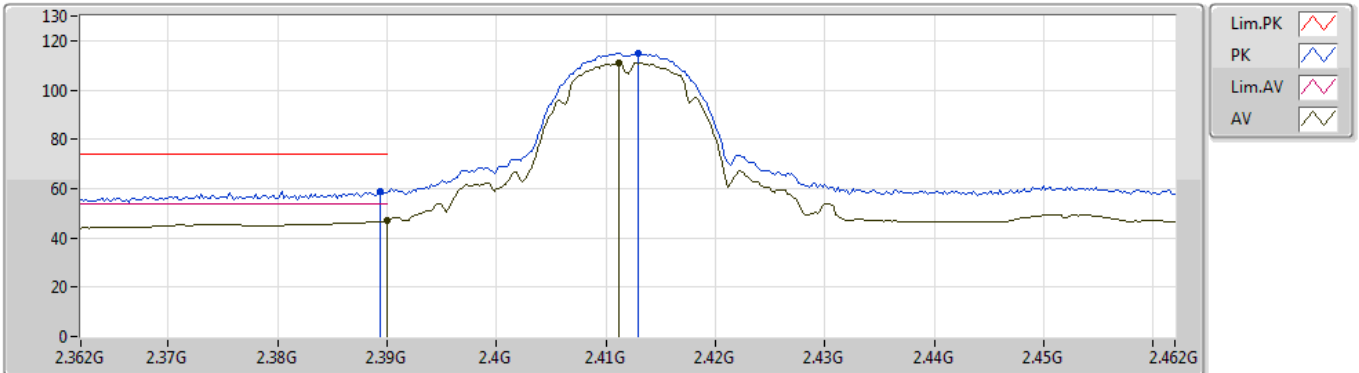
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.3816G	58.98	74.00	-15.02	31.91	3	Vertical	106	1.12	-	27.07			
AV	2.39G	48.14	54.00	-5.86	31.93	3	Vertical	106	1.12	-	16.21			
PK	2.413G	115.80	Inf	-Inf	32.01	3	Vertical	106	1.12	-	83.79			
AV	2.4112G	111.85	Inf	-Inf	32.00	3	Vertical	106	1.12	-	79.85			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2412MHz_TX



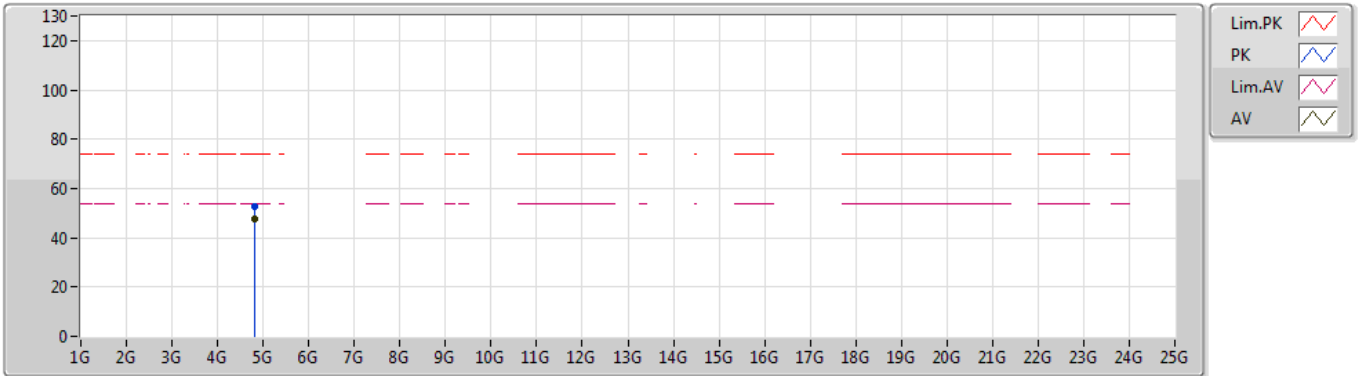
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

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	59.08	74.00	-14.92	31.93	3	Horizontal	202	1.50	-	27.15			
AV	2.39G	47.06	54.00	-6.94	31.93	3	Horizontal	202	1.50	-	15.13			
PK	2.413G	115.06	Inf	-Inf	32.01	3	Horizontal	202	1.50	-	83.05			
AV	2.4112G	111.00	Inf	-Inf	32.00	3	Horizontal	202	1.50	-	79.00			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2412MHz_TX



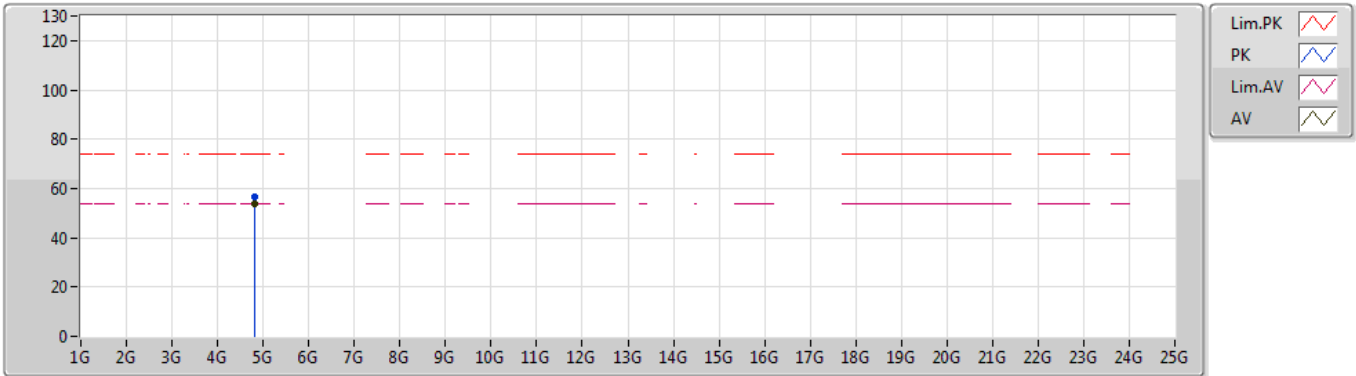
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.8239G	52.54	74.00	-21.46	4.71	3	Vertical	66	1.68	-	47.83			
AV	4.82391G	47.83	54.00	-6.17	4.71	3	Vertical	66	1.68	-	43.12			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2412MHz_TX



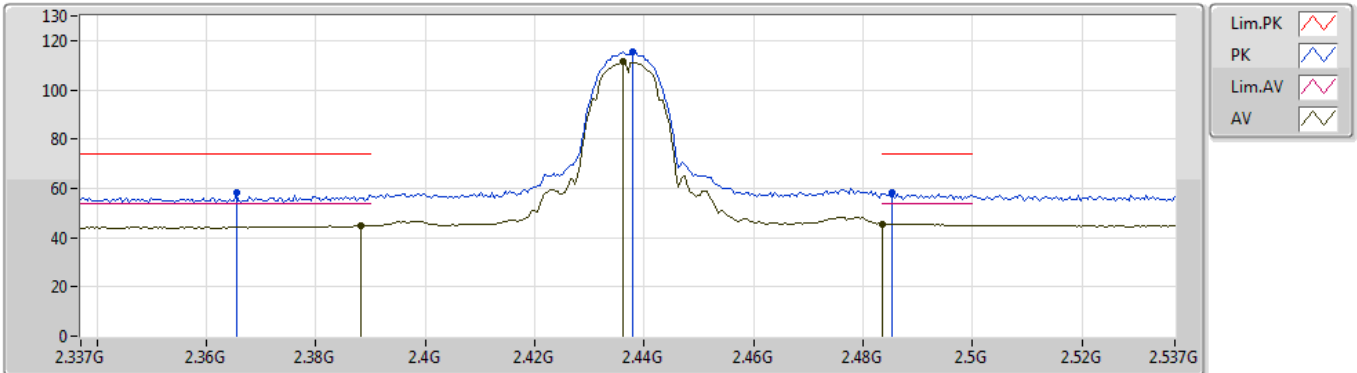
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.82392G	56.51	74.00	-17.49	4.71	3	Horizontal	42	1.56	-	51.80			
AV	4.82393G	53.73	54.00	-0.27	4.71	3	Horizontal	42	1.56	-	49.02			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2437MHz_TX



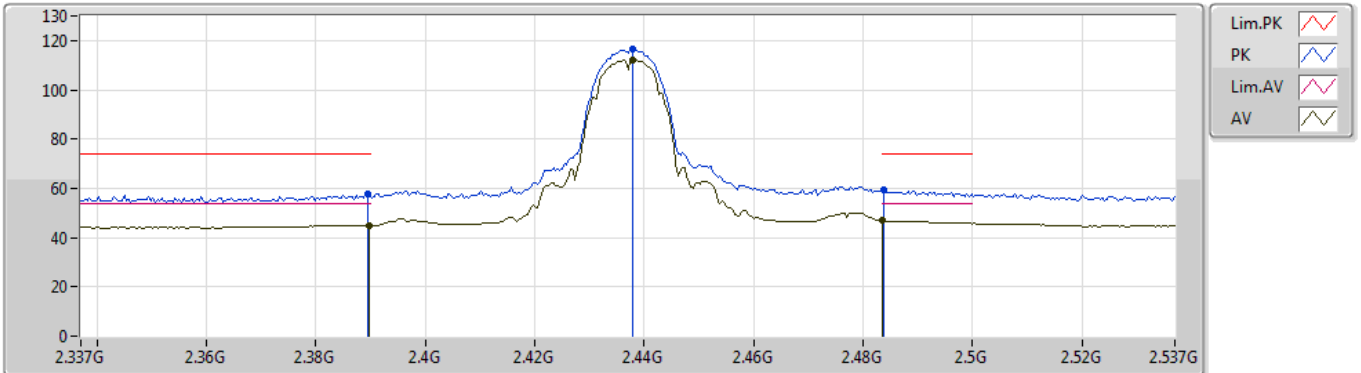
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3654G	58.17	74.00	-15.83	31.86	3	Vertical	106	1.06	-	26.31
AV	2.3882G	44.64	54.00	-9.36	31.93	3	Vertical	106	1.06	-	12.71
PK	2.4378G	115.19	Inf	-Inf	32.09	3	Vertical	106	1.06	-	83.10
AV	2.4362G	111.26	Inf	-Inf	32.09	3	Vertical	106	1.06	-	79.17
PK	2.4854G	58.16	74.00	-15.84	32.26	3	Vertical	106	1.06	-	25.90
AV	2.4835G	45.65	54.00	-8.35	32.25	3	Vertical	106	1.06	-	13.40

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2437MHz_TX



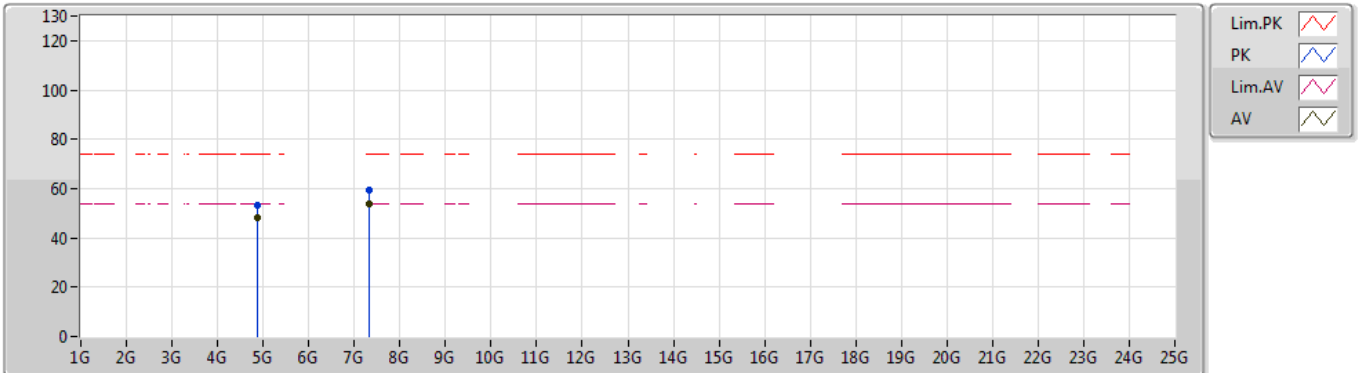
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

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	57.97	74.00	-16.03	31.93	3	Horizontal	204	1.46	-	26.04
AV	2.3898G	45.04	54.00	-8.96	31.93	3	Horizontal	204	1.46	-	13.11
PK	2.4378G	116.38	Inf	-Inf	32.09	3	Horizontal	204	1.46	-	84.29
AV	2.4378G	112.25	Inf	-Inf	32.09	3	Horizontal	204	1.46	-	80.16
PK	2.4838G	59.20	74.00	-14.80	32.25	3	Horizontal	204	1.46	-	26.95
AV	2.4835G	47.05	54.00	-6.95	32.25	3	Horizontal	204	1.46	-	14.80

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2437MHz_TX



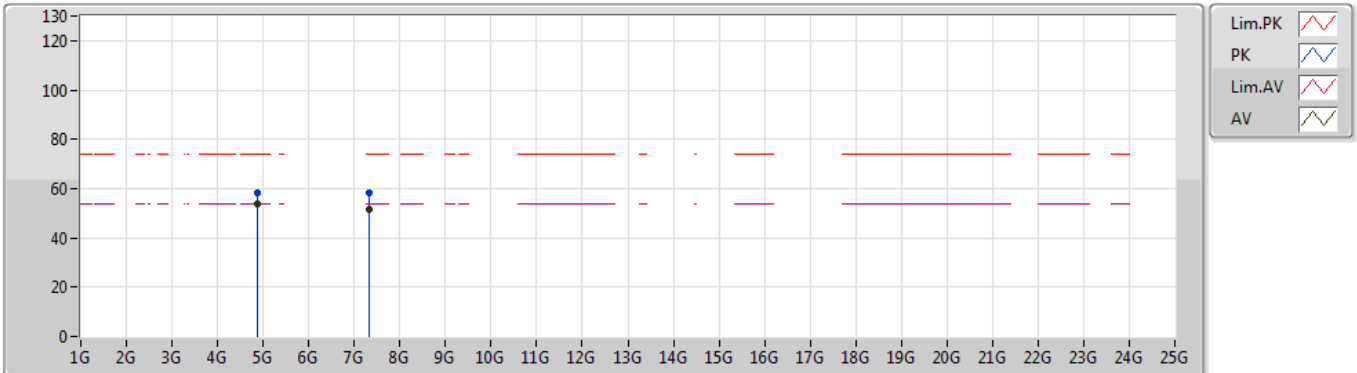
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.87385G	53.30	74.00	-20.70	4.80	3	Vertical	68	1.50	-	48.50			
AV	4.87397G	48.01	54.00	-5.99	4.80	3	Vertical	68	1.50	-	43.21			
PK	7.3119G	59.50	74.00	-14.50	8.99	3	Vertical	95	1.42	-	50.51			
AV	7.31164G	53.76	54.00	-0.24	8.99	3	Vertical	95	1.42	-	44.77			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2437MHz_TX



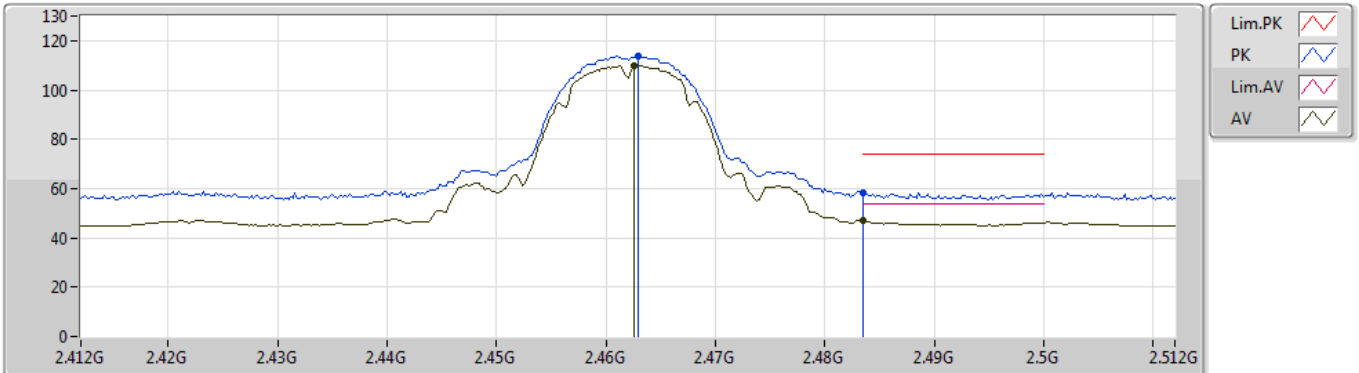
EUT Y_3TX
Setting 90
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.87394G	58.36	74.00	-15.64	4.80	3	Horizontal	43	1.50	-	53.56			
AV	4.87396G	53.78	54.00	-0.22	4.80	3	Horizontal	43	1.50	-	48.98			
PK	7.31196G	58.05	74.00	-15.95	8.99	3	Horizontal	32	1.70	-	49.06			
AV	7.31164G	51.53	54.00	-2.47	8.99	3	Horizontal	32	1.70	-	42.54			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2462MHz_TX



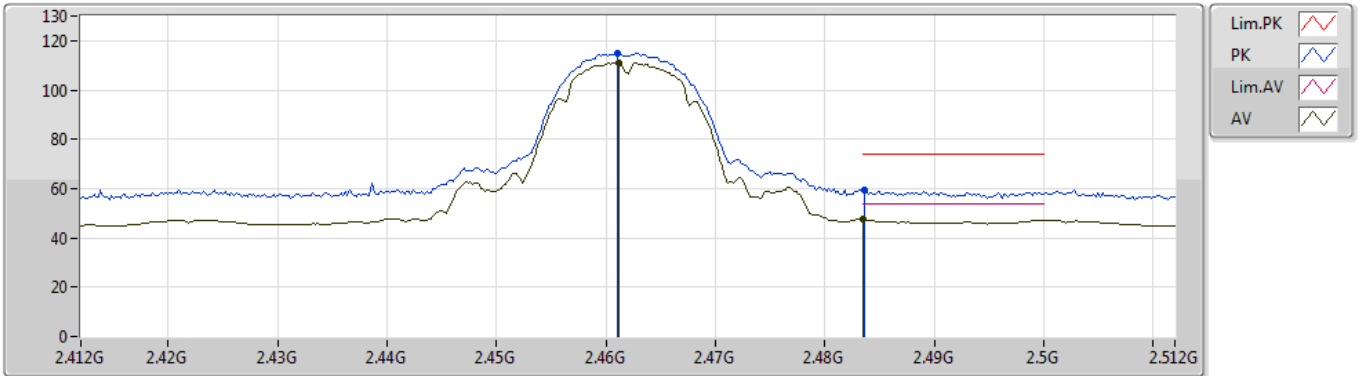
EUT Y_3TX
Setting 87
03-E-2
FSP(100080)

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	113.78	Inf	-Inf	32.18	3	Vertical	108	1.08	-	81.60			
AV	2.4626G	109.69	Inf	-Inf	32.18	3	Vertical	108	1.08	-	77.51			
PK	2.4835G	58.44	74.00	-15.56	32.25	3	Vertical	108	1.08	-	26.19			
AV	2.4835G	47.09	54.00	-6.91	32.25	3	Vertical	108	1.08	-	14.84			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2462MHz_TX



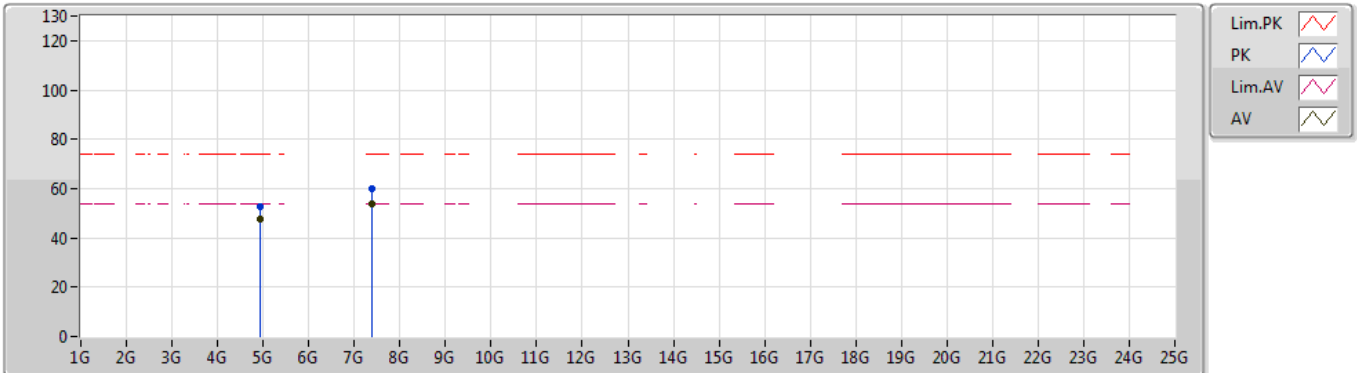
EUT Y_3TX
Setting 87
03-E-2
FSP(100080)

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	115.02	Inf	-Inf	32.17	3	Horizontal	200	1.49	-	82.85			
AV	2.4612G	111.03	Inf	-Inf	32.17	3	Horizontal	200	1.49	-	78.86			
PK	2.4836G	59.65	74.00	-14.35	32.25	3	Horizontal	200	1.49	-	27.40			
AV	2.4835G	47.80	54.00	-6.20	32.25	3	Horizontal	200	1.49	-	15.55			

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2462MHz_TX



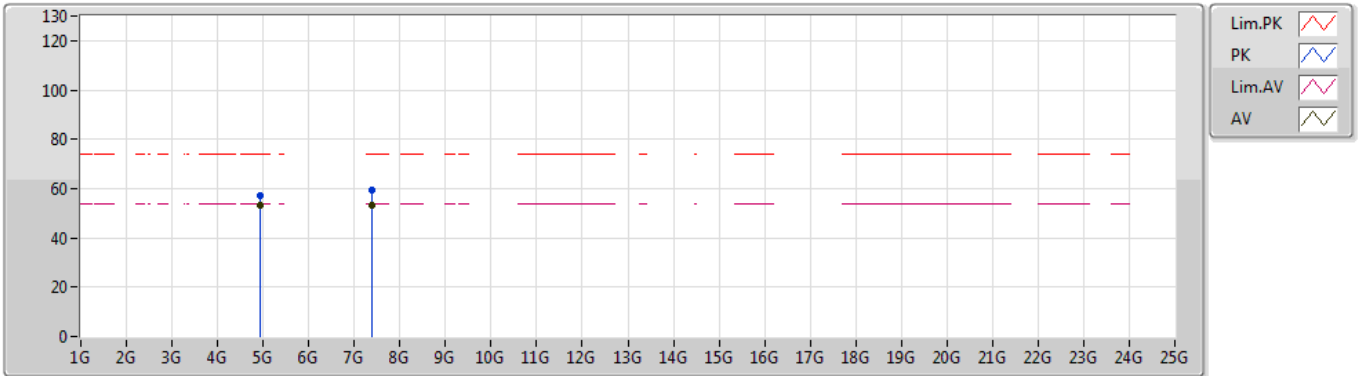
EUT Y_3TX
Setting 87
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	4.9238G	52.70	74.00	-21.30	4.90	3	Vertical	72	1.47	-	47.80
AV	4.92394G	47.40	54.00	-6.60	4.90	3	Vertical	72	1.47	-	42.50
PK	7.38678G	60.14	74.00	-13.86	9.15	3	Vertical	95	1.48	-	50.99
AV	7.38666G	53.95	54.00	-0.05	9.15	3	Vertical	95	1.48	-	44.80

802.11b_Nss1,(1Mbps)_3TX

04/10/2019

2462MHz_TX



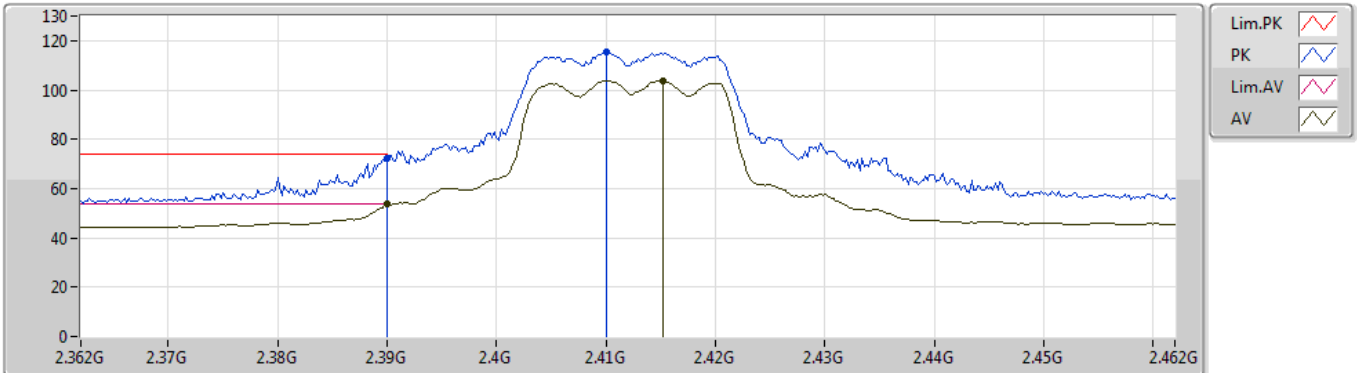
EUT Y_3TX
Setting 87
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.92409G	57.17	74.00	-16.83	4.90	3	Horizontal	86	1.62	-	52.27			
AV	4.92394G	53.48	54.00	-0.52	4.90	3	Horizontal	86	1.62	-	48.58			
PK	7.38612G	59.27	74.00	-14.73	9.15	3	Horizontal	38	1.69	-	50.12			
AV	7.38666G	53.00	54.00	-1.00	9.15	3	Horizontal	38	1.69	-	43.85			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2412MHz_TX



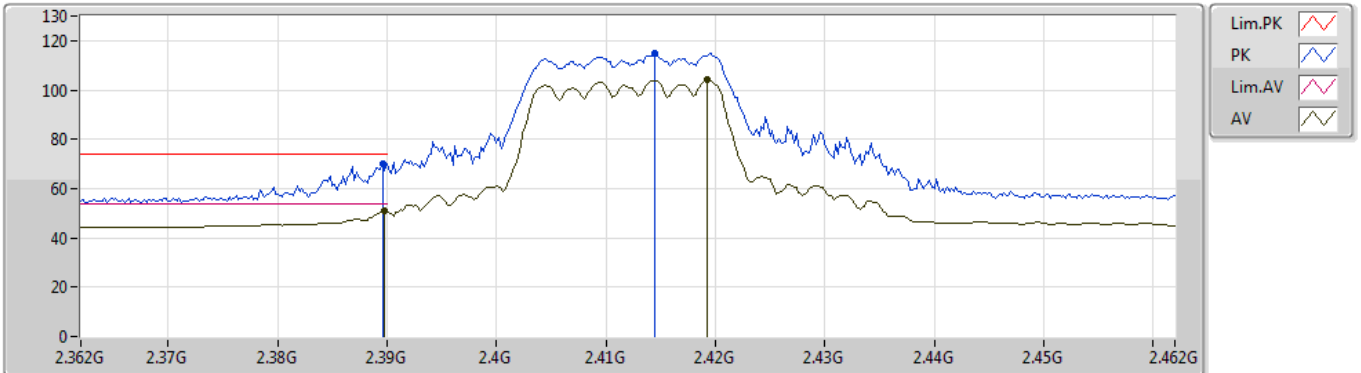
EUT Y_3TX
Setting 74
03-W-3
FSP(100080)

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	72.36	74.00	-1.64	31.93	3	Vertical	356	1.61	-	40.43
AV	2.39G	53.55	54.00	-0.45	31.93	3	Vertical	356	1.61	-	21.62
PK	2.41G	115.25	Inf	-Inf	32.00	3	Vertical	356	1.61	-	83.25
AV	2.4152G	103.70	Inf	-Inf	32.02	3	Vertical	356	1.61	-	71.68

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2412MHz_TX



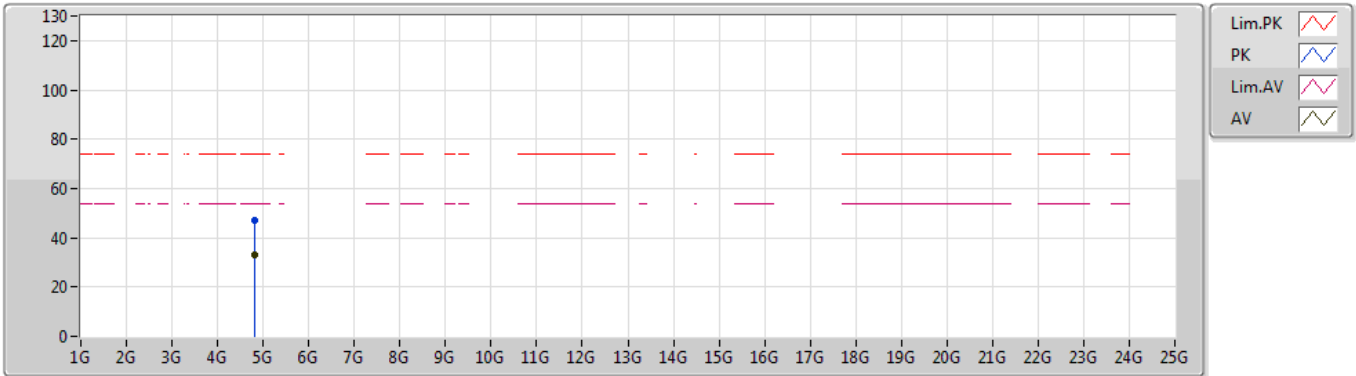
EUT Y_3TX
Setting 74
03-W-3
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.3896G	69.85	74.00	-4.15	31.93	3	Horizontal	0	1.34	-	37.92			
AV	2.3898G	50.92	54.00	-3.08	31.93	3	Horizontal	0	1.34	-	18.99			
PK	2.4144G	114.98	Inf	-Inf	32.01	3	Horizontal	0	1.34	-	82.97			
AV	2.4192G	103.95	Inf	-Inf	32.03	3	Horizontal	0	1.34	-	71.92			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2412MHz_TX



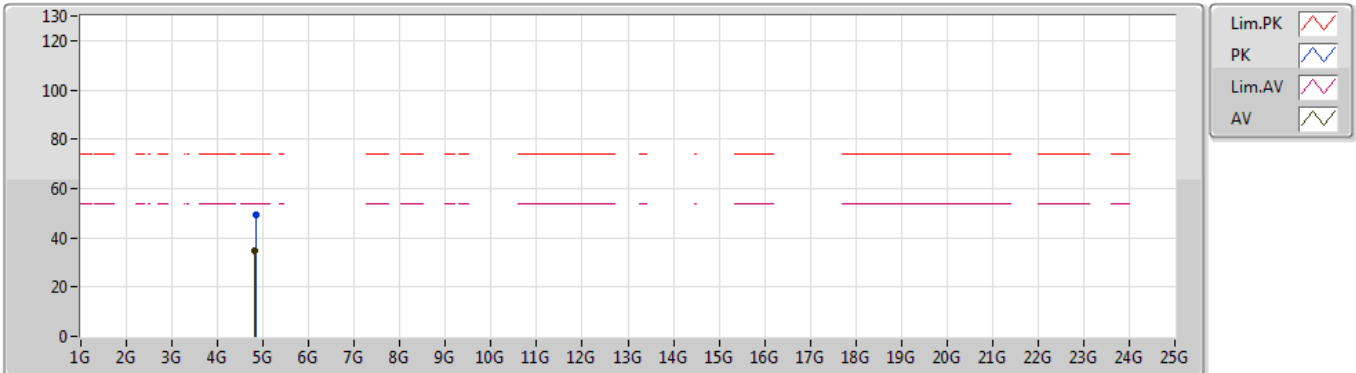
EUT Y_3TX
Setting 74
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.81476G	47.25	74.00	-26.75	4.69	3	Vertical	64	2.92	-	42.56			
AV	4.82184G	33.19	54.00	-20.81	4.70	3	Vertical	64	2.92	-	28.49			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2412MHz_TX



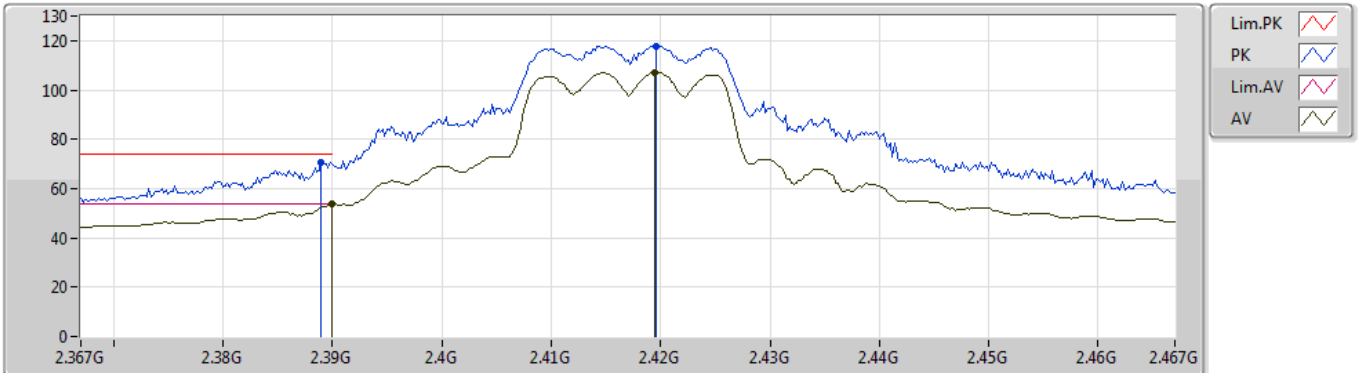
EUT Y_3TX
Setting 74
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.82952G	49.21	74.00	-24.79	4.72	3	Horizontal	135	1.77	-	44.49			
AV	4.824G	34.78	54.00	-19.22	4.71	3	Horizontal	135	1.77	-	30.07			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2417MHz_TX



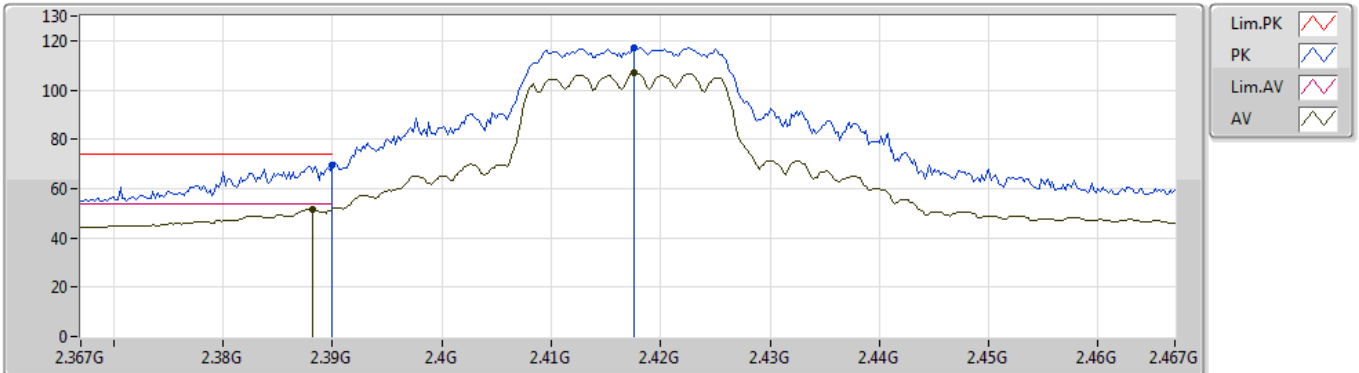
EUT Y_3TX
Setting 86
03-W-3
FSP(100080)

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	70.62	74.00	-3.38	31.93	3	Vertical	0	2.06	-	38.69			
AV	2.39G	53.58	54.00	-0.42	31.93	3	Vertical	0	2.06	-	21.65			
PK	2.4196G	117.93	Inf	-Inf	32.03	3	Vertical	0	2.06	-	85.90			
AV	2.4194G	107.19	Inf	-Inf	32.03	3	Vertical	0	2.06	-	75.16			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2417MHz_TX



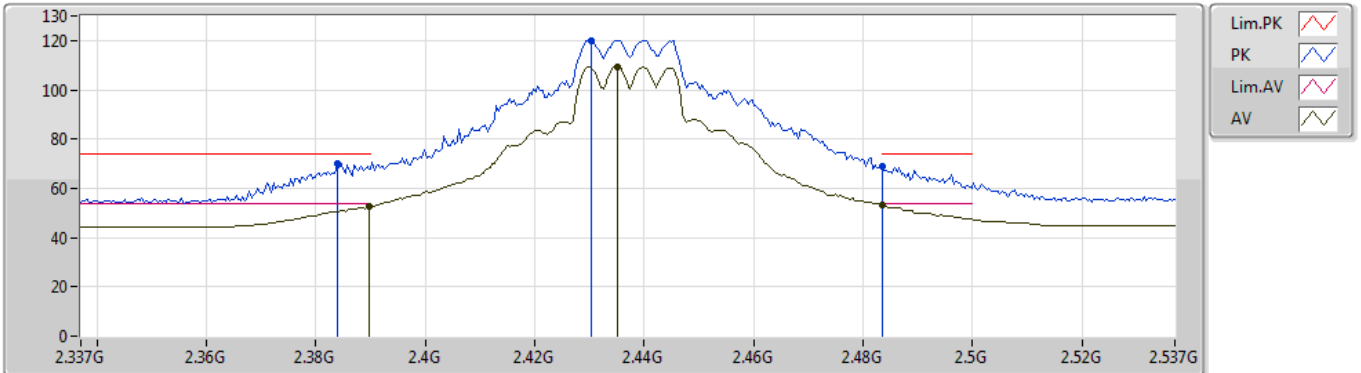
EUT Y_3TX
Setting 86
03-W-3
FSP(100080)

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	69.36	74.00	-4.64	31.93	3	Horizontal	16	2.52	-	37.43			
AV	2.3882G	51.67	54.00	-2.33	31.93	3	Horizontal	16	2.52	-	19.74			
PK	2.4176G	117.34	Inf	-Inf	32.02	3	Horizontal	16	2.52	-	85.32			
AV	2.4176G	107.03	Inf	-Inf	32.02	3	Horizontal	16	2.52	-	75.01			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2437MHz_TX



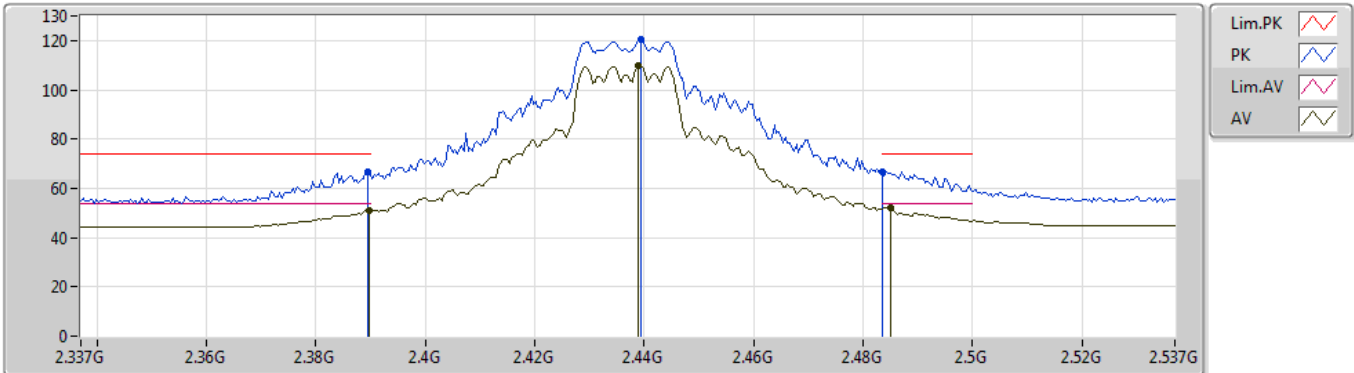
EUT Y_3TX
Setting 120
03-W-3
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3838G	69.97	74.00	-4.03	31.92	3	Vertical	339	1.82	-	38.05
AV	2.3898G	52.44	54.00	-1.56	31.93	3	Vertical	339	1.82	-	20.51
PK	2.4302G	120.04	Inf	-Inf	32.07	3	Vertical	339	1.82	-	87.97
AV	2.435G	109.38	Inf	-Inf	32.09	3	Vertical	339	1.82	-	77.29
PK	2.4835G	68.72	74.00	-5.28	32.25	3	Vertical	339	1.82	-	36.47
AV	2.4835G	53.27	54.00	-0.73	32.25	3	Vertical	339	1.82	-	21.02

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2437MHz_TX



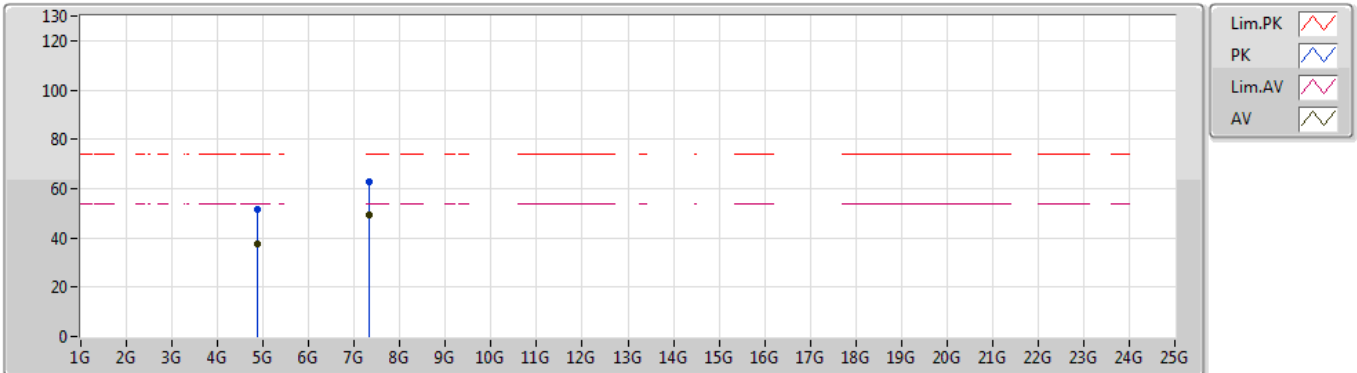
EUT Y_3TX
Setting 120
03-W-3
FSP(100080)

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	66.71	74.00	-7.29	31.93	3	Horizontal	201	1.50	-	34.78
AV	2.3898G	51.08	54.00	-2.92	31.93	3	Horizontal	201	1.50	-	19.15
PK	2.4394G	120.28	Inf	-Inf	32.10	3	Horizontal	201	1.50	-	88.18
AV	2.439G	109.69	Inf	-Inf	32.10	3	Horizontal	201	1.50	-	77.59
PK	2.4835G	66.87	74.00	-7.13	32.25	3	Horizontal	201	1.50	-	34.62
AV	2.485G	52.20	54.00	-1.80	32.26	3	Horizontal	201	1.50	-	19.94

802.11n HT20_Nss1,(MCS0)_3TX

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2437MHz_TX



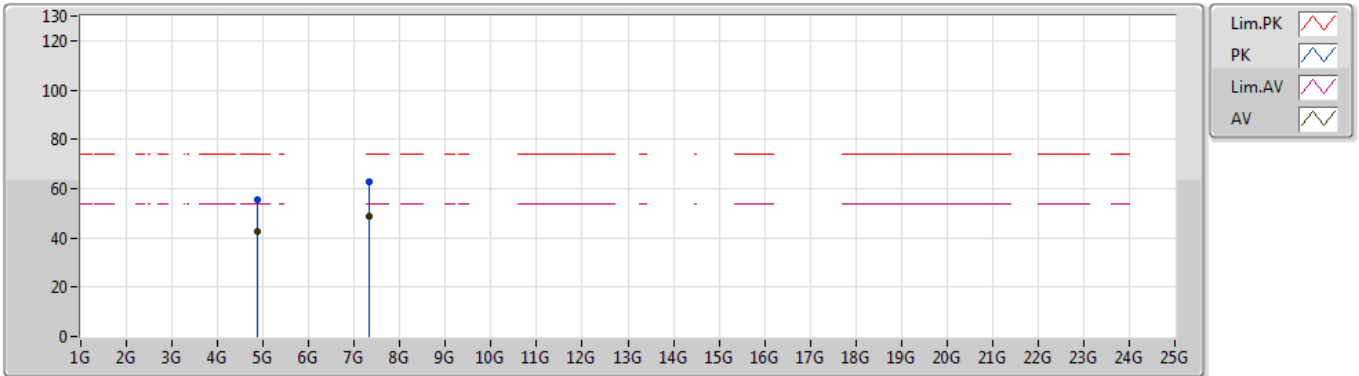
EUT Y_3TX
Setting 120
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	4.87562G	51.41	74.00	-22.59	4.80	3	Vertical	63	1.47	-	46.61
AV	4.87556G	37.80	54.00	-16.20	4.80	3	Vertical	63	1.47	-	33.00
PK	7.31028G	62.54	74.00	-11.46	8.99	3	Vertical	94	1.45	-	53.55
AV	7.31106G	49.10	54.00	-4.90	8.99	3	Vertical	94	1.45	-	40.11

802.11n HT20_Nss1,(MCS0)_3TX

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2437MHz_TX



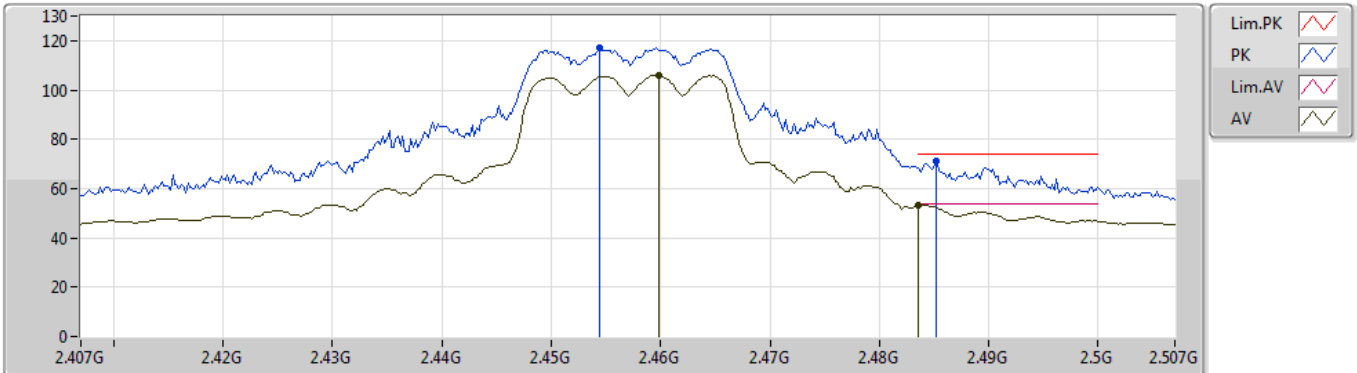
EUT Y_3TX
Setting 120
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.8767G	55.65	74.00	-18.35	4.80	3	Horizontal	86	1.59	-	50.85			
AV	4.87574G	42.40	54.00	-11.60	4.80	3	Horizontal	86	1.59	-	37.60			
PK	7.3104G	62.83	74.00	-11.17	8.99	3	Horizontal	32	1.61	-	53.84			
AV	7.31028G	48.81	54.00	-5.19	8.99	3	Horizontal	32	1.61	-	39.82			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2457MHz_TX



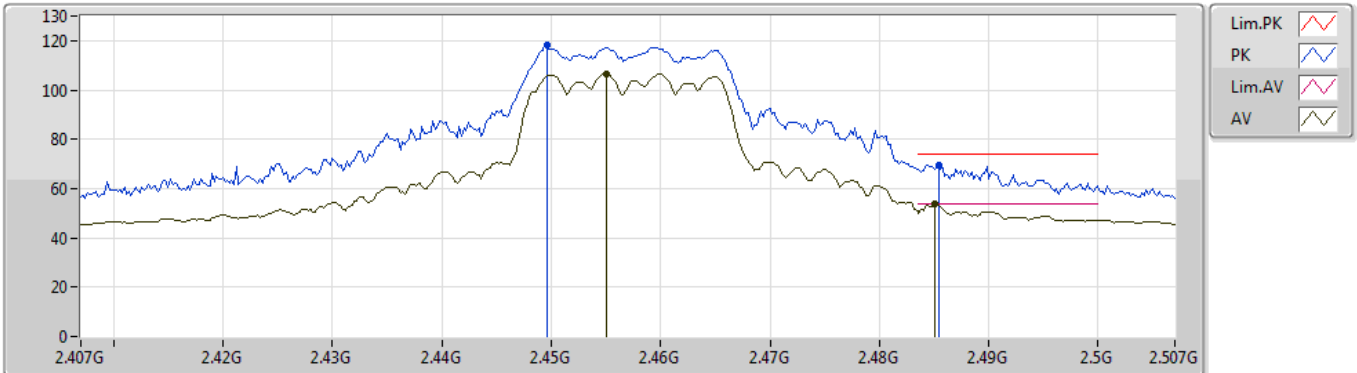
EUT Y_3TX
Setting 87
03-W-3
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.4544G	117.31	Inf	-Inf	32.15	3	Vertical	10	1.97	-	85.16
AV	2.4598G	105.84	Inf	-Inf	32.17	3	Vertical	10	1.97	-	73.67
PK	2.4852G	70.97	74.00	-3.03	32.26	3	Vertical	10	1.97	-	38.71
AV	2.4836G	53.13	54.00	-0.87	32.25	3	Vertical	10	1.97	-	20.88

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2457MHz_TX



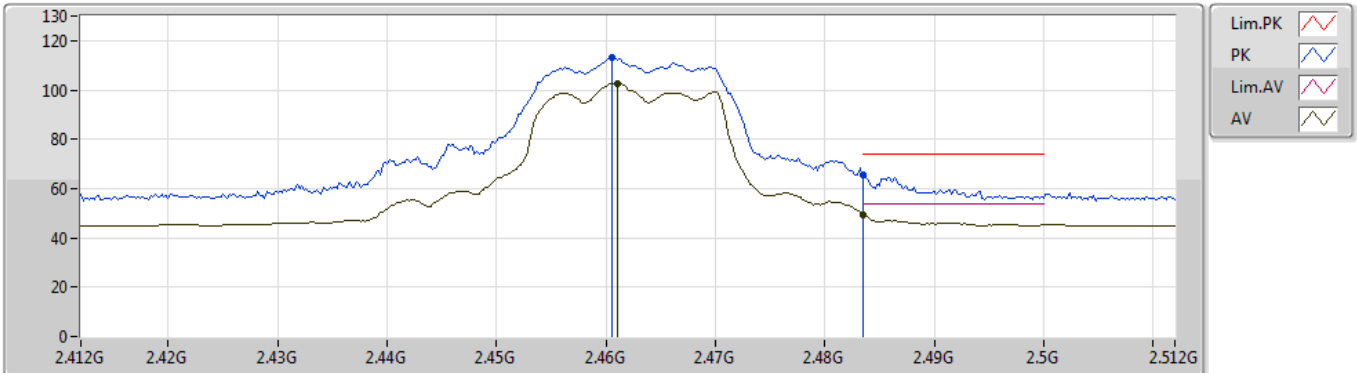
EUT Y_3TX
Setting 87
03-W-3
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.4496G	118.01	Inf	-Inf	32.13	3	Horizontal	200	1.01	-	85.88			
AV	2.455G	106.42	Inf	-Inf	32.15	3	Horizontal	200	1.01	-	74.27			
PK	2.4854G	69.63	74.00	-4.37	32.26	3	Horizontal	200	1.01	-	37.37			
AV	2.485G	53.73	54.00	-0.27	32.26	3	Horizontal	200	1.01	-	21.47			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2462MHz_TX



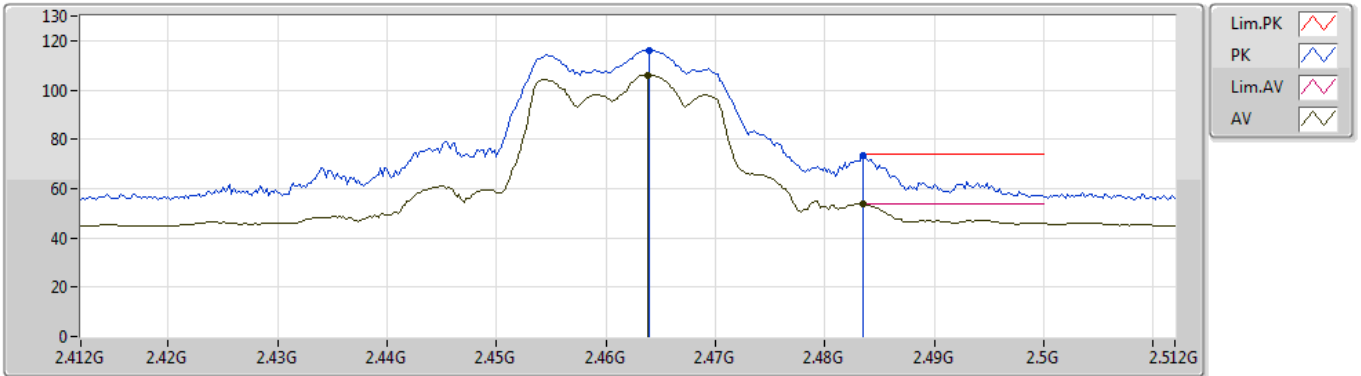
EUT Y_3TX
Setting 78
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.4606G	113.03	Inf	-Inf	32.17	3	Vertical	104	1.42	-	80.86			
AV	2.461G	102.66	Inf	-Inf	32.17	3	Vertical	104	1.42	-	70.49			
PK	2.4835G	65.56	74.00	-8.44	32.25	3	Vertical	104	1.42	-	33.31			
AV	2.4835G	49.47	54.00	-4.53	32.25	3	Vertical	104	1.42	-	17.22			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2462MHz_TX



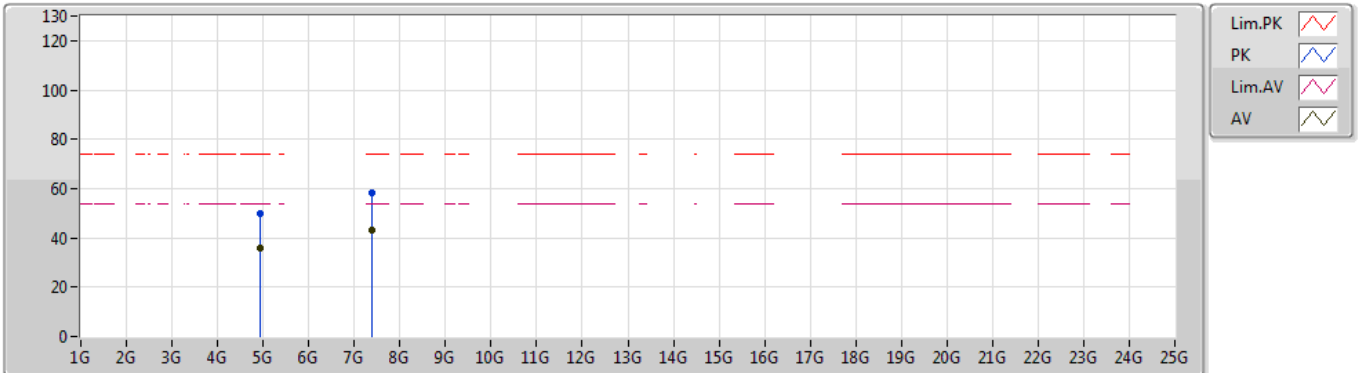
EUT Y_3TX
Setting 78
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	2.464G	116.12	Inf	-Inf	32.18	3	Horizontal	205	1.10	-	83.94			
AV	2.4638G	106.00	Inf	-Inf	32.18	3	Horizontal	205	1.10	-	73.82			
PK	2.4835G	73.31	74.00	-0.69	32.25	3	Horizontal	205	1.10	-	41.06			
AV	2.4835G	53.56	54.00	-0.44	32.25	3	Horizontal	205	1.10	-	21.31			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2462MHz_TX



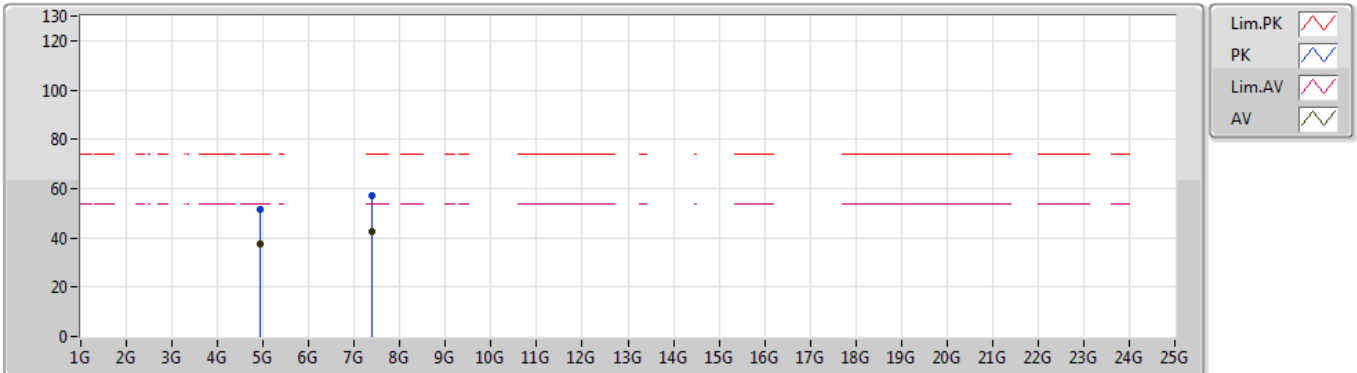
EUT Y_3TX
Setting 78
03-E-2
FSP(100080)

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	49.73	74.00	-24.27	4.89	3	Vertical	83	2.99	-	44.84			
AV	4.9267G	36.04	54.00	-17.96	4.89	3	Vertical	83	2.99	-	31.15			
PK	7.38648G	58.02	74.00	-15.98	9.15	3	Vertical	96	1.48	-	48.87			
AV	7.38624G	43.34	54.00	-10.66	9.15	3	Vertical	96	1.48	-	34.19			

802.11n HT20_Nss1,(MCS0)_3TX

04/10/2019

2462MHz_TX



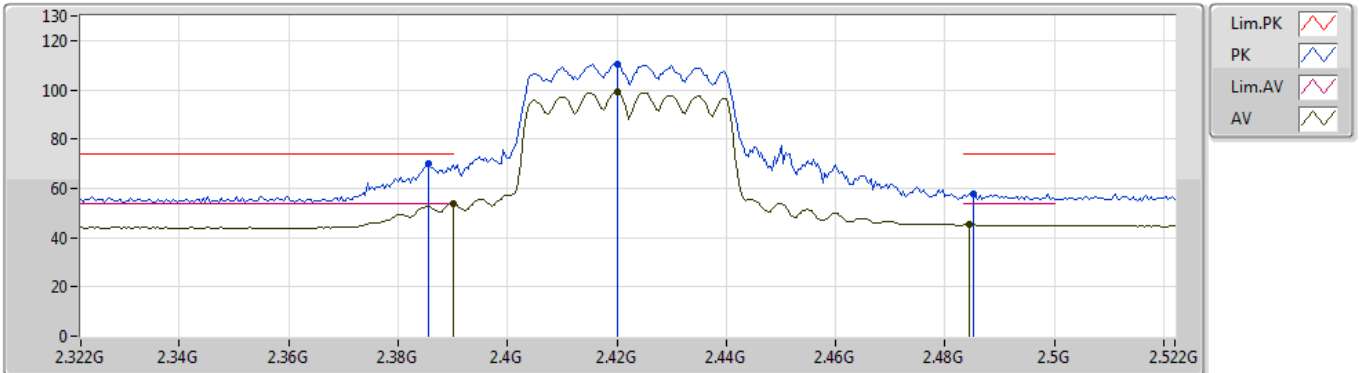
EUT Y_3TX
Setting 78
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.92478G	51.49	74.00	-22.51	4.90	3	Horizontal	86	1.66	-	46.59			
AV	4.92442G	37.30	54.00	-16.70	4.90	3	Horizontal	86	1.66	-	32.40			
PK	7.3851G	57.00	74.00	-17.00	9.15	3	Horizontal	40	1.71	-	47.85			
AV	7.38546G	42.56	54.00	-11.44	9.15	3	Horizontal	40	1.71	-	33.41			

802.11n HT40_Nss1,(MCS0)_3TX

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2422MHz_TX



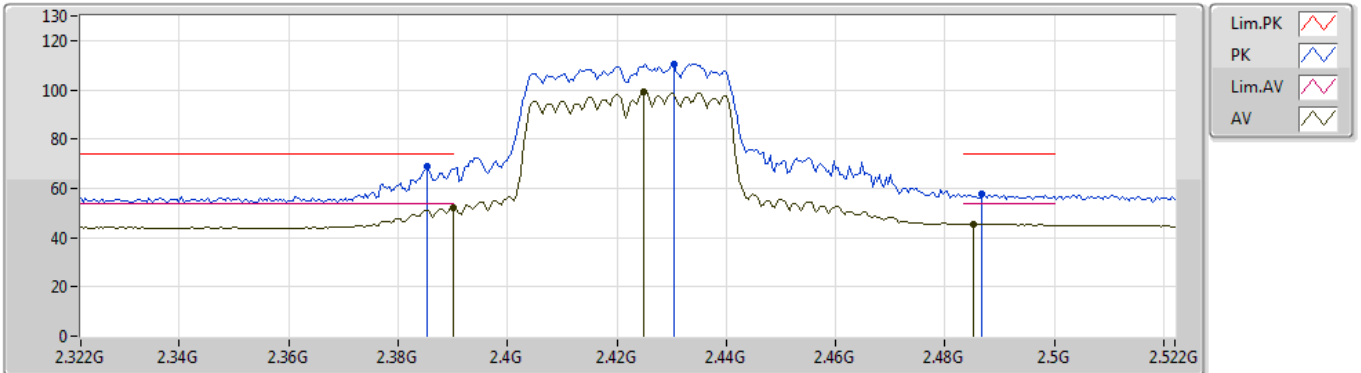
EUT Y_3TX
Setting 70
03-E-2
FSP(100080)

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	70.18	74.00	-3.82	31.92	3	Vertical	347	1.86	-	38.26
AV	2.39G	53.58	54.00	-0.42	31.93	3	Vertical	347	1.86	-	21.65
PK	2.42G	110.49	Inf	-Inf	32.03	3	Vertical	347	1.86	-	78.46
AV	2.42G	98.94	Inf	-Inf	32.03	3	Vertical	347	1.86	-	66.91
PK	2.4852G	57.75	74.00	-16.25	32.26	3	Vertical	347	1.86	-	25.49
AV	2.4844G	45.16	54.00	-8.84	32.25	3	Vertical	347	1.86	-	12.91

802.11n HT40_Nss1,(MCS0)_3TX

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2422MHz_TX



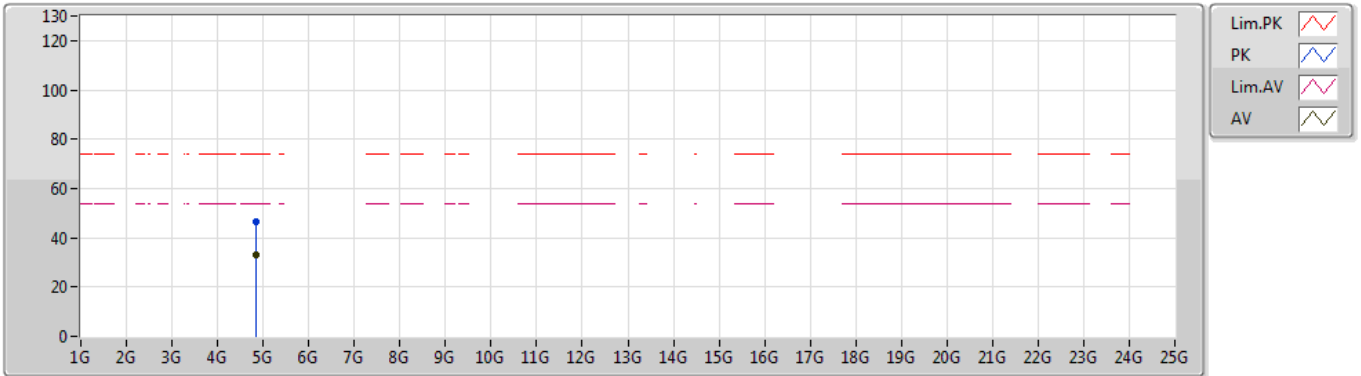
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Setting 70
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3852G	68.83	74.00	-5.17	31.92	3	Horizontal	202	1.08	-	36.91
AV	2.39G	52.22	54.00	-1.78	31.93	3	Horizontal	202	1.08	-	20.29
PK	2.4304G	110.45	Inf	-Inf	32.07	3	Horizontal	202	1.08	-	78.38
AV	2.4248G	99.08	Inf	-Inf	32.04	3	Horizontal	202	1.08	-	67.04
PK	2.4868G	57.61	74.00	-16.39	32.26	3	Horizontal	202	1.08	-	25.35
AV	2.4852G	45.31	54.00	-8.69	32.26	3	Horizontal	202	1.08	-	13.05

802.11n HT40_Nss1,(MCS0)_3TX

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2422MHz_TX



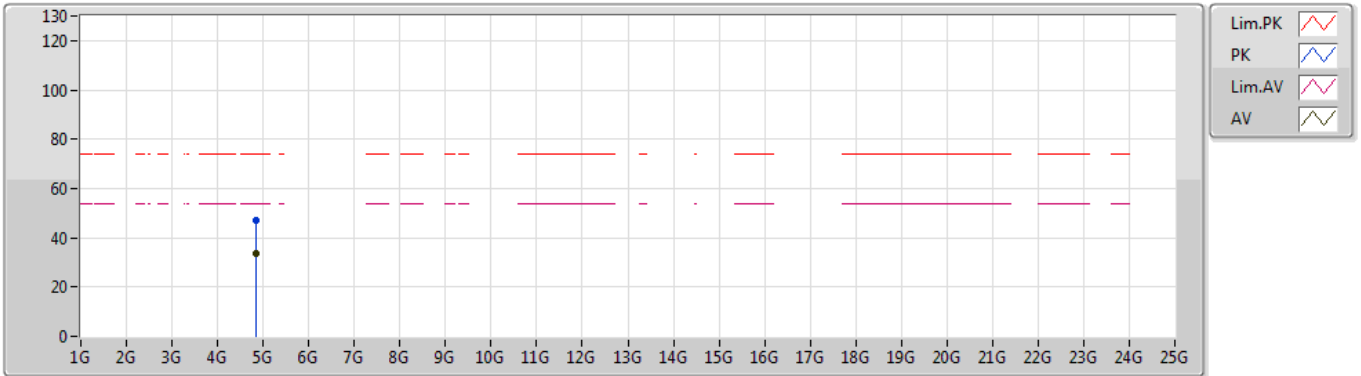
EUT Y_3TX
Setting 70
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.83284G	46.41	74.00	-27.59	4.73	3	Vertical	61	2.56	-	41.68			
AV	4.84394G	33.01	54.00	-20.99	4.75	3	Vertical	61	2.56	-	28.26			

802.11n HT40_Nss1,(MCS0)_3TX

05/10/2019

2422MHz_TX



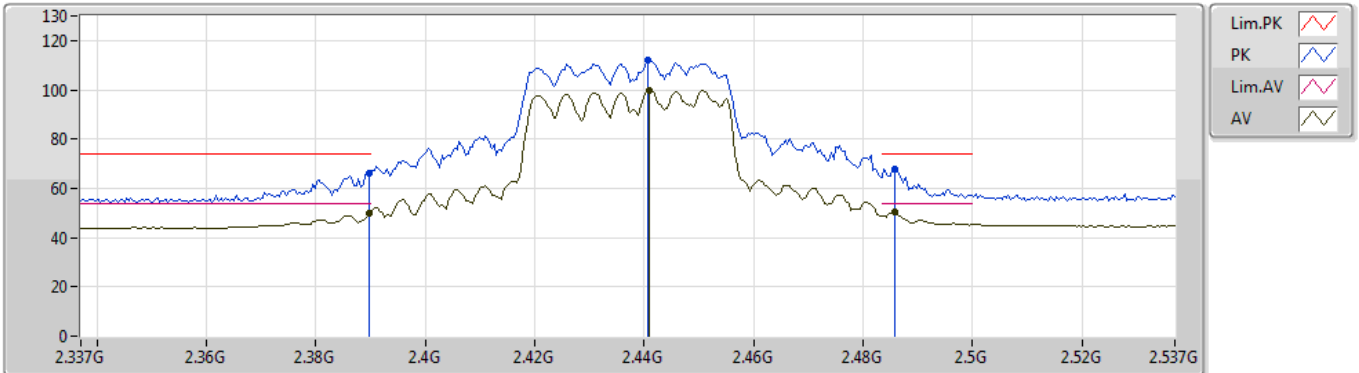
EUT Y_3TX
Setting 70
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.84394G	47.33	74.00	-26.67	4.75	3	Horizontal	131	1.54	-	42.58			
AV	4.84412G	33.63	54.00	-20.37	4.75	3	Horizontal	131	1.54	-	28.88			

802.11n HT40_Nss1,(MCS0)_3TX

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2437MHz_TX



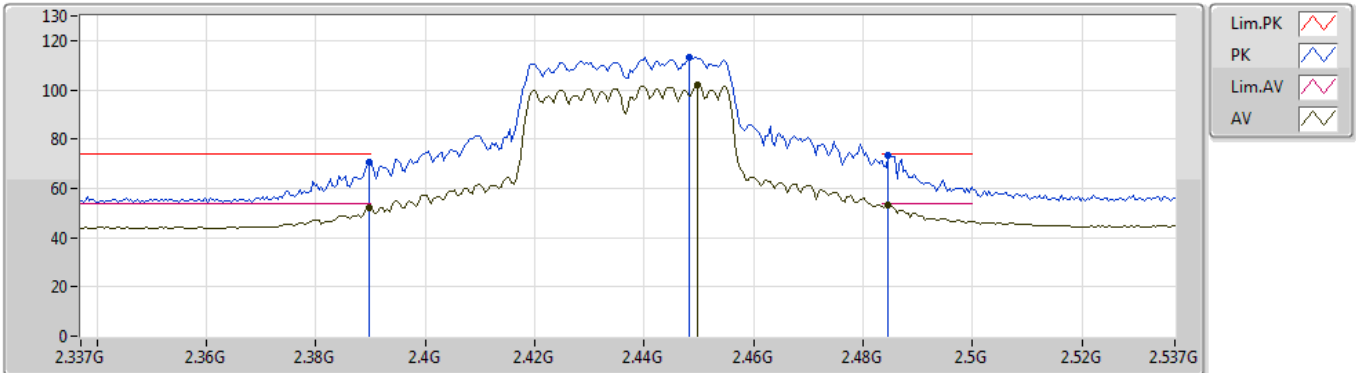
EUT Y_3TX
Setting 81
03-E-2
FSP(100080)

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	66.26	74.00	-7.74	31.93	3	Vertical	105	2.44	-	34.33
AV	2.3898G	49.93	54.00	-4.07	31.93	3	Vertical	105	2.44	-	18.00
PK	2.4406G	112.00	Inf	-Inf	32.10	3	Vertical	105	2.44	-	79.90
AV	2.441G	99.97	Inf	-Inf	32.10	3	Vertical	105	2.44	-	67.87
PK	2.4858G	68.01	74.00	-5.99	32.26	3	Vertical	105	2.44	-	35.75
AV	2.4858G	50.28	54.00	-3.72	32.26	3	Vertical	105	2.44	-	18.02

802.11n HT40_Nss1,(MCS0)_3TX

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2437MHz_TX



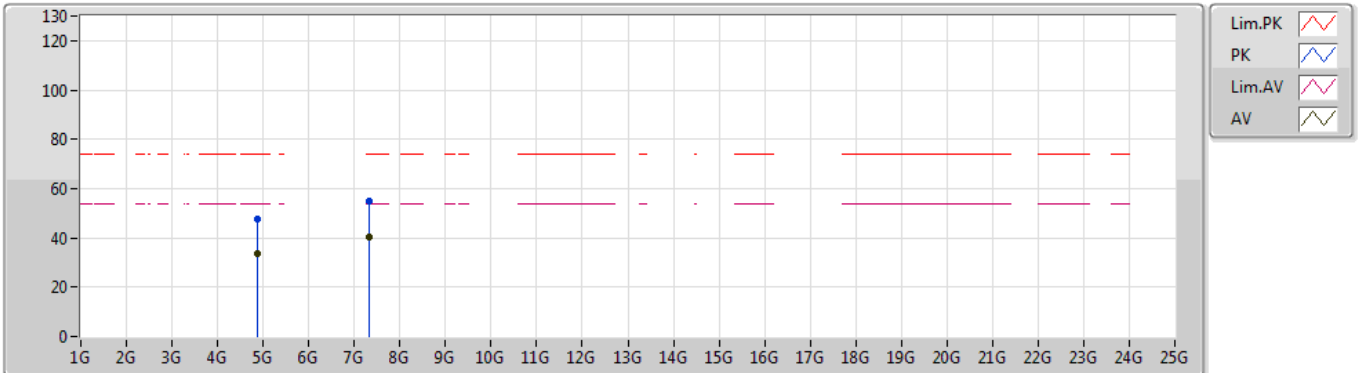
EUT Y_3TX
Setting 81
03-E-2
FSP(100080)

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	70.62	74.00	-3.38	31.93	3	Horizontal	202	1.23	-	38.69
AV	2.3898G	52.02	54.00	-1.98	31.93	3	Horizontal	202	1.23	-	20.09
PK	2.4482G	113.39	Inf	-Inf	32.12	3	Horizontal	202	1.23	-	81.27
AV	2.4498G	101.87	Inf	-Inf	32.13	3	Horizontal	202	1.23	-	69.74
PK	2.4846G	73.52	74.00	-0.48	32.25	3	Horizontal	202	1.23	-	41.27
AV	2.4846G	53.04	54.00	-0.96	32.25	3	Horizontal	202	1.23	-	20.79

802.11n HT40_Nss1,(MCS0)_3TX

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2437MHz_TX



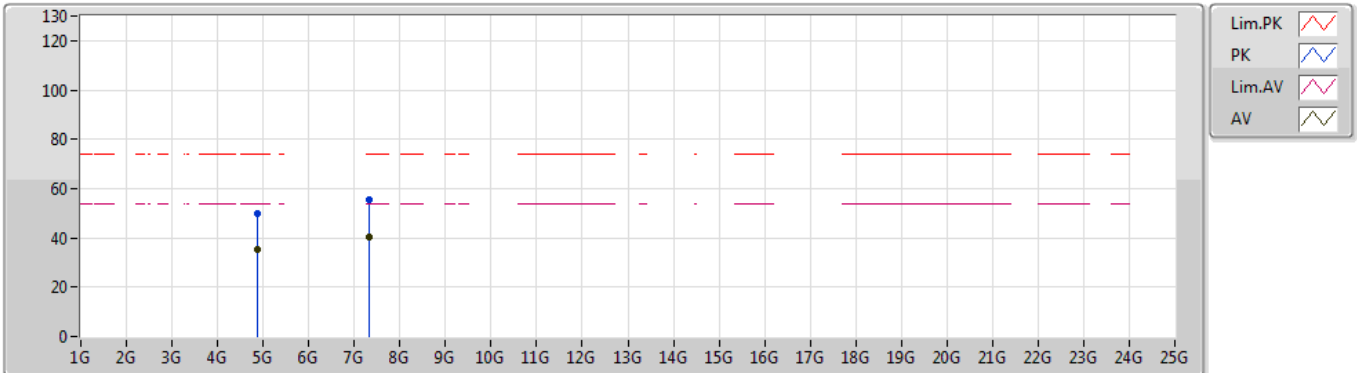
EUT Y_3TX
Setting 81
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.87124G	47.46	74.00	-26.54	4.79	3	Vertical	70	2.86	-	42.67			
AV	4.87154G	33.78	54.00	-20.22	4.79	3	Vertical	70	2.86	-	28.99			
PK	7.32078G	54.95	74.00	-19.05	9.01	3	Vertical	96	1.49	-	45.94			
AV	7.31082G	40.46	54.00	-13.54	8.99	3	Vertical	96	1.49	-	31.47			

802.11n HT40_Nss1,(MCS0)_3TX

05/10/2019

2437MHz_TX



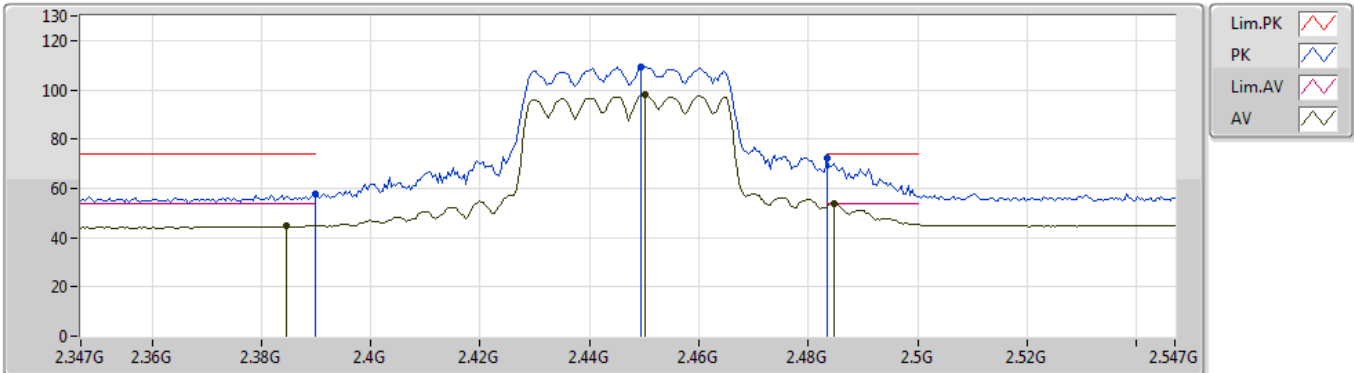
EUT Y_3TX
Setting 81
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.8752G	49.74	74.00	-24.26	4.80	3	Horizontal	85	1.50	-	44.94			
AV	4.874G	35.19	54.00	-18.81	4.80	3	Horizontal	85	1.50	-	30.39			
PK	7.31028G	55.45	74.00	-18.55	8.99	3	Horizontal	34	1.57	-	46.46			
AV	7.3152G	40.38	54.00	-13.62	9.01	3	Horizontal	34	1.57	-	31.37			

802.11n HT40_Nss1,(MCS0)_3TX

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2447MHz_TX



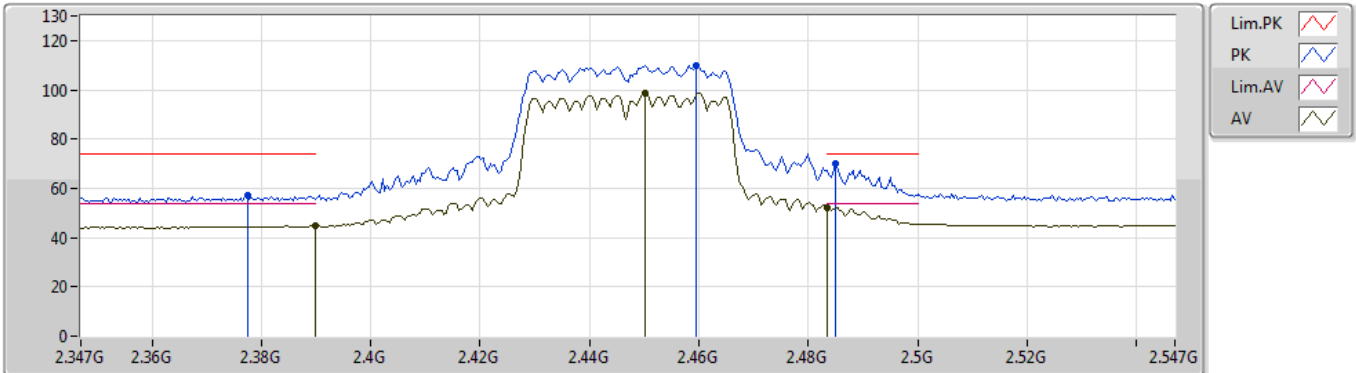
EUT Y_3TX
Setting 71
03-E-2
FSP(100080)

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	57.90	74.00	-16.10	31.93	3	Vertical	3	1.76	-	25.97
AV	2.3846G	44.64	54.00	-9.36	31.92	3	Vertical	3	1.76	-	12.72
PK	2.4494G	109.35	Inf	-Inf	32.13	3	Vertical	3	1.76	-	77.22
AV	2.4502G	98.05	Inf	-Inf	32.14	3	Vertical	3	1.76	-	65.91
PK	2.4835G	72.17	74.00	-1.83	32.25	3	Vertical	3	1.76	-	39.92
AV	2.4846G	53.62	54.00	-0.38	32.25	3	Vertical	3	1.76	-	21.37

802.11n HT40_Nss1,(MCS0)_3TX

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2447MHz_TX



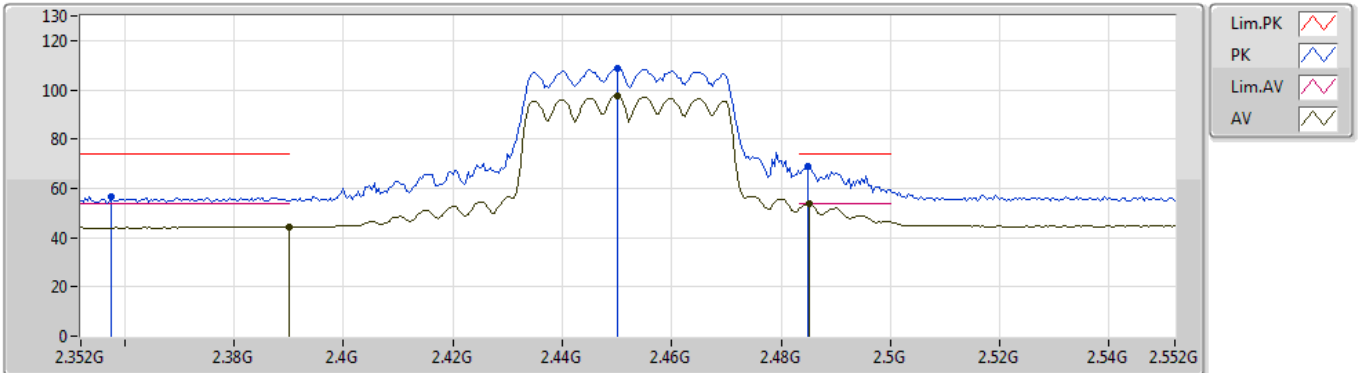
EUT Y_3TX
Setting 71
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3774G	56.92	74.00	-17.08	31.89	3	Horizontal	201	1.03	-	25.03
AV	2.3898G	44.71	54.00	-9.29	31.93	3	Horizontal	201	1.03	-	12.78
PK	2.4594G	109.77	Inf	-Inf	32.17	3	Horizontal	201	1.03	-	77.60
AV	2.4502G	98.84	Inf	-Inf	32.14	3	Horizontal	201	1.03	-	66.70
PK	2.485G	70.07	74.00	-3.93	32.26	3	Horizontal	201	1.03	-	37.81
AV	2.4835G	52.17	54.00	-1.83	32.25	3	Horizontal	201	1.03	-	19.92

802.11n HT40_Nss1,(MCS0)_3TX

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2452MHz_TX



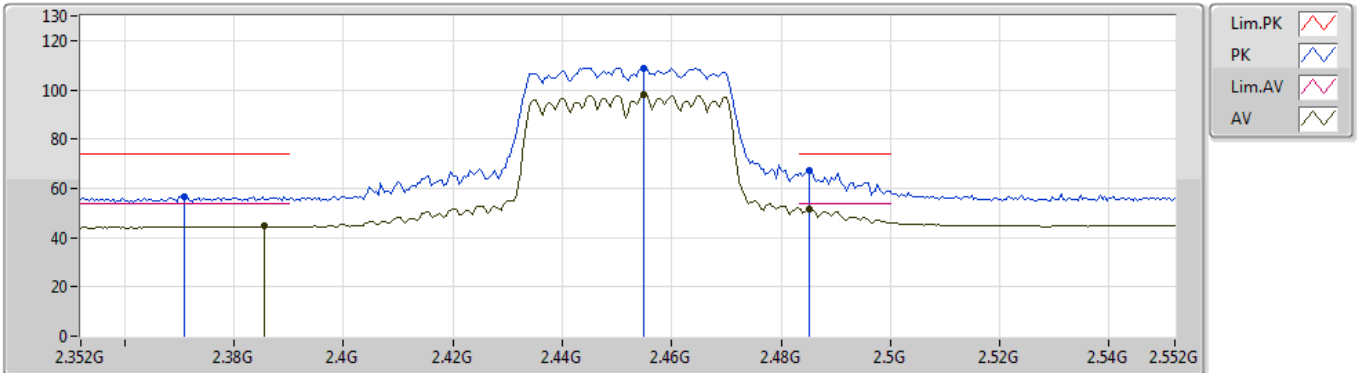
EUT Y_3TX
Setting 66
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3576G	56.56	74.00	-17.44	31.85	3	Vertical	351	1.73	-	24.71
AV	2.39G	44.34	54.00	-9.66	31.93	3	Vertical	351	1.73	-	12.41
PK	2.45G	108.77	Inf	-Inf	32.14	3	Vertical	351	1.73	-	76.63
AV	2.45G	97.45	Inf	-Inf	32.14	3	Vertical	351	1.73	-	65.31
PK	2.4848G	68.87	74.00	-5.13	32.25	3	Vertical	351	1.73	-	36.62
AV	2.4852G	53.76	54.00	-0.24	32.26	3	Vertical	351	1.73	-	21.50

802.11n HT40_Nss1,(MCS0)_3TX

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2452MHz_TX



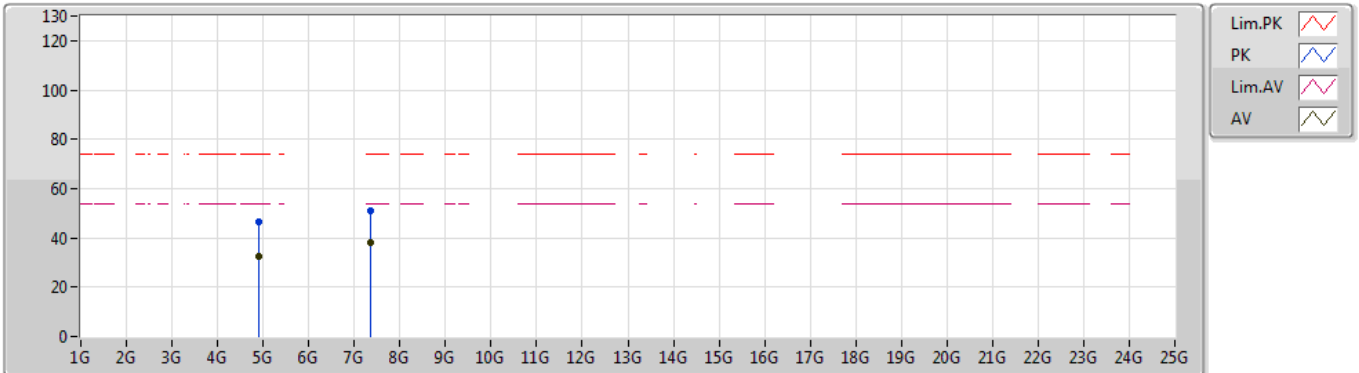
EUT Y_3TX
Setting 66
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)
PK	2.3708G	56.80	74.00	-17.20	31.88	3	Horizontal	207	1.01	-	24.92
AV	2.3856G	44.58	54.00	-9.42	31.92	3	Horizontal	207	1.01	-	12.66
PK	2.4548G	108.85	Inf	-Inf	32.15	3	Horizontal	207	1.01	-	76.70
AV	2.4548G	97.98	Inf	-Inf	32.15	3	Horizontal	207	1.01	-	65.83
PK	2.4852G	67.21	74.00	-6.79	32.26	3	Horizontal	207	1.01	-	34.95
AV	2.4852G	51.73	54.00	-2.27	32.26	3	Horizontal	207	1.01	-	19.47

802.11n HT40_Nss1,(MCS0)_3TX

05/10/2019

2452MHz_TX



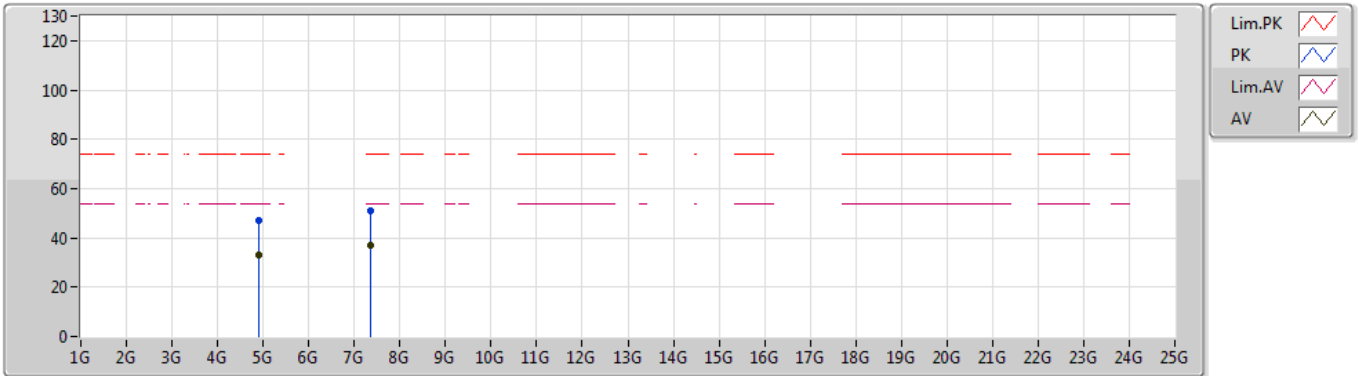
EUT Y_3TX
Setting 66
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.90364G	46.45	74.00	-27.55	4.86	3	Vertical	182	1.49	-	41.59			
AV	4.91144G	32.64	54.00	-21.36	4.87	3	Vertical	182	1.49	-	27.77			
PK	7.36494G	51.21	74.00	-22.79	9.09	3	Vertical	98	1.36	-	42.12			
AV	7.35582G	37.84	54.00	-16.16	9.09	3	Vertical	98	1.36	-	28.75			

802.11n HT40_Nss1,(MCS0)_3TX

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2452MHz_TX



EUT Y_3TX
Setting 66
03-E-2
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)			
PK	4.90442G	47.20	74.00	-26.80	4.86	3	Horizontal	87	1.26	-	42.34			
AV	4.90406G	33.15	54.00	-20.85	4.86	3	Horizontal	87	1.26	-	28.29			
PK	7.35036G	50.89	74.00	-23.11	9.07	3	Horizontal	37	1.67	-	41.82			
AV	7.36554G	37.05	54.00	-16.95	9.11	3	Horizontal	37	1.67	-	27.94			

