

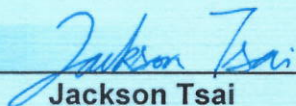
# VERIFICATION OF COMPLIANCE

● Equipment : WiFi6 11ax 2T2R module 1800Mbps  
Model No. : AW7915-NPD  
Applicant : AsiaRF Co., Ltd.  
1F, 7, Houde Street, Yonghe Dist. New Taipei City Taiwan  
23455

**I HEREBY****DECLARE THAT :**

The equipment was **Passed** the test performed according to  
**EN 300 328 V2.2.2 (2019-07)**

The test was carried out on **May 13, 2022** at **SPORTON INTERNATIONAL INC. Hsinhua**  
**Laboratory.**

  
Jackson Tsai

**SPORTON INTERNATIONAL INC. Hsinhua Laboratory**

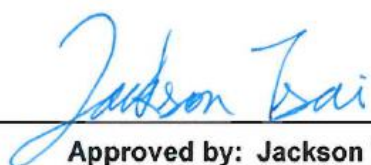
No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)

# Radio Test Report

**Equipment** : WiFi6 11ax 2T2R module 1800Mbps  
**Brand Name** : AsiaRF Co., Ltd.  
**Model Name** : AW7915-NPD  
**Applicant** : AsiaRF Co., Ltd.  
1F, 7, Houde Street, Yonghe Dist. New Taipei  
City Taiwan 23455  
**Manufacturer** : AsiaRF Co., Ltd.  
1F, 7, Houde Street, Yonghe Dist. New Taipei  
City Taiwan 23455  
**Standard** : EN 300 328 V2.2.2 (2019-07)

The product was received on Mar. 28, 2022, and testing was started from Apr. 21, 2022 and completed on May 13, 2022. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in EN 300 328 V2.2.2 (2019-07) and shown compliance with the applicable technical standards.

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



Approved by: Jackson Tsai

**SPORTON INTERNATIONAL INC. Hsinhua Laboratory**

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)

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**APPENDIX I. TEST PHOTOS**

**PHOTOGRAPHS OF EUT v01**

## History of this test report

[illegible]

## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	4.3.2.2	RF Output Power	PASS	-
3.2	4.3.2.3	Power Spectral Density	PASS	-
5.1	4.3.2.6	Adaptivity	PASS	-
3.3	4.3.2.7	Occupied Channel Bandwidth	PASS	-
3.4	4.3.2.8	Transmitter unwanted emissions in the out-of-band domain	PASS	-
3.5	4.3.2.9	Transmitter unwanted emissions in the spurious domain	PASS	-
4.1	4.3.2.10	Receiver spurious emissions	PASS	-
6.1	4.3.2.11	Receiver Blocking	PASS	-
1.1.7	4.3.2.12	Geo-location capability	N/A	-

**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 EUT supports beamforming and CDD modes, and the CDD mode is the worst case. Therefore, all test items are evaluated in the report. The beamforming mode only evaluates the output power.

**Reviewed by: Ben Tseng**

**Report Producer: Jenny Yang**

# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), VHT20, ax(HEW20)	2412-2472	1-13 [13]
2400-2483.5	n (HT40), VHT40, ax(HEW40)	2422-2462	3-11 [9]

#### <Non-Beamforming>

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	802.11ax HEW20	20	2TX
2.4-2.4835GHz	802.11ax HEW40	40	2TX

#### <Beamforming>

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11ax HEW20-BF	20	2TX
2.4-2.4835GHz	802.11ax HEW40-BF	40	2TX

#### Note:

- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

### 1.1.2 Antenna Information

Group	Ant.	Brand	Model Name	Antenna Type	Connector	Support	Cable Loss (dBi)
1	1-2	Asiarf	ANT010-DAU	PCB	I-PEX / MMCX	2.4G+5G	0.3
2	3-4	Asiarf	ANT003	PCB	I-PEX / MMCX	2.4G+5G	0.3
3	5-6	Asiarf	A245005N	PCB	I-PEX / MMCX	2.4G+5G	0.3
4	7-8	Asiarf	A2405N	PCB	I-PEX / MMCX	2.4G	0.3
5	9-10	Asiarf	A5005N	PCB	I-PEX / MMCX	5G	0.3
6	11-12	Asiarf	A245004	Dipole	I-PEX / MMCX	2.4G+5G	0.3
7	13-14	Asiarf	A245002	Dipole	I-PEX / MMCX	2.4G+5G	0.3



Group	Ant.	Gain (dBi)	
		2.4G	5G
1	1-2	5.2	5.5
2	3-4	2.5	2.5
3	5-6	4	5.1
4	7-8	5.2	-
5	9-10	-	5
6	11-12	4	5.1
7	13-14	2	2

Note 1: EUT can match with above antennas for using. The higher gain (Ant. 1/6) were used to perform the worst configuration and result of that was recorded as the final test result.

Note 2: The antenna mentioned above will not be sold with the EUT in the market.

**For 2.4GHz function:**

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

Group 1, 2, 3, 4, 6, 7 could transmit/receive simultaneously.

**For 5GHz function:**

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

Group 1, 2, 3, 5, 6, 7 could transmit/receive simultaneously.

**1.1.3 Test Duty Cycle**
**<Non-Beamforming>**

Mode	DC	DCF (dB)
802.11b_Nss1,(1Mbps)_2TX	0.994	0.026
802.11g_Nss1,(6Mbps)_2TX	0.96	0.177
802.11ax HEW20_Nss1,(MCS0)_2TX	0.945	0.246
802.11ax HEW40_Nss1,(MCS0)_2TX	0.846	0.726

**<Beamforming>**

Mode	DC	DCF (dB)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.945	0.246
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.846	0.726



**1.1.4 EUT Information**

Operational Condition		
<b>EUT Power Type</b>	From Test Fixture	
<b>Beamforming Function</b>	<input checked="" type="checkbox"/> With beamforming	<input type="checkbox"/> Without beamforming
<b>Resource Unit(802.11ax)</b>	<input checked="" type="checkbox"/> Full RU	<input type="checkbox"/> Partial RU
<b>Software / Firmware Version for Adaptivity &amp; Receiver Blocking</b>		LEDE Reboot 17.01-SNAPSHOT unknown / LuCI (unknown)
Type of EUT		
<input checked="" type="checkbox"/>	Stand-alone	
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)	
	Combined Equipment - Brand Name / Model No.:	...
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)	
	Host System - Brand Name / Model No.:	...
<input type="checkbox"/>	Other:	

**1.1.5 Table for Multiple Listing**

SKU	Ant. Connector	Description
1	I-PEX	There are two SKUs for EUT. The only difference between SKU 1 and SKU 2 is Ant. Connector, but the gain is same. Therefore, SKU 1 configuration was measured during the test.
2	MMCX	

**1.1.6 Adaptive Equipment**

Adaptive Equipment	
<input type="checkbox"/>	non-Adaptive Equipment
<input checked="" type="checkbox"/>	Adaptive Equipment without the possibility to switch to a non-adaptive mode:
<input type="checkbox"/>	Maximum declared RF Output power of less than 10 dBm e.i.r.p.
<input checked="" type="checkbox"/>	The equipment has implemented an LBT based DAA mechanism:
	<input type="checkbox"/> The equipment is Frame Based equipment
	<input checked="" type="checkbox"/> The equipment is Load Based equipment
	<input type="checkbox"/> The equipment can switch dynamically between Frame Based and Load Based equipment
<input type="checkbox"/>	The equipment has implemented an non-LBT based DAA mechanism
<input type="checkbox"/>	The equipment can operate in more than one adaptive mode
<input type="checkbox"/>	Adaptive Equipment which can also operate in a non-adaptive mode

**1.1.7 Geo-location capability supported by the equipment**

Geo-location capability supported by the equipment	
<input type="checkbox"/>	Yes
<input type="checkbox"/>	The geographical location determined by the equipment as defined in EN 300 328, clause 4.3.2.12.3 is not accessible to the user.
<input checked="" type="checkbox"/>	No

## 1.2 Testing Applied Standards

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

- ♦ EN 300 328 V2.2.2 (2019-07)

## 1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
<input checked="" type="checkbox"/> Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456	FAX: 886-3-327-0973		
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH07-HY	Alan Chien	20.1~26.9°C / 50~60%	11/May/2022~13/May/2022
Radiated	05CH01-HY	Wayne Chiu	21.6~22.1°C / 57~59%	22/Apr/2022~29/Apr/2022
Adaptivity	DFS01-HY	Peng Huang	23.6~25.8°C / 52~63%	25/Apr/2022
Receiver Blocking	DFS03-HY	Tony Chang	21.7~25.9°C / 53~62%	21/Apr/2022
<input type="checkbox"/> Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787	FAX: 886-3-318-0287		

## 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))

Parameter	Uncertainty	Limit
Occupied Bandwidth	± 0.1 %	± 5 %
RF power, conducted	± 1.3 dB	± 1.5 dB
Power Spectral Density, conducted	± 1.3 dB	± 3 dB
Unwanted Emissions, conducted	± 1.3 dB	± 3 dB
All emissions, radiated	± 3.7dB	± 6 dB
Temperature	± 0.4 °C	± 3 °C
Supply voltages	± 0.4 %	± 3 %
Time	± 1 %	± 5 %

## 2 Test Configuration of EUT

### 2.1 Test Condition

Condition Item	Abbreviation/Remark	Remark
Tnom	Tnom	20°C
Tmin	Tmin	0°C
Tmax	Tmax	70°C
-	Vnom	230V

### 2.2 Test Channel Mode

Test Software Version	QATool_Dbg 0.0.2.33
-----------------------	---------------------

#### <Non-Beamforming>

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	8
2442MHz	8.5
2472MHz	8.5
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	11
2442MHz	11.5
2472MHz	11.5
802.11ax HEW20_Nss1,(MCS0)_2TX	-
2412MHz	11
2442MHz	11.5
2472MHz	11
802.11ax HEW40_Nss1,(MCS0)_2TX	-
2422MHz	11
2442MHz	11.5
2462MHz	11.5




**<Beamforming>**

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
2412MHz	8
2442MHz	8.5
2472MHz	8.5
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
2422MHz	8
2442MHz	8.5
2462MHz	8.5

## 2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
<b>Test Items</b>	RF Output Power, Power Spectral Density, Occupied Channel Bandwidth, Transmitter unwanted emissions in the OOB domain
<b>Test Condition</b>	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
<b>Test Item</b>	Transmitter Unwanted Emissions in The Spurious Domain Receiver Spurious Emissions
<b>Test Condition</b>	Radiated measurement
<b>Operating Mode</b>	Transmit / Receive
<b>1</b>	Test Fixture mode; PCB Antenna
<b>2</b>	Test Fixture mode; Dipole Antenna
<b>Orthogonal Planes of EUT</b>	<b>Z Plane</b>
	

The Worst Case Mode for Following Conformance Tests	
<b>Test Items</b>	Adaptivity
<b>Test Condition</b>	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
<b>Test Items</b>	Receiver Blocking
<b>Test Condition</b>	Conducted measurement at a receiver chain

## 2.4 Support Equipment

Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	Remark
1	Notebook	DELL	E5410	-
2	Adapter for NB	DELL	HA65NM130	-

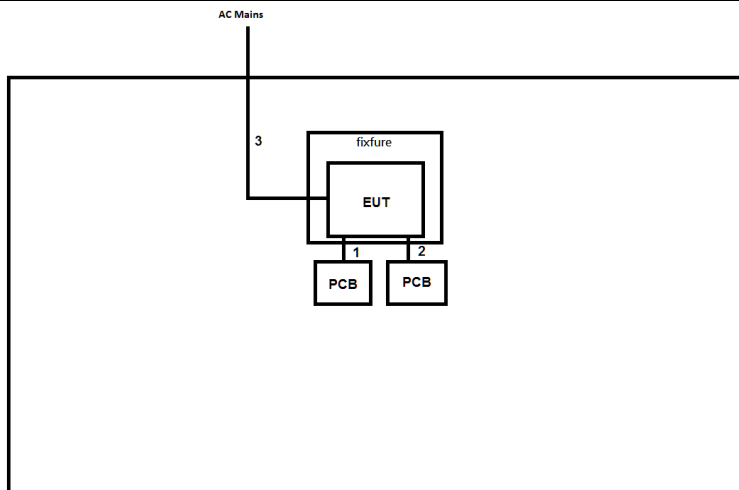
Support Equipment - Radiated				
No.	Equipment	Brand Name	Model Name	Remark
1	Fixture	Sinovoip	Banana Pi BPi-R64	-
2	Adapter	SHENZHEN YINGHUIYUAN ELECTRONICS CO.,LTD	YHY-12004000	-

Support Equipment - Adaptivity				
No.	Equipment	Brand Name	Model Name	Remark
1	AP (Master)	ADTRAN	834-V6	-
2	Notebook	DELL	Latitude E5540	-
3	Notebook	DELL	Latitude E5550	-

Support Equipment - Receiver Blocking				
No.	Equipment	Brand Name	Model Name	Remark
1	Notebook	DELL	Latitude E5540	-

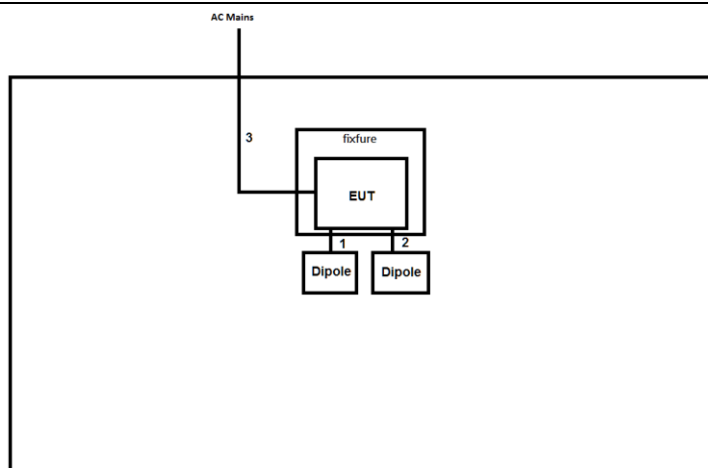
## 2.5 Test Setup Diagram

**Test Setup Diagram - Radiated Test for Mode 1**



Item	Connection	Shielded	Length(m)	Remark
1	RF Cable	No	0.1	-
2	RF Cable	No	0.1	-
3	Power cable	No	1.2	-

**Test Setup Diagram - Radiated Test for Mode 2**



Item	Connection	Shielded	Length(m)	Remark
1	RF Cable	No	0.1	-
2	RF Cable	No	0.1	-
3	Power cable	No	1.2	-



### 3 Transmitter Test Result

#### 3.1 RF Output Power

##### 3.1.1 RF Output Power Limit

RF Output Power Limit	
<input checked="" type="checkbox"/>	Mean equivalent isotropic radiated power (e.i.r.p.) ≤ 20 dBm

##### 3.1.2 Measuring Instruments

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

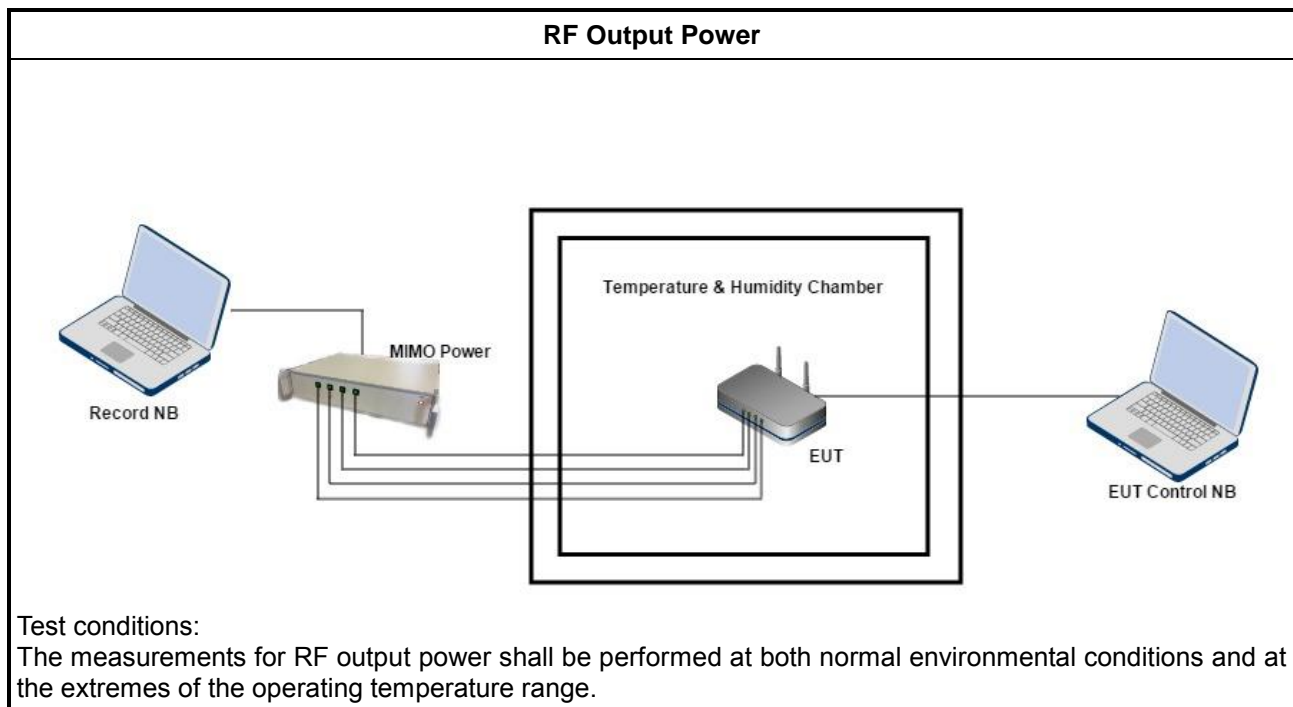
##### 3.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	The measurements shall be performed at both normal environmental conditions and at the extremes of the operating temperature range.
<input checked="" type="checkbox"/>	Refer as EN 300 328, clause 5.4.2.2.1 for conducted measurement.
<p>Step 1: Use a fast power sensor suitable for 2,4 GHz and capable of 1 MS/s.            Use the following settings:</p> <ul style="list-style-type: none"> <li>- Sample speed 1 MS/s or faster.</li> <li>- The samples shall represent the RMS power of the signal.</li> <li>- Measurement duration: For adaptive equipment, the measurement duration shall be long enough to ensure a minimum number of bursts (at least 10) are captured.</li> </ul> <p>NOTE 1: For adaptive equipment, to increase the measurement accuracy, a higher number of bursts may be used.</p> <p>Step 2: For conducted measurements on devices with multiple transmit chains:</p> <ul style="list-style-type: none"> <li>- Connect one power sensor to each transmit port for a synchronous measurement on all transmit ports.</li> <li>- Trigger the power sensors so that they start sampling at the same time.              Make sure the time difference between the samples of all sensors is less than half the time between the samples of all sensors is less than 500 ns.</li> <li>- For each instant in time, sum the power of the individual samples of all ports and store them. Use these stored samples in all following steps.</li> </ul> <p>Step 3: Find the start and stop times of each burst in the stored measurement samples.            NOTE 2: The start and stop times are defined as the points where the power is at least 30 dB the RMS burst power calculated in step 4.</p> <p>Step 4: Between the start and stop times of each individual burst calculate the RMS power over the burst using the formula below. Save these Pburst values, as well as the start and stop times for each burst.</p> $P_{burst} = \frac{1}{k} \sum_{n=1}^k P_{sample}(n)$ <p>with 'k' being the total number of samples and 'n' the actual sample number</p> <p>Step 5: The highest of all Pburst values (value "A" in dBm) will be used for maximum e.i.r.p. calculations.</p>	

Step 6: Add the (stated) antenna assembly gain "G" in dBi of the individual antenna.  
 If applicable, add the additional beamforming gain "Y" in dB.  
 If more than one antenna assembly is intended for this power setting, the maximum overall antenna gain (G or G + Y) shall be used. The RF Output Power (P) shall be calculated using the formula below:  
 $P = A + G + Y$ . This value, which shall comply with the limit given in clauses 4.3.2.2.3, shall be recorded in the test report.

☐ Refer as EN 300 328, clause 5.4.2.2.2 for radiated measurement.

## 3.1.4 Test Setup



## 3.1.5 Test Result of RF Output Power

Refer as Appendix A

## 3.2 Power Spectral Density

### 3.2.1 Power Spectral Density Limit

Power Spectral Density Limit	
<input checked="" type="checkbox"/>	Mean equivalent isotropic radiated power (e.i.r.p.) density $\leq 10$ dBm/MHz

### 3.2.2 Measuring Instruments

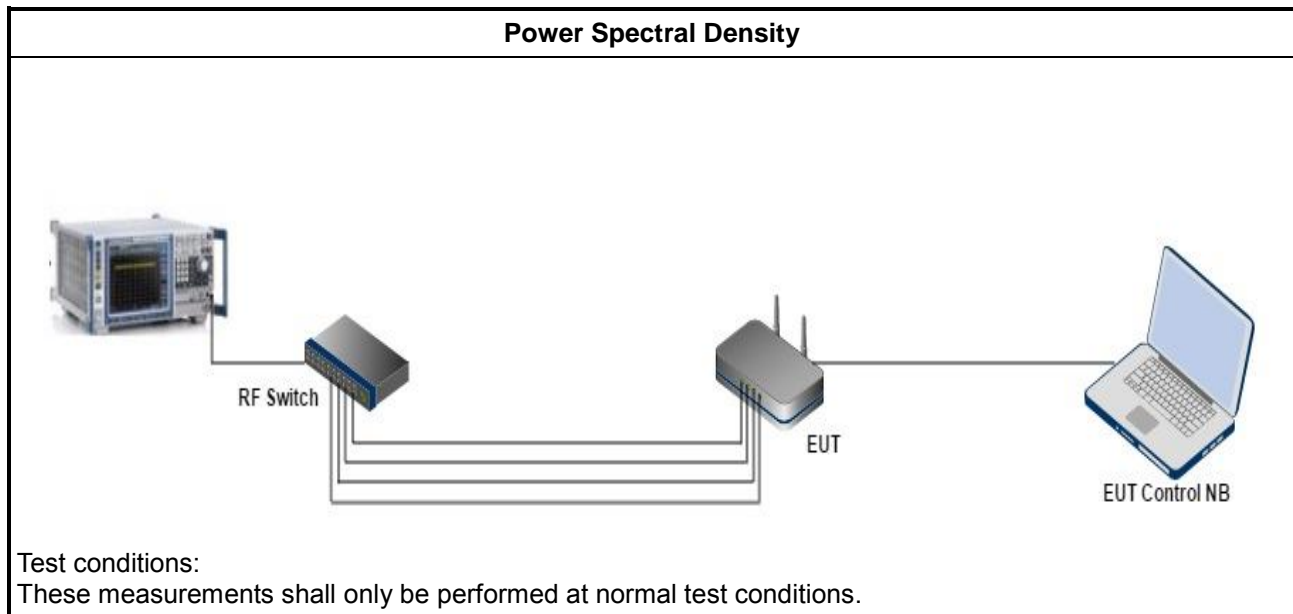
Refer a test equipment and calibration data table in this test report.

### 3.2.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Power spectral density shall be measured using one of the options below.
<input type="checkbox"/>	Option 1: For equipment with continuous and non-continuous transmissions. Refer as EN 300 328, clause 5.4.3.2.1.
<input checked="" type="checkbox"/>	Option 2: For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Based equipment). Refer as EN 300 328, clause 5.4.3.2.1.
<input checked="" type="checkbox"/>	Refer as EN 300 328, clause 5.4.3.2.1 for conducted measurement.
<input type="checkbox"/>	Option 1:
Step 1:	Connect the UUT to the spectrum analyzer and use the following settings: - Start & Stop Frequency: 2400 MHz ~ 2483.5MHz - Resolution BW: 10 kHz - Video BW: 30 kHz - Sweep Points: > 8 350 - Detector Mode: RMS - Trace Mode: Max Hold - Sweep time: For non-continuous transmissions: 2 x Channel Occupancy Time x number of sweep points For continuous transmissions: 10s; the sweep time may be increased further until a value where the sweep time has no impact on the RMS value of the signal For non-continuous signals, wait for the trace to stabilize.
Step 2:	For conducted measurements on smart antenna systems using either operating mode 2 or operating mode 3 (see clause 5.3.2.2), repeat the measurement for each of the transmit ports. For each sampling point (frequency domain), add up the coincident power values (in mW) for the different transmit chains and use this as the new data set.
Step 3:	Add up the values for power for all the samples in the file using the formula below. $P_{Sum} = \sum_{n=1}^k P_{sample}(n)$ with 'k' being the total number of samples and 'n' the actual sample number
Step 4:	Normalize the individual values for power (in dBm) so that the sum is equal to the RF Output Power (e.i.r.p.) measured in clause 5.4.2 and save the corrected data. The following formulas can be used: $C_{Corr} = P_{Sum} - P_{e.i.r.p.}$ $P_{Samplecorr}(n) = P_{Sample}(n) - C_{Corr}$ with 'n' being the actual sample number

Step 5:	Starting from the first sample $P_{\text{Samplecorr}}(n)$ (lowest frequency), add up the power (in mW) of the following samples representing a 1 MHz segment and record the results for power and position (i.e. sample #1 to sample #100). This is the Power Spectral Density (e.i.r.p.) for the first 1 MHz segment which shall be recorded.
Step 6:	Shift the start point of the samples added up in step 5 by one sample and repeat the procedure in step 5 (i.e. sample #2 to #101).
Step 7:	Repeat step 6 until the end of the data set and record the Power Spectral Density values for each of the 1 MHz segments. From all the recorded results, the highest value is the maximum Power Spectral Density for the UUT. This value, which shall comply with the limit given in clause 4.3.2.3.3, shall be recorded in the test report.
<input checked="" type="checkbox"/> Option 2:	
Step 1:	Connect the UUT to the spectrum analyser and use the following settings: <ul style="list-style-type: none"> <li>- Centre Frequency: The centre frequency of the channel under test</li> <li>- RBW: 1 MHz</li> <li>- VBW: 3 MHz</li> <li>- Frequency Span: <math>2 \times \text{Nominal Bandwidth}</math> (e.g. 40 MHz for a 20 MHz channel)</li> <li>- Detector Mode: Peak</li> <li>- Trace Mode: Max Hold</li> </ul>
Step 2:	When the trace is complete, find the peak value of the power envelope and record the frequency.
Step 3:	Make the following changes to the settings of the spectrum analyser: <ul style="list-style-type: none"> <li>- Centre Frequency: Equal to the frequency recorded in step 2</li> <li>- Frequency Span: 3 MHz</li> <li>- RBW: 1 MHz</li> <li>- VBW: 3 MHz</li> <li>- Sweep Time: 1 minute</li> <li>- Detector Mode: RMS</li> <li>- Trace Mode: Max Hold</li> </ul>
Step 4:	When the trace is complete, the trace shall be captured using the "Hold" or "View" option on the spectrum analyser. Find the peak value of the trace and place the analyser marker on this peak. This level is recorded as the highest mean power (power spectral density) $D$ in a 1 MHz band. Alternatively, where a spectrum analyser is equipped with a function to measure power spectral density, this function may be used to display the power spectral density $D$ in dBm / MHz. In case of conducted measurements on smart antenna systems operating in a mode with multiple transmit chains active simultaneously, the power spectral density of each transmit chain shall be measured separately to calculate the total power spectral density (value $D$ in dBm / MHz) for the UUT.
Step 5:	The maximum Power Spectral Density (PSD) e.i.r.p. is calculated from the above measured power spectral density $D$ , the observed Duty Cycle (DC) (see clause 5.4.2.2.1.3, step 4), the applicable antenna assembly gain $G$ in dBi and if applicable the beamforming gain $Y$ in dB, according to the formula below. This value shall be recorded in the test report. If more than one antenna assembly is intended for this power setting, the gain of the antenna assembly with the highest gain shall be used. $\text{PSD} = D + G + Y + 10 \times \log(1 / \text{DC}) \quad (\text{dBm} / \text{MHz})$
<input type="checkbox"/> Refer as EN 300 328, clause 5.4.3.2.2 for radiated measurement.	

### 3.2.4 Test Setup



### 3.2.5 Test Result of Power Spectral Density

Refer as Appendix B

### 3.3 Occupied Channel Bandwidth

#### 3.3.1 Occupied Channel Bandwidth Limit

Occupied Channel Bandwidth Limit
<b>Type of Frequency Hopping Equipment:</b>
<input type="checkbox"/> Occupied Channel Bandwidth for each hopping frequency fall completely within 2.4 GHz – 2.4835 GHz.
<input type="checkbox"/> For non-adaptive equipment with e.i.r.p greater than 10 dBm, Occupied Channel Bandwidth $\leq$ 5 MHz.
<b>Type of Equipment Using Wide Band Modulations Other than FHSS:</b>
<input checked="" type="checkbox"/> Occupied Channel Bandwidth fall completely within 2.4 GHz – 2.4835 GHz.
<input type="checkbox"/> For non-adaptive equipment with e.i.r.p greater than 10 dBm, Occupied Channel Bandwidth $\leq$ 20 MHz.

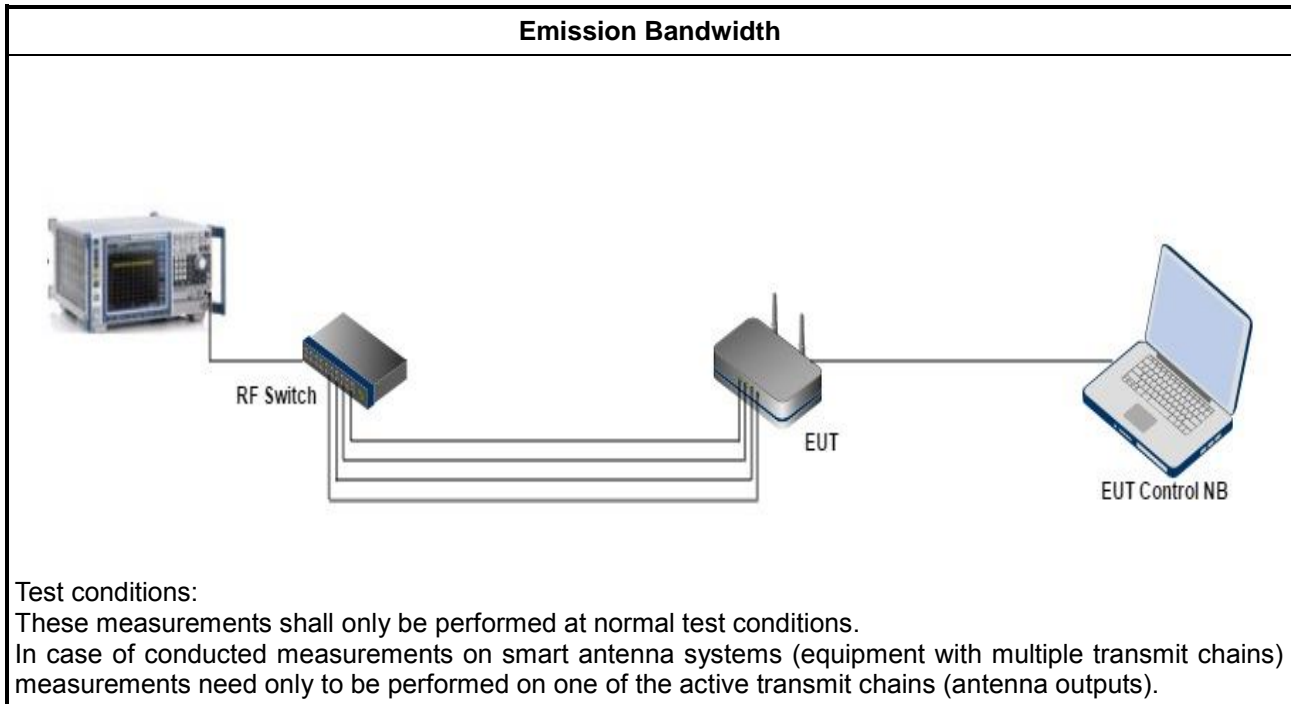
#### 3.3.2 Measuring Instruments

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

#### 3.3.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as EN 300 328, clause 5.4.7.2.1 for conducted measurement.
<p>Step 1: Connect the UUT to the spectrum analyzer and use the following settings:</p> <ul style="list-style-type: none"> <li>- Centre Frequency : The centre frequency of the channel under test.</li> <li>- Resolution BW : <math>\sim 1\%</math> of the span without going below <math>1\%</math>.</li> <li>- Video BW : <math>3 \times</math> RBW.</li> <li>- Frequency Span : <math>2 \times</math> Occupied Channel Bandwidth (e.g. 40 MHz for a 20 MHz channel)</li> <li>- Detector Mode : RMS.</li> <li>- Trace Mode : Max Hold.</li> <li>- Sweep Time : 1s.</li> </ul> <p>Step 2: Wait until the trace is completed. Find the peak value of the trace and place the analyzer marker on this peak.</p> <p>Step 3: Use the 99 % bandwidth function of the spectrum analyzer to measure the Occupied Channel Bandwidth of the UUT ,This value shall be recorded. NOTE: Make sure that the power envelope is sufficiently above the noise floor of the analyzer to avoid the noise signals left and right from the power envelope being taken into account by this measurement.</p>
<input type="checkbox"/> Refer as EN 300 328, clause 5.4.7.2.2 for radiated measurement.

### 3.3.4 Test Setup



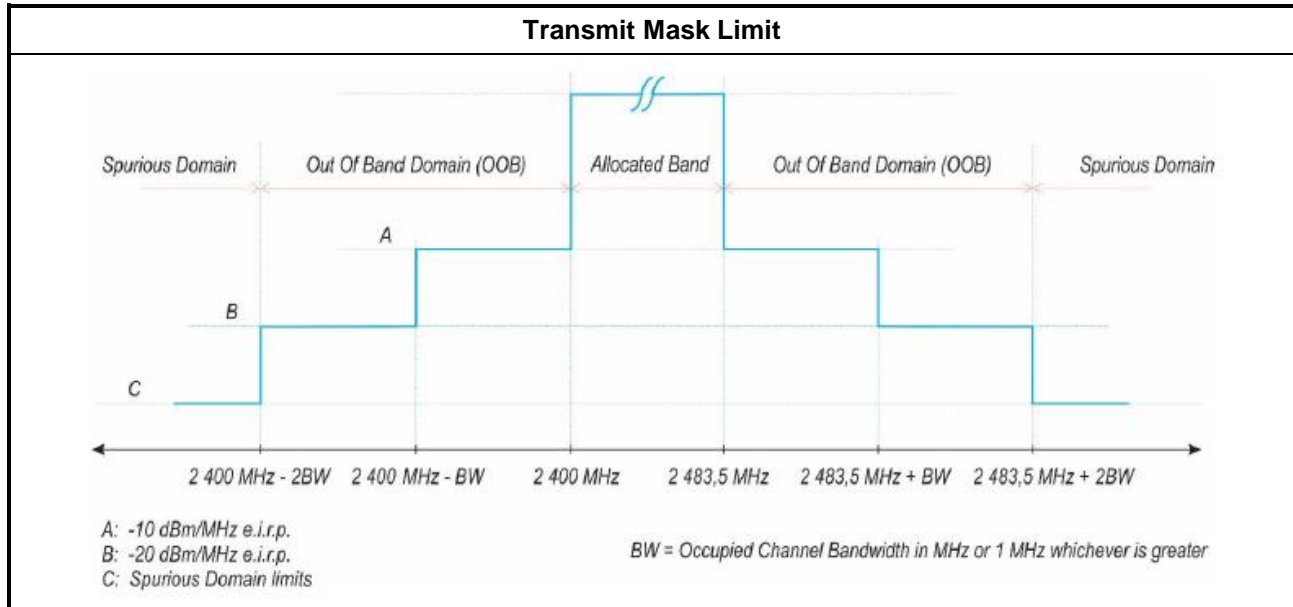
### 3.3.5 Test Result of Occupied Channel Bandwidth

Refer as Appendix C



### 3.4 Transmitter Unwanted Emissions in the Out-of-band Domain

#### 3.4.1 Transmitter Unwanted Emissions in the Out-of-band Domain Limit



#### 3.4.2 Measuring Instruments

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

#### 3.4.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 300 328, clause 5.4.8.2.1 for conducted measurement.
<p>Step 1: Connect the UUT to the spectrum analyzer and use the following settings:</p> <ul style="list-style-type: none"> <li>- Centre Frequency : 2 484 MHz</li> <li>- Span : 0 Hz</li> <li>- Resolution BW : 1 MHz</li> <li>- Filter mode : Channel filter</li> <li>- Video BW : 3MHz</li> <li>- Detector Mode : RMS</li> <li>- Trace Mode : Clear / Write</li> <li>- Sweep Mode : Continuous</li> <li>- Sweep Points : Sweep Time [s] / (1 <math>\mu</math>s) or 5 000 whichever is greater</li> <li>- Trigger Mode : Video trigger</li> <li>- Sweep Time : &gt; 120 % of the duration of the longest burst detected during the measurement of the RF Output Power.</li> </ul> <p>NOTE 1: In case video triggering is not possible, an external trigger source may be used.</p>	

Step 2: (segment 2 483,5 MHz to 2 483,5 MHz + BW)

- Adjust the trigger level to select the transmissions with the highest power level.
- For frequency hopping equipment operating in a normal hopping mode, the different hops will result in signal bursts with different power levels. In this case the burst with the highest power level shall be selected.
- Set a window (start and stop lines) to match with the start and end of the burst and in which the RMS power shall be measured using the Time Domain Power function.
- Select RMS power to be measured within the selected window and note the result which is the RMS power within this 1 MHz segment (2 483,5 MHz to 2 484,5 MHz). Compare this value with the applicable limit provided by the mask.
- Increase the centre frequency in steps of 1 MHz and repeat this measurement for every 1 MHz segment within the range 2 483,5 MHz to 2 483,5 MHz + BW. The centre frequency of the last 1 MHz segment shall be set to 2 483,5 MHz + BW - 0,5 MHz (which means this may partly overlap with the previous 1 MHz segment).

Step 3: (segment 2 483,5 MHz + BW to 2 483,5 MHz + 2BW)

- Change the centre frequency of the analyzer to 2 484 MHz + BW and perform the measurement for the first 1 MHz segment within range 2 483,5 MHz + BW to 2 483,5 MHz + 2BW. Increase the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2 483,5 MHz + 2 BW - 0,5 MHz.

Step 4: (segment 2 400 MHz - BW to 2 400 MHz)

- Change the centre frequency of the analyzer to 2 399,5 MHz and perform the measurement for the first 1 MHz segment within range 2 400 MHz - BW to 2 400 MHz. Reduce the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2 400 MHz - 2BW + 0,5 MHz.

Step 5: (segment 2 400 MHz - 2BW to 2 400 MHz - BW)

- Change the centre frequency of the analyzer to 2 399,5 MHz - BW and perform the measurement for the first 1 MHz segment within range 2 400 MHz - 2BW to 2 400 MHz - BW. Reduce the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2 400 MHz - 2BW + 0,5 MHz.

Step 6: - In case of conducted measurements on equipment with a single transmit chain, the declared antenna assembly gain "G" in dBi shall be added to the results for each of the 1 MHz segments and compared with the limits provided by the mask given in figures 1 or 3. If more than one antenna assembly is intended for this power setting, the antenna with the highest gain shall be considered.

- In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), the measurements need to be repeated for each of the active transmit chains. The declared antenna assembly gain "G" in dBi for a single antenna shall be added to these results. If more than one antenna assembly is intended for this power setting, the antenna with the highest gain shall be considered. Comparison with the applicable limits shall be done using any of the options given below:

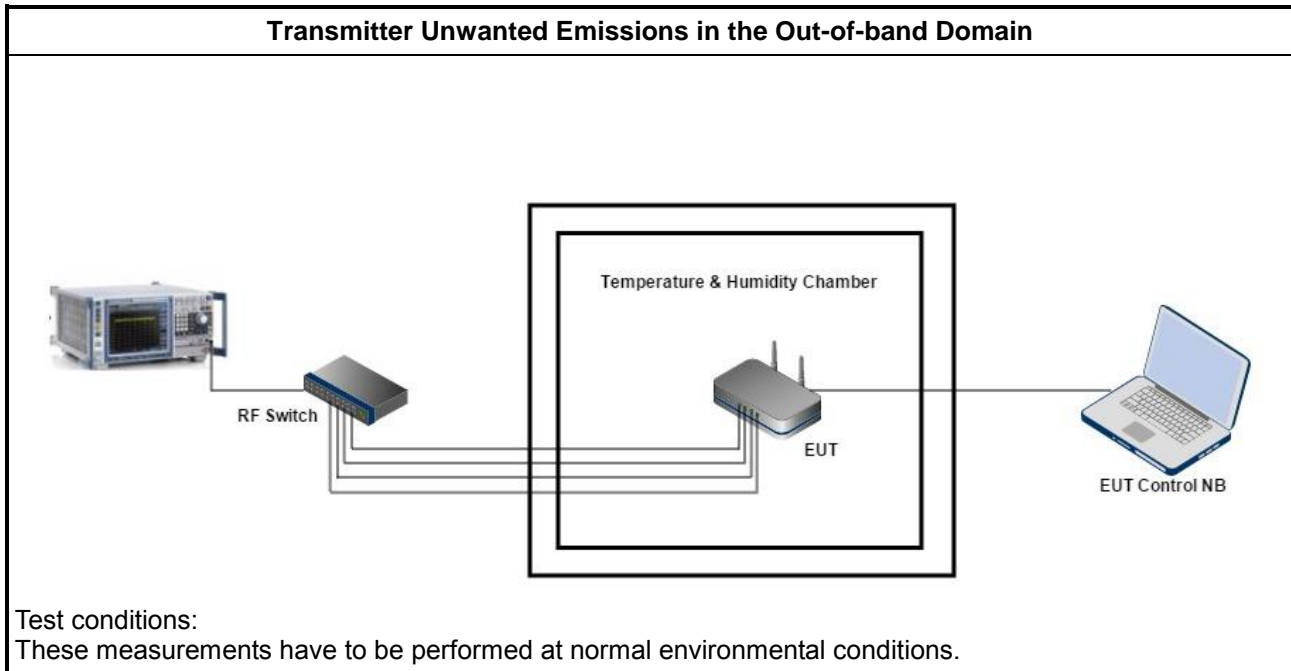
- Option 1: the results for each of the transmit chains for the corresponding 1 MHz segments shall be added. The additional beamforming gain "Y" in dB shall be added as well and the resulting values compared with the limits provided by the mask given in figures 1 or 3.

- Option 2: the limits provided by the mask given in figures 1 or 3 shall be reduced by  $10 \times \log_{10}(Ach)$  and the additional beamforming gain "Y" in dB. The results for each of the transmit chains shall be individually compared with these reduced limits.

NOTE 2: Ach refers to the number of active transmit chains. It shall be recorded whether the equipment complies with the mask provided in figures 1 or 3.

☐ Refer as EN 300 328, clause 5.4.8.2.2 for radiated measurement.

### 3.4.4 Test Setup



### 3.4.5 Test Result of Transmitter Unwanted Emissions in the Out-of-band Domain

Refer as Appendix D

### 3.5 Transmitter Unwanted Emissions in the Spurious Domain

#### 3.5.1 Transmitter Unwanted Emissions in the Spurious Domain Limit

Frequency Range	Maximum Power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 694 MHz	-54 dBm	100 kHz
694 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz
Note 1: spurious domain $\leq (2400 \text{ MHz} - 2N)$ and spurious domain $\geq (2483.5 \text{ MHz} + 2N)$ ; N = MAX (1, Occupied Channel Bandwidth) MHz		

#### 3.5.2 Measuring Instruments

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

### 3.5.3 Test Procedures

Test Method	
<input type="checkbox"/>	Refer as EN 300 328, clause 5.4.9.2.1 for conducted measurement. Conducted spurious emissions and radiated by the cabinet with the antenna connector(s) terminated by a specified load (cabinet radiation).
<input checked="" type="checkbox"/>	Refer as EN 300 328, clause 5.4.9.2.2 for radiated measurement.
<p>Pre-scan: The test procedure below shall be used to identify potential unwanted emissions of the UUT.</p> <p>Step 1: The sensitivity of the spectrum analyzer should be such that the noise floor is at least 12 dB below the limits given in tables 4 or 12.</p> <p>Step 2: The emissions over the range 30 MHz to 1 000 MHz shall be identified.  Spectrum analyzer settings :  - Resolution bandwidth : 100 kHz  - Video bandwidth : 300 kHz  - Detector mode : Peak  - Filter type : 3 dB (Gaussian)  - Trace Mode : Max Hold  - Sweep Points : <math>\geq 19\,400</math>  NOTE 1: For spectrum analyzers not supporting this high number of sweep points, the frequency band may need to be segmented.  - Sweep time:  •For non-continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 100 kHz frequency step, the measurement time is greater than two transmissions of the UUT.  •For Frequency Hopping equipment operating in a normal operating (hopping not disabled) mode, the sweep time shall be further increased to capture multiple transmissions on the same hopping frequency in different hopping sequences.  Allow the trace to stabilize. Any emissions identified during the sweeps above and that fall within the 6 dB range below the applicable limit or above, shall be individually measured using the procedure in clause 5.4.9.2.1.3 and compared to the limits given in tables 4 or 12.</p> <p>Step 3: The emissions over the range 1 GHz to 12,75 GHz shall be identified.  Spectrum analyzer settings:  - Resolution bandwidth : 1 MHz  - Video bandwidth : 3 MHz  - Filter type : 3 dB (Gaussian)  - Detector mode : Peak  - Trace Mode : Max Hold  - Sweep Points : <math>\geq 23\,500</math>  NOTE 2: For spectrum analyzers not supporting this high number of sweep points, the frequency band may need to be segmented.  - Sweep time:  •For non-continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 1 MHz frequency step, the measurement time is greater than two transmissions of the UUT.  •For Frequency Hopping equipment operating in a normal operating (hopping not disabled) mode, the sweep time shall be further increased to capture multiple transmissions on the same hopping frequency in different hopping sequences.  Allow the trace to stabilize. Any emissions identified during the sweeps above that fall within the 6 dB range below the applicable limit or above, shall be individually measured using the procedure in clause 5.4.9.2.1.3 and compared to the limits given in tables 4 or 12.  Frequency Hopping equipment may generate a block (or several blocks) of spurious emissions anywhere within the spurious domain. If this is the case, only the highest peak of each block of emissions shall be measured using the procedure in clause 5.4.9.2.1.3.</p>	

Step 4: In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), the steps 2 and 3 need to be repeated for each of the active transmit chains (Ach). The limits used to identify emissions during this pre-scan need to be reduced with  $10 \times \log_{10}(\text{Ach})$  (number of active transmit chains).

Measurement of the emissions identified during the pre-scan

Step 1: The level of the emissions shall be measured using the following spectrum analyzer settings:

- Measurement Mode : Time Domain Power
- Centre Frequency : Frequency of emission identified during the pre-scan
- Resolution Bandwidth : 100 kHz (< 1 GHz) / 1 MHz (> 1 GHz)
- Video Bandwidth : 300 kHz (< 1 GHz) / 3 MHz (> 1 GHz)
- Frequency Span : Zero Span
- Sweep mode : Single Sweep
- Sweep time : >120 % of the duration of the longest burst detected during the measurement of the RF Output Power
- Sweep points : Sweep time [ $\mu\text{s}$ ] / (1  $\mu\text{s}$ ) with a maximum of 30 000
- Trigger : Video (burst signals) or Manual (continuous signals)
- Detector : RMS

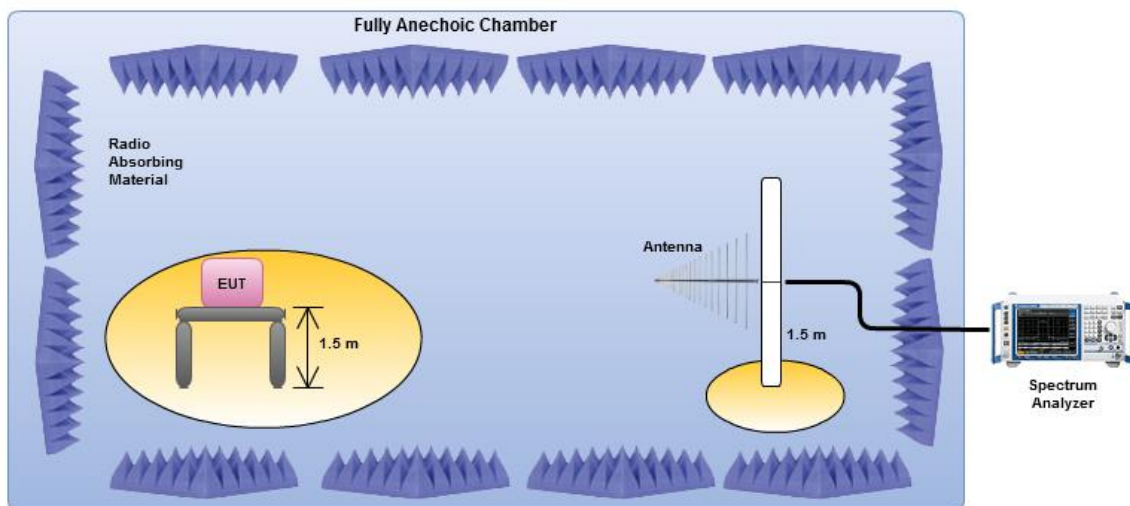
Step 2: Set a window where the start and stop indicators match the start and end of the burst with the highest level and record the value of the power measured within this window.  
If the spurious emission to be measured is a continuous transmission, the measurement window shall be set to match the start and stop times of the sweep.

Step 3: In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), step 2 needs to be repeated for each of the active transmit chains (Ach).  
Sum the measured power (within the observed window) for each of the active transmit chains.

Step 4: The value defined in step 3 shall be compared to the limits defined in tables 4 or 12.

### 3.5.4 Test Setup

#### Transmitter Unwanted Emissions in the Spurious Domain



Test conditions:

These measurements shall only be performed at normal test conditions.

A measuring distance of at least 3 m shall be used for measurements at frequencies up to 1 GHz. For frequencies above 1 GHz, any suitable measuring far field distance may be used, depending on the test system noise floor for detecting spurious emission signals. The equipment size (excluding the antenna) shall be less than 20 % of the measuring distance. The height of the equipment or of the substitution antenna shall be 1.5 m.



### **3.5.5 Transmitter Radiated Unwanted Emissions**

Refer as Appendix E



## 4 Receiver Test Result

### 4.1 Receiver Spurious Emissions

#### 4.1.1 Receiver Spurious Emissions Limit

Frequency Range	Maximum Power	Bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

#### 4.1.2 Measuring Instruments

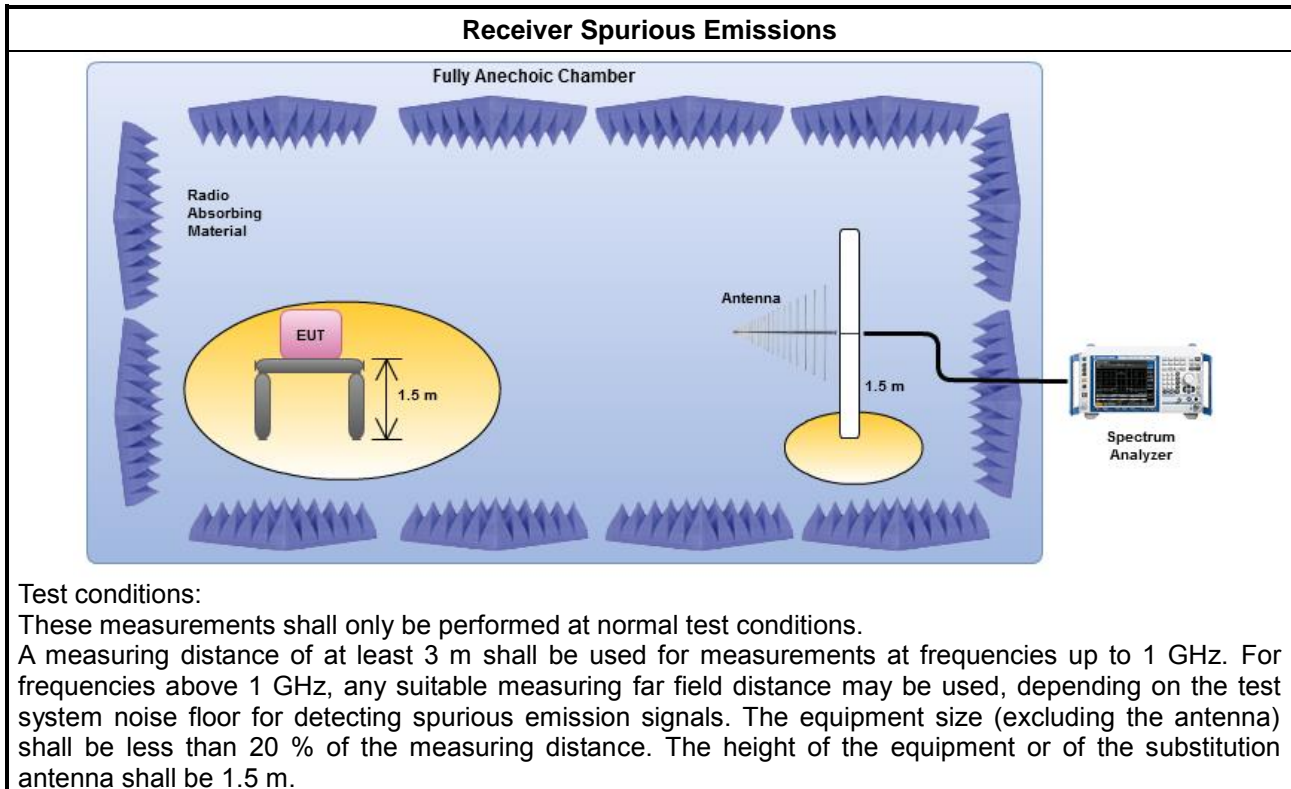
Refer a test equipment and calibration data table in this test report.

#### 4.1.3 Test Procedures

Test Method	
<input type="checkbox"/>	Refer as EN 300 328, clause 5.4.10.2.1 for conducted measurement. Conducted spurious emissions and radiated by the cabinet with the antenna connector(s) terminated by a specified load (cabinet radiation).
<input checked="" type="checkbox"/>	Refer as EN 300 328, clause 5.4.10.2.2 for radiated measurement.
<p>Pre-scan: The test procedure below shall be used to identify potential unwanted emissions of the UUT.</p> <p>Step 1: The sensitivity of the spectrum analyzer should be such that the noise floor is at least 12 dB below the limits given in tables 5 or 13.</p> <p>Step 2: The emissions over the range 30 MHz to 1 000 MHz shall be identified.</p> <p>Spectrum analyzer settings :</p> <ul style="list-style-type: none"> <li>- Resolution bandwidth : 100 kHz</li> <li>- Video bandwidth : 300 kHz</li> <li>- Filter type : 3 dB (Gaussian)</li> <li>- Detector mode : Peak</li> <li>- Trace Mode : Max Hold</li> <li>- Sweep Points : <math>\geq 19\,400</math></li> </ul> <p>NOTE 1: For spectrum analyzers not supporting this high number of sweep points, the frequency band may need to be segmented.</p> <ul style="list-style-type: none"> <li>- Sweep time : Auto</li> </ul> <p>Allow the trace to stabilize. Any emissions identified during the sweeps above and that fall within the 6 dB range below the applicable limit or above, shall be individually measured using the procedure in clause 5.4.10.2.1.3 and compared to the limits given in tables 5 or 13.</p>	

- Step 3: The emissions over the range 1 GHz to 12,75 GHz shall be identified.  
Spectrum analyzer settings:
- Resolution bandwidth : 1 MHz
  - Video bandwidth : 3 MHz
  - Filter type : 3 dB (Gaussian)
  - Detector mode : Peak
  - Trace Mode : Max Hold
  - Sweep Points :  $\geq 23\,500$
- NOTE 2: For spectrum analyzers not supporting this high number of sweep points, the frequency band may need to be segmented.
- Sweep time: Auto
- Allow the trace to stabilize. Any emissions identified during the sweeps above that fall within the 6 dB range below the applicable limit or above, shall be individually measured using the procedure in clause 5.4.10.2.1.3 and compared to the limits given in tables 5 or 13.
- Frequency Hopping equipment may generate a block (or several blocks) of spurious emissions anywhere within the spurious domain. If this is the case, only the highest peak of each block of emissions shall be measured using the procedure in clause 5.4.10.2.1.3.
- Step 4: In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), the steps 2 and 3 need to be repeated for each of the active transmit chains (Ach). The limits used to identify emissions during this pre-scan need to be reduced with  $10 \times \log_{10}(\text{Ach})$  (number of active transmit chains).
- Measurement of the emissions identified during the pre-scan
- Step 1: The level of the emissions shall be measured using the following spectrum analyzer settings:
- Measurement Mode : Time Domain Power
  - Centre Frequency : Frequency of emission identified during the pre-scan
  - Resolution Bandwidth : 100 kHz ( $< 1\text{ GHz}$ ) / 1 MHz ( $> 1\text{ GHz}$ )
  - Video Bandwidth : 300 kHz ( $< 1\text{ GHz}$ ) / 3 MHz ( $> 1\text{ GHz}$ )
  - Frequency Span : Zero Span
  - Sweep mode : Single Sweep
  - Sweep time : 30 ms
  - Sweep Point :  $\geq 30\,000$
  - Trigger : Video (for burst signals) or Manual (for continuous signals)
  - Detector : RMS
- Step 2: Set a window where the start and stop indicators match the start and end of the burst with the highest level and record the value of the power measured within this window.  
If the spurious emission to be measured is a continuous transmission, the measurement window shall be set to the start and stop times of the sweep.
- Step 3: In case of conducted measurements on smart antenna systems (equipment with multiple receive chains), step 2 needs to be repeated for each of the active receive chains (Ach).  
Sum the measured power (within the observed window) for each of the active receive chains
- Step 4: The value defined in step 3 shall be compared to the limits defined in tables 5 and 13.

#### 4.1.4 Test Setup



#### 4.1.5 Receiver Radiated Spurious Emissions

Refer as Appendix F

## 5 Adaptivity Test Result

### 5.1 Adaptivity

#### 5.1.1 Adaptivity Limit

Adaptivity Limit	
<input checked="" type="checkbox"/>	Only for adaptive systems and RF Output Power > 10 dBm
<input type="checkbox"/>	Non-LBT based Detect and Avoid: <ul style="list-style-type: none"> <li>Minimum remain unavailable = 1sec;</li> <li>Minimum Idle Period time = 100us;</li> <li>Maximum COT = 40ms</li> <li>i.e. COT [40ms] + Idle Period [2ms - 5% of COT]; N x [COT+Idle];</li> <li>TL = -70 dBm/MHz + 10 × log10 (100 mW / Pout) (Pout in mW e.i.r.p.)</li> </ul>
<input type="checkbox"/>	LBT based Detect and Avoid (Frame Based Equipment): <ul style="list-style-type: none"> <li>Minimum Clear Channel Assessment (CCA) time &gt; 18 us;</li> <li>Maximum COT = 1 ms to 10 ms</li> <li>Minimum of Idle period Time &gt; 5% of COT</li> <li>e.g. CCA [120us] + COT [10ms] + Idle Period [0.5ms - 5% of COT];</li> <li>TL = -70 dBm/MHz + 10 × log10 (100 mW / Pout) (Pout in mW e.i.r.p.)</li> </ul>
<input checked="" type="checkbox"/>	LBT based Detect and Avoid (Load Based Equipment with spectrum sharing mechanism IEEE Std.): <ul style="list-style-type: none"> <li>LBT based spectrum sharing mechanism may implement IEEE 802.11™ [i.3], clause 10, clause 11, clause 15, clause 16, clause 18 and clause 19, or in IEEE 802.15.4™ [i.4], clause 5, clause 6 and clause 10</li> <li>TL = -70 dBm/MHz + 10 × log10 (100 mW / Pout) (Pout in mW e.i.r.p.)</li> </ul>
<input type="checkbox"/>	LBT based Detect and Avoid (Load Based Equipment): <ul style="list-style-type: none"> <li>Minimum Clear Channel Assessment (CCA) time &gt;18 us;</li> <li>Maximum COT ≤ 13ms;</li> <li>Minimum of Idle period Time &gt;18 us;</li> <li>TL = -70 dBm/MHz + 10 × log10 (100 mW / Pout) (Pout in mW e.i.r.p.)</li> </ul>
<input checked="" type="checkbox"/>	Short Control Signaling Transmissions: <ul style="list-style-type: none"> <li>Short Control Signaling Transmissions shall have a maximum duty cycle of 10 % within an observation period of 50 ms.</li> </ul>

Unwanted Signal Parameters				
Equipment Type	Wanted Signal Mean Power from Companion Device	Unwanted Signal Frequency (MHz)	Unwanted Signal Mean power (dBm)	Type of Interfering Signal
LBT	sufficient to maintain the link (see note 2)	2395 or 2488,5 (see note 1)	-35 (see note 3)	CW
Non-LBT	-30 dBm			
Note 1: The highest frequency shall be used for testing operating channels within the range 2 400 MHz to 2442 MHz, while the lowest frequency shall be used for testing operating channels within the range 2 442 MHz to 2 483,5 MHz.				
Note 2: A typical value which can be used in most cases is -50 dBm/MHz.				
Note 3: The level specified is the level in front of the UUT antenna. In case of conducted measurements, this level has to be corrected by the actual antenna assembly gain.				

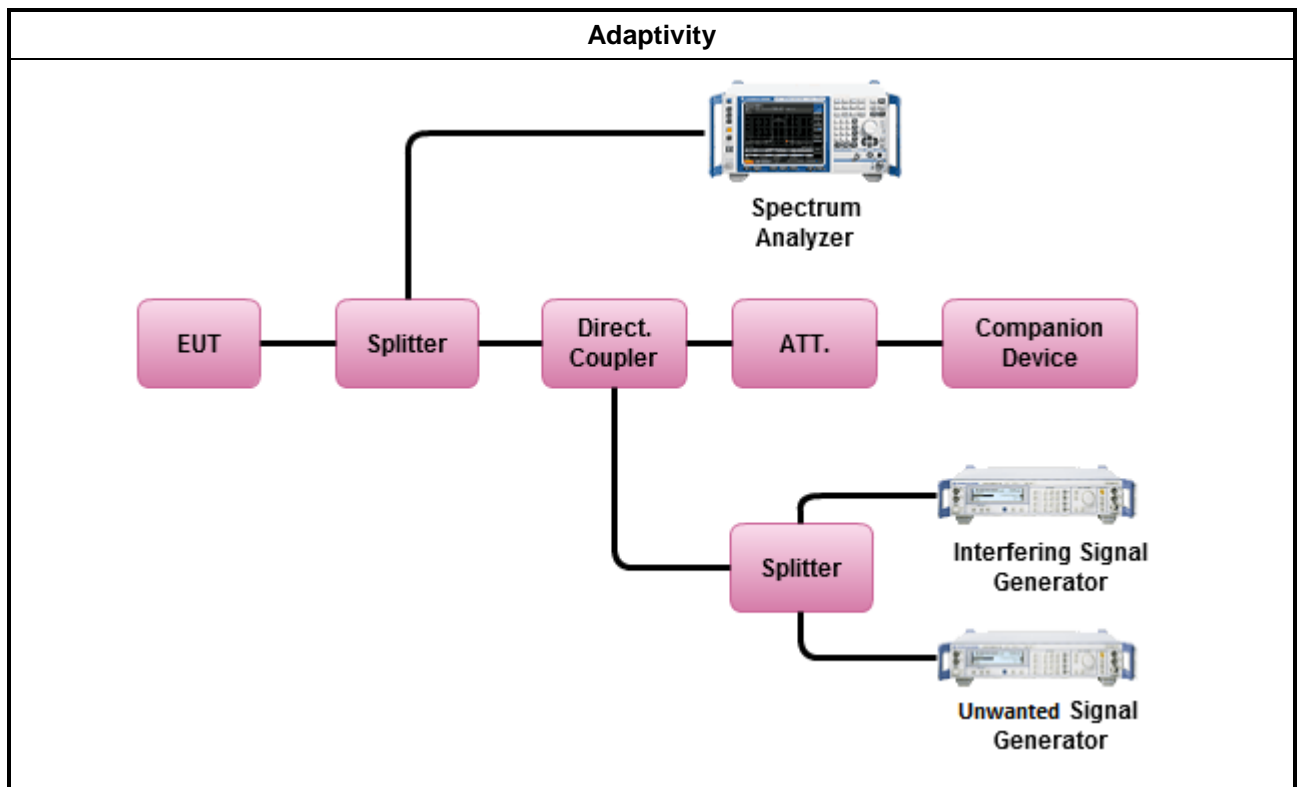
### 5.1.2 Measuring Instruments

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

### 5.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 300 328, clause 5.4.6.2.1 for conducted measurement.
<input checked="" type="checkbox"/>	For conducted measurements on devices with multiple transmit chains and receive chains. The power splitter/combiner shall be used to combine all the transmit/receive chains (antenna outputs) into a single test point. The insertion loss of the power splitter/combiner shall be taken into account.
<input type="checkbox"/>	Refer as EN 300 328, clause 5.4.6.2.2 for radiated measurement.

### 5.1.4 Test Setup



### 5.1.5 Test Result of Adaptivity

Refer as Appendix G

## 6 Receiver Blocking Test Result

### 6.1 Receiver Blocking

#### 6.1.1 Receiver Blocking Limit

Receiver Blocking Limit	
<input checked="" type="checkbox"/>	Receiver Category 1: Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p. shall be considered as receiver category 1 equipment.
<input type="checkbox"/>	Receiver Category 2: Non-adaptive equipment with a Medium Utilization (MU) factor greater than 1 % and less than or equal to 10 % or adaptive equipment with a maximum RF output power of 10 dBm e.i.r.p. shall be considered as receiver category 2 equipment.
<input type="checkbox"/>	Receiver Category 3: Non-adaptive equipment with a maximum Medium Utilization (MU) factor of 1 % or adaptive equipment with a maximum RF output power of 0 dBm e.i.r.p. shall be considered as receiver category 3 equipment.

Table 1: Receiver Blocking Parameters for Receiver Category 1 Equipment			
Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
(-133 dBm + 10 × log <sub>10</sub> (OCBW)) or -68 dBm whichever is less (see note 2)	2 380 2 504	-34	CW
(-139 dBm + 10 × log <sub>10</sub> (OCBW)) or -74 dBm whichever is less (see note 3)	2 300, 2 330 2 360, 2 524 2 584, 2 674		
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

**Table 2: Receiver Blocking Parameters for Receiver Category 2 Equipment**

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
$(-139 \text{ dBm} + 10 \times \log_{10}(\text{OCBW}) + 10 \text{ dB})$ or $(-74 \text{ dBm} + 10 \text{ dB})$ whichever is less (see note 2)	2 380, 2 504 2 300, 2 584	-34	CW

NOTE 1: OCBW is in Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to  $P_{\text{min}} + 26 \text{ dB}$  where  $P_{\text{min}}$  is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

**Table 3: Receiver Blocking Parameters for Receiver Category 3 Equipment**

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
$(-139 \text{ dBm} + 10 \times \log_{10}(\text{OCBW}) + 20 \text{ dB})$ or $(-74 \text{ dBm} + 20 \text{ dB})$ whichever is less (see note 2)	2 380, 2 504 2 300, 2 584	-34	CW

NOTE 1: OCBW is in Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to  $P_{\text{min}} + 30 \text{ dB}$  where  $P_{\text{min}}$  is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

## 6.1.2 Measuring Instruments

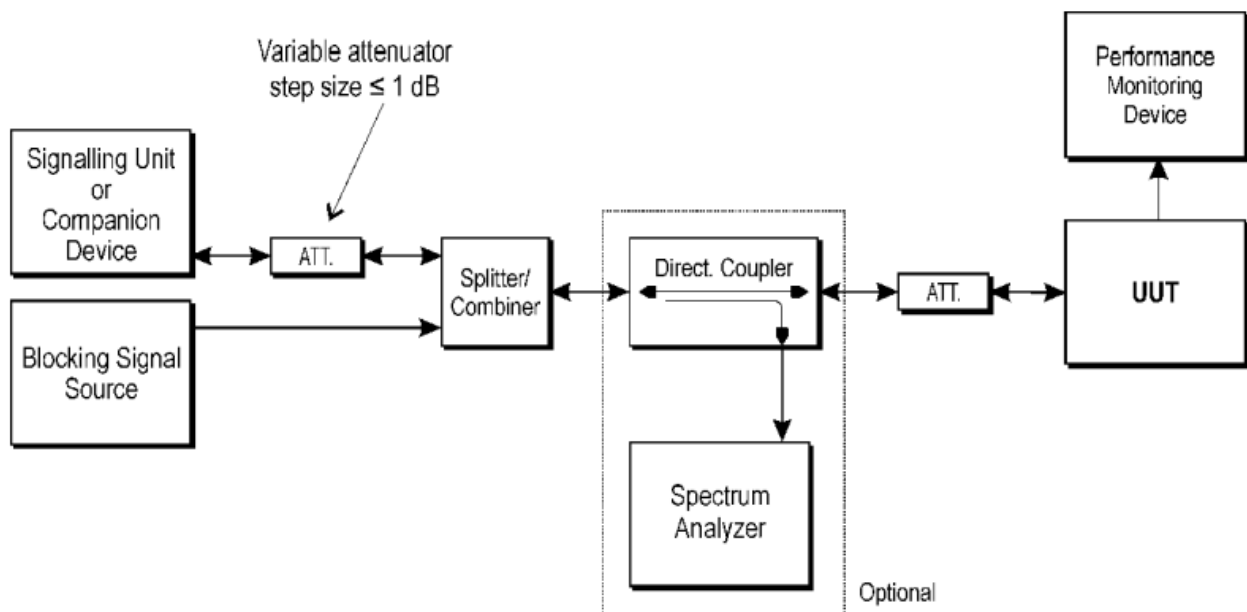
Refer a test equipment and calibration data table in this test report.

### 6.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 300 328, clause 5.4.11.2.1 for conducted measurement.
<input checked="" type="checkbox"/>	For systems using multiple receive chains only one chain (antenna port) need to be tested. All other receiver inputs shall be terminated. For non-frequency hopping equipment, the UUT shall be set to the lowest operating channel.
	Step 1 The blocking signal generator is set to the first frequency as defined in the appropriate table corresponding to the receiver category and type of equipment.
	<p>Step 2 With the blocking signal generator switched off, a communication link is established between the UUT and the associated companion device using the test setup shown in figure 6.</p> <p>Unless the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the level of the wanted signal shall be set to the value provided in the table corresponding to the receiver category and type of equipment. The test procedure defined in clause 5.4.2, and more in particular clause 5.4.2.2.1.2, can be used to measure the (conducted) level of the wanted signal however no correction shall be made for antenna gain of the companion device (step 6 in clause 5.4.2.2.1.2 shall be ignored). This level may be measured directly at the output of the companion device and a correction is made for the coupling loss into the UUT. The actual level for the wanted signal shall be recorded in the test report.</p> <p>When the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the attenuation of the variable attenuator shall be increased in 1 dB steps to a value at which the minimum performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still met. The resulting level for the wanted signal at the input of the UUT is Pmin. This signal level (Pmin) is increased by the value provided in note 2 of the applicable table corresponding to the receiver category and type of equipment.</p>
	Step 3 The blocking signal at the UUT is set to the level provided in the table corresponding to the receiver category and type of equipment.
	<p>Step 4 Repeat step 2 and step 3 for each remaining combination of frequency and level for the blocking signal as provided in the table corresponding to the receiver category and type of equipment.</p> <p>For non-FHSS equipment, repeat step 2 to step 4 with the UUT operating at the highest operating channel on which the blocking test has to be performed (see clause 5.4.11.1).</p> <p>It shall be assessed and recorded in the test report whether the UUT complies with the Receiver Blocking requirement.</p>
<input type="checkbox"/>	Refer as EN 300 328, clause 5.4.11.2.2 for radiated measurement.



### 6.1.4 Test Setup



### 6.1.5 Test Result of Receiver Blocking

Refer as Appendix H

## 7 Test Equipment and Calibration Data

### Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	10Hz~40GHz	14/Feb/2022	13/Feb/2023
Programmable Temp. & Humi. Chamber	Giant Force	GTH-225-40-CP-AR	MAA1311-008	-40~100℃	08/Jun/2021	07/Jun/2022
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022
USB Wideband Power Sensor	Agilent	U2021XA	MY54320011	50MHz~18GHz	15/Aug/2021	14/Aug/2022
USB Wideband Power Sensor	Agilent	U2021XA	MY54320013	50MHz~18GHz	15/Aug/2021	14/Aug/2022
SENSE-300328_DTS	Sporton	V5.10.7.15	N/A	N/A	N/A	N/A

### Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV40	101514	10Hz~40GHz	30/Apr/2021	29/Apr/2022
Signal Analyzer	R&S	FSV 40	101515	10Hz~40GHz	14/Feb/2022	13/Feb/2023
Amplifier	Agilent	8447D	2944A11146	100kHz~1.3GHz	02/Sep/2021	01/Sep/2022
Microwave Preamplifier	EMC INSTRUMENT	EMC051845BE	980241	1GHz~18GHz	17/May/2021	16/May/2022
Bilog Antenna & 6dB Attenuator	SCHAFFNER	CBL6111C & N-6-06	2737 & AT-N0603	30MHz~1GHz	04/Sep/2021	03/Sep/2022
Double Ridged Guide Horn Antenna	ETS • LINDGREN	3117	00091920	1GHz~18GHz	25/Nov/2021	24/Nov/2022
RF Cable	Jye Bao	SUOFLEX 104	CB001+F1403+S N329367/4	30MHz~1GHz	16/Mar/2022	15/Mar/2023
RF Cable	HUBER+SUHNER	SUOFLEX 104	SN345669/4+MY 34919/4	1GHz~40GHz	16/Mar/2022	15/Mar/2023
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	18/Mar/2022	17/Mar/2023
Microwave Prempplier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	08/Mar/2022	07/Mar/2023
SENSE-300328_DTS	Sporton	V5.10.7.14	N/A	N/A	N/A	N/A

**Instrument for Adaptivity Test**

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSP30	100793	9 kHz ~ 30GHz	30/Jun/2021	29/Jun/2022
Vector Signal Generator	Keysight	N5182B	MY53051912	9kHz~6GHz	21/Mar/2022	20/Mar/2023
Signal Generator	Keysight	N5171B	MY53051240	9kHz~6GHz	24/Nov/2021	23/Nov/2022
DFS-Adaptivity	Sporton	Ver 2.7	N/A	N/A	N/A	N/A

**Instrument for Receiver Blocking Test**

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Wireless connectivity tester	R&S	CMW270	100855	70MHz ~6GHz	24/Nov/2021	23/Nov/2022
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022



**Summary**

Mode	EIRP (dBm)	EIRP (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	19.14	0.08204
802.11g_Nss1,(6Mbps)_2TX	19.89	0.09750
802.11ax HEW20_Nss1,(MCS0)_2TX	19.98	0.09954
802.11ax HEW40_Nss1,(MCS0)_2TX	19.70	0.09333

**Result**

Mode	Result	Gain (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-
2412MHz_Tnom	Pass	4.90	10.57	11.49	14.06	18.96	20.00
2412MHz_Tmin	Pass	4.90	10.60	11.41	14.03	18.93	20.00
2412MHz_Tmax	Pass	4.90	10.82	11.61	14.24	19.14	20.00
2442MHz_Tnom	Pass	4.90	10.64	11.41	14.05	18.95	20.00
2442MHz_Tmin	Pass	4.90	10.56	11.44	14.03	18.93	20.00
2442MHz_Tmax	Pass	4.90	10.71	11.46	14.11	19.01	20.00
2472MHz_Tnom	Pass	4.90	10.60	11.42	14.04	18.94	20.00
2472MHz_Tmin	Pass	4.90	10.50	11.37	13.97	18.87	20.00
2472MHz_Tmax	Pass	4.90	10.72	11.51	14.14	19.04	20.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-
2412MHz_Tnom	Pass	4.90	11.59	11.97	14.79	19.69	20.00
2412MHz_Tmin	Pass	4.90	11.25	12.11	14.71	19.61	20.00
2412MHz_Tmax	Pass	4.90	11.72	12.15	14.95	19.85	20.00
2442MHz_Tnom	Pass	4.90	11.53	12.04	14.80	19.70	20.00
2442MHz_Tmin	Pass	4.90	11.57	12.03	14.82	19.72	20.00
2442MHz_Tmax	Pass	4.90	11.69	12.15	14.94	19.84	20.00
2472MHz_Tnom	Pass	4.90	11.54	12.19	14.89	19.79	20.00
2472MHz_Tmin	Pass	4.90	11.47	12.24	14.88	19.78	20.00
2472MHz_Tmax	Pass	4.90	11.71	12.24	14.99	19.89	20.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
2412MHz_Tnom	Pass	4.90	11.69	12.09	14.90	19.80	20.00
2412MHz_Tmin	Pass	4.90	10.58	11.14	13.88	18.78	20.00
2412MHz_Tmax	Pass	4.90	11.90	12.24	15.08	19.98	20.00
2442MHz_Tnom	Pass	4.90	11.71	12.05	14.89	19.79	20.00
2442MHz_Tmin	Pass	4.90	11.65	11.84	14.76	19.66	20.00
2442MHz_Tmax	Pass	4.90	11.82	11.96	14.90	19.80	20.00
2472MHz_Tnom	Pass	4.90	11.05	11.65	14.37	19.27	20.00
2472MHz_Tmin	Pass	4.90	10.96	11.63	14.32	19.22	20.00
2472MHz_Tmax	Pass	4.90	11.30	11.88	14.61	19.51	20.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
2422MHz_Tnom	Pass	4.90	11.42	11.91	14.68	19.58	20.00
2422MHz_Tmin	Pass	4.90	11.41	11.75	14.59	19.49	20.00
2422MHz_Tmax	Pass	4.90	11.58	11.87	14.74	19.64	20.00
2442MHz_Tnom	Pass	4.90	11.47	11.87	14.68	19.58	20.00
2442MHz_Tmin	Pass	4.90	11.36	11.91	14.65	19.55	20.00
2442MHz_Tmax	Pass	4.90	11.56	12.00	14.80	19.70	20.00
2462MHz_Tnom	Pass	4.90	11.47	11.96	14.73	19.63	20.00
2462MHz_Tmin	Pass	4.90	11.34	11.91	14.64	19.54	20.00
2462MHz_Tmax	Pass	4.90	11.54	12.00	14.79	19.69	20.00

Port X = Port X output power; Total Power = Total power measure all transmit ports simultaneously.



**Summary**

Mode	EIRP (dBm)	EIRP (W)
2.4-2.4835GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	19.93	0.09840
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	19.59	0.09099



Result

Mode	Result	Gain (dBi)	Total Power (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Port 1 (dBm)	Port 2 (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
2412MHz_Tnom	Pass	7.91	11.78	19.69	20.00	8.57	8.97
2412MHz_Tmin	Pass	7.91	10.82	18.73	20.00	7.45	8.14
2412MHz_Tmax	Pass	7.91	12.00	19.91	20.00	8.85	9.13
2442MHz_Tnom	Pass	7.91	11.81	19.72	20.00	8.67	8.92
2442MHz_Tmin	Pass	7.91	11.63	19.54	20.00	8.51	8.73
2442MHz_Tmax	Pass	7.91	11.70	19.61	20.00	8.61	8.76
2472MHz_Tnom	Pass	7.91	11.84	19.75	20.00	8.53	9.11
2472MHz_Tmin	Pass	7.91	11.79	19.70	20.00	8.32	9.20
2472MHz_Tmax	Pass	7.91	12.02	19.93	20.00	8.55	9.43
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
2422MHz_Tnom	Pass	7.91	11.65	19.56	20.00	8.39	8.88
2422MHz_Tmin	Pass	7.91	11.57	19.48	20.00	8.37	8.74
2422MHz_Tmax	Pass	7.91	11.68	19.59	20.00	8.58	8.75
2442MHz_Tnom	Pass	7.91	11.67	19.58	20.00	8.46	8.85
2442MHz_Tmin	Pass	7.91	11.57	19.48	20.00	8.31	8.79
2442MHz_Tmax	Pass	7.91	11.65	19.56	20.00	8.42	8.85
2462MHz_Tnom	Pass	7.91	11.66	19.57	20.00	8.34	8.93
2462MHz_Tmin	Pass	7.91	11.54	19.45	20.00	8.12	8.90
2462MHz_Tmax	Pass	7.91	11.59	19.50	20.00	8.30	8.85

Port X = Port X output power; Total Power = Total power measure all transmit ports simultaneously.



**Summary**

Mode	EIRP PD (dBm/MHz)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_2TX	9.88
802.11g_Nss1,(6Mbps)_2TX	7.93
802.11ax HEW20_Nss1,(MCS0)_2TX	7.31
802.11ax HEW40_Nss1,(MCS0)_2TX	4.24

RBW=1MHz



**Result**

Mode	Result	Gain (dBi)	PD (dBm/MHz)	EIRP PD (dBm/MHz)	EIRP PD Limit (dBm/MHz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-
2412MHz_Tnom	Pass	4.90	4.90	9.80	10.00
2442MHz_Tnom	Pass	4.90	4.98	9.88	10.00
2472MHz_Tnom	Pass	4.90	4.81	9.71	10.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-
2412MHz_Tnom	Pass	4.90	2.98	7.88	10.00
2442MHz_Tnom	Pass	4.90	3.03	7.93	10.00
2472MHz_Tnom	Pass	4.90	2.99	7.89	10.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-
2412MHz_Tnom	Pass	4.90	2.40	7.30	10.00
2442MHz_Tnom	Pass	4.90	2.41	7.31	10.00
2472MHz_Tnom	Pass	4.90	2.36	7.26	10.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-
2422MHz_Tnom	Pass	4.90	-0.66	4.24	10.00
2442MHz_Tnom	Pass	4.90	-0.74	4.16	10.00
2462MHz_Tnom	Pass	4.90	-0.66	4.24	10.00

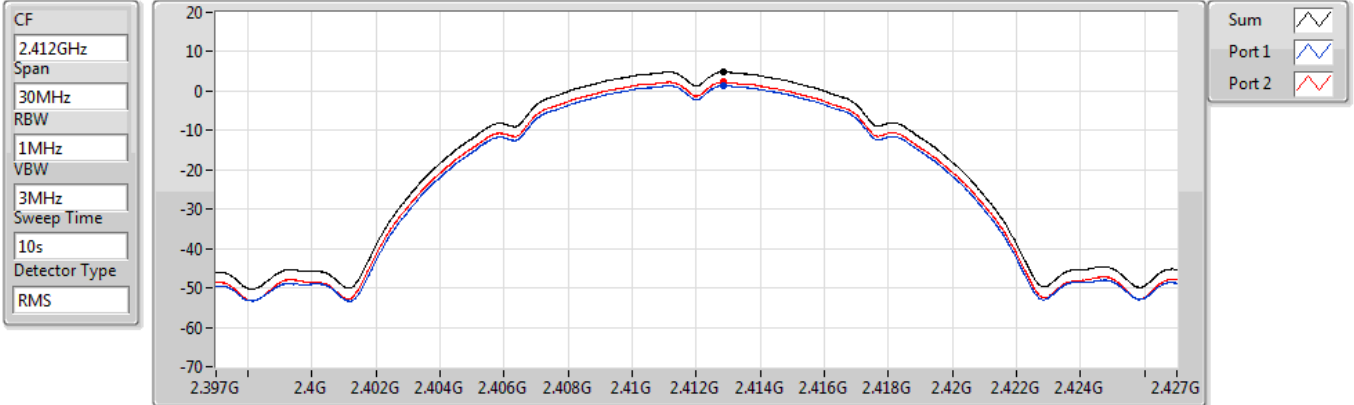
RBW=1MHz;  
Port X = Port X power density;

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

## PSD

2412MHz

12/05/2022

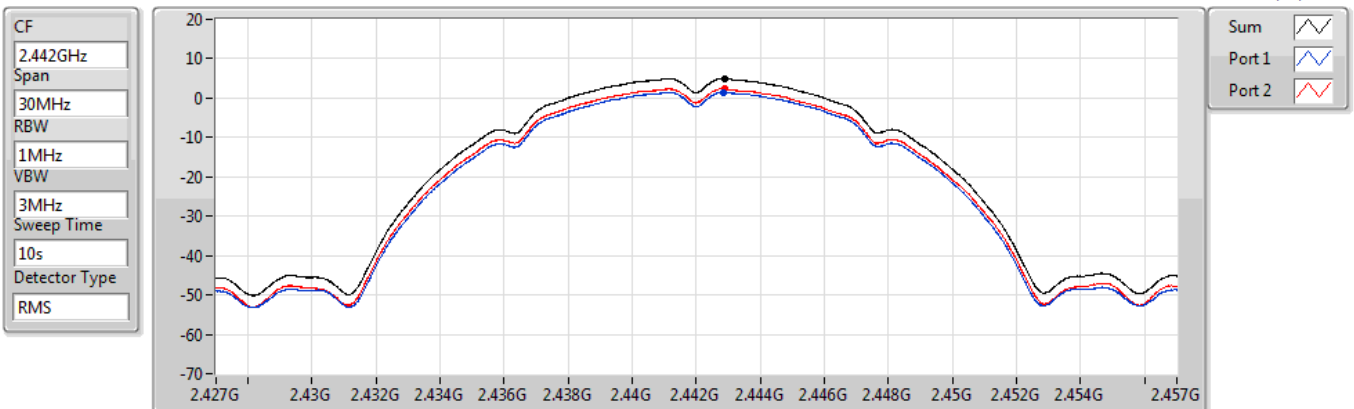


## 802.11b\_Nss1,(1Mbps)\_2TX

## PSD

2442MHz

12/05/2022

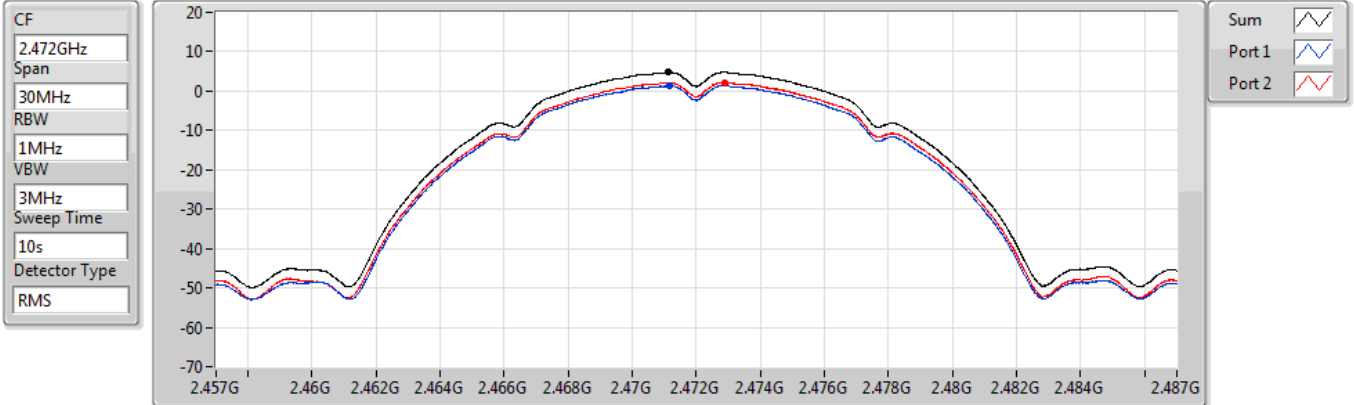


## 802.11b\_Nss1,(1Mbps)\_2TX

## PSD

2472MHz

12/05/2022

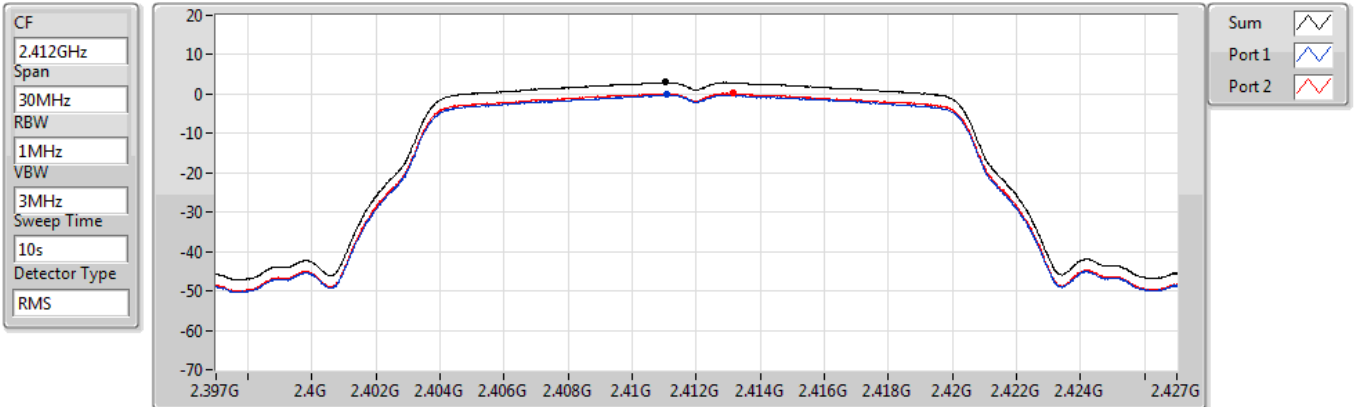


## 802.11g\_Nss1,(6Mbps)\_2TX

## PSD

2412MHz

12/05/2022

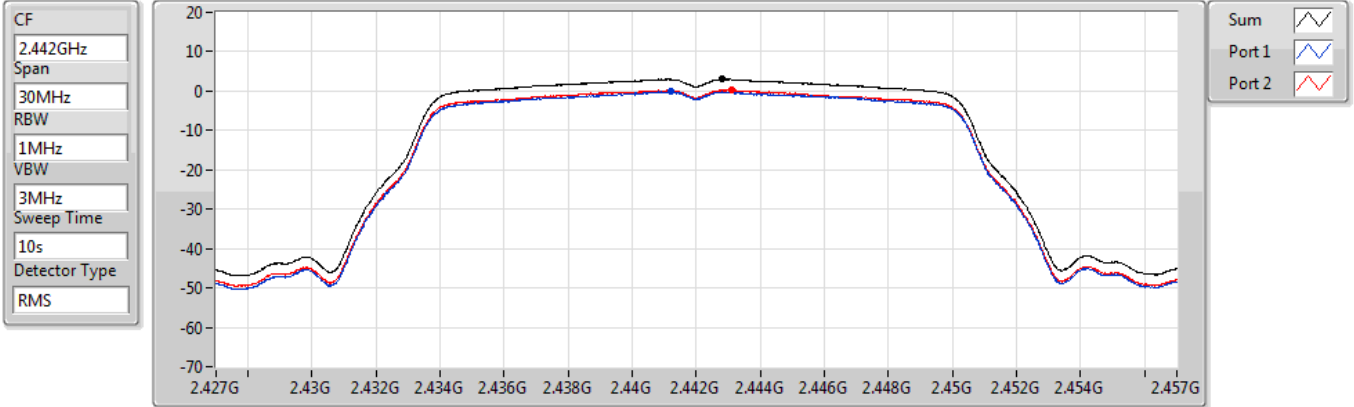


## 802.11g\_Nss1,(6Mbps)\_2TX

## PSD

2442MHz

12/05/2022



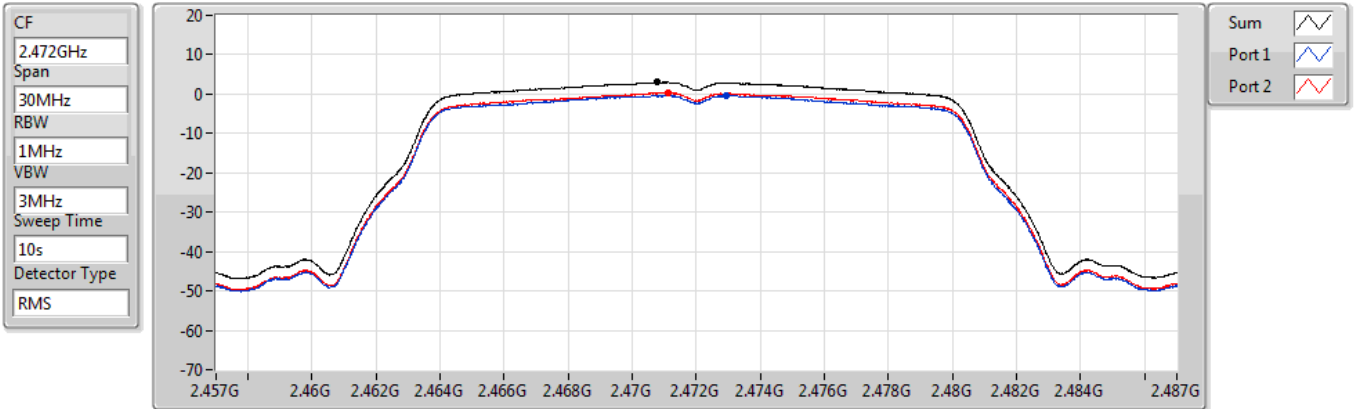
PD	Port 1	Port 2
(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
3.03	-0.12	0.23

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

## PSD

2472MHz

12/05/2022



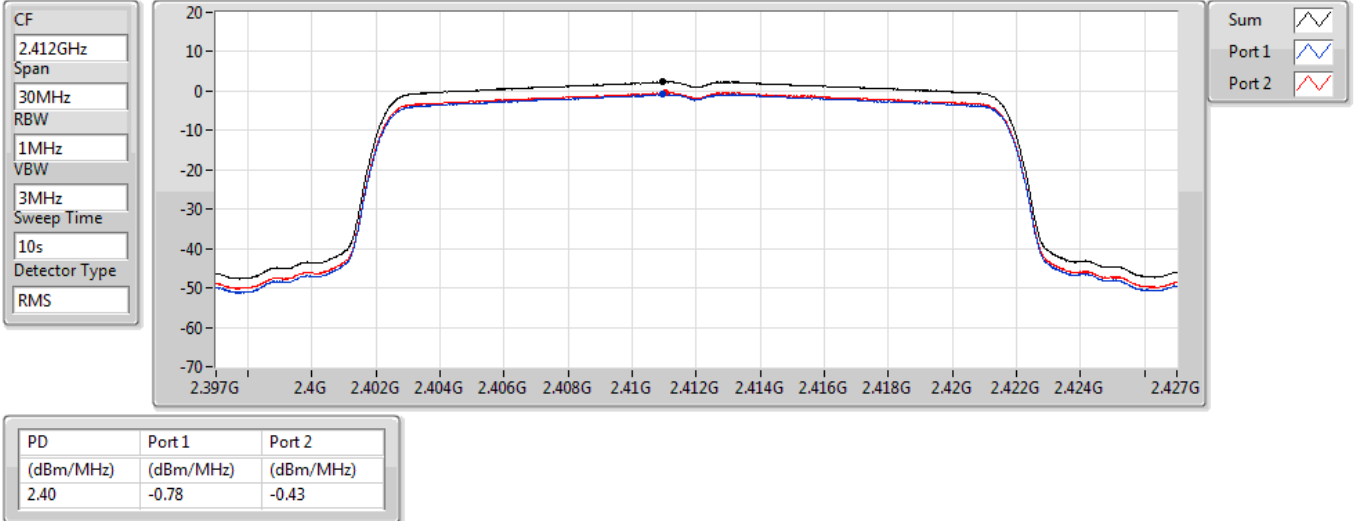
PD	Port 1	Port 2
(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
2.99	-0.34	0.35

## 802.11ax HEW20\_Nss1,(MCS0)\_2TX

## PSD

2412MHz

13/05/2022

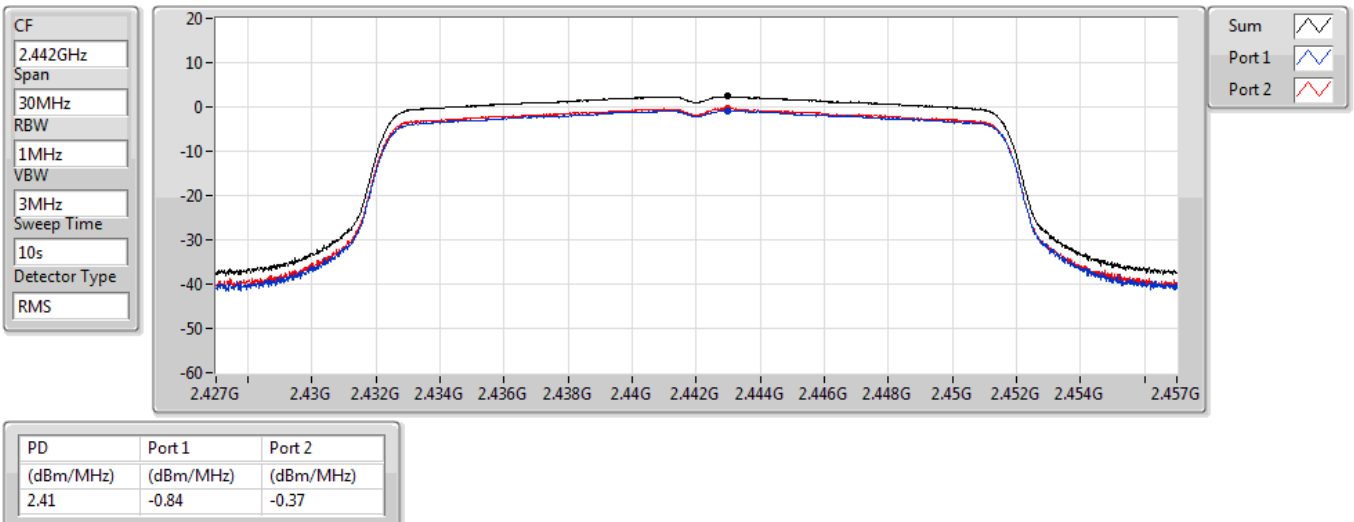


## 802.11ax HEW20\_Nss1,(MCS0)\_2TX

## PSD

2442MHz

13/05/2022

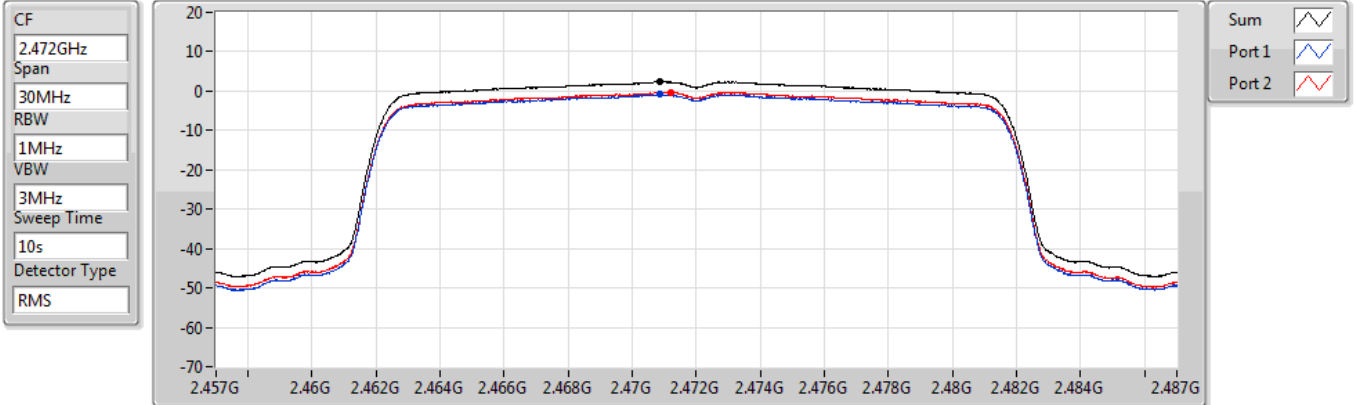


## 802.11ax HEW20\_Nss1,(MCS0)\_2TX

## PSD

2472MHz

12/05/2022

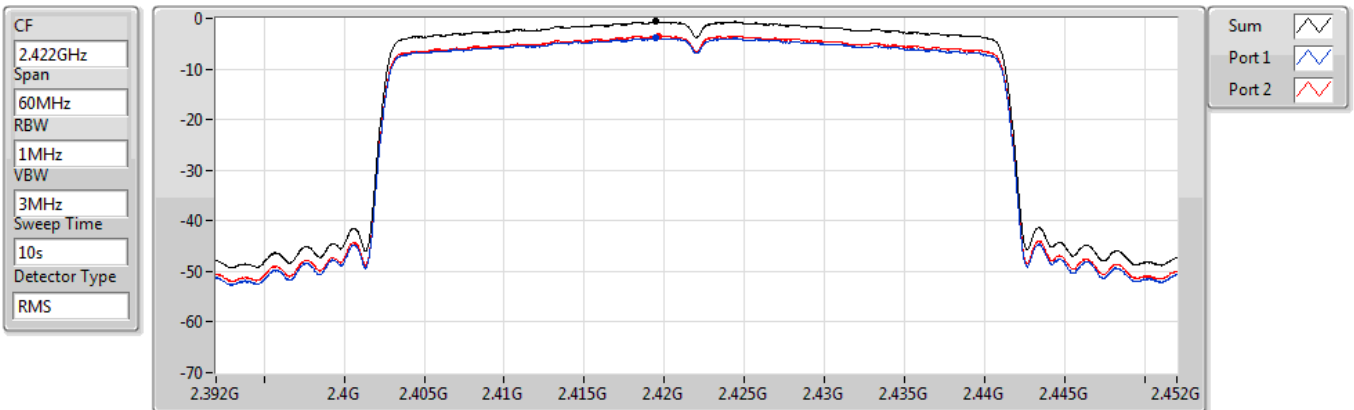


## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

## PSD

2422MHz

12/05/2022

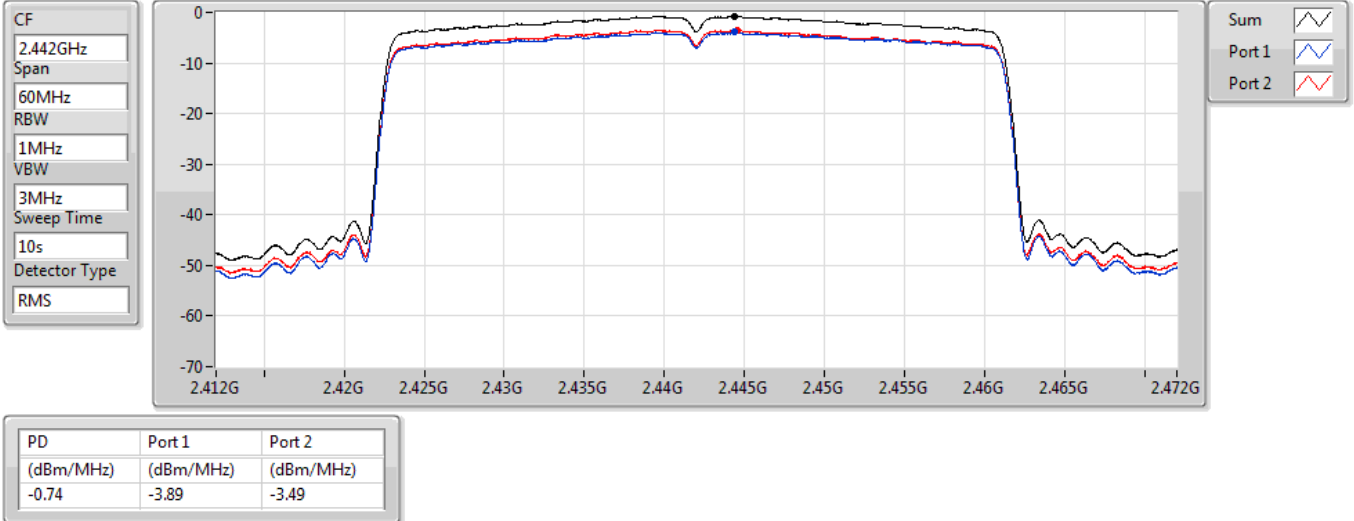


## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

## PSD

2442MHz

12/05/2022

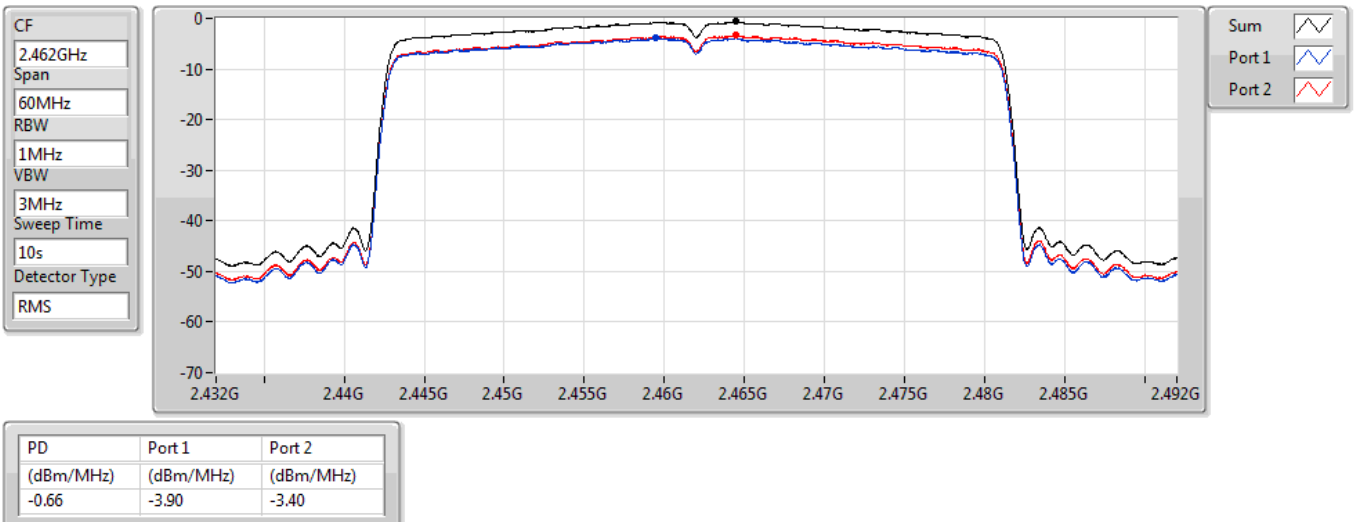


## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

## PSD

2462MHz

12/05/2022



**Summary**

Mode	OBW (Hz)	ITU-Code
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	12.834M	12M8G1D
802.11g_Nss1,(6Mbps)_2TX	16.492M	16M5D1D
802.11ax HEW20_Nss1,(MCS0)_2TX	18.991M	19M0D1D
802.11ax HEW40_Nss1,(MCS0)_2TX	37.781M	37M8D1D

OBW = 99% occupied bandwidth



**Result**

Mode	Result	Limit (Hz)	fl-OBW (Hz)	fh-OBW (Hz)	OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-
2412MHz_Tnom	Pass	2.4-2.4835G	2.405583G	2.418417G	12.834M
2442MHz_Tnom	Pass	2.4-2.4835G	2.435583G	2.448417G	12.834M
2472MHz_Tnom	Pass	2.4-2.4835G	2.465563G	2.478417G	12.814M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-
2412MHz_Tnom	Pass	2.4-2.4835G	2.403744G	2.420236G	16.492M
2442MHz_Tnom	Pass	2.4-2.4835G	2.433744G	2.450236G	16.492M
2472MHz_Tnom	Pass	2.4-2.4835G	2.463744G	2.480236G	16.492M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-
2412MHz_Tnom	Pass	2.4-2.4835G	2.402525G	2.421475G	18.951M
2442MHz_Tnom	Pass	2.4-2.4835G	2.432505G	2.451495G	18.991M
2472MHz_Tnom	Pass	2.4-2.4835G	2.462525G	2.481455G	18.931M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-
2422MHz_Tnom	Pass	2.4-2.4835G	2.403129G	2.440871G	37.741M
2442MHz_Tnom	Pass	2.4-2.4835G	2.423129G	2.460911G	37.781M
2462MHz_Tnom	Pass	2.4-2.4835G	2.443129G	2.480871G	37.741M

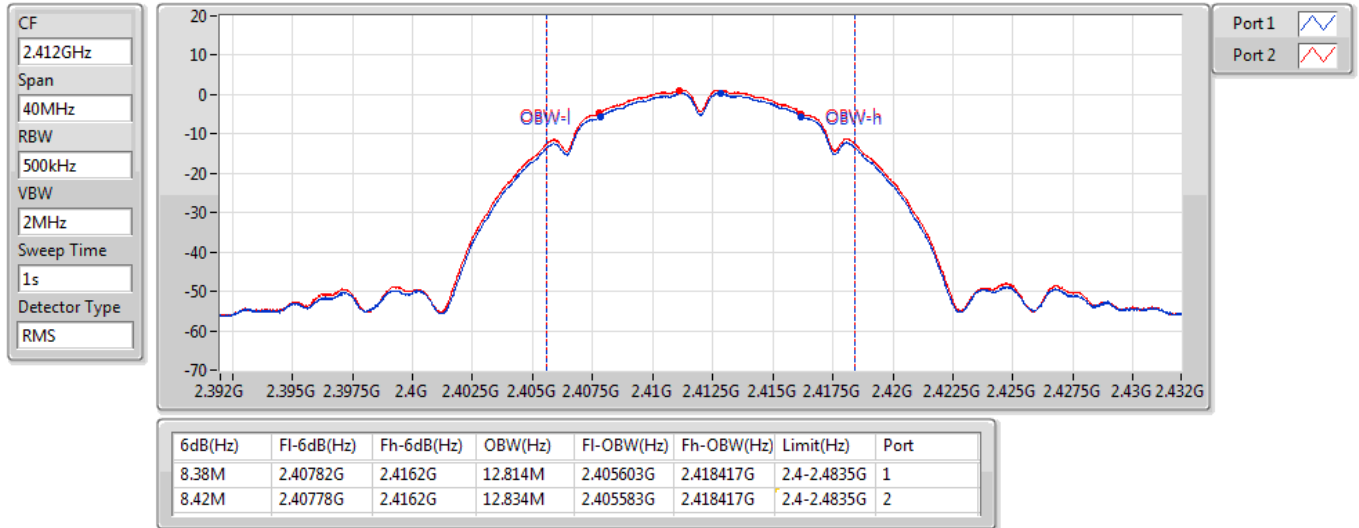
fl-OBW = fl lower edge 99% occupied bandwidth; fh-OBW = fh higher edge 99% occupied bandwidth; OBW = 99% occupied bandwidth;  
N dB = 6dB down bandwidth

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

EBW

2412MHz

12/05/2022

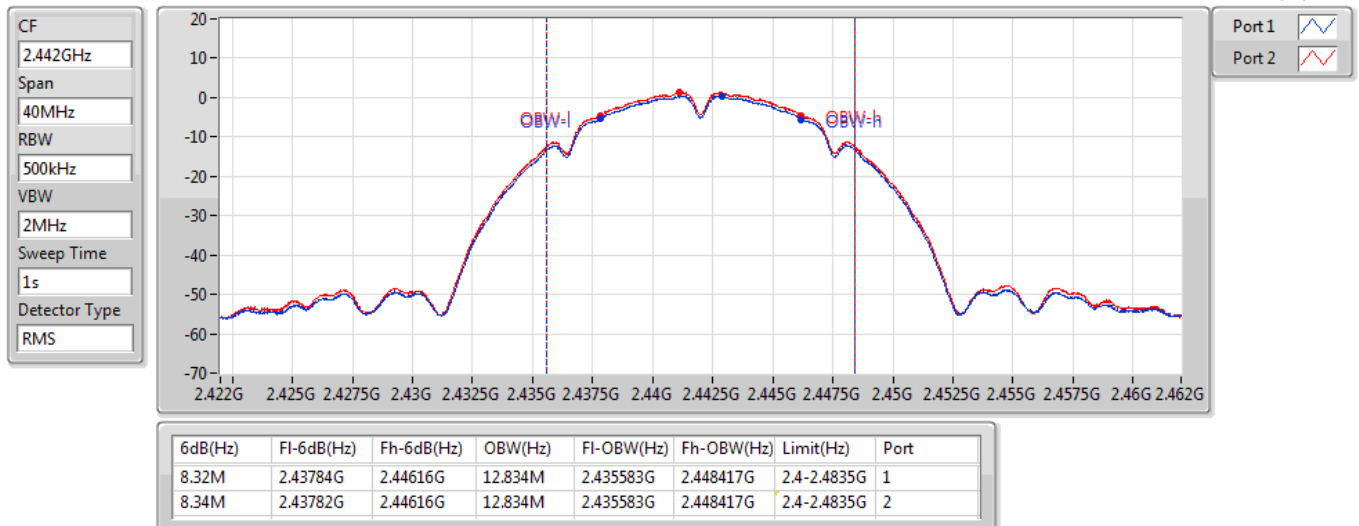


## 802.11b\_Nss1,(1Mbps)\_2TX

EBW

2442MHz

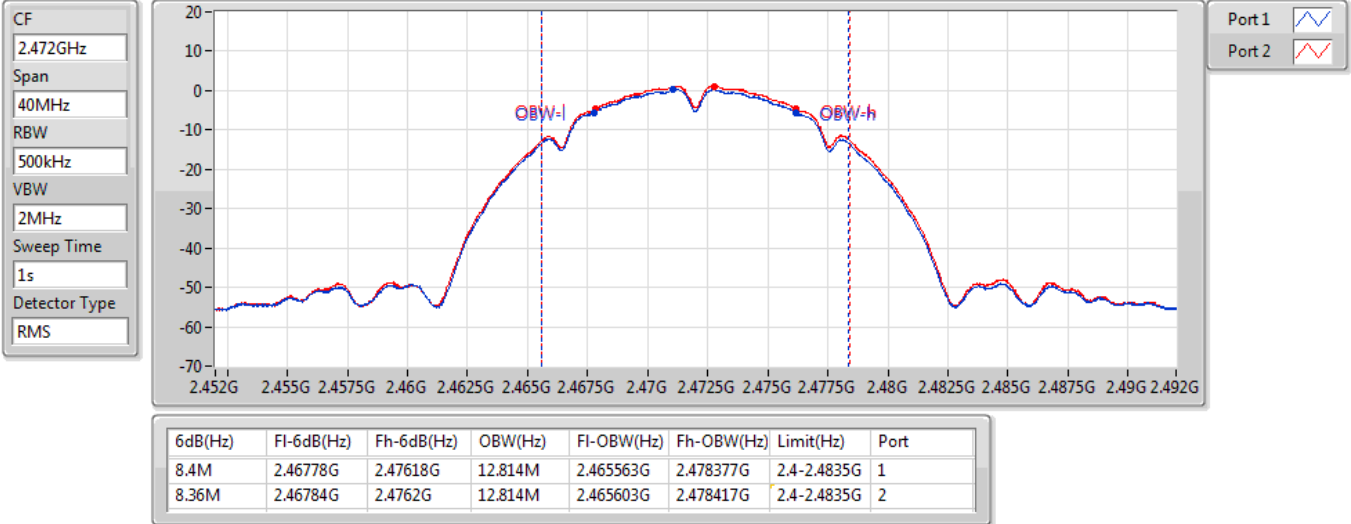
12/05/2022



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

**EBW**
**2472MHz**

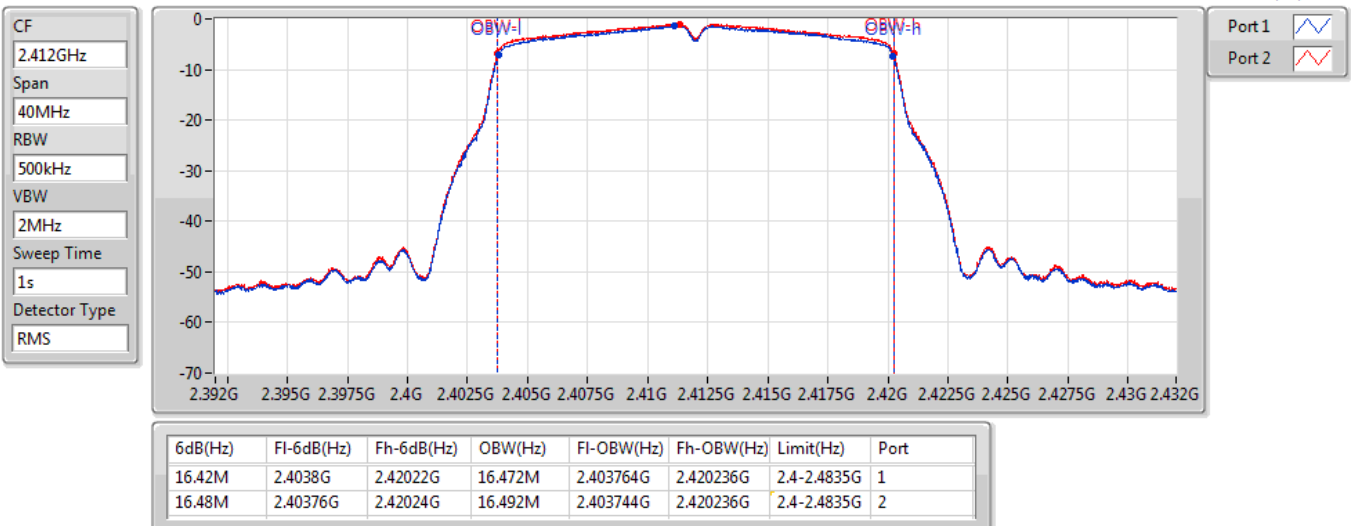
12/05/2022



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

**EBW**
**2412MHz**

12/05/2022

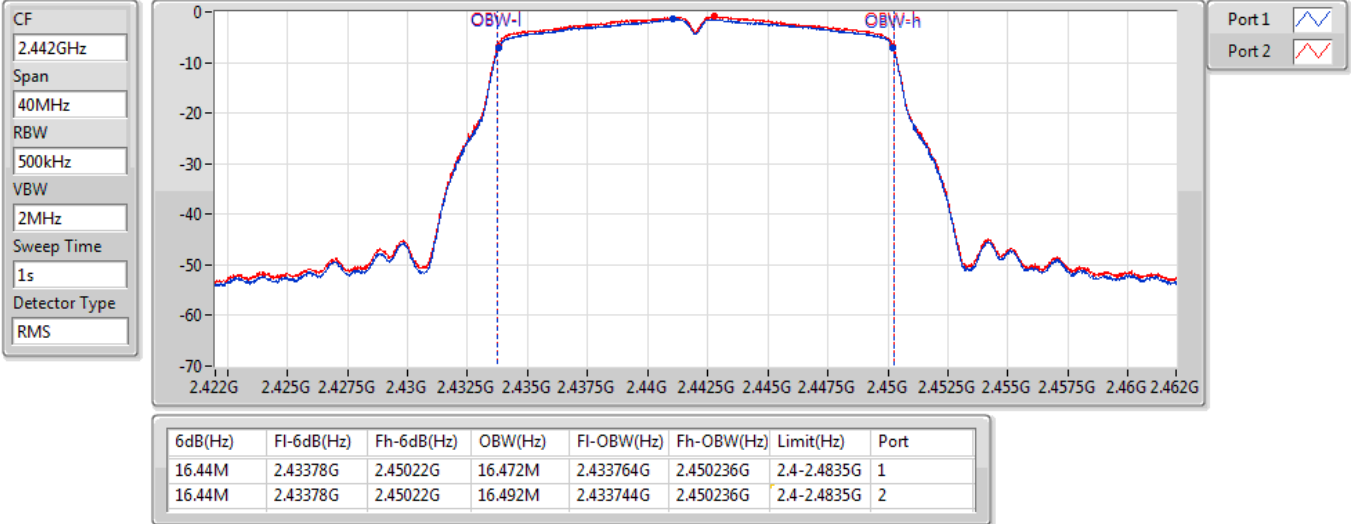


## 802.11g\_Nss1,(6Mbps)\_2TX

EBW

2442MHz

12/05/2022

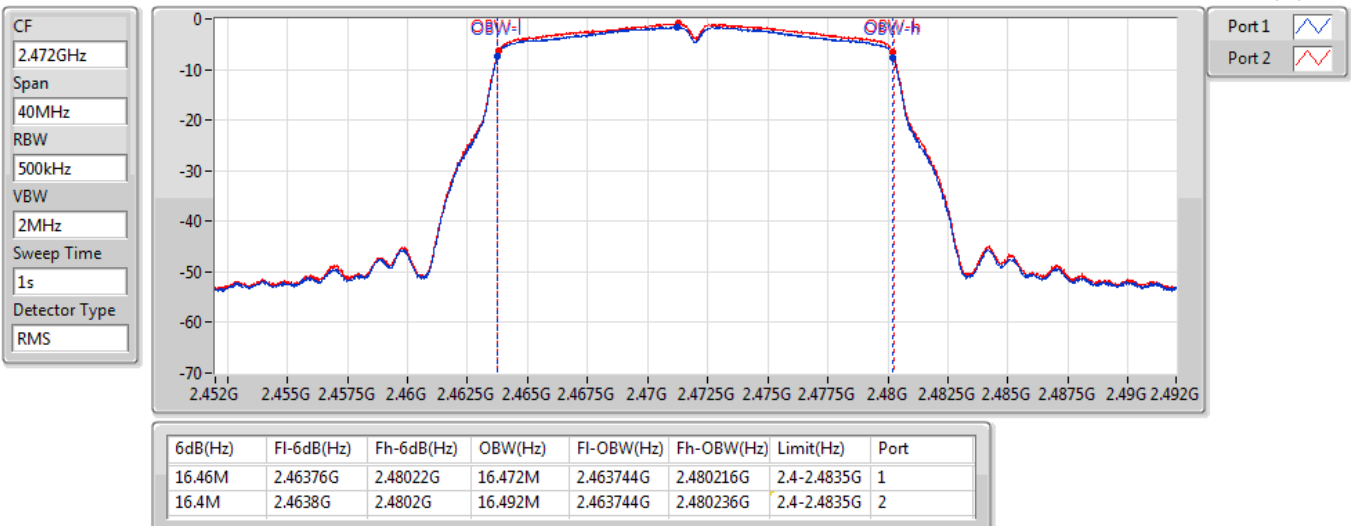


## 802.11g\_Nss1,(6Mbps)\_2TX

EBW

2472MHz

12/05/2022

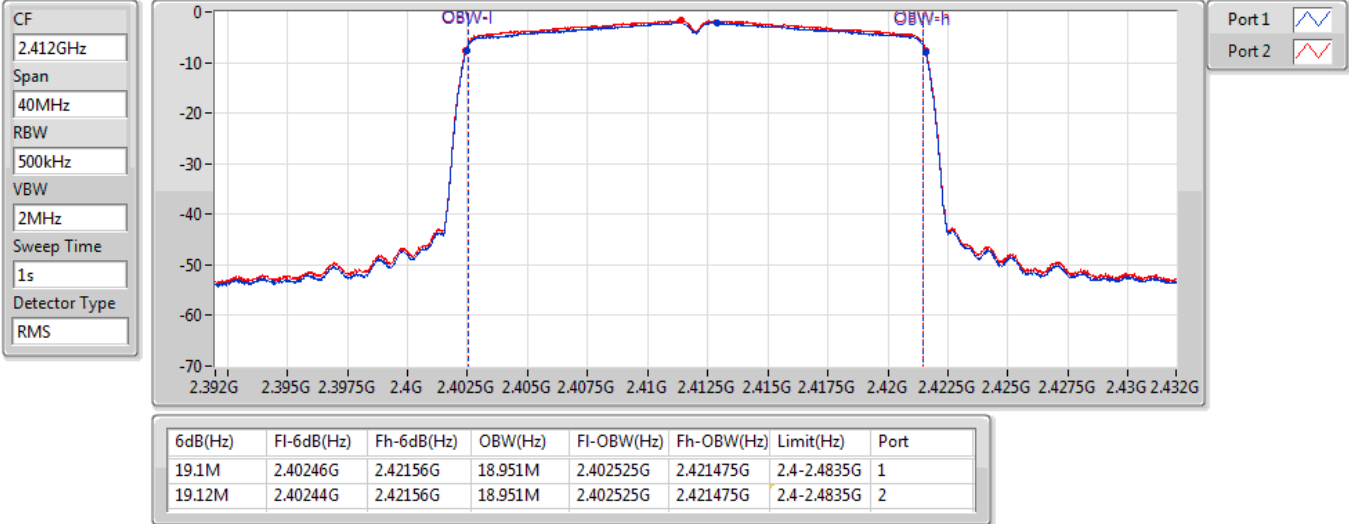


## 802.11ax HEW20\_Nss1,(MCS0)\_2TX

EBW

2412MHz

12/05/2022

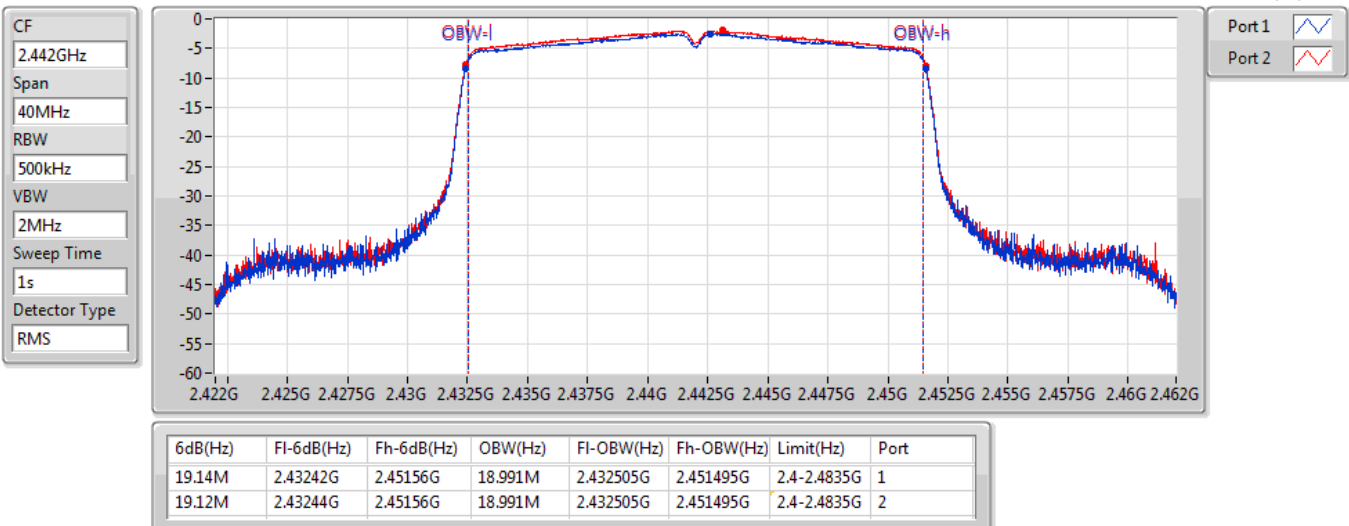


## 802.11ax HEW20\_Nss1,(MCS0)\_2TX

EBW

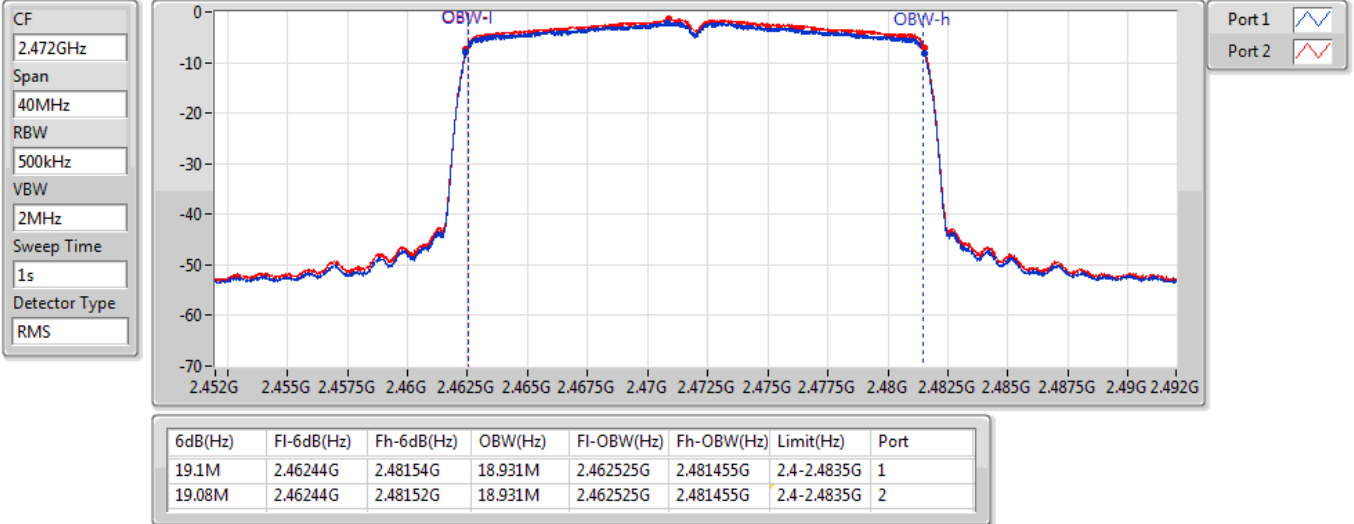
2442MHz

12/05/2022

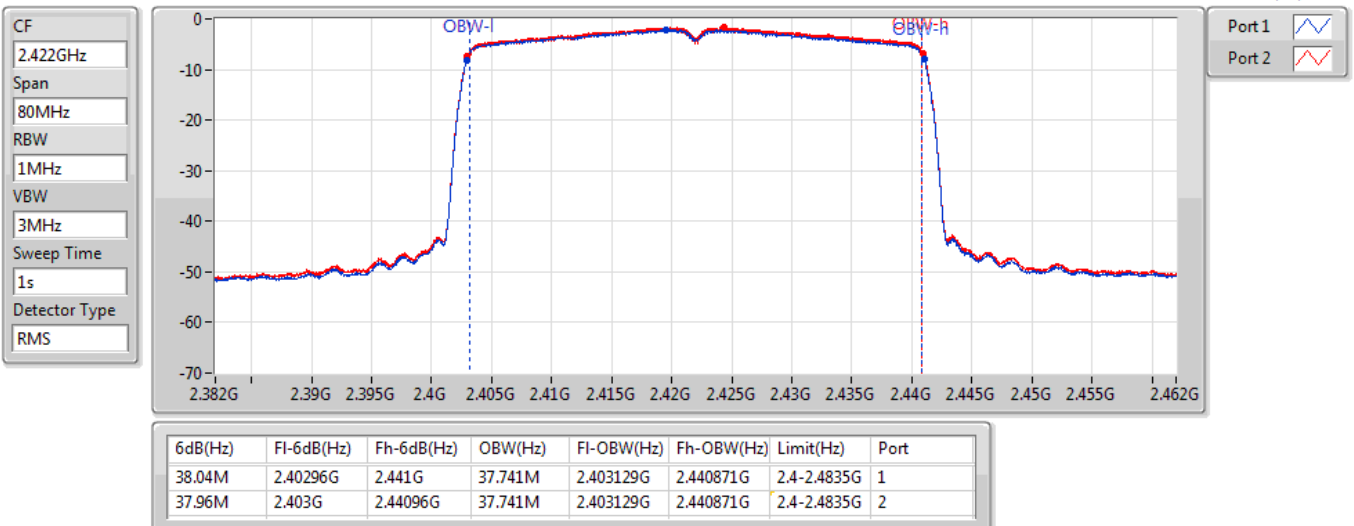


**802.11ax HEW20\_Nss1,(MCS0)\_2TX**
**EBW**
**2472MHz**

12/05/2022


**802.11ax HEW40\_Nss1,(MCS0)\_2TX**
**EBW**
**2422MHz**

12/05/2022

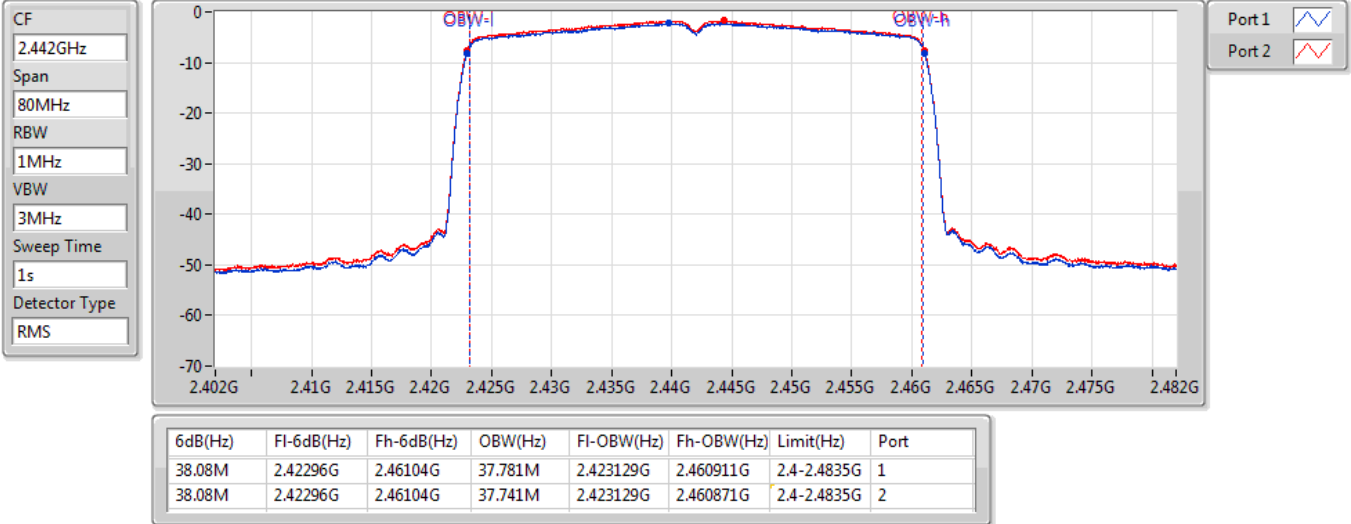


## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

EBW

2442MHz

12/05/2022

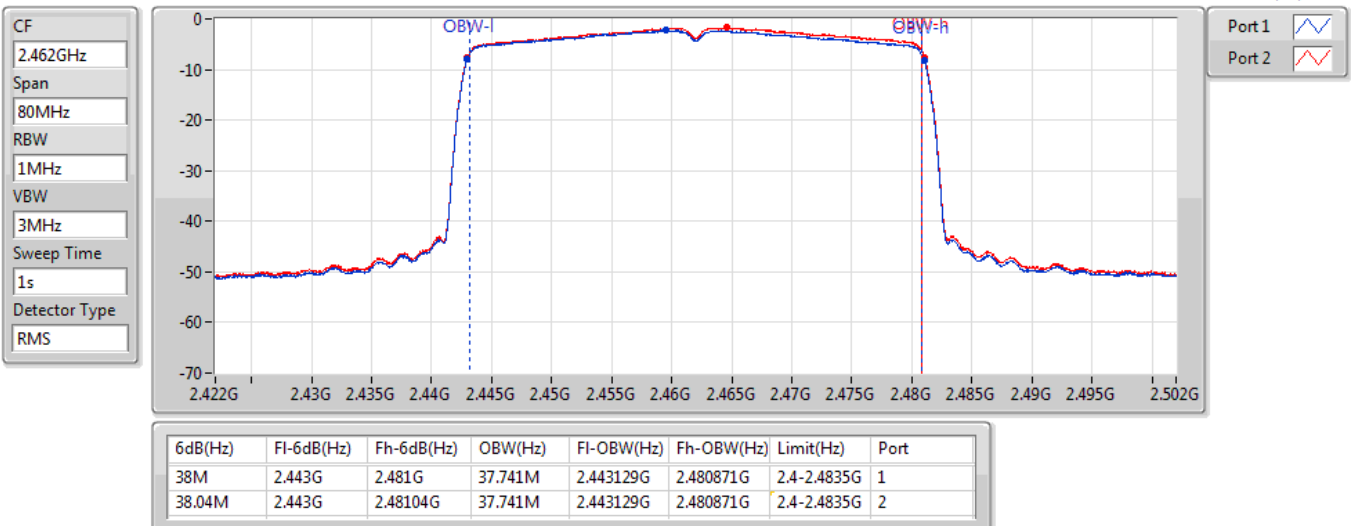


## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

EBW

2462MHz

12/05/2022





**Summary**

Mode	EIRP-A (dBm)	Limit-A (dBm)	EIRP-B (dBm)	Limit-B (dBm)
2.4-2.4835GHz	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	-39.01	-10	-44.71	-20
802.11g_Nss1,(6Mbps)_2TX	-36.26	-10	-43.22	-20
802.11ax HEW20_Nss1,(MCS0)_2TX	-37.18	-10	-42.97	-20
802.11ax HEW40_Nss1,(MCS0)_2TX	-37.8	-10	-43.8	-20



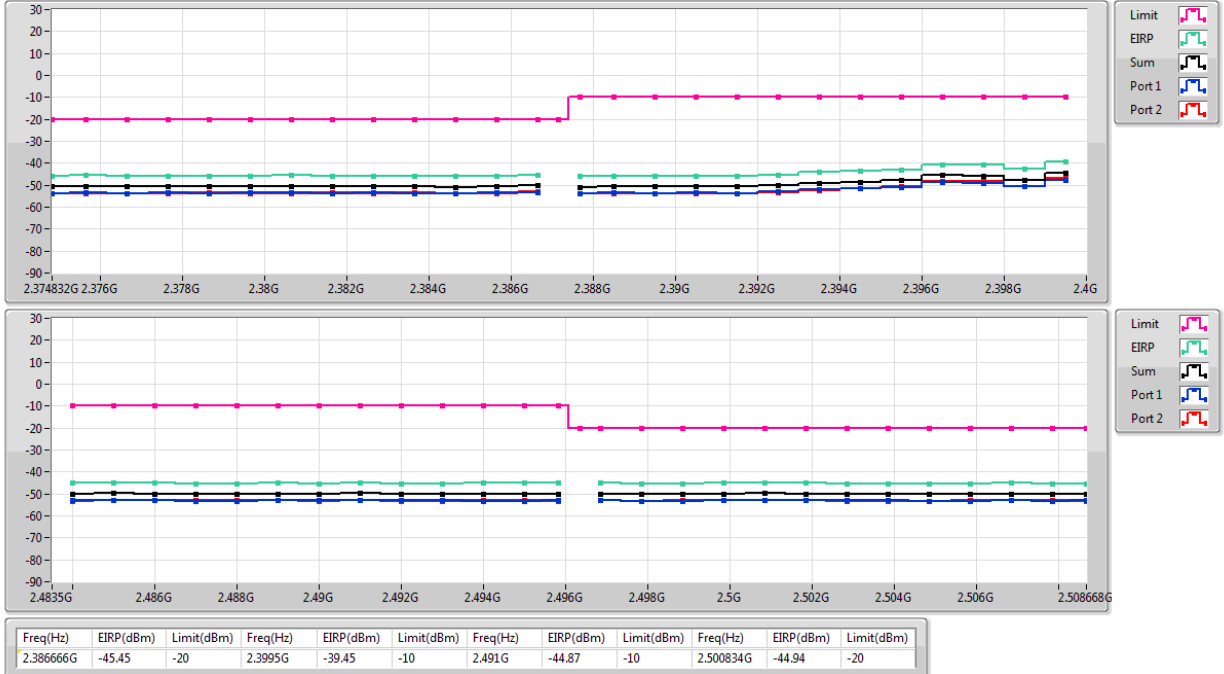
## Result

Mode	Result	Freq (Hz)	EIRP (dBm)	Limit (dBm)	Freq (Hz)	EIRP (dBm)	Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-
2412MHz_Tnom	Pass	2.386666G	-45.45	-20	2.3995G	-39.45	-10
2412MHz_Tnom	Pass	2.500834G	-44.94	-20	2.491G	-44.87	-10
2472MHz_Tnom	Pass	2.382686G	-45.75	-20	2.3965G	-45.73	-10
2472MHz_Tnom	Pass	2.500814G	-44.71	-20	2.485G	-39.01	-10
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-
2412MHz_Tnom	Pass	2.382008G	-44.06	-20	2.3995G	-36.37	-10
2412MHz_Tnom	Pass	2.509492G	-44.29	-20	2.486G	-44.08	-10
2472MHz_Tnom	Pass	2.373008G	-44.98	-20	2.3995G	-44.83	-10
2472MHz_Tnom	Pass	2.500492G	-43.22	-20	2.484G	-36.26	-10
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
2412MHz_Tnom	Pass	2.379549G	-43.82	-20	2.3995G	-37.78	-10
2412MHz_Tnom	Pass	2.503951G	-43.86	-20	2.486G	-43.46	-10
2472MHz_Tnom	Pass	2.372569G	-44.44	-20	2.3955G	-44.39	-10
2472MHz_Tnom	Pass	2.504931G	-42.97	-20	2.484G	-37.18	-10
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
2422MHz_Tnom	Pass	2.336759G	-44.23	-20	2.3975G	-38.35	-10
2422MHz_Tnom	Pass	2.523741G	-44.01	-20	2.488G	-43.47	-10
2462MHz_Tnom	Pass	2.338759G	-44.47	-20	2.3995G	-44.22	-10
2462MHz_Tnom	Pass	2.521741G	-43.80	-20	2.484G	-37.80	-10

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

## MASK-DTS

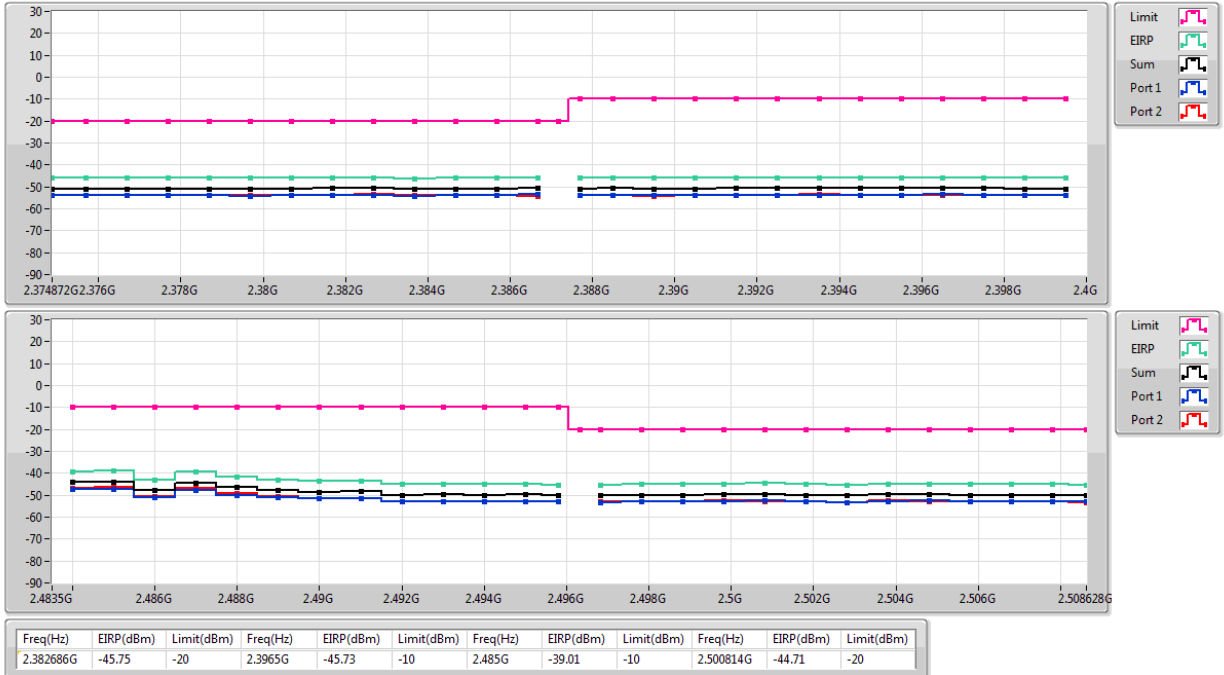
### 2412MHz\_Tnom



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

## MASK-DTS

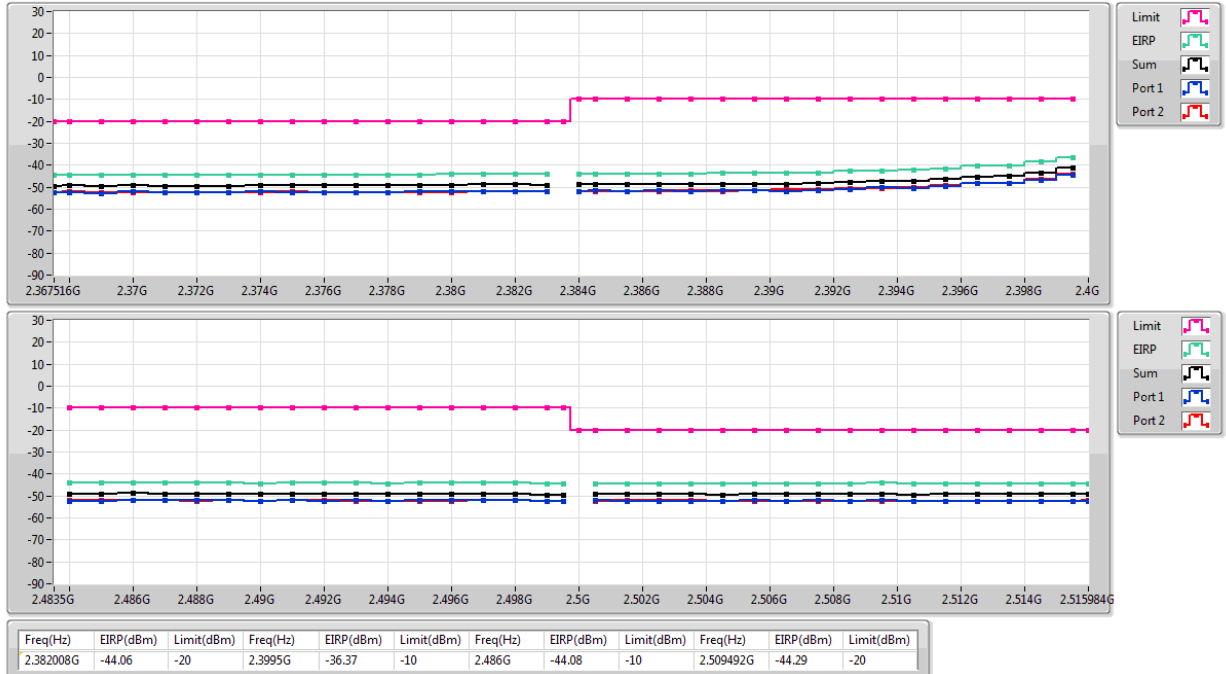
### 2472MHz\_Tnom



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

## MASK-DTS

### 2412MHz\_Tnom



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

## MASK-DTS

### 2472MHz\_Tnom

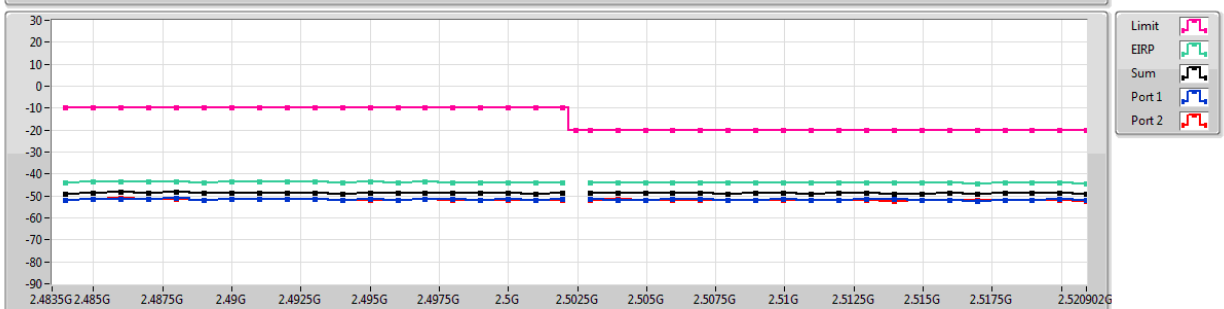
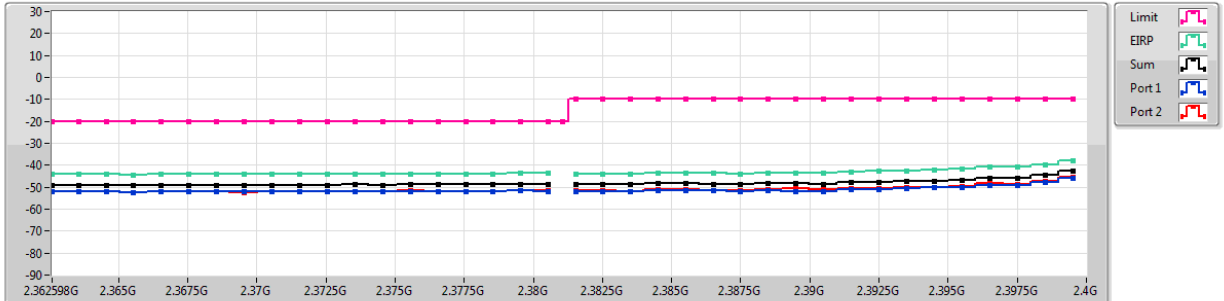


## 802.11ax HEW20\_Nss1,(MCS0)\_2TX

## MASK-DTS

2412MHz\_Tnom

12/05/2022



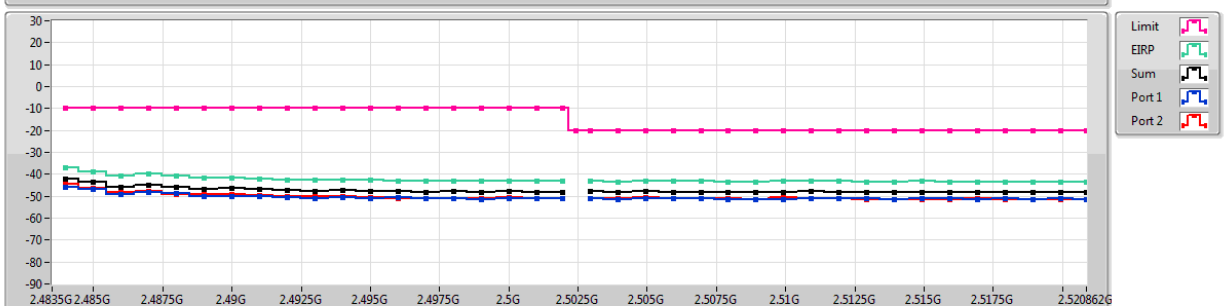
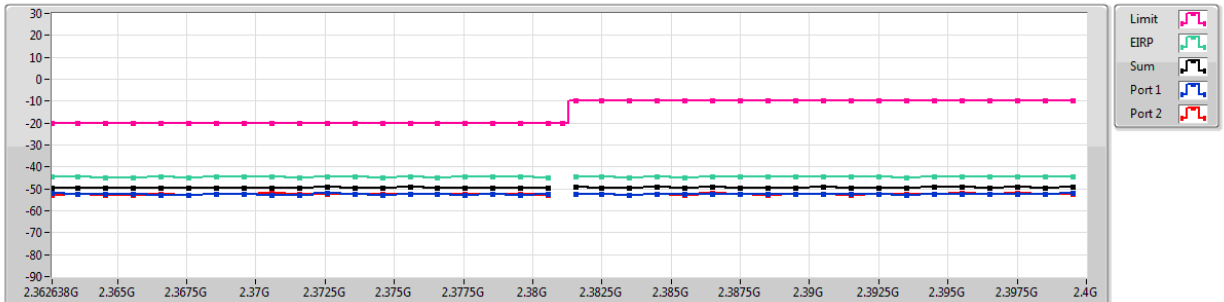
Freq(Hz)	EIRP(dBm)	Limit(dBm)	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Freq(Hz)	EIRP(dBm)	Limit(dBm)
2.379549G	-43.82	-20	2.3995G	-37.78	-10	2.486G	-43.46	-10	2.503951G	-43.86	-20

## 802.11ax HEW20\_Nss1,(MCS0)\_2TX

## MASK-DTS

2472MHz\_Tnom

12/05/2022



Freq(Hz)	EIRP(dBm)	Limit(dBm)	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Freq(Hz)	EIRP(dBm)	Limit(dBm)
2.372569G	-44.44	-20	2.3955G	-44.39	-10	2.484G	-37.18	-10	2.504931G	-42.97	-20

## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

## MASK-DTS

2422MHz\_Tnom



## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

## MASK-DTS

2462MHz\_Tnom



**Summary**

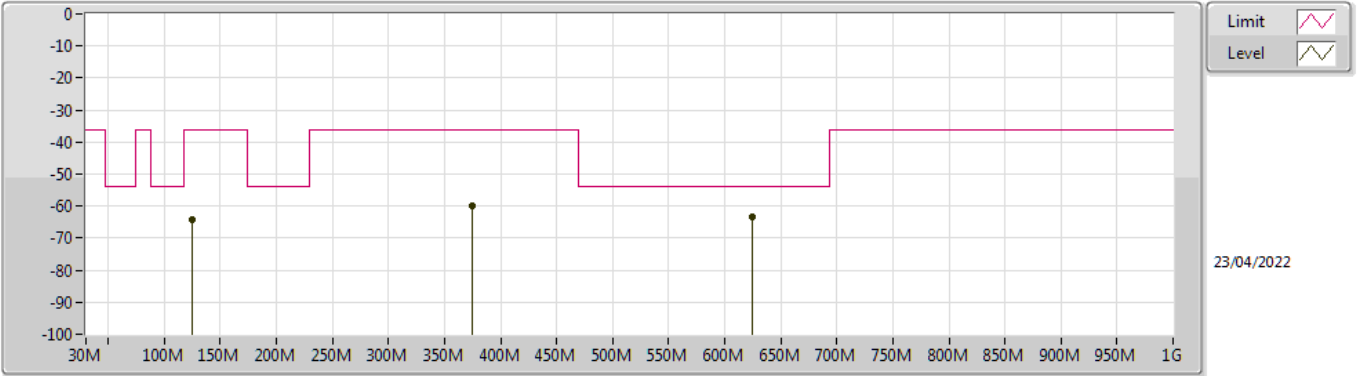
Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	AV	624.98M	-62.00	-54.00	-8.00	8.25	3	Horizontal	0	1.5	-

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz_TX	Pass	AV	125M	-64.36	-36.00	-28.36	1.52	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	375.02M	-59.97	-36.00	-23.97	3.55	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	624.98M	-63.46	-54.00	-9.46	8.01	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	250.01M	-55.42	-36.00	-19.42	1.66	3	Horizontal	0	1.5	-
2422MHz_TX	Pass	AV	375.02M	-55.73	-36.00	-19.73	2.75	3	Horizontal	0	1.5	-
2422MHz_TX	Pass	AV	624.98M	-62.00	-54.00	-8.00	8.25	3	Horizontal	0	1.5	-

## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

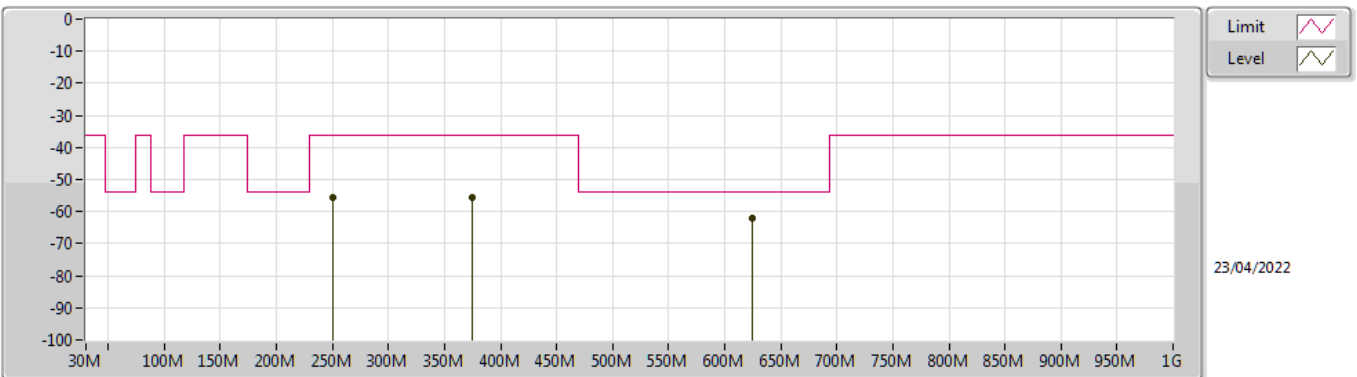
### 2422MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	125M	-64.36	-36.00	-28.36	1.52	3	Vertical	360	1.5	-	-65.88	27.71	1.60	27.79
AV	375.02M	-59.97	-36.00	-23.97	3.55	3	Vertical	360	1.5	-	-63.52	28.49	2.71	27.65
AV	624.98M	-63.46	-54.00	-9.46	8.01	3	Vertical	360	1.5	-	-71.47	33.03	3.45	28.47

## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

### 2422MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	250.01M	-55.42	-36.00	-19.42	1.66	3	Horizontal	0	1.5	-	-57.08	26.50	2.24	27.08
AV	375.02M	-55.73	-36.00	-19.73	2.75	3	Horizontal	0	1.5	-	-58.48	27.69	2.71	27.65
AV	624.98M	-62.00	-54.00	-8.00	8.25	3	Horizontal	0	1.5	-	-70.25	33.27	3.45	28.47



**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	AV	4.94421G	-30.30	-30.00	-0.30	0.16	3	Vertical	354	1.5	TDP
802.11g_Nss1,(6Mbps)_2TX	Pass	AV	7.23484G	-35.86	-30.00	-5.86	1.99	3	Vertical	282	1.5	TDP
802.11ax HEW20_Nss1,(MCS0)_2TX	Pass	AV	7.23753G	-36.62	-30.00	-6.62	2.05	3	Vertical	284	1.5	TDP
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	AV	7.3964G	-37.38	-30.00	-7.38	2.18	3	Vertical	360	1.5	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TX	Pass	AV	4.82418G	-30.45	-30.00	-0.45	0.81	3	Vertical	358	1.5	TDP
2412MHz_TX	Pass	AV	7.23543G	-36.90	-30.00	-6.90	2.01	3	Vertical	287	1.5	TDP
2412MHz_TX	Pass	AV	9.64854G	-42.92	-30.00	-12.92	4.47	3	Vertical	0	1.5	-
2412MHz_TX	Pass	AV	4.82395G	-43.79	-30.00	-13.79	2.20	3	Horizontal	360	1.5	-
2412MHz_TX	Pass	AV	7.23749G	-47.12	-30.00	-17.12	1.31	3	Horizontal	360	1.5	-
2412MHz_TX	Pass	AV	9.64854G	-56.73	-30.00	-26.73	1.79	3	Horizontal	360	1.5	-
2472MHz_TX	Pass	AV	4.94421G	-30.30	-30.00	-0.30	0.16	3	Vertical	354	1.5	TDP
2472MHz_TX	Pass	AV	7.41539G	-31.28	-30.00	-1.28	1.97	3	Vertical	281	1.5	TDP
2472MHz_TX	Pass	AV	9.88836G	-45.43	-30.00	-15.43	4.15	3	Vertical	0	1.5	-
2472MHz_TX	Pass	AV	4.94427G	-43.86	-30.00	-13.86	1.56	3	Horizontal	360	1.5	-
2472MHz_TX	Pass	AV	7.4159G	-41.01	-30.00	-11.01	1.27	3	Horizontal	360	1.5	-
2472MHz_TX	Pass	AV	9.88877G	-55.07	-30.00	-25.07	1.61	3	Horizontal	360	1.5	-
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TX	Pass	AV	4.82602G	-37.56	-30.00	-7.56	0.81	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	7.23484G	-35.86	-30.00	-5.86	1.99	3	Vertical	282	1.5	TDP
2412MHz_TX	Pass	AV	9.65144G	-49.67	-30.00	-19.67	4.46	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	4.82644G	-48.64	-30.00	-18.64	2.19	3	Horizontal	0	1.5	-
2412MHz_TX	Pass	AV	7.23624G	-43.73	-30.00	-13.73	1.30	3	Horizontal	0	1.5	-
2412MHz_TX	Pass	AV	9.6419G	-56.93	-30.00	-26.93	1.74	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	4.94054G	-39.76	-30.00	-9.76	0.22	3	Vertical	0	1.5	-
2472MHz_TX	Pass	AV	7.41682G	-39.07	-30.00	-9.07	1.95	3	Vertical	283	1.5	TDP
2472MHz_TX	Pass	AV	9.88213G	-54.16	-30.00	-24.16	4.15	3	Vertical	0	1.5	-
2472MHz_TX	Pass	AV	4.94593G	-51.83	-30.00	-21.83	1.54	3	Horizontal	360	1.5	-
2472MHz_TX	Pass	AV	7.42005G	-45.02	-30.00	-15.02	1.21	3	Horizontal	360	1.5	-
2472MHz_TX	Pass	AV	9.8813G	-57.58	-30.00	-27.58	1.65	3	Horizontal	360	1.5	-
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TX	Pass	AV	4.82312G	-36.93	-30.00	-6.93	0.82	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	7.23753G	-36.62	-30.00	-6.62	2.05	3	Vertical	284	1.5	TDP
2412MHz_TX	Pass	AV	9.64522G	-50.66	-30.00	-20.66	4.46	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	4.82271G	-49.43	-30.00	-19.43	2.21	3	Horizontal	0	1.5	-
2412MHz_TX	Pass	AV	7.23873G	-44.86	-30.00	-14.86	1.33	3	Horizontal	0	1.5	-
2412MHz_TX	Pass	AV	9.65559G	-58.21	-30.00	-28.21	1.78	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	4.94552G	-39.52	-30.00	-9.52	0.14	3	Vertical	0	1.5	-
2472MHz_TX	Pass	AV	7.41267G	-39.76	-30.00	-9.76	2.02	3	Vertical	282	1.5	TDP
2472MHz_TX	Pass	AV	9.88877G	-52.66	-30.00	-22.66	4.15	3	Vertical	0	1.5	-
2472MHz_TX	Pass	AV	4.9451G	-49.86	-30.00	-19.86	1.55	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	7.41466G	-45.75	-30.00	-15.75	1.29	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	9.88794G	-57.67	-30.00	-27.67	1.62	3	Horizontal	0	1.5	-
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz_TX	Pass	AV	4.84304G	-38.31	-30.00	-8.31	0.75	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	7.26556G	-39.29	-30.00	-9.29	2.13	3	Vertical	282	1.5	TDP
2422MHz_TX	Pass	AV	9.68878G	-52.12	-30.00	-22.12	4.31	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	4.85133G	-51.18	-30.00	-21.18	2.19	3	Horizontal	0	1.5	-
2422MHz_TX	Pass	AV	7.25865G	-45.33	-30.00	-15.33	1.43	3	Horizontal	0	1.5	-
2422MHz_TX	Pass	AV	9.68298G	-57.43	-30.00	-27.43	1.70	3	Horizontal	0	1.5	-
2462MHz_TX	Pass	AV	4.92311G	-40.04	-30.00	-10.04	0.48	3	Vertical	360	1.5	-
2462MHz_TX	Pass	AV	7.3964G	-37.38	-30.00	-7.38	2.18	3	Vertical	360	1.5	-



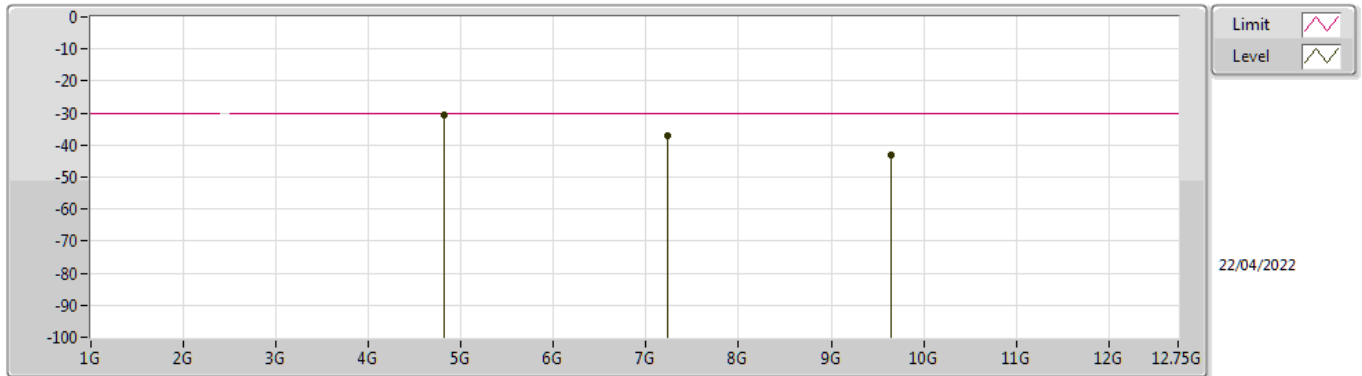
## ***RSE TX above 1GHz\_Non-Beamforming\_PCB Antenna***

## ***Appendix E.2***

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2462MHz_TX	Pass	AV	9.8477G	-54.06	-30.00	-24.06	4.17	3	Vertical	360	1.5	-
2462MHz_TX	Pass	AV	4.92311G	-53.93	-30.00	-23.93	1.80	3	Horizontal	0	1.5	-
2462MHz_TX	Pass	AV	7.39433G	-48.89	-30.00	-18.89	1.41	3	Horizontal	0	1.5	-
2462MHz_TX	Pass	AV	9.84313G	-57.22	-30.00	-27.22	1.83	3	Horizontal	0	1.5	-

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

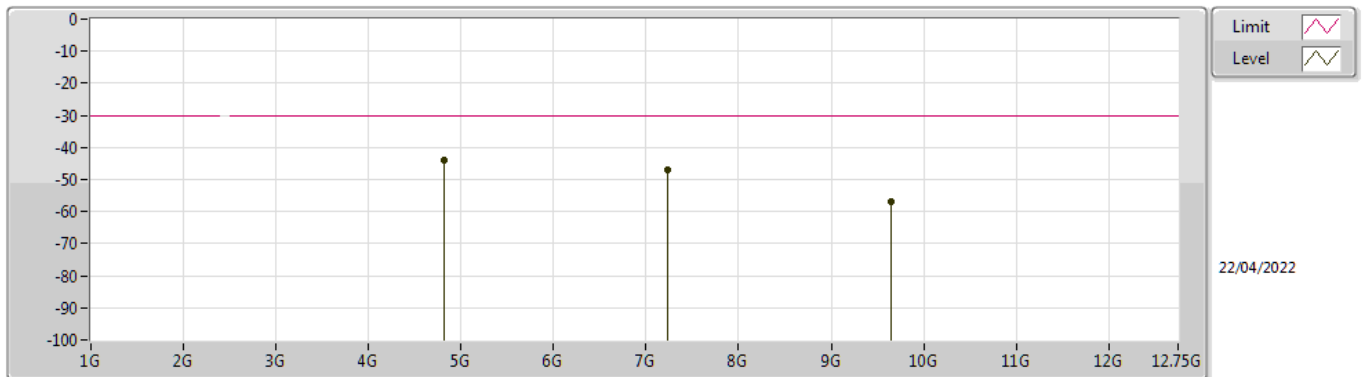
### 2412MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.82418G	-30.45	-30.00	-0.45	0.81	3	Vertical	358	1.5	TDP	-31.26	46.41	6.74	52.34
AV	7.23543G	-36.90	-30.00	-6.90	2.01	3	Vertical	287	1.5	TDP	-38.91	47.82	8.03	53.84
AV	9.64854G	-42.92	-30.00	-12.92	4.47	3	Vertical	0	1.5	-	-47.39	49.90	9.44	54.87

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

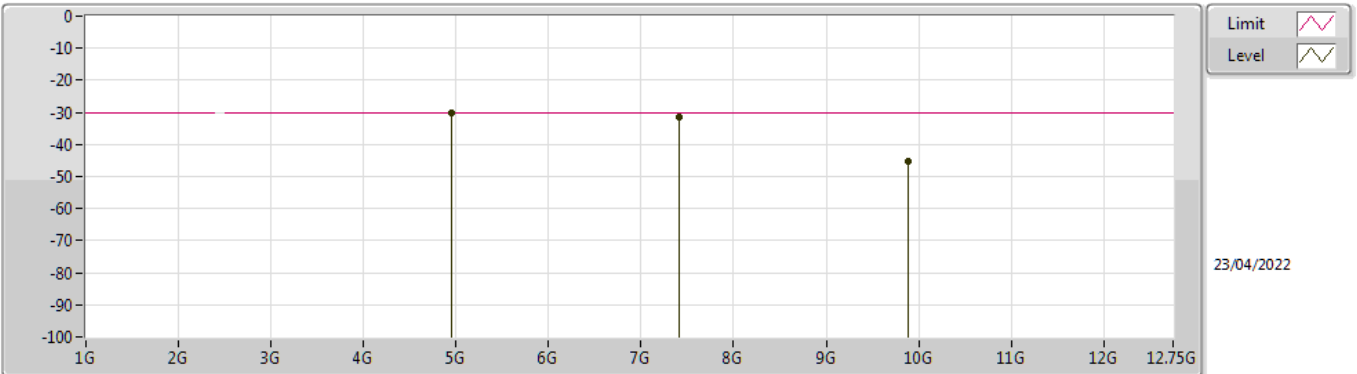
### 2412MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.82395G	-43.79	-30.00	-13.79	2.20	3	Horizontal	360	1.5	-	-45.99	47.80	6.74	52.34
AV	7.23749G	-47.12	-30.00	-17.12	1.31	3	Horizontal	360	1.5	-	-48.43	47.12	8.03	53.84
AV	9.64854G	-56.73	-30.00	-26.73	1.79	3	Horizontal	360	1.5	-	-58.52	47.22	9.44	54.87

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

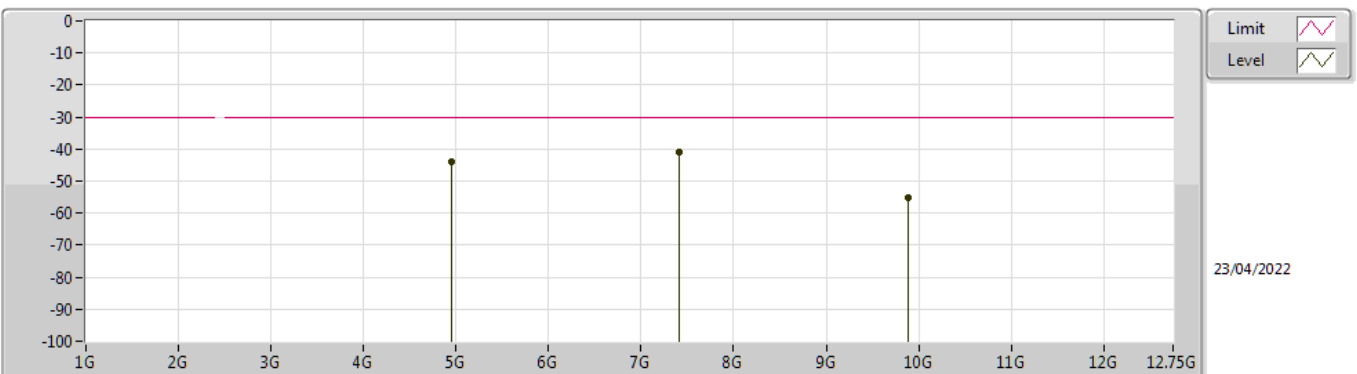
## 2472MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94421G	-30.30	-30.00	-0.30	0.16	3	Vertical	354	1.5	TDP	-30.46	45.74	6.81	52.39
AV	7.41539G	-31.28	-30.00	-1.28	1.97	3	Vertical	281	1.5	TDP	-33.25	47.65	8.23	53.91
AV	9.88836G	-45.43	-30.00	-15.43	4.15	3	Vertical	0	1.5	-	-49.58	49.65	9.63	55.13

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

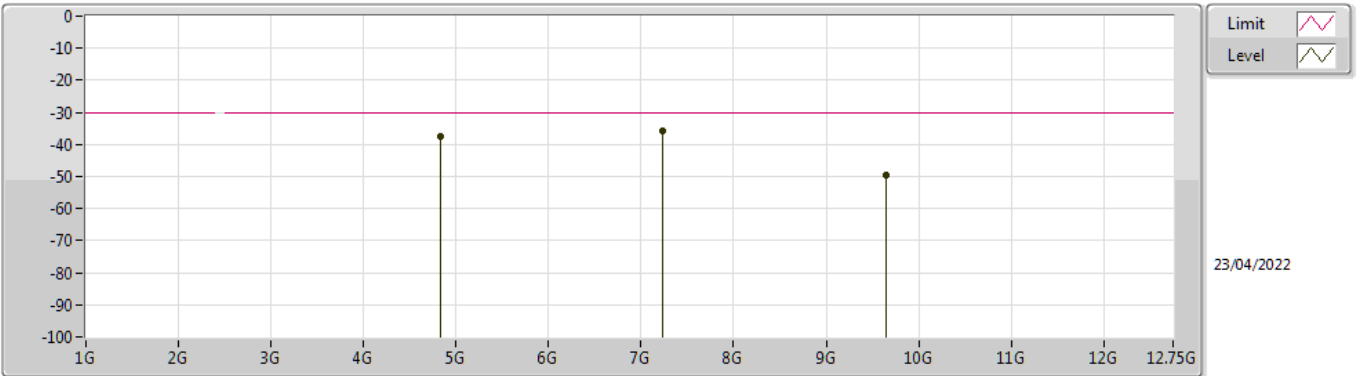
## 2472MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94427G	-43.86	-30.00	-13.86	1.56	3	Horizontal	360	1.5	-	-45.42	47.14	6.81	52.39
AV	7.4159G	-41.01	-30.00	-11.01	1.27	3	Horizontal	360	1.5	-	-42.28	46.95	8.23	53.91
AV	9.88877G	-55.07	-30.00	-25.07	1.61	3	Horizontal	360	1.5	-	-56.68	47.11	9.63	55.13

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

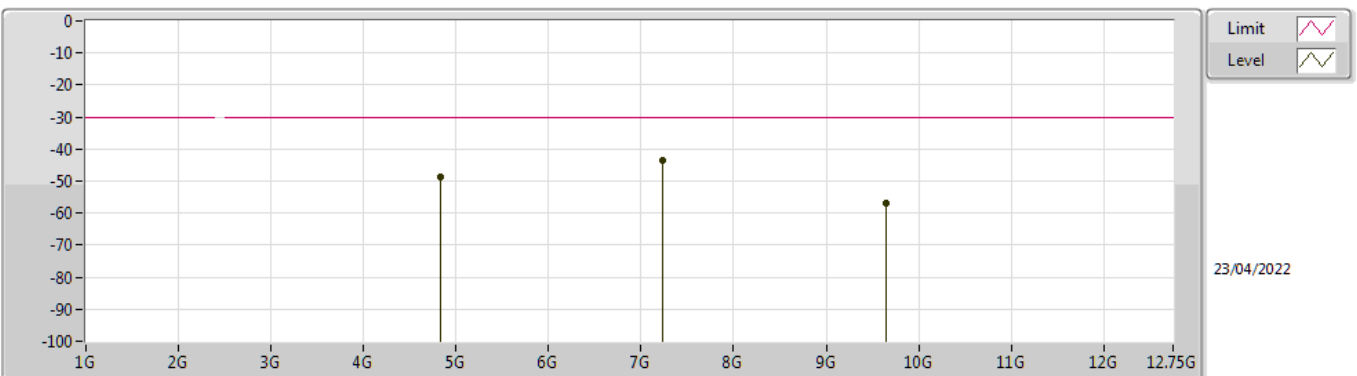
### 2412MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.82602G	-37.56	-30.00	-7.56	0.81	3	Vertical	360	1.5	-	-38.37	46.41	6.74	52.34
AV	7.23484G	-35.86	-30.00	-5.86	1.99	3	Vertical	282	1.5	TDP	-37.85	47.80	8.03	53.84
AV	9.65144G	-49.67	-30.00	-19.67	4.46	3	Vertical	360	1.5	-	-54.13	49.89	9.44	54.87

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

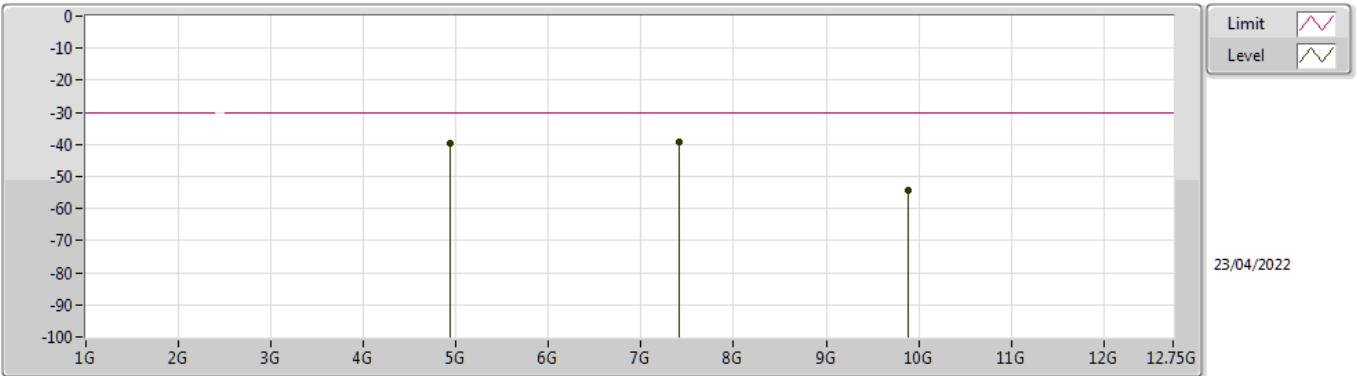
### 2412MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.82644G	-48.64	-30.00	-18.64	2.19	3	Horizontal	0	1.5	-	-50.83	47.79	6.74	52.34
AV	7.23624G	-43.73	-30.00	-13.73	1.30	3	Horizontal	0	1.5	-	-45.03	47.11	8.03	53.84
AV	9.6419G	-56.93	-30.00	-26.93	1.74	3	Horizontal	0	1.5	-	-58.67	47.17	9.43	54.86

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

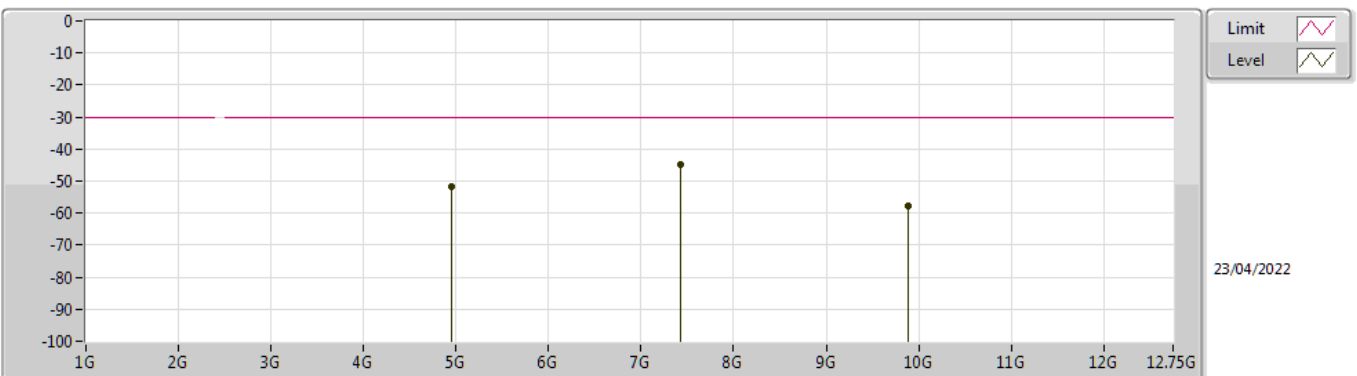
## 2472MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94054G	-39.76	-30.00	-9.76	0.22	3	Vertical	0	1.5	-	-39.98	45.80	6.81	52.39
AV	7.41682G	-39.07	-30.00	-9.07	1.95	3	Vertical	283	1.5	TDP	-41.02	47.63	8.23	53.91
AV	9.88213G	-54.16	-30.00	-24.16	4.15	3	Vertical	0	1.5	-	-58.31	49.65	9.62	55.12

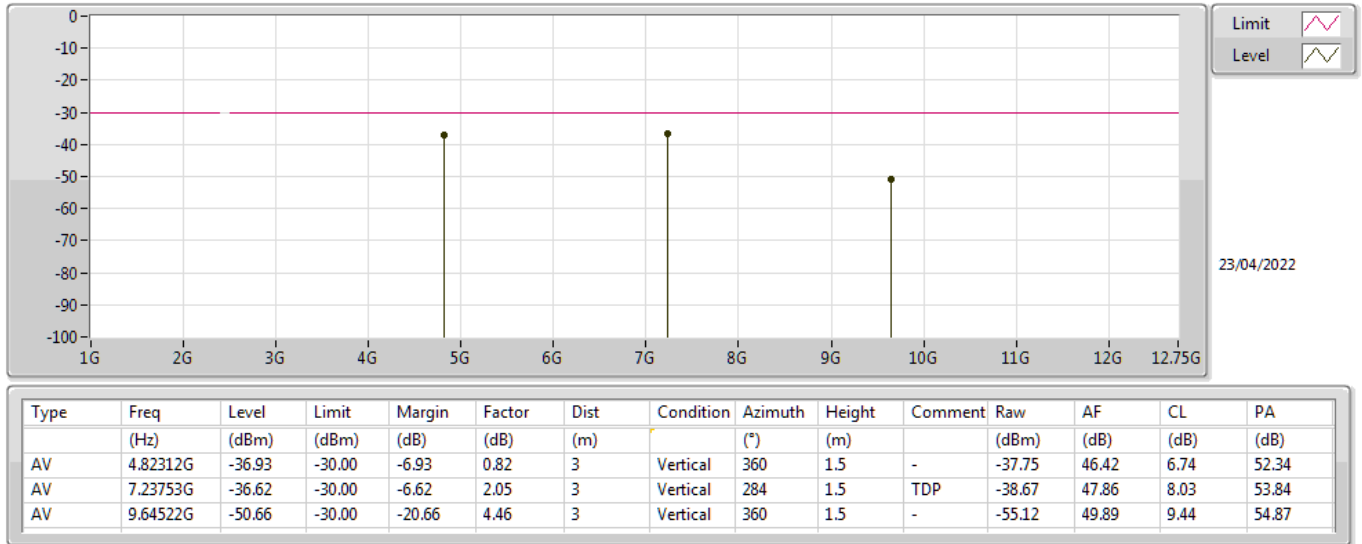
# 802.11g\_Nss1,(6Mbps)\_2TX

## 2472MHz\_TX

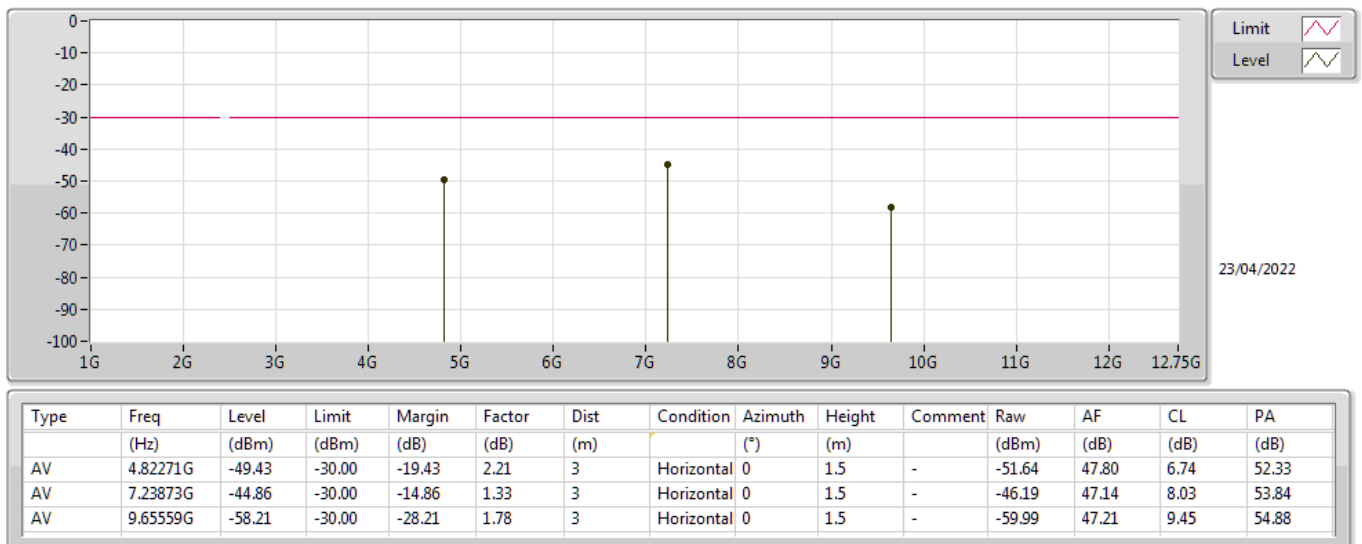


Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94593G	-51.83	-30.00	-21.83	1.54	3	Horizontal	360	1.5	-	-53.37	47.12	6.81	52.39
AV	7.42005G	-45.02	-30.00	-15.02	1.21	3	Horizontal	360	1.5	-	-46.23	46.90	8.22	53.91
AV	9.8813G	-57.58	-30.00	-27.58	1.65	3	Horizontal	360	1.5	-	-59.23	47.15	9.62	55.12

## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2412MHz\_TX

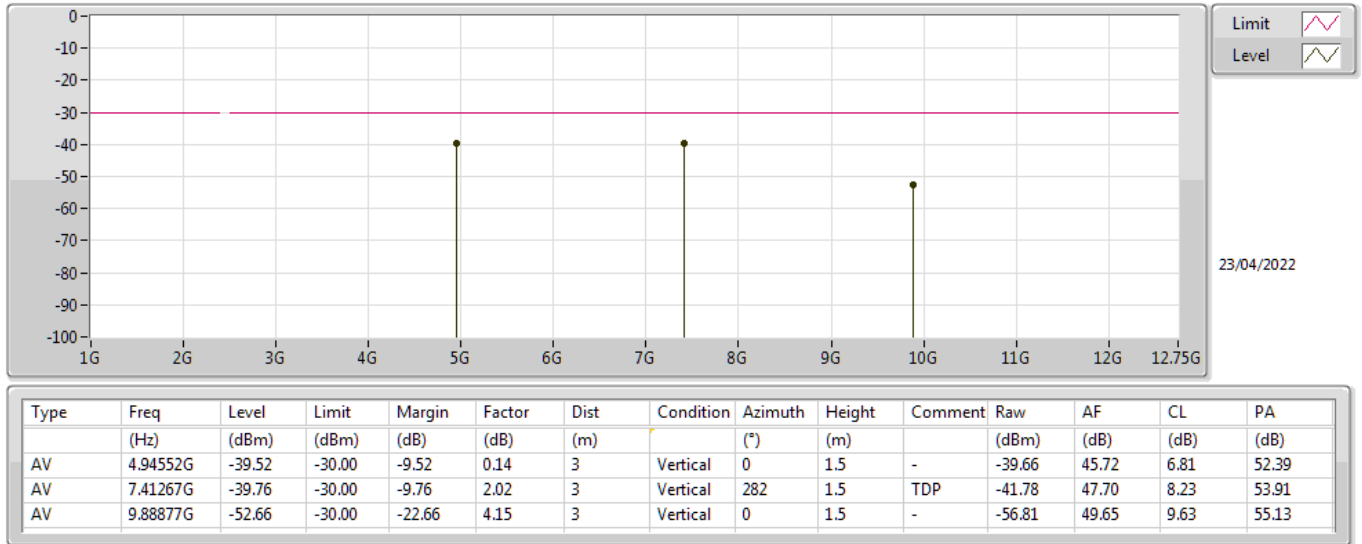


## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2412MHz\_TX

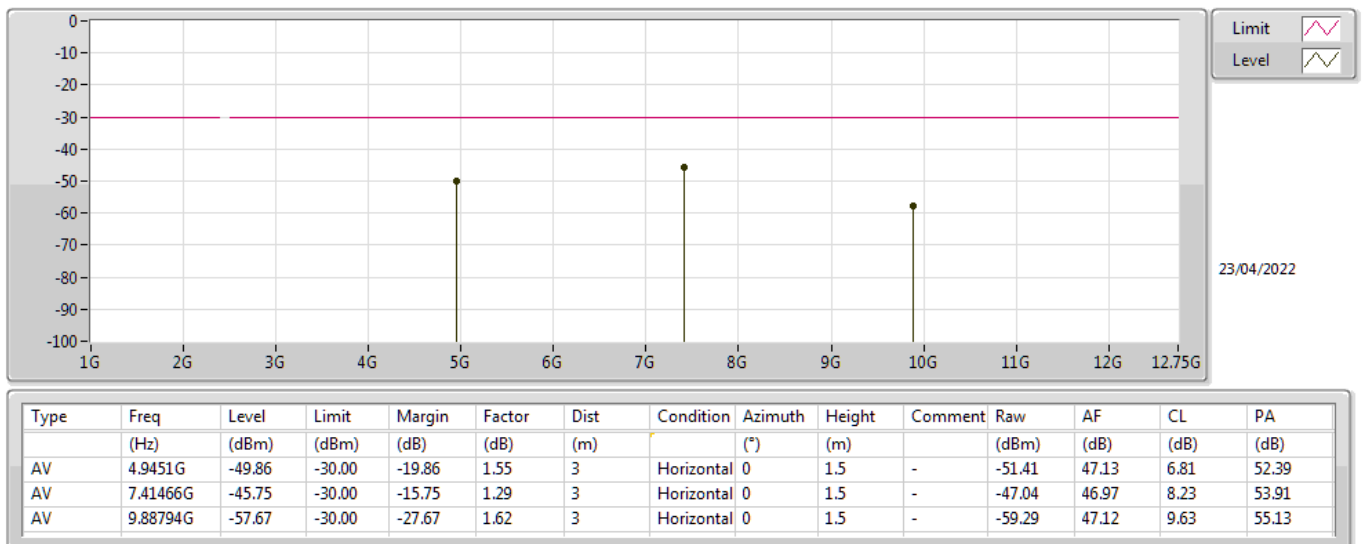




## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2472MHz\_TX

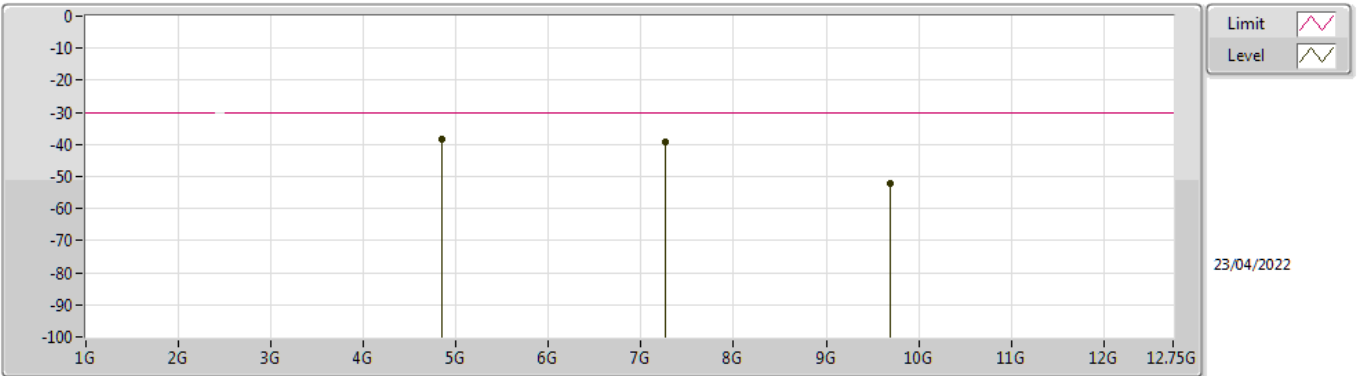


## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2472MHz\_TX



# 802.11ax HEW40\_Nss1,(MCS0)\_2TX

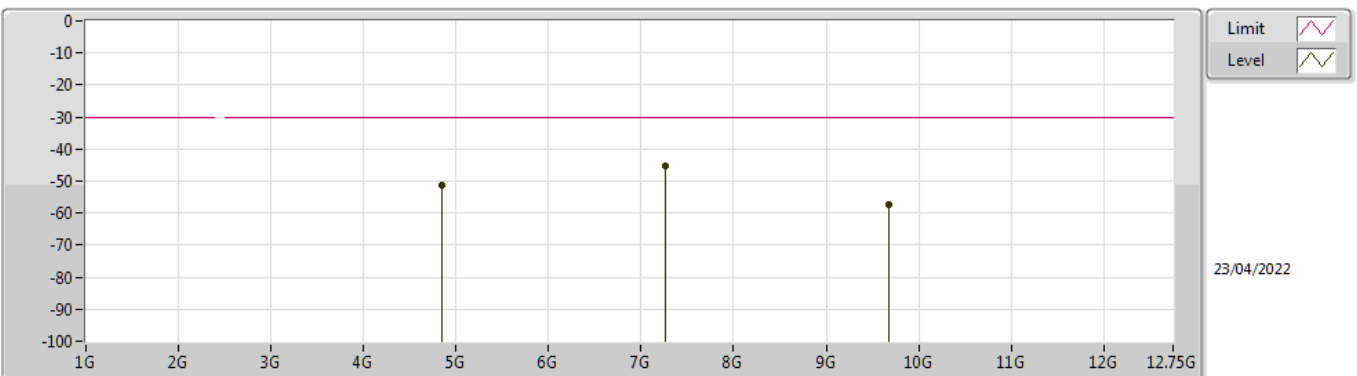
## 2422MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.84304G	-38.31	-30.00	-8.31	0.75	3	Vertical	360	1.5	-	-39.06	46.34	6.75	52.34
AV	7.26556G	-39.29	-30.00	-9.29	2.13	3	Vertical	282	1.5	TDP	-41.42	47.91	8.07	53.85
AV	9.68878G	-52.12	-30.00	-22.12	4.31	3	Vertical	360	1.5	-	-56.43	49.74	9.48	54.91

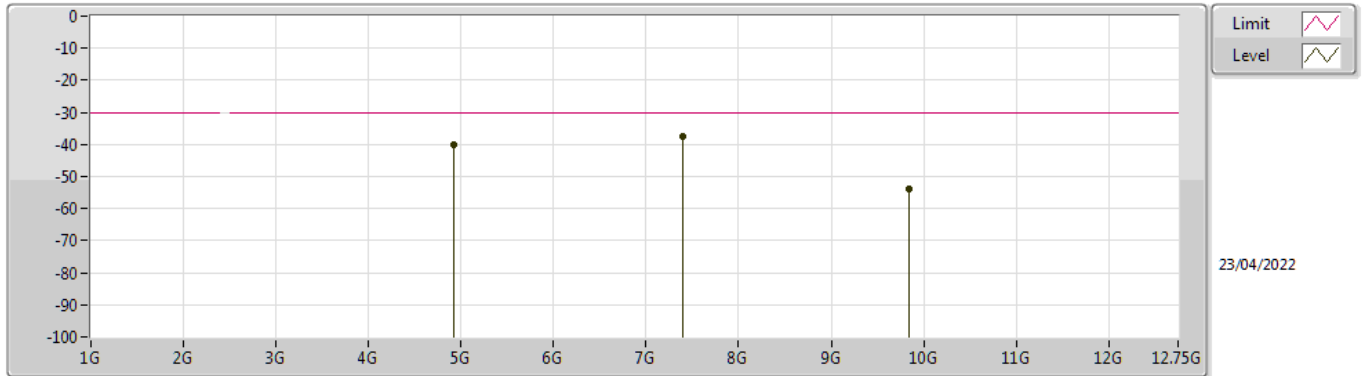
# 802.11ax HEW40\_Nss1,(MCS0)\_2TX

## 2422MHz\_TX



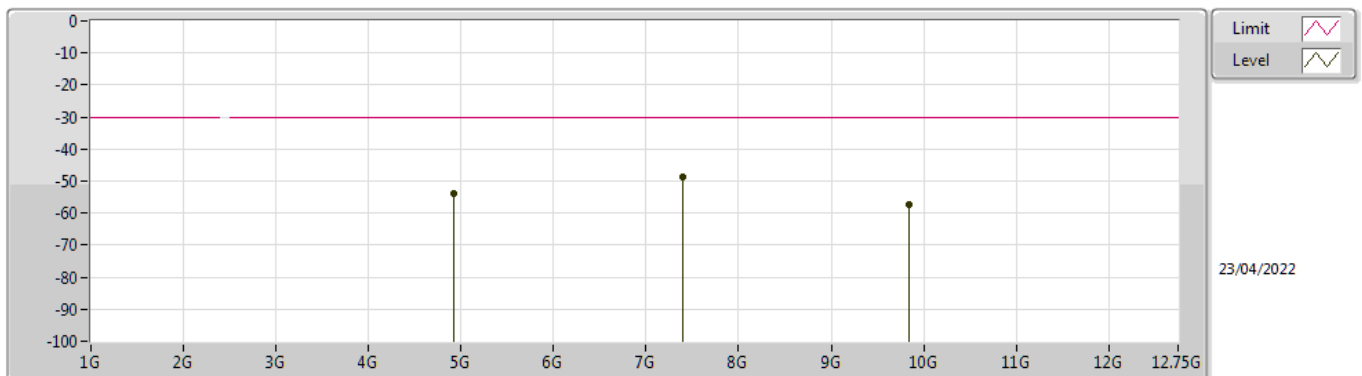
Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.85133G	-51.18	-30.00	-21.18	2.19	3	Horizontal	0	1.5	-	-53.37	47.78	6.76	52.35
AV	7.25865G	-45.33	-30.00	-15.33	1.43	3	Horizontal	0	1.5	-	-46.76	47.22	8.06	53.85
AV	9.68298G	-57.43	-30.00	-27.43	1.70	3	Horizontal	0	1.5	-	-59.13	47.14	9.47	54.91

## 802.11ax HEW40\_Nss1,(MCS0)\_2TX 2462MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.92311G	-40.04	-30.00	-10.04	0.48	3	Vertical	360	1.5	-	-40.52	46.06	6.80	52.38
AV	7.3964G	-37.38	-30.00	-7.38	2.18	3	Vertical	360	1.5	-	-39.56	47.84	8.24	53.90
AV	9.8477G	-54.06	-30.00	-24.06	4.17	3	Vertical	360	1.5	-	-58.23	49.65	9.61	55.09

## 802.11ax HEW40\_Nss1,(MCS0)\_2TX 2462MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.92311G	-53.93	-30.00	-23.93	1.80	3	Horizontal	0	1.5	-	-55.73	47.38	6.80	52.38
AV	7.39433G	-48.89	-30.00	-18.89	1.41	3	Horizontal	0	1.5	-	-50.30	47.08	8.23	53.90
AV	9.84313G	-57.22	-30.00	-27.22	1.83	3	Horizontal	0	1.5	-	-59.05	47.30	9.61	55.08

**Summary**

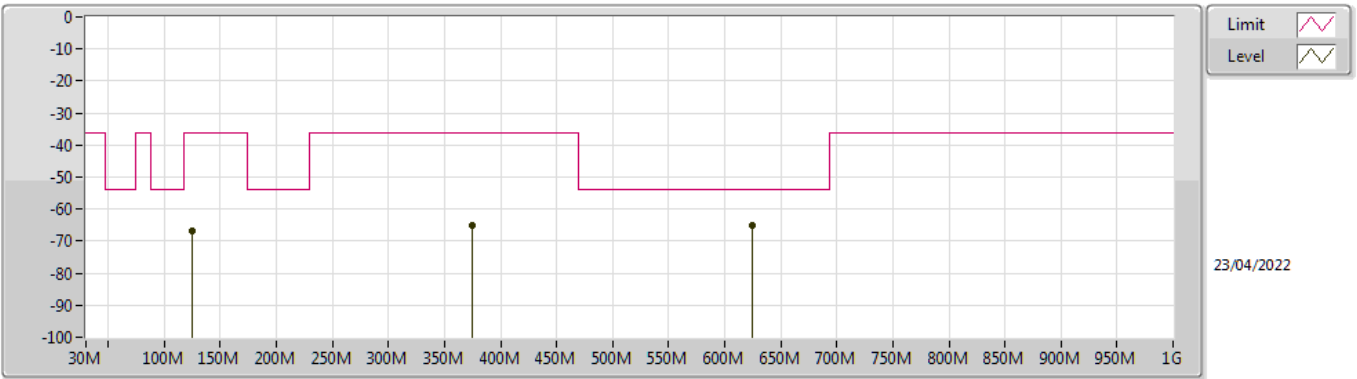
Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	AV	624.98M	-64.24	-54.00	-10.24	8.25	3	Horizontal	360	1.5	-

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2462MHz_TX	Pass	AV	124.95M	-66.75	-36.00	-30.75	1.52	3	Vertical	0	1.5	-
2462MHz_TX	Pass	AV	375.02M	-65.07	-36.00	-29.07	3.55	3	Vertical	0	1.5	-
2462MHz_TX	Pass	AV	624.98M	-64.96	-54.00	-10.96	8.01	3	Vertical	0	1.5	-
2462MHz_TX	Pass	AV	250.01M	-65.74	-36.00	-29.74	1.66	3	Horizontal	360	1.5	-
2462MHz_TX	Pass	AV	375.02M	-63.96	-36.00	-27.96	2.75	3	Horizontal	360	1.5	-
2462MHz_TX	Pass	AV	624.98M	-64.24	-54.00	-10.24	8.25	3	Horizontal	360	1.5	-

## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

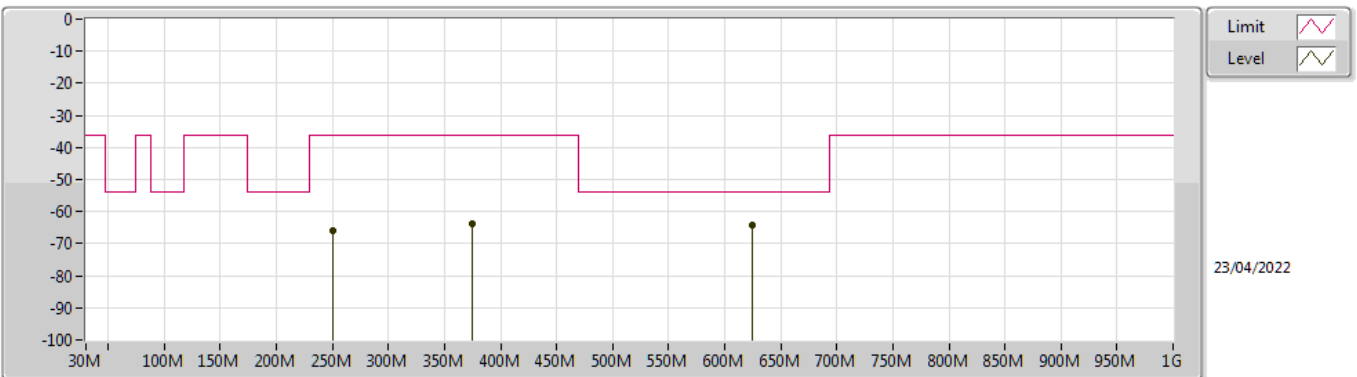
### 2462MHz\_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBm)	(dBm)	(dB)	(dB)	(m)		(°)	(m)		(dBm)	(dB)	(dB)	(dB)
AV	124.95M	-66.75	-36.00	-30.75	1.52	3	Vertical	0	1.5	-	-68.27	27.71	1.60	27.79
AV	375.02M	-65.07	-36.00	-29.07	3.55	3	Vertical	0	1.5	-	-68.62	28.49	2.71	27.65
AV	624.98M	-64.96	-54.00	-10.96	8.01	3	Vertical	0	1.5	-	-72.97	33.03	3.45	28.47

## 802.11ax HEW40\_Nss1,(MCS0)\_2TX

### 2462MHz\_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBm)	(dBm)	(dB)	(dB)	(m)		(°)	(m)		(dBm)	(dB)	(dB)	(dB)
AV	250.01M	-65.74	-36.00	-29.74	1.66	3	Horizontal	360	1.5	-	-67.40	26.50	2.24	27.08
AV	375.02M	-63.96	-36.00	-27.96	2.75	3	Horizontal	360	1.5	-	-66.71	27.69	2.71	27.65
AV	624.98M	-64.24	-54.00	-10.24	8.25	3	Horizontal	360	1.5	-	-72.49	33.27	3.45	28.47

**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	AV	4.82436G	-30.13	-30.00	-0.13	2.20	3	Horizontal	272	1.5	TDP
802.11g_Nss1,(6Mbps)_2TX	Pass	AV	7.23983G	-35.68	-30.00	-5.68	2.09	3	Vertical	281	1.5	TDP
802.11ax HEW20_Nss1,(MCS0)_2TX	Pass	AV	7.23751G	-36.63	-30.00	-6.63	2.05	3	Vertical	284	1.5	TDP
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	AV	7.25823G	-36.17	-30.00	-6.17	2.21	3	Vertical	360	1.5	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TX	Pass	AV	4.82395G	-46.90	-30.00	-16.90	0.81	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	7.23541G	-36.49	-30.00	-6.49	2.01	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	9.64854G	-51.22	-30.00	-21.22	4.47	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	4.82436G	-30.13	-30.00	-0.13	2.20	3	Horizontal	272	1.5	TDP
2412MHz_TX	Pass	AV	7.23707G	-39.40	-30.00	-9.40	1.31	3	Horizontal	0	1.5	-
2412MHz_TX	Pass	AV	9.64854G	-48.59	-30.00	-18.59	1.79	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	4.94427G	-45.91	-30.00	-15.91	0.16	3	Vertical	0	1.5	-
2472MHz_TX	Pass	AV	7.41557G	-30.49	-30.00	-0.49	1.97	3	Vertical	281	1.5	TDP
2472MHz_TX	Pass	AV	9.88836G	-49.43	-30.00	-19.43	4.15	3	Vertical	0	1.5	-
2472MHz_TX	Pass	AV	4.94432G	-32.01	-30.00	-2.01	1.55	3	Horizontal	278	1.5	TDP
2472MHz_TX	Pass	AV	7.41507G	-41.93	-30.00	-11.93	1.28	3	Horizontal	360	1.5	-
2472MHz_TX	Pass	AV	9.88836G	-56.42	-30.00	-26.42	1.61	3	Horizontal	360	1.5	-
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TX	Pass	AV	4.82561G	-50.81	-30.00	-20.81	0.81	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	7.23983G	-35.68	-30.00	-5.68	2.09	3	Vertical	281	1.5	TDP
2412MHz_TX	Pass	AV	9.64771G	-52.75	-30.00	-22.75	4.46	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	4.82634G	-38.42	-30.00	-8.42	2.19	3	Horizontal	81	1.5	TDP
2412MHz_TX	Pass	AV	7.24247G	-37.19	-30.00	-7.19	1.39	3	Horizontal	0	1.5	-
2412MHz_TX	Pass	AV	9.64273G	-54.95	-30.00	-24.95	1.75	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	4.94303G	-52.86	-30.00	-22.86	0.18	3	Vertical	360	1.5	-
2472MHz_TX	Pass	AV	7.41695G	-37.39	-30.00	-7.39	1.95	3	Vertical	281	1.5	TDP
2472MHz_TX	Pass	AV	9.89168G	-55.27	-30.00	-25.27	4.15	3	Vertical	360	1.5	-
2472MHz_TX	Pass	AV	4.94635G	-40.63	-30.00	-10.63	1.53	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	7.41217G	-38.52	-30.00	-8.52	1.32	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	9.88711G	-56.42	-30.00	-26.42	1.61	3	Horizontal	0	1.5	-
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TX	Pass	AV	4.81856G	-51.82	-30.00	-21.82	0.85	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	7.23751G	-36.63	-30.00	-6.63	2.05	3	Vertical	284	1.5	TDP
2412MHz_TX	Pass	AV	9.64937G	-54.49	-30.00	-24.49	4.47	3	Vertical	360	1.5	-
2412MHz_TX	Pass	AV	4.82279G	-40.91	-30.00	-10.91	2.21	3	Horizontal	84	1.5	-
2412MHz_TX	Pass	AV	7.2379G	-36.77	-30.00	-6.77	1.32	3	Horizontal	0	1.5	-
2412MHz_TX	Pass	AV	9.64314G	-53.87	-30.00	-23.87	1.75	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	4.93888G	-55.16	-30.00	-25.16	0.24	3	Vertical	360	1.5	-
2472MHz_TX	Pass	AV	7.41703G	-38.10	-30.00	-8.10	1.94	3	Vertical	281	1.5	TDP
2472MHz_TX	Pass	AV	9.88462G	-55.09	-30.00	-25.09	4.14	3	Vertical	360	1.5	-
2472MHz_TX	Pass	AV	4.94303G	-43.03	-30.00	-13.03	1.57	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	7.41009G	-40.00	-30.00	-10.00	1.35	3	Horizontal	0	1.5	-
2472MHz_TX	Pass	AV	9.88545G	-57.23	-30.00	-27.23	1.62	3	Horizontal	0	1.5	-
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz_TX	Pass	AV	4.84304G	-53.67	-30.00	-23.67	0.75	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	7.25823G	-36.17	-30.00	-6.17	2.21	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	9.67551G	-55.18	-30.00	-25.18	4.36	3	Vertical	360	1.5	-
2422MHz_TX	Pass	AV	4.85133G	-38.44	-30.00	-8.44	2.19	3	Horizontal	0	1.5	-
2422MHz_TX	Pass	AV	7.25865G	-37.34	-30.00	-7.34	1.43	3	Horizontal	0	1.5	-
2422MHz_TX	Pass	AV	9.67468G	-56.76	-30.00	-26.76	1.72	3	Horizontal	0	1.5	-
2462MHz_TX	Pass	AV	4.92104G	-55.94	-30.00	-25.94	0.52	3	Vertical	360	1.5	-
2462MHz_TX	Pass	AV	7.3852G	-36.85	-30.00	-6.85	1.96	3	Vertical	360	1.5	-





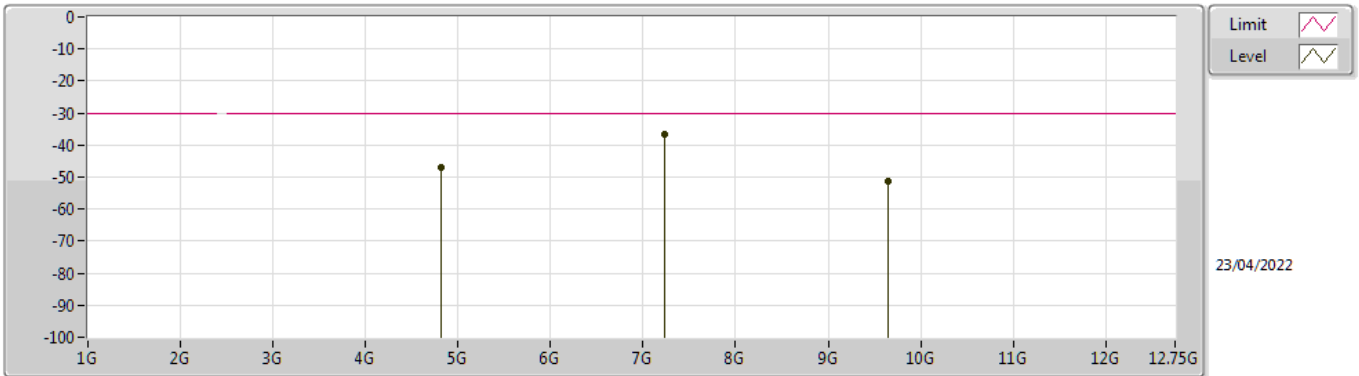
## ***RSE TX above 1GHz\_Non-Beamforming\_Dipole Antenna***

## ***Appendix E.4***

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2462MHz_TX	Pass	AV	9.85599G	-54.75	-30.00	-24.75	4.17	3	Vertical	360	1.5	-
2462MHz_TX	Pass	AV	4.9256G	-42.07	-30.00	-12.07	1.77	3	Horizontal	0	1.5	-
2462MHz_TX	Pass	AV	7.3964G	-38.81	-30.00	-8.81	1.45	3	Horizontal	0	1.5	-
2462MHz_TX	Pass	AV	9.85019G	-56.76	-30.00	-26.76	1.84	3	Horizontal	0	1.5	-

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

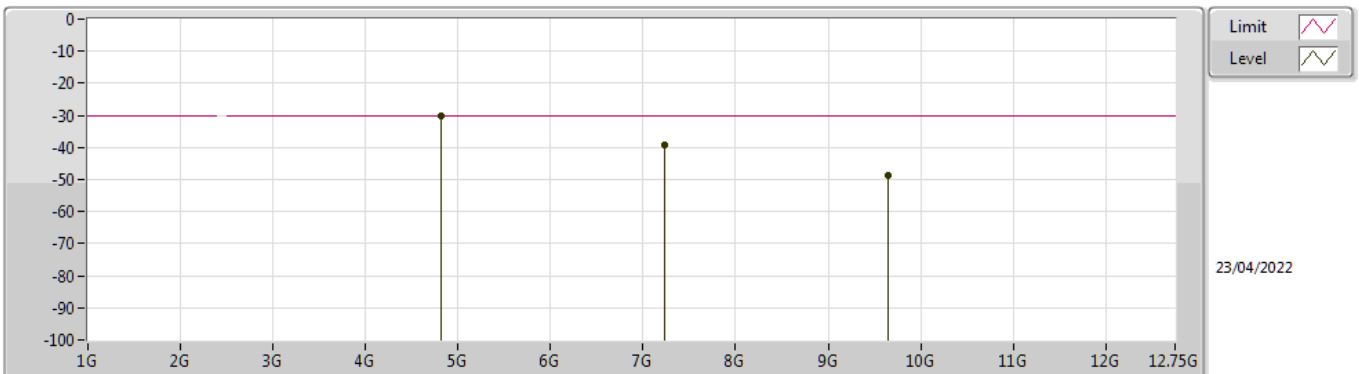
### 2412MHz\_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBm)	(dBm)	(dB)	(dB)	(m)		(°)	(m)		(dBm)	(dB)	(dB)	(dB)
AV	4.82395G	-46.90	-30.00	-16.90	0.81	3	Vertical	360	1.5	-	-47.71	46.41	6.74	52.34
AV	7.23541G	-36.49	-30.00	-6.49	2.01	3	Vertical	360	1.5	-	-38.50	47.82	8.03	53.84
AV	9.64854G	-51.22	-30.00	-21.22	4.47	3	Vertical	360	1.5	-	-55.69	49.90	9.44	54.87

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

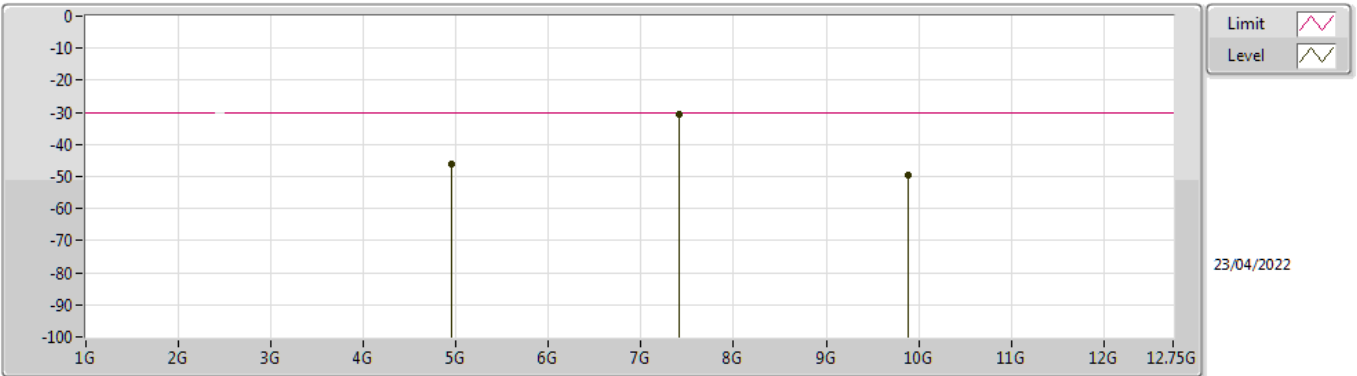
### 2412MHz\_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBm)	(dBm)	(dB)	(dB)	(m)		(°)	(m)		(dBm)	(dB)	(dB)	(dB)
AV	4.82436G	-30.13	-30.00	-0.13	2.20	3	Horizontal	272	1.5	TDP	-32.33	47.80	6.74	52.34
AV	7.23707G	-39.40	-30.00	-9.40	1.31	3	Horizontal	0	1.5	-	-40.71	47.12	8.03	53.84
AV	9.64854G	-48.59	-30.00	-18.59	1.79	3	Horizontal	0	1.5	-	-50.38	47.22	9.44	54.87

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

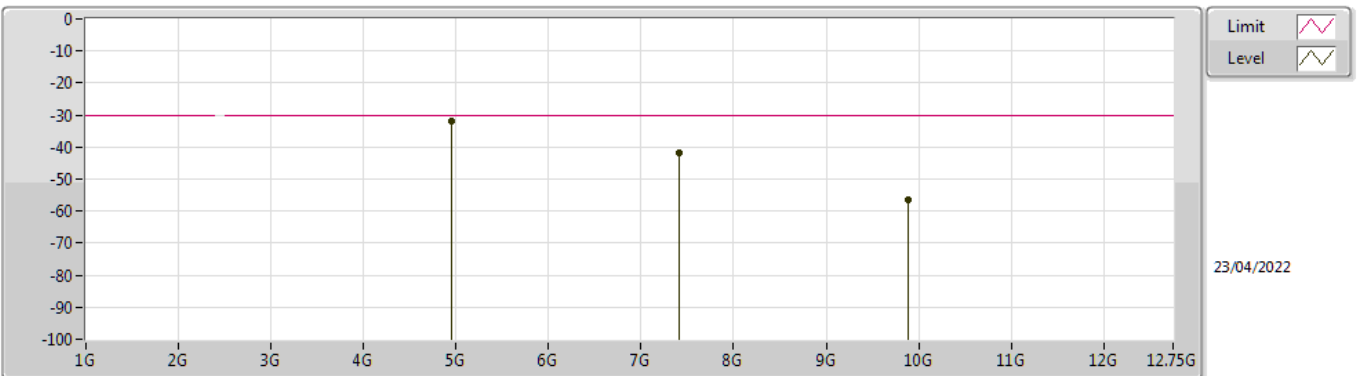
### 2472MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94427G	-45.91	-30.00	-15.91	0.16	3	Vertical	0	1.5	-	-46.07	45.74	6.81	52.39
AV	7.41557G	-30.49	-30.00	-0.49	1.97	3	Vertical	281	1.5	TDP	-32.46	47.65	8.23	53.91
AV	9.88836G	-49.43	-30.00	-19.43	4.15	3	Vertical	0	1.5	-	-53.58	49.65	9.63	55.13

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

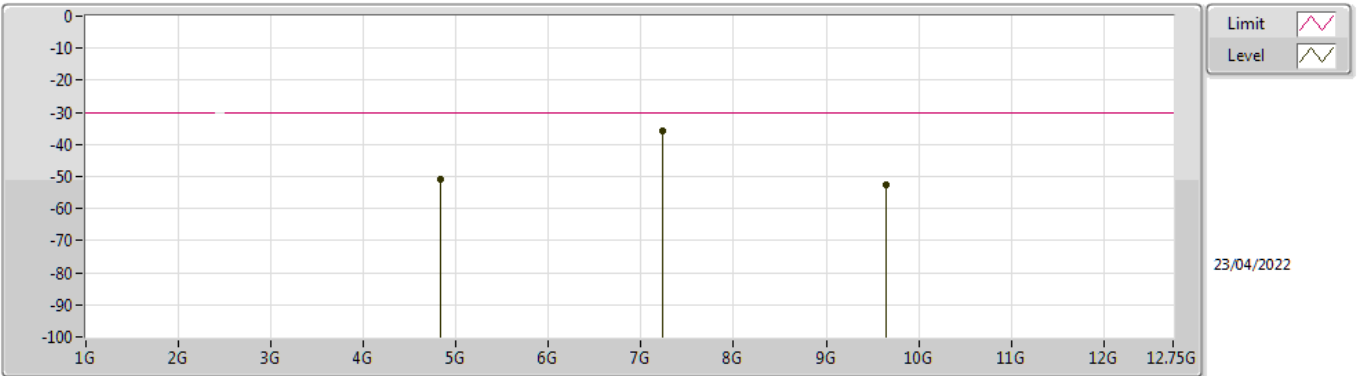
### 2472MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94432G	-32.01	-30.00	-2.01	1.55	3	Horizontal	278	1.5	TDP	-33.56	47.13	6.81	52.39
AV	7.41507G	-41.93	-30.00	-11.93	1.28	3	Horizontal	360	1.5	-	-43.21	46.96	8.23	53.91
AV	9.88836G	-56.42	-30.00	-26.42	1.61	3	Horizontal	360	1.5	-	-58.03	47.11	9.63	55.13

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

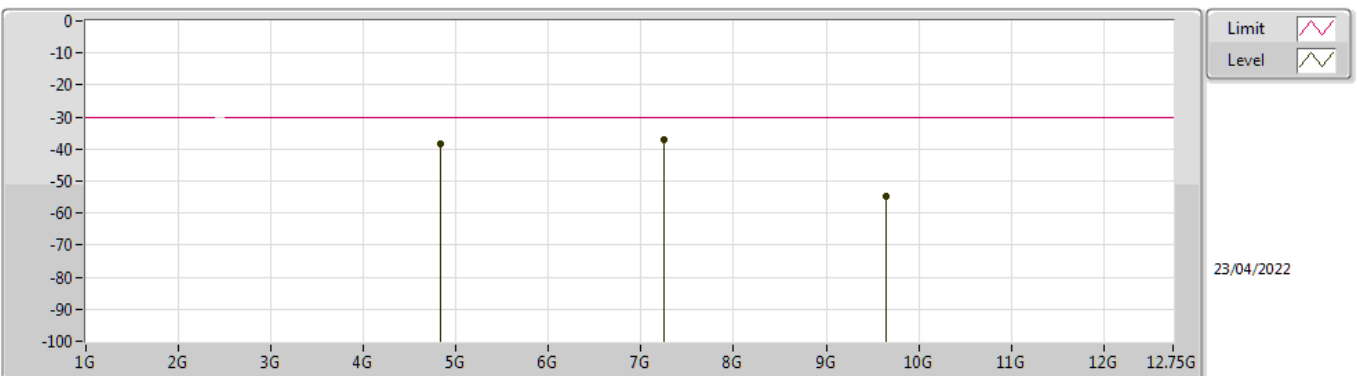
## 2412MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.82561G	-50.81	-30.00	-20.81	0.81	3	Vertical	360	1.5	-	-51.62	46.41	6.74	52.34
AV	7.23983G	-35.68	-30.00	-5.68	2.09	3	Vertical	281	1.5	TDP	-37.77	47.90	8.03	53.84
AV	9.64771G	-52.75	-30.00	-22.75	4.46	3	Vertical	360	1.5	-	-57.21	49.89	9.44	54.87

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

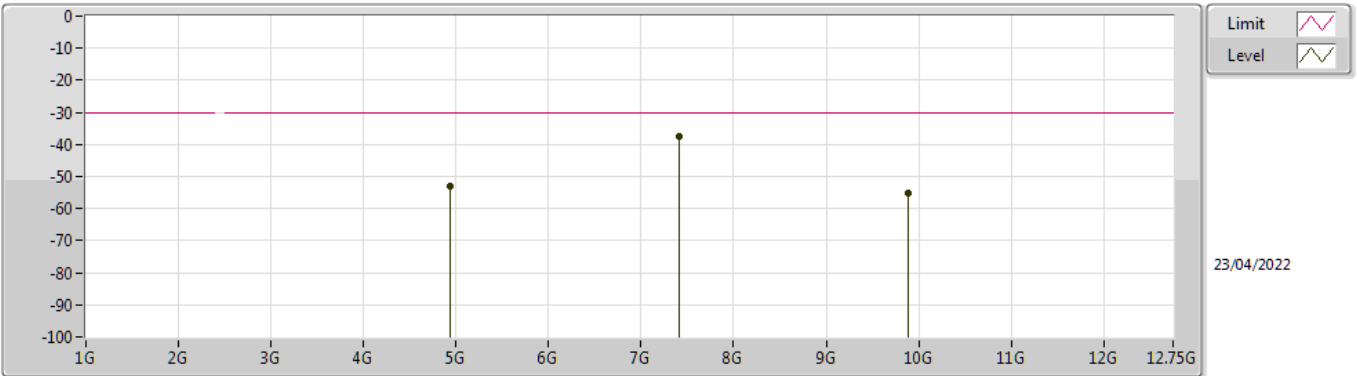
## 2412MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.82634G	-38.42	-30.00	-8.42	2.19	3	Horizontal	81	1.5	TDP	-40.61	47.79	6.74	52.34
AV	7.24247G	-37.19	-30.00	-7.19	1.39	3	Horizontal	0	1.5	-	-38.58	47.19	8.04	53.84
AV	9.64273G	-54.95	-30.00	-24.95	1.75	3	Horizontal	0	1.5	-	-56.70	47.18	9.43	54.86

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

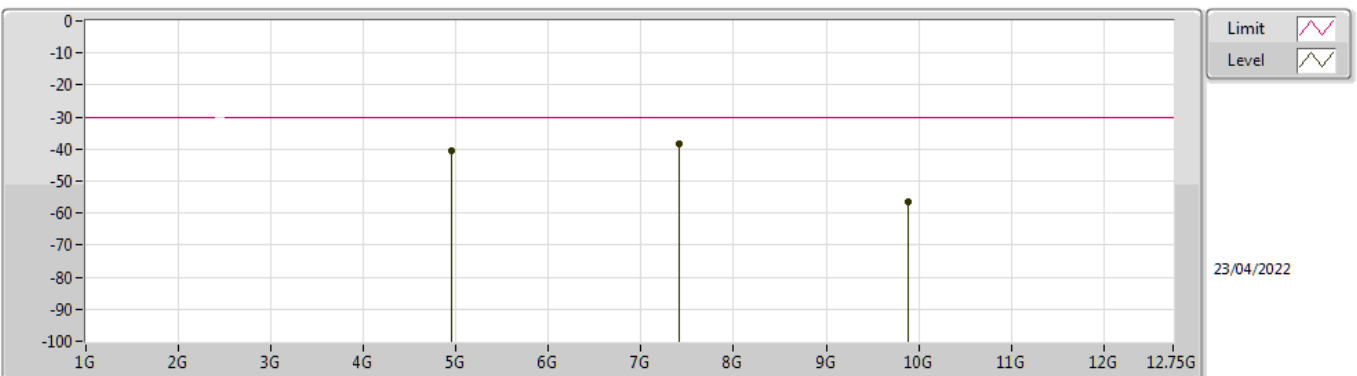
## 2472MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94303G	-52.86	-30.00	-22.86	0.18	3	Vertical	360	1.5	-	-53.04	45.76	6.81	52.39
AV	7.41695G	-37.39	-30.00	-7.39	1.95	3	Vertical	281	1.5	TDP	-39.34	47.63	8.23	53.91
AV	9.89168G	-55.27	-30.00	-25.27	4.15	3	Vertical	360	1.5	-	-59.42	49.65	9.63	55.13

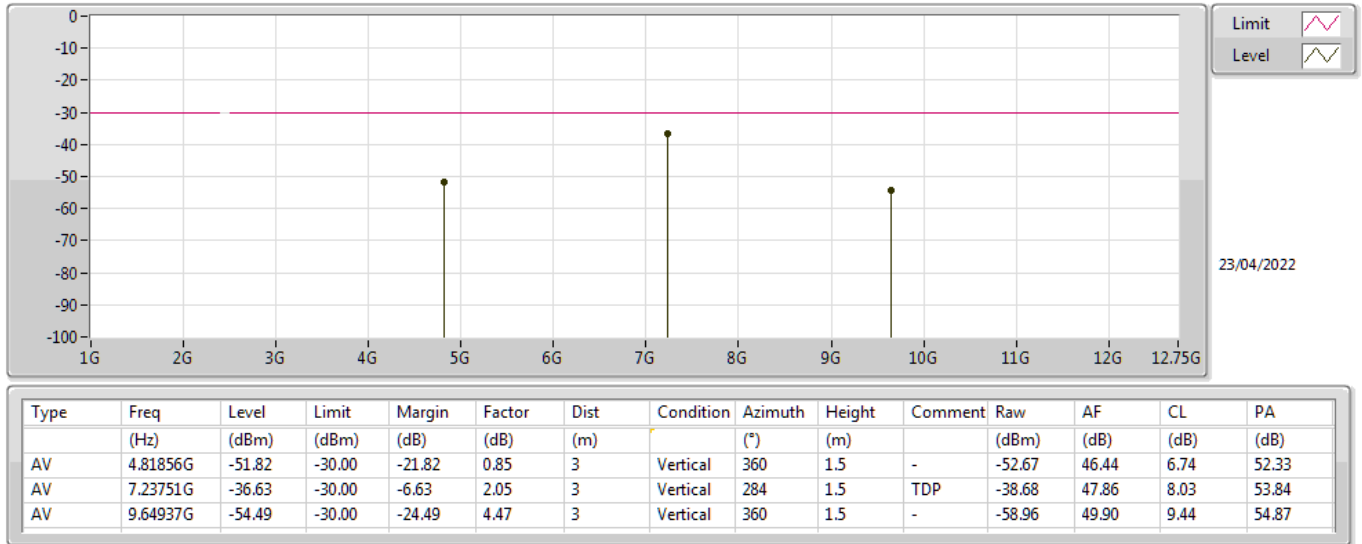
# 802.11g\_Nss1,(6Mbps)\_2TX

## 2472MHz\_TX

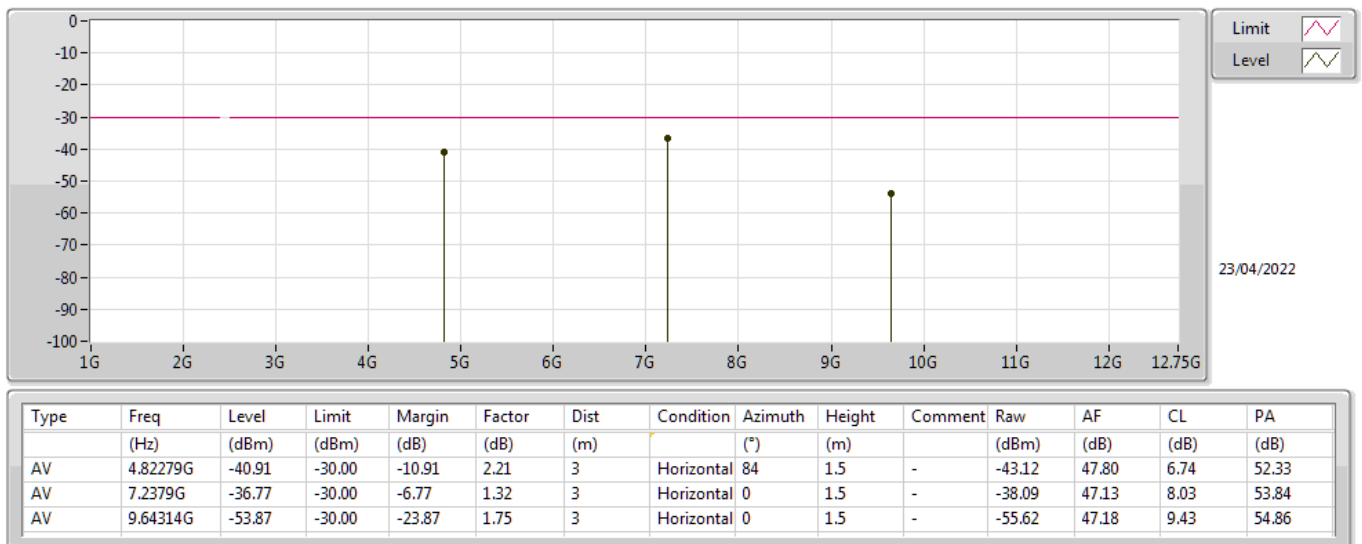


Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.94635G	-40.63	-30.00	-10.63	1.53	3	Horizontal	0	1.5	-	-42.16	47.11	6.81	52.39
AV	7.41217G	-38.52	-30.00	-8.52	1.32	3	Horizontal	0	1.5	-	-39.84	47.00	8.23	53.91
AV	9.88711G	-56.42	-30.00	-26.42	1.61	3	Horizontal	0	1.5	-	-58.03	47.12	9.62	55.13

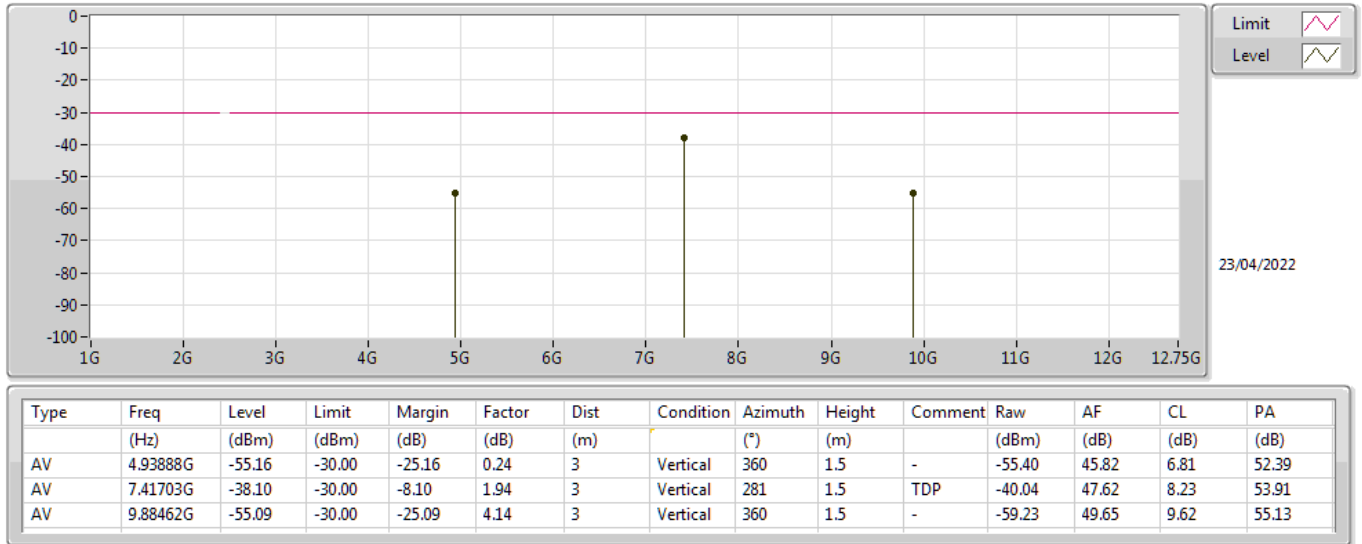
## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2412MHz\_TX



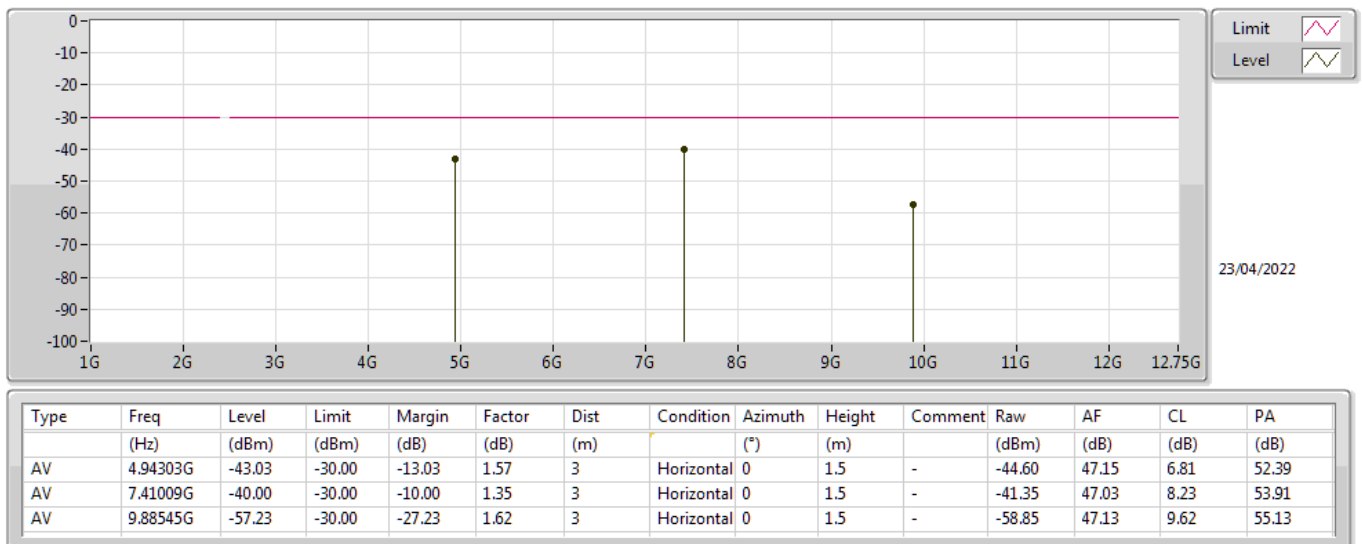
## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2412MHz\_TX



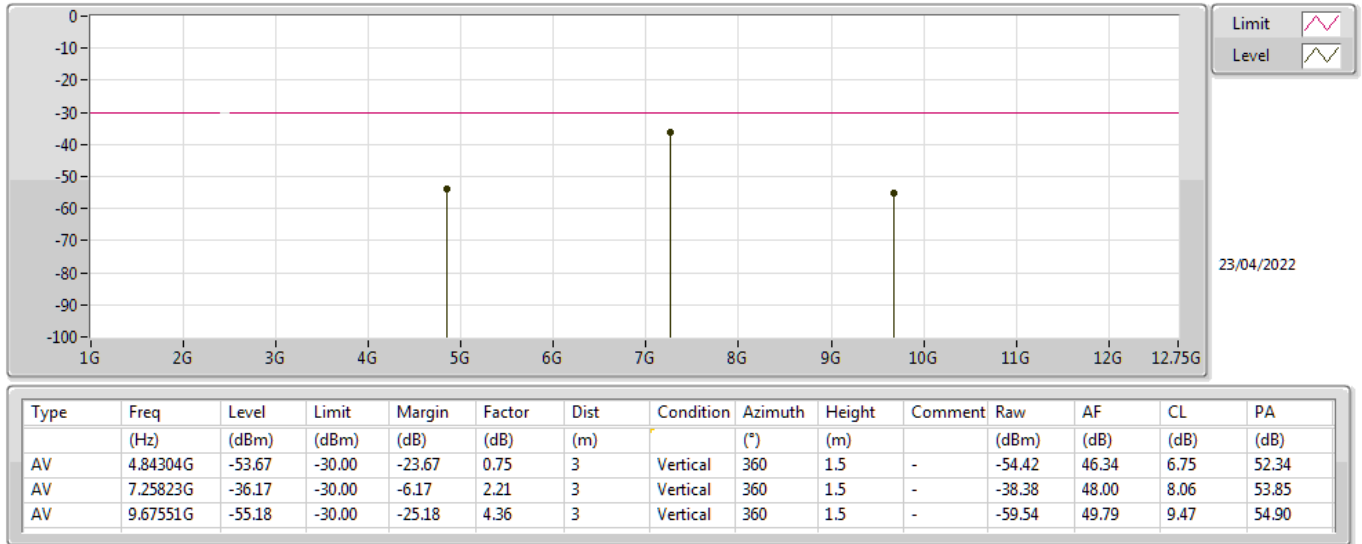
## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2472MHz\_TX



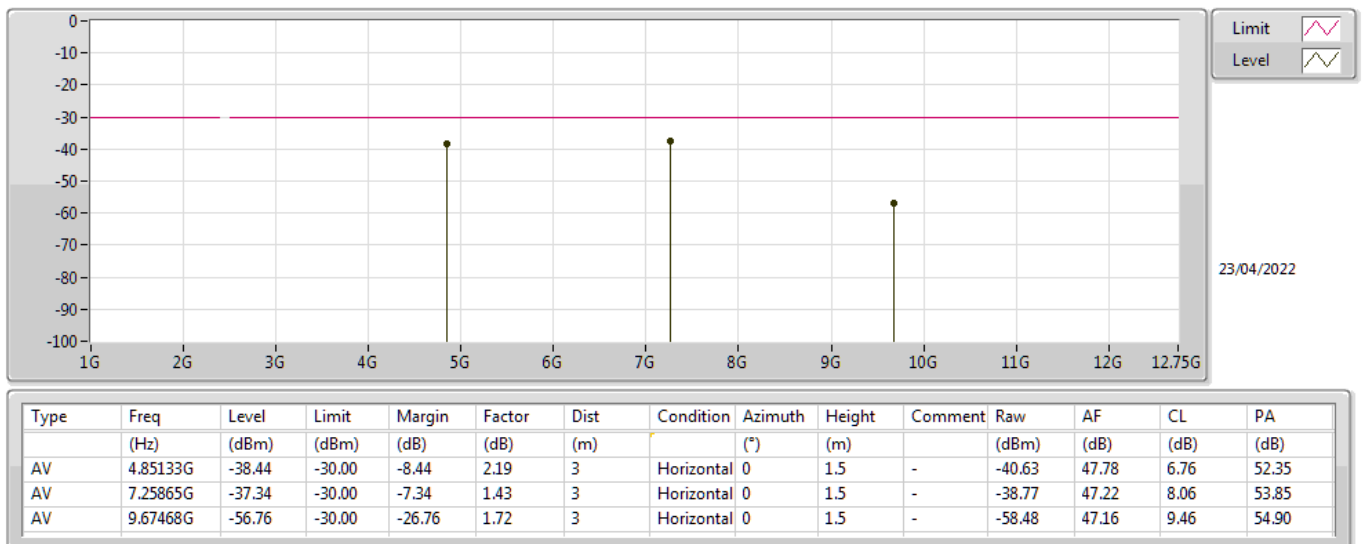
## 802.11ax HEW20\_Nss1,(MCS0)\_2TX 2472MHz\_TX



## 802.11ax HEW40\_Nss1,(MCS0)\_2TX 2422MHz\_TX



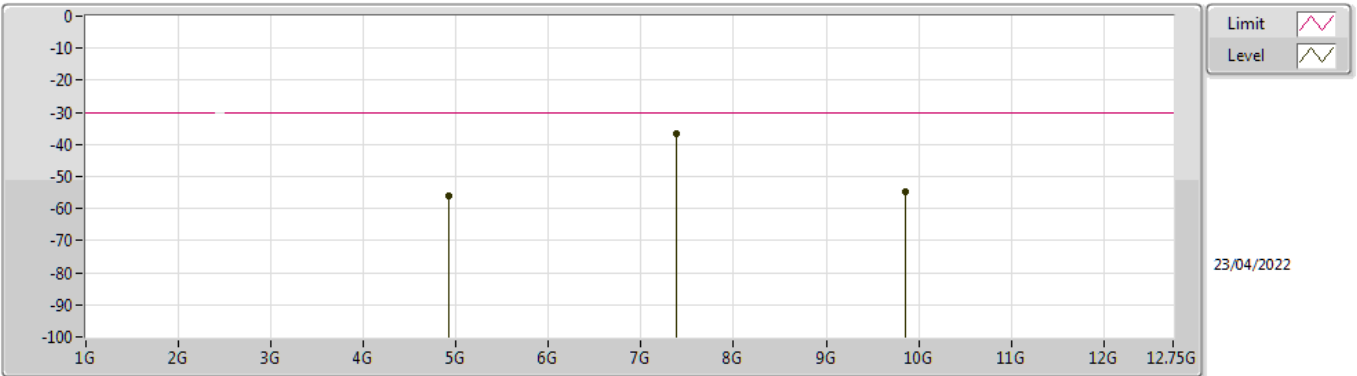
## 802.11ax HEW40\_Nss1,(MCS0)\_2TX 2422MHz\_TX





# 802.11ax HEW40\_Nss1,(MCS0)\_2TX

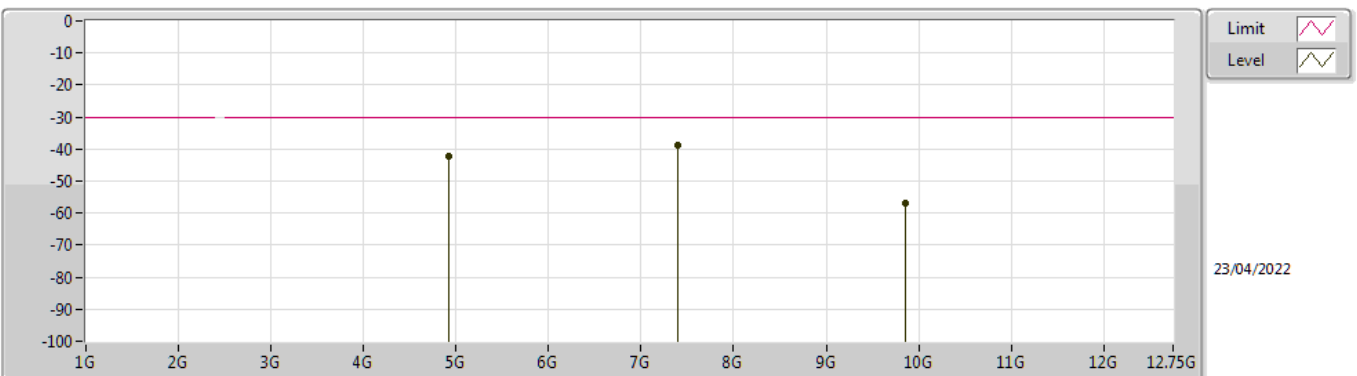
## 2462MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.92104G	-55.94	-30.00	-25.94	0.52	3	Vertical	360	1.5	-	-56.46	46.10	6.80	52.38
AV	7.3852G	-36.85	-30.00	-6.85	1.96	3	Vertical	360	1.5	-	-38.81	47.64	8.22	53.90
AV	9.85599G	-54.75	-30.00	-24.75	4.17	3	Vertical	360	1.5	-	-58.92	49.65	9.61	55.09

# 802.11ax HEW40\_Nss1,(MCS0)\_2TX

## 2462MHz\_TX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	4.9256G	-42.07	-30.00	-12.07	1.77	3	Horizontal	0	1.5	-	-43.84	47.35	6.80	52.38
AV	7.3964G	-38.81	-30.00	-8.81	1.45	3	Horizontal	0	1.5	-	-40.26	47.11	8.24	53.90
AV	9.85019G	-56.76	-30.00	-26.76	1.84	3	Horizontal	0	1.5	-	-58.60	47.32	9.61	55.09

**Summary**

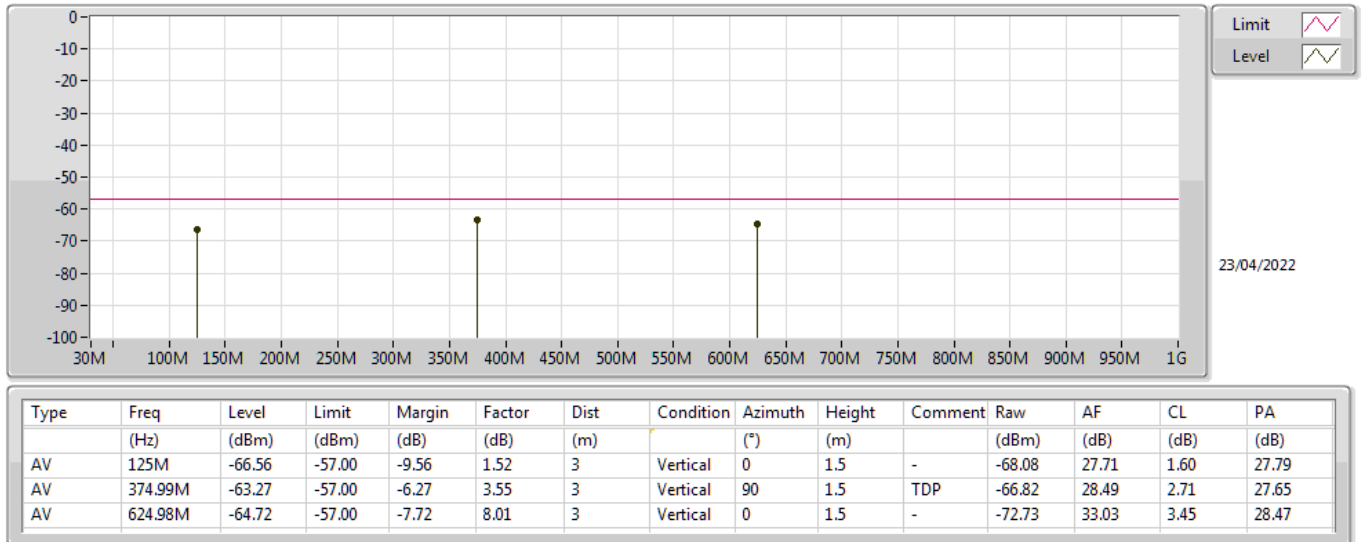
Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40_(MCS0)_RX	Pass	AV	374.99M	-63.27	-57.00	-6.27	3.55	3	Vertical	90	1.5	TDP

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ax HEW40_(MCS0)_RX	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz_RX	Pass	AV	125M	-66.56	-57.00	-9.56	1.52	3	Vertical	0	1.5	-
2422MHz_RX	Pass	AV	374.99M	-63.27	-57.00	-6.27	3.55	3	Vertical	90	1.5	TDP
2422MHz_RX	Pass	AV	624.98M	-64.72	-57.00	-7.72	8.01	3	Vertical	0	1.5	-
2422MHz_RX	Pass	AV	250.01M	-64.76	-57.00	-7.76	1.66	3	Horizontal	360	1.5	-
2422MHz_RX	Pass	AV	624.98M	-65.59	-57.00	-8.59	8.25	3	Horizontal	360	1.5	-
2422MHz_RX	Pass	AV	99.55M	-68.38	-57.00	-11.38	-0.49	3	Horizontal	360	1.5	-

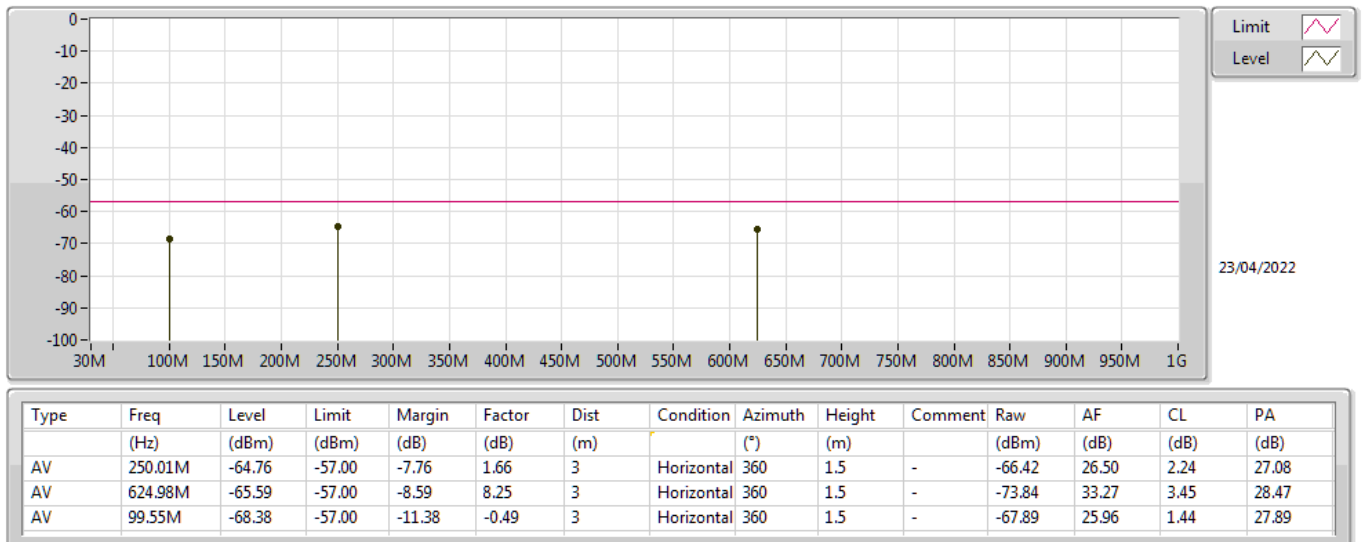
## 802.11ax HEW40\_(MCS0)\_RX

### 2422MHz\_RX



## 802.11ax HEW40\_(MCS0)\_RX

### 2422MHz\_RX



**Summary**

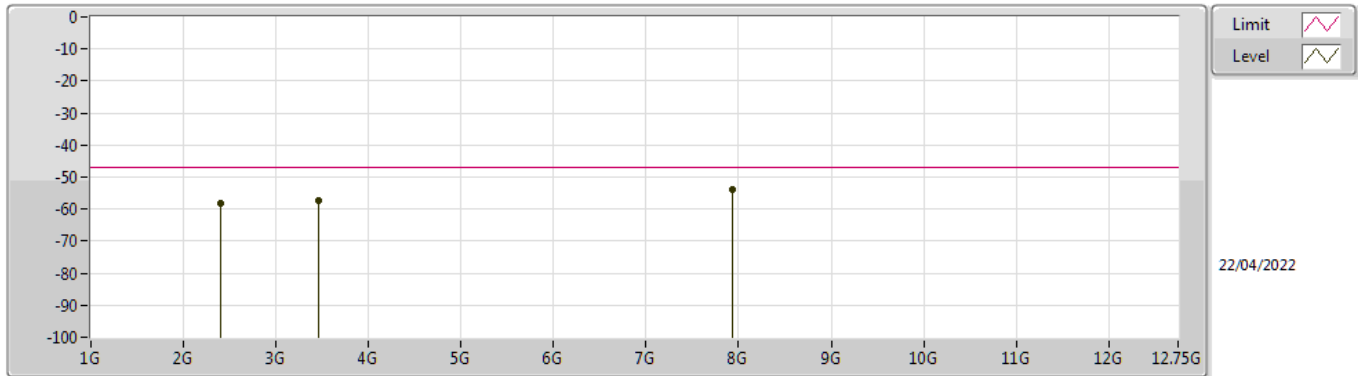
Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40_(MCS0)_RX	Pass	AV	7.9338G	-53.86	-47.00	-6.86	2.04	3	Vertical	0	1.5	-

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ax HEW40_(MCS0)_RX	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz_RX	Pass	AV	2.40006G	-58.29	-47.00	-11.29	-3.42	3	Vertical	0	1.5	-
2422MHz_RX	Pass	AV	3.45761G	-57.28	-47.00	-10.28	-1.76	3	Vertical	0	1.5	-
2422MHz_RX	Pass	AV	7.9338G	-53.86	-47.00	-6.86	2.04	3	Vertical	0	1.5	-
2422MHz_RX	Pass	AV	1.12501G	-57.29	-47.00	-10.29	-7.62	3	Horizontal	360	1.5	-
2422MHz_RX	Pass	AV	1.60003G	-59.26	-47.00	-12.26	-7.21	3	Horizontal	360	1.5	-
2422MHz_RX	Pass	AV	3.47011G	-57.11	-47.00	-10.11	0.20	3	Horizontal	360	1.5	-
2462MHz_RX	Pass	AV	2.40006G	-58.29	-47.00	-11.29	-3.42	3	Vertical	360	1.5	-
2462MHz_RX	Pass	AV	3.47011G	-56.96	-47.00	-9.96	-1.68	3	Vertical	360	1.5	-
2462MHz_RX	Pass	AV	7.9643G	-54.21	-47.00	-7.21	1.93	3	Vertical	360	1.5	-
2462MHz_RX	Pass	AV	1.12451G	-56.45	-47.00	-9.45	-7.61	3	Horizontal	0	1.5	-
2462MHz_RX	Pass	AV	2.40006G	-57.23	-47.00	-10.23	-1.02	3	Horizontal	0	1.5	-
2462MHz_RX	Pass	AV	5.47919G	-57.22	-47.00	-10.22	2.04	3	Horizontal	0	1.5	-

## 802.11ax HEW40\_(MCS0)\_RX

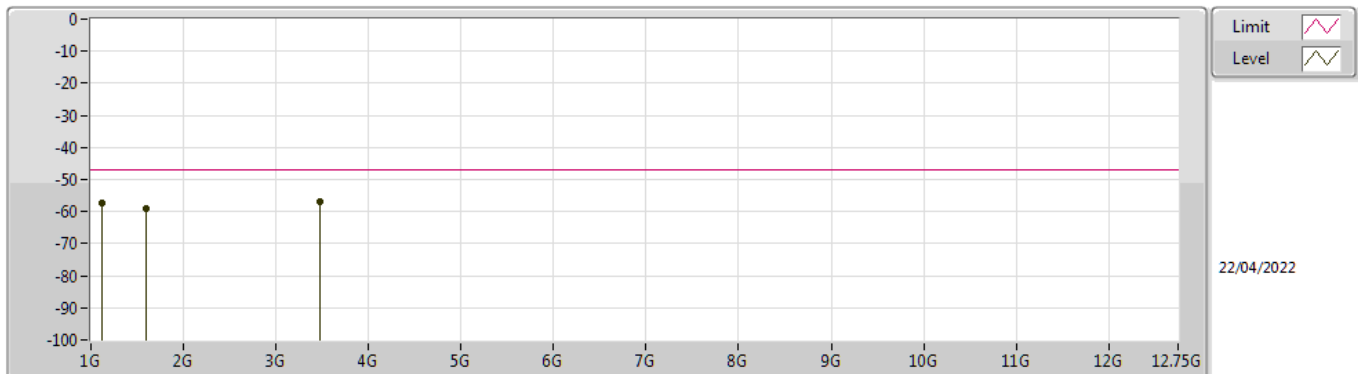
### 2422MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	2.40006G	-58.29	-47.00	-11.29	-3.42	3	Vertical	0	1.5	-	-54.87	43.59	4.85	51.86
AV	3.45761G	-57.28	-47.00	-10.28	-1.76	3	Vertical	0	1.5	-	-55.52	44.35	5.81	51.92
AV	7.9338G	-53.86	-47.00	-6.86	2.04	3	Vertical	0	1.5	-	-55.90	47.88	8.37	54.21

## 802.11ax HEW40\_(MCS0)\_RX

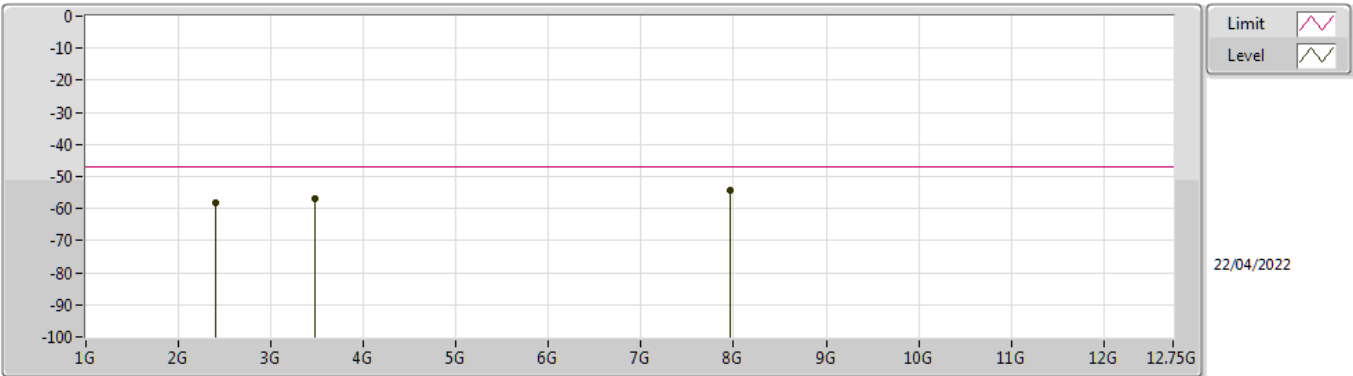
### 2422MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	1.12501G	-57.29	-47.00	-10.29	-7.62	3	Horizontal	360	1.5	-	-49.67	40.92	3.30	51.84
AV	1.60003G	-59.26	-47.00	-12.26	-7.21	3	Horizontal	360	1.5	-	-52.05	40.80	3.93	51.94
AV	3.47011G	-57.11	-47.00	-10.11	0.20	3	Horizontal	360	1.5	-	-57.31	46.29	5.83	51.92

## 802.11ax HEW40\_(MCS0)\_RX

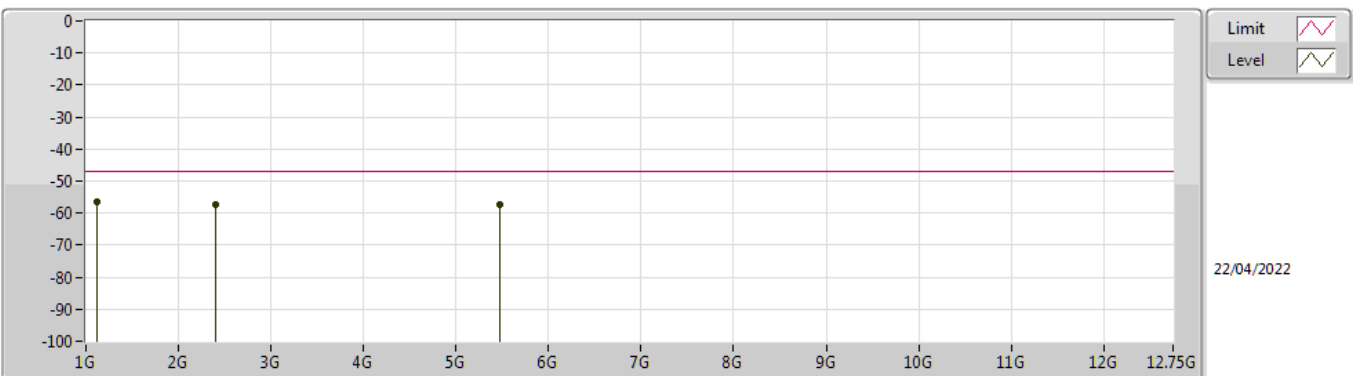
### 2462MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	2.40006G	-58.29	-47.00	-11.29	-3.42	3	Vertical	360	1.5	-	-54.87	43.59	4.85	51.86
AV	3.47011G	-56.96	-47.00	-9.96	-1.68	3	Vertical	360	1.5	-	-55.28	44.41	5.83	51.92
AV	7.9643G	-54.21	-47.00	-7.21	1.93	3	Vertical	360	1.5	-	-56.14	47.77	8.39	54.23

## 802.11ax HEW40\_(MCS0)\_RX

### 2462MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	1.12451G	-56.45	-47.00	-9.45	-7.61	3	Horizontal	0	1.5	-	-48.84	40.92	3.30	51.83
AV	2.40006G	-57.23	-47.00	-10.23	-1.02	3	Horizontal	0	1.5	-	-56.21	45.99	4.85	51.86
AV	5.47919G	-57.22	-47.00	-10.22	2.04	3	Horizontal	0	1.5	-	-59.26	47.65	7.13	52.74



**Summary**

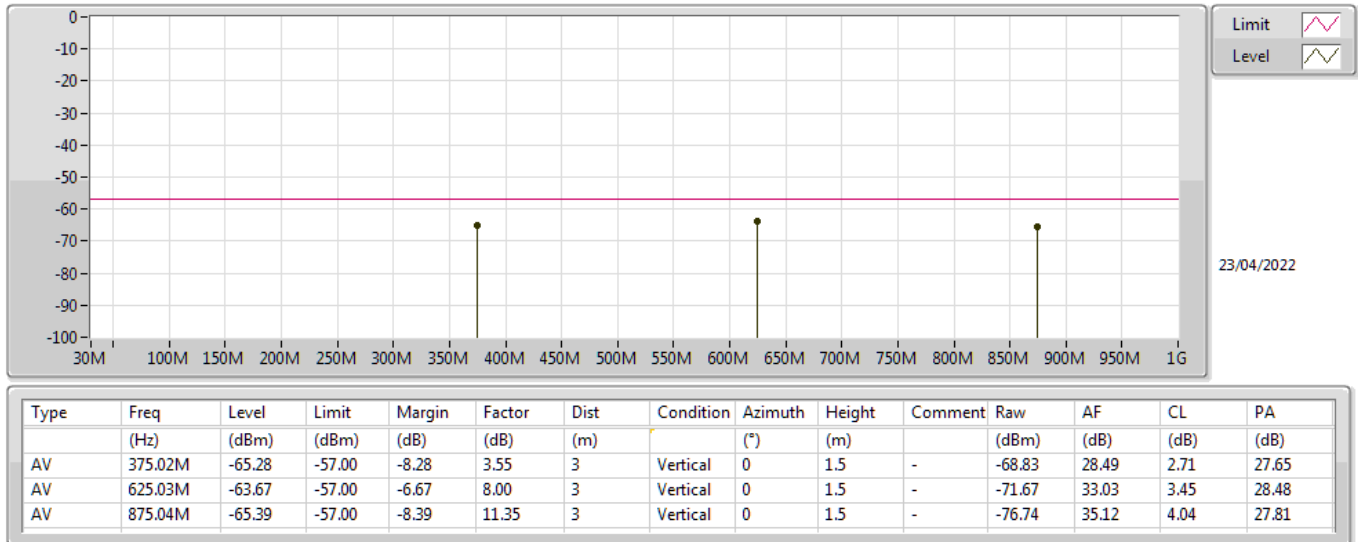
Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40_(MCS0)_RX	Pass	AV	625.03M	-63.67	-57.00	-6.67	8.00	3	Vertical	0	1.5	-

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ax HEW40_(MCS0)_RX	-	-	-	-	-	-	-	-	-	-	-	-
2462MHz_RX	Pass	AV	375.02M	-65.28	-57.00	-8.28	3.55	3	Vertical	0	1.5	-
2462MHz_RX	Pass	AV	625.03M	-63.67	-57.00	-6.67	8.00	3	Vertical	0	1.5	-
2462MHz_RX	Pass	AV	875.04M	-65.39	-57.00	-8.39	11.35	3	Vertical	0	1.5	-
2462MHz_RX	Pass	AV	250.01M	-67.01	-57.00	-10.01	1.66	3	Horizontal	360	1.5	-
2462MHz_RX	Pass	AV	375.02M	-64.02	-57.00	-7.02	2.75	3	Horizontal	360	1.5	-
2462MHz_RX	Pass	AV	624.98M	-64.70	-57.00	-7.70	8.25	3	Horizontal	360	1.5	-

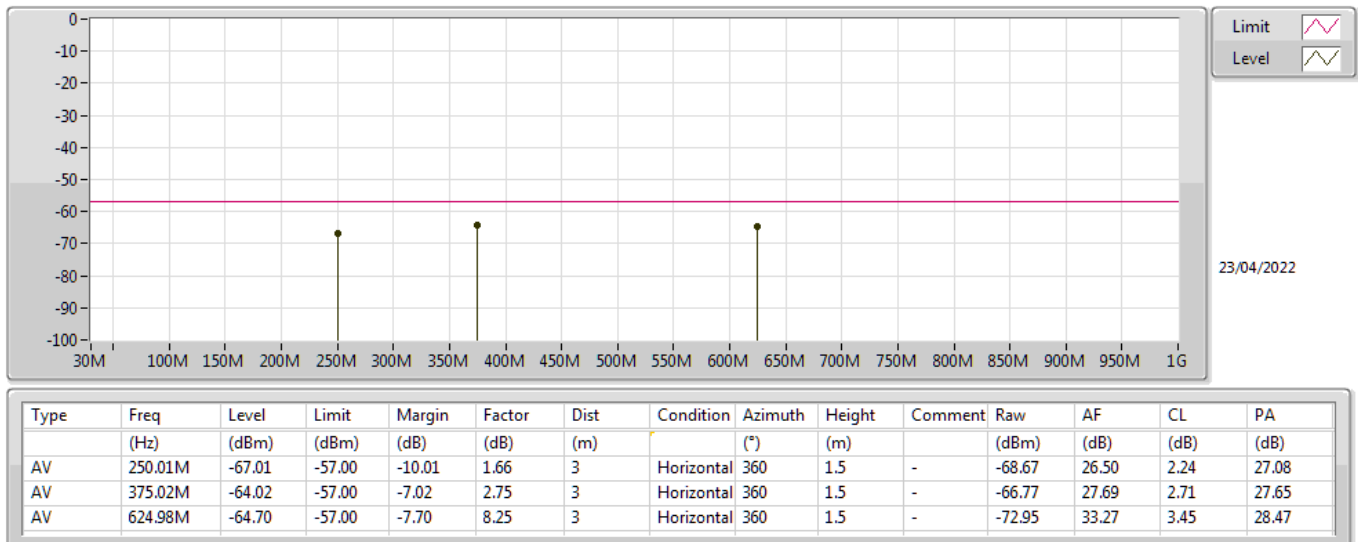
## 802.11ax HEW40\_(MCS0)\_RX

### 2462MHz\_RX



## 802.11ax HEW40\_(MCS0)\_RX

### 2462MHz\_RX



**Summary**

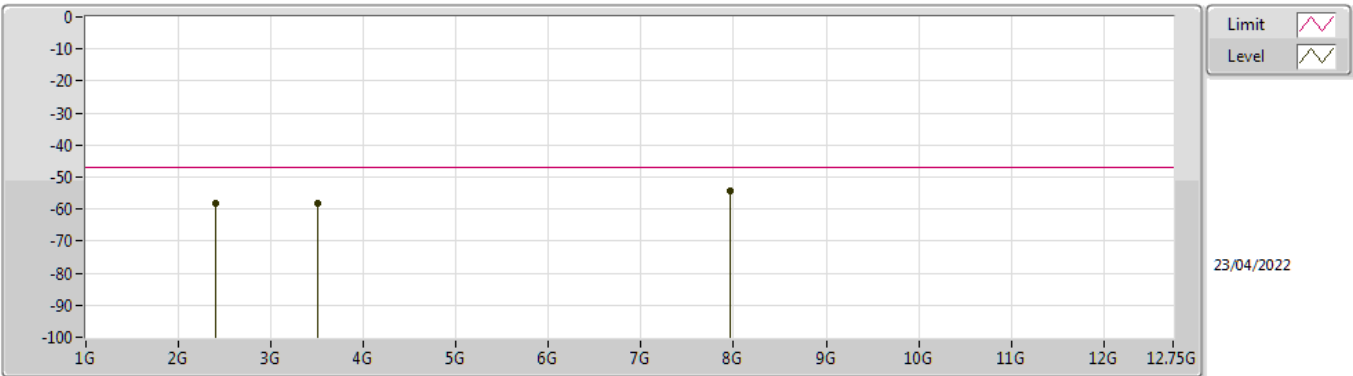
Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40_(MCS0)_RX	Pass	AV	7.9688G	-53.73	-47.00	-6.73	1.95	3	Vertical	0	1.5	-

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ax HEW40_(MCS0)_RX	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz_RX	Pass	AV	2.40006G	-58.26	-47.00	-11.26	-3.42	3	Vertical	360	1.5	-
2422MHz_RX	Pass	AV	3.49811G	-58.08	-47.00	-11.08	-1.56	3	Vertical	360	1.5	-
2422MHz_RX	Pass	AV	7.9688G	-54.18	-47.00	-7.18	1.95	3	Vertical	360	1.5	-
2422MHz_RX	Pass	AV	2.40006G	-58.17	-47.00	-11.17	-1.02	3	Horizontal	0	1.5	-
2422MHz_RX	Pass	AV	3.51361G	-56.06	-47.00	-9.06	0.22	3	Horizontal	0	1.5	-
2422MHz_RX	Pass	AV	4.84366G	-56.80	-47.00	-9.80	2.19	3	Horizontal	0	1.5	-
2462MHz_RX	Pass	AV	2.40006G	-58.58	-47.00	-11.58	-3.42	3	Vertical	0	1.5	-
2462MHz_RX	Pass	AV	3.57411G	-57.93	-47.00	-10.93	-1.35	3	Vertical	0	1.5	-
2462MHz_RX	Pass	AV	7.9688G	-53.73	-47.00	-6.73	1.95	3	Vertical	0	1.5	-
2462MHz_RX	Pass	AV	1.12501G	-55.47	-47.00	-8.47	-7.62	3	Horizontal	360	1.5	-
2462MHz_RX	Pass	AV	3.19059G	-56.03	-47.00	-9.03	0.49	3	Horizontal	360	1.5	-
2462MHz_RX	Pass	AV	6.58974G	-56.46	-47.00	-9.46	2.56	3	Horizontal	360	1.5	-

## 802.11ax HEW40\_(MCS0)\_RX

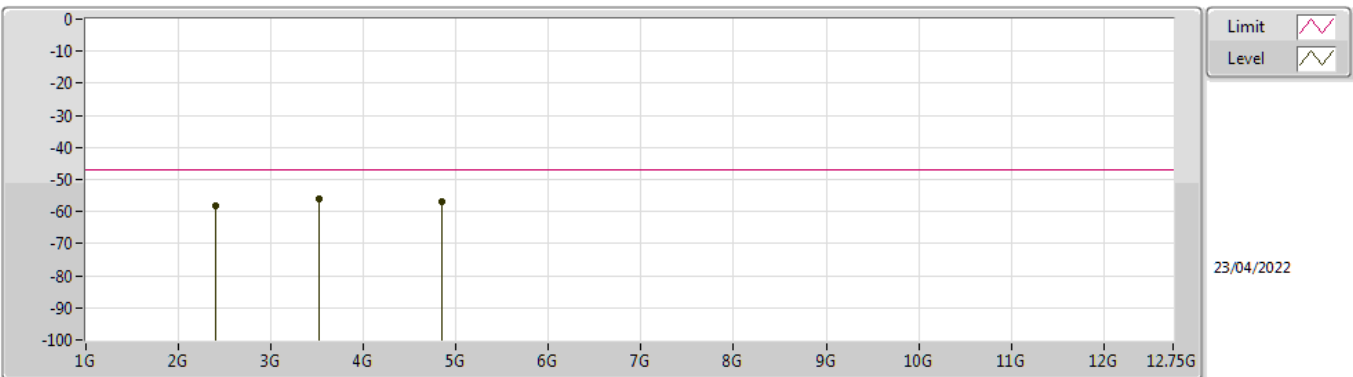
### 2422MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	2.40006G	-58.26	-47.00	-11.26	-3.42	3	Vertical	360	1.5	-	-54.84	43.59	4.85	51.86
AV	3.49811G	-58.08	-47.00	-11.08	-1.56	3	Vertical	360	1.5	-	-56.52	44.53	5.85	51.94
AV	7.9688G	-54.18	-47.00	-7.18	1.95	3	Vertical	360	1.5	-	-56.13	47.79	8.39	54.23

## 802.11ax HEW40\_(MCS0)\_RX

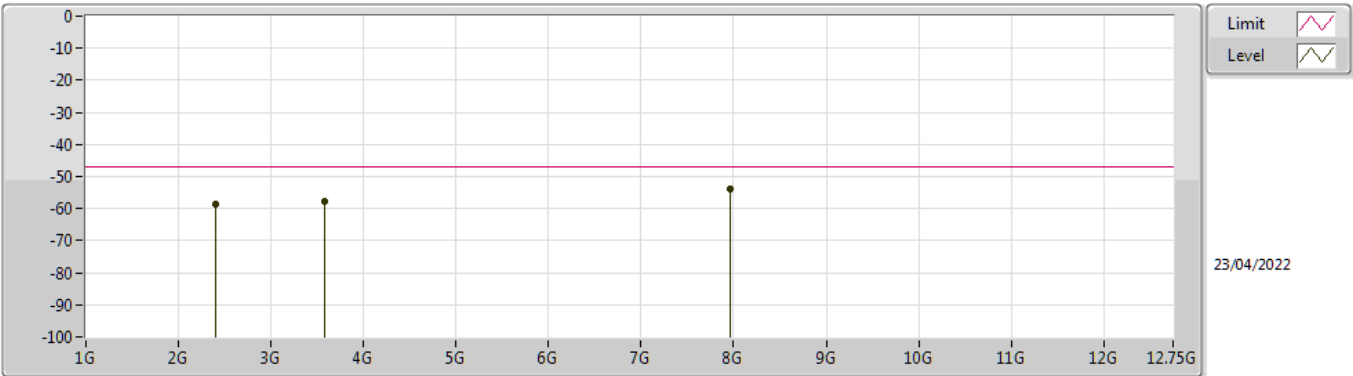
### 2422MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	2.40006G	-58.17	-47.00	-11.17	-1.02	3	Horizontal	0	1.5	-	-57.15	45.99	4.85	51.86
AV	3.51361G	-56.06	-47.00	-9.06	0.22	3	Horizontal	0	1.5	-	-56.28	46.29	5.87	51.94
AV	4.84366G	-56.80	-47.00	-9.80	2.19	3	Horizontal	0	1.5	-	-58.99	47.78	6.75	52.34

## 802.11ax HEW40\_(MCS0)\_RX

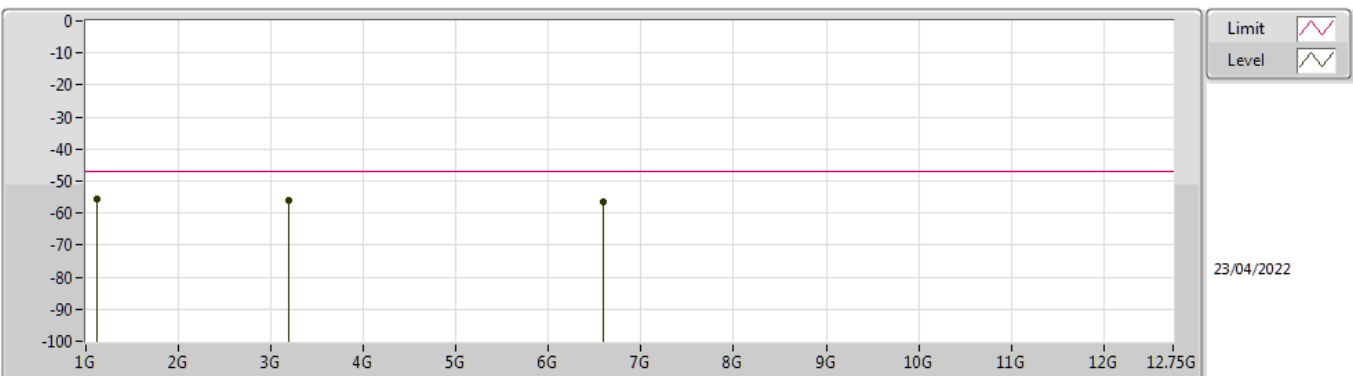
### 2462MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	2.40006G	-58.58	-47.00	-11.58	-3.42	3	Vertical	0	1.5	-	-55.16	43.59	4.85	51.86
AV	3.57411G	-57.93	-47.00	-10.93	-1.35	3	Vertical	0	1.5	-	-56.58	44.68	5.93	51.96
AV	7.9688G	-53.73	-47.00	-6.73	1.95	3	Vertical	0	1.5	-	-55.68	47.79	8.39	54.23

## 802.11ax HEW40\_(MCS0)\_RX

### 2462MHz\_RX



Type	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBm)	AF (dB)	CL (dB)	PA (dB)
AV	1.12501G	-55.47	-47.00	-8.47	-7.62	3	Horizontal	360	1.5	-	-47.85	40.92	3.30	51.84
AV	3.19059G	-56.03	-47.00	-9.03	0.49	3	Horizontal	360	1.5	-	-56.52	46.69	5.57	51.77
AV	6.58974G	-56.46	-47.00	-9.46	2.56	3	Horizontal	360	1.5	-	-59.02	48.57	7.67	53.68

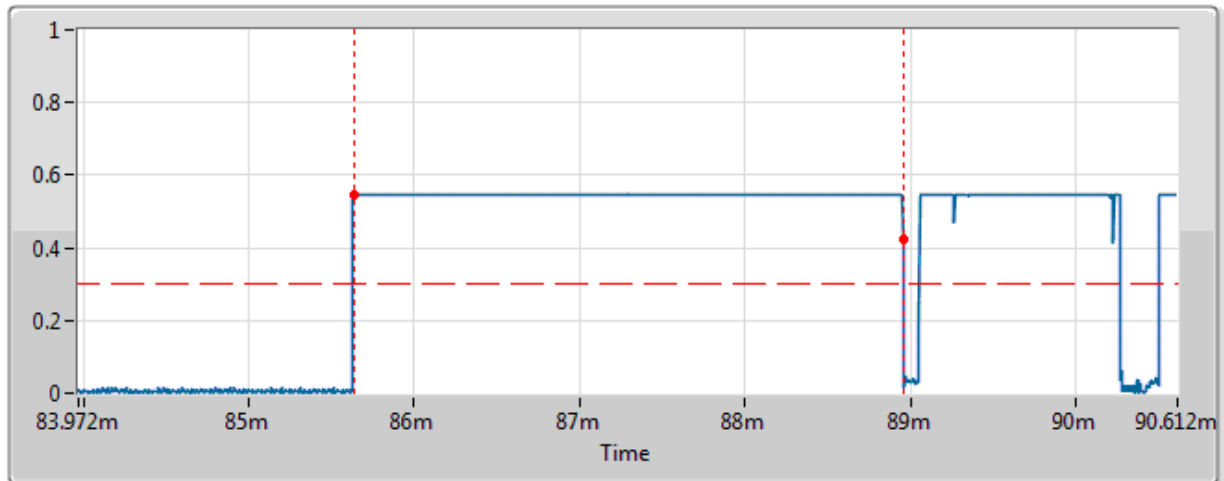
Adaptivity & Unwanted signal Result						
Adaptivity Detection Threshold Level		-70 dBm/MHz				
Unwanted signal Level		-29.8 dBm				
Modulation Mode	Freq. (MHz)	Adaptivity	Unwanted signal Test Status	Short Control Signaling Transmissions (ms)	Channel Occupancy Time (ms)	Idle Period (us)
802.11b	2412	Pass	Pass	0.212	3.321	37.000
802.11b	2472	Pass	Pass	0.402	3.321	28.000
802.11g	2412	Pass	Pass	0.060	3.322	44.000
802.11g	2472	Pass	Pass	0.060	3.322	44.000
802.11ax (HEW20)	2412	Pass	Pass	0.062	3.329	31.000
802.11ax (HEW20)	2472	Pass	Pass	0.062	3.332	30.000
802.11ax (HEW40)	2422	Pass	Pass	3.336	6.594	40.000
802.11ax (HEW40)	2462	Pass	Pass	0.179	6.595	30.000
Limit		N/A	N/A	5	N/A	N/A
Result		Complied				
Note: Channel Occupancy Time and Idle Period Time follow as IEEE 802.11™ [i.3] clause 10, clause 11, clause 15, clause 16, clause 18 and clause 19 specification without restriction.						



## 802.11b – 2412 MHz

### Channel Occupancy Time

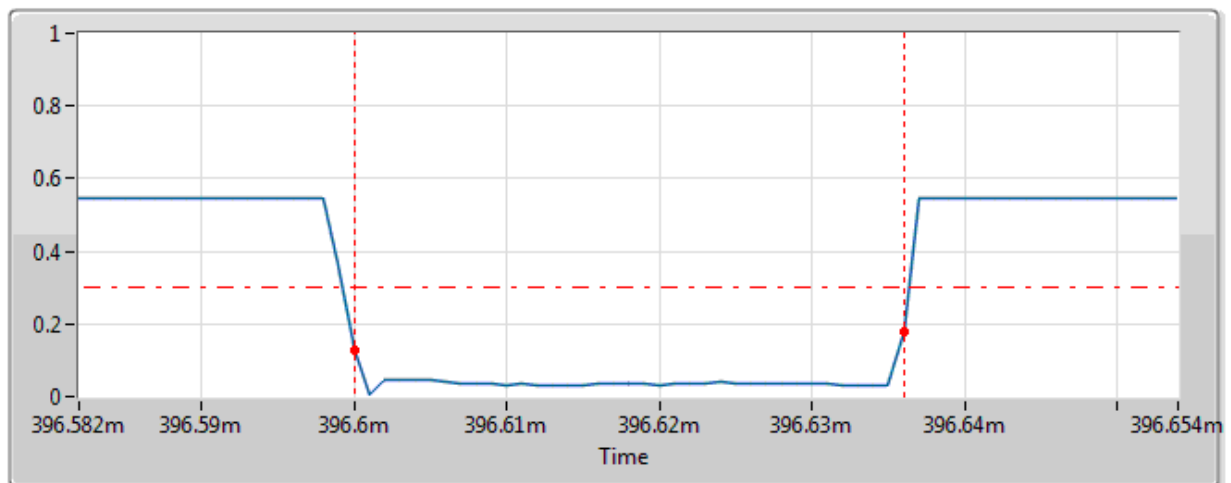
#### Max On Time



3.321ms

### Idle Period

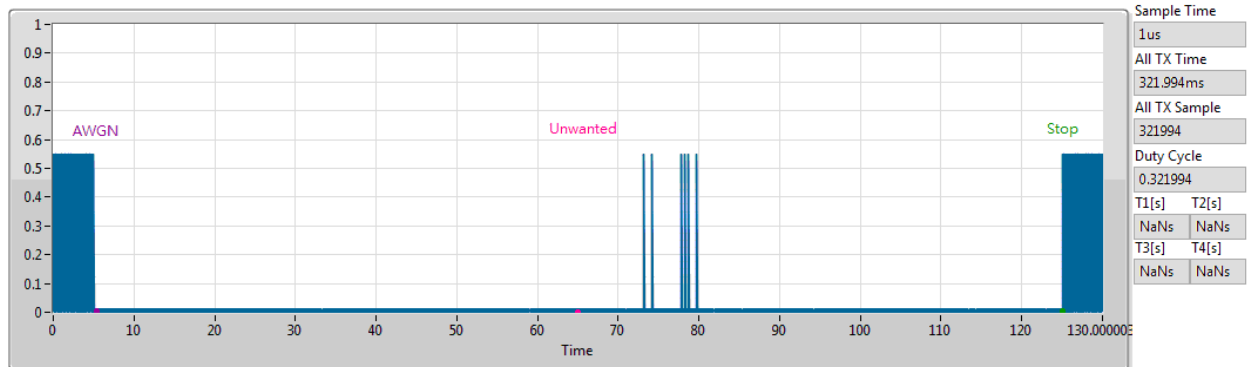
#### Min Off Time



37us

## Adaptivity & Unwanted Signal Plots

### Time Analysis

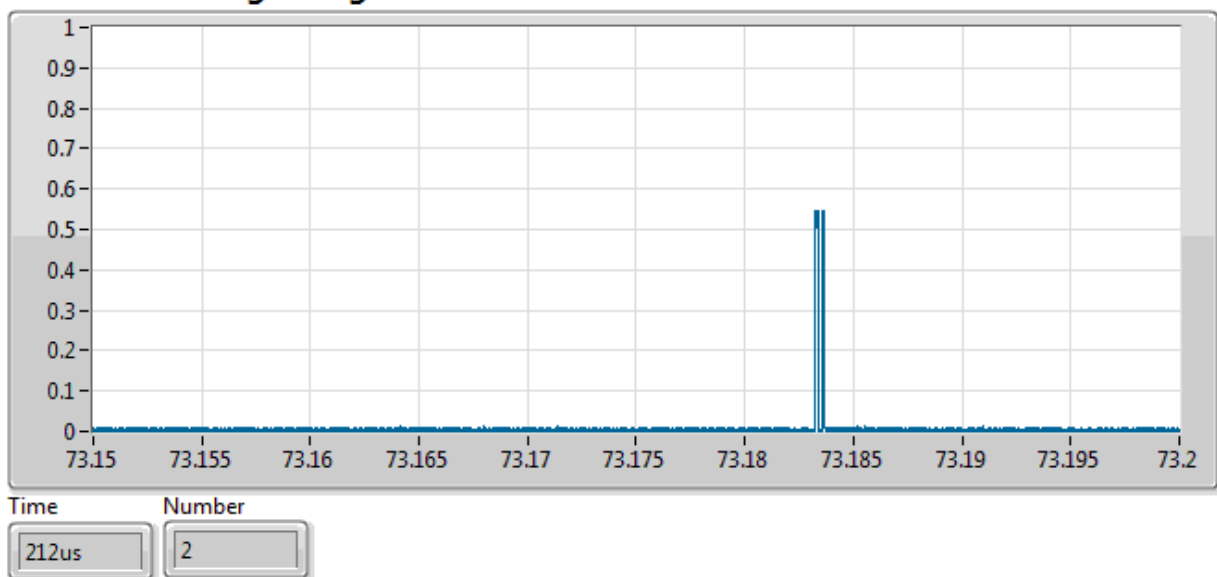


AWGN : Adding the interference signal.

Unwanted : Adding the Unwanted signal on 2488.5 MHz.

## Short Control Signaling Transmissions Plots

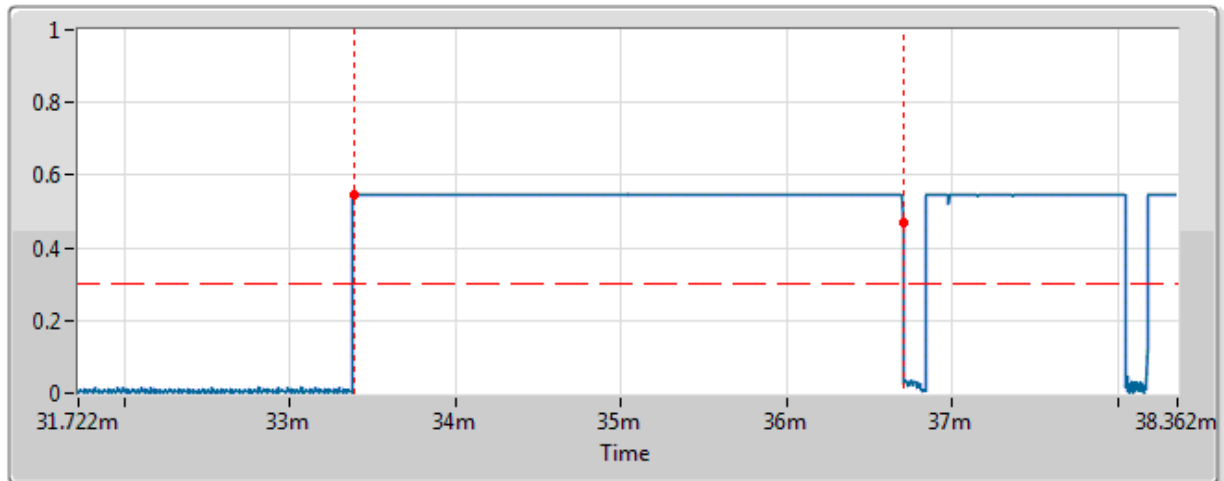
### Short Control Signalling Transmissions



## 802.11b – 2472 MHz

### Channel Occupancy Time

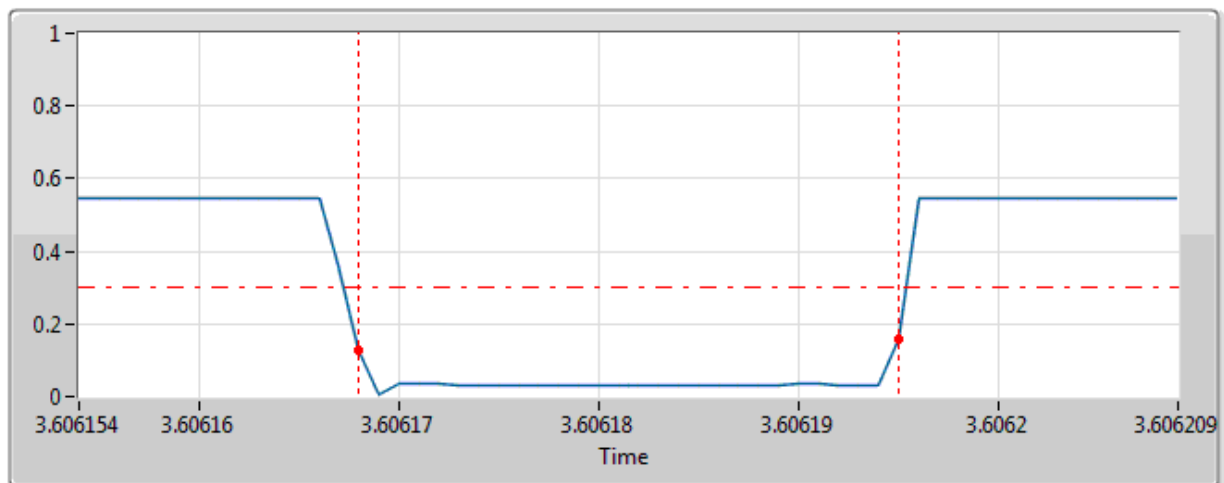
#### Max On Time



3.321ms

### Idle Period

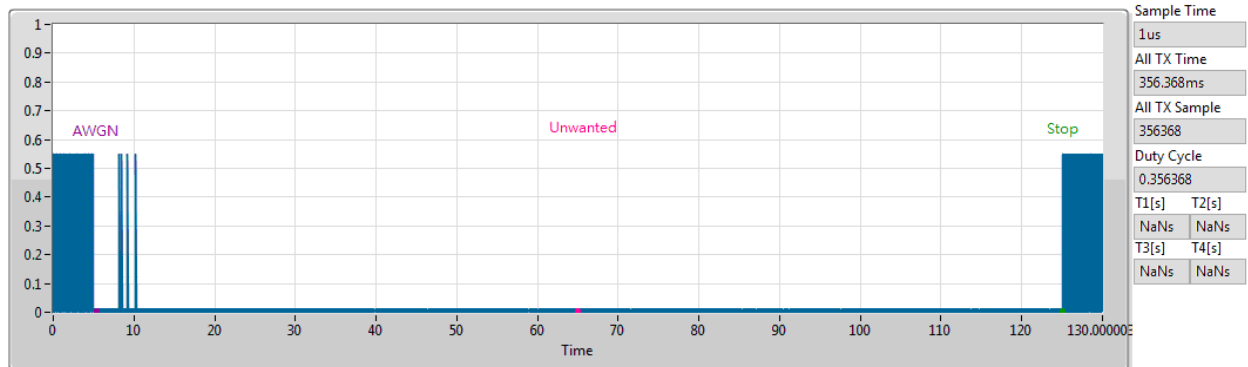
#### Min Off Time



28us

## Adaptivity & Unwanted Signal Plots

### Time Analysis

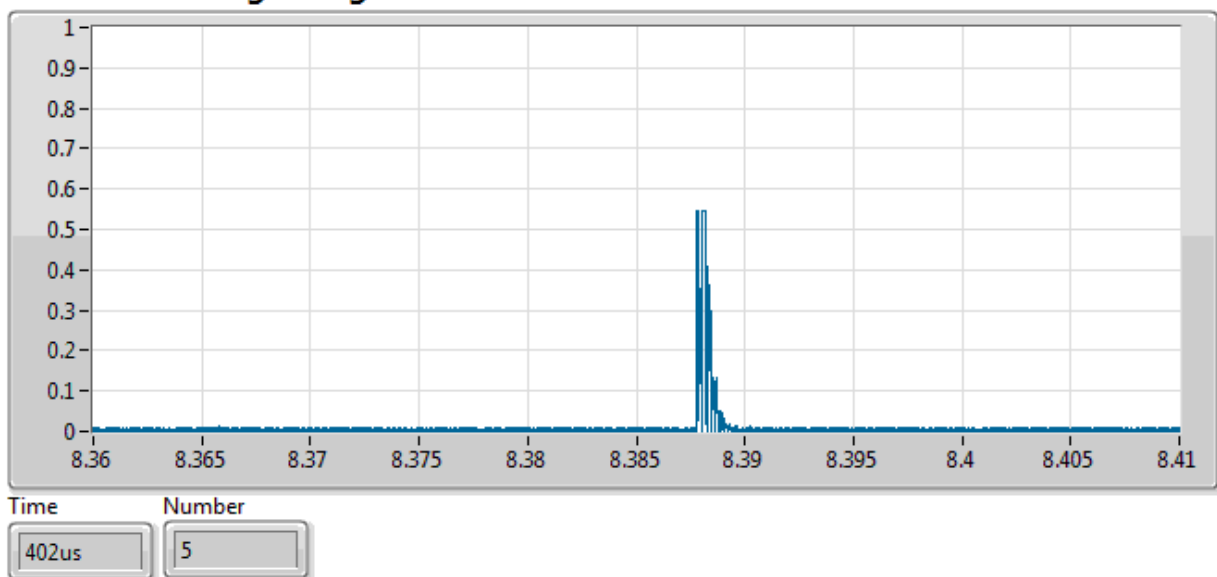


AWGN : Adding the interference signal.

Unwanted : Adding the Unwanted signal on 2395 MHz.

## Short Control Signaling Transmissions Plots

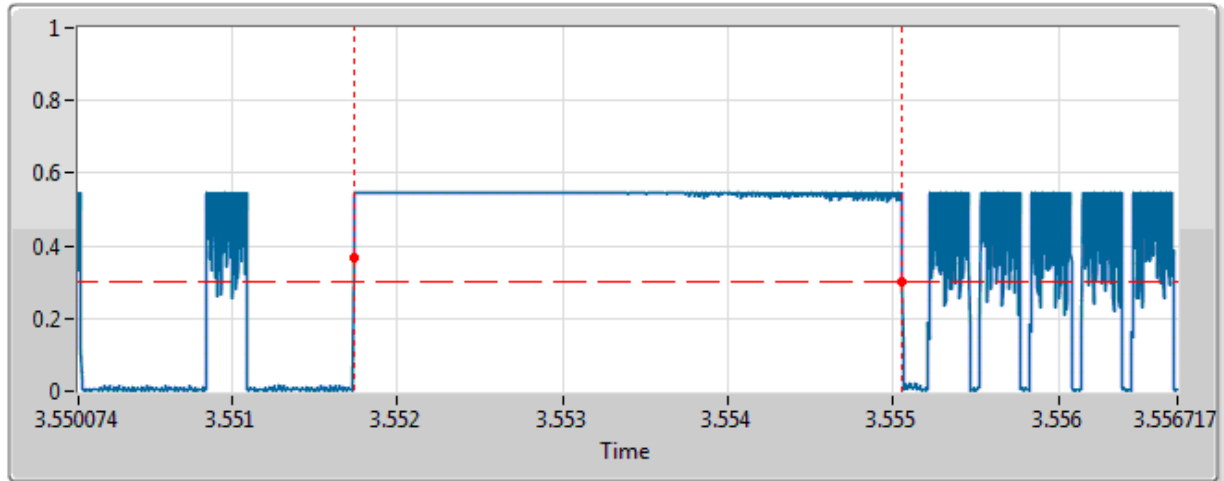
### Short Control Signalling Transmissions



802.11g – 2412 MHz

Channel Occupancy Time

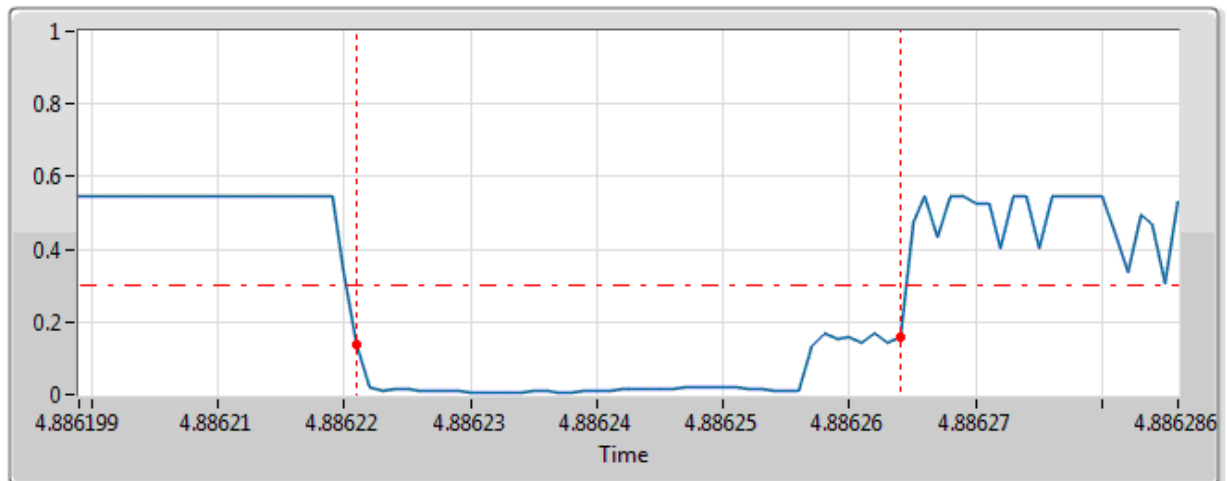
Max On Time



3.322ms

Idle Period

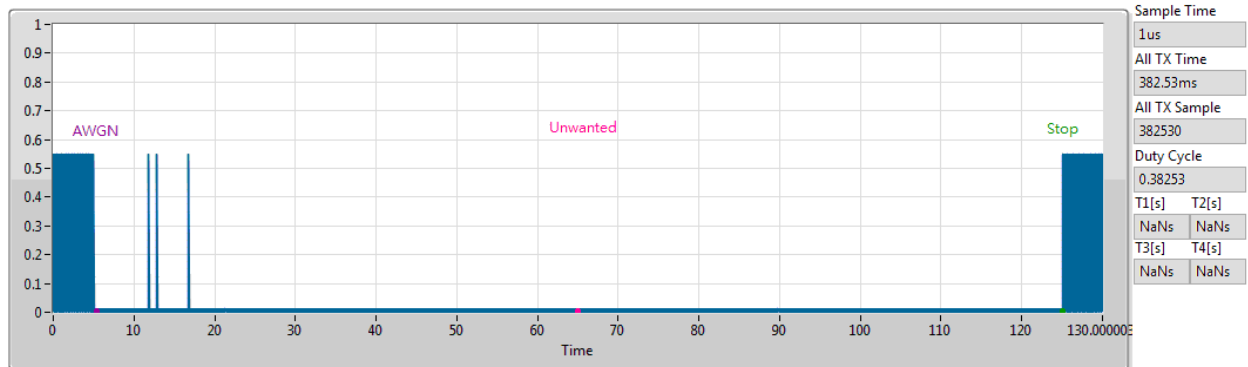
Min Off Time



44us

## Adaptivity & Unwanted Signal Plots

### Time Analysis

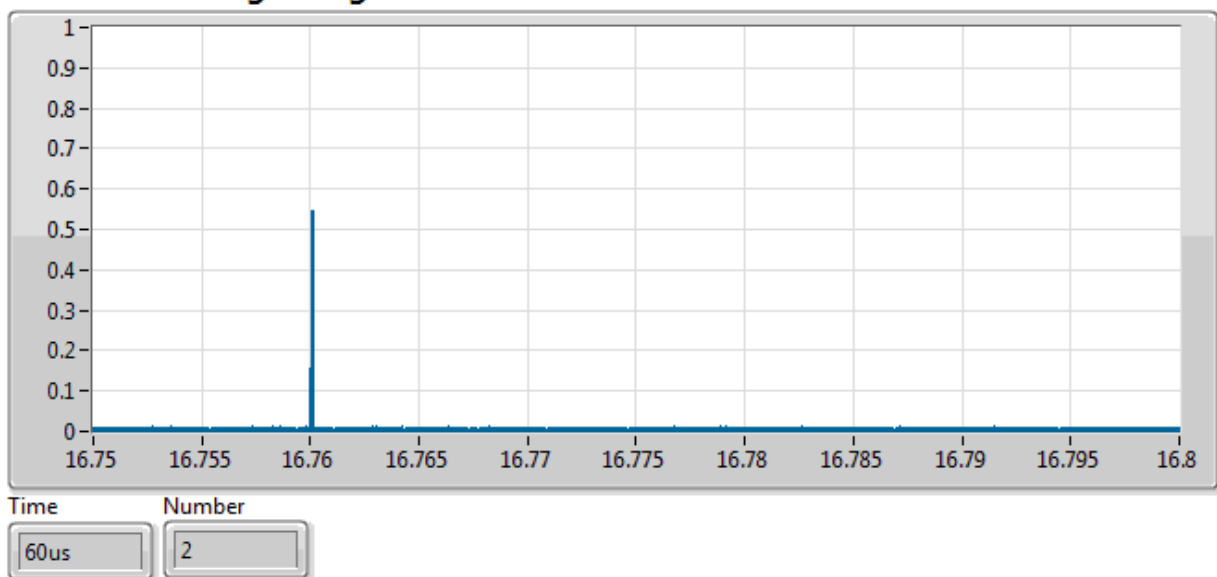


AWGN : Adding the interference signal.

Unwanted : Adding the Unwanted signal on 2488.5 MHz.

## Short Control Signaling Transmissions Plots

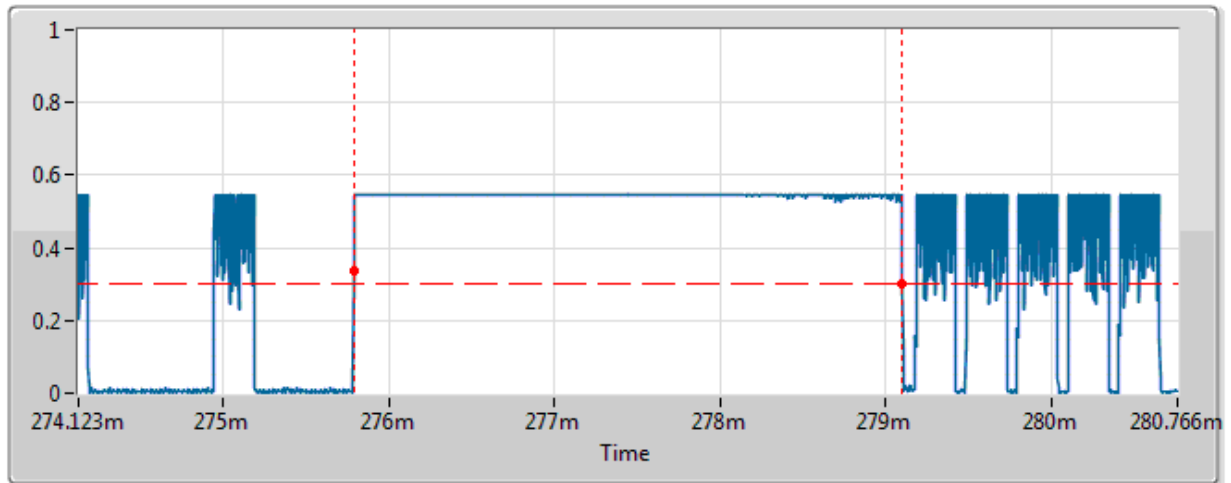
### Short Control Signalling Transmissions



802.11g – 2472 MHz

Channel Occupancy Time

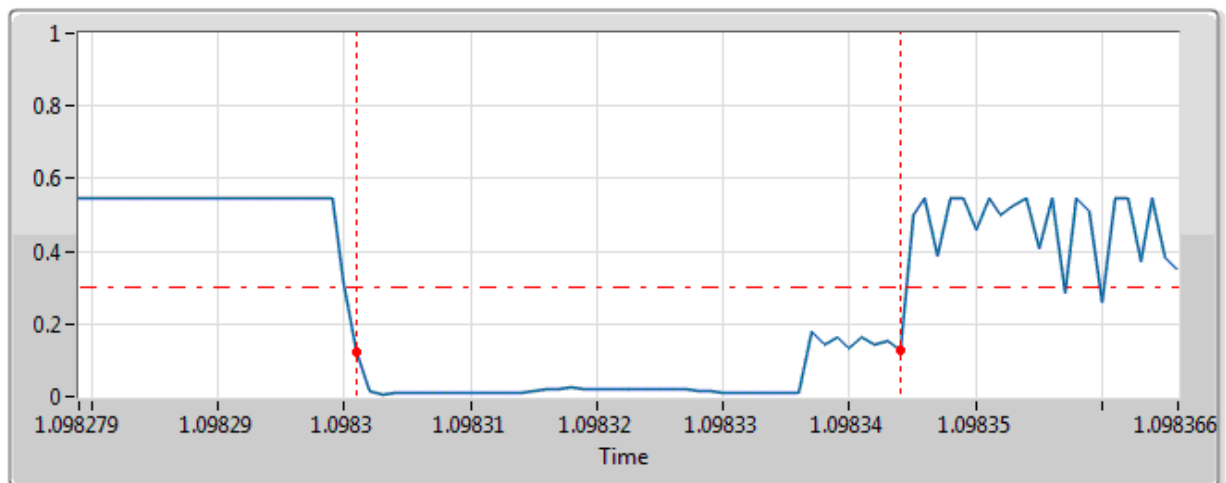
Max On Time



3.322ms

Idle Period

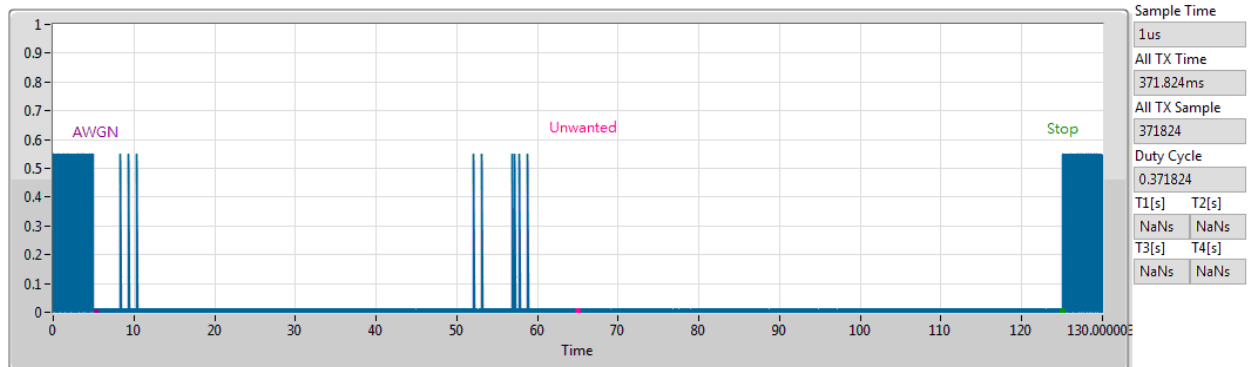
Min Off Time



44us

## Adaptivity & Unwanted Signal Plots

### Time Analysis

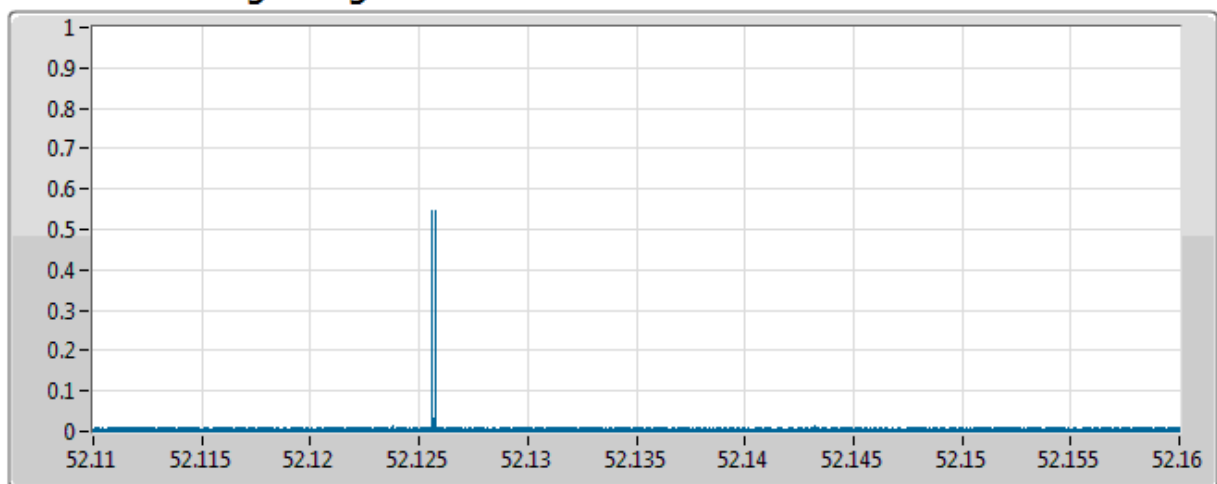


AWGN : Adding the interference signal.

Unwanted : Adding the Unwanted signal on 2395 MHz.

## Short Control Signaling Transmissions Plots

### Short Control Signalling Transmissions



Time

Number

60us

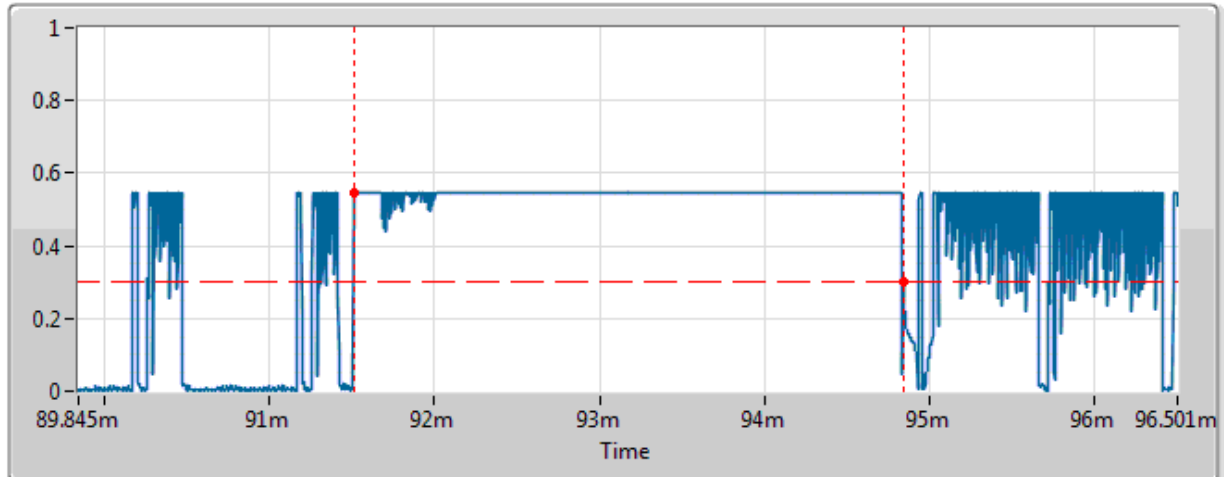
2



## HEW20 – 2412 MHz

### Channel Occupancy Time

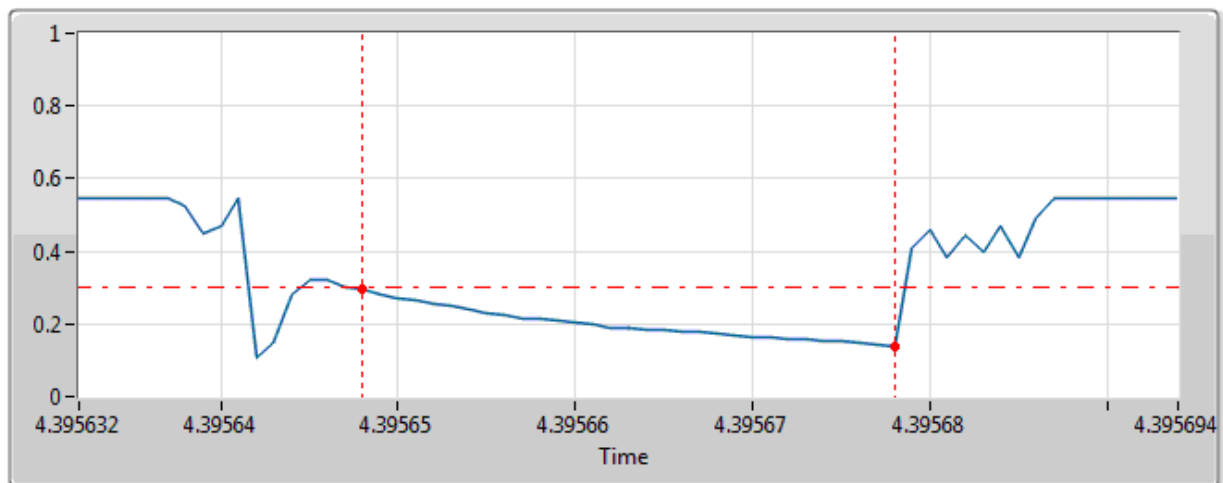
#### Max On Time



3.329ms

### Idle Period

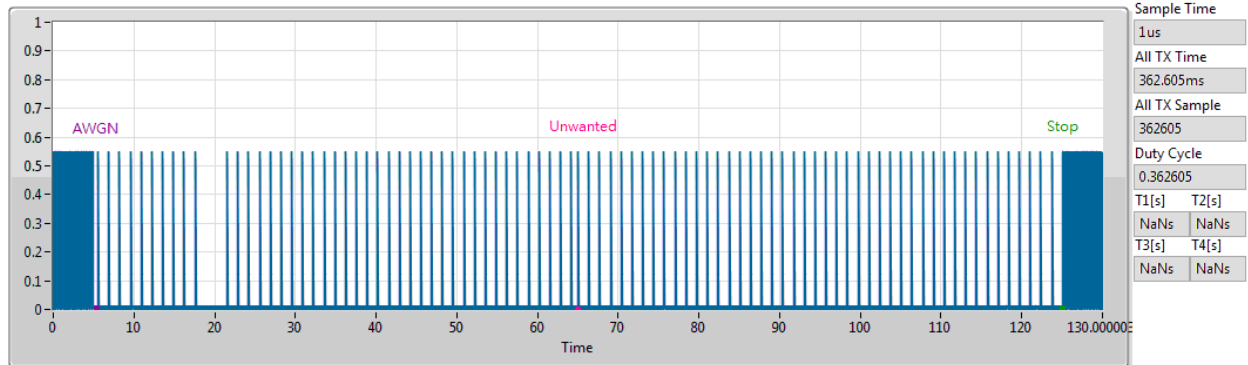
#### Min Off Time



31us

## Adaptivity & Unwanted Signal Plots

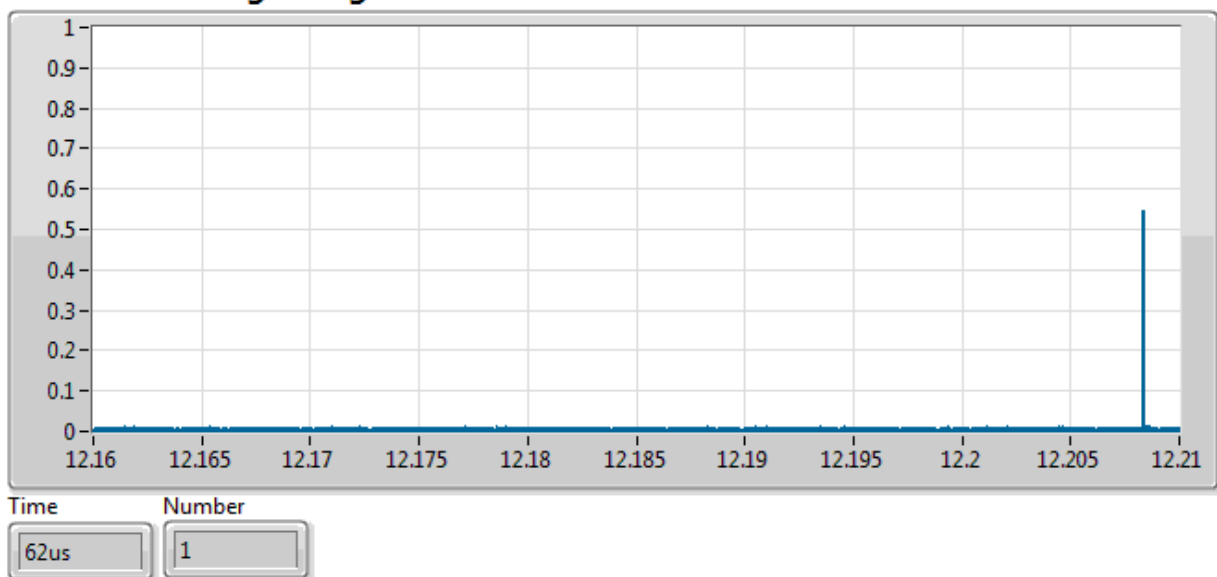
### Time Analysis



AWGN : Adding the interference signal.  
 Unwanted : Adding the Unwanted signal on 2488.5 MHz.

## Short Control Signaling Transmissions Plots

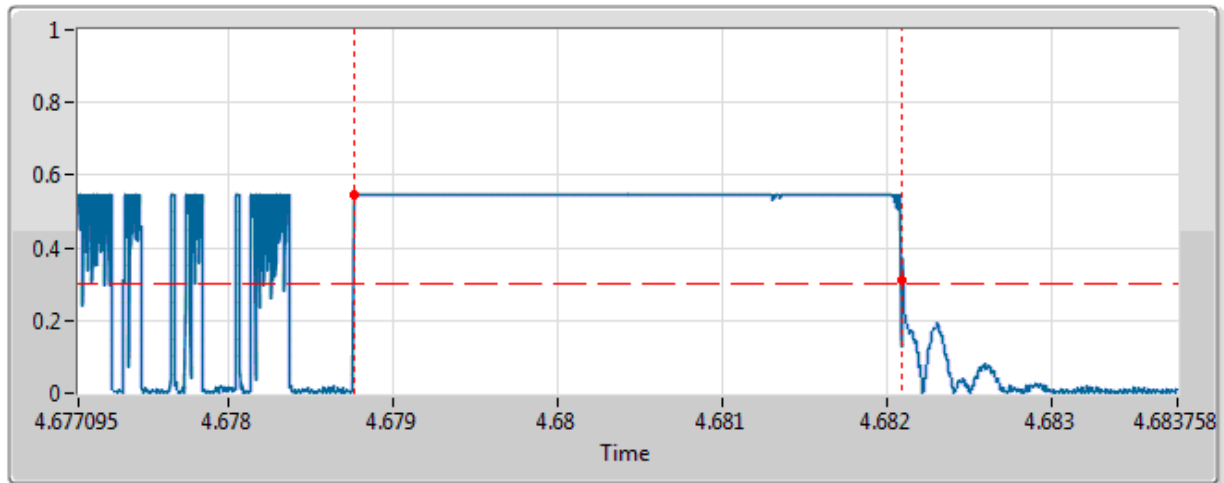
### Short Control Signalling Transmissions



## HEW20 – 2472 MHz

### Channel Occupancy Time

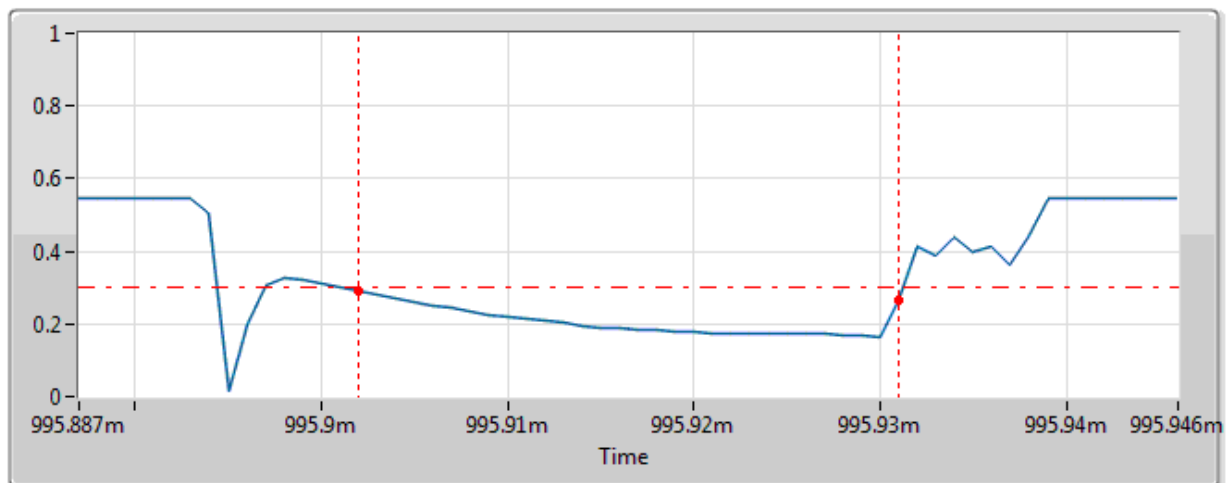
#### Max On Time



3.332ms

### Idle Period

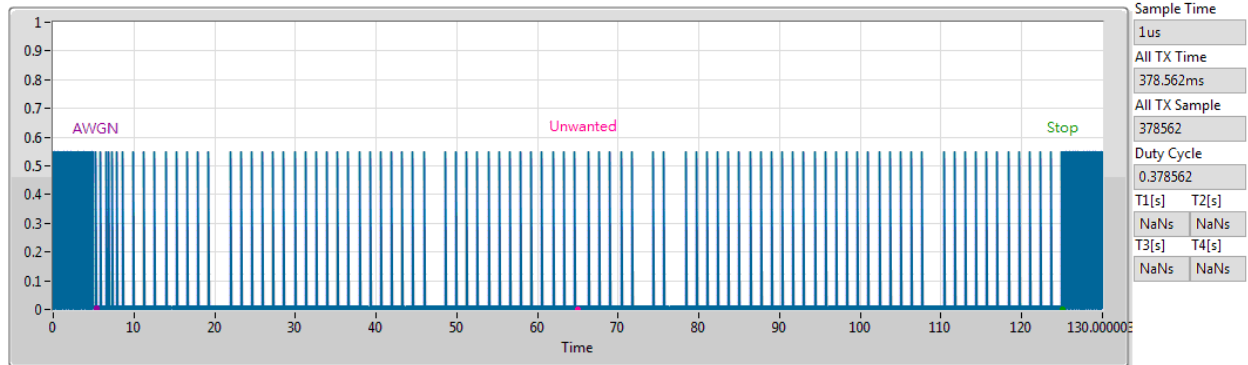
#### Min Off Time



30us

## Adaptivity & Unwanted Signal Plots

### Time Analysis

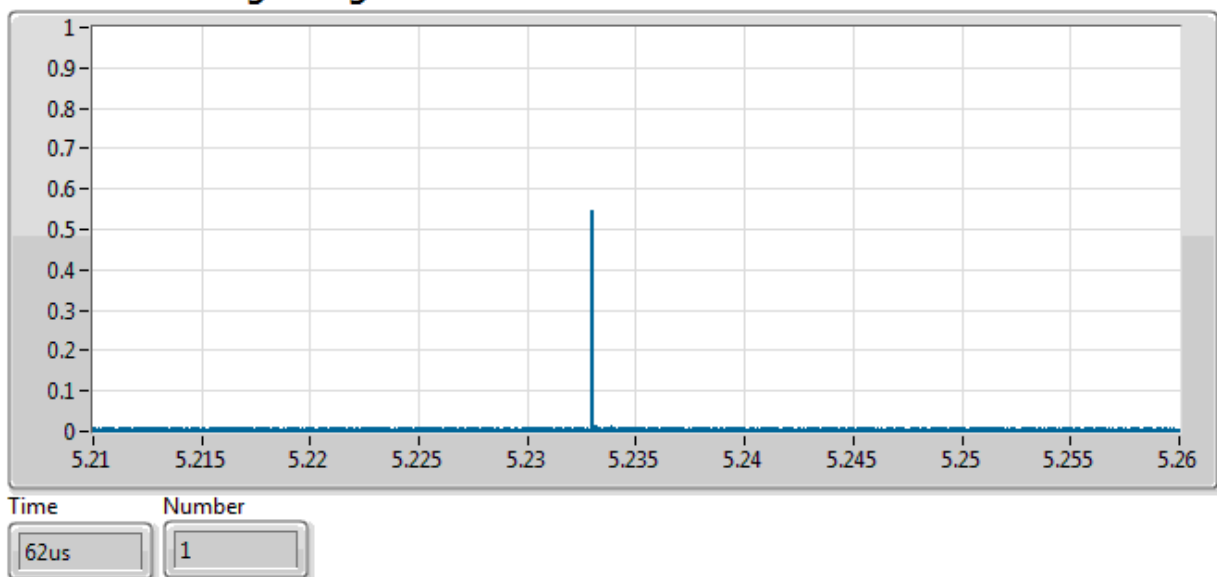


AWGN : Adding the interference signal.

Unwanted : Adding the Unwanted signal on 2395 MHz.

## Short Control Signaling Transmissions Plots

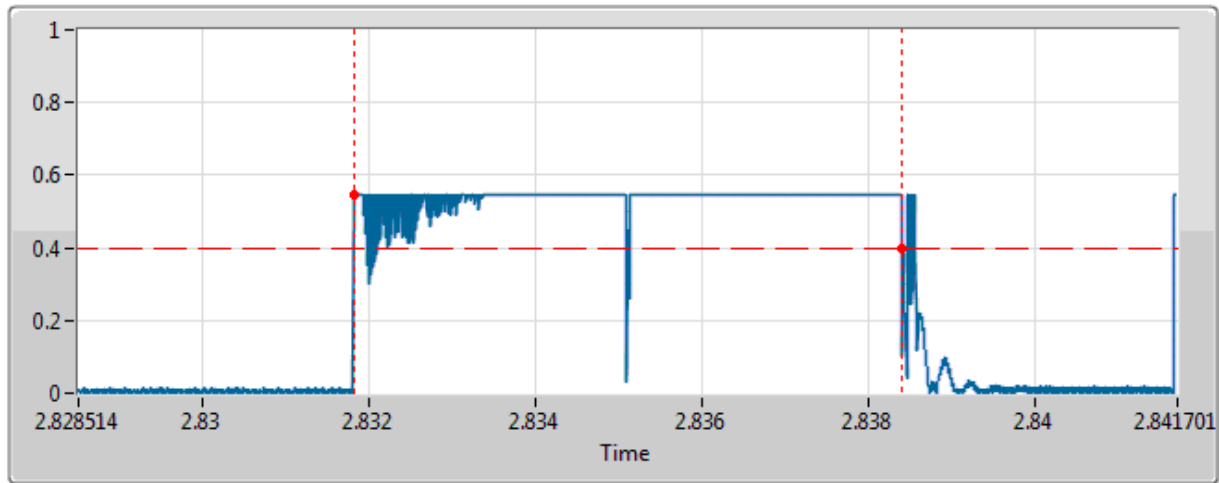
### Short Control Signalling Transmissions



## HEW40 – 2422 MHz

### Channel Occupancy Time

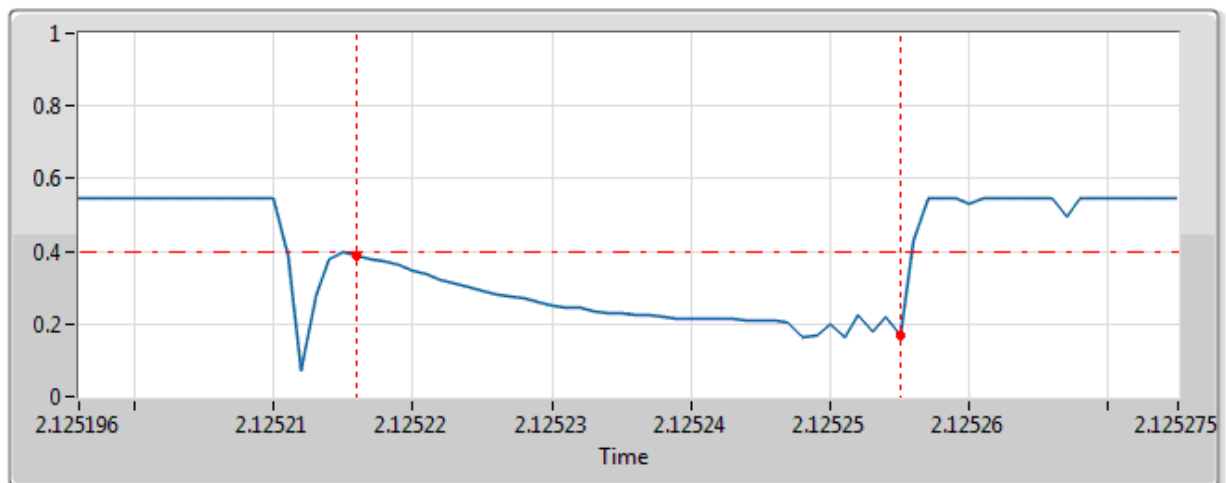
#### Max On Time



6.594ms

### Idle Period

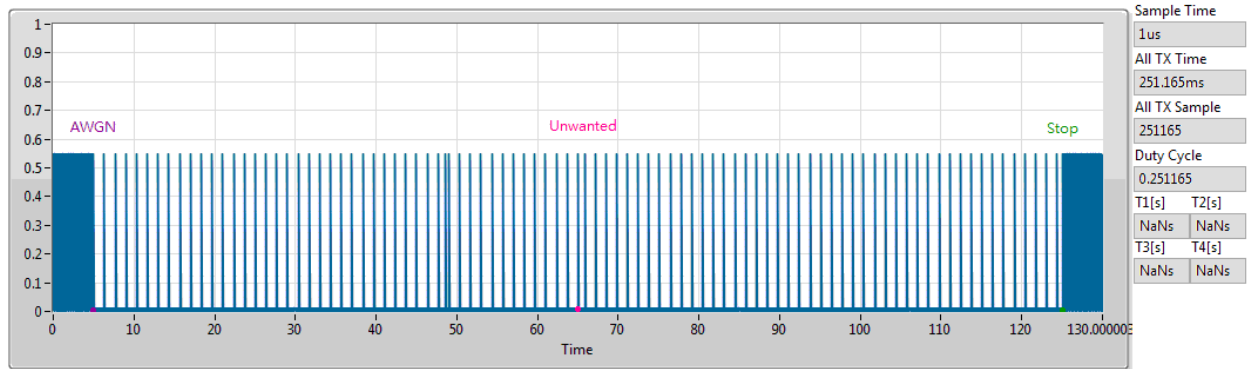
#### Min Off Time



40us

## Adaptivity & Unwanted Signal Plots

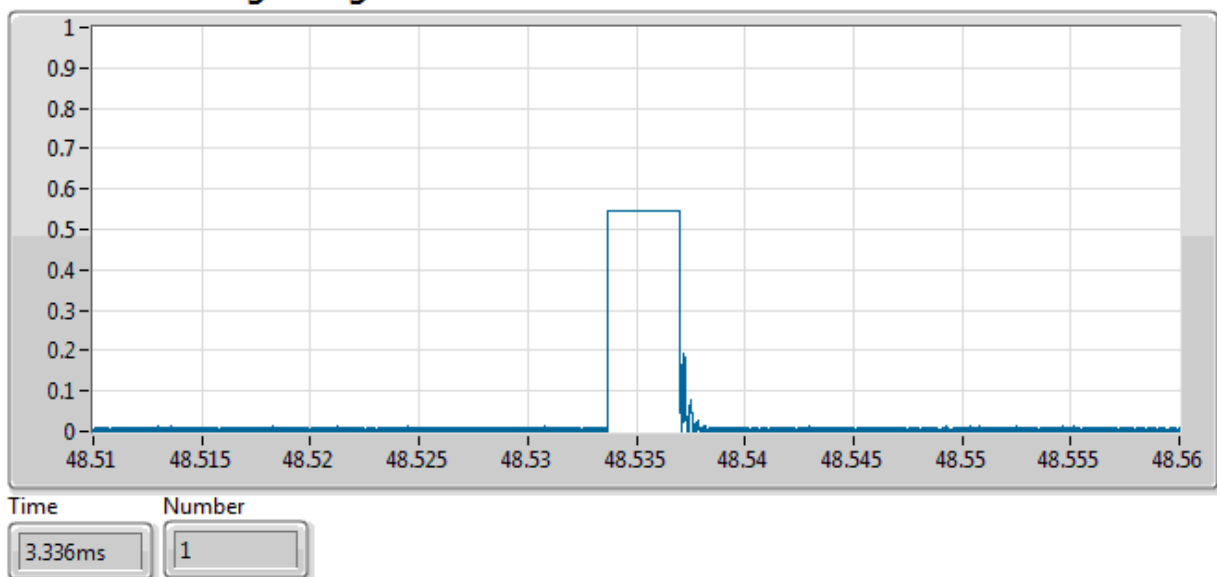
### Time Analysis



AWGN : Adding the interference signal.  
 Unwanted : Adding the Unwanted signal on 2488.5 MHz.

## Short Control Signaling Transmissions Plots

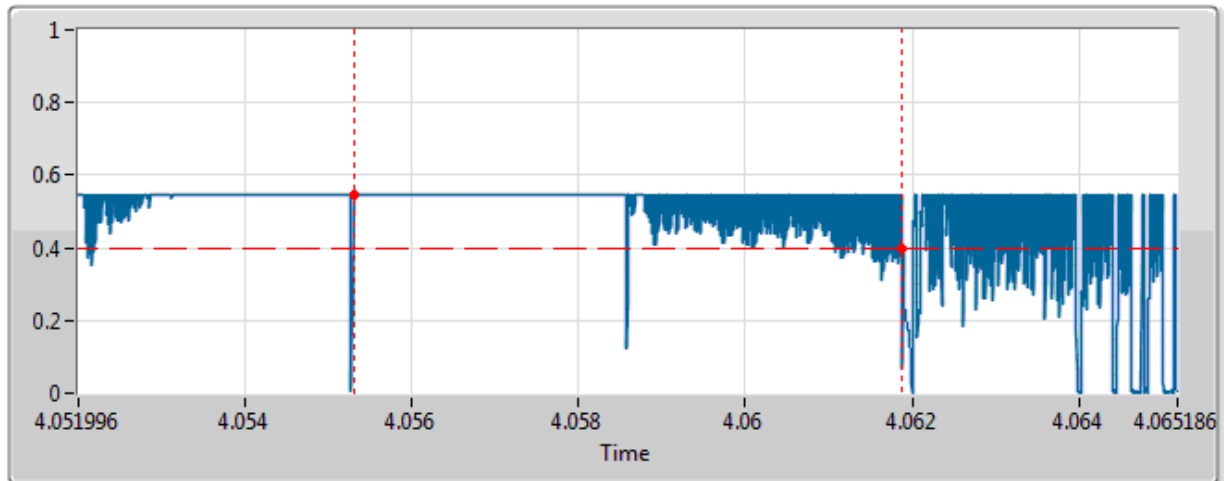
### Short Control Signalling Transmissions



## HEW40 – 2462 MHz

### Channel Occupancy Time

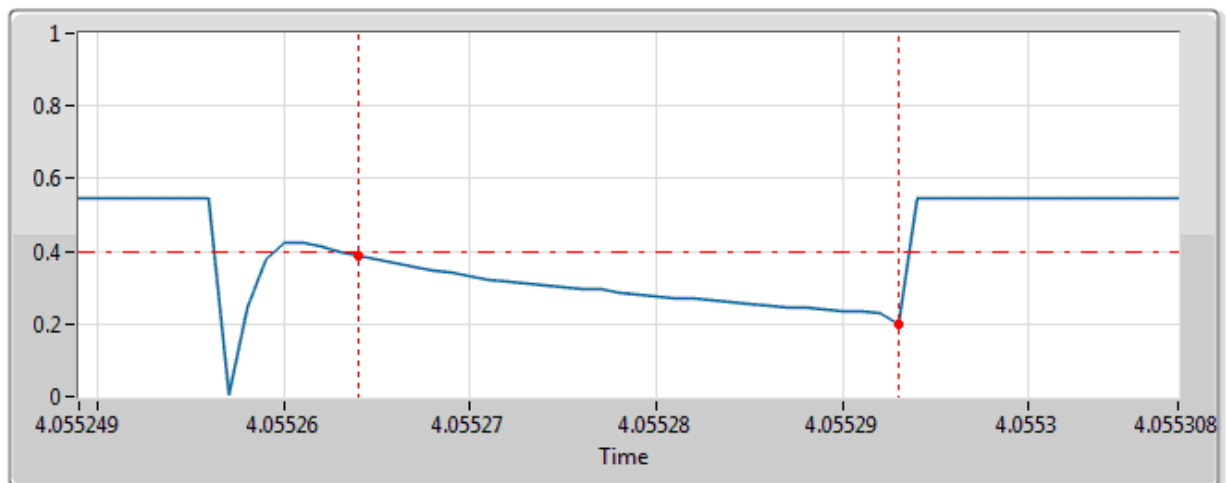
#### Max On Time



6.595ms

### Idle Period

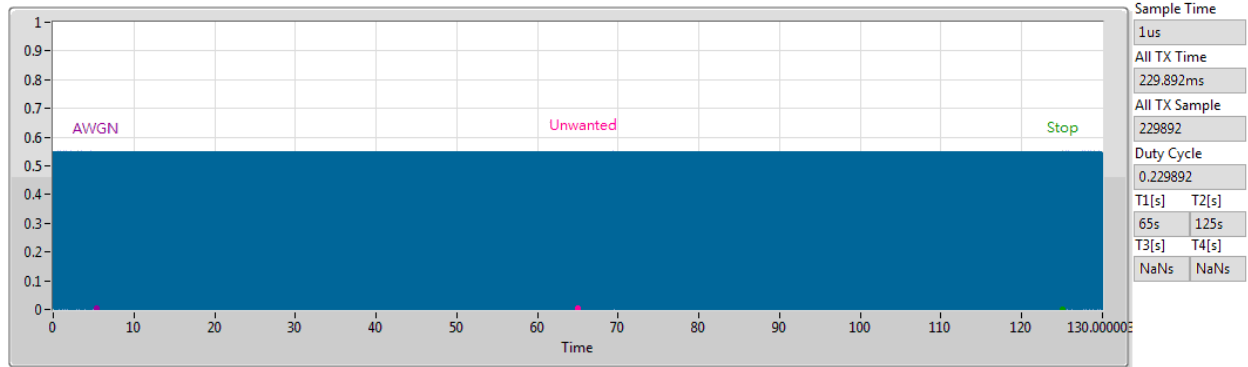
#### Min Off Time



30us

## Adaptivity & Unwanted Signal Plots

### Time Analysis

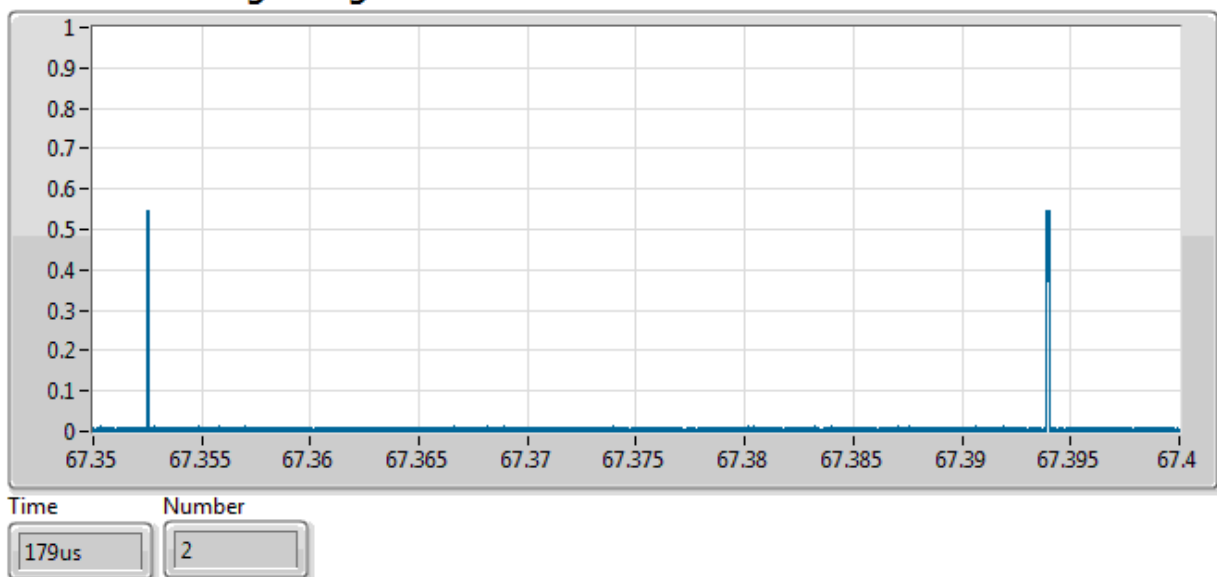


AWGN : Adding the interference signal.

Unwanted : Adding the Unwanted signal on 2395 MHz.

## Short Control Signaling Transmissions Plots

### Short Control Signalling Transmissions





Receiver Blocking Result						
<b>P<sub>min</sub>(dBm)</b>	-82					
Modulation Mode	Operation Frequency (MHz)	Wanted Signal Mean Power from Companion Device (dBm)	Receiver Blocking Power (dBm)	Blocking Signal Frequency (MHz)	Type of Blocking Signal	Test Result
802.11b	2412	-64	-28.8	2380	CW	Pass
	2412	-70	-28.8	2300	CW	Pass
	2412	-70	-28.8	2330	CW	Pass
	2412	-70	-28.8	2360	CW	Pass
<b>Limit</b>	PER(Packet Error Rate) $\leq$ 10%					
<b>Result</b>	Complied					

Receiver Blocking Result						
<b>P<sub>min</sub>(dBm)</b>	-75					
Modulation Mode	Operation Frequency (MHz)	Wanted Signal Mean Power from Companion Device (dBm)	Receiver Blocking Power (dBm)	Blocking Signal Frequency (MHz)	Type of Blocking Signal	Test Result
802.11b	2472	-64	-28.8	2504	CW	Pass
	2472	-70	-28.8	2524	CW	Pass
	2472	-70	-28.8	2584	CW	Pass
	2472	-70	-28.8	2674	CW	Pass
<b>Limit</b>	PER(Packet Error Rate) $\leq$ 10%					
<b>Result</b>	Complied					

Receiver Blocking Result						
<b>P<sub>min</sub>(dBm)</b>	-79					
Modulation Mode	Operation Frequency (MHz)	Wanted Signal Mean Power from Companion Device (dBm)	Receiver Blocking Power (dBm)	Blocking Signal Frequency (MHz)	Type of Blocking Signal	Test Result
802.11g	2412	-64	-28.8	2380	CW	Pass
	2412	-70	-28.8	2300	CW	Pass
	2412	-70	-28.8	2330	CW	Pass
	2412	-70	-28.8	2360	CW	Pass
<b>Limit</b>	PER(Packet Error Rate) $\leq$ 10%					
<b>Result</b>	Complied					

Receiver Blocking Result						
<b>P<sub>min</sub>(dBm)</b>	-75					
Modulation Mode	Operation Frequency (MHz)	Wanted Signal Mean Power from Companion Device (dBm)	Receiver Blocking Power (dBm)	Blocking Signal Frequency (MHz)	Type of Blocking Signal	Test Result
802.11g	2472	-64	-28.8	2504	CW	Pass
	2472	-70	-28.8	2524	CW	Pass
	2472	-70	-28.8	2584	CW	Pass
	2472	-70	-28.8	2674	CW	Pass
<b>Limit</b>	PER(Packet Error Rate) $\leq$ 10%					
<b>Result</b>	Complied					

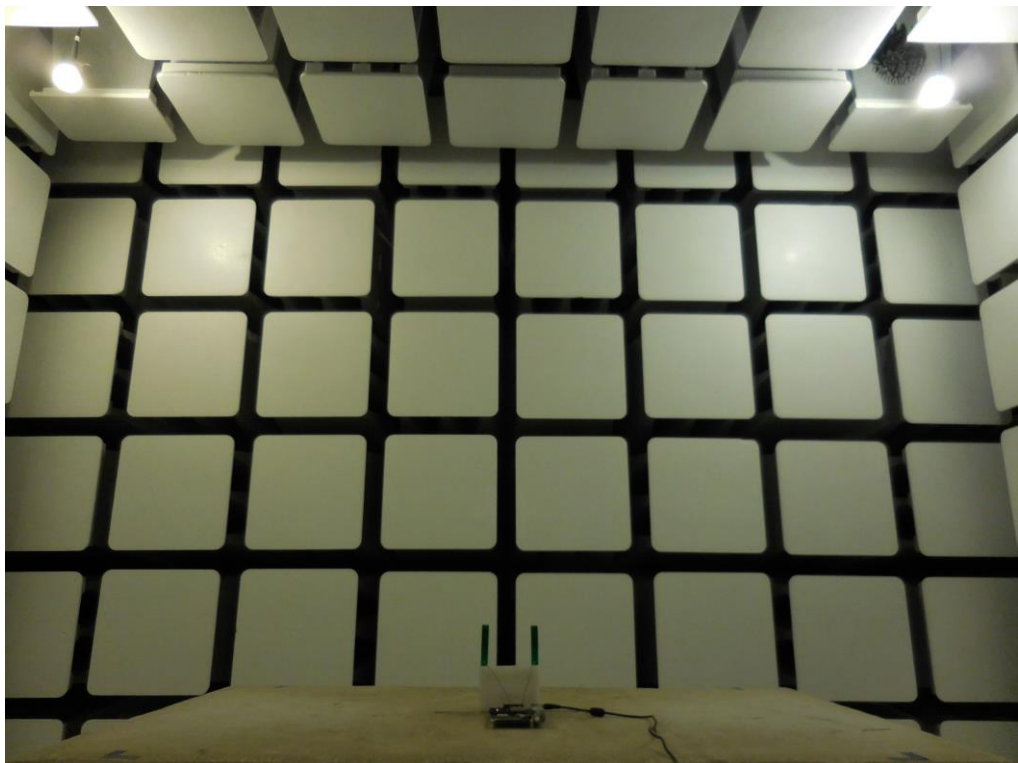
## 1. Photographs of Radiated Emissions Test Configuration

PCB Antenna

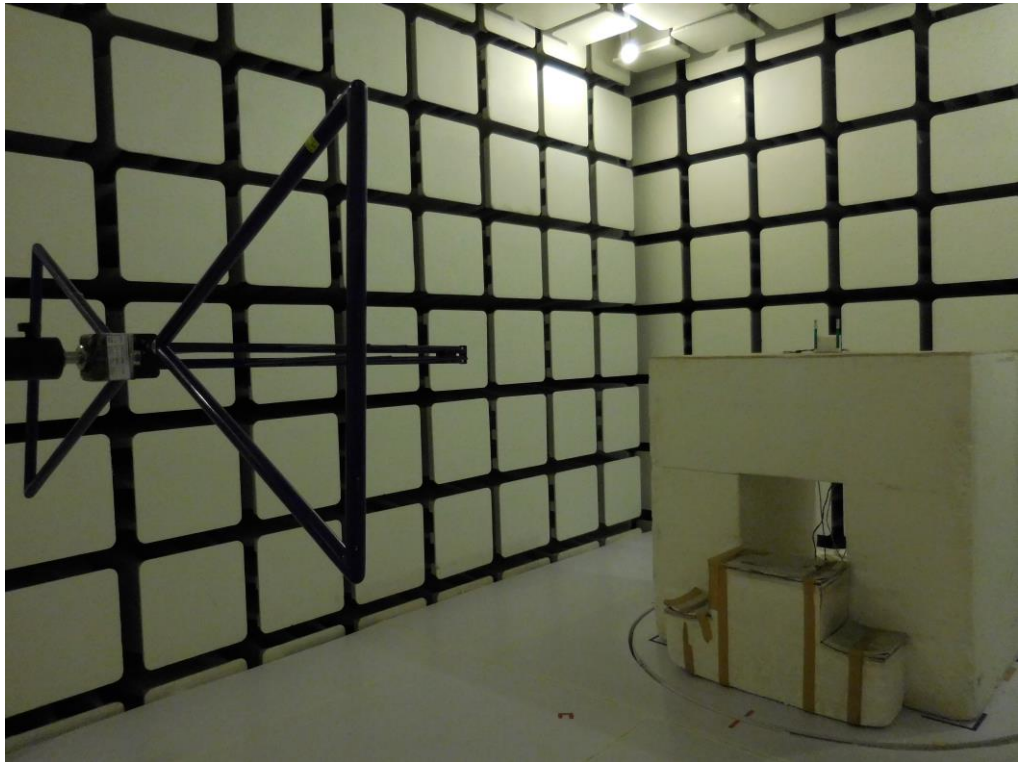
**Front view**



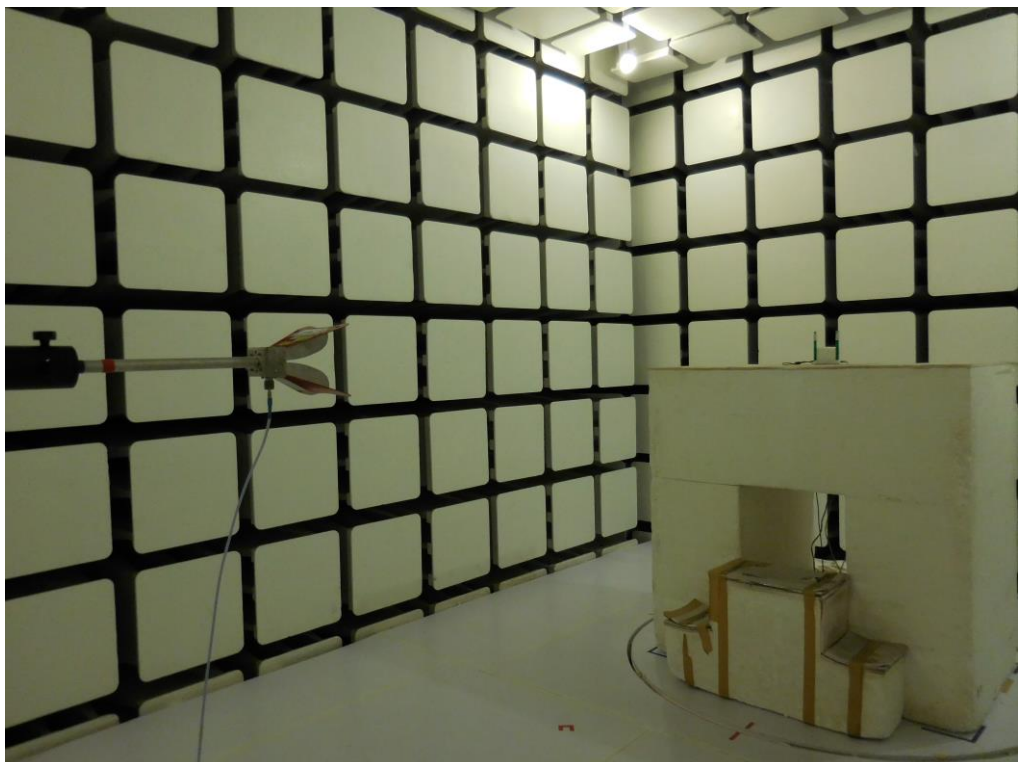
**Rear view**



**Bilog Antenna**

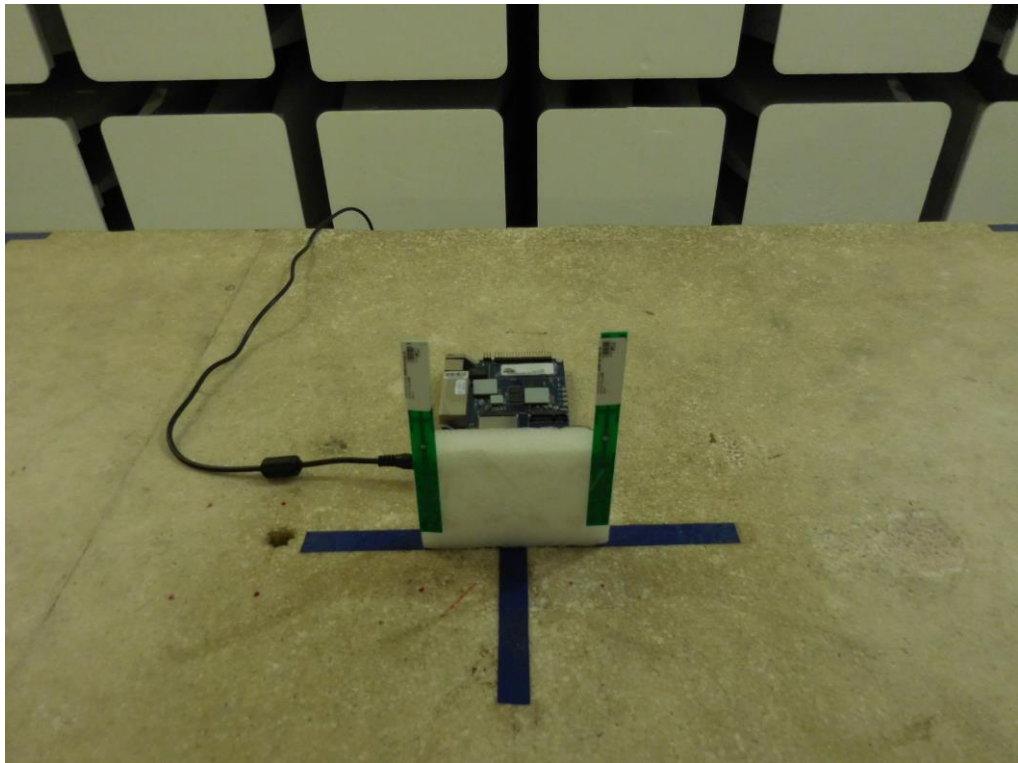


**Horn Antenna**

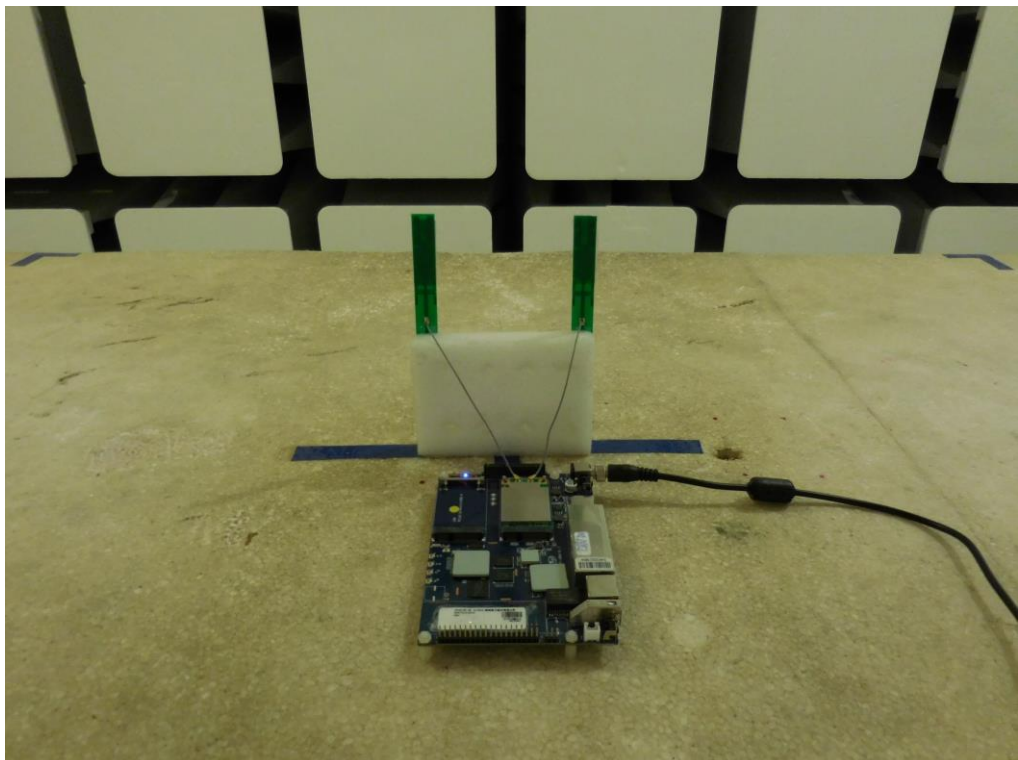




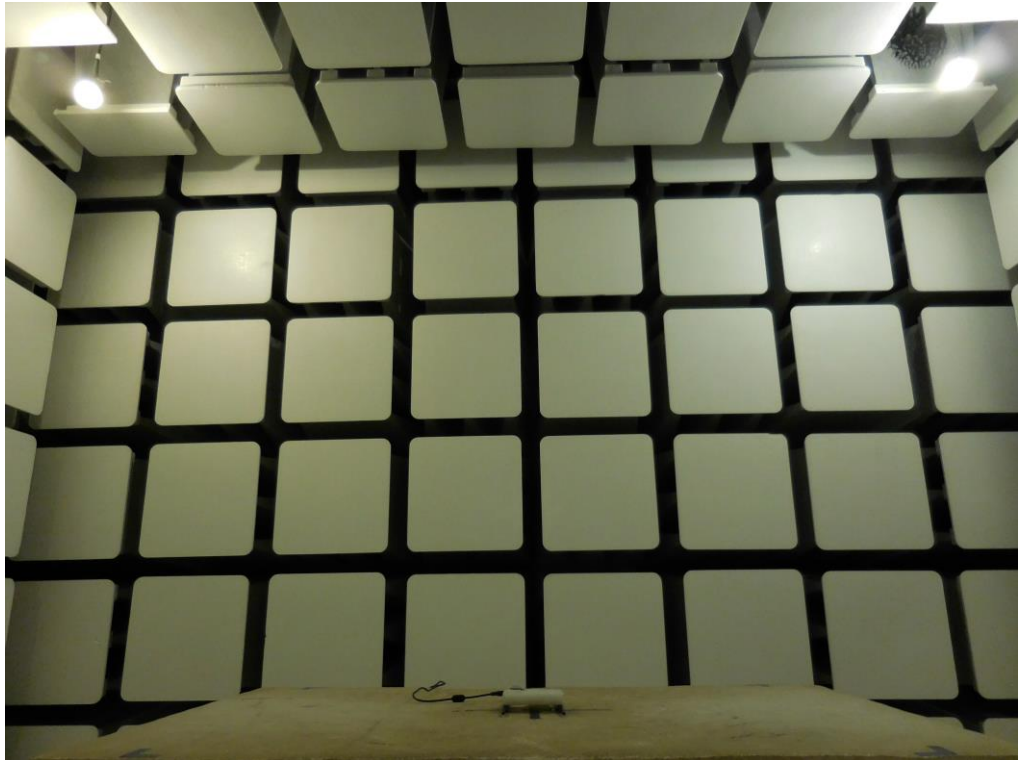
**EUT take a close-up**



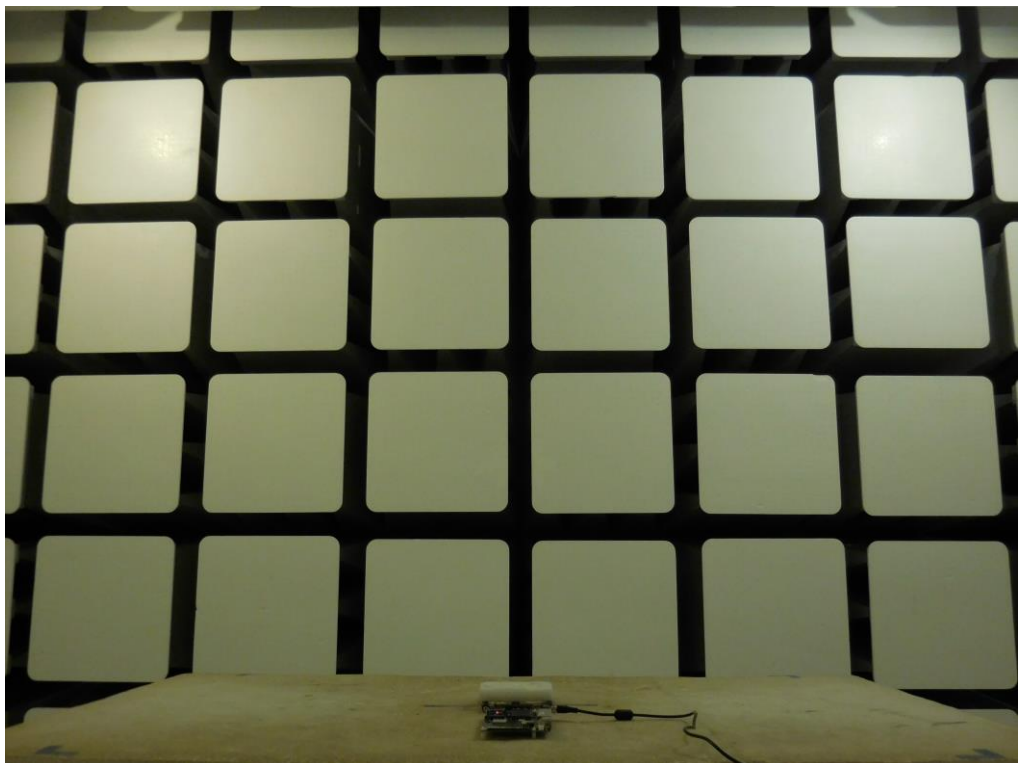
**EUT take a close-up**



**Dipole Antenna**

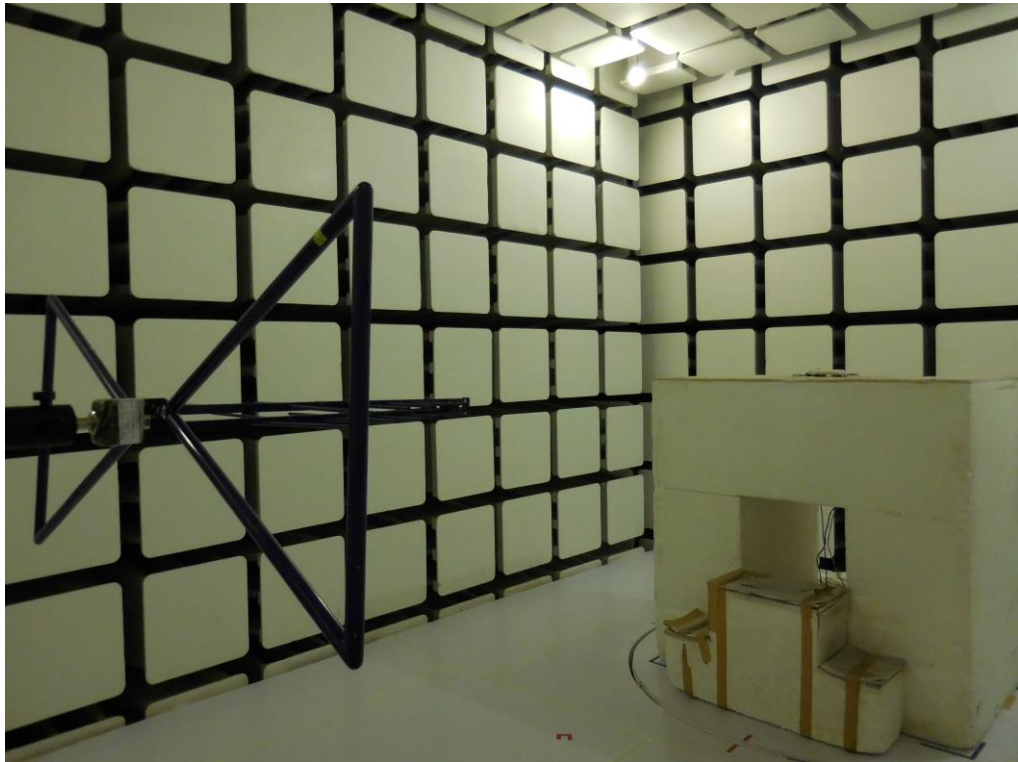


**Front view**



**Rear view**

**Bilog Antenna**

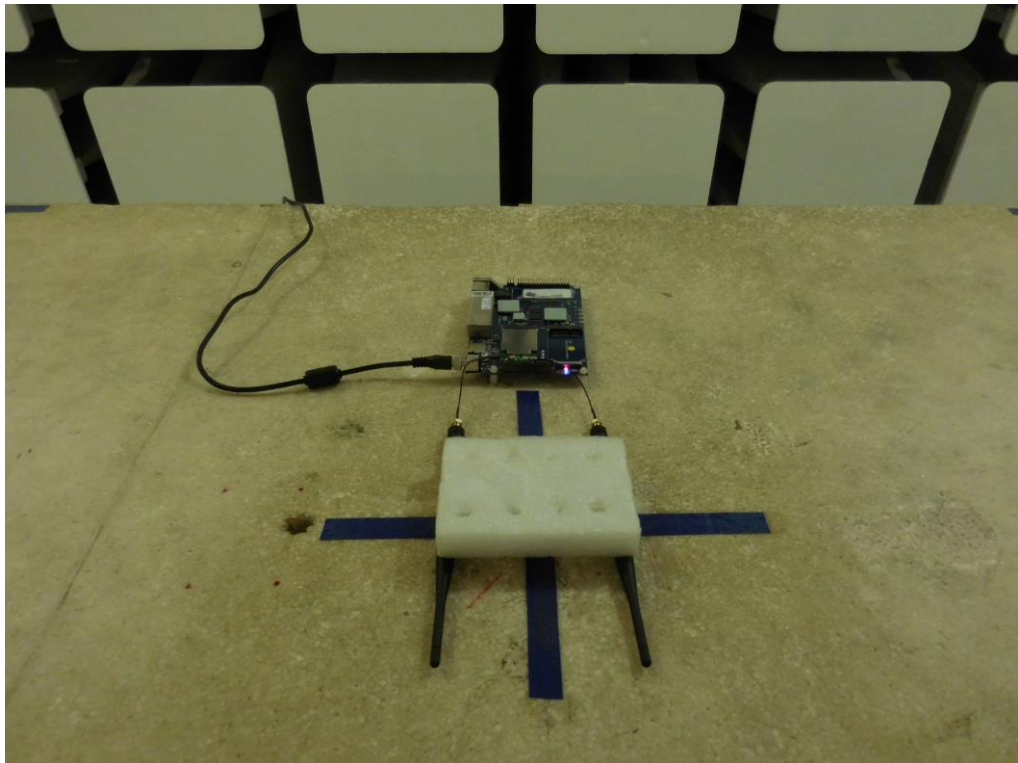


**Horn Antenna**

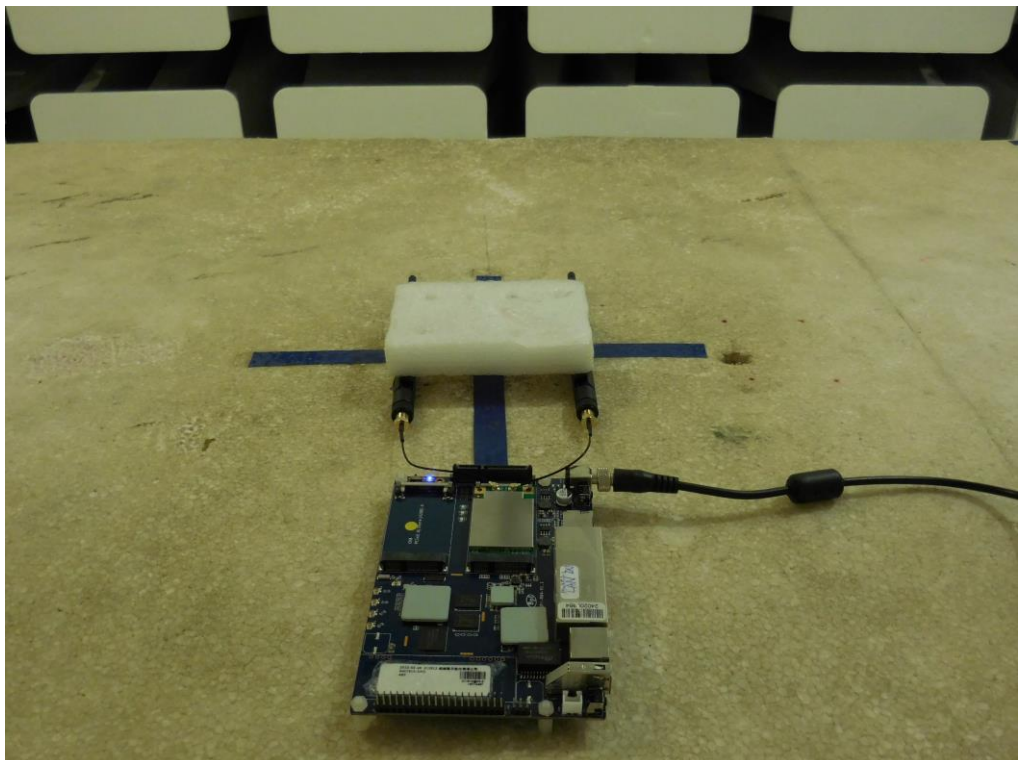




EUT take a close-up



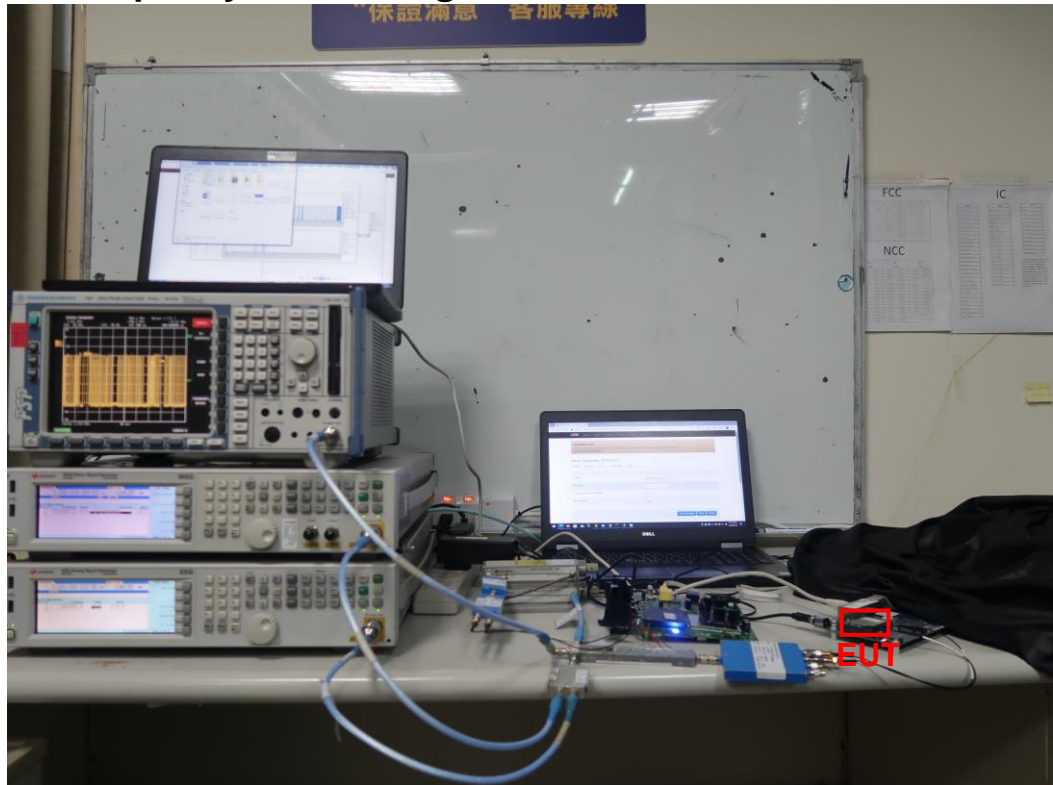
EUT take a close-up





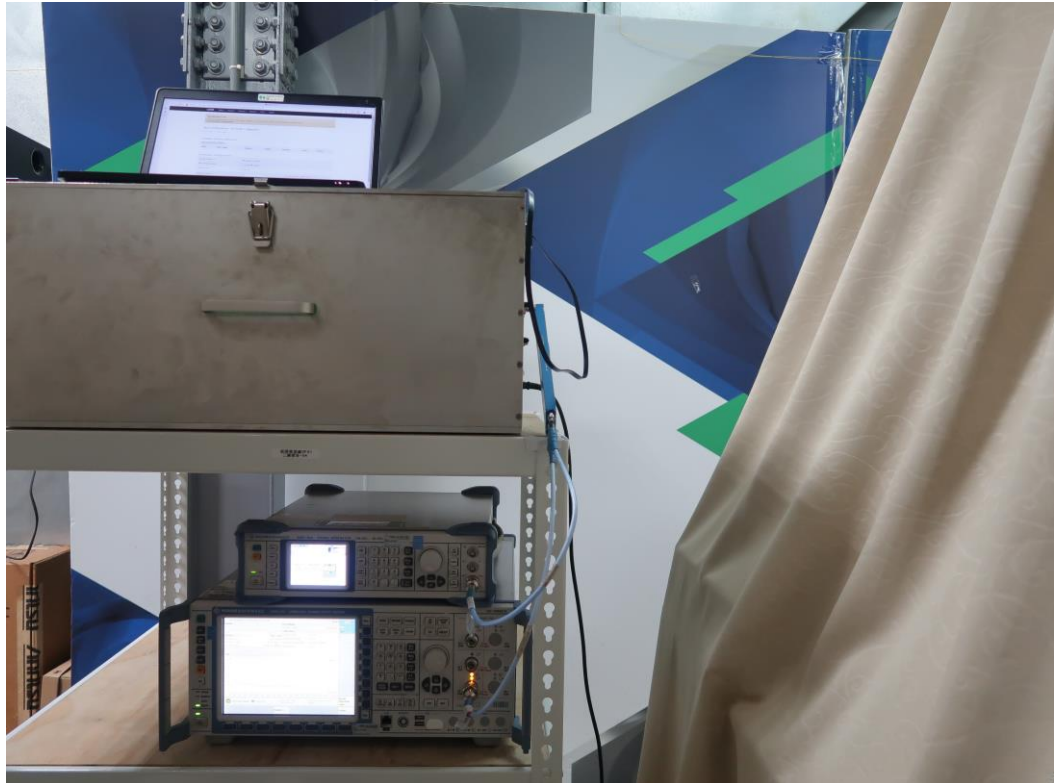
## 2. Photographs of Adaptivity Test Configuration

Front view

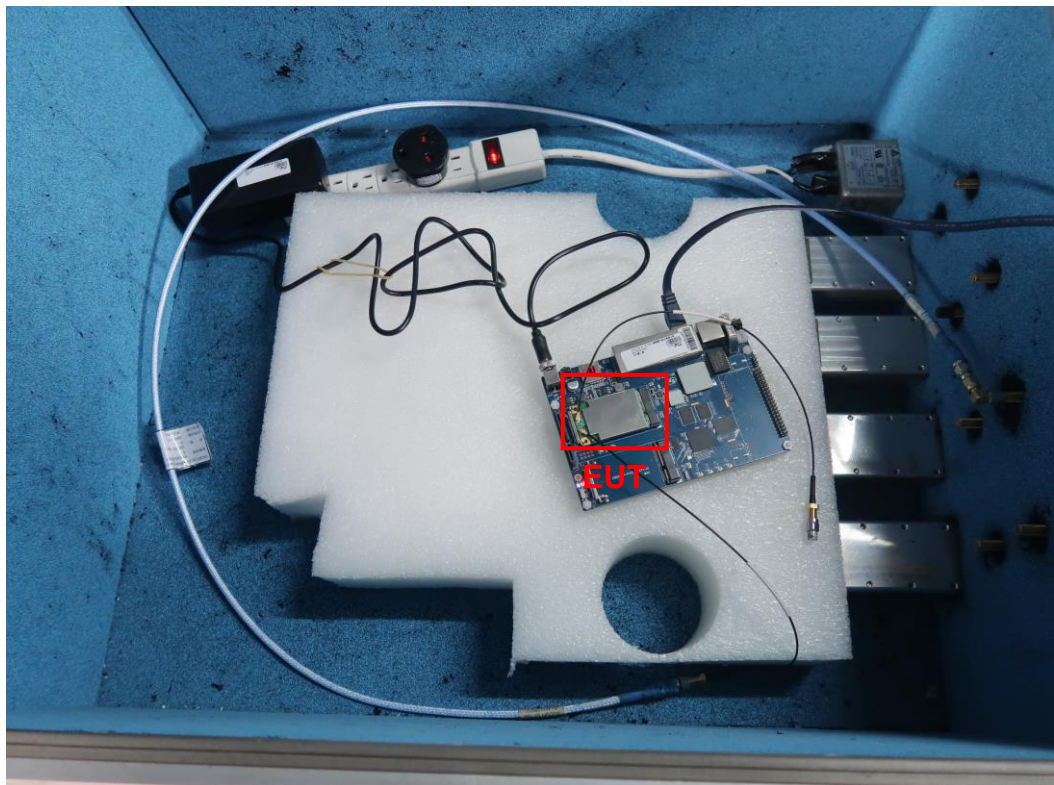


### 3. Photographs of Receiver Blocking Test Configuration

Front view



EUT close-up photo



————THE END————