



# FCC RADIO TEST REPORT

**FCC ID** : NKR-RAAME1  
**Equipment** : Madesafe Gateway, Madesafe/IOT Gateway  
**Brand Name** : Catapult TECH  
**Model Name** : 815-00027, 815-00028, 815-00029  
**Applicant** : Wistron NeWeb Corporation  
20 Park Avenue II Hsinchu Science Park Hsinchu  
Taiwan 308  
**Manufacturer** : Wistron NeWeb Corporation  
20 Park Avenue II Hsinchu Science Park Hsinchu  
Taiwan 308  
**Standard** : 47 CFR FCC Part 15.247

The product was received on Jan. 28, 2019, and testing was started from Jun. 01, 2019 and completed on Jun. 19, 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: Cliff Chang

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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**Photographs of EUT v01**



TEL : 886-3-656-9065  
FAX : 886-3-656-9085  
Report Template No.: CB 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:**

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: Sandy Chuang**



# 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	2TX
2.4-2.4835GHz	802.11g	20	2TX
2.4-2.4835GHz	802.11n HT20	20	2TX
2.4-2.4835GHz	802.11n HT40	40	2TX

**Note:**

- ♦ 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ 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.
- ♦ EUT contains a certified RF module (FCC ID: W7Z-WD907102) for EUT 2.

### 1.1.2 Antenna Information

Ant.	Port			Brand		P/N		
	WLAN 2.4GHz	WLAN 5GHz	Bluetooth	WLAN 2.4GHz、5GHz / Bluetooth (Internal)	Bluetooth (External)	WLAN 2.4GHz、5GHz	Bluetooth (Internal)	Bluetooth (External)
1	1	1	-	WNC	-	3ADHUBW69S1-111	-	-
2	2	2	-	WNC	-	3ADHUBW69S1-111	-	-
3	-	-	1	WNC	-	-	95XKAJ15.G04	-
4	-	-	1	-	<b>RF link</b>	-	-	08.22100.007

Ant.	Antenna Type			Antenna Connector	Gain (dBi)					
	WLAN 2.4GHz、 5GHz	Bluetooth (Internal)	Bluetooth (External)		WLAN 2.4GHz	WLAN 5GHz	Bluetooth (Internal)	Bluetooth (External)		
								Antenna Gain	Cable loss (dB)	True Gain
1	PIFA	-	-	N/A	1.20	4.01	-	-	-	-
2	PIFA	-	-	N/A	0.66	4.02	-	-	-	-
3	-	PCB	-	N/A	-	-	1.25	-	-	-
4	-	-	Dipole	SMA	-	-	-	2.70	3.31	-0.61

Note 1: The above information was declared by manufacturer.

#### <For 2.4GHz Band>

For IEEE 802.11b/g/n 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 Band>

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.

#### <For Bluetooth> (1TX/1RX)

Only Port 1 can be used as transmitting/receiving antenna.

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b	0.99	0.04	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11g	0.97	0.13	3.11m	1k
802.11n HT20	0.98	0.09	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11n HT40	0.955	0.2	2.32m	1k

**1.1.4 EUT Operational Condition**

<b>EUT Power Type</b>	From Power Adapter or PoE			
<b>Beamforming Function</b>	<input type="checkbox"/>	With beamforming	<input checked="" type="checkbox"/>	Without beamforming
<b>Function</b>	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/>	Point-to-point
<b>Test Software Version</b>	DutApiMimoBt.exe			

Note: The above information was declared by manufacturer.

**1.1.5 Table for Multiple Listing**

The difference for each equipment name/model name is shown as below:

EUT	1	2	3
<b>Equipment Name</b>	Madesafe Gateway	Madesafe/IOT Gateway	Madesafe Gateway
<b>Model Name</b>	815-00027	815-00028	815-00029
<b>Contain certified Module (Zigbee function only)</b>	-	V (FCC ID: W7Z-WD907102)	-
<b>Bluetooth Antenna</b>	Internal	Internal	External
<b>WIFI / Bluetooth Function</b>	V	V	V

Note: From the above models, EUT 1 and EUT 3 were 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

## 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	Eddie Weng	25~27°C / 52~56%	Jun. 11, 2019~ Jun. 12, 2019
Radiated (Below 1GHz)	03CH04-CB	KJ Chang	21~23°C / 45~52%	Jun. 01, 2019~ Jun. 17, 2019
Radiated (Above 1GHz)	03CH06-CB	KJ Chang	22~24°C / 50~60%	Jun. 01, 2019~ Jun. 17, 2019
AC Conduction	CO02-CB	Peter Wu	24.3~24.5°C / 59~63%	Jun. 05, 2019~ Jun. 19, 2019

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086B 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)	3.9 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 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	10.0 x10 <sup>-5</sup>	Confidence levels of 95%



## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

Mode	PowerSetting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	16
2417MHz	18
2437MHz	18
2462MHz	18
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	16
2417MHz	18
2437MHz	20
2457MHz	17
2462MHz	15
802.11n HT20_Nss1,(MCS0)_2TX	-
2412MHz	15
2417MHz	18
2437MHz	20
2457MHz	15
2462MHz	15
802.11n HT40_Nss1,(MCS0)_2TX	-
2422MHz	11
2427MHz	13
2437MHz	16
2447MHz	15
2452MHz	14



## 2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	AC power-line conducted emissions
<b>Condition</b>	AC power-line conducted measurement for line and neutral
<b>Operating Mode</b>	CTX
1	EUT 1 + 2.4GHz + Adapter
2	EUT 1 + 2.4GHz + PoE
Mode 2 generated the worst test result, so it was recorded in this report.	

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
<b>Test Condition</b>	Conducted measurement at transmit chains
1	EUT 1



<b>The Worst Case Mode for Following Conformance Tests</b>	
<b>Tests Item</b>	Emissions in Restricted Frequency Bands
<b>Test Condition</b>	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.
<b>Operating Mode &lt; 1GHz</b>	CTX
The EUT can be placed in Y-axis and Z-axis. EUT Y axis has been evaluated to be the worst case at Emissions in Restricted Frequency Bands <Above 1GHz>; thus, the measurement will follow this same test configuration.	
1	EUT 1 in Y axis + 2.4GHz + Adapter
2	EUT 1 in Y axis + 2.4GHz + PoE
Mode 1 generated the worst test result, so it was recorded in this report.	
<b>Operating Mode &gt; 1GHz</b>	CTX
<b>For Radiated Emission</b> The EUT was performed at Y axis and Z axis position. The worst case was found at Y axis, thus the measurement will follow this same test configuration. <b>For Band Edge Emission</b> The EUT was performed at Y axis and Z axis position. The worst case was found at Z axis, thus the measurement will follow this same test configuration.	

<b>The Worst Case Mode for Following Conformance Tests</b>	
<b>Tests Item</b>	Simultaneous Transmission Analysis - Radiated Emission Co-location
<b>Test Condition</b>	Radiated measurement
<b>Operating Mode</b>	Normal Link
The EUT can be placed in Y-axis and Z-axis. After evaluating, "Z axis" generated the worst test result, so the measurement will follow this same test configuration.	
1	EUT 1 in Z axis + WLAN 2.4GHz + WLAN 5GHz
Refer to Appendix G for Radiated Emission Co-location.	



The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
<b>Operating Mode</b>	
1	WLAN 2.4GHz + WLAN 5GHz + Bluetooth
2	WLAN 2.4GHz + WLAN 5GHz + Bluetooth + Zigbee (FCC ID: W7Z-WD907102)
Refer to Sporton Test Report No.: FA912811 for Co-location RF Exposure Evaluation.	

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

The PoE information as below:

Support Unit	Brand Name	Model Name
PoE	Microsemi	PD-9001GR/AT/AC

## 2.3 EUT Operation during Test

For CTX:

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 Holder	Model Name	Rating
1	Adapter	JIANGSU CHENYANG ELECTRON Co.,LTD	CYSF12G-050200U	INPUT: 100-240V~50/60Hz, 0.35A Max OUTPUT: 5V, 2.0A
Other				
Bluetooth Antenna*1 (For EUT 3 use)				

## 2.5 Support Equipment

### For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	LAN NB	DELL	E6430	N/A
B	Flash disk3.0	Transcend	B06	N/A
C	PoE	Microsemi	PD-9001GR/AT/AC	N/A

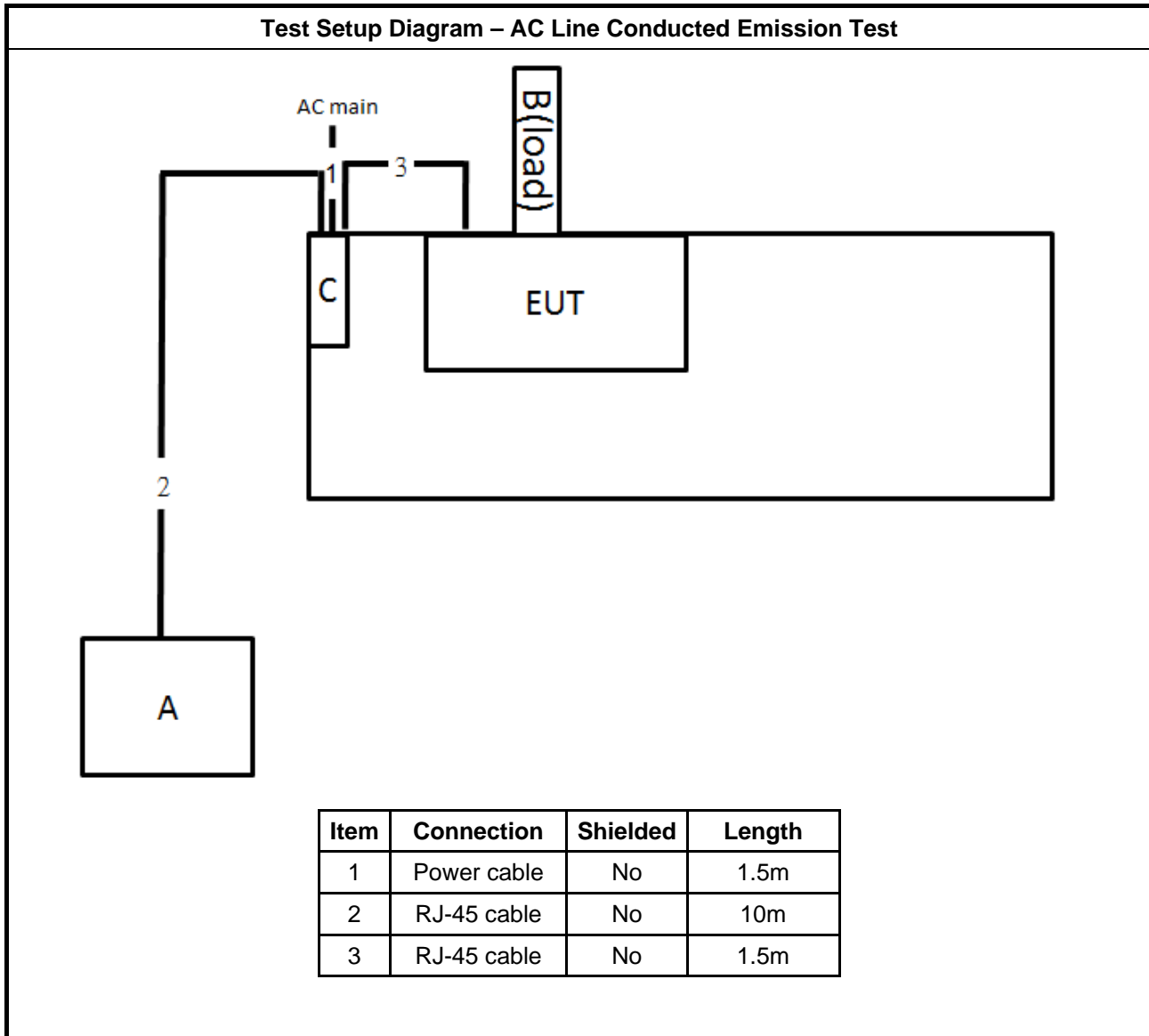
### For Radiated:

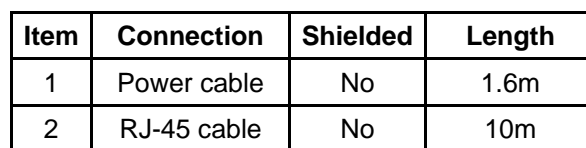
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

### For RF Conducted:

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

## 2.6 Test Setup Diagram









### 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.

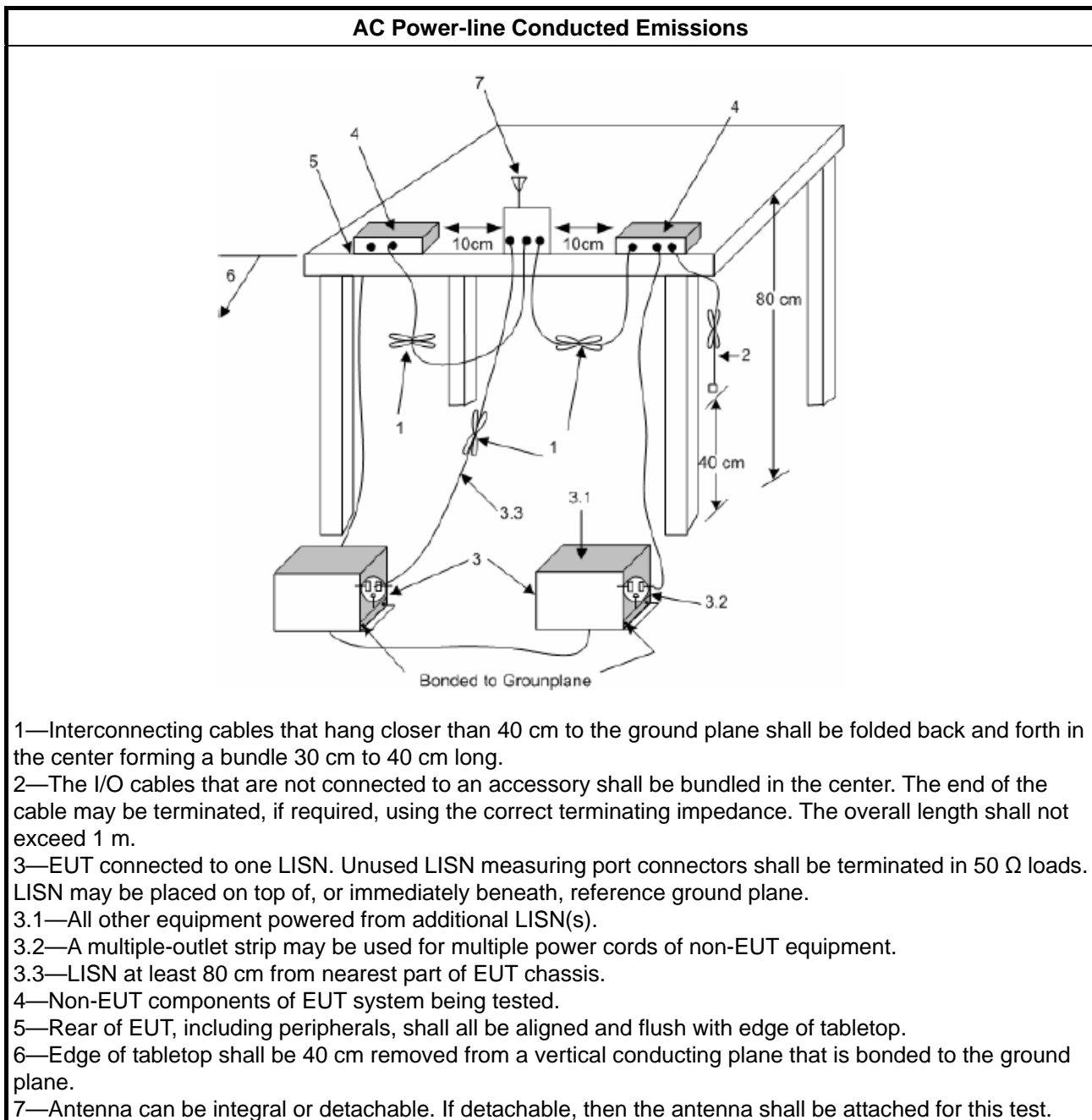
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

Test Method
2 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	
<b>Systems using digital modulation techniques:</b>	
▪	6 dB bandwidth $\geq$ 500 kHz.

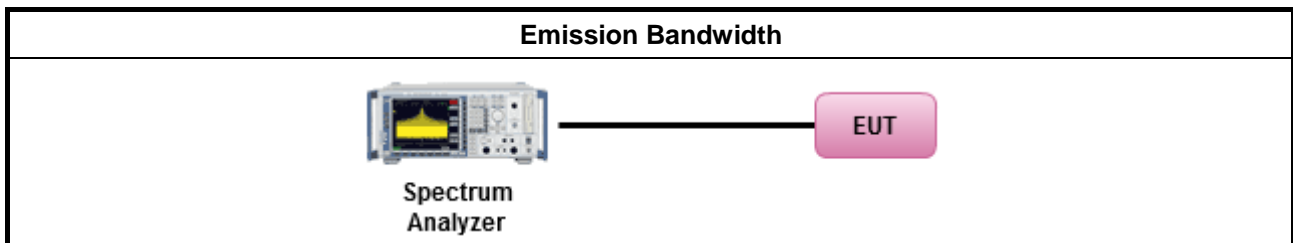
### 3.2.2 Measuring Instruments

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	
	▪ 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.	

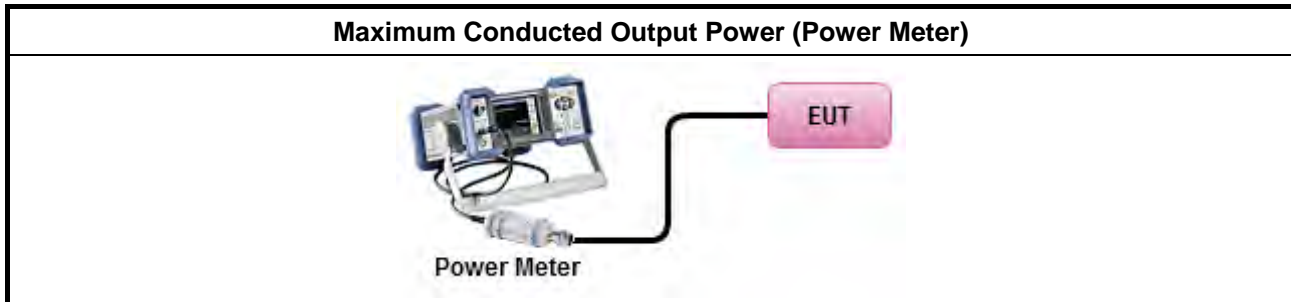
#### 3.3.2 Measuring Instruments

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

### 3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>Maximum Peak Conducted Output Power</li> </ul>	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ 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).
<ul style="list-style-type: none"> <li>Maximum Conducted Output Power</li> </ul>	
[duty cycle ≥ 98% or external video / power trigger]	
<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 checked="" 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 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).
<ul style="list-style-type: none"> <li>For conducted measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	
<ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP calculation could be following as methods:  <math display="block">P_{total} = P_1 + P_2 + \dots + P_n</math>                     (calculated in linear unit [mW] and transfer to log unit [dBm])  <math display="block">EIRP_{total} = P_{total} + DG</math> </li> </ul>	

### 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

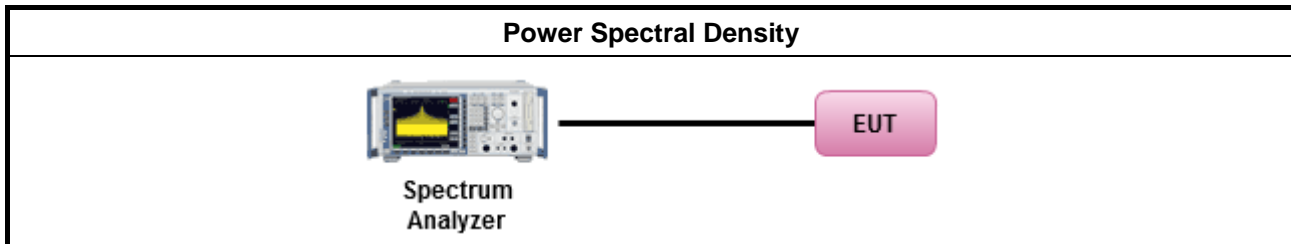
Refer a test equipment and calibration data table in this test report.

#### 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 11.10.2 Method PKPSD. [duty cycle $\geq 98\%$ or external video / power trigger]
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.
<input type="checkbox"/>	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	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)
<input type="checkbox"/>	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:	
<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
<p>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.</p> <p>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.</p>	

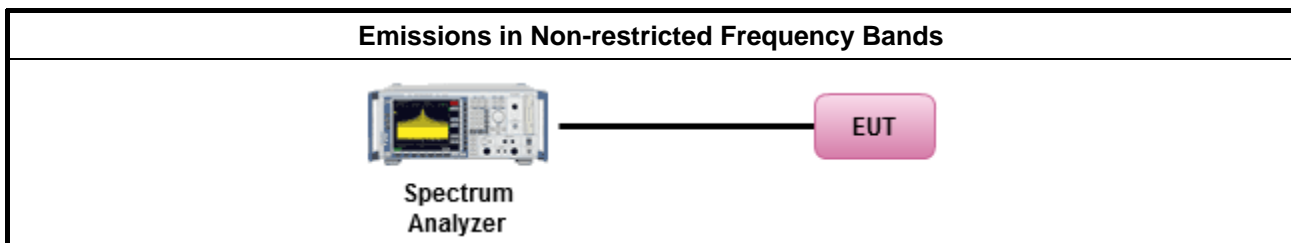
#### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

Test Method
<ul style="list-style-type: none"> <li>Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.</li> </ul>

#### 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

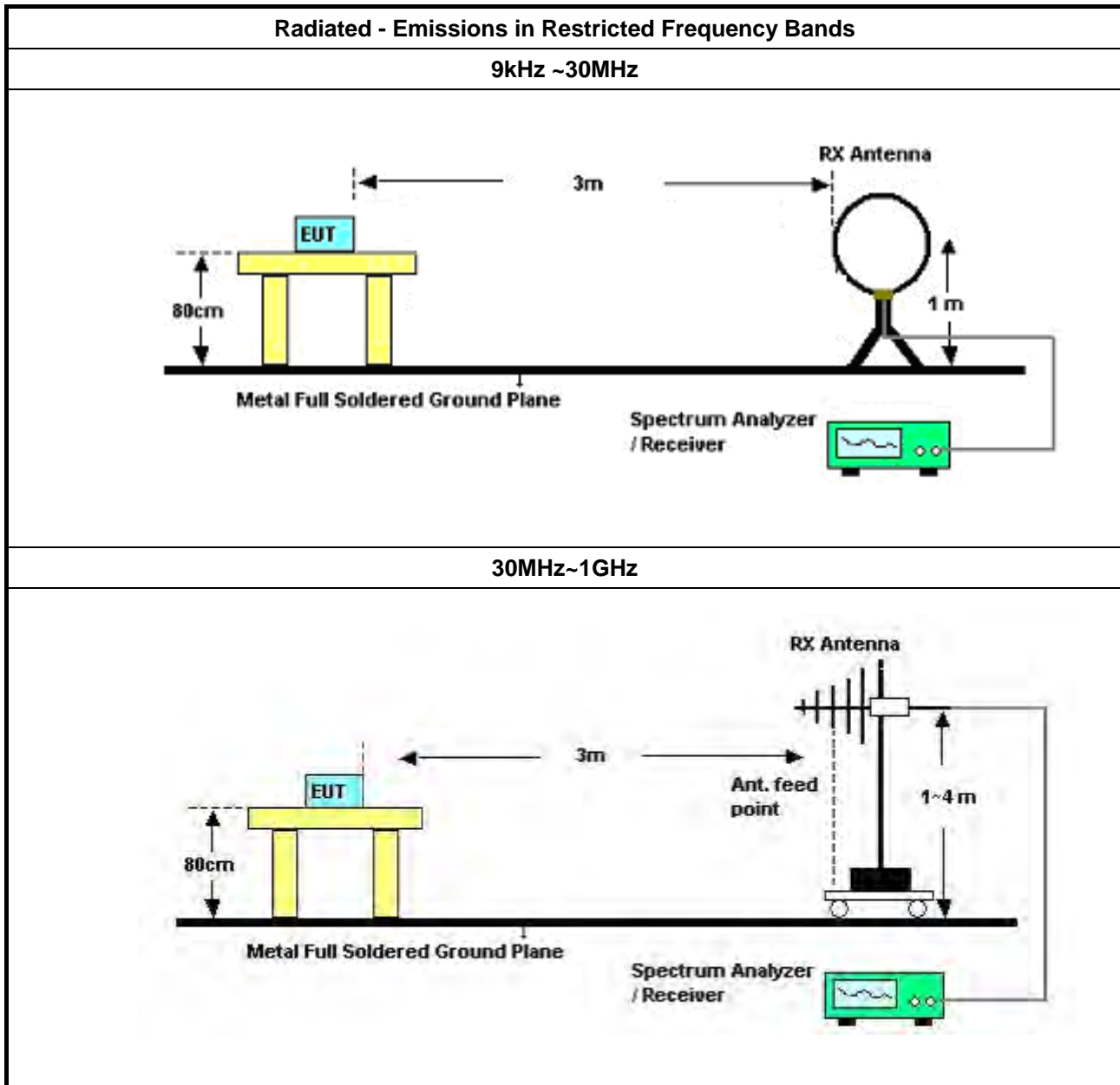
Refer a test equipment and calibration data table in this test report.

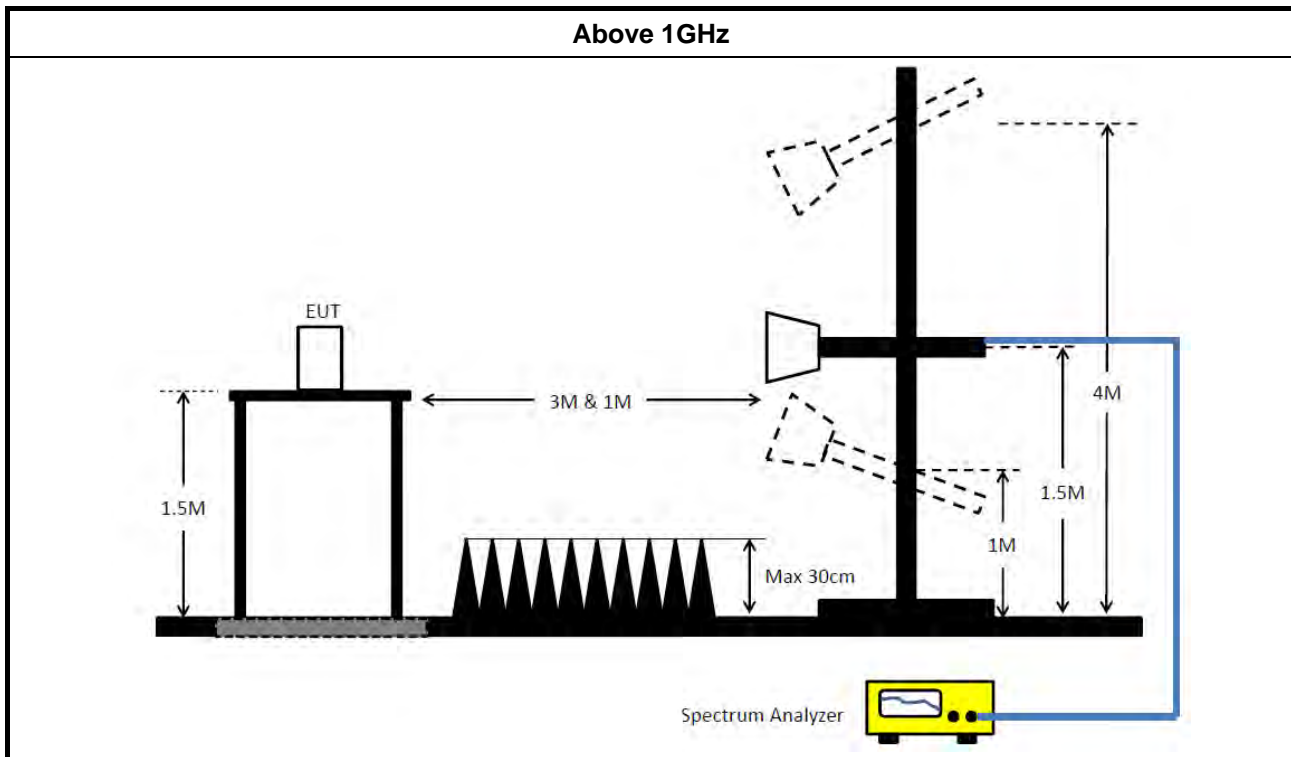


### 3.6.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>The average emission levels shall be measured in [duty cycle <math>\geq 98</math> or duty factor].</li> </ul>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	
<ul style="list-style-type: none"> <li>For the transmitter unwanted emissions shall be measured using following options below:</li> </ul>	
	<ul style="list-style-type: none"> <li>Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.</li> </ul>
	<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.
<ul style="list-style-type: none"> <li>For the transmitter band-edge emissions shall be measured using following options below:</li> </ul>	
	<ul style="list-style-type: none"> <li>Refer as FCC KDB 558074 clause 8.7 &amp; 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.</li> </ul>
	<ul style="list-style-type: none"> <li>Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.</li> </ul>
	<ul style="list-style-type: none"> <li>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).</li> </ul>
	<ul style="list-style-type: none"> <li>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</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>

### 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)

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, 2018	Nov. 20, 2019	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 05, 2018	Nov. 04, 2019	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 16, 2019	Jan. 15, 2020	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Nov. 06, 2018	Nov. 05, 2019	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH04-CB)
Horn Antenna	ETS • Lindgren	3115	00143147	750MHz~18GHz	Oct. 26, 2018	Oct. 25, 2019	Radiation (03CH04-CB)
BILOG ANTENNA	Schaffner	CBL6112B & N-6-06-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 12, 2018	Oct. 11, 2019	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 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	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH04-CB)
RF Cable	Woken	Low Cable-03+22	N/A	30MHz – 1GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1292	1GHz~18GHz	Jul. 20, 2018	Jul. 19, 2019	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH06-CB)
RF Cable	HUBER+SUHNER	RG402	High Cable-05	1GHz~18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH06-CB)



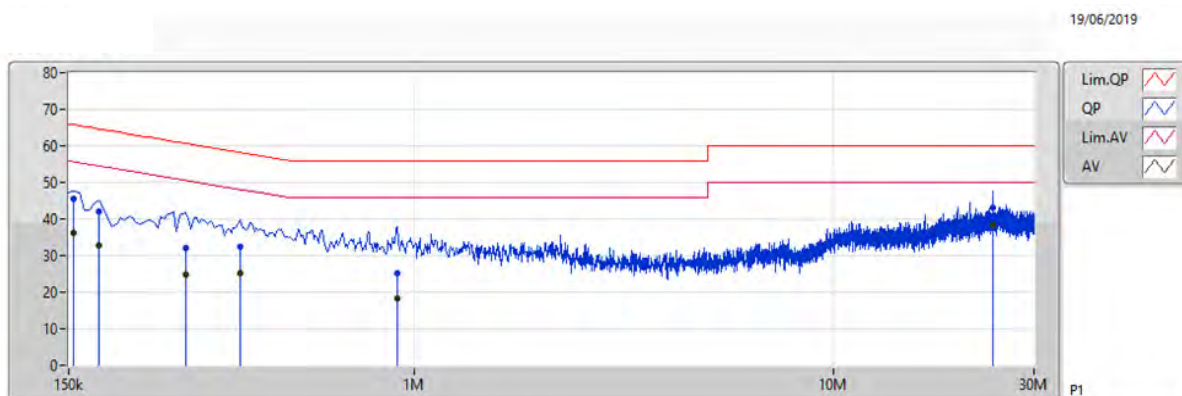
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable	HUBER+SUHNER	RG402	High Cable-05+24	1GHz~18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH06-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH06-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jun. 22, 2018	Jun. 21, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 24, 2018	Oct. 23, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Sep. 03, 2018	Sep. 02, 2019	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Sep. 03, 2018	Sep. 02, 2019	Conducted (TH02-CB)

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

NCR means Non-Calibration required.

### AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Line
Operating Function	CTX		



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	AF (dB)	CL (dB)	AT (dB)				
QP	154.5k	45.49	65.75	-20.26	9.90	Line	-	35.59	0.05	0.06	9.79				
AV	154.5k	36.09	55.75	-19.66	9.90	Line	-	26.19	0.05	0.06	9.79				
QP	177k	41.91	64.62	-22.71	9.91	Line	-	32.00	0.06	0.06	9.79				
AV	177k	32.78	54.62	-21.84	9.91	Line	-	22.87	0.06	0.06	9.79				
QP	285k	32.20	60.67	-28.47	9.92	Line	-	22.28	0.06	0.06	9.80				
AV	285k	24.66	50.67	-26.01	9.92	Line	-	14.74	0.06	0.06	9.80				
QP	384k	32.56	58.20	-25.64	9.93	Line	-	22.63	0.06	0.06	9.81				
AV	384k	25.32	48.20	-22.88	9.93	Line	-	15.39	0.06	0.06	9.81				
QP	910.5k	25.07	56.00	-30.93	9.98	Line	-	15.09	0.07	0.09	9.82				
AV	910.5k	18.15	46.00	-27.85	9.98	Line	-	8.17	0.07	0.09	9.82				
QP	24.009M	43.02	60.00	-16.98	10.67	Line	-	32.35	0.32	0.34	10.01				
AV	24.009M	38.12	50.00	-11.88	10.67	Line	"Worst"	27.45	0.32	0.34	10.01				

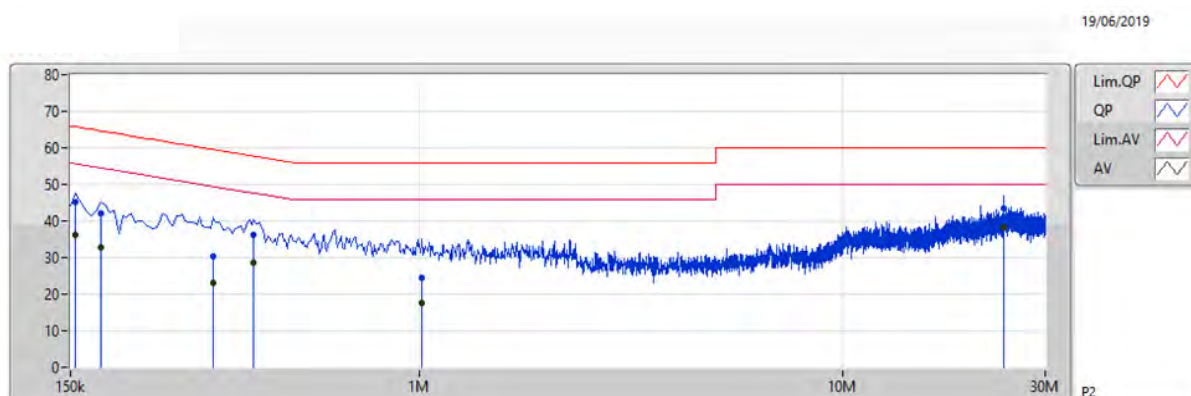
Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)



### AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Neutral
Operating Function	CTX		



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	AF (dB)	CL (dB)	AT (dB)			
QP	154.5k	45.24	65.75	-20.51	9.89	Neutral	-	35.35	0.04	0.06	9.79			
AV	154.5k	36.11	55.75	-19.64	9.89	Neutral	-	26.22	0.04	0.06	9.79			
QP	177k	42.05	64.62	-22.57	9.89	Neutral	-	32.16	0.04	0.06	9.79			
AV	177k	32.74	54.62	-21.88	9.89	Neutral	-	22.85	0.04	0.06	9.79			
QP	325.5k	30.29	59.56	-29.27	9.90	Neutral	-	20.39	0.04	0.06	9.80			
AV	325.5k	22.95	49.56	-26.61	9.90	Neutral	-	13.05	0.04	0.06	9.80			
QP	406.5k	36.26	57.72	-21.46	9.91	Neutral	-	26.35	0.04	0.06	9.81			
AV	406.5k	28.58	47.72	-19.14	9.91	Neutral	-	18.67	0.04	0.06	9.81			
QP	1.014M	24.48	56.00	-31.52	9.97	Neutral	-	14.51	0.06	0.09	9.82			
AV	1.014M	17.69	46.00	-28.31	9.97	Neutral	-	7.72	0.06	0.09	9.82			
QP	24.009M	43.53	60.00	-16.47	10.66	Neutral	-	32.87	0.31	0.34	10.01			
AV	24.009M	38.32	50.00	-11.68	10.66	Neutral	"Worst"	27.66	0.31	0.34	10.01			

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	10.075M	13.518M	13M5G1D	10.025M	13.418M
802.11g_Nss1,(6Mbps)_2TX	16.375M	16.667M	16M7D1D	16.35M	16.517M
802.11n HT20_Nss1,(MCS0)_2TX	17.575M	17.841M	17M8D1D	17.55M	17.641M
802.11n HT40_Nss1,(MCS0)_2TX	36.05M	36.232M	36M2D1D	35.55M	36.132M

**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;

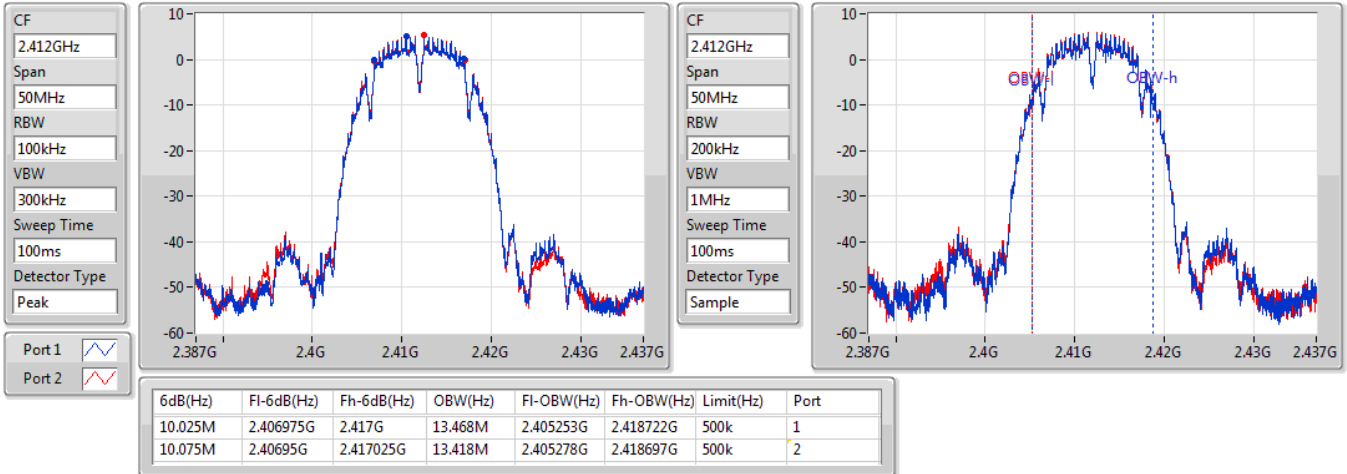
**Result**

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	10.025M	13.468M	10.075M	13.418M
2437MHz	Pass	500k	10.05M	13.443M	10.075M	13.518M
2462MHz	Pass	500k	10.05M	13.468M	10.05M	13.518M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.375M	16.517M	16.35M	16.542M
2437MHz	Pass	500k	16.35M	16.667M	16.35M	16.667M
2462MHz	Pass	500k	16.35M	16.517M	16.35M	16.542M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.666M	17.55M	17.641M
2437MHz	Pass	500k	17.575M	17.841M	17.55M	17.816M
2462MHz	Pass	500k	17.575M	17.641M	17.55M	17.641M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	36.05M	36.182M	35.55M	36.182M
2437MHz	Pass	500k	35.65M	36.182M	35.7M	36.232M
2452MHz	Pass	500k	35.85M	36.182M	35.65M	36.132M

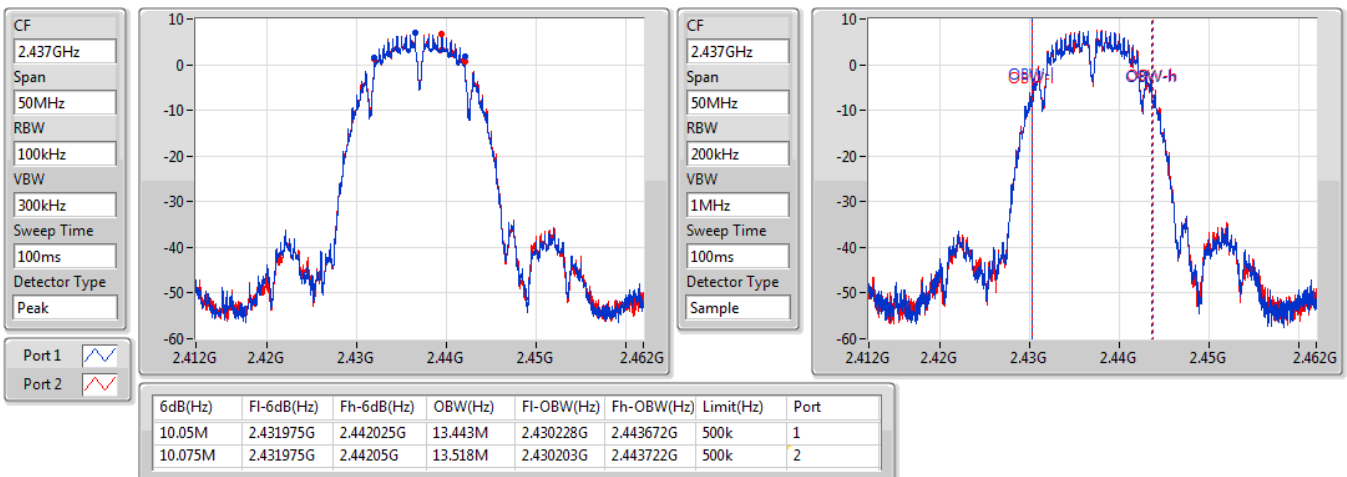
**Port X-N dB** = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

**802.11b\_Nss1,(1Mbps)\_2TX**
**EBW**
**2412MHz**

11/06/2019

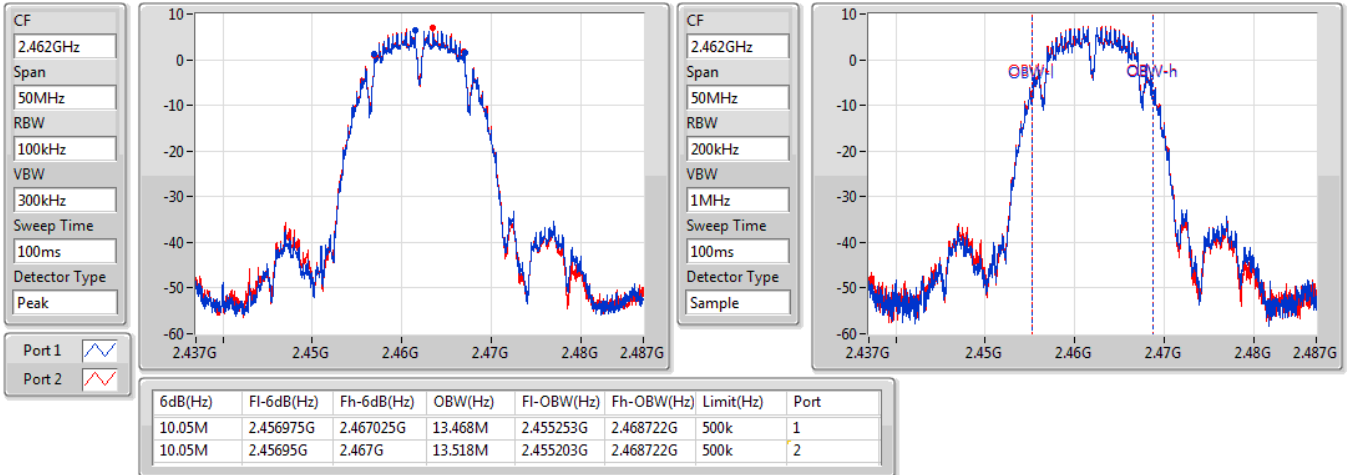

**802.11b\_Nss1,(1Mbps)\_2TX**
**EBW**
**2437MHz**

11/06/2019

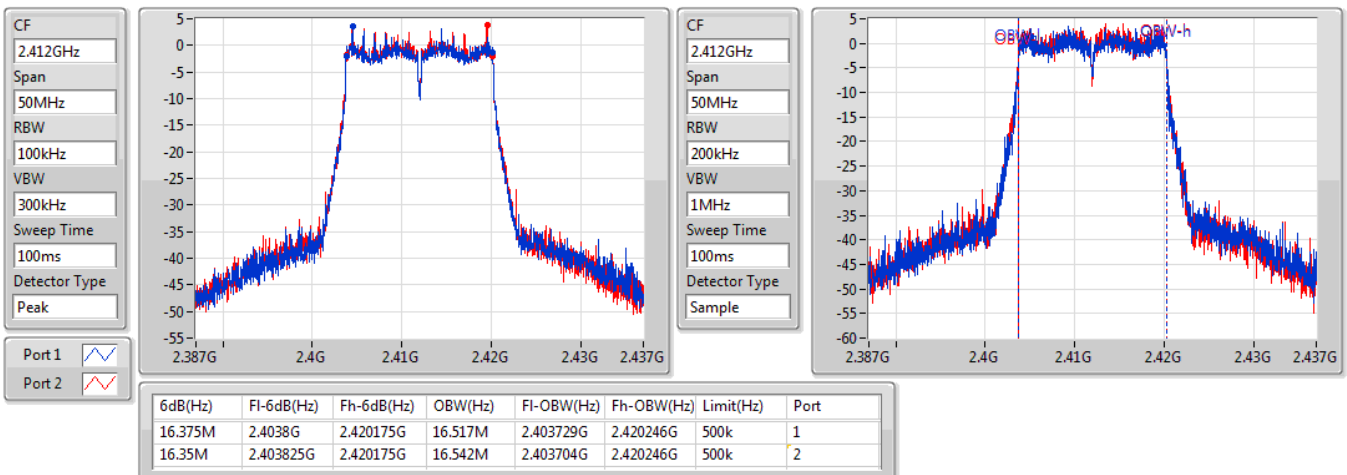


**802.11b\_Nss1,(1Mbps)\_2TX**
**EBW**
**2462MHz**

11/06/2019

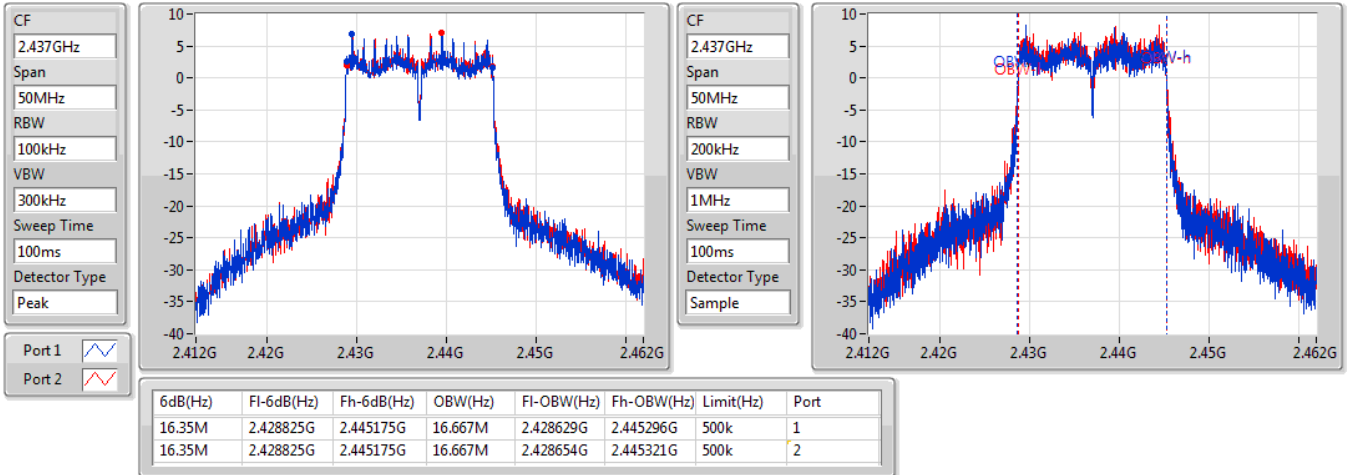

**802.11g\_Nss1,(6Mbps)\_2TX**
**EBW**
**2412MHz**

11/06/2019

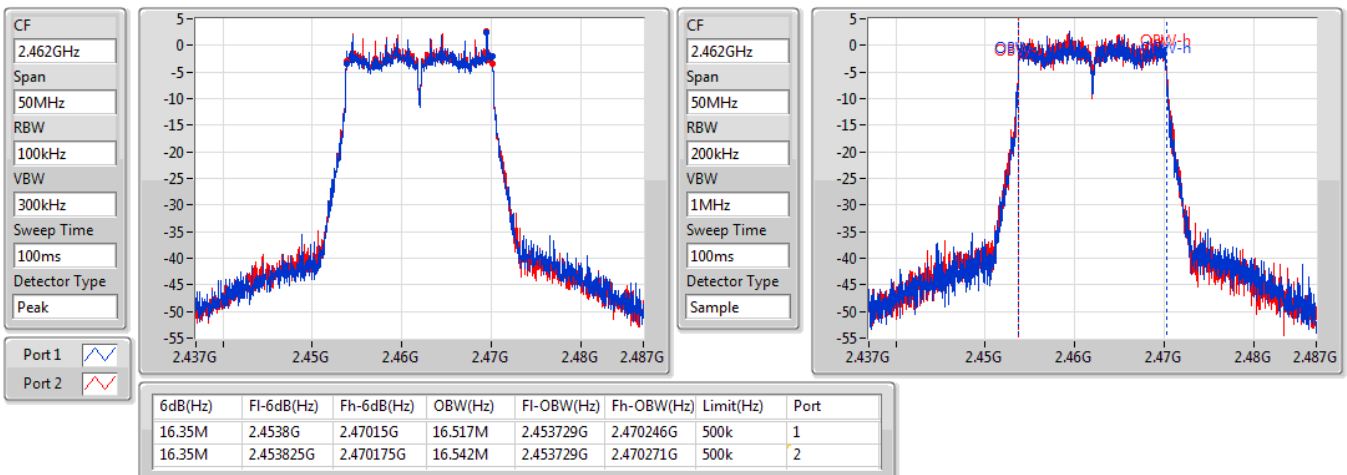


**802.11g\_Nss1,(6Mbps)\_2TX**
**EBW**
**2437MHz**

11/06/2019

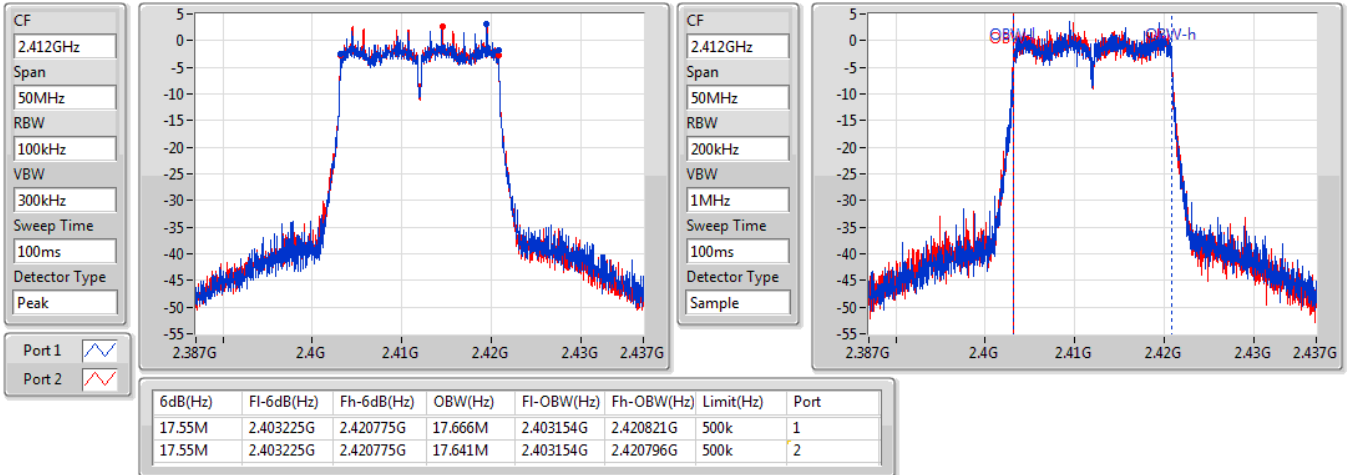

**802.11g\_Nss1,(6Mbps)\_2TX**
**EBW**
**2462MHz**

11/06/2019

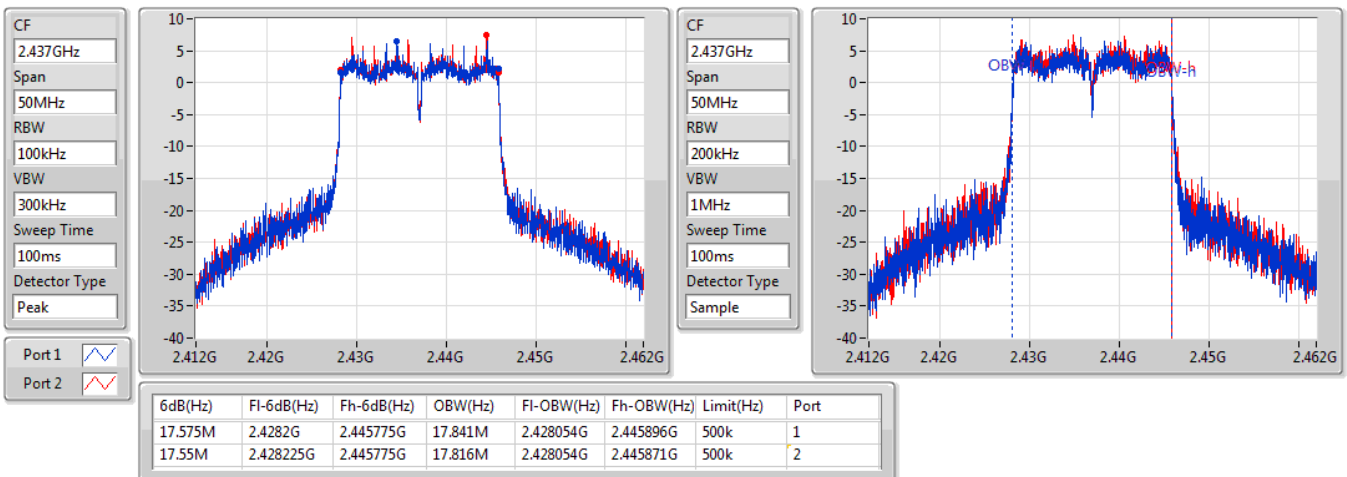


**802.11n HT20\_Nss1,(MCS0)\_2TX**
**EBW**
**2412MHz**

11/06/2019

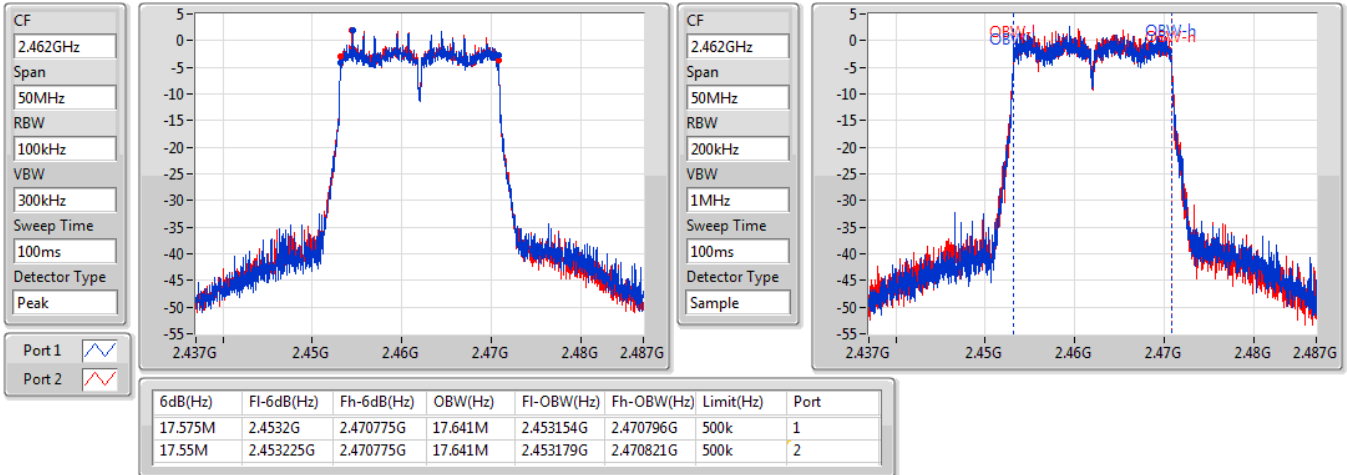

**802.11n HT20\_Nss1,(MCS0)\_2TX**
**EBW**
**2437MHz**

11/06/2019

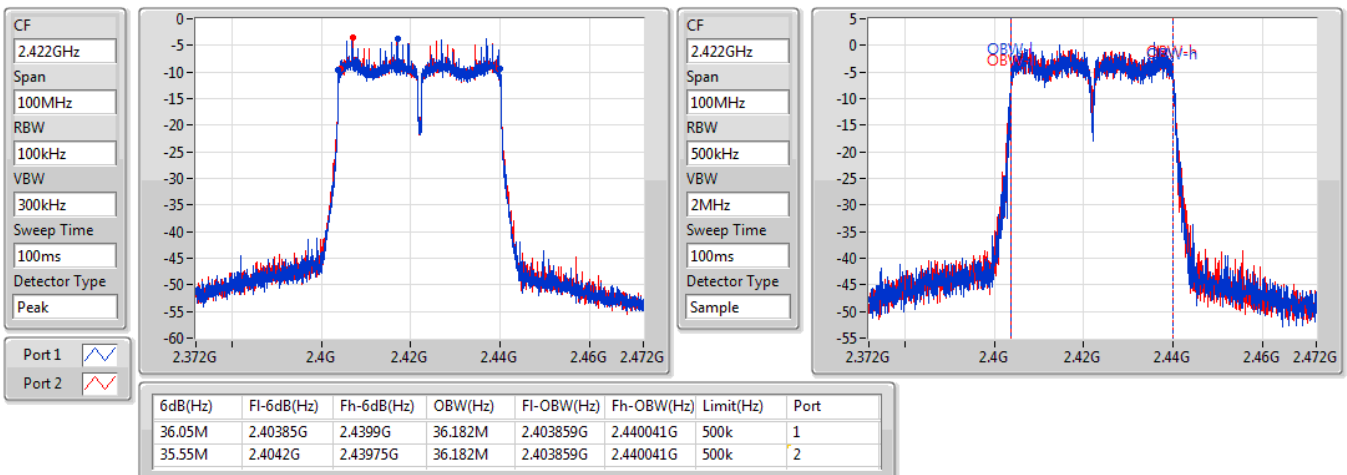


**802.11n HT20\_Nss1,(MCS0)\_2TX**
**EBW**
**2462MHz**

11/06/2019


**802.11n HT40\_Nss1,(MCS0)\_2TX**
**EBW**
**2422MHz**

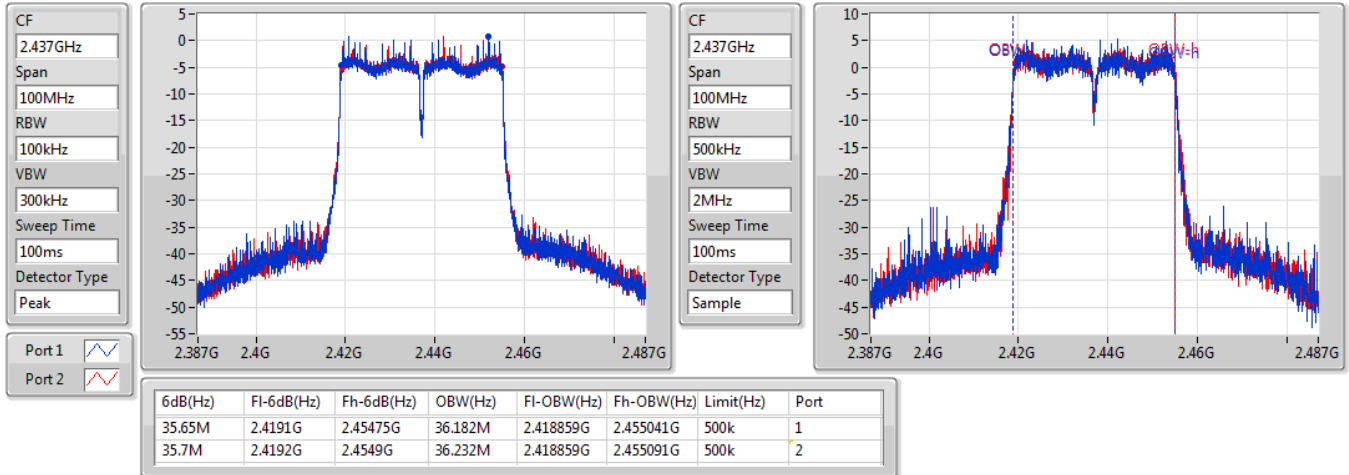
11/06/2019



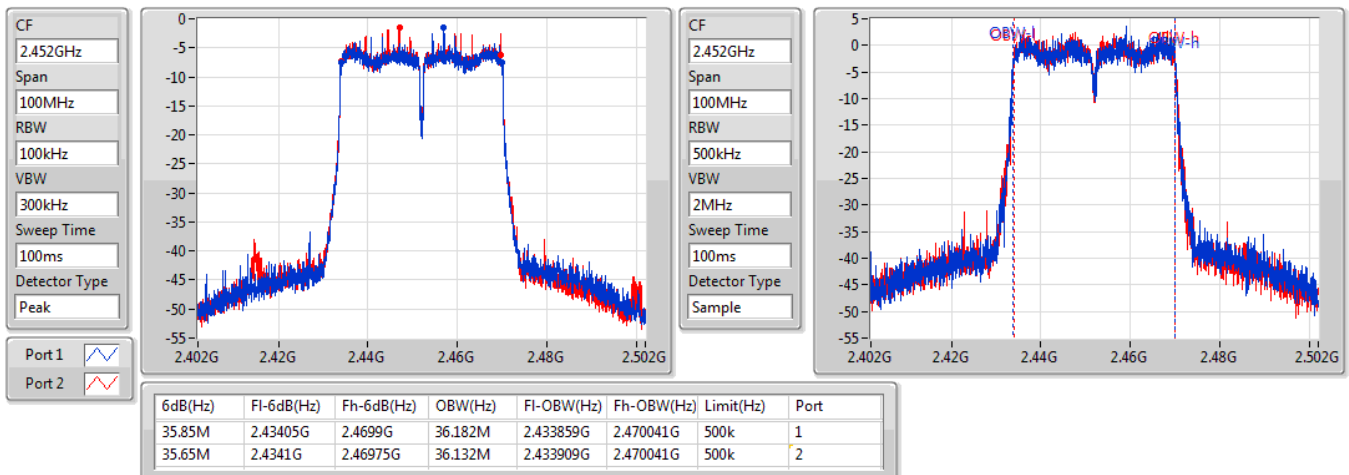


**802.11n HT40\_Nss1,(MCS0)\_2TX**
**EBW**
**2437MHz**

11/06/2019


**802.11n HT40\_Nss1,(MCS0)\_2TX**
**EBW**
**2452MHz**

11/06/2019





## Average Power Results

## Appendix C

### Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	20.50	0.11220
802.11g_Nss1,(6Mbps)_2TX	21.99	0.15812
802.11n HT20_Nss1,(MCS0)_2TX	22.09	0.16181
802.11n HT40_Nss1,(MCS0)_2TX	18.35	0.06839



## Average Power Results

## Appendix C

### Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.20	15.55	15.82	18.70	30.00
2417MHz	Pass	1.20	17.17	17.45	20.32	30.00
2437MHz	Pass	1.20	17.38	17.59	20.50	30.00
2462MHz	Pass	1.20	17.17	17.46	20.33	30.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.20	15.33	15.63	18.49	30.00
2417MHz	Pass	1.20	17.32	17.48	20.41	30.00
2437MHz	Pass	1.20	18.85	19.10	21.99	30.00
2457MHz	Pass	1.20	15.99	16.36	19.19	30.00
2462MHz	Pass	1.20	14.12	14.41	17.28	30.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.20	14.54	14.76	17.66	30.00
2417MHz	Pass	1.20	17.45	17.62	20.55	30.00
2437MHz	Pass	1.20	18.92	19.23	22.09	30.00
2457MHz	Pass	1.20	14.26	14.57	17.43	30.00
2462MHz	Pass	1.20	14.25	14.51	17.39	30.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	1.20	10.60	10.82	13.72	30.00
2427MHz	Pass	1.20	12.50	12.71	15.62	30.00
2437MHz	Pass	1.20	15.21	15.47	18.35	30.00
2447MHz	Pass	1.20	14.26	14.54	17.41	30.00
2452MHz	Pass	1.20	13.26	13.55	16.42	30.00

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



**Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_2TX	0.02
802.11g_Nss1,(6Mbps)_2TX	-5.82
802.11n HT20_Nss1,(MCS0)_2TX	-5.51
802.11n HT40_Nss1,(MCS0)_2TX	-11.41

RBW=3 kHz.

**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	3.94	-6.05	-5.70	-5.44	8.00
2437MHz	Pass	3.94	-2.73	-1.97	-1.57	8.00
2462MHz	Pass	3.94	-2.99	-2.99	0.02	8.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.94	-11.84	-11.00	-9.49	8.00
2437MHz	Pass	3.94	-8.46	-7.76	-5.82	8.00
2462MHz	Pass	3.94	-13.44	-13.56	-11.07	8.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.94	-11.43	-11.42	-10.06	8.00
2437MHz	Pass	3.94	-7.64	-6.94	-5.51	8.00
2462MHz	Pass	3.94	-12.99	-12.41	-10.23	8.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	3.94	-19.10	-18.41	-16.55	8.00
2437MHz	Pass	3.94	-14.24	-13.76	-11.41	8.00
2452MHz	Pass	3.94	-16.01	-16.32	-13.72	8.00

**DG** = Directional Gain; RBW=3 kHz;

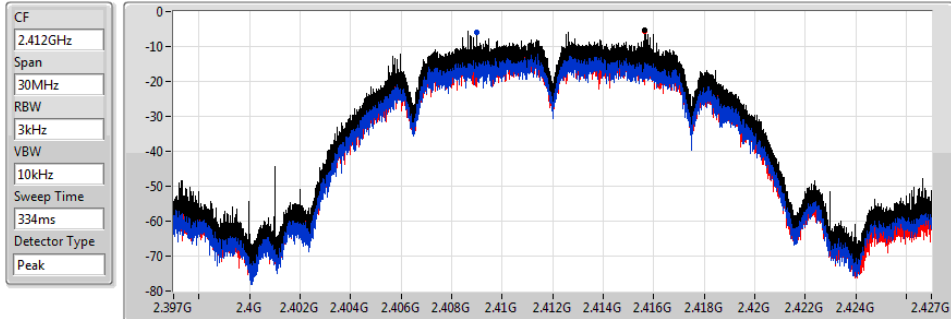
**PD** = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

### 802.11b\_Nss1,(1Mbps)\_2TX

### PSD

2412MHz

11/06/2019



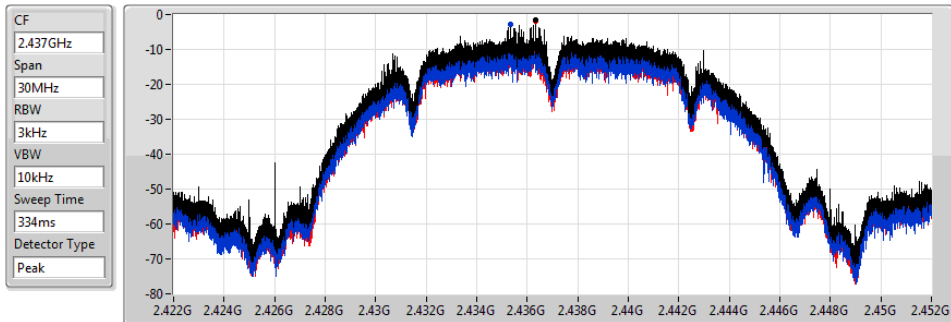
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-5.44	-5.44	-6.05	-5.70

### 802.11b\_Nss1,(1Mbps)\_2TX

### PSD

2437MHz

11/06/2019



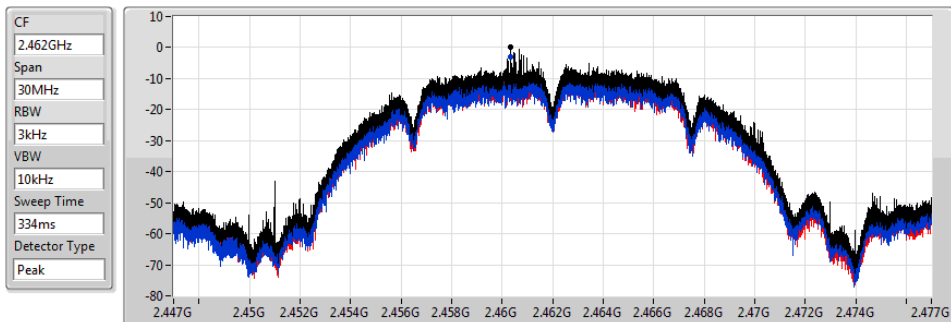
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-1.57	-1.57	-2.73	-1.97

### 802.11b\_Nss1,(1Mbps)\_2TX

### PSD

2462MHz

11/06/2019



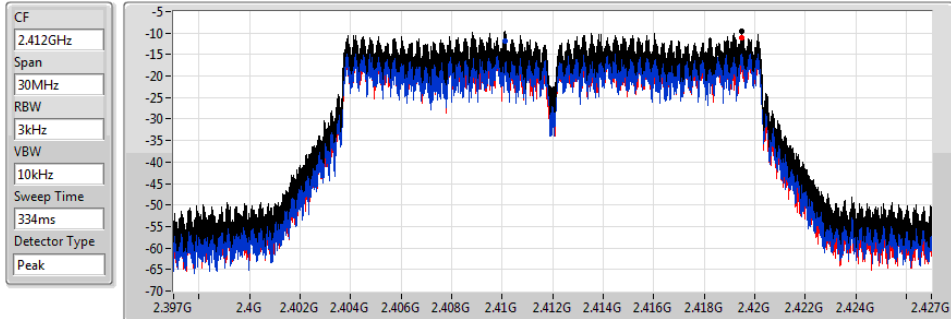
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
0.02	0.02	-2.99	-2.99

### 802.11g\_Nss1,(6Mbps)\_2TX

### PSD

2412MHz

11/06/2019



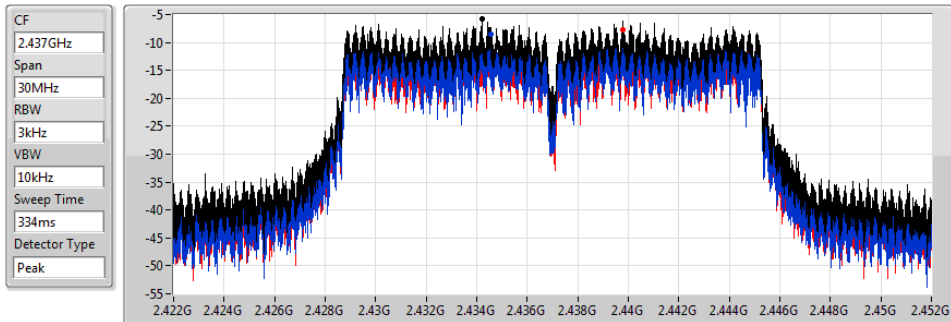
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-9.49	-9.49	-11.84	-11.00

### 802.11g\_Nss1,(6Mbps)\_2TX

### PSD

2437MHz

11/06/2019



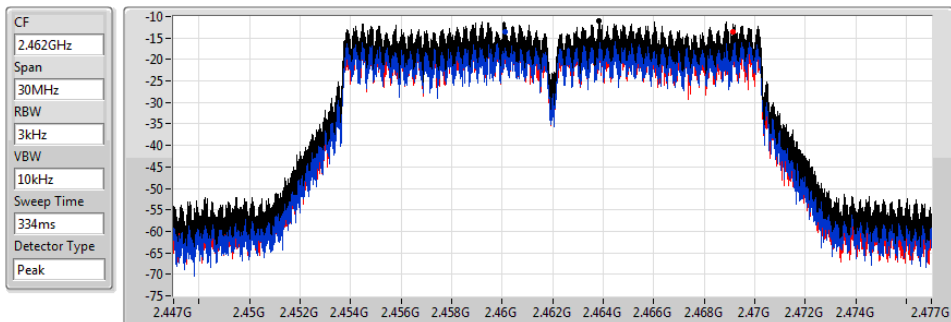
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-5.82	-5.82	-8.46	-7.76

### 802.11g\_Nss1,(6Mbps)\_2TX

### PSD

2462MHz

11/06/2019



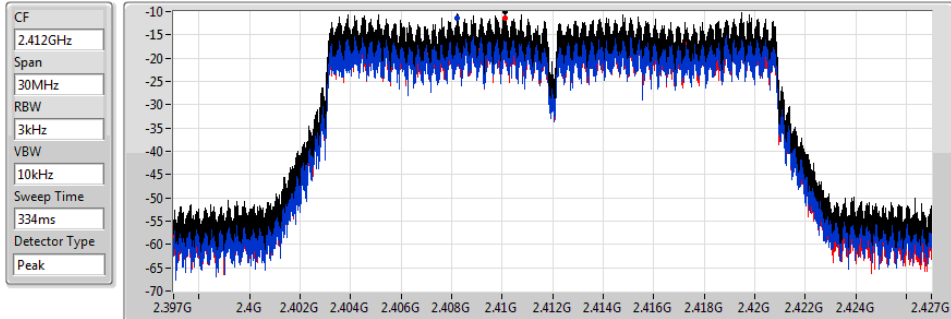
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-11.07	-11.07	-13.44	-13.56

### 802.11n HT20\_Nss1,(MCS0)\_2TX

### PSD

2412MHz

11/06/2019



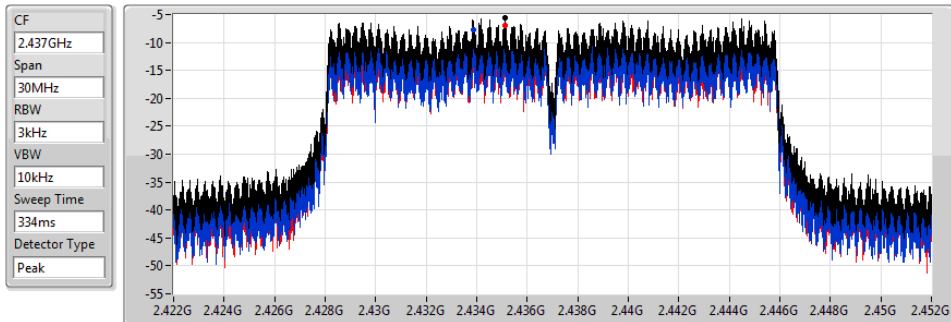
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-10.06	-10.06	-11.43	-11.42

### 802.11n HT20\_Nss1,(MCS0)\_2TX

### PSD

2437MHz

11/06/2019



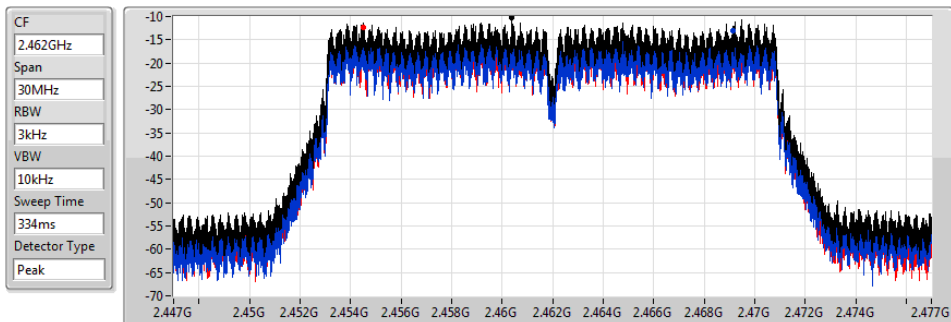
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-5.51	-5.51	-7.64	-6.94

### 802.11n HT20\_Nss1,(MCS0)\_2TX

### PSD

2462MHz

11/06/2019



Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-10.23	-10.23	-12.99	-12.41

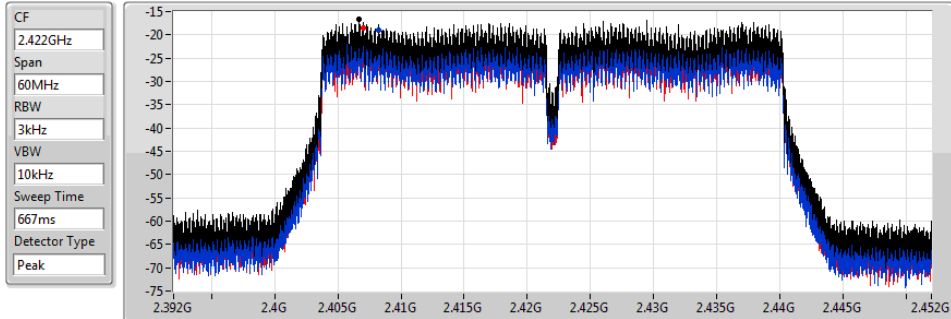


## 802.11n HT40\_Nss1,(MCS0)\_2TX

## PSD

2422MHz

11/06/2019



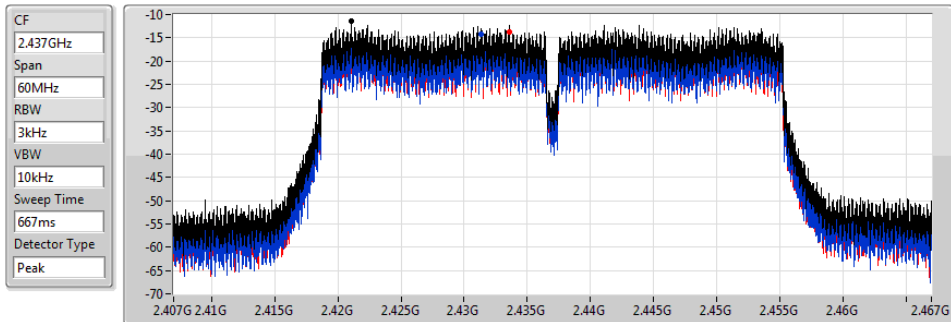
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-16.55	-16.55	-19.10	-18.41

## 802.11n HT40\_Nss1,(MCS0)\_2TX

## PSD

2437MHz

11/06/2019



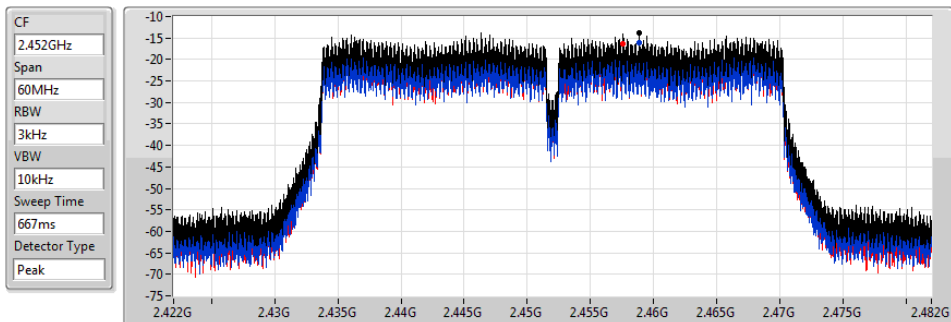
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-11.41	-11.41	-14.24	-13.76

## 802.11n HT40\_Nss1,(MCS0)\_2TX

## PSD

2452MHz

11/06/2019



Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-13.72	-13.72	-16.01	-16.32



## CSE(Non-restricted Band) Results

## Appendix E

### 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)_2TX	Pass	2.43858G	23.22	-6.78	821.04M	-21.22	2.39696G	-38.49	2.48894G	-34.20	3.28208G	-30.41	2
802.11g_Nss1,(6Mbps)_2TX	Pass	2.43323G	22.80	-7.20	801.23M	-33.22	2.39848G	-15.78	2.48478G	-40.49	7.23795G	-36.19	2
802.11n HT20_Nss1,(MCS0)_2TX	Pass	2.42956G	21.12	-8.88	301.45M	-39.69	2.39984G	-17.49	2.5063G	-40.29	7.24076G	-38.59	1
802.11n HT40_Nss1,(MCS0)_2TX	Pass	2.42939G	17.14	-12.86	826.92M	-36.74	2.39952G	-19.93	2.48414G	-27.35	16.37597G	-40.79	2



## CSE(Non-restricted Band) Results

## Appendix E

### Result

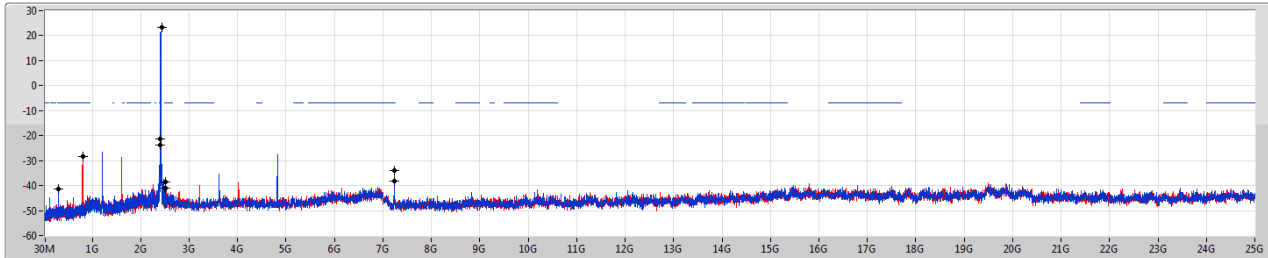
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43858G	23.22	-6.78	301.45M	-41.32	2.39752G	-23.62	2.50702G	-38.47	7.23514G	-38.15	1
2412MHz	Pass	2.43858G	23.22	-6.78	805.89M	-28.33	2.39704G	-21.42	2.5175G	-41.19	7.23514G	-34.00	2
2437MHz	Pass	2.43858G	23.22	-6.78	2.30991G	-38.08	2.39952G	-35.90	2.5135G	-35.37	2.5235G	-40.54	1
2437MHz	Pass	2.43858G	23.22	-6.78	811.72M	-26.70	2.39952G	-34.70	2.51502G	-37.79	3.24837G	-35.22	2
2462MHz	Pass	2.43858G	23.22	-6.78	2.03264G	-40.90	2.39664G	-39.50	2.48598G	-33.36	2.53755G	-38.40	1
2462MHz	Pass	2.43858G	23.22	-6.78	821.04M	-21.22	2.39696G	-38.49	2.48894G	-34.20	3.28208G	-30.41	2
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43323G	22.80	-7.20	603.18M	-40.09	2.39968G	-17.70	2.48446G	-36.50	7.23233G	-37.01	1
2412MHz	Pass	2.43323G	22.80	-7.20	801.23M	-33.22	2.39848G	-15.78	2.48478G	-40.49	7.23795G	-36.19	2
2437MHz	Pass	2.43323G	22.80	-7.20	1.98254G	-38.57	2.39952G	-24.86	2.4851G	-25.06	2.55441G	-39.09	1
2437MHz	Pass	2.43323G	22.80	-7.20	809.39M	-30.63	2.39808G	-23.98	2.4863G	-25.85	3.24837G	-38.81	2
2462MHz	Pass	2.43323G	22.80	-7.20	307.27M	-40.34	2.39952G	-41.07	2.48814G	-28.36	16.4196G	-40.09	1
2462MHz	Pass	2.43323G	22.80	-7.20	828.03M	-27.21	2.39176G	-41.11	2.4839G	-30.13	3.28208G	-35.40	2
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.42956G	21.12	-8.88	301.45M	-39.69	2.39984G	-17.49	2.5063G	-40.29	7.24076G	-38.59	1
2412MHz	Pass	2.42956G	21.12	-8.88	807.06M	-34.88	2.39952G	-18.96	2.4907G	-40.83	7.22952G	-38.09	2
2437MHz	Pass	2.42956G	21.12	-8.88	2.03031G	-37.72	2.39928G	-21.63	2.4851G	-24.74	2.54036G	-36.74	1
2437MHz	Pass	2.42956G	21.12	-8.88	818.71M	-30.57	2.39984G	-21.17	2.48382G	-23.76	2.5235G	-37.11	2
2462MHz	Pass	2.42956G	21.12	-8.88	2.19108G	-39.55	2.3932G	-41.17	2.48446G	-25.07	16.79046G	-40.38	1
2462MHz	Pass	2.42956G	21.12	-8.88	812.88M	-26.90	2.39832G	-39.83	2.48358G	-25.52	3.28208G	-36.14	2
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.42939G	17.14	-12.86	604.79M	-39.21	2.3952G	-26.67	2.48446G	-40.01	16.83592G	-40.63	1
2422MHz	Pass	2.42939G	17.14	-12.86	793.72M	-39.03	2.39696G	-26.79	2.4931G	-40.11	17.06028G	-40.02	2
2437MHz	Pass	2.42939G	17.14	-12.86	303.66M	-40.55	2.39792G	-20.55	2.48382G	-27.10	16.54985G	-40.13	1
2437MHz	Pass	2.42939G	17.14	-12.86	826.92M	-36.74	2.39952G	-19.93	2.48414G	-27.35	16.37597G	-40.79	2
2452MHz	Pass	2.42939G	17.14	-12.86	305.95M	-39.92	2.39952G	-34.11	2.48942G	-25.08	16.40963G	-40.12	1
2452MHz	Pass	2.42939G	17.14	-12.86	830.36M	-31.68	2.39776G	-34.81	2.48446G	-25.18	3.26745G	-36.25	2

## 802.11b\_Nss1,(1Mbps)\_2TX

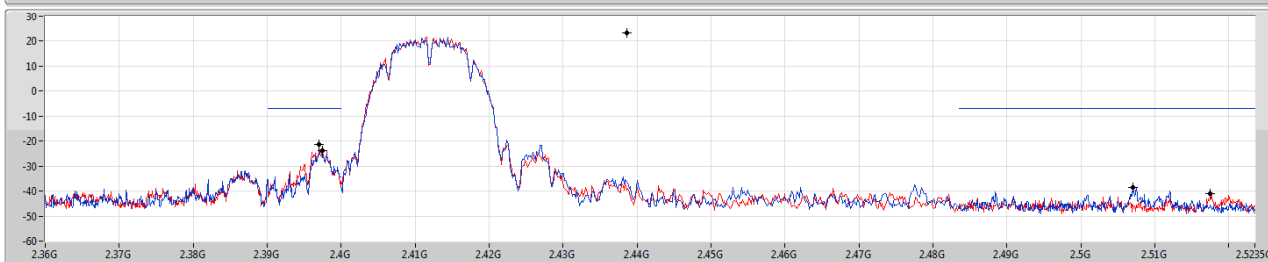
2412MHz

CSE NdB

11/06/2019



Port 1  
Port 2



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

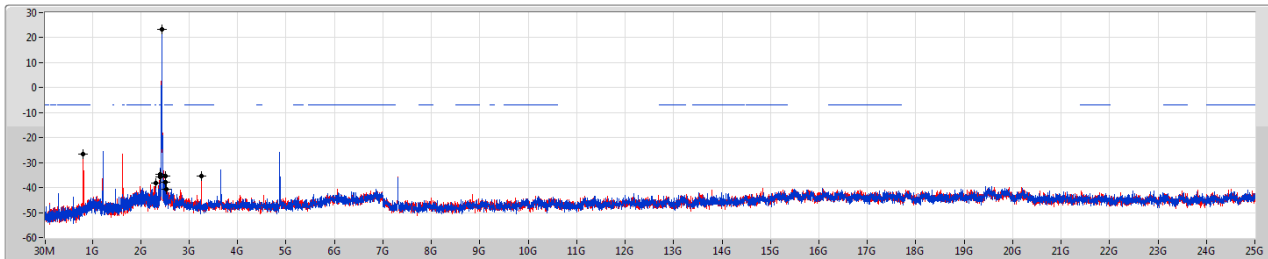
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43858G	23.22	-6.78	301.45M	-41.32	2.39752G	-23.62	2.50702G	-38.47	7.23514G	-38.15	1
2.43858G	23.22	-6.78	805.89M	-28.33	2.39704G	-21.42	2.5175G	-41.19	7.23514G	-34.00	2

## 802.11b\_Nss1,(1Mbps)\_2TX

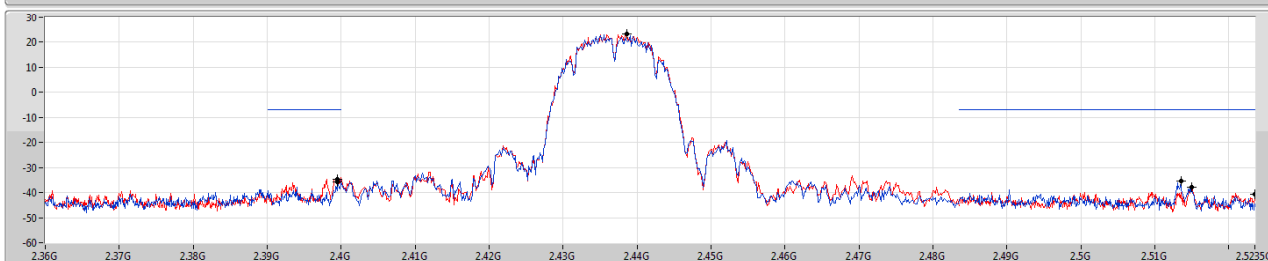
2437MHz

CSE NdB

11/06/2019



Port 1  
Port 2



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

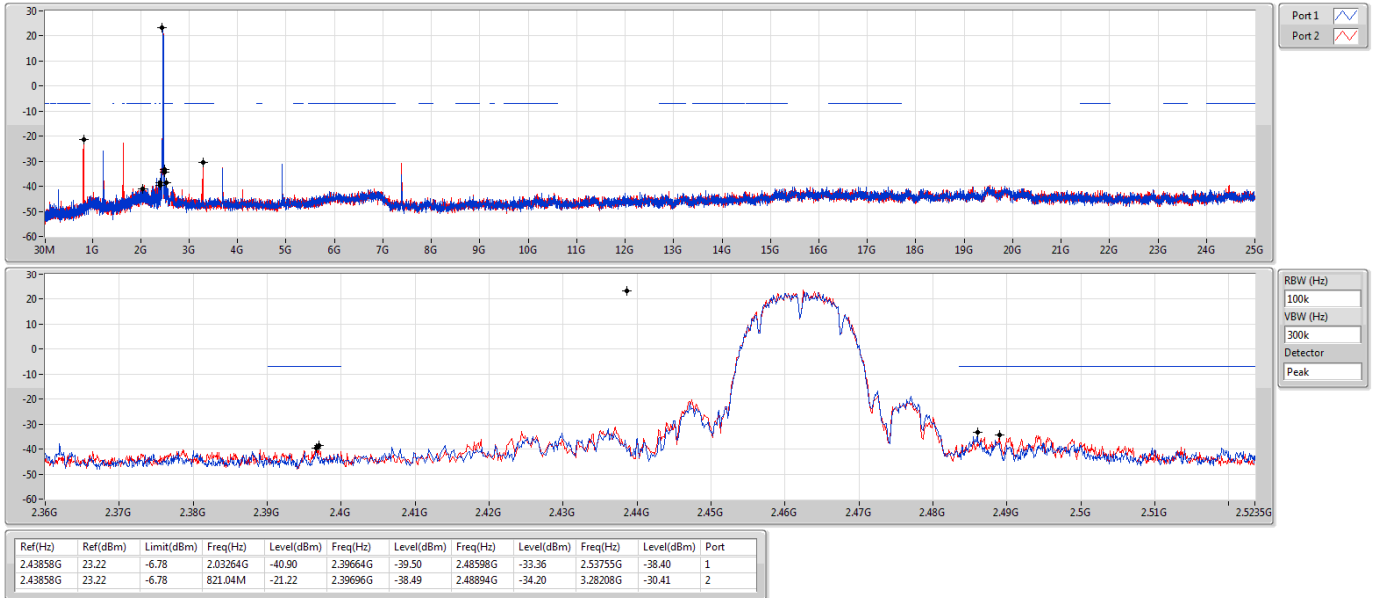
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43858G	23.22	-6.78	2.30991G	-38.08	2.39952G	-35.90	2.5135G	-35.37	2.5235G	-40.54	1
2.43858G	23.22	-6.78	811.72M	-26.70	2.39952G	-34.70	2.51502G	-37.79	3.24837G	-35.22	2

## 802.11b\_Nss1,(1Mbps)\_2TX

2462MHz

CSE NdB

11/06/2019

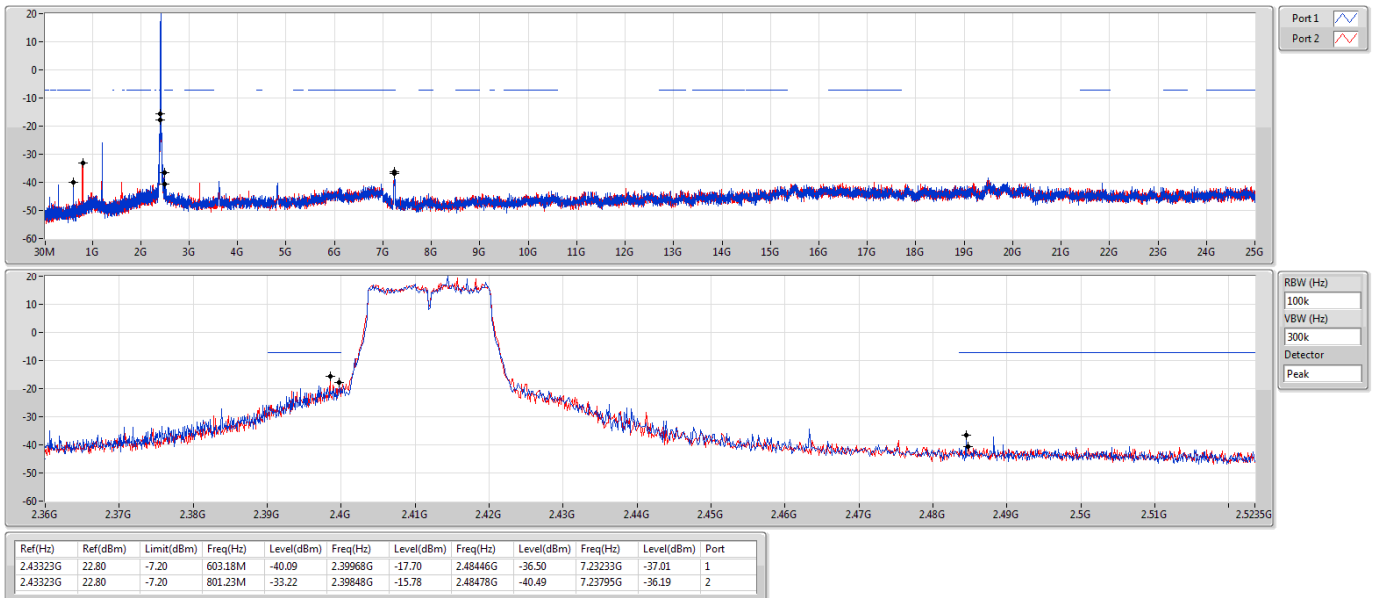


## 802.11g\_Nss1,(6Mbps)\_2TX

2412MHz

CSE NdB

11/06/2019

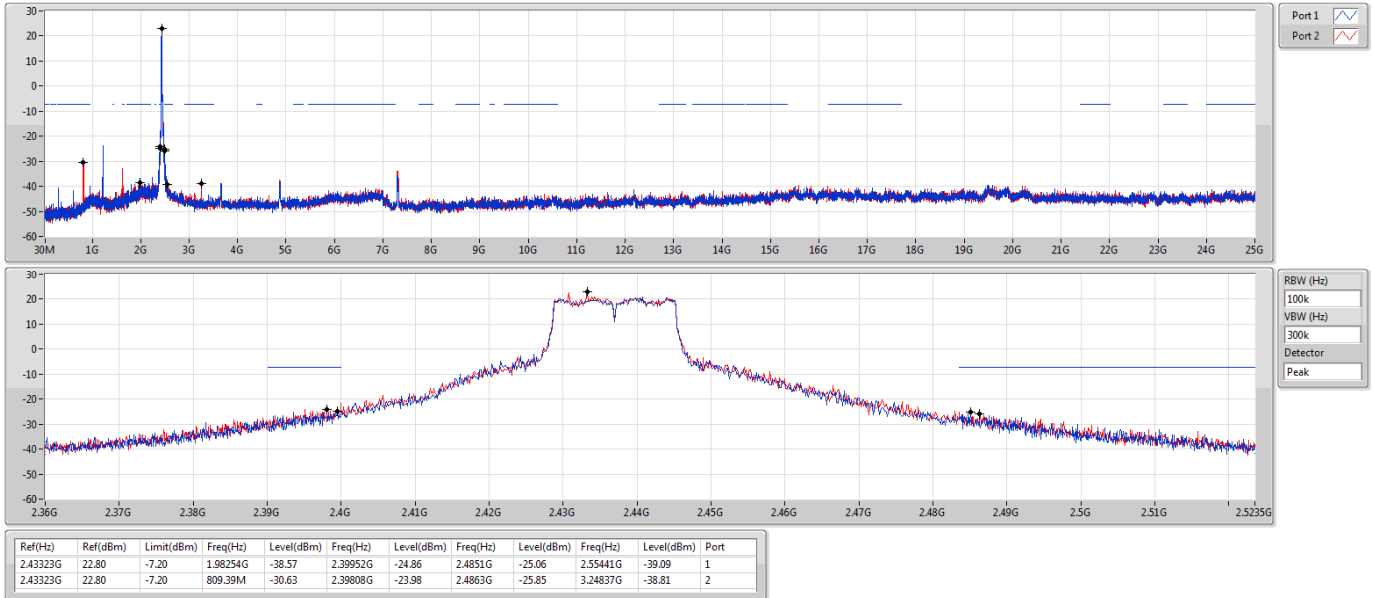


## 802.11g\_Nss1,(6Mbps)\_2TX

2437MHz

CSE NdB

11/06/2019

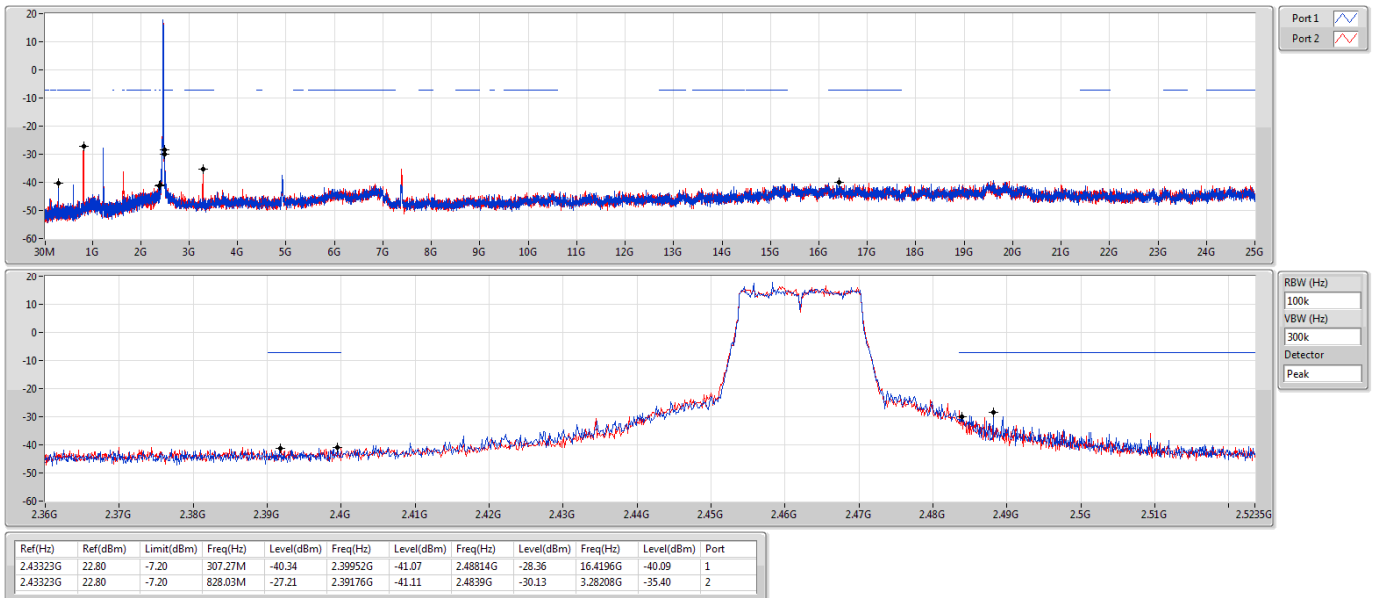


## 802.11g\_Nss1,(6Mbps)\_2TX

2462MHz

CSE NdB

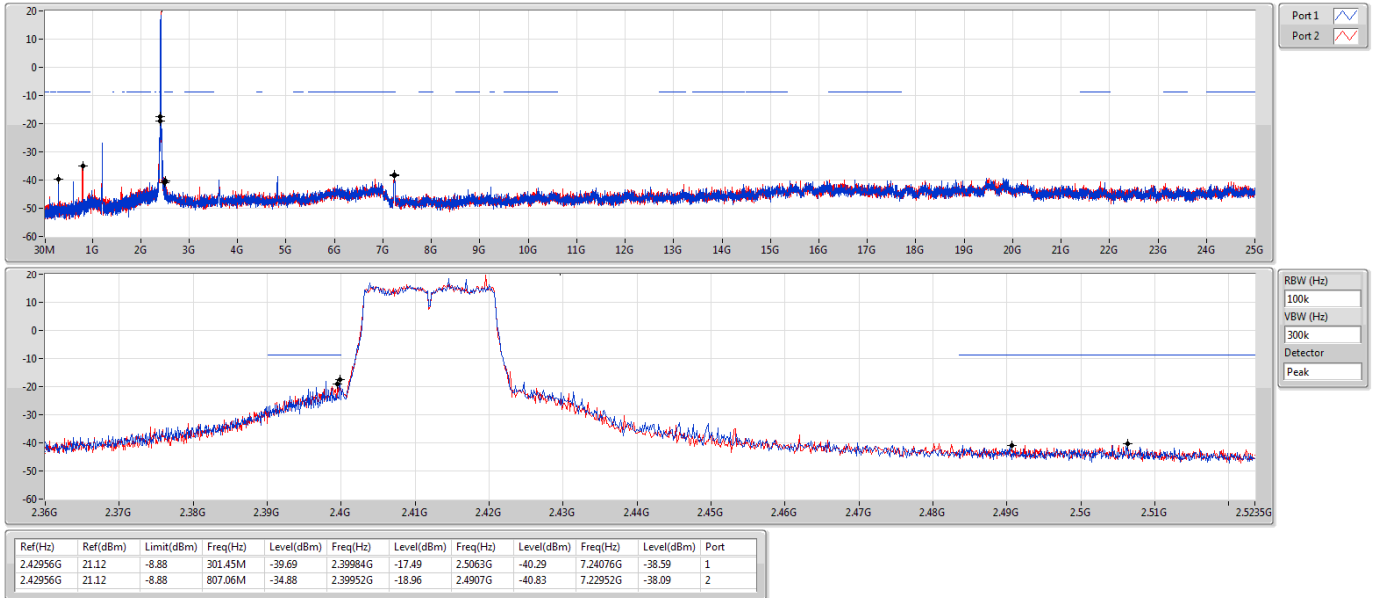
11/06/2019



802.11n HT20\_Nss1,(MCS0)\_2TX

CSE NdB

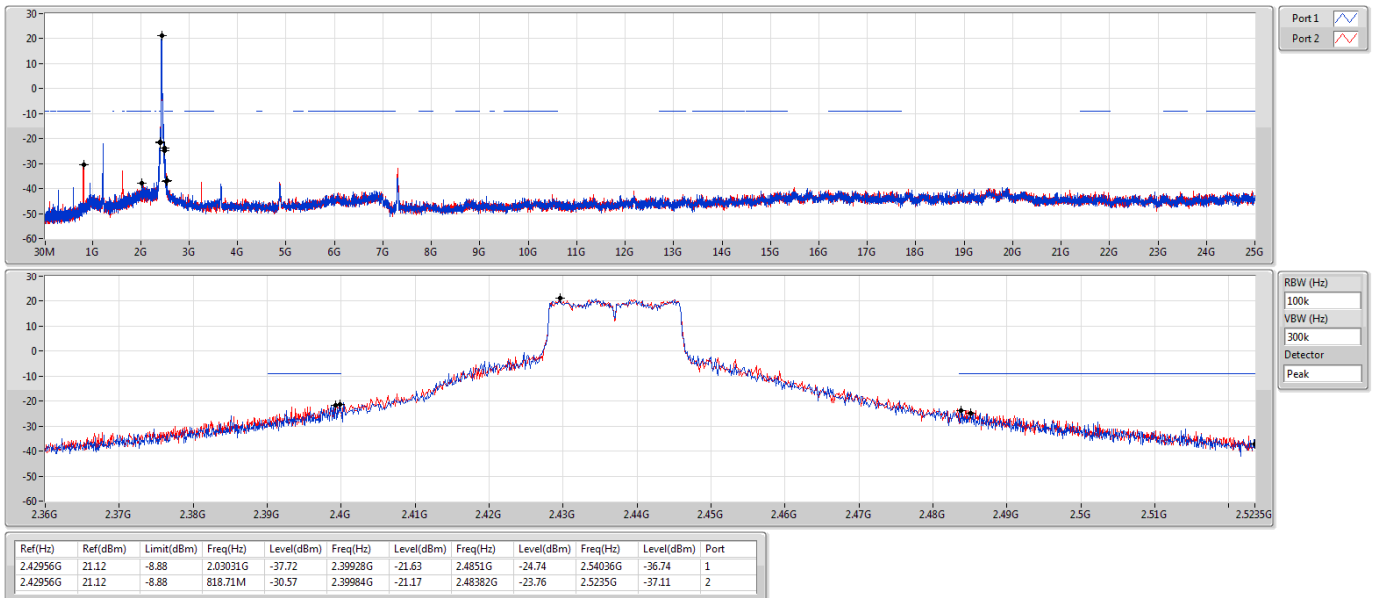
2412MHz



802.11n HT20\_Nss1,(MCS0)\_2TX

CSE NdB

2437MHz

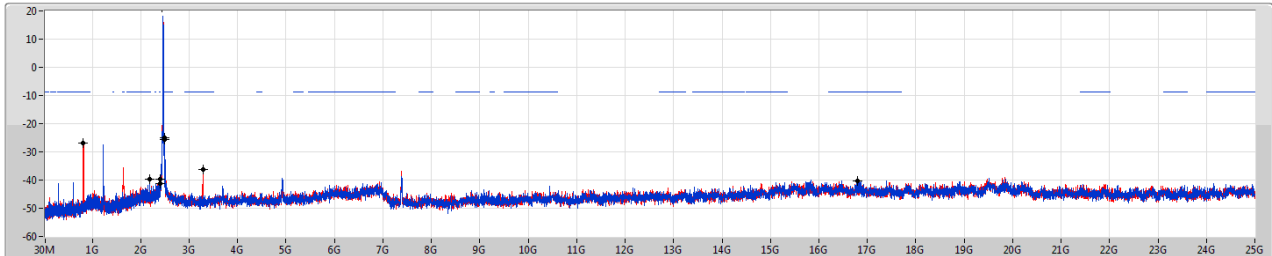


## 802.11n HT20\_Nss1,(MCS0)\_2TX

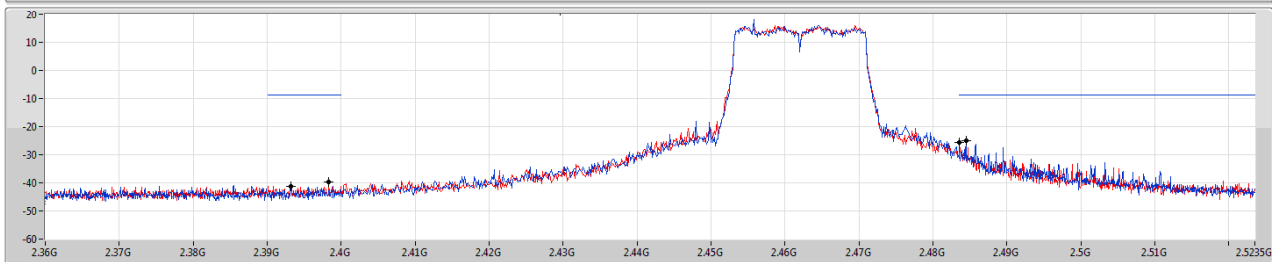
2462MHz

CSE NdB

11/06/2019



Port 1  
Port 2



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

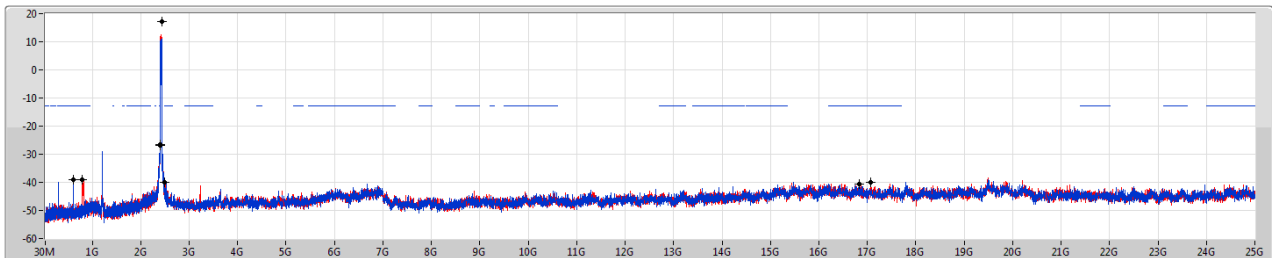
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.42956G	21.12	-8.88	2.19108G	-39.55	2.3932G	-41.17	2.48446G	-25.07	16.79046G	-40.38	1
2.42956G	21.12	-8.88	812.88M	-26.90	2.39832G	-39.83	2.48358G	-25.52	3.28208G	-36.14	2

## 802.11n HT40\_Nss1,(MCS0)\_2TX

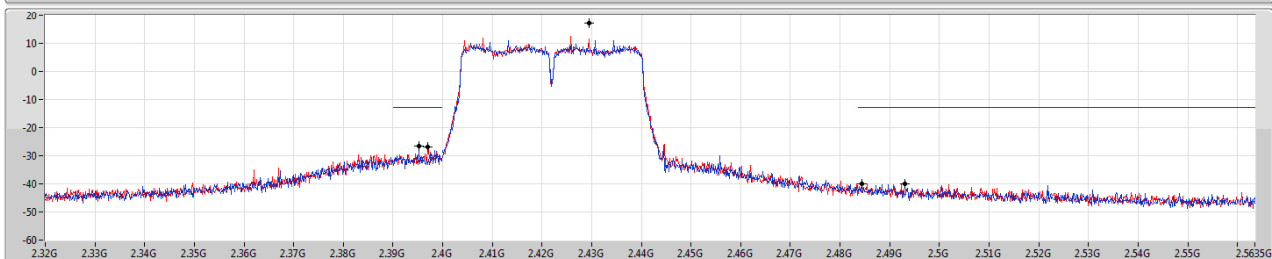
2422MHz

CSE NdB

11/06/2019



Port 1  
Port 2



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

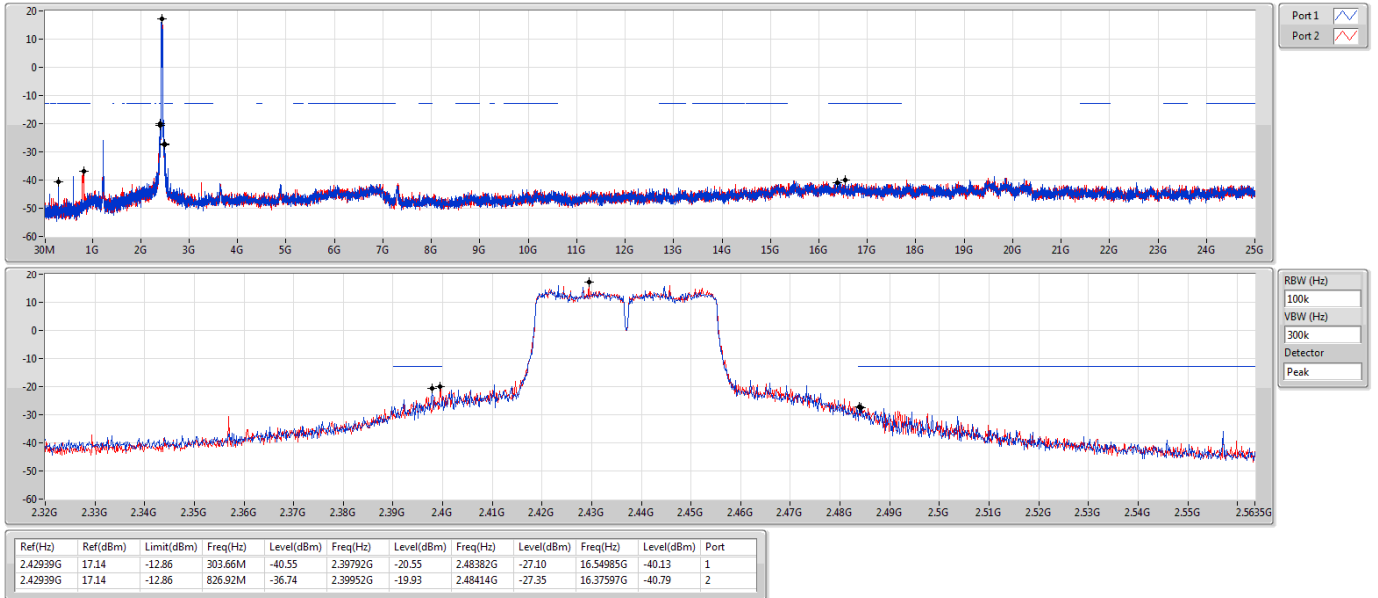
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.42939G	17.14	-12.86	604.79M	-39.21	2.3952G	-26.67	2.48446G	-40.01	16.83592G	-40.63	1
2.42939G	17.14	-12.86	793.72M	-39.03	2.39696G	-26.79	2.4931G	-40.11	17.06028G	-40.02	2



802.11n HT40\_Nss1,(MCS0)\_2TX

CSE NdB

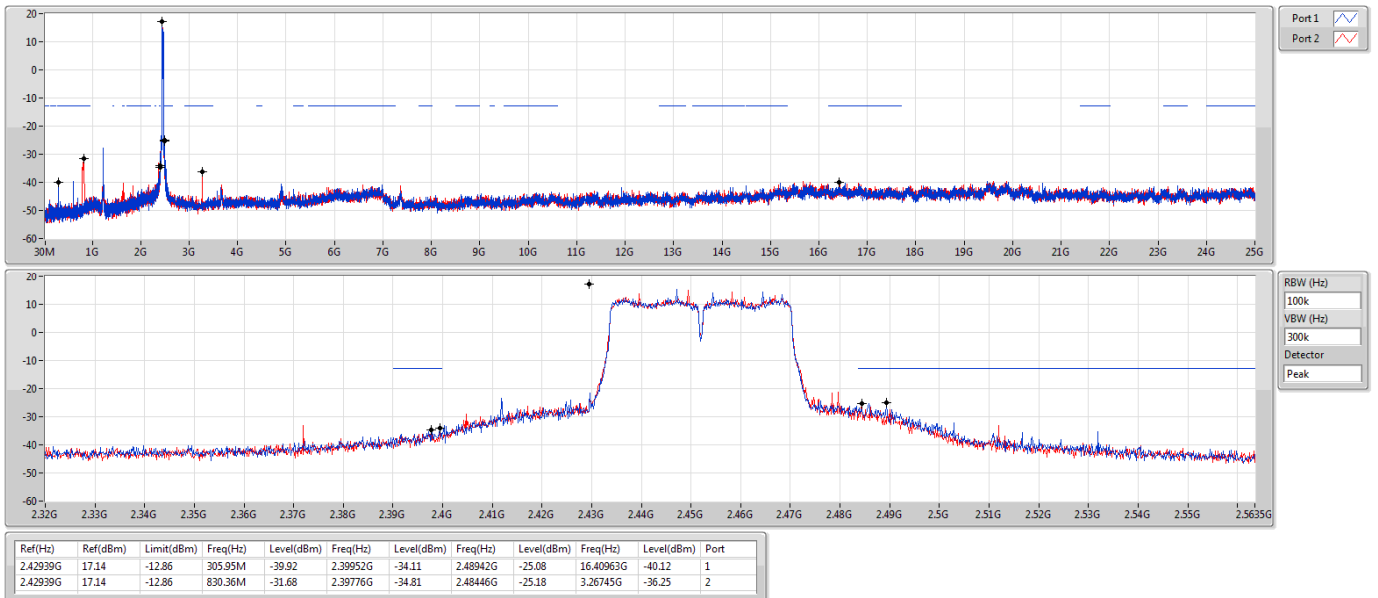
2437MHz

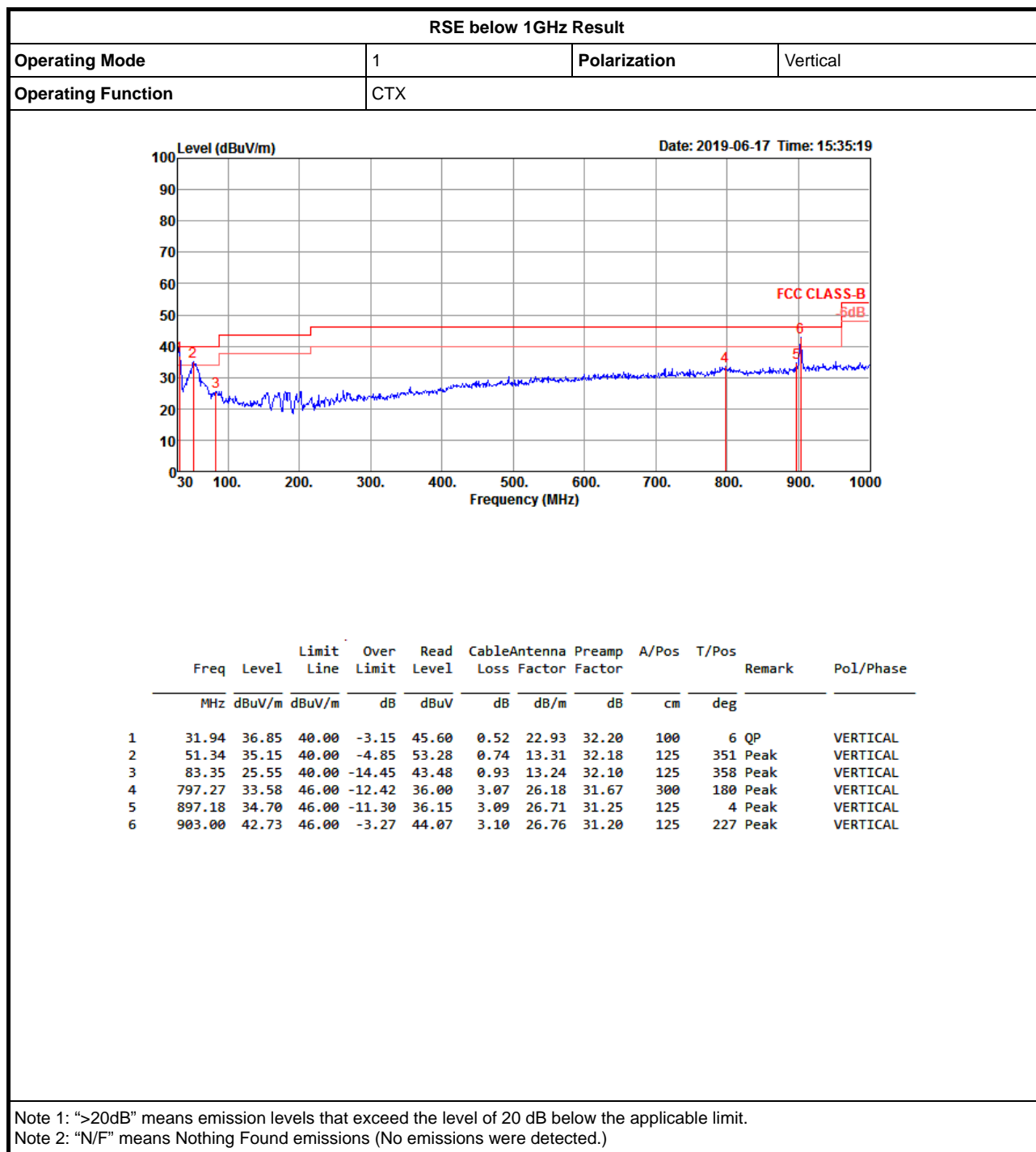


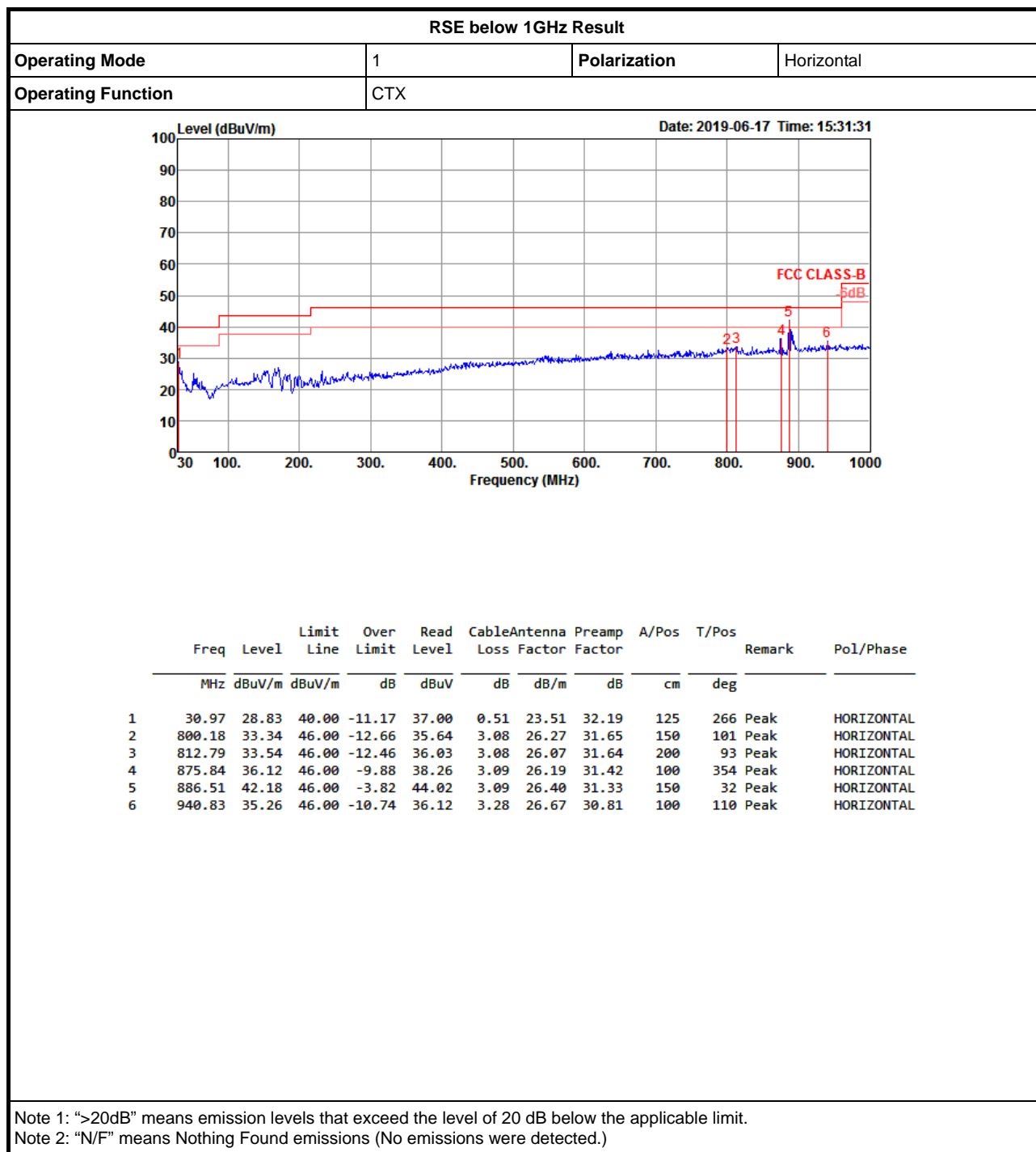
802.11n HT40\_Nss1,(MCS0)\_2TX

CSE NdB

2452MHz









## RSE TX above 1GHz Results

## Appendix F.2

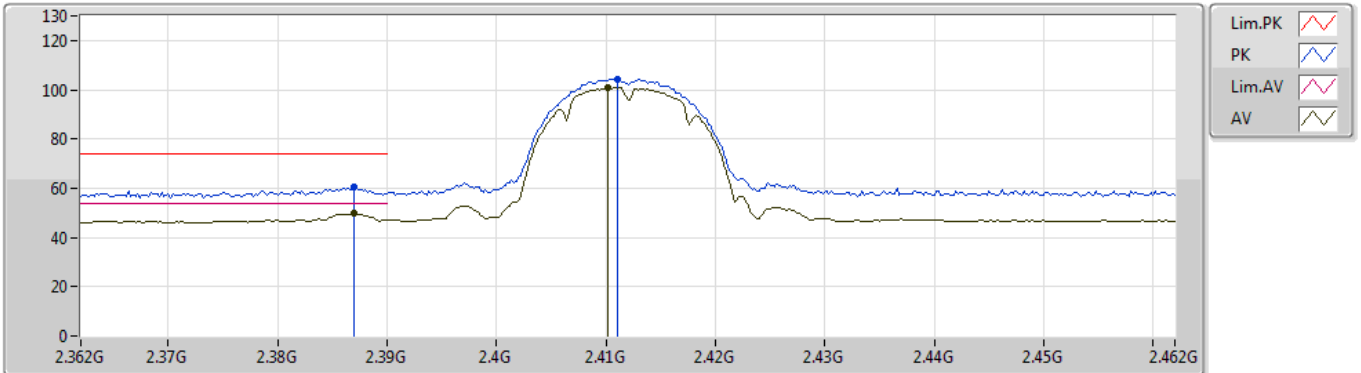
### Summary

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	-	-	-	-	-	-	-	-	-	-	-	-
802.11n HT20_Nss1,(MCS0)_2TX	Pass	AV	2.3886G	53.99	54.00	-0.01	31.20	3	Horizontal	165	1.39	-

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2412MHz\_TX



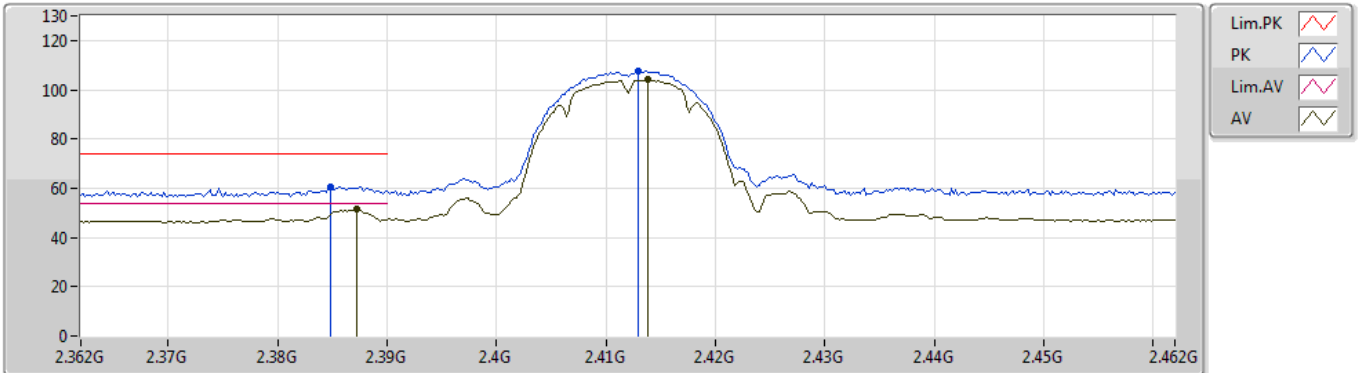
EUT Z\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.387G	60.25	74.00	-13.75	31.20	3	Vertical	32	2.75	-				
AV	2.387G	49.70	54.00	-4.30	31.20	3	Vertical	32	2.75	-				
PK	2.411G	104.33	Inf	-Inf	31.25	3	Vertical	32	2.75	-				
AV	2.4102G	100.72	Inf	-Inf	31.25	3	Vertical	32	2.75	-				

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2412MHz\_TX



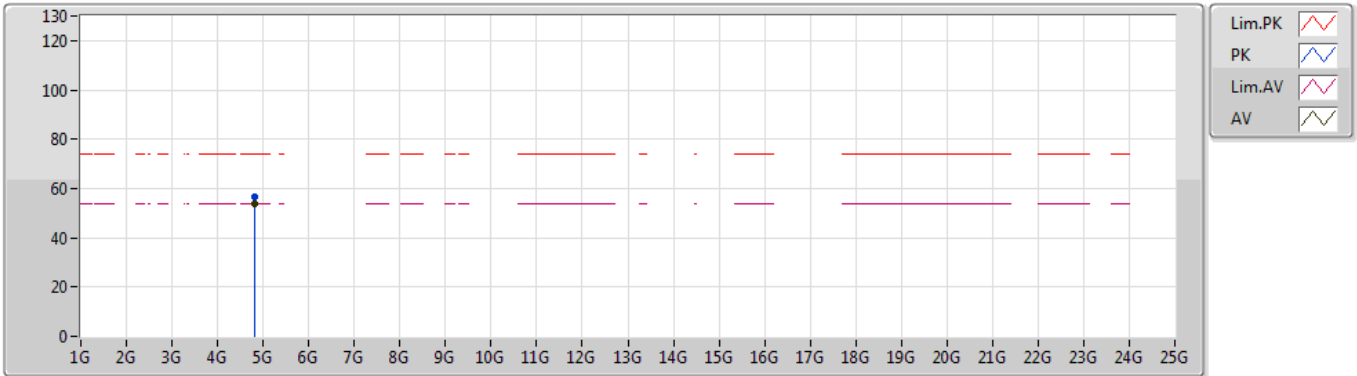
EUT Z\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3848G	60.72	74.00	-13.28	31.19	3	Horizontal	283	1.38	-				
AV	2.3872G	51.28	54.00	-2.72	31.20	3	Horizontal	283	1.38	-				
PK	2.413G	107.56	Inf	-Inf	31.26	3	Horizontal	283	1.38	-				
AV	2.4138G	104.11	Inf	-Inf	31.26	3	Horizontal	283	1.38	-				

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2412MHz\_TX



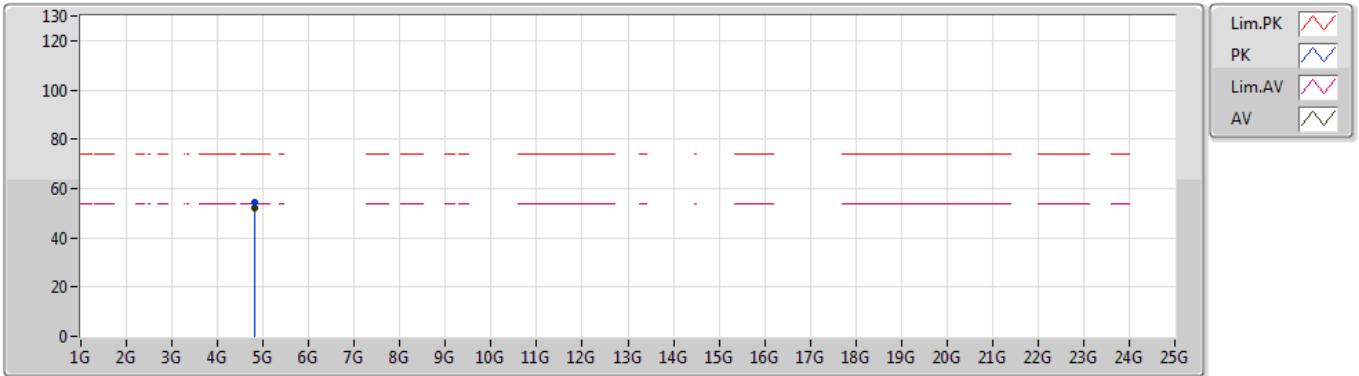
EUT Y\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.82404G	56.66	74.00	-17.34	7.17	3	Vertical	316	2.83	-				
AV	4.82398G	53.96	54.00	-0.04	7.17	3	Vertical	316	2.83	-				

### 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

### 2412MHz\_TX



EUT Y\_2TX  
Setting 16  
02-L-2  
FSU(100015)

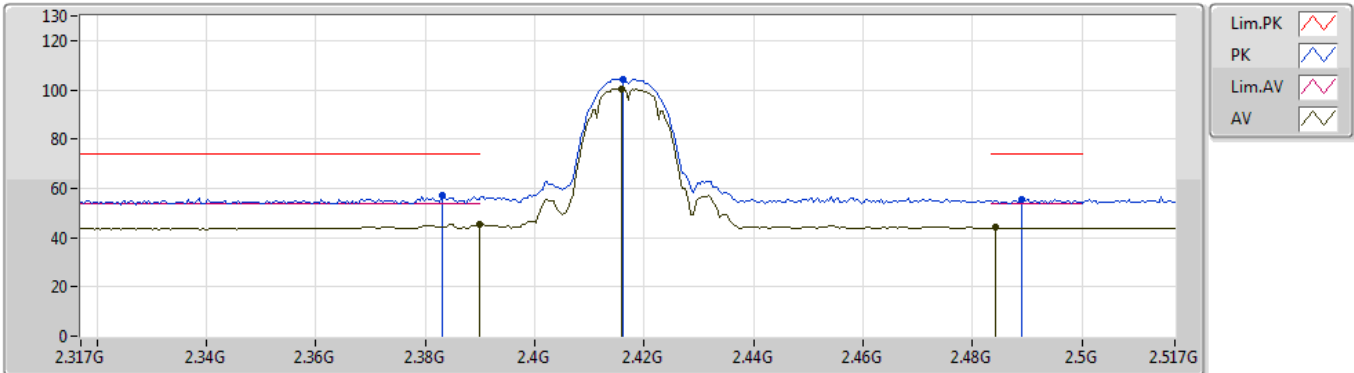
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.82402G	54.53	74.00	-19.47	7.17	3	Horizontal	36	1.92	-				
AV	4.82398G	51.94	54.00	-2.06	7.17	3	Horizontal	36	1.92	-				



## 802.11b\_Nss1,(1Mbps)\_2TX

06/06/2019

## 2417MHz\_TX



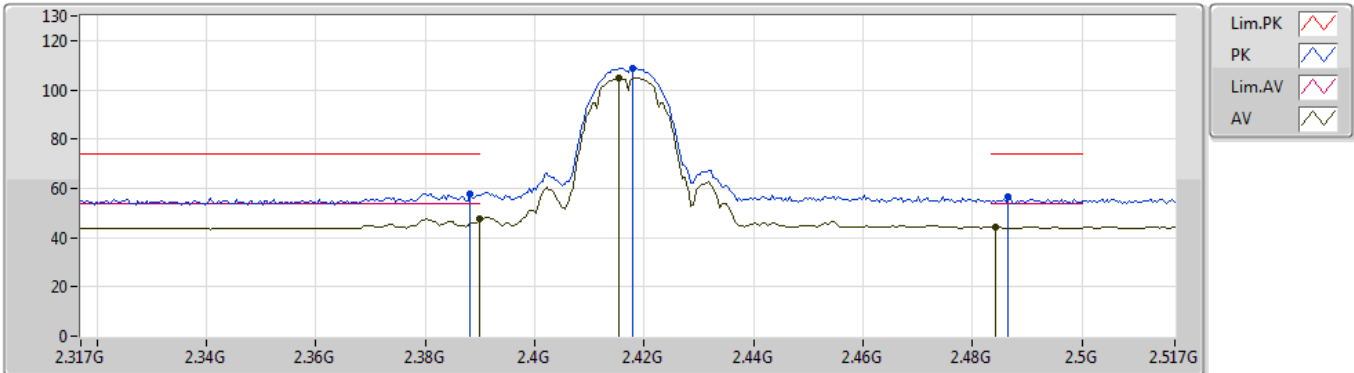
EUT\_Z\_2TX  
Setting 18  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.383G	57.11	74.00	-16.89	31.19	3	Vertical	119	2.68	-				
AV	2.3898G	45.41	54.00	-8.59	31.20	3	Vertical	119	2.68	-				
PK	2.4162G	104.48	Inf	-Inf	31.27	3	Vertical	119	2.68	-				
AV	2.4158G	100.49	Inf	-Inf	31.27	3	Vertical	119	2.68	-				
PK	2.489G	55.45	74.00	-18.55	31.41	3	Vertical	119	2.68	-				
AV	2.4842G	44.02	54.00	-9.98	31.39	3	Vertical	119	2.68	-				

## 802.11b\_Nss1,(1Mbps)\_2TX

06/06/2019

## 2417MHz\_TX



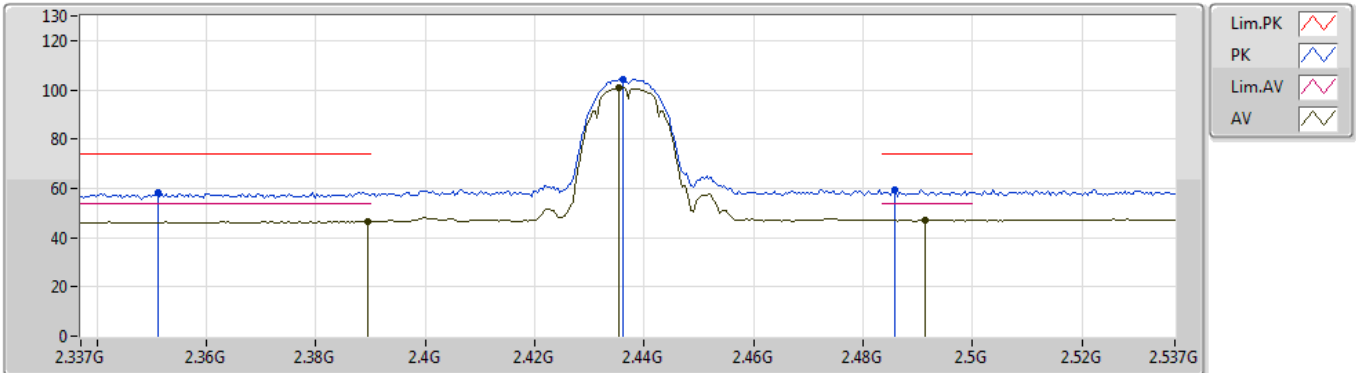
EUT\_Z\_2TX  
Setting 18  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment			
PK	2.3882G	57.85	74.00	-16.15	31.20	3	Horizontal	36	1.77	-			
AV	2.3898G	47.66	54.00	-6.34	31.20	3	Horizontal	36	1.77	-			
PK	2.4178G	108.88	Inf	-Inf	31.27	3	Horizontal	36	1.77	-			
AV	2.4154G	104.87	Inf	-Inf	31.26	3	Horizontal	36	1.77	-			
PK	2.4866G	56.78	74.00	-17.22	31.40	3	Horizontal	36	1.77	-			
AV	2.4842G	44.46	54.00	-9.54	31.39	3	Horizontal	36	1.77	-			

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2437MHz\_TX



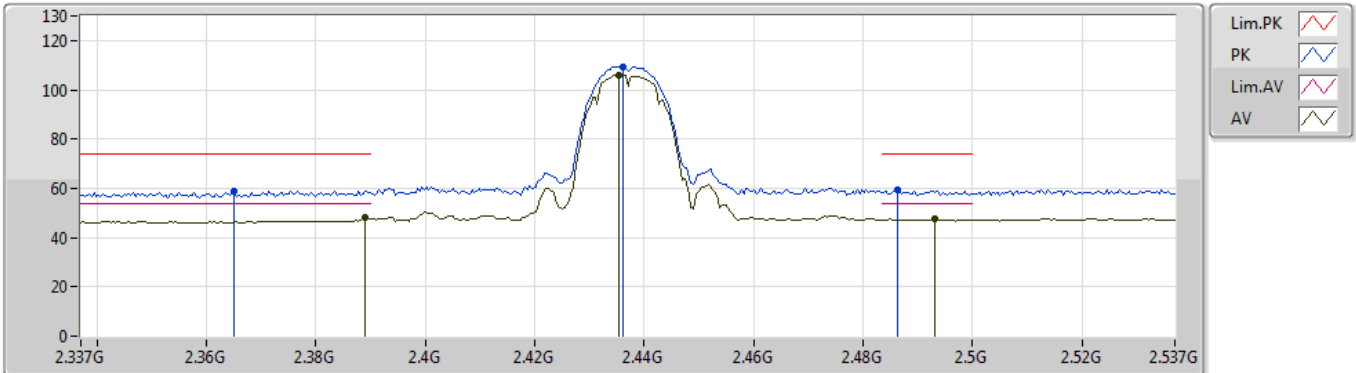
EUT Z\_2TX  
Setting 18  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.351G	58.43	74.00	-15.57	31.11	3	Vertical	0	2.37	-				
AV	2.3894G	46.63	54.00	-7.37	31.20	3	Vertical	0	2.37	-				
PK	2.4362G	104.27	Inf	-Inf	31.30	3	Vertical	0	2.37	-				
AV	2.4354G	100.78	Inf	-Inf	31.30	3	Vertical	0	2.37	-				
PK	2.4858G	59.53	74.00	-14.47	31.40	3	Vertical	0	2.37	-				
AV	2.4914G	47.26	54.00	-6.74	31.42	3	Vertical	0	2.37	-				

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2437MHz\_TX



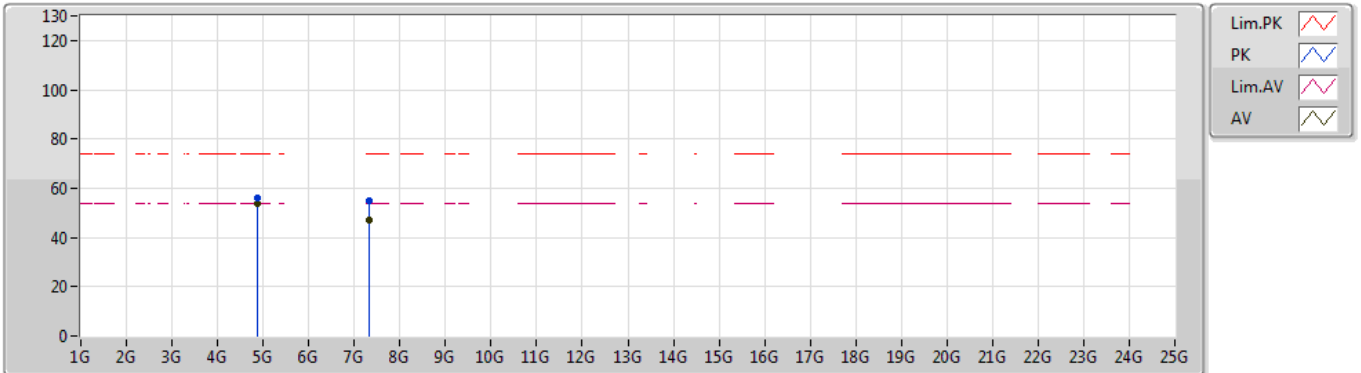
EUT\_Z\_2TX  
Setting 18  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.365G	58.99	74.00	-15.01	31.15	3	Horizontal	33	1.01	-
AV	2.389G	48.00	54.00	-6.00	31.20	3	Horizontal	33	1.01	-
PK	2.4362G	109.48	Inf	-Inf	31.30	3	Horizontal	33	1.01	-
AV	2.4354G	105.97	Inf	-Inf	31.30	3	Horizontal	33	1.01	-
PK	2.4862G	59.37	74.00	-14.63	31.40	3	Horizontal	33	1.01	-
AV	2.493G	47.56	54.00	-6.44	31.42	3	Horizontal	33	1.01	-

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2437MHz\_TX



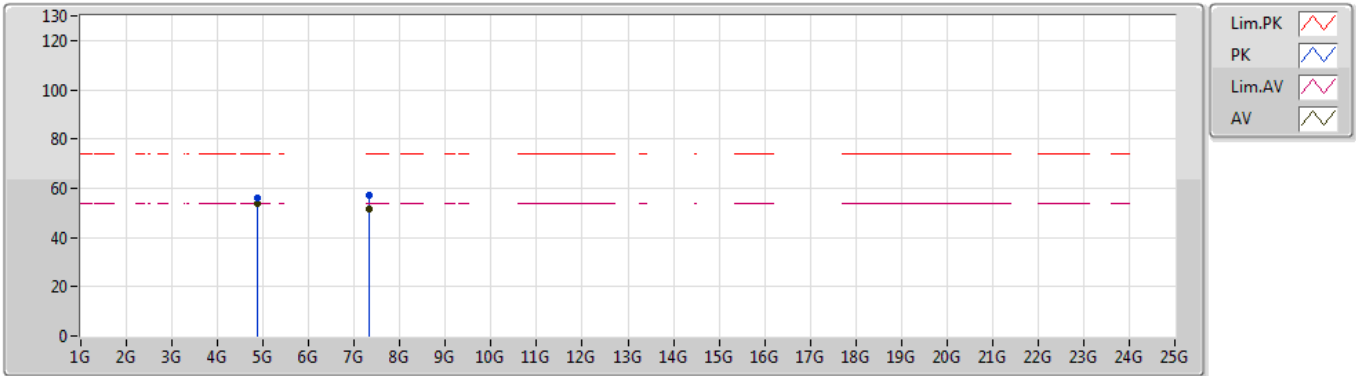
EUT Y\_2TX  
Setting 18  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87394G	56.23	74.00	-17.77	7.28	3	Vertical	53	1.89	-				
AV	4.87398G	53.91	54.00	-0.09	7.28	3	Vertical	53	1.89	-				
PK	7.31196G	54.99	74.00	-19.01	10.55	3	Vertical	318	2.13	-				
AV	7.31176G	47.29	54.00	-6.71	10.55	3	Vertical	318	2.13	-				

### 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

### 2437MHz\_TX



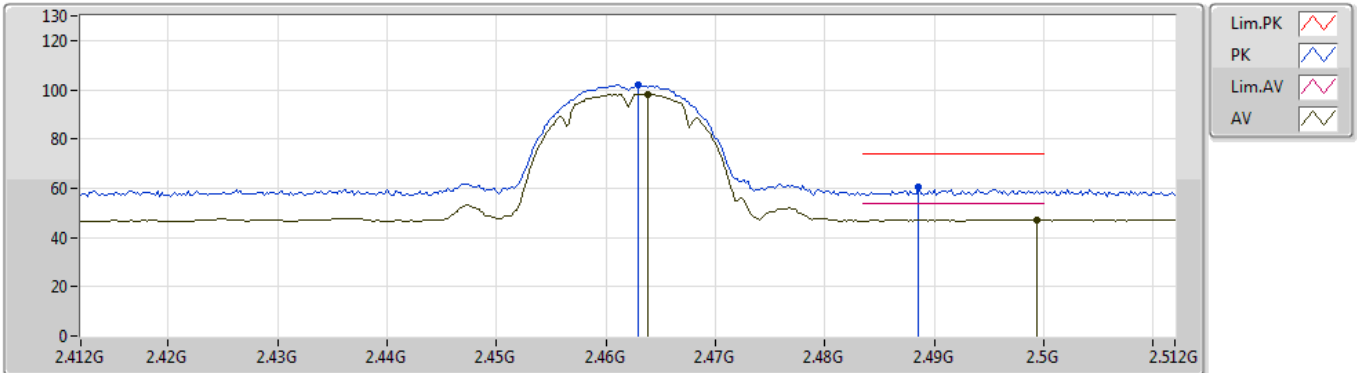
EUT Y\_2TX  
Setting 18  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87402G	56.13	74.00	-17.87	7.28	3	Horizontal	92	1.88	-				
AV	4.874G	53.67	54.00	-0.33	7.28	3	Horizontal	92	1.88	-				
PK	7.31192G	57.37	74.00	-16.63	10.55	3	Horizontal	343	1.98	-				
AV	7.31174G	51.63	54.00	-2.37	10.55	3	Horizontal	343	1.98	-				

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2462MHz\_TX



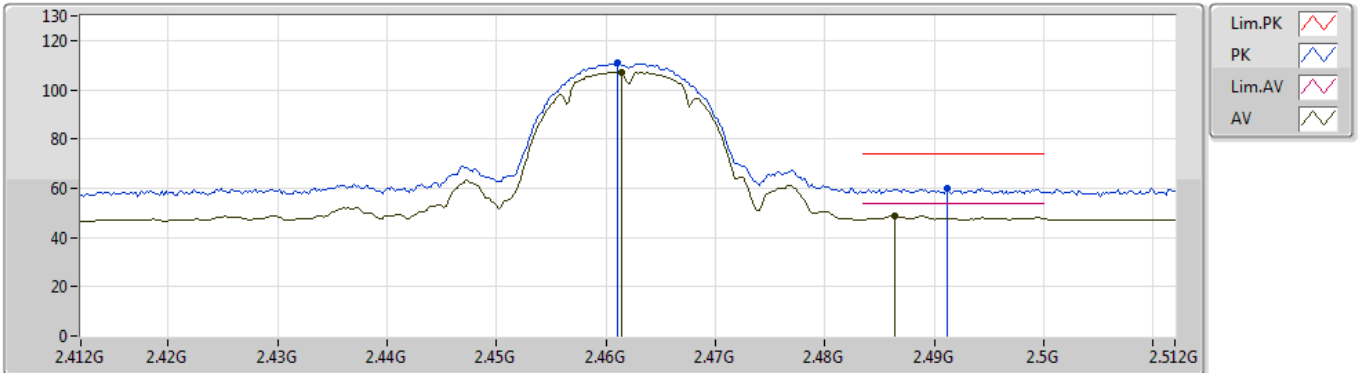
EUT\_Z\_2TX  
Setting 18  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.463G	101.97	Inf	-Inf	31.36	3	Vertical	75	1.44	-				
AV	2.4638G	98.33	Inf	-Inf	31.36	3	Vertical	75	1.44	-				
PK	2.4886G	60.58	74.00	-13.42	31.41	3	Vertical	75	1.44	-				
AV	2.4994G	47.17	54.00	-6.83	31.43	3	Vertical	75	1.44	-				

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2462MHz\_TX



EUT\_Z\_2TX  
Setting 18  
02-L-2  
FSU(100015)

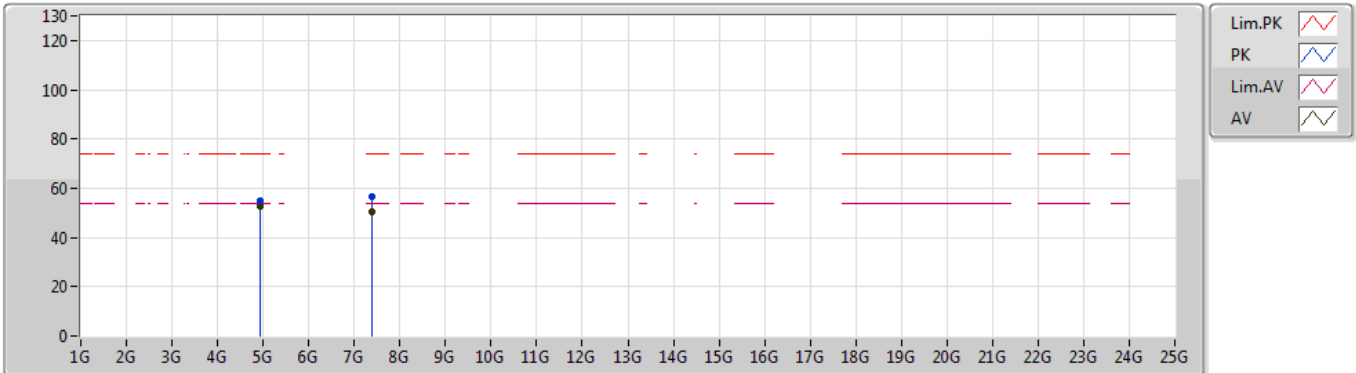
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.461G	110.67	Inf	-Inf	31.35	3	Horizontal	332	2.98	-				
AV	2.4614G	107.12	Inf	-Inf	31.35	3	Horizontal	332	2.98	-				
PK	2.4912G	59.97	74.00	-14.03	31.42	3	Horizontal	332	2.98	-				
AV	2.4864G	48.70	54.00	-5.30	31.40	3	Horizontal	332	2.98	-				



## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2462MHz\_TX



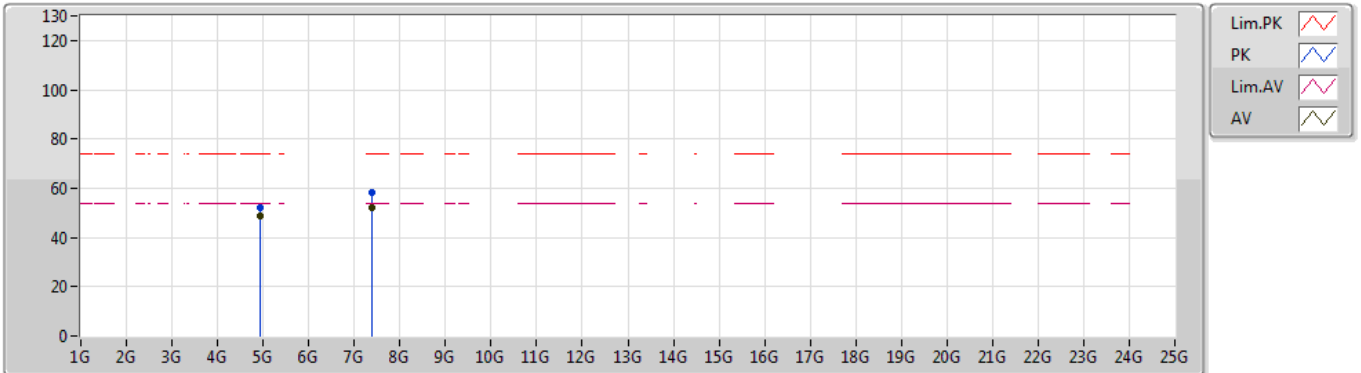
EUT Y\_2TX  
Setting 18  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.92404G	55.13	74.00	-18.87	7.40	3	Vertical	248	2.23	-				
AV	4.92402G	52.61	54.00	-1.39	7.40	3	Vertical	248	2.23	-				
PK	7.3851G	56.46	74.00	-17.54	10.76	3	Vertical	223	2.05	-				
AV	7.38526G	50.18	54.00	-3.82	10.76	3	Vertical	223	2.05	-				

## 802.11b\_Nss1,(1Mbps)\_2TX

05/06/2019

## 2462MHz\_TX



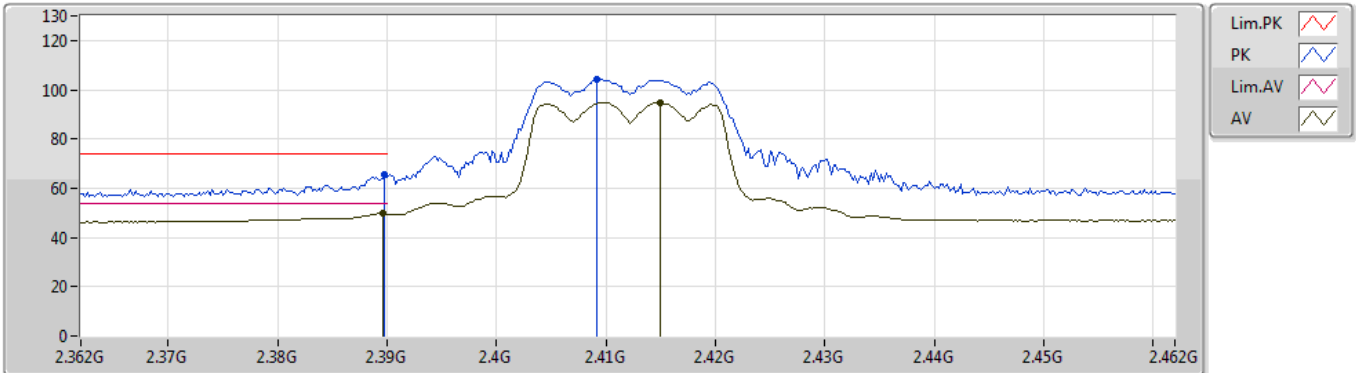
EUT Y\_2TX  
Setting 18  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.92404G	52.06	74.00	-21.94	7.40	3	Horizontal	54	1.95	-				
AV	4.92398G	48.75	54.00	-5.25	7.40	3	Horizontal	54	1.95	-				
PK	7.38504G	58.36	74.00	-15.64	10.76	3	Horizontal	296	1.94	-				
AV	7.38526G	52.12	54.00	-1.88	10.76	3	Horizontal	296	1.94	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

05/06/2019

## 2412MHz\_TX



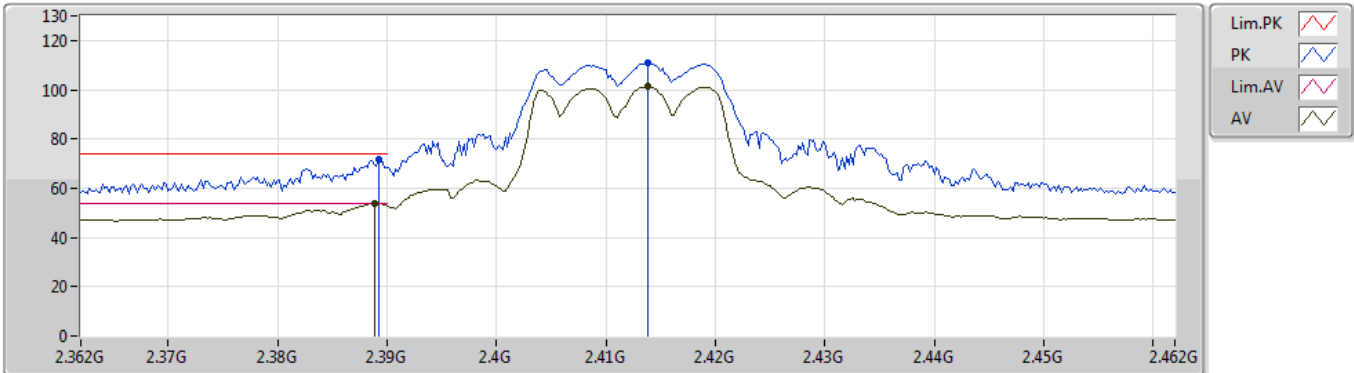
EUT\_Z\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3898G	65.61	74.00	-8.39	31.20	3	Vertical	299	2.86	-				
AV	2.3896G	49.84	54.00	-4.16	31.20	3	Vertical	299	2.86	-				
PK	2.4092G	104.45	Inf	-Inf	31.24	3	Vertical	299	2.86	-				
AV	2.415G	94.86	Inf	-Inf	31.26	3	Vertical	299	2.86	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

05/06/2019

## 2412MHz\_TX



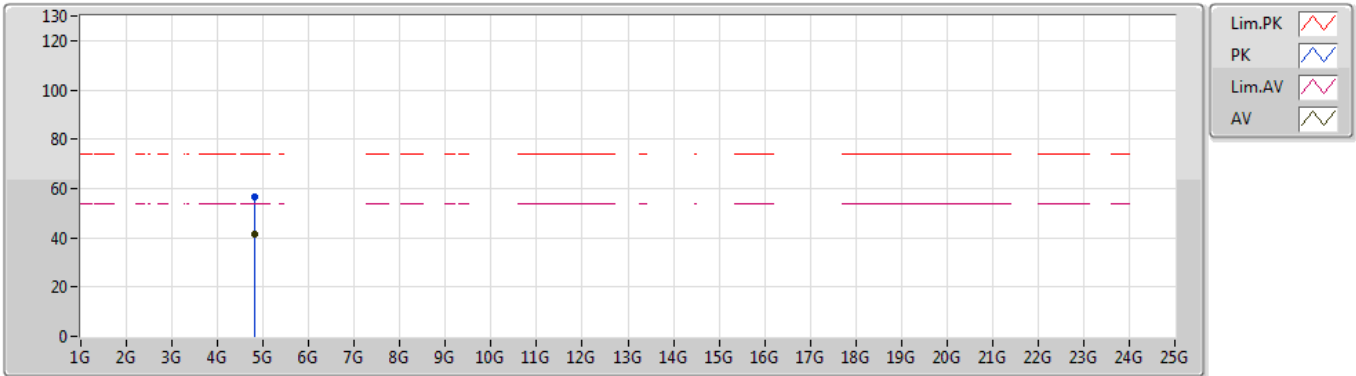
EUT\_Z\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3892G	71.86	74.00	-2.14	31.20	3	Horizontal	134	1.40	-				
AV	2.3888G	53.98	54.00	-0.02	31.20	3	Horizontal	134	1.40	-				
PK	2.4138G	110.80	Inf	-Inf	31.26	3	Horizontal	134	1.40	-				
AV	2.4138G	101.27	Inf	-Inf	31.26	3	Horizontal	134	1.40	-				

### 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

### 2412MHz\_TX



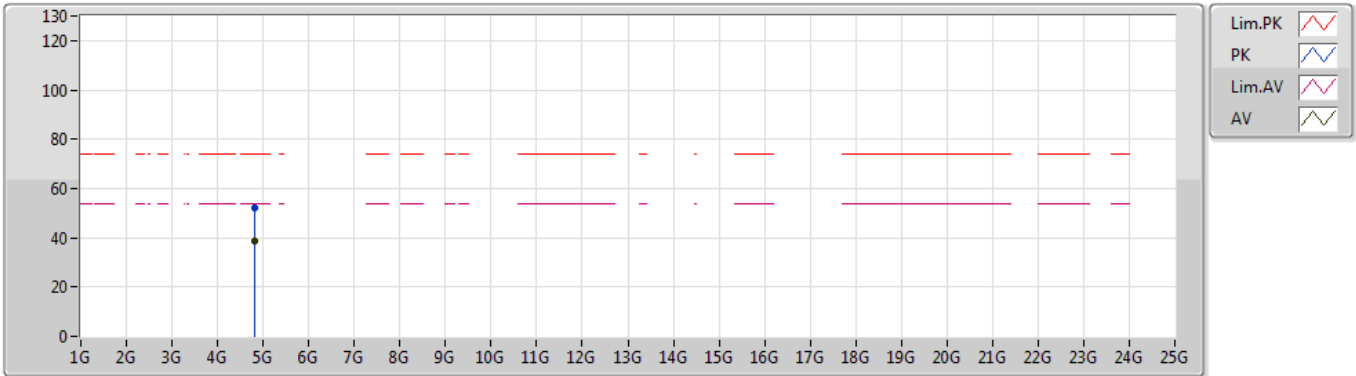
EUT Y\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.82316G	56.75	74.00	-17.25	7.16	3	Vertical	217	3.00	-				
AV	4.82364G	41.67	54.00	-12.33	7.16	3	Vertical	217	3.00	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2412MHz\_TX



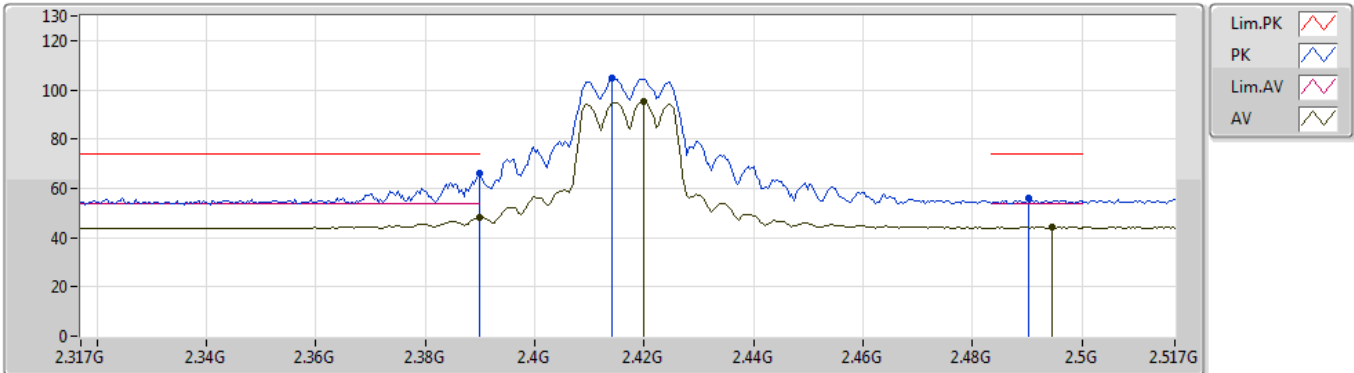
EUT Y\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.8238G	52.02	74.00	-21.98	7.17	3	Horizontal	305	2.14	-				
AV	4.8244G	38.59	54.00	-15.41	7.17	3	Horizontal	305	2.14	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2417MHz\_TX



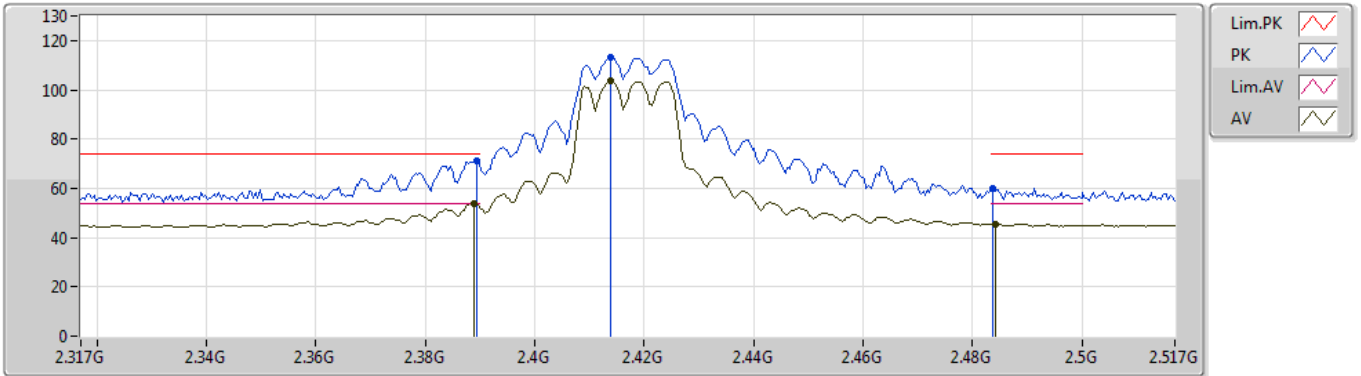
EUT Z\_2TX  
Setting 18  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3898G	66.24	74.00	-7.76	31.20	3	Vertical	66	1.30	-				
AV	2.3898G	48.07	54.00	-5.93	31.20	3	Vertical	66	1.30	-				
PK	2.4142G	104.68	Inf	-Inf	31.26	3	Vertical	66	1.30	-				
AV	2.4198G	95.10	Inf	-Inf	31.27	3	Vertical	66	1.30	-				
PK	2.4902G	55.80	74.00	-18.20	31.41	3	Vertical	66	1.30	-				
AV	2.4946G	44.10	54.00	-9.90	31.42	3	Vertical	66	1.30	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2417MHz\_TX



EUT\_Z\_2TX  
Setting 18  
02-J-5  
FSP(100080)

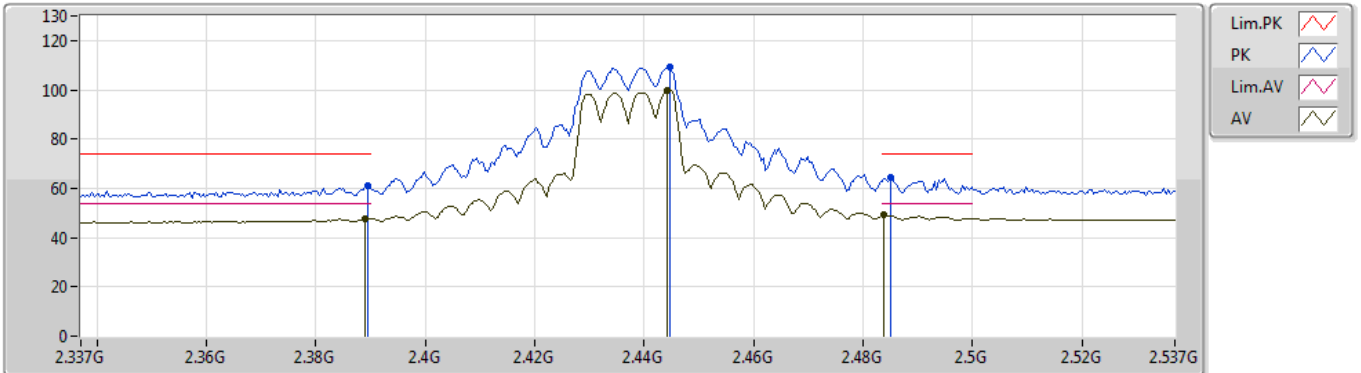
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment			
PK	2.3894G	71.26	74.00	-2.74	31.20	3	Horizontal	164	1.39	-			
AV	2.389G	53.87	54.00	-0.13	31.20	3	Horizontal	164	1.39	-			
PK	2.4138G	113.00	Inf	-Inf	31.26	3	Horizontal	164	1.39	-			
AV	2.4138G	103.41	Inf	-Inf	31.26	3	Horizontal	164	1.39	-			
PK	2.4838G	60.04	74.00	-13.96	31.39	3	Horizontal	164	1.39	-			
AV	2.4842G	45.49	54.00	-8.51	31.39	3	Horizontal	164	1.39	-			



## 802.11g\_Nss1,(6Mbps)\_2TX

05/06/2019

## 2437MHz\_TX



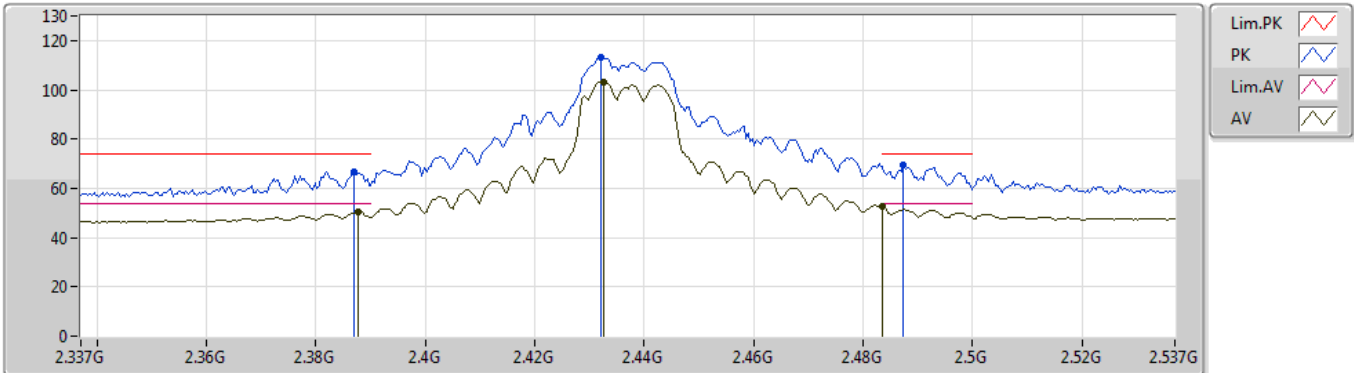
EUT\_Z\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3894G	60.99	74.00	-13.01	31.20	3	Vertical	73	2.40	-
AV	2.389G	47.58	54.00	-6.42	31.20	3	Vertical	73	2.40	-
PK	2.4446G	109.12	Inf	-Inf	31.32	3	Vertical	73	2.40	-
AV	2.4442G	99.83	Inf	-Inf	31.32	3	Vertical	73	2.40	-
PK	2.485G	64.66	74.00	-9.34	31.40	3	Vertical	73	2.40	-
AV	2.4838G	49.06	54.00	-4.94	31.39	3	Vertical	73	2.40	-

## 802.11g\_Nss1,(6Mbps)\_2TX

05/06/2019

## 2437MHz\_TX



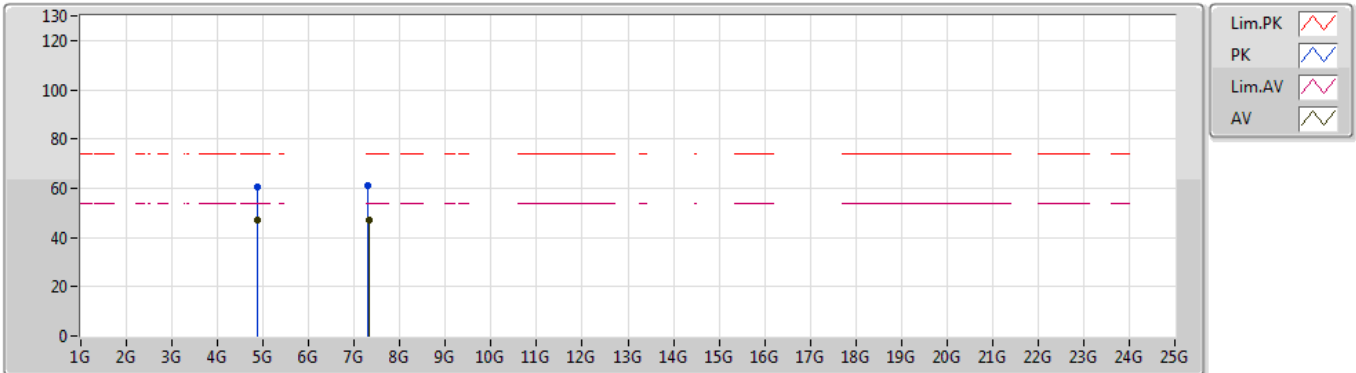
EUT Z\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.387G	66.86	74.00	-7.14	31.20	3	Horizontal	300	1.39	-
AV	2.3878G	50.38	54.00	-3.62	31.20	3	Horizontal	300	1.39	-
PK	2.4322G	113.00	Inf	-Inf	31.29	3	Horizontal	300	1.39	-
AV	2.4326G	103.37	Inf	-Inf	31.29	3	Horizontal	300	1.39	-
PK	2.4874G	69.58	74.00	-4.42	31.40	3	Horizontal	300	1.39	-
AV	2.4835G	52.91	54.00	-1.09	31.39	3	Horizontal	300	1.39	-

## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2437MHz\_TX



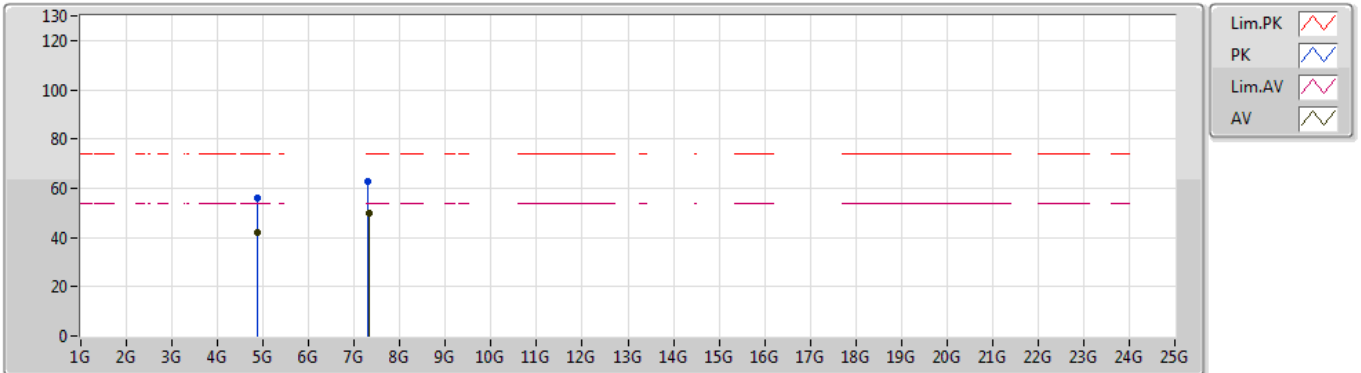
EUT Y\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87448G	60.51	74.00	-13.49	7.28	3	Vertical	207	2.94	-				
AV	4.87304G	46.79	54.00	-7.21	7.28	3	Vertical	207	2.94	-				
PK	7.30736G	60.83	74.00	-13.17	10.55	3	Vertical	251	2.28	-				
AV	7.31256G	46.92	54.00	-7.08	10.56	3	Vertical	251	2.28	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2437MHz\_TX



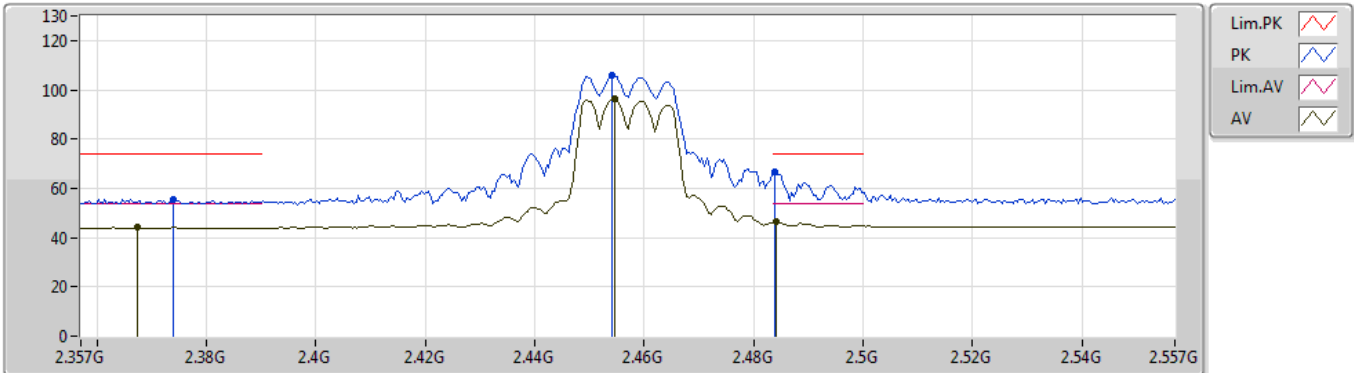
EUT Y\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87444G	56.03	74.00	-17.97	7.28	3	Horizontal	352	2.08	-				
AV	4.87344G	42.12	54.00	-11.88	7.28	3	Horizontal	352	2.08	-				
PK	7.30816G	62.50	74.00	-11.50	10.55	3	Horizontal	265	2.01	-				
AV	7.31372G	49.93	54.00	-4.07	10.56	3	Horizontal	265	2.01	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2457MHz\_TX



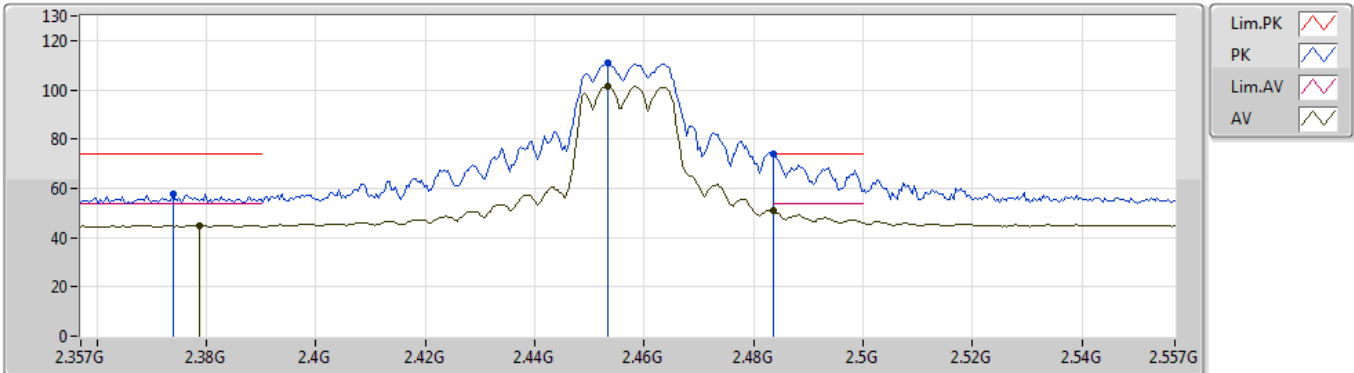
EUT\_Z\_2TX  
Setting 17  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3738G	55.68	74.00	-18.32	31.16	3	Vertical	126	1.55	-				
AV	2.3674G	44.02	54.00	-9.98	31.15	3	Vertical	126	1.55	-				
PK	2.4542G	105.70	Inf	-Inf	31.34	3	Vertical	126	1.55	-				
AV	2.4546G	96.14	Inf	-Inf	31.34	3	Vertical	126	1.55	-				
PK	2.4838G	66.56	74.00	-7.44	31.39	3	Vertical	126	1.55	-				
AV	2.4842G	46.34	54.00	-7.66	31.39	3	Vertical	126	1.55	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2457MHz\_TX



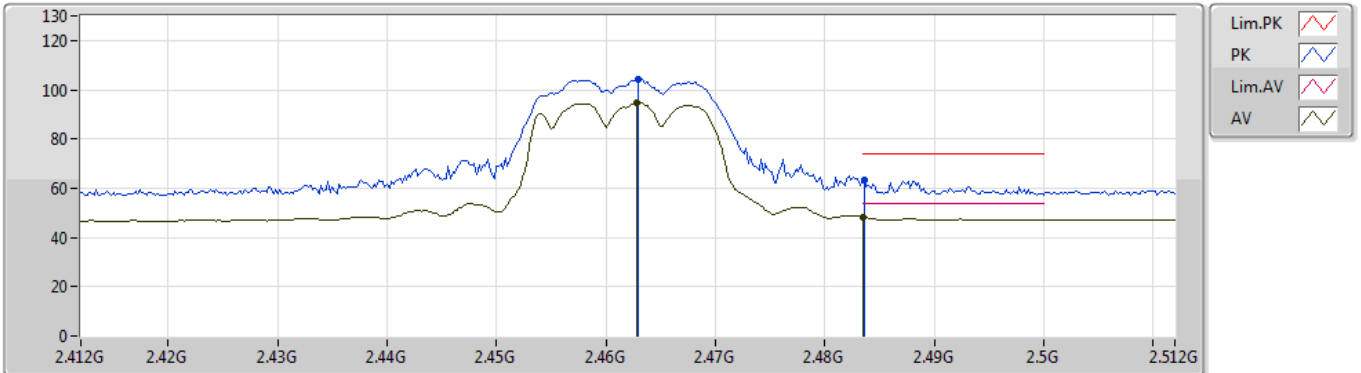
EUT\_Z\_2TX  
Setting 17  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3738G	57.70	74.00	-16.30	31.16	3	Horizontal	167	1.17	-
AV	2.3786G	45.08	54.00	-8.92	31.18	3	Horizontal	167	1.17	-
PK	2.4534G	110.82	Inf	-Inf	31.34	3	Horizontal	167	1.17	-
AV	2.4534G	101.39	Inf	-Inf	31.34	3	Horizontal	167	1.17	-
PK	2.4835G	73.98	74.00	-0.02	31.39	3	Horizontal	167	1.17	-
AV	2.4835G	50.92	54.00	-3.08	31.39	3	Horizontal	167	1.17	-

## 802.11g\_Nss1,(6Mbps)\_2TX

05/06/2019

## 2462MHz\_TX



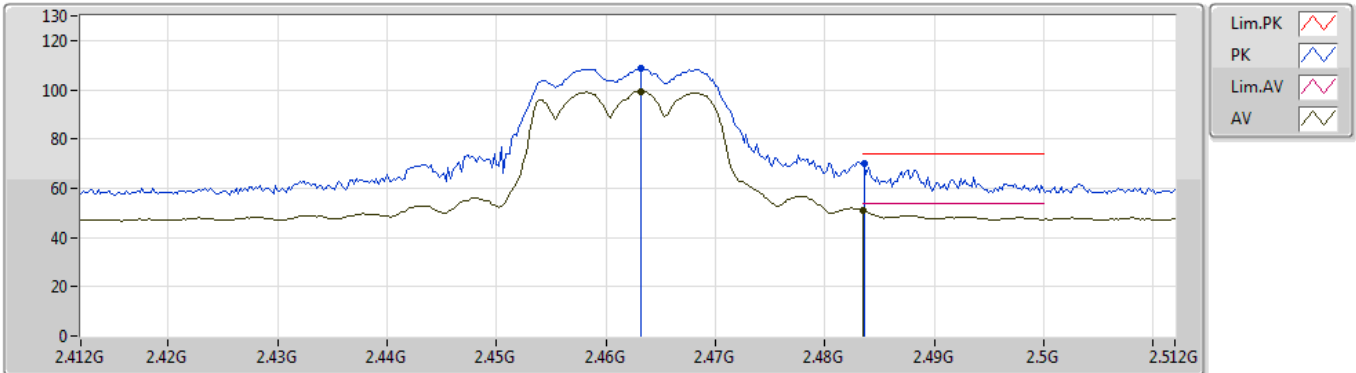
EUT\_Z\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.463G	104.07	Inf	-Inf	31.36	3	Vertical	74	3.00	-				
AV	2.4628G	94.85	Inf	-Inf	31.36	3	Vertical	74	3.00	-				
PK	2.4836G	63.12	74.00	-10.88	31.39	3	Vertical	74	3.00	-				
AV	2.4835G	48.44	54.00	-5.56	31.39	3	Vertical	74	3.00	-				

## 802.11g\_Nss1,(6Mbps)\_2TX

05/06/2019

## 2462MHz\_TX



EUT\_Z\_2TX  
Setting 15  
02-L-2  
FSU(100015)

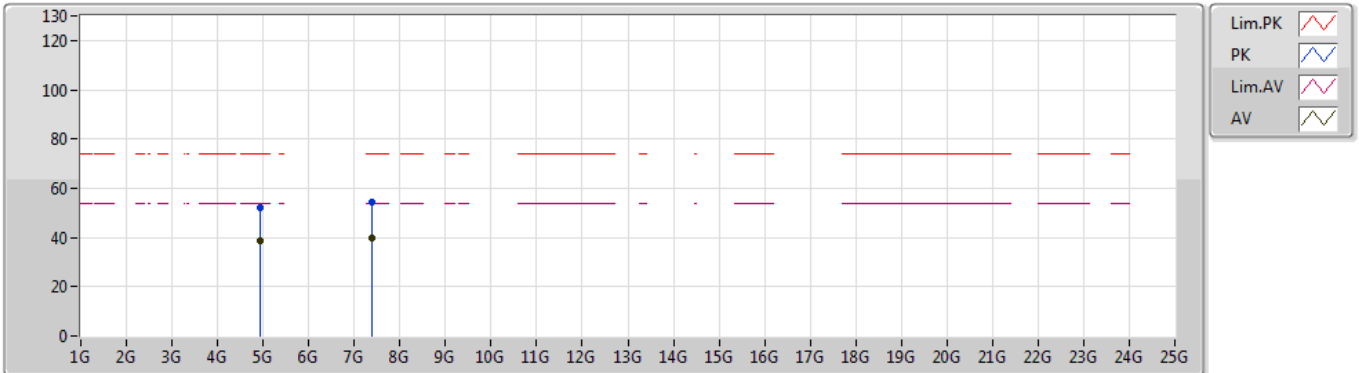
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.4632G	108.70	Inf	-Inf	31.36	3	Horizontal	74	1.00	-				
AV	2.4632G	99.40	Inf	-Inf	31.36	3	Horizontal	74	1.00	-				
PK	2.4836G	70.05	74.00	-3.95	31.39	3	Horizontal	74	1.00	-				
AV	2.4835G	51.21	54.00	-2.79	31.39	3	Horizontal	74	1.00	-				



## 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

## 2462MHz\_TX



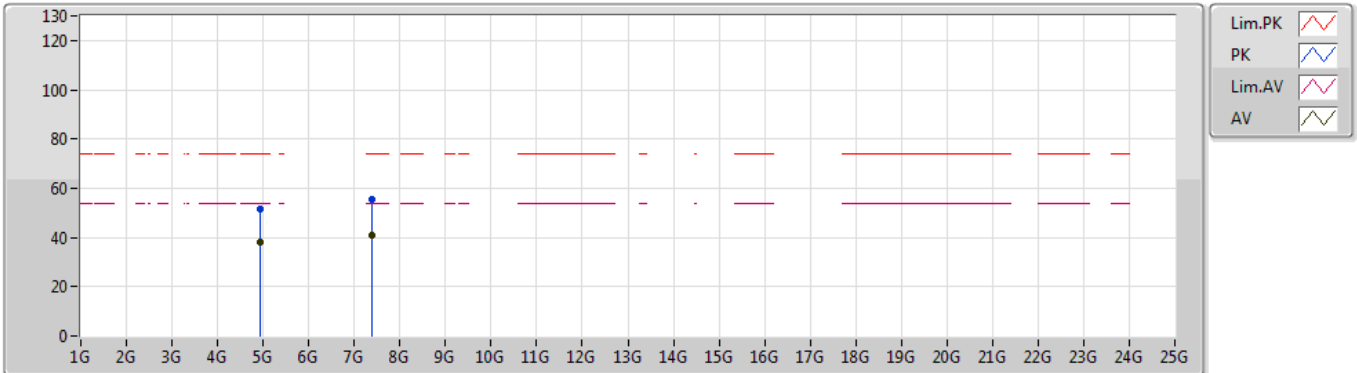
EUT Y\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.92152G	51.95	74.00	-22.05	7.39	3	Vertical	171	2.02	-				
AV	4.9222G	38.79	54.00	-15.21	7.39	3	Vertical	171	2.02	-				
PK	7.3898G	54.33	74.00	-19.67	10.78	3	Vertical	146	2.06	-				
AV	7.38492G	39.93	54.00	-14.07	10.76	3	Vertical	146	2.06	-				

### 802.11g\_Nss1,(6Mbps)\_2TX

06/06/2019

### 2462MHz\_TX



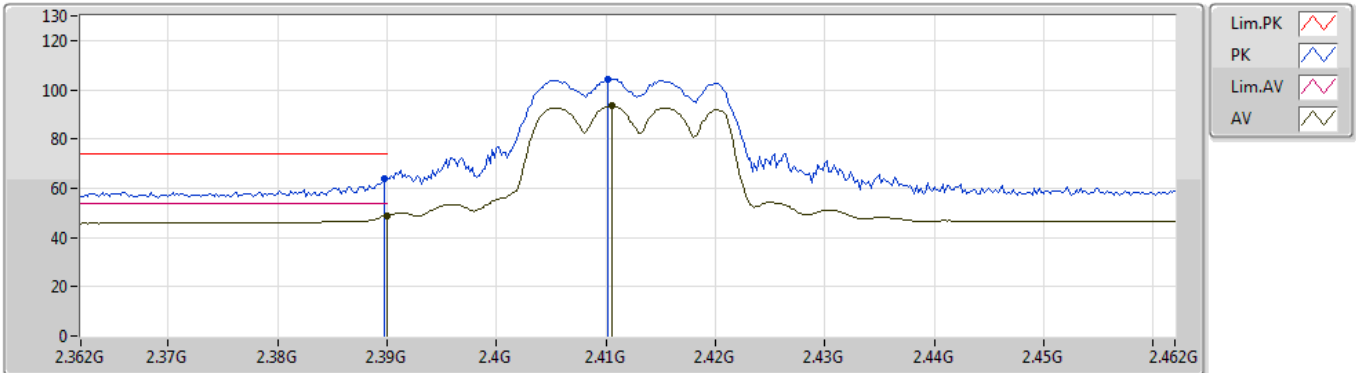
EUT Y\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment			
PK	4.9276G	51.41	74.00	-22.59	7.42	3	Horizontal	358	1.96	-			
AV	4.92304G	37.85	54.00	-16.15	7.39	3	Horizontal	358	1.96	-			
PK	7.39184G	55.50	74.00	-18.50	10.77	3	Horizontal	25	1.92	-			
AV	7.38692G	41.07	54.00	-12.93	10.76	3	Horizontal	25	1.92	-			

## 802.11n HT20\_Nss1,(MCS0)\_2TX

05/06/2019

## 2412MHz\_TX



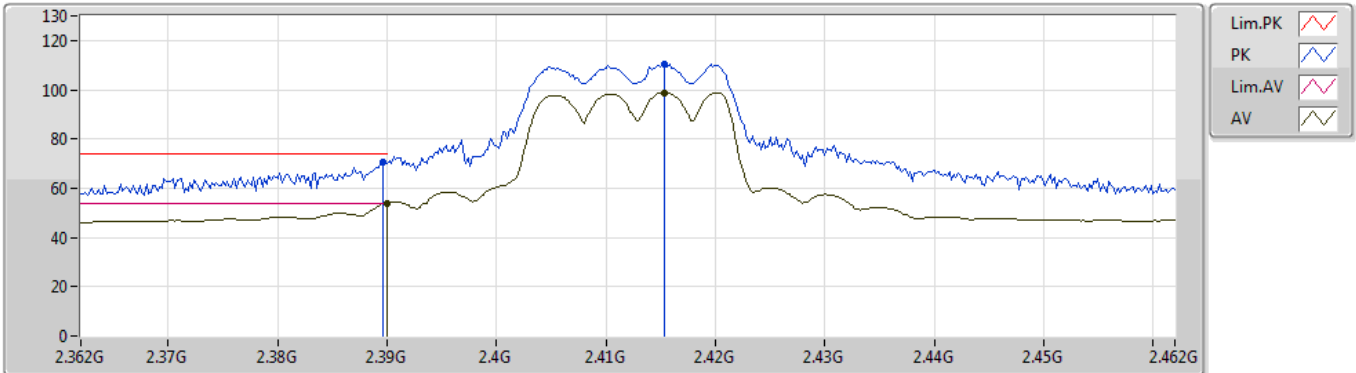
EUT\_Z\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3898G	63.91	74.00	-10.09	31.20	3	Vertical	261	2.65	-				
AV	2.39G	48.99	54.00	-5.01	31.20	3	Vertical	261	2.65	-				
PK	2.4102G	104.37	Inf	-Inf	31.25	3	Vertical	261	2.65	-				
AV	2.4106G	93.35	Inf	-Inf	31.25	3	Vertical	261	2.65	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

05/06/2019

## 2412MHz\_TX



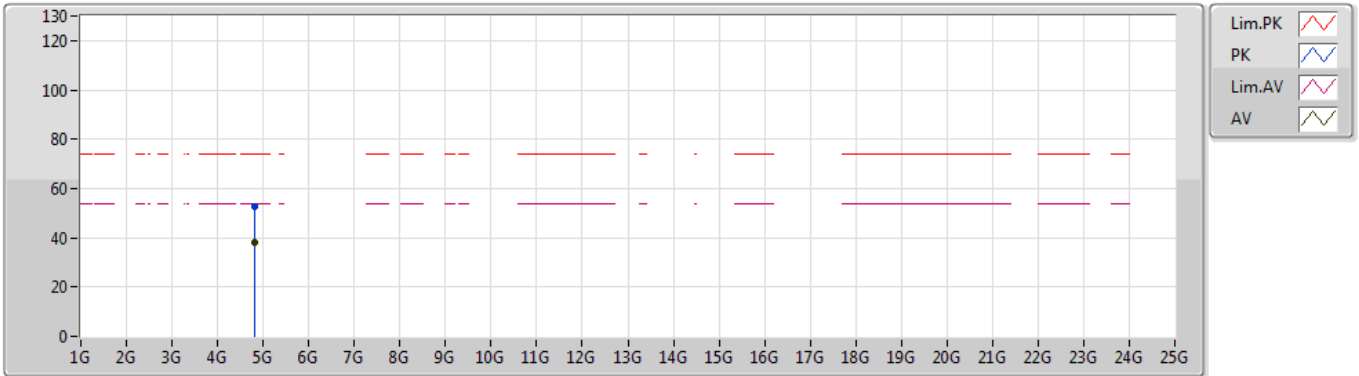
EUT\_Z\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3896G	70.52	74.00	-3.48	31.20	3	Horizontal	347	1.40	-				
AV	2.39G	53.95	54.00	-0.05	31.20	3	Horizontal	347	1.40	-				
PK	2.4154G	110.31	Inf	-Inf	31.26	3	Horizontal	347	1.40	-				
AV	2.4154G	98.75	Inf	-Inf	31.26	3	Horizontal	347	1.40	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2412MHz\_TX



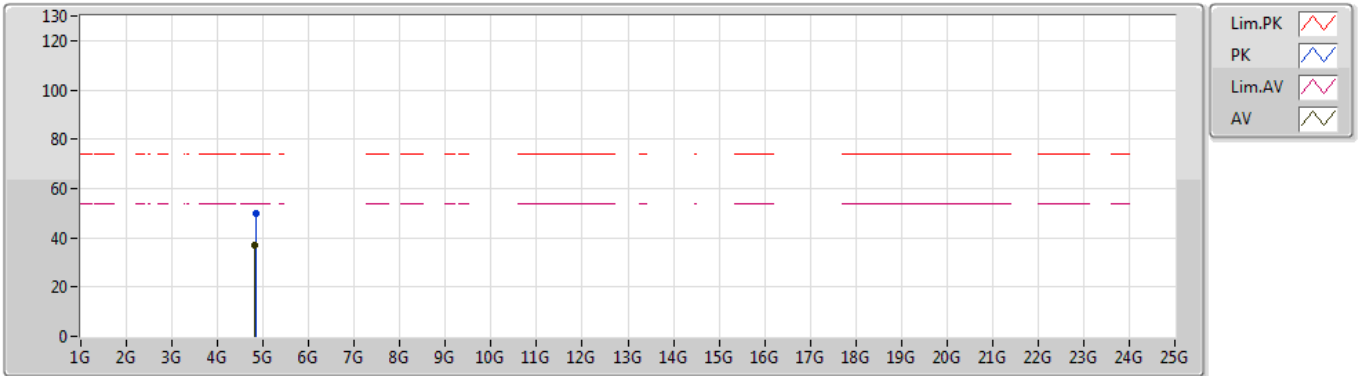
EUT Y\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.82308G	52.61	74.00	-21.39	7.16	3	Vertical	310	2.98	-				
AV	4.82324G	37.84	54.00	-16.16	7.16	3	Vertical	310	2.98	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2412MHz\_TX

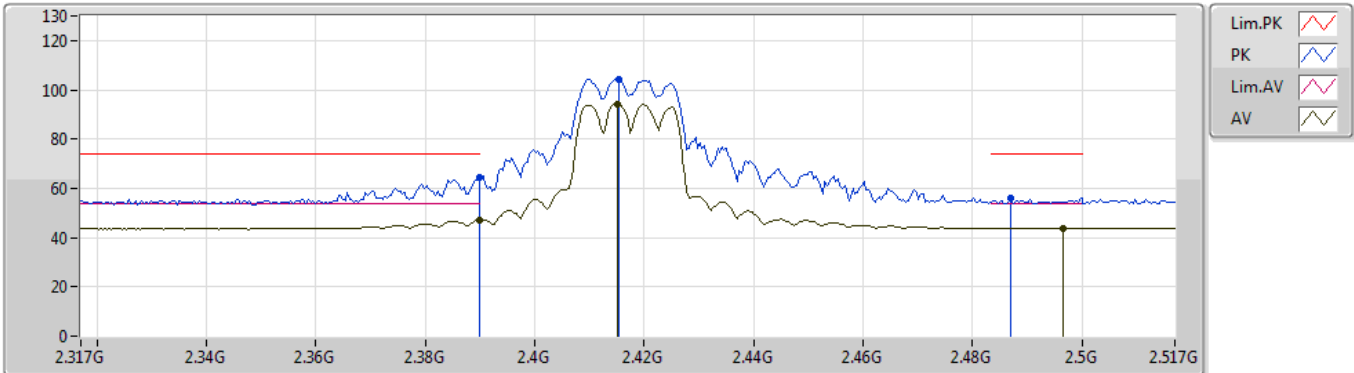


EUT Y\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.82876G	49.73	74.00	-24.27	7.18	3	Horizontal	96	2.11	-				
AV	4.8244G	36.71	54.00	-17.29	7.17	3	Horizontal	96	2.11	-				

**802.11n HT20\_Nss1,(MCS0)\_2TX**

06/06/2019

**2417MHz\_TX**


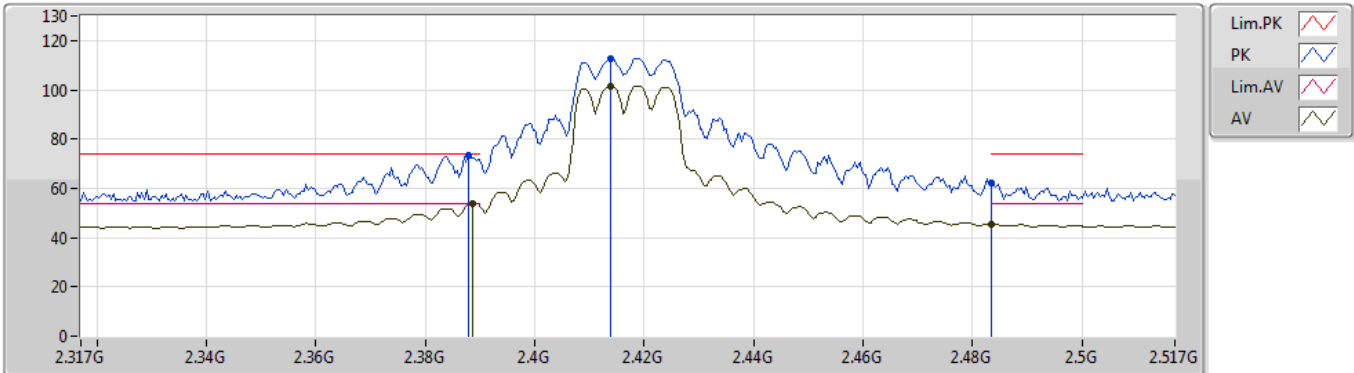
EUT\_Z\_2TX  
Setting 18  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3898G	64.16	74.00	-9.84	31.20	3	Vertical	69	1.44	-				
AV	2.3898G	47.21	54.00	-6.79	31.20	3	Vertical	69	1.44	-				
PK	2.4154G	104.06	Inf	-Inf	31.26	3	Vertical	69	1.44	-				
AV	2.415G	94.31	Inf	-Inf	31.26	3	Vertical	69	1.44	-				
PK	2.487G	56.03	74.00	-17.97	31.40	3	Vertical	69	1.44	-				
AV	2.4966G	43.89	54.00	-10.11	31.42	3	Vertical	69	1.44	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2417MHz\_TX



EUT\_Z\_2TX  
Setting 18  
02-J-5  
FSP(100080)

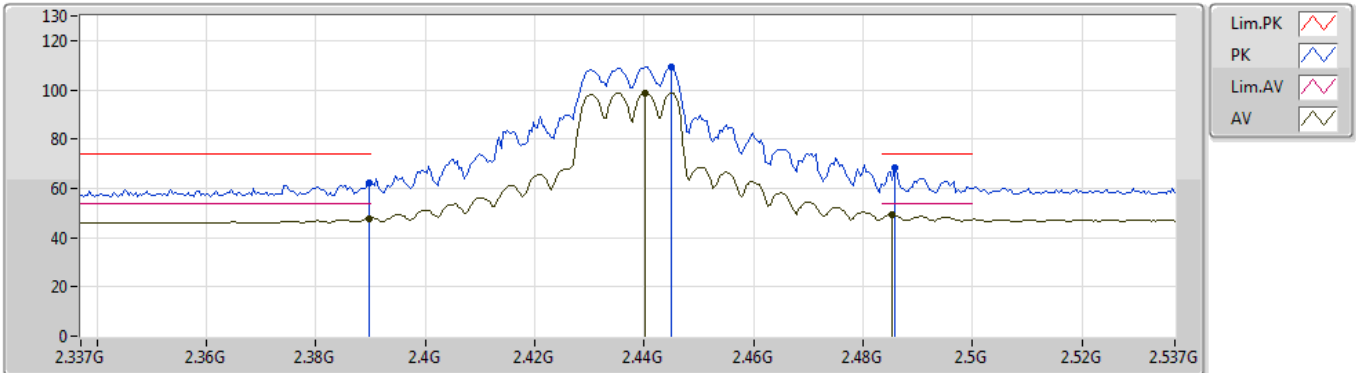
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3878G	73.35	74.00	-0.65	31.20	3	Horizontal	165	1.39	-				
AV	2.3886G	53.99	54.00	-0.01	31.20	3	Horizontal	165	1.39	-				
PK	2.4138G	112.70	Inf	-Inf	31.26	3	Horizontal	165	1.39	-				
AV	2.4138G	101.53	Inf	-Inf	31.26	3	Horizontal	165	1.39	-				
PK	2.4835G	62.17	74.00	-11.83	31.39	3	Horizontal	165	1.39	-				
AV	2.4835G	45.51	54.00	-8.49	31.39	3	Horizontal	165	1.39	-				



## 802.11n HT20\_Nss1,(MCS0)\_2TX

05/06/2019

## 2437MHz\_TX



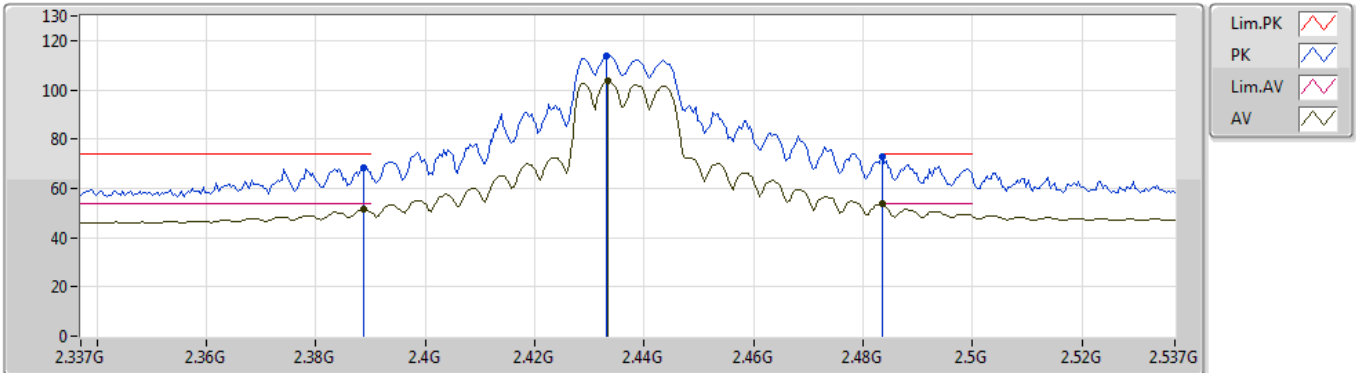
EUT Z\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3898G	62.34	74.00	-11.66	31.20	3	Vertical	120	3.00	-
AV	2.3898G	47.82	54.00	-6.18	31.20	3	Vertical	120	3.00	-
PK	2.445G	109.12	Inf	-Inf	31.32	3	Vertical	120	3.00	-
AV	2.4402G	98.86	Inf	-Inf	31.31	3	Vertical	120	3.00	-
PK	2.4858G	68.10	74.00	-5.90	31.40	3	Vertical	120	3.00	-
AV	2.4854G	49.17	54.00	-4.83	31.40	3	Vertical	120	3.00	-

## 802.11n HT20\_Nss1,(MCS0)\_2TX

05/06/2019

## 2437MHz\_TX



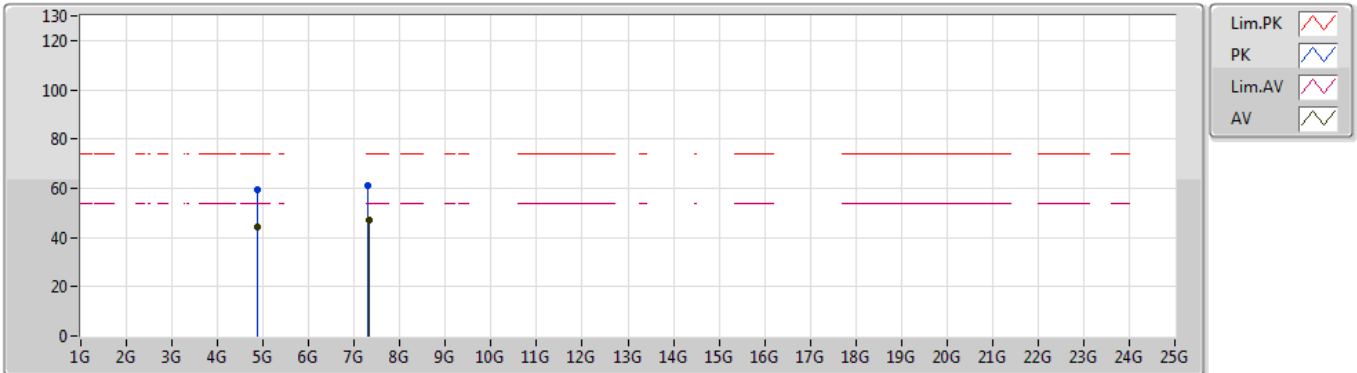
EUT\_Z\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3886G	68.36	74.00	-5.64	31.20	3	Horizontal	353	1.43	-
AV	2.3886G	51.36	54.00	-2.64	31.20	3	Horizontal	353	1.43	-
PK	2.433G	114.03	Inf	-Inf	31.29	3	Horizontal	353	1.43	-
AV	2.4334G	103.45	Inf	-Inf	31.29	3	Horizontal	353	1.43	-
PK	2.4835G	72.86	74.00	-1.14	31.39	3	Horizontal	353	1.43	-
AV	2.4835G	53.82	54.00	-0.18	31.39	3	Horizontal	353	1.43	-

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2437MHz\_TX



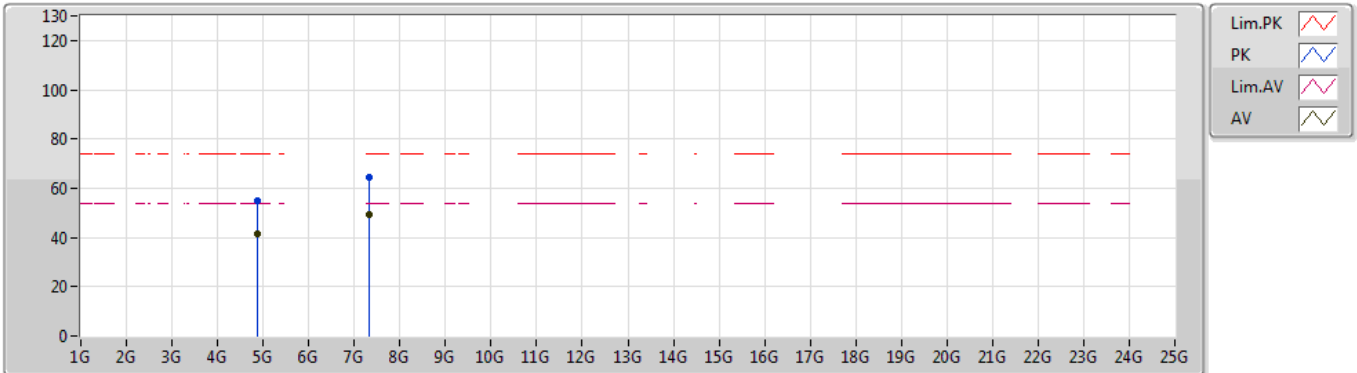
EUT Y\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87292G	59.49	74.00	-14.51	7.28	3	Vertical	277	2.96	-				
AV	4.8726G	44.53	54.00	-9.47	7.28	3	Vertical	277	2.96	-				
PK	7.30152G	60.89	74.00	-13.11	10.52	3	Vertical	262	1.99	-				
AV	7.312G	47.18	54.00	-6.82	10.55	3	Vertical	262	1.99	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2437MHz\_TX



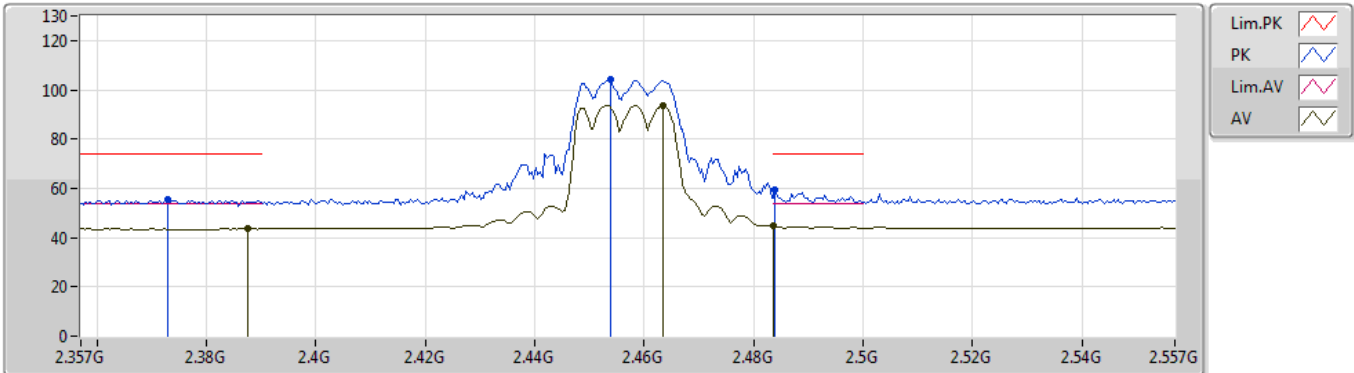
EUT Y\_2TX  
Setting 20  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87288G	54.79	74.00	-19.21	7.28	3	Horizontal	68	2.08	-				
AV	4.87312G	41.64	54.00	-12.36	7.28	3	Horizontal	68	2.08	-				
PK	7.31356G	64.23	74.00	-9.77	10.56	3	Horizontal	29	2.00	-				
AV	7.31356G	49.57	54.00	-4.43	10.56	3	Horizontal	29	2.00	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2457MHz\_TX



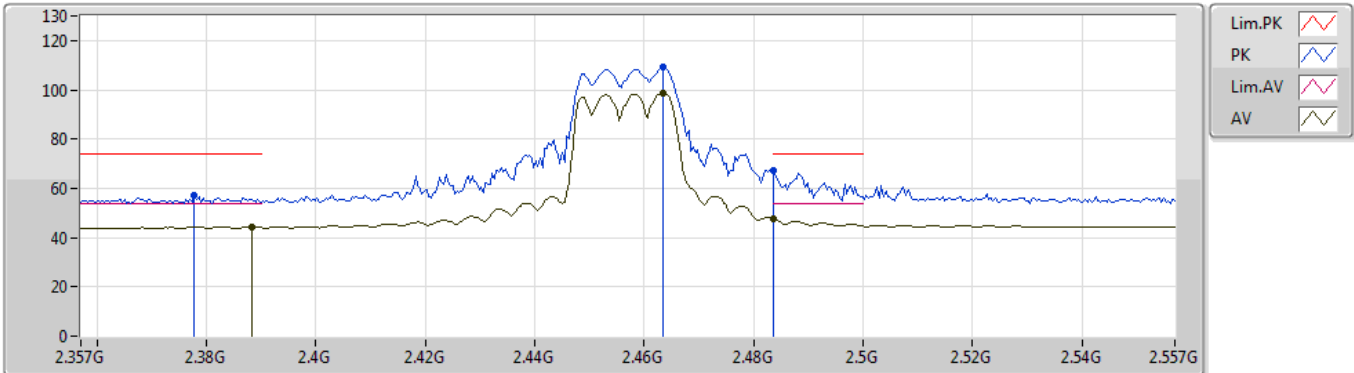
EUT\_Z\_2TX  
Setting 15  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.373G	55.44	74.00	-18.56	31.16	3	Vertical	305	2.93	-				
AV	2.3874G	43.57	54.00	-10.43	31.20	3	Vertical	305	2.93	-				
PK	2.4538G	103.98	Inf	-Inf	31.34	3	Vertical	305	2.93	-				
AV	2.4634G	93.53	Inf	-Inf	31.36	3	Vertical	305	2.93	-				
PK	2.4838G	59.22	74.00	-14.78	31.39	3	Vertical	305	2.93	-				
AV	2.4835G	44.83	54.00	-9.17	31.39	3	Vertical	305	2.93	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2457MHz\_TX



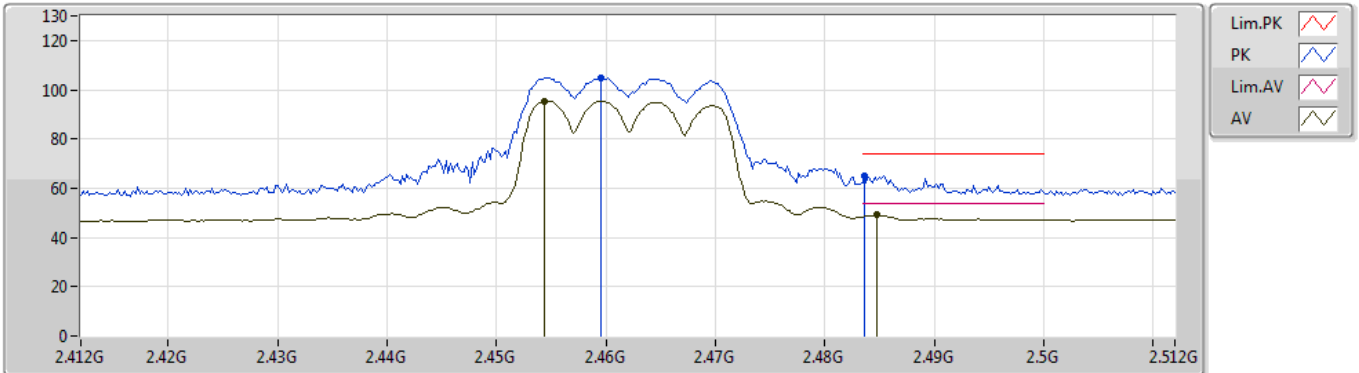
EUT Z\_2TX  
Setting 15  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3778G	57.30	74.00	-16.70	31.17	3	Horizontal	160	1.39	-
AV	2.3882G	44.32	54.00	-9.68	31.20	3	Horizontal	160	1.39	-
PK	2.4634G	109.10	Inf	-Inf	31.36	3	Horizontal	160	1.39	-
AV	2.4634G	98.82	Inf	-Inf	31.36	3	Horizontal	160	1.39	-
PK	2.4835G	67.49	74.00	-6.51	31.39	3	Horizontal	160	1.39	-
AV	2.4835G	47.62	54.00	-6.38	31.39	3	Horizontal	160	1.39	-

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2462MHz\_TX



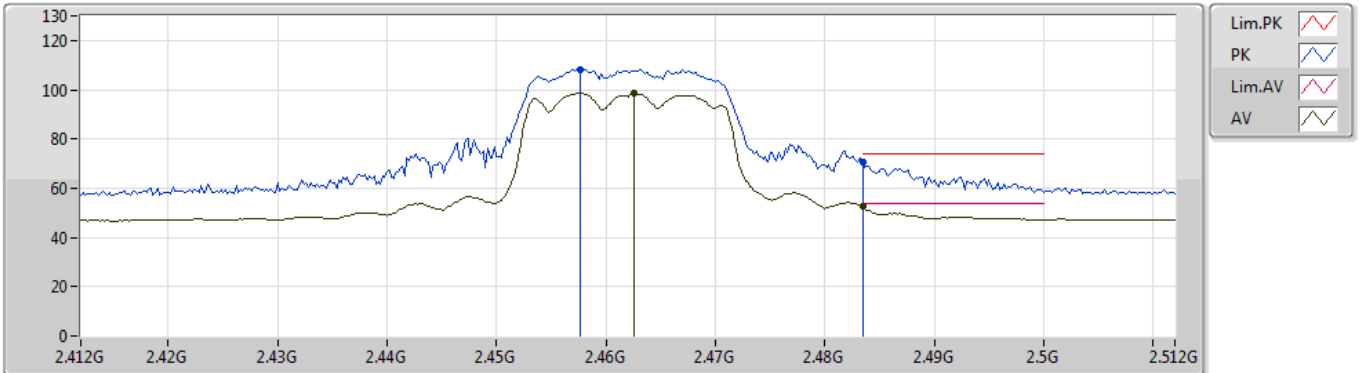
EUT\_Z\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.4596G	105.06	Inf	-Inf	31.35	3	Vertical	100	3.00	-
AV	2.4544G	95.48	Inf	-Inf	31.34	3	Vertical	100	3.00	-
PK	2.4836G	65.14	74.00	-8.86	31.39	3	Vertical	100	3.00	-
AV	2.4848G	49.04	54.00	-4.96	31.40	3	Vertical	100	3.00	-

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2462MHz\_TX



EUT\_Z\_2TX  
Setting 15  
02-L-2  
FSU(100015)

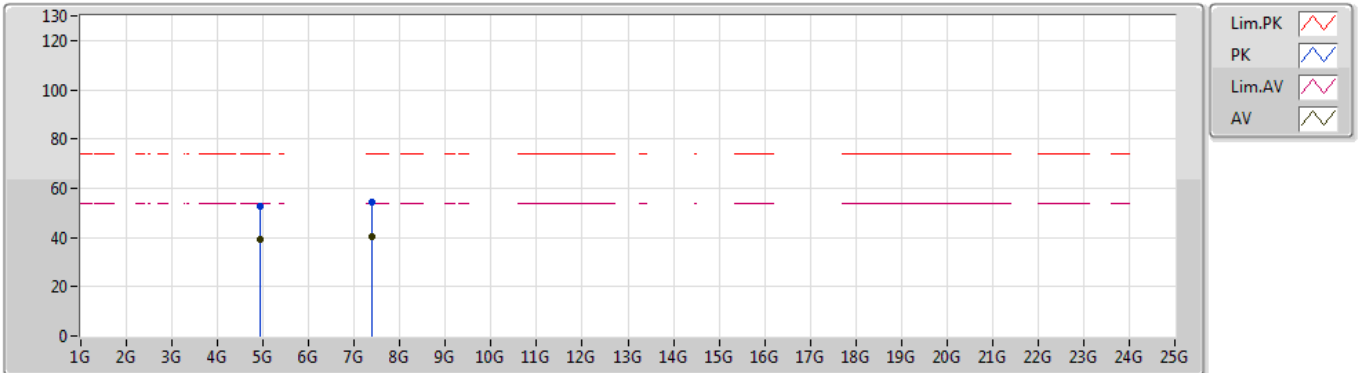
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.4576G	108.18	Inf	-Inf	31.34	3	Horizontal	326	2.98	-
AV	2.4626G	98.59	Inf	-Inf	31.36	3	Horizontal	326	2.98	-
PK	2.4835G	70.60	74.00	-3.40	31.39	3	Horizontal	326	2.98	-
AV	2.4835G	52.40	54.00	-1.60	31.39	3	Horizontal	326	2.98	-



## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2462MHz\_TX



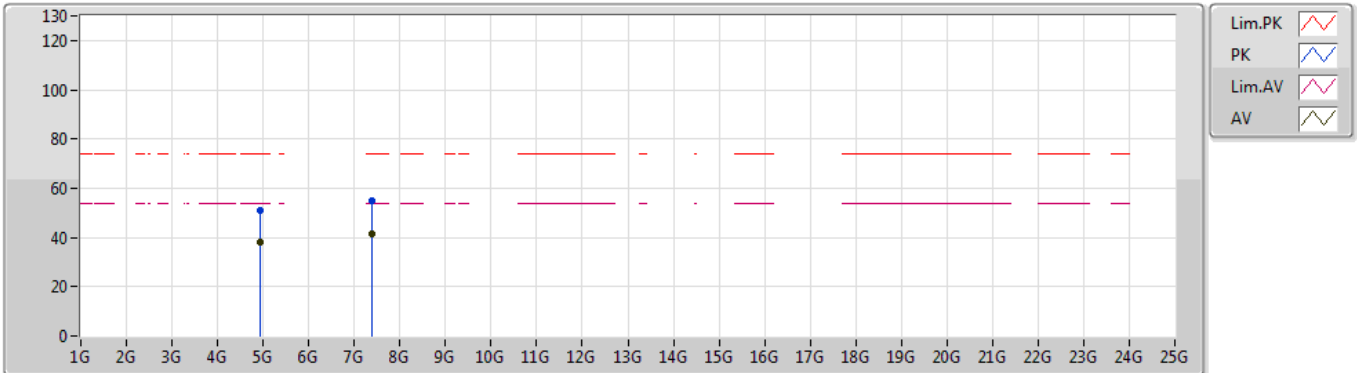
EUT Y\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.93344G	52.95	74.00	-21.05	7.43	3	Vertical	56	1.98	-				
AV	4.92992G	39.03	54.00	-14.97	7.43	3	Vertical	56	1.98	-				
PK	7.37724G	54.08	74.00	-19.92	10.73	3	Vertical	350	1.67	-				
AV	7.3954G	40.53	54.00	-13.47	10.78	3	Vertical	350	1.67	-				

## 802.11n HT20\_Nss1,(MCS0)\_2TX

06/06/2019

## 2462MHz\_TX



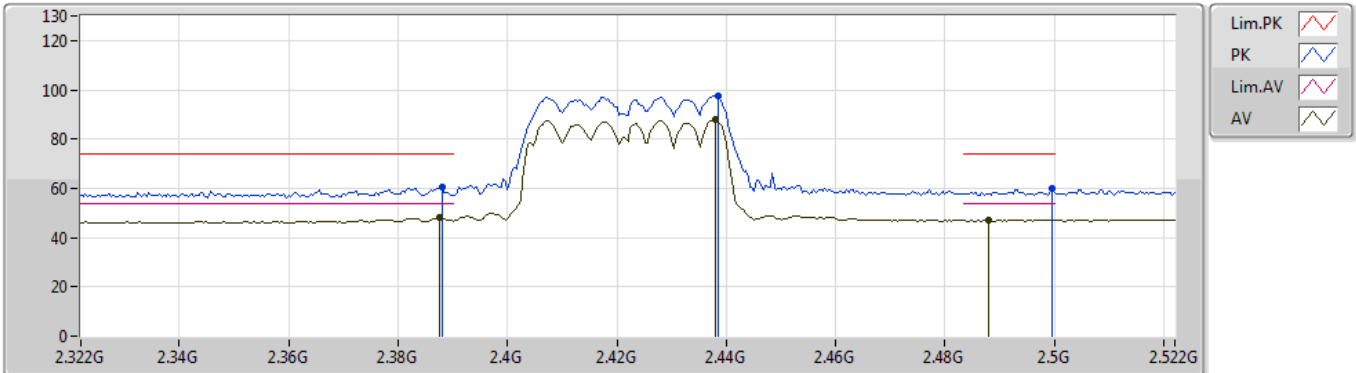
EUT Y\_2TX  
Setting 15  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.9316G	51.12	74.00	-22.88	7.43	3	Horizontal	136	1.94	-				
AV	4.93364G	38.00	54.00	-16.00	7.43	3	Horizontal	136	1.94	-				
PK	7.38356G	54.93	74.00	-19.07	10.75	3	Horizontal	251	1.19	-				
AV	7.37708G	41.56	54.00	-12.44	10.73	3	Horizontal	251	1.19	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2422MHz\_TX



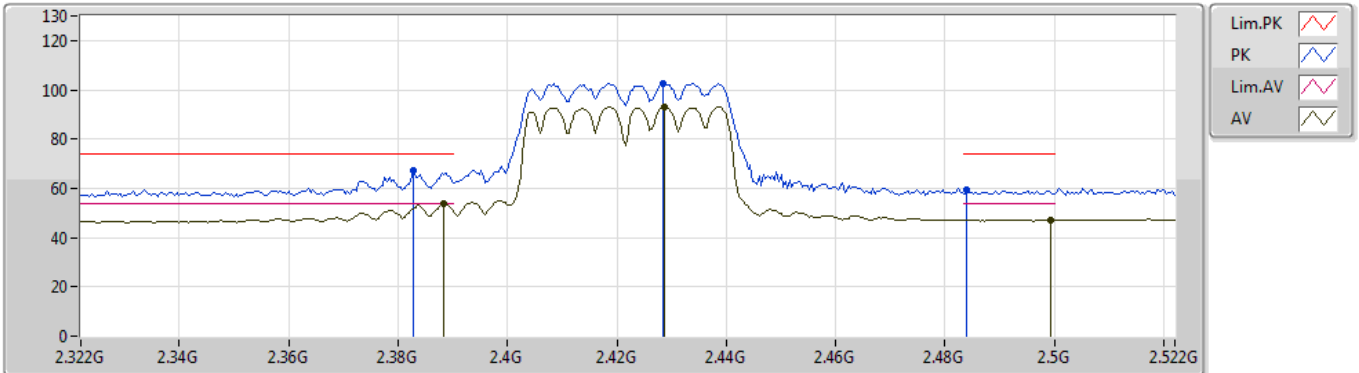
EUT\_Z\_2TX  
Setting 11  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.388G	60.46	74.00	-13.54	31.20	3	Vertical	79	2.99	-				
AV	2.3876G	48.10	54.00	-5.90	31.20	3	Vertical	79	2.99	-				
PK	2.4384G	97.64	Inf	-Inf	31.31	3	Vertical	79	2.99	-				
AV	2.438G	88.06	Inf	-Inf	31.31	3	Vertical	79	2.99	-				
PK	2.4996G	59.82	74.00	-14.18	31.43	3	Vertical	79	2.99	-				
AV	2.488G	47.02	54.00	-6.98	31.41	3	Vertical	79	2.99	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2422MHz\_TX



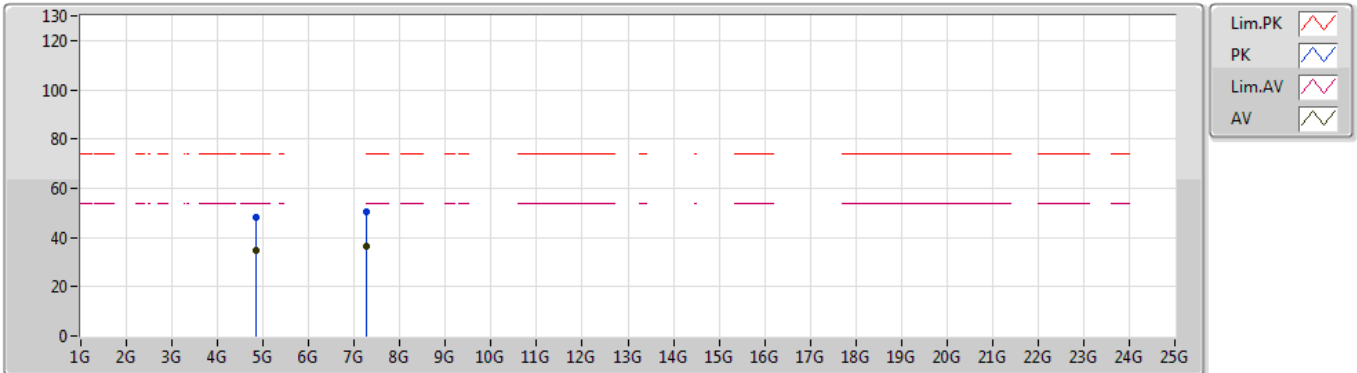
EUT\_Z\_2TX  
Setting 11  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3828G	67.00	74.00	-7.00	31.19	3	Horizontal	129	1.42	-				
AV	2.3884G	53.82	54.00	-0.18	31.20	3	Horizontal	129	1.42	-				
PK	2.4284G	102.74	Inf	-Inf	31.29	3	Horizontal	129	1.42	-				
AV	2.4288G	93.03	Inf	-Inf	31.29	3	Horizontal	129	1.42	-				
PK	2.484G	59.42	74.00	-14.58	31.39	3	Horizontal	129	1.42	-				
AV	2.4992G	47.33	54.00	-6.67	31.43	3	Horizontal	129	1.42	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2422MHz\_TX



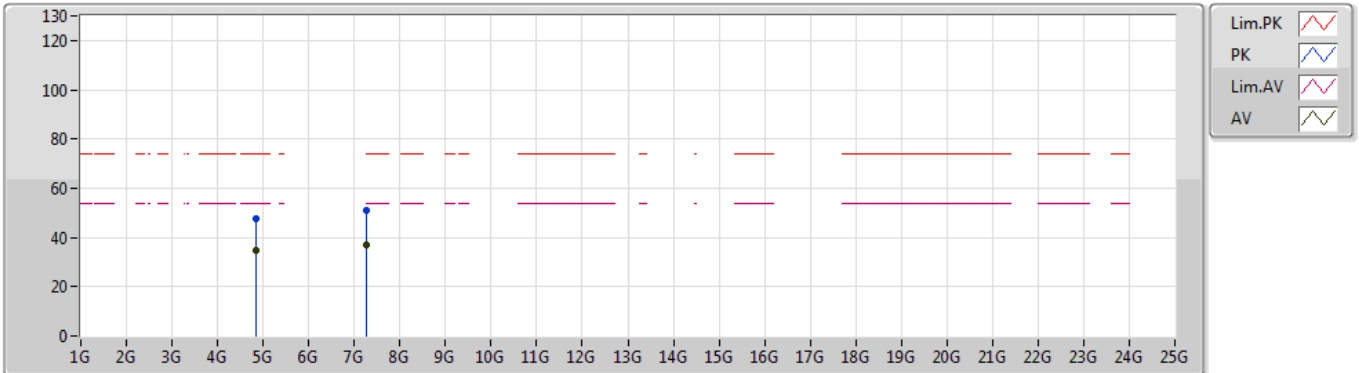
EUT Y\_2TX  
Setting 11  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.84548G	47.91	74.00	-26.09	7.22	3	Vertical	281	1.78	-				
AV	4.85084G	34.57	54.00	-19.43	7.24	3	Vertical	281	1.78	-				
PK	7.27504G	50.70	74.00	-23.30	10.44	3	Vertical	143	2.01	-				
AV	7.274G	36.67	54.00	-17.33	10.43	3	Vertical	143	2.01	-				

### 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

### 2422MHz\_TX



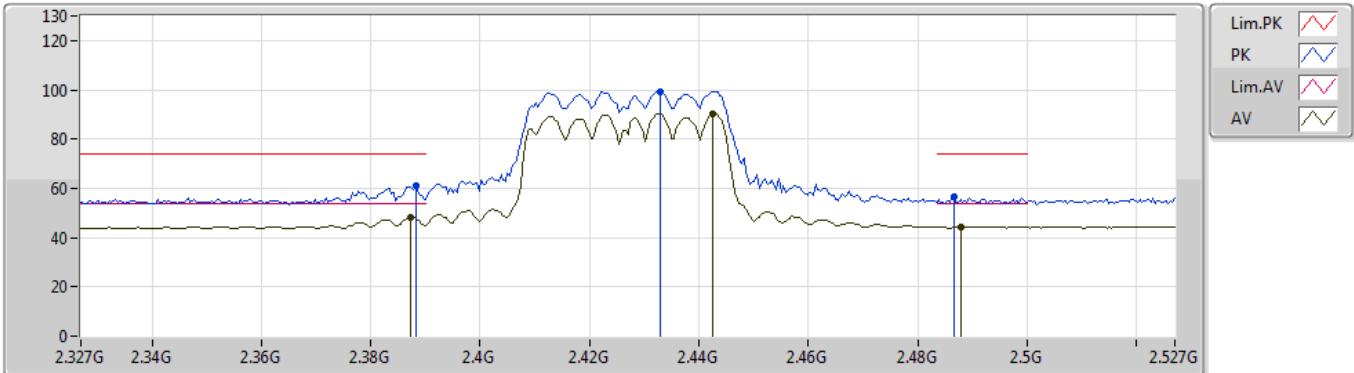
EUT Y\_2TX  
Setting 11  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.85196G	47.46	74.00	-26.54	7.24	3	Horizontal	183	1.58	-				
AV	4.84988G	34.51	54.00	-19.49	7.22	3	Horizontal	183	1.58	-				
PK	7.2688G	50.80	74.00	-23.20	10.42	3	Horizontal	262	2.40	-				
AV	7.27432G	36.76	54.00	-17.24	10.43	3	Horizontal	262	2.40	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2427MHz\_TX



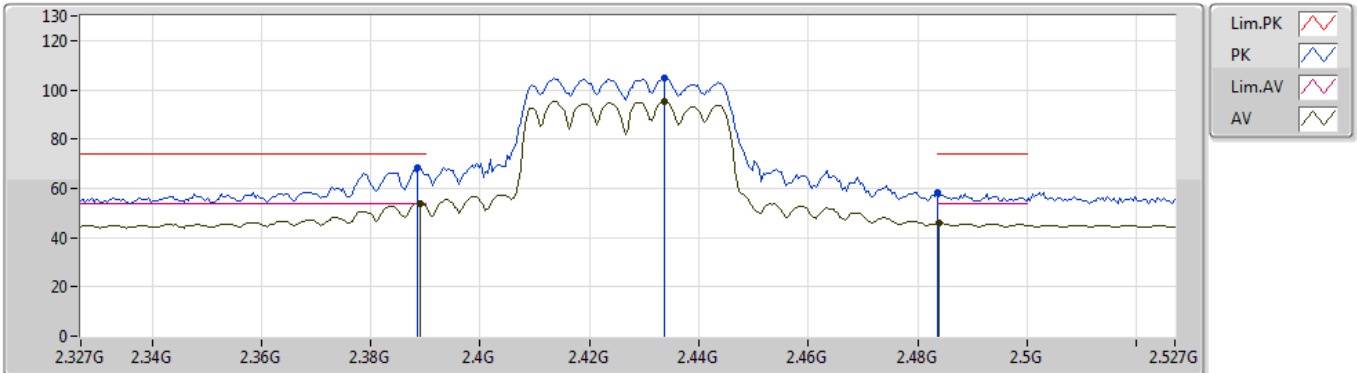
EUT\_Z\_2TX  
Setting 13  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3882G	60.80	74.00	-13.20	31.20	3	Vertical	124	2.99	-				
AV	2.3874G	47.99	54.00	-6.01	31.20	3	Vertical	124	2.99	-				
PK	2.433G	99.44	Inf	-Inf	31.29	3	Vertical	124	2.99	-				
AV	2.4426G	90.19	Inf	-Inf	31.32	3	Vertical	124	2.99	-				
PK	2.4866G	56.36	74.00	-17.64	31.40	3	Vertical	124	2.99	-				
AV	2.4878G	44.53	54.00	-9.47	31.41	3	Vertical	124	2.99	-				

### 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

### 2427MHz\_TX



EUT\_Z\_2TX  
Setting 13  
02-J-5  
FSP(100080)

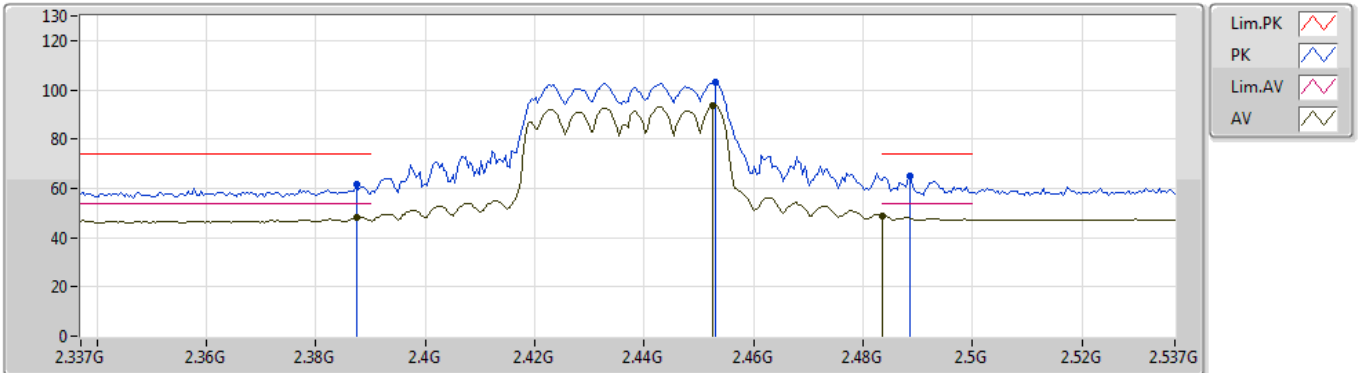
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3886G	68.45	74.00	-5.55	31.20	3	Horizontal	164	1.41	-				
AV	2.389G	53.97	54.00	-0.03	31.20	3	Horizontal	164	1.41	-				
PK	2.4338G	104.91	Inf	-Inf	31.29	3	Horizontal	164	1.41	-				
AV	2.4338G	95.19	Inf	-Inf	31.29	3	Horizontal	164	1.41	-				
PK	2.4835G	58.44	74.00	-15.56	31.39	3	Horizontal	164	1.41	-				
AV	2.4838G	46.00	54.00	-8.00	31.39	3	Horizontal	164	1.41	-				



## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2437MHz\_TX



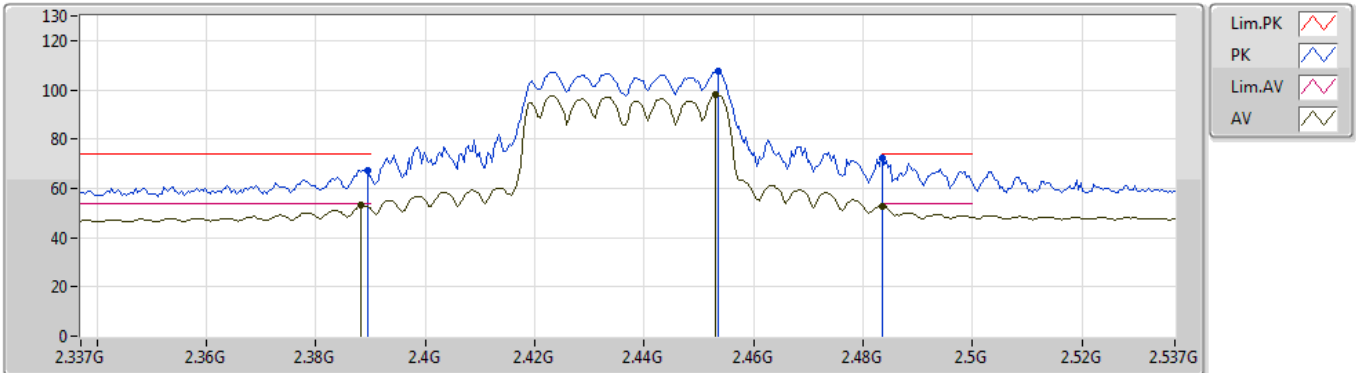
EUT\_Z\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3874G	61.45	74.00	-12.55	31.20	3	Vertical	62	2.99	-				
AV	2.3874G	48.23	54.00	-5.77	31.20	3	Vertical	62	2.99	-				
PK	2.453G	102.86	Inf	-Inf	31.33	3	Vertical	62	2.99	-				
AV	2.4526G	93.39	Inf	-Inf	31.33	3	Vertical	62	2.99	-				
PK	2.4886G	65.02	74.00	-8.98	31.41	3	Vertical	62	2.99	-				
AV	2.4835G	49.00	54.00	-5.00	31.39	3	Vertical	62	2.99	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2437MHz\_TX



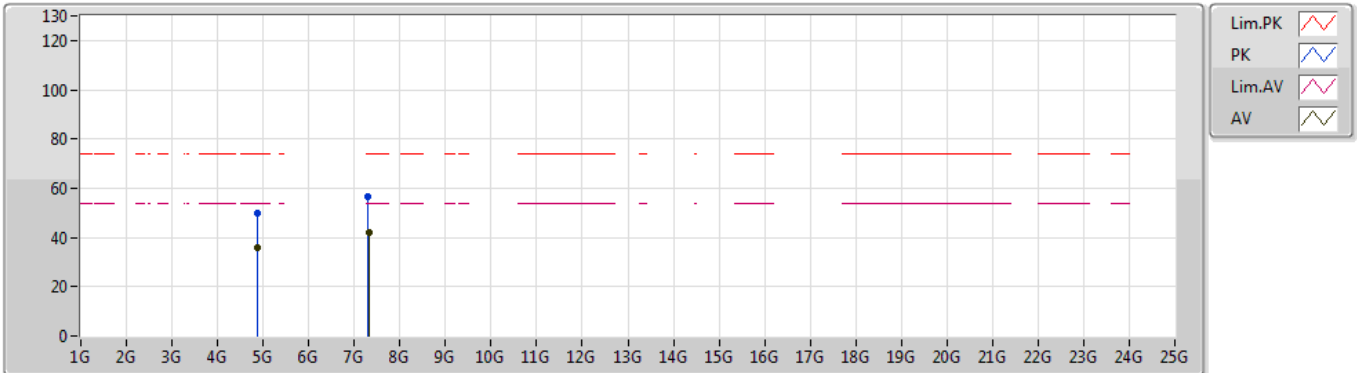
EUT Z\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3894G	67.43	74.00	-6.57	31.20	3	Horizontal	78	1.00	-
AV	2.3882G	53.23	54.00	-0.77	31.20	3	Horizontal	78	1.00	-
PK	2.4534G	107.81	Inf	-Inf	31.34	3	Horizontal	78	1.00	-
AV	2.453G	98.04	Inf	-Inf	31.33	3	Horizontal	78	1.00	-
PK	2.4835G	72.36	74.00	-1.64	31.39	3	Horizontal	78	1.00	-
AV	2.4835G	52.78	54.00	-1.22	31.39	3	Horizontal	78	1.00	-

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2437MHz\_TX



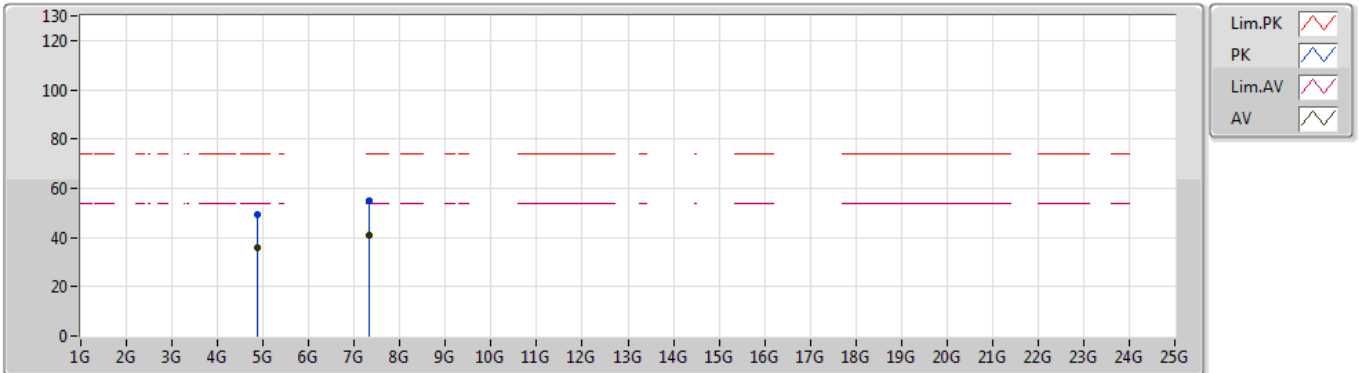
EUT Y\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87472G	49.69	74.00	-24.31	7.28	3	Vertical	109	2.49	-				
AV	4.87476G	35.99	54.00	-18.01	7.28	3	Vertical	109	2.49	-				
PK	7.30988G	56.65	74.00	-17.35	10.54	3	Vertical	71	1.06	-				
AV	7.31428G	42.23	54.00	-11.77	10.56	3	Vertical	71	1.06	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2437MHz\_TX



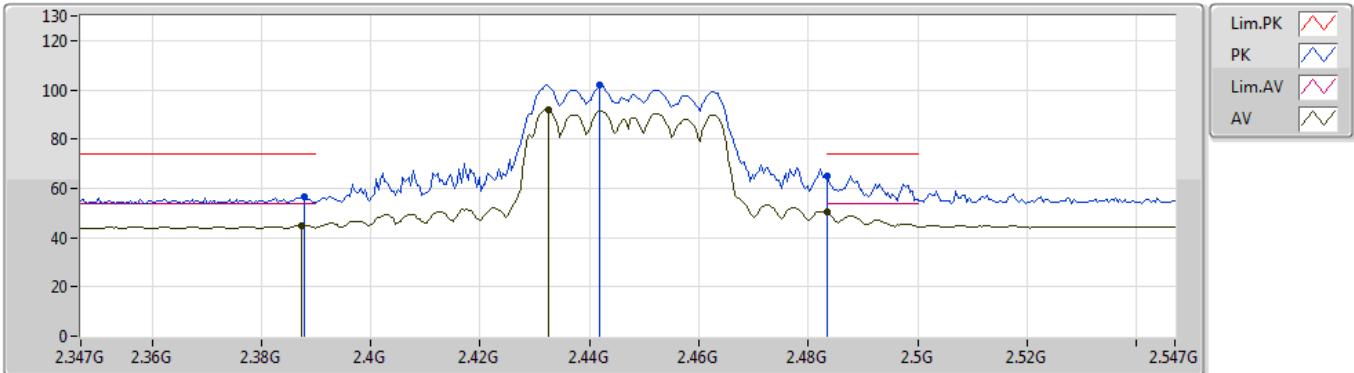
EUT Y\_2TX  
Setting 16  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87536G	49.18	74.00	-24.82	7.29	3	Horizontal	333	1.39	-				
AV	4.87476G	36.00	54.00	-18.00	7.28	3	Horizontal	333	1.39	-				
PK	7.32048G	54.65	74.00	-19.35	10.58	3	Horizontal	103	1.75	-				
AV	7.31468G	41.14	54.00	-12.86	10.56	3	Horizontal	103	1.75	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2447MHz\_TX



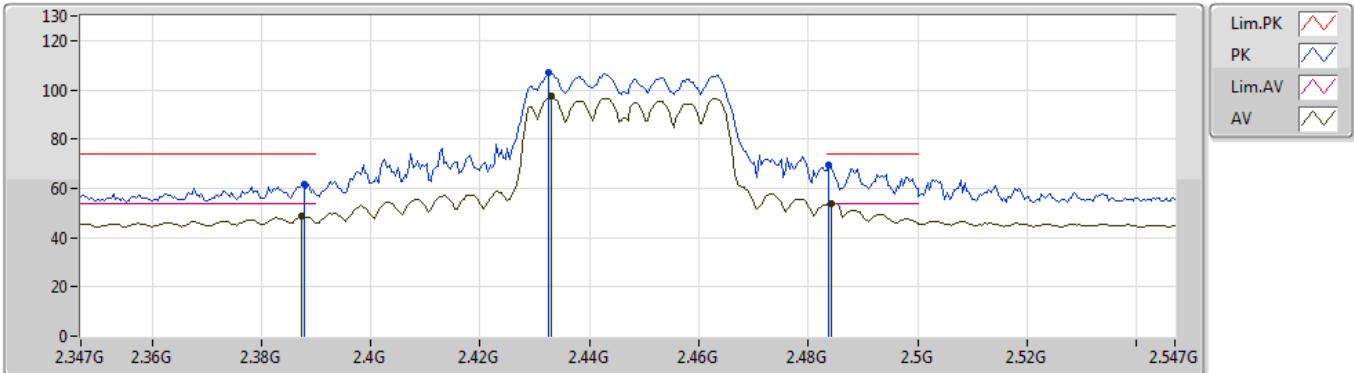
EUT\_Z\_2TX  
Setting 15  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3878G	56.71	74.00	-17.29	31.20	3	Vertical	132	2.39	-				
AV	2.3874G	45.05	54.00	-8.95	31.20	3	Vertical	132	2.39	-				
PK	2.4418G	101.85	Inf	-Inf	31.32	3	Vertical	132	2.39	-				
AV	2.4326G	92.13	Inf	-Inf	31.29	3	Vertical	132	2.39	-				
PK	2.4835G	65.04	74.00	-8.96	31.39	3	Vertical	132	2.39	-				
AV	2.4835G	50.25	54.00	-3.75	31.39	3	Vertical	132	2.39	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2447MHz\_TX



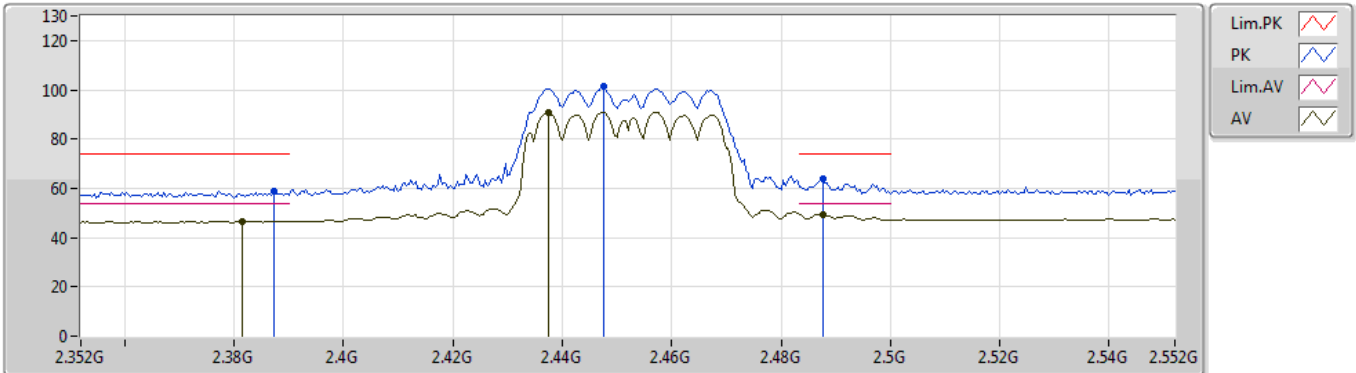
EUT\_Z\_2TX  
Setting 15  
02-J-5  
FSP(100080)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3878G	61.79	74.00	-12.21	31.20	3	Horizontal	163	1.61	-
AV	2.3874G	48.60	54.00	-5.40	31.20	3	Horizontal	163	1.61	-
PK	2.4326G	106.75	Inf	-Inf	31.29	3	Horizontal	163	1.61	-
AV	2.433G	97.25	Inf	-Inf	31.29	3	Horizontal	163	1.61	-
PK	2.4838G	69.31	74.00	-4.69	31.39	3	Horizontal	163	1.61	-
AV	2.4842G	53.83	54.00	-0.17	31.39	3	Horizontal	163	1.61	-

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2452MHz\_TX



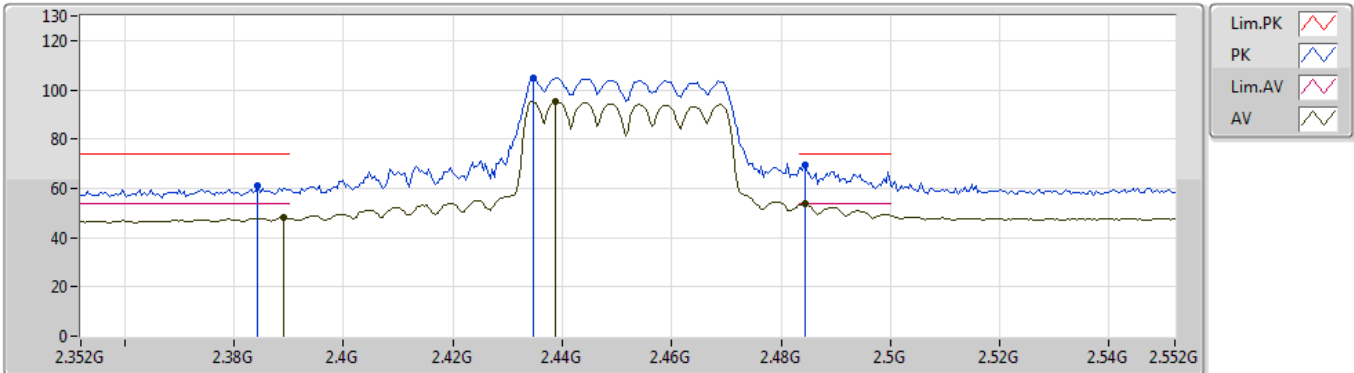
EUT Z\_2TX  
Setting 14  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3872G	58.76	74.00	-15.24	31.20	3	Vertical	47	3.00	-
AV	2.3816G	46.66	54.00	-7.34	31.19	3	Vertical	47	3.00	-
PK	2.4476G	101.21	Inf	-Inf	31.33	3	Vertical	47	3.00	-
AV	2.4376G	90.79	Inf	-Inf	31.31	3	Vertical	47	3.00	-
PK	2.4876G	63.89	74.00	-10.11	31.41	3	Vertical	47	3.00	-
AV	2.4876G	49.57	54.00	-4.43	31.41	3	Vertical	47	3.00	-

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2452MHz\_TX



EUT\_Z\_2TX  
Setting 14  
02-L-2  
FSU(100015)

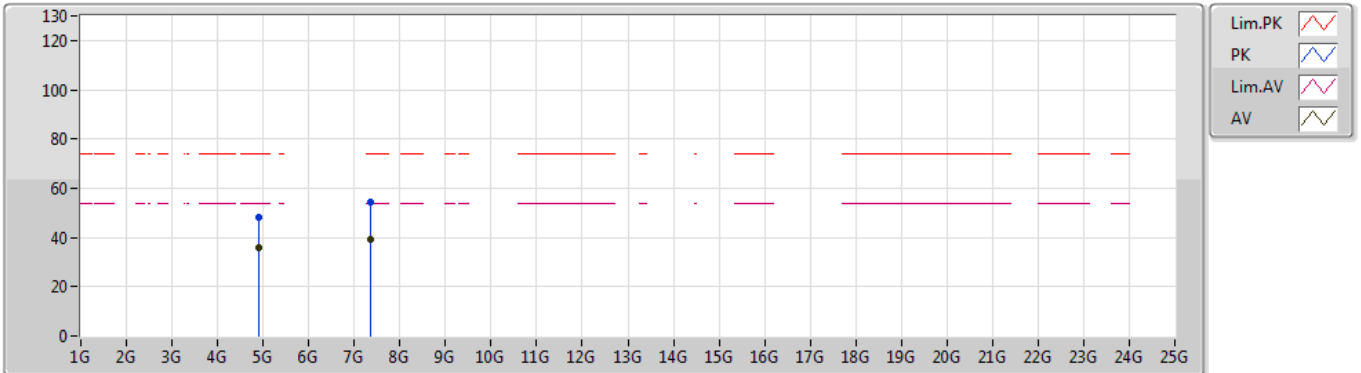
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3844G	61.03	74.00	-12.97	31.19	3	Horizontal	245	1.01	-
AV	2.3892G	48.02	54.00	-5.98	31.20	3	Horizontal	245	1.01	-
PK	2.4348G	104.73	Inf	-Inf	31.30	3	Horizontal	245	1.01	-
AV	2.4388G	95.15	Inf	-Inf	31.31	3	Horizontal	245	1.01	-
PK	2.4844G	69.59	74.00	-4.41	31.40	3	Horizontal	245	1.01	-
AV	2.4844G	53.78	54.00	-0.22	31.40	3	Horizontal	245	1.01	-



### 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

### 2452MHz\_TX



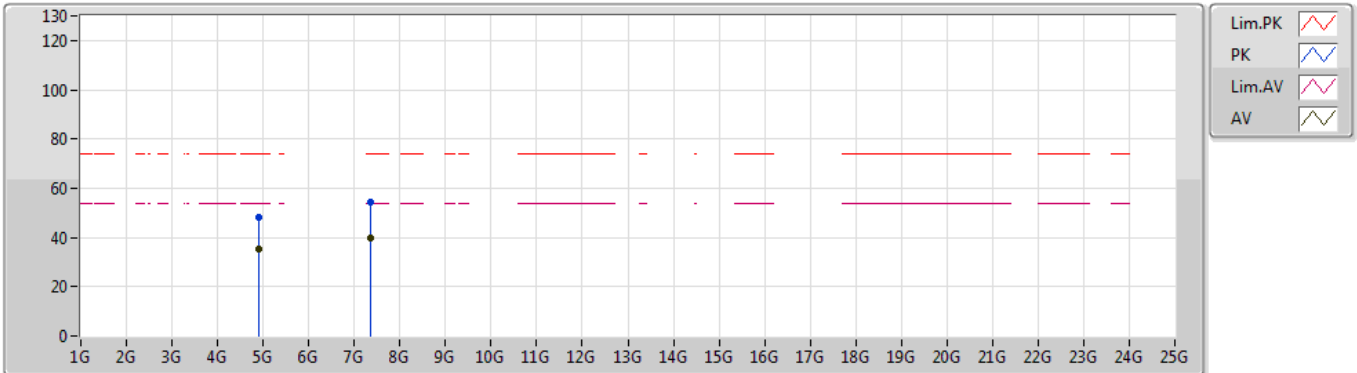
EUT Y\_2TX  
Setting 14  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.89524G	48.46	74.00	-25.54	7.34	3	Vertical	283	1.68	-				
AV	4.89456G	35.96	54.00	-18.04	7.34	3	Vertical	283	1.68	-				
PK	7.3498G	54.20	74.00	-19.80	10.66	3	Vertical	128	2.24	-				
AV	7.3498G	38.97	54.00	-15.03	10.66	3	Vertical	128	2.24	-				

## 802.11n HT40\_Nss1,(MCS0)\_2TX

06/06/2019

## 2452MHz\_TX



EUT Y\_2TX  
Setting 14  
02-L-2  
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.8972G	48.27	74.00	-25.73	7.34	3	Horizontal	74	1.28	-				
AV	4.89716G	35.06	54.00	-18.94	7.34	3	Horizontal	74	1.28	-				
PK	7.34812G	54.08	74.00	-19.92	10.66	3	Horizontal	162	1.03	-				
AV	7.34952G	39.91	54.00	-14.09	10.66	3	Horizontal	162	1.03	-				

