

# FCC C2PC Test Report

**FCC ID** : MXF-C4000BG  
**Equipment** : Residential Gateway Products  
**Model No.** : C4000BG  
**Brand Name** : CenturyLink  
**Applicant** : Gemtek Technology Co., Ltd.  
**Address** : No. 15-1 Zhonghua Road, Hsinchu Industrial Park, Hukou, Hsinchu, Taiwan, 30352.  
**Standard** : 47 CFR FCC Part 15.407  
**Received Date** : Aug. 22, 2020  
**Tested Date** : Sep. 18 ~ Oct. 20, 2020

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:

  
\_\_\_\_\_  
Along Chen / Assistant Manager

  
\_\_\_\_\_  
Gary Chang / Manager



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## Release Record

Report No.	Version	Description	Issued Date
FR082201-01AN	Rev. 01	Initial issue	Apr. 14, 2021

## Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 1.043MHz 40.82 (Margin -15.18dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5350.00MHz 53.82 (Margin -0.18dB) - AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: <b>Non-beamforming mode</b> 5250~5350MHz: 23.82 5470~5725MHz: 23.66 <b>Beamforming mode</b> 5250~5350MHz: 23.73 5470~5725MHz: 22.87	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

### Declaration of Conformity:

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

### Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

# 1 General Description

## 1.1 Information

This is a Class II Permissive Change report (C2PC).

This report is issued as a supplementary report to original ICC report no. FR082201AN. The modification is only concerned with adding 5250~5350MHz and 5470~5725 MHz band by software setting.

### 1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N <sub>TX</sub> )	Data Rate / MCS
5250-5350 5470-5725	a	5260-5320 5500-5720	52-64 [4] 100-144 [12]	2	6-54 Mbps
5250-5350 5470-5725	n (HT20)	5260-5320 5500-5720	52-64 [4] 100-144 [12]	2	MCS 0-15
5250-5350 5470-5725	n (HT40)	5270-5310 5510-5710	54-62 [2] 102-142 [6]	2	MCS 0-15
5250-5350 5470-5725	ac (VHT20)	5260-5320 5500-5720	52-64 [4] 100-144 [12]	2	MCS 0-9
5250-5350 5470-5725	ac (VHT40)	5270-5310 5510-5710	54-62 [2] 102-142 [6]	2	MCS 0-9
5250-5350 5470-5725	ac (VHT80)	5290 5530-5690	58 [1] 106-138 [3]	2	MCS 0-9
5250-5350 5470-5725	ax (HE20)	5260-5320 5500-5720	52-64 [4] 100-144 [12]	2	MCS 0-11
5250-5350 5470-5725	ax (HE40)	5270-5310 5510-5710	54-62 [2] 102-142 [6]	2	MCS 0-11
5250-5350 5470-5725	ax (HE80)	5290 5530-5690	58 [1] 106-138 [3]	2	MCS 0-11
5150-5350 5470-5725	ax (HE160)	5250 5570	50 [1] 114 [1]	2	MCS 0-11

Note 1: RF output power specifies that Maximum Conducted Output Power.  
 Note 2: The device supports OFDM/OFDMA- BPSK, QPSK, 16QAM, 64QAM, 256QAM and 1024QAM modulation.  
 Note 3: 802.11an / ac / ax supports beamforming function.

### 1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)				
				2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	G_Ant1	Panel	UFL	1.75	1.83	2.29	2.93	2.73
2	G_Ant2	Panel	UFL	2.55	3.05	3.91	4.99	4.6

### 1.1.3 Power Supply Type of Equipment under Test (EUT)

<b>Power Supply Type</b>	12 Vdc from AC adapter
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### 1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	AC adapter 1	Brand: LEI Model: ML30B1120250-A1 I/P: 100-120Vac, 50/60Hz, 0.8A O/P: 12Vdc, 2.5A Power Line: 1.8m non-shielded without core
2	AC adapter 2	Brand: MOSO Model: MSS-V2500WR120-030E0-US I/P: 100-240Vac, 50 / 60Hz, 1.0A O/P: 12Vdc, 2.5A Power Line: 1.8m non-shielded without core
3	RJ45 (WAN) (White)	1.7m non-shielded without core
4	RJ 45 (LAN) (Yellow)	1.7m non-shielded without core
5	RJ11 (Green)	3.6m non-shielded without core

### 1.1.5 Channel List

802.11a / n HT20 / ac VHT20 / ax HE20		802.11n HT40 / ac VHT40 / ax HE40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
52	5260	54	5270
56	5280	62	5310
60	5300	102	5510
64	5320	110	5550
100	5500	118	5590
104	5520	126	5630
108	5540	134	5670
112	5560	142	5710
116	5580	<b>802.11ac VHT80 / ax HE80</b>	
120	5600	58	5290
124	5620	106	5530
128	5640	122	5610
132	5660	138	5690
136	5680	<b>802.11ac VHT160 / ax HE160</b>	
140	5700	50	5250
144	5720	114	5570

### 1.1.6 Test Tool and Duty Cycle

Test Tool	Intel DUT GUI, Version: V610.26		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11a	100.00%	0.00
	ax (HE20)	100.00%	0.00
	ax (HE40)	100.00%	0.00
	ax (HE80)	100.00%	0.00
	ax (HE160)	100.00%	0.00

### 1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index	
		Non-Beamforming	Beamforming
11a	5260	21	---
11a	5300	21	---
11a	5320	21	---
11a	5500	20.5	---
11a	5580	20.5	---
11a	5700	20	---
11a	5720	20	---
VHT20	5260	20.5	20.5
VHT20	5300	20.5	20.5
VHT20	5320	20.5	20.5
VHT20	5500	20.5	20
VHT20	5580	20.5	20
VHT20	5700	20	19.5
VHT20	5720	20	19
VHT40	5270	20.5	20.5
VHT40	5310	20	20
VHT40	5510	19.5	19.5
VHT40	5590	20.5	20
VHT40	5670	20	19.5
VHT40	5710	20	19.5
VHT80	5290	20.5	20.5
VHT80	5530	20.5	20
VHT80	5610	21	20
VHT80	5690	20	19.5
VHT160	5250	17	17
VHT160	5570	19	19

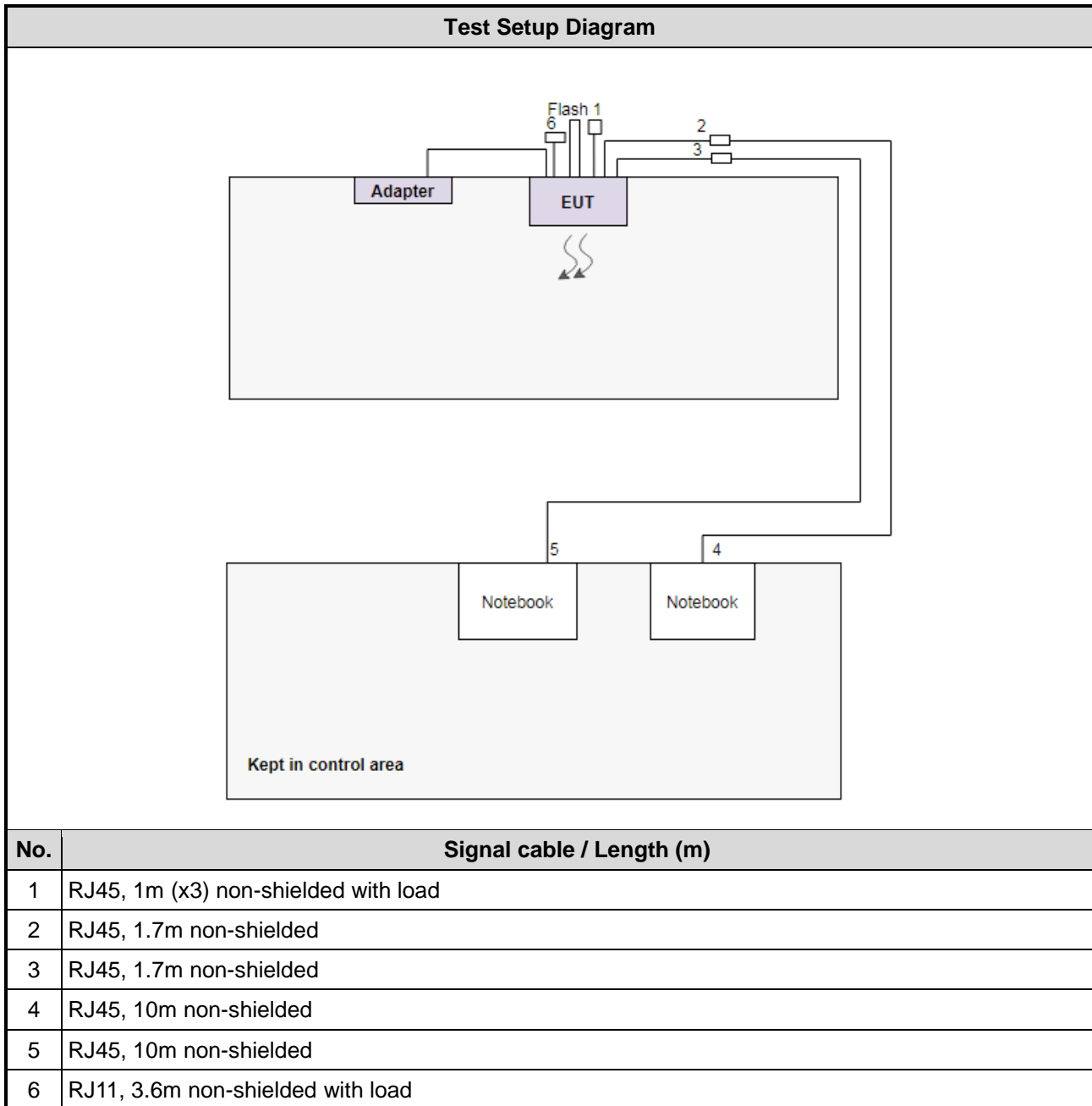


Modulation Mode	Test Frequency (MHz)	Power Index	
		Non-Beamforming	Beamforming
ax (HE20)	5260	20.5	20.5
ax (HE20)	5300	20.5	20.5
ax (HE20)	5320	20.5	20.5
ax (HE20)	5500	20.5	20
ax (HE20)	5580	20.5	20
ax (HE20)	5700	20	19.5
ax (HE20)	5720	20	19
ax (HE40)	5270	20.5	20.5
ax (HE40)	5310	20	20
ax (HE40)	5510	19.5	19.5
ax (HE40)	5590	20.5	20
ax (HE40)	5670	20	19.5
ax (HE40)	5710	20	19.5
ax (HE80)	5290	20.5	20.5
ax (HE80)	5530	20.5	20
ax (HE80)	5610	21	20
ax (HE80)	5690	20	19.5
ax (HE160)	5250	17	17
ax (HE160)	5570	19	19

## 1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	WAN (White)	---	---	---	Provided by applicant.
2	LAN (Yellow)	---	---	---	Provided by applicant.
3	RJ45	ICC	RJ45-10m	---	---
4	RJ45	ICC	RJ45-10m	---	---
5	RJ45	ICC	RJ45-1.3m	---	---
6	RJ45	ICC	RJ45-1.3m	---	---
7	RJ11 (Green)	---	---	---	Provided by applicant.
8	RJ45 Connector	ICC	RJ45 Connector	---	---
9	RJ45 Connector	ICC	RJ45 Connector	---	---
10	RJ45 Load	ICC	---	---	---
11	RJ11 Load	ICC	---	---	---
12	Notebook	DELL	Latitude E6430	DoC	---
13	Notebook	DELL	Latitude E6440	DoC	---
14	USB 3.0 Flash	Transcend	JetFlash 700	---	---
14	RJ45	ICC	RJ45-1.3m	---	---

### 1.3 Test Setup Chart



## 1.4 The Equipment List

<b>Test Item</b>	Conducted Emission				
<b>Test Site</b>	Conduction room 1 / (CO01-WS)				
<b>Test Date</b>	Oct. 19, 2020				
<b>Instrument</b>	<b>Brand</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Receiver	R&S	ESR3	101658	Dec. 12, 2019	Dec. 11, 2020
LISN	R&S	ENV216	101579	Mar. 12, 2020	Mar. 11, 2021
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 22, 2019	Oct. 21, 2020
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

<b>Test Item</b>	Radiated Emission below 1GHz				
<b>Test Site</b>	966 chamber1 / (03CH01-WS)				
<b>Test Date</b>	Oct. 20, 2020				
<b>Instrument</b>	<b>Brand</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Spectrum Analyzer	R&S	FSV40	101498	Dec. 17, 2019	Dec. 16, 2020
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 10, 2020	Jul. 09, 2021
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 12, 2019	Dec. 11, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 06, 2020	Oct. 05, 2021
Preamplifier	EMC	EMC02325	980225	Jul. 03, 2020	Jul. 02, 2021
Preamplifier	Agilent	83017A	MY39501308	Sep. 26, 2020	Sep. 25, 2021
Preamplifier	EMC	EMC184045B	980192	Jul. 21, 2020	Jul. 20, 2021
RF Cable	EMC	EMC104-SM-SM-8000	181106	Oct. 06, 2020	Oct. 05, 2021
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 06, 2020	Oct. 05, 2021
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 06, 2020	Oct. 05, 2021
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	160502	Oct. 06, 2020	Oct. 05, 2021
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 06, 2020	Oct. 05, 2021
LF cable 11M	EMC	EMCCFD400-NW-NW-11000	200801	Oct. 06, 2020	Oct. 05, 2021
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

<b>Test Item</b>	Radiated Emission above 1GHz				
<b>Test Site</b>	966 chamber1 / (03CH01-WS)				
<b>Test Date</b>	Sep. 18 ~ Sep. 23, 2020				
<b>Instrument</b>	<b>Brand</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Spectrum Analyzer	R&S	FSV40	101498	Dec. 17, 2019	Dec. 16, 2020
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 10, 2020	Jul. 09, 2021
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 12, 2019	Dec. 11, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980225	Jul. 03, 2020	Jul. 02, 2021
Preamplifier	Agilent	83017A	MY39501308	Oct. 08, 2019	Oct. 07, 2020
Preamplifier	EMC	EMC184045B	980192	Jul. 21, 2020	Jul. 20, 2021
RF Cable	EMC	EMC104-SM-SM-80 00	181106	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 07, 2019	Oct. 06, 2020
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 07, 2019	Oct. 06, 2020
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 07, 2019	Oct. 06, 2020
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Aug. 13, 2020	Aug. 12, 2021
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

<b>Test Item</b>	RF Conducted				
<b>Test Site</b>	(TH01-WS)				
<b>Test Date</b>	Sep. 21 ~ Oct. 20, 2020				
<b>Instrument</b>	<b>Brand</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Spectrum Analyzer	R&S	FSV40	101063	Apr. 30, 2020	Apr. 29, 2021
Power Meter	Anritsu	ML2495A	1241002	Oct. 23, 2019	Oct. 22, 2020
Power Sensor	Anritsu	MA2411B	1207366	Oct. 23, 2019	Oct. 22, 2020
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 02, 2019	Dec. 01, 2020
Measurement Software	Sporton	SENSE-15247_DTS	V5.9	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

## 1.5 Test Standards

47 CFR FCC Part 15.407

ANSI C63.10-2013

## 1.6 Reference Guidance

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

## 1.7 Deviation from Test Standard and Measurement Procedure

None

## 1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ( $k=2$ )).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	$\pm 34.130$ Hz
Conducted power	$\pm 0.808$ dB
Frequency error	$\pm 1 \times 10^{-9}$
Power density	$\pm 0.583$ dB
Conducted emission	$\pm 2.715$ dB
AC conducted emission	$\pm 2.92$ dB
Radiated emission $\leq 1$ GHz	$\pm 3.41$ dB
Radiated emission $> 1$ GHz	$\pm 4.59$ dB
Time	$\pm 0.1\%$
Temperature	$\pm 0.4$ °C

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## 2 Test Configuration

### 2.1 Testing Facility

<b>Test Laboratory</b>	International Certification Corporation
<b>Test Site</b>	CO01-WS, 03CH01-WS, TH01-WS
<b>Address of Test Site</b>	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- ISED#: 10807A
- CAB identifier: TW2732

## 2.2 The Worst Test Modes and Channel Details

For Frequency band 5250-5350 MHz, 5470-5725 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	ax HE20	5260	MCS 0	Non-beamforming
Radiated Emissions ≤1GHz	ax HE20	5260	MCS 0	Non-beamforming
RF Output Power	11a	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	6 Mbps	Non-beamforming
	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5610 / 5690	MCS 0	
	VHT160	5250 / 5570		
	ax HE20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	ax HE40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	ax HE80	5290 / 5530 / 5610 / 5690	MCS 0	
RF Output Power	ax HE160	5250 / 5570	MCS 0	Beamforming
	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5610 / 5690	MCS 0	
	VHT160	5250 / 5570	MCS 0	
	ax HE20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	ax HE40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	ax HE80	5290 / 5530 / 5610 / 5690	MCS 0	
ax HE160	5250 / 5570	MCS 0		
<b>NOTE:</b>				
1) Adapter 1 (Brand: LEI) and Adapter 2 (Brand: MOSO) had been covered during the pretest. The worst adapter is <b>Adapter 2 (Brand: MOSO)</b> , and only its data was record in this test report for conducted emissions test.				
2) Adapter 1 (Brand: LEI) and Adapter 2 (Brand: MOSO) had been covered during the pretest. The worst adapter is <b>Adapter 1 (Brand: LEI)</b> , and only its data was record in this test report for radiated emissions test.				
3) Non-beamforming and beamforming mode had been covered during the pretest. The worst mode is Non-beamforming thus Non-beamforming is tested for all test items.				



For Frequency band 5250-5350 MHz, 5470-5725 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	6 Mbps	Non-beamforming
	ax HE20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	ax HE40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	ax HE80	5290 / 5530 / 5610 / 5690	MCS 0	
	ax HE160	5250 / 5570	MCS 0	
Frequency Stability	Un-modulation	5320	---	Non-beamforming
<b>NOTE:</b>				
<p>1) Adapter 1 (Brand: LEI) and Adapter 2 (Brand: MOSO) had been covered during the pretest. The worst adapter is <b>Adapter 2 (Brand: MOSO)</b>, and only its data was record in this test report for conducted emissions test.</p> <p>2) Adapter 1 (Brand: LEI) and Adapter 2 (Brand: MOSO) had been covered during the pretest. The worst adapter is <b>Adapter 1 (Brand: LEI)</b>, and only its data was record in this test report for radiated emissions test.</p> <p>3) Non-beamforming and beamforming mode had been covered during the pretest. The worst mode is Non-beamforming thus Non-beamforming is tested for all test items.</p>				

## 3 Transmitter Test Results

### 3.1 Conducted Emissions

#### 3.1.1 Limit of Conducted Emissions

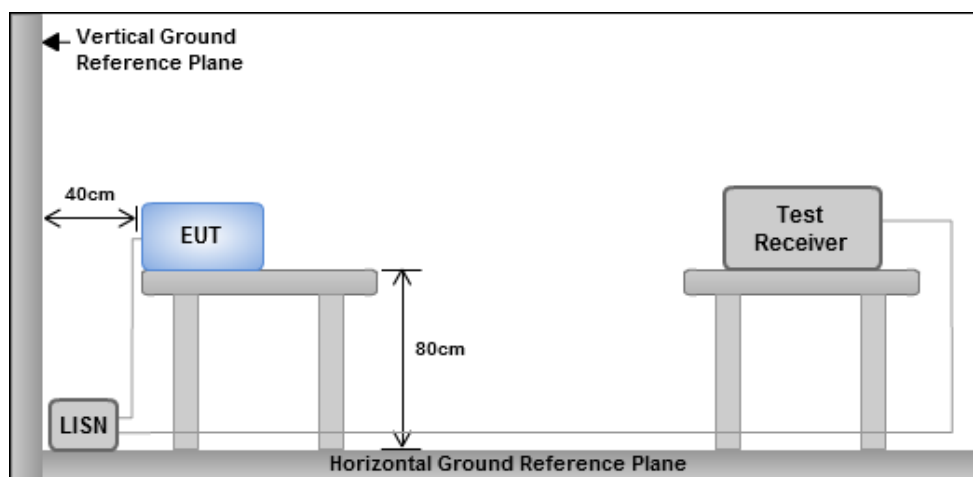
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

#### 3.1.2 Test Procedures

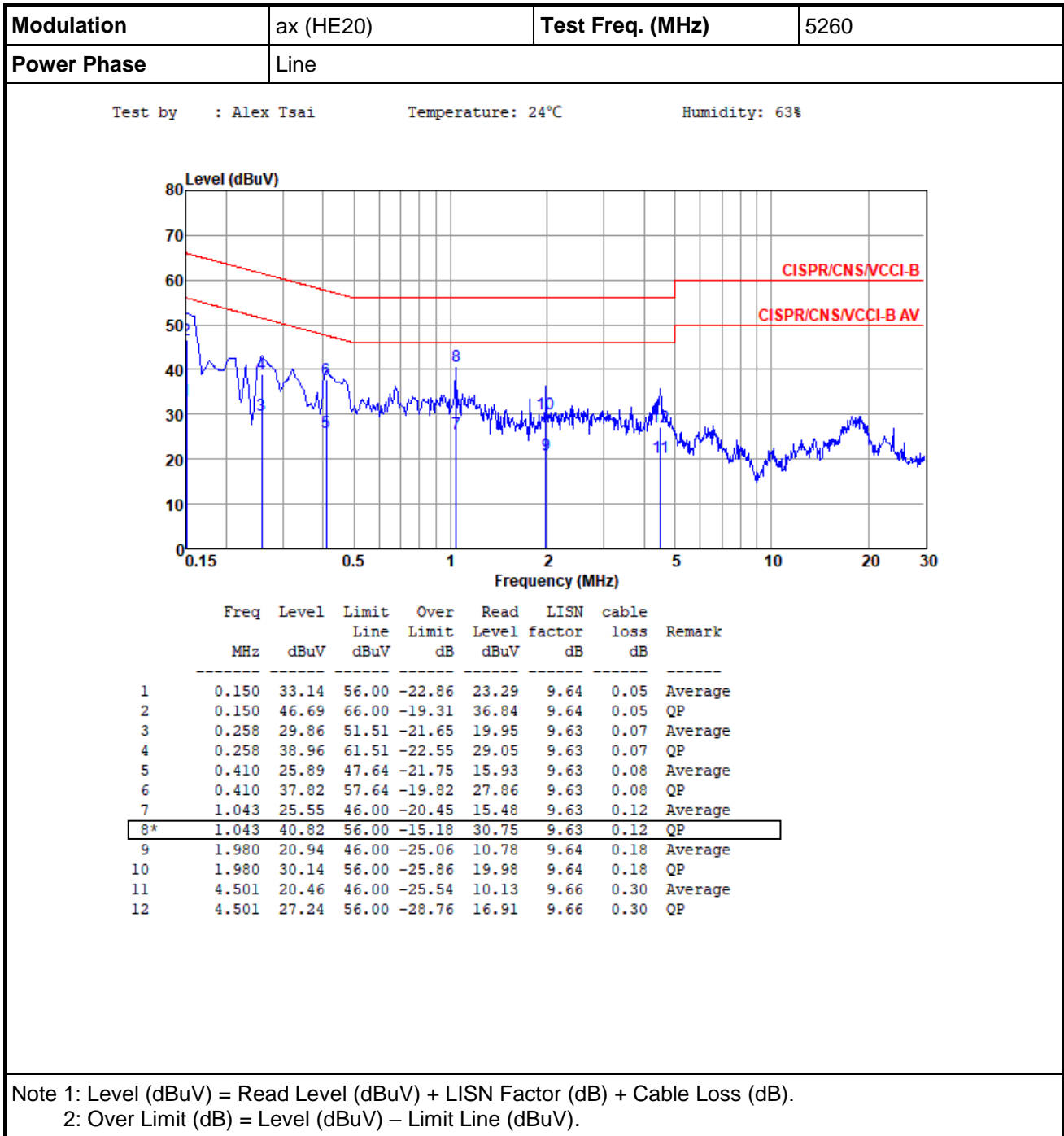
1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50  $\Omega$  LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V/60Hz

#### 3.1.3 Test Setup



- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

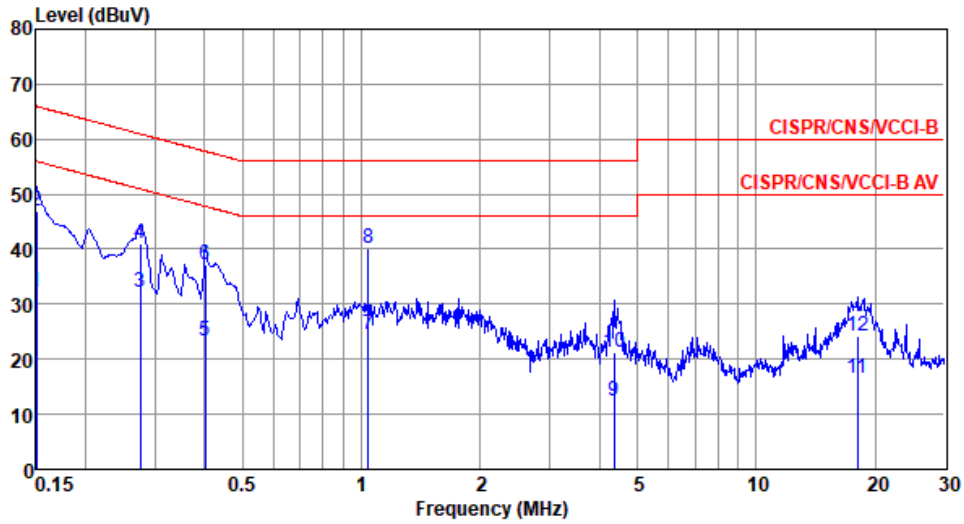
### 3.1.4 Test Result of Conducted Emissions



<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5260
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<b>Power Phase</b>	Neutral
--------------------	---------

Test by : Alex Tsai      Temperature: 24°C      Humidity: 63%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	32.30	56.00	-23.70	22.47	9.66	0.05	Average
2	0.150	47.06	66.00	-18.94	37.23	9.66	0.05	QP
3	0.276	32.18	50.94	-18.76	22.30	9.65	0.07	Average
4	0.276	41.03	60.94	-19.91	31.15	9.65	0.07	QP
5	0.402	23.46	47.81	-24.35	13.56	9.65	0.08	Average
6	0.402	37.22	57.81	-20.59	27.32	9.65	0.08	QP
7	1.043	24.39	46.00	-21.61	14.42	9.65	0.12	Average
8*	1.043	40.12	56.00	-15.88	30.15	9.65	0.12	QP
9	4.361	12.40	46.00	-33.60	2.15	9.68	0.30	Average
10	4.361	21.20	56.00	-34.80	10.95	9.68	0.30	QP
11	18.039	16.58	50.00	-33.42	5.65	9.82	0.64	Average
12	18.039	24.25	60.00	-35.75	13.32	9.82	0.64	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).  
 Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

## 3.2 Emission Bandwidth

### 3.2.1 Test Procedures

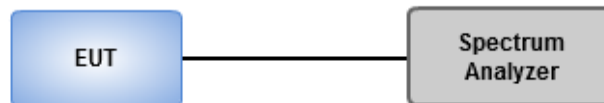
#### 26dB Bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW, Detector = Peak.
3. Trace mode = max hold.
4. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

#### Occupied Bandwidth

1. Set RBW = 1 % to 5 % of the OBW
2. Set VBW  $\geq$  3 RBW
3. Sample detection and single sweep mode shall be used
4. Use the 99 % power bandwidth function of the instrument

### 3.2.2 Test Setup



### 3.2.3 Test Result of Emission Bandwidth

<b>Ambient Condition</b>	22~25°C / 65~68%	<b>Tested By</b>	Aska Huang
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#### Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_2TX	84.058M	78.148M	78M1D1D	81.739M	77.858M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	25.435M	16.671M	16M7D1D	22.391M	16.556M
802.11ax HEW20_Nss1,(MCS0)_2TX	23.333M	19.103M	19M1D1D	21.594M	18.987M
802.11ax HEW40_Nss1,(MCS0)_2TX	43.768M	38.09M	38M1D1D	41.304M	37.742M
802.11ax HEW80_Nss1,(MCS0)_2TX	84.928M	77.337M	77M3D1D	82.899M	77.337M
802.11ax HEW160_Nss1,(MCS0)_2TX	83.188M	77.858M	77M9D1D	83.188M	77.858M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	25.217M	16.671M	16M7D1D	15.833M	13.336M
802.11ax HEW20_Nss1,(MCS0)_2TX	25.507M	19.219M	19M2D1D	15.592M	14.47M
802.11ax HEW40_Nss1,(MCS0)_2TX	44.493M	38.553M	38M6D1D	35.42M	33.839M
802.11ax HEW80_Nss1,(MCS0)_2TX	83.478M	77.569M	77M6D1D	76.69M	73.412M
802.11ax HEW160_Nss1,(MCS0)_2TX	164.638M	156.064M	156MD1D	164.638M	155.601M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.261M	4.038M	4M04D1D	3.217M	3.951M
802.11ax HEW20_Nss1,(MCS0)_2TX	4.522M	4.515M	4M52D1D	4.522M	4.515M
802.11ax HEW40_Nss1,(MCS0)_2TX	4.087M	4.472M	4M47D1D	4.087M	4.428M
802.11ax HEW80_Nss1,(MCS0)_2TX	4.043M	4.038M	4M04D1D	4.043M	4.038M

**Max-N dB** = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

**Max-OBW** = Maximum 99% occupied bandwidth;

**Min-N dB** = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

**Min-OBW** = Minimum 99% occupied bandwidth;

**Result**

Mode	Result	Limit (Hz)	Port 1 -N dB (Hz)	Port 1 -OBW (Hz)	Port 2 -N dB (Hz)	Port 2 -OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	24.348M	16.671M	25M	16.614M
5300MHz	Pass	Inf	24.42M	16.671M	25.435M	16.671M
5320MHz	Pass	Inf	22.681M	16.614M	22.391M	16.556M
5500MHz	Pass	Inf	23.043M	16.614M	22.536M	16.556M
5580MHz	Pass	Inf	24.13M	16.671M	25.217M	16.671M
5700MHz	Pass	Inf	22.609M	16.671M	22.464M	16.614M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.005M	13.404M	15.833M	13.336M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.261M	4.038M	3.217M	3.951M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	23.333M	19.103M	22.246M	19.103M
5300MHz	Pass	Inf	22.319M	18.987M	21.594M	18.987M
5320MHz	Pass	Inf	22.246M	18.987M	23.043M	19.045M
5500MHz	Pass	Inf	24.058M	19.045M	23.043M	18.987M
5580MHz	Pass	Inf	22.681M	18.929M	22.899M	18.929M
5700MHz	Pass	Inf	25.507M	19.219M	23.551M	19.219M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	17.176M	14.642M	15.592M	14.47M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.522M	4.515M	4.522M	4.515M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	43.768M	38.09M	42.609M	37.974M
5310MHz	Pass	Inf	41.884M	37.742M	41.304M	37.742M
5510MHz	Pass	Inf	43.333M	38.205M	44.348M	38.09M
5590MHz	Pass	Inf	44.493M	38.321M	43.913M	38.553M
5670MHz	Pass	Inf	42.754M	37.974M	42.754M	37.858M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.42M	33.839M	36.016M	33.839M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.087M	4.472M	4.087M	4.428M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	82.899M	77.337M	84.928M	77.337M
5530MHz	Pass	Inf	82.609M	77.569M	82.319M	77.569M
5610MHz	Pass	Inf	83.478M	77.569M	82.609M	77.569M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	78.183M	73.598M	76.69M	73.412M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4.043M	4.038M	4.043M	4.038M
802.11ax HEW160_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	84.058M	78.148M	81.739M	77.858M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	83.188M	77.858M	83.188M	77.858M
5570MHz	Pass	Inf	164.638M	156.064M	164.638M	155.601M

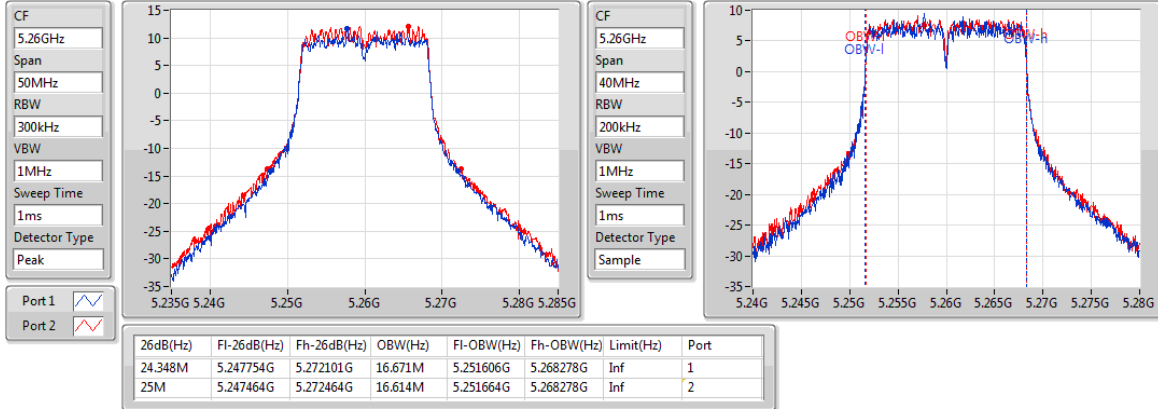
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

**Port X-OBW** = Port X 99% occupied bandwidth;

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

EBW

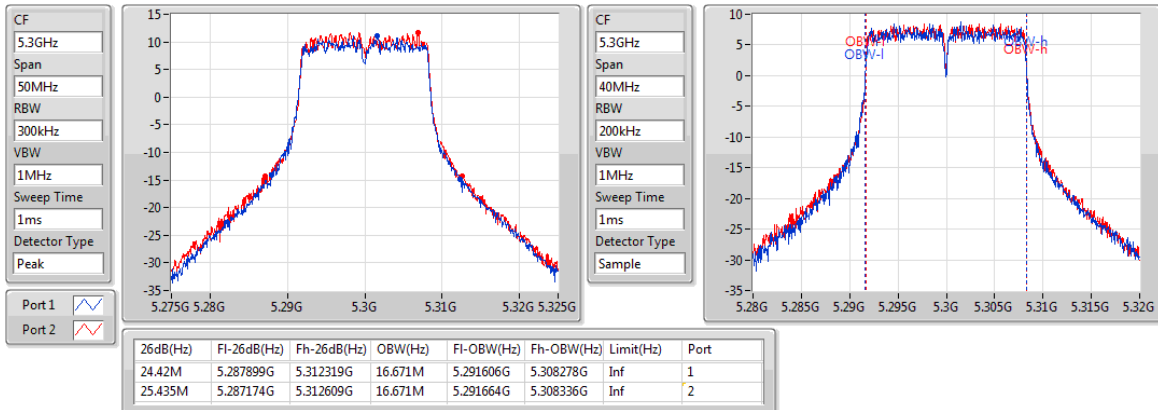
5260MHz



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

EBW

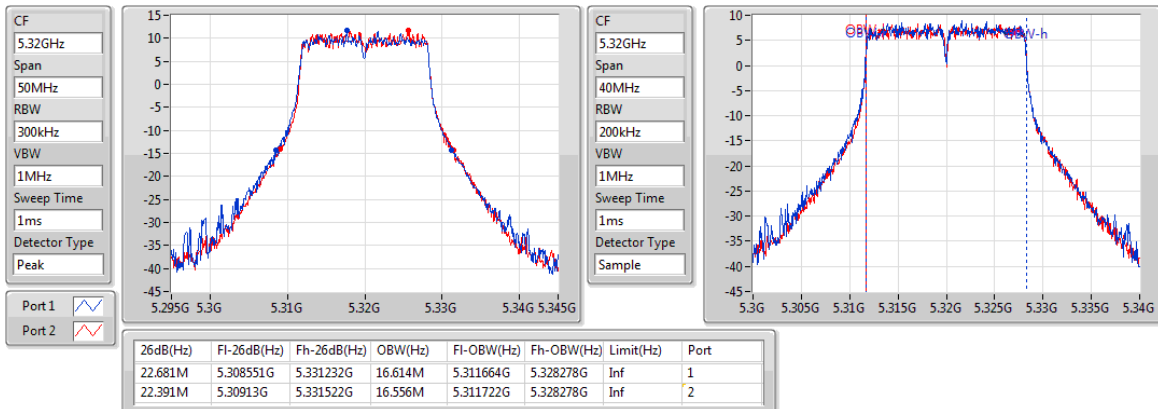
5300MHz



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

EBW

5320MHz

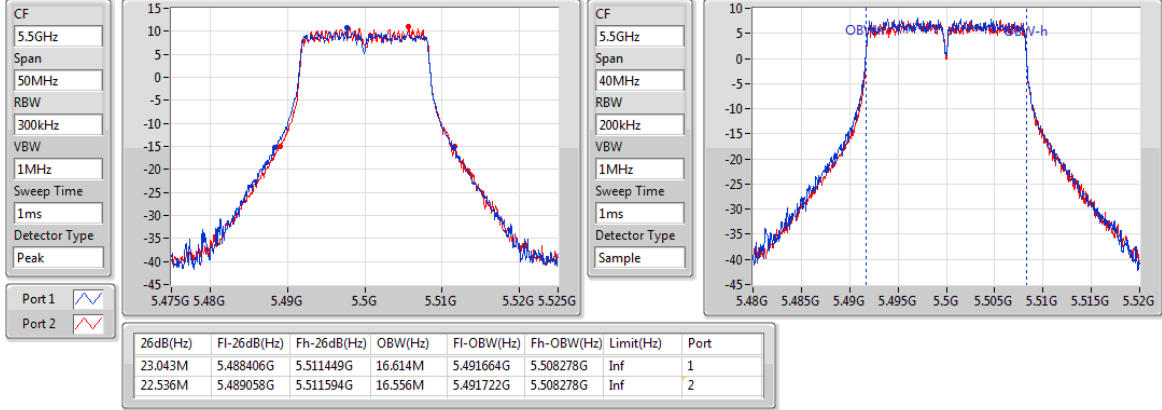




### 802.11a\_Nss1,(6Mbps)\_2TX

EBW

5500MHz



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

EBW

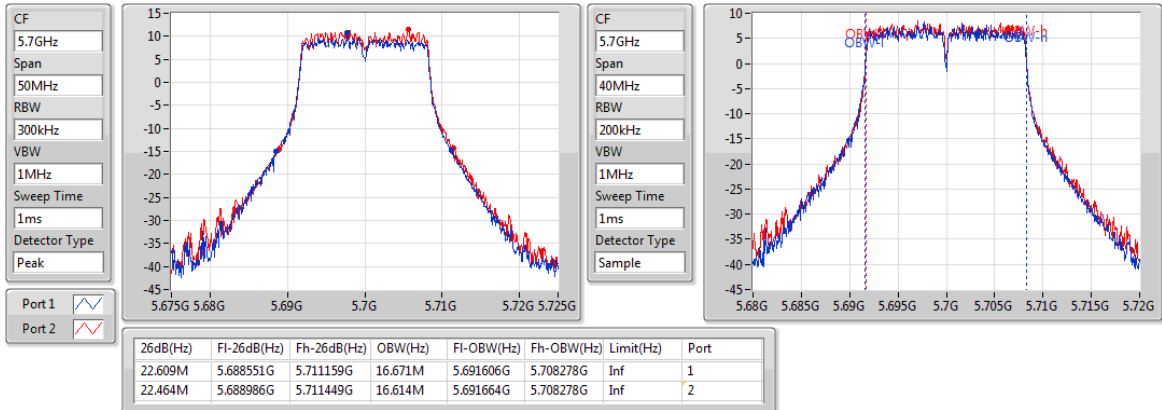
5580MHz



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

EBW

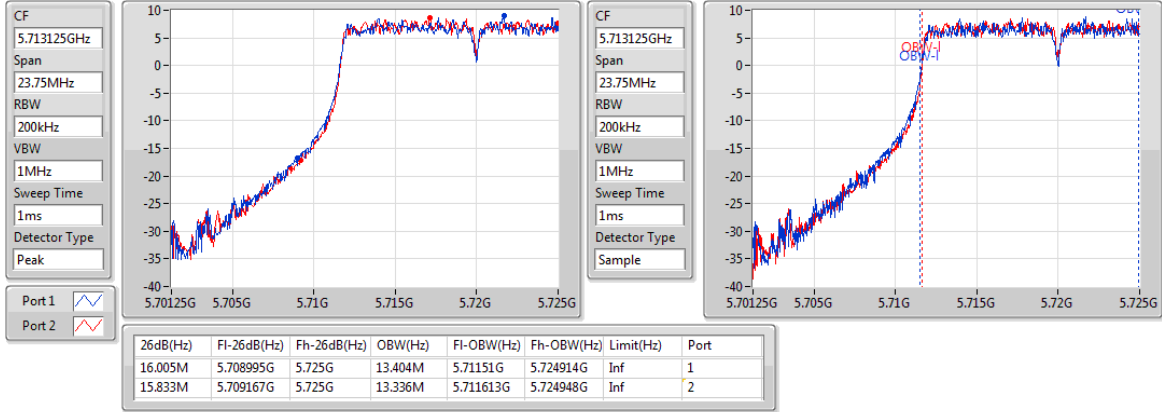
5700MHz



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

EBW

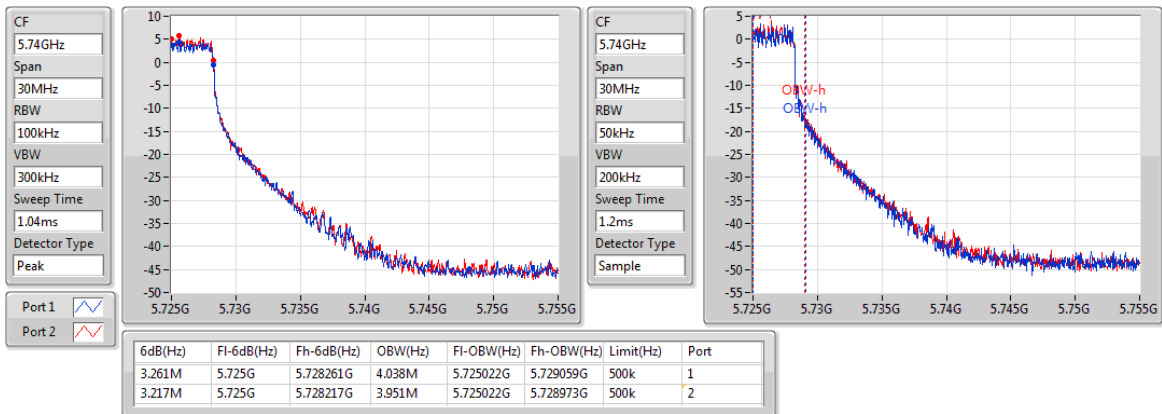
#### 5720MHz Straddle 5.47-5.725GHz



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

EBW

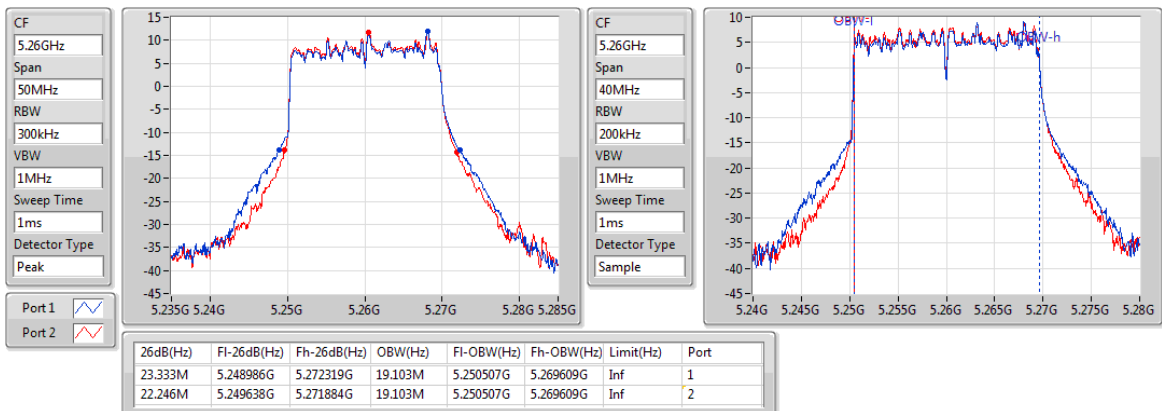
#### 5720MHz Straddle 5.725-5.85GHz



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

EBW

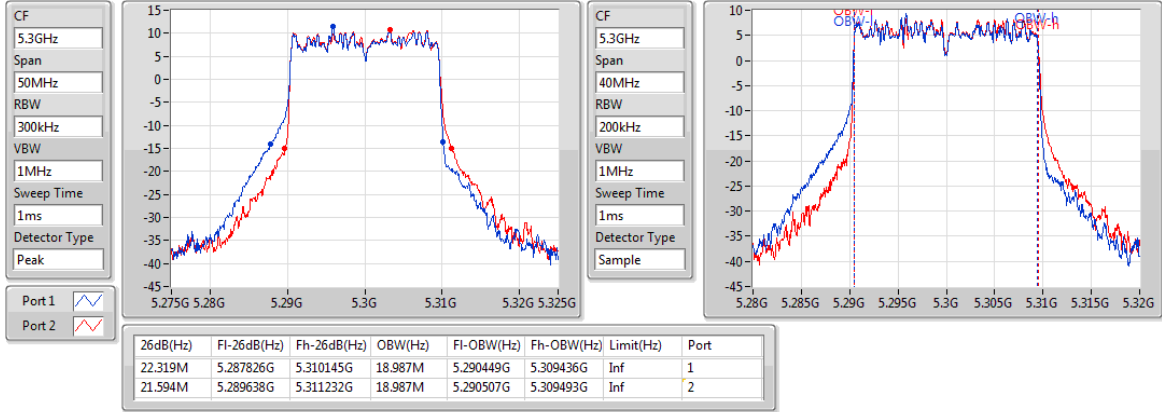
#### 5260MHz



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

EBW

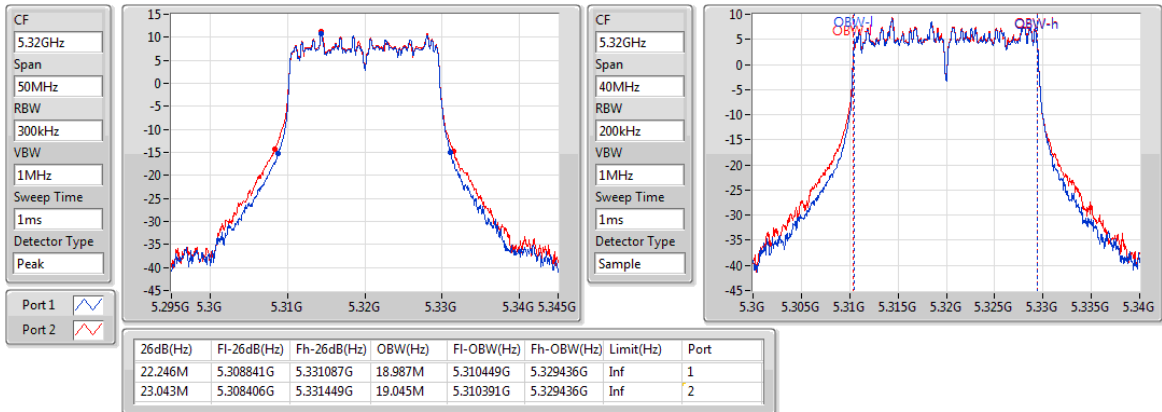
5300MHz



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

EBW

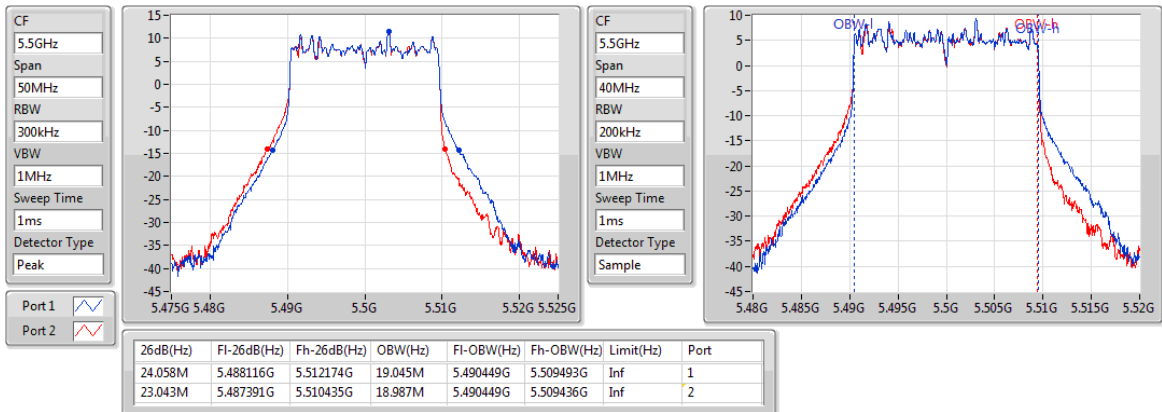
5320MHz



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

EBW

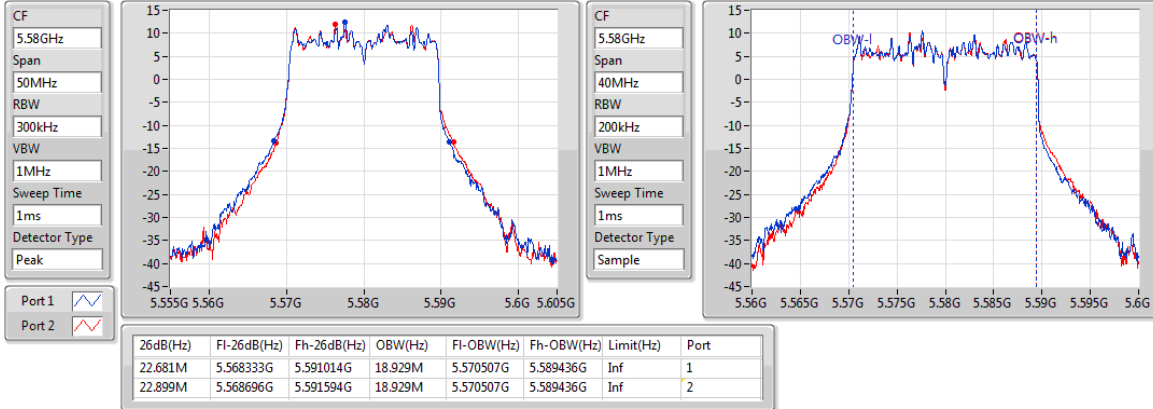
5500MHz



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

EBW

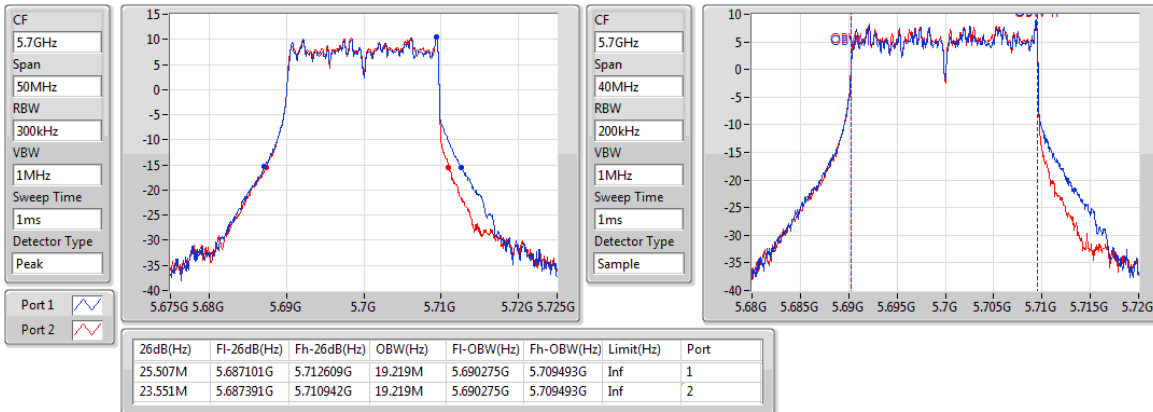
5580MHz



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

EBW

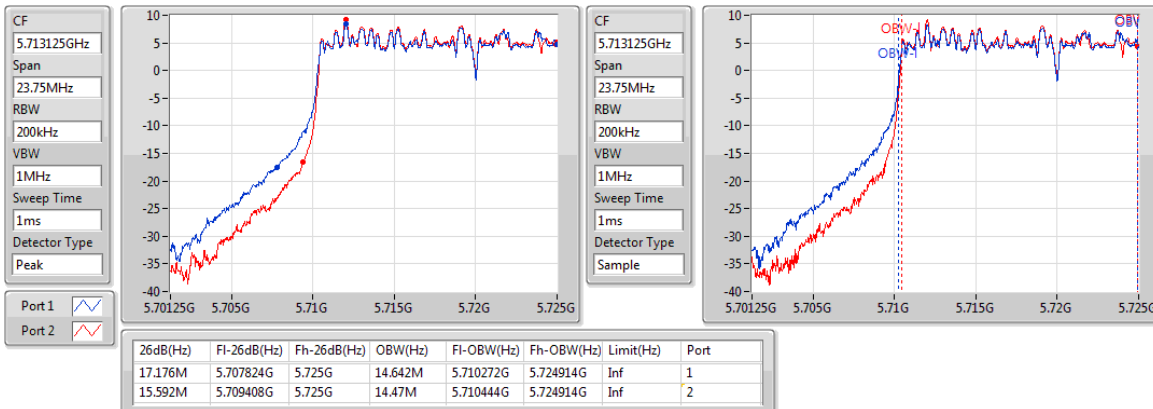
5700MHz



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

EBW

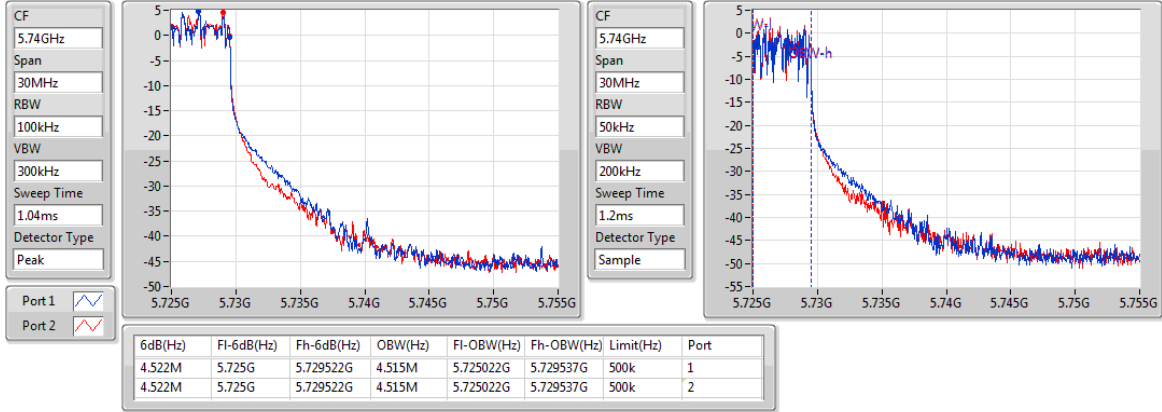
5720MHz Straddle 5.47-5.725GHz



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

EBW

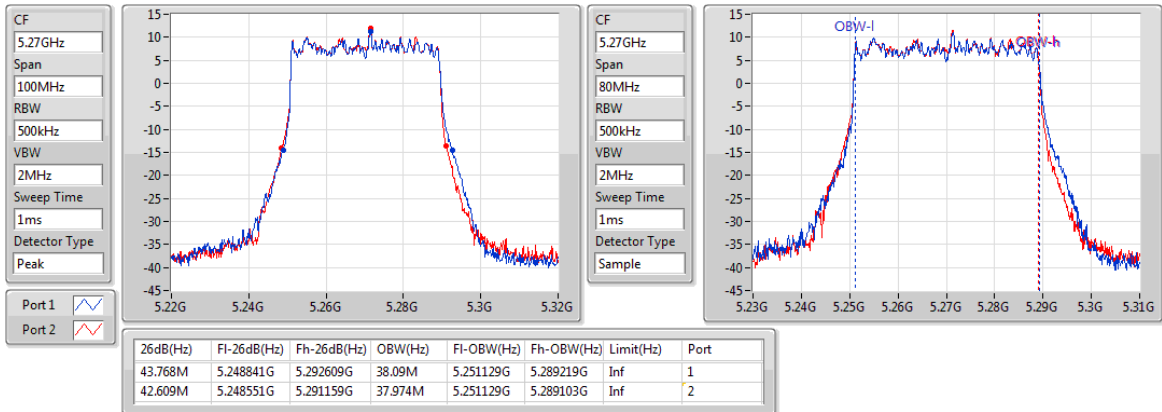
#### 5720MHz Straddle 5.725-5.85GHz



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

EBW

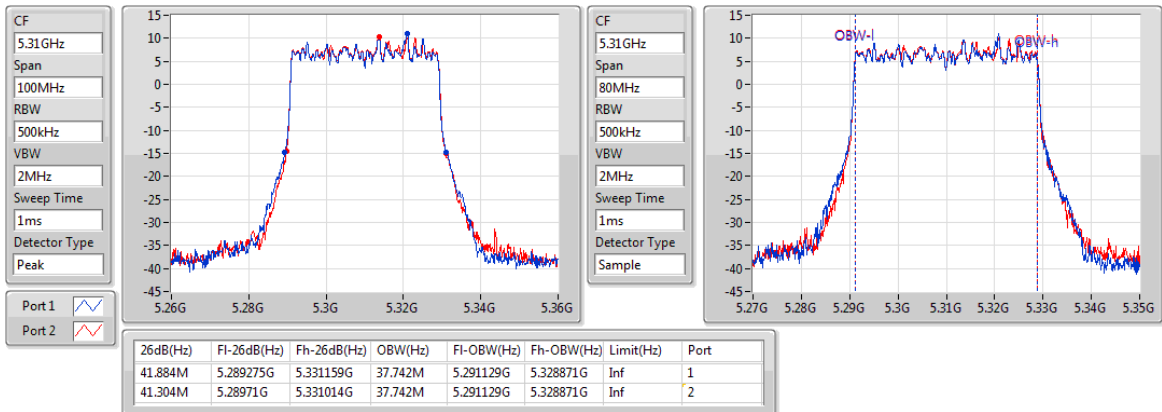
#### 5270MHz



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

EBW

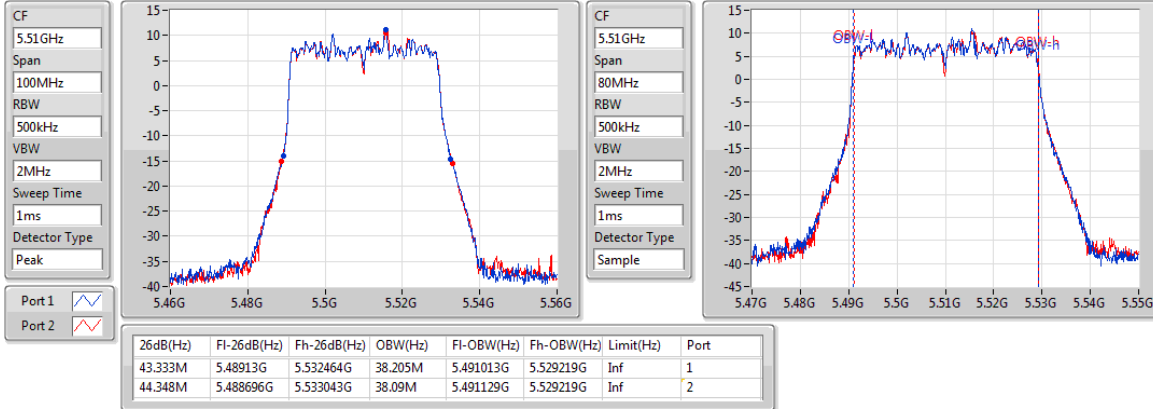
#### 5310MHz



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

EBW

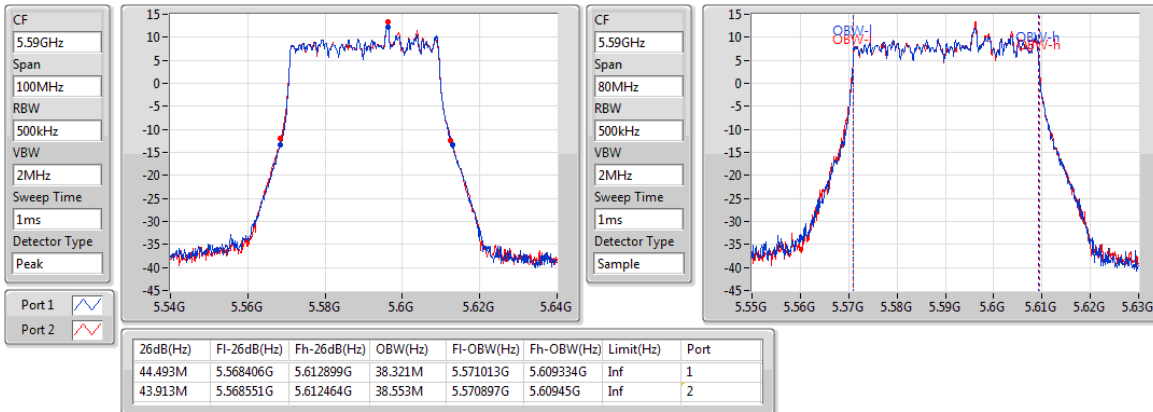
5510MHz



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

EBW

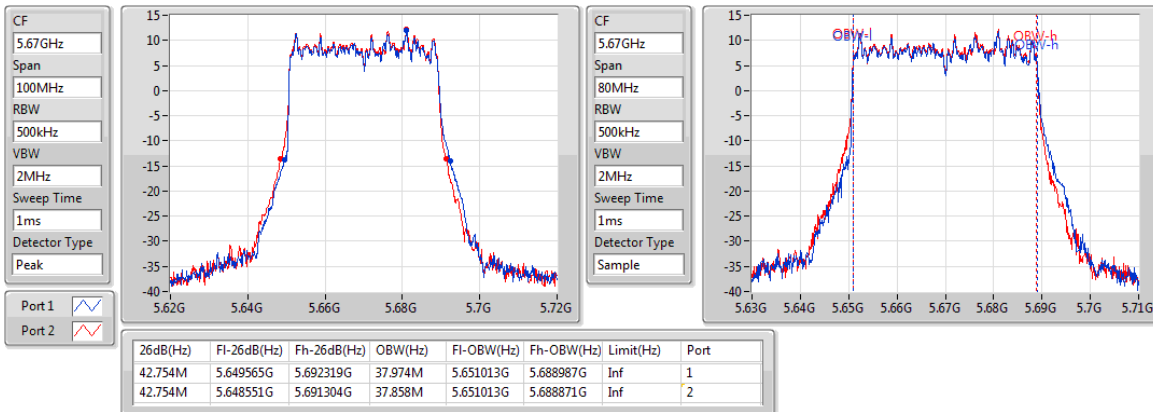
5590MHz



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

EBW

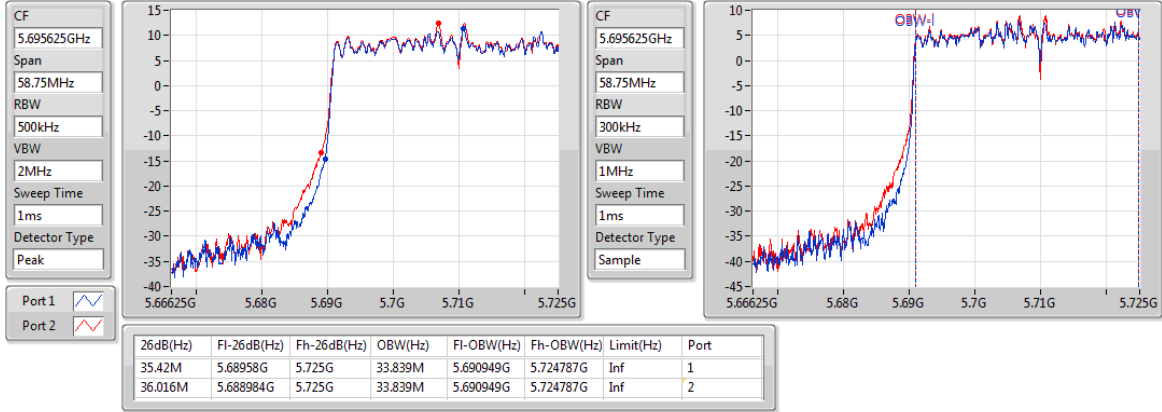
5670MHz



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

EBW

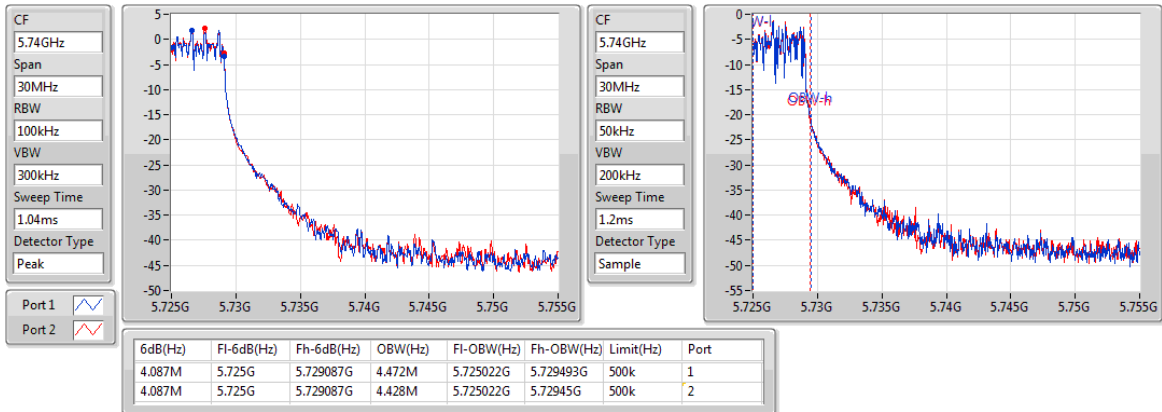
#### 5710MHz Straddle 5.47-5.725GHz



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

EBW

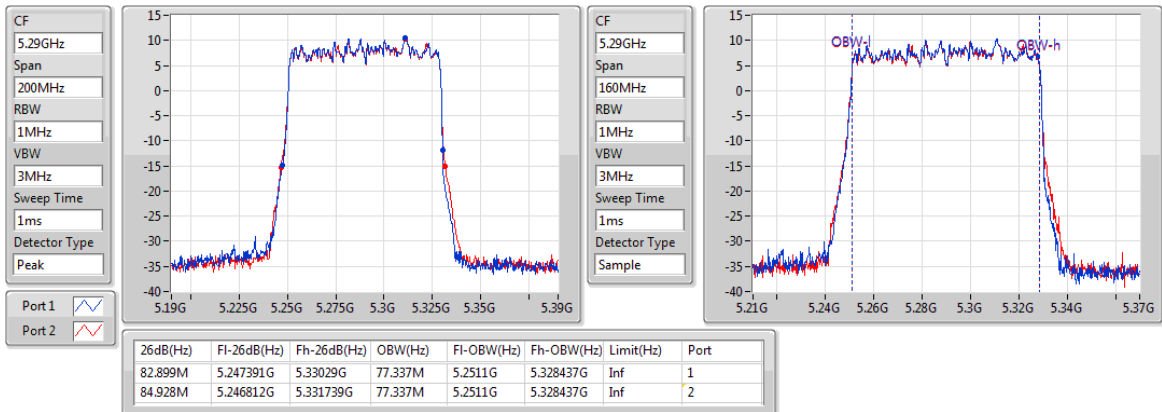
#### 5710MHz Straddle 5.725-5.85GHz



### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

EBW

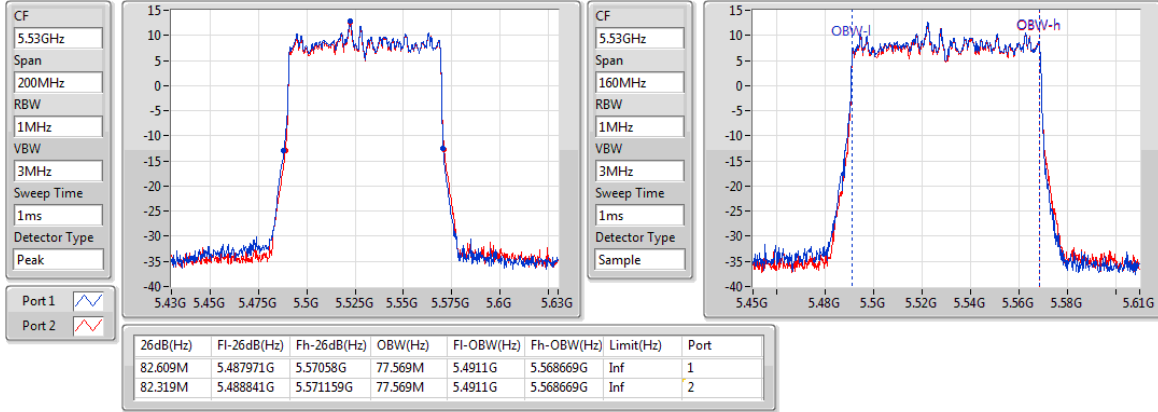
#### 5290MHz



### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

EBW

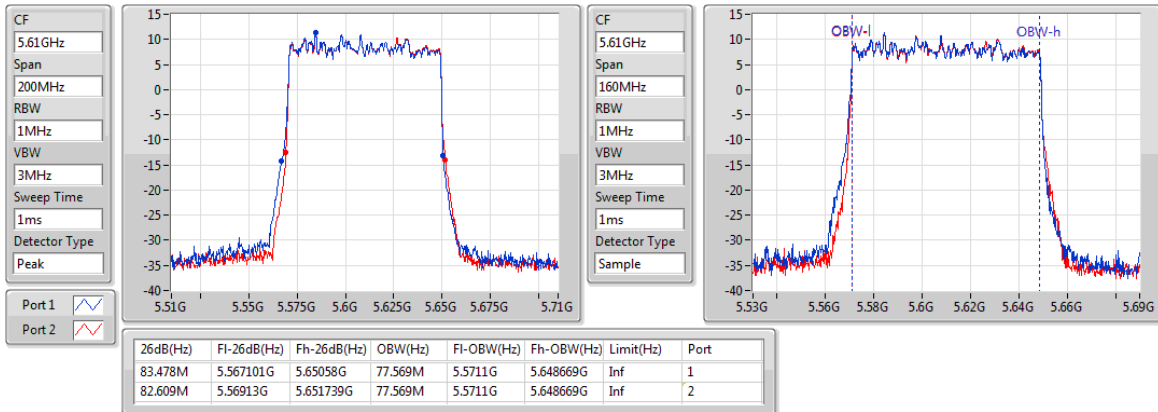
#### 5530MHz



### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

EBW

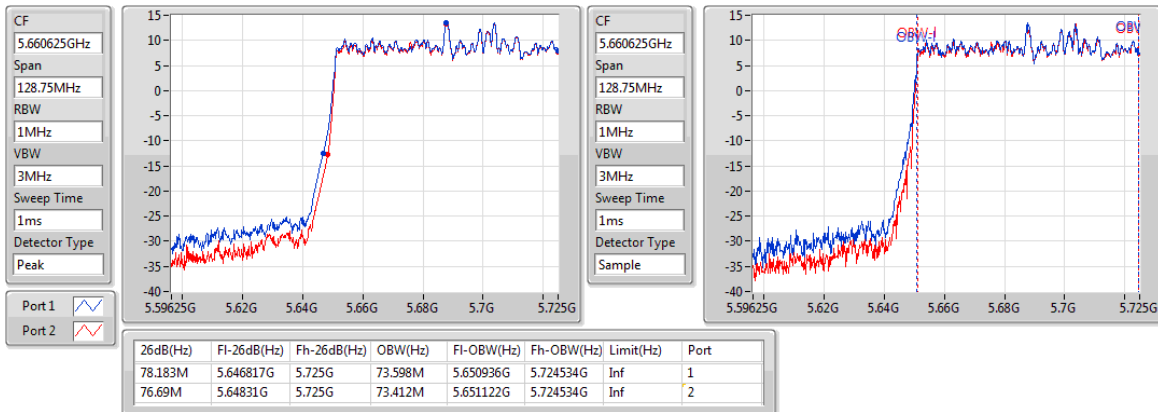
#### 5610MHz



### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

EBW

#### 5690MHz Straddle 5.47-5.725GHz

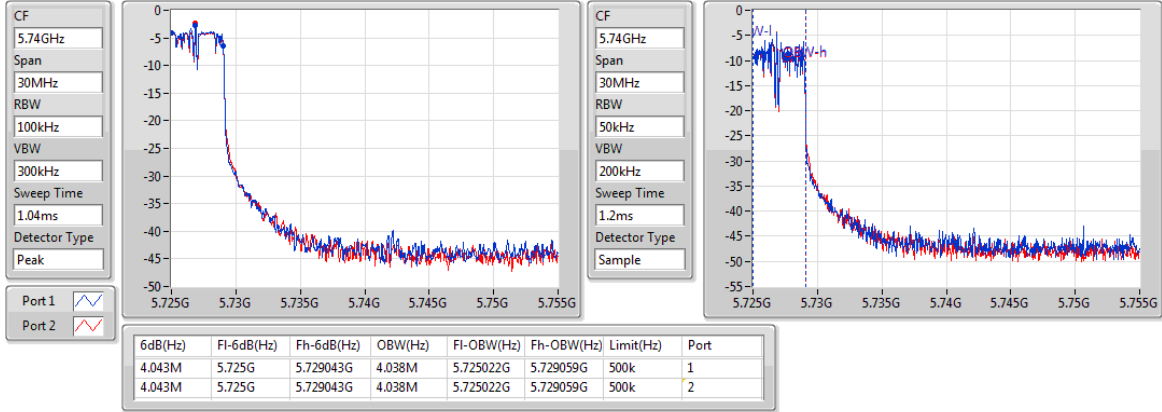




### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

EBW

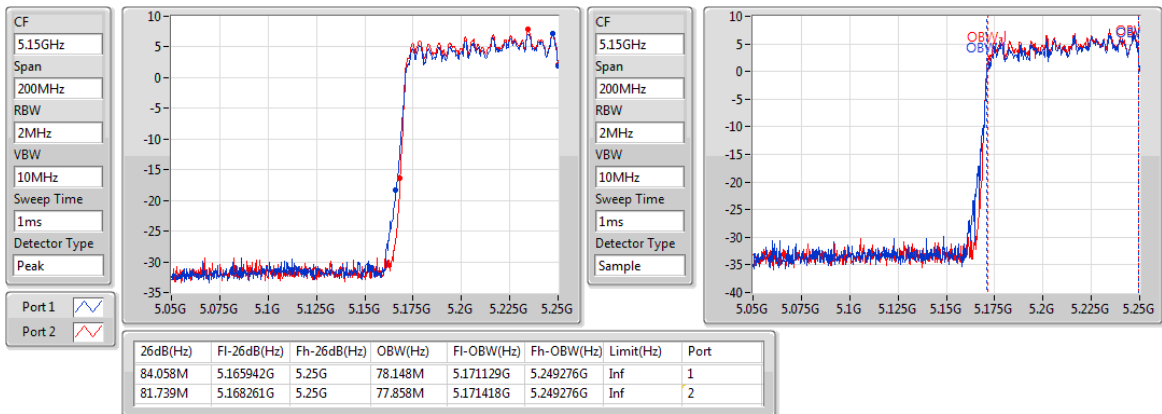
#### 5690MHz Straddle 5.725-5.85GHz



### 802.11ax HEW160\_Nss1,(MCS0)\_2TX

EBW

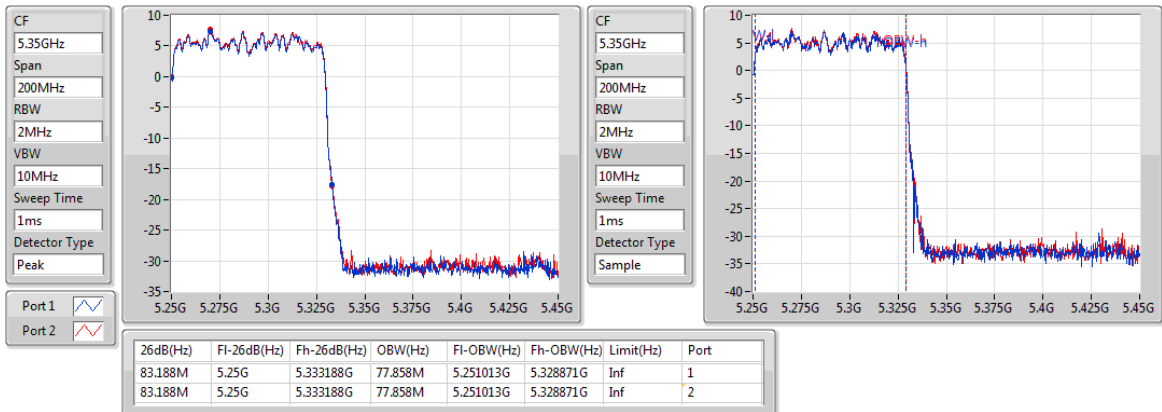
#### 5250MHz Straddle 5.15-5.25GHz



### 802.11ax HEW160\_Nss1,(MCS0)\_2TX

EBW

#### 5250MHz Straddle 5.25-5.35GHz

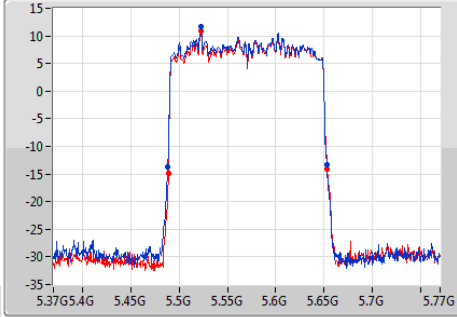


### 802.11ax HEW160\_Nss1,(MCS0)\_2TX

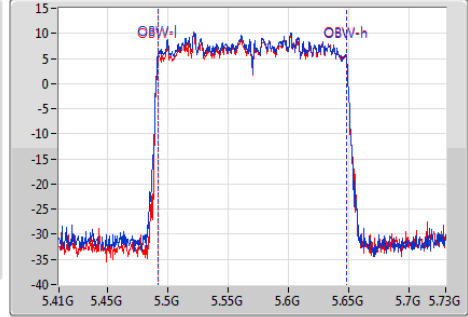
EBW

5570MHz

CF  
5.57GHz  
Span  
400MHz  
RBW  
2MHz  
VBW  
10MHz  
Sweep Time  
1ms  
Detector Type  
Peak



CF  
5.57GHz  
Span  
320MHz  
RBW  
2MHz  
VBW  
10MHz  
Sweep Time  
1ms  
Detector Type  
Sample



Port 1   
Port 2 

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
164.638M	5.488261G	5.652899G	156.064M	5.491737G	5.6478G	Inf	1
164.638M	5.488841G	5.653478G	155.601M	5.4922G	5.6478G	Inf	2

### 3.3 RF Output Power

#### 3.3.1 Limit of RF Output Power

Frequency band 5150-5250 MHz		
Operating Mode		Limit
<input type="checkbox"/>	Outdoor access point	Conducted Power: 1 W The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm)
<input checked="" type="checkbox"/>	Indoor access point	Conducted Power: 1 W
<input type="checkbox"/>	Fixed point-to-point access points	Conducted Power: 1 W
<input type="checkbox"/>	Client devices	Conducted Power: 250 mW

Frequency Band (MHz)		Limit
<input checked="" type="checkbox"/>	5250 ~ 5350	Conducted Power: 250mW or 11dBm+10 log B
<input checked="" type="checkbox"/>	5470 ~ 5725	Conducted Power: 250mW or 11dBm+10 log B
<input checked="" type="checkbox"/>	5725 ~ 5850	Conducted Power: 1 W

Note: "B" is the 26dB emission bandwidth in MHz.

#### 3.3.2 Test Procedures

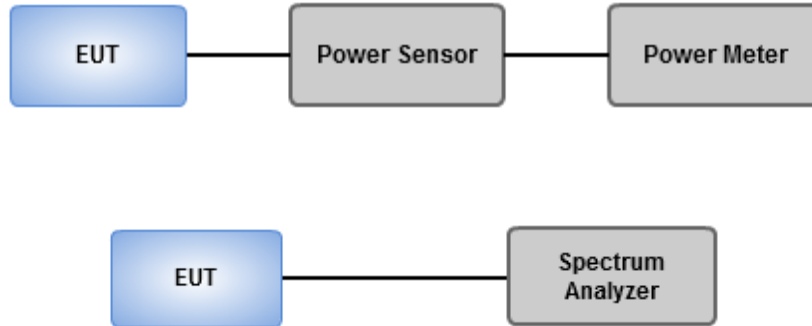
##### Method PM-G (Measurement using a gated RF average power meter)

Measurements is performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

##### Spectrum analyzer (For channel that extends across the 5.725 GHz boundary)

1. Set RBW = 1MHz, VBW = 3MHz, Sweep time = Auto, Detector = RMS.
2. Trace average at least 100 traces in power averaging mode.
3. Compute power by integrating the spectrum across the 26 dB EBW.
4. Add  $10 \log(1/X)$ , X:duty cycle) if duty cycle is <98%).

### 3.3.3 Test Setup



### 3.3.4 Test Result of Maximum Conducted Output Power

<b>Ambient Condition</b>	22~25°C / 65~68%	<b>Tested By</b>	Aska Huang
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#### *Non-beamforming mode*

##### Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT160_Nss1,(MCS0)_2TX	16.59	0.04560	19.64	0.09204
802.11ax HEW160_Nss1,(MCS0)_2TX	16.72	0.04699	19.77	0.09484
5.25-5.35GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	23.79	0.23933	27.70	0.58884
802.11ac VHT20_Nss1,(MCS0)_2TX	23.78	0.23878	27.69	0.58749
802.11ac VHT40_Nss1,(MCS0)_2TX	23.50	0.22387	27.41	0.55081
802.11ac VHT80_Nss1,(MCS0)_2TX	23.01	0.19999	26.92	0.49204
802.11ac VHT160_Nss1,(MCS0)_2TX	17.69	0.05875	21.60	0.14454
802.11ax HEW20_Nss1,(MCS0)_2TX	23.82	0.24099	27.73	0.59293
802.11ax HEW40_Nss1,(MCS0)_2TX	23.51	0.22439	27.42	0.55208
802.11ax HEW80_Nss1,(MCS0)_2TX	23.05	0.20184	26.96	0.49659
802.11ax HEW160_Nss1,(MCS0)_2TX	17.81	0.06039	21.72	0.14859
5.47-5.725GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	22.87	0.19364	27.86	0.61094
802.11ac VHT20_Nss1,(MCS0)_2TX	23.33	0.21528	28.32	0.67920
802.11ac VHT40_Nss1,(MCS0)_2TX	23.57	0.22751	28.56	0.71779
802.11ac VHT80_Nss1,(MCS0)_2TX	23.60	0.22909	28.59	0.72277
802.11ac VHT160_Nss1,(MCS0)_2TX	22.50	0.17783	27.49	0.56105
802.11ax HEW20_Nss1,(MCS0)_2TX	23.38	0.21777	28.37	0.68707
802.11ax HEW40_Nss1,(MCS0)_2TX	23.62	0.23014	28.61	0.72611
802.11ax HEW80_Nss1,(MCS0)_2TX	23.66	0.23227	28.65	0.73282

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
802.11ax HEW160_Nss1,(MCS0)_2TX	22.55	0.17989	27.54	0.56754
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.08	0.04055	20.68	0.11695
802.11ac VHT20_Nss1,(MCS0)_2TX	16.64	0.04613	21.24	0.13305
802.11ac VHT40_Nss1,(MCS0)_2TX	12.63	0.01832	17.23	0.05284
802.11ac VHT80_Nss1,(MCS0)_2TX	9.28	0.00847	13.88	0.02443
802.11ax HEW20_Nss1,(MCS0)_2TX	17.34	0.05420	21.94	0.15631
802.11ax HEW40_Nss1,(MCS0)_2TX	13.94	0.02477	18.54	0.07145
802.11ax HEW80_Nss1,(MCS0)_2TX	10.41	0.01099	15.01	0.03170

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5260MHz	Pass	3.91	20.52	20.85	23.70	24.00	27.61	30.00
5300MHz	Pass	3.91	20.75	20.8	23.79	24.00	27.70	30.00
5320MHz	Pass	3.91	20.71	20.82	23.78	24.00	27.69	30.00
5500MHz	Pass	4.99	19.99	19.56	22.79	24.00	27.78	30.00
5580MHz	Pass	4.99	20.01	19.7	22.87	24.00	27.86	30.00
5700MHz	Pass	4.99	19.54	19.81	22.69	24.00	27.68	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	4.99	18.95	19.31	22.14	23	27.13	29.00
5720MHz Straddle 5.725-5.85GHz	Pass	4.60	12.90	13.24	16.08	30.00	20.68	36.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5260MHz	Pass	3.91	20.61	20.93	23.78	24.00	27.69	30.00
5300MHz	Pass	3.91	20.58	20.85	23.73	24.00	27.64	30.00
5320MHz	Pass	3.91	20.31	20.95	23.65	24.00	27.56	30.00
5500MHz	Pass	4.99	20.18	20.01	23.11	24.00	28.10	30.00
5580MHz	Pass	4.99	20.37	20.27	23.33	24.00	28.32	30.00
5700MHz	Pass	4.99	19.91	20.3	23.12	24.00	28.11	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	4.99	18.75	19.28	22.03	22.93	27.02	30.00
5720MHz Straddle 5.725-5.85GHz	Pass	4.60	13.56	13.70	16.64	30.00	21.24	36.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5270MHz	Pass	3.91	20.19	20.77	23.50	24.00	27.41	30.00
5310MHz	Pass	3.91	19.68	19.95	22.83	24.00	26.74	30.00
5510MHz	Pass	4.99	19.61	19.83	22.73	24.00	27.72	30.00
5590MHz	Pass	4.99	20.58	20.49	23.55	24.00	28.54	30.00
5670MHz	Pass	4.99	20.34	20.77	23.57	24.00	28.56	30.00
5710MHz Straddle 5.47-5.725GHz	Pass	4.99	19.59	19.74	22.68	24.00	27.67	30.00
5710MHz Straddle 5.725-5.85GHz	Pass	4.60	9.54	9.69	12.63	30.00	17.23	36.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5290MHz	Pass	3.91	19.91	20.08	23.01	24.00	26.92	30.00
5530MHz	Pass	4.99	20.41	20.02	23.23	24.00	28.22	30.00
5610MHz	Pass	4.99	20.66	20.51	23.60	24.00	28.59	30.00
5690MHz Straddle 5.47-5.725GHz	Pass	4.99	20.47	20.09	23.29	24.00	28.28	30.00
5690MHz Straddle 5.725-5.85GHz	Pass	4.60	6.43	6.10	9.28	30.00	13.88	36.00
802.11ac VHT160_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	3.05	13.42	13.73	16.59	30.00	19.64	36.00

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
5250MHz Straddle 5.25-5.35GHz	Pass	3.91	14.65	14.71	17.69	24.00	21.60	30.00
5570MHz	Pass	4.99	19.88	19.05	22.50	24.00	27.49	30.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5260MHz	Pass	3.91	20.63	20.98	23.82	24.00	27.73	30.00
5300MHz	Pass	3.91	20.65	20.9	23.79	24.00	27.70	30.00
5320MHz	Pass	3.91	20.36	21.02	23.71	24.00	27.62	30.00
5500MHz	Pass	4.99	20.23	20.04	23.15	24.00	28.14	30.00
5580MHz	Pass	4.99	20.42	20.31	23.38	24.00	28.37	30.00
5700MHz	Pass	4.99	19.95	20.34	23.16	24.00	28.15	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	4.99	18.87	19.24	22.07	22.93	27.06	28.93
5720MHz Straddle 5.725-5.85GHz	Pass	4.60	14.02	14.62	17.34	30.00	21.94	36.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5270MHz	Pass	3.91	20.21	20.78	23.51	24.00	27.42	30.00
5310MHz	Pass	3.91	19.71	19.99	22.86	24.00	26.77	30.00
5510MHz	Pass	4.99	19.69	19.91	22.81	24.00	27.80	30.00
5590MHz	Pass	4.99	20.62	20.52	23.58	24.00	28.57	30.00
5670MHz	Pass	4.99	20.38	20.82	23.62	24.00	28.61	30.00
5710MHz Straddle 5.47-5.725GHz	Pass	4.99	19.94	20.28	23.12	24.00	28.11	30.00
5710MHz Straddle 5.725-5.85GHz	Pass	4.60	10.76	11.10	13.94	30.00	18.54	36.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5290MHz	Pass	3.91	19.95	20.13	23.05	24.00	26.96	30.00
5530MHz	Pass	4.99	20.46	20.07	23.28	24.00	28.27	30.00
5610MHz	Pass	4.99	20.71	20.58	23.66	24.00	28.65	30.00
5690MHz Straddle 5.47-5.725GHz	Pass	4.99	20.51	20.26	23.40	24.00	28.39	30.00
5690MHz Straddle 5.725-5.85GHz	Pass	4.60	7.49	7.31	10.41	30.00	15.01	36.00
802.11ax HEW160_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	3.05	13.67	13.74	16.72	30.00	19.77	36.00
5250MHz Straddle 5.25-5.35GHz	Pass	3.91	14.93	14.67	17.81	24.00	21.72	30.00
5570MHz	Pass	4.99	19.92	19.12	22.55	24.00	27.54	30.00

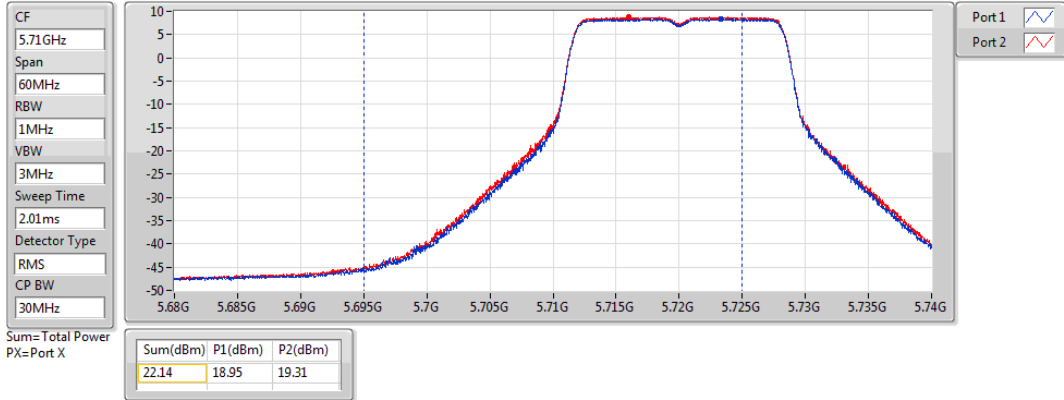
**DG** = Directional Gain; **Port X** = Port X output power



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

AV Power

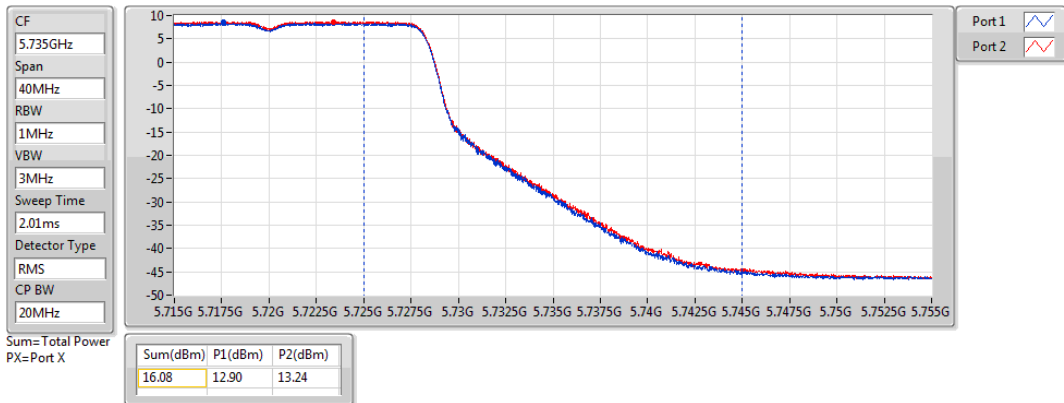
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### 802.11a\_Nss1,(6Mbps)\_2TX

AV Power

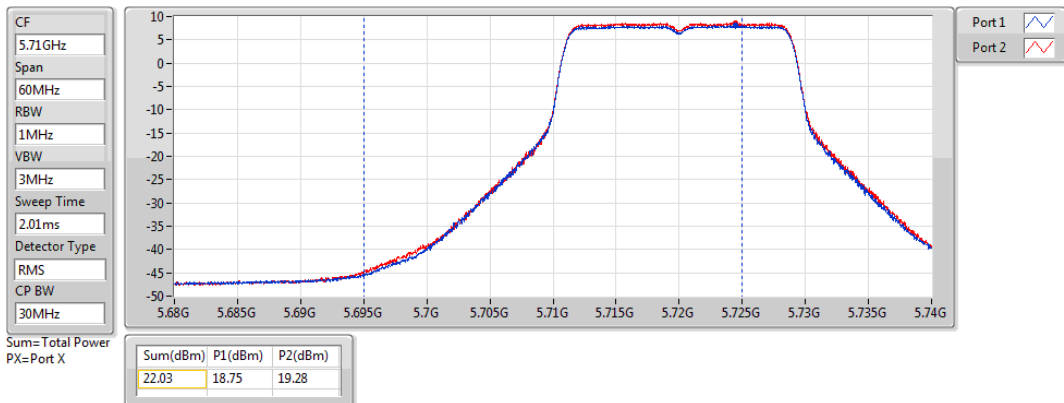
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### 802.11ac VHT20\_Nss1,(MCS0)\_2TX

AV Power

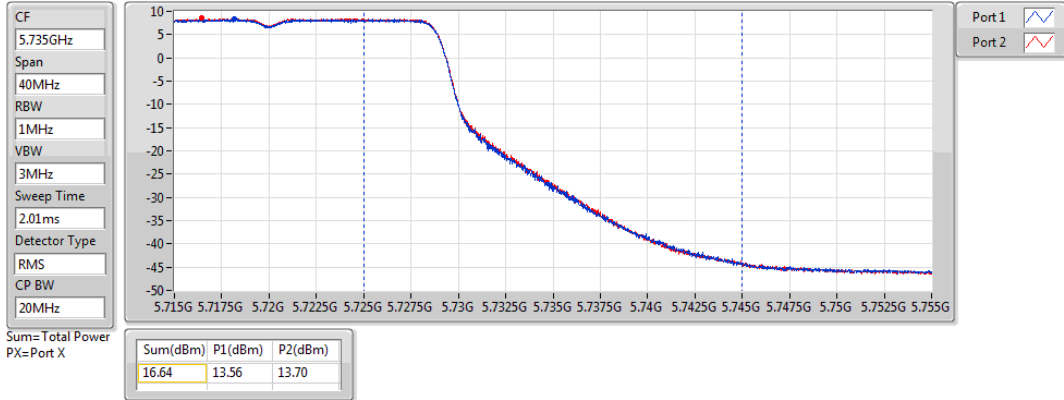
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### 802.11ac VHT20\_Nss1,(MCS0)\_2TX

AV Power

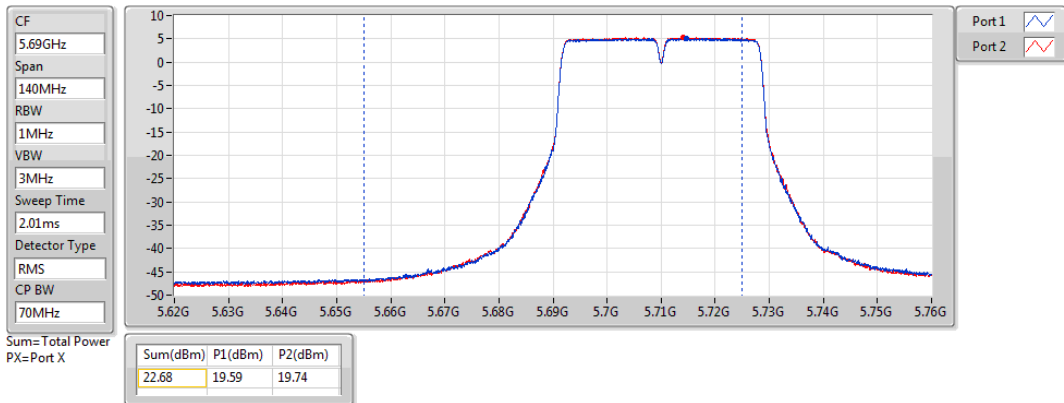
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### 802.11ac VHT40\_Nss1,(MCS0)\_2TX

AV Power

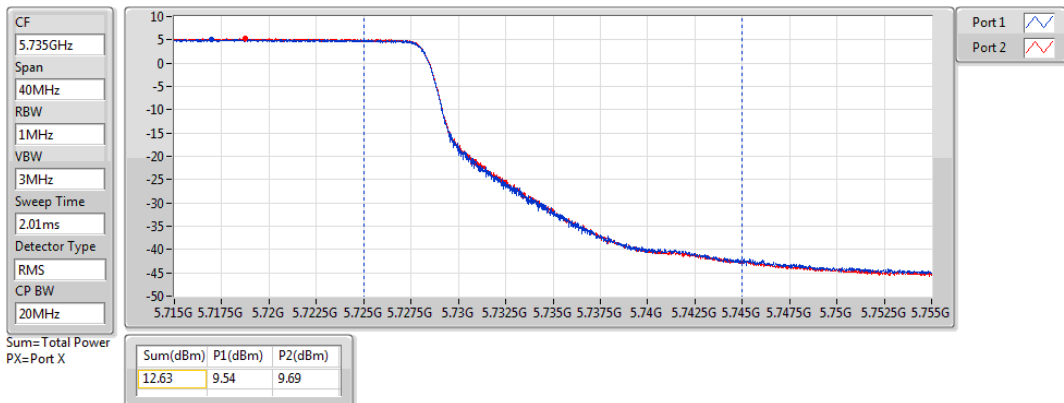
#### 5710MHz Straddle 5.47-5.725GHz\_TnomVnom



### 802.11ac VHT40\_Nss1,(MCS0)\_2TX

AV Power

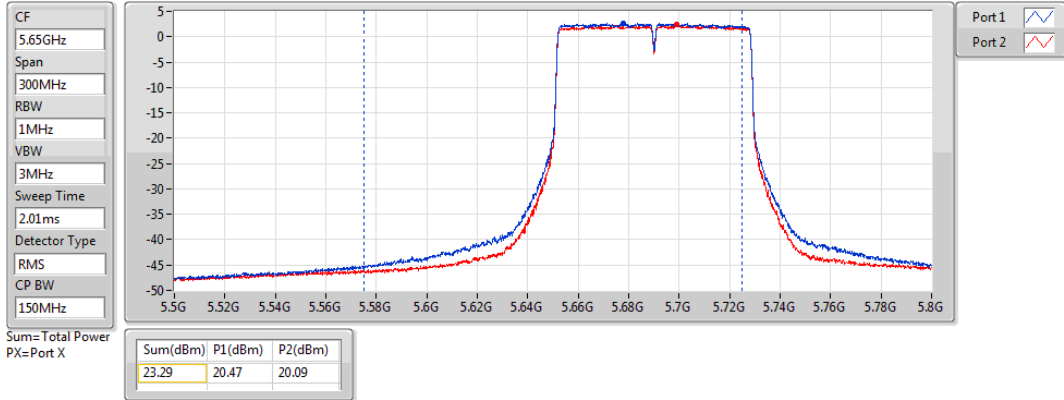
#### 5710MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ac VHT80\_Nss1,(MCS0)\_2TX

AV Power

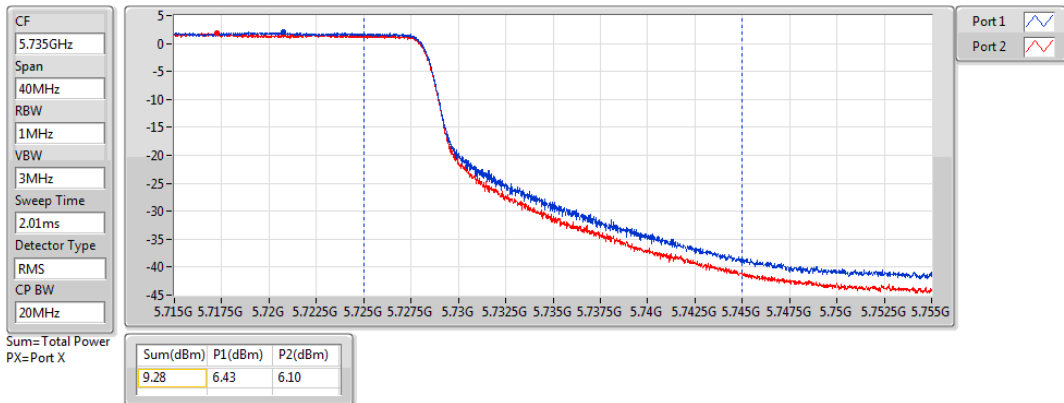
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### 802.11ac VHT80\_Nss1,(MCS0)\_2TX

AV Power

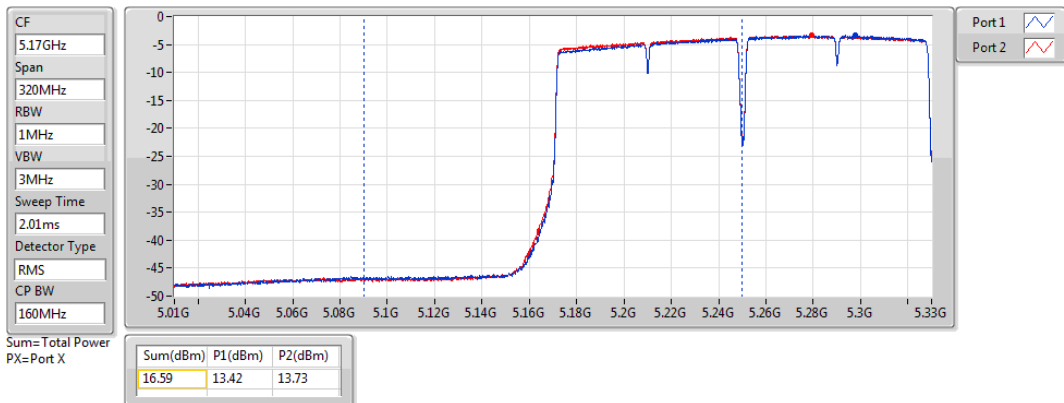
#### 5690MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ac VHT160\_Nss1,(MCS0)\_2TX

AV Power

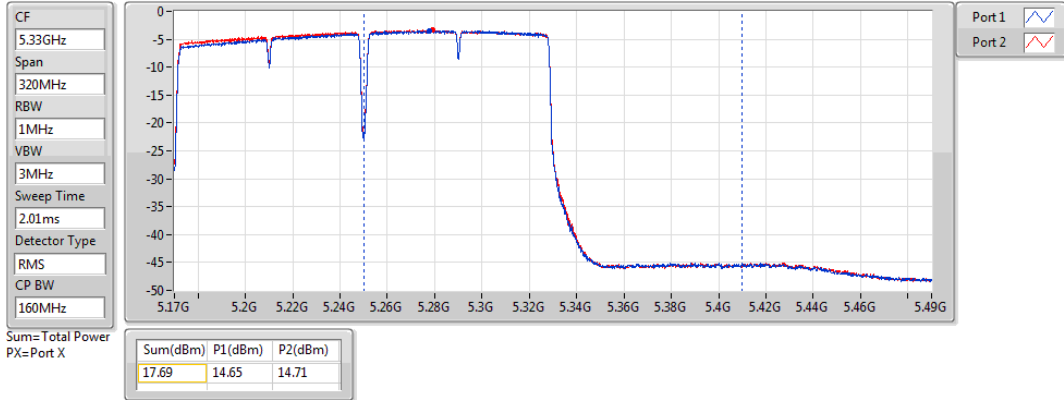
#### 5250MHz Straddle 5.15-5.25GHz\_TnomVnom



### 802.11ac VHT160\_Nss1,(MCS0)\_2TX

AV Power

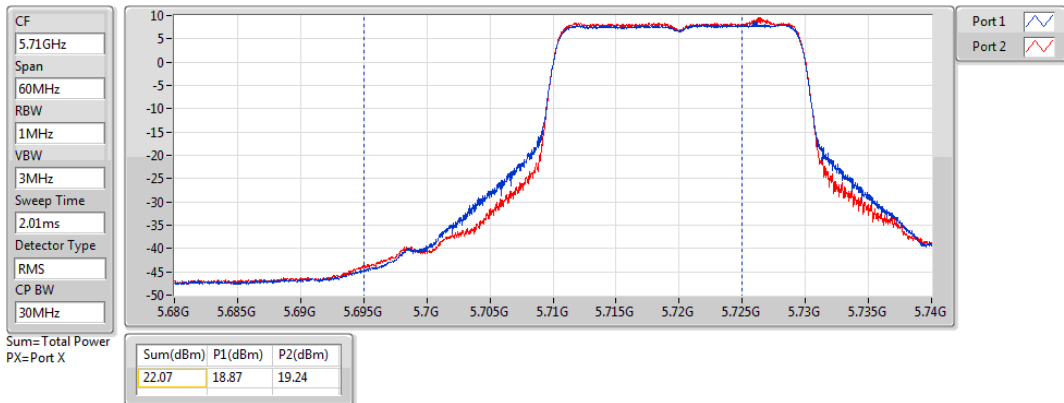
#### 5250MHz Straddle 5.25-5.35GHz\_TnomVnom



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

AV Power

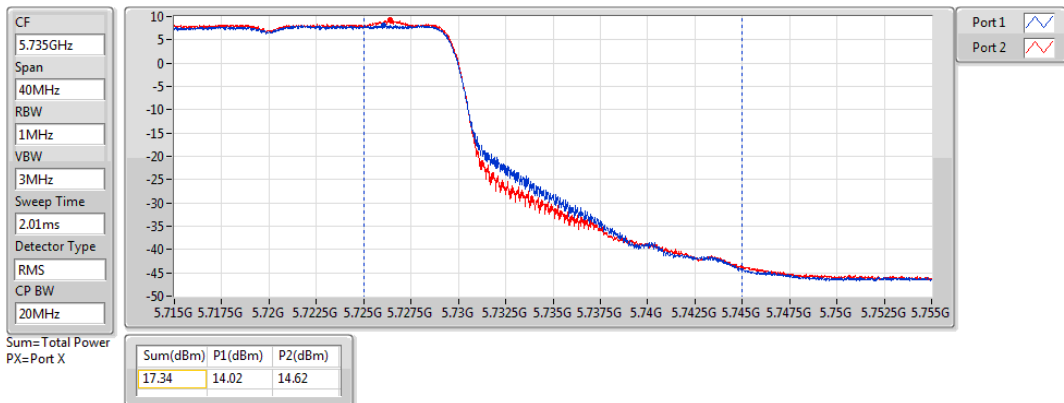
#### 5720MHz Straddle 5.47-5.725GHz\_TnomVnom



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

AV Power

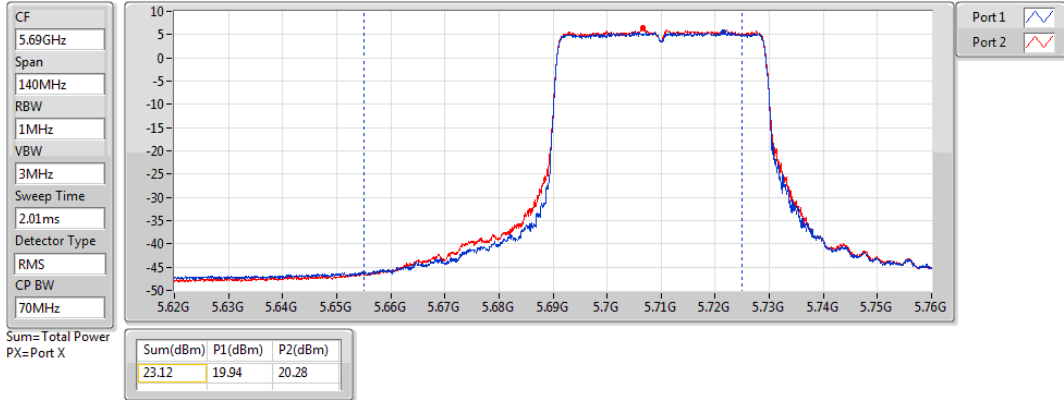
#### 5720MHz Straddle 5.725-5.85GHz\_TnomVnom



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

AV Power

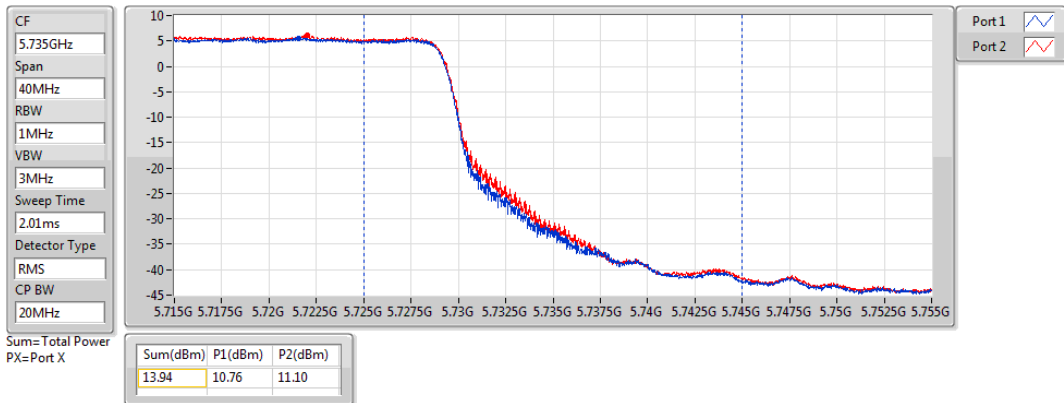
#### 5710MHz Straddle 5.47-5.725GHz\_TnomVnom



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

AV Power

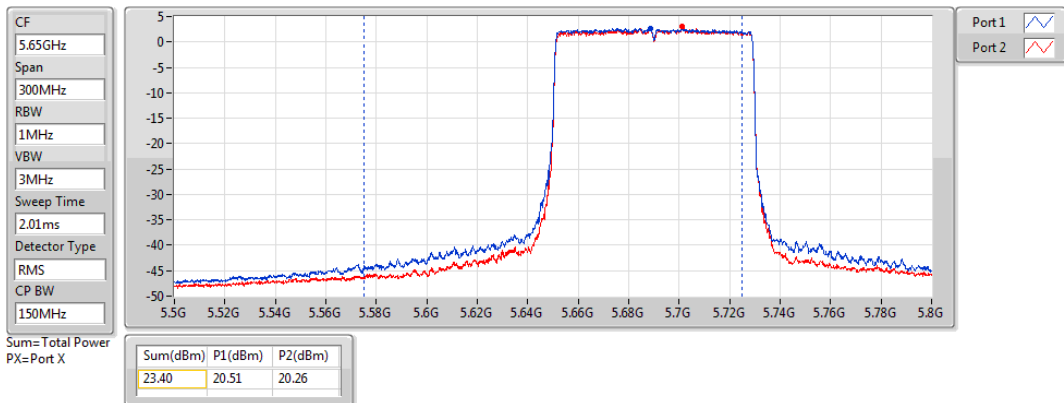
#### 5710MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

AV Power

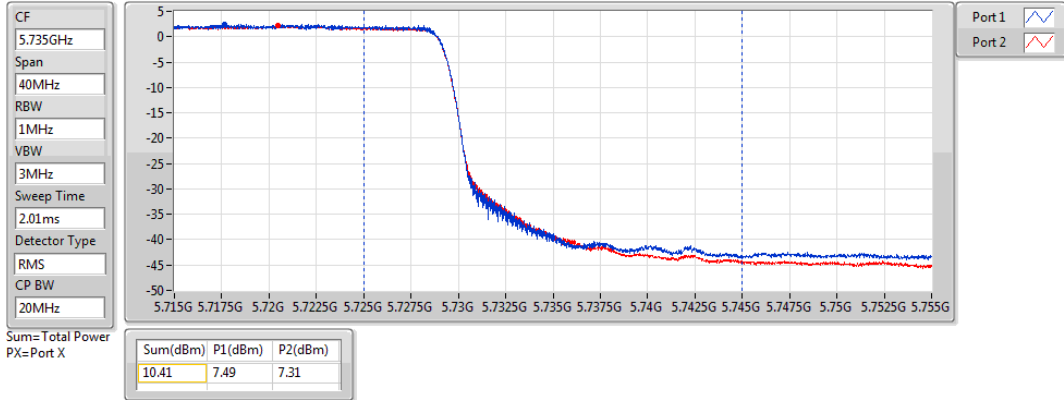
#### 5690MHz Straddle 5.47-5.725GHz\_TnomVnom



### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

AV Power

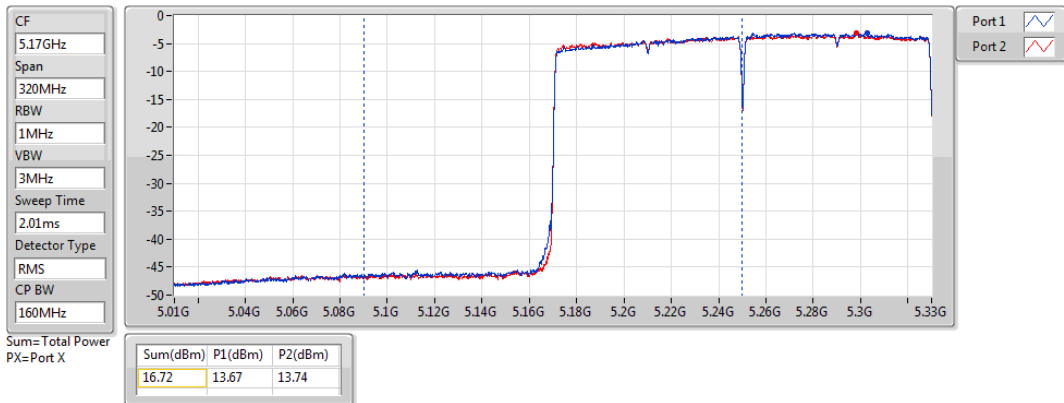
#### 5690MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ax HEW160\_Nss1,(MCS0)\_2TX

AV Power

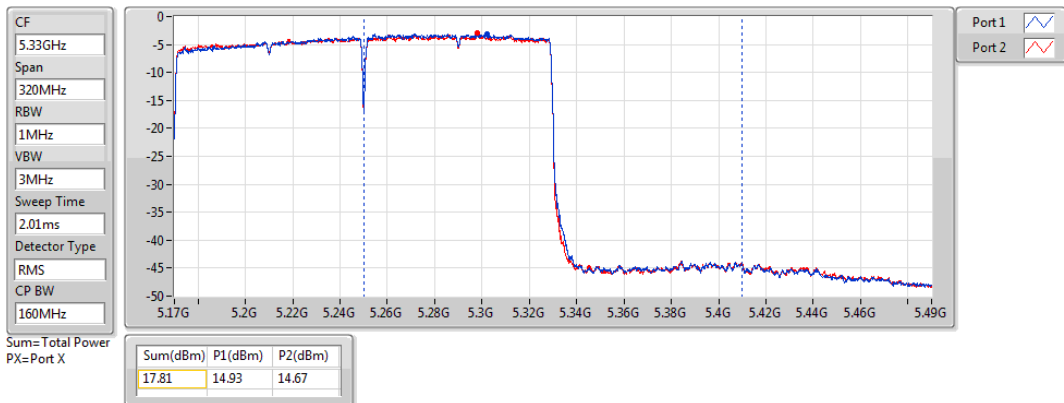
#### 5250MHz Straddle 5.15-5.25GHz\_TnomVnom



### 802.11ax HEW160\_Nss1,(MCS0)\_2TX

AV Power

#### 5250MHz Straddle 5.25-5.35GHz\_TnomVnom



## Beamforming mode

### Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT160-BF_Nss1,(MCS0)_2TX	16.47	0.04436	21.94	0.15631
802.11ax HEW160-BF_Nss1,(MCS0)_2TX	16.59	0.04560	22.06	0.16069
5.25-5.35GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	23.72	0.23550	29.87	0.97051
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	23.44	0.22080	29.59	0.90991
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	22.88	0.19409	29.03	0.79983
802.11ac VHT160-BF_Nss1,(MCS0)_2TX	17.52	0.05649	23.67	0.23281
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	23.73	0.23605	29.88	0.97275
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	23.47	0.22233	29.62	0.91622
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	22.97	0.19815	29.12	0.81658
802.11ax HEW160-BF_Nss1,(MCS0)_2TX	17.59	0.05741	23.74	0.23659
5.47-5.725GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	22.77	0.18923	29.80	0.95499
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	22.74	0.18793	29.77	0.94842
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	22.71	0.18664	29.74	0.94189
802.11ac VHT160-BF_Nss1,(MCS0)_2TX	22.41	0.17418	29.44	0.87902
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	22.87	0.19364	29.90	0.97724
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	22.80	0.19055	29.83	0.96161
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	22.78	0.18967	29.81	0.95719
802.11ax HEW160-BF_Nss1,(MCS0)_2TX	22.47	0.17660	29.50	0.89125
5.725-5.85GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	15.52	0.03565	22.25	0.16788
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	12.40	0.01738	19.13	0.08185

<b>Mode</b>	<b>Total Power (dBm)</b>	<b>Total Power (W)</b>	<b>EIRP (dBm)</b>	<b>EIRP (W)</b>
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	8.70	0.00741	15.43	0.03491
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	16.28	0.04246	23.01	0.19999
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	13.28	0.02128	20.01	0.10023
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	9.62	0.00916	16.35	0.04315



**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5260MHz	Pass	6.15	20.58	20.83	23.72	23.85	29.87	30.00
5300MHz	Pass	6.15	20.55	20.81	23.69	23.85	29.84	30.00
5320MHz	Pass	6.15	20.28	20.91	23.62	23.85	29.77	30.00
5500MHz	Pass	7.03	19.56	19.52	22.55	22.97	29.58	30.00
5580MHz	Pass	7.03	19.73	19.79	22.77	22.97	29.80	30.00
5700MHz	Pass	7.03	19.43	19.82	22.64	22.97	29.67	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	7.03	17.80	18.20	21.01	22.97	28.04	30.00
5720MHz Straddle 5.725-5.85GHz	Pass	6.73	12.33	12.69	15.52	29.27	22.25	36.00
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5270MHz	Pass	6.15	20.13	20.71	23.44	23.85	29.59	30.00
5310MHz	Pass	6.15	19.63	19.91	22.78	23.85	28.93	30.00
5510MHz	Pass	7.03	19.54	19.72	22.64	22.97	29.67	30.00
5590MHz	Pass	7.03	19.53	19.92	22.74	22.97	29.77	30.00
5670MHz	Pass	7.03	19.37	20.02	22.72	22.97	29.75	30.00
5710MHz Straddle 5.47-5.725GHz	Pass	7.03	19.37	19.52	22.46	22.97	29.49	30.00
5710MHz Straddle 5.725-5.85GHz	Pass	6.73	9.31	9.47	12.40	29.27	19.13	36.00
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5290MHz	Pass	6.15	19.83	19.91	22.88	23.85	29.03	30.00
5530MHz	Pass	7.03	19.95	19.43	22.71	22.97	29.74	30.00
5610MHz	Pass	7.03	19.72	19.58	22.66	22.97	29.69	30.00
5690MHz Straddle 5.47-5.725GHz	Pass	7.03	19.81	19.41	22.62	22.97	29.65	30.00
5690MHz Straddle 5.725-5.85GHz	Pass	6.73	5.86	5.51	8.70	29.27	15.43	36.00
802.11ac VHT160-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	5.47	13.39	13.52	16.47	30.00	21.94	36.00
5250MHz Straddle 5.25-5.35GHz	Pass	6.15	14.58	14.43	17.52	23.85	23.67	30.00
5570MHz	Pass	7.03	19.75	19.02	22.41	22.97	29.44	30.00
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5260MHz	Pass	6.15	20.59	20.85	23.73	23.85	29.88	30.00
5300MHz	Pass	6.15	20.58	20.83	23.72	23.85	29.87	30.00
5320MHz	Pass	6.15	20.27	20.98	23.65	23.85	29.80	30.00
5500MHz	Pass	7.03	19.86	19.56	22.72	22.97	29.75	30.00
5580MHz	Pass	7.03	19.91	19.81	22.87	22.97	29.90	30.00

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
5700MHz	Pass	7.03	19.48	19.79	22.65	22.97	29.68	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	7.03	18.04	18.26	21.16	22.97	28.19	30.00
5720MHz Straddle 5.725-5.85GHz	Pass	6.73	13.14	13.39	16.28	29.27	23.01	36.00
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5270MHz	Pass	6.15	20.18	20.73	23.47	23.85	29.62	30.00
5310MHz	Pass	6.15	19.68	19.93	22.82	23.85	28.97	30.00
5510MHz	Pass	7.03	19.61	19.75	22.69	22.97	29.72	30.00
5590MHz	Pass	7.03	19.62	19.95	22.80	22.97	29.83	30.00
5670MHz	Pass	7.03	19.41	20.12	22.79	22.97	29.82	30.00
5710MHz Straddle 5.47-5.725GHz	Pass	7.03	19.37	19.54	22.47	22.97	29.50	30.00
5710MHz Straddle 5.725-5.85GHz	Pass	6.73	10.14	10.39	13.28	29.27	20.01	36.00
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5290MHz	Pass	6.15	19.88	20.03	22.97	23.85	29.12	30.00
5530MHz	Pass	7.03	19.97	19.56	22.78	22.97	29.81	30.00
5610MHz	Pass	7.03	19.78	19.62	22.71	22.97	29.74	30.00
5690MHz Straddle 5.47-5.725GHz	Pass	7.03	19.88	19.49	22.70	22.97	29.73	30.00
5690MHz Straddle 5.725-5.85GHz	Pass	6.73	6.77	6.45	9.62	29.27	16.35	36.00
802.11ax HEW160-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	5.47	13.50	13.65	16.59	30.00	22.06	36.00
5250MHz Straddle 5.25-5.35GHz	Pass	6.15	14.65	14.51	17.59	23.85	23.74	30.00
5570MHz	Pass	7.03	19.82	19.07	22.47	22.97	29.50	30.00

Port X = Port X output power

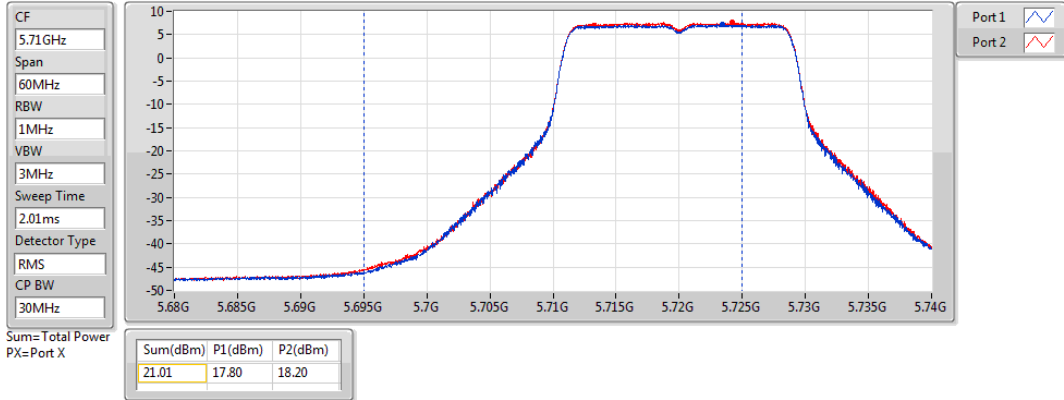
Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. DG = Directional gain  
 For 5.15 ~ 5.25 GHz, Directional Gain =  $10 * \log((10^{1.83/20} + 10^{3.05/20})^2 / 2) = 5.47$  dBi  
 For 5.25 ~ 5.35 GHz, Directional Gain =  $10 * \log((10^{2.29/20} + 10^{3.91/20})^2 / 2) = 6.15$  dBi > 6 dBi, limit shall be reduced to 24 dBm - ( 6.15 dBi - 6 dBi ) = 23.85 dBm;  
 For 5.15 ~ 5.25 GHz, Directional Gain =  $10 * \log((10^{2.93/20} + 10^{4.99/20})^2 / 2) = 7.03$  dBi > 6 dBi, limit shall be reduced to 24 dBm - ( 7.03 dBi - 6 dBi ) = 22.97 dBm;  
 For 5.725 ~ 5.85 GHz, Directional Gain =  $10 * \log((10^{2.73/20} + 10^{4.6/20})^2 / 2) = 6.73$  dBi > 6 dBi, limit shall be reduced to 30 dBm - ( 6.73 dBi - 6 dBi ) = 29.27 dBm;

### 802.11ac VHT20-BF\_Nss1,(MCS0)\_2TX

AV Power

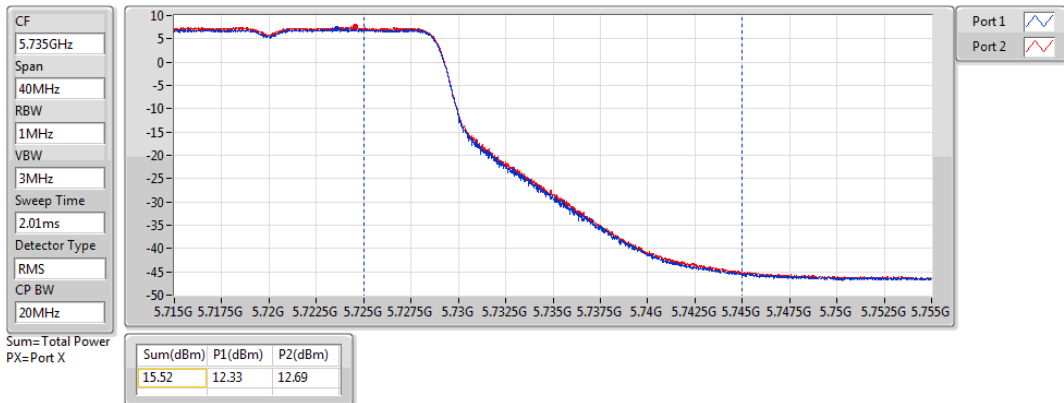
#### 5720MHz Straddle 5.47-5.725GHz\_TnomVnom



### 802.11ac VHT20-BF\_Nss1,(MCS0)\_2TX

AV Power

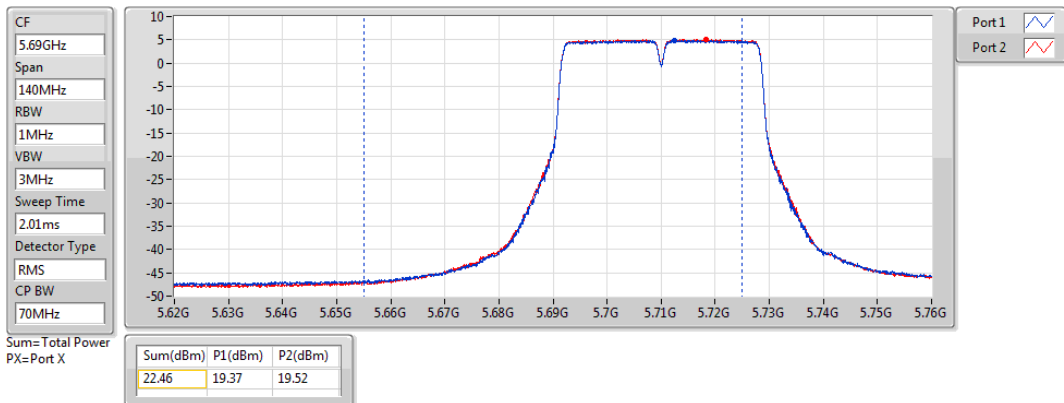
#### 5720MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ac VHT40-BF\_Nss1,(MCS0)\_2TX

AV Power

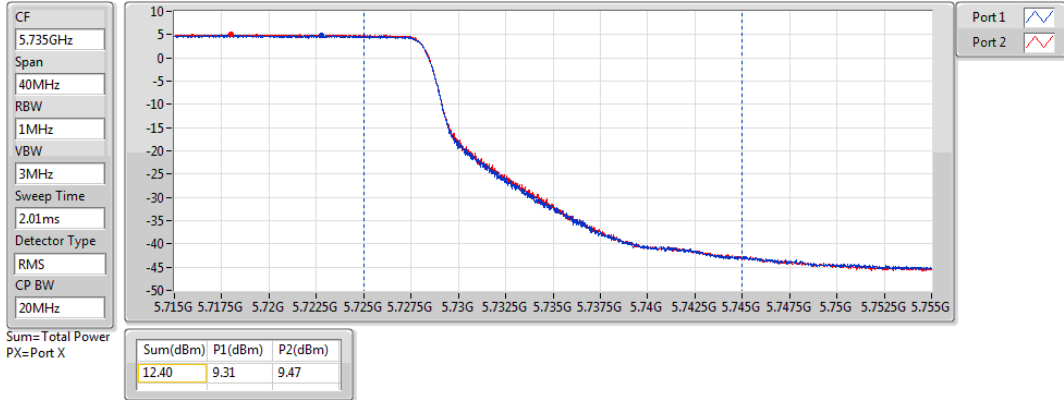
#### 5710MHz Straddle 5.47-5.725GHz\_TnomVnom



### 802.11ac VHT40-BF\_Nss1,(MCS0)\_2TX

AV Power

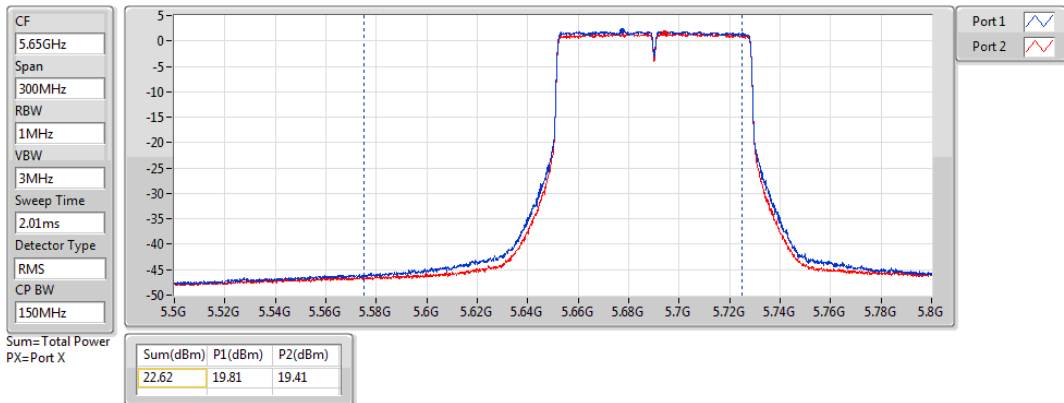
#### 5710MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ac VHT80-BF\_Nss1,(MCS0)\_2TX

AV Power

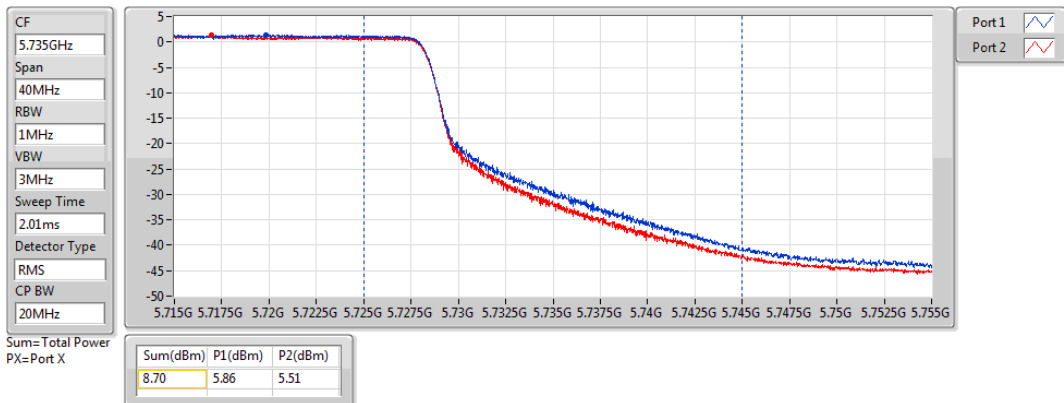
#### 5690MHz Straddle 5.47-5.725GHz\_TnomVnom



### 802.11ac VHT80-BF\_Nss1,(MCS0)\_2TX

AV Power

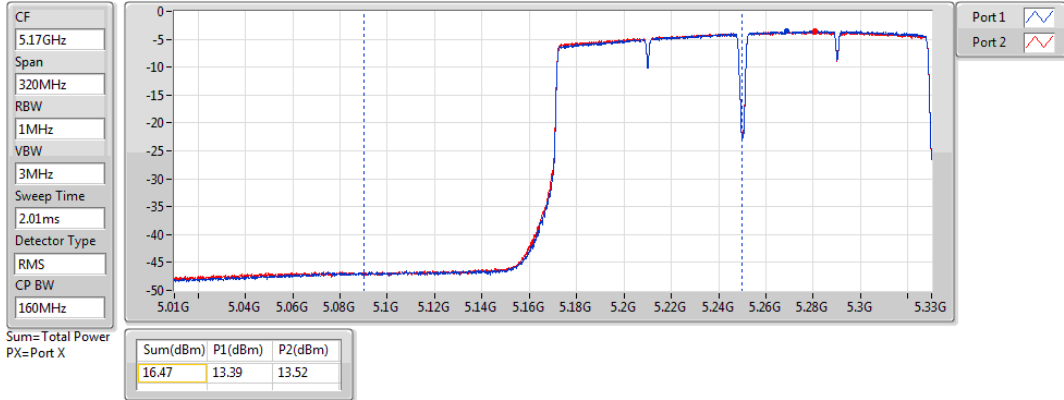
#### 5690MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ac VHT160-BF\_Nss1,(MCS0)\_2TX

AV Power

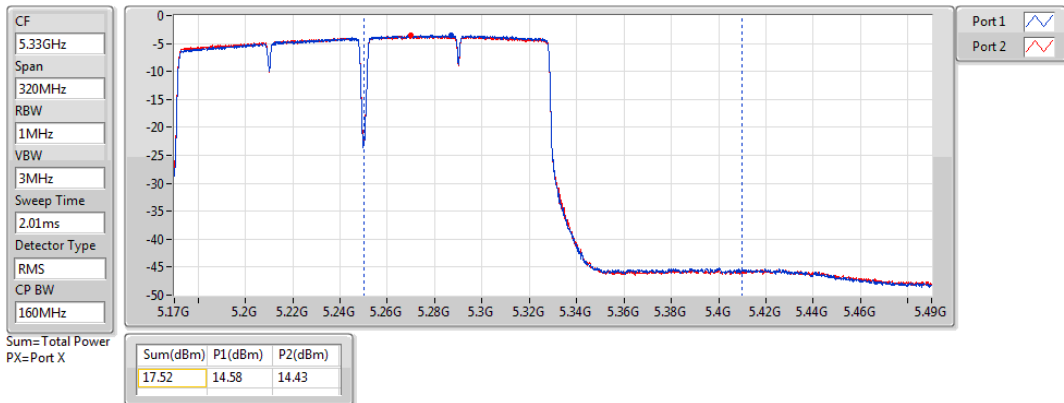
#### 5250MHz Straddle 5.15-5.25GHz\_TnomVnom



### 802.11ac VHT160-BF\_Nss1,(MCS0)\_2TX

AV Power

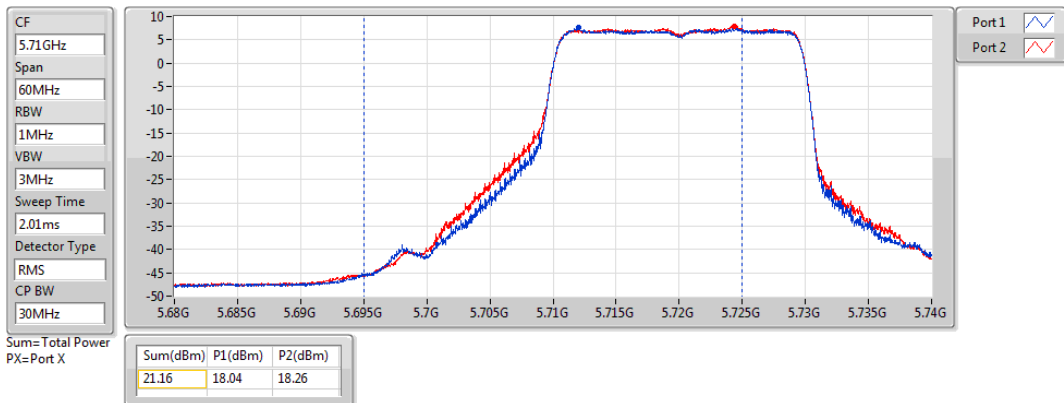
#### 5250MHz Straddle 5.25-5.35GHz\_TnomVnom



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

AV Power

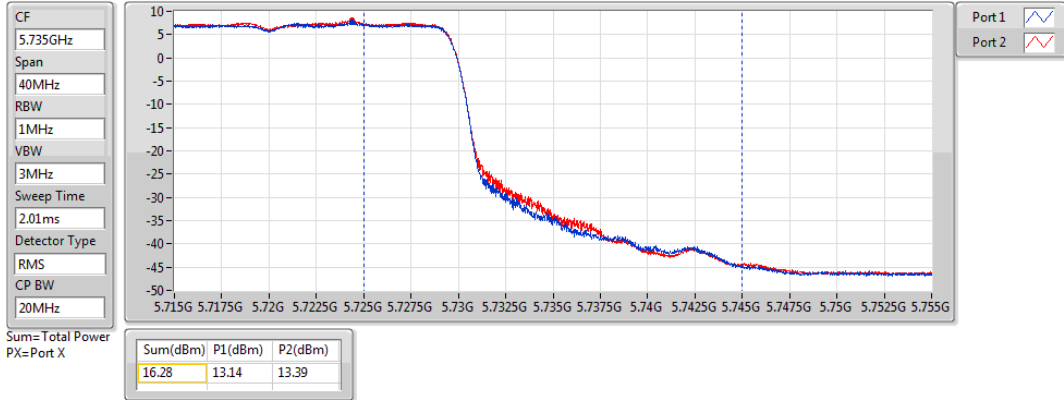
#### 5720MHz Straddle 5.47-5.725GHz\_TnomVnom



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

AV Power

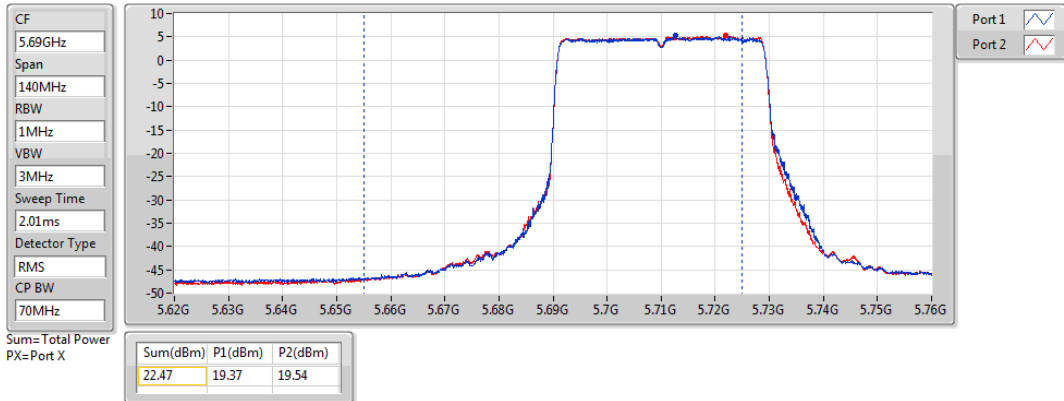
#### 5720MHz Straddle 5.725-5.85GHz\_TnomVnom



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

AV Power

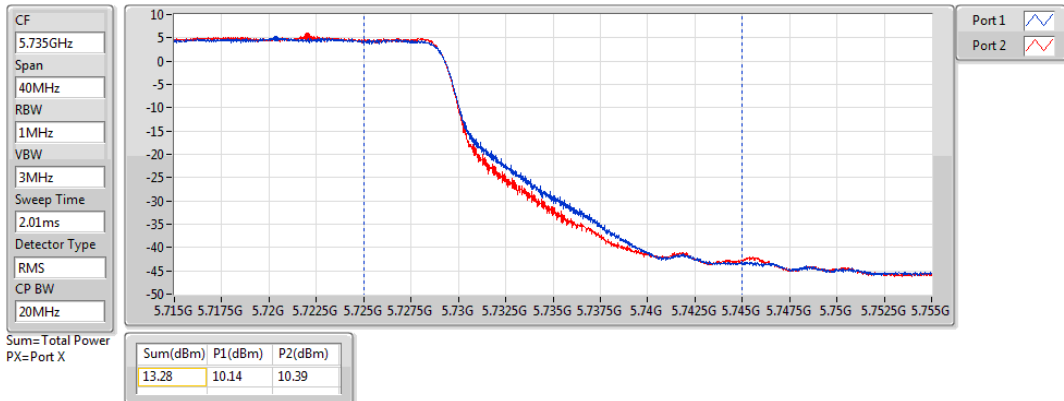
#### 5710MHz Straddle 5.47-5.725GHz\_TnomVnom



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

AV Power

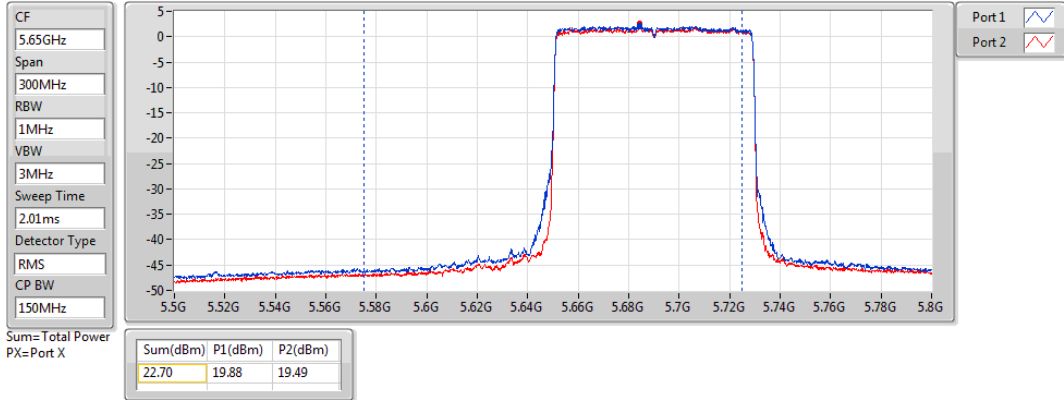
#### 5710MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ax HEW80-BF\_Nss1,(MCS0)\_2TX

AV Power

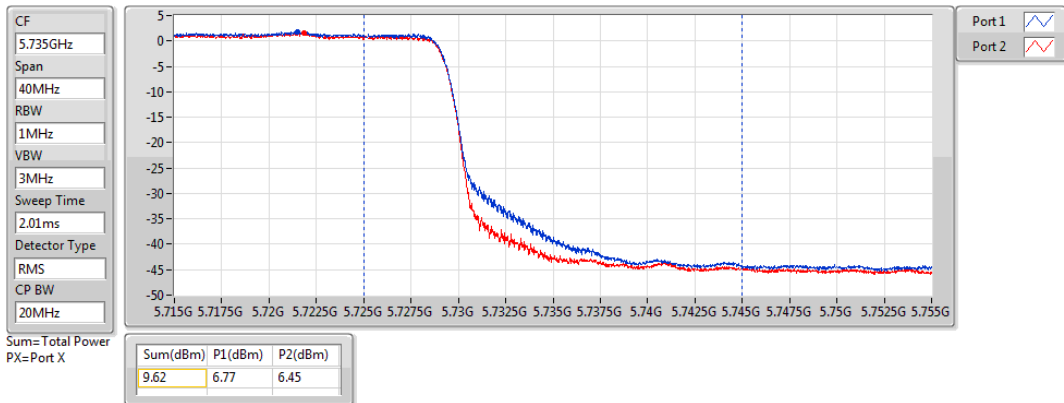
#### 5690MHz Straddle 5.47-5.725GHz\_TnomVnom



### 802.11ax HEW80-BF\_Nss1,(MCS0)\_2TX

AV Power

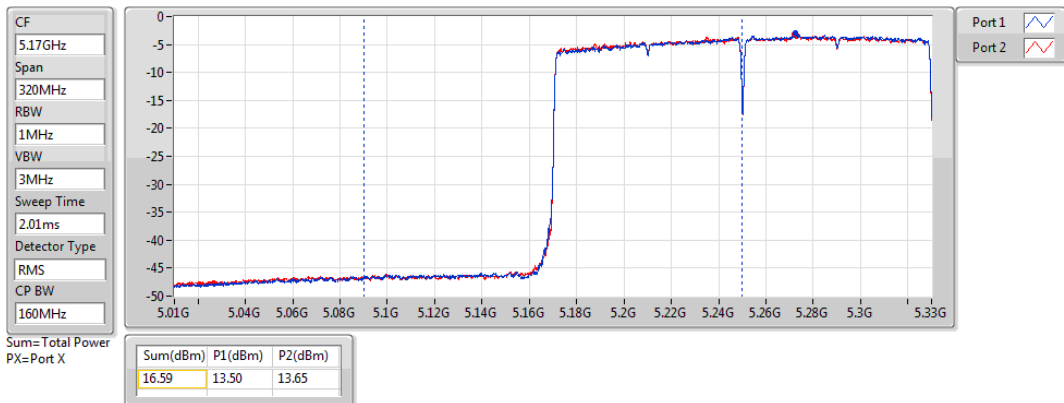
#### 5690MHz Straddle 5.725-5.85GHz\_TnomVnom



### 802.11ax HEW160-BF\_Nss1,(MCS0)\_2TX

AV Power

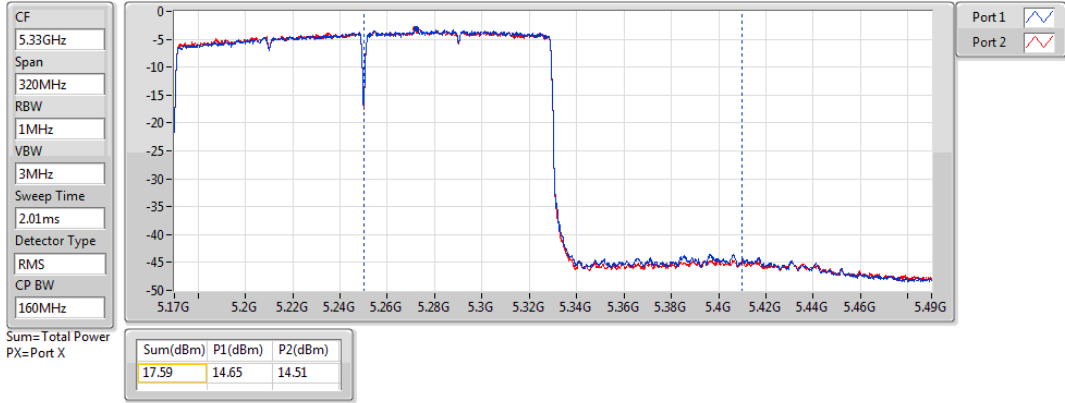
#### 5250MHz Straddle 5.15-5.25GHz\_TnomVnom



**802.11ax HEW160-BF\_Nss1,(MCS0)\_2TX**

**AV Power**

**5250MHz Straddle 5.25-5.35GHz\_TnomVnom**





### 3.4 Peak Power Spectral Density

#### 3.4.1 Limit of Peak Power Spectral Density

Frequency band 5150-5250 MHz	
Operating Mode	Limit
<input type="checkbox"/> Outdoor access point	17 dBm / MHz
<input checked="" type="checkbox"/> Indoor access point	17 dBm / MHz
<input type="checkbox"/> Fixed point-to-point access points	17 dBm / MHz
<input type="checkbox"/> Client devices	11 dBm / MHz

Frequency Band (MHz)	Limit
<input checked="" type="checkbox"/> 5250 ~ 5350	11 dBm / MHz
<input checked="" type="checkbox"/> 5470 ~ 5725	11 dBm / MHz
<input checked="" type="checkbox"/> 5725 ~ 5850	30 dBm /500 kHz

#### 3.4.2 Test Procedures

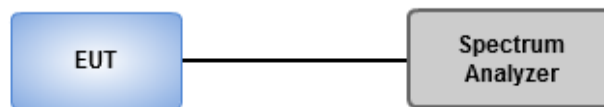
##### 5150 ~ 5250 MHz / 5250 ~ 5350 MHz / 5470 ~ 5725 MHz

1. Set RBW = 1 MHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

##### 5725 ~ 5850 MHz

1. Set RBW = 500 kHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

#### 3.4.3 Test Setup



### 3.4.4 Test Result of Peak Power Spectral Density

<b>Ambient Condition</b>	22~25°C / 65~68%	<b>Tested By</b>	Aska Huang
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#### Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ax HEW160_Nss1,(MCS0)_2TX	-2.54	2.93
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	10.64	16.79
802.11ax HEW20_Nss1,(MCS0)_2TX	10.62	16.77
802.11ax HEW40_Nss1,(MCS0)_2TX	6.86	13.01
802.11ax HEW80_Nss1,(MCS0)_2TX	3.49	9.64
802.11ax HEW160_Nss1,(MCS0)_2TX	-2.44	3.71
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	9.83	16.86
802.11ax HEW20_Nss1,(MCS0)_2TX	9.87	16.90
802.11ax HEW40_Nss1,(MCS0)_2TX	7.28	14.31
802.11ax HEW80_Nss1,(MCS0)_2TX	4.14	11.17
802.11ax HEW160_Nss1,(MCS0)_2TX	-0.34	6.69
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	8.11	14.84
802.11ax HEW20_Nss1,(MCS0)_2TX	8.47	15.20
802.11ax HEW40_Nss1,(MCS0)_2TX	5.41	12.14
802.11ax HEW80_Nss1,(MCS0)_2TX	1.59	8.32

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

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm/RB W)	Port 2 (dBm/RB W)	PD (dBm/RB W)	PD Limit (dBm/RB W)	EIRP PD (dBm/RB W)	EIRP PD Limit (dBm/RB W)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5260MHz	Pass	6.15	7.26	7.60	10.35	10.85	16.50	17.00
5300MHz	Pass	6.15	7.53	7.60	10.50	10.85	16.65	17.00
5320MHz	Pass	6.15	7.64	7.79	10.64	10.85	16.79	17.00
5500MHz	Pass	7.03	6.76	6.35	9.50	9.97	16.53	17.00
5580MHz	Pass	7.03	6.97	6.83	9.83	9.97	16.86	17.00
5700MHz	Pass	7.03	6.23	6.95	9.52	9.97	16.55	17.00
5720MHz Straddle 5.47-5.725GHz	Pass	7.03	6.66	7.07	9.83	9.97	16.86	17.00
5720MHz Straddle 5.725-5.85GHz	Pass	6.73	5.01	5.39	8.11	29.27	14.84	36.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5260MHz	Pass	6.15	7.15	7.65	10.42	10.85	16.57	17.00
5300MHz	Pass	6.15	7.42	7.83	10.62	10.85	16.77	17.00
5320MHz	Pass	6.15	6.86	7.96	10.35	10.85	16.50	17.00
5500MHz	Pass	7.03	6.99	6.56	9.69	9.97	16.72	17.00
5580MHz	Pass	7.03	7.11	6.75	9.87	9.97	16.90	17.00
5700MHz	Pass	7.03	6.32	6.96	9.57	9.97	16.60	17.00
5720MHz Straddle 5.47-5.725GHz	Pass	7.03	6.35	6.95	9.64	9.97	16.67	17.00
5720MHz Straddle 5.725-5.85GHz	Pass	6.73	4.98	6.11	8.47	29.27	15.20	36.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5270MHz	Pass	6.15	3.89	4.36	6.86	10.85	13.01	17.00
5310MHz	Pass	6.15	3.12	3.58	6.37	10.85	12.52	17.00
5510MHz	Pass	7.03	2.91	3.32	5.99	9.97	13.02	17.00
5590MHz	Pass	7.03	4.11	4.75	7.28	9.97	14.31	17.00
5670MHz	Pass	7.03	3.77	4.59	7.00	9.97	14.03	17.00
5710MHz Straddle 5.47-5.725GHz	Pass	7.03	3.91	4.79	7.18	9.97	14.21	17.00
5710MHz Straddle 5.725-5.85GHz	Pass	6.73	2.19	2.77	5.41	29.27	12.14	36.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5290MHz	Pass	6.15	0.90	0.73	3.49	10.85	9.64	17.00
5530MHz	Pass	7.03	0.95	0.72	3.82	9.97	10.85	17.00
5610MHz	Pass	7.03	0.86	1.04	3.81	9.97	10.84	17.00
5690MHz Straddle 5.47-5.725GHz	Pass	7.03	1.09	1.30	4.14	9.97	11.17	17.00
5690MHz Straddle 5.725-5.85GHz	Pass	6.73	-1.31	-1.51	1.59	29.27	8.32	36.00
802.11ax HEW160_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	5.47	-5.73	-5.20	-2.54	17.00	2.93	23.00
5250MHz Straddle 5.25-5.35GHz	Pass	6.15	-5.51	-5.24	-2.44	10.85	3.71	17.00
5570MHz	Pass	7.03	-3.10	-3.27	-0.34	9.97	6.69	17.00

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

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

**DG** = Directional gain

For 5.15 ~ 5.25 GHz, Directional Gain =  $10 * \log((10^{1.83/20} + 10^{3.05/20})^2 / 2) = 5.47$  dBi

For 5.25 ~ 5.35 GHz, Directional Gain =  $10 * \log((10^{2.29/20} + 10^{3.91/20})^2 / 2) = 6.15$  dBi > 6 dBi, limit shall be reduced to 11

---

$\text{dBm} - (6.15 \text{ dBi} - 6 \text{ dBi}) = 10.85 \text{ dBm};$

For 5.15 ~ 5.25 GHz, Directional Gain  $= 10 * \log((10^{2.93/20} + 10^{4.99/20})^2 / 2) = 7.03 \text{ dBi} > 6 \text{ dBi}$ , limit shall be reduced to 11

$\text{dBm} - (7.03 \text{ dBi} - 6 \text{ dBi}) = 9.97 \text{ dBm};$

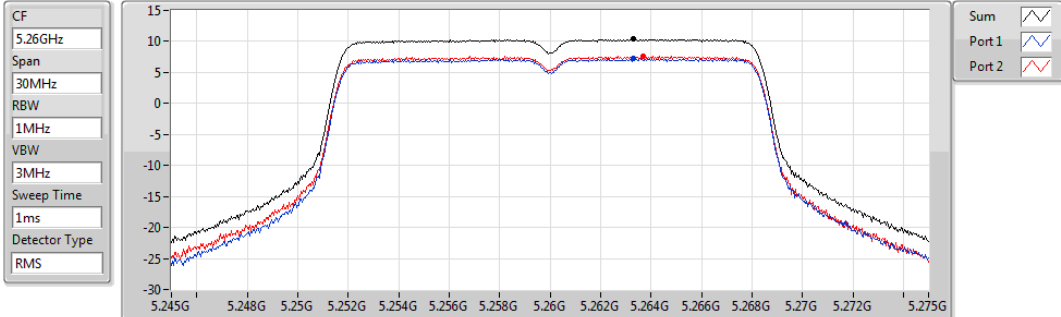
For 5.725 ~ 5.85 GHz, Directional Gain  $= 10 * \log((10^{2.73/20} + 10^{4.6/20})^2 / 2) = 6.73 \text{ dBi} > 6 \text{ dBi}$ , limit shall be reduced to 30

$\text{dBm} - (6.73 \text{ dBi} - 6 \text{ dBi}) = 29.27 \text{ dBm};$

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

PSD

5260MHz

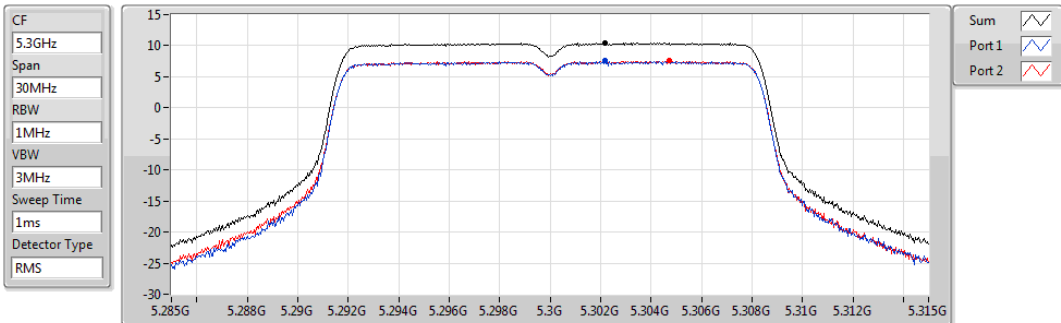


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.35	10.35	7.26	7.60

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

PSD

5300MHz

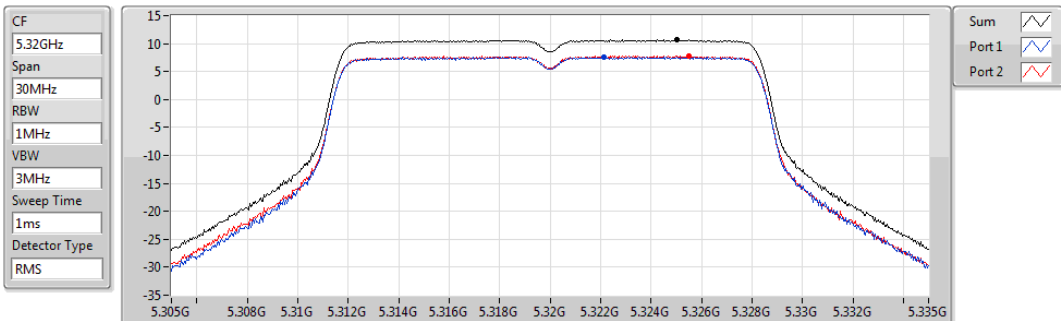


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.50	10.50	7.53	7.60

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

PSD

5320MHz

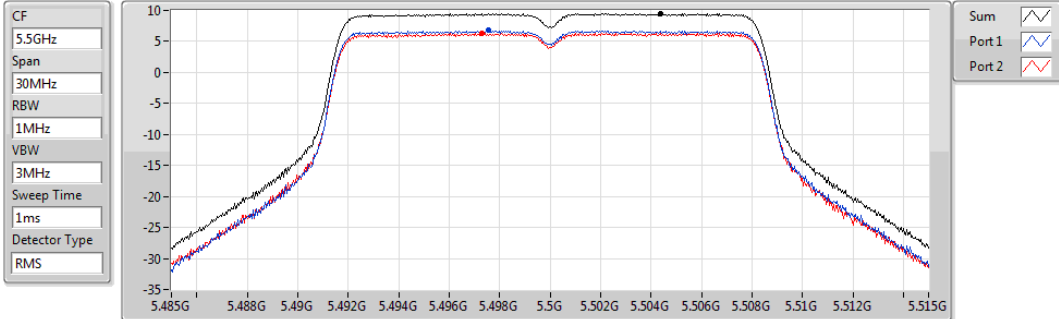


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.64	10.64	7.64	7.79

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

PSD

#### 5500MHz

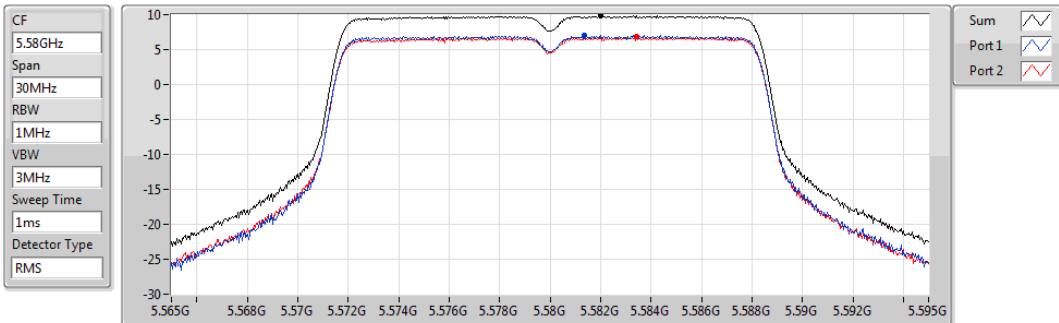


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.50	9.50	6.76	6.35

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

PSD

#### 5580MHz

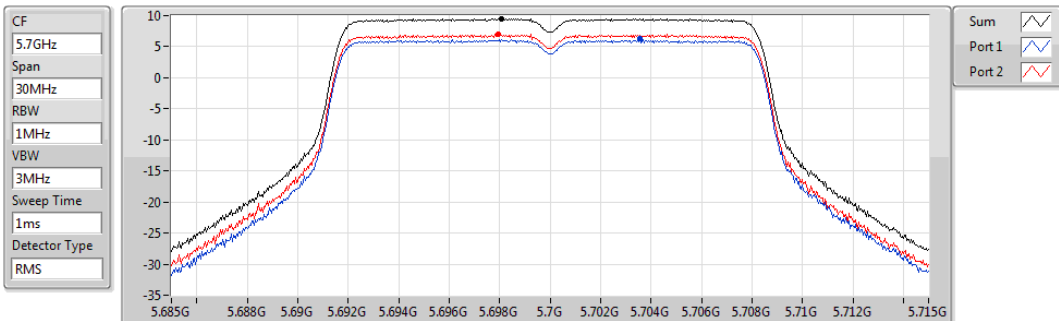


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.83	9.83	6.97	6.83

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

PSD

#### 5700MHz

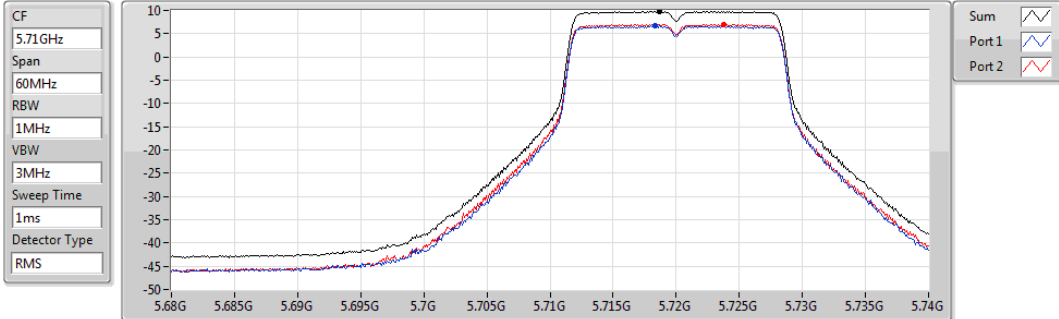


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.52	9.52	6.23	6.95

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

PSD

#### 5720MHz Straddle 5.47-5.725GHz

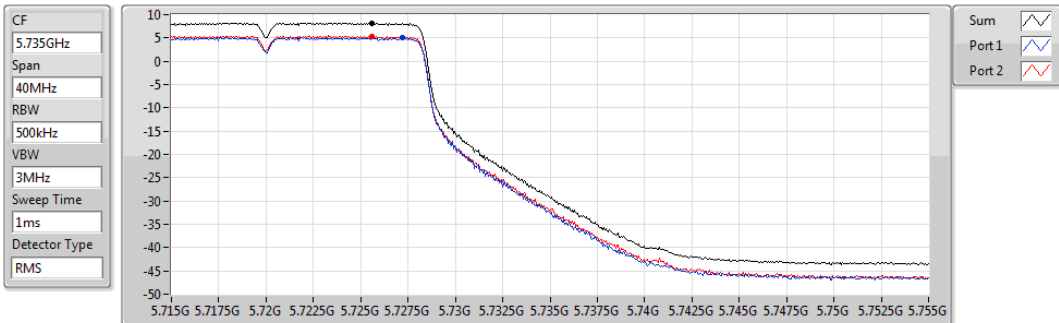


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.83	9.83	6.66	7.07

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

PSD

#### 5720MHz Straddle 5.725-5.85GHz

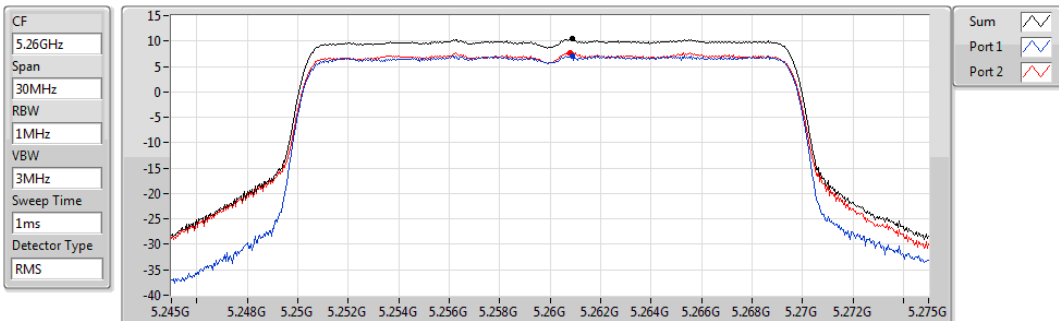


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.11	8.11	5.01	5.39

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

PSD

#### 5260MHz

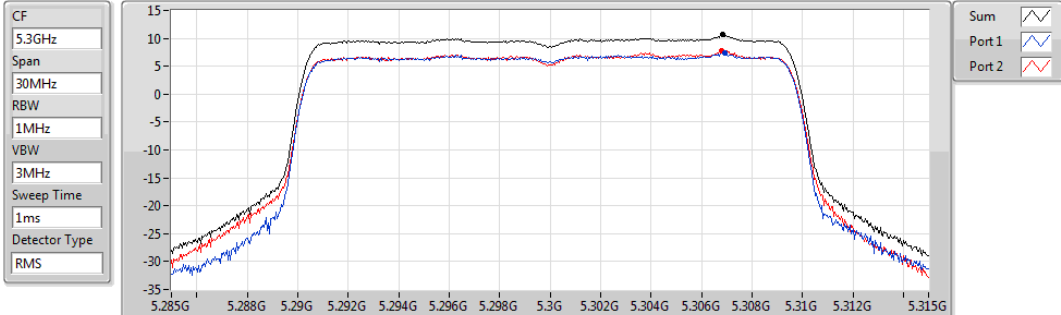


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.42	10.42	7.15	7.65

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

PSD

#### 5300MHz

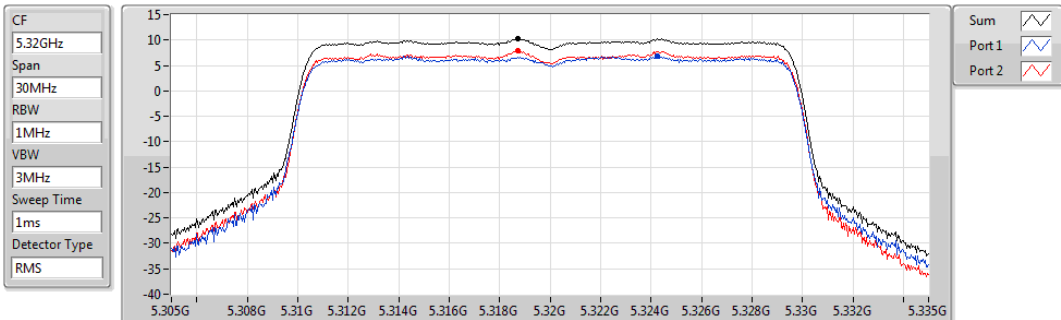


Sum	PD	Port 1	Port 2
(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)
10.62	10.62	7.42	7.83

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

PSD

#### 5320MHz

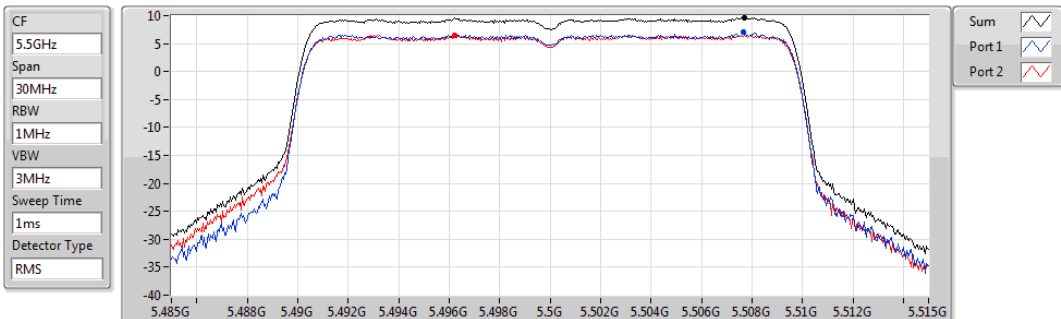


Sum	PD	Port 1	Port 2
(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)
10.35	10.35	6.86	7.96

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

PSD

#### 5500MHz



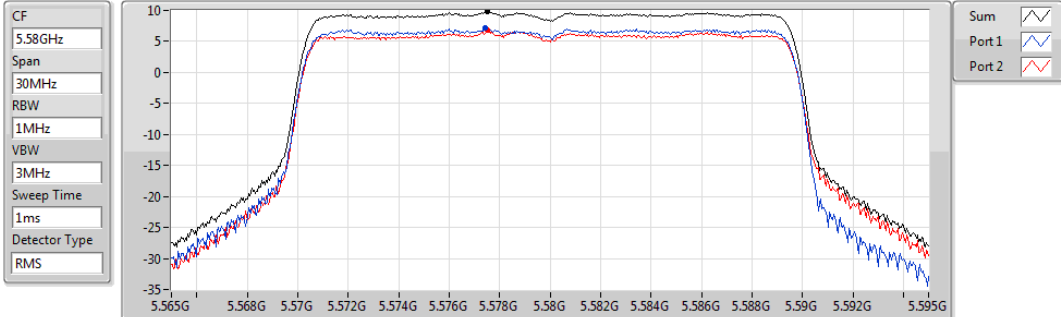
Sum	PD	Port 1	Port 2
(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)
9.69	9.69	6.99	6.56



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

PSD

#### 5580MHz

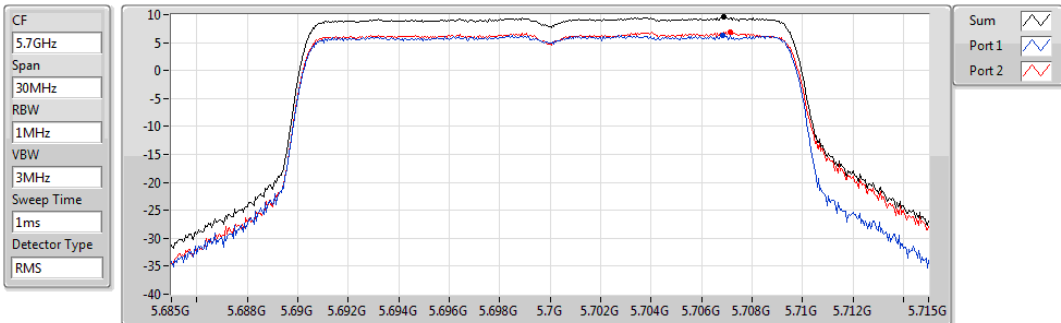


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.87	9.87	7.11	6.75

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

PSD

#### 5700MHz

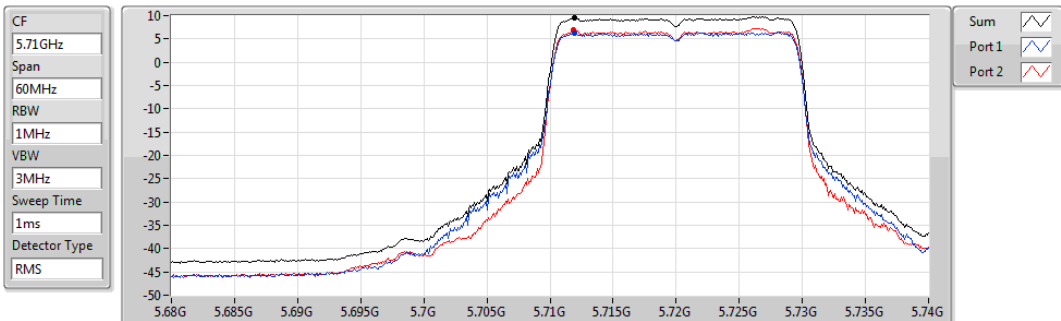


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.57	9.57	6.32	6.96

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

PSD

#### 5720MHz Straddle 5.47-5.725GHz

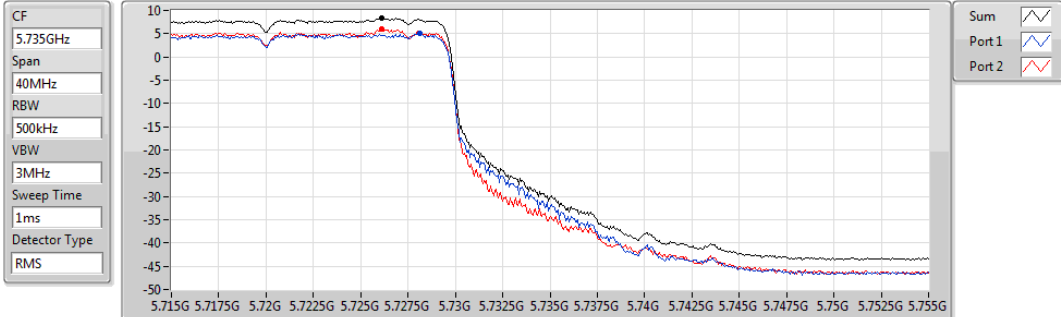


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.64	9.64	6.35	6.95

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

PSD

#### 5720MHz Straddle 5.725-5.85GHz

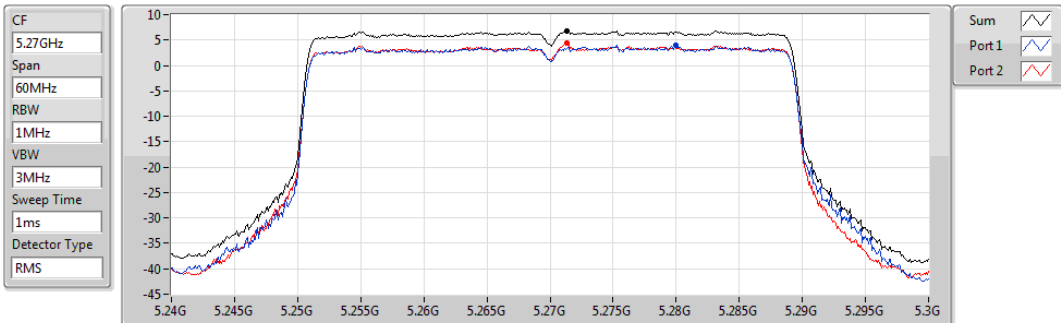


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.47	8.47	4.98	6.11

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

PSD

#### 5270MHz

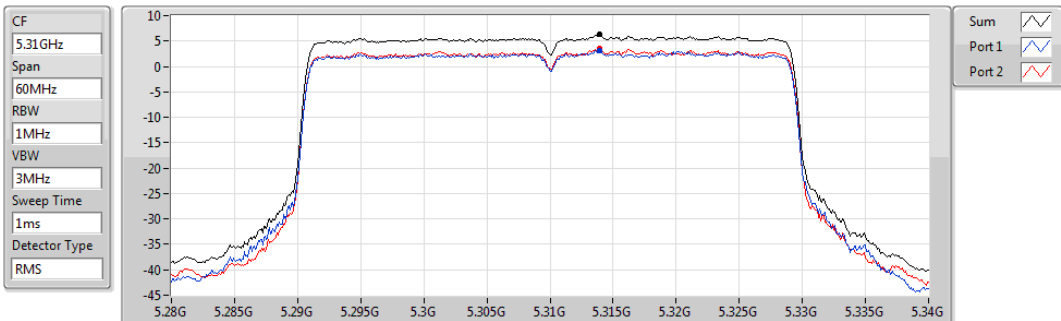


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.86	6.86	3.89	4.36

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

PSD

#### 5310MHz

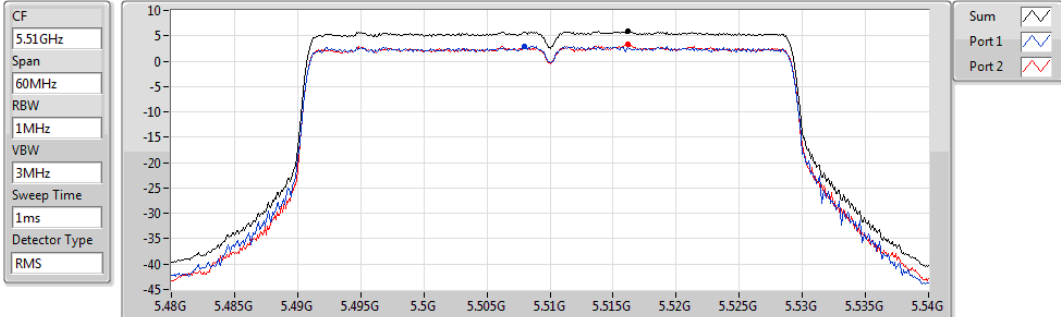


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.37	6.37	3.12	3.58

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

PSD

#### 5510MHz

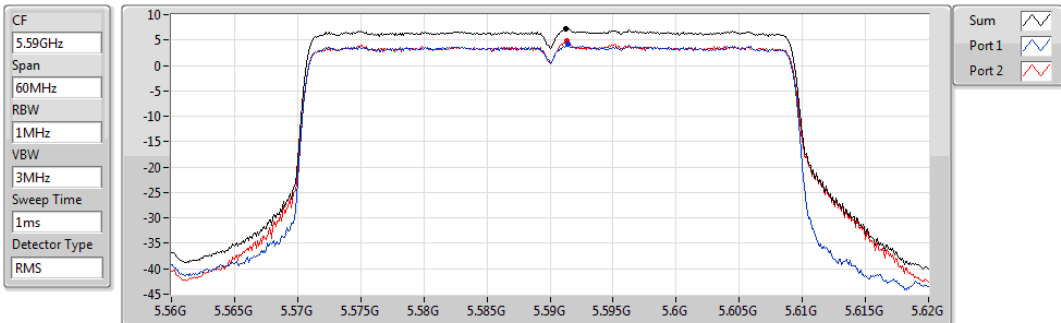


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.99	5.99	2.91	3.32

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

PSD

#### 5590MHz

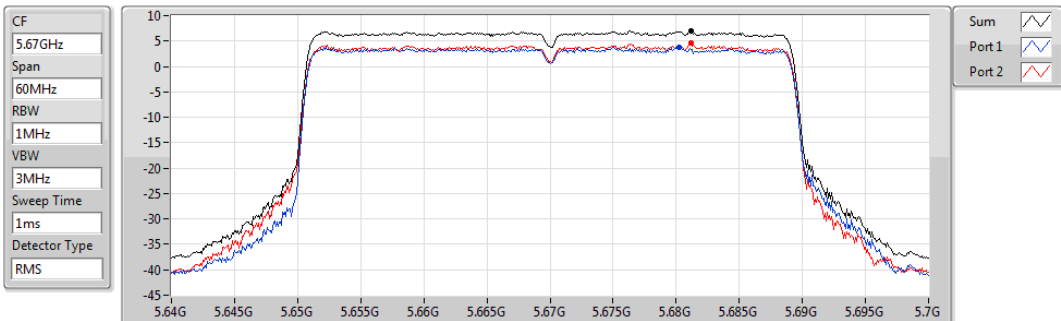


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.28	7.28	4.11	4.75

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

PSD

#### 5670MHz

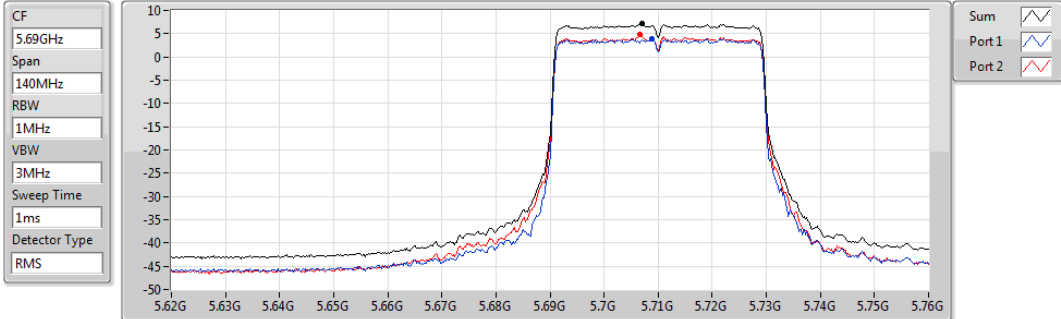


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.00	7.00	3.77	4.59

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

PSD

#### 5710MHz Straddle 5.47-5.725GHz

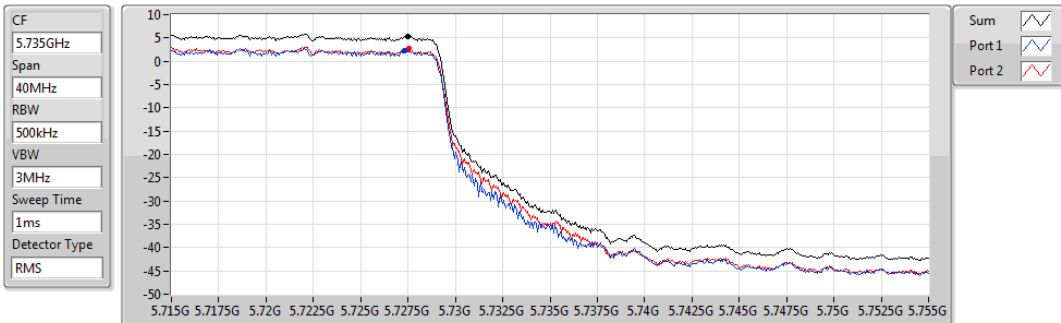


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.18	7.18	3.91	4.79

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

PSD

#### 5710MHz Straddle 5.725-5.85GHz

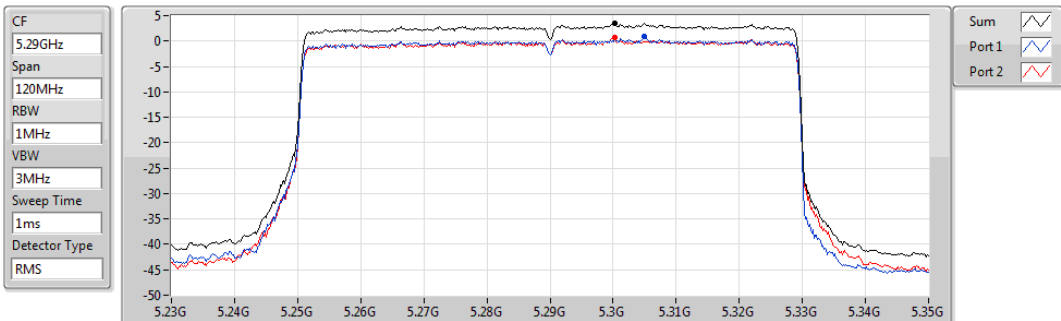


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.41	5.41	2.19	2.77

### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

PSD

#### 5290MHz

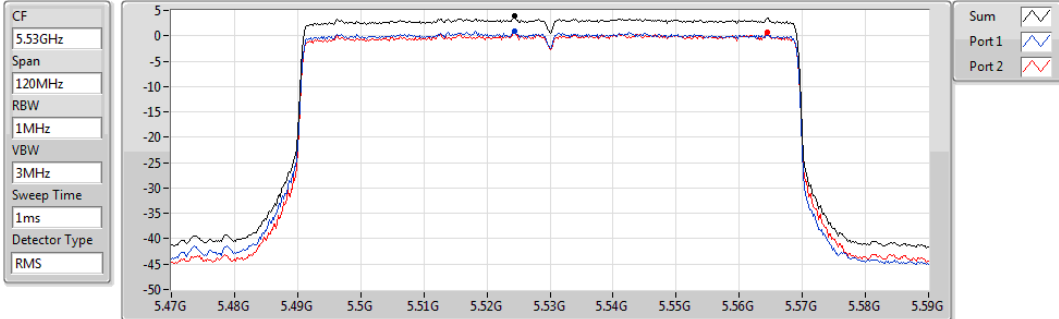


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.49	3.49	0.90	0.73

### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

PSD

5530MHz

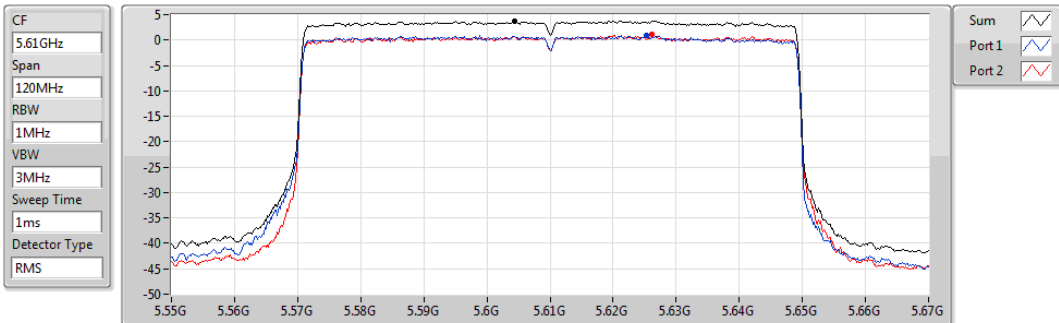


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.82	3.82	0.95	0.72

### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

PSD

5610MHz

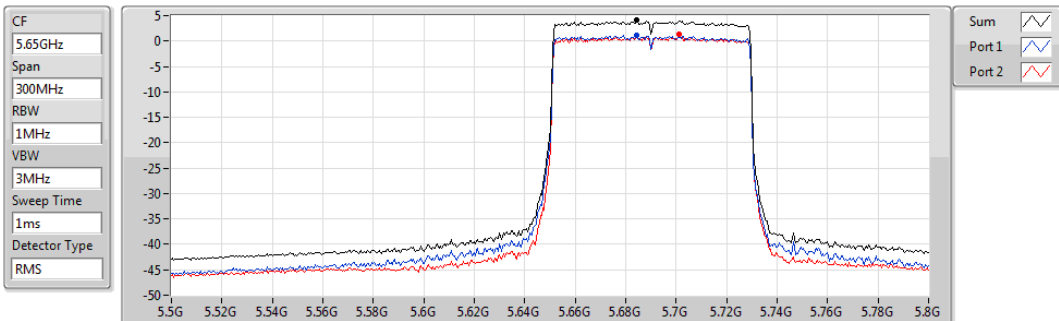


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.81	3.81	0.86	1.04

### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

PSD

5690MHz Straddle 5.47-5.725GHz

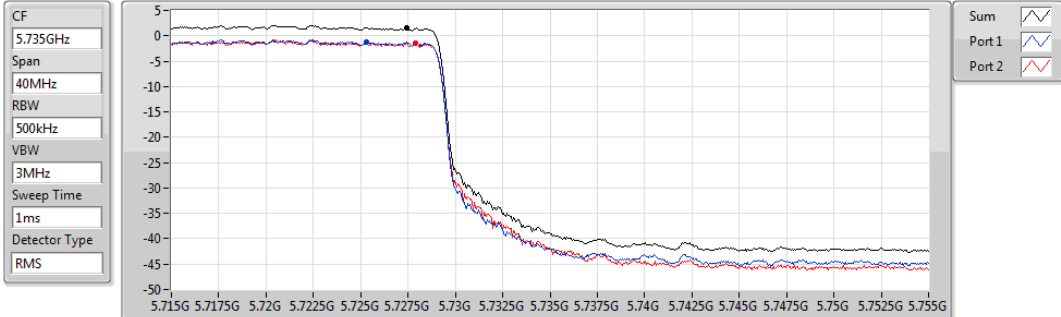


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.14	4.14	1.09	1.30

### 802.11ax HEW80\_Nss1,(MCS0)\_2TX

PSD

#### 5690MHz Straddle 5.725-5.85GHz

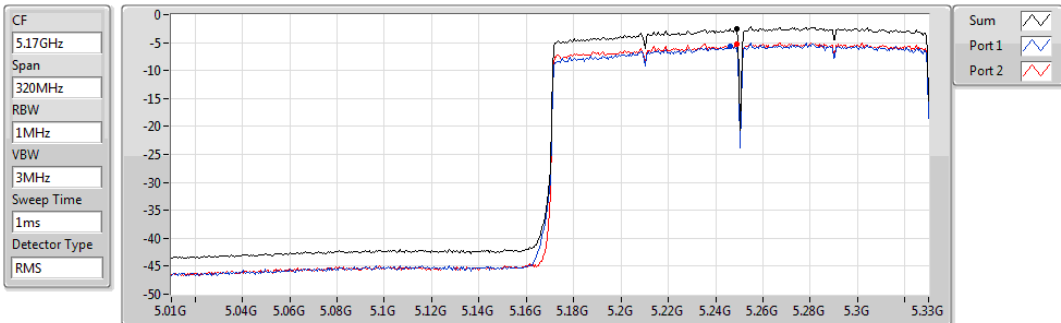


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.59	1.59	-1.31	-1.51

### 802.11ax HEW160\_Nss1,(MCS0)\_2TX

PSD

#### 5250MHz Straddle 5.15-5.25GHz

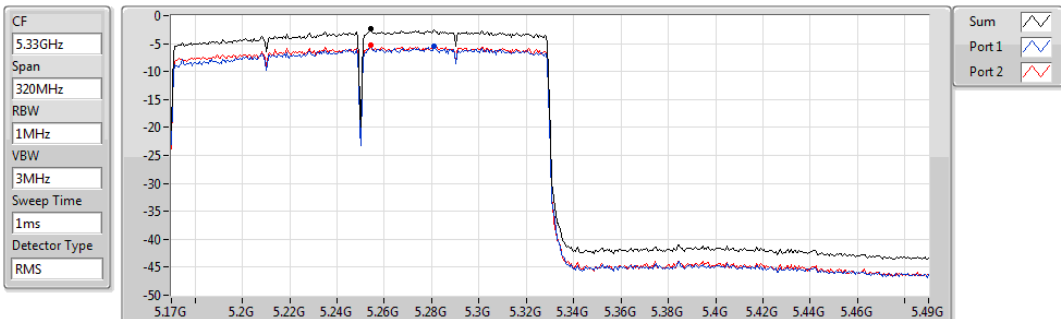


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.54	-2.54	-5.73	-5.20

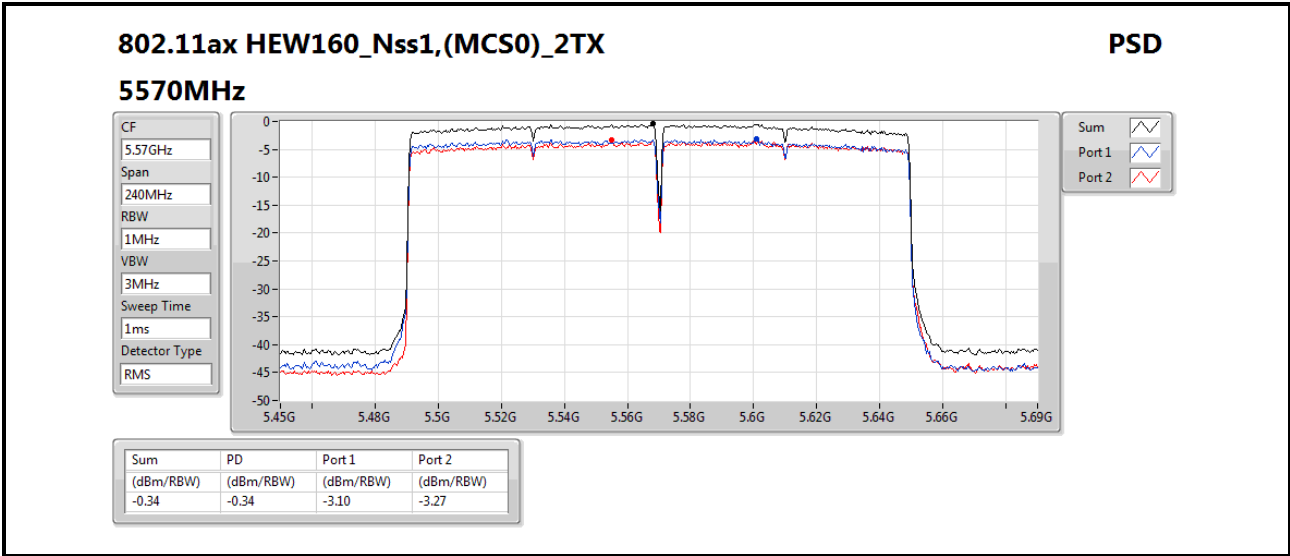
### 802.11ax HEW160\_Nss1,(MCS0)\_2TX

PSD

#### 5250MHz Straddle 5.25-5.35GHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.44	-2.44	-5.51	-5.24



### 3.5 Transmitter Radiated and Band Edge Emissions

#### 3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

**Note 1:**  
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

**Note 2:**  
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.850 GHz	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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



### 3.5.2 Test Procedures

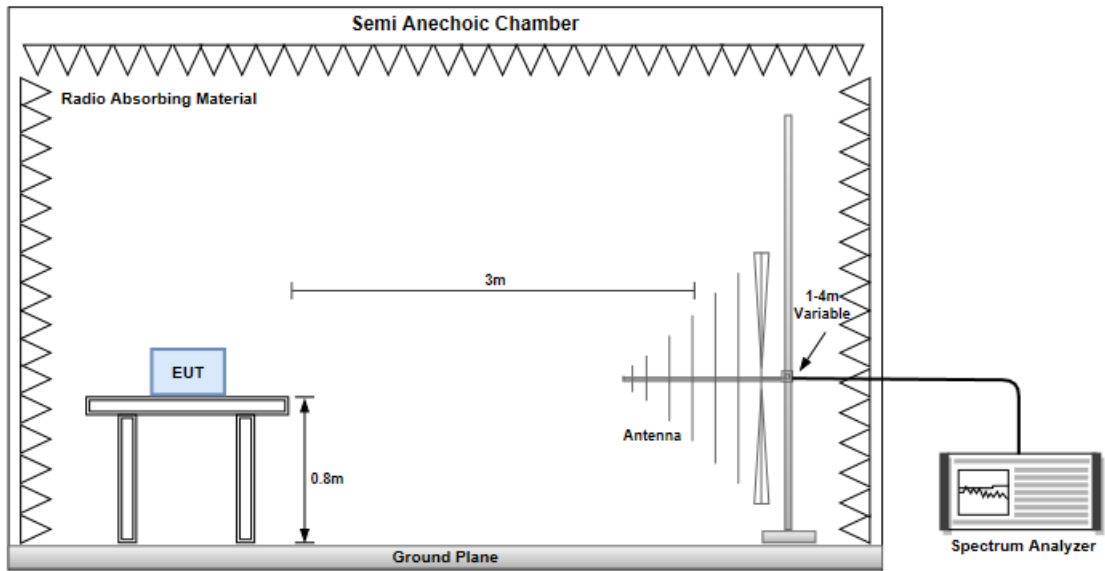
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

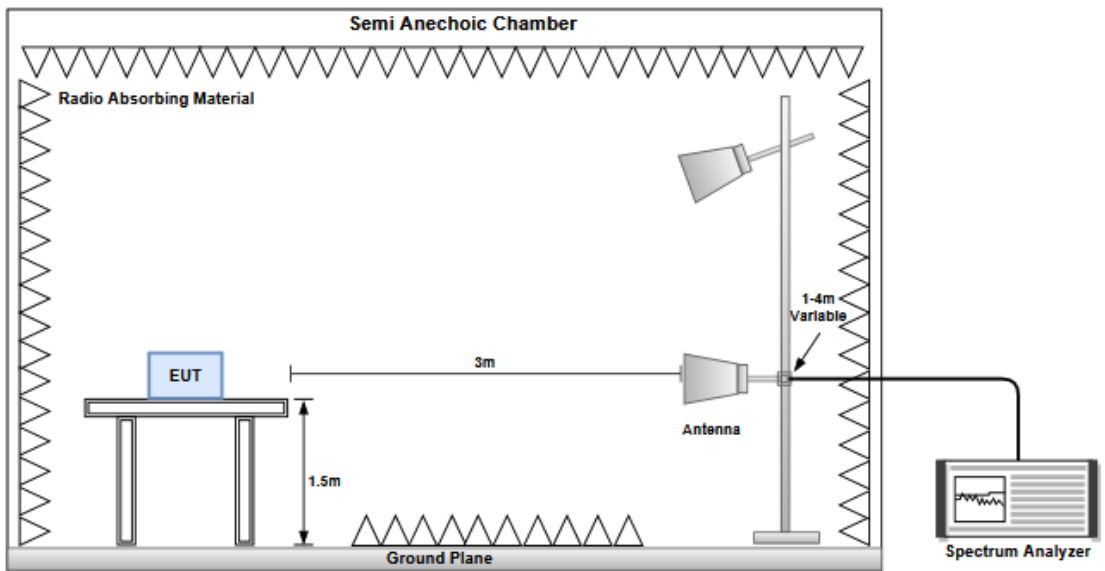
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

### 3.5.3 Test Setup

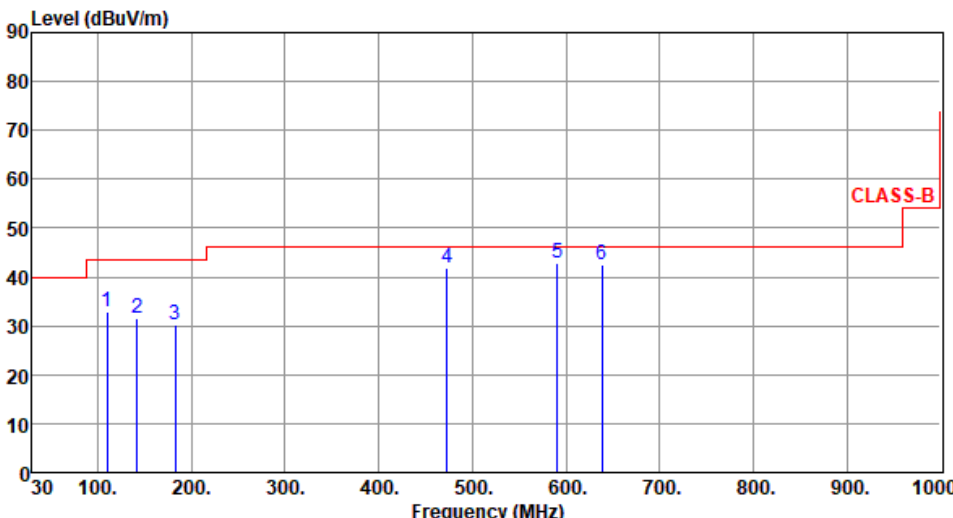
#### Radiated Emissions below 1 GHz



#### Radiated Emissions above 1 GHz

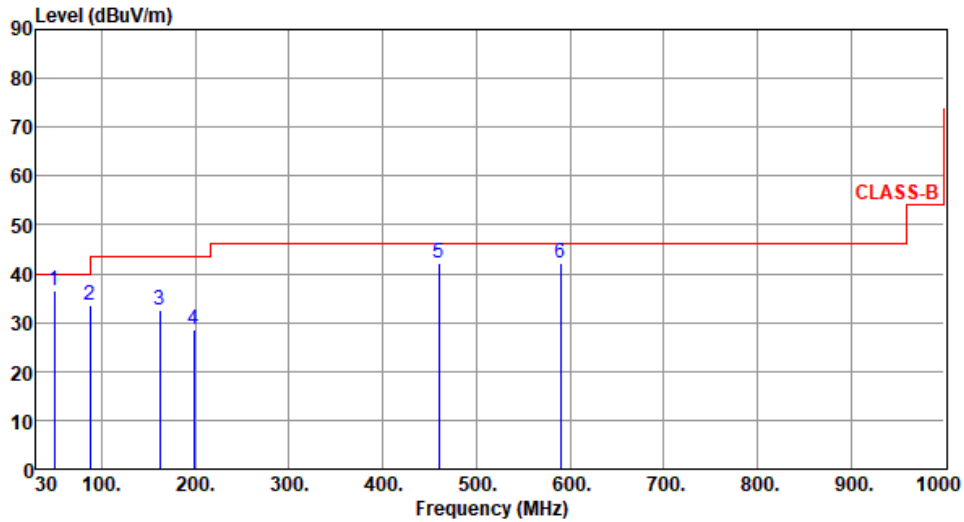


### 3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5260																																																																				
<b>Polarization</b>	Horizontal																																																																						
Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 67																																																																							
 <p>The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (30 to 1000). A red line represents the CLASS-B limit, which is constant at 43.50 dBuV/m from 30 MHz to 1000 MHz. Six blue vertical lines indicate emission peaks at 110.09, 141.89, 183.20, 473.20, 590.64, and 638.33 MHz. The peak levels are 32.89, 31.53, 30.06, 41.88, 42.77, and 42.57 dBuV/m respectively. The margin between the emission level and the limit is -10.61, -11.97, -13.44, -4.12, -3.23, and -3.43 dB.</p>																																																																							
	<table border="1"> <thead> <tr> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>110.09</td> <td>32.89</td> <td>43.50</td> <td>-10.61</td> <td>44.65</td> <td>-11.76</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>2</td> <td>141.89</td> <td>31.53</td> <td>43.50</td> <td>-11.97</td> <td>40.61</td> <td>-9.08</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>3</td> <td>183.20</td> <td>30.06</td> <td>43.50</td> <td>-13.44</td> <td>40.75</td> <td>-10.69</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>4</td> <td>473.20</td> <td>41.88</td> <td>46.00</td> <td>-4.12</td> <td>45.69</td> <td>-3.81</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>5</td> <td>590.64</td> <td>42.77</td> <td>46.00</td> <td>-3.23</td> <td>44.06</td> <td>-1.29</td> <td>QP</td> <td>144</td> </tr> <tr> <td>6</td> <td>638.33</td> <td>42.57</td> <td>46.00</td> <td>-3.43</td> <td>42.87</td> <td>-0.30</td> <td>Peak</td> <td>---</td> </tr> </tbody> </table>	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	110.09	32.89	43.50	-10.61	44.65	-11.76	Peak	---	2	141.89	31.53	43.50	-11.97	40.61	-9.08	Peak	---	3	183.20	30.06	43.50	-13.44	40.75	-10.69	Peak	---	4	473.20	41.88	46.00	-4.12	45.69	-3.81	Peak	---	5	590.64	42.77	46.00	-3.23	44.06	-1.29	QP	144	6	638.33	42.57	46.00	-3.43	42.87	-0.30	Peak	---							
Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																															
1	110.09	32.89	43.50	-10.61	44.65	-11.76	Peak	---																																																															
2	141.89	31.53	43.50	-11.97	40.61	-9.08	Peak	---																																																															
3	183.20	30.06	43.50	-13.44	40.75	-10.69	Peak	---																																																															
4	473.20	41.88	46.00	-4.12	45.69	-3.81	Peak	---																																																															
5	590.64	42.77	46.00	-3.23	44.06	-1.29	QP	144																																																															
6	638.33	42.57	46.00	-3.43	42.87	-0.30	Peak	---																																																															
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m). Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.																																																																							

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5260
<b>Polarization</b>	Vertical		

Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 67



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	49.54	36.57	40.00	-3.43	44.99	-8.42	QP	100	157
2	87.18	33.63	40.00	-6.37	48.12	-14.49	Peak	---	---
3	161.85	32.58	43.50	-10.92	41.50	-8.92	Peak	---	---
4	198.71	28.57	43.50	-14.93	40.51	-11.94	Peak	---	---
5	459.63	42.02	46.00	-3.98	46.13	-4.11	Peak	---	---
6	590.05	42.28	46.00	-3.72	43.58	-1.30	QP	100	133

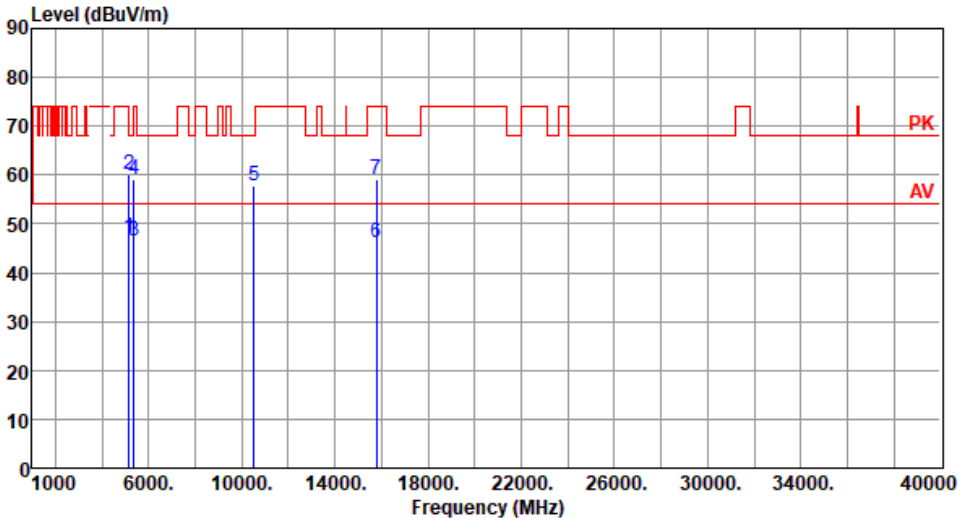
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

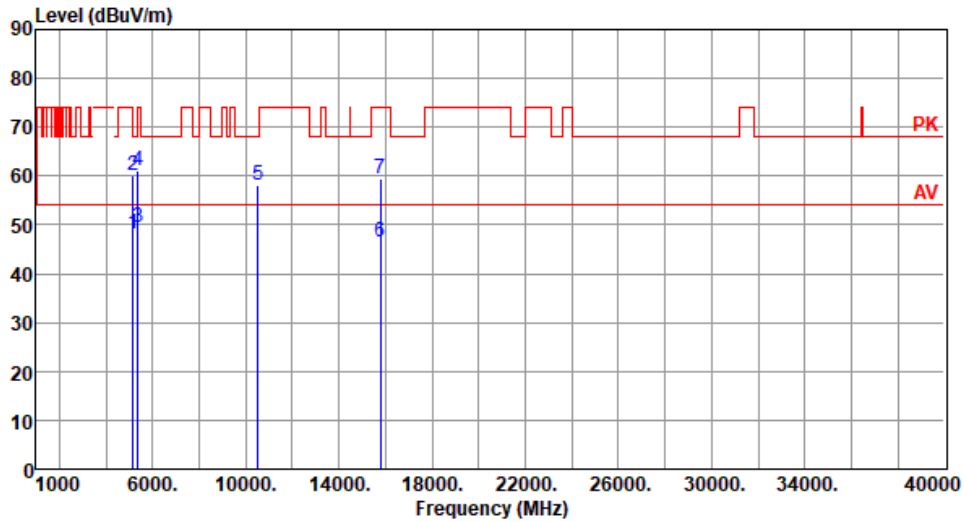
### 3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11a

Modulation	11a	Test Freq. (MHz)	5260						
Polarization	Horizontal								
Test By : Roger Lu      Temperature(°C):23      Humidity(%):65									
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	47.15	54.00	-6.85	42.51	4.64	Average	135	108
2	5150.00	60.02	74.00	-13.98	55.38	4.64	Peak	135	108
3	5350.00	46.60	54.00	-7.40	42.66	3.94	Average	135	108
4	5350.00	59.27	74.00	-14.73	55.33	3.94	Peak	135	108
5	10520.00	57.90	68.20	-10.30	43.44	14.46	Peak	100	45
6	15780.00	46.16	54.00	-7.84	31.98	14.18	Average	100	54
7	15780.00	59.12	74.00	-14.88	44.94	14.18	Peak	100	54

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)  
\*Factor includes antenna factor , cable loss and amplifier gain  
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5260
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.30	54.00	-5.70	43.66	4.64	Average	209	254
2	5150.00	60.20	74.00	-13.80	55.56	4.64	Peak	209	254
3	5350.00	49.45	54.00	-4.55	45.51	3.94	Average	209	254
4	5350.00	61.24	74.00	-12.76	57.30	3.94	Peak	209	254
5	10520.00	58.07	68.20	-10.13	43.61	14.46	Peak	100	30
6	15780.00	46.48	54.00	-7.52	32.30	14.18	Average	100	60
7	15780.00	59.36	74.00	-14.64	45.18	14.18	Peak	100	60

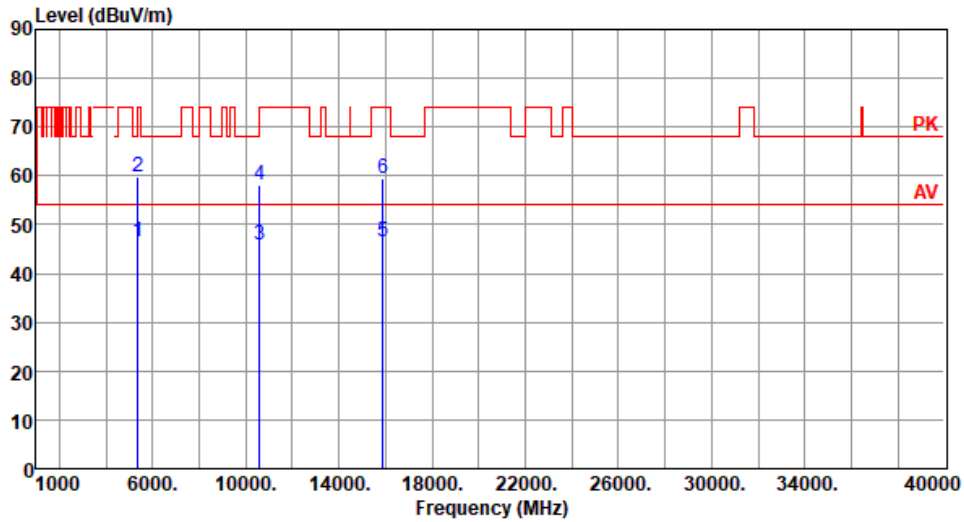
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5300
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):25      Humidity(%) :61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.61	54.00	-7.39	42.67	3.94	Average	132	110
2	5350.00	59.77	74.00	-14.23	55.83	3.94	Peak	132	110
3	10600.00	45.85	54.00	-8.15	31.57	14.28	Average	100	50
4	10600.00	57.98	74.00	-16.02	43.70	14.28	Peak	100	50
5	15900.00	46.53	54.00	-7.47	32.28	14.25	Average	100	90
6	15900.00	59.55	74.00	-14.45	45.30	14.25	Peak	100	90

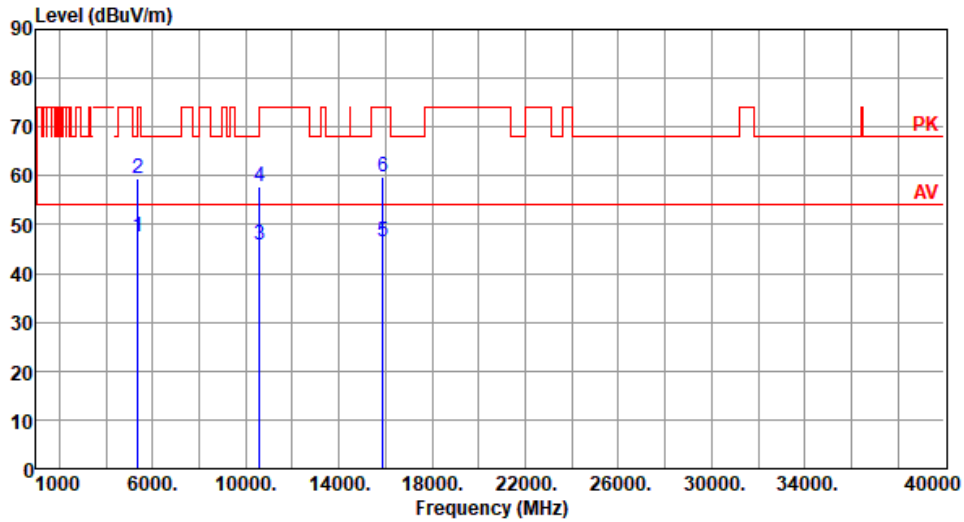
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5300
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):25      Humidity(%):61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.44	54.00	-6.56	43.50	3.94	Average	200	261
2	5350.00	59.52	74.00	-14.48	55.58	3.94	Peak	200	261
3	10600.00	45.91	54.00	-8.09	31.63	14.28	Average	100	40
4	10600.00	57.88	74.00	-16.12	43.60	14.28	Peak	100	40
5	15900.00	46.65	54.00	-7.35	32.40	14.25	Average	100	30
6	15900.00	59.74	74.00	-14.26	45.49	14.25	Peak	100	30

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

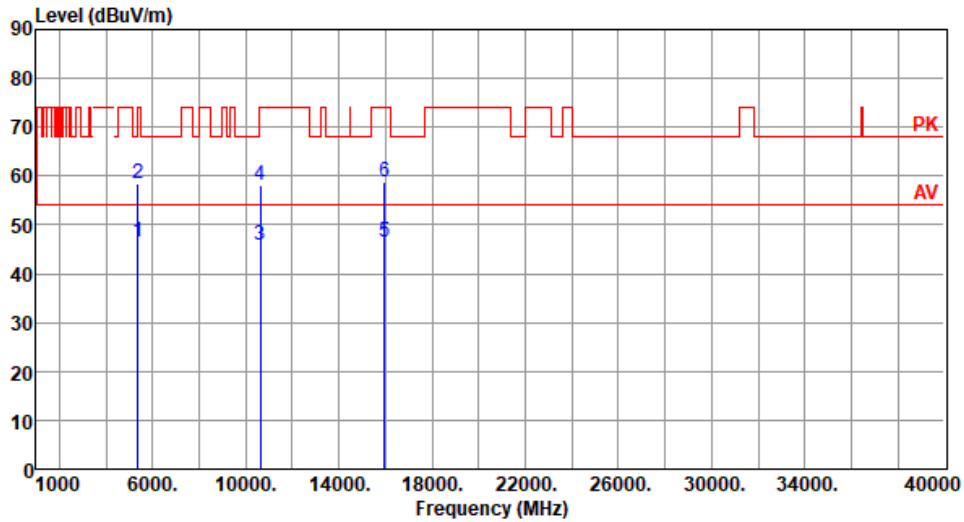
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5320
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):25      Humidity(%):61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.37	54.00	-7.63	42.43	3.94	Average	219	264
2	5350.00	58.49	74.00	-15.51	54.55	3.94	Peak	219	264
3	10640.00	45.87	54.00	-8.13	31.49	14.38	Average	100	43
4	10640.00	58.06	74.00	-15.94	43.68	14.38	Peak	100	43
5	15960.00	46.35	54.00	-7.65	32.13	14.22	Average	100	22
6	15960.00	58.93	74.00	-15.07	44.71	14.22	Peak	100	22

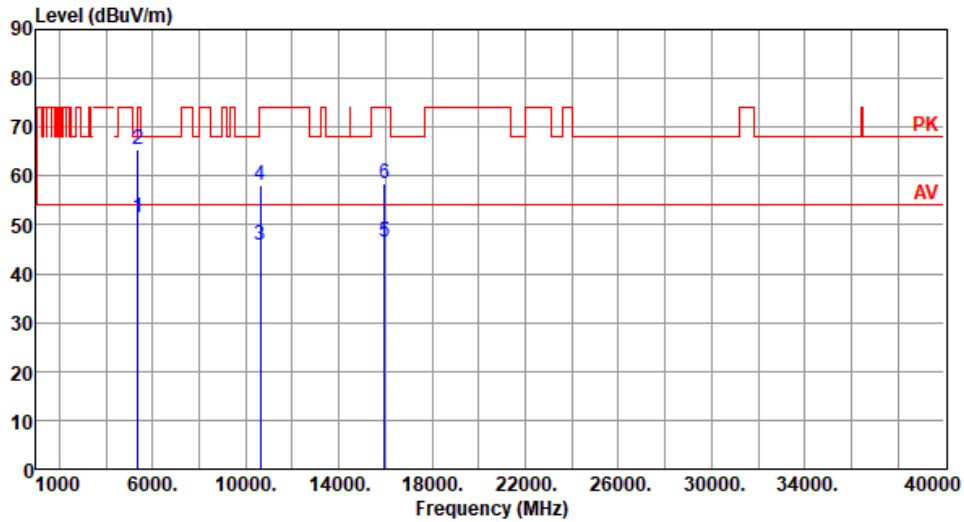
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5320
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):25      Humidity(%):61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	51.54	54.00	-2.46	47.60	3.94	Average	197	257
2	5350.00	65.30	74.00	-8.70	61.36	3.94	Peak	197	257
3	10640.00	45.97	54.00	-8.03	31.59	14.38	Average	100	38
4	10640.00	57.99	74.00	-16.01	43.61	14.38	Peak	100	38
5	15960.00	46.56	54.00	-7.44	32.34	14.22	Average	100	42
6	15960.00	58.37	74.00	-15.63	44.15	14.22	Peak	100	42

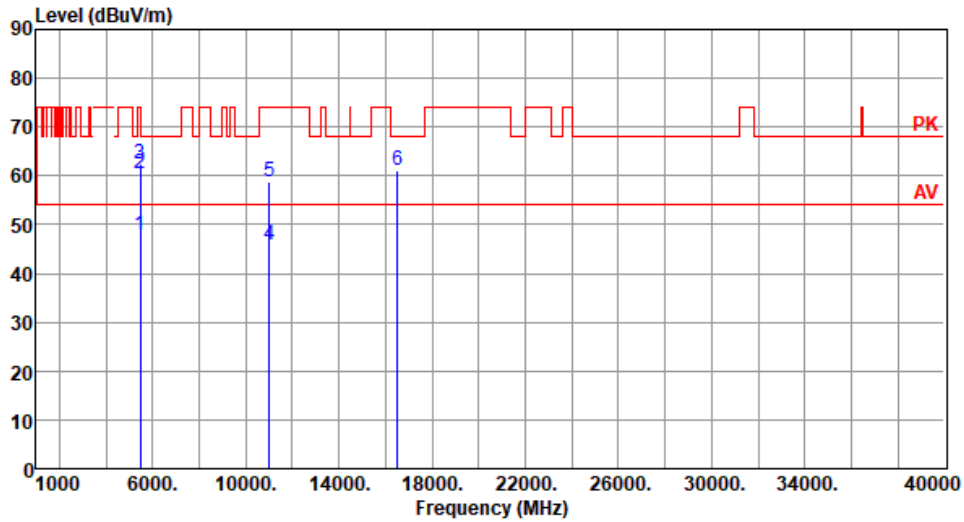
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5500
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):25      Humidity(%) :61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.72	54.00	-6.28	43.27	4.45	Average	235	335
2	5460.00	60.43	74.00	-13.57	55.98	4.45	Peak	235	335
3	5470.00	62.59	68.20	-5.61	58.09	4.50	Peak	235	335
4	11000.00	45.68	54.00	-8.32	30.80	14.88	Average	100	144
5	11000.00	58.72	74.00	-15.28	43.84	14.88	Peak	100	144
6	16500.00	61.22	68.20	-6.98	45.03	16.19	Peak	100	137

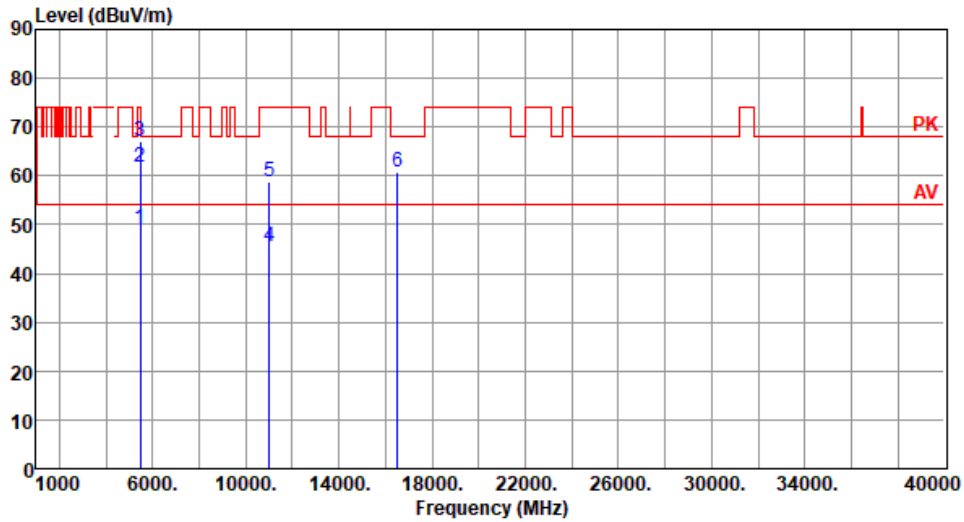
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5500
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):25      Humidity(%):61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	49.04	54.00	-4.96	44.59	4.45	Average	163	256
2	5460.00	61.82	74.00	-12.18	57.37	4.45	Peak	163	256
3	5470.00	66.97	68.20	-1.23	62.47	4.50	Peak	163	256
4	11000.00	45.35	54.00	-8.65	30.47	14.88	Average	100	42
5	11000.00	58.62	74.00	-15.38	43.74	14.88	Peak	100	42
6	16500.00	60.66	68.20	-7.54	44.47	16.19	Peak	100	77

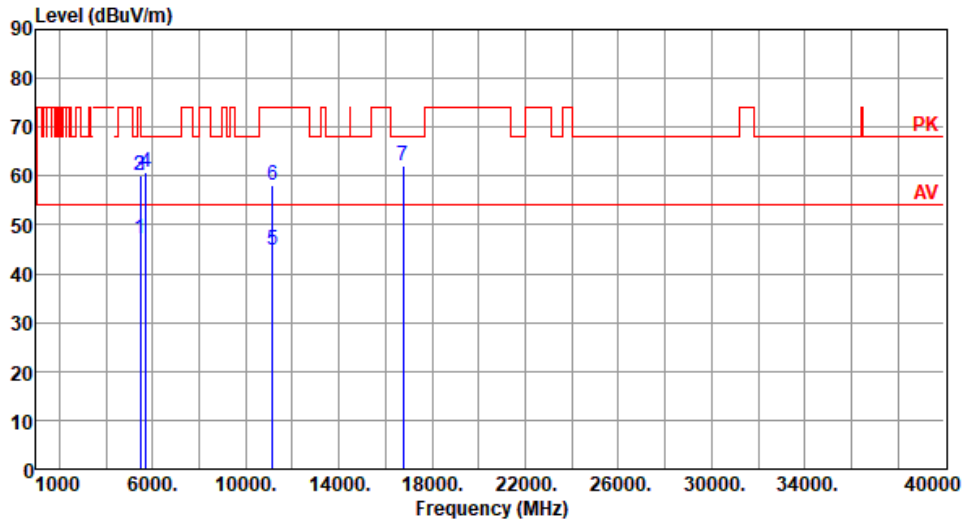
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5580
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):25      Humidity(%) :61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.19	54.00	-6.81	42.74	4.45	Average	222	332
2	5460.00	59.98	74.00	-14.02	55.53	4.45	Peak	222	332
3	5470.00	60.17	68.20	-8.03	55.67	4.50	Peak	222	332
4	5725.00	60.78	68.20	-7.42	55.93	4.85	Peak	222	332
5	11160.00	44.69	54.00	-9.31	30.31	14.38	Average	100	80
6	11160.00	57.99	74.00	-16.01	43.61	14.38	Peak	100	80
7	16740.00	62.01	68.20	-6.19	44.54	17.47	Peak	100	20

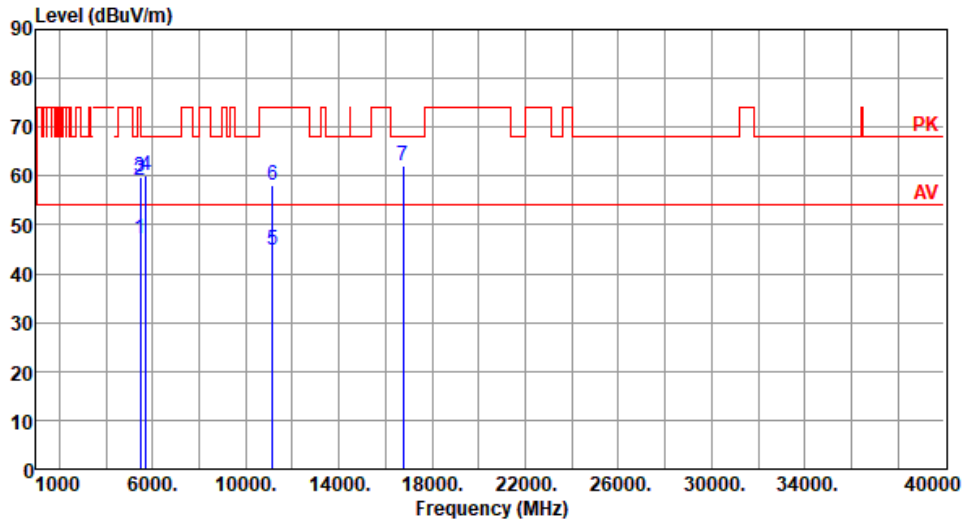
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5580
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):25      Humidity(%):61



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.16	54.00	-6.84	42.71	4.45	Average	221	240
2	5460.00	59.15	74.00	-14.85	54.70	4.45	Peak	221	240
3	5470.00	59.87	68.20	-8.33	55.37	4.50	Peak	221	240
4	5725.00	60.23	68.20	-7.97	55.38	4.85	Peak	221	240
5	11160.00	44.83	54.00	-9.17	30.45	14.38	Average	100	50
6	11160.00	58.22	74.00	-15.78	43.84	14.38	Peak	100	50
7	16740.00	62.16	68.20	-6.04	44.69	17.47	Peak	100	30

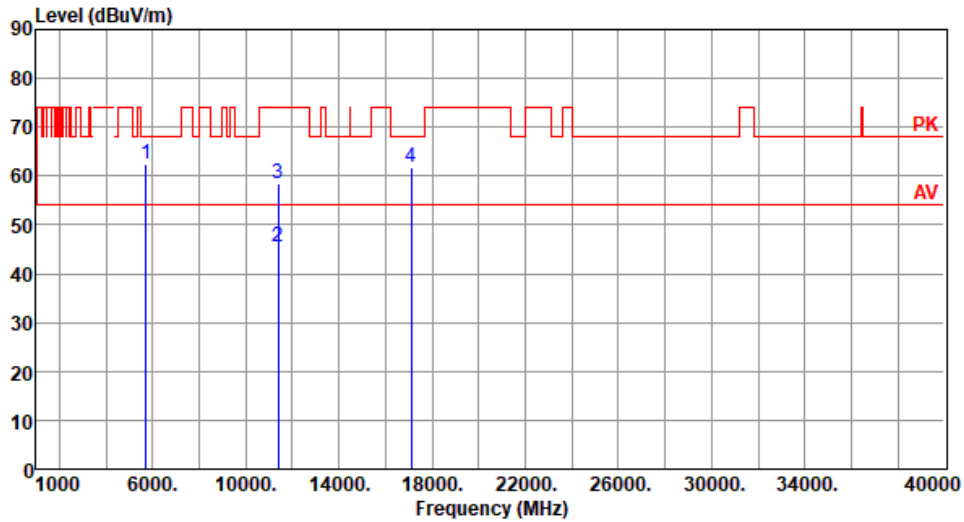
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5700
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 23      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	62.54	68.20	-5.66	57.69	4.85	Peak	220	330
2	11400.00	45.56	54.00	-8.44	30.88	14.68	Average	100	52
3	11400.00	58.29	74.00	-15.71	43.61	14.68	Peak	100	52
4	17100.00	61.84	68.20	-6.36	44.16	17.68	Peak	100	56

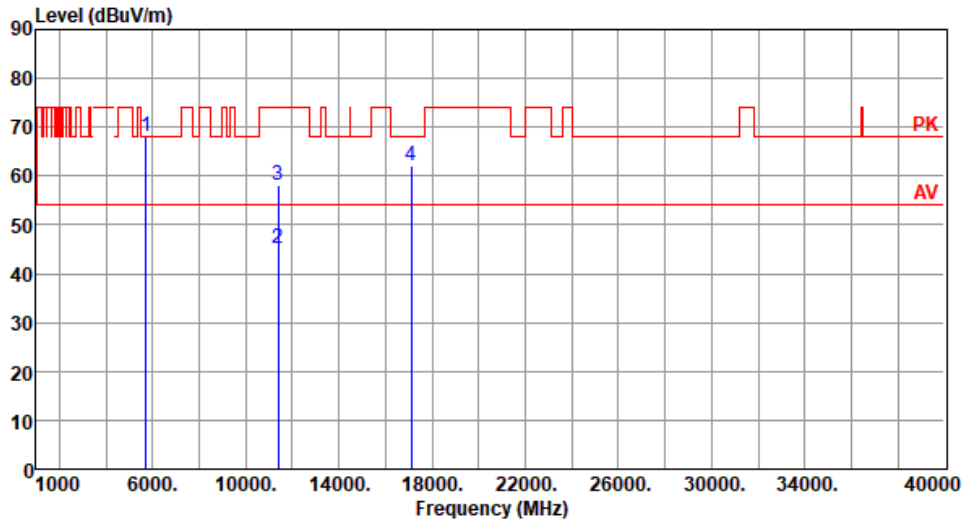
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5700
<b>Polarization</b>	Vertical		

Test By : Akun Chung      Temperature(°C): 23      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	67.95	68.20	-0.25	63.10	4.85	Peak	226	239
2	11400.00	45.27	54.00	-8.73	30.59	14.68	Average	100	66
3	11400.00	58.23	74.00	-15.77	43.55	14.68	Peak	100	66
4	17100.00	62.00	68.20	-6.20	44.32	17.68	Peak	100	66

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

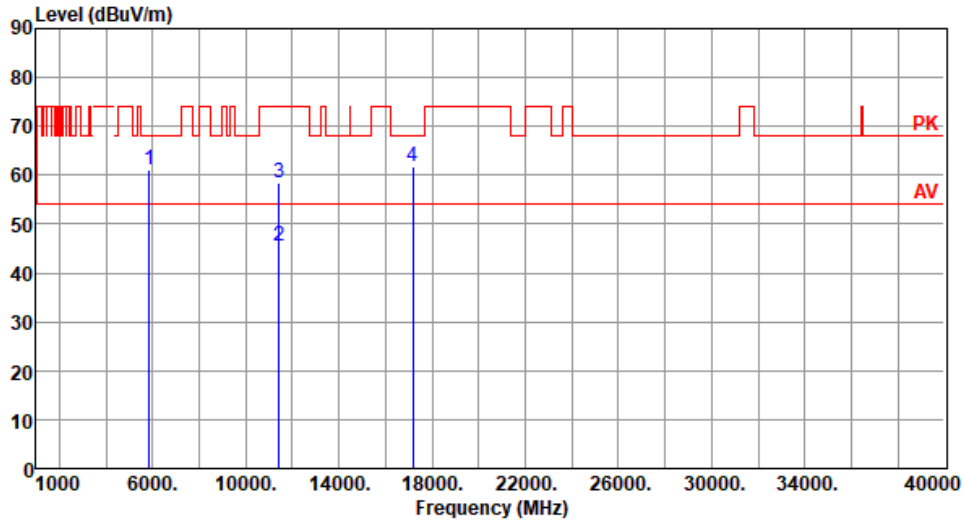
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5720
<b>Polarization</b>	Horizontal		

Test By : Roger Lu      Temperature(°C): 23      Humidity(%): 65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.02	68.20	-7.18	55.57	5.45	Peak	221	332
2	11440.00	45.43	54.00	-8.57	30.77	14.66	Average	100	53
3	11440.00	58.41	74.00	-15.59	43.75	14.66	Peak	100	53
4	17160.00	61.63	68.20	-6.57	43.98	17.65	Peak	100	62

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

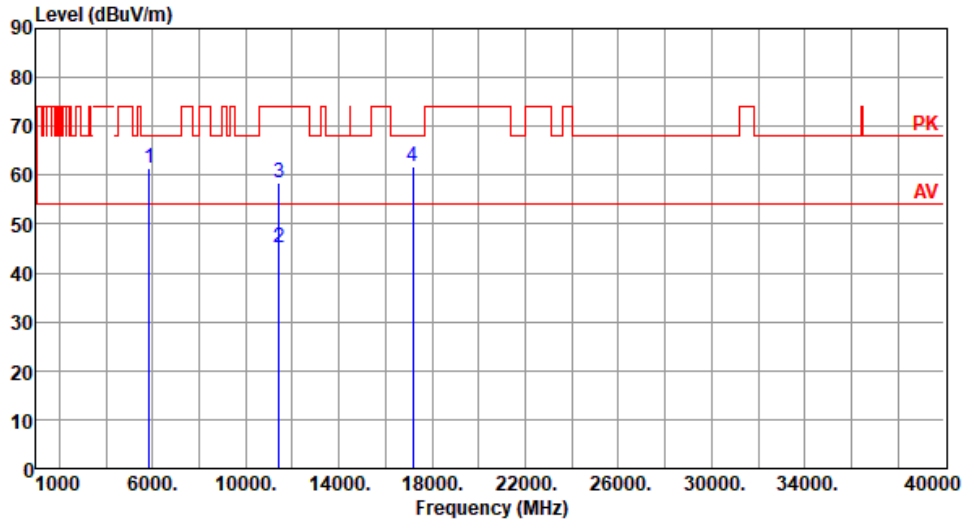
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11a	<b>Test Freq. (MHz)</b>	5720
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<b>Polarization</b>	Vertical
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Test By : Roger Lu      Temperature(°C): 23      Humidity(%): 65



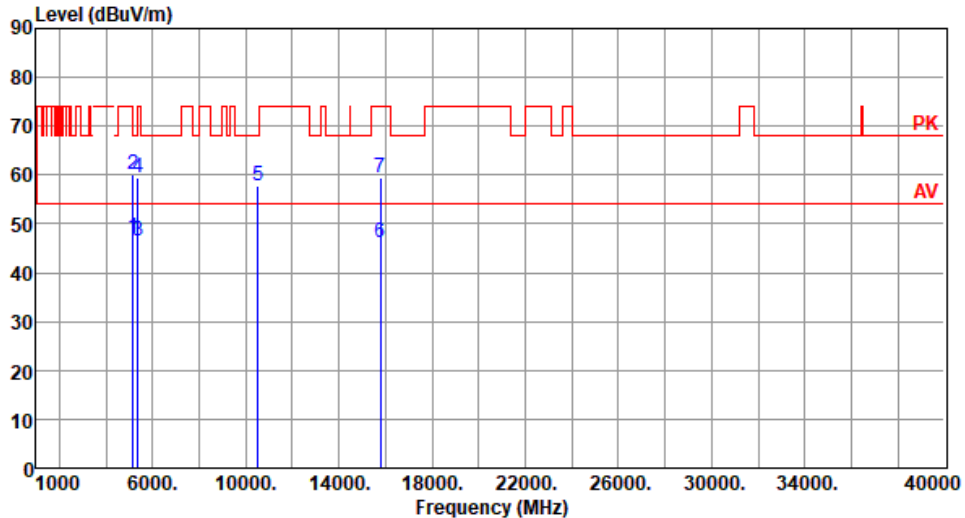
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.35	68.20	-6.85	55.90	5.45	Peak	226	241
2	11440.00	45.25	54.00	-8.75	30.59	14.66	Average	100	40
3	11440.00	58.61	74.00	-15.39	43.95	14.66	Peak	100	40
4	17160.00	61.90	68.20	-6.30	44.25	17.65	Peak	100	55

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

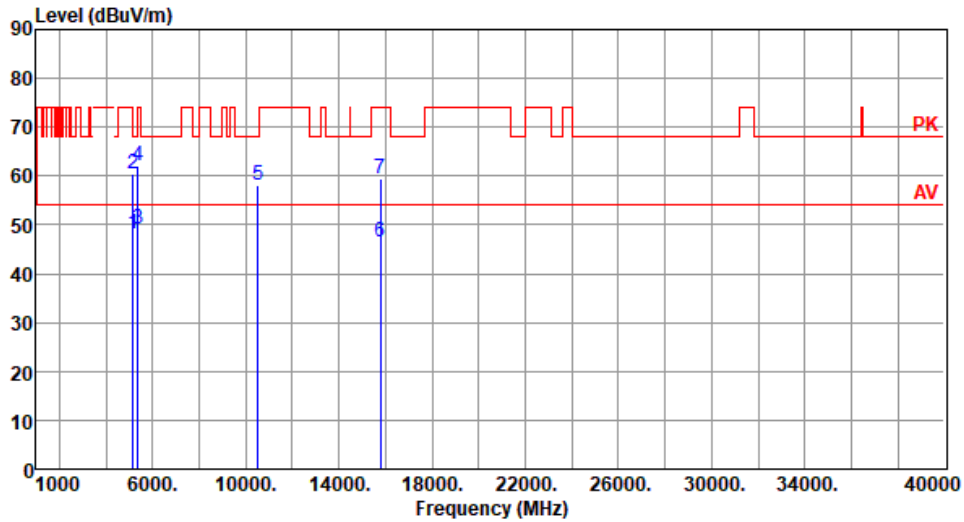
### 3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for ax (HE20)

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5260						
<b>Polarization</b>	Horizontal								
<p>Test By : Roger Lu      Temperature(°C):23      Humidity(%):63</p>									
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	47.17	54.00	-6.83	42.53	4.64	Average	132	105
2	5150.00	60.18	74.00	-13.82	55.54	4.64	Peak	132	105
3	5350.00	46.43	54.00	-7.57	42.49	3.94	Average	132	105
4	5350.00	59.30	74.00	-14.70	55.36	3.94	Peak	132	105
5	10520.00	57.87	68.20	-10.33	43.41	14.46	Peak	100	41
6	15780.00	46.29	54.00	-7.71	32.11	14.18	Average	100	48
7	15780.00	59.35	74.00	-14.65	45.17	14.18	Peak	100	48

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)  
\*Factor includes antenna factor , cable loss and amplifier gain  
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5260
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.16	54.00	-5.84	43.52	4.64	Average	211	251
2	5150.00	60.33	74.00	-13.67	55.69	4.64	Peak	211	251
3	5350.00	49.31	54.00	-4.69	45.37	3.94	Average	211	251
4	5350.00	61.94	74.00	-12.06	58.00	3.94	Peak	211	251
5	10520.00	58.02	68.20	-10.18	43.56	14.46	Peak	100	20
6	15780.00	46.46	54.00	-7.54	32.28	14.18	Average	100	100
7	15780.00	59.45	74.00	-14.55	45.27	14.18	Peak	100	100

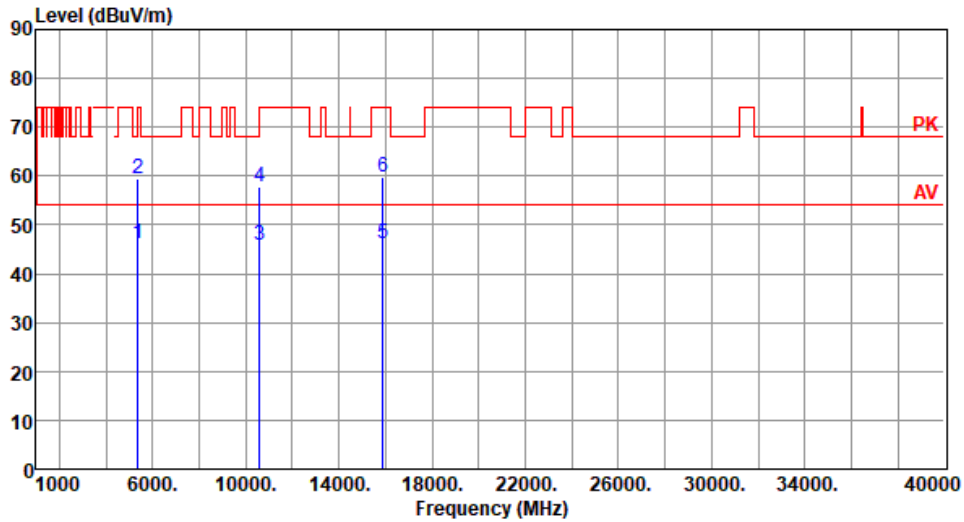
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5300
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.33	54.00	-7.67	42.39	3.94	Average	130	108
2	5350.00	59.49	74.00	-14.51	55.55	3.94	Peak	130	108
3	10600.00	45.71	54.00	-8.29	31.43	14.28	Average	100	48
4	10600.00	57.81	74.00	-16.19	43.53	14.28	Peak	100	48
5	15900.00	46.31	54.00	-7.69	32.06	14.25	Average	100	93
6	15900.00	59.63	74.00	-14.37	45.38	14.25	Peak	100	93

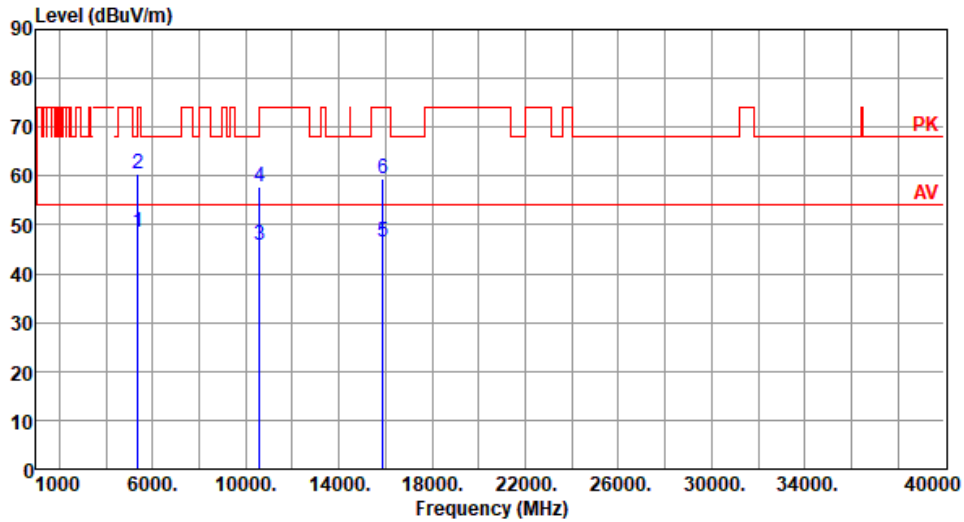
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5300
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	48.61	54.00	-5.39	44.67	3.94	Average	215	246
2	5350.00	60.30	74.00	-13.70	56.36	3.94	Peak	215	246
3	10600.00	45.86	54.00	-8.14	31.58	14.28	Average	100	30
4	10600.00	57.91	74.00	-16.09	43.63	14.28	Peak	100	30
5	15900.00	46.52	54.00	-7.48	32.27	14.25	Average	100	20
6	15900.00	59.58	74.00	-14.42	45.33	14.25	Peak	100	20

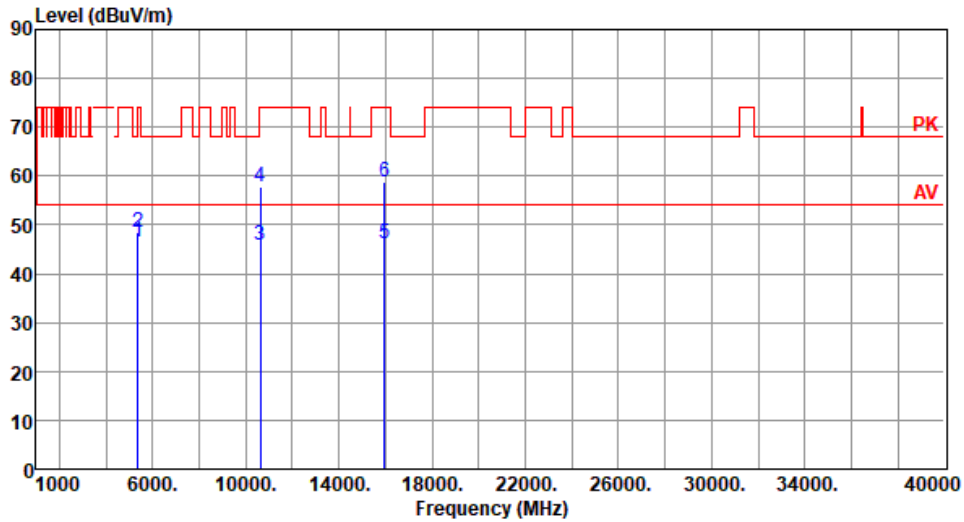
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5320
<b>Polarization</b>	Horizontal		

Test By :Akun Chung      Temperature(°C):22      Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.49	54.00	-7.51	42.55	3.94	Average	210	261
2	5350.00	48.46	74.00	-25.54	44.52	3.94	Peak	210	261
3	10640.00	45.83	54.00	-8.17	31.45	14.38	Average	100	37
4	10640.00	57.93	74.00	-16.07	43.55	14.38	Peak	100	37
5	15960.00	46.19	54.00	-7.81	31.97	14.22	Average	100	26
6	15960.00	58.69	74.00	-15.31	44.47	14.22	Peak	100	26

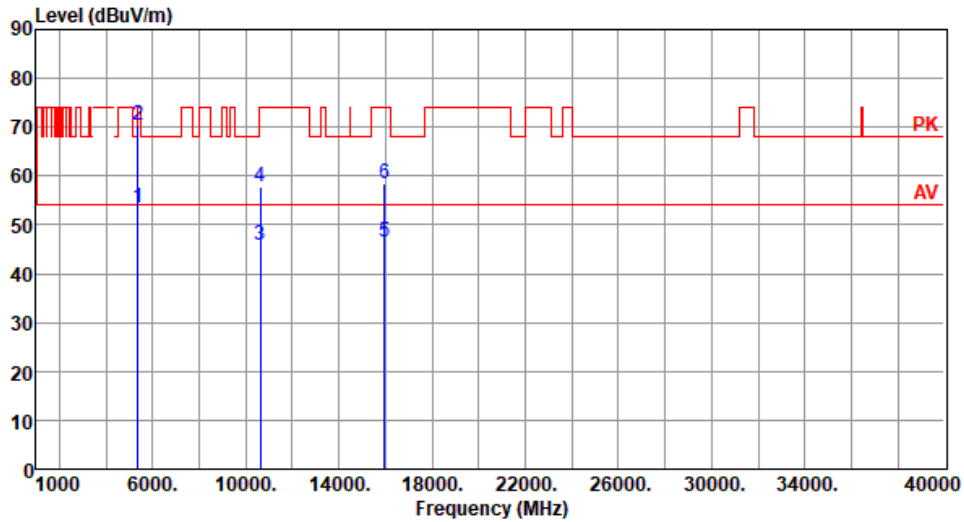
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5320
<b>Polarization</b>	Vertical		

Test By :Akun Chung      Temperature(°C):22      Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	53.44	54.00	-0.56	49.50	3.94	Average	184	25
2	5350.00	70.43	74.00	-3.57	66.49	3.94	Peak	184	25
3	10640.00	45.83	54.00	-8.17	31.45	14.38	Average	100	35
4	10640.00	57.73	74.00	-16.27	43.35	14.38	Peak	100	35
5	15960.00	46.37	54.00	-7.63	32.15	14.22	Average	100	39
6	15960.00	58.32	74.00	-15.68	44.10	14.22	Peak	100	39

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

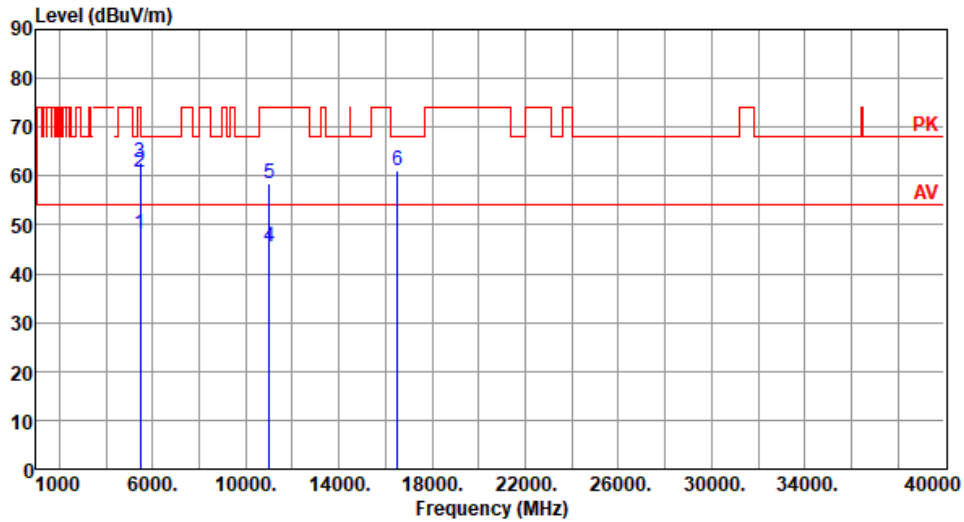
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5500
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	48.00	54.00	-6.00	43.55	4.45	Average	231	331
2	5460.00	60.69	74.00	-13.31	56.24	4.45	Peak	231	331
3	5470.00	62.74	68.20	-5.46	58.24	4.50	Peak	231	331
4	11000.00	45.52	54.00	-8.48	30.64	14.88	Average	100	162
5	11000.00	58.53	74.00	-15.47	43.65	14.88	Peak	100	141
6	16500.00	61.12	68.20	-7.08	44.93	16.19	Peak	100	141

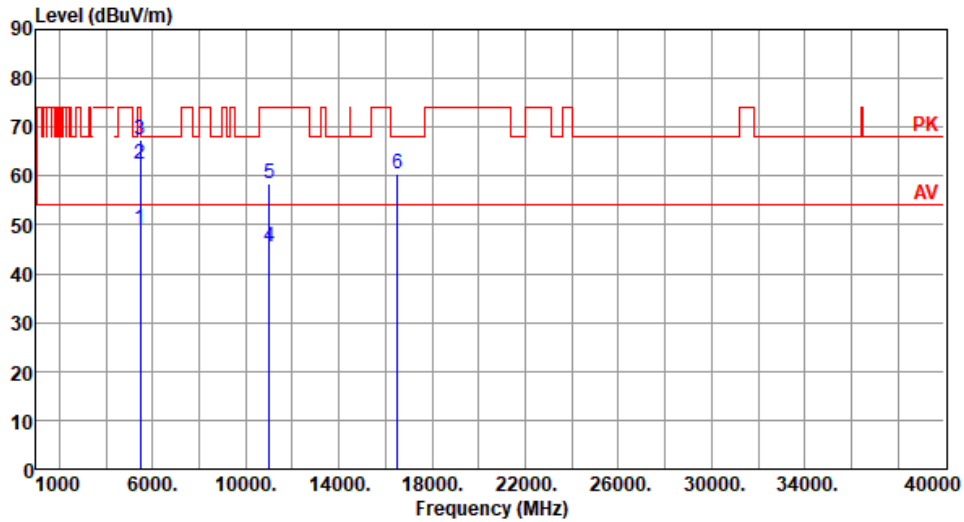
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5500
<b>Polarization</b>	Vertical		

Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	49.20	54.00	-4.80	44.75	4.45	Average	212	257
2	5460.00	62.55	74.00	-11.45	58.10	4.45	Peak	212	257
3	5470.00	67.47	68.20	-0.73	62.97	4.50	Peak	212	257
4	11000.00	45.53	54.00	-8.47	30.65	14.88	Average	100	125
5	11000.00	58.36	74.00	-15.64	43.48	14.88	Peak	100	125
6	16500.00	60.38	68.20	-7.82	44.19	16.19	Peak	100	45

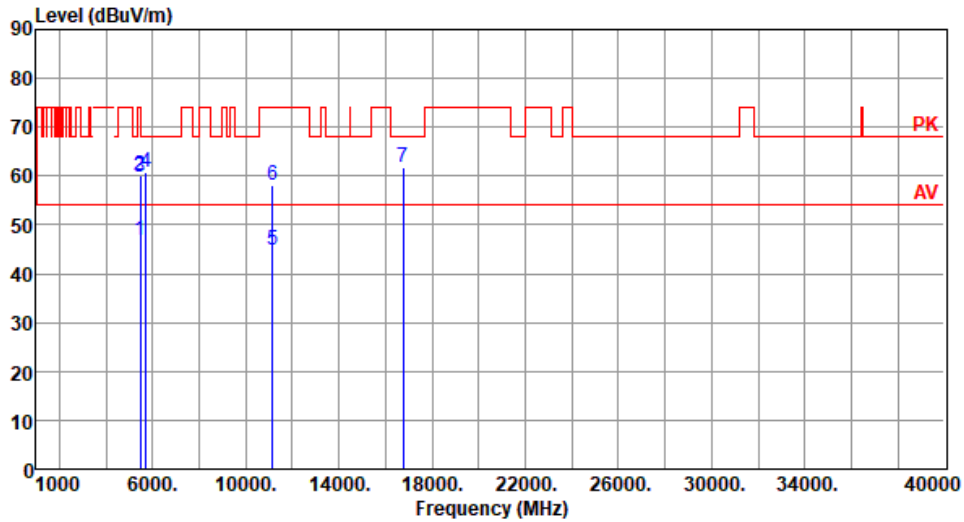
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5580
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.88	54.00	-7.12	42.43	4.45	Average	220	331
2	5460.00	60.09	74.00	-13.91	55.64	4.45	Peak	220	331
3	5470.00	59.90	68.20	-8.30	55.40	4.50	Peak	220	331
4	5725.00	60.69	68.20	-7.51	55.84	4.85	Peak	220	331
5	11160.00	44.85	54.00	-9.15	30.47	14.38	Average	100	76
6	11160.00	58.05	74.00	-15.95	43.67	14.38	Peak	100	76
7	16740.00	61.88	68.20	-6.32	44.41	17.47	Peak	100	23

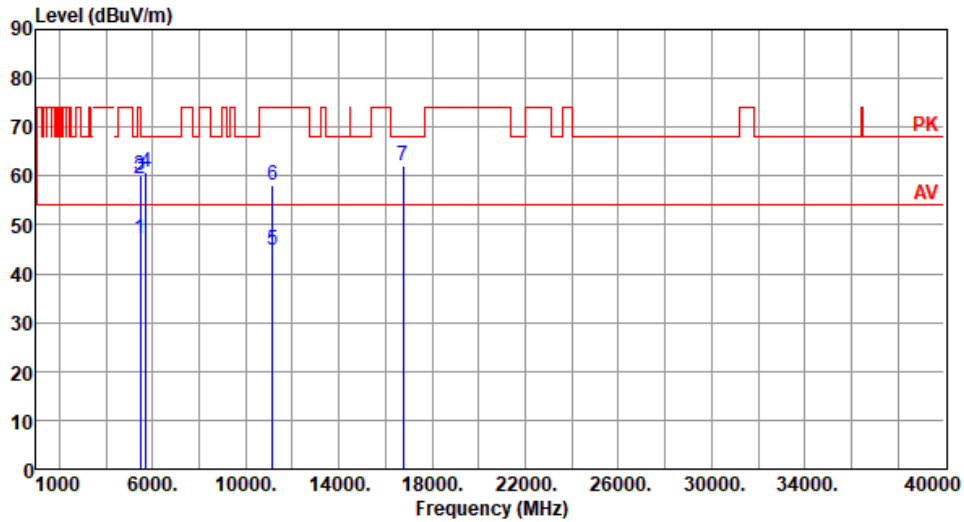
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5580
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.25	54.00	-6.75	42.80	4.45	Average	213	252
2	5460.00	59.43	74.00	-14.57	54.98	4.45	Peak	213	252
3	5470.00	60.08	68.20	-8.12	55.58	4.50	Peak	213	252
4	5725.00	60.61	68.20	-7.59	55.76	4.85	Peak	213	252
5	11160.00	44.89	54.00	-9.11	30.51	14.38	Average	100	45
6	11160.00	58.25	74.00	-15.75	43.87	14.38	Peak	100	45
7	16740.00	62.03	68.20	-6.17	44.56	17.47	Peak	100	25

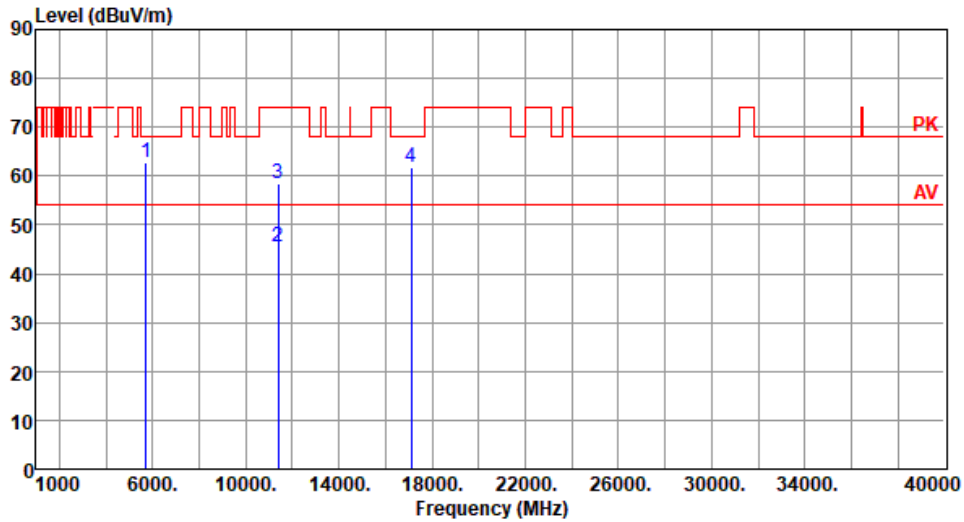
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5700
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 23      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	62.67	68.20	-5.53	57.82	4.85	Peak	218	229
2	11400.00	45.42	54.00	-8.58	30.74	14.68	Average	100	50
3	11400.00	58.42	74.00	-15.58	43.74	14.68	Peak	100	50
4	17100.00	61.68	68.20	-6.52	44.00	17.68	Peak	100	46

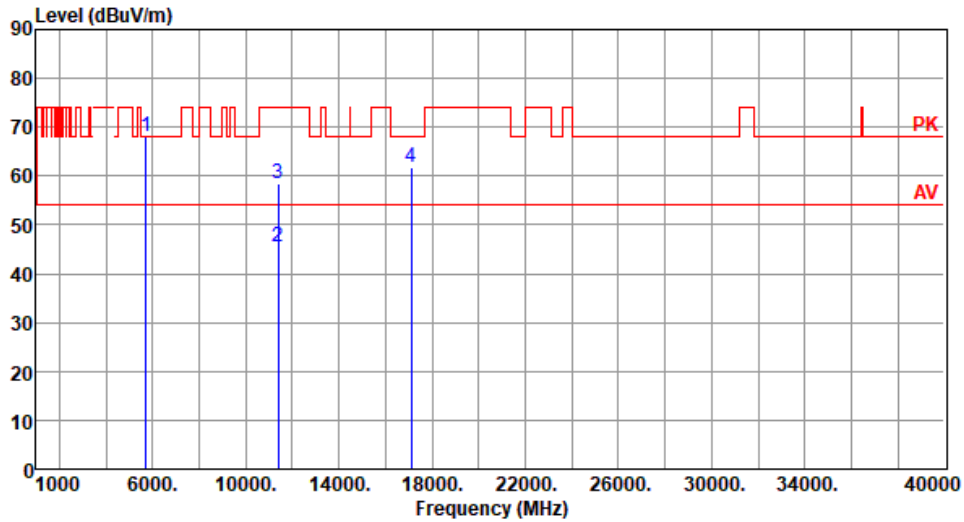
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5700
<b>Polarization</b>	Vertical		

Test By : Akun Chung      Temperature(°C): 23      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	67.95	68.20	-0.25	63.10	4.85	Peak	212	246
2	11400.00	45.43	54.00	-8.57	30.75	14.68	Average	100	56
3	11400.00	58.32	74.00	-15.68	43.64	14.68	Peak	100	56
4	17100.00	61.81	68.20	-6.39	44.13	17.68	Peak	100	56

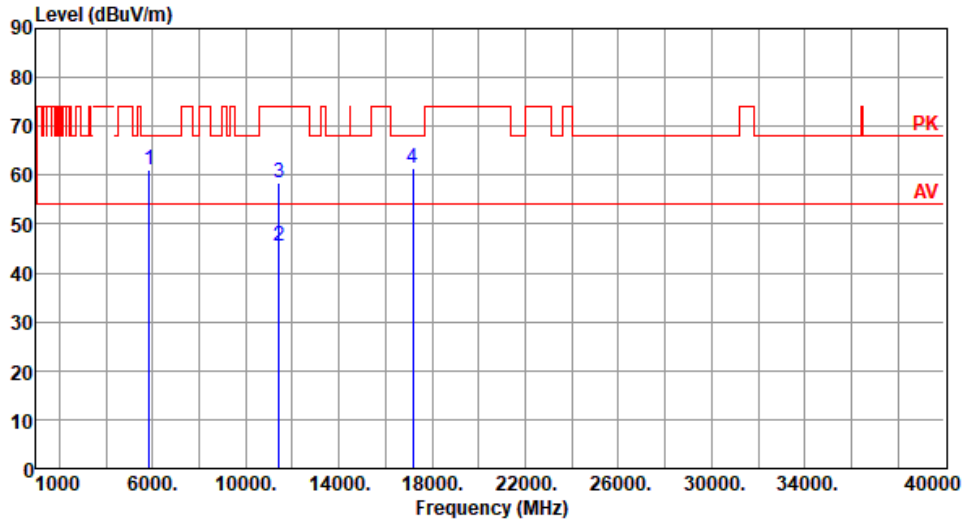
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5720
<b>Polarization</b>	Horizontal		

Test By : Roger Lu      Temperature(°C): 23      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.04	68.20	-7.16	55.59	5.45	Peak	218	329
2	11440.00	45.55	54.00	-8.45	30.89	14.66	Average	100	48
3	11440.00	58.35	74.00	-15.65	43.69	14.66	Peak	100	48
4	17160.00	61.49	68.20	-6.71	43.84	17.65	Peak	100	66

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

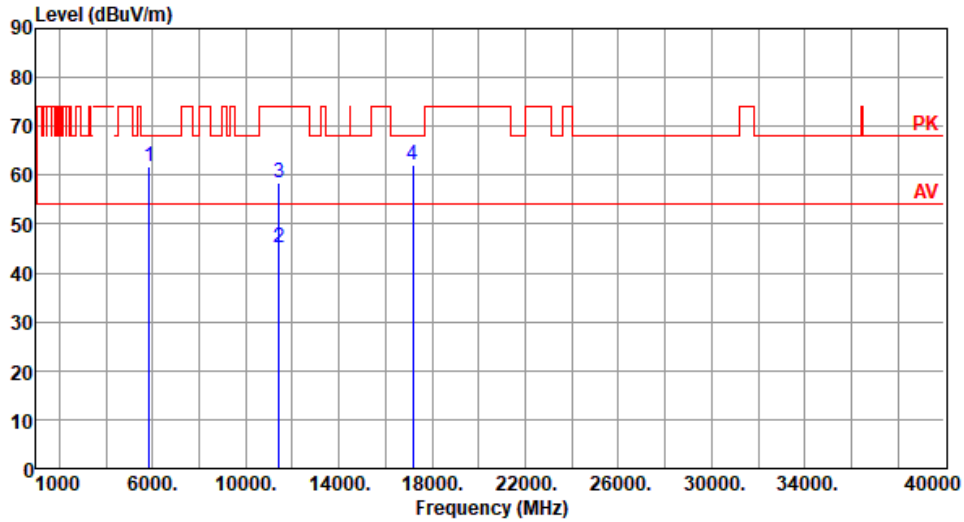
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE20)	<b>Test Freq. (MHz)</b>	5720
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<b>Polarization</b>	Vertical
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Test By : Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.61	68.20	-6.59	56.16	5.45	Peak	228	245
2	11440.00	45.18	54.00	-8.82	30.52	14.66	Average	100	20
3	11440.00	58.56	74.00	-15.44	43.90	14.66	Peak	100	20
4	17160.00	62.03	68.20	-6.17	44.38	17.65	Peak	100	60

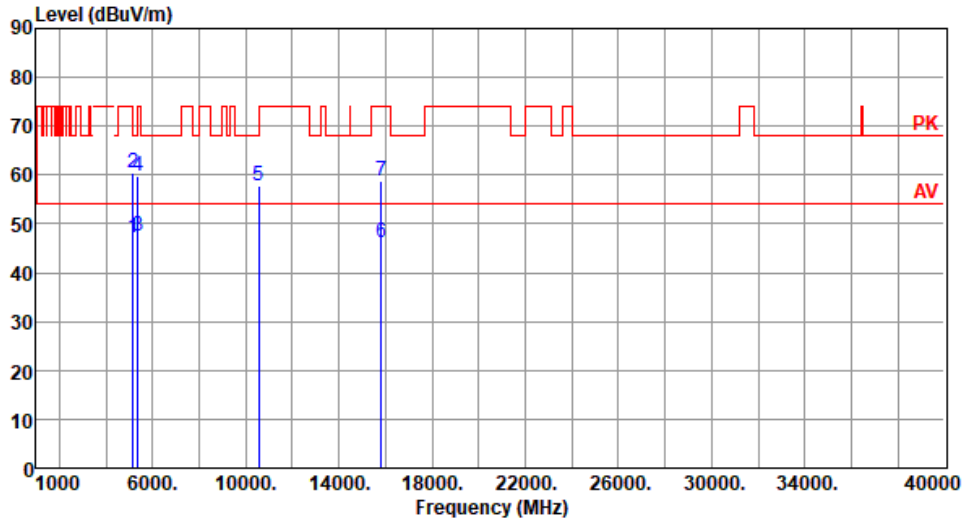
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

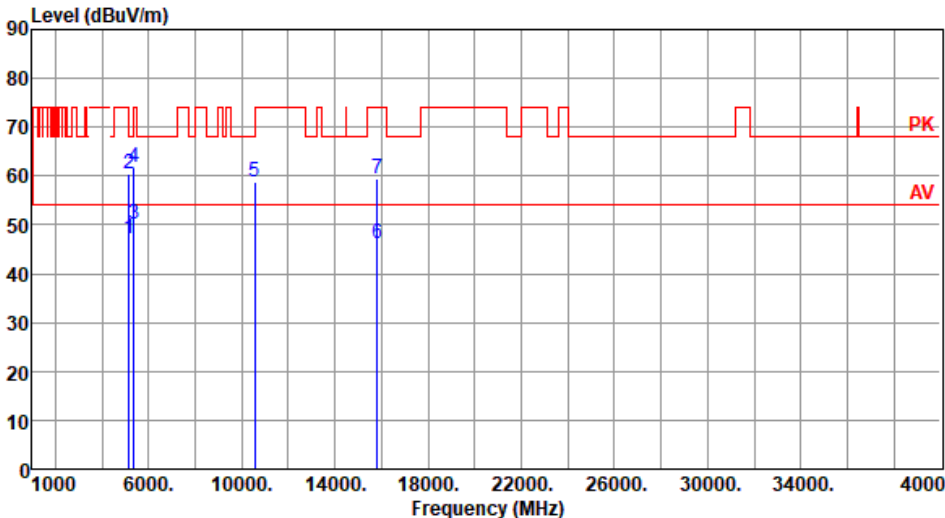
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



### 3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for ax (HE40)

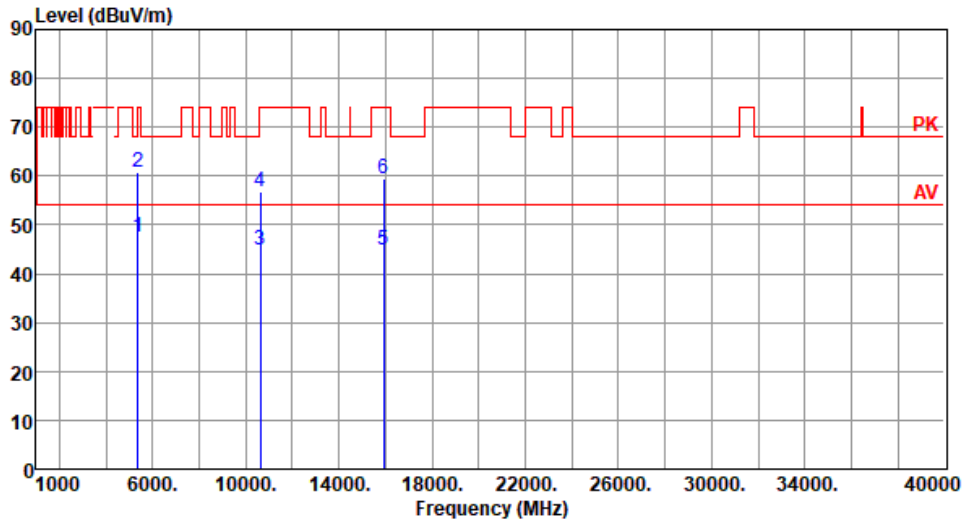
<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5270						
<b>Polarization</b>	Horizontal								
Test By : Roger Lu      Temperature(°C):23      Humidity(%):63									
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	47.08	54.00	-6.92	42.44	4.64	Average	130	105
2	5150.00	60.29	74.00	-13.71	55.65	4.64	Peak	130	105
3	5350.00	47.61	54.00	-6.39	43.67	3.94	Average	130	105
4	5350.00	59.83	74.00	-14.17	55.89	3.94	Peak	130	105
5	10540.00	57.68	68.20	-10.52	43.26	14.42	Peak	100	56
6	15810.00	46.22	54.00	-7.78	32.04	14.18	Average	100	41
7	15810.00	58.79	74.00	-15.21	44.61	14.18	Peak	100	41

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)  
 \*Factor includes antenna factor , cable loss and amplifier gain  
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5270						
<b>Polarization</b>	Vertical								
Test By :Roger Lu		Temperature(°C):23	Humidity(%):63						
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	47.29	54.00	-6.71	42.65	4.64	Average	208	259
2	5150.00	60.52	74.00	-13.48	55.88	4.64	Peak	208	259
3	5350.00	50.15	54.00	-3.85	46.21	3.94	Average	208	259
4	5350.00	61.91	74.00	-12.09	57.97	3.94	Peak	208	259
5	10540.00	58.87	68.20	-9.33	44.45	14.42	Peak	100	90
6	15810.00	46.27	54.00	-7.73	32.09	14.18	Average	100	40
7	15810.00	59.48	74.00	-14.52	45.30	14.18	Peak	100	40
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5310
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.59	54.00	-6.41	43.65	3.94	Average	130	108
2	5350.00	60.93	74.00	-13.07	56.99	3.94	Peak	130	108
3	10620.00	45.00	54.00	-9.00	30.66	14.34	Average	100	125
4	10620.00	56.94	74.00	-17.06	42.60	14.34	Peak	100	125
5	15930.00	44.71	54.00	-9.29	30.48	14.23	Average	100	143
6	15930.00	59.38	74.00	-14.62	45.15	14.23	Peak	100	143

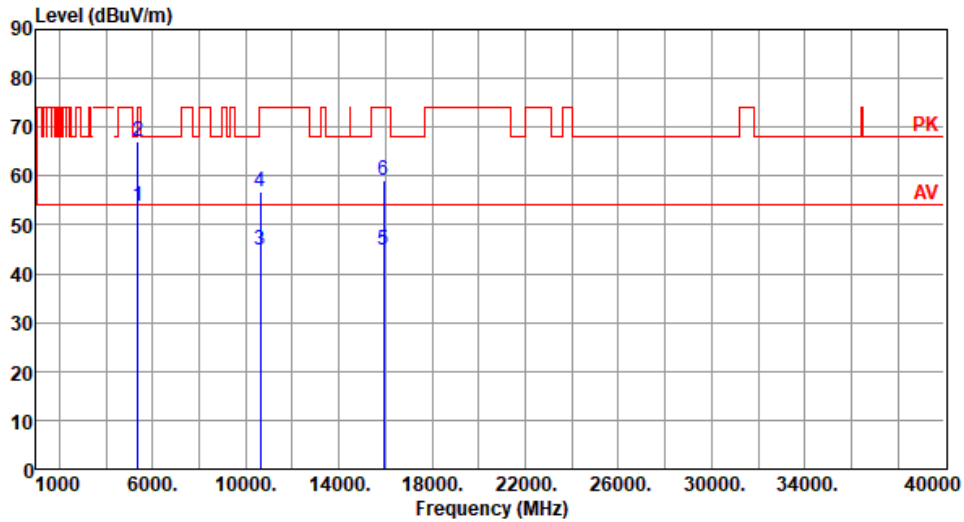
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5310
<b>Polarization</b>	Vertical		

Test By :Akun Chung      Temperature(°C):22      Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	53.79	54.00	-0.21	49.85	3.94	Average	160	251
2	5350.00	67.25	74.00	-6.75	63.31	3.94	Peak	160	251
3	10620.00	44.71	54.00	-9.29	30.37	14.34	Average	100	142
4	10620.00	56.78	74.00	-17.22	42.44	14.34	Peak	100	142
5	15930.00	44.92	54.00	-9.08	30.69	14.23	Average	100	169
6	15930.00	59.17	74.00	-14.83	44.94	14.23	Peak	100	169

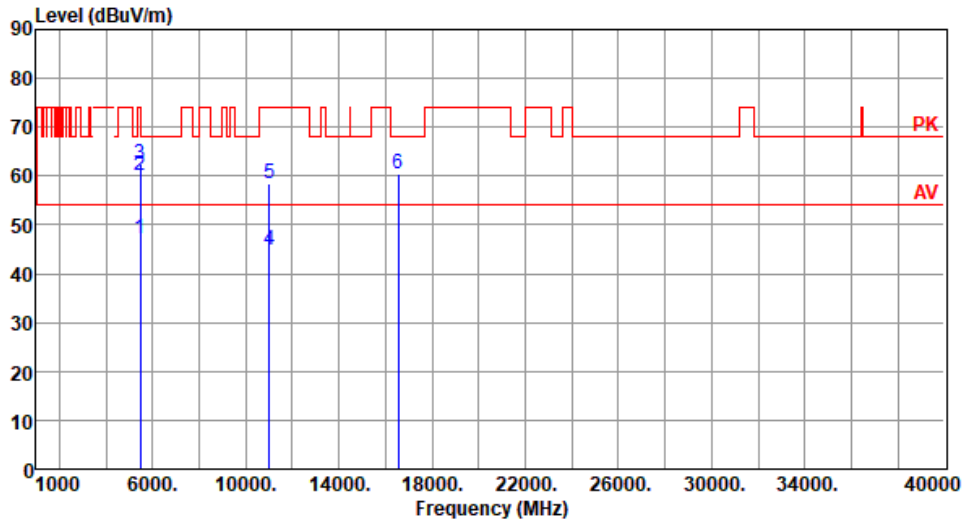
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5510
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.00	54.00	-7.00	42.55	4.45	Average	222	331
2	5460.00	60.13	74.00	-13.87	55.68	4.45	Peak	222	331
3	5470.00	62.50	68.20	-5.70	58.00	4.50	Peak	222	331
4	11020.00	44.69	54.00	-9.31	29.88	14.81	Average	100	72
5	11020.00	58.42	74.00	-15.58	43.61	14.81	Peak	100	72
6	16530.00	60.32	68.20	-7.88	43.99	16.33	Peak	100	145

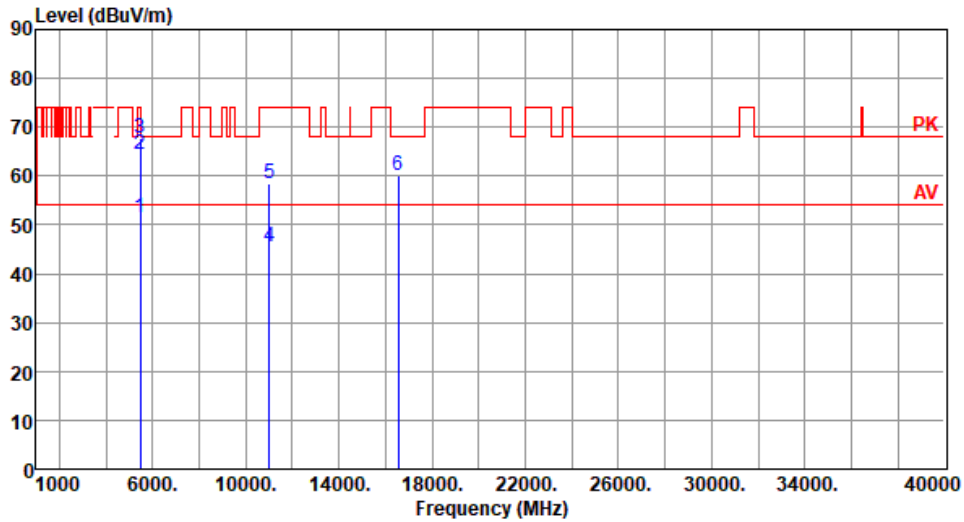
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5510
<b>Polarization</b>	Vertical		

Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	51.48	54.00	-2.52	47.03	4.45	Average	216	255
2	5460.00	64.49	74.00	-9.51	60.04	4.45	Peak	216	255
3	5470.00	67.81	68.20	-0.39	63.31	4.50	Peak	216	255
4	11020.00	45.34	54.00	-8.66	30.53	14.81	Average	100	163
5	11020.00	58.60	74.00	-15.40	43.79	14.81	Peak	100	163
6	16530.00	60.16	68.20	-8.04	43.83	16.33	Peak	100	55

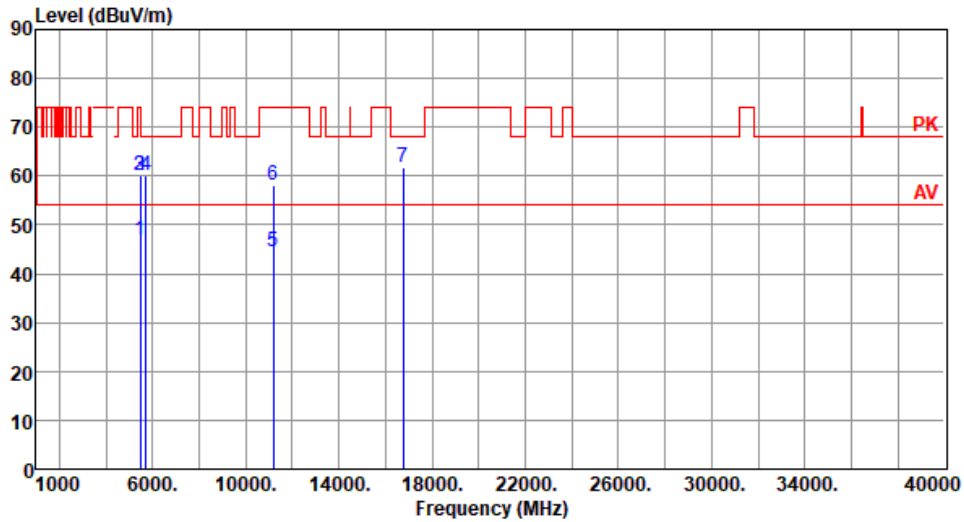
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5550
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63

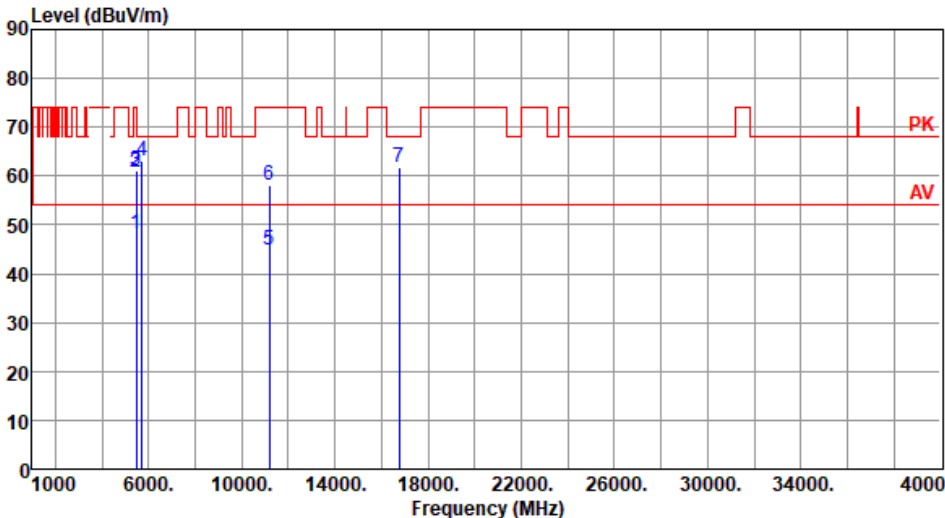


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.95	54.00	-7.05	42.50	4.45	Average	235	333
2	5460.00	59.99	74.00	-14.01	55.54	4.45	Peak	235	333
3	5470.00	60.24	68.20	-7.96	55.74	4.50	Peak	235	333
4	5725.00	60.20	68.20	-8.00	55.35	4.85	Peak	235	333
5	11180.00	44.65	54.00	-9.35	30.32	14.33	Average	100	65
6	11180.00	58.03	74.00	-15.97	43.70	14.33	Peak	100	65
7	16770.00	61.72	68.20	-6.48	44.14	17.58	Peak	100	41

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

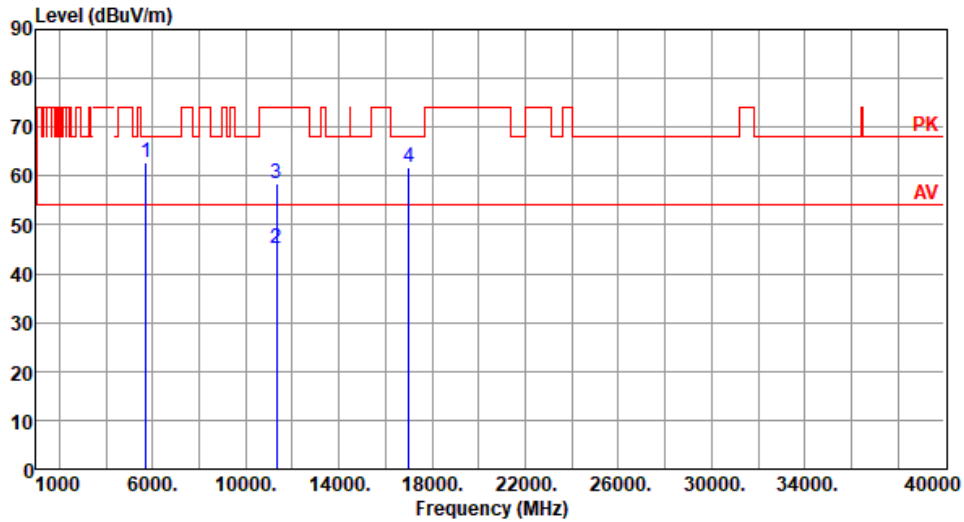
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5550																																																																																	
<b>Polarization</b>	Vertical																																																																																			
Test By : Roger Lu		Temperature(°C): 23	Humidity(%): 63																																																																																	
																																																																																				
	<table border="1"> <thead> <tr> <th></th> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5460.00</td> <td>48.13</td> <td>54.00</td> <td>-5.87</td> <td>43.68</td> <td>4.45</td> <td>Average</td> <td>199</td> <td>241</td> </tr> <tr> <td>2</td> <td>5460.00</td> <td>60.76</td> <td>74.00</td> <td>-13.24</td> <td>56.31</td> <td>4.45</td> <td>Peak</td> <td>199</td> <td>241</td> </tr> <tr> <td>3</td> <td>5470.00</td> <td>61.21</td> <td>68.20</td> <td>-6.99</td> <td>56.71</td> <td>4.50</td> <td>Peak</td> <td>199</td> <td>241</td> </tr> <tr> <td>4</td> <td>5725.00</td> <td>63.09</td> <td>68.20</td> <td>-5.11</td> <td>58.24</td> <td>4.85</td> <td>Peak</td> <td>199</td> <td>241</td> </tr> <tr> <td>5</td> <td>11180.00</td> <td>44.91</td> <td>54.00</td> <td>-9.09</td> <td>30.58</td> <td>14.33</td> <td>Average</td> <td>100</td> <td>50</td> </tr> <tr> <td>6</td> <td>11180.00</td> <td>58.14</td> <td>74.00</td> <td>-15.86</td> <td>43.81</td> <td>14.33</td> <td>Peak</td> <td>100</td> <td>50</td> </tr> <tr> <td>7</td> <td>16770.00</td> <td>61.90</td> <td>68.20</td> <td>-6.30</td> <td>44.32</td> <td>17.58</td> <td>Peak</td> <td>100</td> <td>20</td> </tr> </tbody> </table>		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	5460.00	48.13	54.00	-5.87	43.68	4.45	Average	199	241	2	5460.00	60.76	74.00	-13.24	56.31	4.45	Peak	199	241	3	5470.00	61.21	68.20	-6.99	56.71	4.50	Peak	199	241	4	5725.00	63.09	68.20	-5.11	58.24	4.85	Peak	199	241	5	11180.00	44.91	54.00	-9.09	30.58	14.33	Average	100	50	6	11180.00	58.14	74.00	-15.86	43.81	14.33	Peak	100	50	7	16770.00	61.90	68.20	-6.30	44.32	17.58	Peak	100	20			
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																											
1	5460.00	48.13	54.00	-5.87	43.68	4.45	Average	199	241																																																																											
2	5460.00	60.76	74.00	-13.24	56.31	4.45	Peak	199	241																																																																											
3	5470.00	61.21	68.20	-6.99	56.71	4.50	Peak	199	241																																																																											
4	5725.00	63.09	68.20	-5.11	58.24	4.85	Peak	199	241																																																																											
5	11180.00	44.91	54.00	-9.09	30.58	14.33	Average	100	50																																																																											
6	11180.00	58.14	74.00	-15.86	43.81	14.33	Peak	100	50																																																																											
7	16770.00	61.90	68.20	-6.30	44.32	17.58	Peak	100	20																																																																											
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>																																																																																				



<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5670
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 22      Humidity(%): 64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	62.74	68.20	-5.46	57.89	4.85	Peak	233	331
2	11340.00	45.32	54.00	-8.68	30.85	14.47	Average	100	136
3	11340.00	58.41	74.00	-15.59	43.94	14.47	Peak	100	136
4	17010.00	61.93	68.20	-6.27	44.04	17.89	Peak	100	142

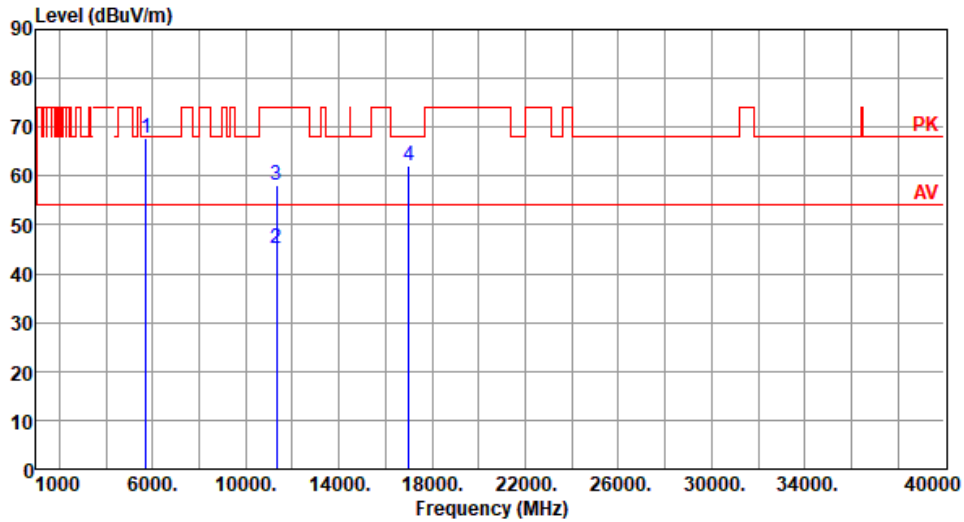
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5670
<b>Polarization</b>	Vertical		

Test By :Akun Chung      Temperature(°C):22      Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	67.87	68.20	-0.33	63.02	4.85	Peak	220	238
2	11340.00	45.21	54.00	-8.79	30.74	14.47	Average	100	143
3	11340.00	58.10	74.00	-15.90	43.63	14.47	Peak	100	143
4	17010.00	61.96	68.20	-6.24	44.07	17.89	Peak	100	165

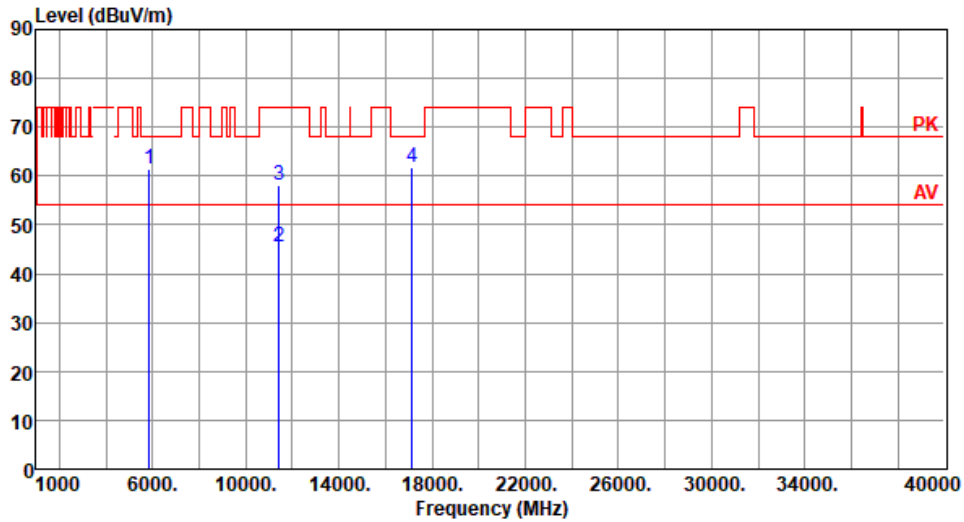
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5710
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.31	68.20	-6.89	55.86	5.45	Peak	230	330
2	11420.00	45.43	54.00	-8.57	30.76	14.67	Average	100	51
3	11420.00	58.27	74.00	-15.73	43.60	14.67	Peak	100	51
4	17130.00	61.61	68.20	-6.59	43.94	17.67	Peak	100	37

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

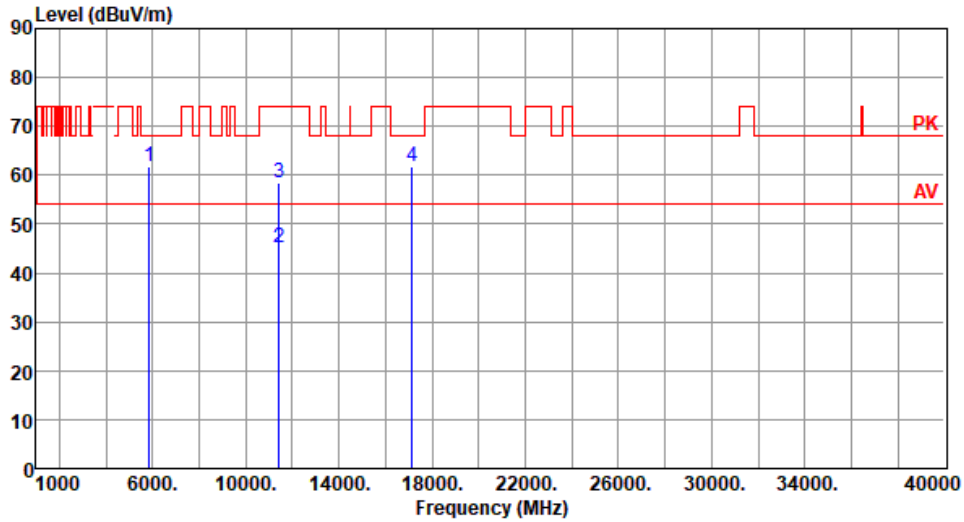
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE40)	<b>Test Freq. (MHz)</b>	5710
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<b>Polarization</b>	Vertical
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Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



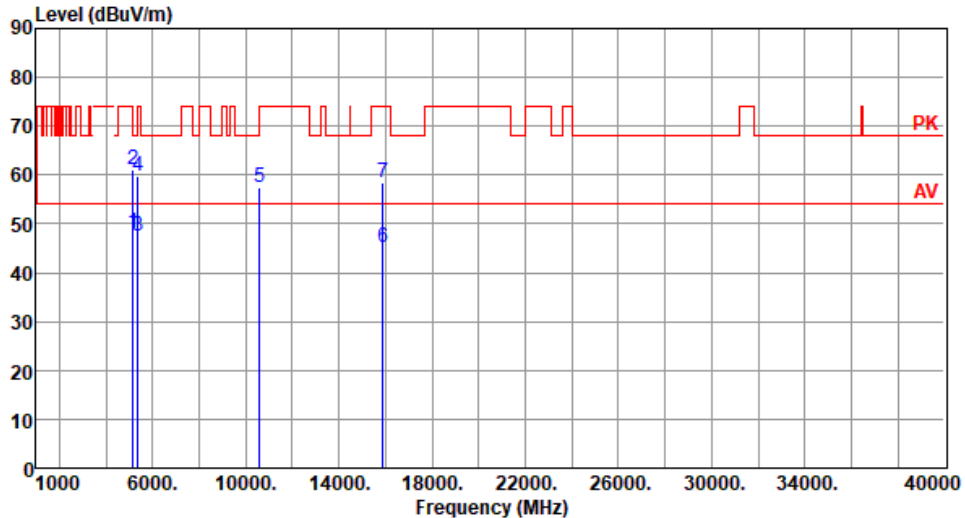
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.81	68.20	-6.39	56.36	5.45	Peak	209	240
2	11420.00	45.23	54.00	-8.77	30.56	14.67	Average	100	30
3	11420.00	58.47	74.00	-15.53	43.80	14.67	Peak	100	30
4	17130.00	61.80	68.20	-6.40	44.13	17.67	Peak	100	25

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

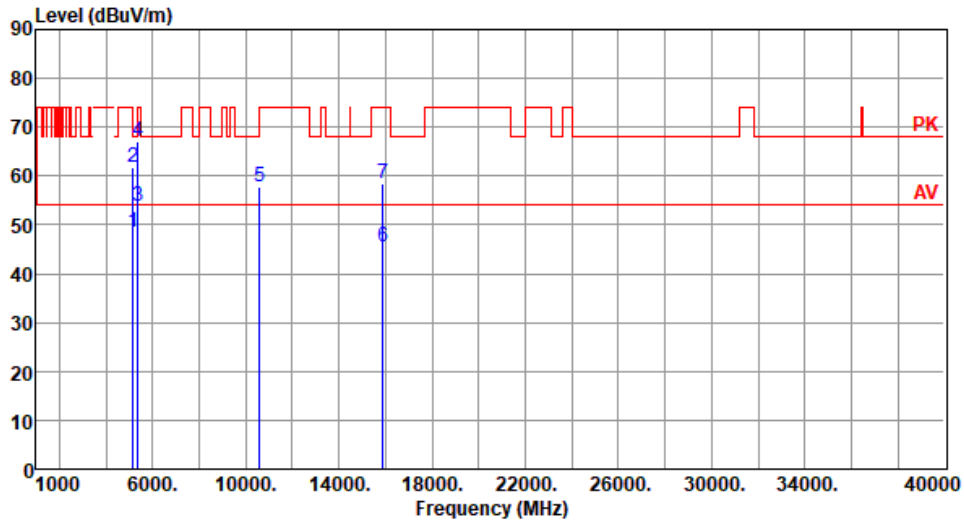
### 3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for ax (HE80)

<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5290						
<b>Polarization</b>	Horizontal								
Test By : Akun Chung      Temperature(°C): 23      Humidity(%): 63									
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High cm	Turn Table deg
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB			
1	5150.00	48.28	54.00	-5.72	43.64	4.64	Average	122	132
2	5150.00	60.99	74.00	-13.01	56.35	4.64	Peak	122	132
3	5350.00	47.63	54.00	-6.37	43.69	3.94	Average	122	132
4	5350.00	59.62	74.00	-14.38	55.68	3.94	Peak	122	132
5	10580.00	57.60	68.20	-10.60	43.28	14.32	Peak	122	132
6	15870.00	45.26	54.00	-8.74	31.03	14.23	Average	100	68
7	15870.00	58.43	74.00	-15.57	44.20	14.23	Peak	100	68

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)  
 \*Factor includes antenna factor , cable loss and amplifier gain  
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5290
<b>Polarization</b>	Vertical		

Test By :Akun Chung      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.59	54.00	-5.41	43.95	4.64	Average	221	254
2	5150.00	61.70	74.00	-12.30	57.06	4.64	Peak	221	254
3	5350.00	53.82	54.00	-0.18	49.88	3.94	Average	221	254
4	5350.00	66.94	74.00	-7.06	63.00	3.94	Peak	221	254
5	10580.00	57.75	68.20	-10.45	43.43	14.32	Peak	100	156
6	15870.00	45.49	54.00	-8.51	31.26	14.23	Average	100	51
7	15870.00	58.33	74.00	-15.67	44.10	14.23	Peak	100	51

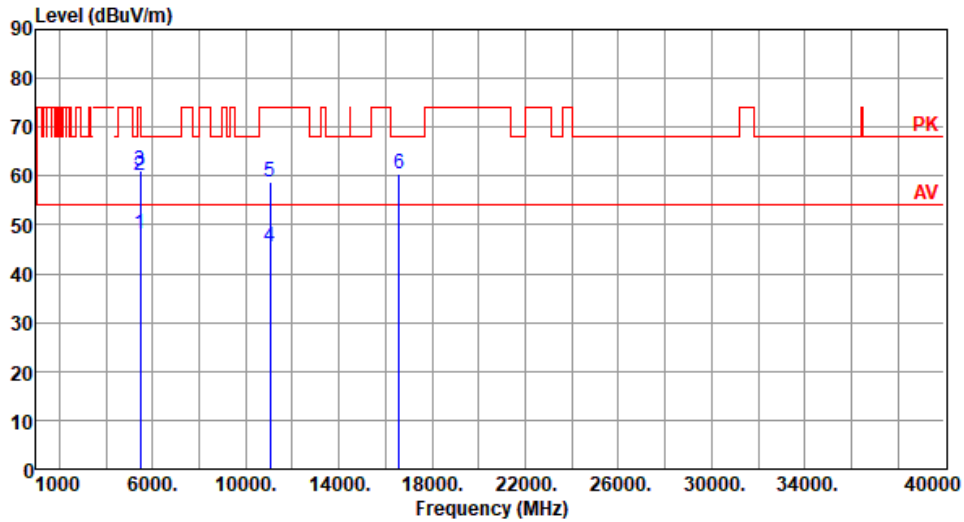
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5530
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 23      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	48.09	54.00	-5.91	43.64	4.45	Average	221	332
2	5460.00	60.15	74.00	-13.85	55.70	4.45	Peak	221	332
3	5470.00	61.24	68.20	-6.96	56.74	4.50	Peak	221	232
4	11060.00	45.53	54.00	-8.47	30.86	14.67	Average	100	61
5	11060.00	58.62	74.00	-15.38	43.95	14.67	Peak	100	61
6	16590.00	60.54	68.20	-7.66	43.93	16.61	Peak	100	52

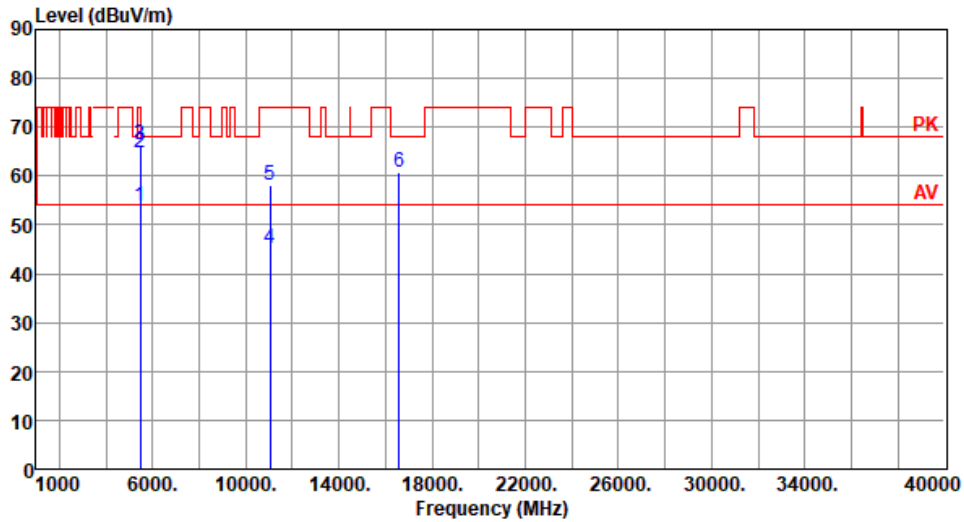
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5530
<b>Polarization</b>	Vertical		

Test By : Akun Chung      Temperature(°C): 23      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	53.73	54.00	-0.27	49.28	4.45	Average	221	236
2	5460.00	64.80	74.00	-9.20	60.35	4.45	Peak	221	236
3	5470.00	66.40	68.20	-1.80	61.90	4.50	Peak	221	236
4	11060.00	45.29	54.00	-8.71	30.62	14.67	Average	100	53
5	11060.00	58.27	74.00	-15.73	43.60	14.67	Peak	100	53
6	16590.00	60.75	68.20	-7.45	44.14	16.61	Peak	100	62

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

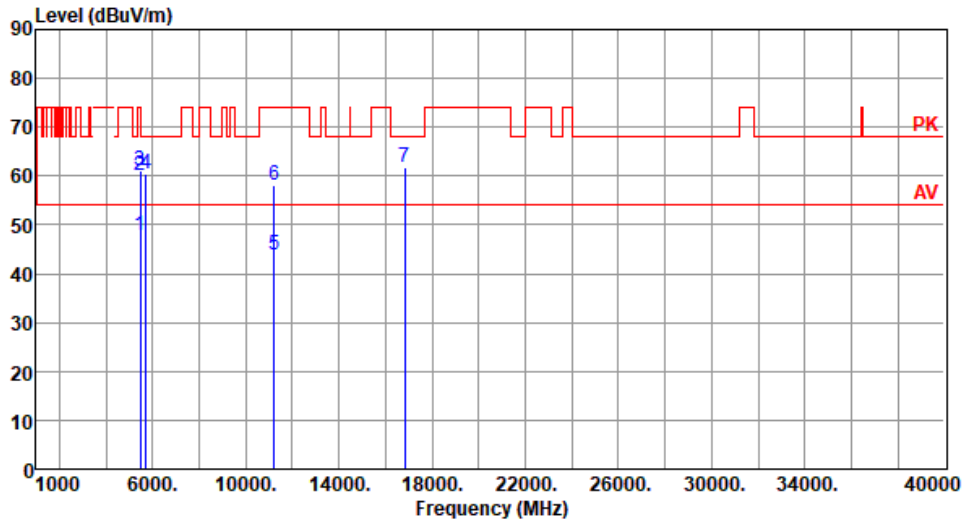
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5610
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.98	54.00	-6.02	43.53	4.45	Average	222	335
2	5460.00	60.19	74.00	-13.81	55.74	4.45	Peak	222	335
3	5470.00	61.03	68.20	-7.17	56.53	4.50	Peak	222	335
4	5725.00	60.44	68.20	-7.76	55.59	4.85	Peak	222	335
5	11220.00	43.98	54.00	-10.02	29.69	14.29	Average	100	56
6	11220.00	58.18	74.00	-15.82	43.89	14.29	Peak	100	56
7	16830.00	61.68	68.20	-6.52	44.03	17.65	Peak	100	65

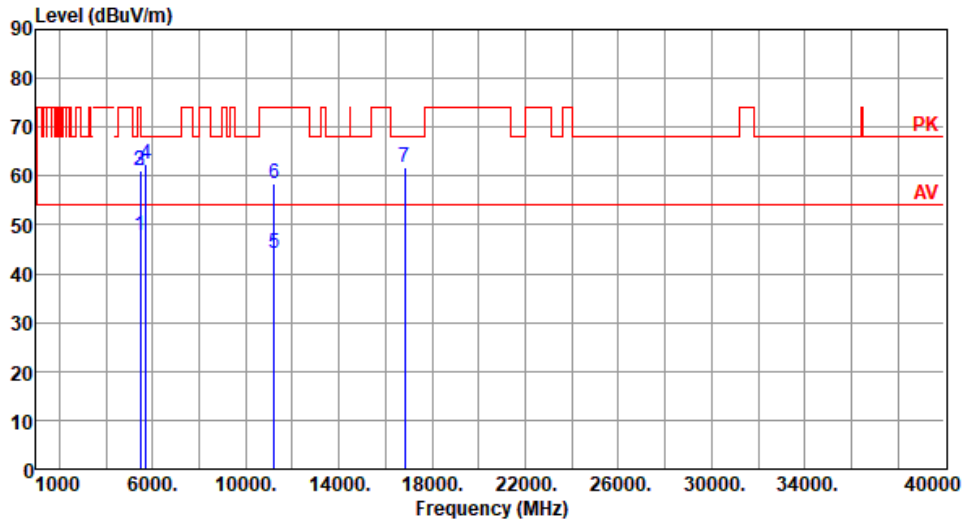
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5610
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.88	54.00	-6.12	43.43	4.45	Average	231	241
2	5460.00	61.09	74.00	-12.91	56.64	4.45	Peak	231	241
3	5470.00	61.20	68.20	-7.00	56.70	4.50	Peak	231	241
4	5725.00	62.37	68.20	-5.83	57.52	4.85	Peak	231	241
5	11220.00	44.19	54.00	-9.81	29.90	14.29	Average	100	168
6	11220.00	58.42	74.00	-15.58	44.13	14.29	Peak	100	168
7	16830.00	61.86	68.20	-6.34	44.21	17.65	Peak	100	67

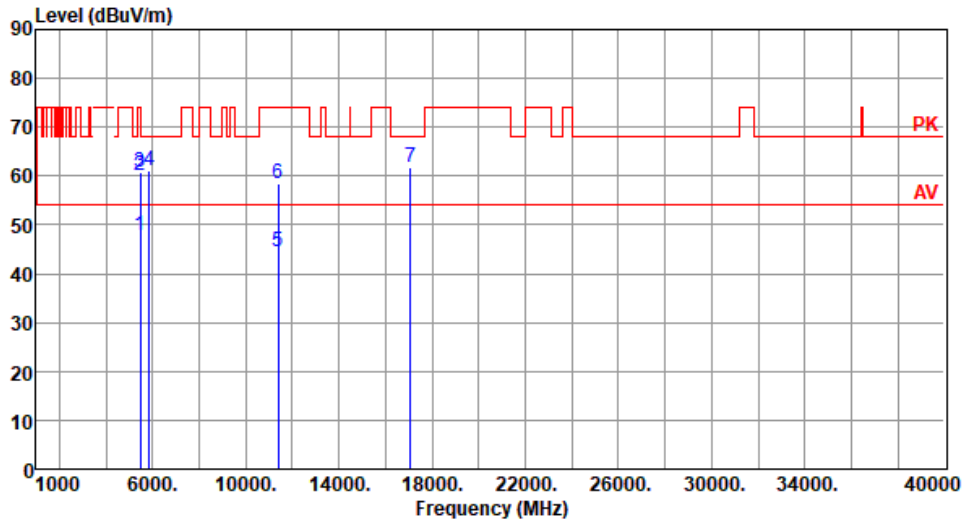
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5690
<b>Polarization</b>	Horizontal		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.85	54.00	-6.15	43.40	4.45	Average	235	331
2	5460.00	59.98	74.00	-14.02	55.53	4.45	Peak	235	331
3	5470.00	60.90	68.20	-7.30	56.40	4.50	Peak	235	331
4	5850.00	61.03	68.20	-7.17	55.58	5.45	Peak	235	331
5	11380.00	44.35	54.00	-9.65	29.74	14.61	Average	100	48
6	11380.00	58.35	74.00	-15.65	43.74	14.61	Peak	100	48
7	17070.00	61.73	68.20	-6.47	43.98	17.75	Peak	100	36

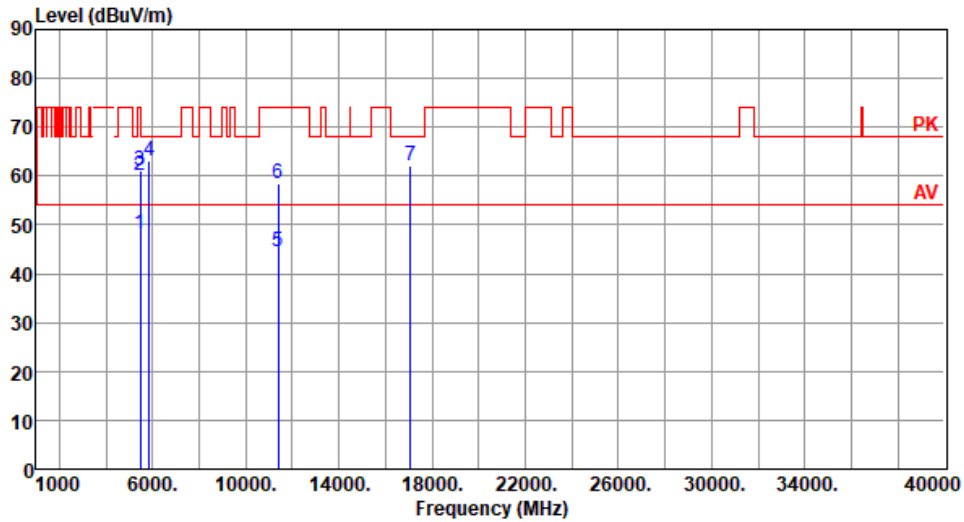
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE80)	<b>Test Freq. (MHz)</b>	5690
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):23      Humidity(%):63



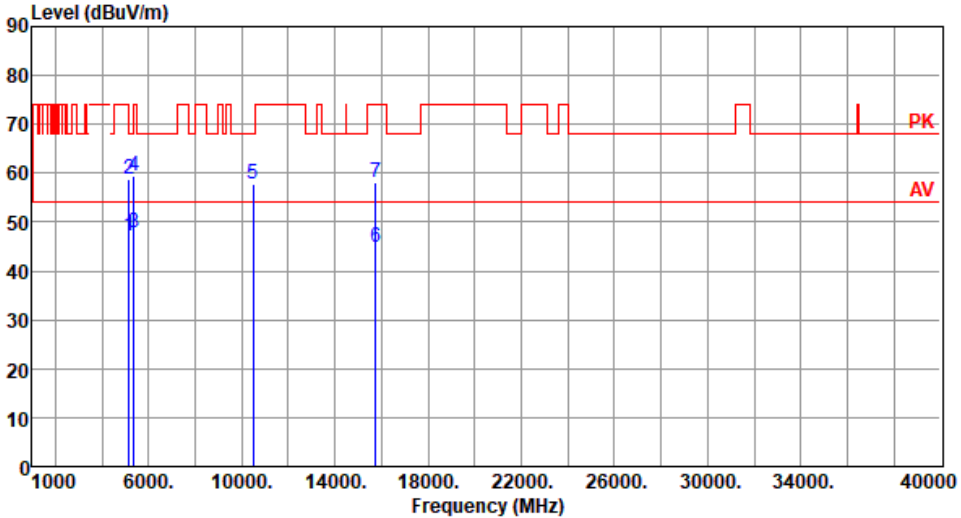
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	48.13	54.00	-5.87	43.68	4.45	Average	218	240
2	5460.00	60.25	74.00	-13.75	55.80	4.45	Peak	218	240
3	5470.00	61.18	68.20	-7.02	56.68	4.50	Peak	218	240
4	5850.00	63.23	68.20	-4.97	57.78	5.45	Peak	218	240
5	11380.00	44.50	54.00	-9.50	29.89	14.61	Average	100	53
6	11380.00	58.52	74.00	-15.48	43.91	14.61	Peak	100	53
7	17070.00	61.97	68.20	-6.23	44.22	17.75	Peak	100	42

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

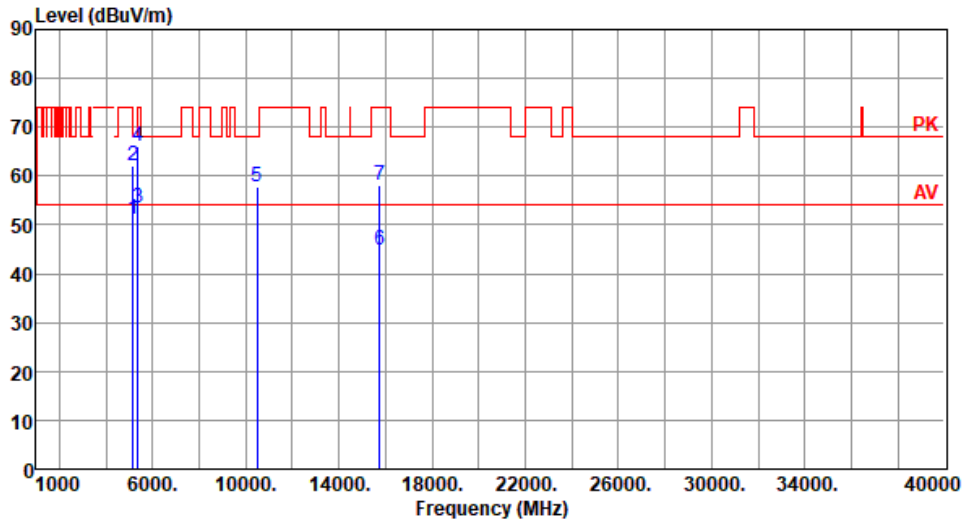
### 3.5.9 Transmitter Radiated Unwanted Emissions (Above 1GHz) for ax (HE160)

<b>Modulation</b>	ax (HE160)		<b>Test Freq. (MHz)</b>	5250					
<b>Polarization</b>	Horizontal								
Test By : Akun Chung		Temperature(°C): 24		Humidity(%): 63					
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.21	54.00	-6.79	42.57	4.64	Average	236	231
2	5150.00	58.85	74.00	-15.15	54.21	4.64	Peak	236	231
3	5350.00	47.83	54.00	-6.17	43.89	3.94	Average	236	231
4	5350.00	59.48	74.00	-14.52	55.54	3.94	Peak	236	231
5	10500.00	57.95	68.20	-10.25	43.45	14.50	Peak	100	37
6	15750.00	44.78	54.00	-9.22	30.58	14.20	Average	100	62
7	15750.00	58.17	74.00	-15.83	43.97	14.20	Peak	100	62
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)          *Factor includes antenna factor , cable loss and amplifier gain          Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	ax (HE160)	<b>Test Freq. (MHz)</b>	5250
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<b>Polarization</b>	Vertical
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Test By : Akun Chung      Temperature(°C): 24      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	51.09	54.00	-2.91	46.45	4.64	Average	246	259
2	5150.00	61.97	74.00	-12.03	57.33	4.64	Peak	246	259
3	5350.00	53.33	54.00	-0.67	49.39	3.94	Average	246	259
4	5350.00	65.96	74.00	-8.04	62.02	3.94	Peak	246	259
5	10500.00	57.81	68.20	-10.39	43.31	14.50	Peak	100	52
6	15750.00	44.67	54.00	-9.33	30.47	14.20	Average	100	61
7	15750.00	58.18	74.00	-15.82	43.98	14.20	Peak	100	61

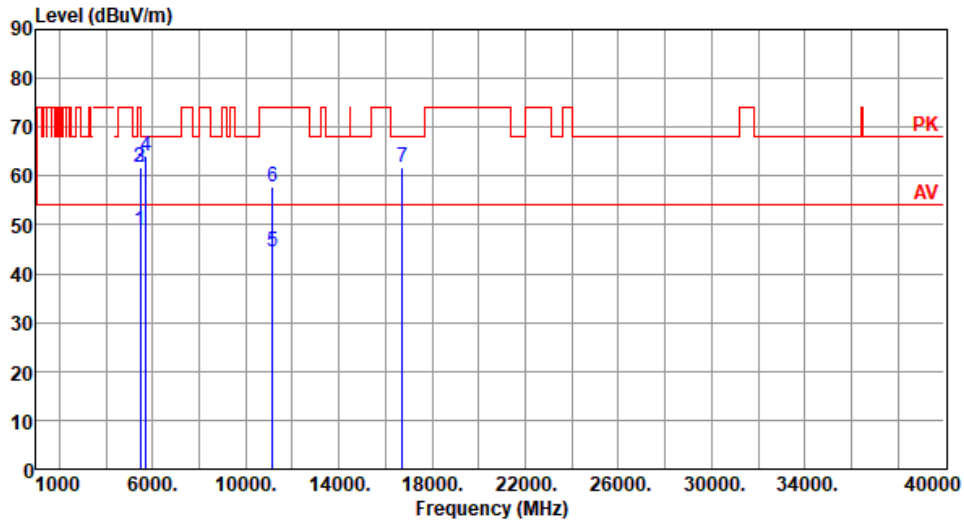
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE160)	<b>Test Freq. (MHz)</b>	5570
<b>Polarization</b>	Horizontal		

Test By : Akun Chung      Temperature(°C): 24      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	48.82	54.00	-5.18	44.37	4.45	Average	174	242
2	5460.00	61.70	74.00	-12.30	57.25	4.45	Peak	174	242
3	5470.00	61.67	68.20	-6.53	57.17	4.50	Peak	174	242
4	5725.00	64.12	68.20	-4.08	59.27	4.85	Peak	174	242
5	11140.00	44.63	54.00	-9.37	30.20	14.43	Average	100	143
6	11140.00	57.86	74.00	-16.14	43.43	14.43	Peak	100	143
7	16710.00	61.71	68.20	-6.49	44.35	17.36	Peak	100	143

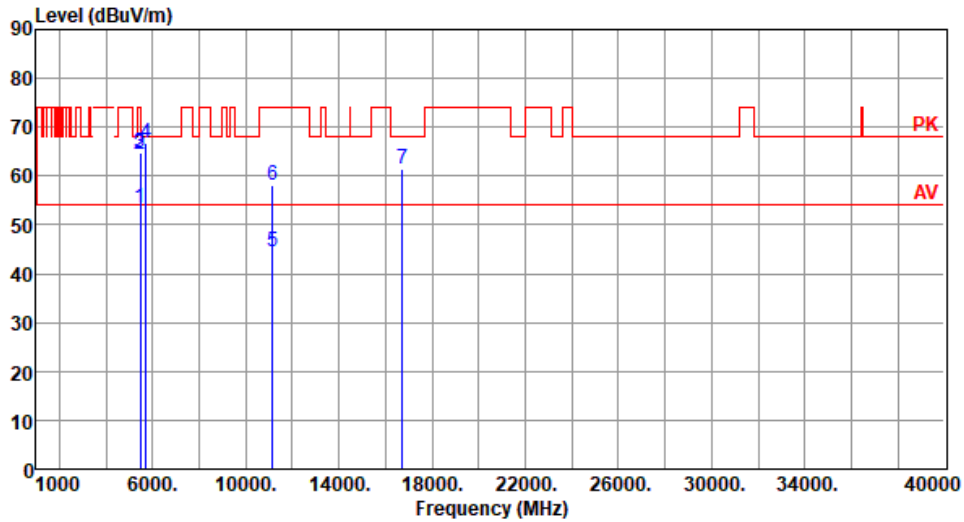
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	ax (HE160)	<b>Test Freq. (MHz)</b>	5570
<b>Polarization</b>	Vertical		

Test By : Akun Chung      Temperature(°C): 24      Humidity(%): 63



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	53.53	54.00	-0.47	49.08	4.45	Average	133	67
2	5460.00	64.27	74.00	-9.73	59.82	4.45	Peak	133	67
3	5470.00	64.65	68.20	-3.55	60.15	4.50	Peak	133	67
4	5725.00	66.78	68.20	-1.42	61.93	4.85	Peak	133	67
5	11140.00	44.36	54.00	-9.64	29.93	14.43	Average	100	28
6	11140.00	58.14	74.00	-15.86	43.71	14.43	Peak	100	28
7	16710.00	61.42	68.20	-6.78	44.06	17.36	Peak	100	55

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



## 3.6 Frequency Stability

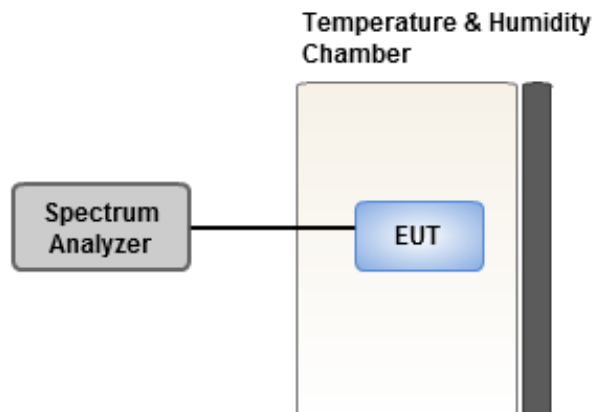
### 3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

### 3.6.2 Test Procedures

1. The EUT is installed in an environment test chamber with external power source.
2. Set the chamber to operate at 20 centigrade and external power source to output at nominal voltage of EUT.
3. A sufficient stabilization period at each temperature is used prior to each frequency measurement.
4. When temperature is stabled, measure the frequency stability.
5. The test shall be performed under normal and extreme condition for temperature and voltage.

### 3.6.3 Test Setup



### 3.6.4 Test Result of Frequency Stability

<b>Ambient Condition</b>	22~25°C / 65~68%	<b>Tested By</b>	Aska Huang
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Frequency: 5320 MHz	Frequency Drift (ppm)			
	0 minute	2 minutes	5 minutes	10 minutes
<b>Temperature (°C)</b>				
T20°C <sub>Vmax</sub>	-0.30	-0.53	-0.17	-0.87
T20°C <sub>Vmin</sub>	-1.50	-0.88	-1.01	-1.18
T50°C <sub>Vnom</sub>	-6.01	-5.92	-6.76	-6.34
T40°C <sub>Vnom</sub>	-3.82	-4.43	-3.91	-4.49
T30°C <sub>Vnom</sub>	-2.50	-2.73	-2.20	-2.78
T20°C <sub>Vnom</sub>	-1.13	-0.61	-0.34	-0.91
T10°C <sub>Vnom</sub>	-2.01	-1.74	-1.70	-2.06
T0°C <sub>Vnom</sub>	-0.33	-0.85	-0.50	-0.02
T-10°C <sub>Vnom</sub>	2.38	1.94	2.61	2.76
T-20°C <sub>Vnom</sub>	4.39	5.43	4.55	5.19
T-30°C <sub>Vnom</sub>	6.04	6.64	6.77	6.44
Vnom [V]: 120	Vmax [V]: 138		Vmin [V]: 102	
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30	

## 4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

### **Linkou**

Tel: 886-2-2601-1640

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District, New Taipei City, Taiwan  
(R.O.C.)

### **Kwei Shan**

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd St.,  
Kwei Shan Dist., Tao Yuan City  
33381, Taiwan (R.O.C.)

### **Kwei Shan Site II**

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd  
St., Kwei Shan Dist., Tao Yuan  
City 333, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

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