

FCC Test Report

FCC ID : JVPVS20T
Equipment : InstaShow Button
Model No. : VS20T
Brand Name : BenQ
Applicant : BenQ Corporation
Address : 16 Jihu Road, Neihu, Taipei 114, Taiwan
Standard : 47 CFR FCC Part 15.407
Received Date : Dec. 27, 2022
Tested Date : Jan. 31 ~ Feb. 15, 2023

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 shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:



Along Chen / Assistant Manager



Gary Chang / Manager

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Release Record

Report No.	Version	Description	Issued Date
FR2D2702	Rev. 01	Initial issue	Mar. 14, 2023

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emissions	[dBuV]: 0.365MHz 38.72 (Margin -9.89dB) - AV	Pass
15.407(b) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 5150.00MHz 52.68 (Margin -1.32dB) - AV	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)	Conducted Output Power	Max Power [dBm]: 5150~5250MHz: 19.83 5725~5850MHz: 15.33	Pass
15.407(a)	Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:

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

Comments and Explanations:

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

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
5150-5250 5725-5850	ac (VHT20)	5180-5240 5745-5825	36-48 [4] 149-165 [5]	2	MCS 0-9
5150-5250 5725-5850	ac (VHT40)	5190-5230 5755-5795	38-46 [2] 151-159 [2]	2	MCS 0-9
5150-5250 5725-5850	ac (VHT80)	5210 5775	42 [1] 155 [1]	2	MCS 0-9

Note 1: OFDM- BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.

1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)	
				5150~5250	5725~5850
1	JR7Q00232 / VSO	PIFA	I-PEX	2.9	2.9
2	JR7Q00233 / VSO	PIFA	I-PEX	2.9	2.2

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	5V=0.9A from host
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1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	Type C Detachable Cable	0.095m shielded without core
2	USB/HDMI Detachable Cable	USB: 0.187m non-shielded without core HDMI: 0.085m shielded without core

1.1.5 Channel List

802.11ac VHT20		802.11ac VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	151	5755
48	5240	159	5795
149	5745	802.11ac VHT80	
153	5765	42	5210
157	5785	155	5775
161	5805	-	-
165	5825	-	-

1.1.6 Test Tool and Duty Cycle

Test Tool	Tera Term, V4.8		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	ac VHT20	85.61%	0.67
	ac VHT40	87.65%	0.57
	ac VHT80	87.08%	0.60

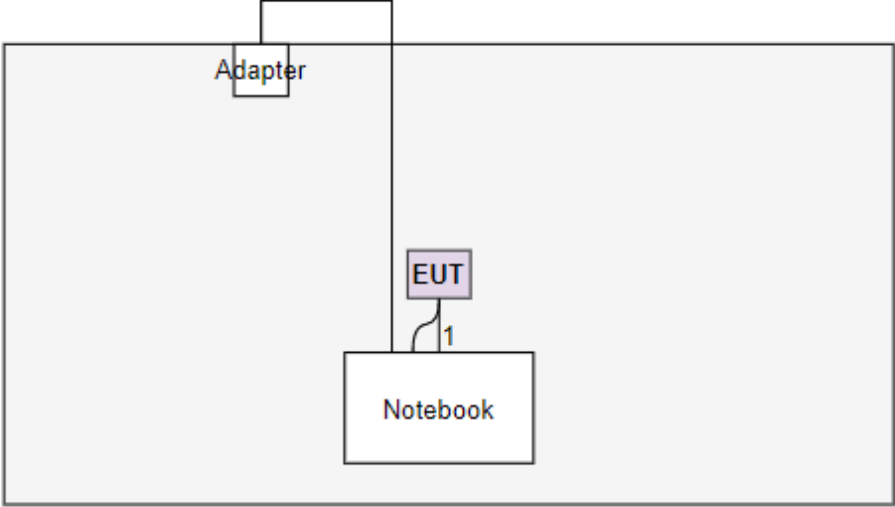
1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
ac VHT20	5180	50
ac VHT20	5200	68
ac VHT20	5240	68
ac VHT20	5745	46
ac VHT20	5785	46
ac VHT20	5825	48
ac VHT40	5190	48
ac VHT40	5230	66
ac VHT40	5755	46
ac VHT40	5795	48
ac VHT80	5210	40
ac VHT80	5775	46

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E5470	DoC	---

1.3 Test Setup Chart

Test Setup Diagram	
	
No.	Signal cable / Length (m)
1	USB/HDMI Detachable Cable, USB: 0.187m non-shielded, HDMI: 0.085m shielded.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Feb. 15, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 15, 2022	Mar. 14, 2023
LISN	R&S	ENV216	101579	Apr. 21, 2022	Apr. 20, 2023
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127667	Jan. 02, 2023	Jan. 01, 2024
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 17, 2022	Oct. 16, 2023
50 ohm terminal (Support Unit)	NA	50	01	May 10, 2022	May 09, 2023
Measurement Software	AUDIX	e3	6.120210k	NA	NA

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

Test Item	Radiated Emission Below 1GHz				
Test Site	966 chamber 3 / (03CH03-WS)				
Tested Date	Jan. 31 ~ Feb. 14, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 15, 2022	Mar. 14, 2023
Spectrum Analyzer	R&S	FSV40	101499	Mar. 08, 2022	Mar. 07, 2023
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 01, 2022	Oct. 31, 2023
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Jun. 28, 2022	Jun. 27, 2023
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 15, 2022	Dec. 14, 2023
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Dec. 30, 2022	Dec. 29, 2023
Preamplifier	EMC	EMC02325	980187	Jul. 16, 2022	Jul. 15, 2023
Preamplifier	EMC	EMC184045SE	980897	Aug. 01, 2022	Jul. 31, 2023
Preamplifier	EMC	EMC184045SE	980903	Jul. 16, 2022	Jul. 15, 2023
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 04, 2022	Oct. 03, 2023
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Sep. 23, 2022	Sep. 22, 2023
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Sep. 23, 2022	Sep. 22, 2023
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Sep. 23, 2022	Sep. 22, 2023
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 23, 2022	Sep. 22, 2023
RF cable-8M	EMC	EMC104-SM-SM-8000	181107	Sep. 23, 2022	Sep. 22, 2023
Measurement Software	AUDIX	e3	6.120210g	NA	NA

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

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Feb. 15, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101910	Apr. 08, 2022	Apr. 07, 2023
Power Meter	Anritsu	ML2495A	1241002	Nov. 23, 2022	Nov. 22, 2023
Power Sensor	Anritsu	MA2411B	1207366	Nov. 23, 2022	Nov. 22, 2023
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Jun. 22, 2022	Jun. 21, 2023
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 09, 2022	Dec. 08, 2023
Measurement Software	Sporton	SENSE-15407_NII	V5.10.8	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

47 CFR FCC Part 15.407
ANSI C63.10-2013

1.6 Reference Guidance

FCC KDB 412172 D01 Determining ERP and EIRP v01r01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

1.7 Deviation from Test Standard and Measurement Procedure

None

1.8 Measurement Uncertainty

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

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.130 Hz
Conducted power	±0.808 dB
Frequency error	±1×10 ⁻⁹
Power density	±0.583 dB
Conducted emission	±2.715 dB
AC conducted emission	±2.92 dB
Unwanted Emission ≤ 1GHz	±3.96 dB
Unwanted Emission > 1GHz	±4.51 dB
Time	±0.1%
Temperature	±0.4 °C

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	CO01-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.)
Test Site	03CH03-WS
Address of Test Site	No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- ISED#: 10807C
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

For Frequency band 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	ac VHT20	5200	MCS 0	---
Radiated Emissions ≤1GHz	ac VHT20	5200	MCS 0	---
RF Output Power				
Radiated Emissions >1GHz	ac VHT20	5180 / 5200 / 5240	MCS 0	---
Emission Bandwidth	ac VHT40	5190 / 5230	MCS 0	
Peak Power Spectral Density	ac VHT80	5210	MCS 0	
Frequency Stability	Un-modulation	5200	---	---
For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	ac VHT20	5745	MCS 0	---
Radiated Emissions ≤1GHz	ac VHT20	5745	MCS 0	---
Radiated Emissions >1GHz				
Emission Bandwidth	ac VHT20	5745 / 5785 / 5825	MCS 0	---
6dB bandwidth	ac VHT40	5755 / 5795	MCS 0	
Peak Power Spectral Density	ac VHT80	5775	MCS 0	
Frequency Stability	Un-modulation	5785	---	---
NOTE:				
1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The Z-plane results were found as the worst case and were shown in this report.				
2. Two cables (USB Type C & USB/HDMI detachable cable) had been covered during the pretest and found that USB/HDMI detachable cable was the worst case and was selected for final testing.				

3 Transmitter Test Results

3.1 Emission Bandwidth

3.1.1 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.

3.1.2 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.

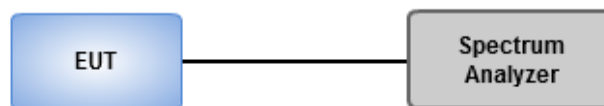
Occupied Bandwidth

1. Set RBW = 1 % to 5 % of the OBW.
2. Set VBW \geq 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.

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition	24°C / 62%	Tested By	Akun Chung
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Refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Limit of Conducted Output Power

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

Frequency Band (MHz)	Limit
<input checked="" type="checkbox"/> 5725 ~ 5850	Conducted Power: 1 W

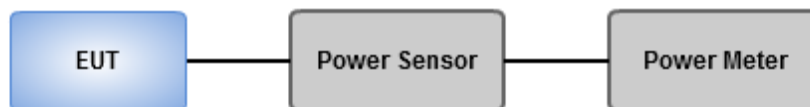
Note: "B" is the 26dB emission bandwidth in MHz.

3.2.2 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.

3.2.3 Test Setup



3.2.4 Test Results

Ambient Condition	24°C / 62%	Tested By	Akun Chung
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Refer to Appendix B.

3.3 Power Spectral Density

3.3.1 Limit of Peak Power Spectral Density

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

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

3.3.2 Test Procedures

For 5150 ~ 5250 MHz

Duty cycle \geq 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 %

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
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

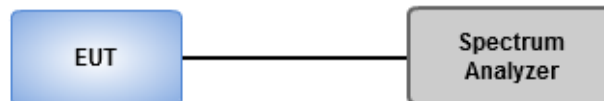
Duty cycle \geq 98 %

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 $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
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.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	24°C / 62%	Tested By	Akun Chung
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Refer to Appendix C.

3.4 Unwanted Emissions

3.4.1 Limit of Unwanted Emissions

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

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

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

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

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

3.4.2 Test Procedures

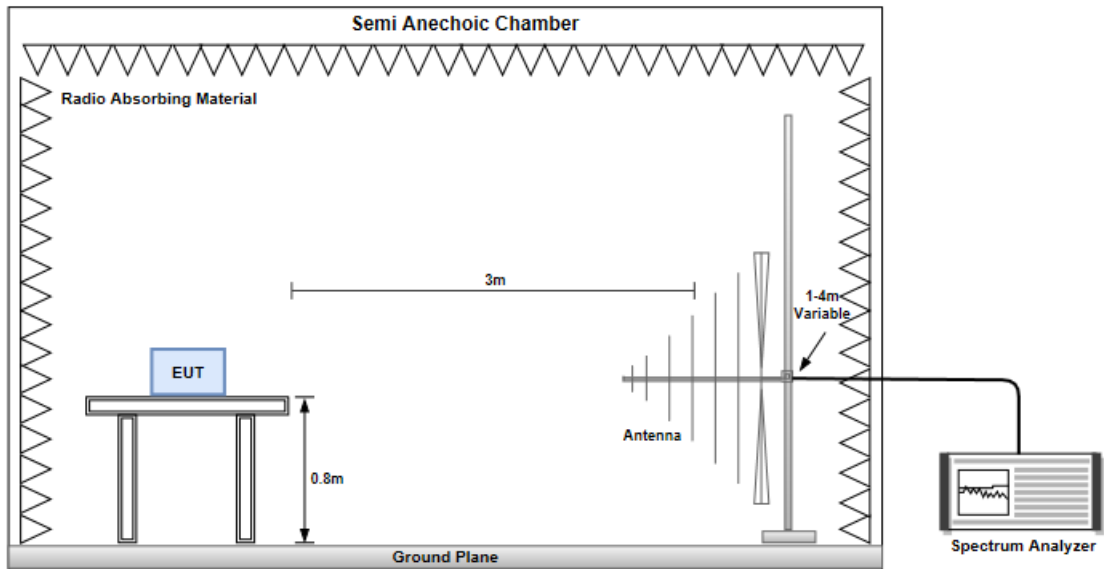
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

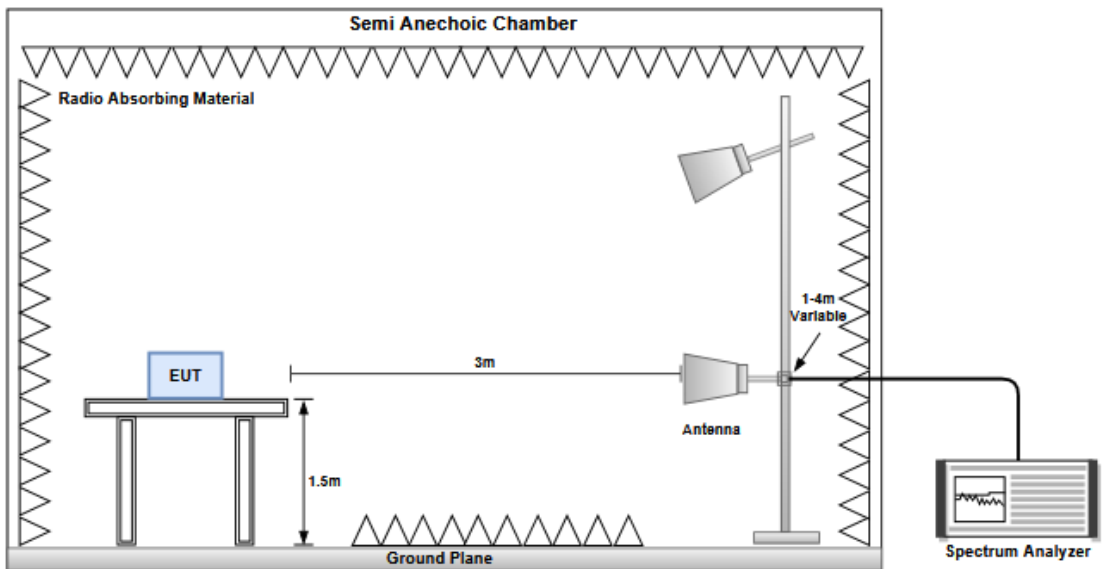
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Refer to Appendix D.

3.5 Frequency Stability

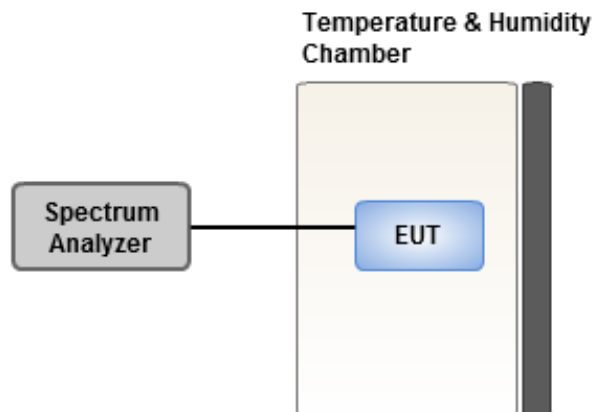
3.5.1 Limit of Frequency Stability

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.

3.5.2 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.

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition	24°C / 62%	Tested By	Akun Chung
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Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

3.6.1 Limit of AC Power Line Conducted Emissions

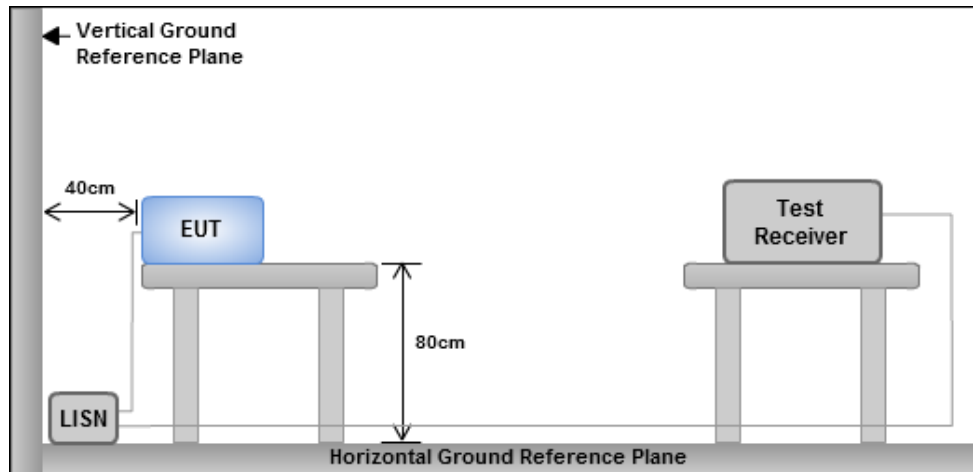
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

3.6.2 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

3.6.3 Test Setup



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

3.6.4 Test Results

Refer to Appendix F.

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 33381, 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

==END==



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT20_Nss2,(MCS0)_2TX	34.848M	18.381M	18M4D1D	21.318M	17.751M
802.11ac VHT40_Nss2,(MCS0)_2TX	86.46M	37.421M	37M4D1D	39.336M	36.402M
802.11ac VHT80_Nss2,(MCS0)_2TX	82.104M	75.922M	75M9D1D	81.576M	75.922M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20_Nss2,(MCS0)_2TX	17.556M	17.811M	17M8D1D	17.16M	17.781M
802.11ac VHT40_Nss2,(MCS0)_2TX	36.3M	36.702M	36M7D1D	35.904M	36.462M
802.11ac VHT80_Nss2,(MCS0)_2TX	75.768M	76.162M	76M2D1D	75.504M	76.162M

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 / Minimum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ac VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.318M	17.751M	21.318M	17.811M
5200MHz	Pass	Inf	28.446M	18.081M	30.294M	18.021M
5240MHz	Pass	Inf	34.848M	18.381M	31.614M	18.021M
5745MHz	Pass	500k	17.556M	17.781M	17.292M	17.811M
5785MHz	Pass	500k	17.49M	17.781M	17.16M	17.811M
5825MHz	Pass	500k	17.16M	17.811M	17.292M	17.811M
802.11ac VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	39.336M	36.402M	39.6M	36.462M
5230MHz	Pass	Inf	85.8M	36.942M	86.46M	37.421M
5755MHz	Pass	500k	36.3M	36.522M	36.3M	36.702M
5795MHz	Pass	500k	36.3M	36.462M	35.904M	36.582M
802.11ac VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.576M	75.922M	82.104M	75.922M
5775MHz	Pass	500k	75.504M	76.162M	75.768M	76.162M

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

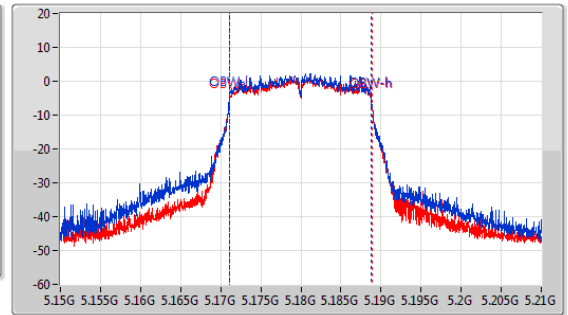
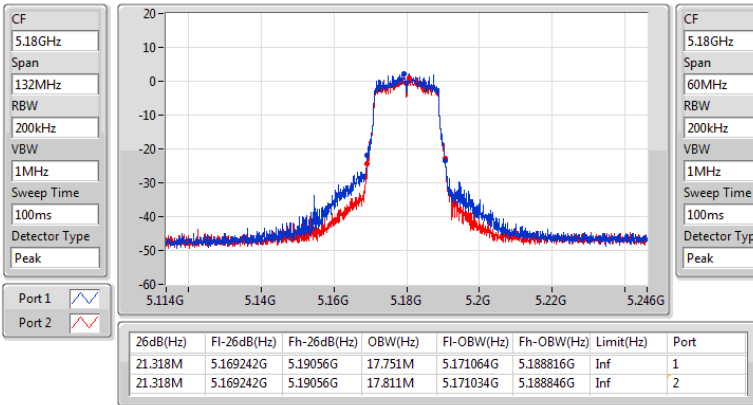
Port X-OBW = Port X 99% occupied bandwidth



5.15-5.25GHz_802.11ac_VHT20_Nss2,(MCS0)_2TX

EBW

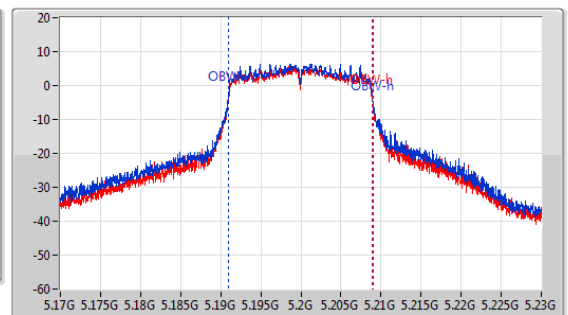
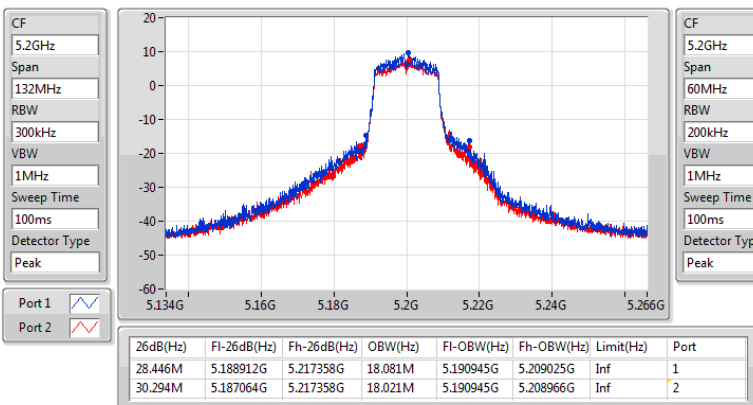
5180MHz



5.15-5.25GHz_802.11ac_VHT20_Nss2,(MCS0)_2TX

EBW

5200MHz



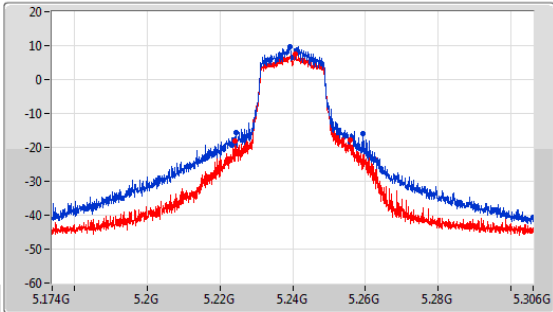


5.15-5.25GHz_802.11ac_VHT20_Nss2,(MCS0)_2TX

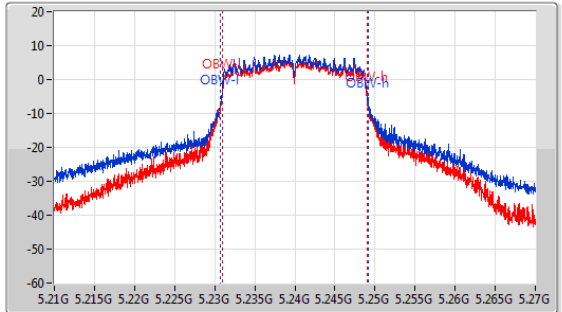
EBW

5240MHz

CF
5.24GHz
Span
132MHz
RBW
300kHz
VBW
1MHz
Sweep Time
100ms
Detector Type
Peak



CF
5.24GHz
Span
60MHz
RBW
200kHz
VBW
1MHz
Sweep Time
100ms
Detector Type
Peak



Port 1
Port 2

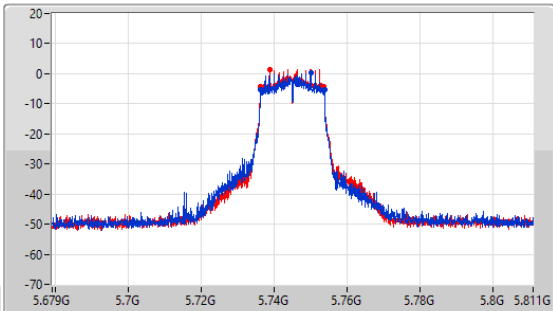
26dB(Hz)	FI-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	FI-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
34.848M	5.224556G	5.259404G	18.381M	5.230765G	5.249145G	Inf	1
31.614M	5.224292G	5.255906G	18.021M	5.230975G	5.248996G	Inf	2

5.725-5.85GHz_802.11ac_VHT20_Nss2,(MCS0)_2TX

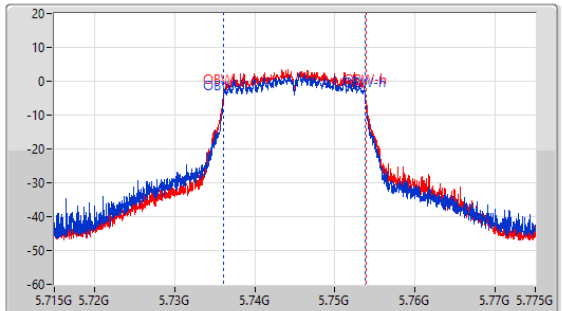
EBW

5745MHz

CF
5.745GHz
Span
132MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak

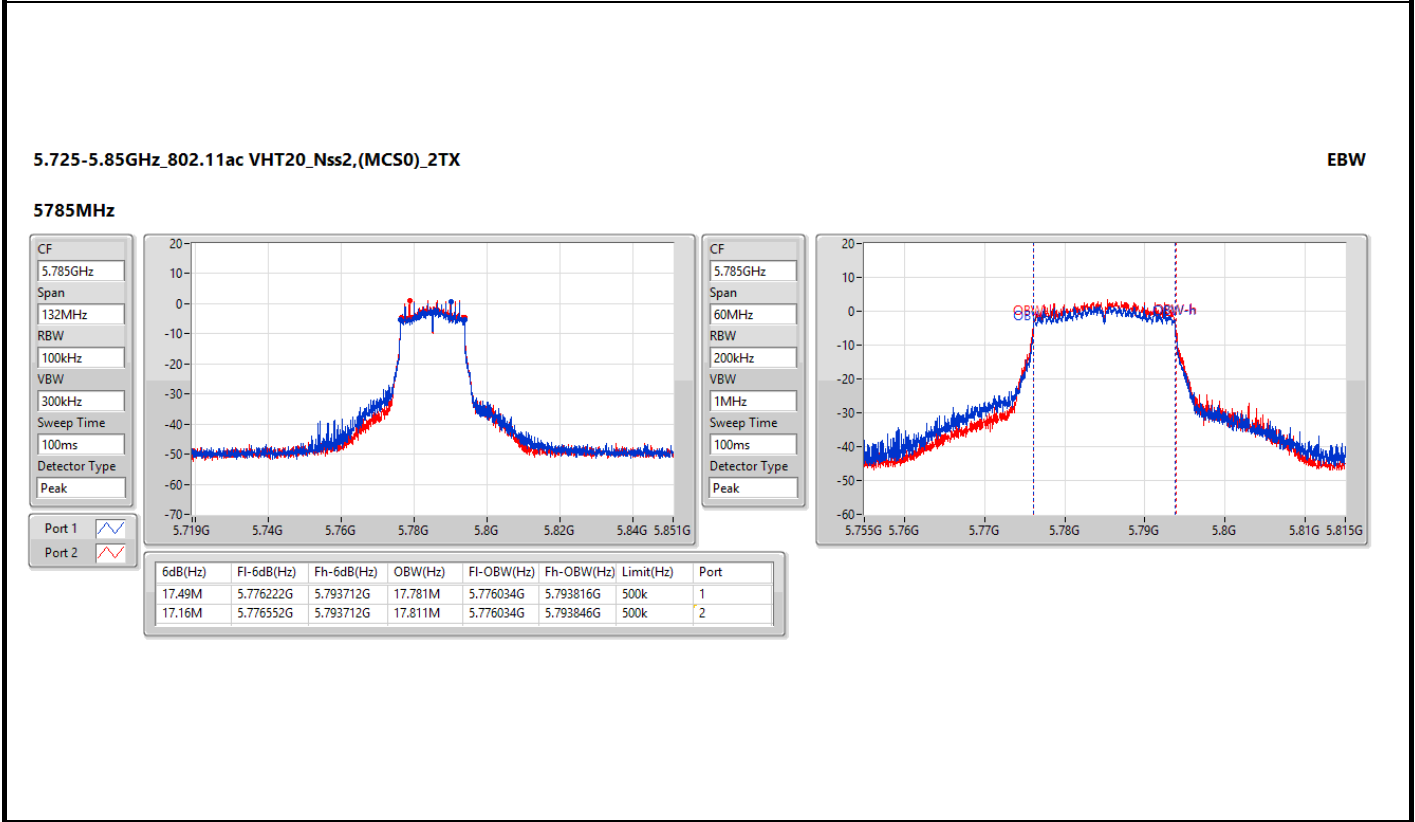
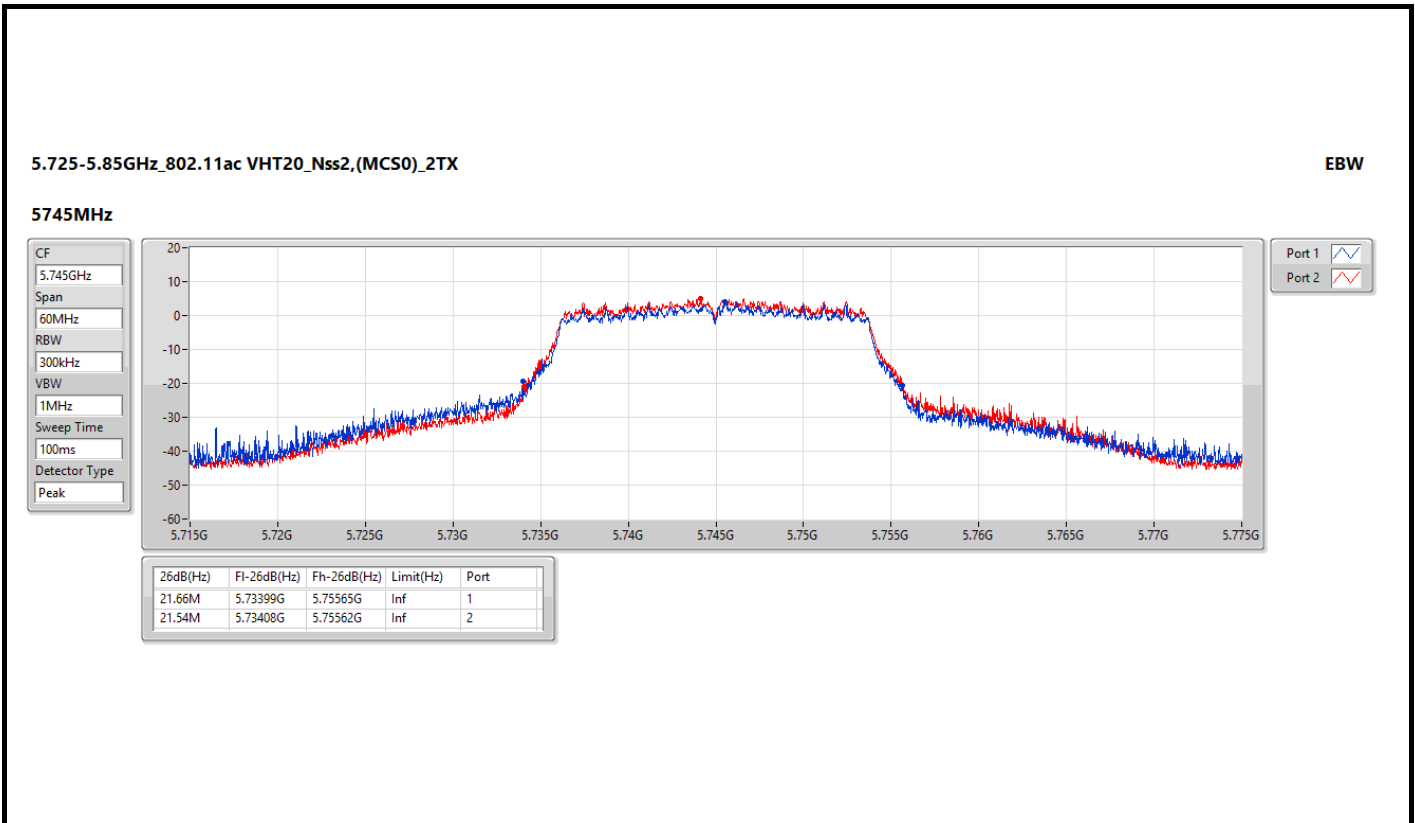


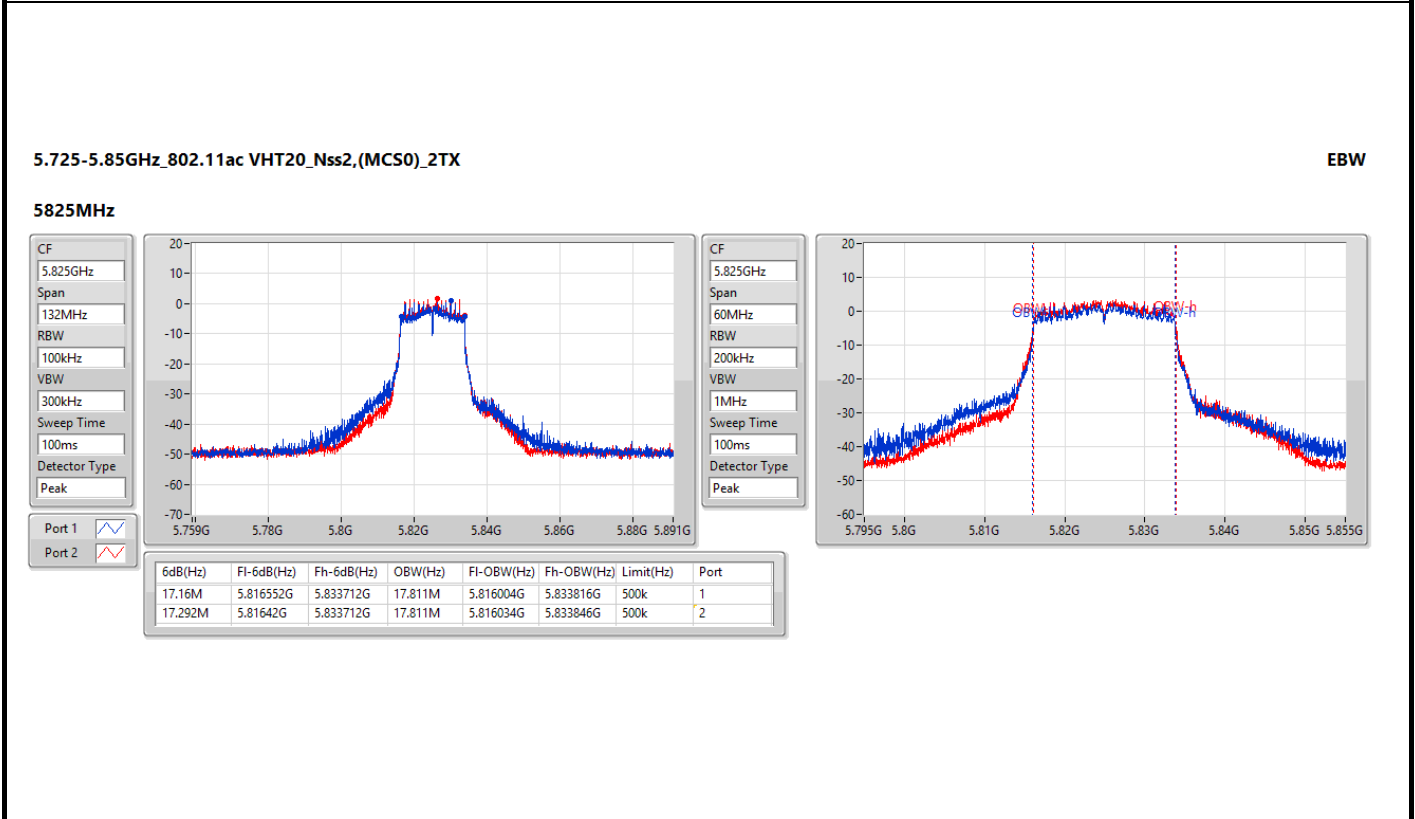
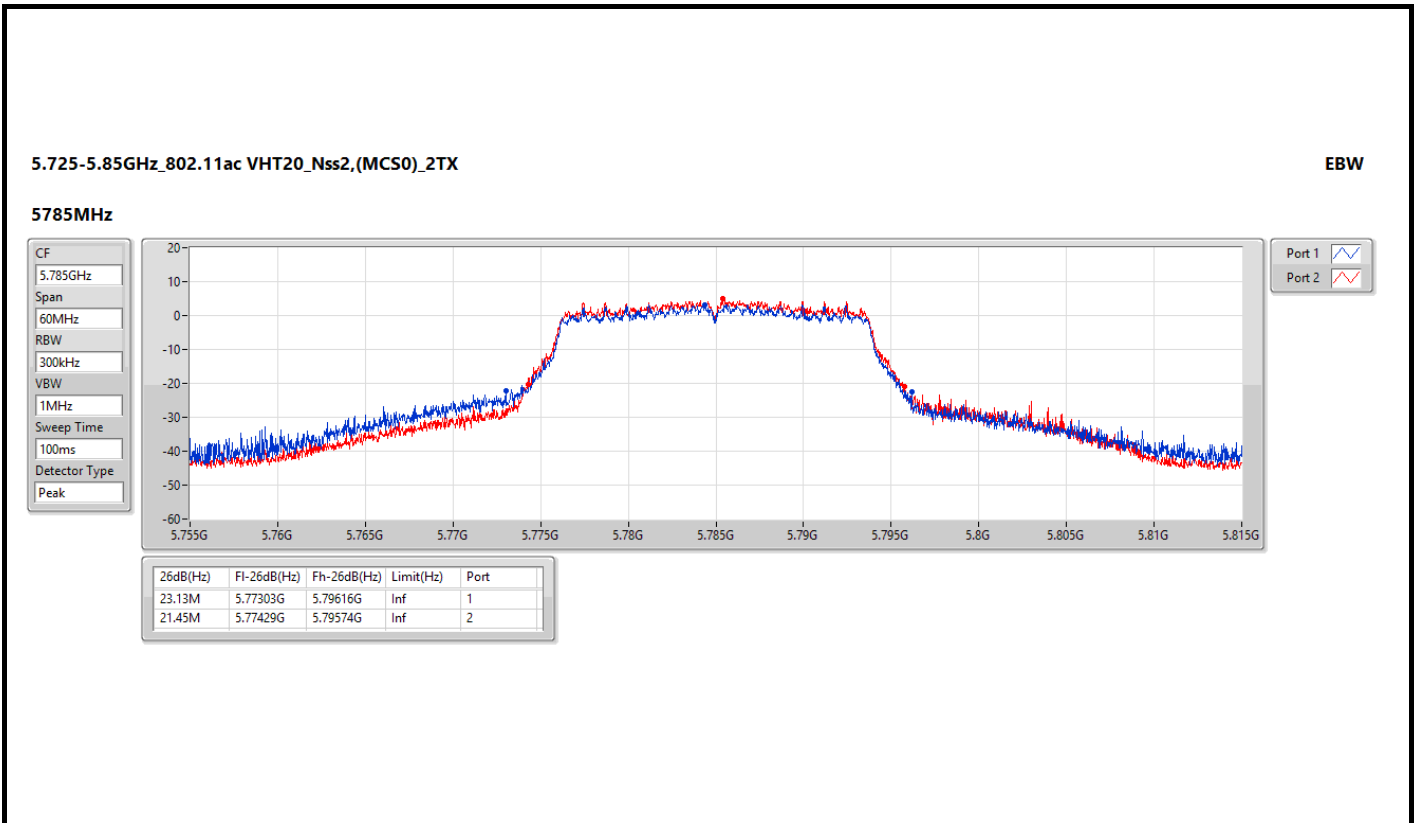
CF
5.745GHz
Span
60MHz
RBW
200kHz
VBW
1MHz
Sweep Time
100ms
Detector Type
Peak



Port 1
Port 2

6dB(Hz)	FI-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	FI-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.556M	5.736156G	5.753712G	17.781M	5.736034G	5.753816G	500k	1
17.292M	5.736156G	5.753448G	17.811M	5.736034G	5.753846G	500k	2







5.725-5.85GHz_802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5825MHz

CF
5.825GHz

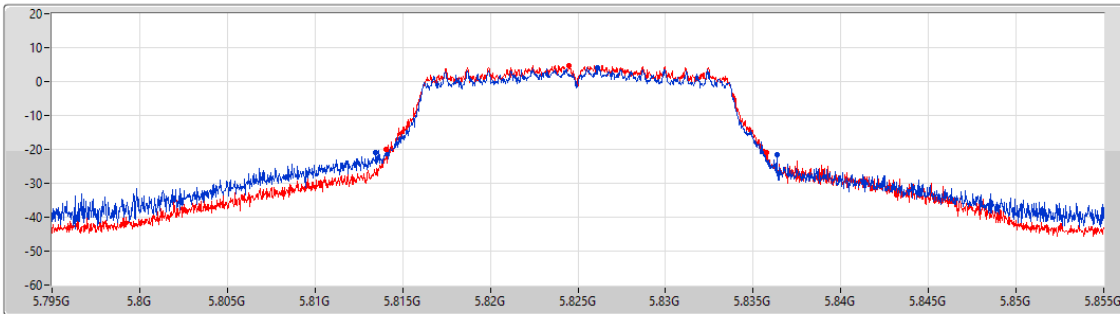
Span
60MHz

RBW
300kHz

VBW
1MHz

Sweep Time
100ms

Detector Type
Peak



Port 1

Port 2

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	Limit(Hz)	Port
22.86M	5.81348G	5.83634G	Inf	1
21.69M	5.81408G	5.83577G	Inf	2

5.15-5.25GHz_802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5190MHz

CF
5.19GHz

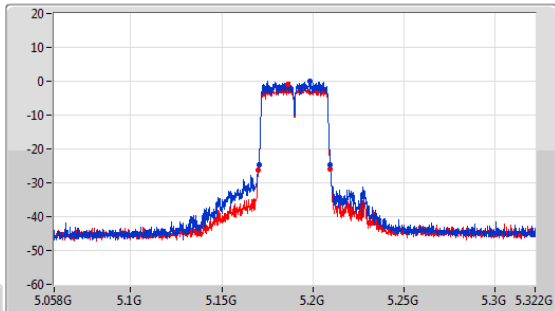
Span
264MHz

RBW
300kHz

VBW
1MHz

Sweep Time
100ms

Detector Type
Peak



Port 1

Port 2

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.336M	5.170332G	5.209668G	36.402M	5.171769G	5.208171G	Inf	1
39.6M	5.170068G	5.209668G	36.462M	5.171709G	5.208171G	Inf	2

CF
5.19GHz

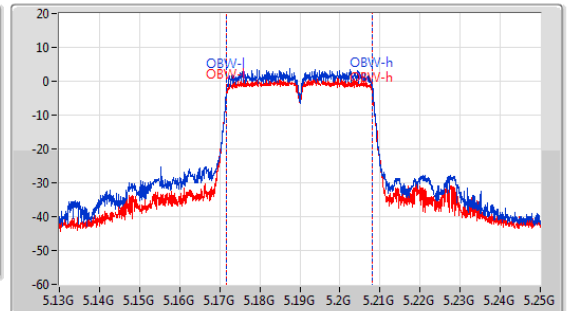
Span
120MHz

RBW
500kHz

VBW
2MHz

Sweep Time
100ms

Detector Type
Peak



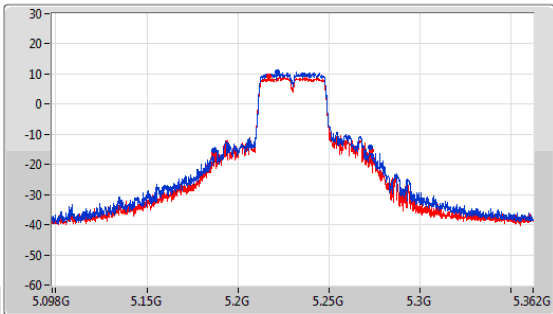


5.15-5.25GHz_802.11ac_VHT40_Nss2,(MCS0)_2TX

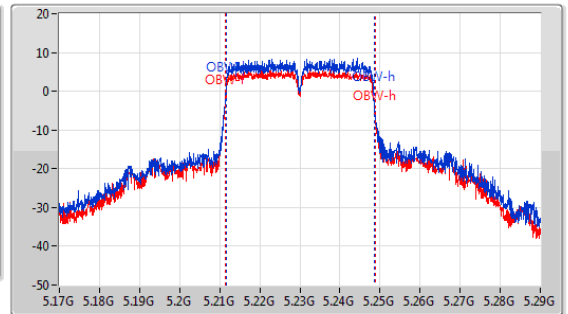
EBW

5230MHz

CF
5.23GHz
Span
264MHz
RBW
1MHz
VBW
3MHz
Sweep Time
100ms
Detector Type
Peak



CF
5.23GHz
Span
120MHz
RBW
500kHz
VBW
2MHz
Sweep Time
100ms
Detector Type
Peak



Port 1
Port 2

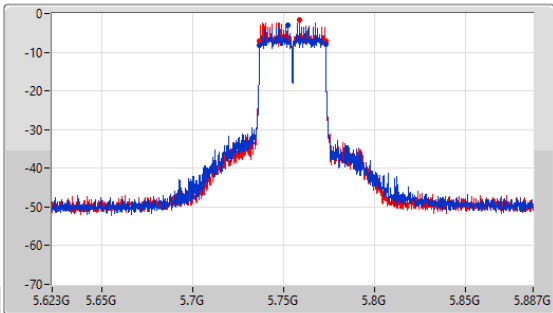
26dB(Hz)	FI-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	FI-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
85.8M	5.186572G	5.272372G	36.942M	5.211589G	5.248531G	Inf	1
86.46M	5.186572G	5.273032G	37.421M	5.211349G	5.248771G	Inf	2

5.725-5.85GHz_802.11ac_VHT40_Nss2,(MCS0)_2TX

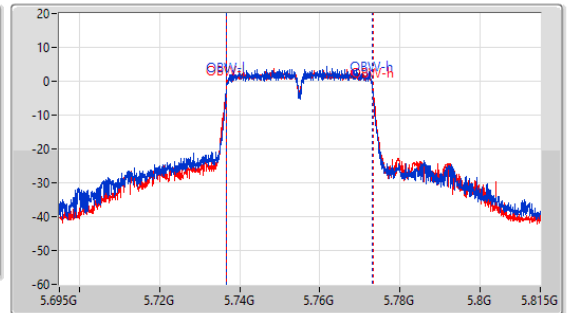
EBW

5755MHz

CF
5.755GHz
Span
264MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak

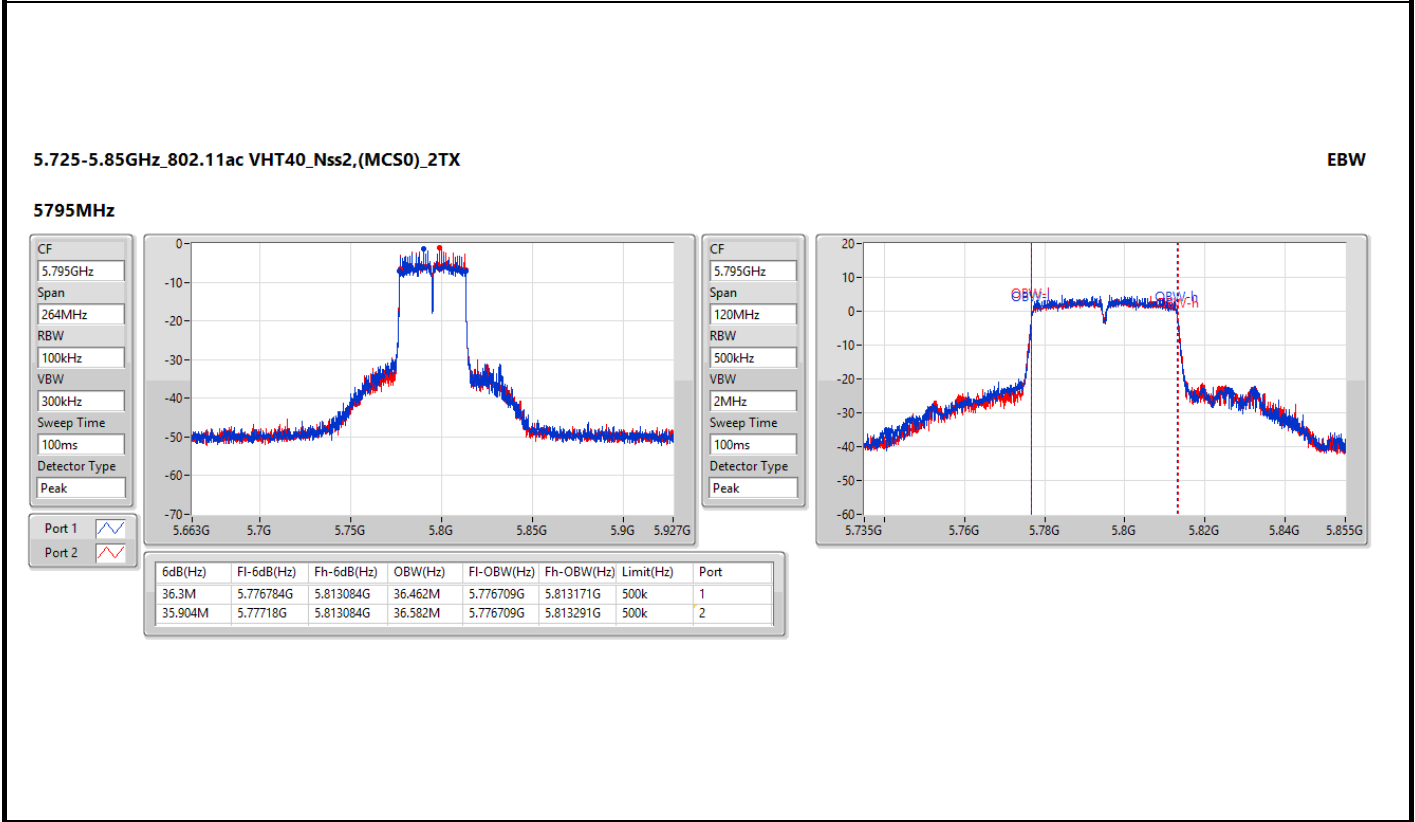
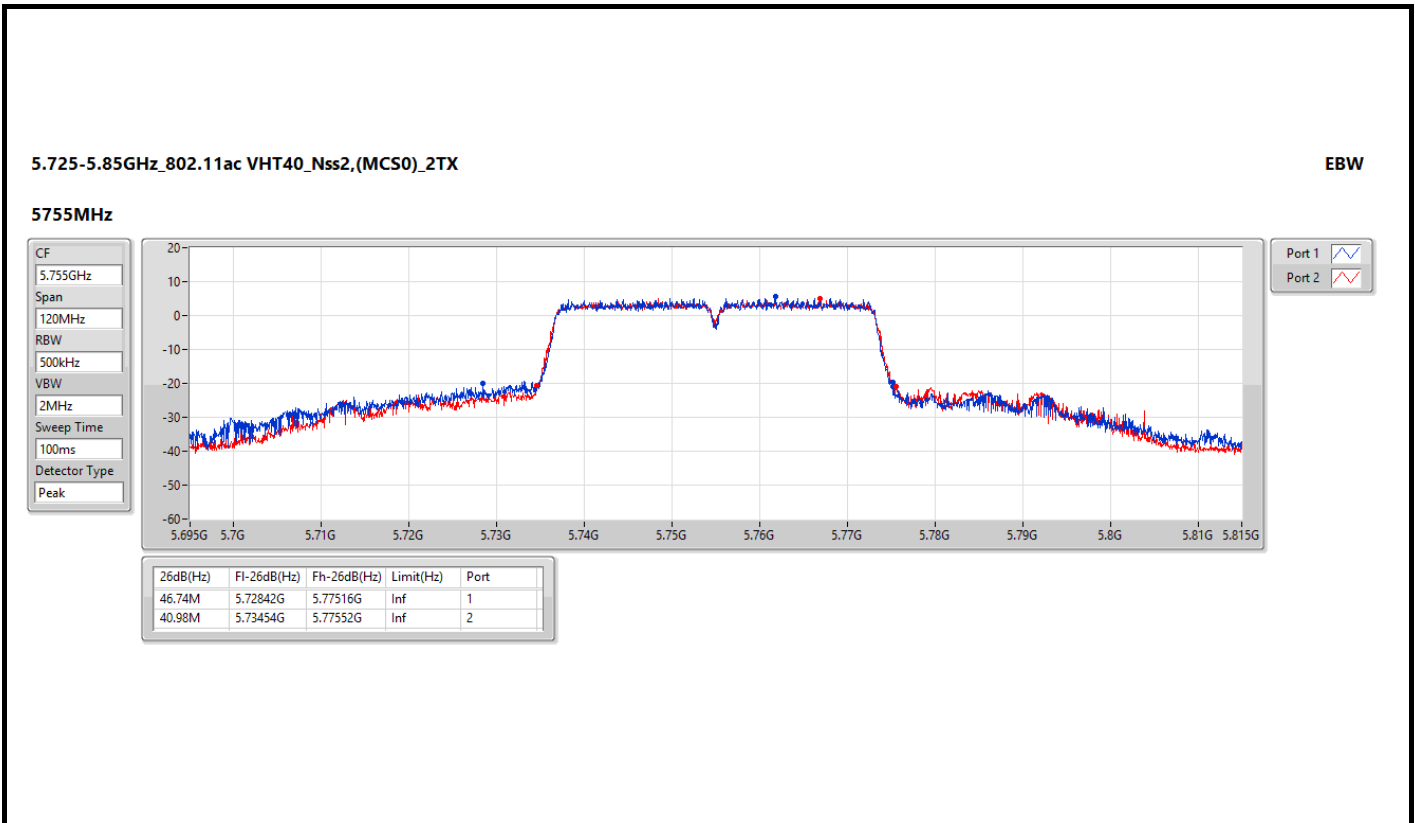


CF
5.755GHz
Span
120MHz
RBW
500kHz
VBW
2MHz
Sweep Time
100ms
Detector Type
Peak



Port 1
Port 2

6dB(Hz)	FI-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	FI-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.736784G	5.773084G	36.522M	5.736649G	5.773171G	500k	1
36.3M	5.736784G	5.773084G	36.702M	5.736589G	5.773291G	500k	2



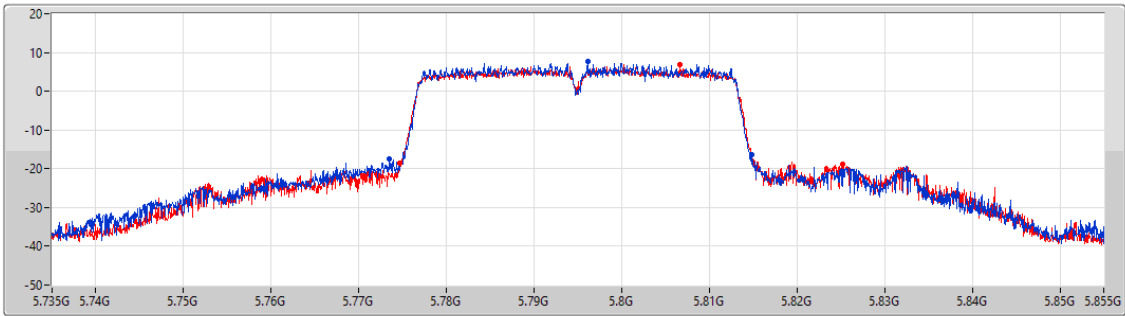


5.725-5.85GHz_802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5795MHz

CF
5.795GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
100ms
Detector Type
Peak



Port 1
Port 2

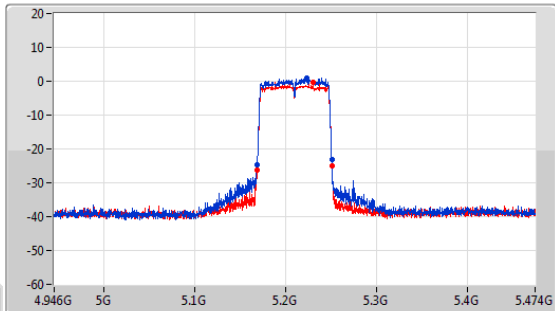
26dB(Hz)	F1-26dB(Hz)	Fh-26dB(Hz)	Limit(Hz)	Port
41.34M	5.77352G	5.81486G	Inf	1
50.52M	5.77466G	5.82518G	Inf	2

5.15-5.25GHz_802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5210MHz

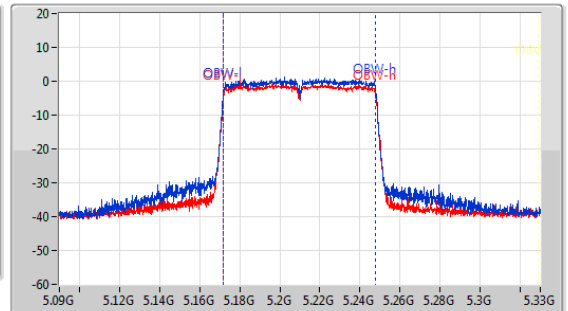
CF
5.21GHz
Span
528MHz
RBW
1MHz
VBW
3MHz
Sweep Time
100ms
Detector Type
Peak



Port 1
Port 2

26dB(Hz)	F1-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	F1-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.576M	5.16908G	5.250656G	75.922M	5.171979G	5.247901G	Inf	1
82.104M	5.168816G	5.25092G	75.922M	5.171979G	5.247901G	Inf	2

CF
5.21GHz
Span
240MHz
RBW
1MHz
VBW
3MHz
Sweep Time
100ms
Detector Type
Peak

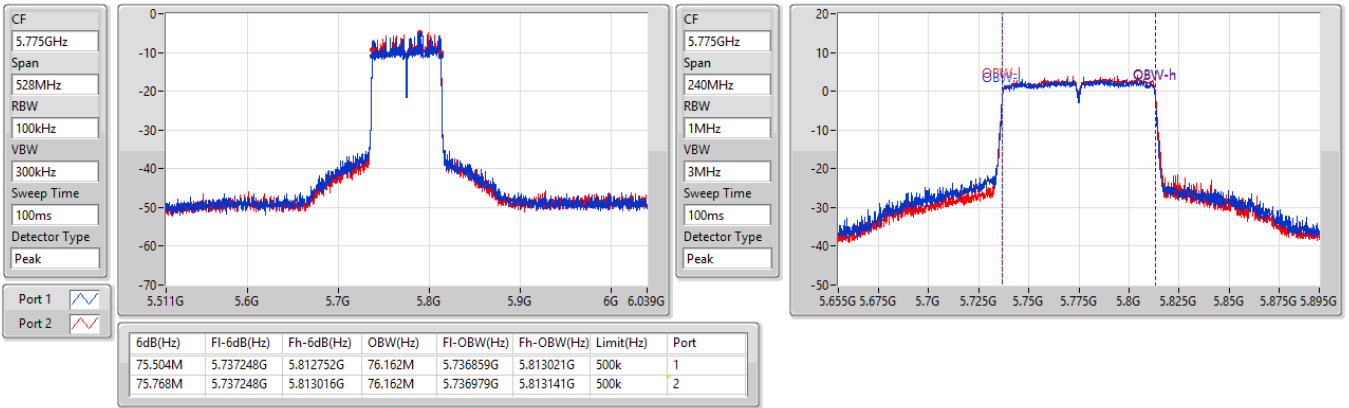




5.725-5.85GHz_802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

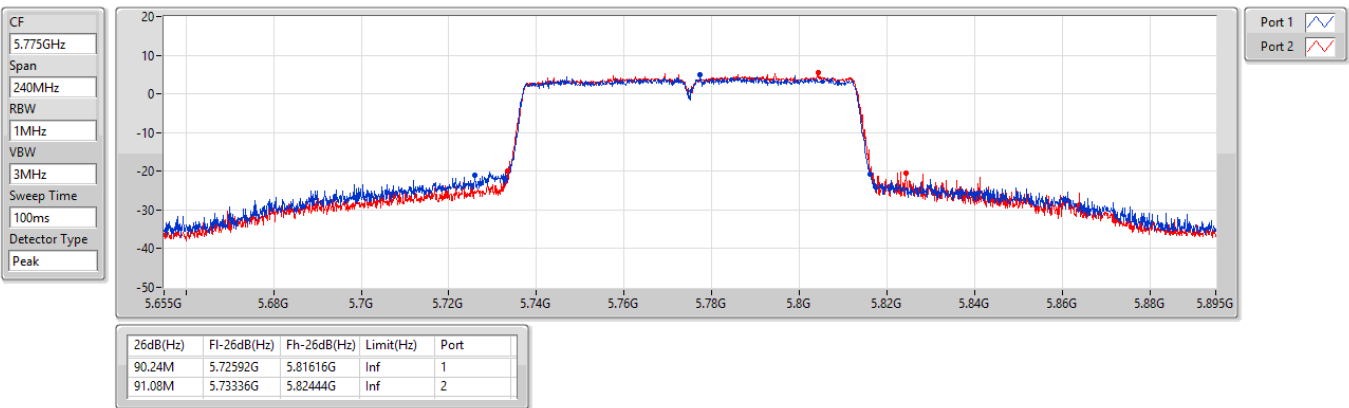
5775MHz



5.725-5.85GHz_802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5775MHz





Conducted Output Power(Average)

Appendix B

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT20_Nss2,(MCS0)_2TX	19.83	0.09616	22.73	0.18750
802.11ac VHT40_Nss2,(MCS0)_2TX	19.71	0.09354	22.61	0.18239
802.11ac VHT80_Nss2,(MCS0)_2TX	13.48	0.02228	16.38	0.04345
5.725-5.85GHz	-	-	-	-
802.11ac VHT20_Nss2,(MCS0)_2TX	15.33	0.03412	17.89	0.06152
802.11ac VHT40_Nss2,(MCS0)_2TX	15.27	0.03365	17.83	0.06067
802.11ac VHT80_Nss2,(MCS0)_2TX	15.03	0.03184	17.59	0.05741

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	2.90	13.46	12.45	15.99	24.00	18.89	30.00
5200MHz	Pass	2.90	17.36	16.21	19.83	24.00	22.73	30.00
5240MHz	Pass	2.90	17.08	16.02	19.59	24.00	22.49	30.00
5745MHz	Pass	2.56	11.75	12.82	15.33	30.00	17.89	36.00
5785MHz	Pass	2.56	11.59	12.51	15.08	30.00	17.64	36.00
5825MHz	Pass	2.56	11.73	12.75	15.28	30.00	17.84	36.00
802.11ac VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	2.90	12.61	11.78	15.23	24.00	18.13	30.00
5230MHz	Pass	2.90	17.16	16.18	19.71	24.00	22.61	30.00
5755MHz	Pass	2.56	11.62	12.6	15.15	30.00	17.71	36.00
5795MHz	Pass	2.56	11.95	12.55	15.27	30.00	17.83	36.00
802.11ac VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	2.90	10.85	10.05	13.48	24.00	16.38	30.00
5775MHz	Pass	2.56	11.91	12.12	15.03	30.00	17.59	36.00

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

For 5.15 ~ 5.25 GHz

Directional Gain = $10 \log [(10^{2.9/10} + 10^{2.9/10})/2] = 2.9 \text{ dBi}$

For 5.725 ~ 5.85 GHz

Directional Gain = $10 \log [(10^{2.9/10} + 10^{2.2/10})/2] = 2.56 \text{ dBi}$



Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT20_Nss2,(MCS0)_2TX	8.43	11.33
802.11ac VHT40_Nss2,(MCS0)_2TX	3.82	6.72
802.11ac VHT80_Nss2,(MCS0)_2TX	-6.03	-3.13
5.725-5.85GHz	-	-
802.11ac VHT20_Nss2,(MCS0)_2TX	2.35	4.91
802.11ac VHT40_Nss2,(MCS0)_2TX	-1.86	0.70
802.11ac VHT80_Nss2,(MCS0)_2TX	-5.52	-2.96

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

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	2.90	1.48	0.39	3.94	11.00	6.84	17.00
5200MHz	Pass	2.90	5.96	4.94	8.32	11.00	11.22	17.00
5240MHz	Pass	2.90	6.15	4.93	8.43	11.00	11.33	17.00
5745MHz	Pass	2.56	-1.39	-0.16	2.17	30.00	4.73	36.00
5785MHz	Pass	2.56	-1.48	-0.41	2.00	30.00	4.56	36.00
5825MHz	Pass	2.56	-1.08	-0.11	2.35	30.00	4.91	36.00
802.11ac VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	2.90	-3.36	-4.44	-0.93	11.00	1.97	17.00
5230MHz	Pass	2.90	1.31	0.52	3.82	11.00	6.72	17.00
5755MHz	Pass	2.56	-5.97	-4.94	-2.48	30.00	0.08	36.00
5795MHz	Pass	2.56	-5.16	-4.34	-1.86	30.00	0.70	36.00
802.11ac VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	2.90	-8.42	-9.43	-6.03	11.00	-3.13	17.00
5775MHz	Pass	2.56	-8.84	-8.00	-5.52	30.00	-2.96	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;

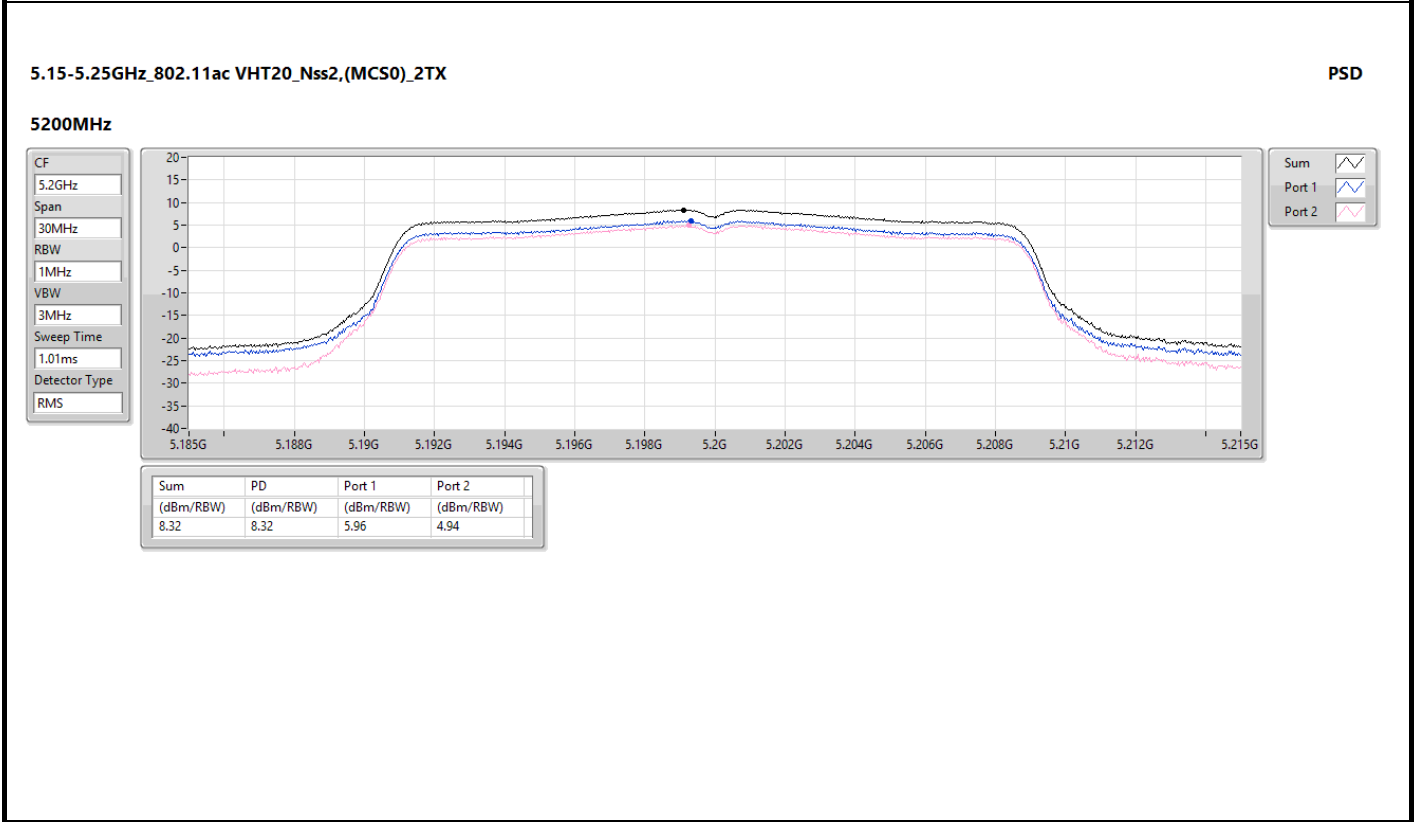
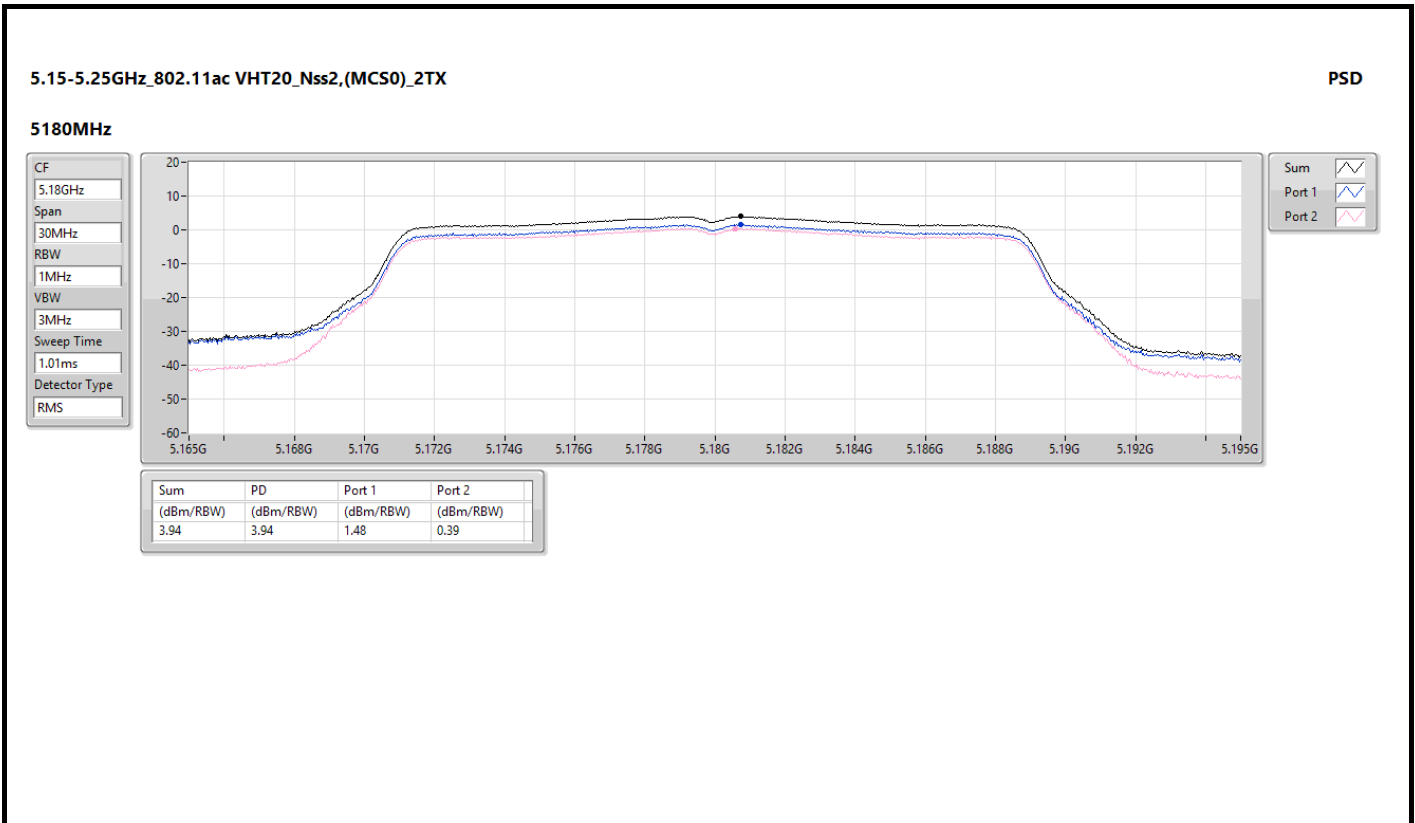
DG = Directional Gain; Port X = Port X output power

For 5.15 ~ 5.25 GHz

Directional Gain = $10 \log [(10^{2.9/10} + 10^{2.9/10})/2] = 2.9 \text{ dBi}$

For 5.725 ~ 5.85 GHz

Directional Gain = $10 \log [(10^{2.9/10} + 10^{2.2/10})/2] = 2.56 \text{ dBi}$



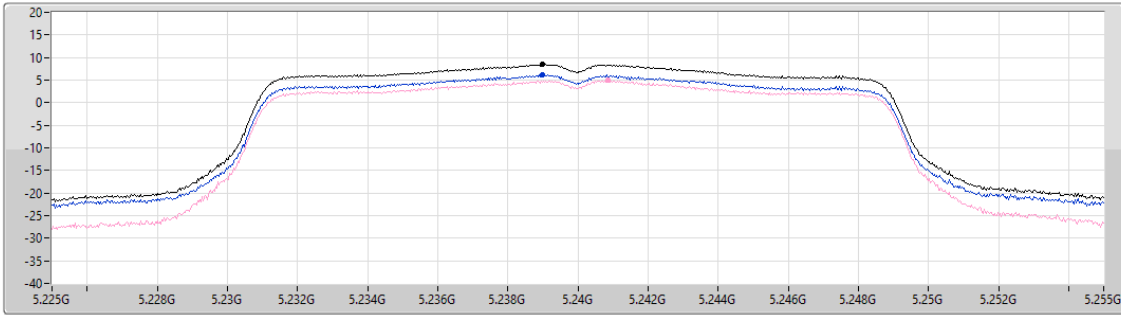


5.15-5.25GHz_802.11ac VHT20_Nss2,(MCS0)_2TX

PSD

5240MHz

CF
5.24GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.01ms
Detector Type
RMS



Sum
Port 1
Port 2

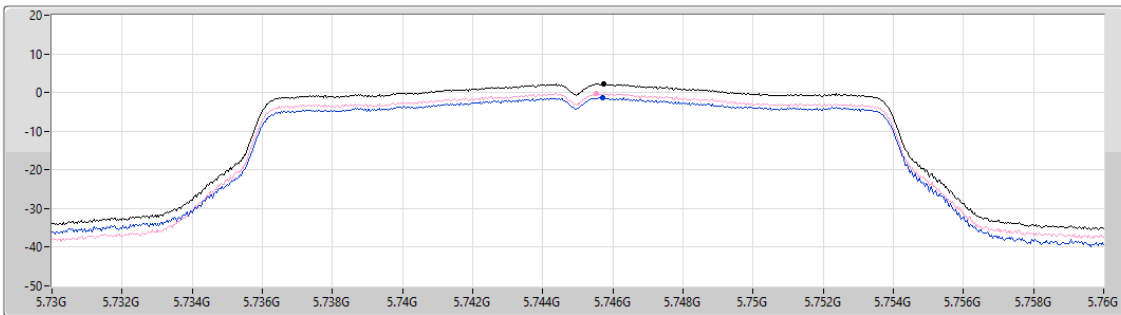
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.43	8.43	6.15	4.93

5.725-5.85GHz_802.11ac VHT20_Nss2,(MCS0)_2TX

PSD

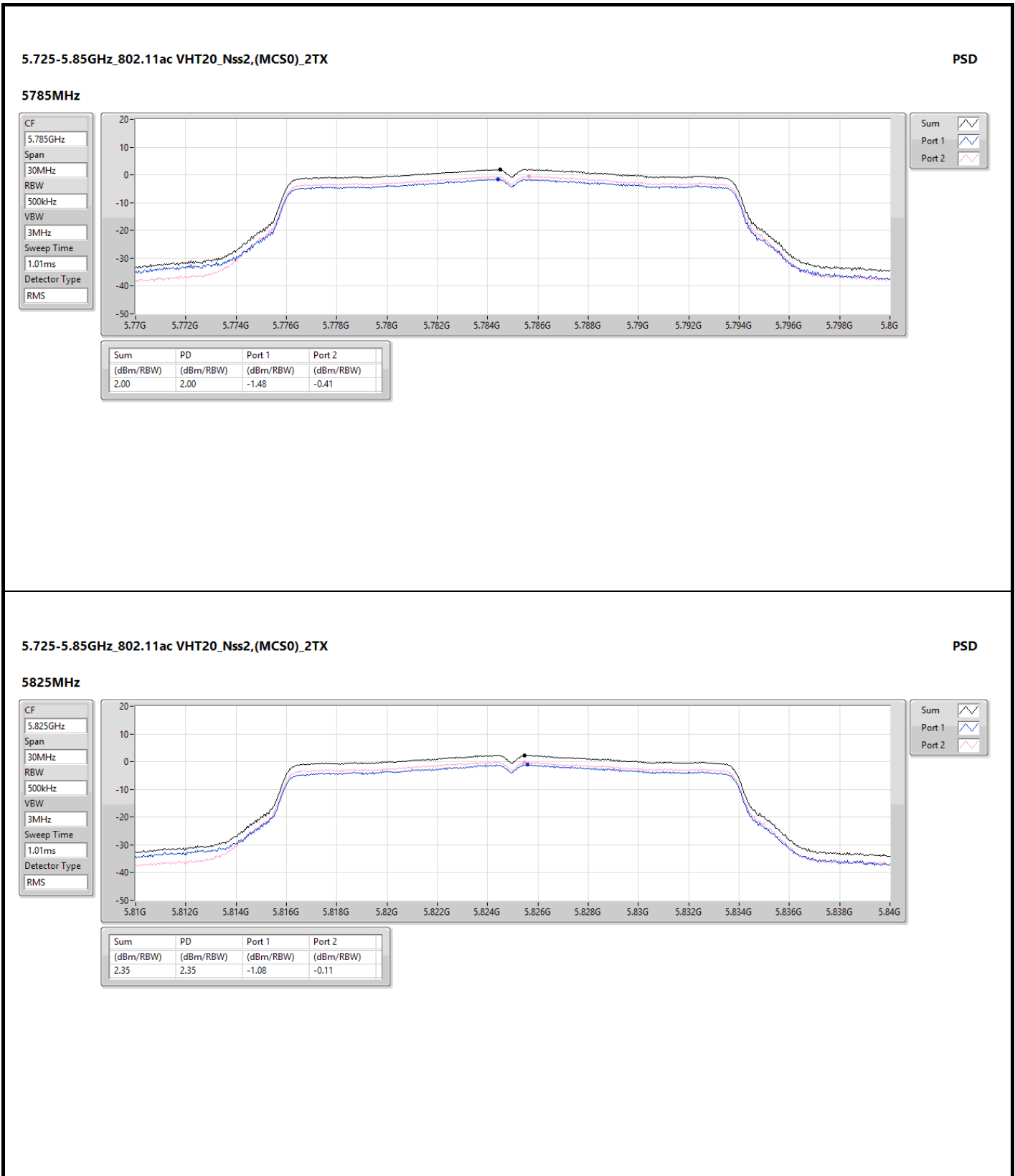
5745MHz

CF
5.745GHz
Span
30MHz
RBW
500kHz
VBW
3MHz
Sweep Time
1.01ms
Detector Type
RMS

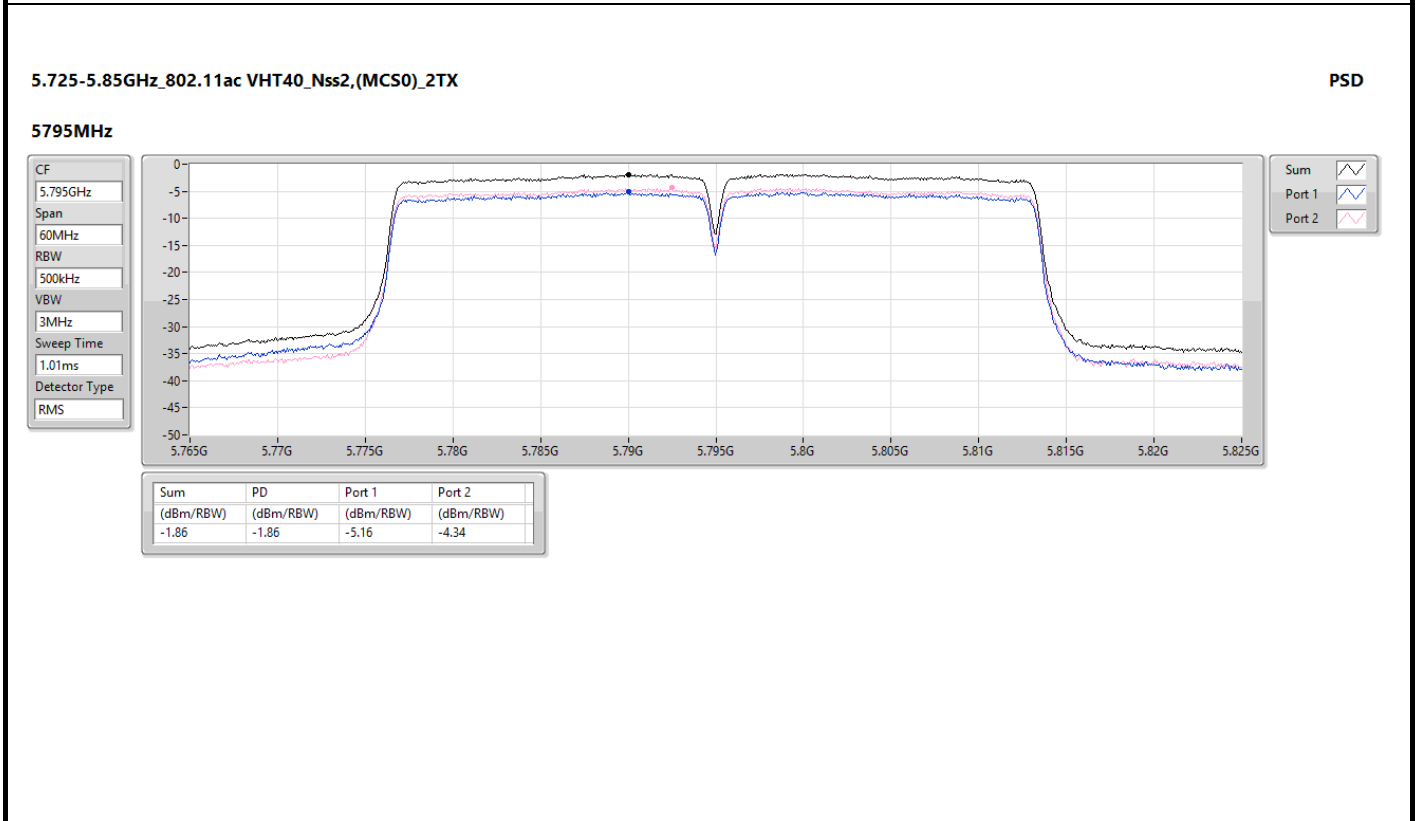
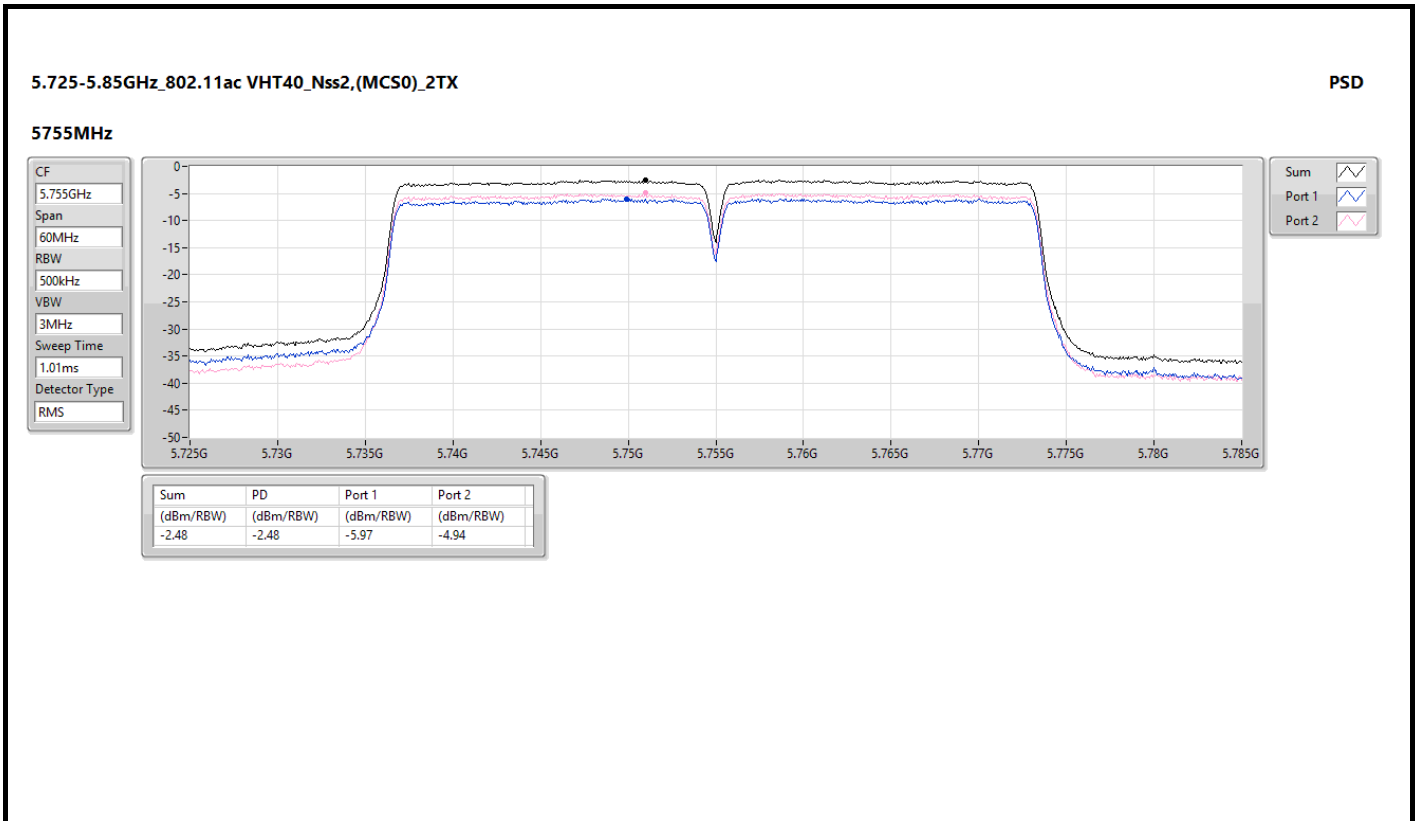


Sum
Port 1
Port 2

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.17	2.17	-1.39	-0.16







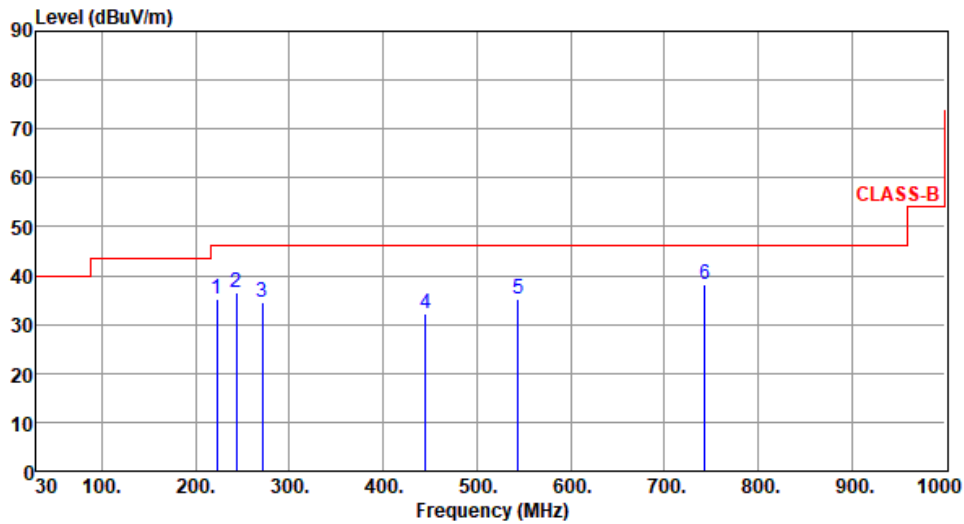




Unwanted Emissions (Below 1GHz)

Modulation	ac VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		

Test By :Sean Yu Temperature(°C):23 Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	223.03	35.16	46.00	-10.84	47.04	-11.88	Peak	---	---
2	243.40	36.68	46.00	-9.32	46.46	-9.78	Peak	---	---
3	271.53	34.70	46.00	-11.30	43.45	-8.75	Peak	---	---
4	445.16	32.15	46.00	-13.85	35.66	-3.51	Peak	---	---
5	544.10	35.32	46.00	-10.68	36.87	-1.55	Peak	---	---
6	742.95	38.22	46.00	-7.78	35.05	3.17	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

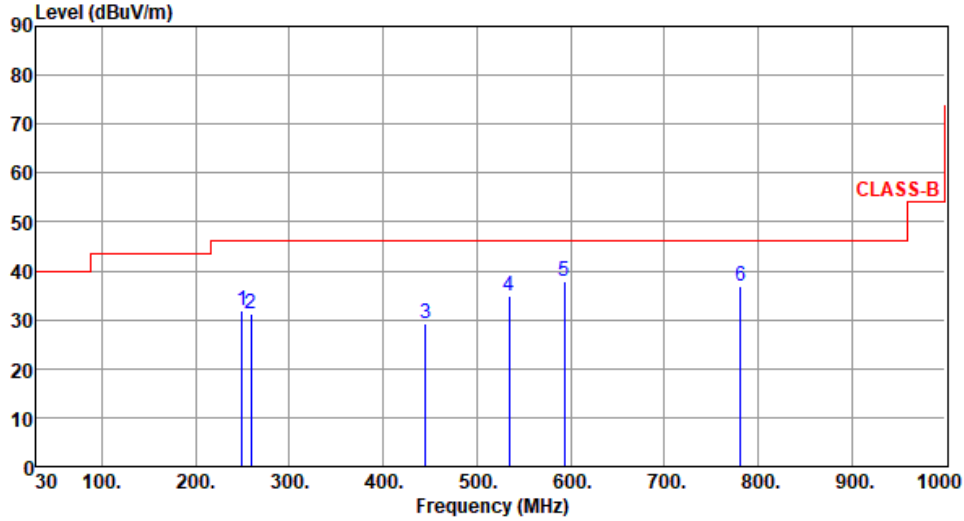
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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



Modulation	ac VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		

Test By :Sean Yu Temperature(°C):23 Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	249.22	31.99	46.00	-14.01	41.63	-9.64	Peak	---	---
2	258.92	31.10	46.00	-14.90	40.41	-9.31	Peak	---	---
3	445.16	29.21	46.00	-16.79	32.72	-3.51	Peak	---	---
4	534.40	34.81	46.00	-11.19	36.60	-1.79	Peak	---	---
5	593.57	37.85	46.00	-8.15	37.99	-0.14	Peak	---	---
6	781.75	36.96	46.00	-9.04	33.04	3.92	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

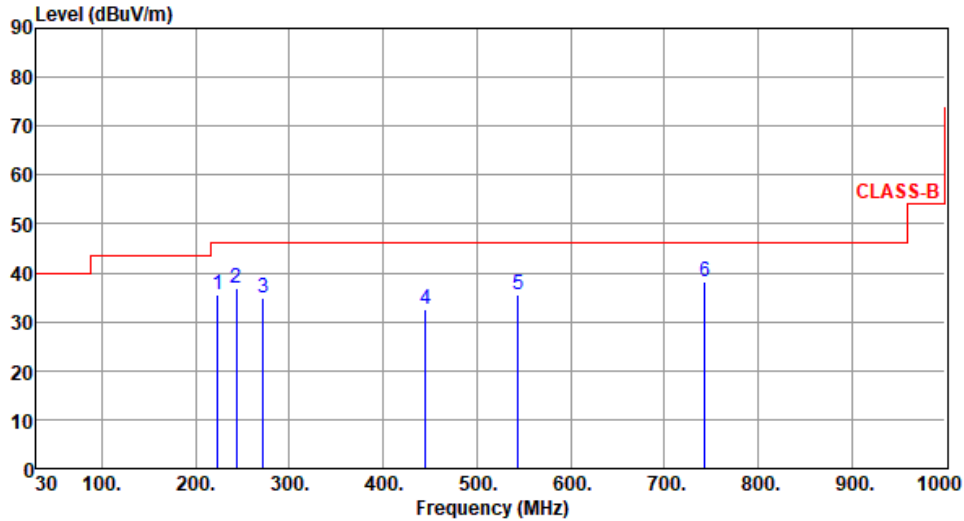
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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



Modulation	ac VHT40	Test Freq. (MHz)	5745
Polarization	Horizontal		

Test By :Sean Yu Temperature(°C):23 Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	223.16	35.48	46.00	-10.52	47.37	-11.89	Peak	---	---
2	243.52	36.75	46.00	-9.25	46.53	-9.78	Peak	---	---
3	271.62	34.89	46.00	-11.11	43.64	-8.75	Peak	---	---
4	445.51	32.44	46.00	-13.56	35.94	-3.50	Peak	---	---
5	544.26	35.68	46.00	-10.32	37.22	-1.54	Peak	---	---
6	742.84	38.06	46.00	-7.94	34.89	3.17	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

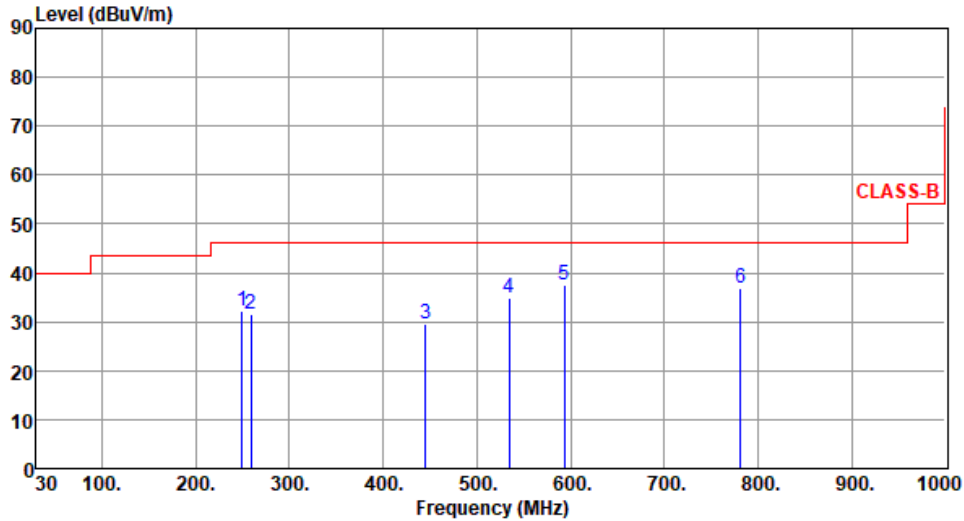
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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



Modulation	ac VHT40	Test Freq. (MHz)	5745
Polarization	Vertical		

Test By :Sean Yu Temperature(°C):23 Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	249.45	32.16	46.00	-13.84	41.79	-9.63	Peak	---	---
2	258.87	31.44	46.00	-14.56	40.76	-9.32	Peak	---	---
3	445.45	29.53	46.00	-16.47	33.03	-3.50	Peak	---	---
4	534.65	34.94	46.00	-11.06	36.73	-1.79	Peak	---	---
5	593.45	37.62	46.00	-8.38	37.76	-0.14	Peak	---	---
6	781.69	36.85	46.00	-9.15	32.94	3.91	Peak	---	---

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.



Unwanted Emissions (Above 1GHz) for ac VHT20

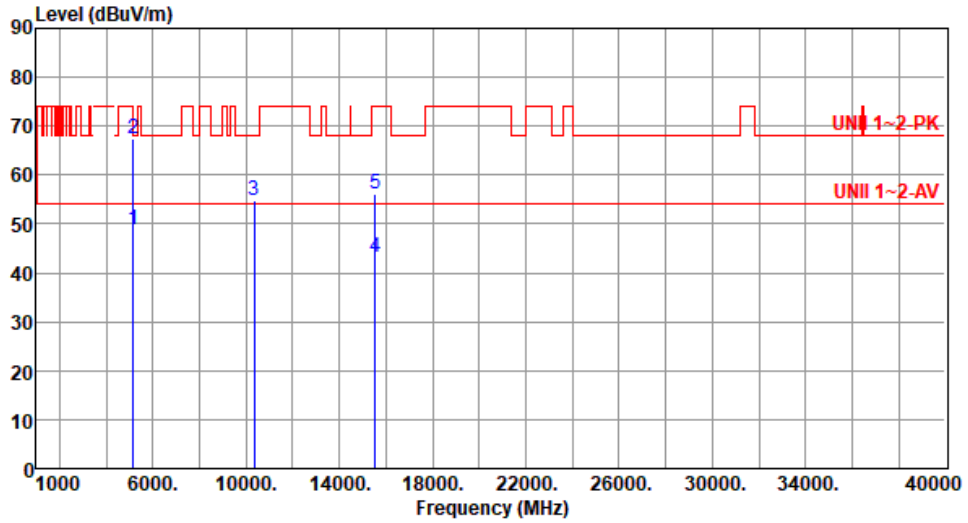
Modulation	ac VHT20	Test Freq. (MHz)	5180						
Polarization	Horizontal								
Test By :Brad Wu Temperature(°C):23 Humidity(%):64									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	51.06	54.00	-2.94	50.24	0.82	Average	100	315
2	5150.00	69.68	74.00	-4.32	68.86	0.82	Peak	100	315
3	10360.00	54.82	68.20	-13.38	46.33	8.49	Peak	100	6
4	15540.00	43.11	54.00	-10.89	37.13	5.98	Average	100	29
5	15540.00	56.25	74.00	-17.75	50.27	5.98	Peak	100	29

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).



Modulation	ac VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	48.92	54.00	-5.08	48.10	0.82	Average	100	112
2	5150.00	67.55	74.00	-6.45	66.73	0.82	Peak	100	112
3	10360.00	54.75	68.20	-13.45	46.26	8.49	Peak	100	24
4	15540.00	43.05	54.00	-10.95	37.07	5.98	Average	100	38
5	15540.00	56.18	74.00	-17.82	50.20	5.98	Peak	100	38

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

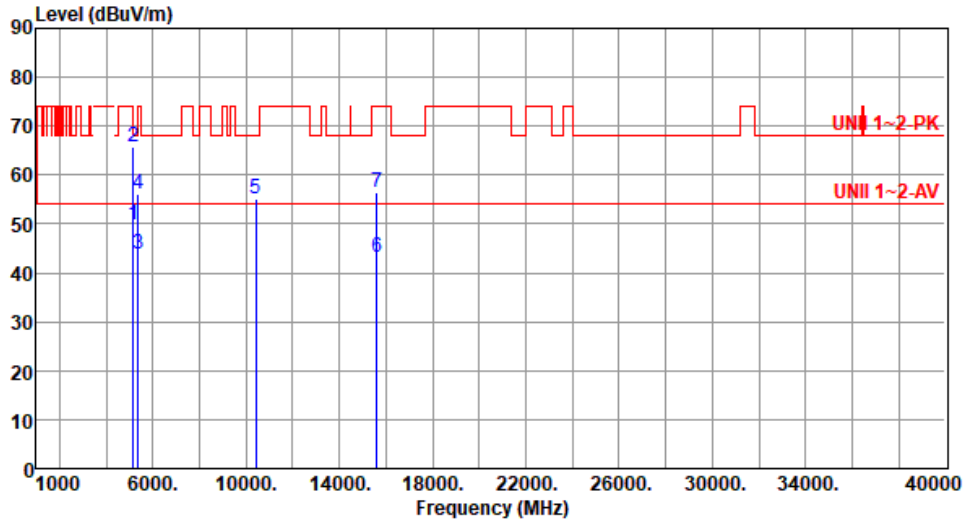
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	49.72	54.00	-4.28	48.90	0.82	Average	106	320
2	5150.00	65.87	74.00	-8.13	65.05	0.82	Peak	106	320
3	5350.00	43.68	54.00	-10.32	43.54	0.14	Average	106	320
4	5350.00	55.99	74.00	-18.01	55.85	0.14	Peak	106	320
5	10400.00	55.09	68.20	-13.11	46.45	8.64	Peak	100	12
6	15600.00	43.16	54.00	-10.84	37.41	5.75	Average	100	5
7	15600.00	56.39	74.00	-17.61	50.64	5.75	Peak	100	5

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

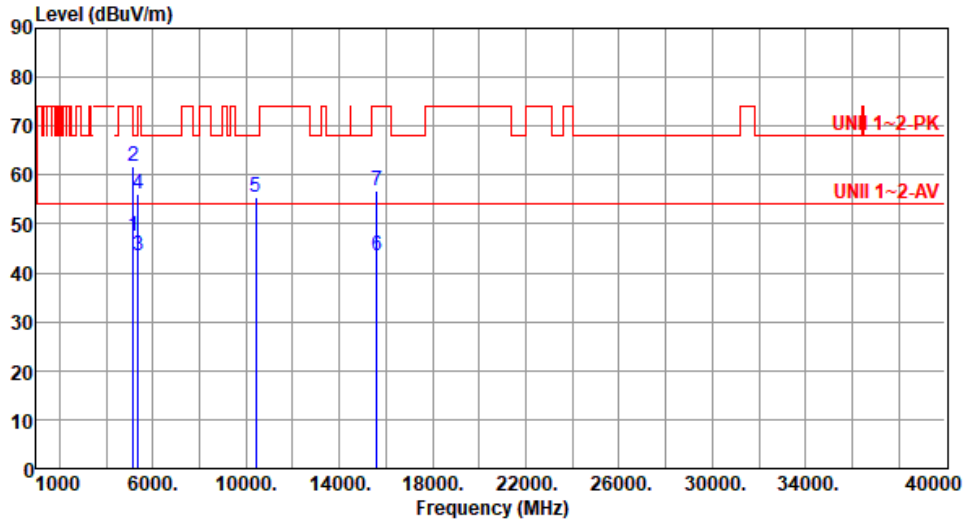
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	47.35	54.00	-6.65	46.53	0.82	Average	100	115
2	5150.00	61.88	74.00	-12.12	61.06	0.82	Peak	100	115
3	5350.00	43.49	54.00	-10.51	43.35	0.14	Average	100	115
4	5350.00	55.97	74.00	-18.03	55.83	0.14	Peak	100	115
5	10400.00	55.49	68.20	-12.71	46.85	8.64	Peak	100	22
6	15600.00	43.35	54.00	-10.65	37.60	5.75	Average	100	11
7	15600.00	56.67	74.00	-17.33	50.92	5.75	Peak	100	11

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

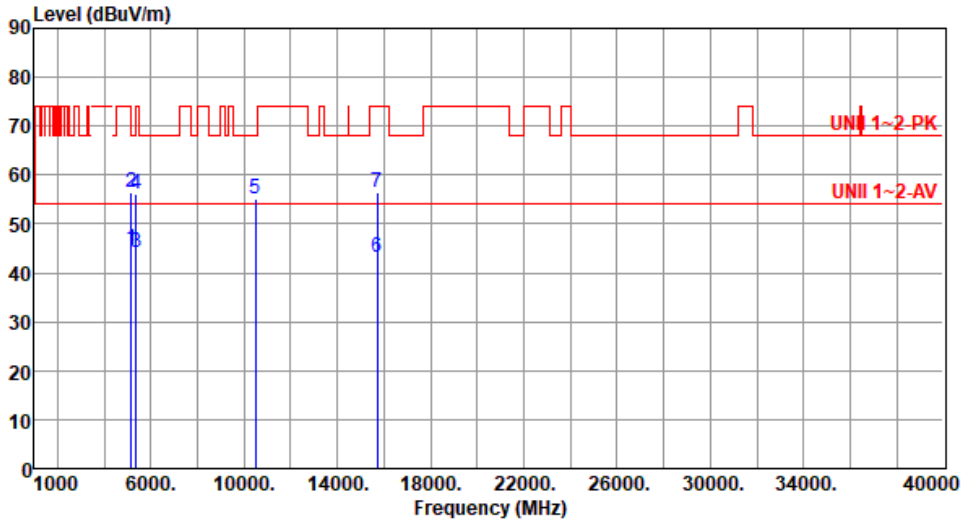
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	44.73	54.00	-9.27	43.91	0.82	Average	100	316
2	5150.00	56.36	74.00	-17.64	55.54	0.82	Peak	100	316
3	5350.00	44.13	54.00	-9.87	43.99	0.14	Average	100	316
4	5350.00	56.06	74.00	-17.94	55.92	0.14	Peak	100	316
5	10480.00	55.24	68.20	-12.96	46.55	8.69	Peak	100	36
6	15720.00	43.29	54.00	-10.71	37.57	5.72	Average	100	8
7	15720.00	56.45	74.00	-17.55	50.73	5.72	Peak	100	8

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

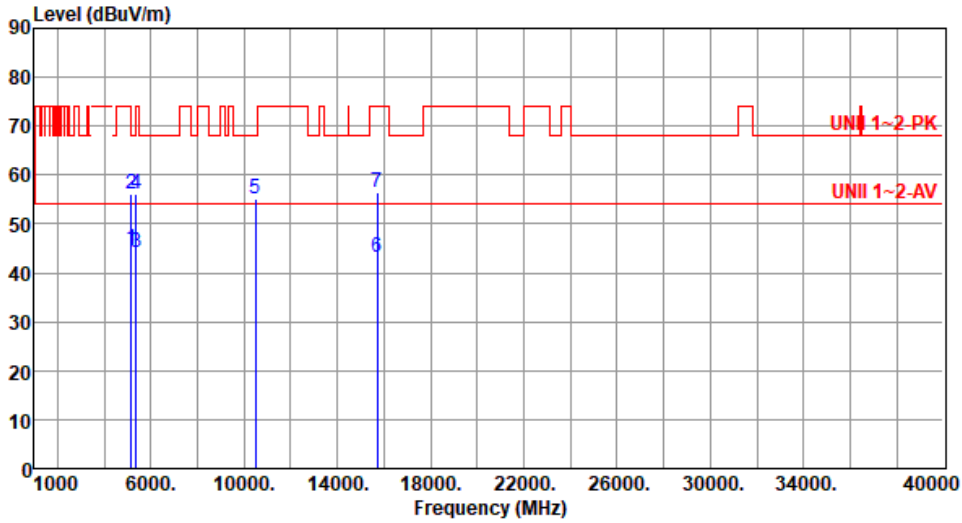
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	44.69	54.00	-9.31	43.87	0.82	Average	100	118
2	5150.00	56.28	74.00	-17.72	55.46	0.82	Peak	100	118
3	5350.00	44.09	54.00	-9.91	43.95	0.14	Average	100	118
4	5350.00	56.11	74.00	-17.89	55.97	0.14	Peak	100	118
5	10480.00	55.12	68.20	-13.08	46.43	8.69	Peak	100	41
6	15720.00	43.32	54.00	-10.68	37.60	5.72	Average	100	16
7	15720.00	56.49	74.00	-17.51	50.77	5.72	Peak	100	16

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

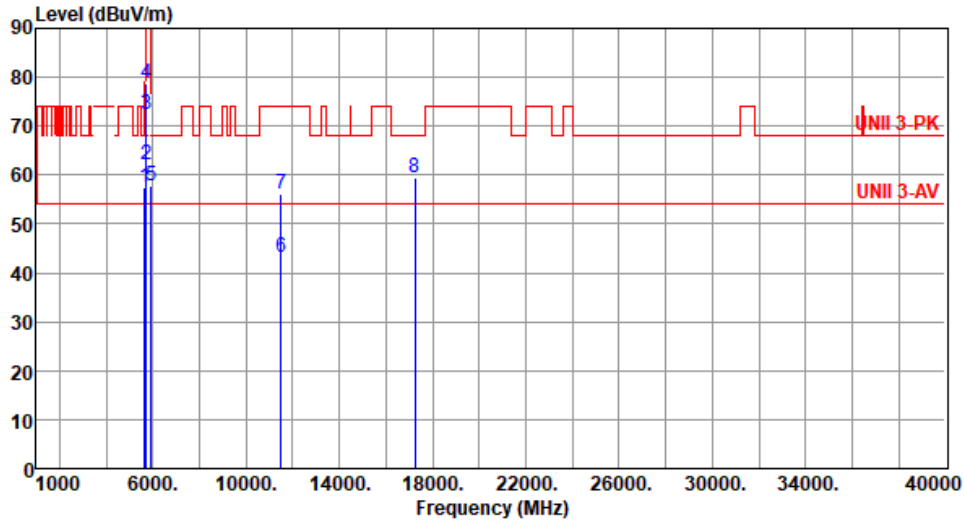
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.35	68.20	-10.85	56.81	0.54	Peak	100	314
2	5700.00	62.04	105.20	-43.16	61.18	0.86	Peak	100	314
3	5720.00	72.45	110.80	-38.35	71.54	0.91	Peak	100	314
4	5725.00	78.80	122.20	-43.40	77.87	0.93	Peak	100	314
5	5925.00	57.63	68.20	-10.57	56.14	1.49	Peak	100	314
6	11490.00	43.15	54.00	-10.85	34.44	8.71	Average	100	22
7	11490.00	56.24	74.00	-17.76	47.53	8.71	Peak	100	22
8	17235.00	59.36	68.20	-8.84	53.10	6.26	Peak	100	24

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

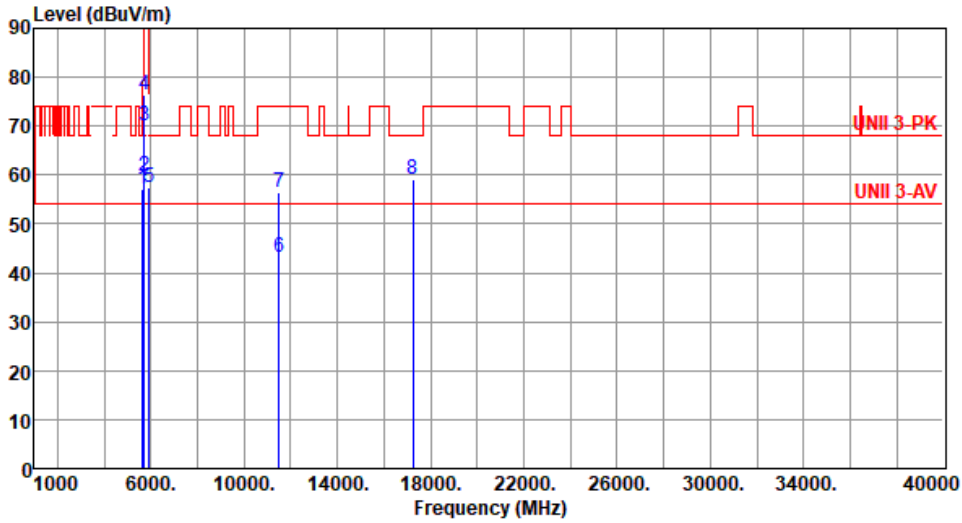
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.25	68.20	-10.95	56.71	0.54	Peak	231	138
2	5700.00	59.82	105.20	-45.38	58.96	0.86	Peak	231	138
3	5720.00	70.16	110.80	-40.64	69.25	0.91	Peak	231	138
4	5725.00	76.46	122.20	-45.74	75.53	0.93	Peak	231	138
5	5925.00	57.58	68.20	-10.62	56.09	1.49	Peak	231	138
6	11490.00	43.18	54.00	-10.82	34.47	8.71	Average	100	36
7	11490.00	56.31	74.00	-17.69	47.60	8.71	Peak	100	36
8	17235.00	59.25	68.20	-8.95	52.99	6.26	Peak	100	18

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

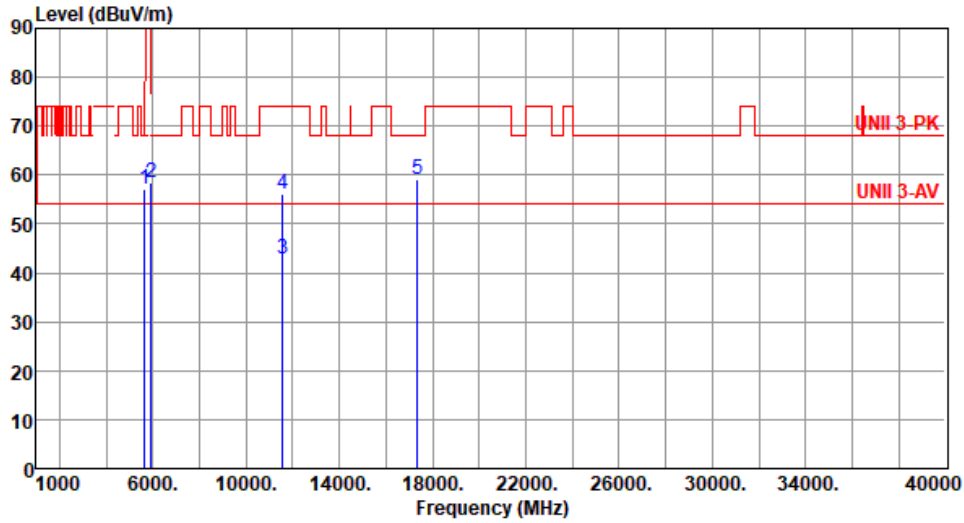
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.15	68.20	-11.05	56.61	0.54	Peak	100	322
2	5925.00	58.43	68.20	-9.77	56.94	1.49	Peak	100	322
3	11570.00	42.95	54.00	-11.05	34.36	8.59	Average	100	19
4	11570.00	56.15	74.00	-17.85	47.56	8.59	Peak	100	19
5	17355.00	59.27	68.20	-8.93	52.69	6.58	Peak	100	18

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

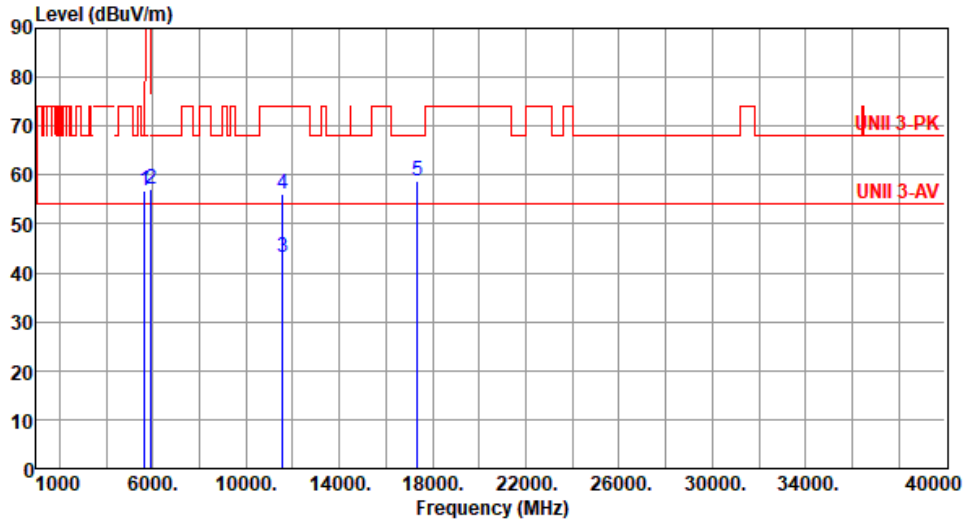
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	56.78	68.20	-11.42	56.24	0.54	Peak	232	136
2	5925.00	57.28	68.20	-10.92	55.79	1.49	Peak	232	136
3	11570.00	43.20	54.00	-10.80	34.61	8.59	Average	100	24
4	11570.00	56.08	74.00	-17.92	47.49	8.59	Peak	100	24
5	17355.00	58.64	68.20	-9.56	52.06	6.58	Peak	100	14

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

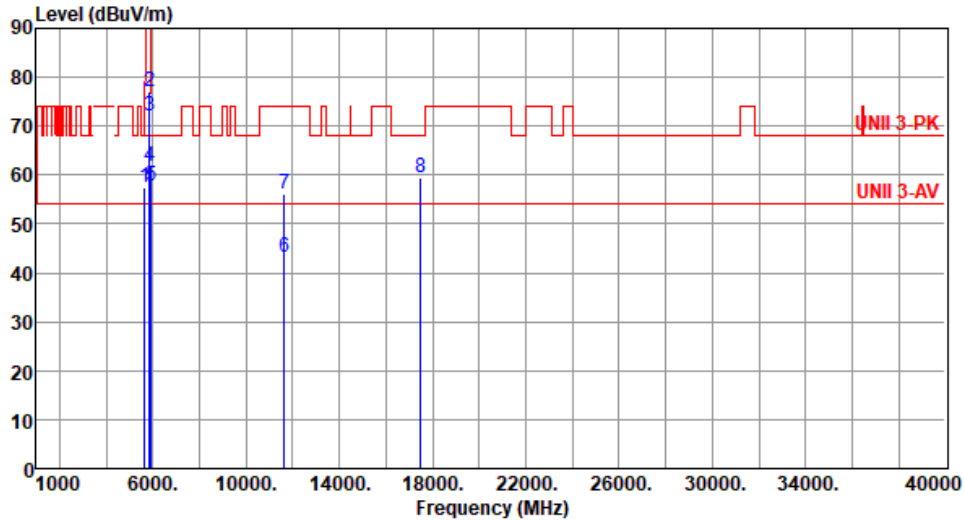
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.42	68.20	-10.78	56.88	0.54	Peak	100	311
2	5850.00	77.14	122.20	-45.06	75.90	1.24	Peak	100	311
3	5855.00	71.99	110.80	-38.81	70.73	1.26	Peak	100	311
4	5875.00	61.90	105.20	-43.30	60.54	1.36	Peak	100	311
5	5925.00	57.73	68.20	-10.47	56.24	1.49	Peak	100	311
6	11650.00	43.14	54.00	-10.86	34.91	8.23	Average	100	35
7	11650.00	56.21	74.00	-17.79	47.98	8.23	Peak	100	35
8	17475.00	59.48	68.20	-8.72	52.39	7.09	Peak	100	26

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

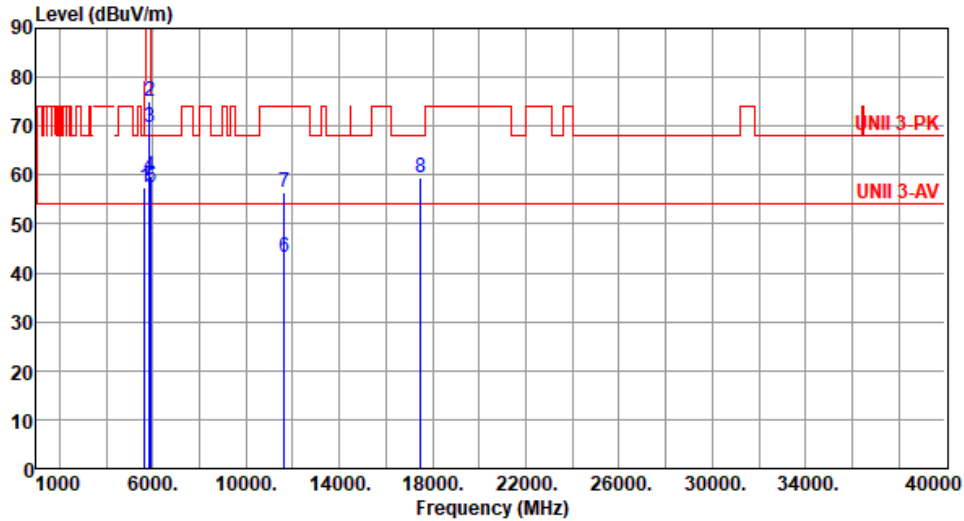
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.29	68.20	-10.91	56.75	0.54	Peak	229	131
2	5850.00	75.06	122.20	-47.14	73.82	1.24	Peak	229	131
3	5855.00	69.82	110.80	-40.98	68.56	1.26	Peak	229	131
4	5875.00	59.65	105.20	-45.55	58.29	1.36	Peak	229	131
5	5925.00	57.61	68.20	-10.59	56.12	1.49	Peak	229	131
6	11650.00	43.26	54.00	-10.74	35.03	8.23	Average	100	46
7	11650.00	56.34	74.00	-17.66	48.11	8.23	Peak	100	46
8	17475.00	59.35	68.20	-8.85	52.26	7.09	Peak	100	21

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

*Factor includes antenna factor , cable loss and amplifier gain

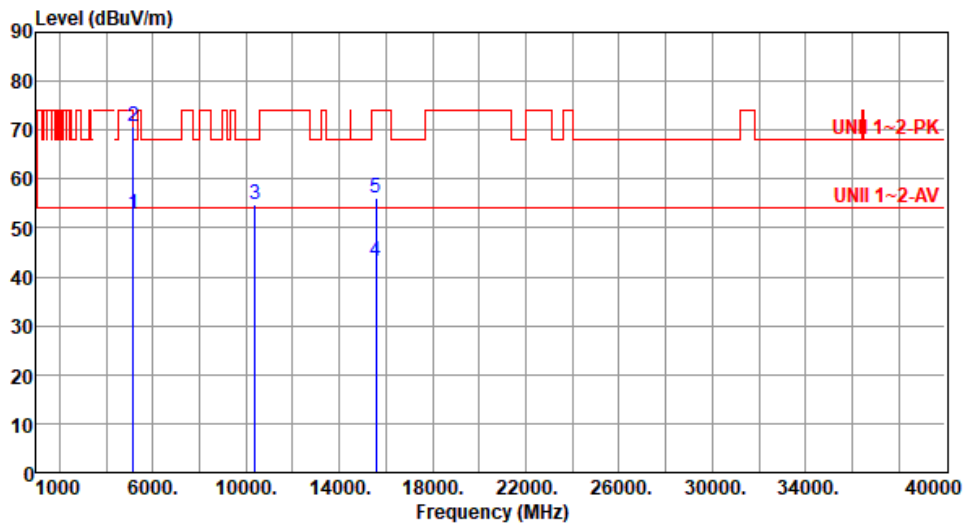
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Unwanted Emissions (Above 1GHz) for ac VHT40

Modulation	ac VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	52.68	54.00	-1.32	51.86	0.82	Average	100	313
2	5150.00	70.74	74.00	-3.26	69.92	0.82	Peak	100	313
3	10380.00	54.76	68.20	-13.44	46.19	8.57	Peak	100	9
4	15570.00	43.08	54.00	-10.92	37.22	5.86	Average	100	34
5	15570.00	56.12	74.00	-17.88	50.26	5.86	Peak	100	34

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

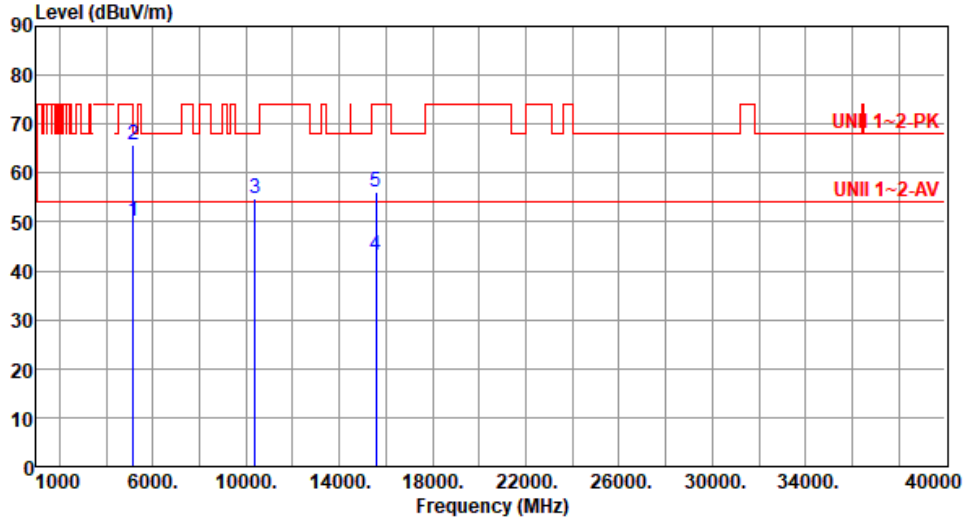
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	50.07	54.00	-3.93	49.25	0.82	Average	100	116
2	5150.00	65.78	74.00	-8.22	64.96	0.82	Peak	100	116
3	10380.00	54.66	68.20	-13.54	46.09	8.57	Peak	100	32
4	15570.00	43.08	54.00	-10.92	37.22	5.86	Average	100	25
5	15570.00	56.14	74.00	-17.86	50.28	5.86	Peak	100	25

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

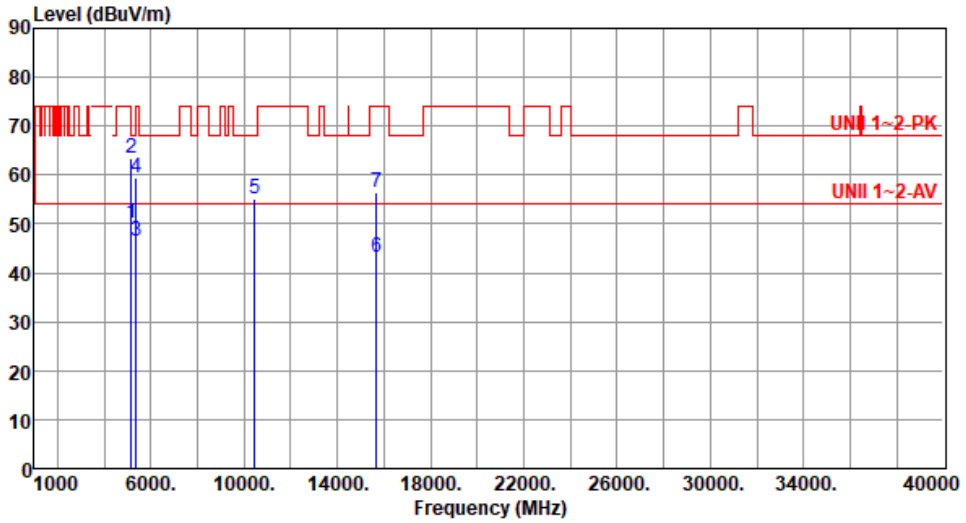
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	50.04	54.00	-3.96	49.22	0.82	Average	100	312
2	5150.00	63.33	74.00	-10.67	62.51	0.82	Peak	100	312
3	5350.00	46.33	54.00	-7.67	46.19	0.14	Average	100	312
4	5350.00	59.35	74.00	-14.65	59.21	0.14	Peak	100	312
5	10460.00	55.19	68.20	-13.01	46.51	8.68	Peak	100	34
6	15690.00	43.22	54.00	-10.78	37.47	5.75	Average	100	11
7	15690.00	56.39	74.00	-17.61	50.64	5.75	Peak	100	11

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

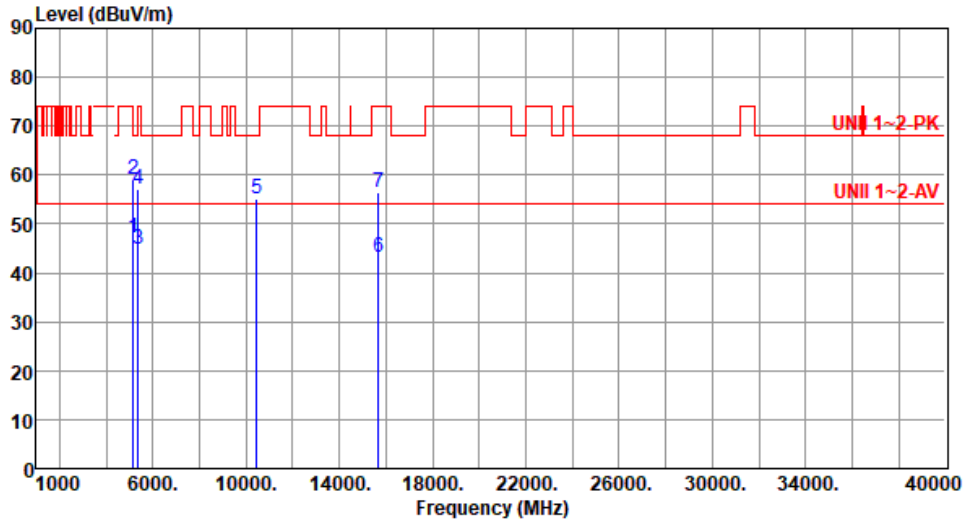
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	47.23	54.00	-6.77	46.41	0.82	Average	100	116
2	5150.00	59.04	74.00	-14.96	58.22	0.82	Peak	100	116
3	5350.00	44.95	54.00	-9.05	44.81	0.14	Average	100	116
4	5350.00	57.28	74.00	-16.72	57.14	0.14	Peak	100	116
5	10460.00	55.16	68.20	-13.04	46.48	8.68	Peak	100	45
6	15690.00	43.29	54.00	-10.71	37.54	5.75	Average	100	14
7	15690.00	56.38	74.00	-17.62	50.63	5.75	Peak	100	14

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

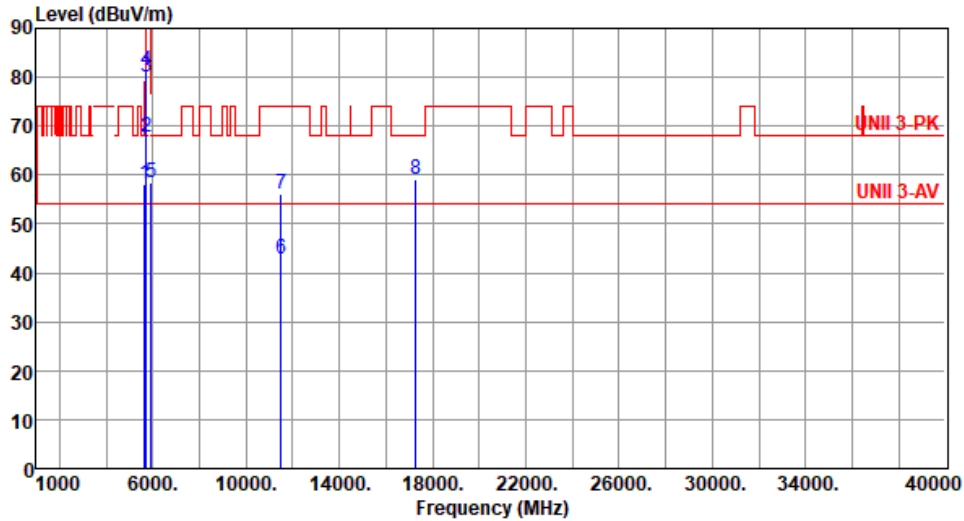
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	58.24	68.20	-9.96	57.70	0.54	Peak	100	312
2	5700.00	67.76	105.20	-37.44	66.90	0.86	Peak	100	312
3	5720.00	79.90	110.80	-30.90	78.99	0.91	Peak	100	312
4	5725.00	81.23	122.20	-40.97	80.30	0.93	Peak	100	312
5	5925.00	58.31	68.20	-9.89	56.82	1.49	Peak	100	312
6	11510.00	42.86	54.00	-11.14	34.16	8.70	Average	100	22
7	11510.00	56.13	74.00	-17.87	47.43	8.70	Peak	100	22
8	17265.00	59.22	68.20	-8.98	52.95	6.27	Peak	100	26

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

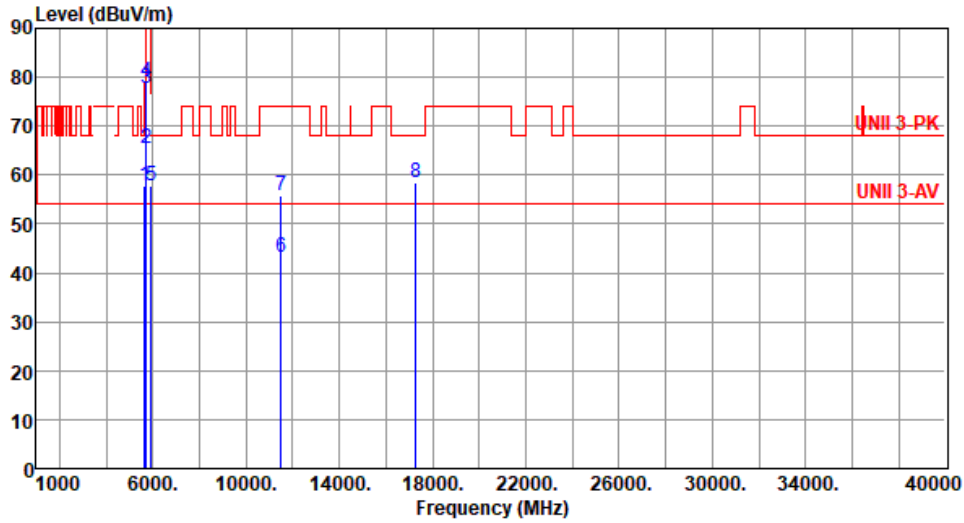
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.92	68.20	-10.28	57.38	0.54	Peak	235	131
2	5700.00	65.46	105.20	-39.74	64.60	0.86	Peak	235	131
3	5720.00	77.68	110.80	-33.12	76.77	0.91	Peak	235	131
4	5725.00	79.04	122.20	-43.16	78.11	0.93	Peak	235	131
5	5925.00	57.86	68.20	-10.34	56.37	1.49	Peak	235	131
6	11510.00	43.15	54.00	-10.85	34.45	8.70	Average	100	29
7	11510.00	55.94	74.00	-18.06	47.24	8.70	Peak	100	29
8	17265.00	58.53	68.20	-9.67	52.26	6.27	Peak	100	16

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

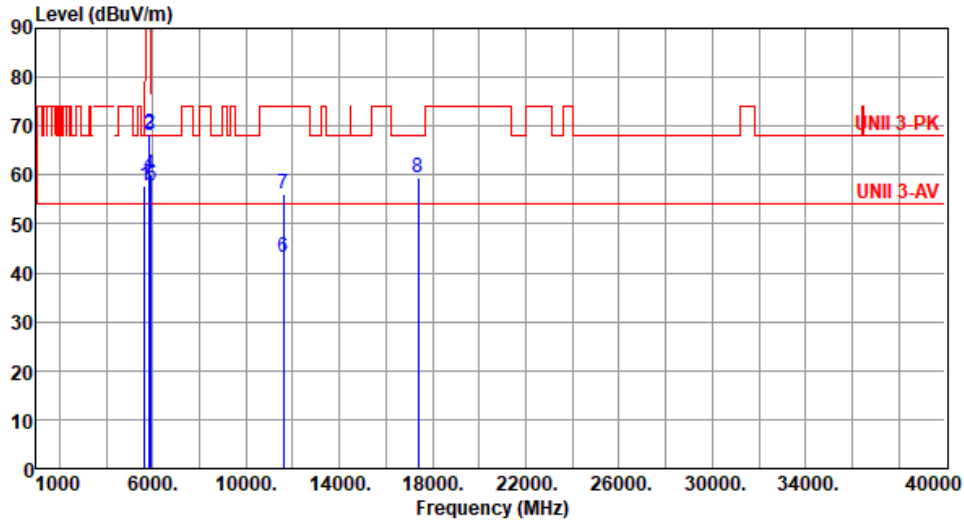
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.67	68.20	-10.53	57.13	0.54	Peak	100	312
2	5850.00	68.26	122.20	-53.94	67.02	1.24	Peak	100	312
3	5855.00	67.93	110.80	-42.87	66.67	1.26	Peak	100	312
4	5875.00	59.97	105.20	-45.23	58.61	1.36	Peak	100	312
5	5925.00	57.84	68.20	-10.36	56.35	1.49	Peak	100	312
6	11590.00	43.05	54.00	-10.95	34.50	8.55	Average	100	38
7	11590.00	56.24	74.00	-17.76	47.69	8.55	Peak	100	38
8	17385.00	59.44	68.20	-8.76	52.71	6.73	Peak	100	21

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

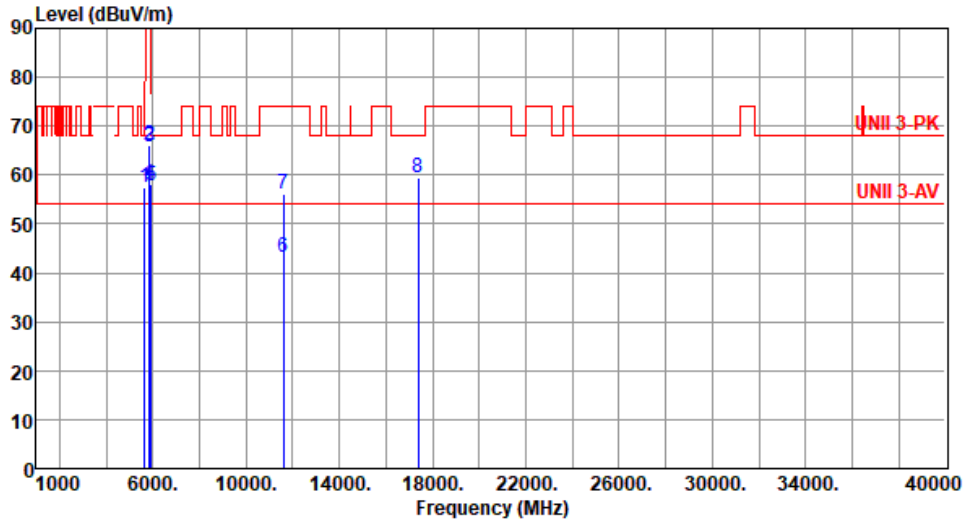
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	57.58	68.20	-10.62	57.04	0.54	Peak	228	129
2	5850.00	66.12	122.20	-56.08	64.88	1.24	Peak	228	129
3	5855.00	65.81	110.80	-44.99	64.55	1.26	Peak	228	129
4	5875.00	58.24	105.20	-46.96	56.88	1.36	Peak	228	129
5	5925.00	57.68	68.20	-10.52	56.19	1.49	Peak	228	129
6	11590.00	43.18	54.00	-10.82	34.63	8.55	Average	100	51
7	11590.00	56.29	74.00	-17.71	47.74	8.55	Peak	100	51
8	17385.00	59.29	68.20	-8.91	52.56	6.73	Peak	100	26

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).



Unwanted Emissions (Above 1GHz) for ac VHT80

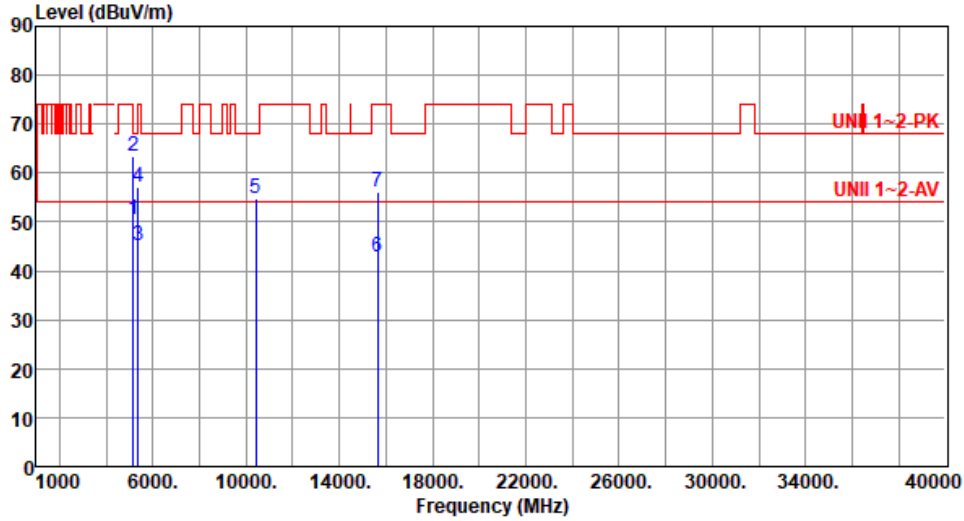
Modulation	ac VHT80	Test Freq. (MHz)	5210						
Polarization	Horizontal								
Test By :Brad Wu Temperature(°C):23 Humidity(%):64									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	52.36	54.00	-1.64	51.54	0.82	Average	100	309
2	5150.00	68.54	74.00	-5.46	67.72	0.82	Peak	100	309
3	5350.00	45.99	54.00	-8.01	45.85	0.14	Average	100	309
4	5350.00	58.73	74.00	-15.27	58.59	0.14	Peak	100	309
5	10420.00	54.76	68.20	-13.44	46.11	8.65	Peak	100	9
6	15630.00	43.05	54.00	-10.95	37.31	5.74	Average	100	21
7	15630.00	56.14	74.00	-17.86	50.40	5.74	Peak	100	21

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).



Modulation	ac VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5150.00	50.44	54.00	-3.56	49.62	0.82	Average	100	114
2	5150.00	63.44	74.00	-10.56	62.62	0.82	Peak	100	114
3	5350.00	45.26	54.00	-8.74	45.12	0.14	Average	100	114
4	5350.00	56.96	74.00	-17.04	56.82	0.14	Peak	100	114
5	10420.00	54.66	68.20	-13.54	46.01	8.65	Peak	100	21
6	15630.00	42.96	54.00	-11.04	37.22	5.74	Average	100	33
7	15630.00	56.05	74.00	-17.95	50.31	5.74	Peak	100	33

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

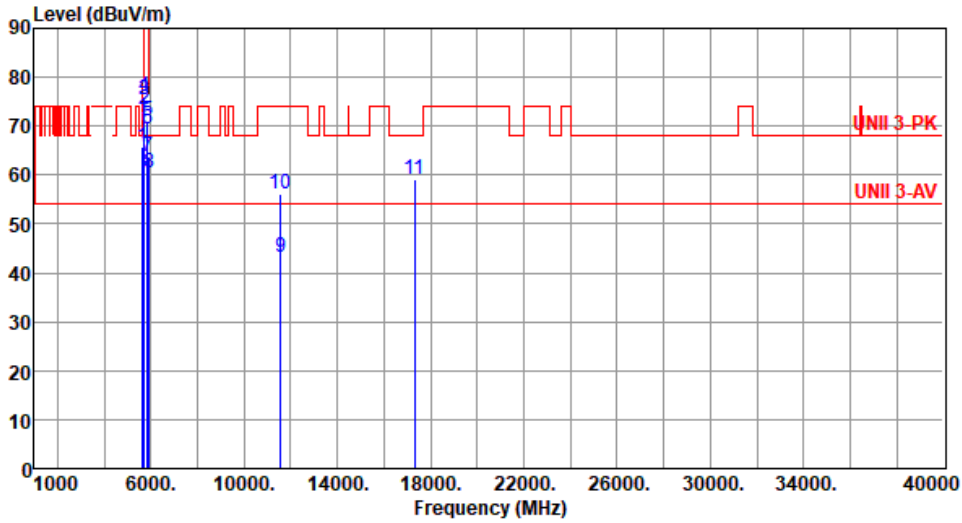
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	65.75	68.20	-2.45	65.21	0.54	Peak	100	314
2	5700.00	73.42	105.20	-31.78	72.56	0.86	Peak	100	314
3	5720.00	75.50	110.80	-35.30	74.59	0.91	Peak	100	314
4	5725.00	76.08	122.20	-46.12	75.15	0.93	Peak	100	314
5	5850.00	71.17	122.20	-51.03	69.93	1.24	Peak	100	314
6	5855.00	69.28	110.80	-41.52	68.02	1.26	Peak	100	314
7	5875.00	63.79	105.20	-41.41	62.43	1.36	Peak	100	314
8	5925.00	60.44	68.20	-7.76	58.95	1.49	Peak	100	314
9	11550.00	43.02	54.00	-10.98	34.39	8.63	Average	100	29
10	11550.00	56.13	74.00	-17.87	47.50	8.63	Peak	100	29
11	17325.00	59.28	68.20	-8.92	52.85	6.43	Peak	100	22

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

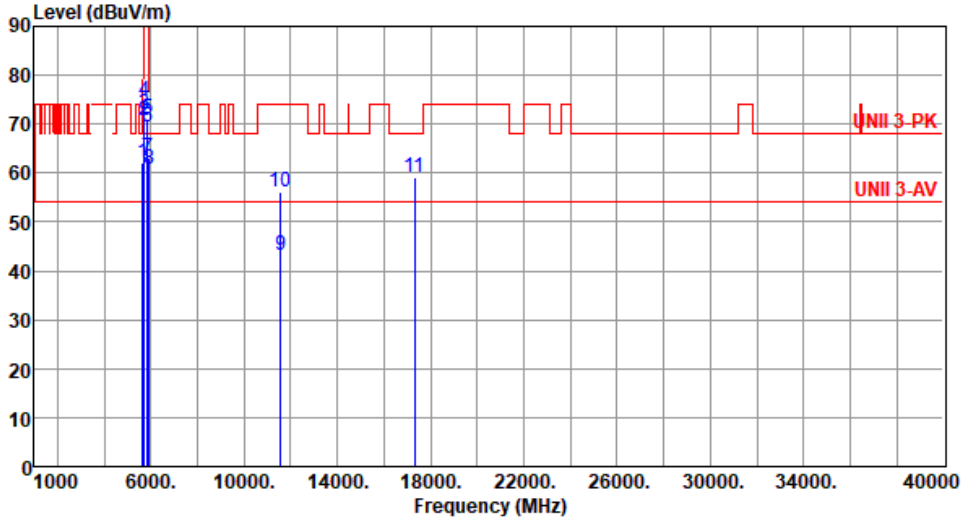
*Factor includes antenna factor , cable loss and amplifier gain

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



Modulation	ac VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		

Test By :Brad Wu Temperature(°C):23 Humidity(%):64



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	5650.00	62.24	68.20	-5.96	61.70	0.54	Peak	232	144
2	5700.00	70.78	105.20	-34.42	69.92	0.86	Peak	232	144
3	5720.00	72.20	110.80	-38.60	71.29	0.91	Peak	232	144
4	5725.00	74.77	122.20	-47.43	73.84	0.93	Peak	232	144
5	5850.00	71.00	122.20	-51.20	69.76	1.24	Peak	232	144
6	5855.00	69.43	110.80	-41.37	68.17	1.26	Peak	232	144
7	5875.00	63.24	105.20	-41.96	61.88	1.36	Peak	232	144
8	5925.00	60.90	68.20	-7.30	59.41	1.49	Peak	232	144
9	11550.00	43.06	54.00	-10.94	34.43	8.63	Average	100	44
10	11550.00	56.25	74.00	-17.75	47.62	8.63	Peak	100	44
11	17325.00	59.18	68.20	-9.02	52.75	6.43	Peak	100	19

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).



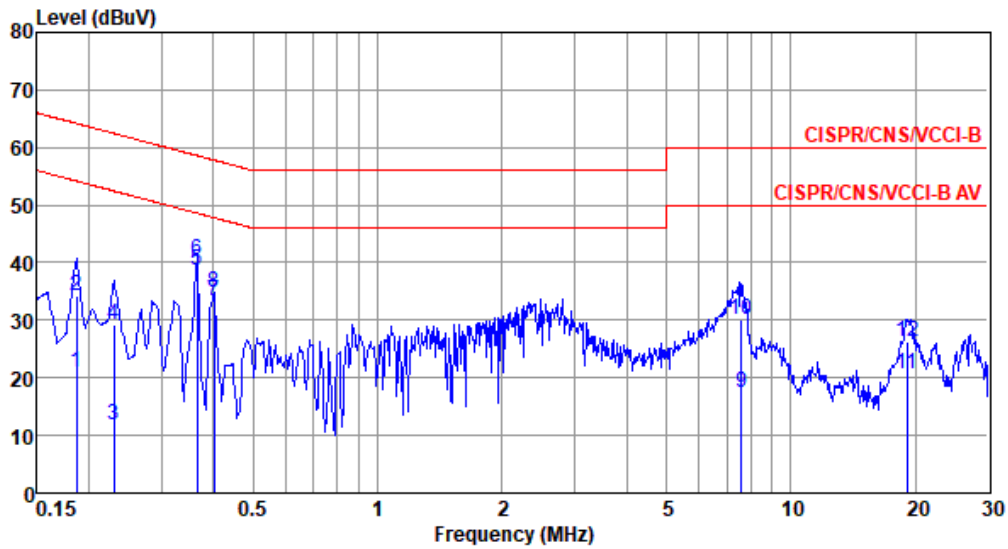
Frequency: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	-7.49	-7.11	-7.73	-7.91
T20°CVmin	-7.72	-7.57	-7.83	-7.51
T50°CVnom	-9.19	-9.23	-9.36	-8.84
T40°CVnom	-8.94	-8.79	-8.33	-8.84
T30°CVnom	-7.92	-7.54	-7.64	-7.86
T20°CVnom	-7.65	-7.17	-7.53	-7.55
T10°CVnom	-6.21	-5.58	-5.39	-6.19
T0°CVnom	-5.98	-5.76	-6.11	-5.36
T-10°CVnom	-5.12	-4.72	-4.87	-4.53
T-20°CVnom	-4.46	-4.47	-3.77	-4.34
T-30°CVnom	-4.29	-6.06	-5.48	-4.65
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	-7.66	-8.06	-8.53	-8.47
T20°CVmin	-8.38	-8.51	-8.66	-8.59
T50°CVnom	-9.42	-8.96	-9.12	-9.27
T40°CVnom	-9.23	-8.87	-9.63	-9.31
T30°CVnom	-8.45	-7.69	-8.02	-8.27
T20°CVnom	-8.26	-7.93	-7.54	-7.61
T10°CVnom	-7.12	-6.81	-6.76	-6.59
T0°CVnom	-6.71	-6.33	-6.84	-7.16
T-10°CVnom	-5.77	-5.81	-5.96	-5.29
T-20°CVnom	-4.87	-5.23	-4.90	-4.66
T-30°CVnom	-7.17	-5.00	-4.84	-4.29
Vnom [V]: 120	Vmax [V]: 138		Vmin [V]: 102	
Tnom [°C]: 20	Tmax [°C]: 50		Tmin [°C]: -30	



Modulation Mode	ac VHT20	Test Freq. (MHz)	5200
Power Phase	Line		

Test by : Brad Wu Temperature: 21°C Humidity: 60%



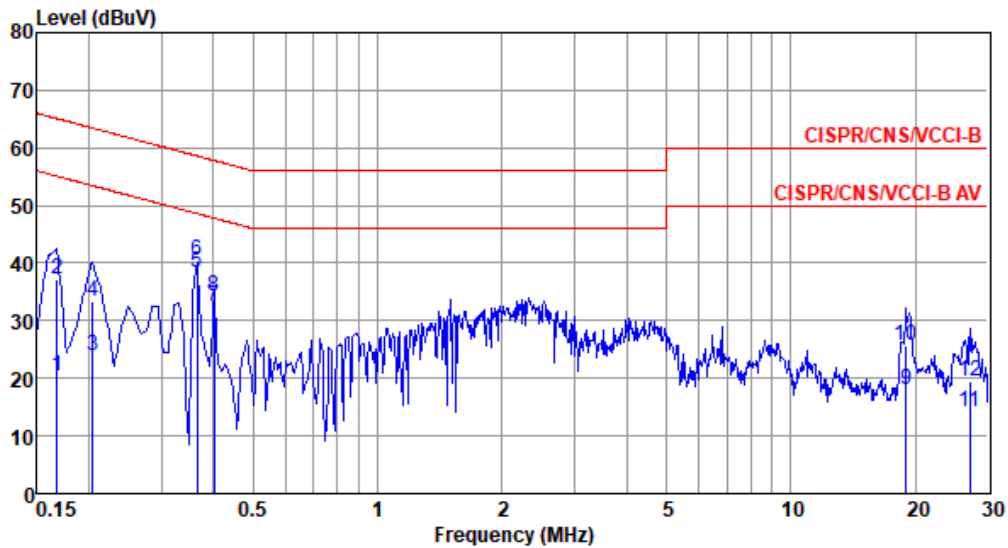
	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.186	21.08	54.20	-33.12	11.34	9.68	0.06	0.00	Average
2	0.186	34.21	64.20	-29.99	24.47	9.68	0.06	0.00	QP
3	0.230	11.85	52.44	-40.59	2.11	9.68	0.06	0.00	Average
4	0.230	29.19	62.44	-33.25	19.45	9.68	0.06	0.00	QP
5*	0.365	38.72	48.61	-9.89	28.99	9.67	0.06	0.00	Average
6	0.365	40.52	58.61	-18.09	30.79	9.67	0.06	0.00	QP
7	0.402	33.40	47.81	-14.41	23.67	9.67	0.06	0.00	Average
8	0.402	34.94	57.81	-22.87	25.21	9.67	0.06	0.00	QP
9	7.606	17.44	50.00	-32.56	7.40	9.73	0.31	0.00	Average
10	7.606	29.97	60.00	-30.03	19.93	9.73	0.31	0.00	QP
11	19.122	20.53	50.00	-29.47	10.30	9.73	0.50	0.00	Average
12	19.122	26.14	60.00	-33.86	15.91	9.73	0.50	0.00	QP

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 Note 2: Over Limit (dB) = Level (dBUV) - Limit Line (dBUV).



Modulation Mode	ac VHT20	Test Freq. (MHz)	5200
Power Phase	Neutral		

Test by : Brad Wu Temperature: 21°C Humidity: 60%



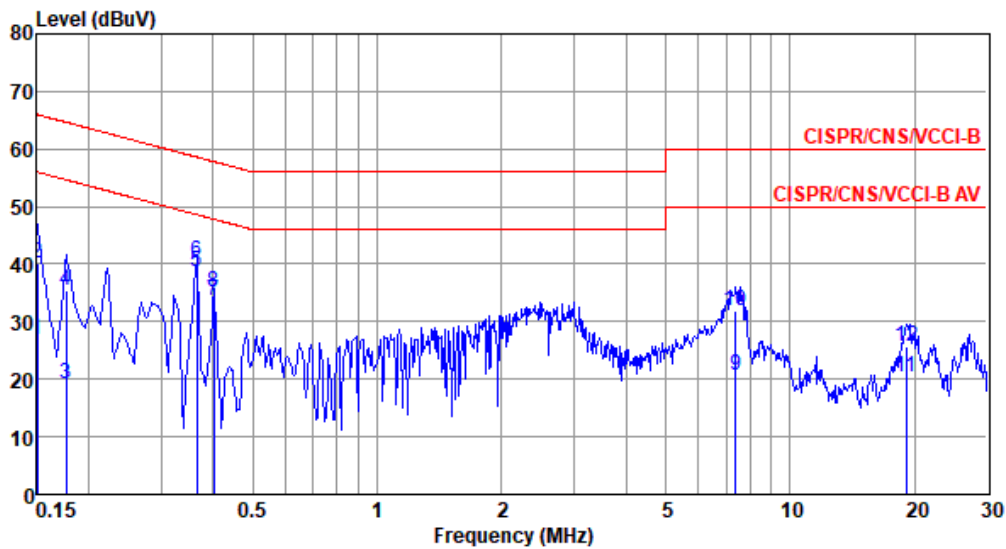
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.168	20.32	55.08	-34.76	10.65	9.61	0.06	0.00	Average
2	0.168	37.31	65.08	-27.77	27.64	9.61	0.06	0.00	QP
3	0.204	23.89	53.45	-29.56	14.22	9.61	0.06	0.00	Average
4	0.204	33.34	63.45	-30.11	23.67	9.61	0.06	0.00	QP
5*	0.365	38.34	48.61	-10.27	28.67	9.61	0.06	0.00	Average
6	0.365	40.34	58.61	-18.27	30.67	9.61	0.06	0.00	QP
7	0.402	32.50	47.81	-15.31	22.83	9.61	0.06	0.00	Average
8	0.402	34.30	57.81	-23.51	24.63	9.61	0.06	0.00	QP
9	19.021	18.13	50.00	-31.87	7.85	9.78	0.50	0.00	Average
10	19.021	25.64	60.00	-34.36	15.36	9.78	0.50	0.00	QP
11	27.127	14.07	50.00	-35.93	3.72	9.77	0.58	0.00	Average
12	27.127	19.52	60.00	-40.48	9.17	9.77	0.58	0.00	QP

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



Modulation Mode	ac VHT20	Test Freq. (MHz)	5745
Power Phase	Line		

Test by : Brad Wu Temperature: 21°C Humidity: 60%



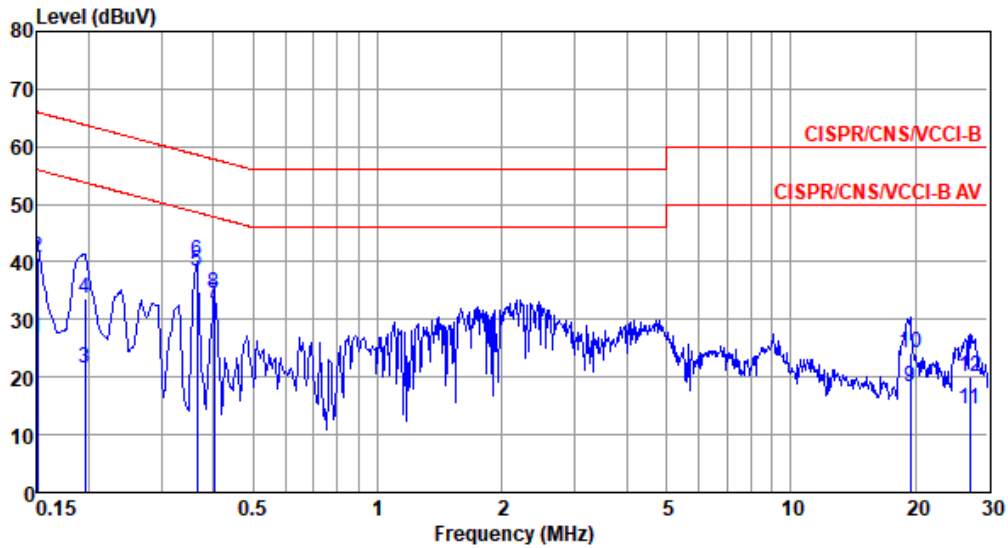
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.150	26.75	56.00	-29.25	17.01	9.68	0.06	0.00	Average
2	0.150	40.14	66.00	-25.86	30.40	9.68	0.06	0.00	QP
3	0.177	19.30	54.64	-35.34	9.56	9.68	0.06	0.00	Average
4	0.177	35.50	64.64	-29.14	25.76	9.68	0.06	0.00	QP
5*	0.365	38.61	48.61	-10.00	28.88	9.67	0.06	0.00	Average
6	0.365	40.56	58.61	-18.05	30.83	9.67	0.06	0.00	QP
7	0.402	33.55	47.81	-14.26	23.82	9.67	0.06	0.00	Average
8	0.402	35.00	57.81	-22.81	25.27	9.67	0.06	0.00	QP
9	7.368	20.75	50.00	-29.25	10.72	9.73	0.30	0.00	Average
10	7.368	31.97	60.00	-28.03	21.94	9.73	0.30	0.00	QP
11	19.122	20.32	50.00	-29.68	10.09	9.73	0.50	0.00	Average
12	19.122	25.60	60.00	-34.40	15.37	9.73	0.50	0.00	QP

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



Modulation Mode	ac VHT20	Test Freq. (MHz)	5745
Power Phase	Neutral		

Test by : Brad Wu Temperature: 21°C Humidity: 60%



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.150	26.82	56.00	-29.18	17.15	9.61	0.06	0.00	Average
2	0.150	40.80	66.00	-25.20	31.13	9.61	0.06	0.00	QP
3	0.195	21.68	53.80	-32.12	12.01	9.61	0.06	0.00	Average
4	0.195	33.70	63.80	-30.10	24.03	9.61	0.06	0.00	QP
5*	0.365	38.25	48.61	-10.36	28.58	9.61	0.06	0.00	Average
6	0.365	40.26	58.61	-18.35	30.59	9.61	0.06	0.00	QP
7	0.402	32.91	47.81	-14.90	23.24	9.61	0.06	0.00	Average
8	0.402	34.40	57.81	-23.41	24.73	9.61	0.06	0.00	QP
9	19.428	18.23	50.00	-31.77	7.94	9.79	0.50	0.00	Average
10	19.428	24.34	60.00	-35.66	14.05	9.79	0.50	0.00	QP
11	27.127	14.59	50.00	-35.41	4.24	9.77	0.58	0.00	Average
12	27.127	20.03	60.00	-39.97	9.68	9.77	0.58	0.00	QP

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