

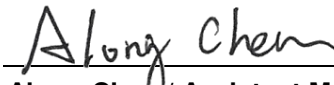
FCC C2PC Test Report

FCC ID : NKRDXA-GO1
Equipment : 802.11ac 3*3 PCIe module
Model No. : DAXA-GO1
Brand Name : WNC
Applicant : Wistron NeWeb Corporation
Address : 20 Park Avenue II, Hsinchu Science Park,
Hsinchu 308,Taiwan,R.O.C.
Standard : 47 CFR FCC Part 15.407
Received Date : Mar. 02, 2016
Tested Date : Mar. 07 ~ Oct. 24, 2016

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

Reviewed by:

Approved by:


Along Chen / Assistant Manager


Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR421702-01AN	Rev. 01	Initial issue	Nov. 16, 2016
FR421702-01AN	Rev. 02	Removed antenna gain of 5250 ~ 5350 and 5470 ~ 5725 MHz band	Nov. 18, 2016

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.502MHz 31.84 (Margin -14.16dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 52.89 (Margin -1.11dB) - 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)	RF Output Power	Max Power [dBm]: 5150-5250MHz: 28.21 5725-5850MHz: 26.34	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

1 General Description

1.1 Information

This report is a supplementary report to original ICC report no. FR421702AN.

This report is issued as a FCC Class II Permissive Change for complying with New U-NII rule requirement.

- ✧ Complying with New U-NII rule requirement for U-NII band -1 / -3 and increases output power of U-NII band -1 / -3 by software setting.
- ✧ Hardware modification. Removed component C93 and changed component C81.

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	a	5180-5240	36-48 [4]	3	6-54 Mbps
5150-5250	n (HT20)	5180-5240	36-48 [4]	3	MCS 0-23
5150-5250	n (HT40)	5190-5230	38-46 [2]	3	MCS 0-23
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	3	MCS 0-9
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	3	MCS 0-9
5150-5250	ac (VHT80)	5210	42 [1]	3	MCS 0-9

Note 1: RF output power specifies that Maximum Conducted Output Power.
 Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N_{TX})	Data Rate / MCS
5725-5850	a	5745-5825	149-165 [5]	3	6-54 Mbps
5725-5850	n (HT20)	5745-5825	149-165 [5]	3	MCS 0-23
5725-5850	n (HT40)	5755-5795	151-159 [2]	3	MCS 0-23
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	3	MCS 0-9
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	3	MCS 0-9
5725-5850	ac (VHT80)	5775	155 [1]	3	MCS 0-9

Note 1: RF output power specifies that Maximum Conducted Output Power.
 Note 2: 802.11a/n/ac uses a combination of 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	1002299	Printed	UFL	3.88	4.2
2	1002300	Printed	UFL	2.62	4.02
3	1002301	Printed	UFL	4.16	3.43

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	3.3Vdc and 4.2Vdc from host
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1.1.4 Accessories

N/A

1.1.5 Channel List

For Frequency band 5150-5250 MHz			
802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	VHT80	
48	5240	42	5210

For Frequency band 5725~5850 MHz			
802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
149	5745	151	5755
153	5765	159	5795
157	5785	VHT80	
161	5805	155	5775
165	5825	---	---

1.1.6 Test Tool and Duty Cycle

Test Tool	ART2-GUI, version: 2.3		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	98.26%	0.08
	VHT20	98.16%	0.08
	VHT40	96.21%	0.17
	VHT80	90.94%	0.41

1.1.7 Power Setting

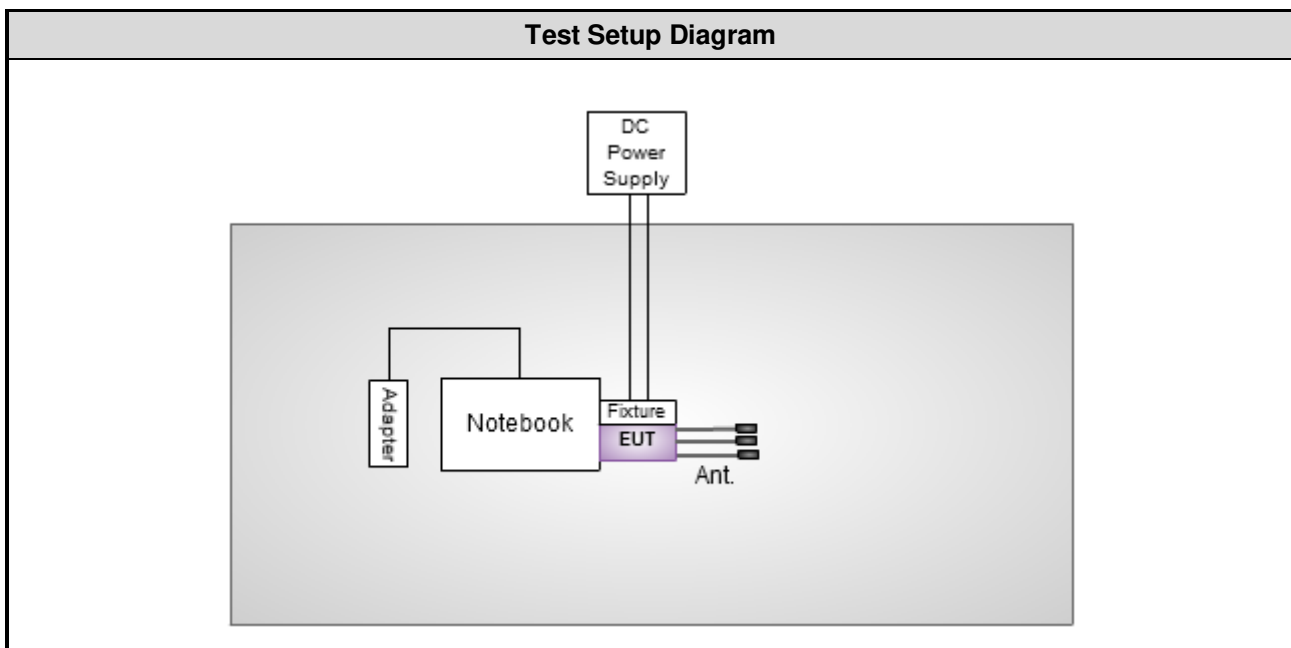
For Frequency band 5150-5250 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5180	20.5
11a	5200	21.5
11a	5240	21.5
HT20	5180	20.5
HT20	5200	21.5
HT20	5240	21.5
HT40	5190	17
HT40	5230	23.5
VHT20	5180	20.5
VHT20	5200	21.5
VHT20	5240	21.5
VHT40	5190	17
VHT40	5230	23.5
VHT80	5210	14

For Frequency band 5725~5850 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5745	21.5
11a	5785	22.0
11a	5825	22.5
HT20	5745	21.5
HT20	5785	22.5
HT20	5825	22.5
HT40	5755	20.0
HT40	5795	22.5
VHT20	5745	21.5
VHT20	5785	22.5
VHT20	5825	22.5
VHT40	5755	20.0
VHT40	5795	22.5
VHT80	5775	19.0

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	9ZFB4X1	DoC	---
2	Fixture	ICC	---	---	---	---

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Mar. 24, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
EMC Receiver	R&S	ESCS 30	100169	Oct. 21, 2015	Oct. 20, 2016
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 13, 2015	Nov. 12, 2016
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 21, 2015	Dec. 20, 2016
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Tested Date	Mar. 07 ~ Mar. 08, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Dec. 17, 2015	Dec. 16, 2016
Receiver	R&S	ESR3	101657	Jan. 12, 2016	Jan. 11, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-523	Nov. 09, 2015	Nov. 08, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Oct. 07, 2015	Oct. 06, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 10, 2015	Dec. 09, 2016
Preamplifier	Burgeon	BPA-530	100218	Nov. 03, 2015	Nov. 02, 2016
Preamplifier	Agilent	83017A	MY39501309	Sep. 22, 2015	Sep. 21, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	EMCC	CFD400-E	CFD400-001	Dec. 10, 2015	Dec. 09, 2016
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Tested Date	Oct. 05, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Dec. 17, 2015	Dec. 16, 2016
Receiver	R&S	ESR3	101657	Jan. 12, 2016	Jan. 11, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-523	Nov. 09, 2015	Nov. 08, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Sep. 21, 2016	Sep. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 10, 2015	Dec. 09, 2016
Preamplifier	EMC	EMC02325	980194	Sep. 26, 2016	Sep. 25, 2017
Preamplifier	Agilent	83017A	MY39501309	Sep. 29, 2016	Sep. 28, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16051	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	EMCC	CFD400-E	CFD400-001	Dec. 10, 2015	Dec. 09, 2016
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	Oct. 24, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Feb. 17, 2016	Feb. 16, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 27, 2015	Nov. 26, 2016
Power Meter	Anritsu	ML2495A	1241002	Oct. 06, 2016	Oct. 05, 2017
Power Sensor	Anritsu	MA2411B	1207366	Oct. 06, 2016	Oct. 05, 2017
DC POWER SOURCE	GW INSTEK	GPC-6030D	EM892443	Oct. 20, 2016	Oct. 19, 2017
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Testing Applied Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.407

ANSI C63.10-2013

FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03

FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.134 Hz
Conducted power	±0.808 dB
Frequency error	±34.134 Hz
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.87 dB
Radiated emission > 1GHz	±5.60 dB
Time	±0.1%
Temperature	±0.6 °C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	17°C / 62%	Sky Huang
Radiated Emissions	03CH02-WS	20-22°C / 62-64%	Anderson Hung Aska Huang
RF Conducted	TH01-WS	22°C / 64%	Alex Huang

➤ FCC site registration No.: 181692

➤ IC site registration No.: 10807A-2

2.2 The Worst Test Modes and Channel Details

For Frequency band 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT40	5230	MCS 0	---
Radiated Emissions ≤1GHz	VHT40	5230	MCS 0	---
RF Output Power	11a	5180 / 5200 / 5240	6 Mbps	---
	HT20	5180 / 5200 / 5240	MCS 0	
	HT40	5190 / 5230	MCS 0	
	VHT20	5180 / 5200 / 5240	MCS 0	
	VHT40	5190 / 5230	MCS 0	
	VHT80	5210	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240	6 Mbps	---
	VHT20	5180 / 5200 / 5240	MCS 0	
	VHT40	5190 / 5230	MCS 0	
	VHT80	5210	MCS 0	
Frequency Stability	Un-modulation	5200	---	---

Note:
1) The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **X-plane** results were found as the worst case and were shown in this report.

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT40	5795	MCS 0	---
Radiated Emissions ≤1GHz	VHT40	5795	MCS 0	---
RF Output Power	11a	5745 / 5785 / 5825	6 Mbps	---
	HT20	5745 / 5785 / 5825	MCS 0	
	HT40	5755 / 5795	MCS 0	
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a	5745 / 5785 / 5825	6 Mbps	---
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	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 **X-plane** results were found as the worst case and were shown in this report.

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

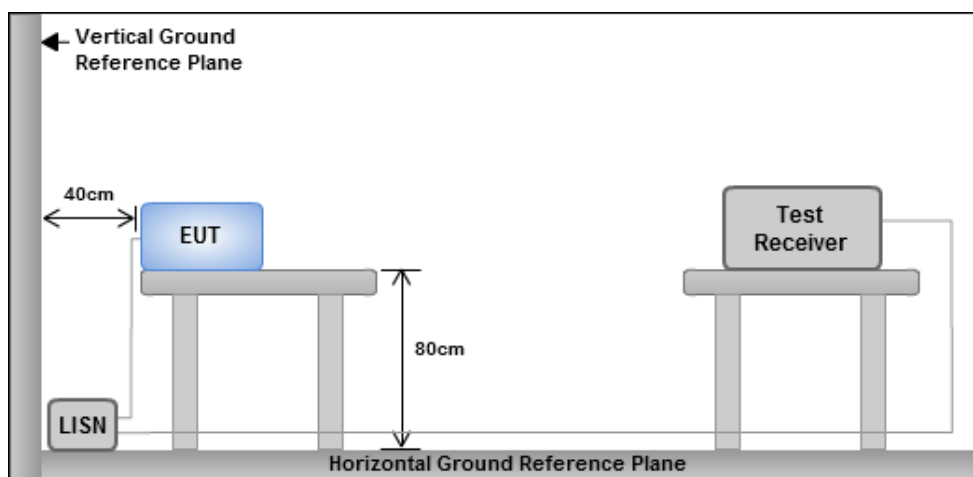
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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.

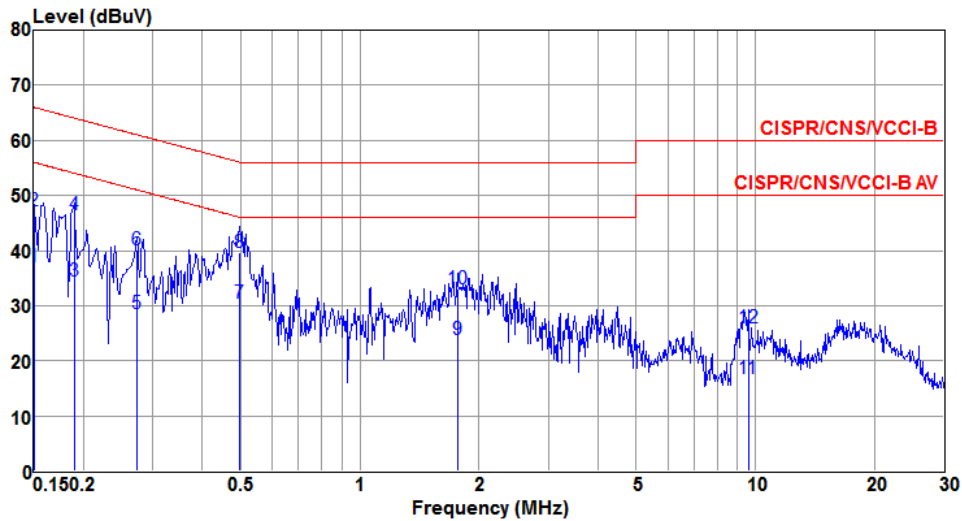
3.1.3 Test Setup



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

3.1.4 Test Result of Conducted Emissions

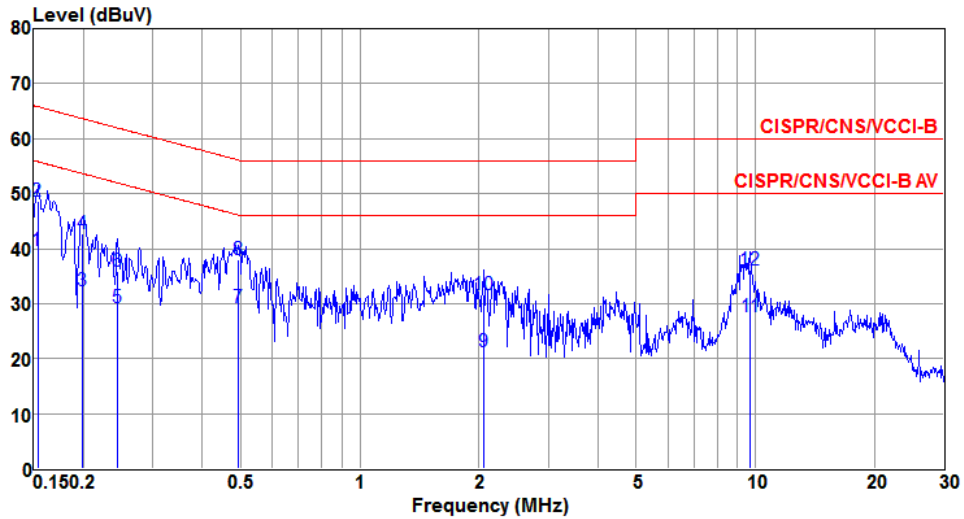
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Line		



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	0.150	37.04	56.00	-18.96	36.91	0.11	0.02	Average
2	0.150	47.09	66.00	-18.91	46.96	0.11	0.02	QP
3	0.189	34.56	54.06	-19.50	34.43	0.11	0.02	Average
4	0.189	46.39	64.06	-17.67	46.26	0.11	0.02	QP
5	0.273	28.62	51.03	-22.41	28.48	0.12	0.02	Average
6	0.273	40.01	61.03	-21.02	39.87	0.12	0.02	QP
7@	0.497	30.35	46.05	-15.70	30.18	0.13	0.04	Average
8	0.497	39.74	56.05	-16.31	39.57	0.13	0.04	QP
9	1.762	23.85	46.00	-22.15	23.62	0.15	0.08	Average
10	1.762	33.09	56.00	-22.91	32.86	0.15	0.08	QP
11	9.603	16.75	50.00	-33.25	16.35	0.24	0.16	Average
12	9.603	26.09	60.00	-33.91	25.69	0.24	0.16	QP

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

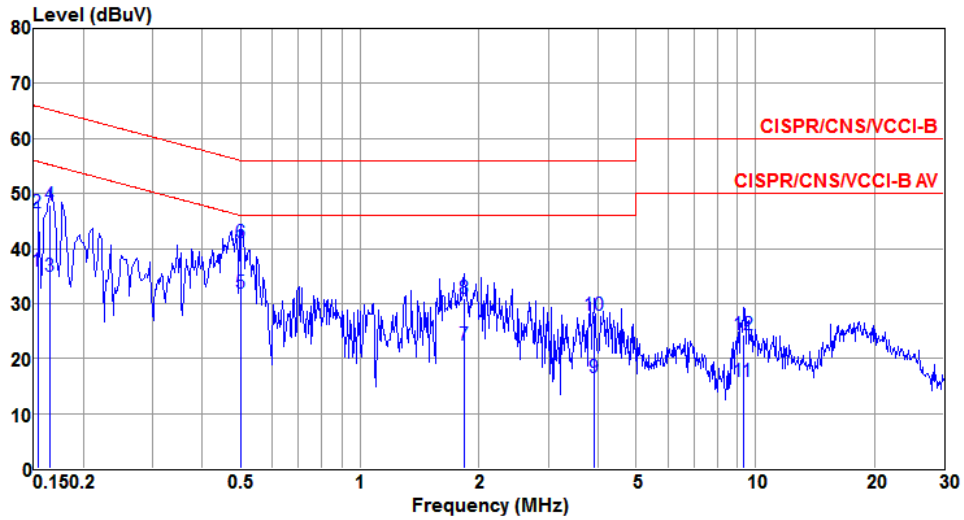
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Neutral		



	Freq	Level	Limit	Over	Read	LISN	cable	Remark
	MHz	dBuV	Line	Limit	Level	factor	loss	
			dBuV	dB	dBuV	dB	dB	
1@	0.153	39.70	55.82	-16.12	39.55	0.13	0.02	Average
2	0.153	48.57	65.82	-17.25	48.42	0.13	0.02	QP
3	0.199	32.43	53.67	-21.24	32.31	0.10	0.02	Average
4	0.199	42.76	63.67	-20.91	42.64	0.10	0.02	QP
5	0.244	29.38	51.95	-22.57	29.25	0.11	0.02	Average
6	0.244	35.79	61.95	-26.16	35.66	0.11	0.02	QP
7	0.494	29.17	46.10	-16.93	28.99	0.14	0.04	Average
8	0.494	38.00	56.10	-18.10	37.82	0.14	0.04	QP
9	2.055	21.22	46.00	-24.78	20.97	0.17	0.08	Average
10	2.055	31.65	56.00	-24.35	31.40	0.17	0.08	QP
11	9.705	27.66	50.00	-22.34	27.23	0.27	0.16	Average
12	9.705	36.07	60.00	-23.93	35.64	0.27	0.16	QP

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

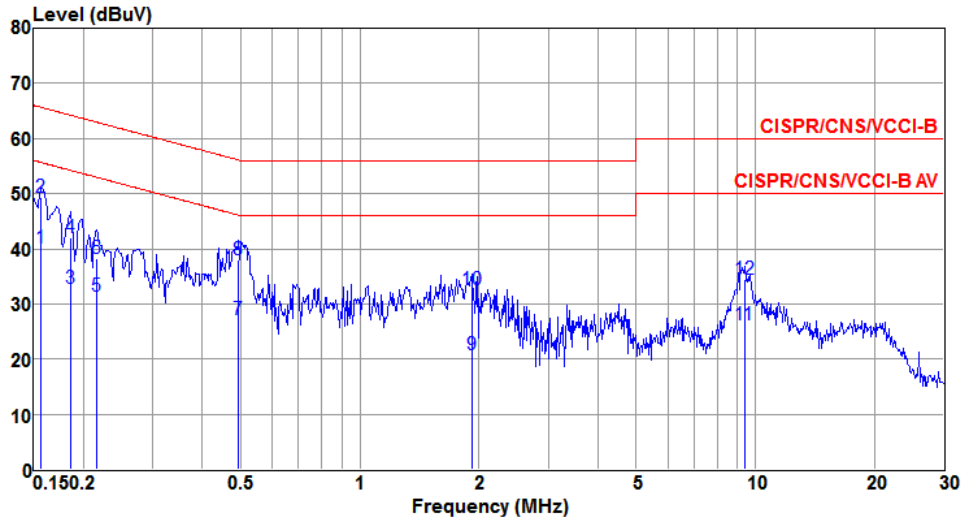
Modulation	VHT40	Test Freq. (MHz)	5795
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.153	35.95	55.82	-19.87	35.82	0.11	0.02	Average
2	0.153	46.59	65.82	-19.23	46.46	0.11	0.02	QP
3	0.165	34.99	55.21	-20.22	34.86	0.11	0.02	Average
4	0.165	47.90	65.21	-17.31	47.77	0.11	0.02	QP
5@	0.502	31.84	46.00	-14.16	31.67	0.13	0.04	Average
6	0.502	41.04	56.00	-14.96	40.87	0.13	0.04	QP
7	1.839	22.37	46.00	-23.63	22.13	0.16	0.08	Average
8	1.839	30.86	56.00	-25.14	30.62	0.16	0.08	QP
9	3.922	16.64	46.00	-29.36	16.33	0.19	0.12	Average
10	3.922	27.83	56.00	-28.17	27.52	0.19	0.12	QP
11	9.302	15.87	50.00	-34.13	15.47	0.24	0.16	Average
12	9.302	24.43	60.00	-35.57	24.03	0.24	0.16	QP

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

Modulation	VHT40	Test Freq. (MHz)	5795
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1@	0.156	40.06	55.65	-15.59	39.91	0.13	0.02	Average
2	0.156	49.31	65.65	-16.34	49.16	0.13	0.02	QP
3	0.186	32.73	54.20	-21.47	32.60	0.11	0.02	Average
4	0.186	42.08	64.20	-22.12	41.95	0.11	0.02	QP
5	0.216	31.34	52.96	-21.62	31.22	0.10	0.02	Average
6	0.216	38.34	62.96	-24.62	38.22	0.10	0.02	QP
7	0.494	27.10	46.10	-19.00	26.92	0.14	0.04	Average
8	0.494	38.02	56.10	-18.08	37.84	0.14	0.04	QP
9	1.918	20.72	46.00	-25.28	20.47	0.17	0.08	Average
10	1.918	32.53	56.00	-23.47	32.28	0.17	0.08	QP
11	9.401	26.09	50.00	-23.91	25.67	0.26	0.16	Average
12	9.401	34.48	60.00	-25.52	34.06	0.26	0.16	QP

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

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.

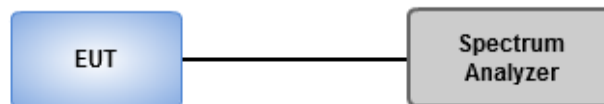
Occupied Bandwidth

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

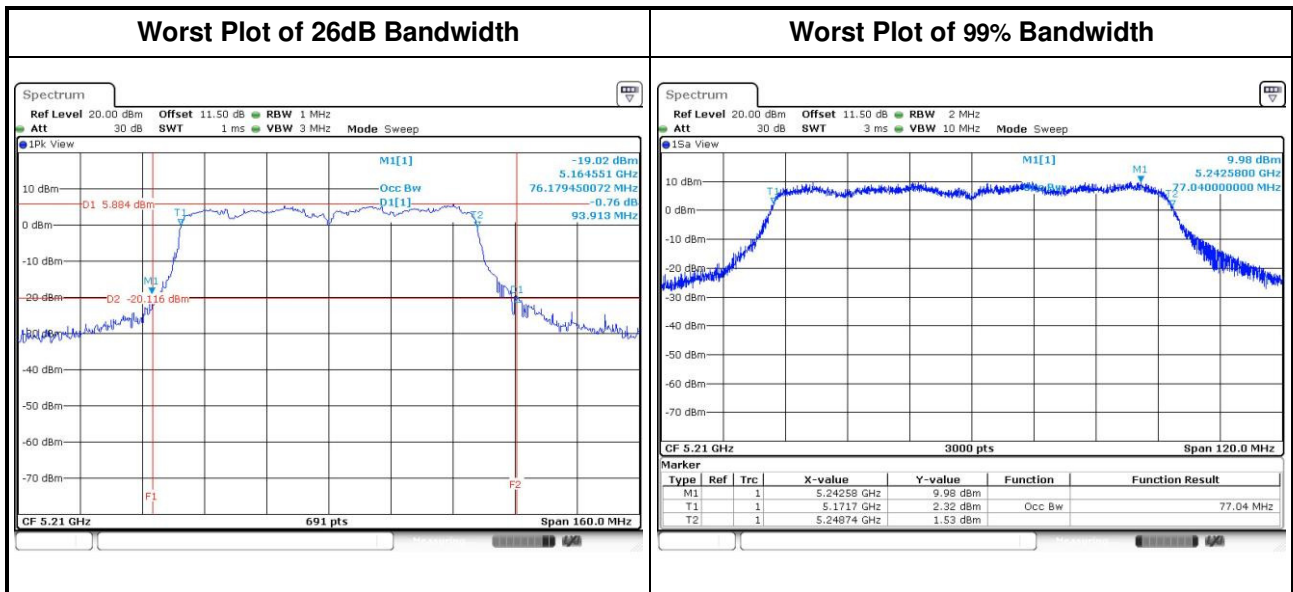
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak, Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB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

3.2.3 Test Setup

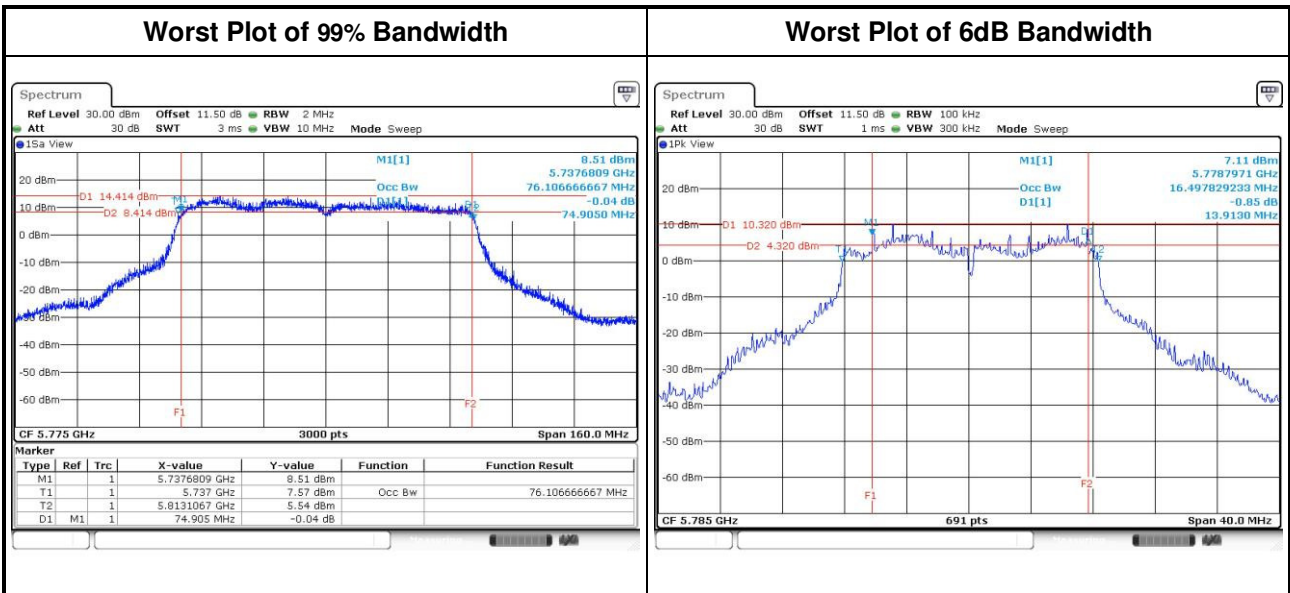


3.2.4 Test Result of Emission Bandwidth

For Frequency band 5150-5250 MHz										
Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	3	5180	25.28	23.94	24.12	---	17.10	17.06	16.88	---
11a	3	5200	28.46	29.33	23.71	---	17.23	17.22	17.18	---
11a	3	5240	28.58	26.38	23.54	---	17.07	17.28	17.09	---
VHT20	3	5180	28.29	27.83	25.86	---	18.23	17.89	18.53	---
VHT20	3	5200	26.78	29.16	26.20	---	18.28	18.70	17.91	---
VHT20	3	5240	27.48	29.62	27.19	---	18.14	17.89	18.46	---
VHT40	3	5190	49.04	45.91	45.10	---	37.24	36.60	37.44	---
VHT40	3	5230	56.93	53.45	55.88	---	38.16	38.10	38.40	---
VHT80	3	5210	93.91	89.74	88.35	---	77.04	76.64	76.20	---



For Frequency band 5725-5850 MHz											
Emission Bandwidth											
Mode	N _{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				6dB BW Limit (MHz)
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	3	5745	16.79	16.72	16.92	---	15.71	15.77	16.41	---	0.5
11a	3	5785	17.08	16.88	16.87	---	13.91	16.29	16.29	---	0.5
11a	3	5825	16.91	16.97	17.01	---	15.71	15.36	16.35	---	0.5
VHT20	3	5745	17.96	17.71	17.91	---	15.77	16.93	17.57	---	0.5
VHT20	3	5785	17.73	17.96	18.15	---	15.77	15.71	15.71	---	0.5
VHT20	3	5825	17.85	18.07	18.01	---	16.00	16.58	16.93	---	0.5
VHT40	3	5755	37.01	36.83	36.64	---	36.13	35.71	36.41	---	0.5
VHT40	3	5795	36.69	36.93	37.07	---	36.71	35.36	36.29	---	0.5
VHT80	3	5775	75.47	76.11	76.00	---	62.61	65.39	70.26	---	0.5



3.3 RF Output Power

3.3.1 Limit of RF Output Power

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

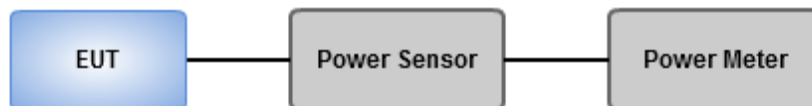
Frequency Band (MHz)	Limit
<input type="checkbox"/> 5250 ~ 5350	250mW or 11dBm+10 log B
<input type="checkbox"/> 5470 ~ 5725	250mW or 11dBm+10 log B
<input checked="" type="checkbox"/> 5725 ~ 5850	1 W

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

3.3.2 Test Procedures

- Method PM-G (Measurement using a gated RF average power meter)**
 - Measurements may 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.

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

For Frequency band 5150-5250 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	3	5180	21.33	20.68	21.15	---	383.098	25.83	30.00
11a	3	5200	22.26	22.3	22.55	---	517.979	27.14	30.00
11a	3	5240	22.71	22.65	22.43	---	545.700	27.37	30.00
HT20	3	5180	21.3	20.77	20.96	---	379.033	25.79	30.00
HT20	3	5200	22.28	22.08	22.15	---	494.539	26.94	30.00
HT20	3	5240	22.64	22.32	22.27	---	522.917	27.18	30.00
HT40	3	5190	17.01	17.44	16.3	---	148.355	21.71	30.00
HT40	3	5230	23.44	23.64	23.11	---	656.651	28.17	30.00
VHT20	3	5180	21.35	20.81	20.98	---	382.276	25.82	30.00
VHT20	3	5200	22.32	22.11	22.19	---	498.740	26.98	30.00
VHT20	3	5240	22.67	22.36	22.31	---	527.330	27.22	30.00
VHT40	3	5190	17.02	17.46	16.35	---	149.221	21.74	30.00
VHT40	3	5230	23.48	23.68	23.14	---	662.252	28.21	30.00
VHT80	3	5210	14.32	14.31	14.05	---	79.427	19.00	30.00

For Frequency band 5725-5850 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	3	5745	21.11	21.34	21.78	---	415.927	26.19	30.00
11a	3	5785	20.53	21.99	21.65	---	417.322	26.20	30.00
11a	3	5825	20.65	21.58	21.32	---	395.544	25.97	30.00
HT20	3	5745	20.45	21.26	21.64	---	390.458	25.92	30.00
HT20	3	5785	20.95	21.63	21.62	---	415.209	26.18	30.00
HT20	3	5825	20.54	21.52	21.14	---	385.163	25.86	30.00
HT40	3	5755	19.15	19.62	20.15	---	277.361	24.43	30.00
HT40	3	5795	21.14	21.69	21.53	---	419.820	26.23	30.00
VHT20	3	5745	20.58	21.35	21.79	---	401.754	26.04	30.00
VHT20	3	5785	21.09	21.77	21.71	---	427.095	26.31	30.00
VHT20	3	5825	20.69	21.68	21.22	---	396.885	25.99	30.00
VHT40	3	5755	19.28	19.71	20.21	---	283.218	24.52	30.00
VHT40	3	5795	21.25	21.83	21.62	---	430.969	26.34	30.00
VHT80	3	5775	18.14	18.35	18.80	---	209.412	23.21	30.00

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

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

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

3.4.2 Test Procedures

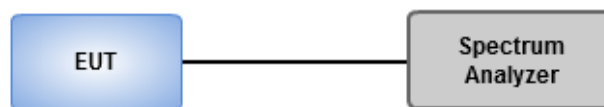
For 5150 ~ 5250 MHz

- Method SA-1 (for 11a / VHT20)
 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.
- Method SA-2 Alternative (for VHT40 / VHT80)
 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

- Method SA-1 (for 11a / VHT20)
 1. Set RBW = 500 kHz, VBW = 2 MHz, Sweep time = auto, Detector = RMS.
 2. Trace average 100 traces.
 3. Use the peak marker function to determine the maximum amplitude level.
- Method SA-2 Alternative (for VHT40 / VHT80)
 1. Set RBW = 500 kHz, VBW = 2 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.

3.4.3 Test Setup

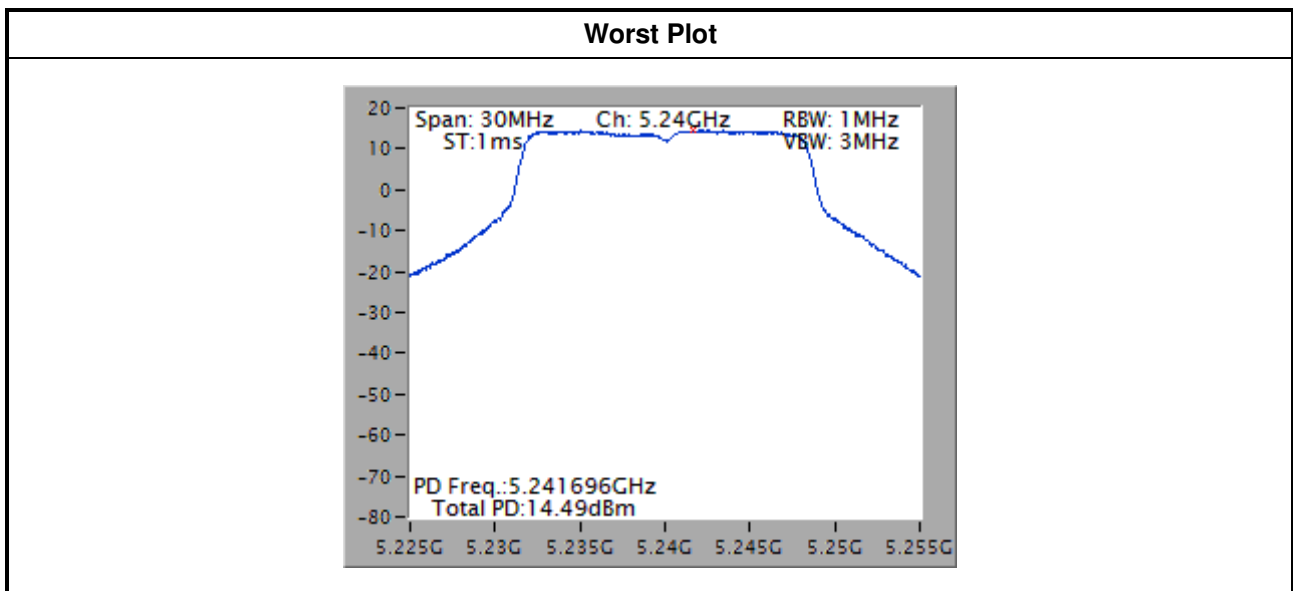


3.4.4 Test Result of Peak Power Spectral Density

For Frequency band 5150-5250 MHz						
Condition			Peak Power Spectral Density (dBm/MHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/MHz)	Duty Factor (dB)	PPSD with D.F (dBm/MHz)	PPSD Limit (dBm/MHz)
11a	3	5180	12.47	0.00	12.47	14.65
11a	3	5200	14.27	0.00	14.27	14.65
11a	3	5240	14.49	0.00	14.49	14.65
VHT20	3	5180	12.43	0.00	12.43	14.65
VHT20	3	5200	13.81	0.00	13.81	14.65
VHT20	3	5240	14.42	0.00	14.42	14.65
VHT40	3	5190	4.97	0.17	5.14	14.65
VHT40	3	5230	11.40	0.17	11.57	14.65
VHT80	3	5210	-0.90	0.41	-0.49	14.65

Note:

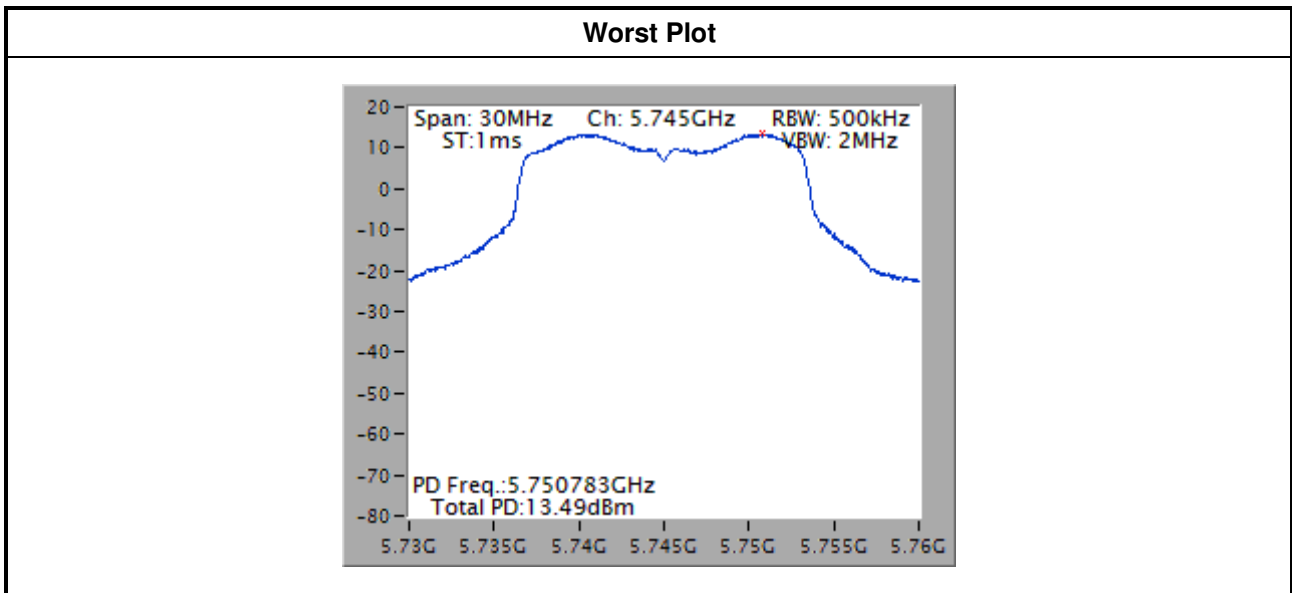
1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.
3. Directional gain = $10 * \log((10^{3.88/20} + 10^{2.62/20} + 10^{4.16/20})^2/3) = 8.35 \text{ dBi} > 6 \text{ dBi}$
Limit shall be reduced to $17 \text{ dBm} - (8.35 \text{ dBi} - 6 \text{ dBi}) = 14.65 \text{ dBm}$



For Frequency band 5725-5850 MHz						
Condition			Peak Power Spectral Density (dBm/500kHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
11a	3	5745	13.49	0.00	13.49	27.34
11a	3	5785	12.00	0.00	12.00	27.34
11a	3	5825	11.23	0.00	11.23	27.34
VHT20	3	5745	12.21	0.00	12.21	27.34
VHT20	3	5785	11.87	0.00	11.87	27.34
VHT20	3	5825	10.92	0.00	10.92	27.34
VHT40	3	5755	7.68	0.17	7.85	27.34
VHT40	3	5795	8.33	0.17	8.50	27.34
VHT80	3	5775	2.53	0.41	2.94	27.34

Note:

1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.
3. Directional gain = $10 * \log((10^{4.2/20} + 10^{4.02/20} + 10^{3.43/20})^2/3) = 8.66 \text{ dBi} > 6 \text{ dBi}$
Limit shall be reduced to $30 \text{ dBm} - (8.66 \text{ dBi} - 6 \text{ dBi}) = 27.34 \text{ dBm}$



3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

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

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

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.850 GHz	<input checked="" type="checkbox"/> 15.407(b)(4)(i) 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.
	<input type="checkbox"/> 15.407(b)(4)(ii) ,compliance with the emission limits in § 15.247(d) Shall be at least 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power,. Attenuation below the general limits specified in §15.209(a) is not required. In addition,radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see § 15.205(c))

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

3.5.2 Test Procedures

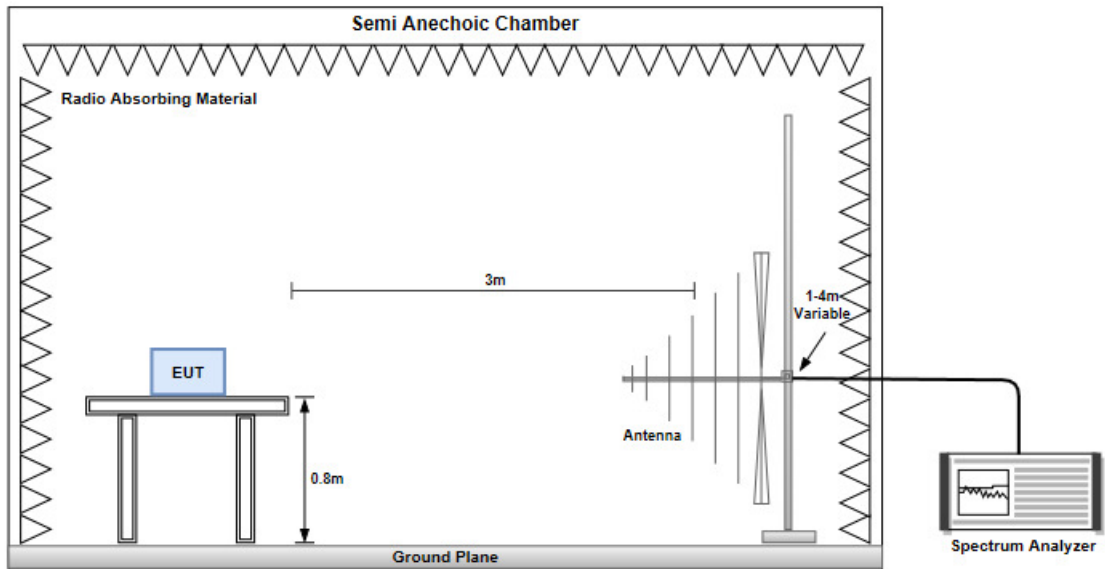
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

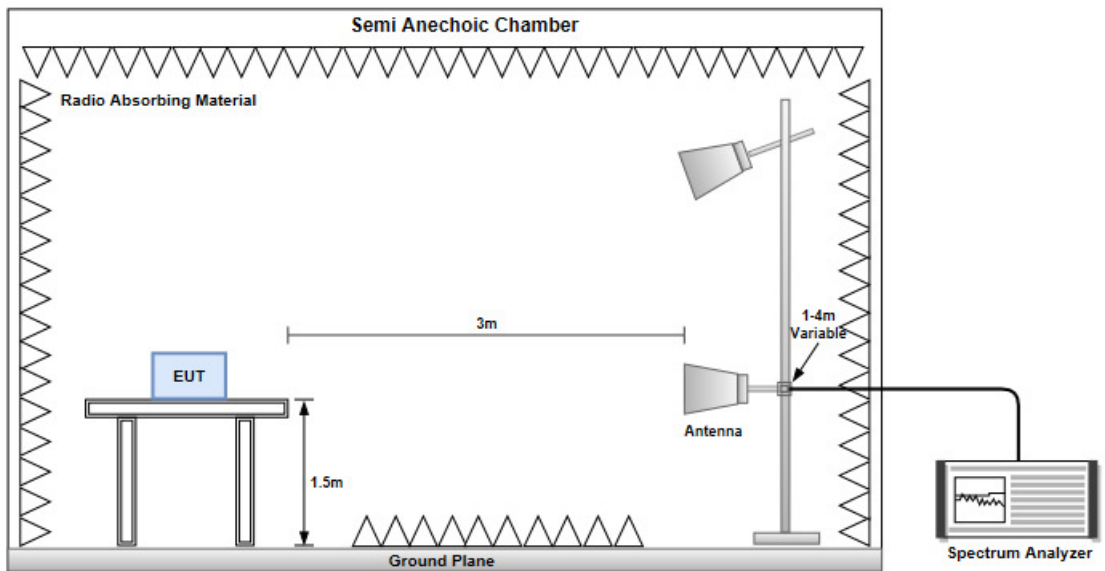
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

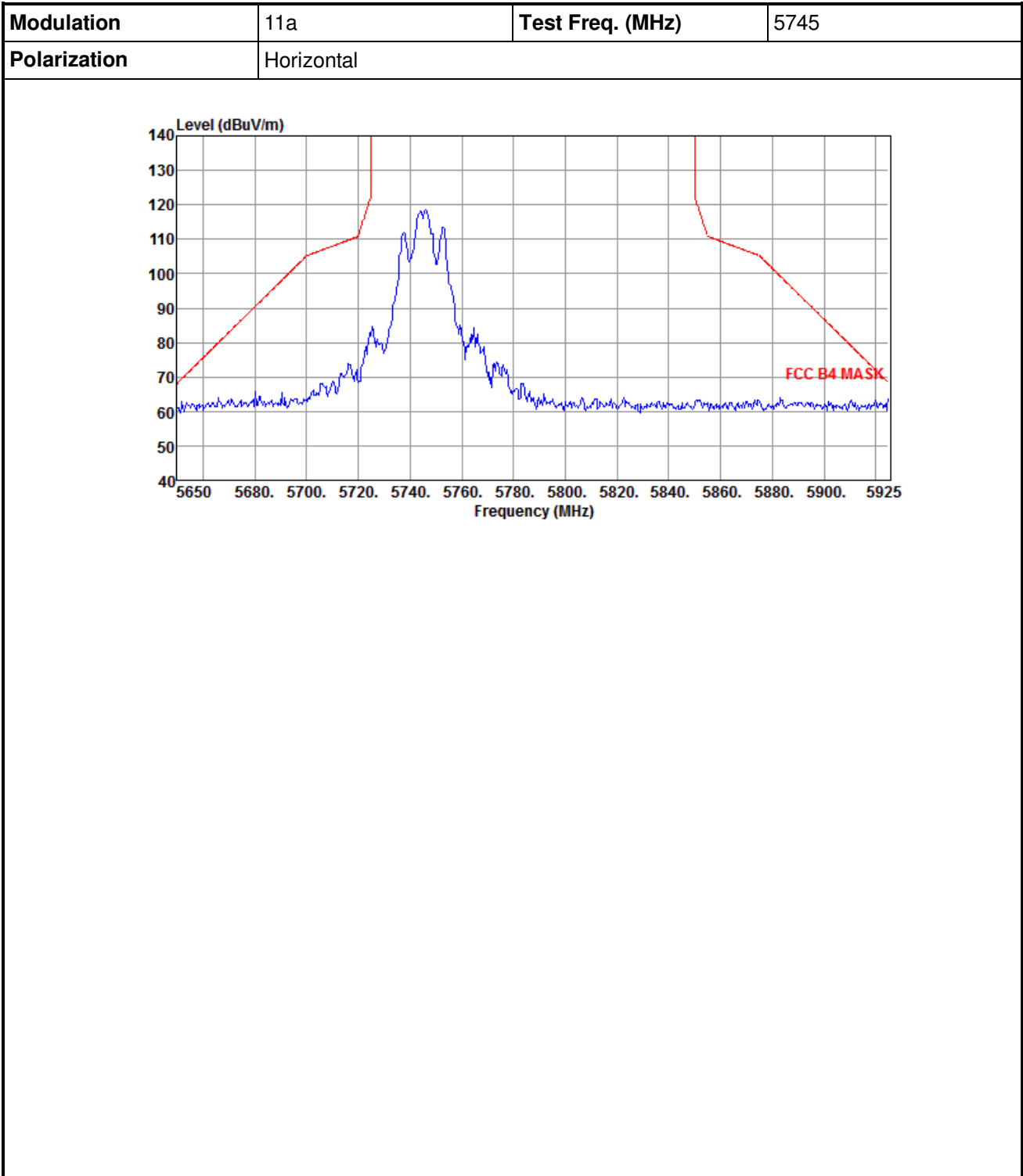
Radiated Emissions below 1 GHz



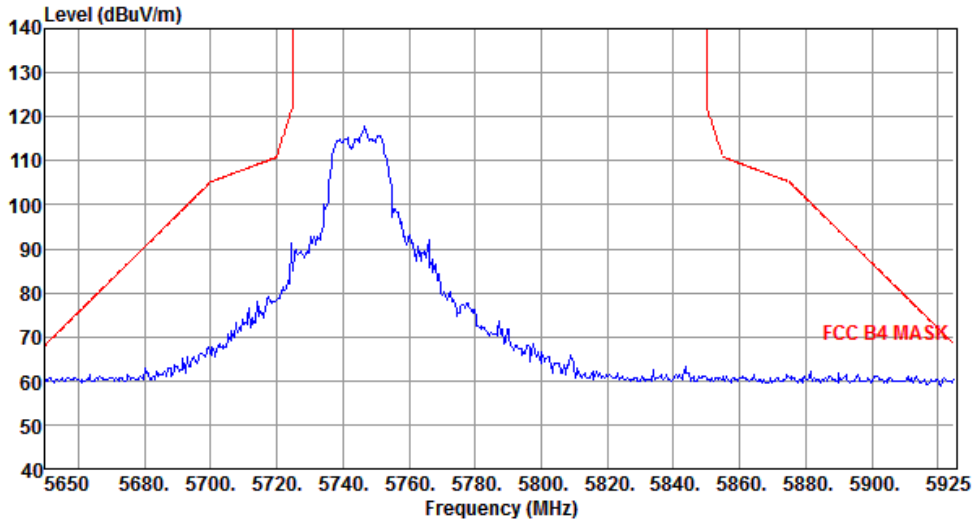
Radiated Emissions above 1 GHz



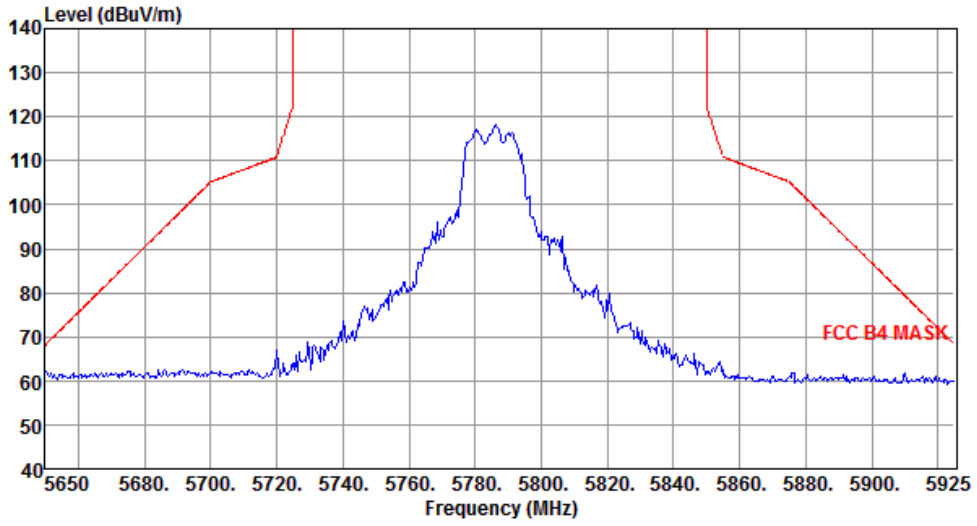
3.5.4 Transmitter Radiated Band Edge for 11a



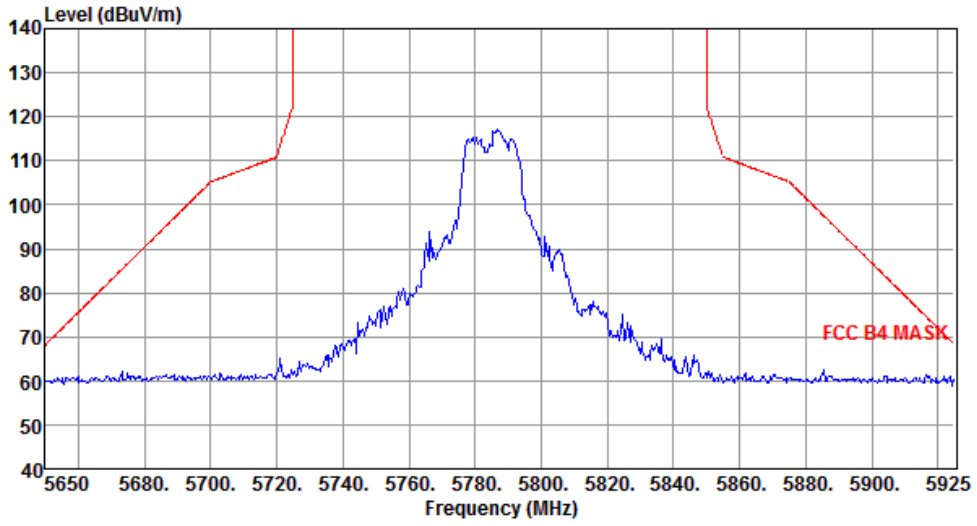
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



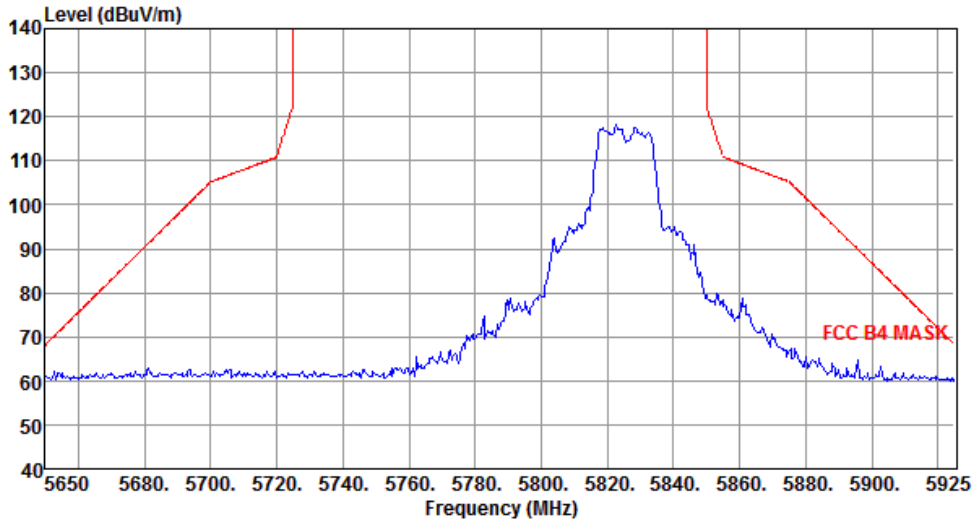
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



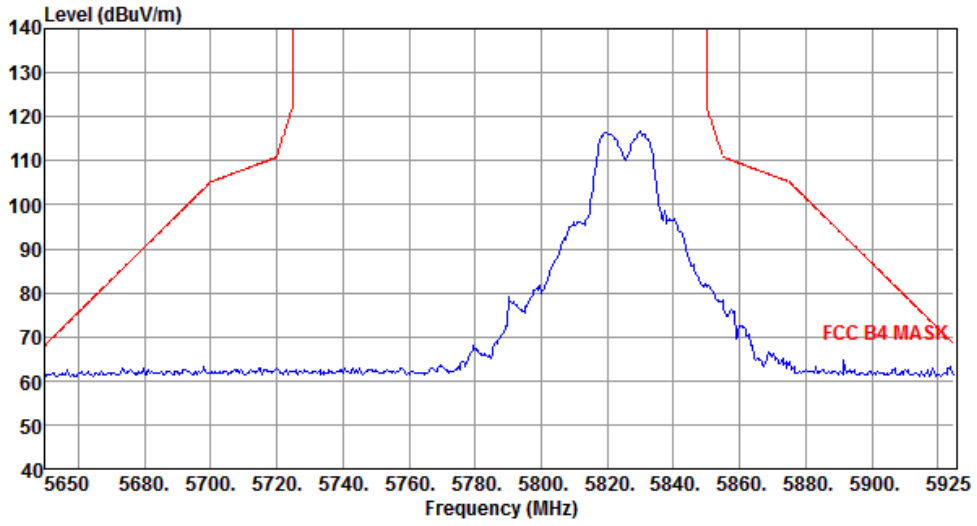
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



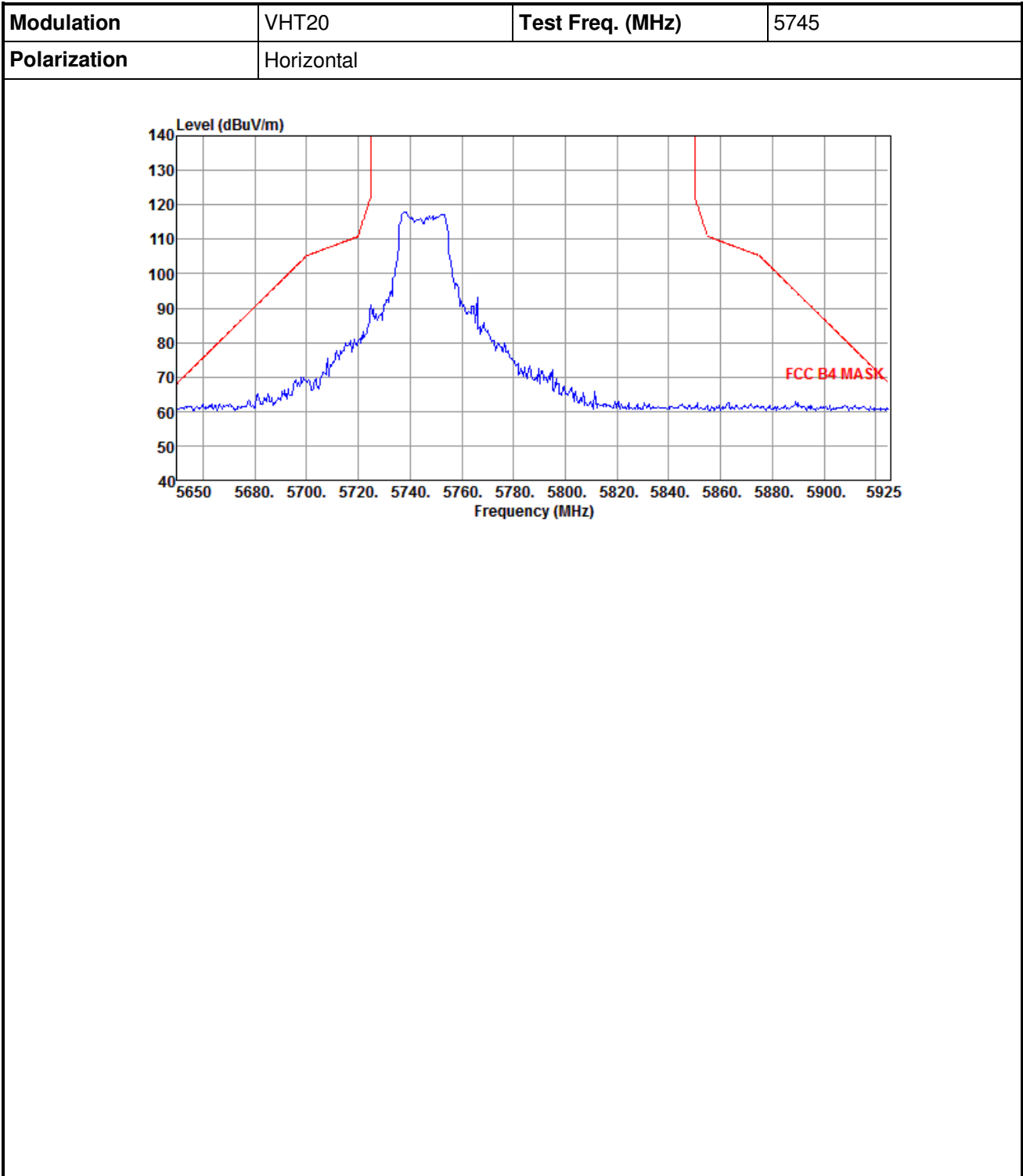
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



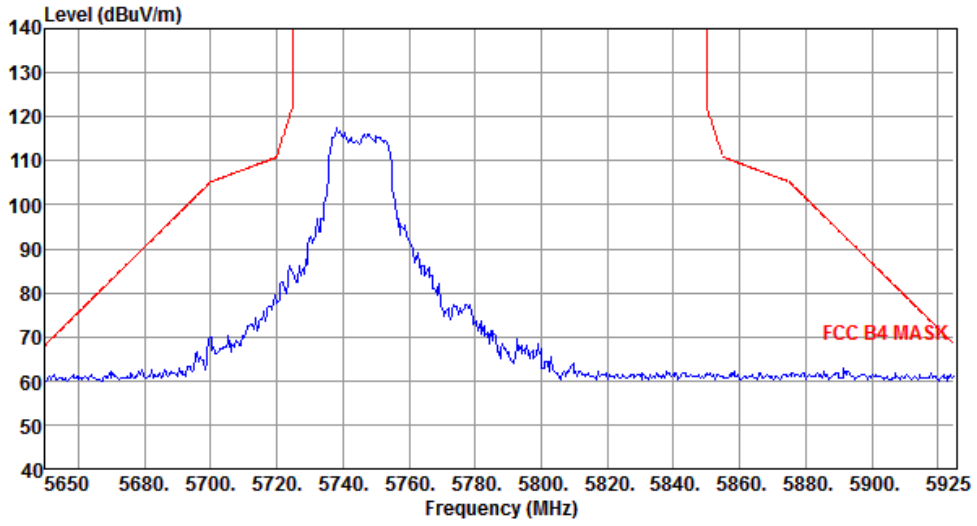
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Vertical		



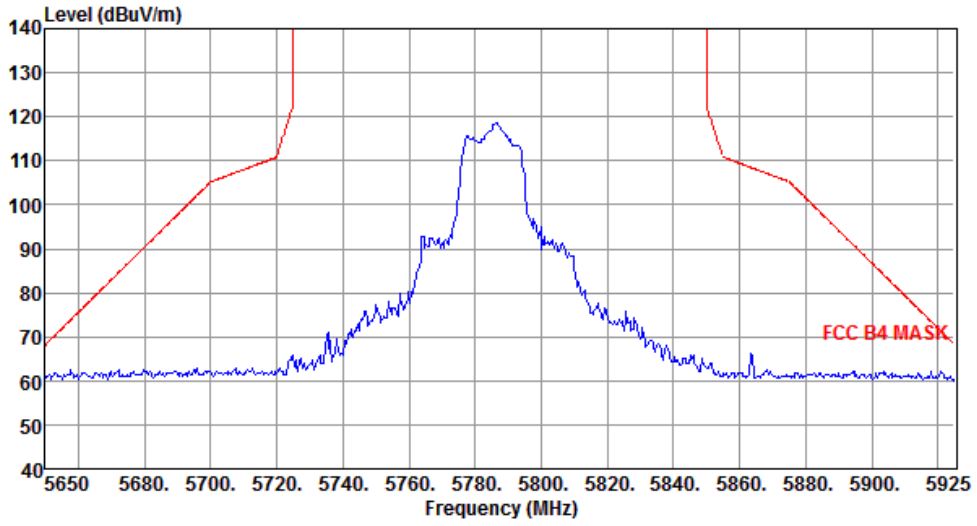
3.5.5 Transmitter Radiated Band Edge for VHT20



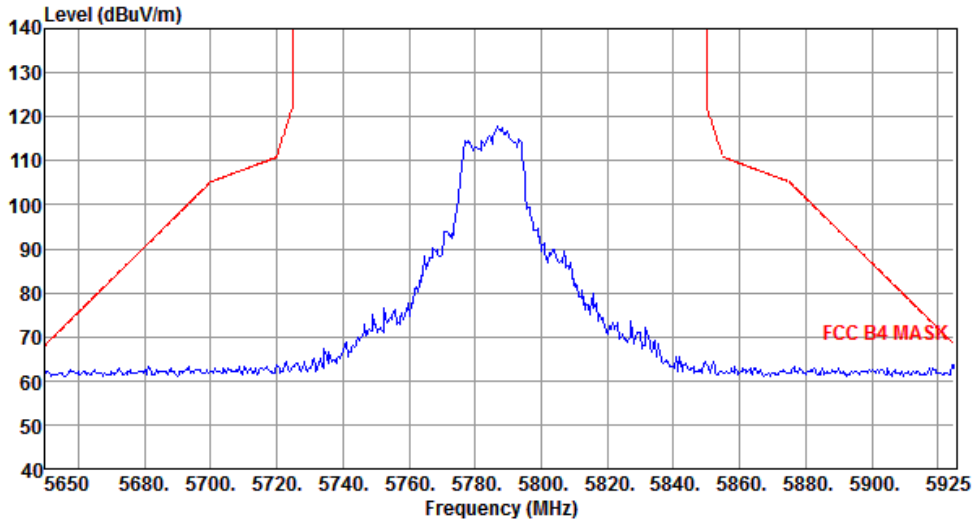
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



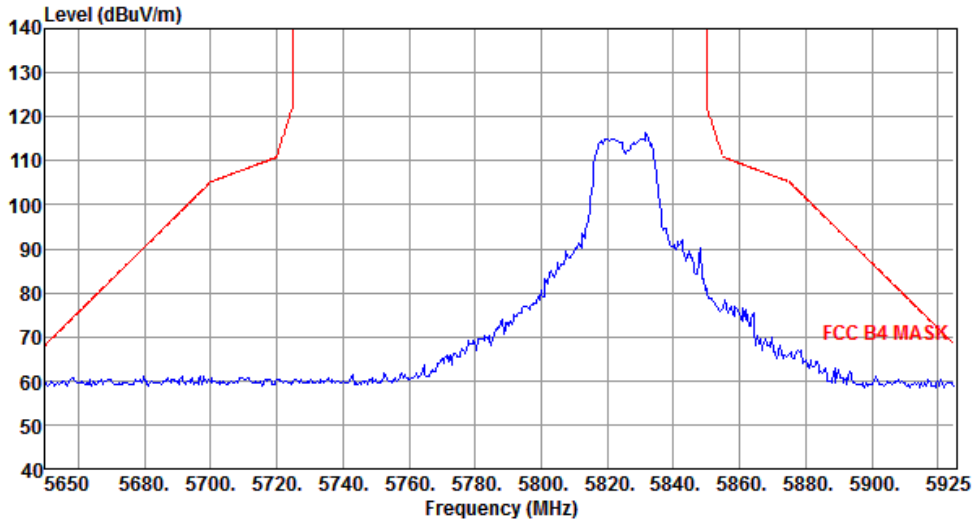
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



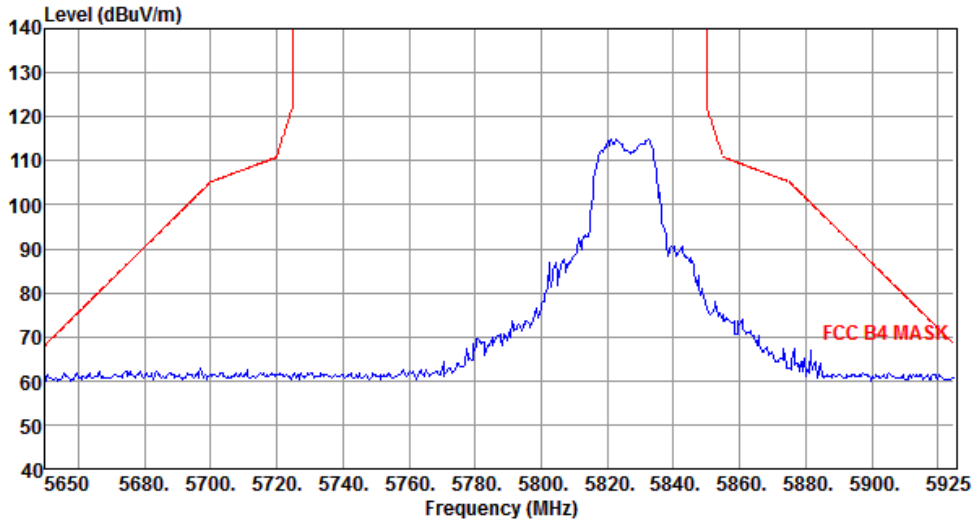
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



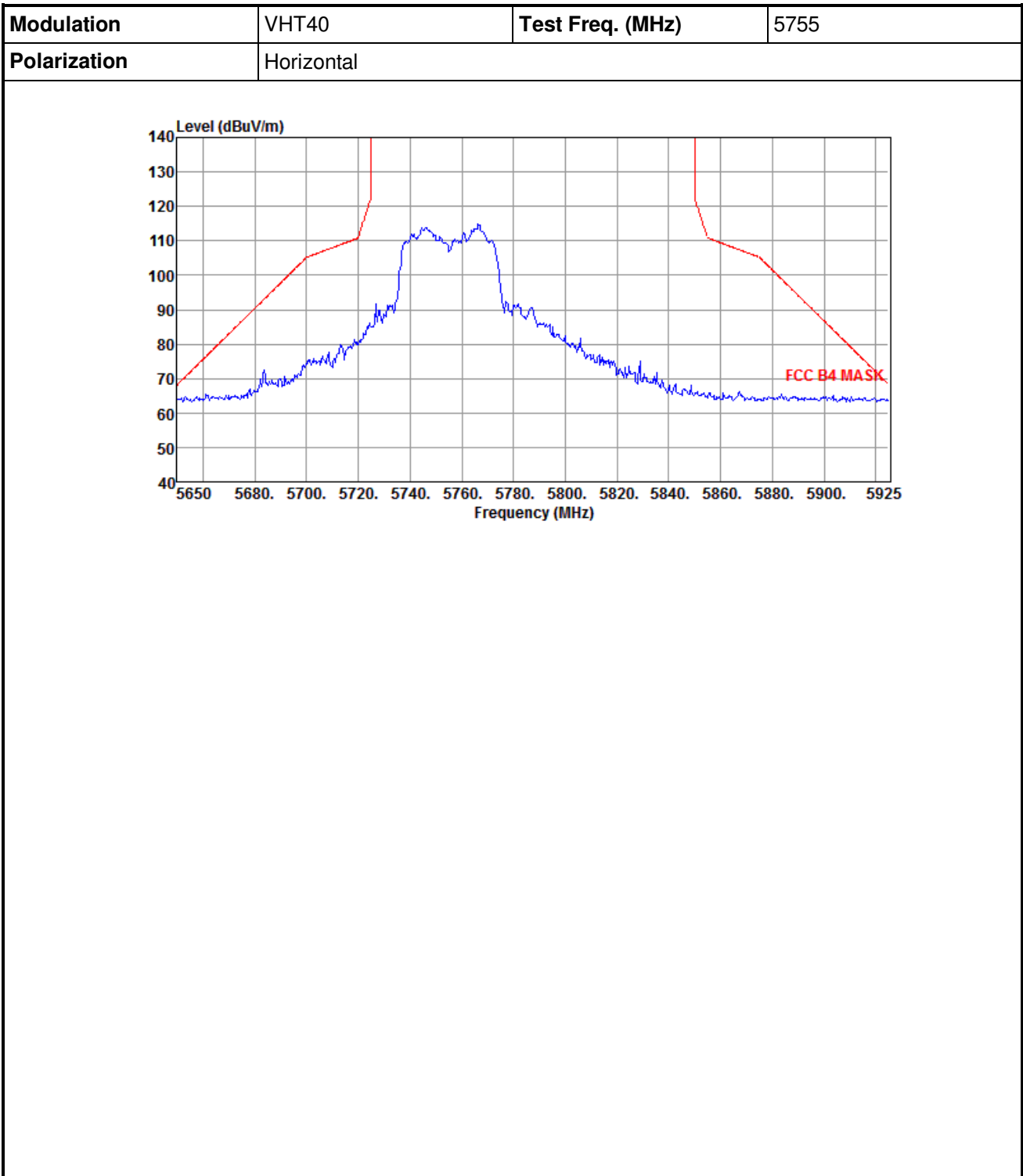
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



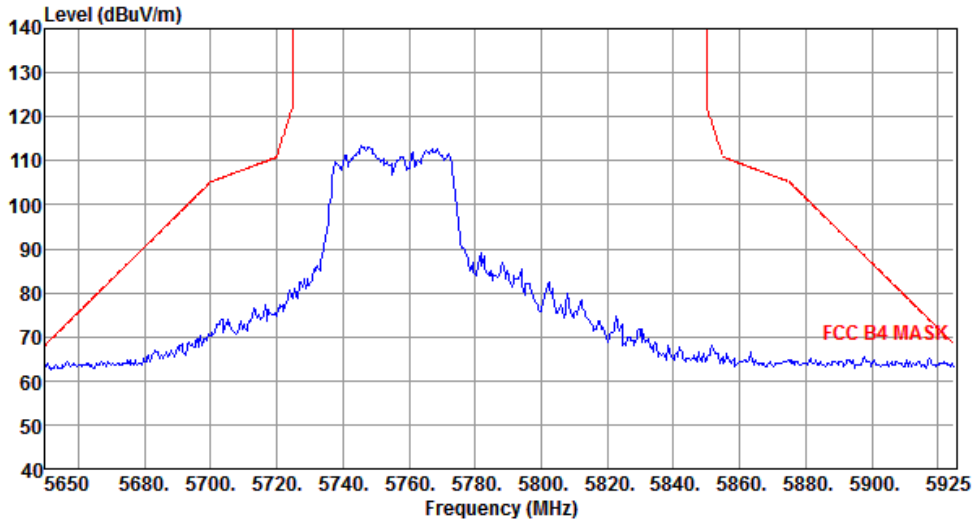
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		



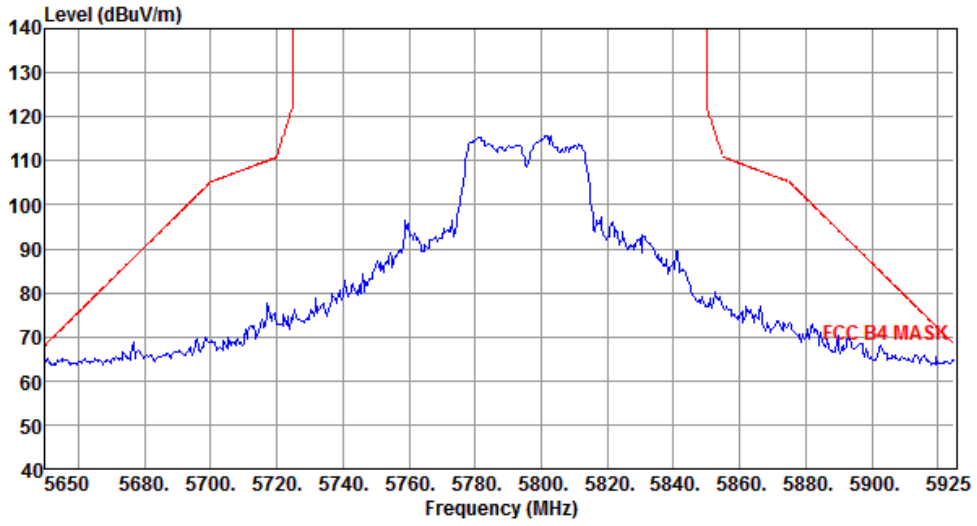
3.5.6 Transmitter Radiated Band Edge for VHT40



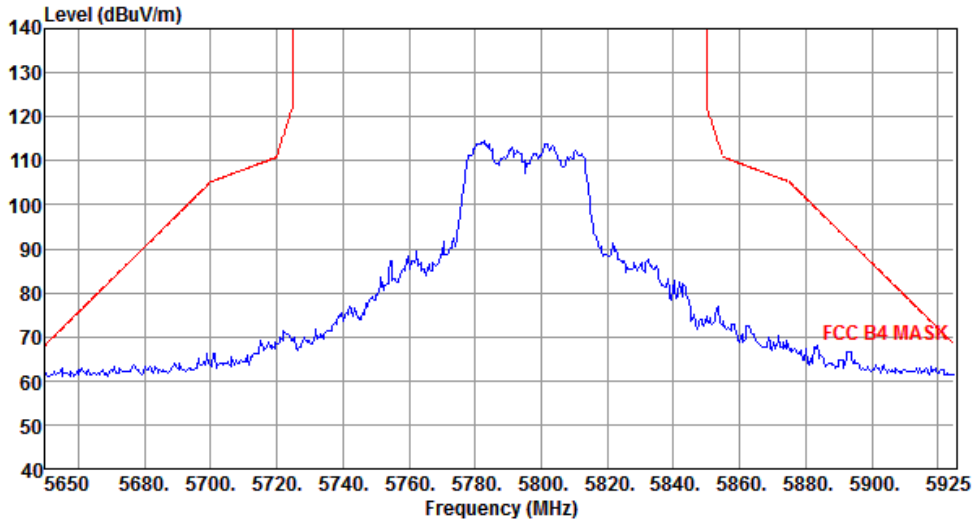
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		

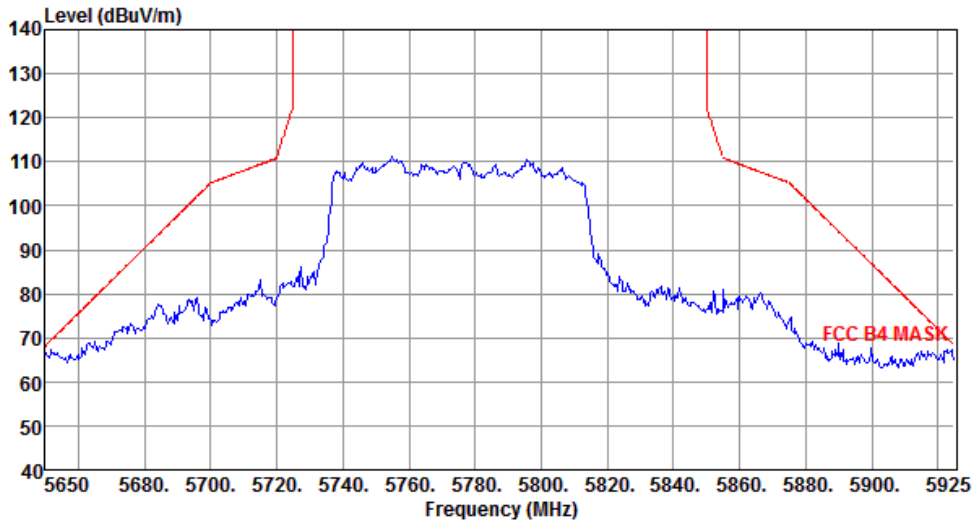


Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		

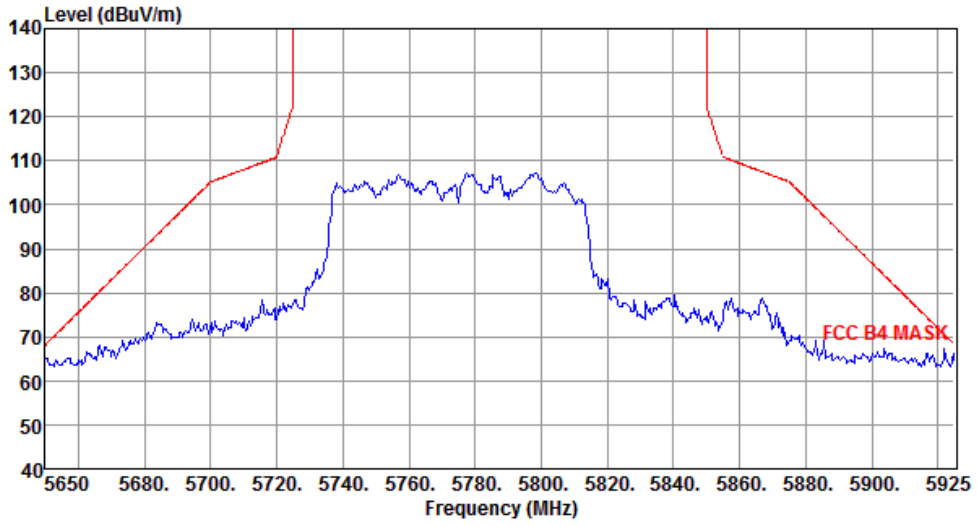


3.5.7 Transmitter Radiated Band Edge for VHT80

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		

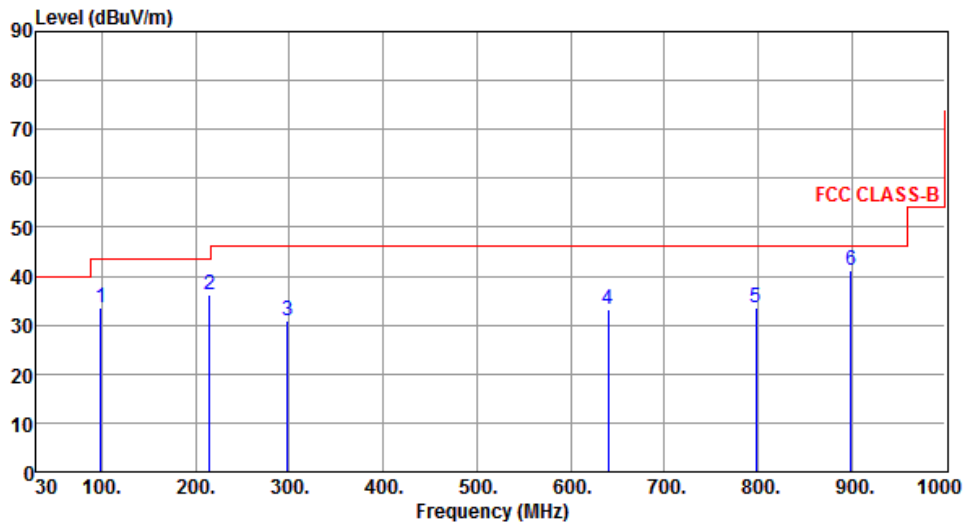


Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		



3.5.8 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	98.72	33.70	43.50	-9.80	50.53	-16.83	Peak	---	---
2	215.27	36.17	43.50	-7.33	50.52	-14.35	Peak	---	---
3	297.68	31.00	46.00	-15.00	42.16	-11.16	Peak	---	---
4	640.25	33.35	46.00	-12.65	37.46	-4.11	Peak	---	---
5	797.42	33.41	46.00	-12.59	35.32	-1.91	Peak	---	---
6	899.53	41.23	46.00	-4.77	41.82	-0.59	Peak	---	---

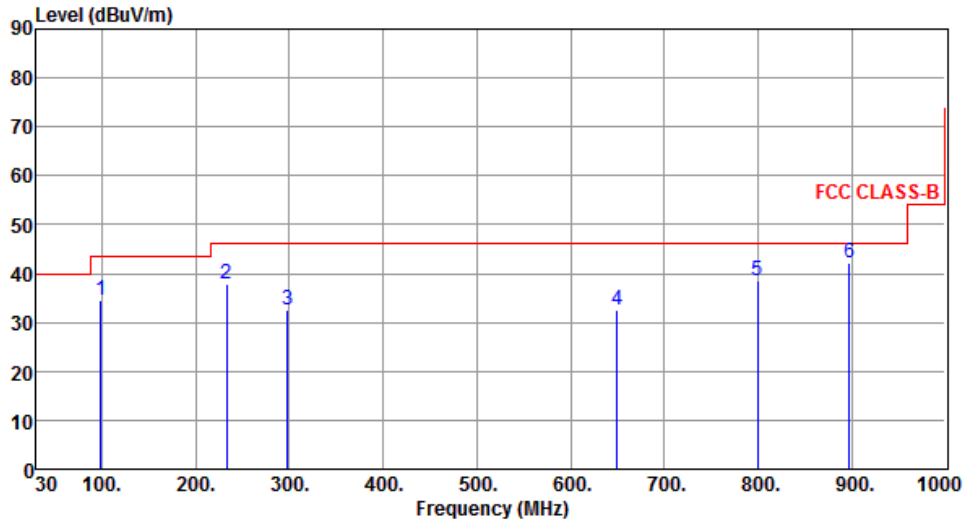
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	98.52	34.39	43.50	-9.11	51.25	-16.86	Peak	---	---
2	233.21	37.99	46.00	-8.01	51.56	-13.57	Peak	---	---
3	297.82	32.66	46.00	-13.34	43.81	-11.15	Peak	---	---
4	649.93	32.56	46.00	-13.44	36.55	-3.99	Peak	---	---
5	799.82	38.65	46.00	-7.35	40.54	-1.89	Peak	---	---
6	897.54	42.07	46.00	-3.93	42.68	-0.61	Peak	---	---

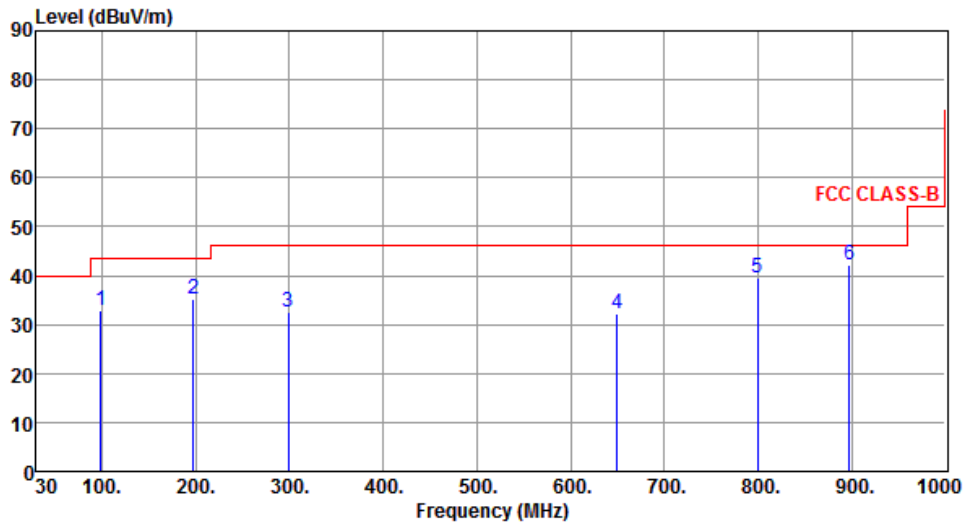
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor, cable loss and amplifier gain

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

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

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	98.52	32.82	43.50	-10.68	49.68	-16.86	Peak	---	---
2	197.36	35.34	43.50	-8.16	49.93	-14.59	Peak	---	---
3	298.83	32.54	46.00	-13.46	43.67	-11.13	Peak	---	---
4	649.80	32.26	46.00	-13.74	36.25	-3.99	Peak	---	---
5	799.48	39.47	46.00	-6.53	41.36	-1.89	Peak	---	---
6	897.26	42.03	46.00	-3.97	42.64	-0.61	Peak	---	---

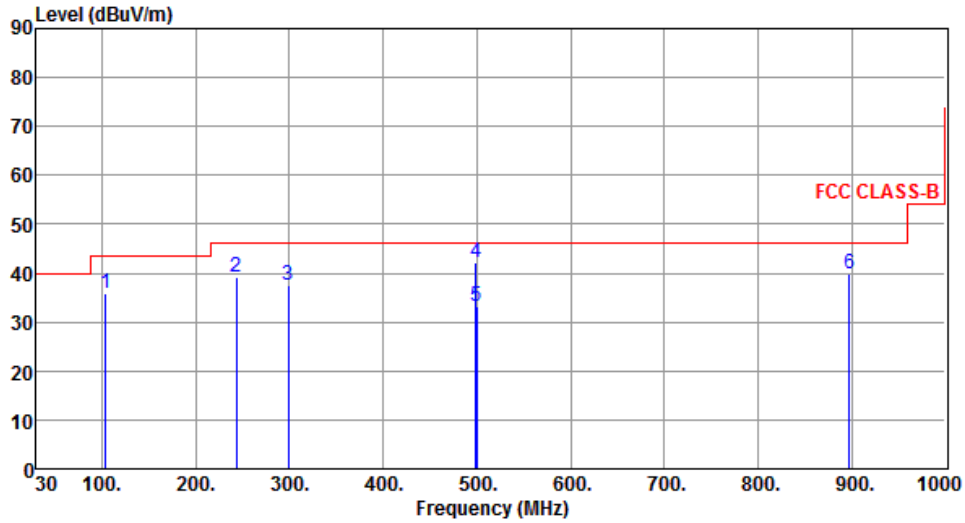
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor, cable loss and amplifier gain

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

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

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	104.28	35.71	43.50	-7.79	51.66	-15.95	Peak	---	---
2	243.62	39.29	46.00	-6.71	52.22	-12.93	Peak	---	---
3	298.72	37.54	46.00	-8.46	48.68	-11.14	Peak	---	---
4	498.62	42.12	46.00	-3.88	48.65	-6.53	Peak	---	---
5	499.83	33.17	46.00	-12.83	39.68	-6.51	Peak	---	---
6	897.52	40.02	46.00	-5.98	40.63	-0.61	Peak	---	---

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

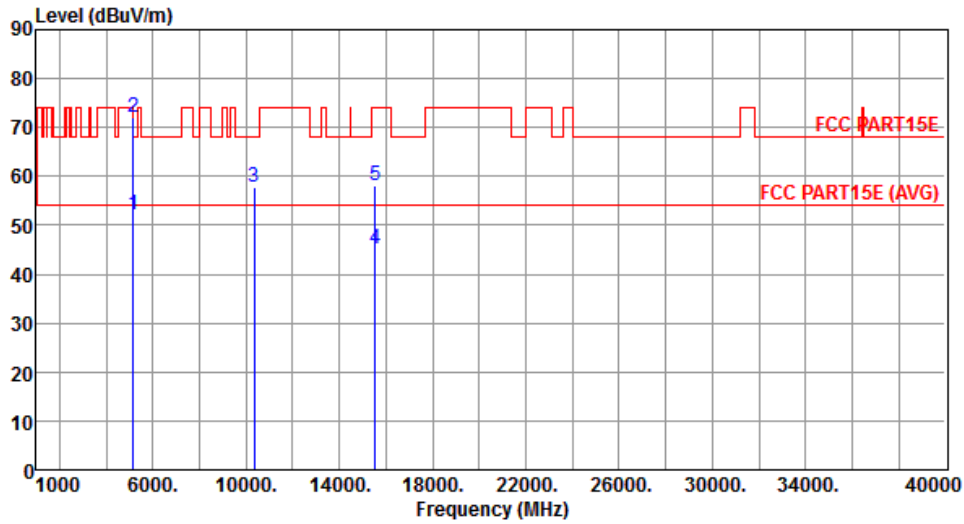
*Factor includes antenna factor , cable loss and amplifier gain

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

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

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

Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



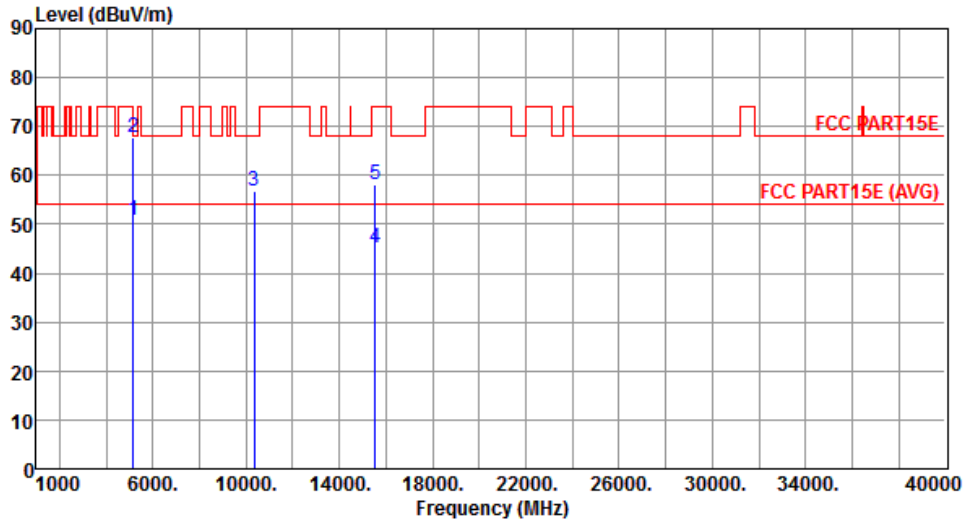
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.27	54.00	-1.73	47.37	4.90	Average	104	76
2	5150.00	72.06	74.00	-1.94	67.16	4.90	Peak	104	76
3	10360.00	57.77	68.20	-10.43	44.10	13.67	Peak	198	91
4	15540.00	45.06	54.00	-8.94	29.34	15.72	Average	159	342
5	15540.00	58.20	74.00	-15.80	42.48	15.72	Peak	159	342

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



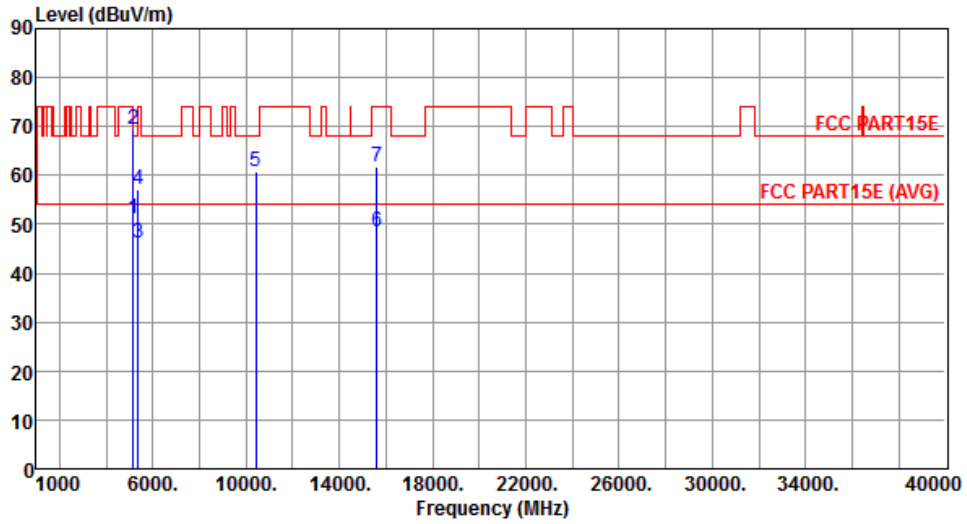
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	50.97	54.00	-3.03	46.07	4.90	Average	108	40
2	5150.00	67.81	74.00	-6.19	62.91	4.90	Peak	108	40
3	10360.00	56.91	68.20	-11.29	43.24	13.67	Peak	315	307
4	15540.00	45.03	54.00	-8.97	29.31	15.72	Average	182	85
5	15540.00	57.96	74.00	-16.04	42.24	15.72	Peak	182	85

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



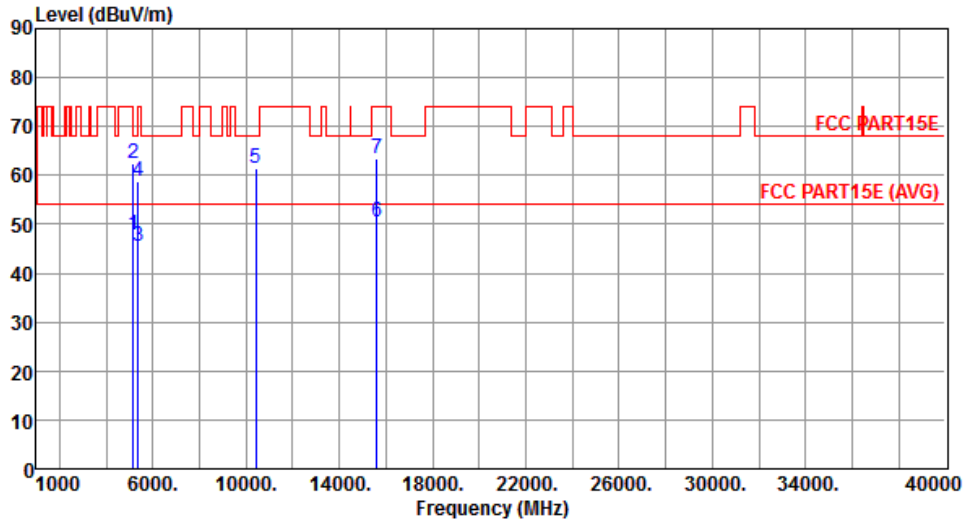
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	51.11	54.00	-2.89	46.21	4.90	Average	248	289
2	5150.00	69.42	74.00	-4.58	64.52	4.90	Peak	248	289
3	5350.00	46.28	54.00	-7.72	41.15	5.13	Average	296	262
4	5350.00	57.24	74.00	-16.76	52.11	5.13	Peak	296	262
5	10400.00	60.85	68.20	-7.35	47.10	13.75	Peak	263	305
6	15600.00	48.59	54.00	-5.41	32.98	15.61	Average	294	302
7	15600.00	61.76	74.00	-12.24	46.15	15.61	Peak	294	302

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

*Factor includes antenna factor , cable loss and amplifier gain

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

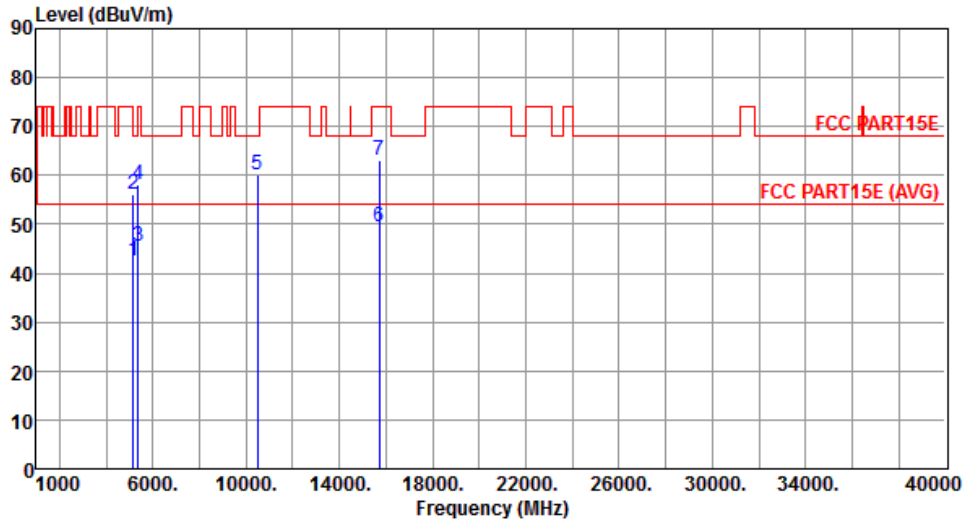
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.95	54.00	-6.05	43.05	4.90	Average	315	243
2	5150.00	62.32	74.00	-11.68	57.42	4.90	Peak	315	243
3	5350.00	45.35	54.00	-8.65	40.22	5.13	Average	315	243
4	5350.00	58.68	74.00	-15.32	53.55	5.13	Peak	315	243
5	10400.00	61.47	68.20	-6.73	47.72	13.75	Peak	199	94
6	15600.00	50.56	54.00	-3.44	34.95	15.61	Average	211	96
7	15600.00	63.34	74.00	-10.66	47.73	15.61	Peak	211	96

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

Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



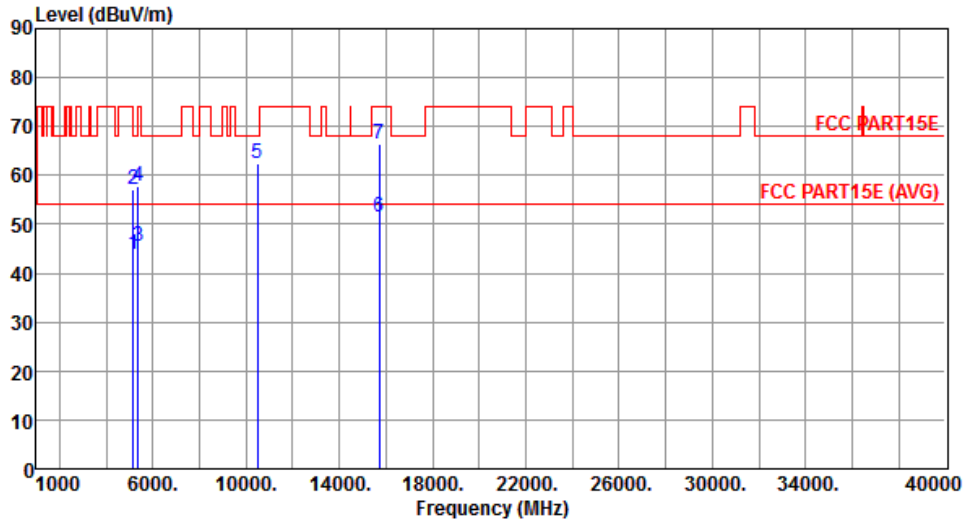
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	42.44	54.00	-11.56	37.54	4.90	Average	246	56
2	5150.00	56.25	74.00	-17.75	51.35	4.90	Peak	246	56
3	5350.00	45.45	54.00	-8.55	40.32	5.13	Average	246	56
4	5350.00	57.96	74.00	-16.04	52.83	5.13	Peak	246	56
5	10480.00	59.99	68.20	-8.21	46.09	13.90	Peak	293	134
6	15720.00	49.64	54.00	-4.36	34.25	15.39	Average	296	102
7	15720.00	63.24	74.00	-10.76	47.85	15.39	Peak	296	102

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

*Factor includes antenna factor , cable loss and amplifier gain

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

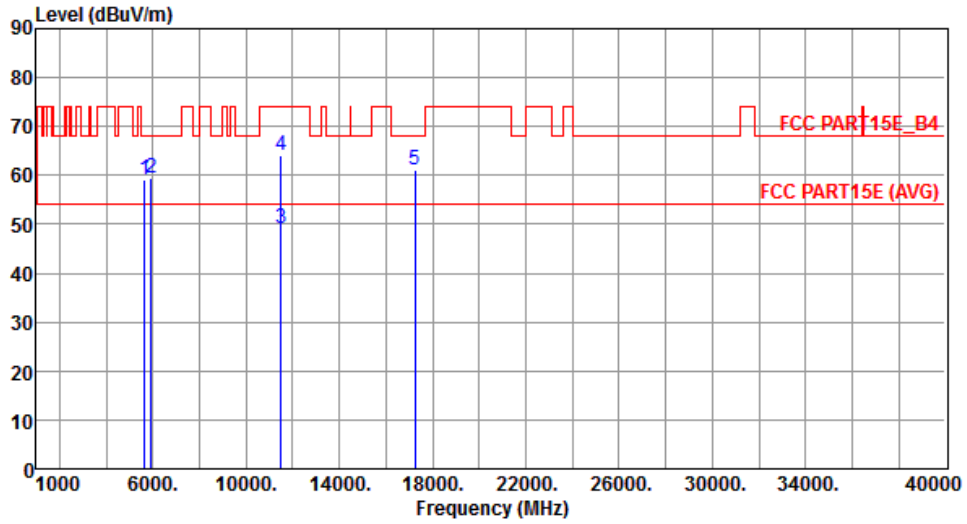
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	43.92	54.00	-10.08	39.02	4.90	Average	104	34
2	5150.00	57.02	74.00	-16.98	52.12	4.90	Peak	104	34
3	5350.00	45.39	54.00	-8.61	40.26	5.13	Average	104	34
4	5350.00	57.70	74.00	-16.30	52.57	5.13	Peak	104	34
5	10480.00	62.51	68.20	-5.69	48.61	13.90	Peak	187	92
6	15720.00	51.49	54.00	-2.51	36.10	15.39	Average	202	91
7	15720.00	66.54	74.00	-7.46	51.15	15.39	Peak	202	91

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

Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



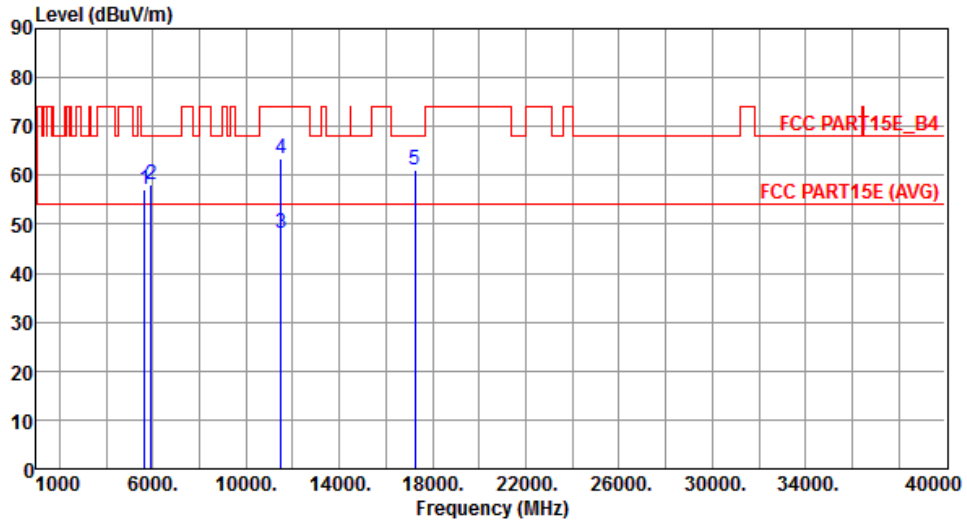
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.96	68.20	-9.24	53.41	5.55	Peak	207	180
2	5925.00	59.61	68.20	-8.59	53.52	6.09	Peak	207	180
3	11490.00	49.06	54.00	-4.94	34.44	14.62	Average	100	148
4	11490.00	64.12	74.00	-9.88	49.50	14.62	Peak	100	148
5	17235.00	61.07	68.20	-7.13	40.43	20.64	Peak	115	76

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



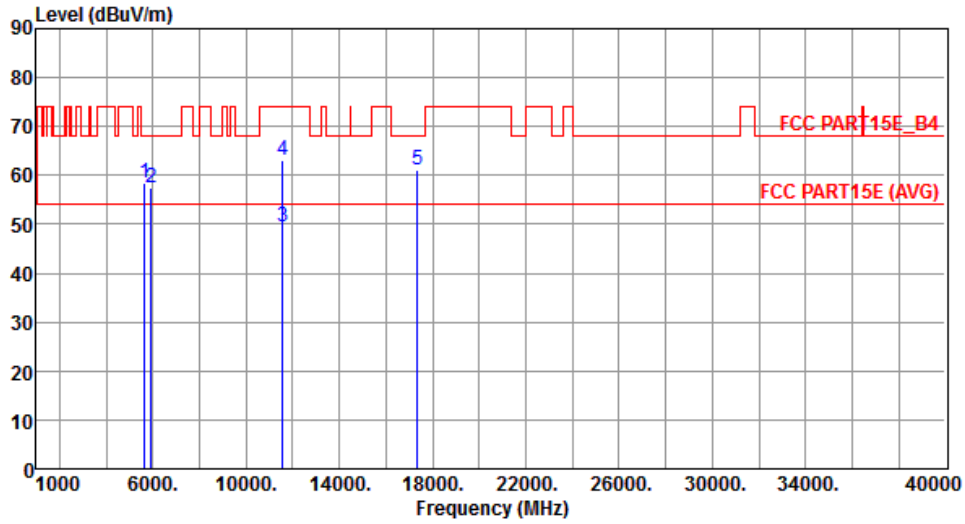
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	57.19	68.20	-11.01	51.64	5.55	Peak	100	107
2	5925.00	57.96	68.20	-10.24	51.87	6.09	Peak	100	107
3	11490.00	48.05	54.00	-5.95	33.43	14.62	Average	100	102
4	11490.00	63.38	74.00	-10.62	48.76	14.62	Peak	100	102
5	17235.00	61.01	68.20	-7.19	40.37	20.64	Peak	143	88

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

*Factor includes antenna factor , cable loss and amplifier gain

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

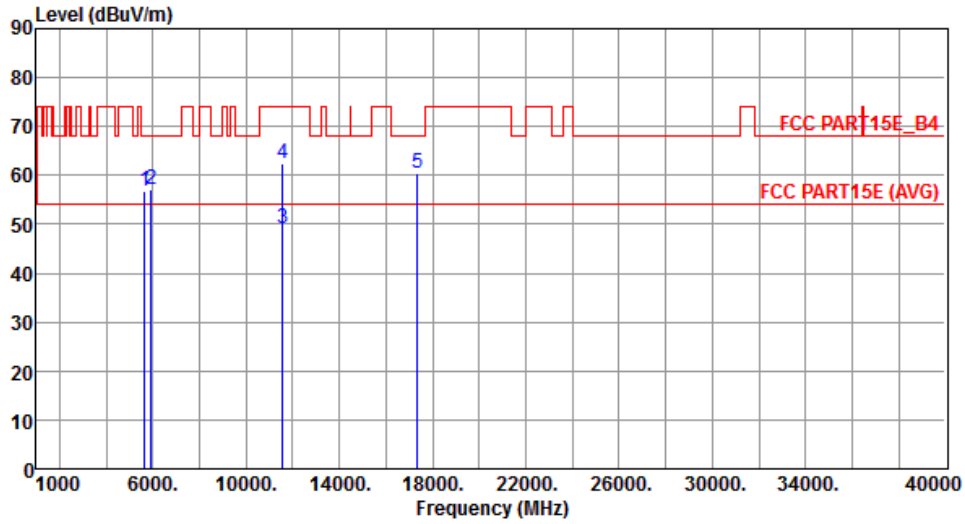
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.32	68.20	-9.88	52.77	5.55	Peak	100	212
2	5925.00	57.31	68.20	-10.89	51.22	6.09	Peak	100	212
3	11570.00	49.46	54.00	-4.54	34.94	14.52	Average	100	240
4	11570.00	63.00	74.00	-11.00	48.48	14.52	Peak	100	240
5	17355.00	60.98	68.20	-7.22	39.69	21.29	Peak	129	204

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

Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



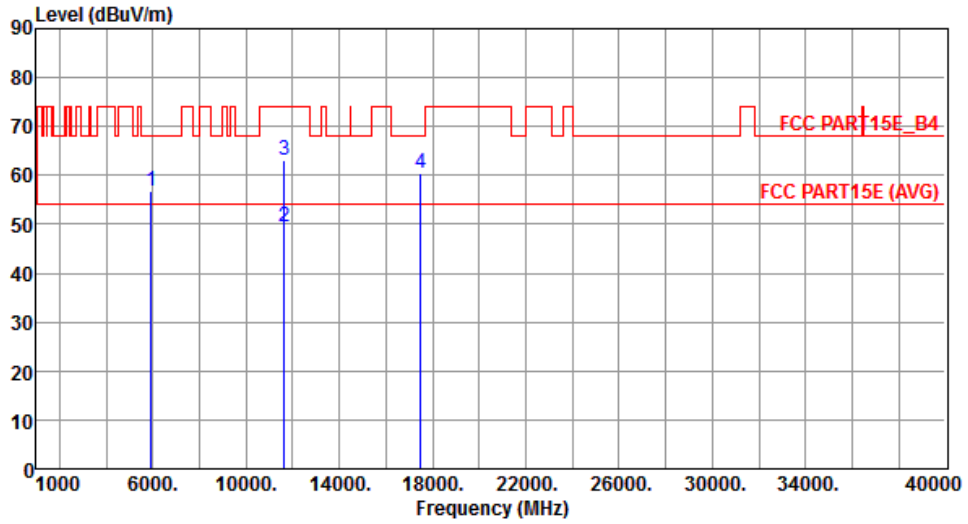
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	56.70	68.20	-11.50	51.15	5.55	Peak	100	62
2	5925.00	57.19	68.20	-11.01	51.10	6.09	Peak	100	62
3	11570.00	49.22	54.00	-4.78	34.70	14.52	Average	100	110
4	11570.00	62.34	74.00	-11.66	47.82	14.52	Peak	100	110
5	17355.00	60.49	68.20	-7.71	39.20	21.29	Peak	134	55

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



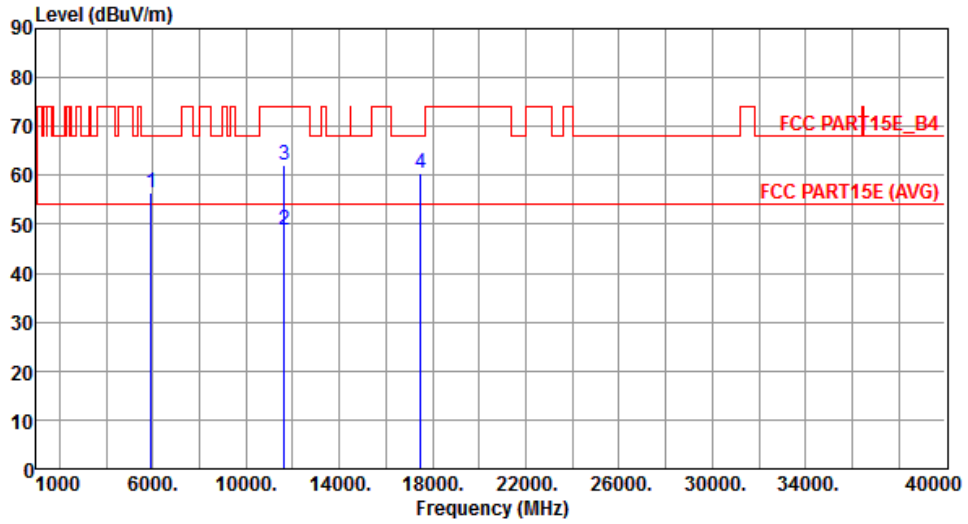
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5925.00	56.78	68.20	-11.42	50.69	6.09	Peak	100	213
2	11650.00	49.63	54.00	-4.37	35.23	14.40	Average	100	243
3	11650.00	63.05	74.00	-10.95	48.65	14.40	Peak	100	243
4	17475.00	60.54	68.20	-7.66	38.60	21.94	Peak	130	45

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5825
Polarization	Vertical		



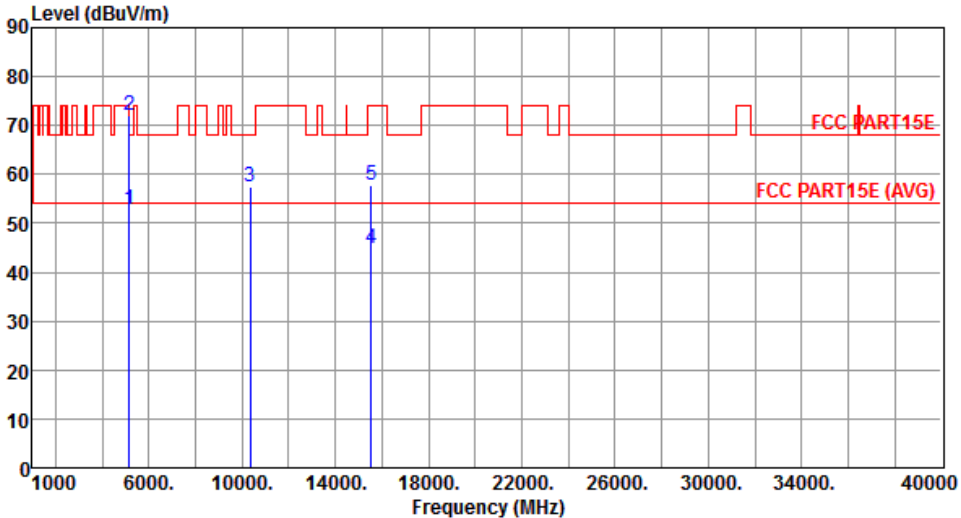
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5925.00	56.44	68.20	-11.76	50.35	6.09	Peak	100	43
2	11650.00	48.87	54.00	-5.13	34.47	14.40	Average	100	185
3	11650.00	61.99	74.00	-12.01	47.59	14.40	Peak	100	185
4	17475.00	60.32	68.20	-7.88	38.38	21.94	Peak	100	137

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

*Factor includes antenna factor , cable loss and amplifier gain

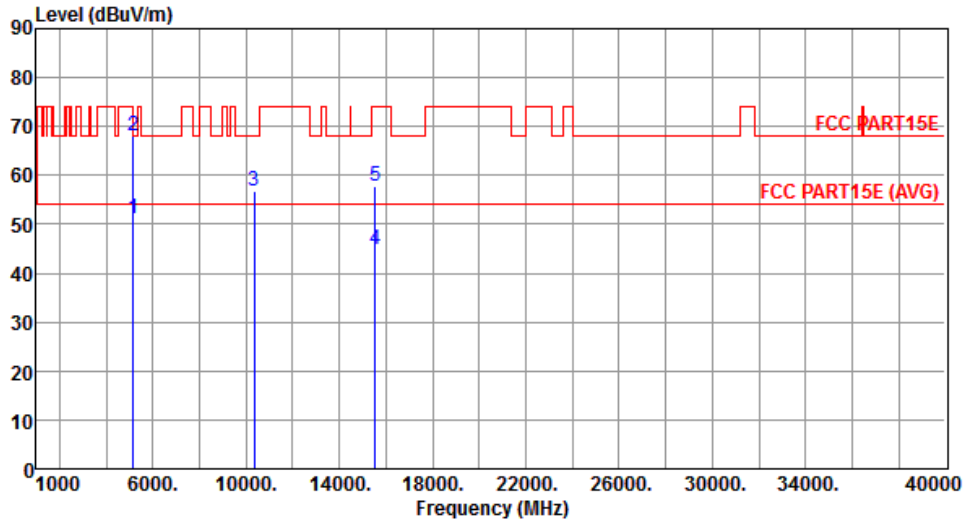
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.10 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT20

Modulation	VHT20	Test Freq. (MHz)	5180						
Polarization	Horizontal								
									
Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	
1	5150.00	52.89	54.00	-1.11	47.99	4.90	Average	242	242
2	5150.00	72.00	74.00	-2.00	67.10	4.90	Peak	242	242
3	10360.00	57.42	68.20	-10.78	43.75	13.67	Peak	183	98
4	15540.00	44.72	54.00	-9.28	29.00	15.72	Average	152	349
5	15540.00	57.73	74.00	-16.27	42.01	15.72	Peak	152	349

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

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



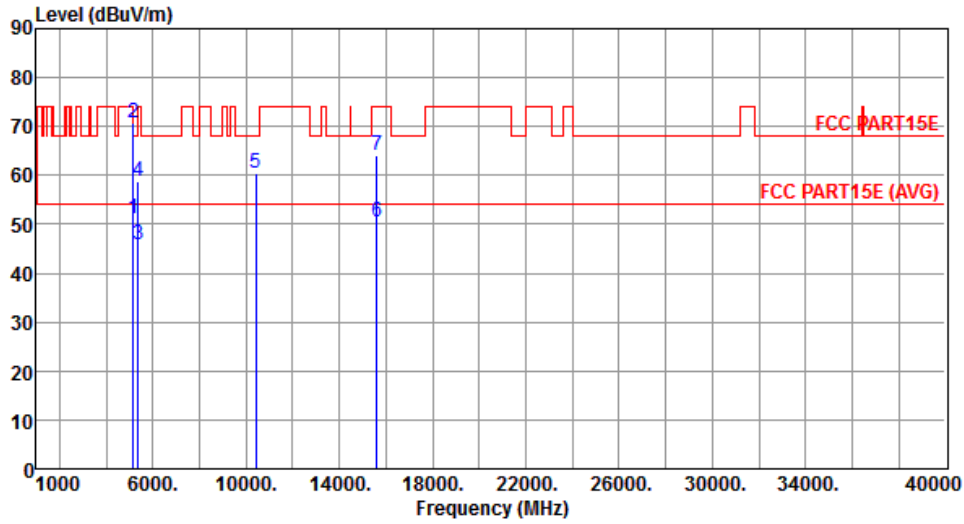
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	51.30	54.00	-2.70	46.40	4.90	Average	105	48
2	5150.00	68.24	74.00	-5.76	63.34	4.90	Peak	105	48
3	10360.00	56.65	68.20	-11.55	42.98	13.67	Peak	311	302
4	15540.00	44.72	54.00	-9.28	29.00	15.72	Average	172	75
5	15540.00	57.63	74.00	-16.37	41.91	15.72	Peak	172	75

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



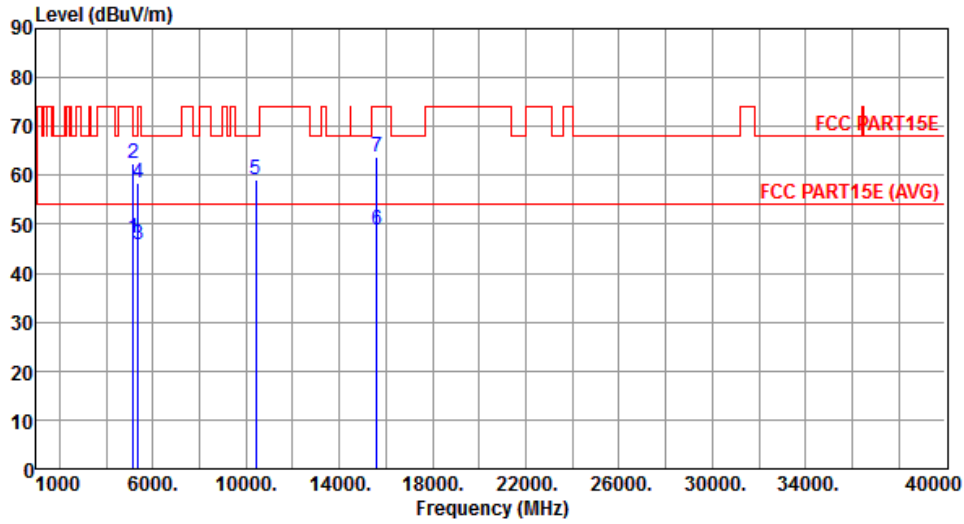
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	51.01	54.00	-2.99	46.11	4.90	Average	260	276
2	5150.00	70.88	74.00	-3.12	65.98	4.90	Peak	260	276
3	5350.00	45.96	54.00	-8.04	40.83	5.13	Average	260	276
4	5350.00	58.84	74.00	-15.16	53.71	5.13	Peak	260	276
5	10400.00	60.39	68.20	-7.81	46.64	13.75	Peak	131	96
6	15600.00	50.60	54.00	-3.40	34.99	15.61	Average	215	11
7	15600.00	64.23	74.00	-9.77	48.62	15.61	Peak	215	11

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



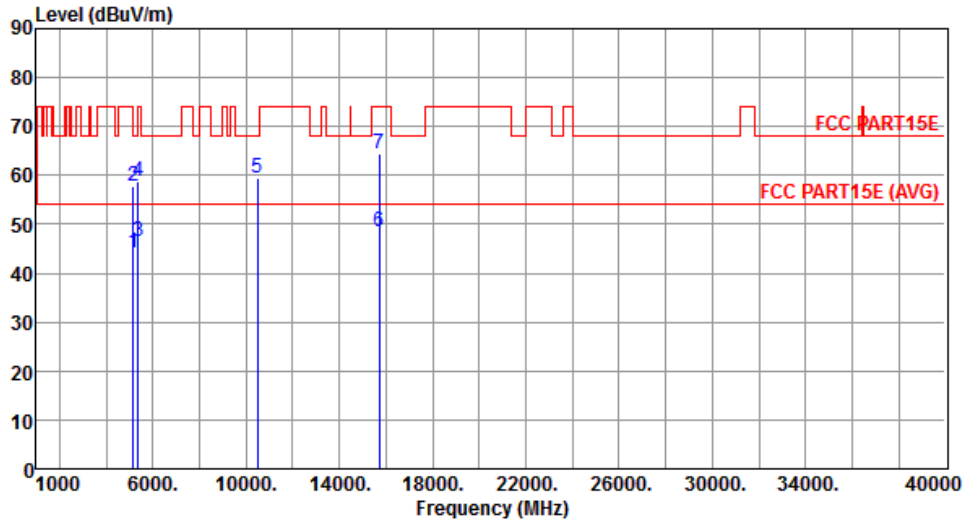
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.00	54.00	-7.00	42.10	4.90	Average	110	63
2	5150.00	62.43	74.00	-11.57	57.53	4.90	Peak	110	63
3	5350.00	45.68	54.00	-8.32	40.55	5.13	Average	100	36
4	5350.00	58.49	74.00	-15.51	53.36	5.13	Peak	100	36
5	10400.00	59.17	68.20	-9.03	45.42	13.75	Peak	249	301
6	15600.00	48.93	54.00	-5.07	33.32	15.61	Average	228	206
7	15600.00	63.77	74.00	-10.23	48.16	15.61	Peak	228	206

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



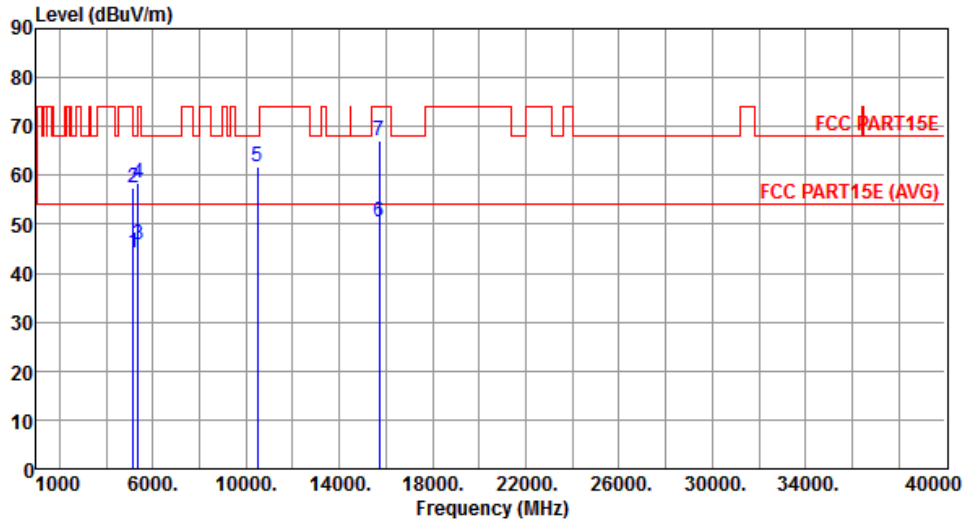
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.15	54.00	-9.85	39.25	4.90	Average	241	48
2	5150.00	57.62	74.00	-16.38	52.72	4.90	Peak	241	48
3	5350.00	46.36	54.00	-7.64	41.23	5.13	Average	241	48
4	5350.00	58.92	74.00	-15.08	53.79	5.13	Peak	241	48
5	10480.00	59.29	68.20	-8.91	45.39	13.90	Peak	291	132
6	15720.00	48.56	54.00	-5.44	33.17	15.39	Average	247	203
7	15720.00	64.49	74.00	-9.51	49.10	15.39	Peak	247	203

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



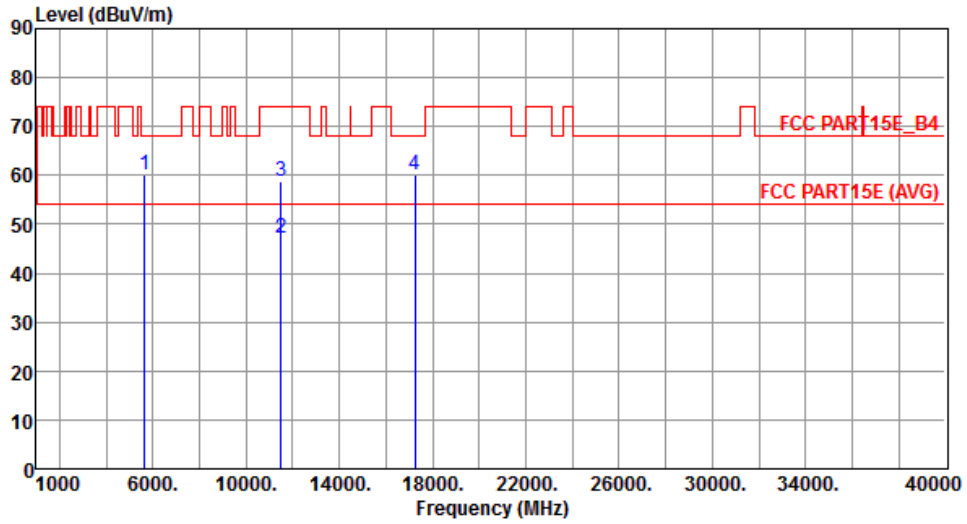
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.06	54.00	-9.94	39.16	4.90	Average	107	28
2	5150.00	57.31	74.00	-16.69	52.41	4.90	Peak	107	28
3	5350.00	45.96	54.00	-8.04	40.83	5.13	Average	107	28
4	5350.00	58.53	74.00	-15.47	53.40	5.13	Peak	107	28
5	10480.00	61.87	68.20	-6.33	47.97	13.90	Peak	195	93
6	15720.00	50.56	54.00	-3.44	35.17	15.39	Average	198	91
7	15720.00	67.07	74.00	-6.93	51.68	15.39	Peak	198	91

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



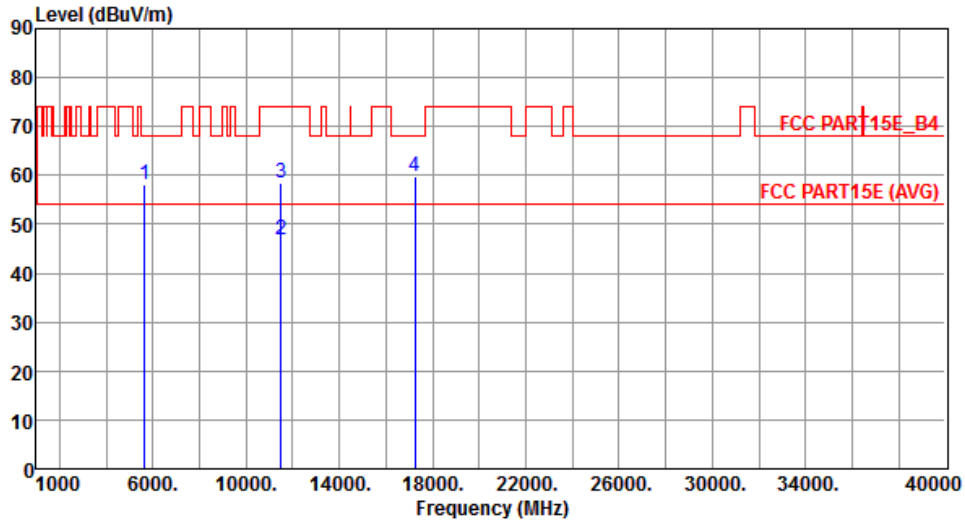
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.11	68.20	-8.09	54.56	5.55	Peak	100	215
2	11490.00	47.02	54.00	-6.98	32.40	14.62	Average	100	144
3	11490.00	58.88	74.00	-15.12	44.26	14.62	Peak	100	144
4	17235.00	60.01	68.20	-8.19	39.37	20.64	Peak	115	72

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

*Factor includes antenna factor , cable loss and amplifier gain

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

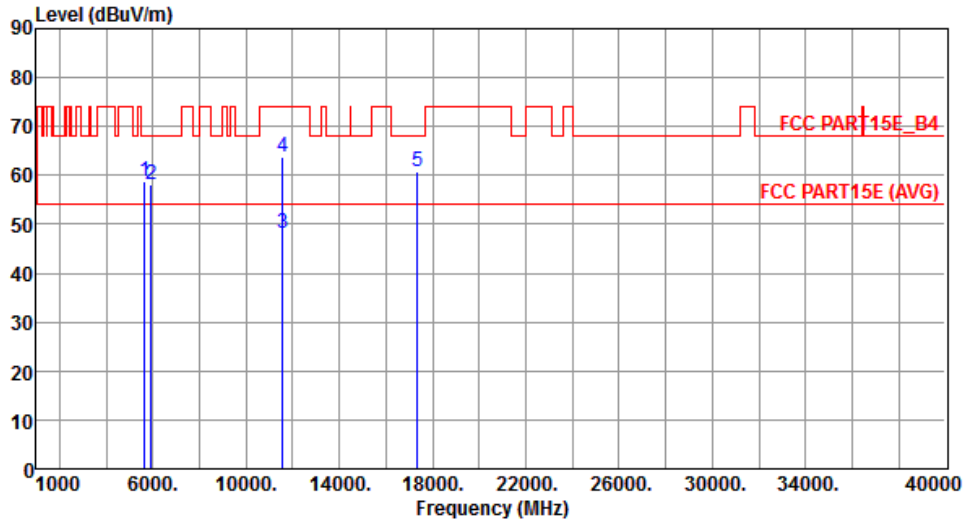
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.18	68.20	-10.02	52.63	5.55	Peak	100	266
2	11490.00	46.96	54.00	-7.04	32.34	14.62	Average	100	182
3	11490.00	58.44	74.00	-15.56	43.82	14.62	Peak	100	182
4	17235.00	59.77	68.20	-8.43	39.13	20.64	Peak	150	32

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



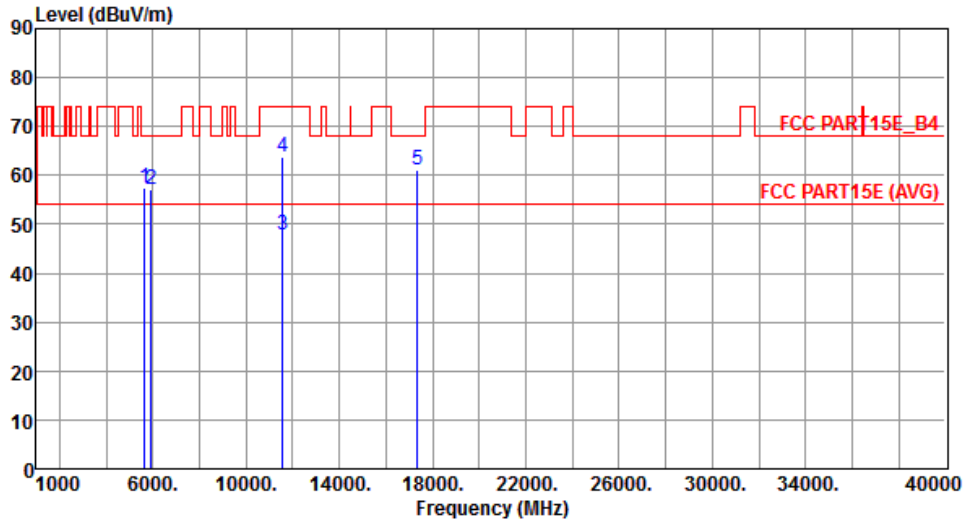
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.71	68.20	-9.49	53.16	5.55	Peak	100	195
2	5925.00	57.97	68.20	-10.23	51.88	6.09	Peak	100	195
3	11570.00	48.06	54.00	-5.94	33.54	14.52	Average	100	195
4	11570.00	63.91	74.00	-10.09	49.39	14.52	Peak	100	195
5	17355.00	60.84	68.20	-7.36	39.55	21.29	Peak	121	75

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



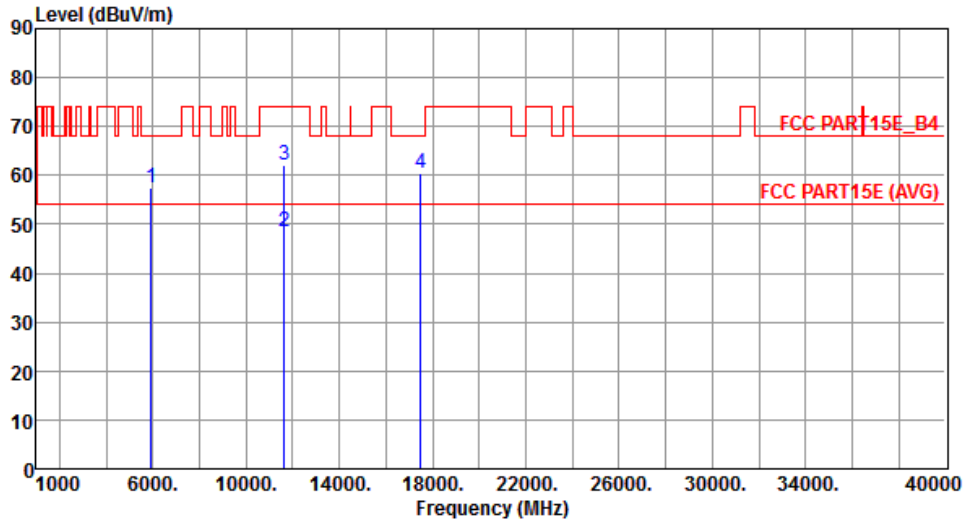
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	57.40	68.20	-10.80	51.85	5.55	Peak	100	171
2	5925.00	57.00	68.20	-11.20	50.91	6.09	Peak	100	171
3	11570.00	47.98	54.00	-6.02	33.46	14.52	Average	100	115
4	11570.00	63.62	74.00	-10.38	49.10	14.52	Peak	100	115
5	17355.00	61.03	68.20	-7.17	39.74	21.29	Peak	132	219

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

*Factor includes antenna factor , cable loss and amplifier gain

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

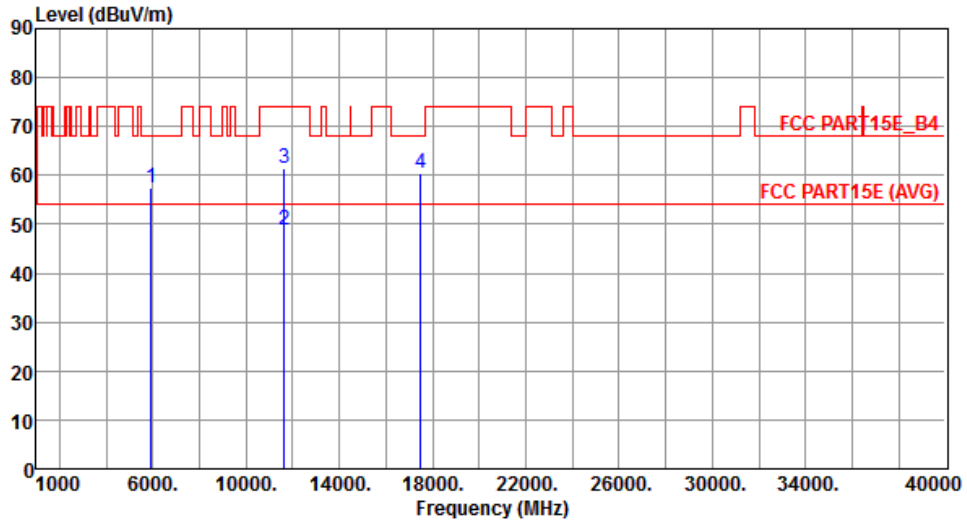
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5925.00	57.54	68.20	-10.66	51.45	6.09	Peak	113	202
2	11650.00	48.38	54.00	-5.62	33.98	14.40	Average	100	108
3	11650.00	62.09	74.00	-11.91	47.69	14.40	Peak	100	108
4	17475.00	60.50	68.20	-7.70	38.56	21.94	Peak	100	255

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

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		



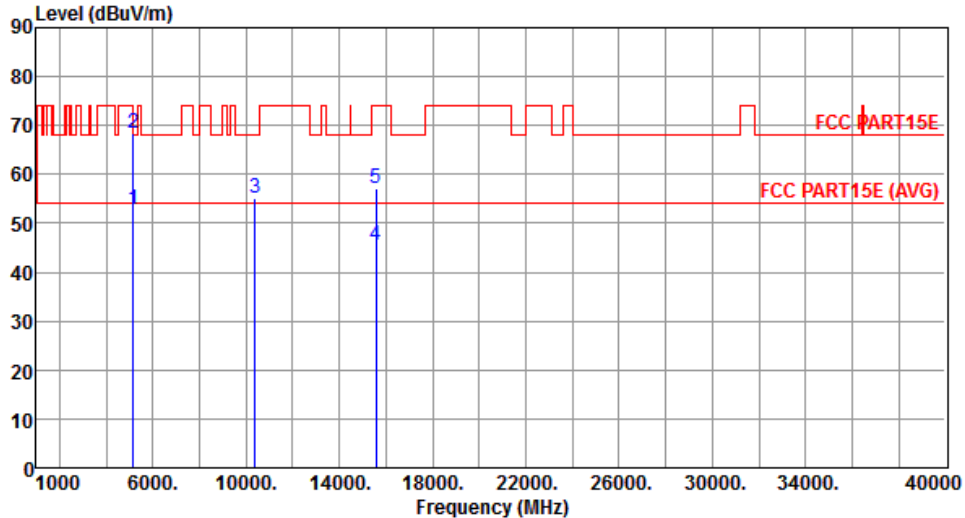
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5925.00	57.58	68.20	-10.62	51.49	6.09	Peak	100	125
2	11650.00	48.68	54.00	-5.32	34.28	14.40	Average	100	133
3	11650.00	61.46	74.00	-12.54	47.06	14.40	Peak	100	133
4	17475.00	60.38	68.20	-7.82	38.44	21.94	Peak	100	96

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

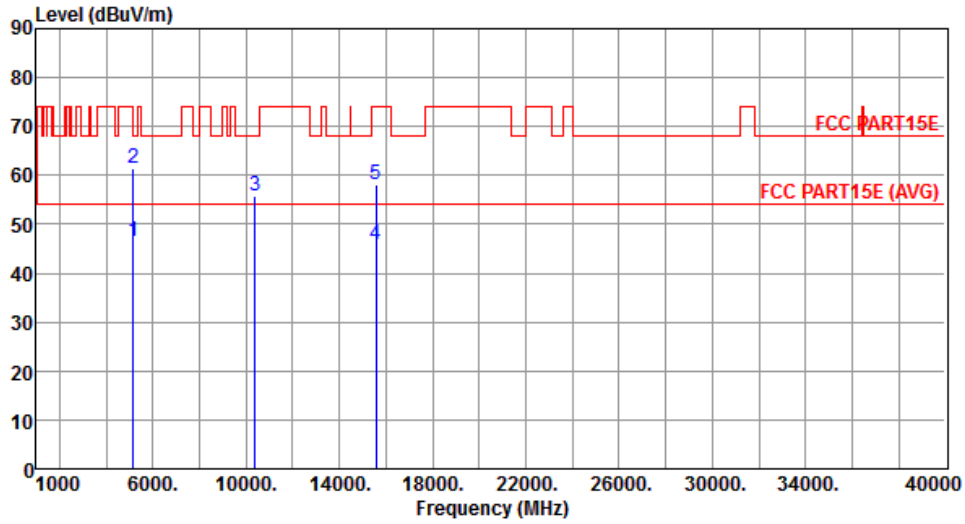
*Factor includes antenna factor , cable loss and amplifier gain

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

3.5.11 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT40

Modulation	VHT40	Test Freq. (MHz)	5190						
Polarization	Horizontal								
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	52.73	54.00	-1.27	47.83	4.90	Average	100	74
2	5150.00	68.43	74.00	-5.57	63.53	4.90	Peak	100	74
3	10380.00	55.24	68.20	-12.96	41.53	13.71	Peak	100	168
4	15570.00	45.40	54.00	-8.60	29.73	15.67	Average	100	196
5	15570.00	57.10	74.00	-16.90	41.43	15.67	Peak	100	196
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



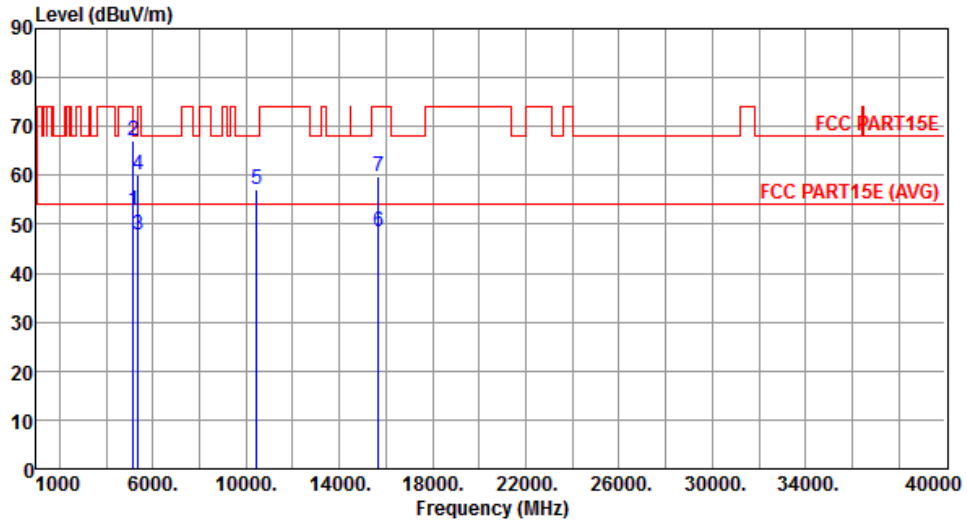
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.59	54.00	-7.41	41.69	4.90	Average	122	79
2	5150.00	61.58	74.00	-12.42	56.68	4.90	Peak	122	79
3	10380.00	55.67	68.20	-12.53	41.96	13.71	Peak	100	168
4	15570.00	45.74	54.00	-8.26	30.07	15.67	Average	155	138
5	15570.00	58.11	74.00	-15.89	42.44	15.67	Peak	155	138

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



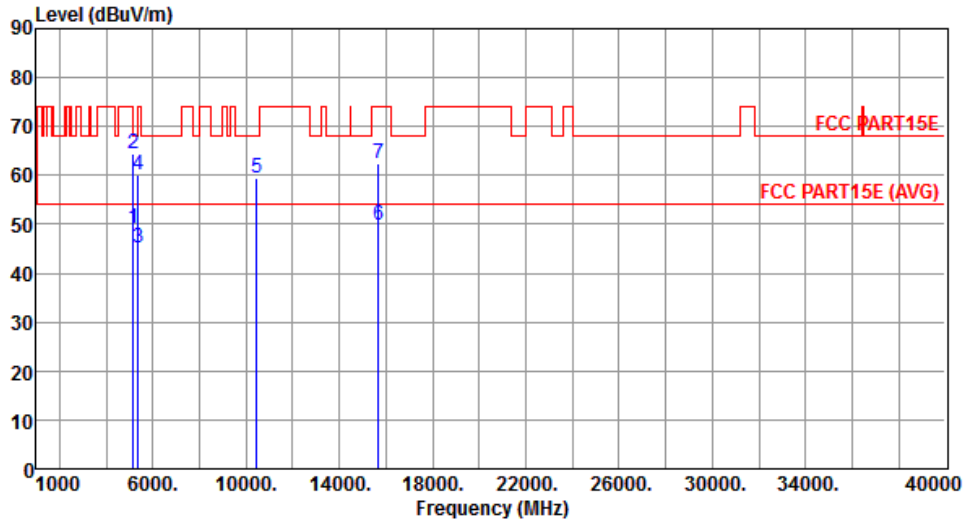
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.73	54.00	-1.27	47.83	4.90	Average	100	74
2	5150.00	67.03	74.00	-6.97	62.13	4.90	Peak	100	74
3	5350.00	47.88	54.00	-6.12	42.75	5.13	Average	100	74
4	5350.00	60.09	74.00	-13.91	54.96	5.13	Peak	100	74
5	10460.00	57.24	68.20	-10.96	43.38	13.86	Peak	189	72
6	15690.00	48.64	54.00	-5.36	33.21	15.43	Average	201	104
7	15690.00	59.69	74.00	-14.31	44.26	15.43	Peak	201	104

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



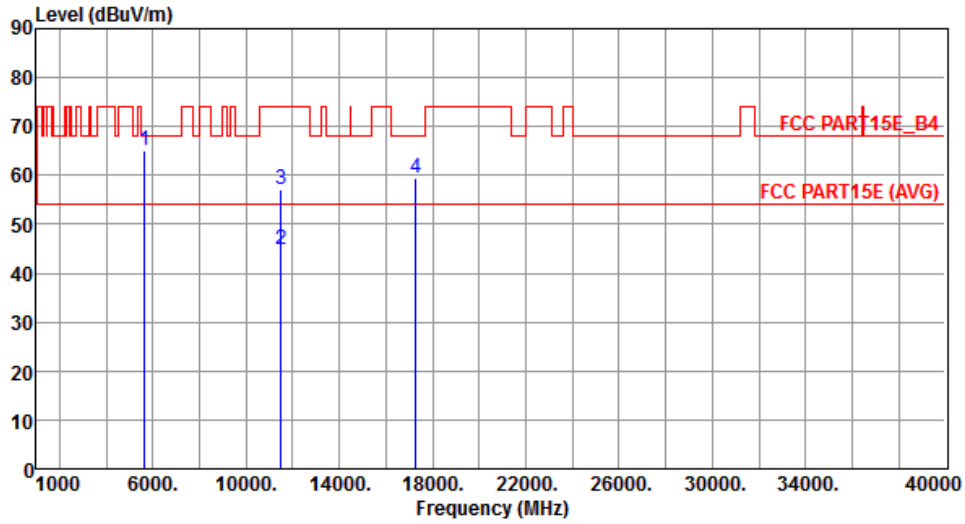
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.02	54.00	-4.98	44.12	4.90	Average	100	76
2	5150.00	64.59	74.00	-9.41	59.69	4.90	Peak	100	76
3	5350.00	45.17	54.00	-8.83	40.04	5.13	Average	100	76
4	5350.00	60.15	74.00	-13.85	55.02	5.13	Peak	100	76
5	10460.00	59.33	68.20	-8.87	45.47	13.86	Peak	100	118
6	15690.00	49.90	54.00	-4.10	34.47	15.43	Average	100	118
7	15690.00	62.50	74.00	-11.50	47.07	15.43	Peak	100	118

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

*Factor includes antenna factor , cable loss and amplifier gain

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

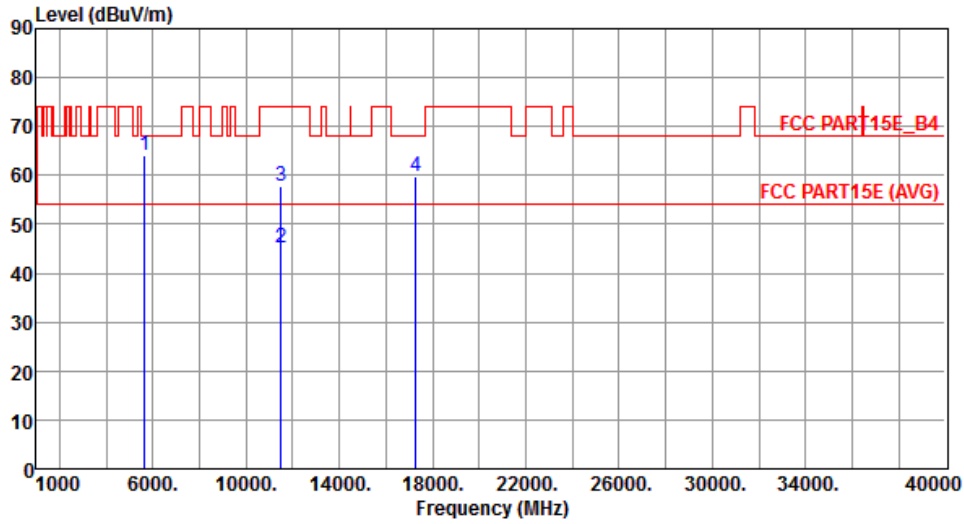
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	64.97	68.20	-3.23	59.42	5.55	Peak	100	218
2	11510.00	44.99	54.00	-9.01	30.37	14.62	Average	100	84
3	11510.00	57.25	74.00	-16.75	42.63	14.62	Peak	100	84
4	17265.00	59.58	68.20	-8.62	38.77	20.81	Peak	100	101

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

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



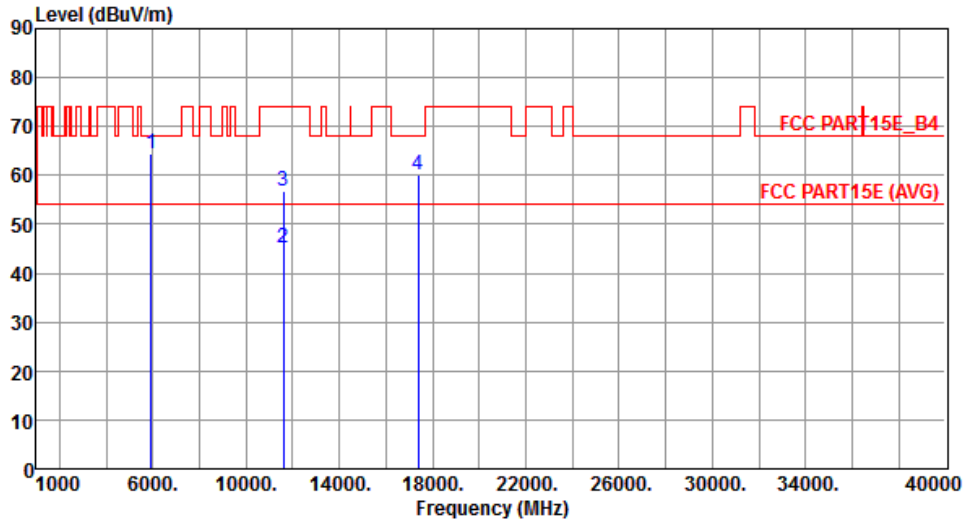
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	64.09	68.20	-4.11	58.54	5.55	Peak	100	128
2	11510.00	45.11	54.00	-8.89	30.49	14.62	Average	100	139
3	11510.00	57.72	74.00	-16.28	43.10	14.62	Peak	100	139
4	17265.00	59.71	68.20	-8.49	38.90	20.81	Peak	100	85

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



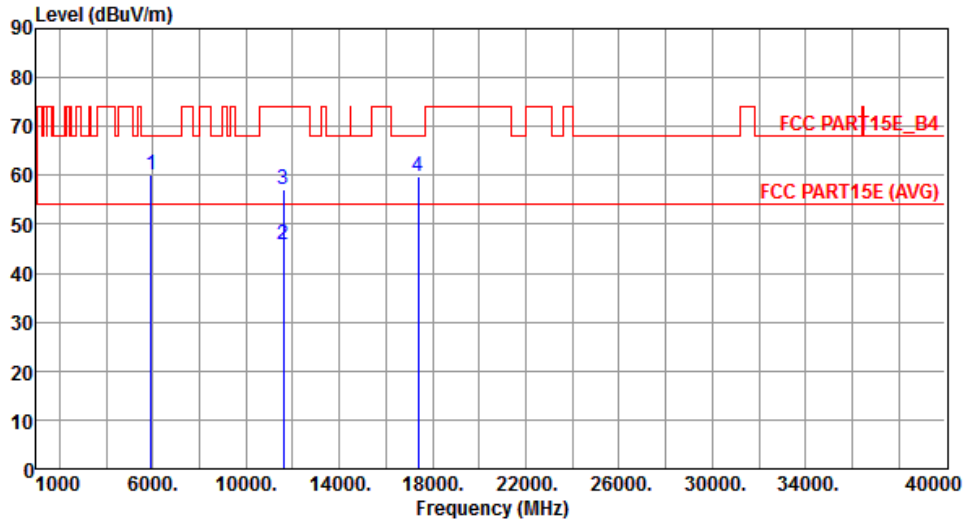
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5925.00	64.47	68.20	-3.73	58.38	6.09	Peak	248	183
2	11590.00	45.23	54.00	-8.77	30.73	14.50	Average	100	189
3	11590.00	56.95	74.00	-17.05	42.45	14.50	Peak	100	189
4	17385.00	60.13	68.20	-8.07	38.67	21.46	Peak	100	82

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

*Factor includes antenna factor, cable loss and amplifier gain

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

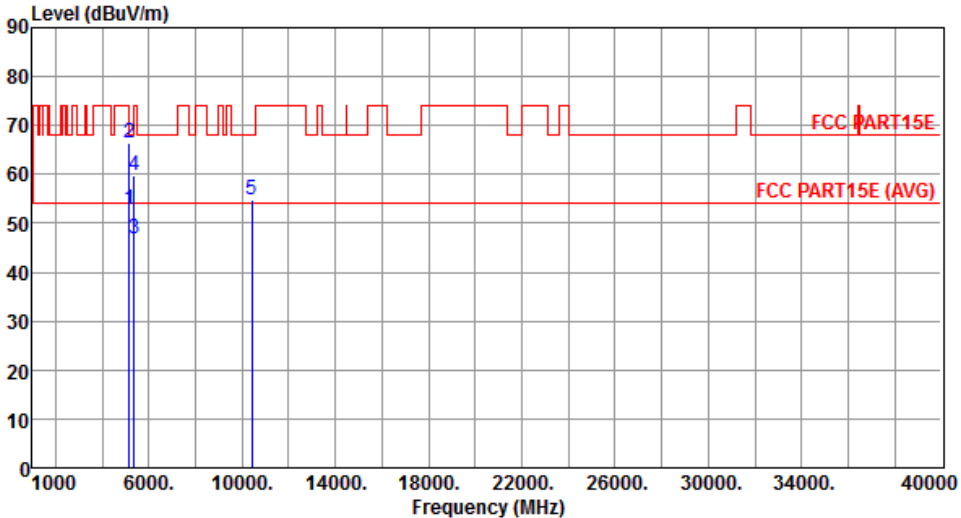
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		



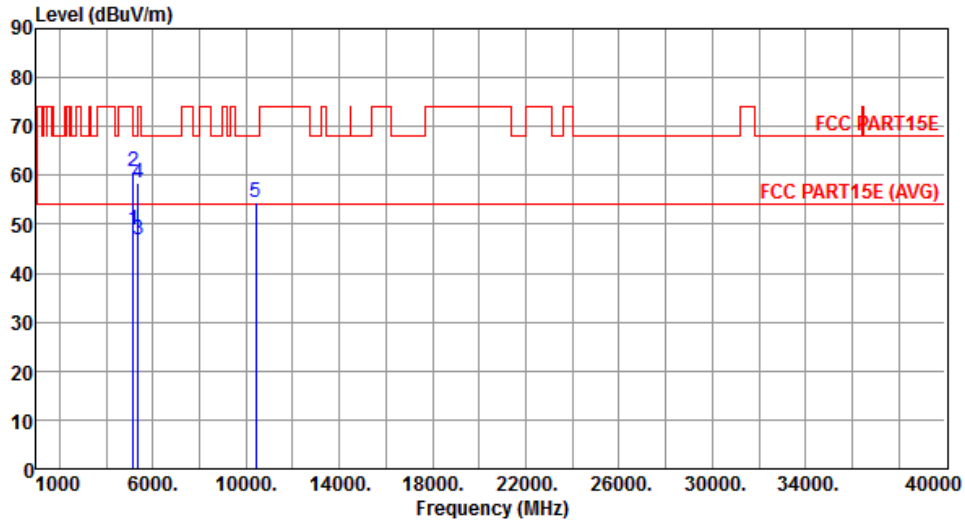
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5925.00	60.09	68.20	-8.11	54.00	6.09	Peak	100	131
2	11590.00	45.86	54.00	-8.14	31.36	14.50	Average	100	120
3	11590.00	57.04	74.00	-16.96	42.54	14.50	Peak	100	120
4	17385.00	59.80	68.20	-8.40	38.34	21.46	Peak	100	157

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

3.5.12 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT80

Modulation	VHT80	Test Freq. (MHz)	5210																																																																		
Polarization	Horizontal																																																																				
																																																																					
	<table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission level</th> <th>Limit</th> <th>Margin</th> <th>SA reading</th> <th>Factor</th> <th>Remark</th> <th>ANT High</th> <th>Turn Table</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th></th> <th>cm</th> <th>deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5150.00</td> <td>52.72</td> <td>54.00</td> <td>-1.28</td> <td>47.82</td> <td>4.90</td> <td>Average</td> <td>100</td> <td>97</td> </tr> <tr> <td>2</td> <td>5150.00</td> <td>66.36</td> <td>74.00</td> <td>-7.64</td> <td>61.46</td> <td>4.90</td> <td>Peak</td> <td>100</td> <td>97</td> </tr> <tr> <td>3</td> <td>5350.00</td> <td>46.86</td> <td>54.00</td> <td>-7.14</td> <td>41.73</td> <td>5.13</td> <td>Average</td> <td>100</td> <td>77</td> </tr> <tr> <td>4</td> <td>5350.00</td> <td>59.66</td> <td>74.00</td> <td>-14.34</td> <td>54.53</td> <td>5.13</td> <td>Peak</td> <td>100</td> <td>77</td> </tr> <tr> <td>5</td> <td>10420.00</td> <td>54.74</td> <td>68.20</td> <td>-13.46</td> <td>40.96</td> <td>13.78</td> <td>Peak</td> <td>100</td> <td>135</td> </tr> </tbody> </table>	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	1	5150.00	52.72	54.00	-1.28	47.82	4.90	Average	100	97	2	5150.00	66.36	74.00	-7.64	61.46	4.90	Peak	100	97	3	5350.00	46.86	54.00	-7.14	41.73	5.13	Average	100	77	4	5350.00	59.66	74.00	-14.34	54.53	5.13	Peak	100	77	5	10420.00	54.74	68.20	-13.46	40.96	13.78	Peak	100	135
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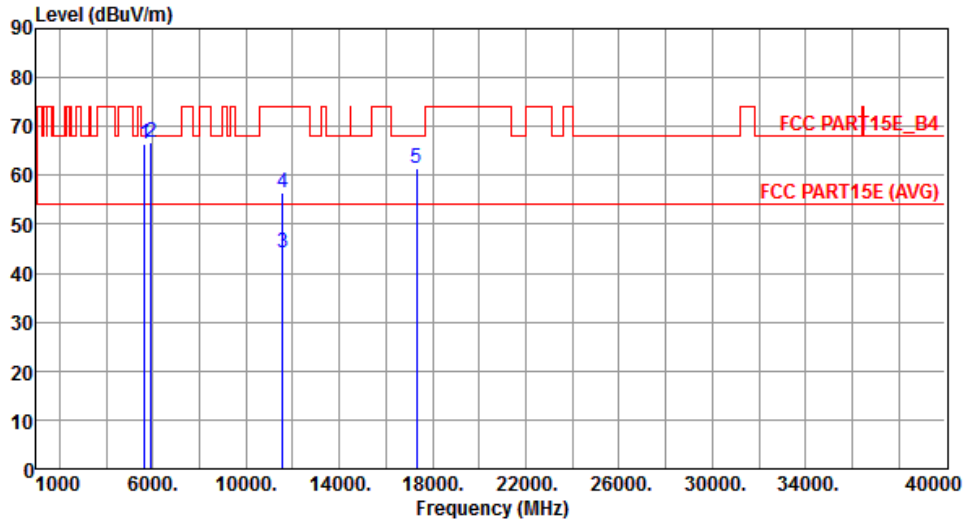
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.73	54.00	-5.27	43.83	4.90	Average	100	80
2	5150.00	60.78	74.00	-13.22	55.88	4.90	Peak	100	80
3	5350.00	46.70	54.00	-7.30	41.57	5.13	Average	100	80
4	5350.00	58.51	74.00	-15.49	53.38	5.13	Peak	100	80
5	10420.00	54.53	68.20	-13.67	40.75	13.78	Peak	100	196

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



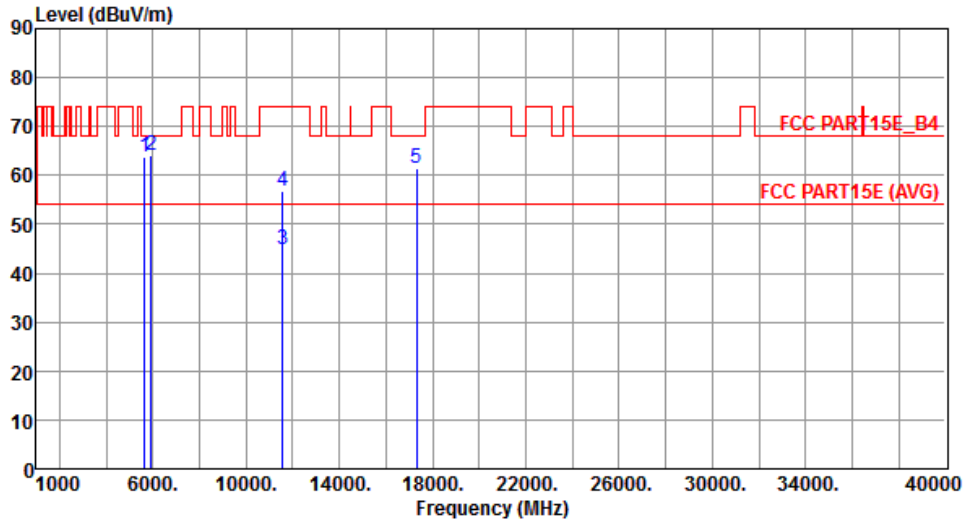
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	66.53	68.20	-1.67	60.98	5.55	Peak	100	215
2	5925.00	66.90	68.20	-1.30	60.81	6.09	Peak	100	109
3	11550.00	44.32	54.00	-9.68	29.77	14.55	Average	100	205
4	11550.00	56.30	74.00	-17.70	41.75	14.55	Peak	100	205
5	17325.00	61.28	68.20	-6.92	40.15	21.13	Peak	100	126

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	63.89	68.20	-4.31	58.34	5.55	Peak	100	48
2	5925.00	64.24	68.20	-3.96	58.15	6.09	Peak	100	48
3	11550.00	44.87	54.00	-9.13	30.32	14.55	Average	100	112
4	11550.00	56.69	74.00	-17.31	42.14	14.55	Peak	100	112
5	17325.00	61.36	68.20	-6.84	40.23	21.13	Peak	100	97

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

*Factor includes antenna factor , cable loss and amplifier gain

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

3.6 Frequency Stability

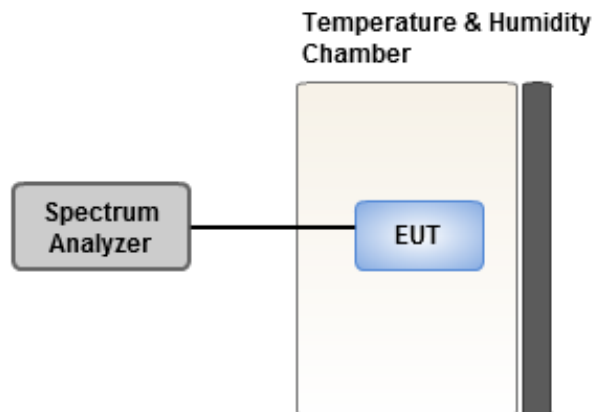
3.6.1 Limit of Frequency Stability

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

3.6.2 Test Procedures

1. The EUT is installed in an environment test chamber with external power source.
2. Set the chamber to operate at 50 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 -30 to 60 centigrade and 85 to 115 percent of the nominal voltage. Change setting of chamber and external power source to complete all conditions.

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability

Frequency: 5200 MHz	Frequency Drift (ppm)				
	Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax		-0.04	-0.22	-0.09	-0.14
T20°CVmin		-0.29	-0.02	-0.09	-0.75
T60°CVnom		0.15	0.20	0.17	-0.23
T50°CVnom		0.87	0.96	1.00	0.95
T40°CVnom		-0.21	-0.18	-0.03	0.16
T30°CVnom		0.40	0.45	0.23	0.20
T20°CVnom		0.37	-0.02	0.36	1.21
T10°CVnom		1.03	1.09	1.62	1.42
T0°CVnom		-0.15	0.43	0.46	0.30
T-10°CVnom		0.48	0.36	1.18	0.35
T-20°CVnom		0.65	1.07	0.98	0.82
T-30°CVnom		-0.52	-0.10	-0.81	-0.94
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102	
Tnom [°C]: 20		Tmax [°C]: 60		Tmin [°C]: -30	

Frequency: 5785 MHz	Frequency Drift (ppm)				
	Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax		4.09	3.89	4.46	4.82
T20°CVmin		4.04	3.82	4.39	4.71
T60°CVnom		3.23	3.51	3.60	3.55
T50°CVnom		3.77	4.01	4.00	3.95
T40°CVnom		3.01	3.31	3.40	3.41
T30°CVnom		2.19	2.46	1.88	1.96
T20°CVnom		2.26	2.66	2.13	2.16
T10°CVnom		2.59	2.94	3.12	2.87
T0°CVnom		1.18	1.40	1.87	1.43
T-10°CVnom		0.90	1.30	1.61	1.28
T-20°CVnom		0.68	0.82	0.83	0.62
T-30°CVnom		-0.61	-0.03	-0.23	-0.30
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102	
Tnom [°C]: 20		Tmax [°C]: 60		Tmin [°C]: -30	

4 Test laboratory information

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

International Certification Corp (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

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

Kwei Shan

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No. 3-1, Lane 6, Wen San 3rd
St., Kwei Shan District, Tao Yuan
City 333, Taiwan, R.O.C.

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan District, 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: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

==END==