

FCC Test Report

FCC ID : P27-XIONESCM2

Equipment : XiOne-SC (B)

Model No. : SCXIxxBEIxCO; SCXIxxBEI

(Refer to item 1.1.1 for more details.)

Brand Name : Comcast Xfinity; Cox; Shaw

(Refer to item 1.1.1 for more details.)

Applicant : Sercomm Corporation

Address : 8F, 3-1, YuanQu St., NanKang, Taipei, 11503,

Taiwan

Standard : 47 CFR FCC Part 15.407

Received Date : Jun. 10, 2021

Tested Date : Jun. 12 ~ Jul. 15, 2021

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

RA

TAF

Testing Laboratory

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Report Version: Rev. 02



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The previous version of the test report has been cancelled and replaced by new version.

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Release Record

Report No.	Version	Description	Issued Date
FR161001AN	Rev. 01	Initial issue	Jul. 26, 2021
FR161001AN	Rev. 02	Beamforming information is added	Jul. 30, 2021

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Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 6.056MHz 49.18 (Margin -10.82dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5470.00MHz 68.15 (Margin -0.05dB) - PK	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: 5150~5250MHz: 23.28 5250~5350MHz: 23.32 5470~5725MHz: 23.81 5725~5850MHz: 26.52	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.

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1 General Description

1.1 Information

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Comcast Xfinity; Cox; Shaw	SCXIxxBEIxCO; SCXIxxBEI	XiOne-SC (B)	Where "x" may be any alphanumeric for External Body Color.

⁺ All models are electrically identical, different model names are for marketing purpose.

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⁺ The above models, model **SCXI11BEI** was selected as a representative one for the final test and only its data was recorded in this report.



1.1.2 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 _{TX})	Data Rate / MCS	
5150-5250 5250-5350 5470-5725 5725-5850	а	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [12] 149-165 [5]	2	6-54 Mbps	
5150-5250 5250-5350 5470-5725 5725-5850	n (HT20)	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [12] 149-165 [5]	2	MCS 0-15	
5150-5250 5250-5350 5470-5725 5725-5850	n (HT40)	5190-5230 5270-5310 5510-5710 5755-5795	38-46 [2] 54-62 [2] 102-142 [6] 151-159 [2]	2	MCS 0-15	
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT20)	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [12] 149-165 [5]	2	MCS 0-9	
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT40)	5190-5230 5270-5310 5510-5710 5755-5795	38-46 [2] 54-62 [2] 102-142 [6] 151-159 [2]	2	MCS 0-9	
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT80)	5210 5290 5530~5690 5775	42 [1] 58 [1] 106-138 [3] 155 [1]	2	MCS 0-9	
5150-5250 5250-5350 5470-5725 5725-5850	ax (HE20)	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [12] 149-165 [5]	2	MCS 0-11	
5150-5250 5250-5350 5470-5725 5725-5850	ax (HE40)	5190-5230 5270-5310 5510-5710 5755-5795	38-46 [2] 54-62 [2] 102-142 [6] 151-159 [2]	2	MCS 0-11	
5150-5250 5250-5350 5470-5725 5725-5850	ax (HE80)	5210 5290 5530~5690 5775	42 [1] 58 [1] 106-138 [3] 155 [1]	2	MCS 0-11	

Note 1: RF output power specifies that Maximum Conducted Output Power.

Note 2: Chip feature: OFDM/OFDMA- BPSK, QPSK, 16QAM, 64QAM, 256QAM and 1024QAM modulation

Note 3: 802.11ax supports beamforming function.



1.1.3 Antenna Details

Ant.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)			(dBi)	
No.	ouo.	.,,,,,		2400~2483.5 5150~5250 5250~5350 5470~5725 572				
1	Ant0	PIFA	UFL	3.37	3.7	3.87	3.8	3.5
2	Ant1	PIFA	NA	3.81	3.83	3.85	3.85	3.92

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	5.0Vdc from AC adapter
-------------------	------------------------

1.1.5 Accessories

	Accessories				
No.	Equipment	Description			
1	AC adapter	Brand: LEADER Model: ML08-7050150-A1 I/P: 100-120V~ 50/60Hz, 0.25A O/P: 5.0Vdc, 1.5A Power Line: 1.8m non-shielded without core			
2	AC adapter	Brand: NetBit Model: NBC08A050150HU I/P: 100-120V~ 50/60Hz, 0.2A O/P: 5.0Vdc, 1.5A Power Line: 1.81m non-shielded without core			
3	AC adapter	Brand: AcBel Model: WAK010 I/P: 100-120V~ 60Hz, 0.25A O/P: 5.0Vdc, 1.5A Power Line: 1.78m non-shielded without core			

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1.1.6 Channel List

802.11a / n HT20 /	ac VHT20 / ax HE20	802.11n HT40 / ac	: VHT40 / ax HE40
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	54	5270
48	5240	62	5310
52	5260	102	5510
56	5280	110	5550
60	5300	118	5590
64	5320	126	5630
100	5500	134	5670
104	5520	142	5710
108	5540	151	5755
112	5560	159	5795
116	5580	802.11ac VH	Γ80 / ax HE80
120	5600	42	5210
124	5620	58	5290
128	5640	106	5530
132	5660	122	5610
136	5680	138	5690
140	5700	155	5775
144	5720		
149	5745		
153	5765		
157	5785		
161	5805		
165	5825		

1.1.7 Test Tool and Duty Cycle

Test Tool	accessMtool, V3.1.0.2 ; Tera Term, V4.66			
	Mode	Duty Cycle (%)	Duty Factor (dB)	
	11a	96.00%	0.18	
Duty Cycle and Duty Factor	ax HE20	99.52%	0.02	
	ax HE40	97.31%	0.12	
	ax HE80	95.08%	0.22	

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1.1.8 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11a	5180	70
11a	5200	76
11a	5240	74
11a	5260	76
11a	5300	74
11a	5320	68
11a	5500	70
11a	5580	74
11a	5700	60
11a	5720	74
11a	5745	86
11a	5785	86
11a	5825	88
ax HE20	5180	68
ax HE20	5200	76
ax HE20	5240	74
ax HE20	5260	76
ax HE20	5300	74
ax HE20	5320	66
ax HE20	5500	66
ax HE20	5580	74
ax HE20	5700	58
ax HE20	5720	74
ax HE20	5745	86
ax HE20	5785	86
ax HE20	5825	88

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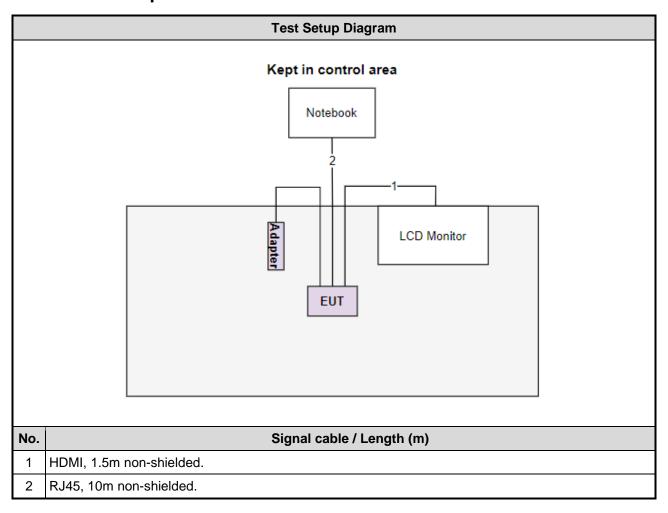
Modulation Mode	Test Frequency (MHz)	Power Index
ax HE40	5190	60
ax HE40	5230	70
ax HE40	5270	70
ax HE40	5310	62
ax HE40	5510	58
ax HE40	5590	74
ax HE40	5670	64
ax HE40	5710	76
ax HE40	5755	90
ax HE40	5795	90
ax HE80	5210	56
ax HE80	5290	56
ax HE80	5530	54
ax HE80	5610	70
ax HE80	5690	76
ax HE80	5775	72



1.2 Local Support Equipment List

Support Equipment List							
No. Equipment Brand Model FCC ID Rema							
1	Notebook	DELL	Latitude E5470	DoC			
2	LCD Monitor	ASUS	MX27UCS				

1.3 Test Setup Chart





1.4 The Equipment List

Test Item	Conducted Emission								
Test Site	Conduction room 1 / (Conduction room 1 / (CO01-WS)							
Tested Date	Jun. 23, 2021								
Instrument	Brand	Brand Model No. Serial No. Calibration Date Calibration Until							
Receiver	Feb. 07, 2022								
LISN	R&S	ENV216	101579	Mar. 17, 2021	Mar. 16, 2022				
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127-666	Dec. 29, 2020	Dec. 28, 2021				
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 21, 2020	Oct. 20, 2021				
50 ohm terminal (Support Unit)	NA	50	04	May 25, 2021	May 24, 2022				
Measurement Software AUDIX e3 6.120210k NA NA NA									
Note: Calibration Inte	rval of instruments liste	d above is one year.							

Test Item	Radiated Emission be	Radiated Emission below 1GHz							
Test Site	966 chamber1 / (03Cl	966 chamber1 / (03CH01-WS)							
Tested Date	Jun. 15, 2021								
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until				
Receiver	R&S	ESR3	101657	Mar. 12, 2021	Mar. 11, 2022				
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 17, 2020	Nov. 16, 2021				
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 10, 2020	Jul. 09, 2021				
Preamplifier	EMC	EMC02325	980225	Jul. 03, 2020	Jul. 02, 2021				
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	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-N W-11000	200801	Oct. 06, 2020	Oct. 05, 2021				
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 06, 2020	Oct. 05, 2021				
Measurement Software AUDIX e3 6.120210g NA NA NA									
Note: Calibration Inter	rval of instruments liste	d above is one year.							

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Test Item	Radiated Emission ab	Radiated Emission above 1GHz							
Test Site	966 chamber1 / (03CH01-WS)								
Tested Date	Jun. 12 ~ Jul. 09, 202	1							
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until				
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2020	Dec. 03, 2021				
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 11, 2020	Dec. 10, 2021				
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 06, 2020	Nov. 05, 2021				
Preamplifier	Agilent	83017A	MY39501308	Sep. 26, 2020	Sep. 25, 2021				
Preamplifier	EMC	EMC184045B	980192	Jul. 21, 2020	Jul. 20, 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				
Measurement Software	AUDIX	e3	6.120210g	NA	NA				
Note: Calibration Inte	rval of instruments liste	d above is one year.							

Test Item	RF Conducted	F Conducted							
Test Site	(TH01-WS)	TH01-WS)							
Tested Date	Jun. 16 ~ Jul. 15, 202	21							
Instrument	Brand	Brand Model No. Serial No. Calibration Date Calibration Until							
Spectrum Analyzer	R&S	FSV40	101063	Apr. 19, 2021	Apr. 18, 2022				
Power Meter	Anritsu	ML2495A	1241002	Nov. 04, 2020	Nov. 03, 2021				
Power Sensor	Anritsu	MA2411B	1207366	Nov. 04, 2020	Nov. 03, 2021				
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 04, 2020	Dec. 03, 2021				
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GTH-150-40-CP-AR-T	MAA1407-012	Sep. 10, 2020	Sep. 09, 2021				
Measurement Software	- SENSE-15407 NII V5 10 NA NA								
Note: Calibration Inte	rval of instruments liste	ed 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

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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	±34.130 Hz			
Conducted power	±0.808 dB			
Frequency error	±1x10 ⁻⁹			
Power density	±0.583 dB			
Conducted emission	±2.715 dB			
AC conducted emission	±2.92 dB			
Radiated emission ≤ 1GHz	±3.41 dB			
Radiated emission > 1GHz	±4.59 dB			
Time	±0.1%			
Temperature	±0.4 °C			

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2 Test Configuration

2.1 Testing Facility

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

FCC Designation No.: TW2732FCC site registration No.: 181692

➤ ISED#: 10807A

➤ CAB identifier: TW2732

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2.2 The Worst Test Modes and Channel Details

Frequen	cy band 5150~525	0 MHz / 5250~5350 MHz / 5470~5	725 MHz		
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration	
Conducted Emissions	ax HE80	5690	MCS 0	1	
Radiated Emissions ≤1GHz	ax HE80	5690	MCS 0	1	
5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	6 Mbps		
Radiated Emissions >1GHz RF Output Power	ax HE20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0	1	
Emission Bandwidth Peak Power Spectral Density	ax HE40	5190 / 5230/ 5270 / 5310 / 5510 5590 / 5670 / 5710	MCS 0		
	ax HE80	5210 / 5290 / 5530 / 5610 / 5690	MCS 0	-	
	ax HE20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0		
RF Output Power	ax HE40	5190 / 5230/ 5270 / 5310 / 5510 5590 / 5670 / 5710	MCS 0	2	
	ax HE80	5210 / 5290 / 5530 / 5610 / 5690	MCS 0	=	
Frequency Stability	Un-modulation	5320		1	
	Frequenc	cy band 5725-5850 MHz			
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration	
Conducted Emissions	ax HE40	5795	MCS 0	1	
Radiated Emissions ≤1GHz	ax HE40	5795	MCS 0	1	
Radiated Emissions >1GHz	11a	5745 / 5785 / 5825	6 Mbps		
RF Output Power	ax HE20	5745 / 5785 / 5825	MCS 0	-	
Emission Bandwidth	ax HE40	5755 / 5795	MCS 0	1	
6dB bandwidth Peak Power Spectral Density	ax HE80	5775	MCS 0		
	ax HE20	5745 / 5785 / 5825	MCS 0		
RF Output Power	ax HE40	5755 / 5795	MCS 0	2	
	ax HE80	5775	MCS 0		
Frequency Stability	Un-modulation	5785		1	

NOTE:

Configuration 1: Non-Beamforming mode Configuration 2: Beamforming mode

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Three adapters (LEADER, NetBit & AcBel) had been covered during the pretest and found that LEADER adapter
was the worst case and was selected for final testing.

^{2.} The EUT had been tested by following test configuration



3 Transmitter Test Results

3.1 Conducted Emissions

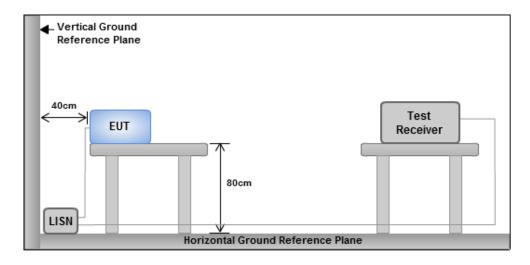
3.1.1 Limit of Conducted Emissions

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 Ω 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



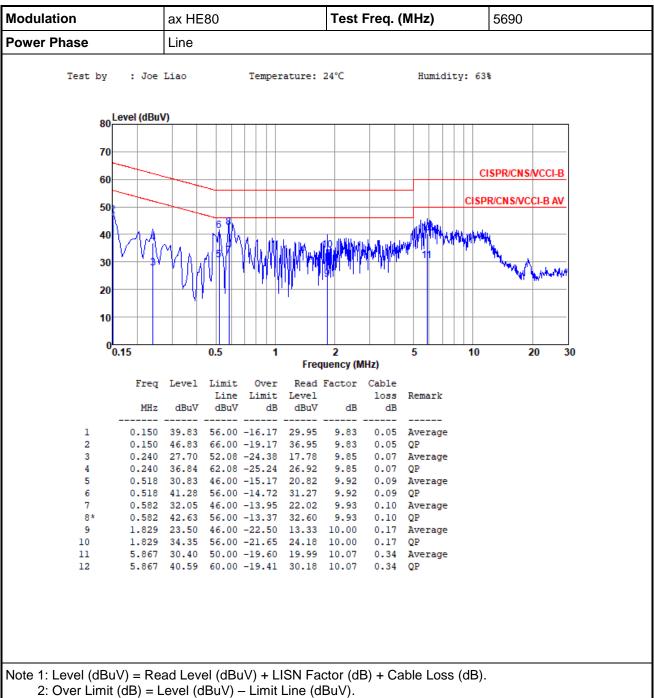
Note: 1. Support units were connected to second LISN.

Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

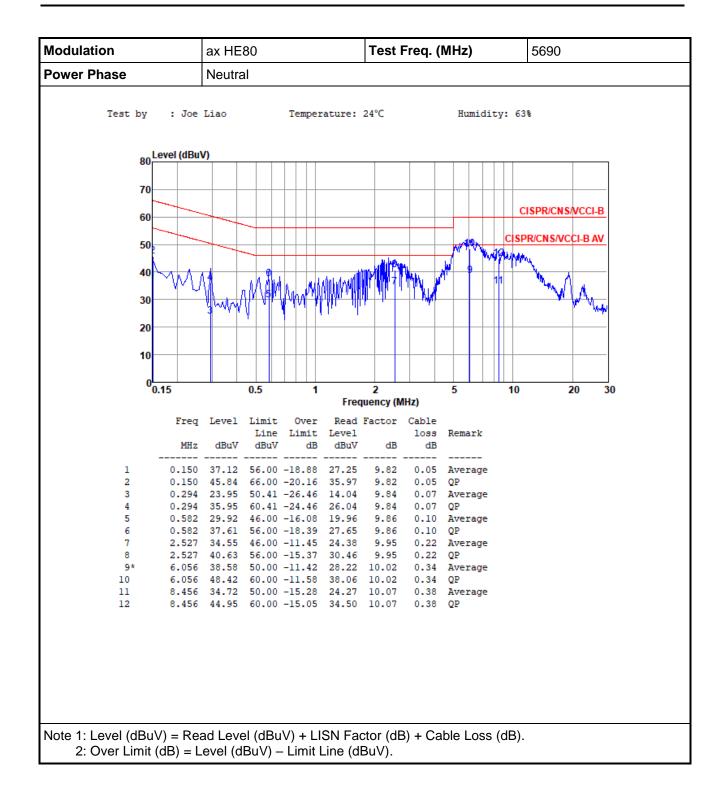
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Test Result of Conducted Emissions 3.1.4

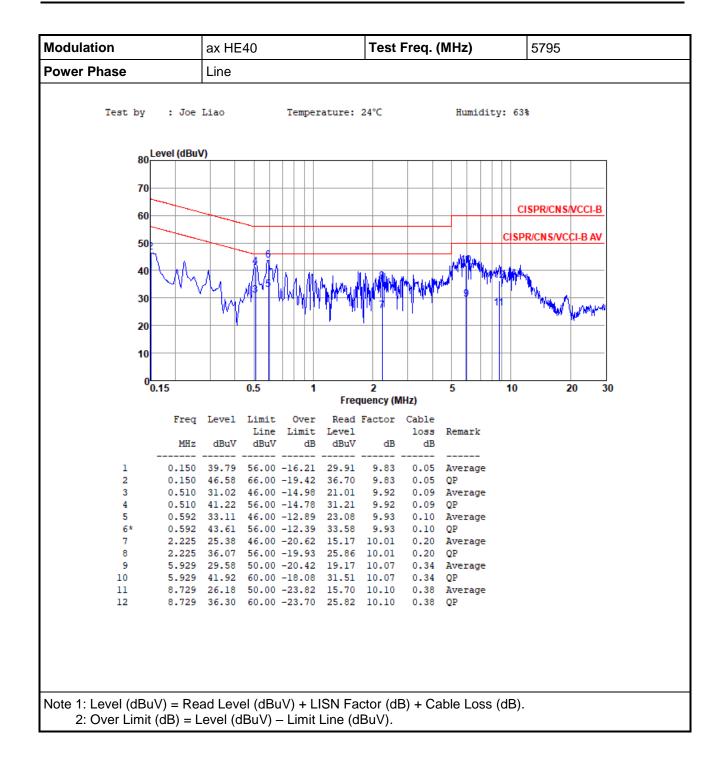






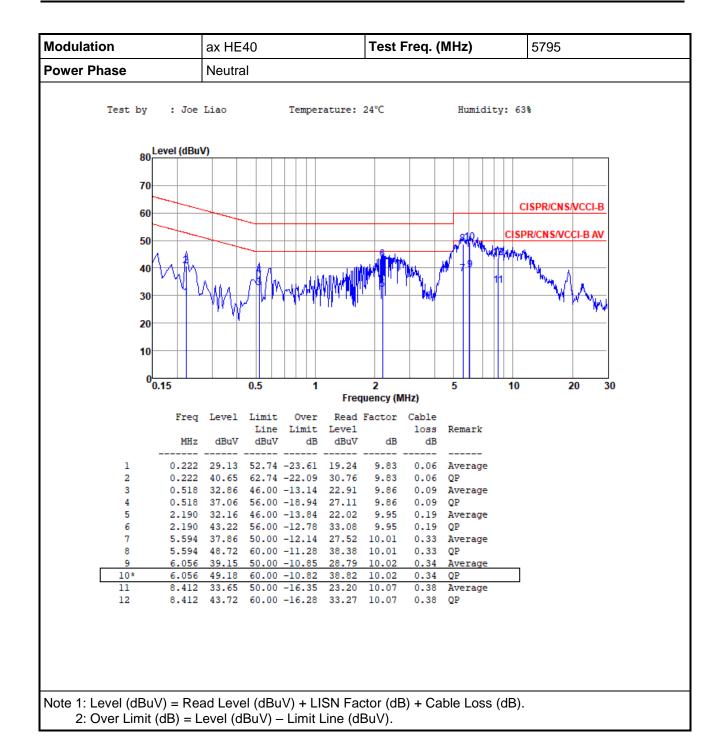
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3.2 Emission Bandwidth

3.2.1 Limit of Emission Bandwidth

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

3.2.2 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.

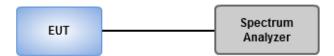
Occupied Bandwidth

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

6dB Bandwidth

- 1. Set RBW = 100kHz, VBW = 300kHz.
- 2. Detector = Peak, Trace mode = max hold.
- 3. Allow the trace to stabilize.
- 4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.2.3 Test Setup



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3.2.4 Test Result of Emission Bandwidth

Ambient Condition	23-25°C / 64%	Tested By	Aska Huang
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Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	32.174M	17.077M	17M1D1D	21.377M	16.498M
802.11ax HEW20_Nss1,(MCS0)_2TX	38.406M	19.247M	19M2D1D	21.594M	19.103M
802.11ax HEW40_Nss1,(MCS0)_2TX	57.971M	37.771M	37M8D1D	39.565M	37.482M
802.11ax HEW80_Nss1,(MCS0)_2TX	81.449M	76.99M	77M0D1D	80.87M	76.7M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	29.638M	19.175M	19M2D1D	21.232M	16.57M
802.11ax HEW20_Nss1,(MCS0)_2TX	34.058M	19.175M	19M2D1D	21.449M	19.03M
802.11ax HEW40_Nss1,(MCS0)_2TX	55.072M	37.627M	37M6D1D	40M	37.627M
802.11ax HEW80_Nss1,(MCS0)_2TX	82.029M	76.99M	77M0D1D	81.449M	76.99M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	24.638M	16.932M	16M9D1D	15.522M	13.372M
802.11ax HEW20_Nss1,(MCS0)_2TX	22.899M	19.175M	19M2D1D	15.739M	14.544M
802.11ax HEW40_Nss1,(MCS0)_2TX	65.942M	37.627M	37M6D1D	37.739M	33.734M
802.11ax HEW80_Nss1,(MCS0)_2TX	94.13M	76.99M	77M0D1D	75.435M	73.155M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.377M	20.116M	20M1D1D	3.13M	4.168M
802.11ax HEW20_Nss1,(MCS0)_2TX	18.986M	20.622M	20M6D1D	4.406M	4.573M
802.11ax HEW40_Nss1,(MCS0)_2TX	37.681M	44.863M	44M9D1D	3.768M	9.957M
802.11ax HEW80_Nss1,(MCS0)_2TX	77.681M	77.279M	77M3D1D	3.71M	20.897M

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;

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Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.377M	16.643M	21.449M	16.498M
5200MHz	Pass	Inf	31.957M	17.004M	24.13M	16.787M
5240MHz	Pass	Inf	32.174M	17.077M	24.13M	16.86M
5260MHz	Pass	Inf	24.275M	19.175M	22.754M	19.103M
5300MHz	Pass	Inf	29.348M	17.077M	29.638M	16.86M
5320MHz	Pass	Inf	21.449M	16.57M	21.232M	16.57M
5500MHz	Pass	Inf	21.739M	16.715M	21.087M	16.498M
5580MHz	Pass	Inf	24.638M	16.932M	21.667M	16.787M
5700MHz	Pass	Inf	21.522M	16.715M	21.377M	16.643M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.652M	13.502M	15.522M	13.372M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.13M	4.457M	3.188M	4.168M
5745MHz	Pass	500k	16.377M	18.234M	16.377M	17.221M
5785MHz	Pass	500k	16.377M	19.682M	16.377M	17.728M
5825MHz	Pass	500k	16.377M	20.116M	16.377M	17.583M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.739M	19.103M	21.594M	19.103M
5200MHz	Pass	Inf	38.406M	19.247M	24.275M	19.175M
5240MHz	Pass	Inf	33.768M	19.247M	28.261M	19.175M
5260MHz	Pass	Inf	30M	19.175M	24.493M	19.175M
5300MHz	Pass	Inf	28.333M	19.175M	34.058M	19.175M
5320MHz	Pass	Inf	21.522M	19.03M	21.449M	19.03M
5500MHz	Pass	Inf	21.812M	19.103M	21.449M	19.103M
5580MHz	Pass	Inf	22.899M	19.175M	21.594M	19.103M
5700MHz	Pass	Inf	21.522M	19.03M	21.667M	19.03M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	17.217M	14.544M	15.739M	14.588M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.406M	4.92M	4.464M	4.573M
5745MHz	Pass	500k	18.841M	19.03M	18.913M	19.03M
5785MHz	Pass	500k	18.986M	19.537M	18.841M	19.175M
5825MHz	Pass	500k	18.623M	20.622M	18.551M	19.32M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	39.565M	37.627M	39.855M	37.482M
5230MHz	Pass	Inf	57.971M	37.771M	42.609M	37.627M
5270MHz	Pass	Inf	55.072M	37.627M	40M	37.627M
5310MHz	Pass	Inf	40M	37.627M	40M	37.627M
5510MHz	Pass	Inf	39.855M	37.627M	40.145M	37.627M
5590MHz	Pass	Inf	65.942M	37.627M	44.493M	37.627M

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Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
5670MHz	Pass	Inf	40.145M	37.627M	40M	37.627M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	42M	33.734M	37.739M	33.734M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.768M	15.861M	3.768M	9.957M
5755MHz	Pass	500k	37.681M	44.863M	37.391M	38.35M
5795MHz	Pass	500k	37.246M	42.692M	36.377M	38.061M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	80.87M	76.99M	81.449M	76.7M
5290MHz	Pass	Inf	82.029M	76.99M	81.449M	76.99M
5530MHz	Pass	Inf	81.159M	76.99M	81.739M	76.99M
5610MHz	Pass	Inf	81.159M	76.99M	81.449M	76.7M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	94.13M	73.155M	75.435M	73.372M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.884M	27.844M	3.71M	20.897M
5775MHz	Pass	500k	76.812M	77.279M	77.681M	76.99M

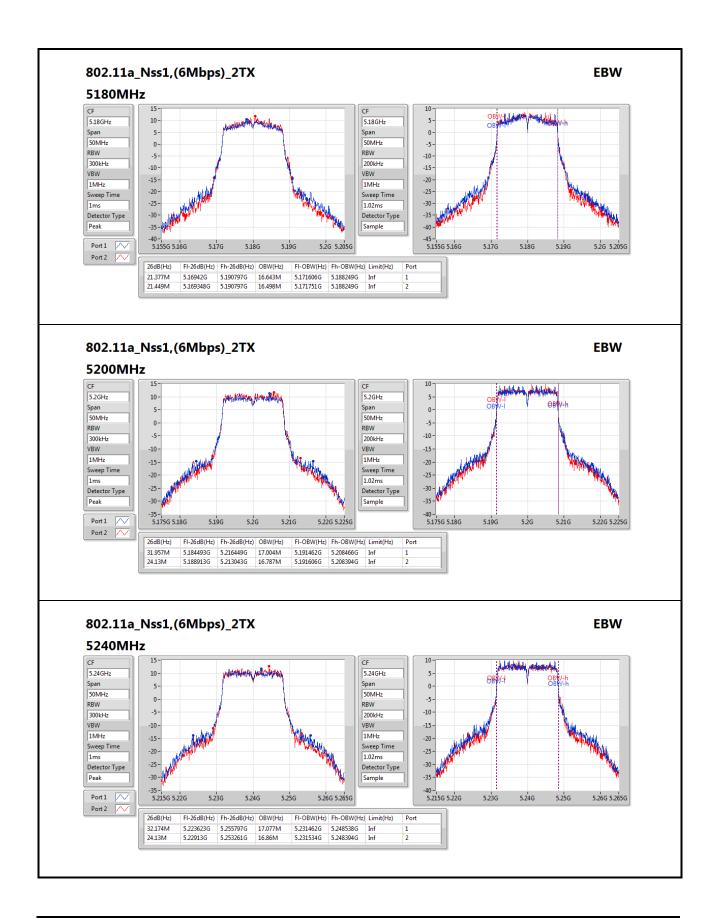
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;

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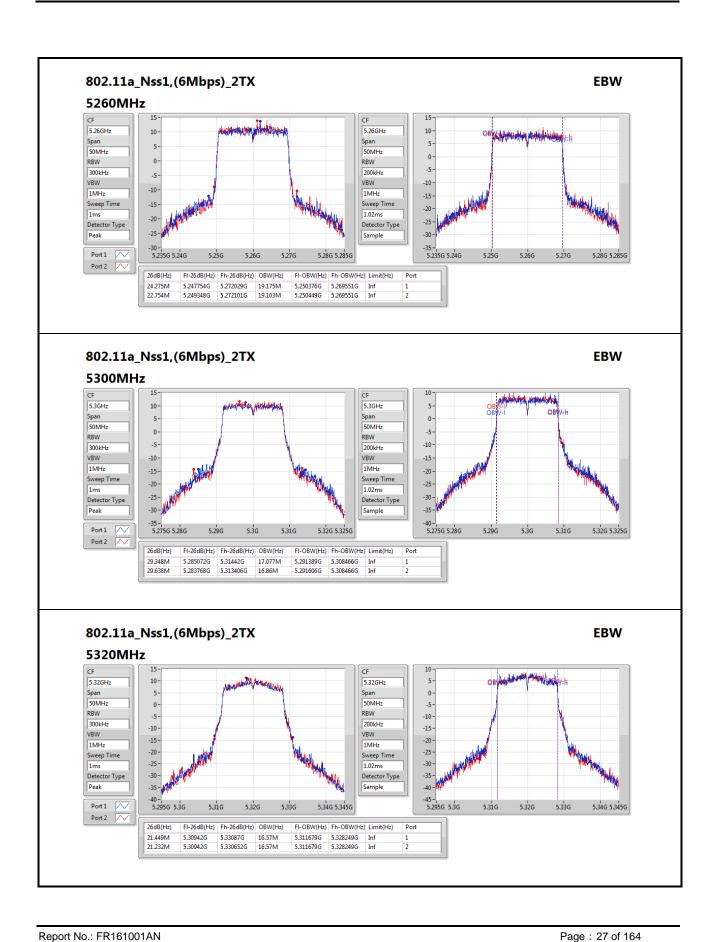
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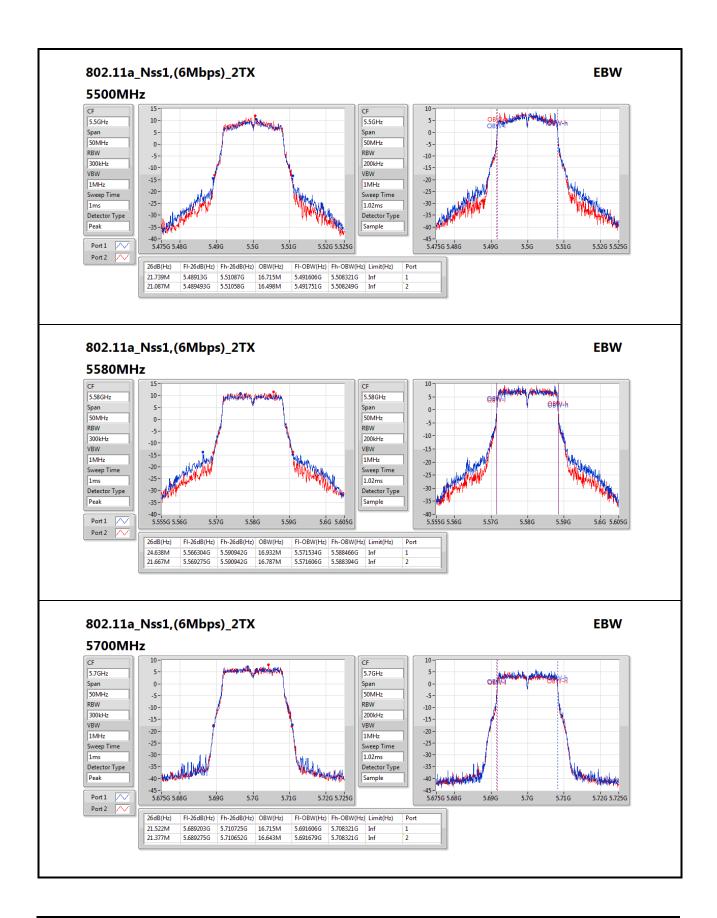


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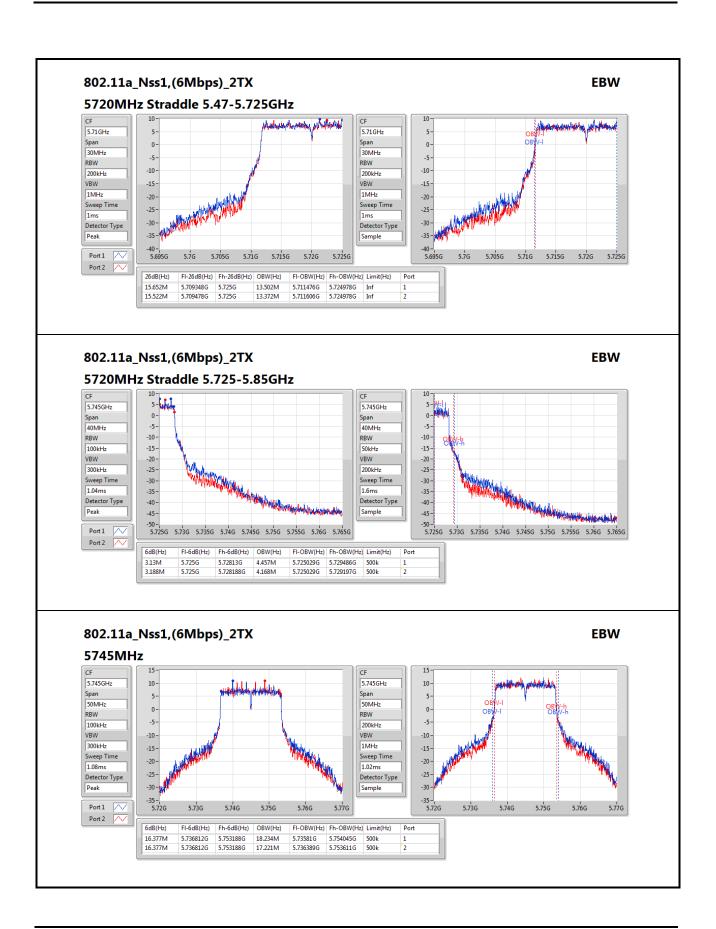




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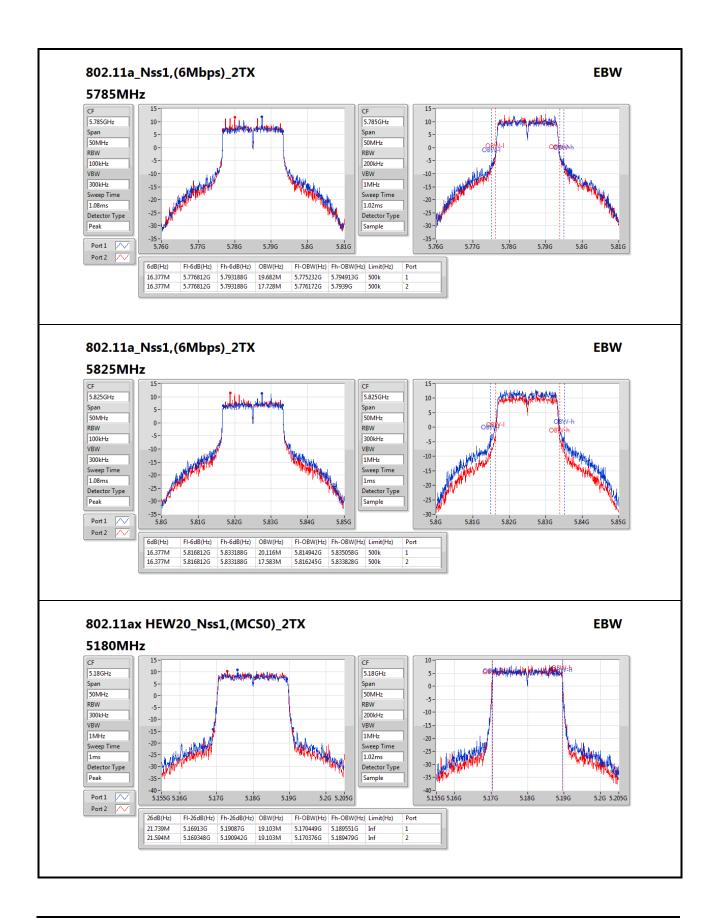




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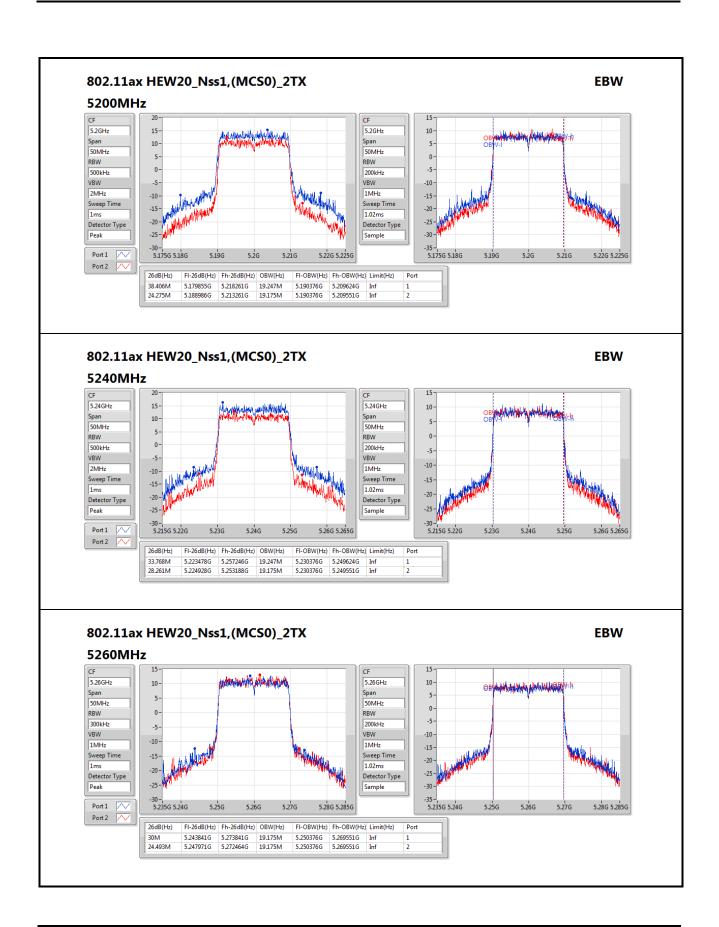




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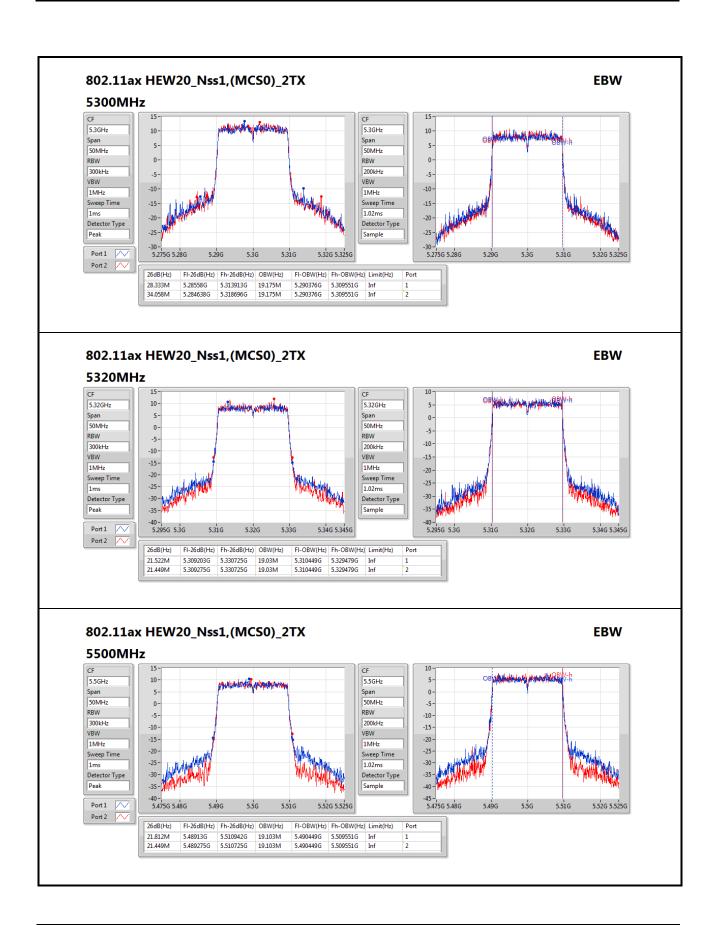




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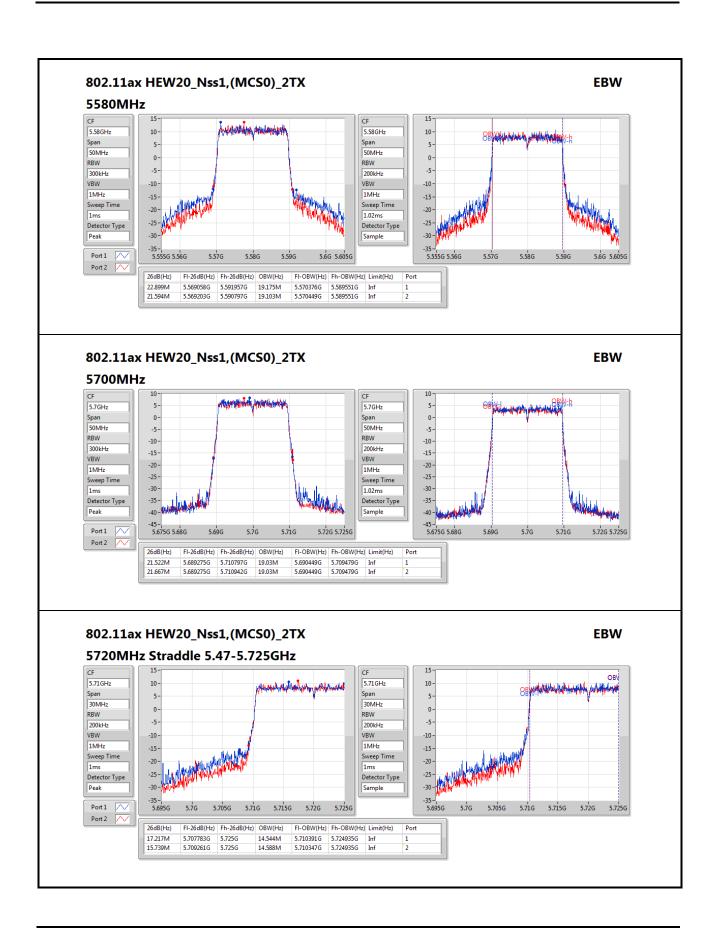
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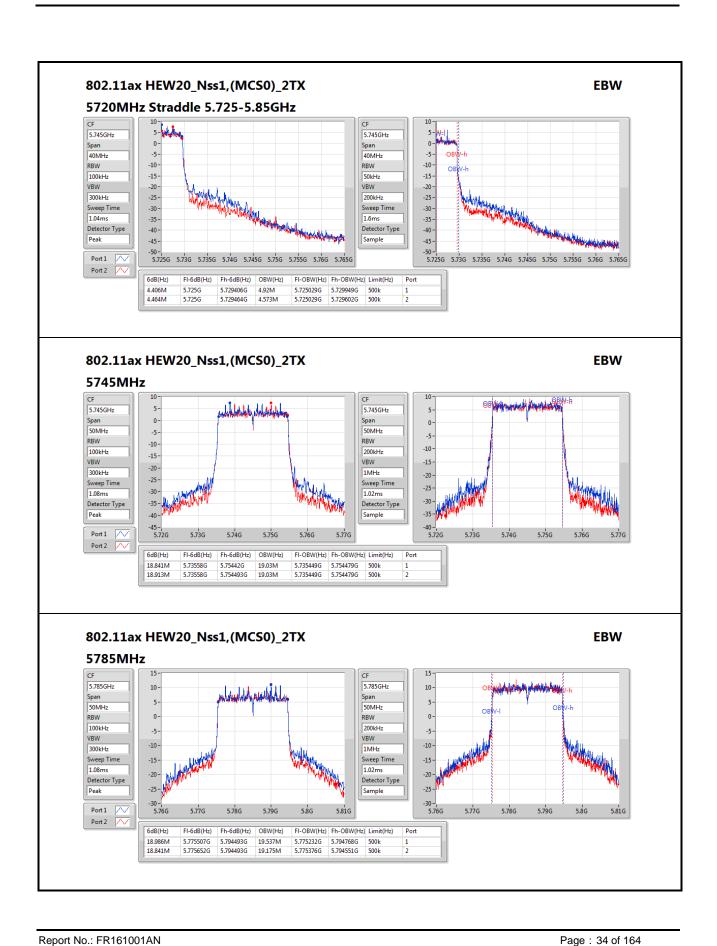


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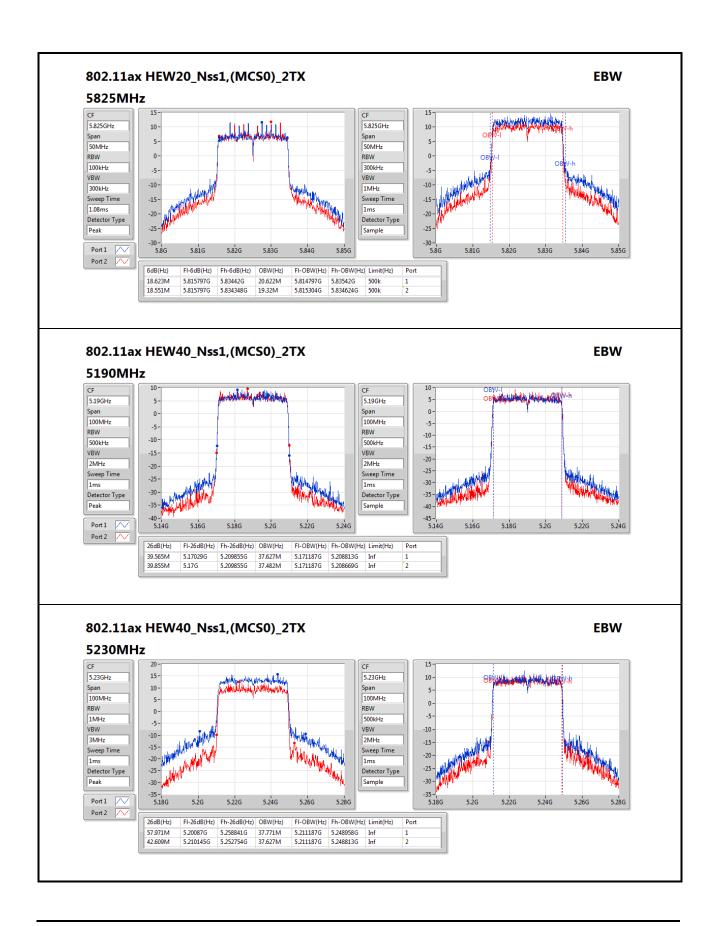




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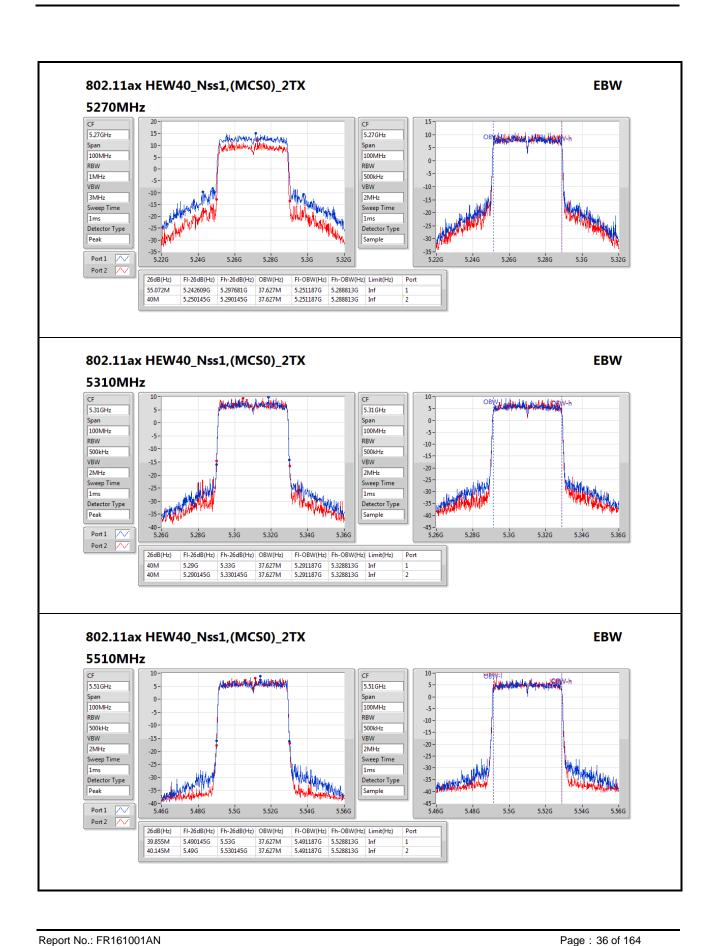




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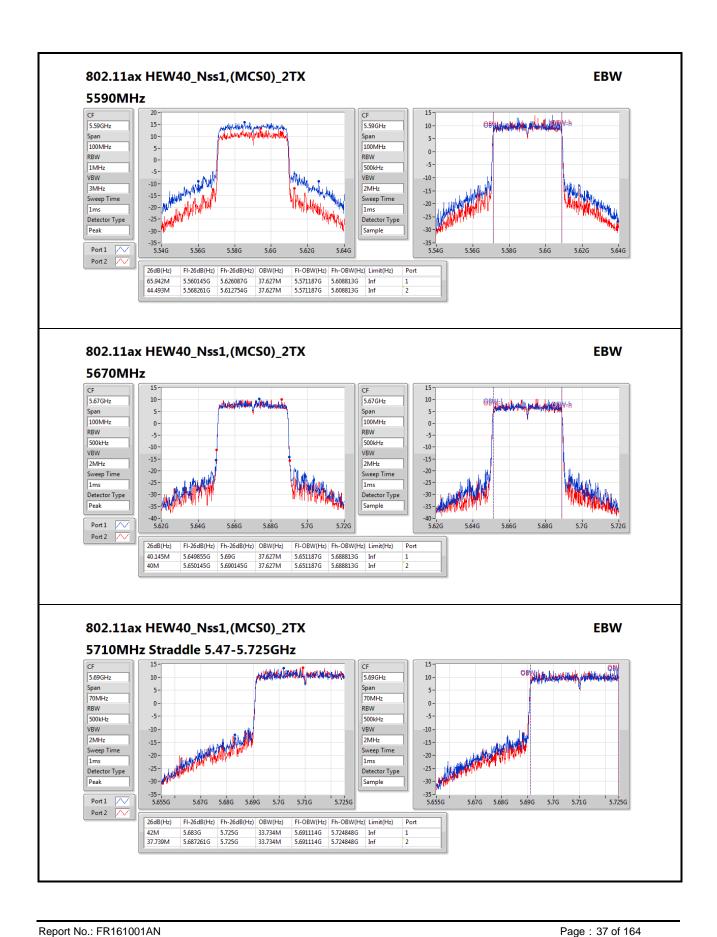




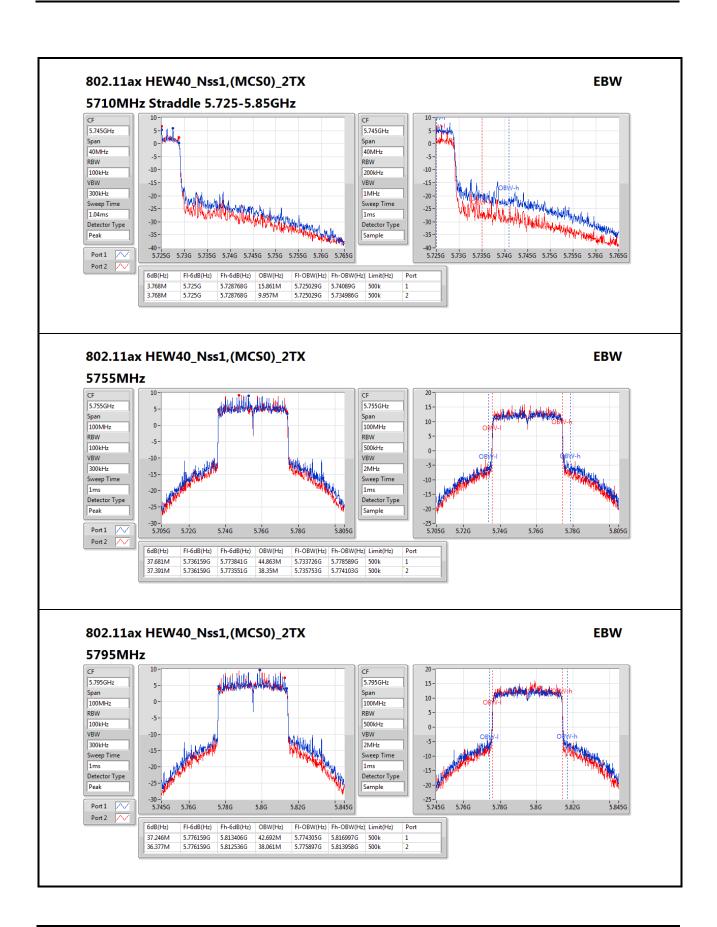
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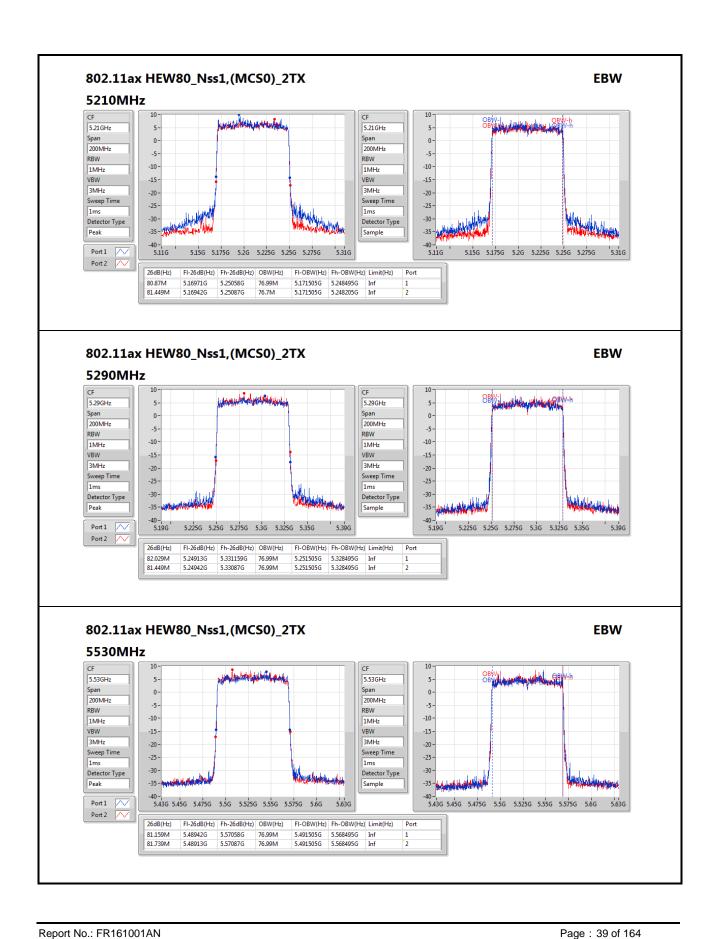




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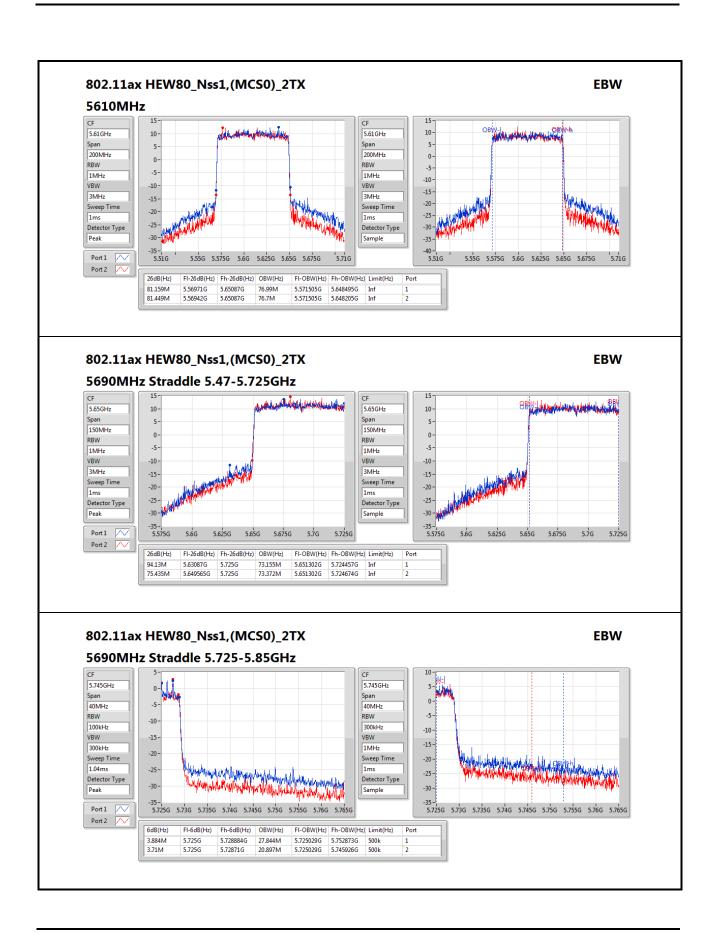
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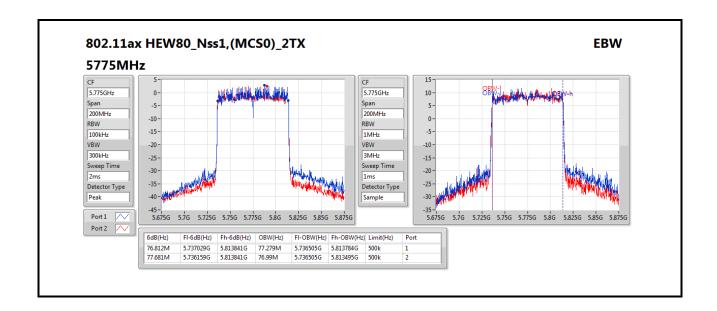




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3.3 RF Output Power

3.3.1 Limit of RF Output Power

	Frequency band 5150-5250 MHz					
Оре	erating Mode	Limit				
	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)				
	Indoor access point	Conducted Power: 1 W				
	Fixed point-to-point access points	Conducted Power: 1 W				
\boxtimes	Client devices	Conducted Power: 250 mW				

Frequency Band (MHz)		Limit	
\boxtimes	5250 ~ 5350	Conducted Power: 250mW or 11dBm+10 log B	
\boxtimes	5470 ~ 5725	Conducted Power: 250mW or 11dBm+10 log B	
\boxtimes			
Note	e: "B" is the 26dB emission bandwidth i	n 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.

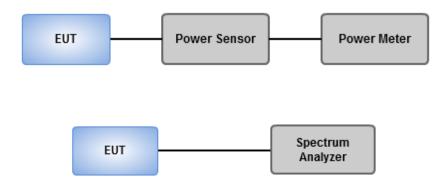
Spectrum analyzer (For channel that extends across the 5.725 GHz boundary)

- 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%).

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3.3.3 Test Setup





3.3.4 Test Result of Maximum Conducted Output Power

And Cont One Pitter	22 2522 / 242/	T4-1D-	
Ambient Condition	23-25°C / 64%	Tested By	Aska Huang

Non-beamforming

Summary

Mode	Total Power	Total Power	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	23.15	0.20654	26.98	0.49888
802.11ax HEW20_Nss1,(MCS0)_2TX	23.28	0.21281	27.11	0.51404
802.11ax HEW40_Nss1,(MCS0)_2TX	22.35	0.17179	26.18	0.41495
802.11ax HEW80_Nss1,(MCS0)_2TX	18.38	0.06887	22.21	0.16634
5.25-5.35GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	23.14	0.20606	27.01	0.50234
802.11ax HEW20_Nss1,(MCS0)_2TX	23.32	0.21478	27.19	0.52360
802.11ax HEW40_Nss1,(MCS0)_2TX	22.14	0.16368	26.01	0.39902
802.11ax HEW80_Nss1,(MCS0)_2TX	18.23	0.06653	22.10	0.16218
5.47-5.725GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	22.87	0.19364	26.72	0.46989
802.11ax HEW20_Nss1,(MCS0)_2TX	23.04	0.20137	26.89	0.48865
802.11ax HEW40_Nss1,(MCS0)_2TX	23.67	0.23281	27.52	0.56494
802.11ax HEW80_Nss1,(MCS0)_2TX	23.81	0.24044	27.66	0.58345
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	25.63	0.36559	29.55	0.90157
802.11ax HEW20_Nss1,(MCS0)_2TX	25.81	0.38107	29.73	0.93972
802.11ax HEW40_Nss1,(MCS0)_2TX	26.52	0.44875	30.44	1.10662
802.11ax HEW80_Nss1,(MCS0)_2TX	22.03	0.15959	25.95	0.39355

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Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.83	18.29	18.61	21.46	24.00	25.29	30.00
5200MHz	Pass	3.83	19.93	20.34	23.15	24.00	26.98	30.00
5240MHz	Pass	3.83	19.67	19.98	22.84	24.00	26.67	30.00
5260MHz	Pass	3.87	20.01	20.25	23.14	24.00	27.01	30.00
5300MHz	Pass	3.87	19.95	19.88	22.93	24.00	26.80	30.00
5320MHz	Pass	3.87	18.13	18.56	21.36	24.00	25.23	30.00
5500MHz	Pass	3.85	18.65	18.75	21.71	24.00	25.56	30.00
5580MHz	Pass	3.85	19.78	19.93	22.87	24.00	26.72	30.00
5700MHz	Pass	3.85	16.33	16.01	19.18	24.00	23.03	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	3.85	18.94	18.95	21.96	22.91	25.81	28.91
5720MHz Straddle 5.725-5.85GHz	Pass	3.92	12.95	12.87	15.92	30.00	19.84	36.00
5745MHz	Pass	3.92	22.28	22.53	25.42	30.00	29.34	36.00
5785MHz	Pass	3.92	22.23	22.38	25.32	30.00	29.24	36.00
5825MHz	Pass	3.92	22.55	22.68	25.63	30.00	29.55	36.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.83	17.84	18.35	21.11	24.00	24.94	30.00
5200MHz	Pass	3.83	20.19	20.35	23.28	24.00	27.11	30.00
5240MHz	Pass	3.83	19.87	20.03	22.96	24.00	26.79	30.00
5260MHz	Pass	3.87	20.05	20.55	23.32	24.00	27.19	30.00
5300MHz	Pass	3.87	19.95	20.13	23.05	24.00	26.92	30.00
5320MHz	Pass	3.87	17.96	18.03	21.01	24.00	24.88	30.00
5500MHz	Pass	3.85	17.85	18.23	21.05	24.00	24.90	30.00
5580MHz	Pass	3.85	19.93	20.13	23.04	24.00	26.89	30.00
5700MHz	Pass	3.85	15.89	15.72	18.82	24.00	22.67	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	3.85	19.15	19.13	22.15	22.97	26.00	28.97
5720MHz Straddle 5.725-5.85GHz	Pass	3.92	14.2	14.12	17.17	30.00	21.09	36.00
5745MHz	Pass	3.92	22.49	22.59	25.55	30.00	29.47	36.00
5785MHz	Pass	3.92	22.47	22.53	25.51	30.00	29.43	36.00
5825MHz	Pass	3.92	22.68	22.92	25.81	30.00	29.73	36.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	3.83	16.44	16.59	19.53	24.00	23.36	30.00
5230MHz	Pass	3.83	19.52	19.16	22.35	24.00	26.18	30.00
5270MHz	Pass	3.87	18.92	19.33	22.14	24.00	26.01	30.00
5310MHz	Pass	3.87	17.16	17.06	20.12	24.00	23.99	30.00
5510MHz	Pass	3.85	16.09	16.29	19.20	24.00	23.05	30.00

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Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
5590MHz	Pass	3.85	20.33	20.45	23.40	24.00	27.25	30.00
5670MHz	Pass	3.85	18.04	17.89	20.98	24.00	24.83	30.00
5710MHz Straddle 5.47-5.725GHz	Pass	3.85	20.59	20.73	23.67	24.00	27.52	30.00
5710MHz Straddle 5.725-5.85GHz	Pass	3.92	11.04	11	14.03	30.00	17.95	36.00
5755MHz	Pass	3.92	23.41	23.54	26.49	30.00	30.41	36.00
5795MHz	Pass	3.92	23.43	23.58	26.52	30.00	30.44	36.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	3.83	15.56	15.17	18.38	24.00	22.21	30.00
5290MHz	Pass	3.87	15.11	15.33	18.23	24.00	22.10	30.00
5530MHz	Pass	3.85	15.19	15.03	18.12	24.00	21.97	30.00
5610MHz	Pass	3.85	19.17	19.05	22.12	24.00	25.97	30.00
5690MHz Straddle 5.47-5.725GHz	Pass	3.85	20.77	20.82	23.81	24.00	27.66	30.00
5690MHz Straddle 5.725-5.85GHz	Pass	3.92	7.49	7.02	10.27	30.00	14.19	36.00
5775MHz	Pass	3.92	19.01	19.03	22.03	30.00	25.95	36.00

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

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Beamforming

Summary

Mode	Total Power	Total Power	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
5.15-5.25GHz	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	20.27	0.10641	27.05	0.50699
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	19.34	0.08590	26.12	0.40926
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	15.37	0.03443	22.15	0.16406
5.25-5.35GHz	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	20.31	0.10740	27.18	0.52240
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	19.13	0.08185	26.00	0.39811
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	15.22	0.03327	22.09	0.16181
5.47-5.725GHz	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	20.03	0.10069	26.87	0.48641
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	20.67	0.11668	27.51	0.56364
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	20.80	0.12023	27.64	0.58076
5.725-5.85GHz	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	22.80	0.19055	29.52	0.89536
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	23.51	0.22439	30.23	1.05439
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	19.02	0.07980	25.74	0.37497

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Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	6.78	14.83	15.34	18.10	23.22	24.88	30.00
5200MHz	Pass	6.78	17.18	17.34	20.27	23.22	27.05	30.00
5240MHz	Pass	6.78	16.86	17.02	19.95	23.22	26.73	30.00
5260MHz	Pass	6.87	17.04	17.54	20.31	23.13	27.18	30.00
5300MHz	Pass	6.87	16.94	17.12	20.04	23.13	26.91	30.00
5320MHz	Pass	6.87	14.95	15.02	18.00	23.13	24.87	30.00
5500MHz	Pass	6.84	14.84	15.22	18.04	23.16	24.88	30.00
5580MHz	Pass	6.84	16.92	17.12	20.03	23.16	26.87	30.00
5700MHz	Pass	6.84	12.88	12.71	15.81	23.16	22.65	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	6.84	16.14	16.12	19.14	23.16	25.98	30.00
5720MHz Straddle 5.725-5.85GHz	Pass	6.72	11.19	11.11	14.16	29.28	20.88	36.00
5745MHz	Pass	6.72	19.48	19.58	22.54	29.28	29.26	36.00
5785MHz	Pass	6.72	19.46	19.52	22.50	29.28	29.22	36.00
5825MHz	Pass	6.72	19.67	19.91	22.80	29.28	29.52	36.00
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	6.78	13.43	13.58	16.52	23.22	23.30	30.00
5230MHz	Pass	6.78	16.51	16.15	19.34	23.22	26.12	30.00
5270MHz	Pass	6.87	15.91	16.32	19.13	23.13	26.00	30.00
5310MHz	Pass	6.87	14.15	14.05	17.11	23.13	23.98	30.00
5510MHz	Pass	6.84	13.08	13.28	16.19	23.16	23.03	30.00
5590MHz	Pass	6.84	17.32	17.44	20.39	23.16	27.23	30.00
5670MHz	Pass	6.84	15.03	14.88	17.97	23.16	24.81	30.00
5710MHz Straddle 5.47-5.725GHz	Pass	6.84	17.58	17.73	20.67	23.16	27.51	30.00
5710MHz Straddle 5.725-5.85GHz	Pass	6.72	8.03	7.99	11.02	29.28	17.74	36.00
5755MHz	Pass	6.72	20.4	20.53	23.48	29.28	30.20	36.00
5795MHz	Pass	6.72	20.42	20.57	23.51	29.28	30.23	36.00
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	6.78	12.55	12.16	15.37	23.22	22.15	30.00
5290MHz	Pass	6.87	12.10	12.32	15.22	23.13	22.09	30.00
5530MHz	Pass	6.84	12.18	12.02	15.11	23.16	21.95	30.00
5610MHz	Pass	6.84	16.16	16.04	19.11	23.16	25.95	30.00
5690MHz Straddle 5.47-5.725GHz	Pass	6.84	17.76	17.81	20.80	23.16	27.64	30.00
5690MHz Straddle 5.725-5.85GHz	Pass	6.72	4.48	4.01	7.26	29.28	13.98	36.00
5775MHz	Pass	6.72	16	16.02	19.02	29.28	25.74	36.00

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

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Note:

For 5.15 ~ 5.25 GHz

DG = Directional Gain=10 * log((10^3.7/20+10^3.83/20)^2/2=6.78 dBi Limit shall be reduced to 24 dBm - (6.78 dBi - 6 dBi) = 23.22 dBm For 5.25 \sim 5.35 GHz

$$\label{eq:defDG} \begin{split} \textbf{DG} &= \text{Directional Gain=10 *} \log((10^{3.87/20} + 10^{3.85/20})^2 / 2 = 6.87 \text{ dBi} \\ \text{Limit shall be reduced to 24 dBm} &- (6.87 \text{ dBi} - 6 \text{ dBi}) = 23.13 \text{ dBm} \\ \text{For 5.47} &\sim 5.725 \text{ GHz} \end{split}$$

$$\label{eq:DG} \begin{split} \textbf{DG} &= \text{Directional Gain=10 *} \log((10^{3.8/20} + 10^{3.85/20})^2 / 2 = 6.84 \text{ dBi} \\ \text{Limit shall be reduced to 24 dBm} - (6.84 \text{ dBi} - 6 \text{ dBi}) = 23.16 \text{ dBm} \\ \text{For 5.725} \sim 5.85 \text{ GHz} \end{split}$$

DG = Directional Gain=10 * $log((10^{3.5/20}+10^{3.92/20})^2/2=6.72 dBi$ Limit shall be reduced to 30 dBm - (6.72 dBi - 6 dBi) = 29.28 dBm

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3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

	Frequency band 5150-5250 MHz				
Оре	Operating Mode Limit				
	Outdoor access point	17 dBm / MHz			
	Indoor access point	17 dBm / MHz			
	Fixed point-to-point access points	17 dBm / MHz			
\boxtimes	Client devices	11 dBm / MHz			

Frequency Band (MHz)		Limit
\boxtimes	5250 ~ 5350	11 dBm / MHz
\boxtimes	5470 ~ 5725	11 dBm / MHz
\boxtimes	5725 ~ 5850	30 dBm /500 kHz

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3.4.2 Test Procedures

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

Duty cycle ≥ 98 %

- 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.

Duty cycle < 98 %

- Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
- 2. Set sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
- 3. Perform a single sweep.
- 4. Use the peak marker function to determine the maximum amplitude level.
- 5. Add 10 log(1/x), where x is the duty cycle.

For 5725 ~ 5850 MHz

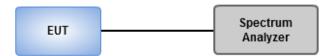
Duty cycle ≥ 98 %

- 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.

Duty cycle < 98 %

- 1. Set RBW = 500 kHz, VBW = 3 MHz, Detector = RMS.
- 2. Set sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
- 3. Perform a single sweep.
- 4. Use the peak marker function to determine the maximum amplitude level.
- 5. Add 10 log(1/x), where x is the duty cycle.

3.4.3 Test Setup



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3.4.4 Test Result of Peak Power Spectral Density

Summary

Mode	PD	EIRP PD
	(dBm/RBW)	(dBm/RBW)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	10.01	16.79
802.11ax HEW20_Nss1,(MCS0)_2TX	9.92	16.70
802.11ax HEW40_Nss1,(MCS0)_2TX	6.34	13.12
802.11ax HEW80_Nss1,(MCS0)_2TX	-0.51	6.27
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	10.08	16.95
802.11ax HEW20_Nss1,(MCS0)_2TX	9.88	16.75
802.11ax HEW40_Nss1,(MCS0)_2TX	5.92	12.79
802.11ax HEW80_Nss1,(MCS0)_2TX	-0.91	5.96
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	10.03	16.87
802.11ax HEW20_Nss1,(MCS0)_2TX	9.87	16.71
802.11ax HEW40_Nss1,(MCS0)_2TX	7.72	14.56
802.11ax HEW80_Nss1,(MCS0)_2TX	4.67	11.51
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	10.97	17.69
802.11ax HEW20_Nss1,(MCS0)_2TX	10.64	17.36
802.11ax HEW40_Nss1,(MCS0)_2TX	8.64	15.36
802.11ax HEW80_Nss1,(MCS0)_2TX	1.9	8.62

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

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The previous version of the test report has been cancelled and replaced by new version.

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Result

Mode	Result	DG	Port 1	Port 2	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	6.78	6.81	7.19	10.01	10.22	16.79	17.00
5200MHz	Pass	6.78	6.87	7.25	9.96	10.22	16.74	17.00
5240MHz	Pass	6.78	6.76	7.02	9.80	10.22	16.58	17.00
5260MHz	Pass	6.87	6.94	7.38	10.08	10.13	16.95	17.00
5300MHz	Pass	6.87	6.86	7.29	9.96	10.13	16.83	17.00
5320MHz	Pass	6.87	6.53	7.16	9.78	10.13	16.65	17.00
5500MHz	Pass	6.84	6.96	7.35	10.03	10.16	16.87	17.00
5580MHz	Pass	6.84	6.96	7.08	9.90	10.16	16.74	17.00
5700MHz	Pass	6.84	3.4	3.11	6.16	10.16	13.00	17.00
5720MHz Straddle 5.47-5.725GHz	Pass	6.84	6.94	6.9	9.80	10.16	16.64	17.00
5720MHz Straddle 5.725-5.85GHz	Pass	6.72	5.41	5.1	8.20	29.28	14.92	36.00
5745MHz	Pass	6.72	7.51	7.91	10.66	29.28	17.38	36.00
5785MHz	Pass	6.72	7.58	7.66	10.60	29.28	17.32	36.00
5825MHz	Pass	6.72	7.87	8.14	10.97	29.28	17.69	36.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	6.78	4.36	4.92	7.57	10.22	14.35	17.00
5200MHz	Pass	6.78	6.86	7.07	9.92	10.22	16.70	17.00
5240MHz	Pass	6.78	6.79	6.78	9.74	10.22	16.52	17.00
5260MHz	Pass	6.87	6.77	7.14	9.88	10.13	16.75	17.00
5300MHz	Pass	6.87	6.59	6.8	9.68	10.13	16.55	17.00
5320MHz	Pass	6.87	4.69	4.75	7.66	10.13	14.53	17.00
5500MHz	Pass	6.84	4.54	4.70	7.49	10.16	14.33	17.00
5580MHz	Pass	6.84	6.79	7.06	9.85	10.16	16.69	17.00
5700MHz	Pass	6.84	2.61	2.2	5.28	10.16	12.12	17.00
5720MHz Straddle 5.47-5.725GHz	Pass	6.84	7	6.96	9.87	10.16	16.71	17.00
5720MHz Straddle 5.725-5.85GHz	Pass	6.72	5.09	5.08	8.06	29.28	14.78	36.00
5745MHz	Pass	6.72	7.54	7.69	10.54	29.28	17.26	36.00
5785MHz	Pass	6.72	7.36	7.5	10.30	29.28	17.02	36.00
5825MHz	Pass	6.72	7.58	7.87	10.64	29.28	17.36	36.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	6.78	0.21	0.27	3.24	10.22	10.02	17.00
5230MHz	Pass	6.78	3.55	3.19	6.34	10.22	13.12	17.00
5270MHz	Pass	6.87	2.87	3.22	5.92	10.13	12.79	17.00
5310MHz	Pass	6.87	0.76	0.79	3.71	10.13	10.58	17.00
5510MHz	Pass	6.84	-0.16	0.02	2.74	10.16	9.58	17.00
5590MHz	Pass	6.84	4.51	4.45	7.33	10.16	14.17	17.00

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Mode	Result	DG	Port 1	Port 2	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5670MHz	Pass	6.84	1.66	1.64	4.50	10.16	11.34	17.00
5710MHz Straddle 5.47-5.725GHz	Pass	6.84	4.79	4.77	7.72	10.16	14.56	17.00
5710MHz Straddle 5.725-5.85GHz	Pass	6.72	2.64	2.76	5.65	29.28	12.37	36.00
5755MHz	Pass	6.72	5.67	5.81	8.64	29.28	15.36	36.00
5795MHz	Pass	6.72	5.5	5.83	8.61	29.28	15.33	36.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	6.78	-3.28	-3.61	-0.51	10.22	6.27	17.00
5290MHz	Pass	6.87	-4.01	-3.75	-0.91	10.13	5.96	17.00
5530MHz	Pass	6.84	-4.05	-3.86	-1.01	10.16	5.83	17.00
5610MHz	Pass	6.84	0.3	-0.06	3.07	10.16	9.91	17.00
5690MHz Straddle 5.47-5.725GHz	Pass	6.84	1.59	1.73	4.67	10.16	11.51	17.00
5690MHz Straddle 5.725-5.85GHz	Pass	6.72	-0.82	-1.2	1.90	29.28	8.62	36.00
5775MHz	Pass	6.72	-1.09	-1.23	1.82	29.28	8.54	36.00

DG = Directional Gain; **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 X power density;

Note:

For 5.15 ~ 5.25 GHz

$$\label{eq:DG} \begin{split} \textbf{DG} &= \text{Directional Gain=10 *} \log((10^{3.7/20} + 10^{3.83/20})^2/2 = 6.78 \text{ dBi} \\ \text{Limit shall be reduced to 11 dBm} - (6.78 dBi - 6 dBi) = 10.22 dBm \\ \text{For } 5.25 \sim 5.35 \text{ GHz} \end{split}$$

DG = Directional Gain=10 * $\log((10^{3.87/20}+10^{3.85/20})^2/2=6.87$ dBi Limit shall be reduced to 11 dBm - (6.87 dBi - 6 dBi) = 10.13 dBm For 5.47 \sim 5.725 GHz

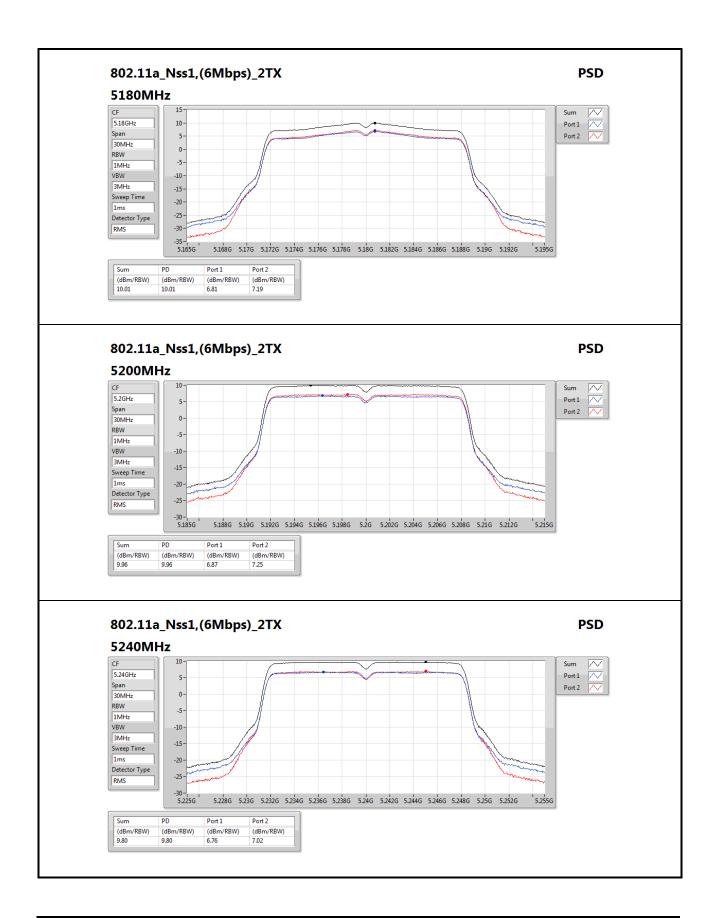
DG = Directional Gain=10 * $\log((10^{3.8/20}+10^{3.85/20})^2/2=6.84$ dBi Limit shall be reduced to 11 dBm - (6.84 dBi - 6 dBi) = 10.16 dBm For $5.725 \sim 5.85$ GHz

DG = Directional Gain=10 * $log((10^{3.5/20}+10^{3.92/20})^2/2=6.72 dBi$ Limit shall be reduced to 30 dBm - (6.72 dBi - 6 dBi) = 29.28 dBm

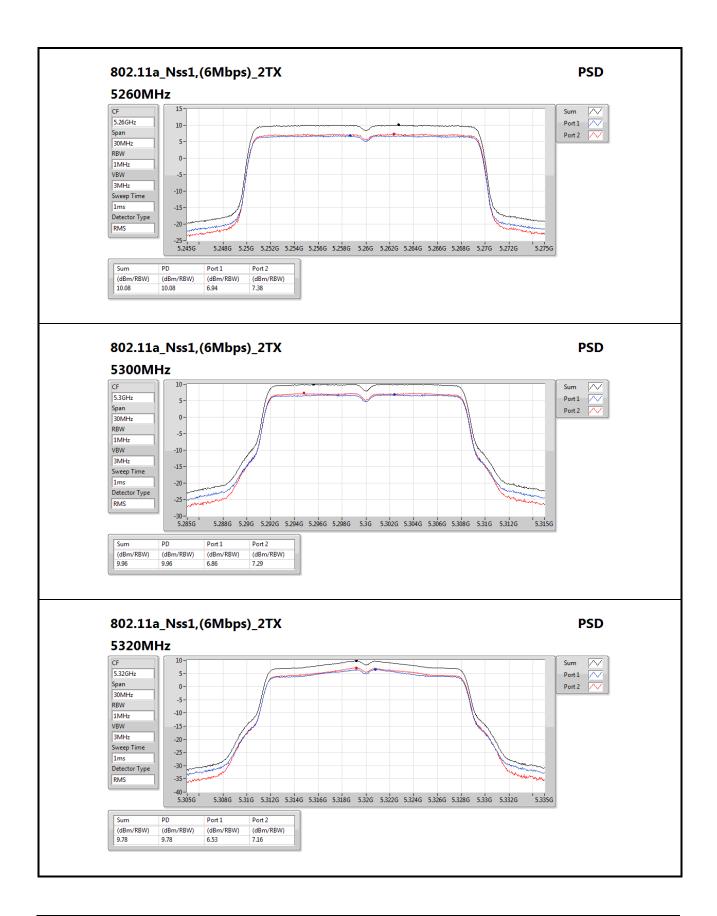
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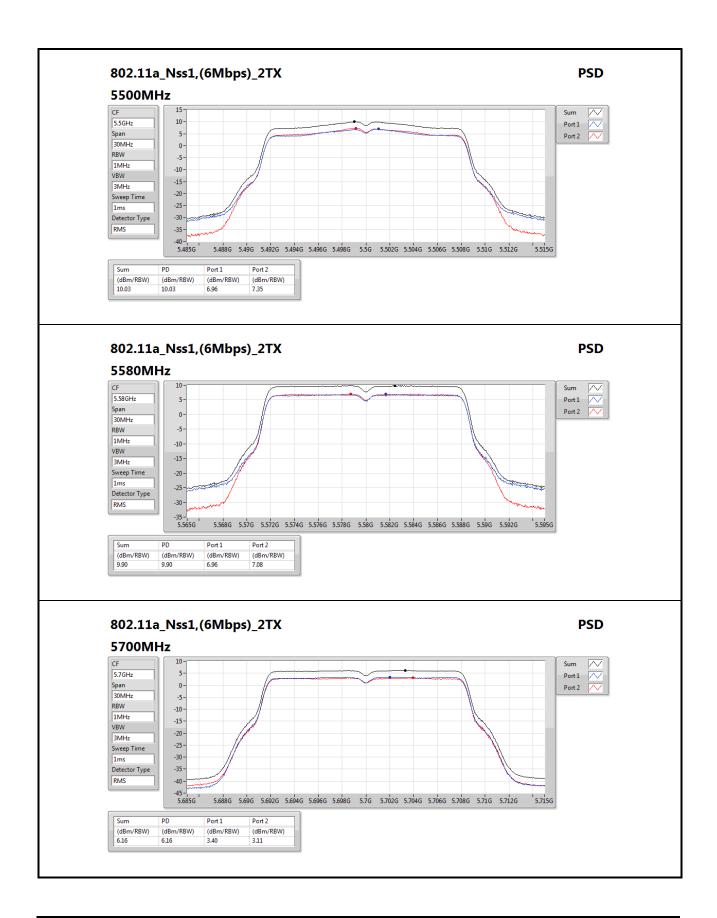




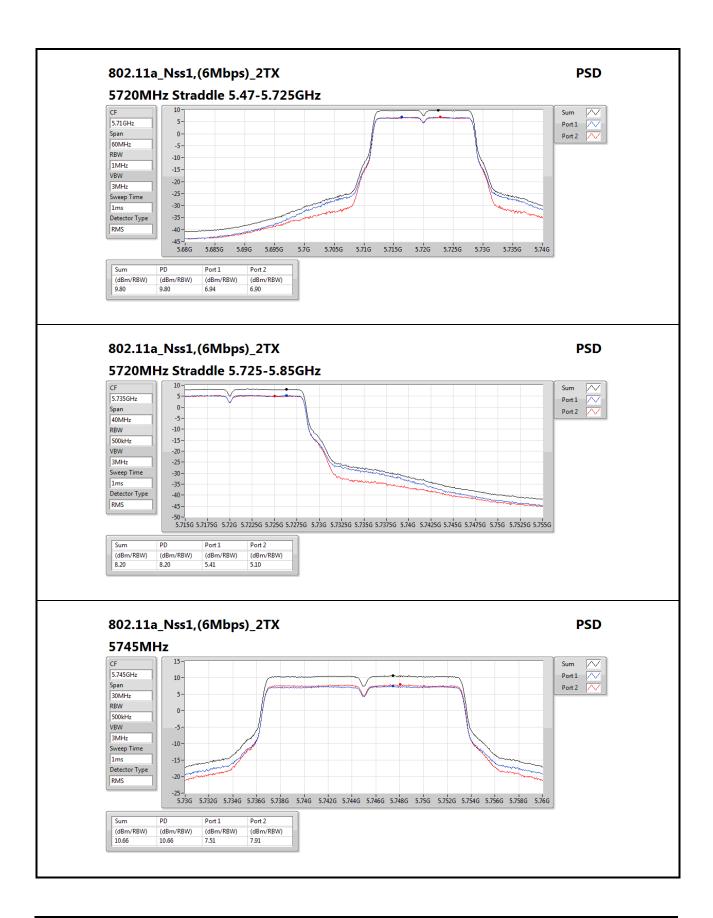




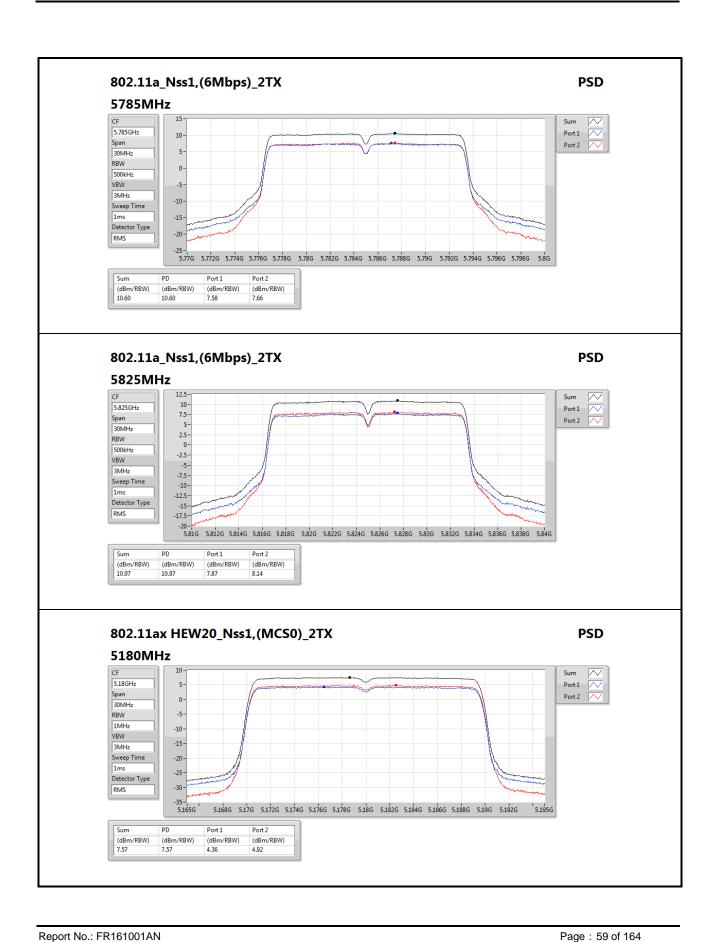






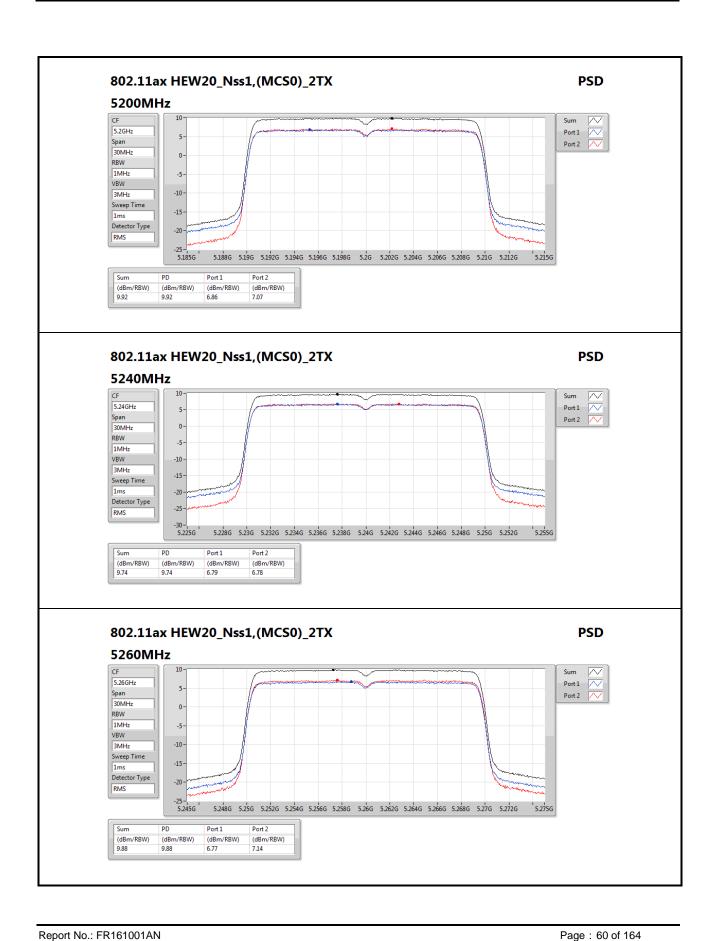




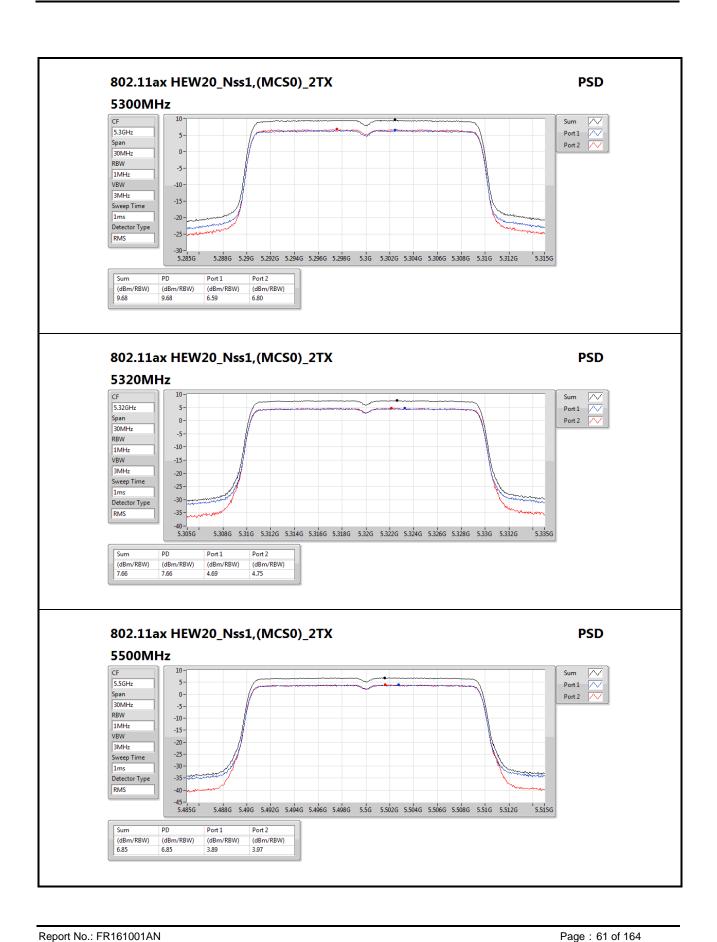


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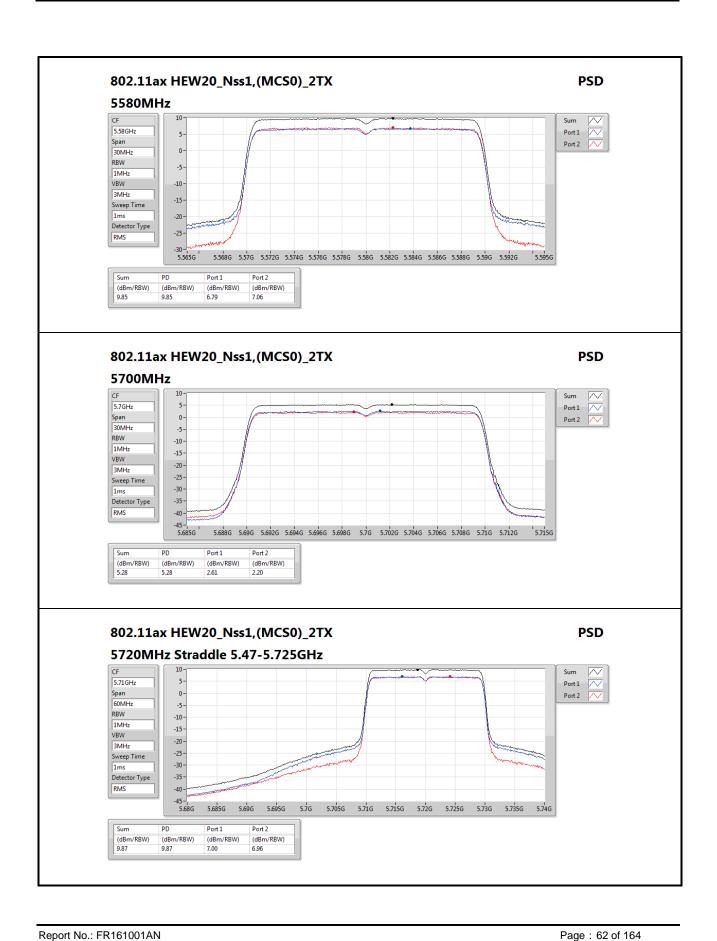




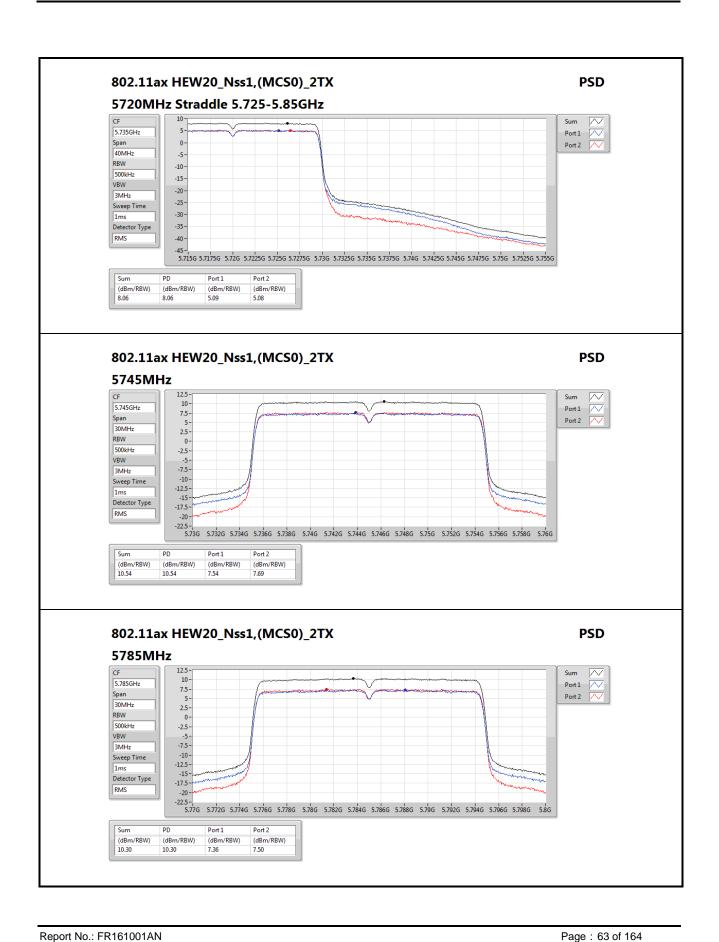






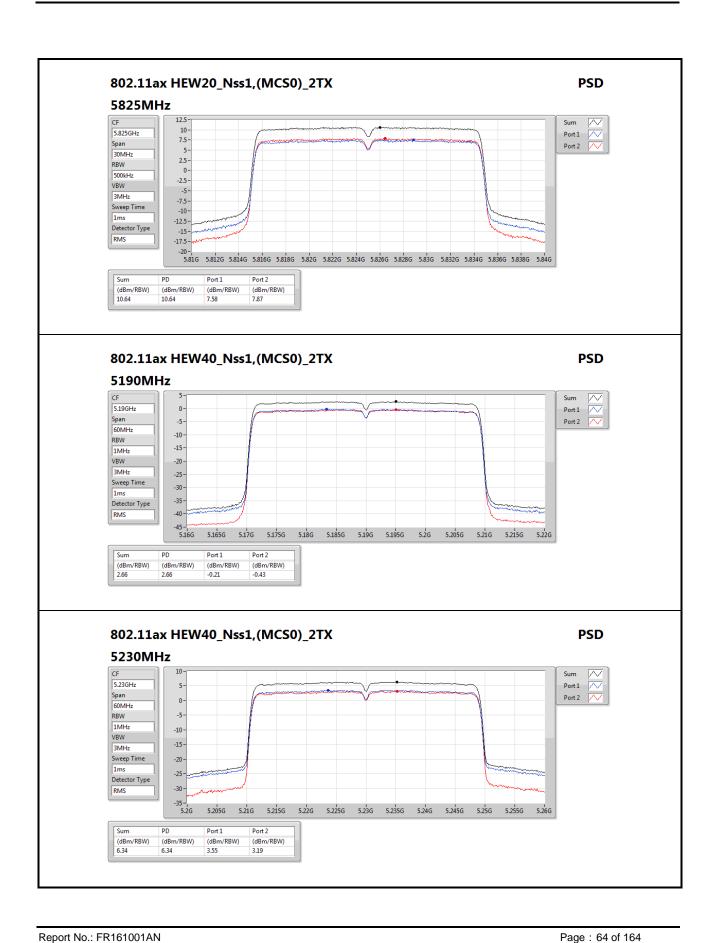






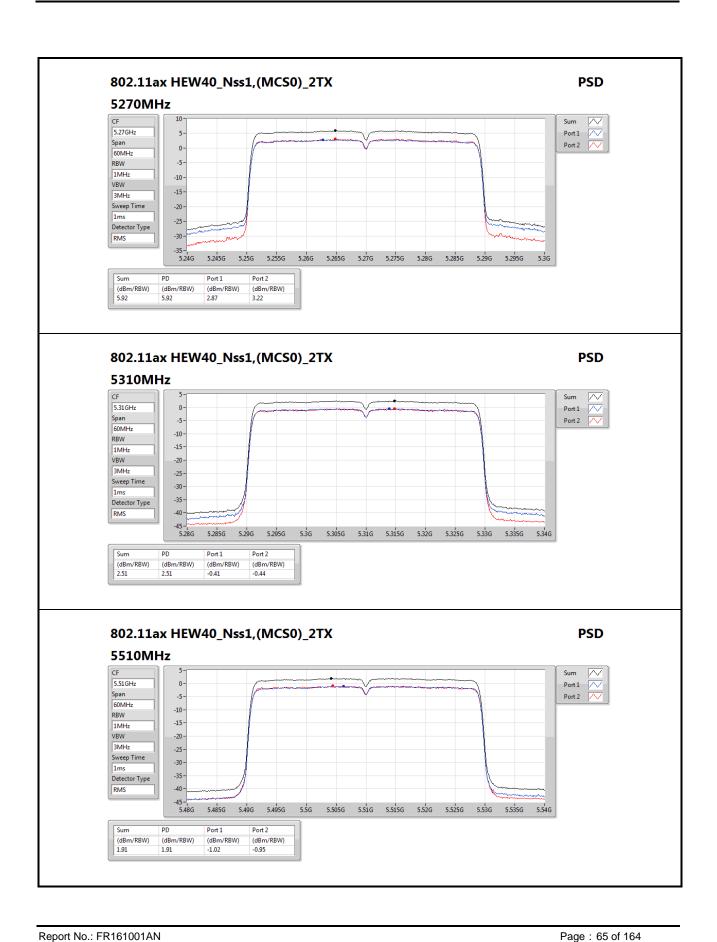
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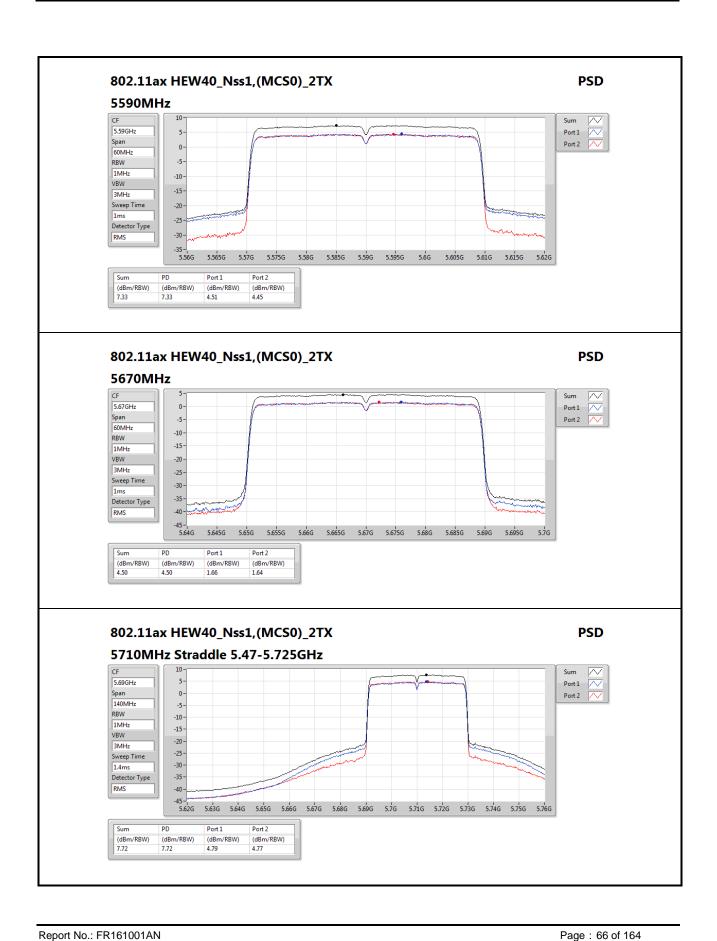
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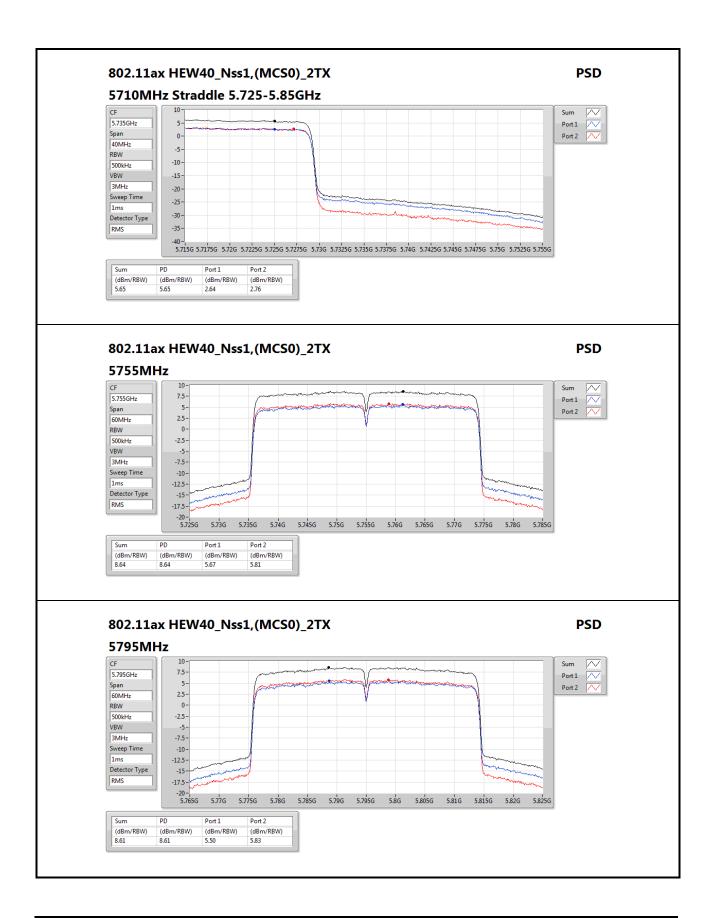


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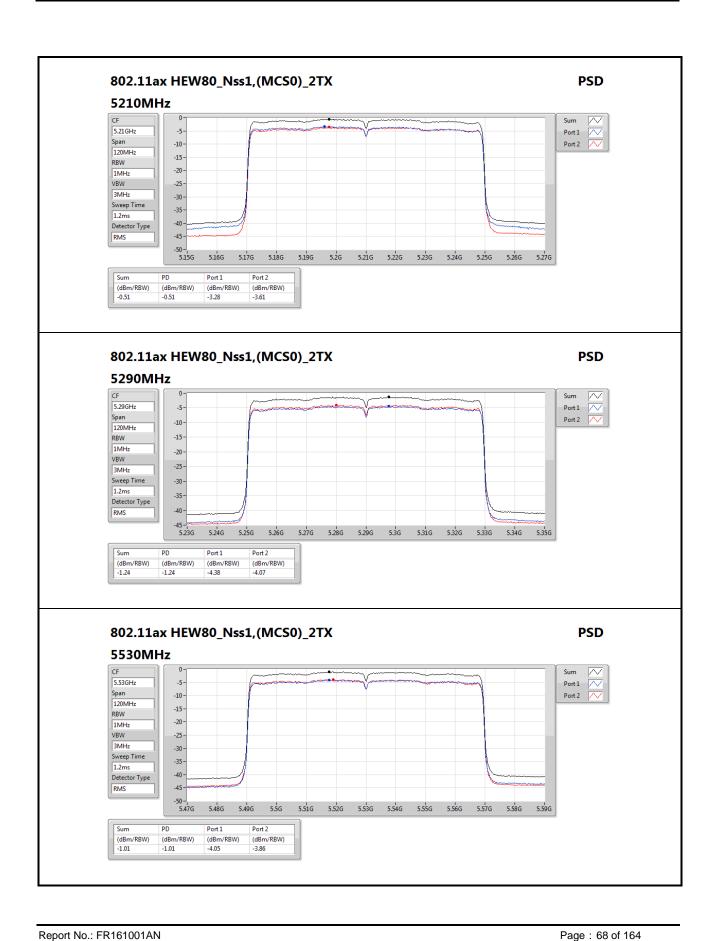




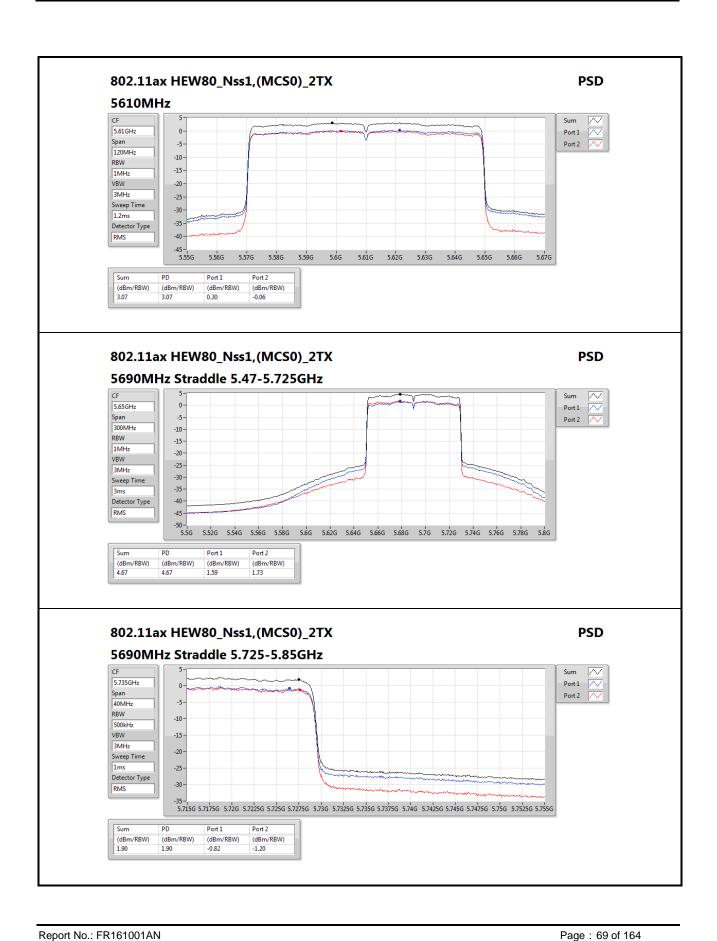




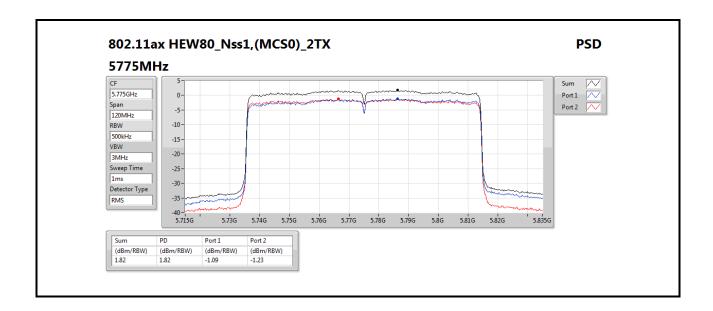












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3.5 Transmitter Radiated and Band Edge Emissions

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.p27 dBm [68.2 dBuV/m@3m]			
5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]			
5.47 - 5.725 GHz	e.i.r.p27 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).

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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.

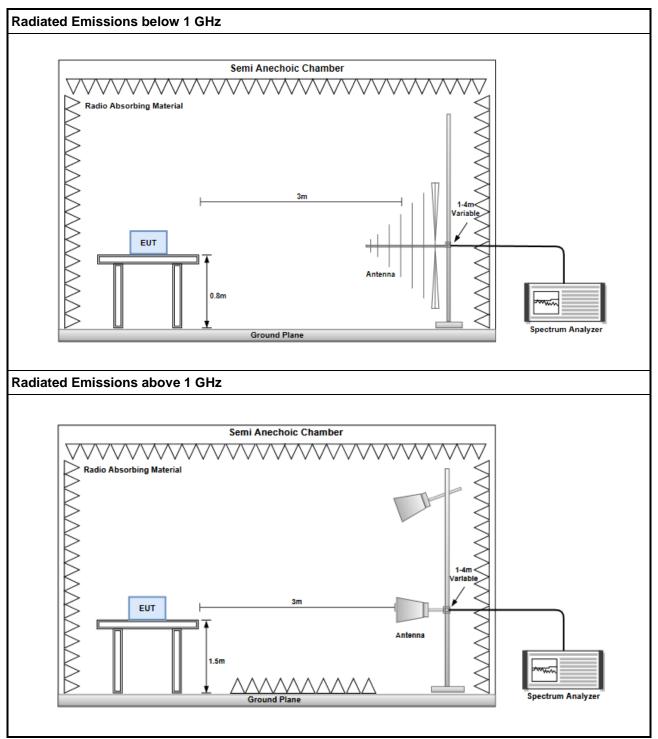
Note:

- 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.

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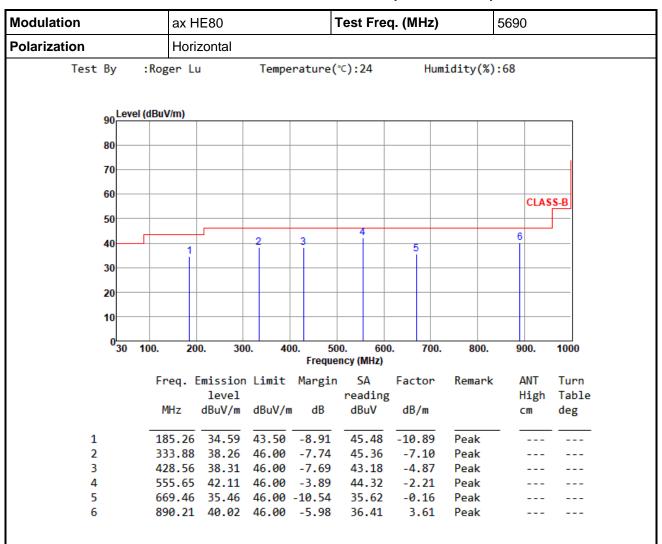


3.5.3 Test Setup





3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)



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

*Factor includes antenna factor , cable loss and amplifier gain

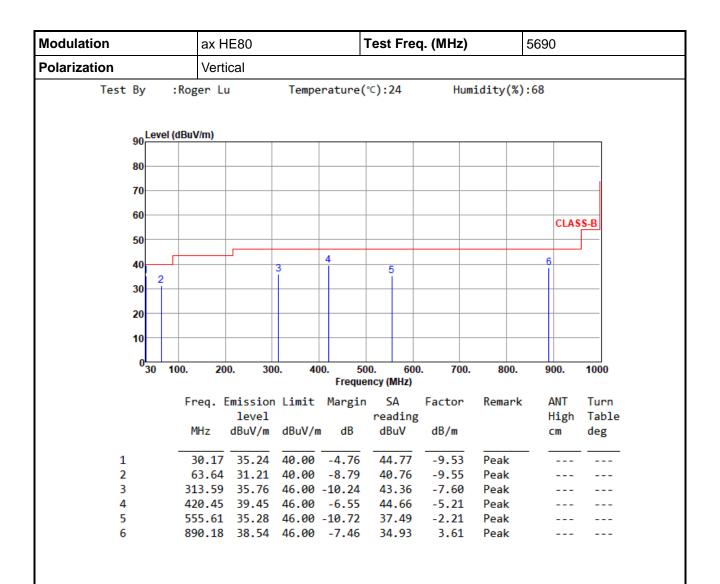
Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

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

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*Factor includes antenna factor, cable loss and amplifier gain

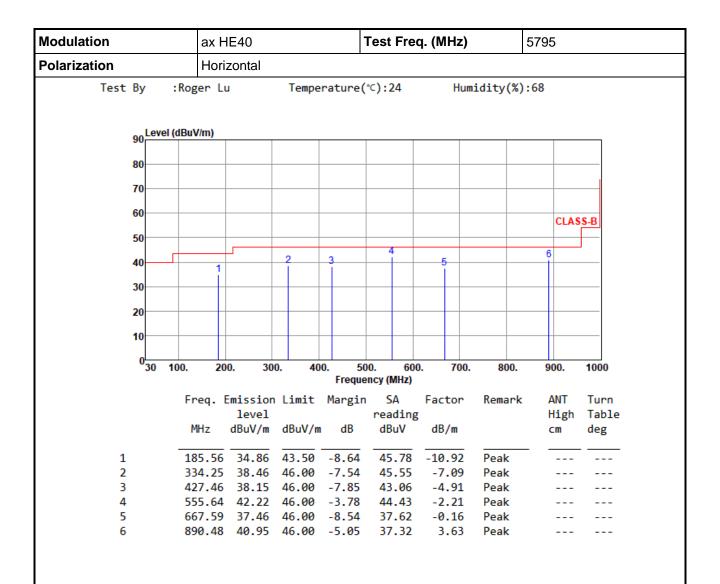
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

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*Factor includes antenna factor, cable loss and amplifier gain

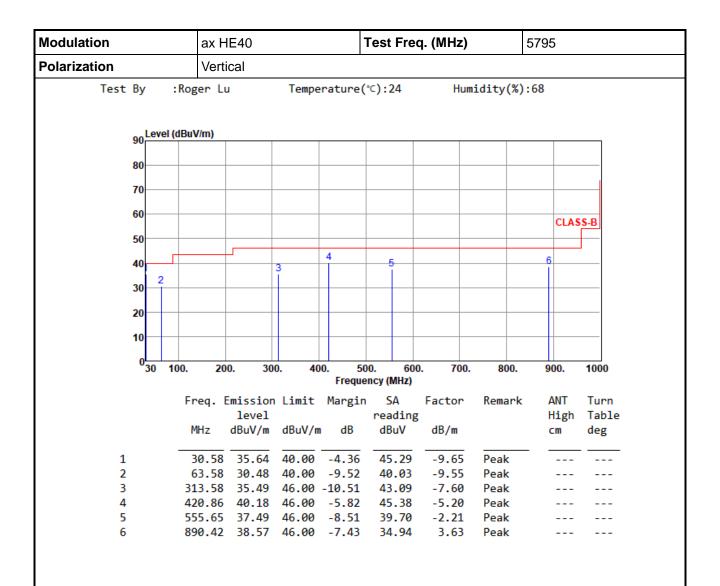
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

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*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.

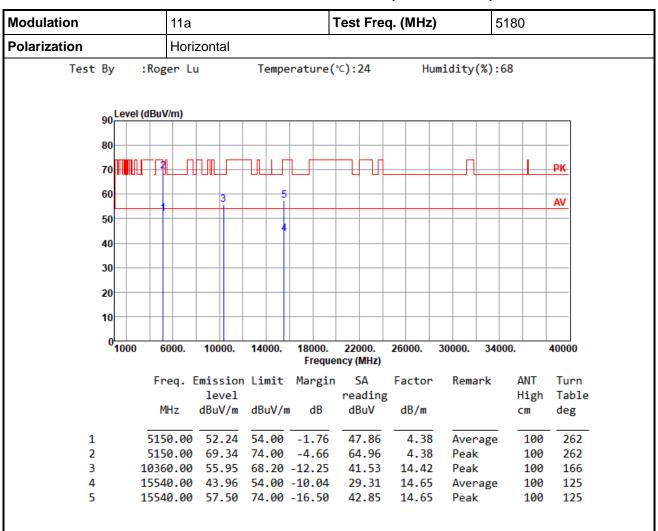
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3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11a



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

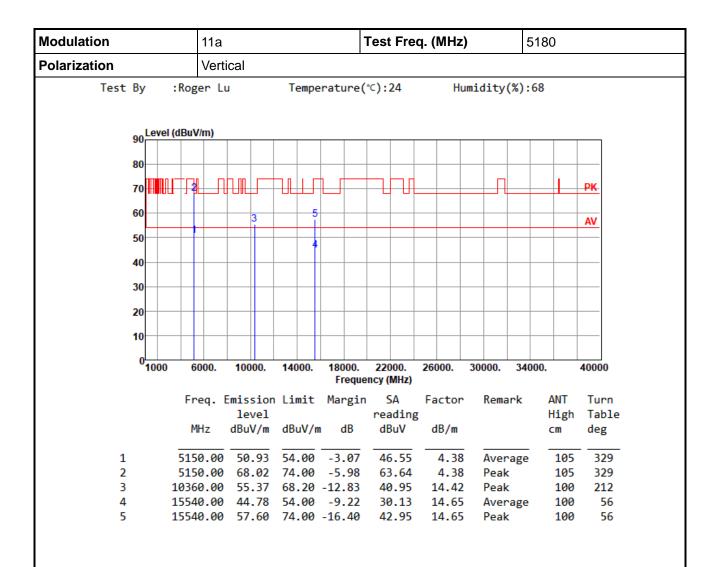
*Factor includes antenna factor, cable loss and amplifier gain

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

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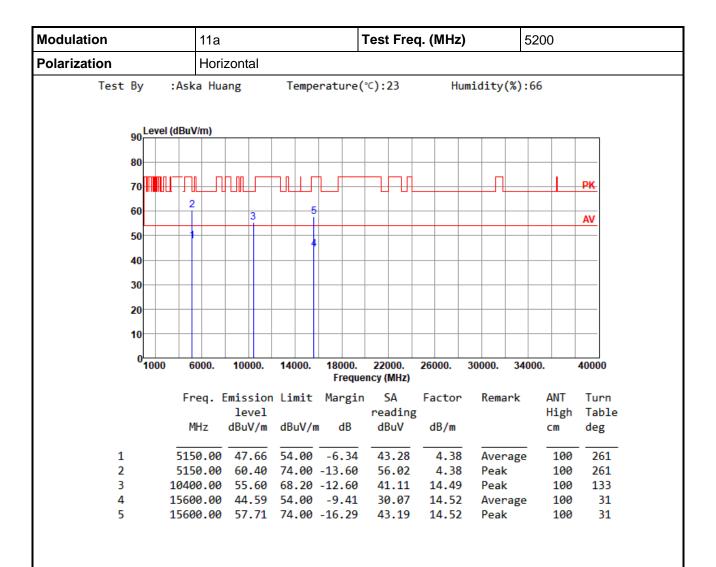
*Factor includes antenna factor, cable loss and amplifier gain

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

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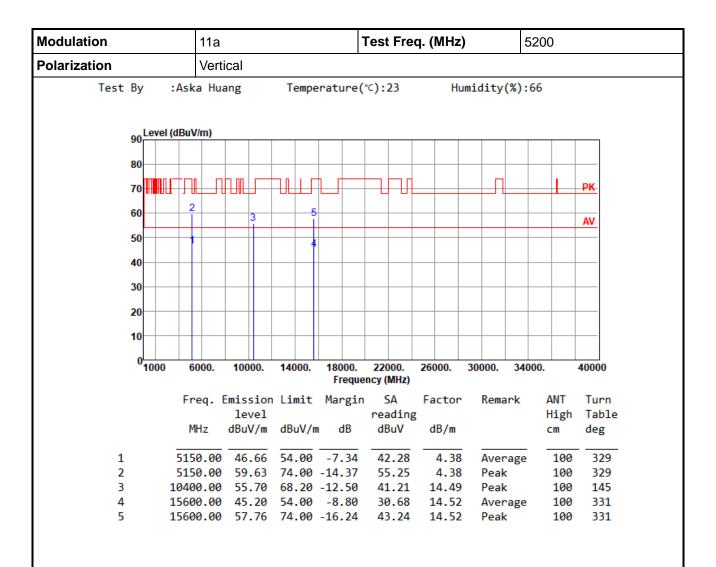
*Factor includes antenna factor, cable loss and amplifier gain

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

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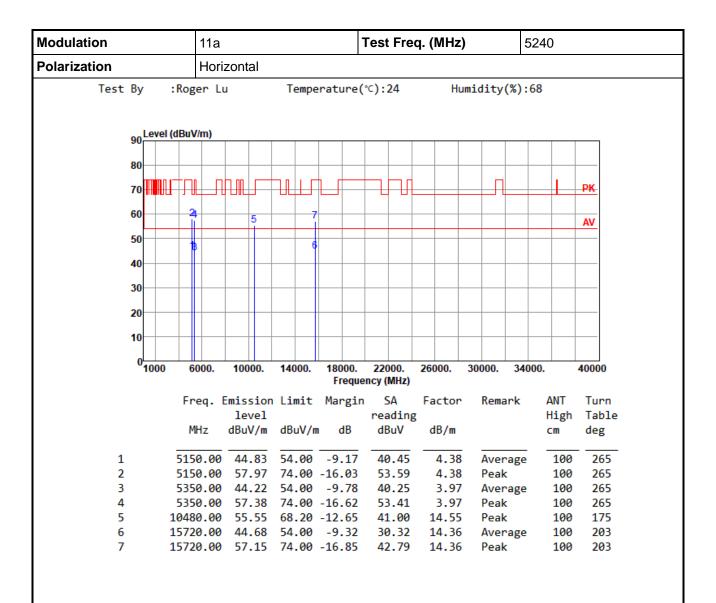
*Factor includes antenna factor, cable loss and amplifier gain

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

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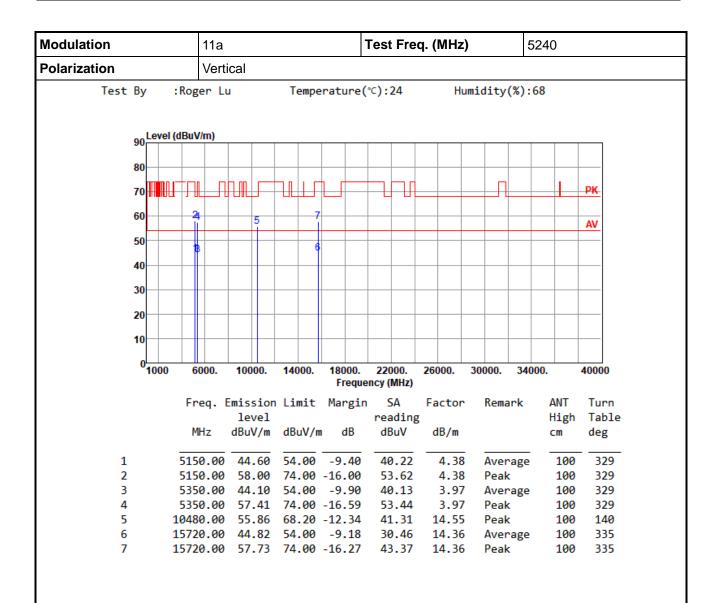
*Factor includes antenna factor, cable loss and amplifier gain

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

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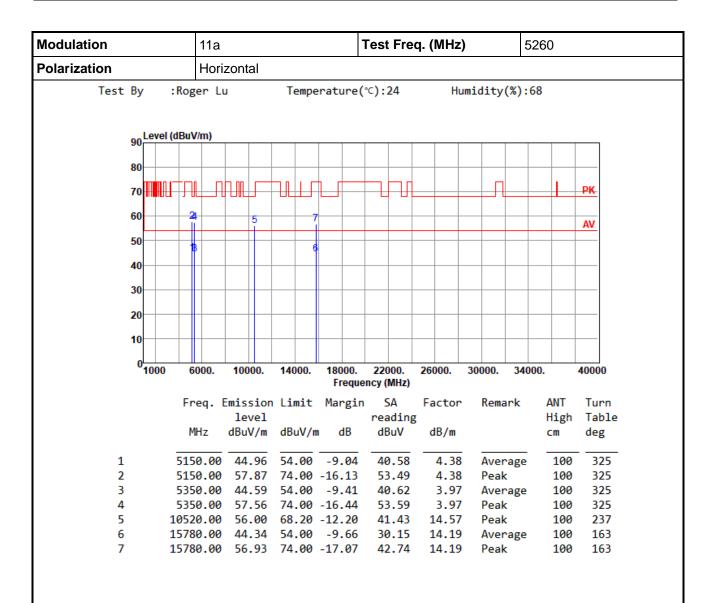


*Factor includes antenna factor, cable loss and amplifier gain

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

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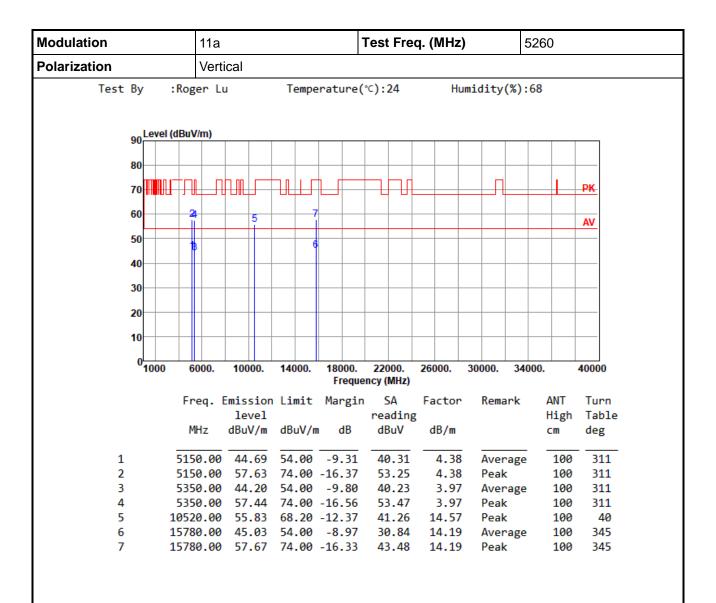
*Factor includes antenna factor, cable loss and amplifier gain

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

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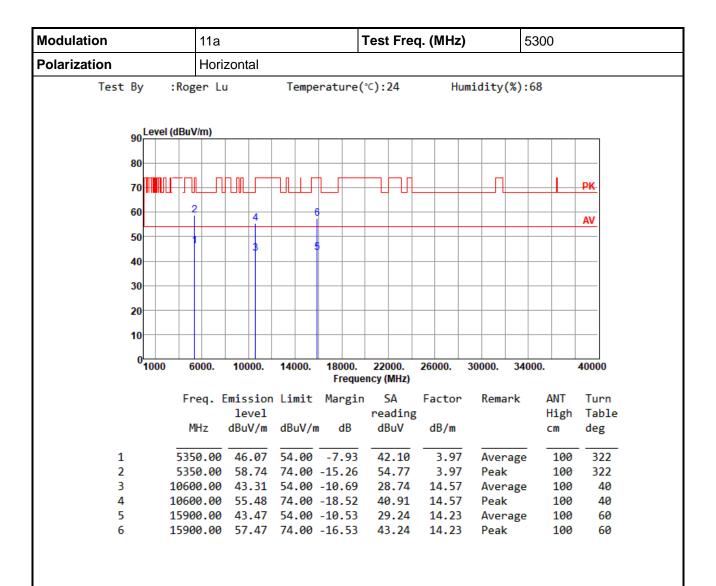
*Factor includes antenna factor, cable loss and amplifier gain

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

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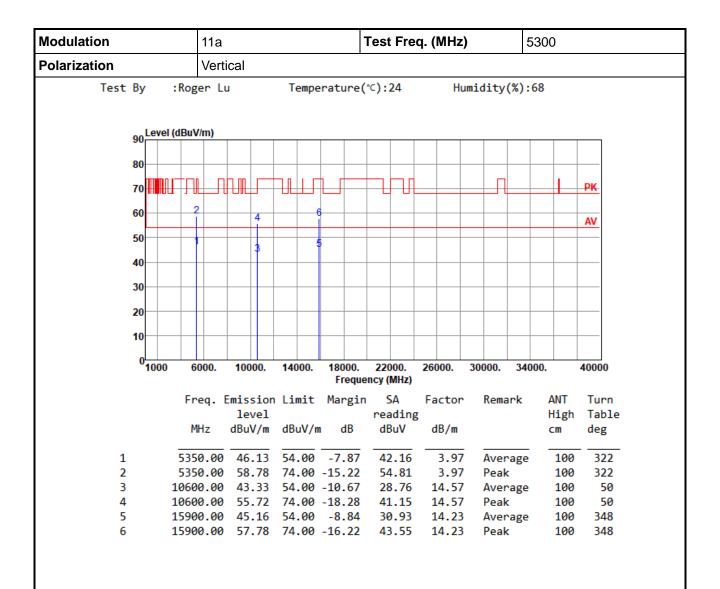
*Factor includes antenna factor, cable loss and amplifier gain

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

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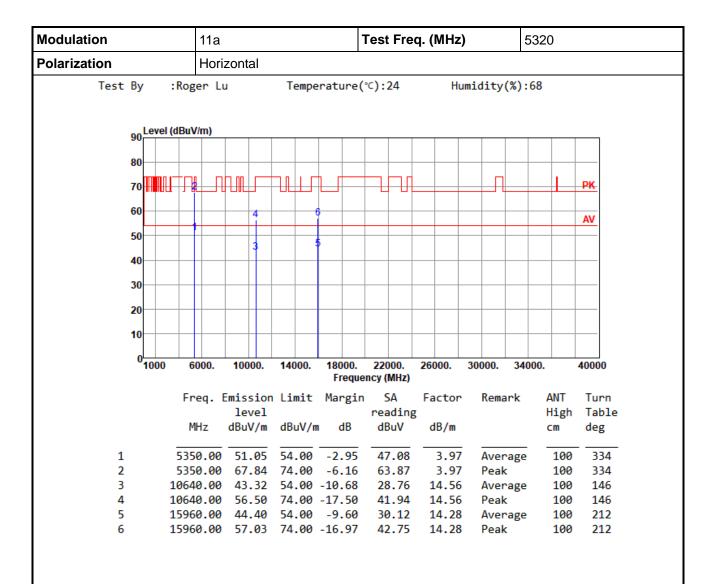


*Factor includes antenna factor, cable loss and amplifier gain

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

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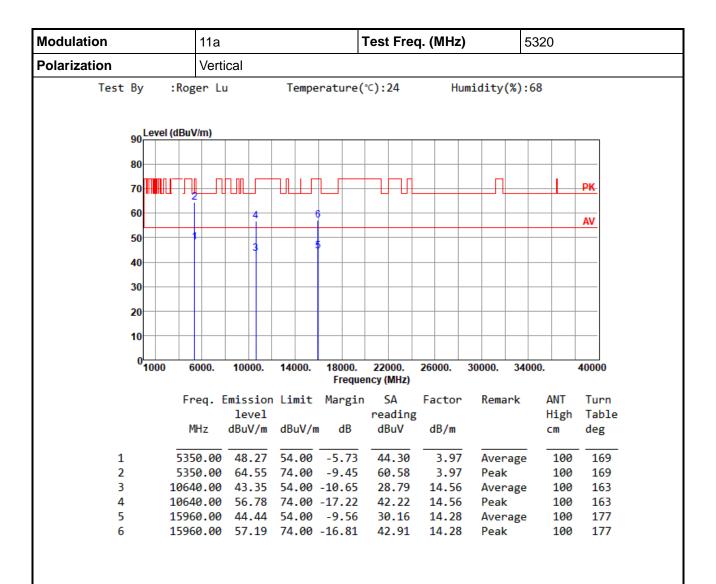


*Factor includes antenna factor, cable loss and amplifier gain

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

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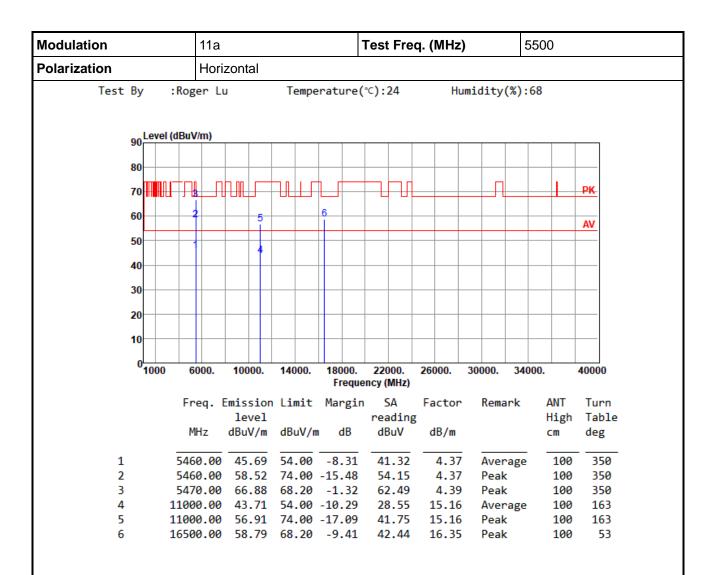
*Factor includes antenna factor, cable loss and amplifier gain

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

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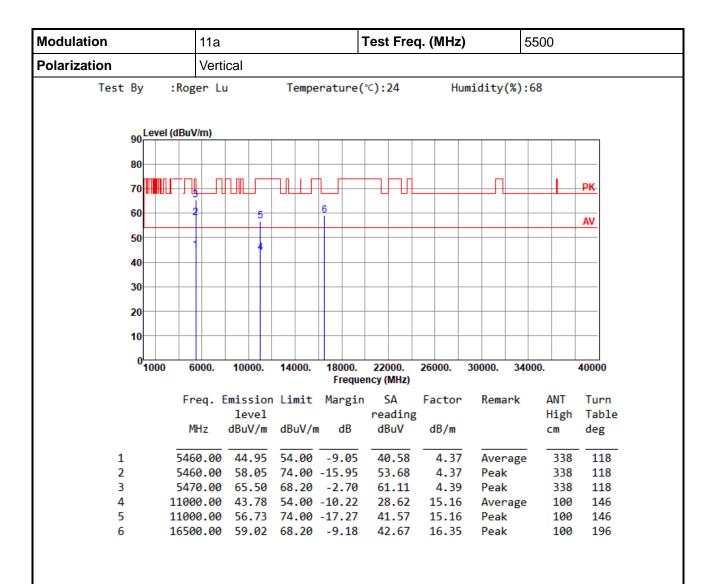
*Factor includes antenna factor , cable loss and amplifier gain

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

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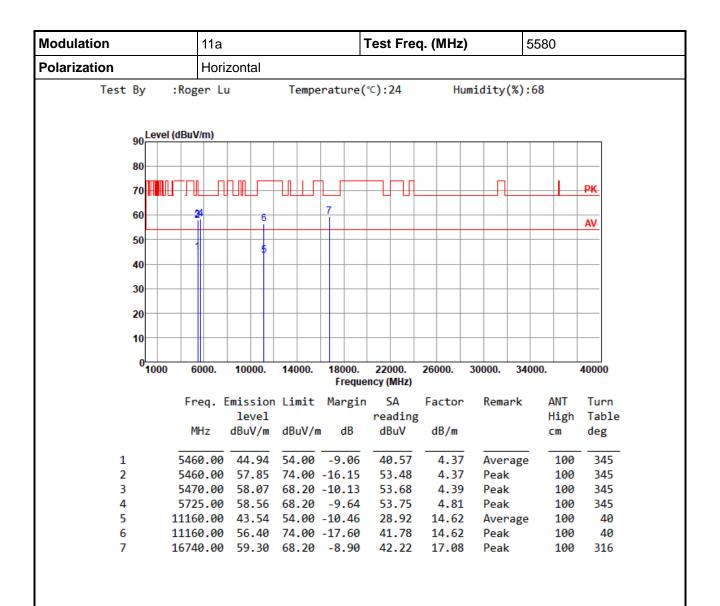
*Factor includes antenna factor, cable loss and amplifier gain

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

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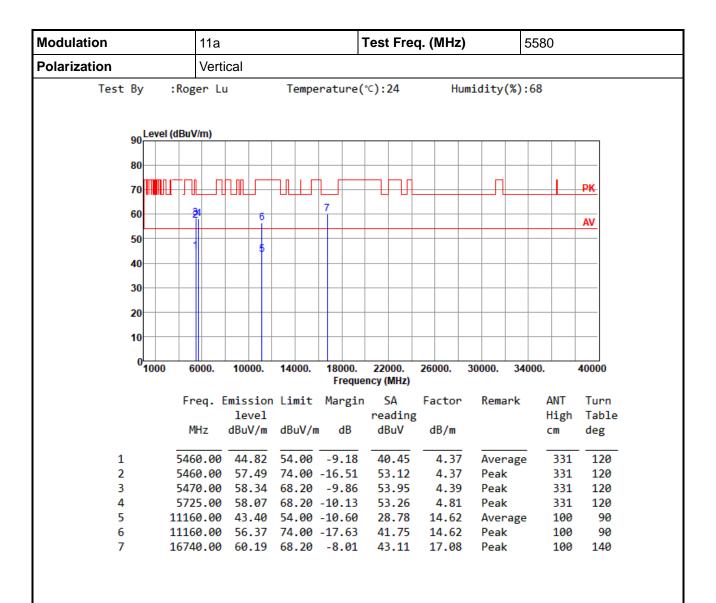
*Factor includes antenna factor, cable loss and amplifier gain

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

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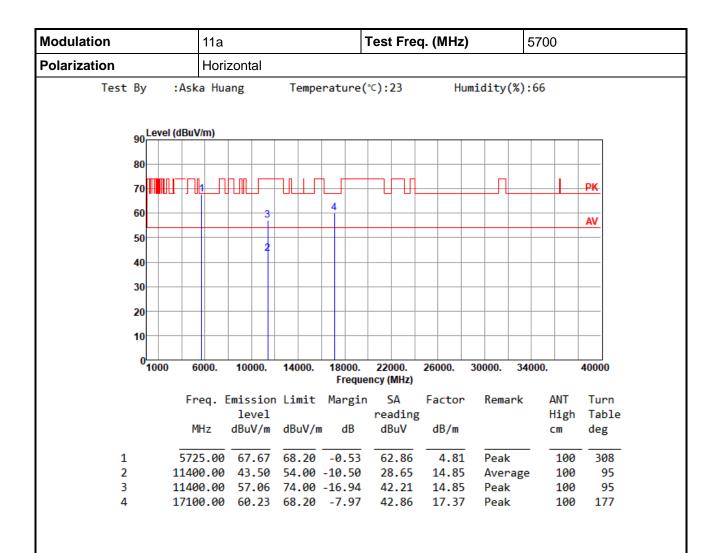
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

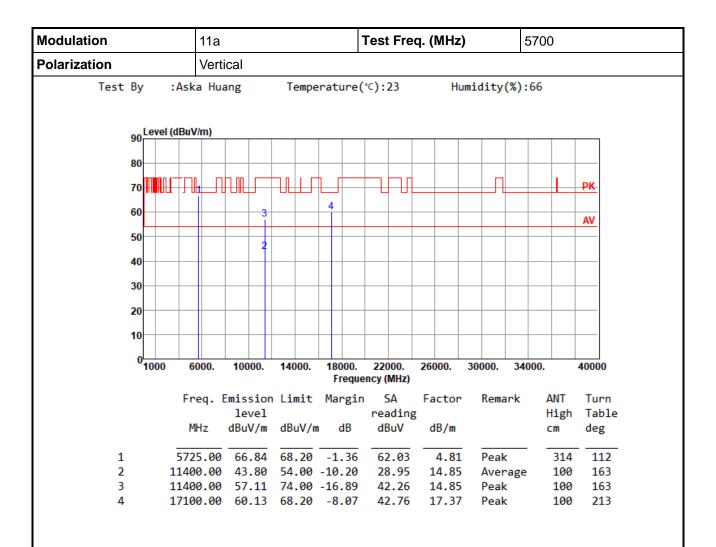
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*Factor includes antenna factor, cable loss and amplifier gain

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

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Modulation	11a		Test Freq. (MHz)		5720	
Polarization	Horizontal					
Test By :Ro	ger Lu	Temperature	(°⊂):24 Hur	midity(%)	:68	
90 Level (dBu	υV/m)					
80						
70				\bot \vdash		PK.
60	1 3	4				AV
50						
40						
30						
20						
10						
01000	6000. 10000.	14000. 18000. Frequ	22000. 26000. ency (MHz)	30000. 3	4000.	40000
F	req. Emissio level	n Limit Margi	n SA Factor reading	Remark	ANT High	Turn Table
	MHz dBuV/m	dBuV/m dB	dBuV dB/m		cm	deg
	50.00 58.87			Peak	100	305
	40.00 43.49 40.00 57.18	54.00 -10.51 74.00 -16.82		Averag Peak	e 100 100	212 212
		68.20 -7.42		Peak	100	238

*Factor includes antenna factor, cable loss and amplifier gain

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

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Polarization	Marthal			(MHz)	5720
	Vertical		1		1
Test By :Rog	ger Lu	Temperature	(°⊂):24	Humidity(%)):68
90 Level (dBu\	//m)				
80					
70					PK-
60	3	4			AV
50	2				
40					
30					
10					
0 1000 6	000. 10000.	14000. 18000.	22000. 2 iency (MHz)	6000. 30000. 3	4000. 40000
Fr	eq. Emission level	Limit Margi		Factor Remark	: ANT Turn High Table
М	1Hz dBuV/m	dBuV/m dB	dBuV	dB/m	cm deg
		68.20 -9.81 54.00 -10.54		5.18 Peak 14.81 Averag	312 126 ge 100 80
3 1144	10.00 56.46	74.00 -17.54 68.20 -7.53	41.65	14.81 Peak 17.42 Peak	100 80 100 142

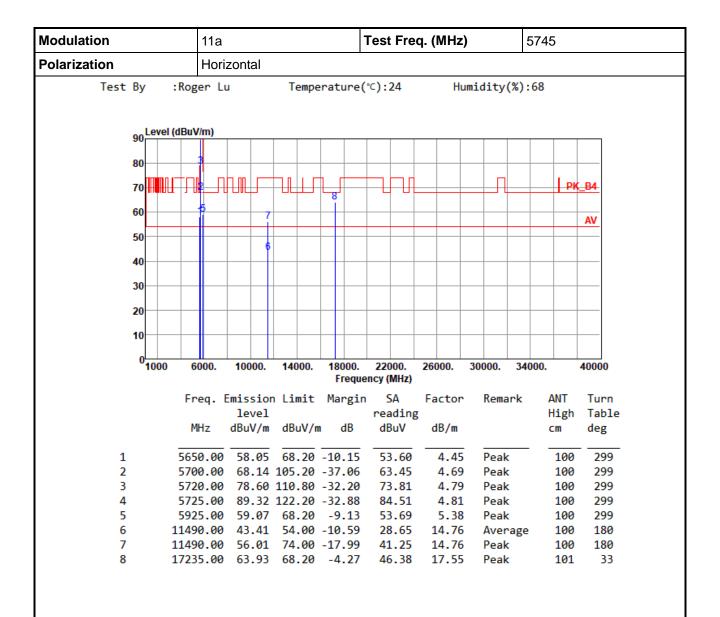
*Factor includes antenna factor, cable loss and amplifier gain

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

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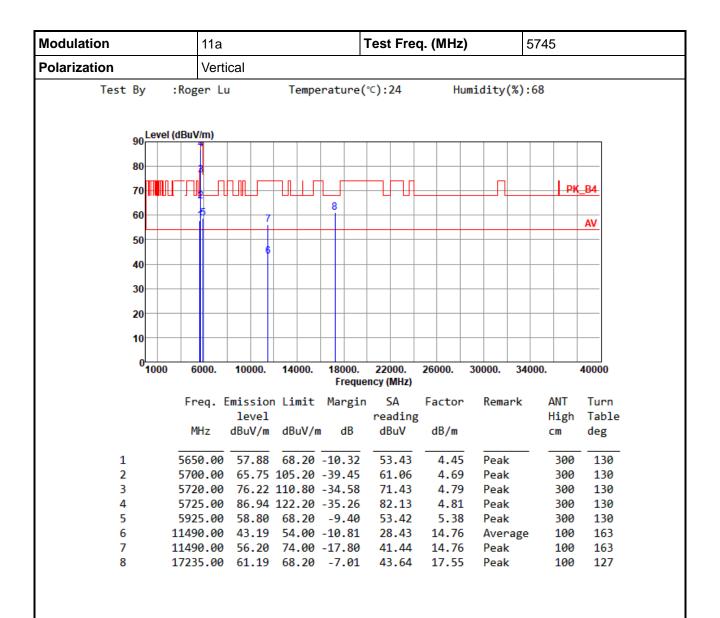
*Factor includes antenna factor, cable loss and amplifier gain

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

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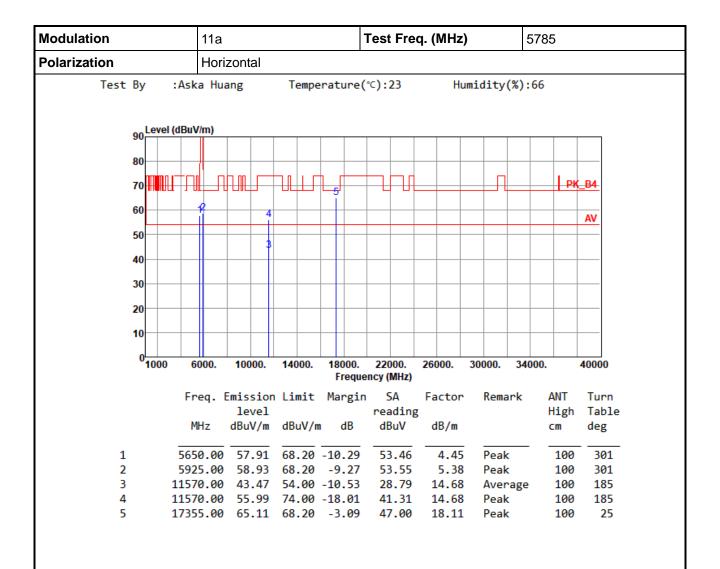
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

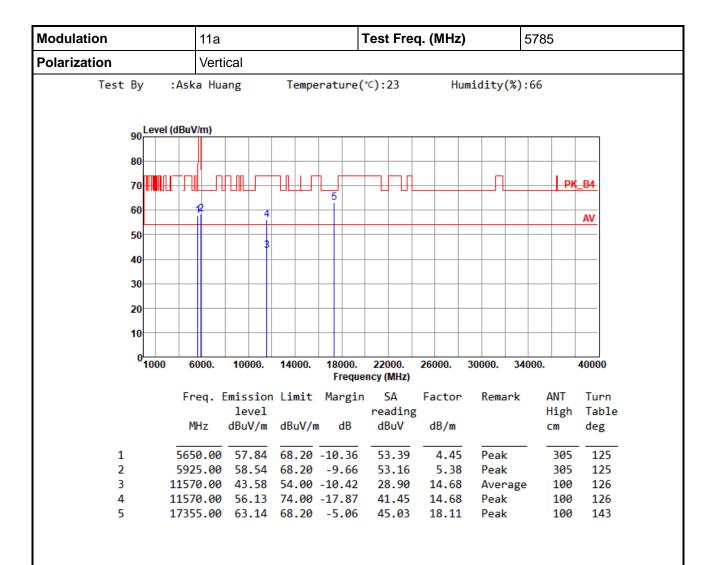
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*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

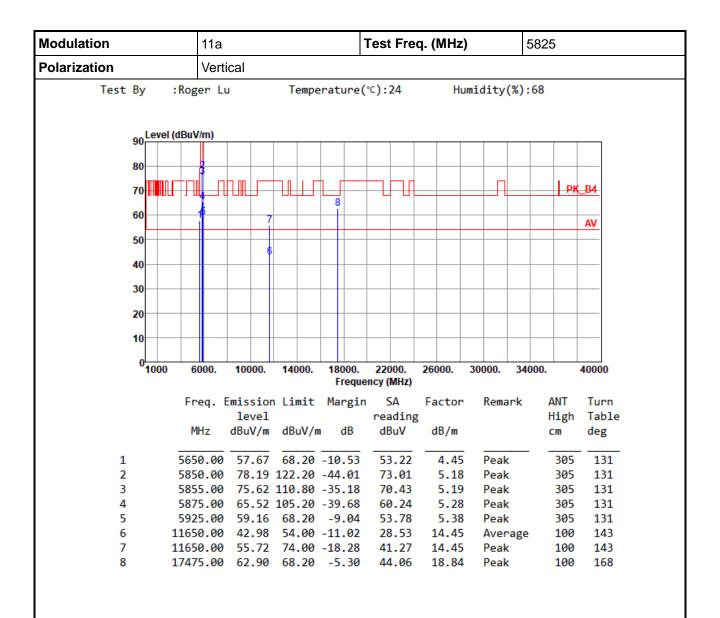
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*Factor includes antenna factor, cable loss and amplifier gain

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

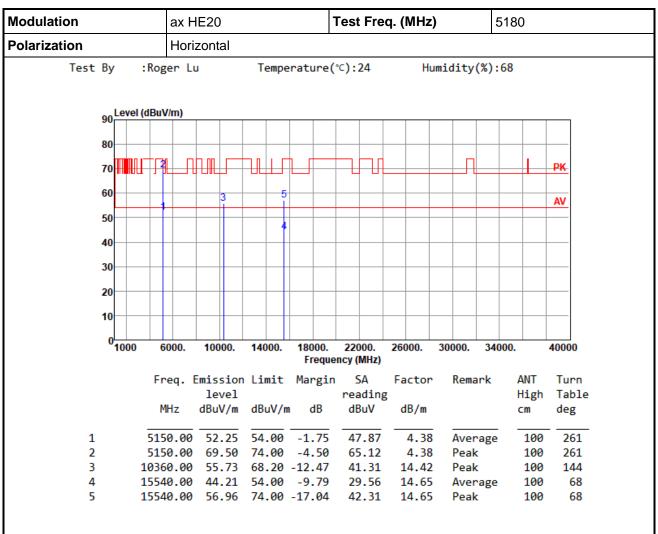
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3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for ax HE20



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

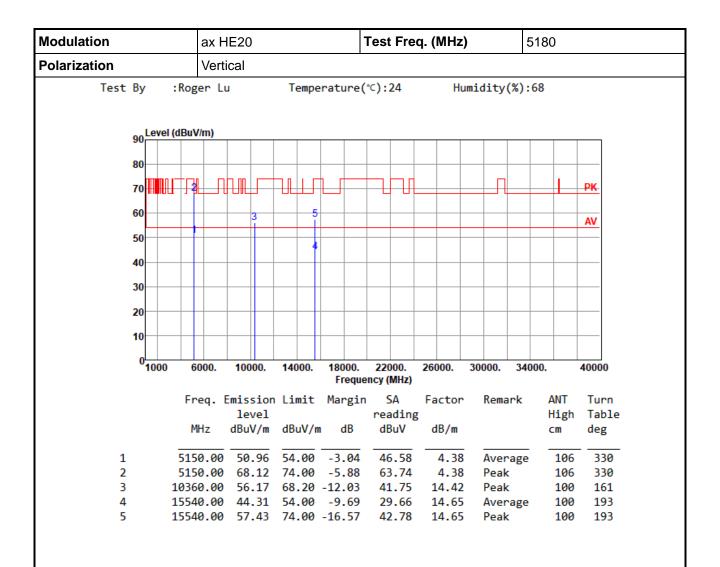
*Factor includes antenna factor, cable loss and amplifier gain

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

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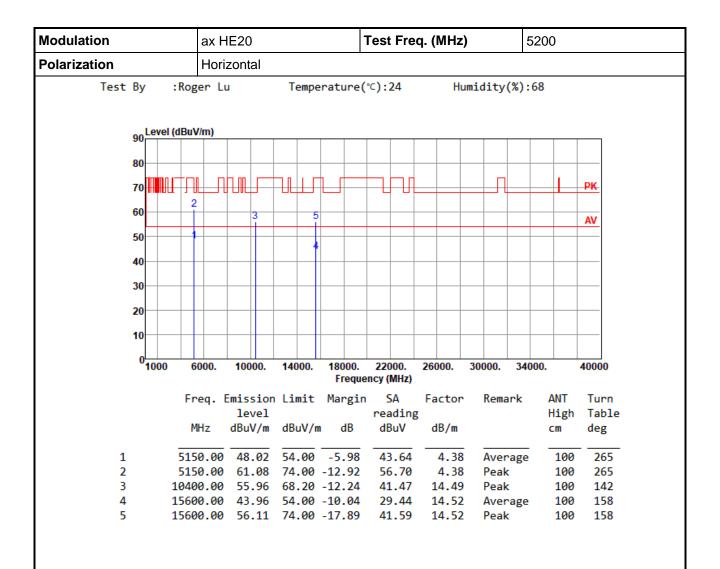
*Factor includes antenna factor, cable loss and amplifier gain

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

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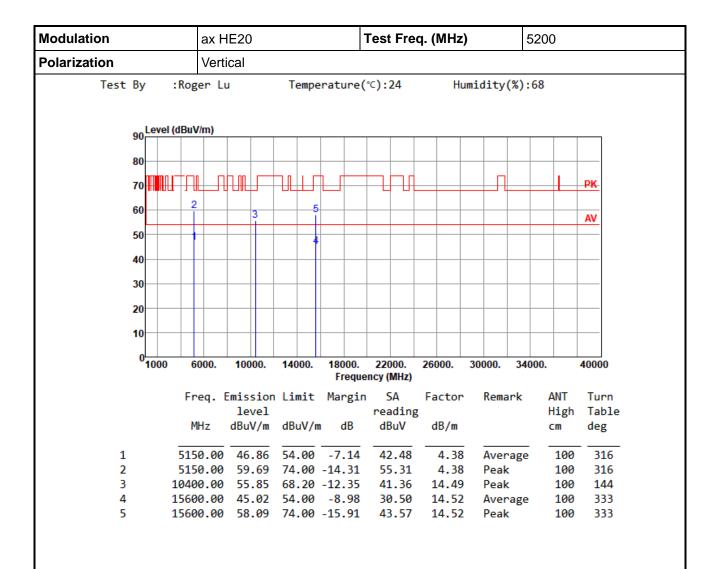
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

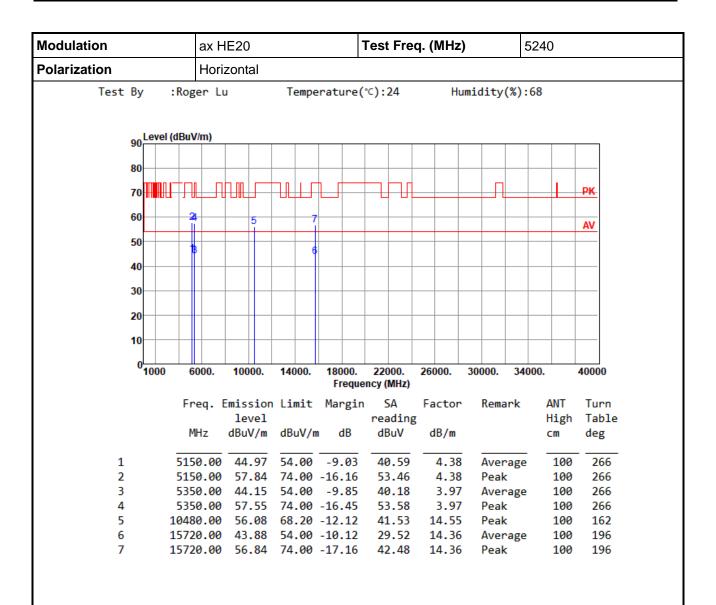
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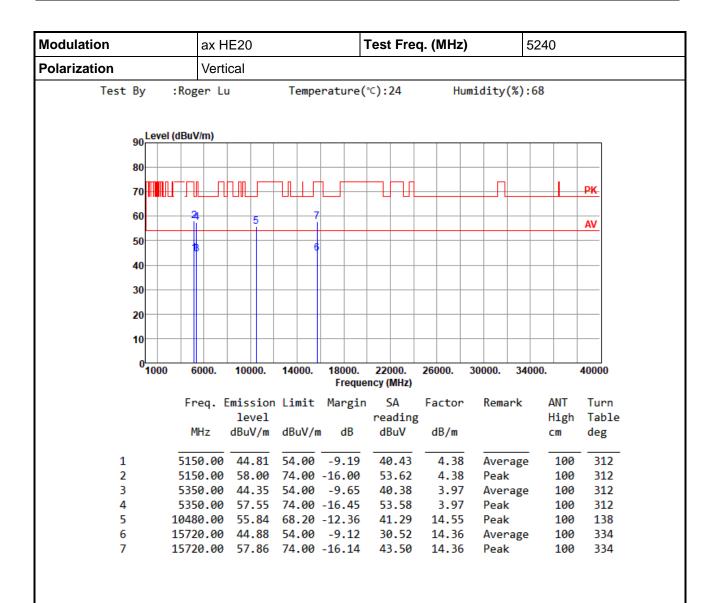
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

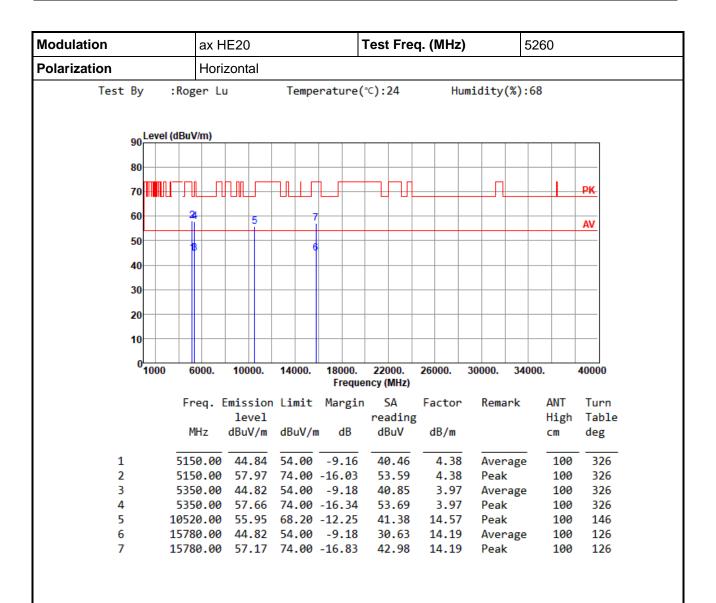
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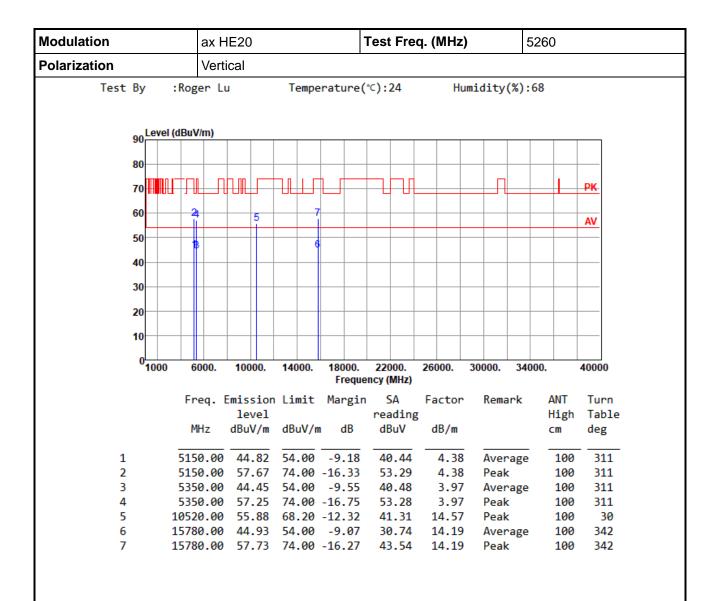
*Factor includes antenna factor, cable loss and amplifier gain

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

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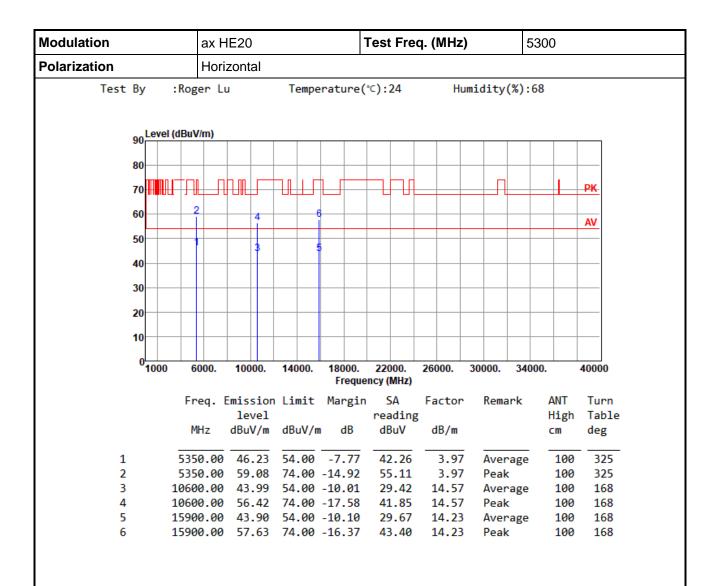
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

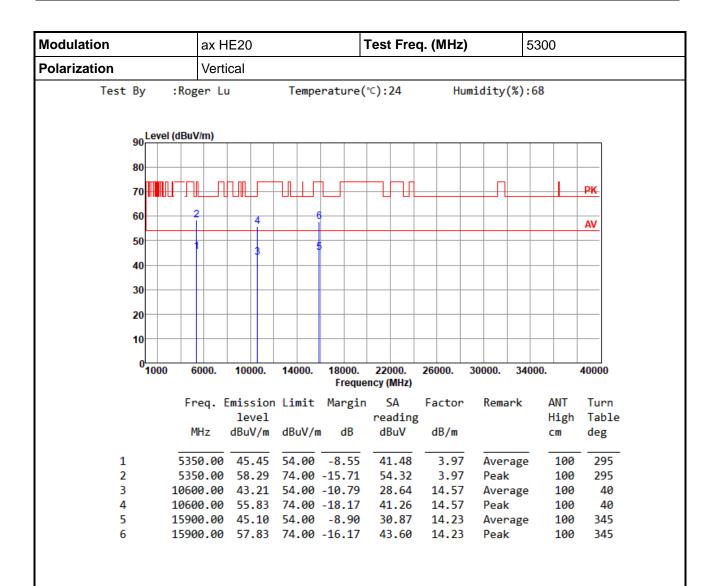
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*Factor includes antenna factor, cable loss and amplifier gain

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

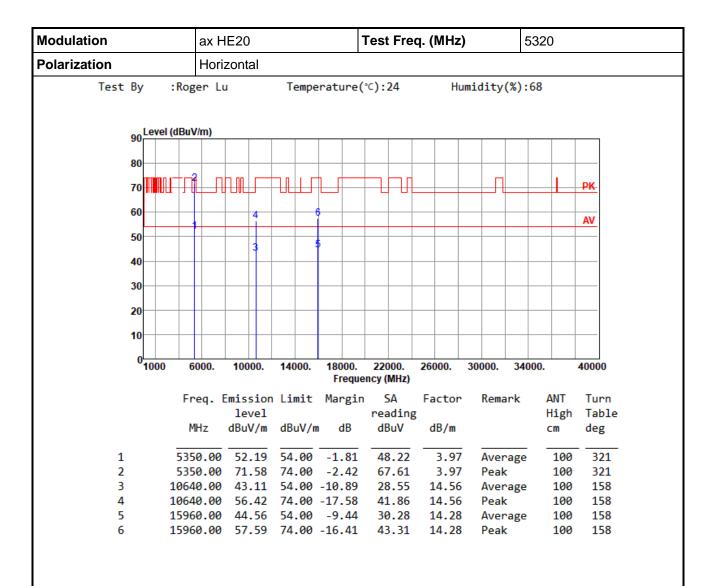
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*Factor includes antenna factor, cable loss and amplifier gain

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

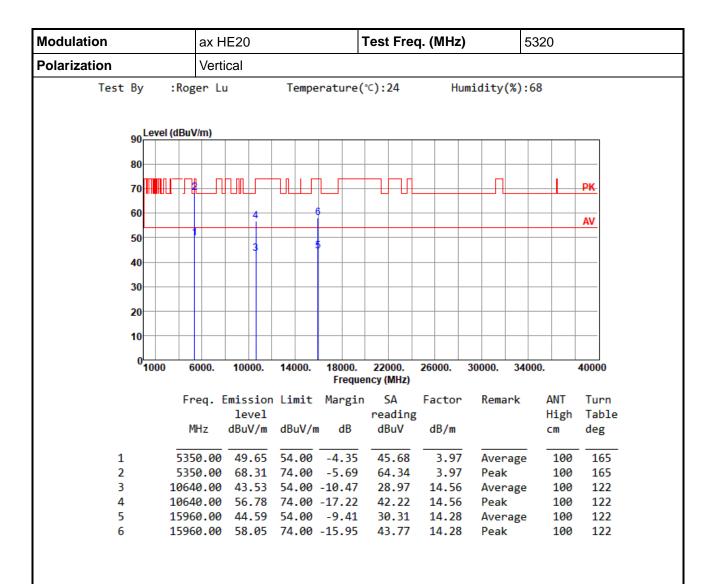
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*Factor includes antenna factor, cable loss and amplifier gain

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

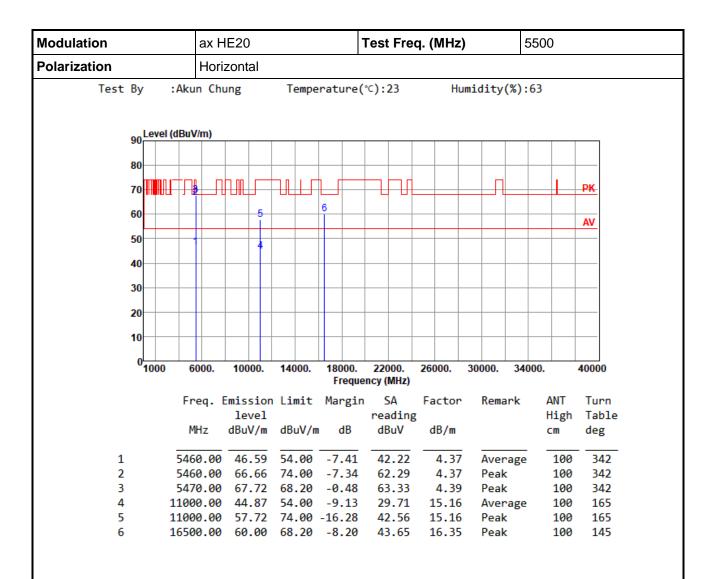
Report No.: FR161001AN

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*Factor includes antenna factor, cable loss and amplifier gain

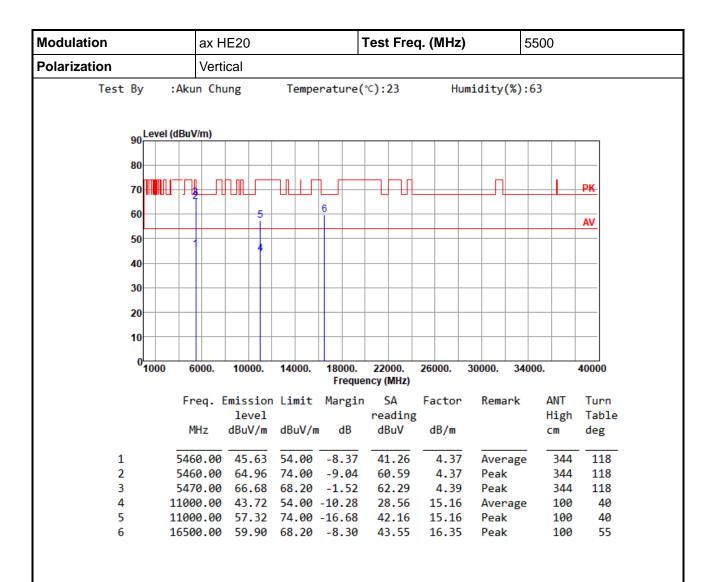
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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*Factor includes antenna factor, cable loss and amplifier gain

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

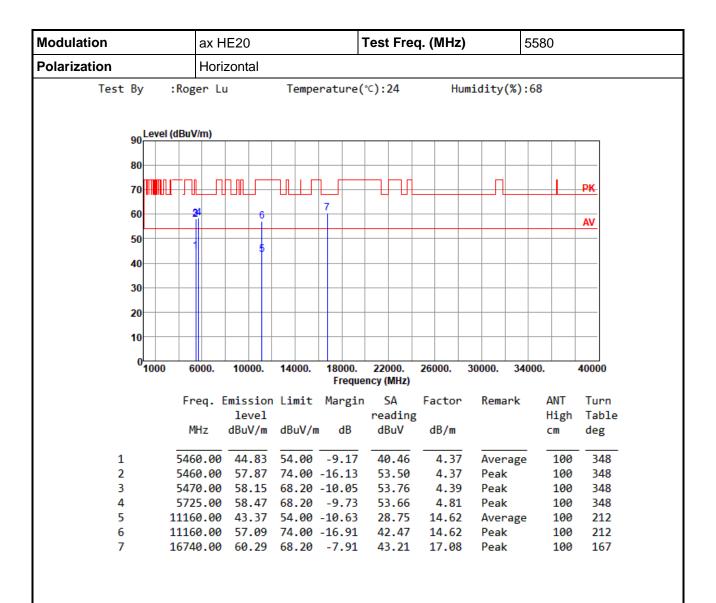
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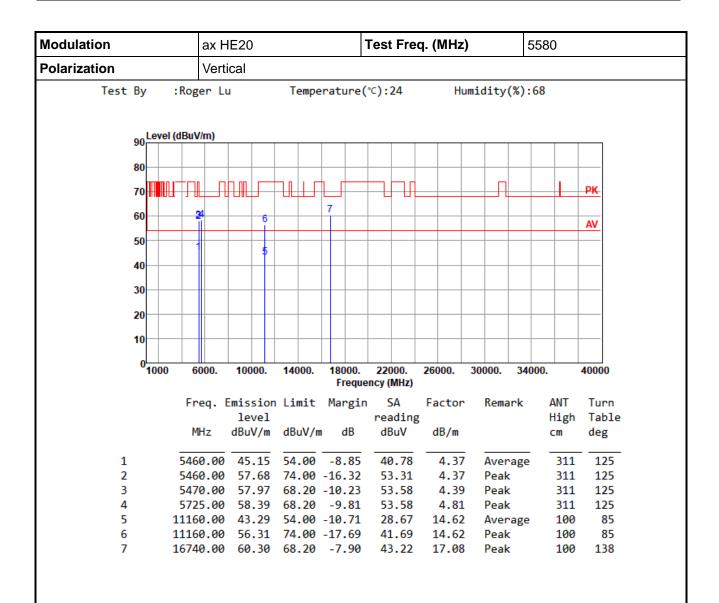
*Factor includes antenna factor, cable loss and amplifier gain

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

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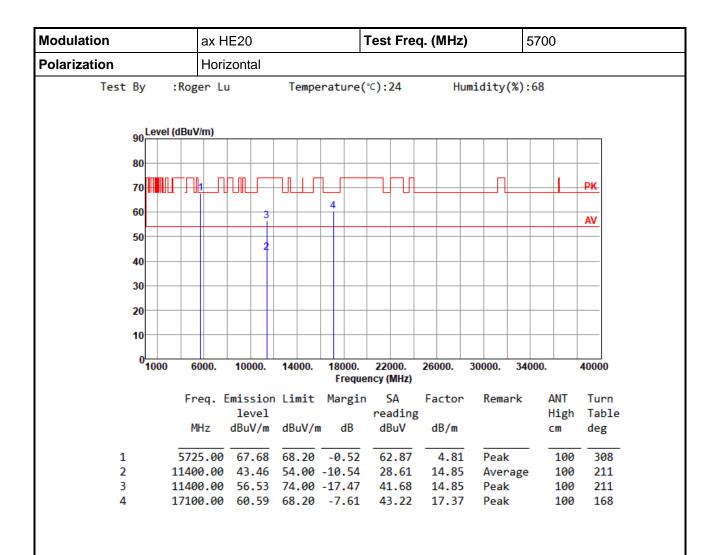
*Factor includes antenna factor, cable loss and amplifier gain

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

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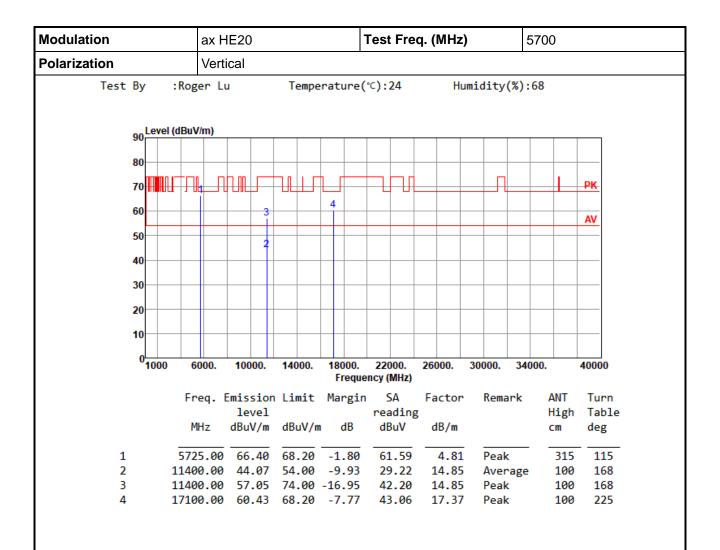
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

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Modulation			ax F)				-	Test Freq. (MHz)							5720			
Polarization			Hori	zont	al														
Test	Ву	:Rog	er L	u		Ten	ıpe	rat	ure(°C):2	4		Hur	midit	y(%):	68			
	Leve	el (dBuV	//m)																
	90																		
	80																		
	70	ПТП					┏				7/							PK	
	60		1					4											
	••				3													AV	
	50				2														
	40																		
	30																		
	20																		
	10						_						+	-					
	01000) 6	000.	100	00.	1400	0.		000.	220 ency (N		2600	00.	30000.	34	000.		40000	
		En	0.0	Emic	cion	Limi	+					Fac	tor	Por	nark		ANT	Turn	
			eq.		vel	LTIIII		ria	ıgııı	rea			COI	itei	liairk		High		
		М	Hz	dBu	V/m	dBu\	//m	ı	dB	dB			/m				cm	deg	
1		585	0.00	 59	.30	68.2	20	-8	.90	54	.12		.18	Pea	ak		100	308	
2						54.6					.96		.81		 erage		100		
3						74.6					.57		.81	Pea			100		
4		1716	0.00	60	.53	68.2	20	-7	.67	43	. 11	17	.42	Pea	ak		100	196	

*Factor includes antenna factor, cable loss and amplifier gain

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

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Modulation			ax F	1E20)				-	Γest	Fre	q. (I	MHz)			572	20	
Polarization			Vert	ical											L			
Test	Ву	:Rog	ger L	u		Te	mpe	rat	ure(°C):2	24		Hui	midit	y(%)	:68		
	Lov	ol (dDu\	(Im)															
	90 Lev	el (dBu\	///////////////////////////////////////						Т							T		
	80																	
		ın I—	п п					1			\neg \sqcap				٦			PK.
	70			┵┷╙┖				_			ш				1			PK
	60		1		3			4										AV
	50																	
					2													
	40																	
	30							\vdash					_		-	-		
	20																	
	10																	
	0 100	0 6	000.	100	00.	1400	00.		000. reque	220 ncy (l		260	000.	30000.	. 34	000.		40000
		Fr	eq.	Emis	sion	Lim	it	Ma	rgin	5	Α	Fa	ctor	Ren	nark		ANT	Turn
					vel					rea	ding						High	Table
		M	1Hz	dBu'	V/m	dBu	V/m	ı	dB	dB	uV	d	B/m				cm	deg
1		585	0.00	58	.46	68.	20	-9	.74	53	.28	_	5.18	Pea	ak	-	311	105
2			10.00								.75		4.81		erage	2	100	75
3			10.00			74.					.59		4.81				100	
4		1716	0.00	60	.53	68.	20	-7	.67	43	.11	1	7.42	Pea	ak		100	143

*Factor includes antenna factor, cable loss and amplifier gain

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

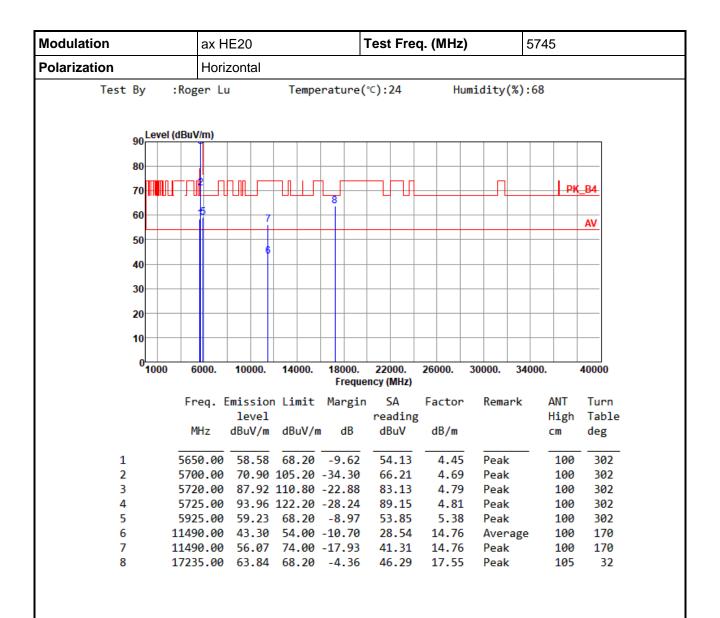
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*Factor includes antenna factor, cable loss and amplifier gain

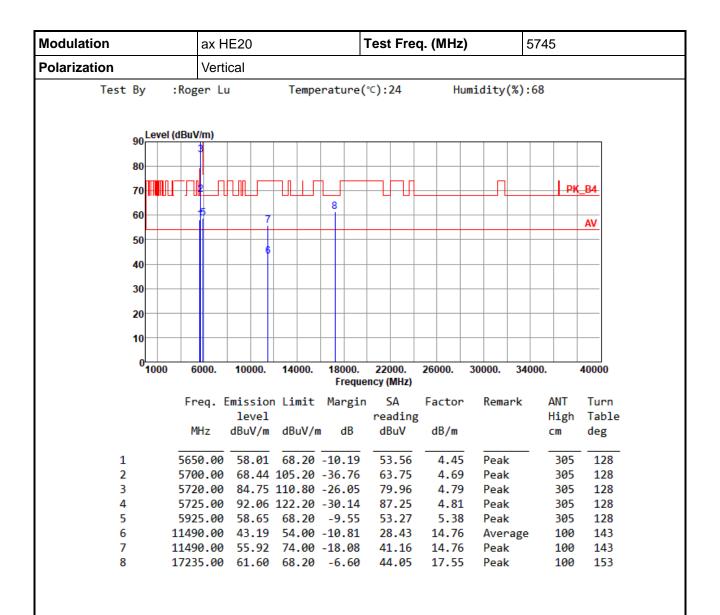
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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*Factor includes antenna factor, cable loss and amplifier gain

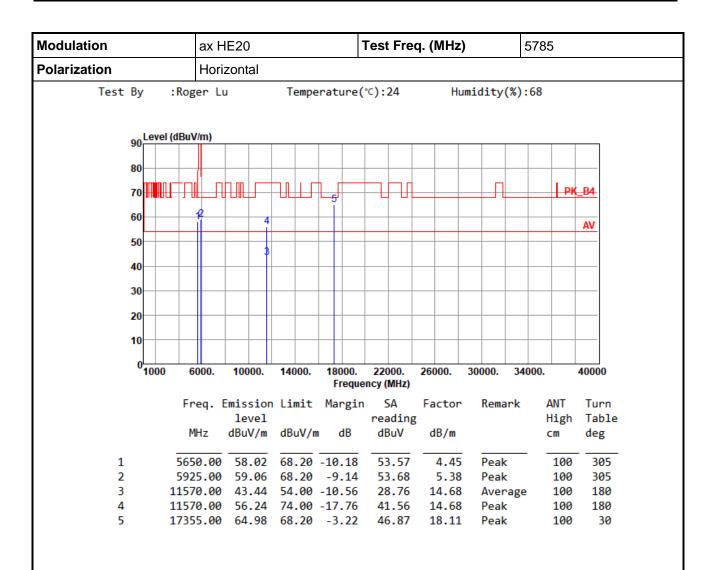
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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*Factor includes antenna factor, cable loss and amplifier gain

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

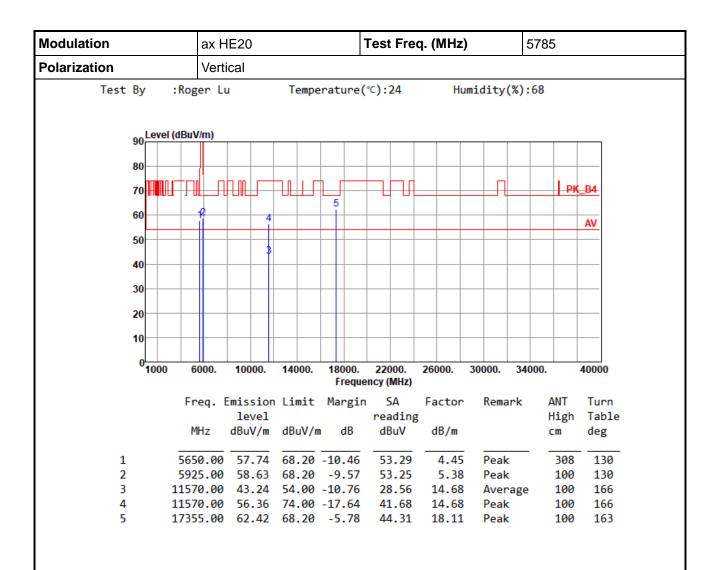
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*Factor includes antenna factor, cable loss and amplifier gain

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

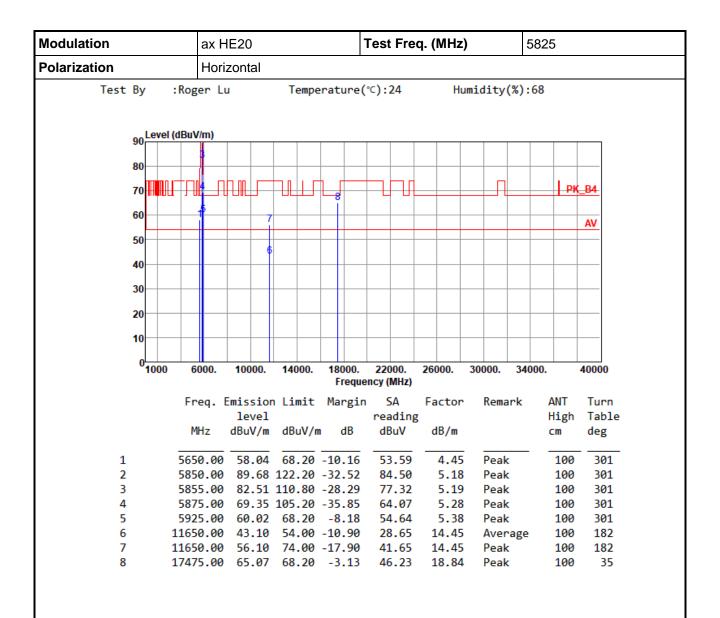
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*Factor includes antenna factor, cable loss and amplifier gain

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

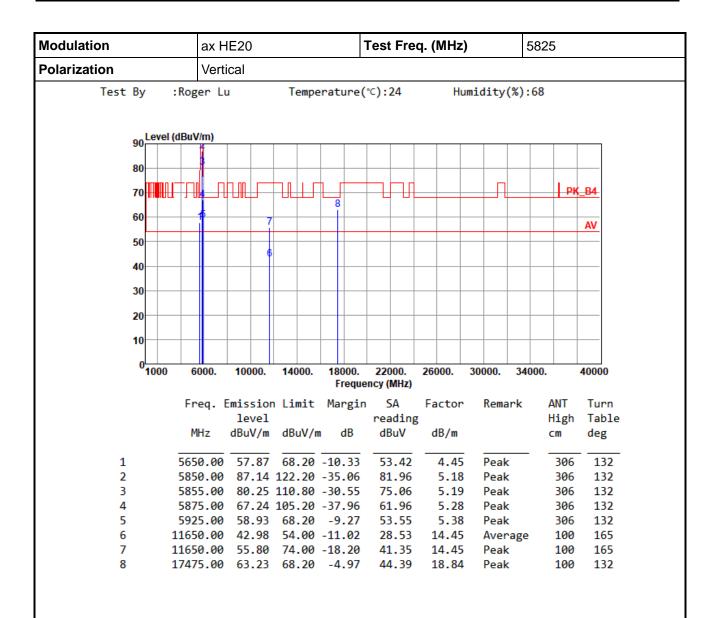
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*Factor includes antenna factor, cable loss and amplifier gain

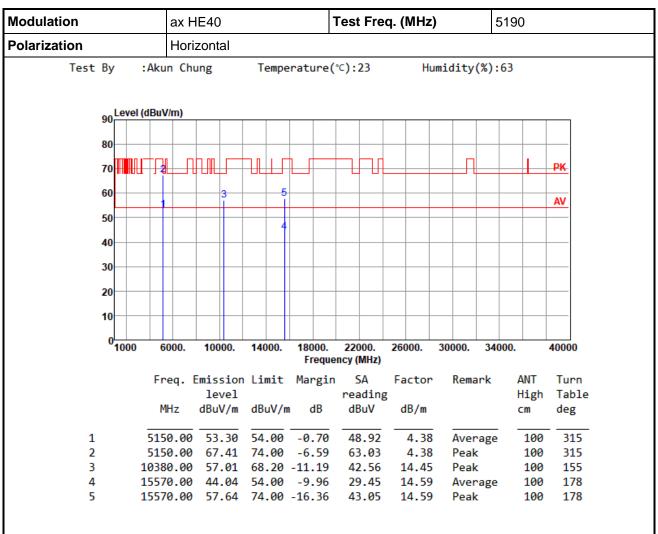
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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



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

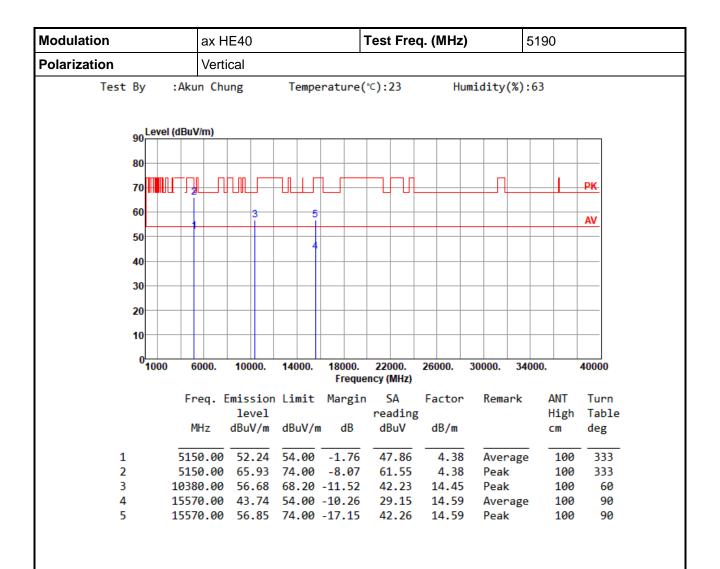
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

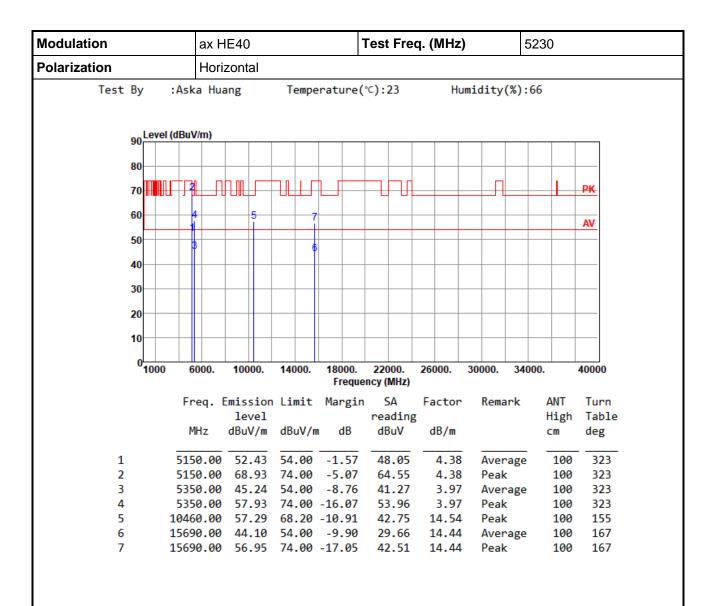
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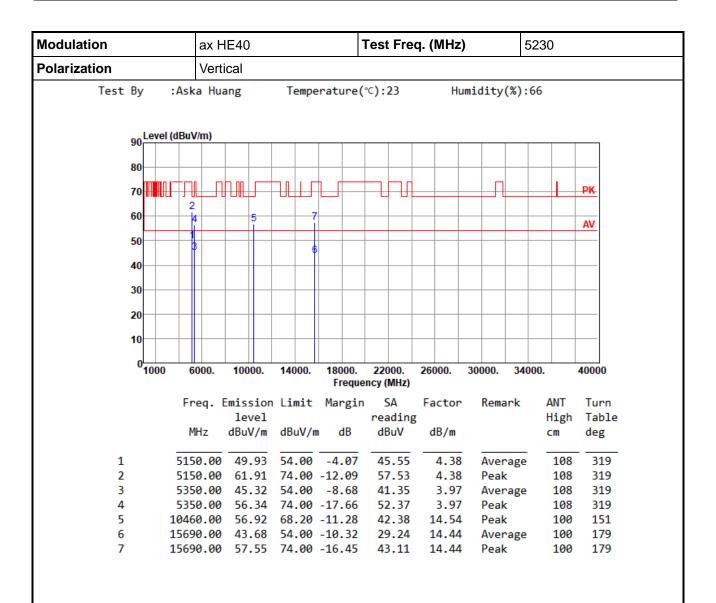
*Factor includes antenna factor, cable loss and amplifier gain

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

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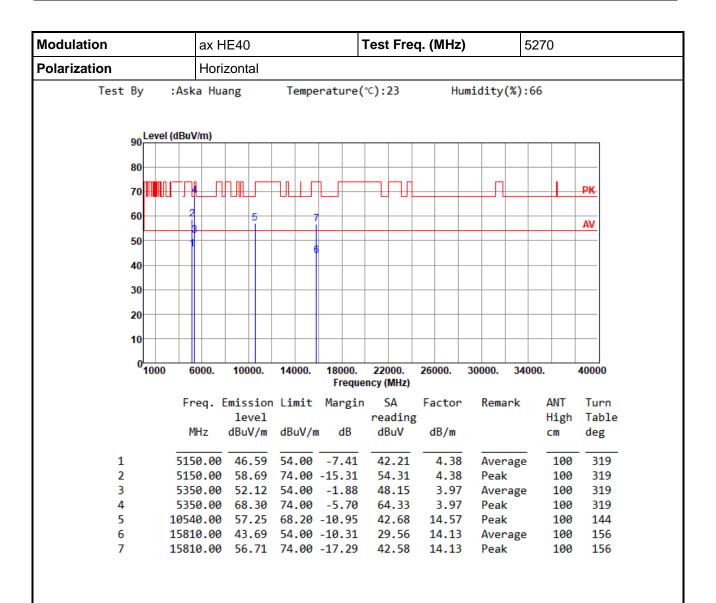
*Factor includes antenna factor, cable loss and amplifier gain

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

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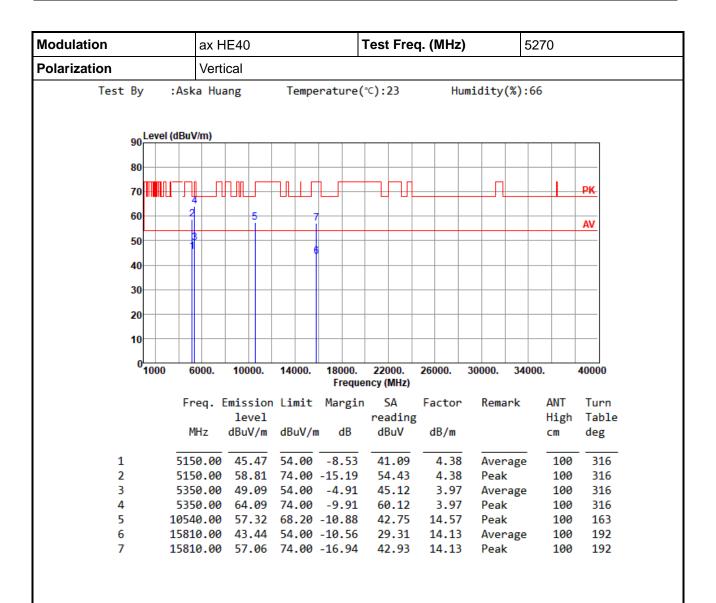
*Factor includes antenna factor, cable loss and amplifier gain

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

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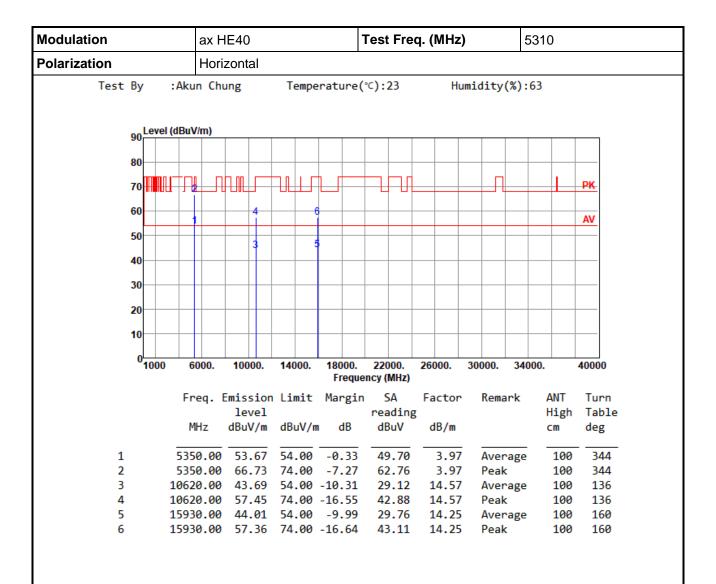
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

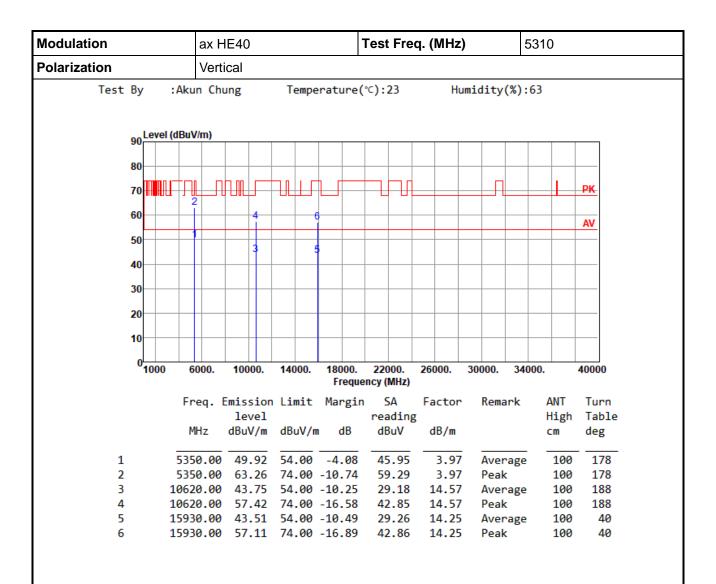
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*Factor includes antenna factor, cable loss and amplifier gain

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

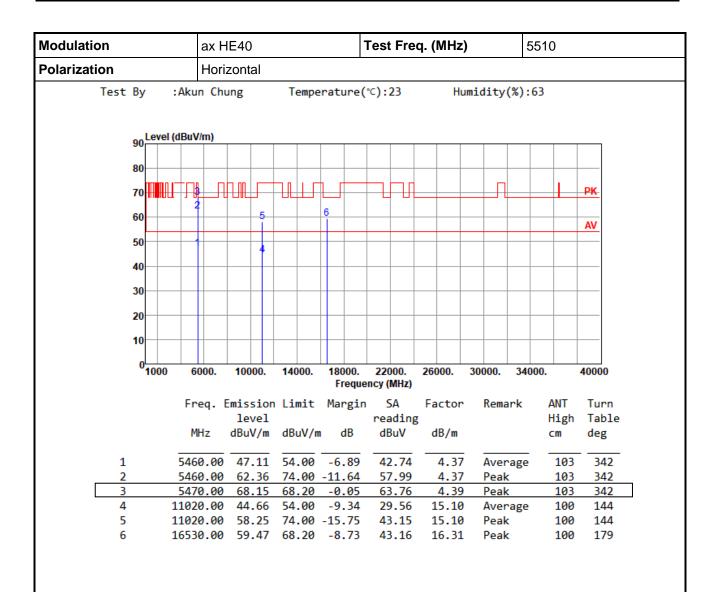
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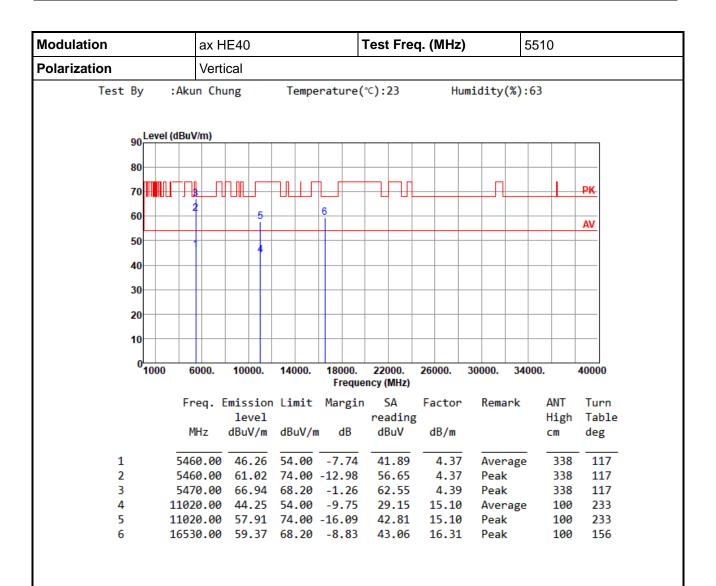
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

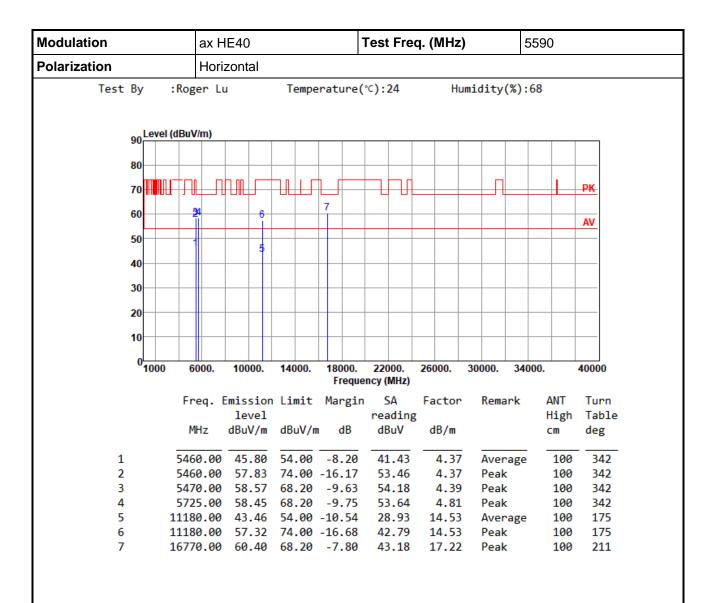
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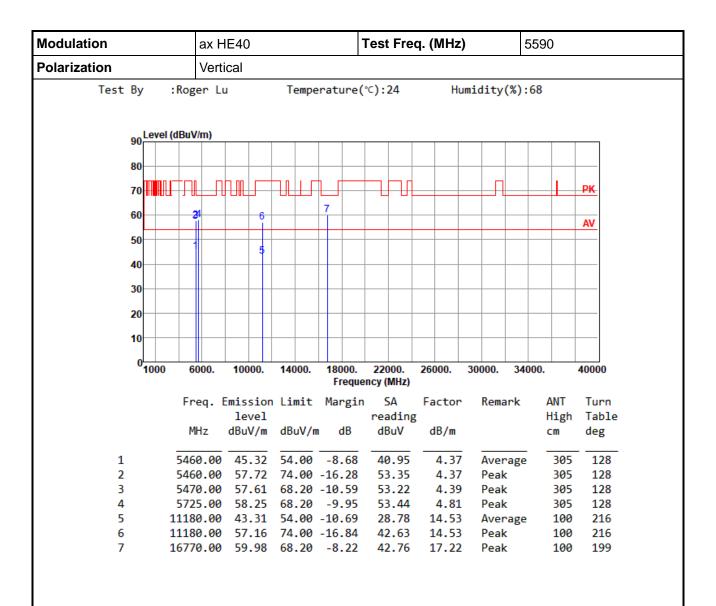
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

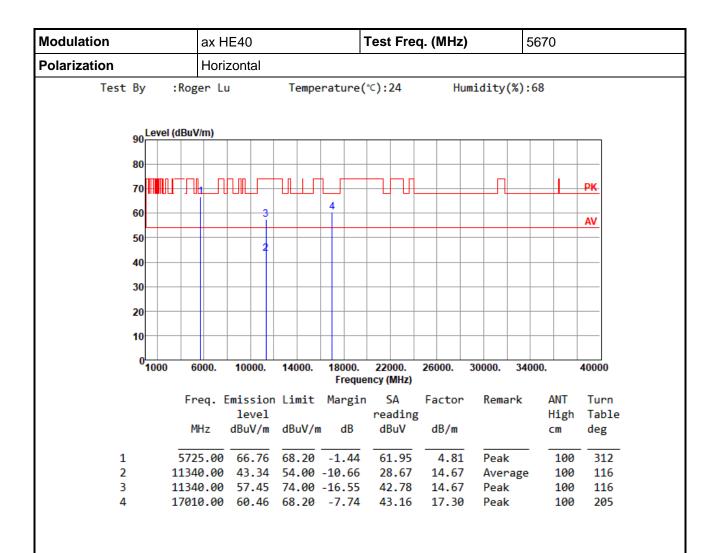
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*Factor includes antenna factor, cable loss and amplifier gain

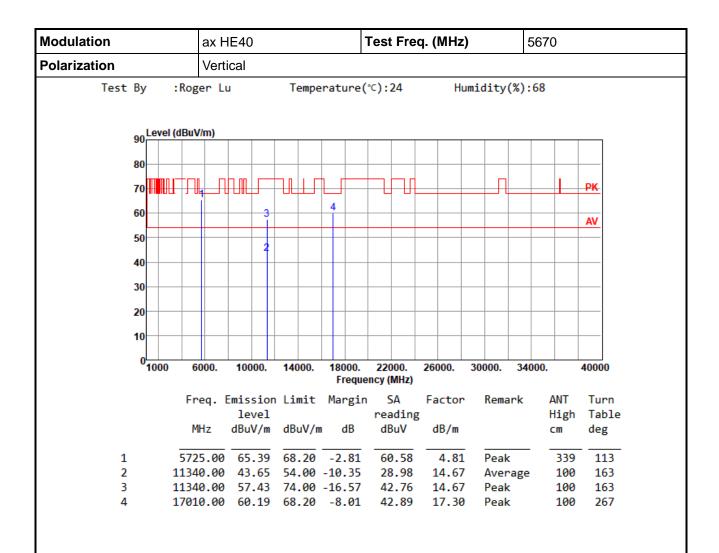
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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*Factor includes antenna factor, cable loss and amplifier gain

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

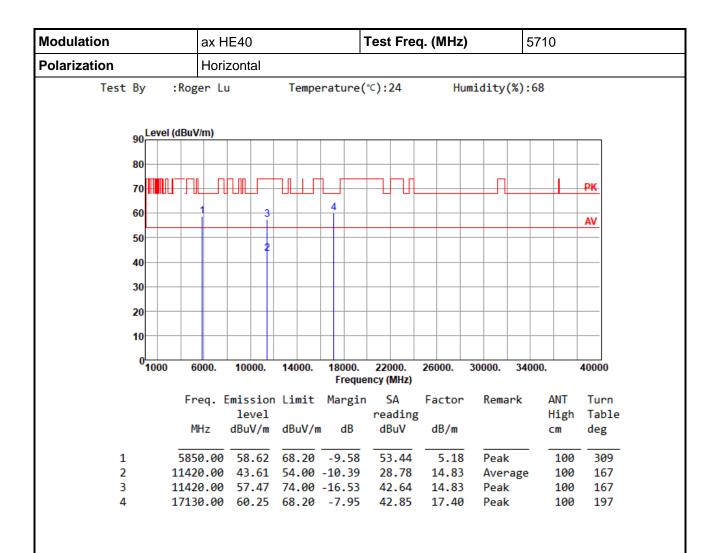
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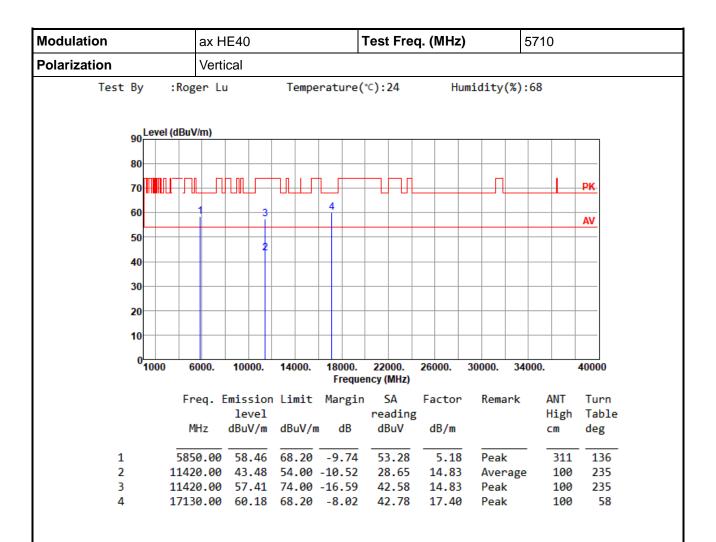


*Factor includes antenna factor, cable loss and amplifier gain

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

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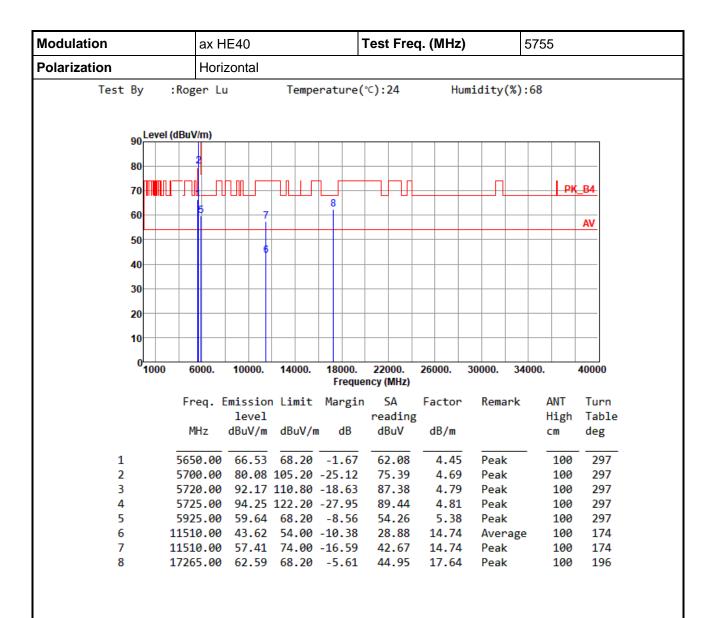
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

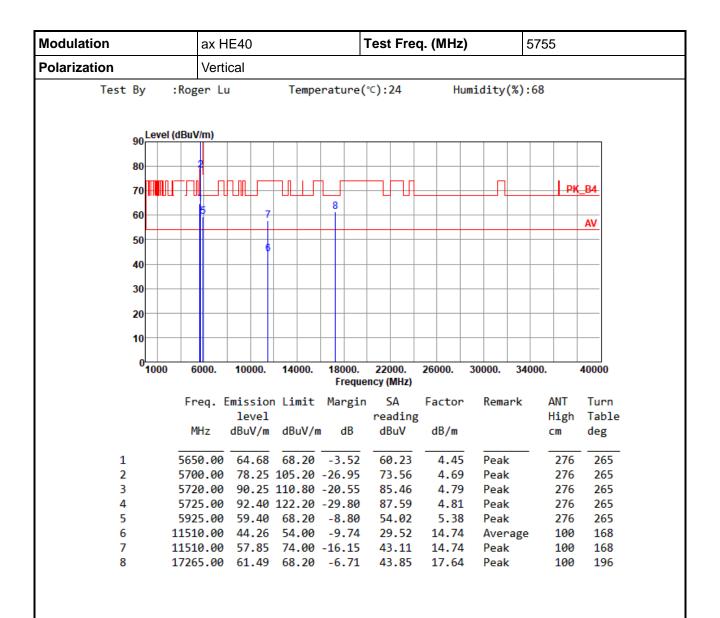
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*Factor includes antenna factor, cable loss and amplifier gain

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

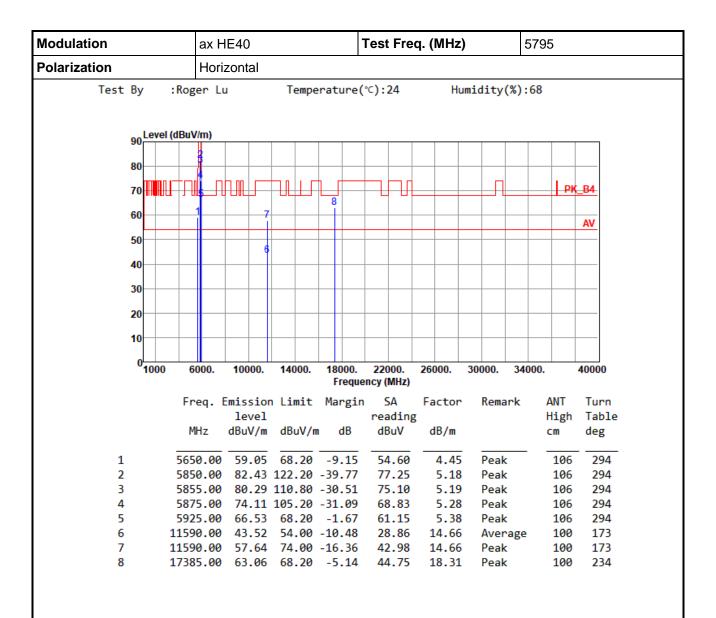
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*Factor includes antenna factor, cable loss and amplifier gain

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

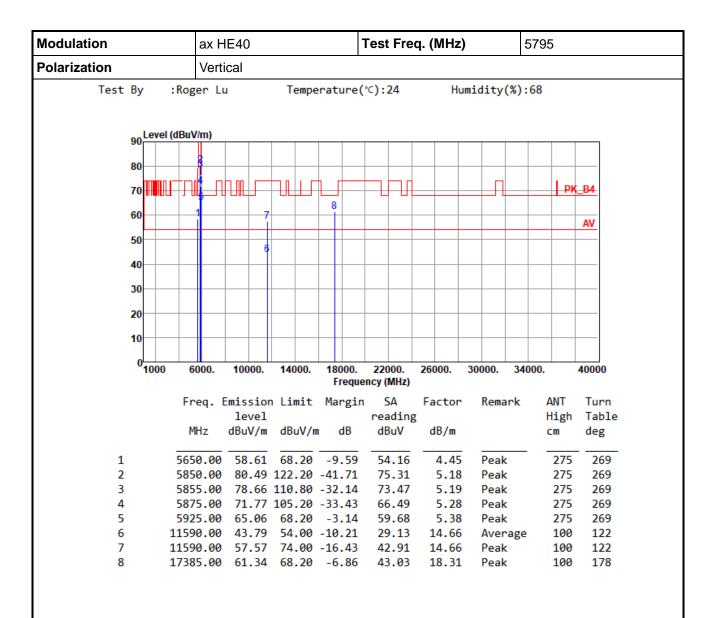
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*Factor includes antenna factor, cable loss and amplifier gain

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

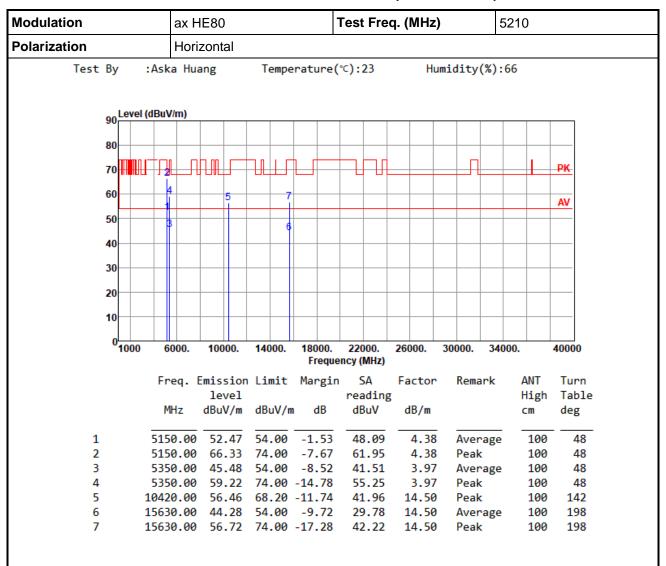
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3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for ax HE80



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

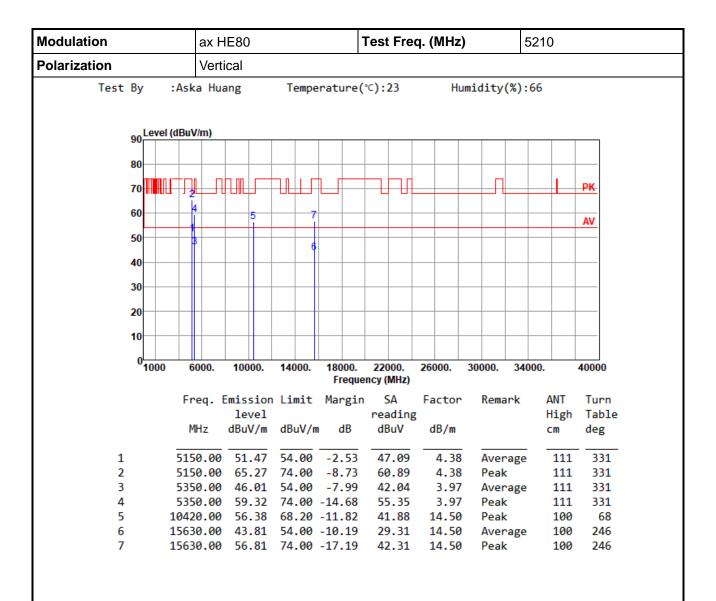
*Factor includes antenna factor, cable loss and amplifier gain

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

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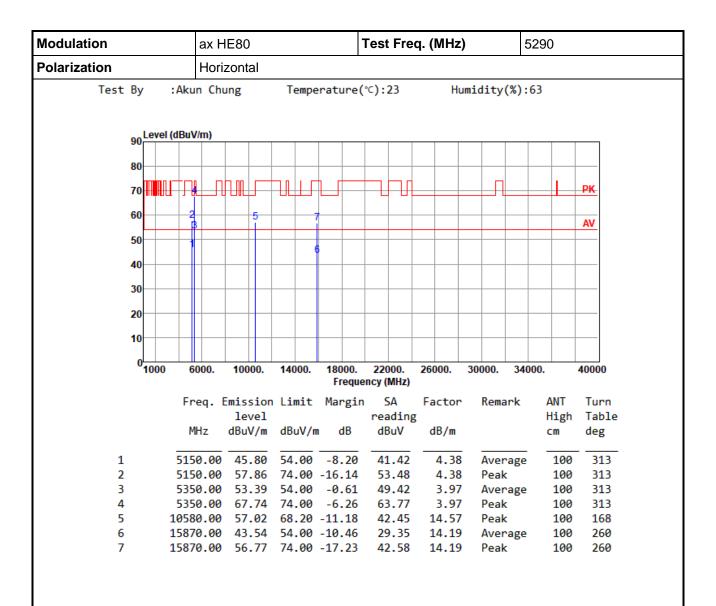
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

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

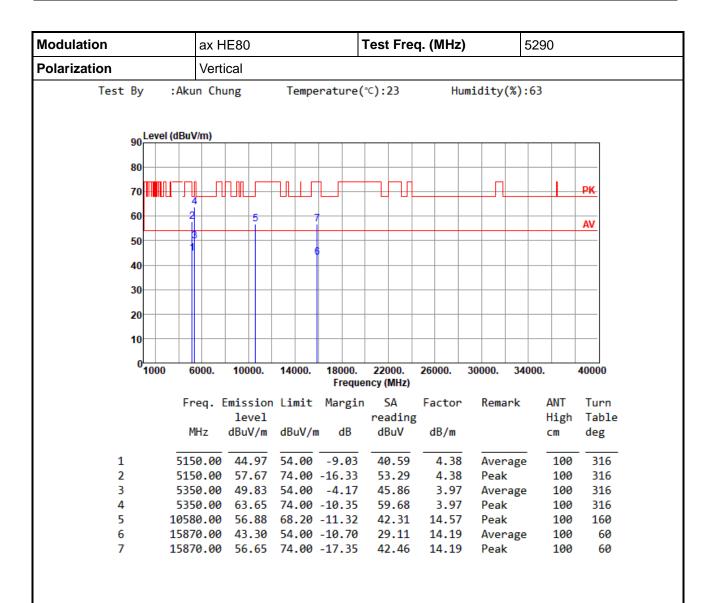
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*Factor includes antenna factor, cable loss and amplifier gain

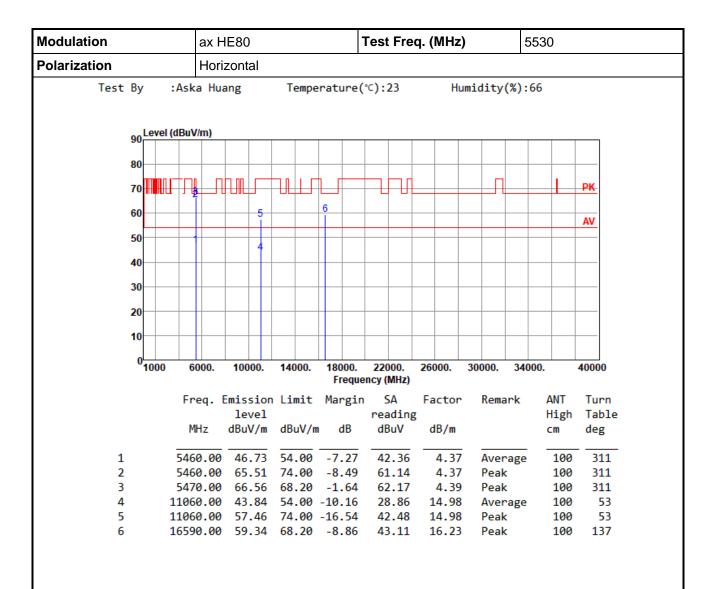
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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*Factor includes antenna factor, cable loss and amplifier gain

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

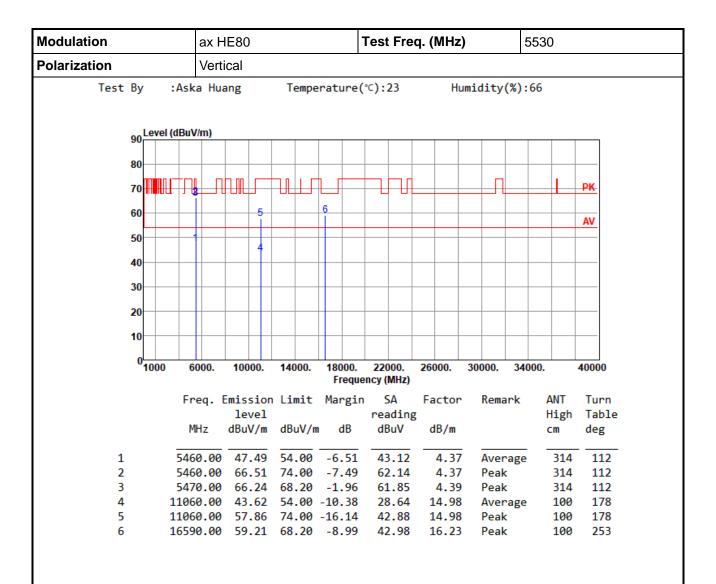
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*Factor includes antenna factor, cable loss and amplifier gain

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

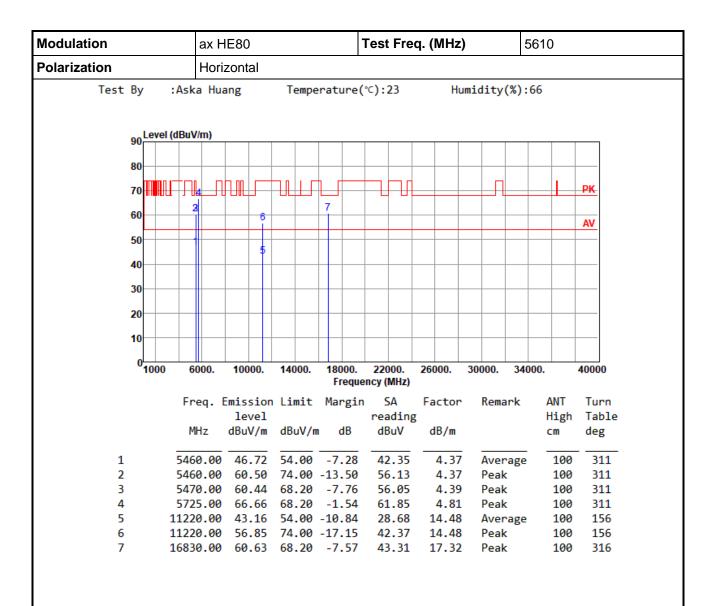
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*Factor includes antenna factor, cable loss and amplifier gain

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

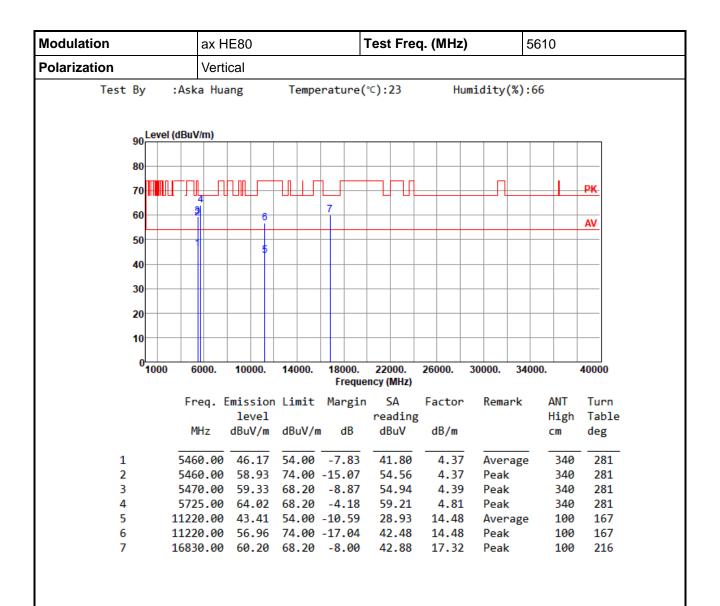
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*Factor includes antenna factor, cable loss and amplifier gain

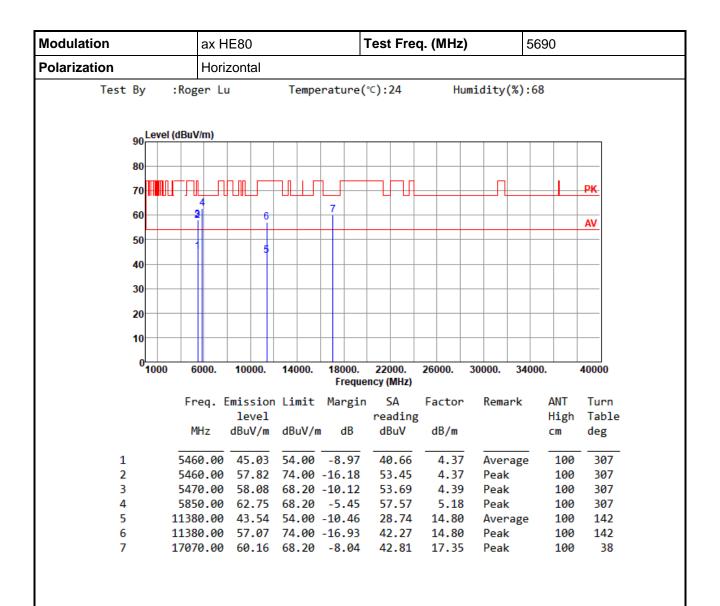
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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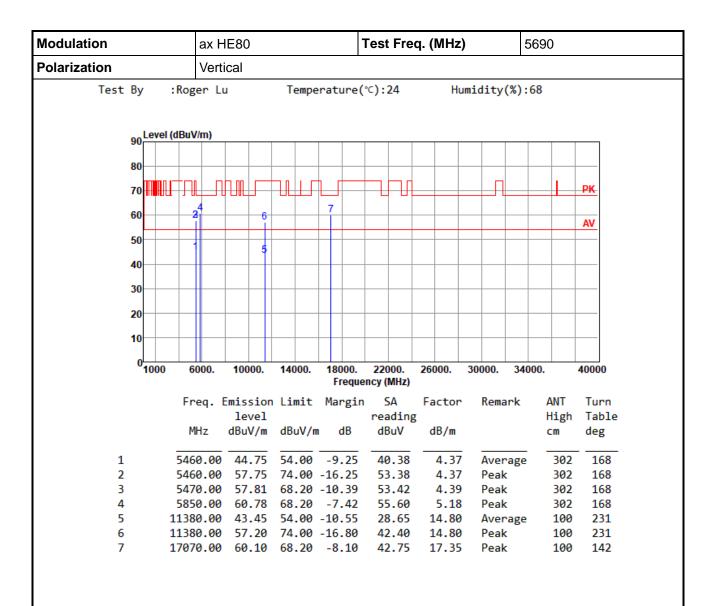
*Factor includes antenna factor, cable loss and amplifier gain

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

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*Factor includes antenna factor, cable loss and amplifier gain

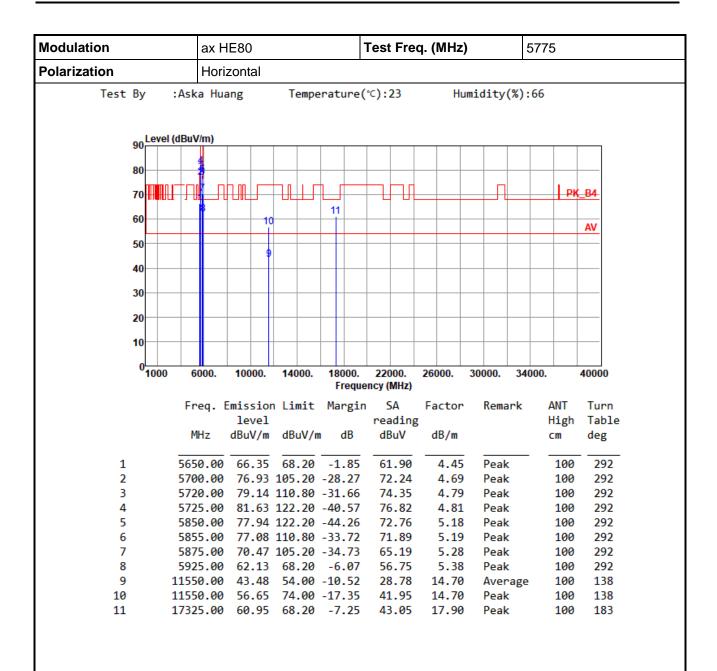
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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*Factor includes antenna factor, cable loss and amplifier gain

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

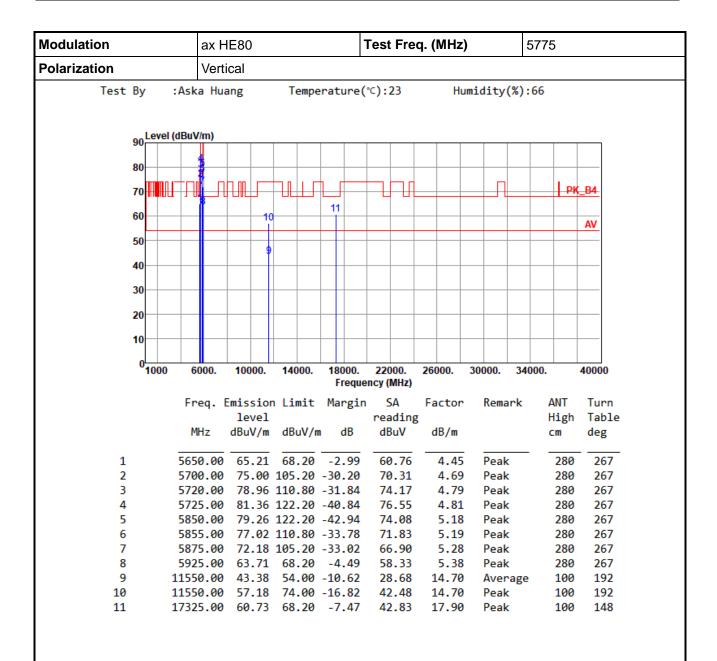
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*Factor includes antenna factor, cable loss and amplifier gain

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

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3.6 Frequency Stability

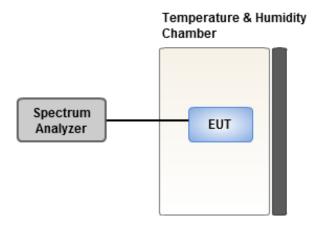
3.6.1 Limit of Frequency Stability

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



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3.6.4 Test Result of Frequency Stability

Ambient Condition 23-25°C / 64% Tested By Aska Huang		
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Frequency: 5320 MHz	Frequency Drift (ppm)				
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes	
T20°CVmax	4.61	4.27	3.99	4.50	
T20°CVmin	2.83	2.41	2.07	2.63	
T50°CVnom	-0.47	-0.04	-0.17	-0.45	
T40°CVnom	2.19	2.90	2.22	2.63	
T30°CVnom	1.88	1.99	2.36	2.31	
T20°CVnom	3.77	4.03	4.60	4.12	
T10°CVnom	3.68	3.79	3.42	3.48	
T0°CVnom	4.53	4.00	4.13	4.16	
T-10°CVnom	4.29	4.53	4.69	4.41	
T-20°CVnom	8.81	9.02	8.14	8.54	
T-30°CVnom	6.32	6.19	6.55	5.86	
Vnom [V]: 120		Vmax [V]: 138		Vmin [V]: 102	
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30	

Frequency: 5785 MHz	Frequency Drift (ppm)				
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes	
T20°CVmax	3.49	3.23	3.40	3.45	
T20°CVmin	1.99	2.05	2.40	2.12	
T50CVnom	-0.19	-0.25	0.30	-0.10	
T40°CVnom	1.97	2.05	1.89	2.52	
T30°CVnom	1.57	2.26	1.27	1.77	
T20°CVnom	2.85	3.53	3.06	3.26	
T10°CVnom	2.74	2.71	2.45	3.14	
T0°CVnom	3.29	3.65	3.09	3.26	
T-10°CVnom	3.91	4.27	4.03	3.91	
T-20°CVnom	7.27	7.60	7.94	7.64	
T-30°CVnom	5.84	6.32	6.17	5.74	
Vnom [V]: 120		Vmax [V]: 138		Vmin [V]: 102	
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30	

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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 No.30-2, Ding Fwu Tsuen, Lin Kou 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.) No.2-1, 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.

Tel: 886-3-271-8666 Fax: 886-3-318-0345

Email: ICC_Service@icertifi.com.tw

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