FCC Test Report

FCC ID	:	**QIS-B5338-168**
Equipment	:	**LTE Indoor CPE**
Model No.	:	**B5338-168**
Brand Name	:	**Huawei**
Applicant	:	**Huawei Technologies Co., Ltd.**
Address	:	**Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, China.**
Standard	:	**47 CFR FCC Part 15.407**
Received Date	:	**Sep. 23, 2016**
Tested Date	:	**Sep. 27 ~ Dec. 21, 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:

Along Chen / Assistant Manager

Approved by:

Gary Chang / Manager

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FR690901-01AN	Rev. 01	Initial issue	Mar. 06, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.262MHz 36.61 (Margin -15.07dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 15600.00MHz 52.99 (Margin -1.01dB) - 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: 18.80 5725-5850MHz: 20.33	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

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]	2	6-54 Mbps
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	MCS 0-15
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	MCS 0-15
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	MCS 0-9
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	MCS 0-9
5150-5250	ac (VHT80)	5210	42 [1]	2	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]	2	6-54 Mbps
5725-5850	n (HT20)	5745-5825	149-165 [5]	2	MCS 0-15
5725-5850	n (HT40)	5755-5795	151-159 [2]	2	MCS 0-15
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	2	MCS 0-9
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	2	MCS 0-9
5725-5850	ac (VHT80)	5775	155 [1]	2	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.	**Type**	**Connector**	**Operating Frequencies (MHz) / Antenna Gain (dBi)**		
			2400~2483.5	**5150~5250**	**5725~5850**
1	PIFA	UFL	2.45	1.3	2.96
2	PIFA	UFL	2.46	1.97	2.99

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from adapter

1.1.4 Accessories

Accessories		
No.	**Equipment**	**Description**
1	AC adapter	Brand: APD Model: WB-24D12FU Power Rating: I/P: 100-240Vac, 50/60Hz, 0.6A Max. O/P: 12Vdc, 2A Power Line: 1.5m non-shielded cable w/o core Efficiency Level: VI
2	AC adapter	Brand: SHENZHEN FRECOM Model: F24W7-120200SPAU Power Rating: I/P: 100-240Vac, 50/60Hz, 0.6A O/P: 12Vdc, 2A Power Line: 1.5m non-shielded cable w/o core Efficiency Level: VI
3	Core (x2) for RJ45	Brand: King core Model: KCF-130
4	Core (x1) for RJ11	Brand: King core Model: K5B RC 16x28x9-M2

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	VHT 80	
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	QATool, Version: 1.0.3.4		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	93.49%	0.29
	VHT20	90.69%	0.42
	VHT40	89.45%	0.48
	VHT80	71.47%	1.46

1.1.7 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5180	1E/1E
11a	5200	1E/1E
11a	5240	1E/1E
HT20	5180	1F/1F
HT20	5200	1E/1E
HT20	5240	1E/1E
HT40	5190	1B/1B
HT40	5230	1E/1E
VHT20	5180	1F/1F
VHT20	5200	1E/1E
VHT20	5240	1E/1E
VHT40	5190	1B/1B
VHT40	5230	1E/1E
VHT80	5210	16/16

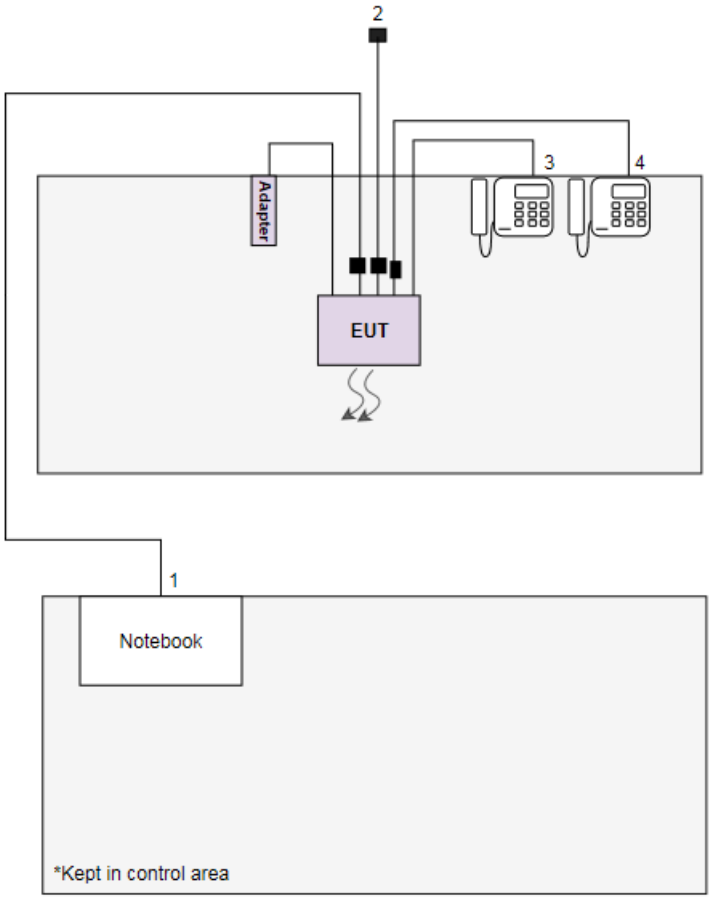
For Frequency band 5725~5850 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5745	24/21
11a	5785	24/21
11a	5825	23/20
HT20	5745	24/21
HT20	5785	23/20
HT20	5825	23/20
HT40	5755	1B/18
HT40	5795	1B/18
VHT20	5745	24/21
VHT20	5785	23/20
VHT20	5825	23/20
VHT40	5755	1B/18
VHT40	5795	1B/18
VHT80	5775	28/25

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 E5420	B6FT9T1	DoC	RJ45, 10m non-shielded with 1 core.
2	Telephone	HTT	HTT-806	187118	---	RJ11, 1.5m non-shielded with 1 core.
3	Telephone	HTT	HTT-806	188597	---	RJ11, 1.5m non-shielded.
4	RJ45 Load	ICC	---	---	---	RJ45, 10m non-shielded with 1 core.

1.3 Test Setup Chart

Test Setup Diagram



1. RJ45, 10m non-shielded with 1 core
2. RJ45, 1.5m non-shielded with 1 core with load
3. RJ11, 1.5m non-shielded
4. RJ11, 1.5m non-shielded with 1 core

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Test Date	Dec. 21, 2016				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Jan. 12, 2016	Jan. 11, 2017
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 08, 2016	Nov. 07, 2017
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 20, 2016	Dec. 19, 2017
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 chamber1 / (03CH01-WS)				
Tested Date	Sep. 27 ~ Sep. 29, 2016				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Dec. 13, 2015	Dec. 12, 2016
Receiver	R&S	ESR3	101658	Nov. 04, 2015	Nov. 03, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 04, 2016	Aug. 03, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 16, 2015	Dec. 15, 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	EMC	EMC02325	980225	Aug. 05, 2016	Aug. 04, 2017
Preamplifier	Agilent	83017A	MY39501308	Oct. 02, 2015	Oct. 01, 2016
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	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 chamber1 / (03CH01-WS)				
Tested Date	Dec. 15, 2016				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 04, 2016	Aug. 03, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 16, 2015	Dec. 15, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 09, 2016	Dec. 08, 2017
Preamplifier	EMC	EMC02325	980225	Aug. 05, 2016	Aug. 04, 2017
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2016	Oct. 05, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 09, 2016	Dec. 08, 2017
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. 18, 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
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 26, 2015	Oct. 25, 2016
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	±3.66 dB
Radiated emission > 1GHz	±5.63 dB
Time	±0.1%
Temperature	±0.6 ^{o}C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	19°C / 62%	Howard Huang
Radiated Emissions	03CH01-WS	20-26°C / 61-62%	Vincent Yeh Kevin Lee
RF Conducted	TH01-WS	23°C / 64%	Brad Wu

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

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	11a	5180	6 Mbps	---
Radiated Emissions ≤1GHz	11a	5180	6 Mbps	---
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. Two adapters had been covered during the pretest and found that **Adapter 2** was the worst case and was selected for final testing (Adapter 1: APD; Adapter 2: SHENZHEN FRECOM).

For Frequency band 5725-5850 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate (Mbps) / MCS**	**Test Configuration**
Conducted Emissions	VHT80	5775	MCS 0	---
Radiated Emissions ≤1GHz	VHT80	5775	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. Two adapters had been covered during the pretest and found that **Adapter 2** was the worst case and was selected for final testing (Adapter 1: APD; Adapter 2: SHENZHEN FRECOM).

3 Transmitter Test Results

3.1 Conducted Emissions

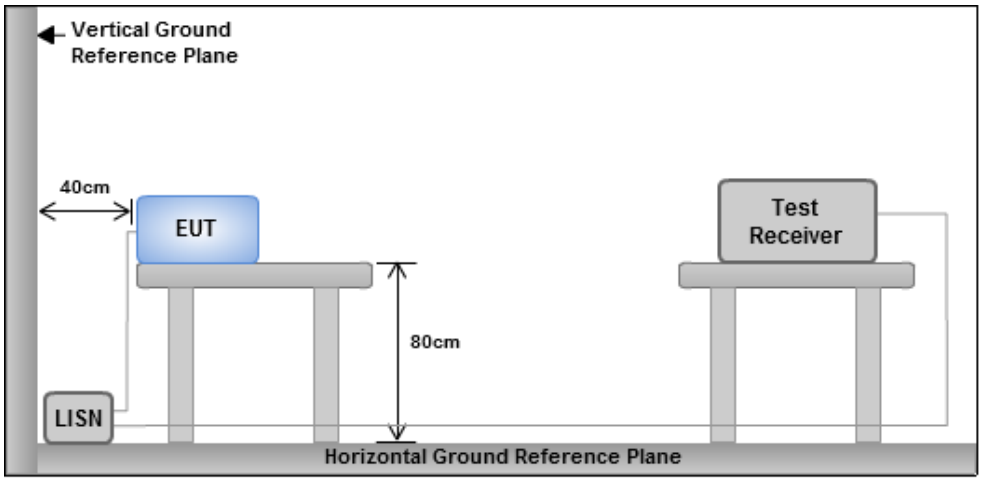
3.1.1 Limit of Conducted Emissions

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.

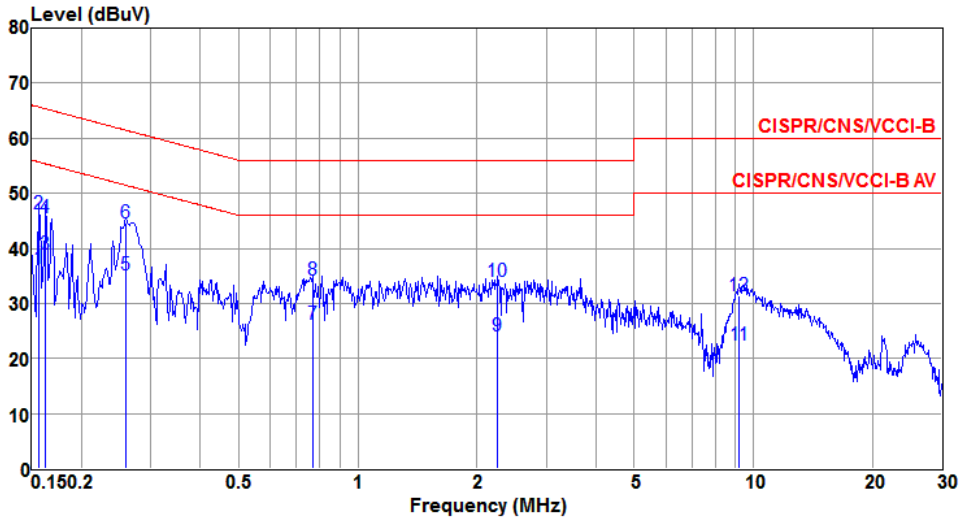
3.1.3 Test Setup



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

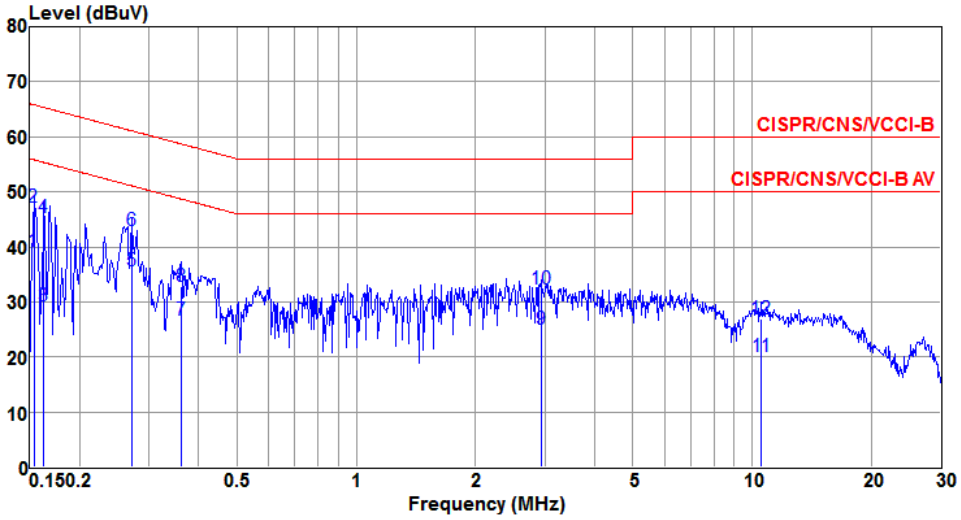
Modulation	11a	Test Freq. (MHz)	5180
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.156	36.31	55.65	-19.34	36.22	0.07	0.02	Average
2	0.156	46.35	65.65	-19.30	46.26	0.07	0.02	QP
3@	0.162	38.96	55.34	-16.38	38.86	0.08	0.02	Average
4	0.162	45.54	65.34	-19.80	45.44	0.08	0.02	QP
5	0.259	35.08	51.47	-16.39	34.97	0.09	0.02	Average
6	0.259	44.66	61.47	-16.81	44.55	0.09	0.02	QP
7	0.767	26.31	46.00	-19.69	26.19	0.07	0.05	Average
8	0.767	34.31	56.00	-21.69	34.19	0.07	0.05	QP
9	2.261	24.01	46.00	-21.99	23.78	0.14	0.09	Average
10	2.261	34.06	56.00	-21.94	33.83	0.14	0.09	QP
11	9.204	22.40	50.00	-27.60	22.04	0.20	0.16	Average
12	9.204	31.46	60.00	-28.54	31.10	0.20	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).

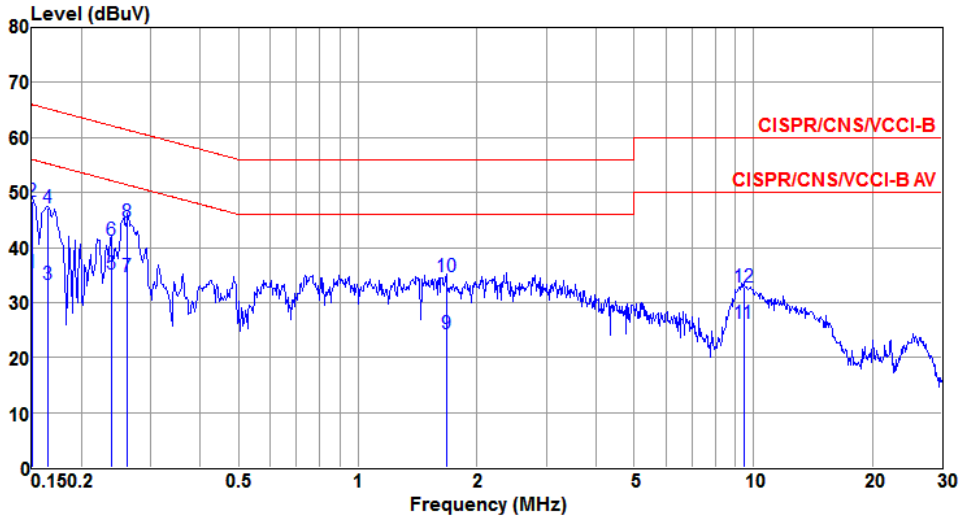
Modulation	11a	Test Freq. (MHz)	5180
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.153	39.19	55.82	-16.63	39.07	0.10	0.02	Average
2	0.153	47.11	65.82	-18.71	46.99	0.10	0.02	QP
3	0.162	29.24	55.34	-26.10	29.12	0.10	0.02	Average
4	0.162	45.39	65.34	-19.95	45.27	0.10	0.02	QP
5@	0.270	35.57	51.12	-15.55	35.44	0.11	0.02	Average
6	0.270	42.89	61.12	-18.23	42.76	0.11	0.02	QP
7	0.361	26.74	48.69	-21.95	26.59	0.12	0.03	Average
8	0.361	32.78	58.69	-25.91	32.63	0.12	0.03	QP
9	2.931	24.92	46.00	-21.08	24.67	0.15	0.10	Average
10	2.931	32.34	56.00	-23.66	32.09	0.15	0.10	QP
11	10.564	19.98	50.00	-30.02	19.49	0.32	0.17	Average
12	10.564	26.93	60.00	-33.07	26.44	0.32	0.17	QP

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

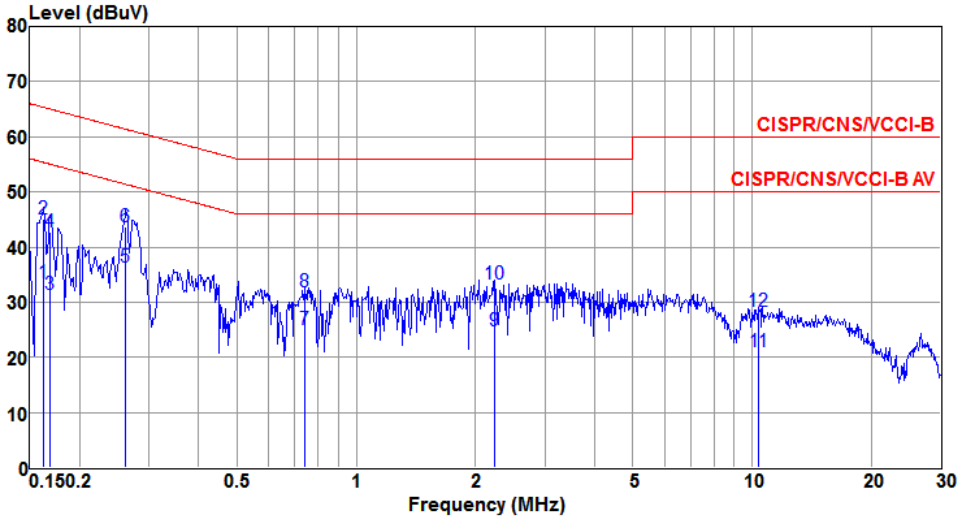
Modulation	VHT80	Test Freq. (MHz)	5775
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	35.40	56.00	-20.60	35.31	0.07	0.02	Average
2	0.150	48.39	66.00	-17.61	48.30	0.07	0.02	QP
3	0.165	33.33	55.21	-21.88	33.23	0.08	0.02	Average
4	0.165	47.20	65.21	-18.01	47.10	0.08	0.02	QP
5	0.238	35.22	52.17	-16.95	35.11	0.09	0.02	Average
6	0.238	41.25	62.17	-20.92	41.14	0.09	0.02	QP
7@	0.262	34.65	51.38	-16.73	34.55	0.08	0.02	Average
8	0.262	44.57	61.38	-16.81	44.47	0.08	0.02	QP
9	1.671	24.24	46.00	-21.76	24.06	0.11	0.07	Average
10	1.671	34.62	56.00	-21.38	34.44	0.11	0.07	QP
11	9.451	26.24	50.00	-23.76	25.88	0.20	0.16	Average
12	9.451	32.84	60.00	-27.16	32.48	0.20	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	VHT80	Test Freq. (MHz)	5775
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.162	33.61	55.34	-21.73	33.49	0.10	0.02	Average
2	0.162	45.00	65.34	-20.34	44.88	0.10	0.02	QP
3	0.169	31.40	55.03	-23.63	31.28	0.10	0.02	Average
4	0.169	42.77	65.03	-22.26	42.65	0.10	0.02	QP
5@	0.262	36.31	51.38	-15.07	36.18	0.11	0.02	Average
6	0.262	43.65	61.38	-17.73	43.52	0.11	0.02	QP
7	0.739	25.08	46.00	-20.92	24.93	0.10	0.05	Average
8	0.739	31.93	56.00	-24.07	31.78	0.10	0.05	QP
9	2.237	24.76	46.00	-21.24	24.51	0.16	0.09	Average
10	2.237	33.37	56.00	-22.63	33.12	0.16	0.09	QP
11	10.397	21.08	50.00	-28.92	20.61	0.31	0.16	Average
12	10.397	28.22	60.00	-31.78	27.75	0.31	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.

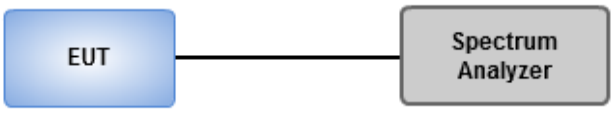
Occupied Bandwidth

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

6dB Bandwidth

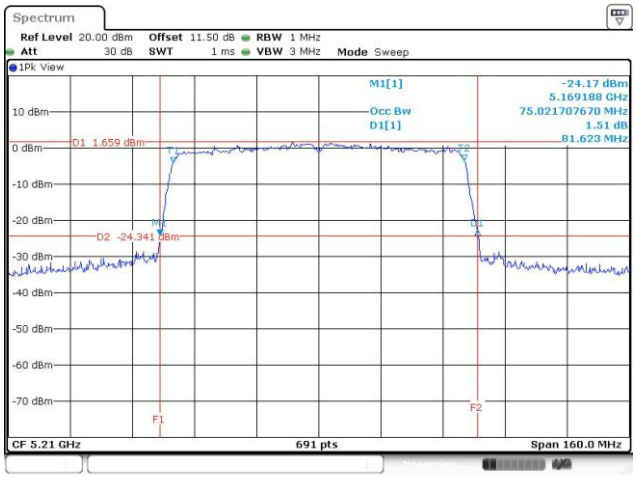
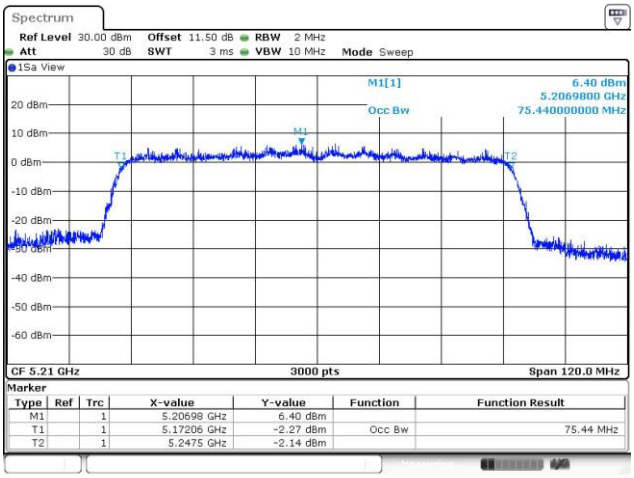
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak,Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB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

3.2.3 Test Setup

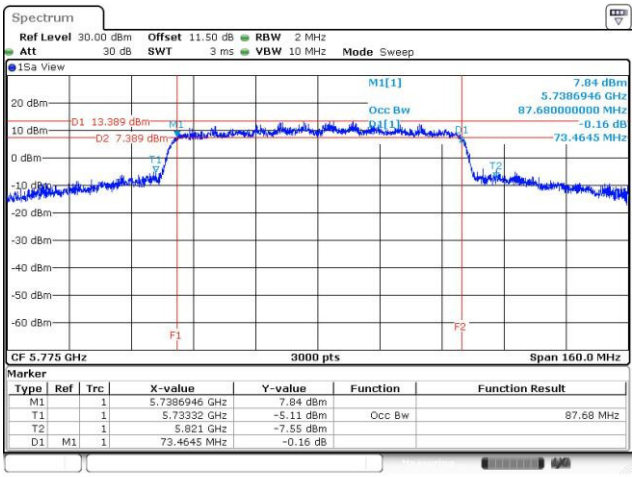
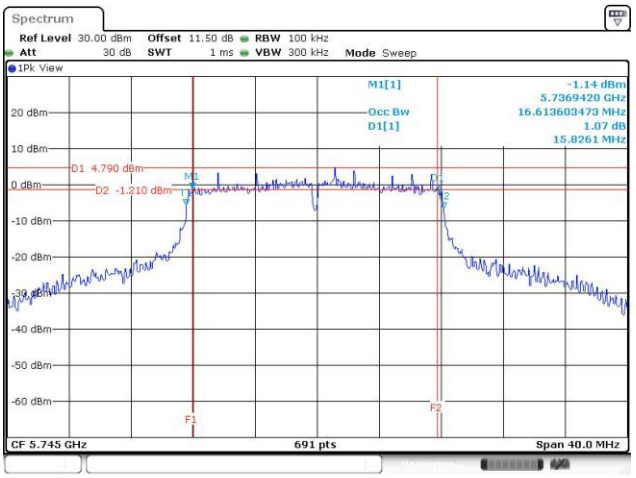


3.2.4 Test Result of Emission Bandwidth

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	2	5180	22.49	25.04	---	---	16.92	16.97	---	---
11a	2	5200	20.46	24.99	---	---	16.89	17.00	---	---
11a	2	5240	21.57	25.57	---	---	16.90	17.06	---	---
VHT20	2	5180	22.03	29.68	---	---	17.75	17.81	---	---
VHT20	2	5200	21.16	25.74	---	---	17.72	17.80	---	---
VHT20	2	5240	21.28	29.33	---	---	17.72	17.79	---	---
VHT40	2	5190	41.39	42.20	---	---	36.20	36.26	---	---
VHT40	2	5230	41.62	58.44	---	---	36.26	36.42	---	---
VHT80	2	5210	81.62	81.62	---	---	75.28	75.44	---	---

Worst Plot of 26dB Bandwidth	Worst Plot of 99% Bandwidth
	

For Frequency band 5725-5850 MHz											
Emission Bandwidth											
Mode	N_{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	6dB BW Limit (MHz)
11a	2	5745	17.29	17.08	---	---	15.83	16.06	---	---	0.5
11a	2	5785	17.36	17.08	---	---	15.94	16.29	---	---	0.5
11a	2	5825	17.21	17.11	---	---	15.94	16.06	---	---	0.5
VHT20	2	5745	18.13	17.93	---	---	16.93	16.75	---	---	0.5
VHT20	2	5785	17.97	17.89	---	---	16.52	16.52	---	---	0.5
VHT20	2	5825	18.07	17.92	---	---	16.35	16.29	---	---	0.5
VHT40	2	5755	36.19	36.16	---	---	35.25	35.25	---	---	0.5
VHT40	2	5795	36.19	36.19	---	---	35.25	35.25	---	---	0.5
VHT80	2	5775	87.68	77.71	---	---	73.97	75.36	---	---	0.5

Worst Plots of 99% Bandwidth	Worst Plots of 6dB Bandwidth
	

3.3 RF Output Power

3.3.1 Limit of RF Output Power

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

Frequency Band (MHz)		Limit
☐	5250 ~ 5350	250mW or 11dBm+10 log B
☐	5470 ~ 5725	250mW or 11dBm+10 log B
☒	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	2	5180	15.59	15.98	---	---	75.852	18.80	30.00
11a	2	5200	15.32	15.78	---	---	71.885	18.57	30.00
11a	2	5240	14.82	15.21	---	---	63.528	18.03	30.00
HT20	2	5180	15.31	15.69	---	---	71.031	18.51	30.00
HT20	2	5200	15.42	15.74	---	---	72.331	18.59	30.00
HT20	2	5240	14.52	15.03	---	---	60.156	17.79	30.00
HT40	2	5190	13.28	13.65	---	---	44.455	16.48	30.00
HT40	2	5230	14.68	15.02	---	---	61.145	17.86	30.00
VHT20	2	5180	15.42	15.81	---	---	72.940	18.63	30.00
VHT20	2	5200	15.55	15.86	---	---	74.440	18.72	30.00
VHT20	2	5240	14.68	15.16	---	---	62.186	17.94	30.00
VHT40	2	5190	13.35	13.83	---	---	45.782	16.61	30.00
VHT40	2	5230	14.82	15.18	---	---	63.300	18.01	30.00
VHT80	2	5210	10.34	11.68	---	---	25.537	14.07	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	2	5745	15.76	15.62	---	---	74.146	18.70	30.00
11a	2	5785	15.42	15.36	---	---	69.190	18.40	30.00
11a	2	5825	14.96	14.81	---	---	61.602	17.90	30.00
HT20	2	5745	15.08	15.12	---	---	64.719	18.11	30.00
HT20	2	5785	14.69	14.91	---	---	60.418	17.81	30.00
HT20	2	5825	14.92	14.65	---	---	60.220	17.80	30.00
HT40	2	5755	10.92	10.71	---	---	24.136	13.83	30.00
HT40	2	5795	10.85	11.03	---	---	24.838	13.95	30.00
VHT20	2	5745	15.2	15.34	---	---	67.311	18.28	30.00
VHT20	2	5785	14.81	15.02	---	---	62.038	17.93	30.00
VHT20	2	5825	15.05	14.8	---	---	62.188	17.94	30.00
VHT40	2	5755	11.07	10.86	---	---	24.984	13.98	30.00
VHT40	2	5795	10.99	11.16	---	---	25.622	14.09	30.00
VHT80	2	5775	17.26	17.38	---	---	107.912	20.33	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**
☐	Outdoor access point	17 dBm / MHz
☒	Indoor access point	17 dBm / MHz
☐	Fixed point-to-point access points	17 dBm / MHz
☐	Mobile and portable client devices	11 dBm / MHz

Frequency Band (MHz)		**Limit**
☐	5250 ~ 5350	11 dBm / MHz
☐	5470 ~ 5725	11 dBm / MHz
☒	5725 ~ 5850	30 dBm / 500 kHz

3.4.2 Test Procedures

For 5150 ~ 5250 MHz

☐ Method SA-1

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

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

For 5725 ~ 5850 MHz

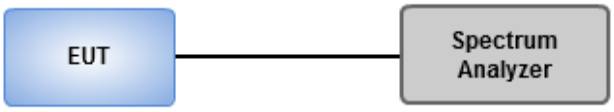
☐ Method SA-1

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

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

3.4.3 Test Setup

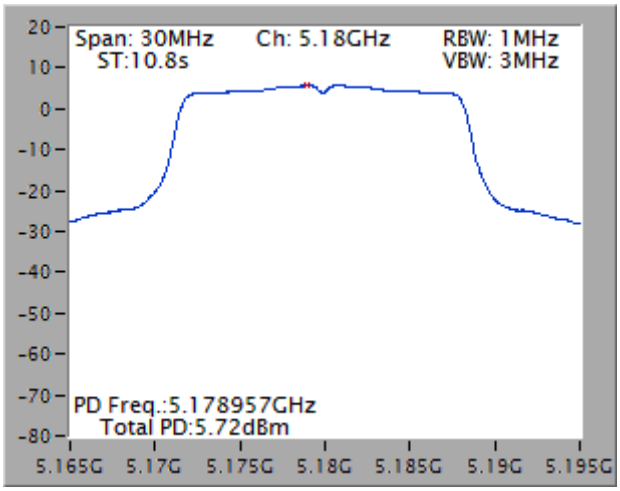


3.4.4 Test Result of Peak Power Spectral Density

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	2	5180	5.72	0.29	6.01	17
11a	2	5200	5.45	0.29	5.74	17
11a	2	5240	5.50	0.29	5.79	17
VHT20	2	5180	4.94	0.42	5.36	17
VHT20	2	5200	5.05	0.42	5.47	17
VHT20	2	5240	4.99	0.42	5.41	17
VHT40	2	5190	-0.77	0.48	-0.29	17
VHT40	2	5230	1.12	0.48	1.60	17
VHT80	2	5210	-6.37	1.46	-4.91	17

Note:
1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.

Worst Plot

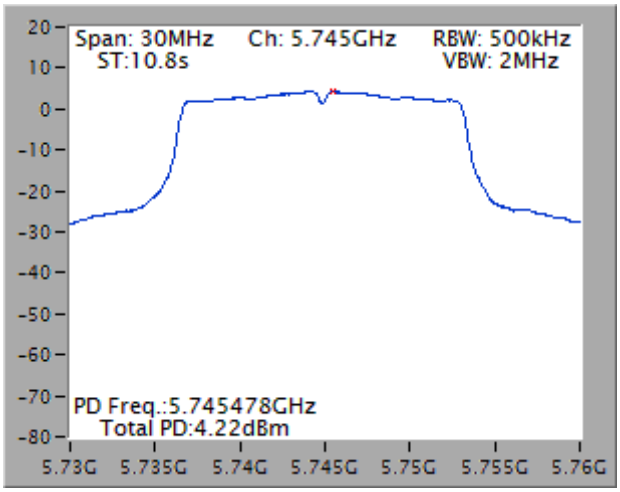


Note: the worst plot is w/o duty factor.

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	2	5745	4.22	0.29	4.51	30.00
11a	2	5785	4.16	0.29	4.45	30.00
11a	2	5825	3.65	0.29	3.94	30.00
VHT20	2	5745	3.81	0.42	4.23	30.00
VHT20	2	5785	3.43	0.42	3.85	30.00
VHT20	2	5825	3.19	0.42	3.61	30.00
VHT40	2	5755	-4.11	0.48	-3.63	30.00
VHT40	2	5795	-4.27	0.48	-3.79	30.00
VHT80	2	5775	-0.96	1.46	0.50	30.00

Note:
1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.

Worst Plot



Note: the worst plot is w/o duty factor.

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	☒	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.
	☐	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

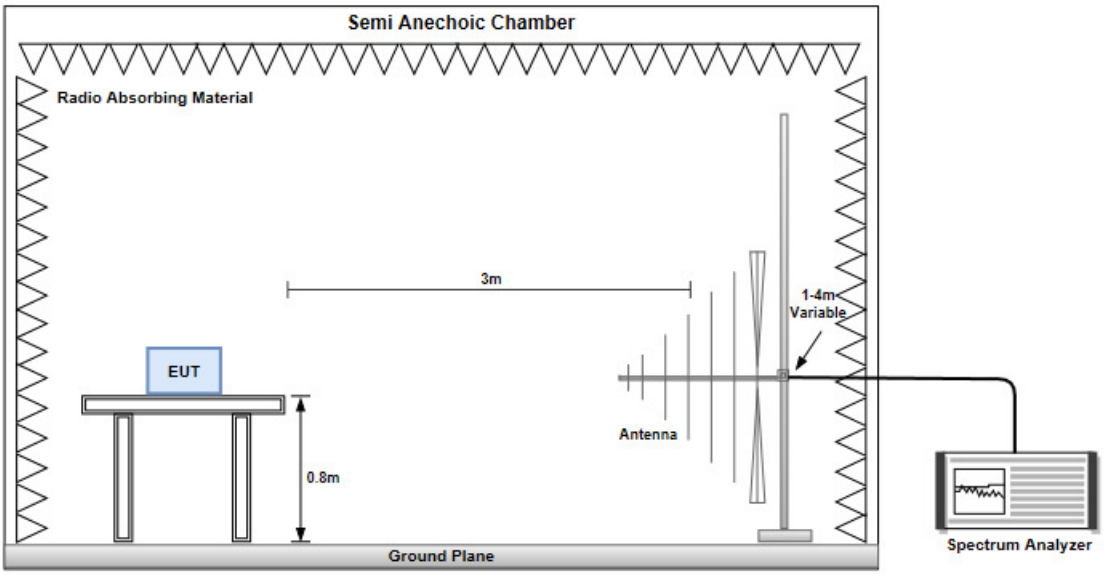
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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:

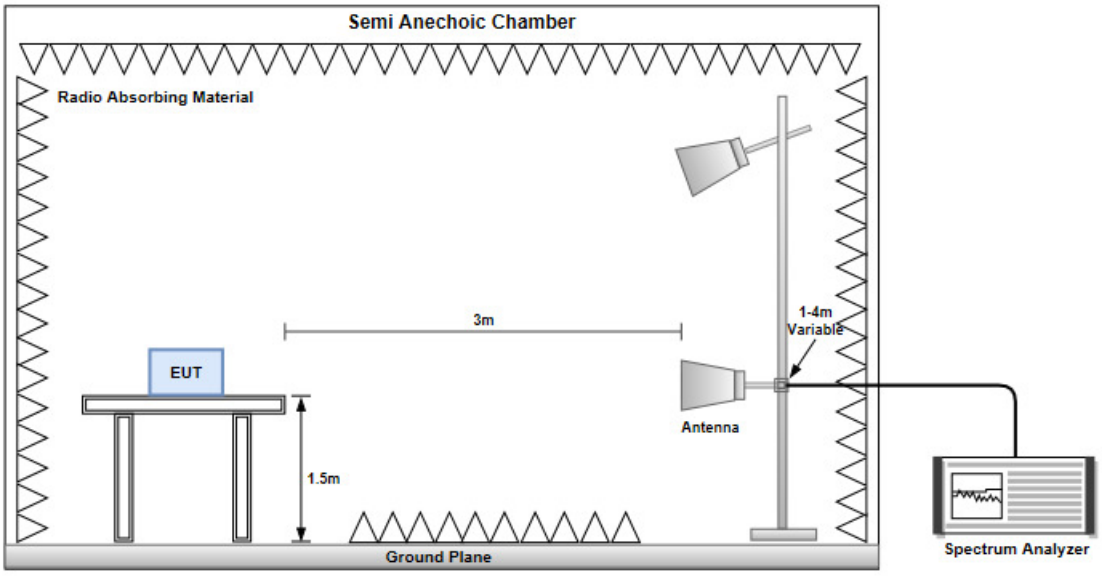
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

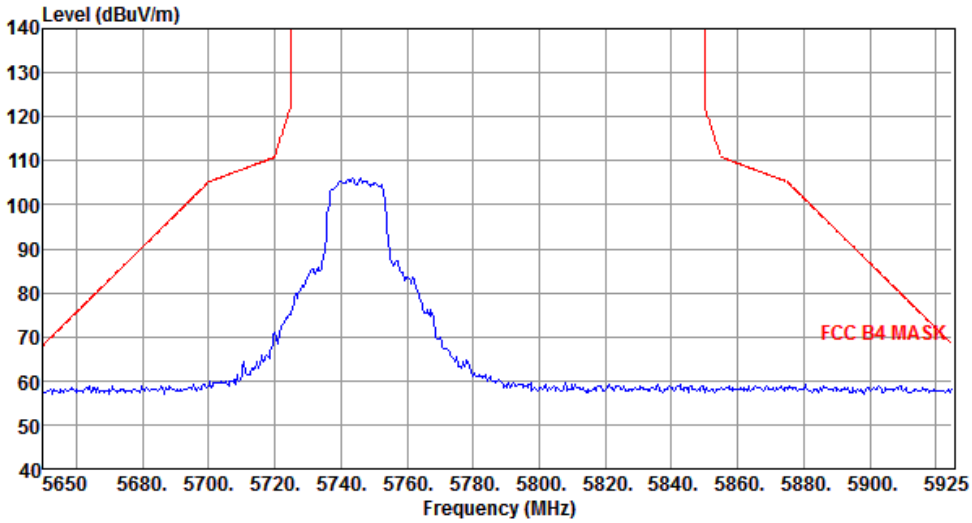


Radiated Emissions above 1 GHz

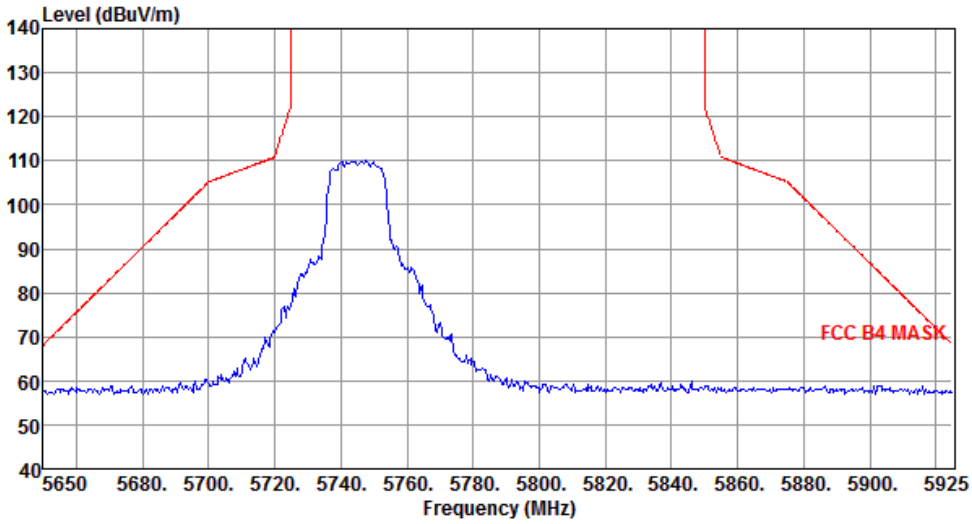


3.5.4 Transmitter Radiated Band Edge for 11a

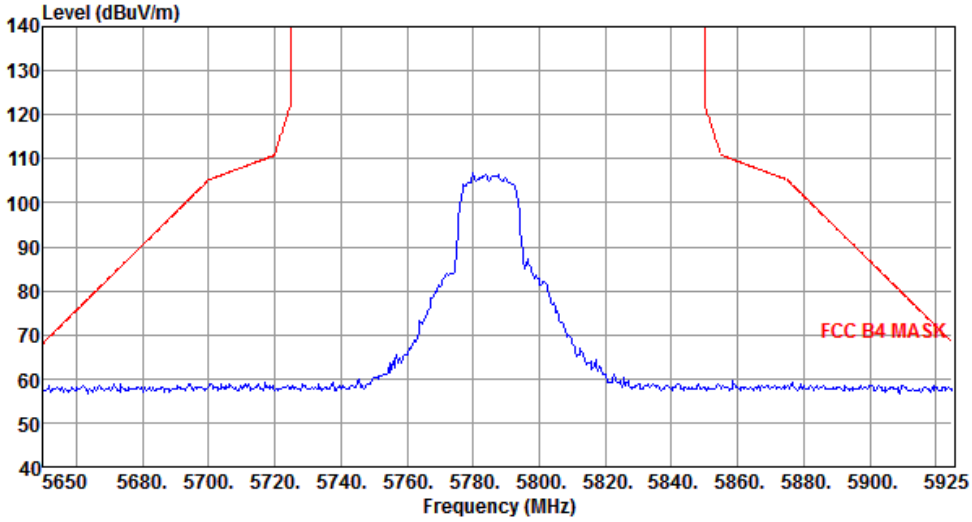
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



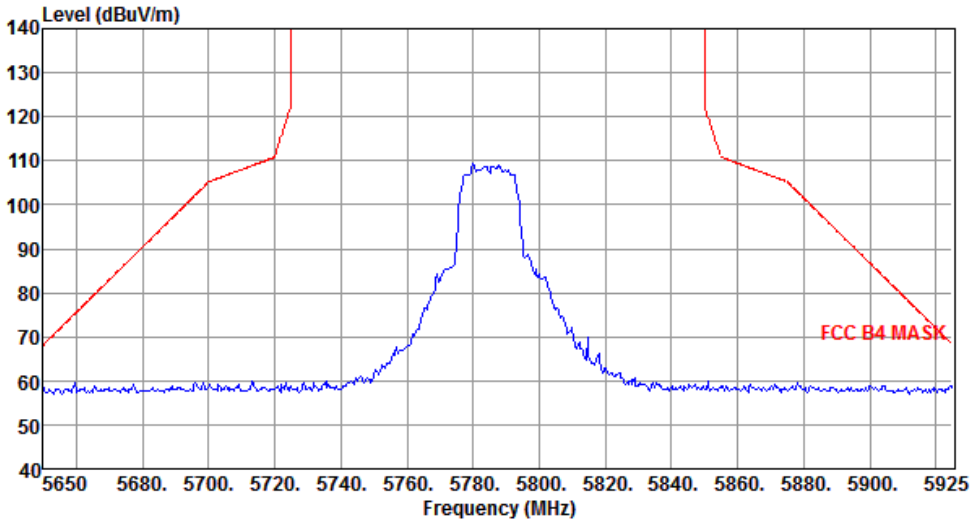
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



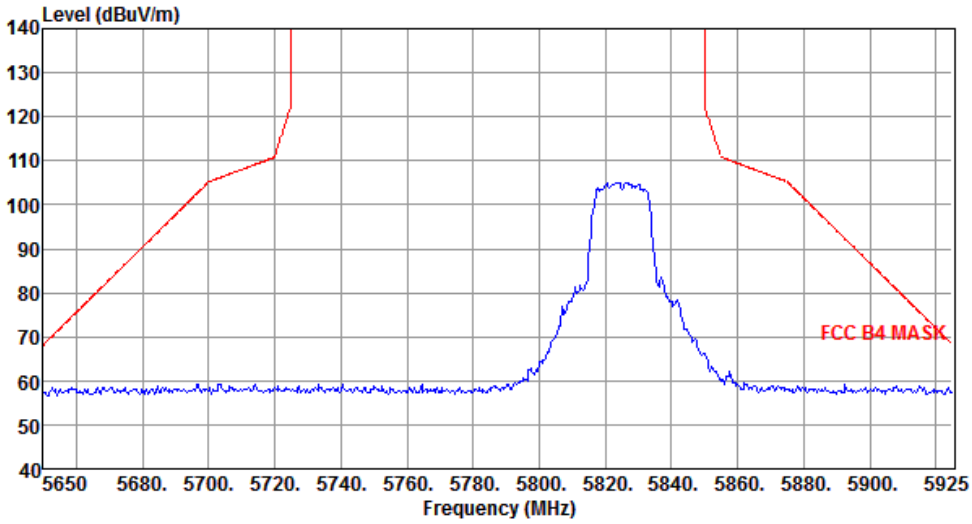
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



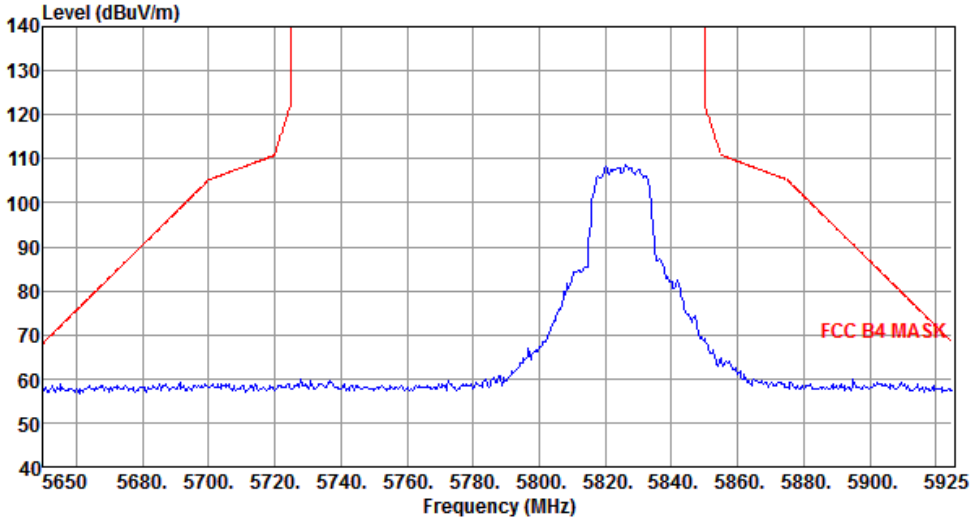
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



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

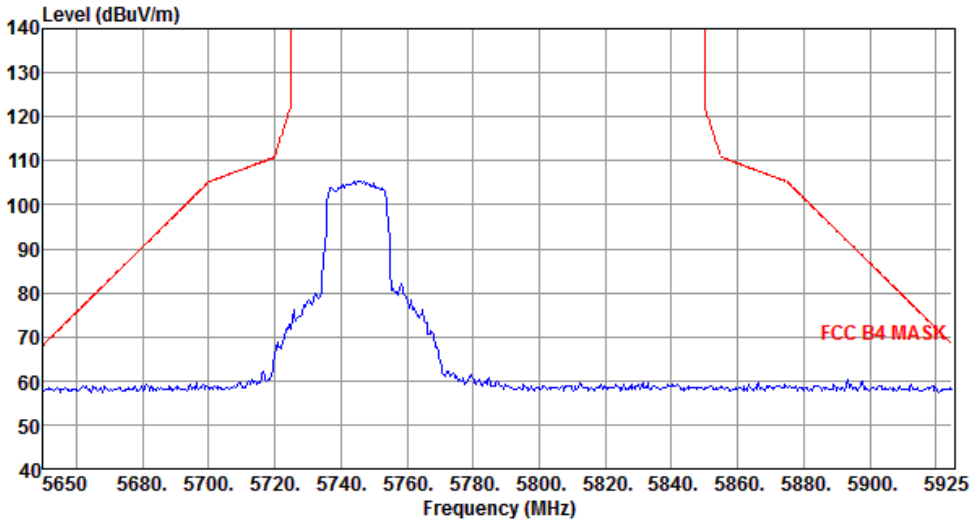


Modulation	11a	Test Freq. (MHz)	5825
Polarization	Vertical		

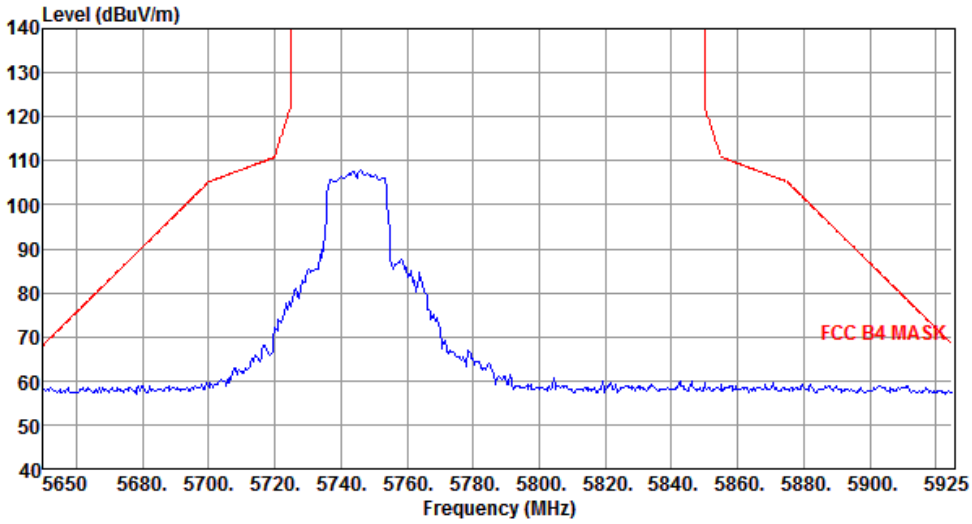


3.5.5 Transmitter Radiated Band Edge for VHT20

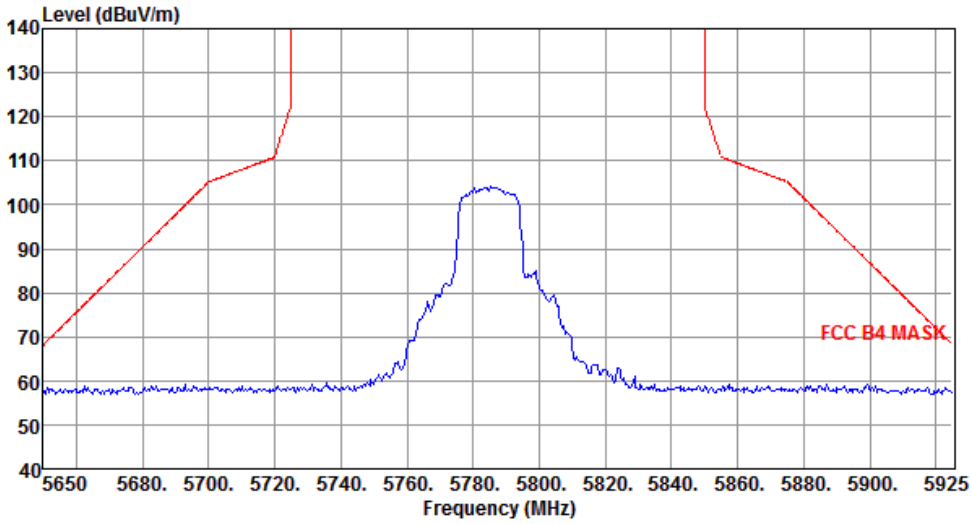
Modulation	VHT20	**Test Freq. (MHz)**	5745
Polarization	Horizontal		



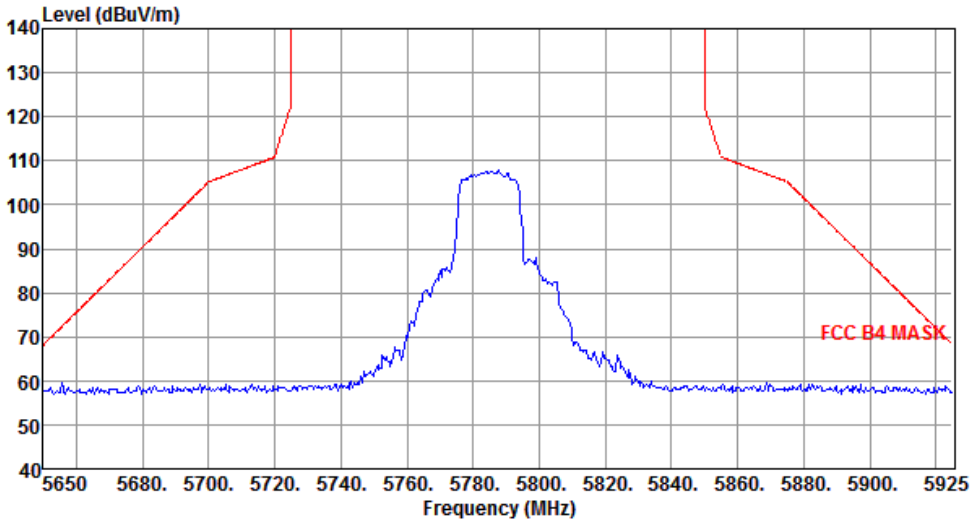
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



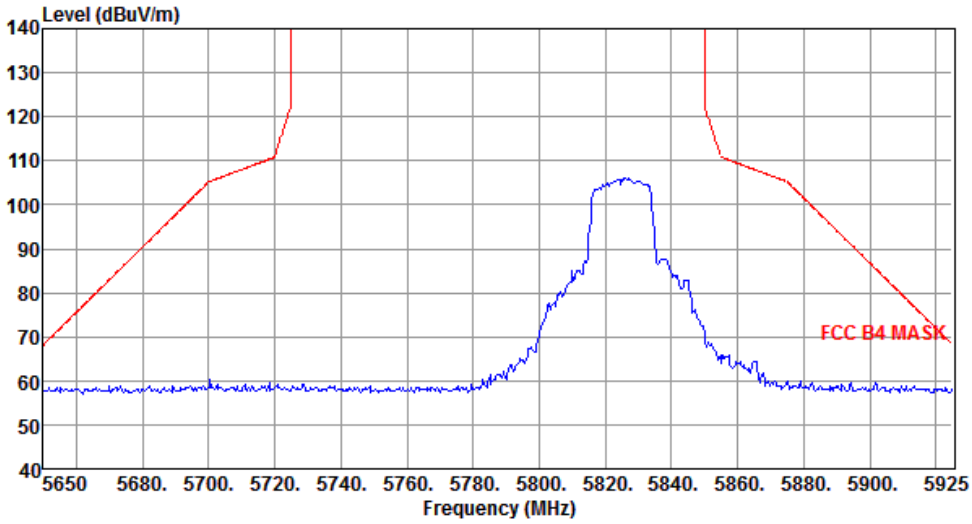
Modulation	VHT20	**Test Freq. (MHz)**	5785
Polarization	Horizontal		



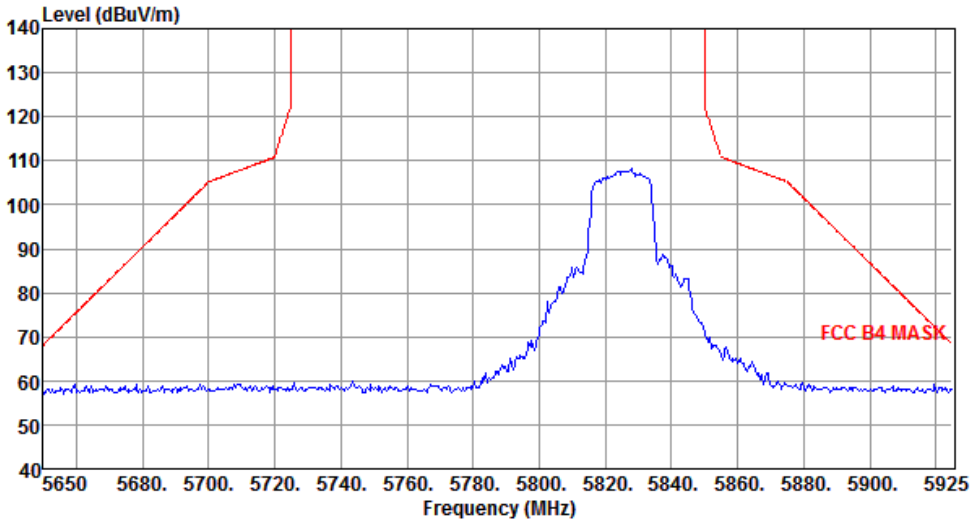
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		

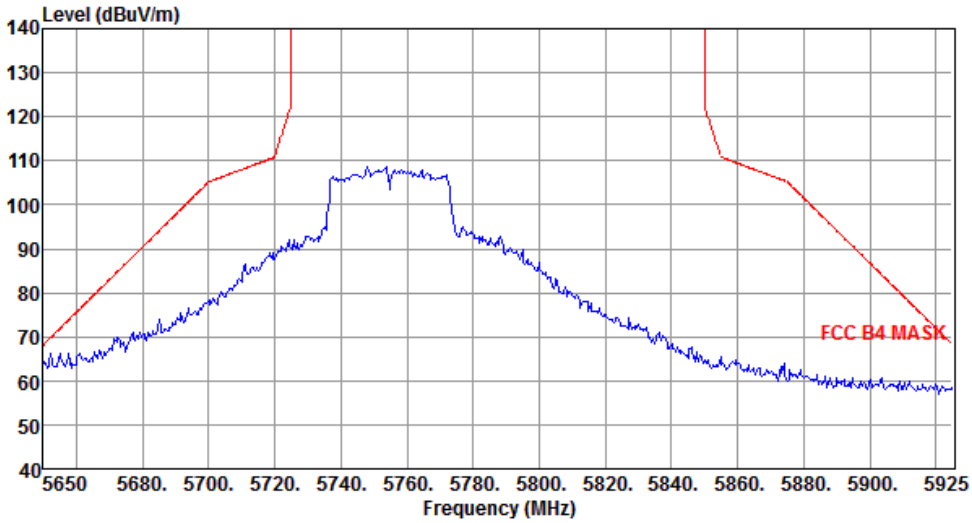


Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		

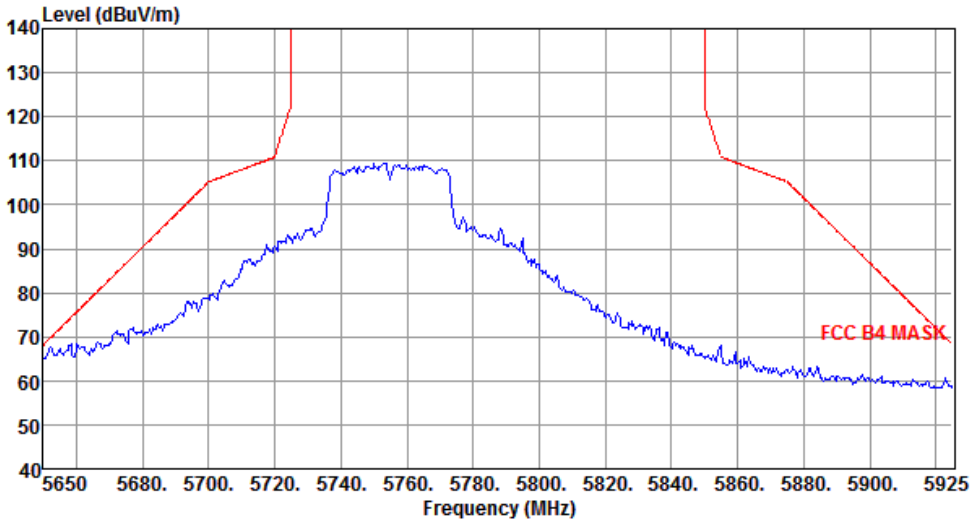


3.5.6 Transmitter Radiated Band Edge for VHT40

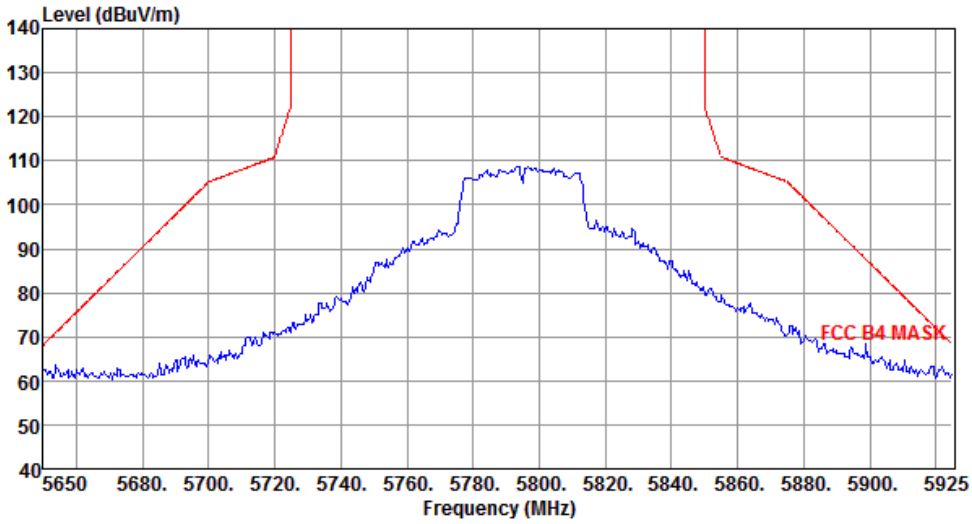
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



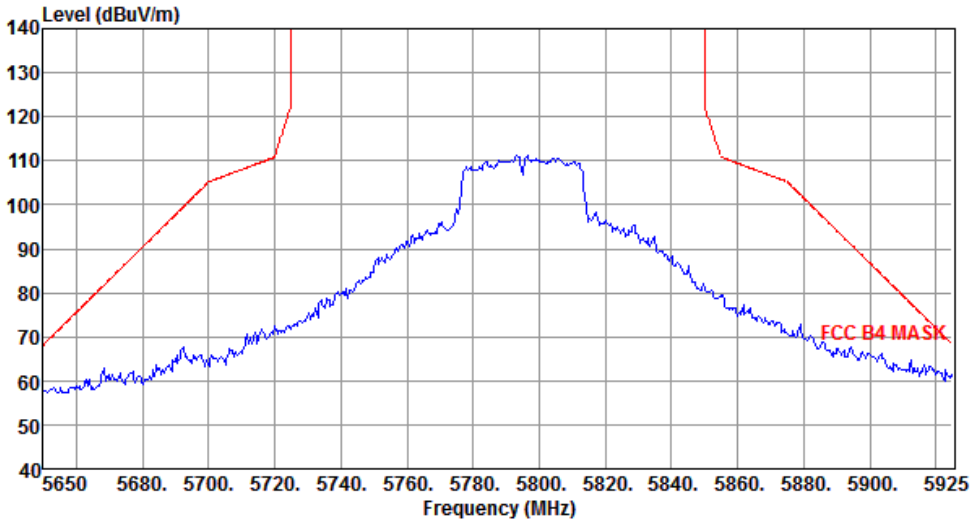
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		

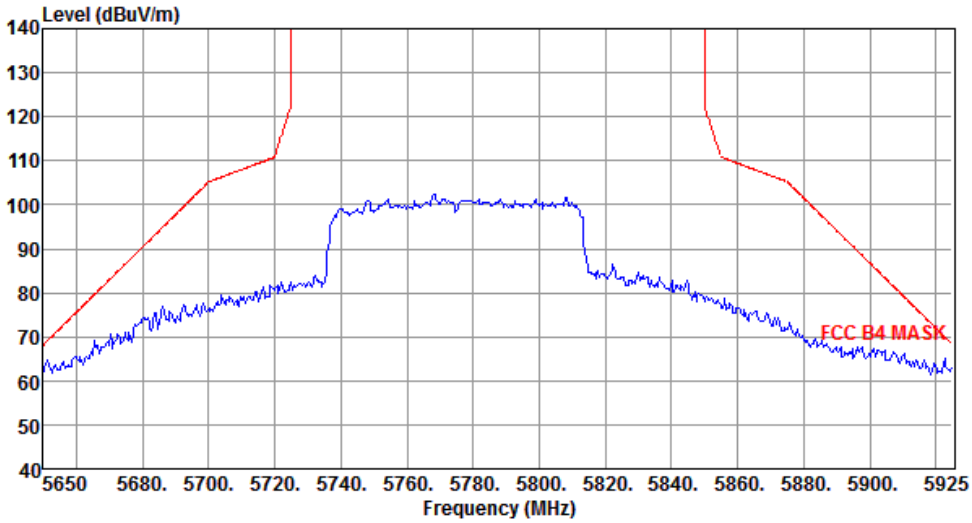


Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		

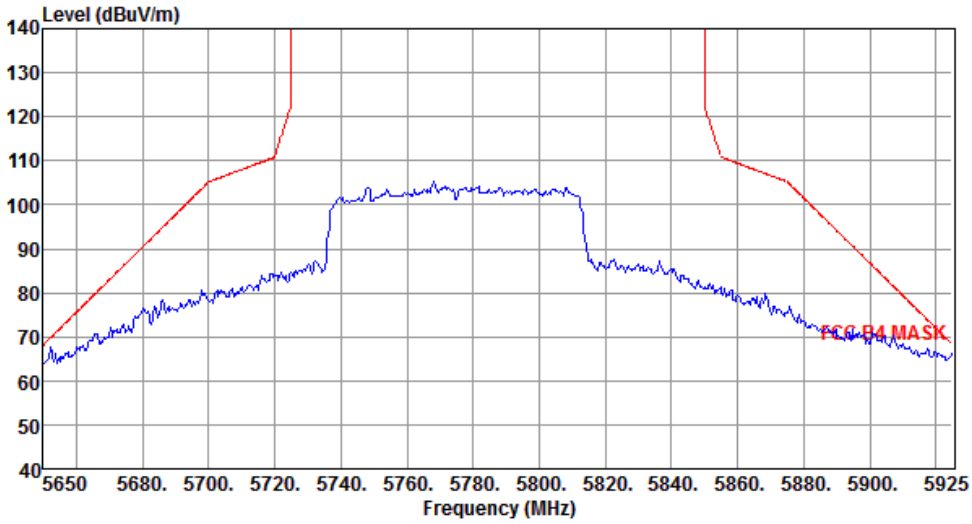


3.5.7 Transmitter Radiated Band Edge for VHT80

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

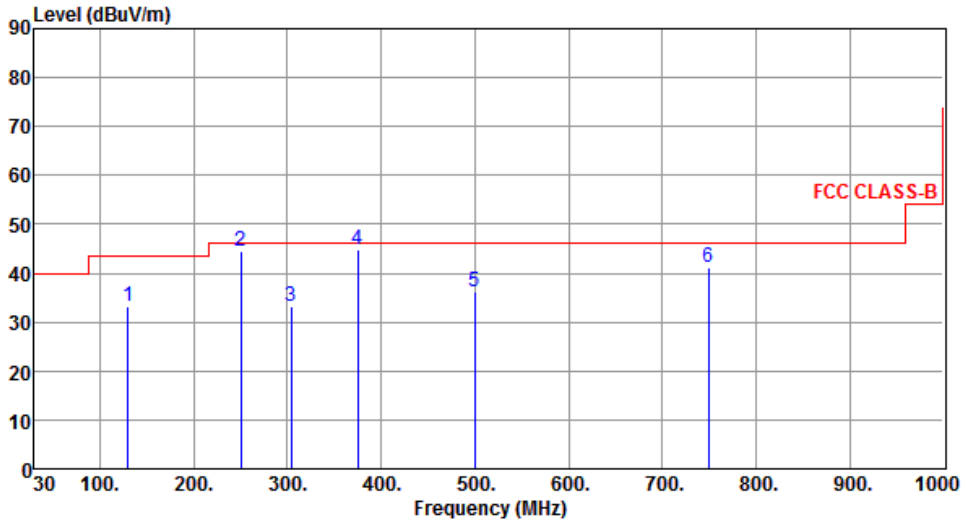


Modulation	VHT80	**Test Freq. (MHz)**	5775
Polarization	Vertical		



3.5.8 Transmitter Radiated Unwanted Emissions (Below 1GHz)

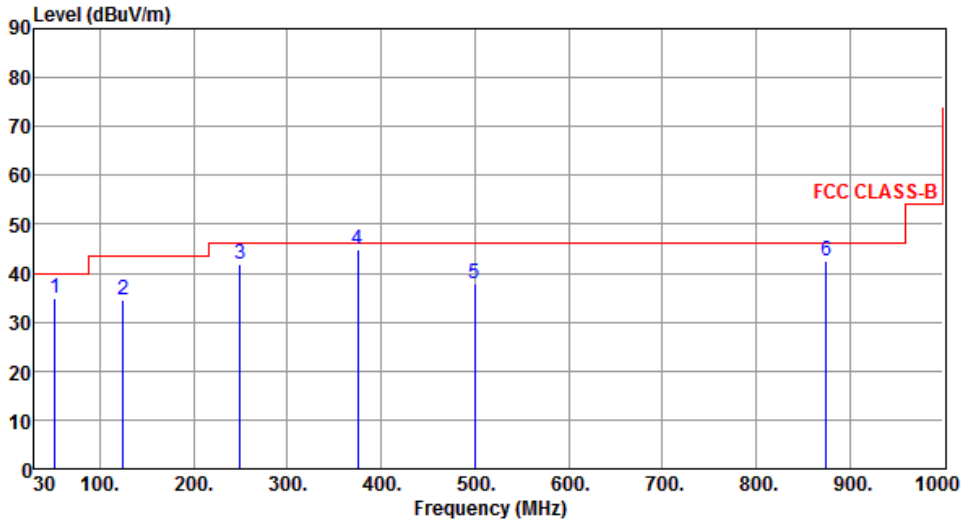
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	129.97	33.19	43.50	-10.31	42.22	-9.03	Peak	---	---
2	249.96	44.46	46.00	-1.54	53.67	-9.21	QP	100	177
3	304.36	33.15	46.00	-12.85	40.55	-7.40	Peak	---	---
4	375.00	44.92	46.00	-1.08	50.54	-5.62	QP	100	133
5	499.78	36.06	46.00	-9.94	38.87	-2.81	Peak	---	---
6	749.41	41.06	46.00	-4.94	39.25	1.81	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.

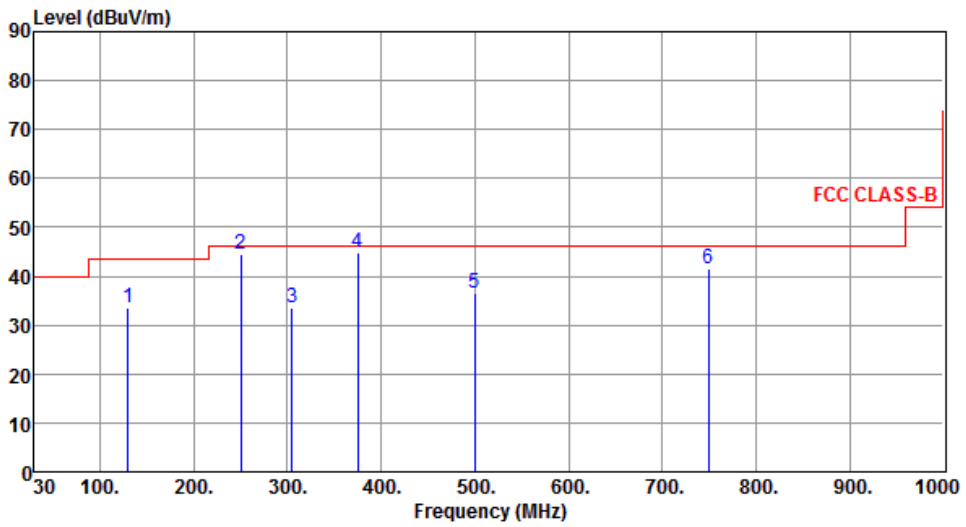
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	52.11	34.74	40.00	-5.26	42.64	-7.90	Peak	---	---
2	124.73	34.67	43.50	-8.83	44.29	-9.62	Peak	---	---
3	249.86	41.96	46.00	-4.04	51.17	-9.21	Peak	---	---
4	375.00	44.78	46.00	-1.22	50.40	-5.62	QP	148	253
5	499.85	37.95	46.00	-8.05	40.76	-2.81	Peak	---	---
6	874.88	42.55	46.00	-3.45	38.77	3.78	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.

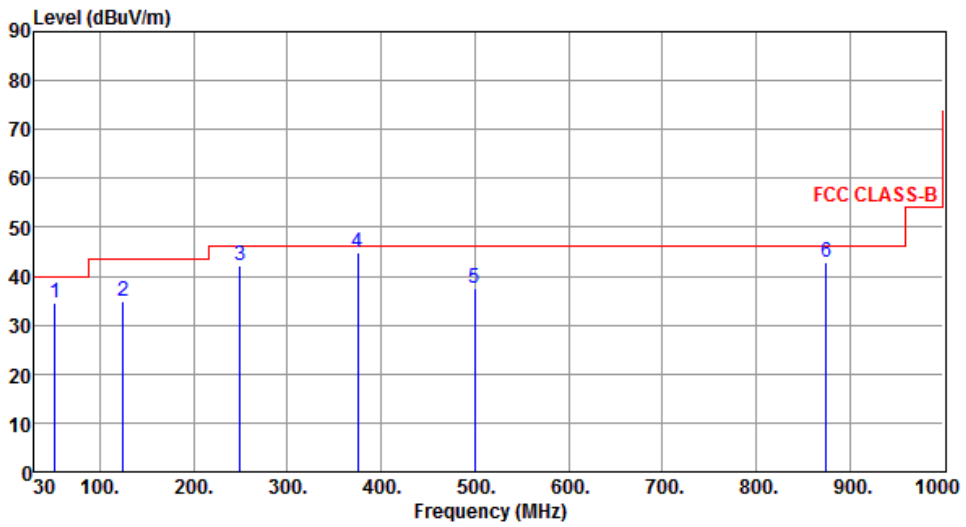
Modulation	VHT80	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	129.82	33.51	43.50	-9.99	42.56	-9.05	Peak	---	---
2	249.98	44.49	46.00	-1.51	53.70	-9.21	QP	100	172
3	304.56	33.44	46.00	-12.56	40.83	-7.39	Peak	---	---
4	375.00	44.95	46.00	-1.05	50.57	-5.62	QP	100	140
5	499.85	36.60	46.00	-9.40	39.41	-2.81	Peak	---	---
6	749.58	41.46	46.00	-4.54	39.65	1.81	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	VHT80	Test Freq. (MHz)	5755
Polarization	Vertical		

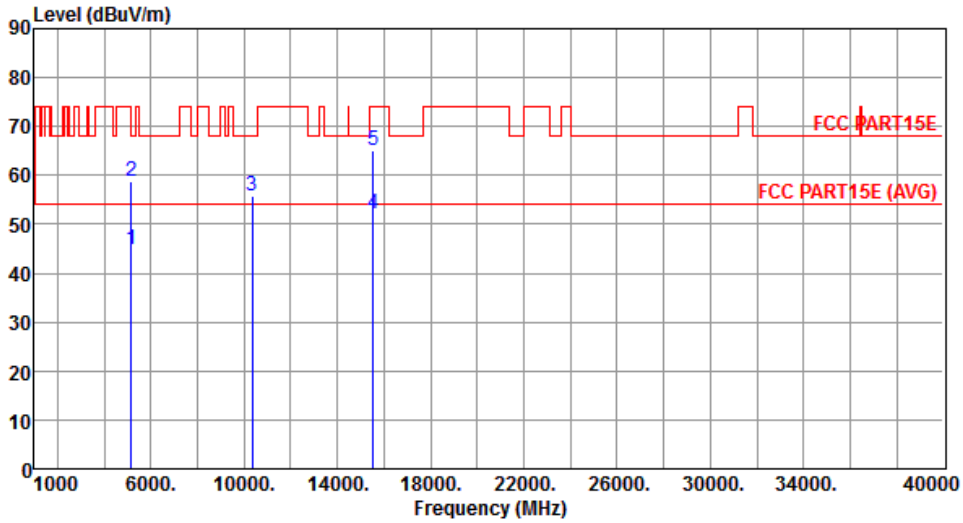


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	52.36	34.54	40.00	-5.46	42.48	-7.94	Peak	---	---
2	124.88	34.98	43.50	-8.52	44.58	-9.60	Peak	---	---
3	249.74	42.21	46.00	-3.79	51.43	-9.22	Peak	---	---
4	375.00	44.68	46.00	-1.32	50.30	-5.62	QP	144	249
5	499.77	37.68	46.00	-8.32	40.49	-2.81	Peak	---	---
6	874.62	42.75	46.00	-3.25	38.98	3.77	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

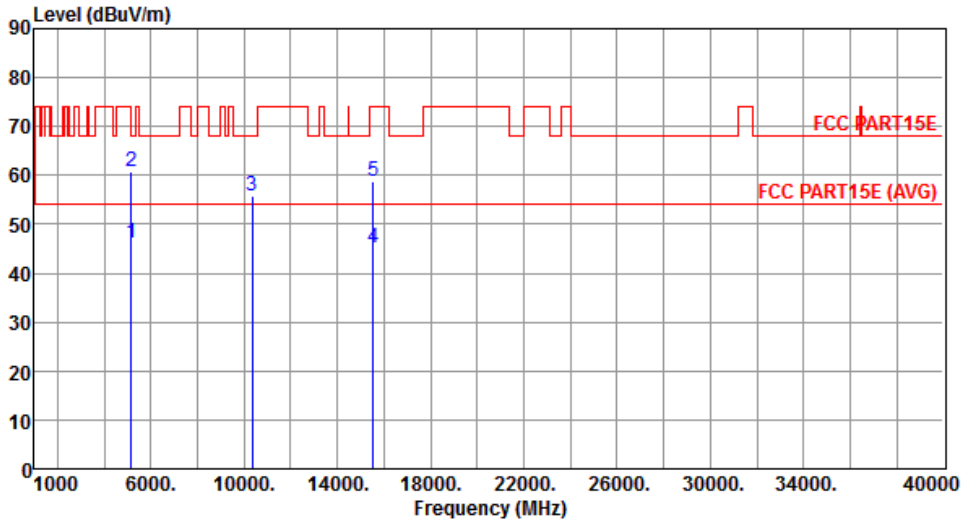
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	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	44.75	54.00	-9.25	40.35	4.40	Average	100	26
2	5150.00	58.77	74.00	-15.23	54.37	4.40	Peak	100	26
3	10360.00	55.73	68.20	-12.47	41.53	14.20	Peak	144	106
4	15540.00	52.18	54.00	-1.82	37.07	15.11	Average	138	226
5	15540.00	64.97	74.00	-9.03	49.86	15.11	Peak	138	226

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).

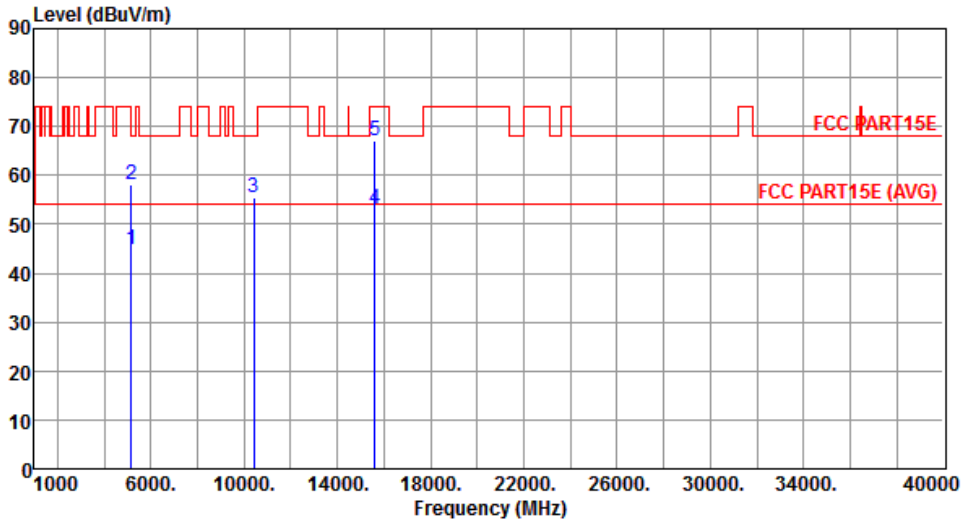
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	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	46.16	54.00	-7.84	41.76	4.40	Average	152	344
2	5150.00	60.75	74.00	-13.25	56.35	4.40	Peak	152	344
3	10360.00	55.94	68.20	-12.26	41.74	14.20	Peak	115	302
4	15540.00	45.23	54.00	-8.77	30.12	15.11	Average	141	73
5	15540.00	58.85	74.00	-15.15	43.74	15.11	Peak	141	73

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).

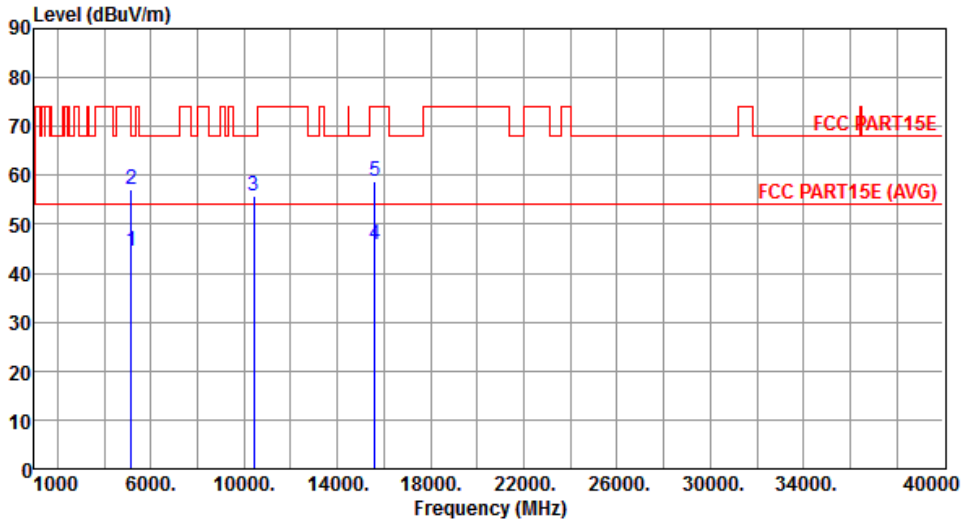
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	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	44.70	54.00	-9.30	40.30	4.40	Average	100	34
2	5150.00	58.19	74.00	-15.81	53.79	4.40	Peak	100	34
3	10400.00	55.45	68.20	-12.75	41.17	14.28	Peak	114	193
4	15600.00	52.99	54.00	-1.01	37.97	15.02	Average	135	221
5	15600.00	67.13	74.00	-6.87	52.11	15.02	Peak	135	221

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).

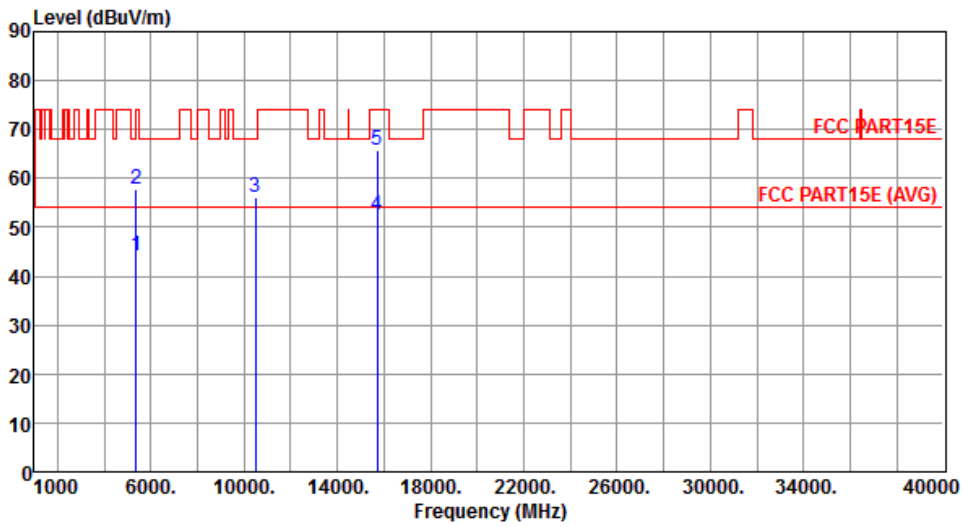
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



	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	44.56	54.00	-9.44	40.16	4.40	Average	131	333
2	5150.00	57.22	74.00	-16.78	52.82	4.40	Peak	131	333
3	10400.00	55.82	68.20	-12.38	41.54	14.28	Peak	132	72
4	15600.00	45.85	54.00	-8.15	30.83	15.02	Average	136	225
5	15600.00	58.85	74.00	-15.15	43.83	15.02	Peak	136	225

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).

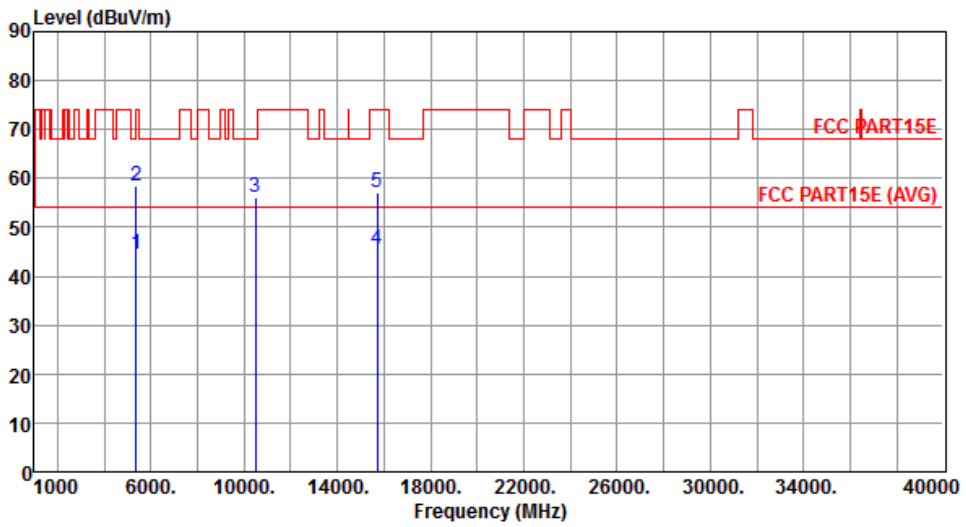
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	44.31	54.00	-9.69	39.67	4.64	Average	100	27
2	5350.00	57.69	74.00	-16.31	53.05	4.64	Peak	100	27
3	10480.00	56.14	68.20	-12.06	41.71	14.43	Peak	149	115
4	15720.00	52.57	54.00	-1.43	37.70	14.87	Average	137	223
5	15720.00	65.84	74.00	-8.16	50.97	14.87	Peak	137	223

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).

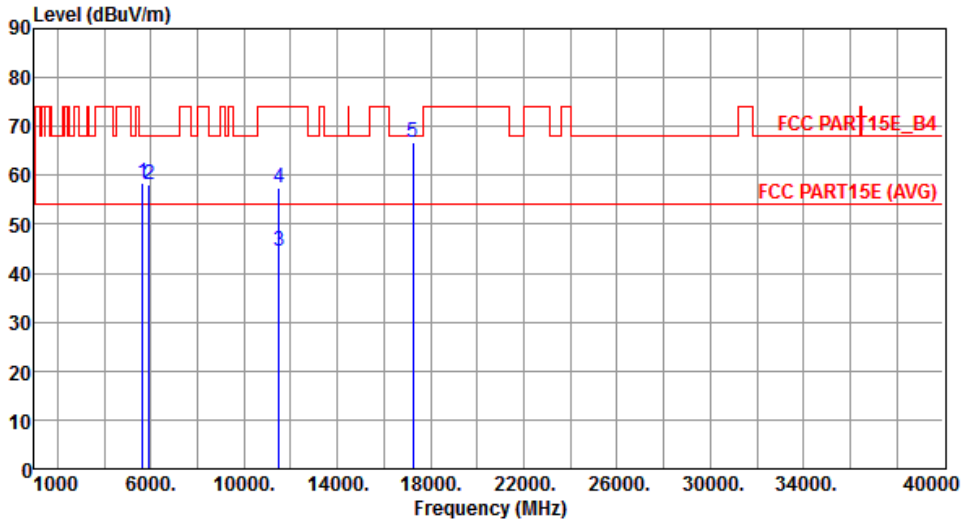
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	44.48	54.00	-9.52	39.84	4.64	Average	100	330
2	5350.00	58.37	74.00	-15.63	53.73	4.64	Peak	100	330
3	10480.00	56.25	68.20	-11.95	41.82	14.43	Peak	108	25
4	15720.00	45.54	54.00	-8.46	30.67	14.87	Average	152	315
5	15720.00	57.21	74.00	-16.79	42.34	14.87	Peak	152	315

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).

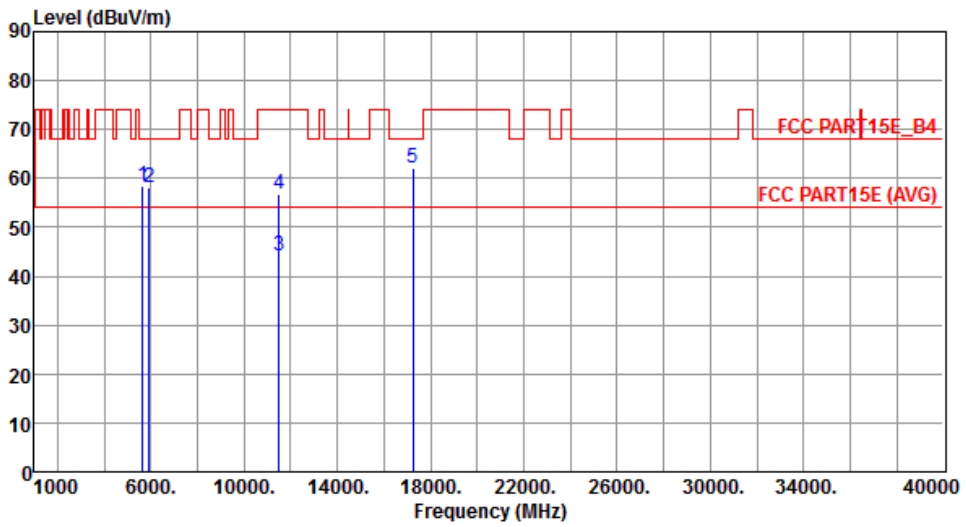
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



	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	58.40	68.20	-9.80	53.40	5.00	Peak	100	303
2	5925.00	58.16	68.20	-10.04	52.82	5.34	Peak	100	303
3	11490.00	44.46	54.00	-9.54	28.93	15.53	Average	112	81
4	11490.00	57.49	74.00	-16.51	41.96	15.53	Peak	112	81
5	17235.00	66.75	68.20	-1.45	47.88	18.87	Peak	176	231

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).

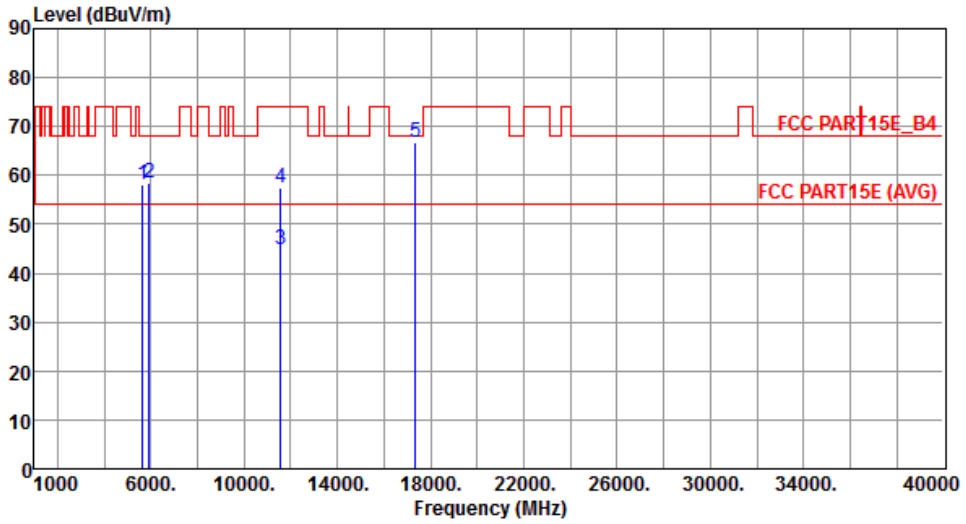
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



	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	58.32	68.20	-9.88	53.32	5.00	Peak	215	273
2	5925.00	57.96	68.20	-10.24	52.62	5.34	Peak	215	273
3	11490.00	44.11	54.00	-9.89	28.58	15.53	Average	192	46
4	11490.00	56.72	74.00	-17.28	41.19	15.53	Peak	192	46
5	17235.00	62.05	68.20	-6.15	43.18	18.87	Peak	156	264

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).

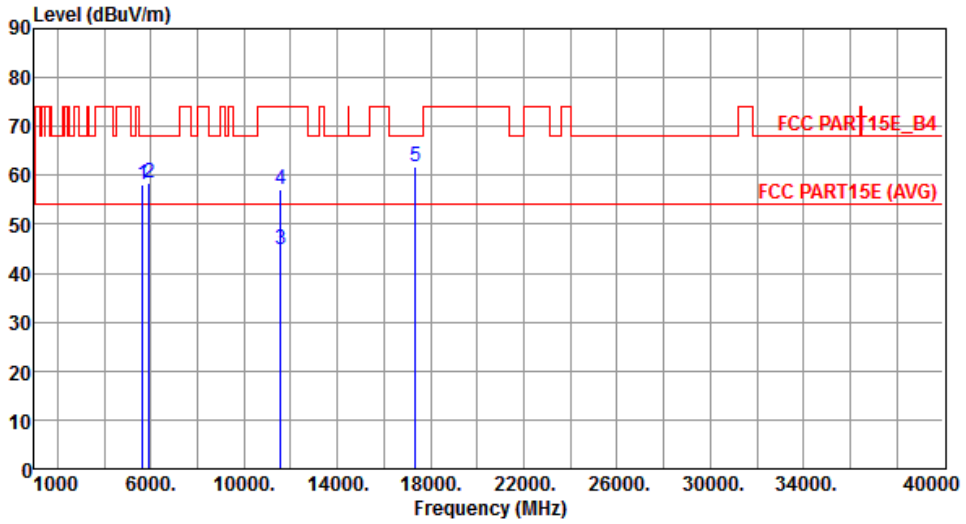
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



	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	58.07	68.20	-10.13	53.07	5.00	Peak	100	310
2	5925.00	58.49	68.20	-9.71	53.15	5.34	Peak	100	310
3	11570.00	44.78	54.00	-9.22	29.45	15.33	Average	159	272
4	11570.00	57.35	74.00	-16.65	42.02	15.33	Peak	159	272
5	17355.00	66.71	68.20	-1.49	47.50	19.21	Peak	178	231

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).

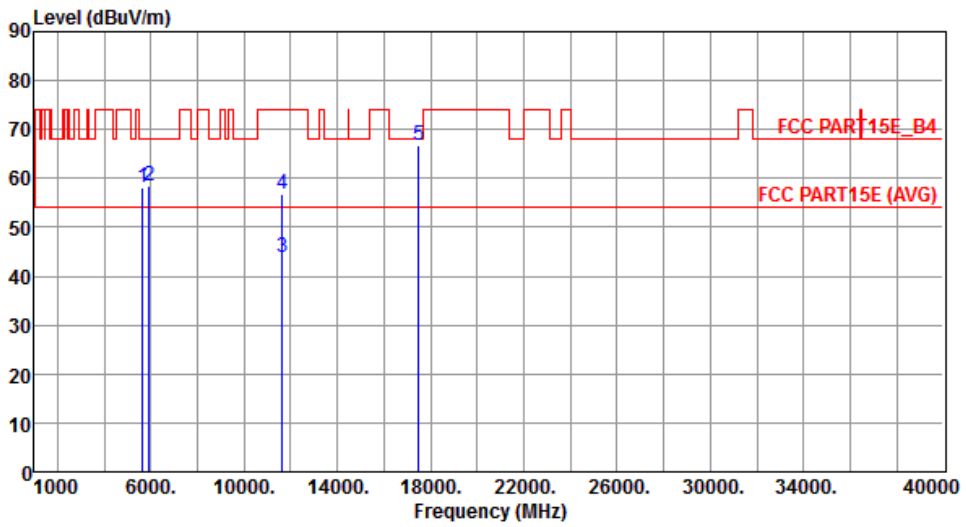
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



	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	58.15	68.20	-10.05	53.15	5.00	Peak	185	334
2	5925.00	58.55	68.20	-9.65	53.21	5.34	Peak	185	334
3	11570.00	44.68	54.00	-9.32	29.35	15.33	Average	110	32
4	11570.00	56.96	74.00	-17.04	41.63	15.33	Peak	110	32
5	17355.00	61.61	68.20	-6.59	42.40	19.21	Peak	131	175

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).

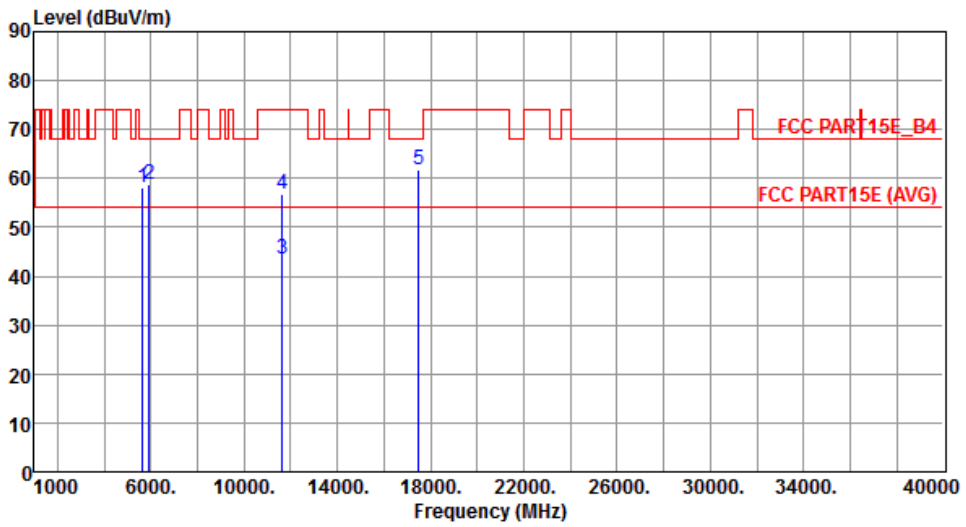
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.00	68.20	-10.20	53.00	5.00	Peak	106	312
2	5925.00	58.51	68.20	-9.69	53.17	5.34	Peak	106	312
3	11650.00	43.70	54.00	-10.30	28.61	15.09	Average	175	145
4	11650.00	56.67	74.00	-17.33	41.58	15.09	Peak	175	145
5	17475.00	66.74	68.20	-1.46	47.19	19.55	Peak	177	229

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		

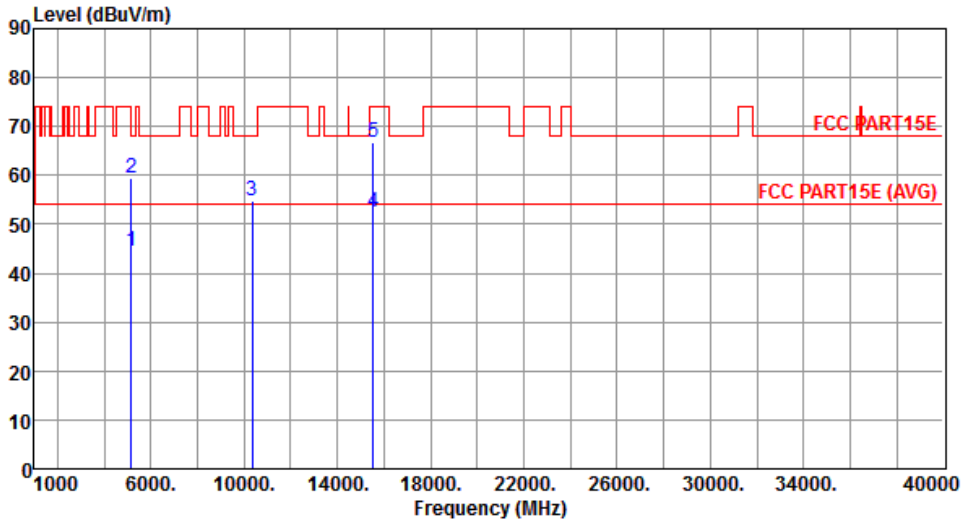


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.09	68.20	-10.11	53.09	5.00	Peak	172	353
2	5925.00	58.79	68.20	-9.41	53.45	5.34	Peak	172	353
3	11650.00	43.57	54.00	-10.43	28.48	15.09	Average	205	149
4	11650.00	56.76	74.00	-17.24	41.67	15.09	Peak	205	149
5	17475.00	61.74	68.20	-6.46	42.19	19.55	Peak	117	62

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

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

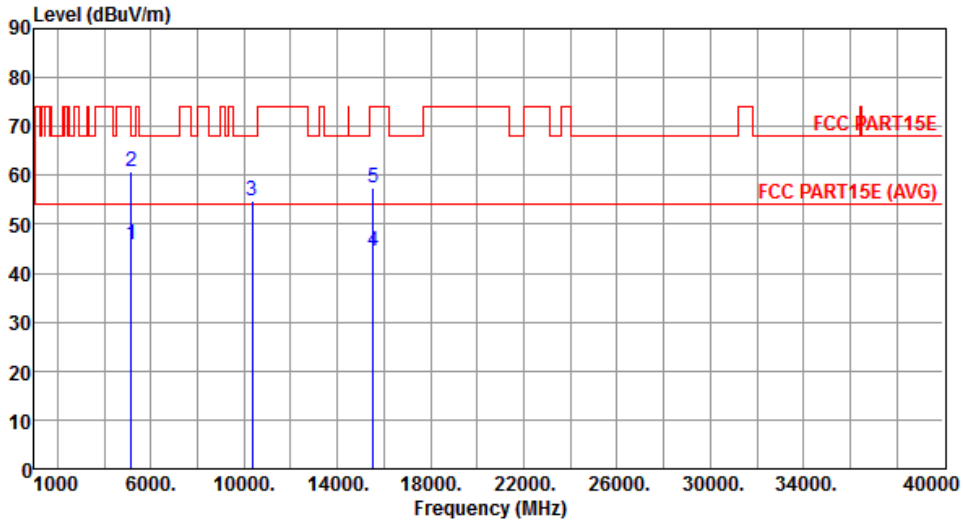
Modulation	VHT20	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



	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	44.60	54.00	-9.40	40.20	4.40	Average	100	38
2	5150.00	59.49	74.00	-14.51	55.09	4.40	Peak	100	38
3	10360.00	54.91	68.20	-13.29	40.71	14.20	Peak	208	242
4	15540.00	52.47	54.00	-1.53	37.36	15.11	Average	131	226
5	15540.00	66.86	74.00	-7.14	51.75	15.11	Peak	131	226

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).

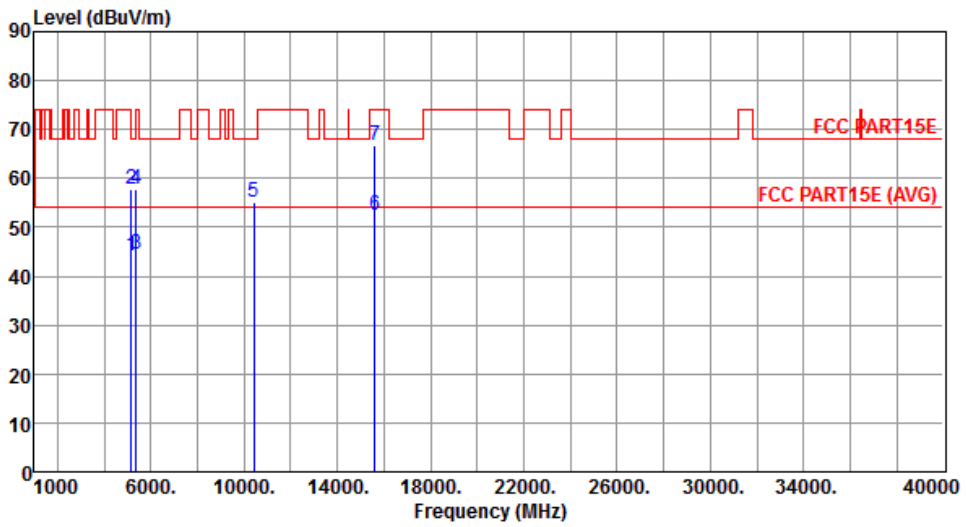
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	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	45.85	54.00	-8.15	41.45	4.40	Average	115	337
2	5150.00	60.68	74.00	-13.32	56.28	4.40	Peak	115	337
3	10360.00	54.85	68.20	-13.35	40.65	14.20	Peak	155	318
4	15540.00	44.37	54.00	-9.63	29.26	15.11	Average	175	48
5	15540.00	57.62	74.00	-16.38	42.51	15.11	Peak	175	48

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

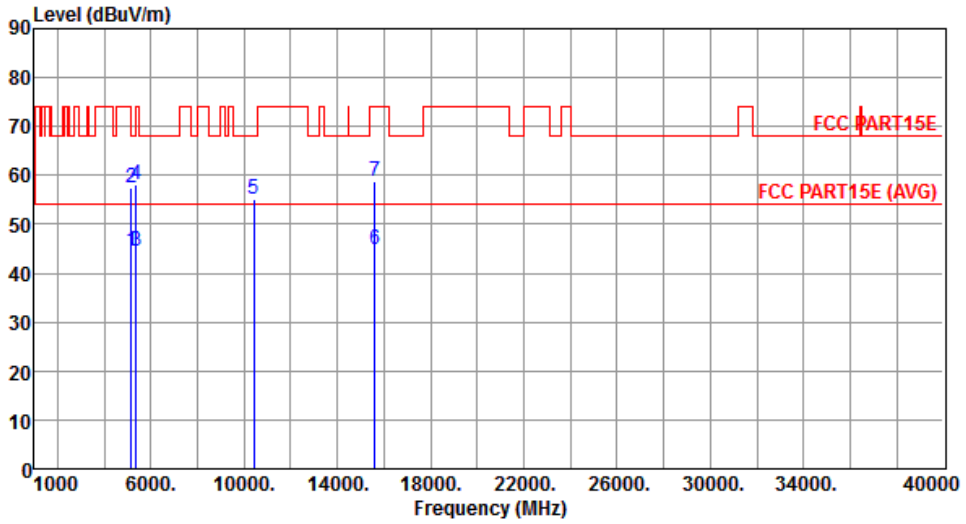
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	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	44.10	54.00	-9.90	39.70	4.40	Average	100	26
2	5150.00	57.63	74.00	-16.37	53.23	4.40	Peak	100	26
3	5350.00	44.37	54.00	-9.63	39.73	4.64	Average	100	26
4	5350.00	57.85	74.00	-16.15	53.21	4.64	Peak	100	26
5	10400.00	55.06	68.20	-13.14	40.78	14.28	Peak	114	203
6	15600.00	52.46	54.00	-1.54	37.44	15.02	Average	125	226
7	15600.00	66.60	74.00	-7.40	51.58	15.02	Peak	125	226

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).

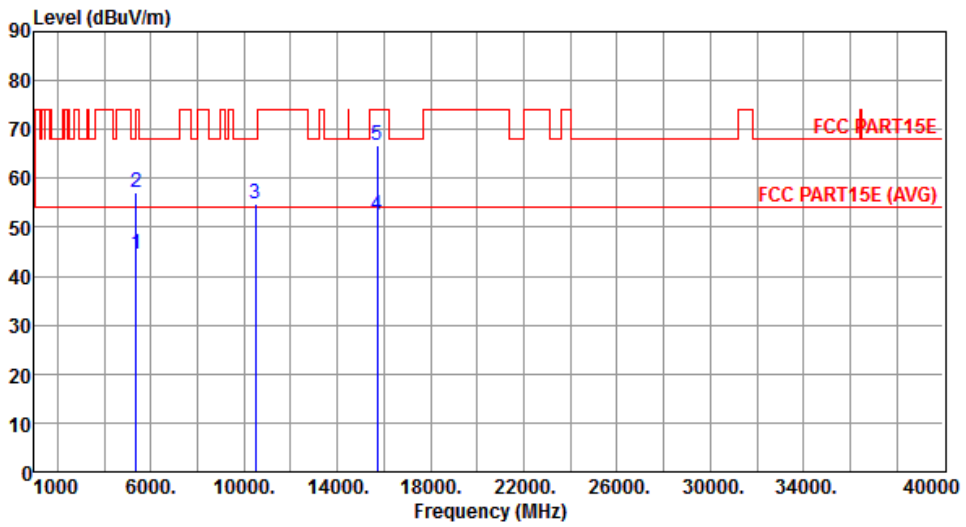
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	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	44.50	54.00	-9.50	40.10	4.40	Average	150	347
2	5150.00	57.55	74.00	-16.45	53.15	4.40	Peak	150	347
3	5350.00	44.65	54.00	-9.35	40.01	4.64	Average	150	347
4	5350.00	58.00	74.00	-16.00	53.36	4.64	Peak	150	347
5	10400.00	55.11	68.20	-13.09	40.83	14.28	Peak	115	287
6	15600.00	44.74	54.00	-9.26	29.72	15.02	Average	218	124
7	15600.00	58.67	74.00	-15.33	43.65	15.02	Peak	218	124

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).

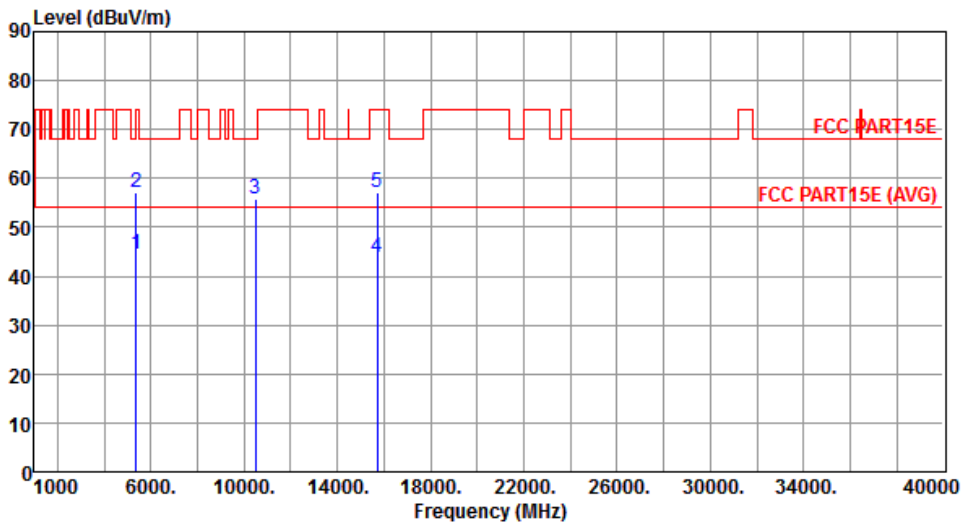
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	44.37	54.00	-9.63	39.73	4.64	Average	100	36
2	5350.00	57.19	74.00	-16.81	52.55	4.64	Peak	100	36
3	10480.00	54.79	68.20	-13.41	40.36	14.43	Peak	197	45
4	15720.00	52.42	54.00	-1.58	37.55	14.87	Average	140	232
5	15720.00	66.73	74.00	-7.27	51.86	14.87	Peak	140	232

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).

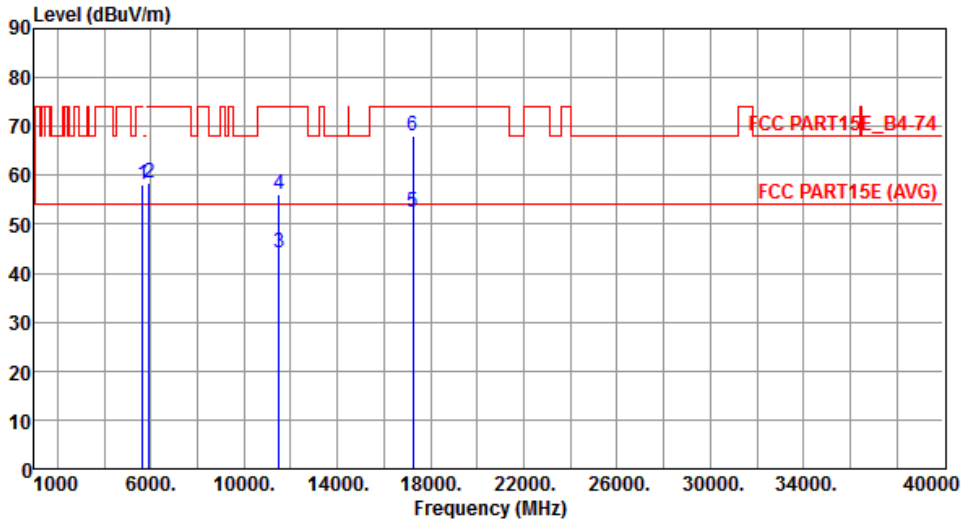
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	44.52	54.00	-9.48	39.88	4.64	Average	158	318
2	5350.00	57.24	74.00	-16.76	52.60	4.64	Peak	158	318
3	10480.00	55.63	68.20	-12.57	41.20	14.43	Peak	157	46
4	15720.00	43.85	54.00	-10.15	28.98	14.87	Average	252	39
5	15720.00	56.96	74.00	-17.04	42.09	14.87	Peak	252	39

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

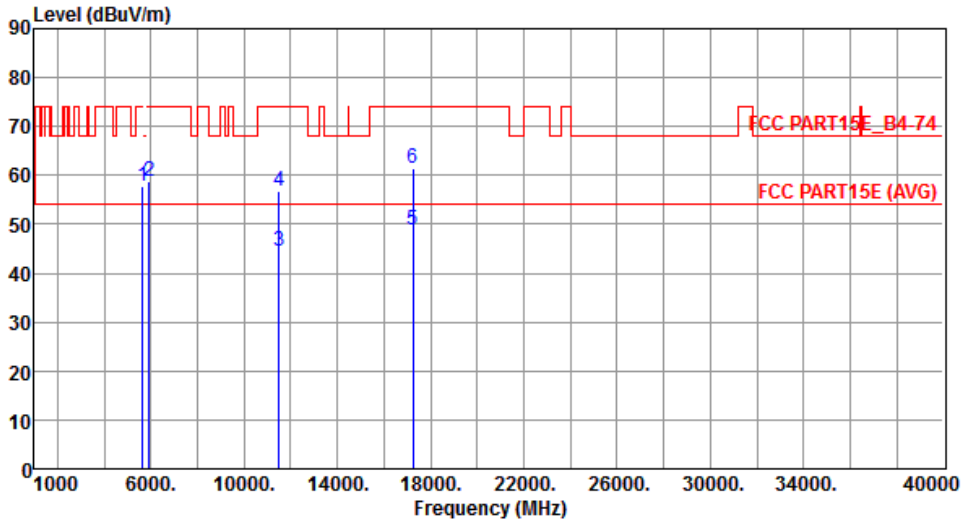
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



	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	58.01	68.20	-10.19	53.01	5.00	Peak	100	311
2	5925.00	58.60	68.20	-9.60	53.26	5.34	Peak	100	311
3	11490.00	44.14	54.00	-9.86	28.61	15.53	Average	206	156
4	11490.00	56.07	74.00	-17.93	40.54	15.53	Peak	206	156
5	17235.00	52.58	54.00	-1.42	33.71	18.87	Average	172	238
6	17235.00	68.24	74.00	-5.76	49.37	18.87	Peak	172	238

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).

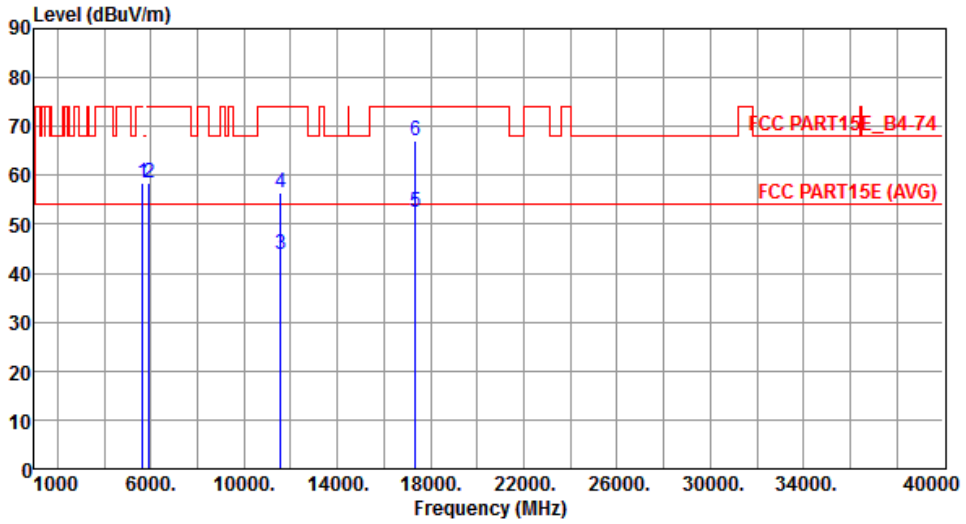
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	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	57.90	68.20	-10.30	52.90	5.00	Peak	198	338
2	5925.00	58.65	68.20	-9.55	53.31	5.34	Peak	198	338
3	11490.00	44.39	54.00	-9.61	28.86	15.53	Average	215	286
4	11490.00	56.80	74.00	-17.20	41.27	15.53	Peak	215	286
5	17235.00	48.83	54.00	-5.17	29.96	18.87	Average	133	249
6	17235.00	61.43	74.00	-12.57	42.56	18.87	Peak	133	249

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).

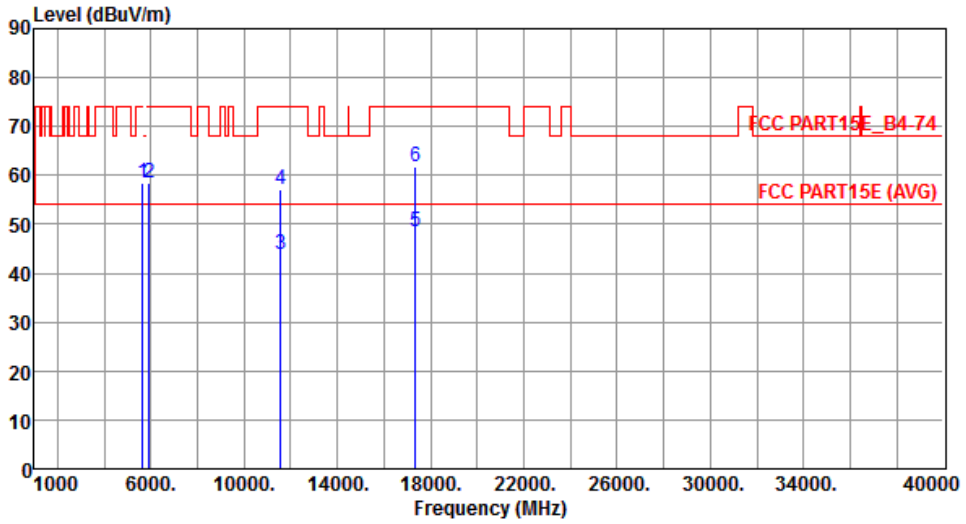
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



	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	58.51	68.20	-9.69	53.51	5.00	Peak	100	311
2	5925.00	58.60	68.20	-9.60	53.26	5.34	Peak	100	311
3	11570.00	43.84	54.00	-10.16	28.51	15.33	Average	100	268
4	11570.00	56.43	74.00	-17.57	41.10	15.33	Peak	100	268
5	17355.00	52.46	54.00	-1.54	33.25	19.21	Average	176	236
6	17355.00	67.24	74.00	-6.76	48.03	19.21	Peak	176	236

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).

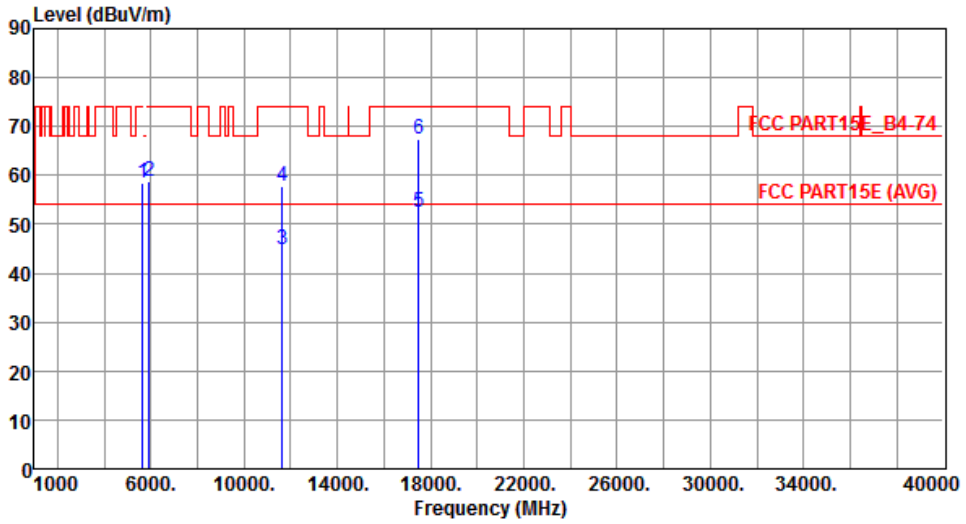
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	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	58.61	68.20	-9.59	53.61	5.00	Peak	179	353
2	5925.00	58.44	68.20	-9.76	53.10	5.34	Peak	179	353
3	11570.00	43.82	54.00	-10.18	28.49	15.33	Average	100	35
4	11570.00	57.11	74.00	-16.89	41.78	15.33	Peak	100	35
5	17355.00	48.63	54.00	-5.37	29.42	19.21	Average	100	166
6	17355.00	61.71	74.00	-12.29	42.50	19.21	Peak	100	166

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).

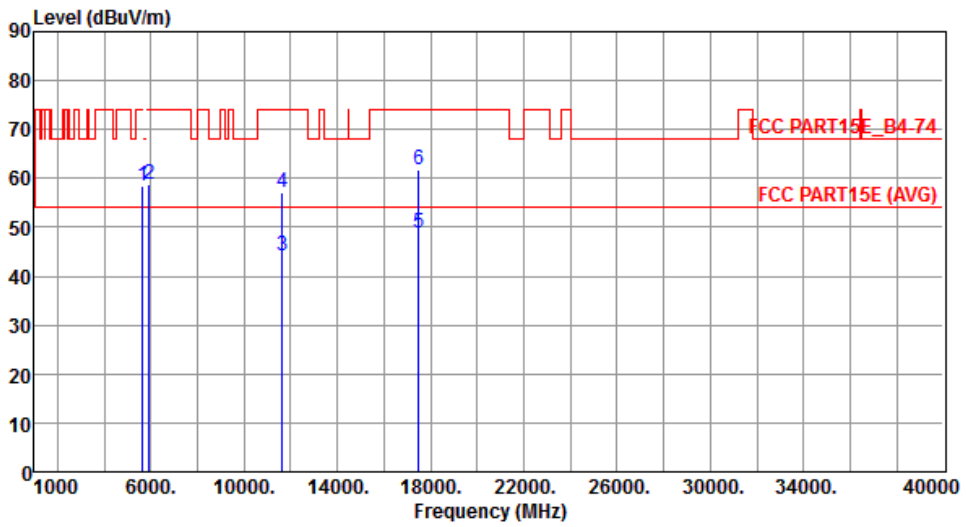
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.40	68.20	-9.80	53.40	5.00	Peak	100	248
2	5925.00	58.74	68.20	-9.46	53.40	5.34	Peak	100	248
3	11650.00	44.69	54.00	-9.31	29.60	15.09	Average	100	204
4	11650.00	57.71	74.00	-16.29	42.62	15.09	Peak	100	204
5	17475.00	52.56	54.00	-1.44	33.01	19.55	Average	179	228
6	17475.00	67.52	74.00	-6.48	47.97	19.55	Peak	179	228

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		

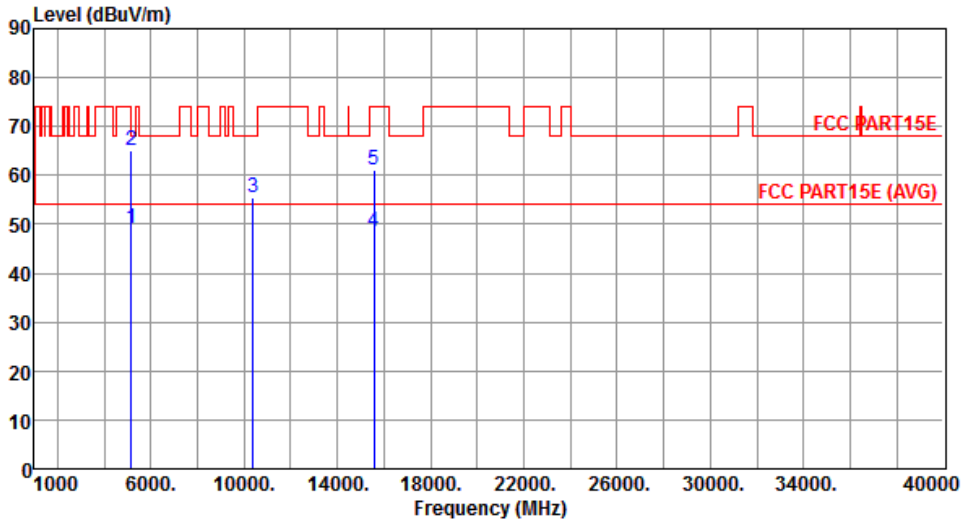


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.30	68.20	-9.90	53.30	5.00	Peak	178	347
2	5925.00	58.67	68.20	-9.53	53.33	5.34	Peak	178	347
3	11650.00	44.17	54.00	-9.83	29.08	15.09	Average	100	145
4	11650.00	57.23	74.00	-16.77	42.14	15.09	Peak	100	145
5	17475.00	48.89	54.00	-5.11	29.34	19.55	Average	100	83
6	17475.00	61.93	74.00	-12.07	42.38	19.55	Peak	100	83

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

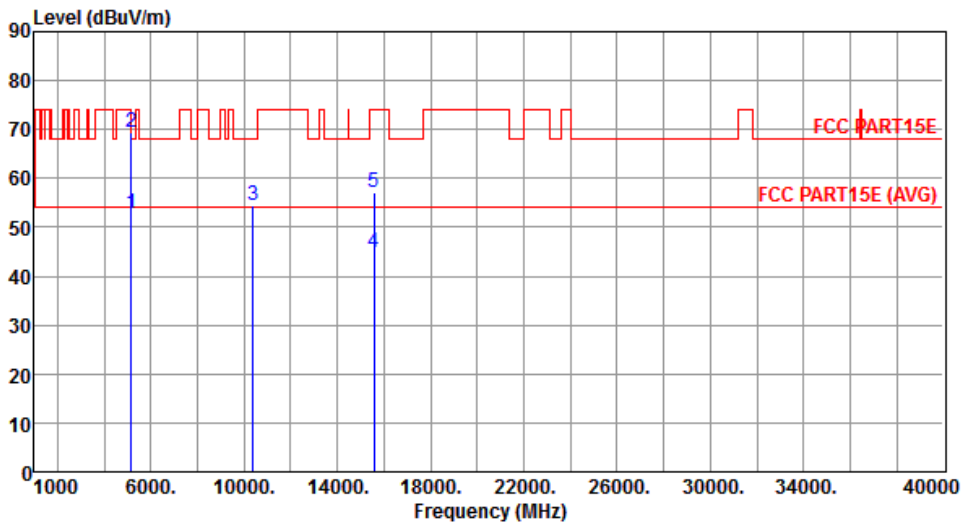
Modulation	VHT40	**Test Freq. (MHz)**	5190
Polarization	Horizontal		



	Freq. 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	49.25	54.00	-4.75	44.85	4.40	Average	100	38
2	5150.00	64.97	74.00	-9.03	60.57	4.40	Peak	100	38
3	10380.00	55.30	68.20	-12.90	41.05	14.25	Peak	100	108
4	15570.00	48.42	54.00	-5.58	33.36	15.06	Average	131	225
5	15570.00	61.13	74.00	-12.87	46.07	15.06	Peak	131	225

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).

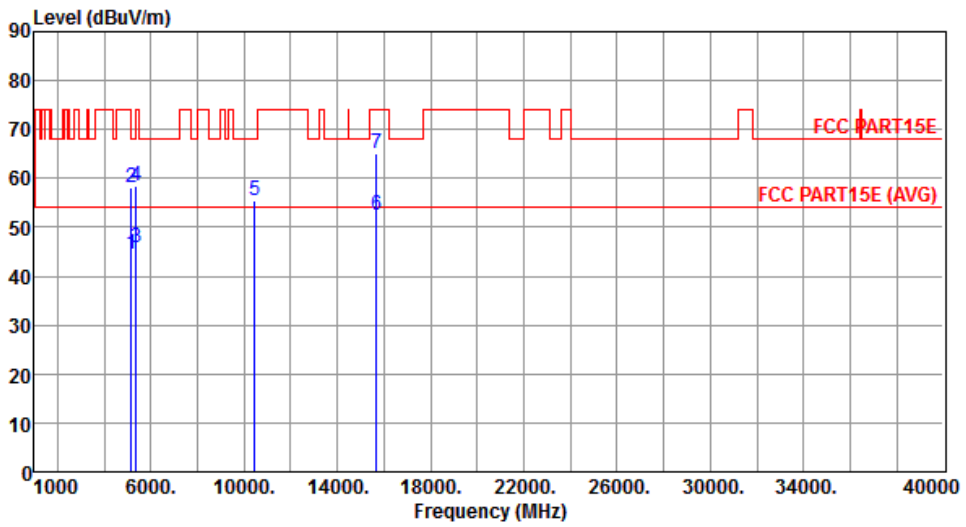
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	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	52.90	54.00	-1.10	48.50	4.40	Average	148	337
2	5150.00	69.38	74.00	-4.62	64.98	4.40	Peak	148	337
3	10380.00	54.46	68.20	-13.74	40.21	14.25	Peak	100	262
4	15570.00	44.84	54.00	-9.16	29.78	15.06	Average	200	160
5	15570.00	57.24	74.00	-16.76	42.18	15.06	Peak	200	160

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).

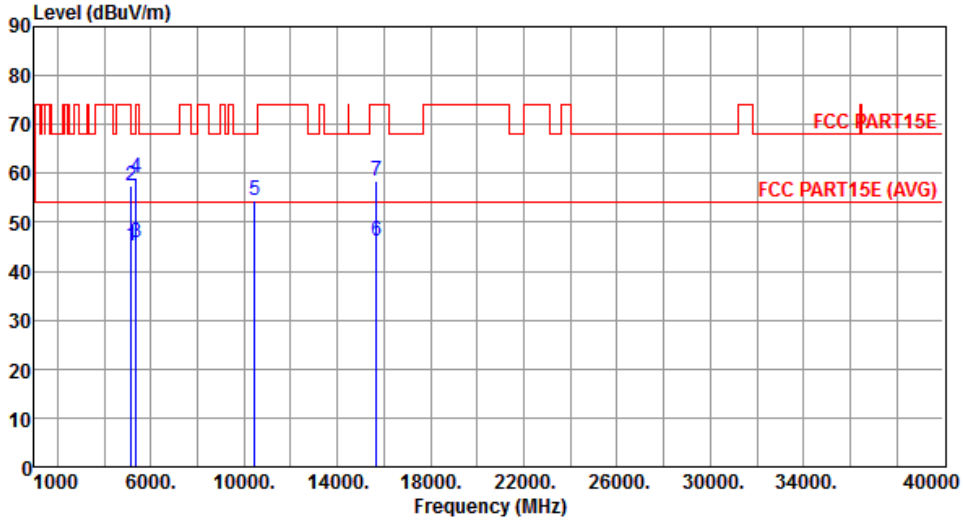
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	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	44.54	54.00	-9.46	40.14	4.40	Average	100	39
2	5150.00	58.14	74.00	-15.86	53.74	4.40	Peak	100	39
3	5350.00	45.93	54.00	-8.07	41.29	4.64	Average	100	39
4	5350.00	58.54	74.00	-15.46	53.90	4.64	Peak	100	39
5	10460.00	55.61	68.20	-12.59	41.21	14.40	Peak	100	126
6	15690.00	52.45	54.00	-1.55	37.54	14.91	Average	137	230
7	15690.00	64.99	74.00	-9.01	50.08	14.91	Peak	137	230

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).

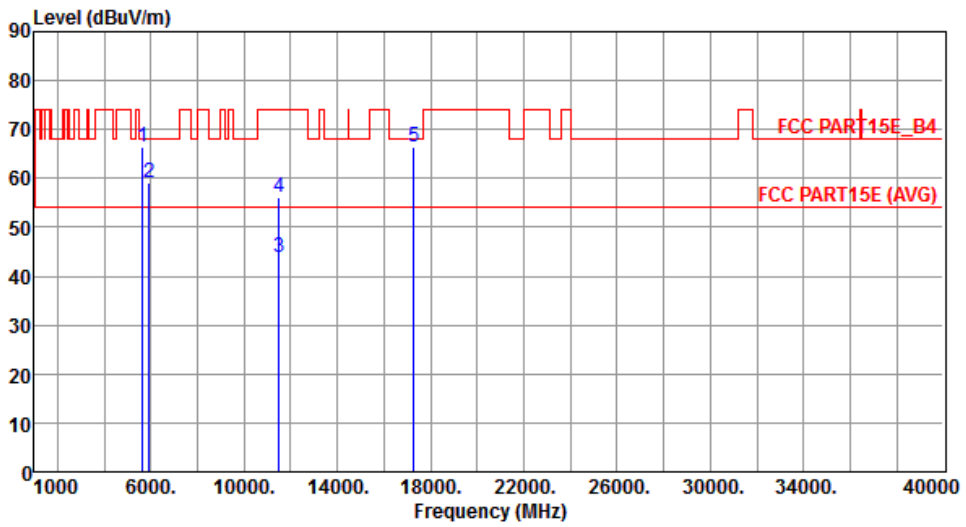
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	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	45.01	54.00	-8.99	40.61	4.40	Average	152	340
2	5150.00	57.44	74.00	-16.56	53.04	4.40	Peak	152	340
3	5350.00	45.88	54.00	-8.12	41.24	4.64	Average	152	340
4	5350.00	59.16	74.00	-14.84	54.52	4.64	Peak	152	340
5	10460.00	54.62	68.20	-13.58	40.22	14.40	Peak	100	63
6	15690.00	46.04	54.00	-7.96	31.13	14.91	Average	162	236
7	15690.00	58.57	74.00	-15.43	43.66	14.91	Peak	162	236

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).

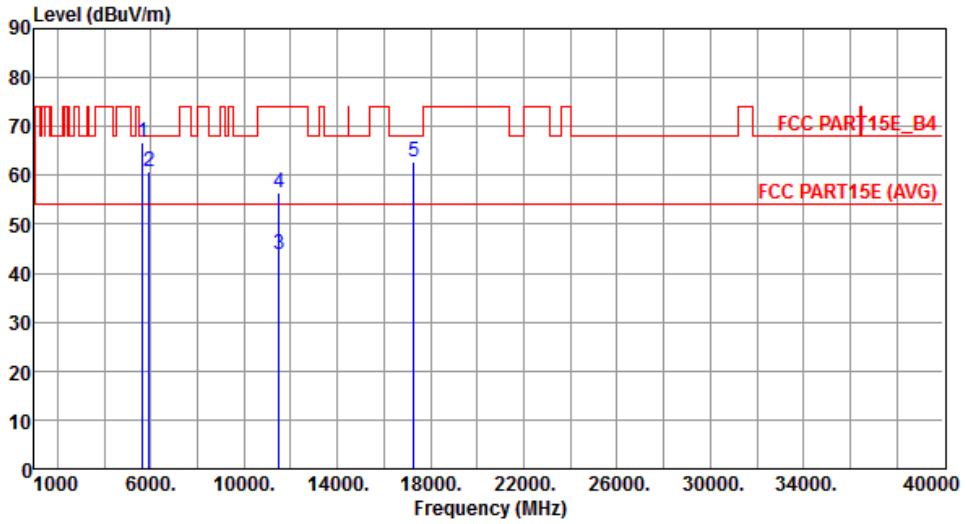
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	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	66.28	68.20	-1.92	61.28	5.00	Peak	100	252
2	5925.00	58.96	68.20	-9.24	53.62	5.34	Peak	100	252
3	11510.00	43.95	54.00	-10.05	28.44	15.51	Average	100	165
4	11510.00	56.15	74.00	-17.85	40.64	15.51	Peak	100	165
5	17265.00	66.31	68.20	-1.89	47.34	18.97	Peak	175	235

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).

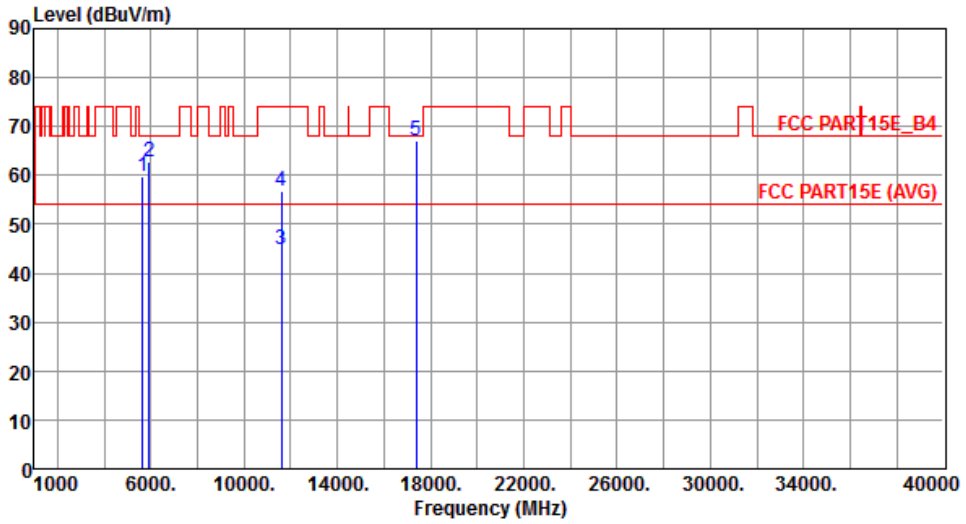
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



	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	66.69	68.20	-1.51	61.69	5.00	Peak	196	345
2	5925.00	60.66	68.20	-7.54	55.32	5.34	Peak	196	345
3	11510.00	43.89	54.00	-10.11	28.38	15.51	Average	100	308
4	11510.00	56.45	74.00	-17.55	40.94	15.51	Peak	100	308
5	17265.00	62.77	68.20	-5.43	43.80	18.97	Peak	140	198

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).

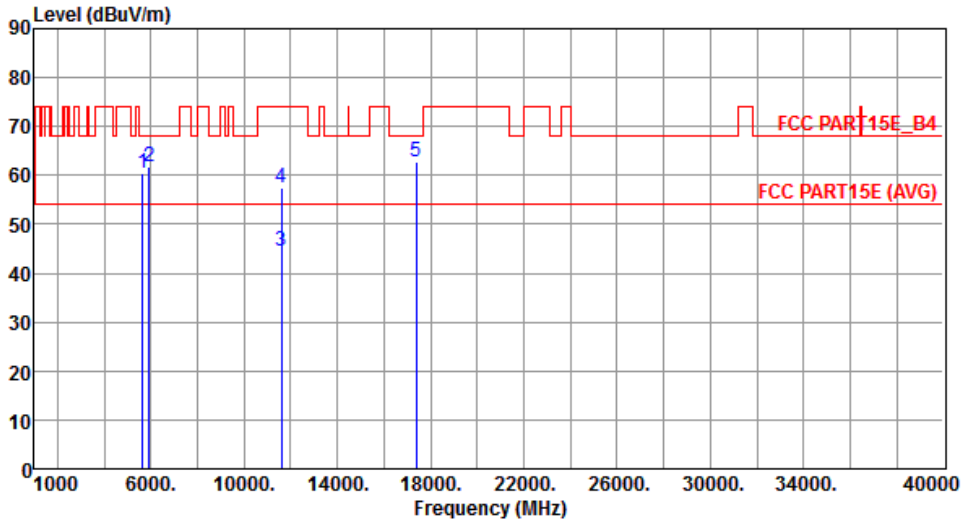
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	59.71	68.20	-8.49	54.71	5.00	Peak	100	253
2	5925.00	62.60	68.20	-5.60	57.26	5.34	Peak	100	253
3	11590.00	44.81	54.00	-9.19	29.54	15.27	Average	100	166
4	11590.00	56.73	74.00	-17.27	41.46	15.27	Peak	100	166
5	17385.00	67.03	68.20	-1.17	47.74	19.29	Peak	239	228

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		

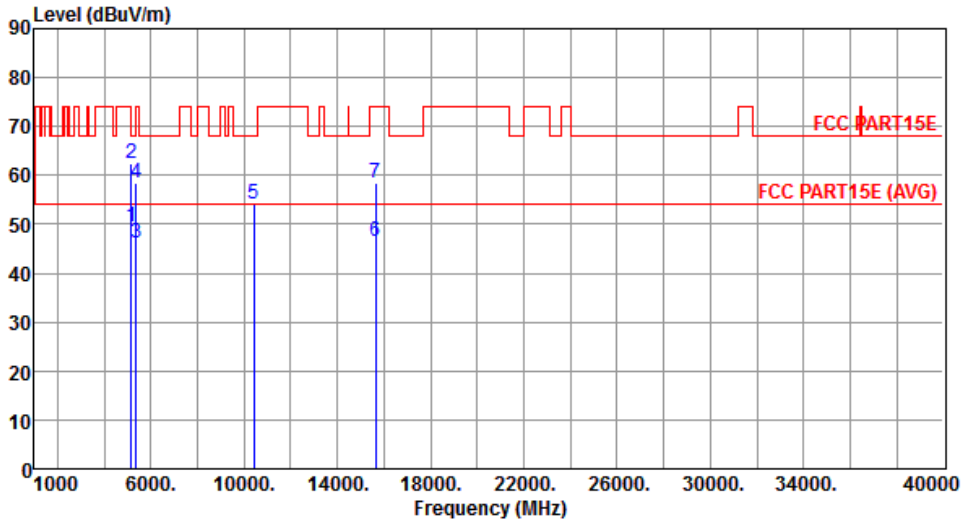


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.36	68.20	-7.84	55.36	5.00	Peak	225	269
2	5925.00	61.87	68.20	-6.33	56.53	5.34	Peak	225	269
3	11590.00	44.66	54.00	-9.34	29.39	15.27	Average	100	313
4	11590.00	57.38	74.00	-16.62	42.11	15.27	Peak	100	313
5	17385.00	62.82	68.20	-5.38	43.53	19.29	Peak	140	230

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

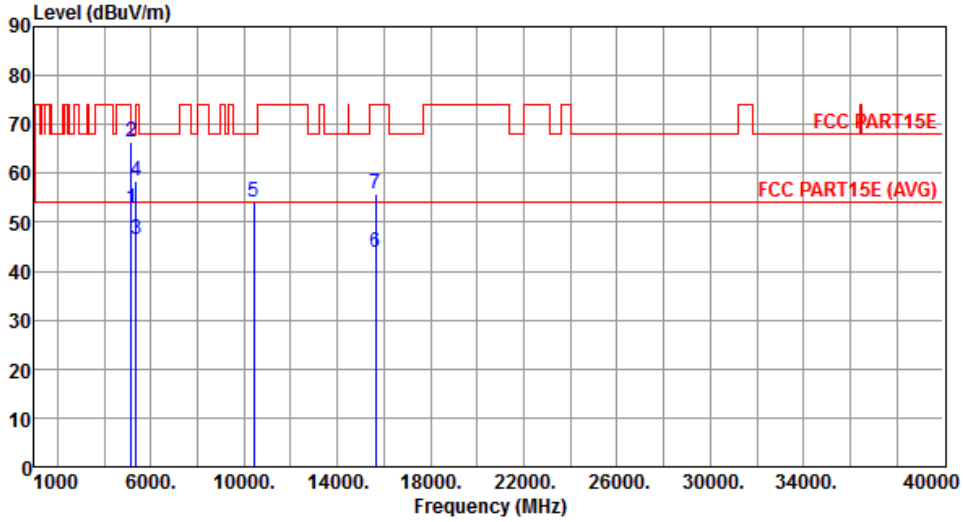
Modulation	VHT80	**Test Freq. (MHz)**	5210
Polarization	Horizontal		



	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	49.48	54.00	-4.52	45.08	4.40	Average	100	49
2	5150.00	62.60	74.00	-11.40	58.20	4.40	Peak	100	49
3	5350.00	46.31	54.00	-7.69	41.67	4.64	Average	100	49
4	5350.00	58.52	74.00	-15.48	53.88	4.64	Peak	100	49
5	10420.00	54.21	68.20	-13.99	39.89	14.32	Peak	119	208
6	15630.00	46.55	54.00	-7.45	31.56	14.99	Average	199	231
7	15630.00	58.53	74.00	-15.47	43.54	14.99	Peak	199	231

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).

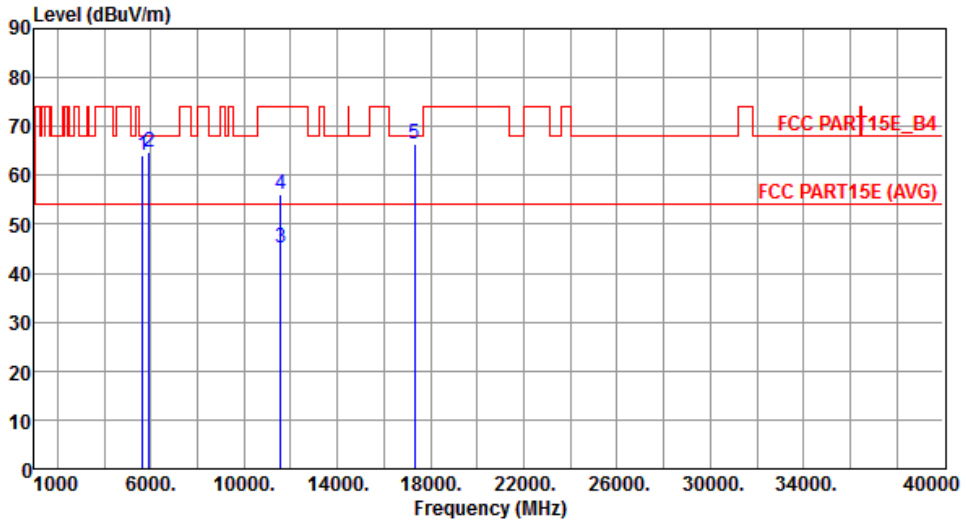
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	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	52.83	54.00	-1.17	48.43	4.40	Average	115	330
2	5150.00	66.48	74.00	-7.52	62.08	4.40	Peak	115	330
3	5350.00	46.61	54.00	-7.39	41.97	4.64	Average	115	330
4	5350.00	58.52	74.00	-15.48	53.88	4.64	Peak	115	330
5	10420.00	54.21	68.20	-13.99	39.89	14.32	Peak	114	217
6	15630.00	43.75	54.00	-10.25	28.76	14.99	Average	152	208
7	15630.00	55.83	74.00	-18.17	40.84	14.99	Peak	152	208

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).

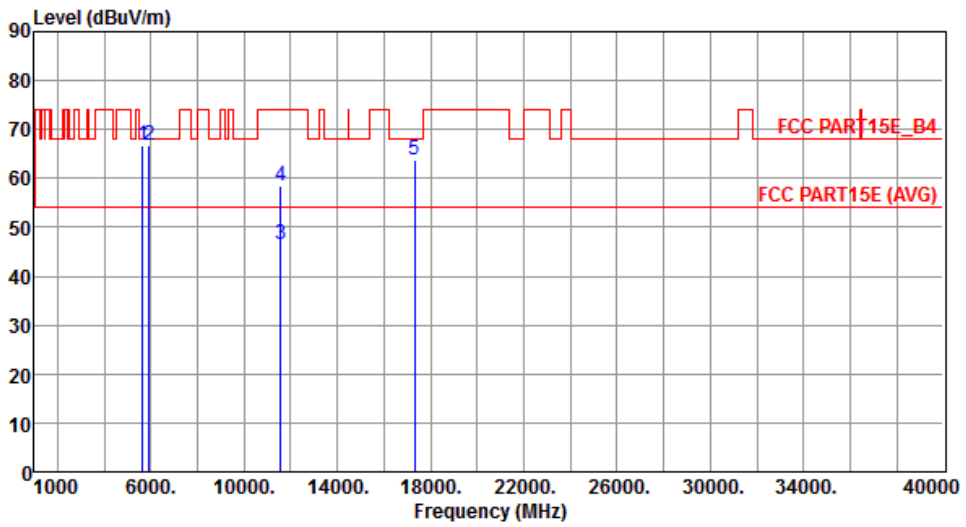
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	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	64.26	68.20	-3.94	59.26	5.00	Peak	100	312
2	5925.00	64.61	68.20	-3.59	59.27	5.34	Peak	100	312
3	11550.00	45.09	54.00	-8.91	29.69	15.40	Average	100	126
4	11550.00	56.25	74.00	-17.75	40.85	15.40	Peak	100	126
5	17325.00	66.50	68.20	-1.70	47.37	19.13	Peak	237	226

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	66.64	68.20	-1.56	61.64	5.00	Peak	207	139
2	5925.00	66.89	68.20	-1.31	61.55	5.34	Peak	207	139
3	11550.00	46.48	54.00	-7.52	31.08	15.40	Average	100	47
4	11550.00	58.44	74.00	-15.56	43.04	15.40	Peak	100	47
5	17325.00	63.86	68.20	-4.34	44.73	19.13	Peak	100	173

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

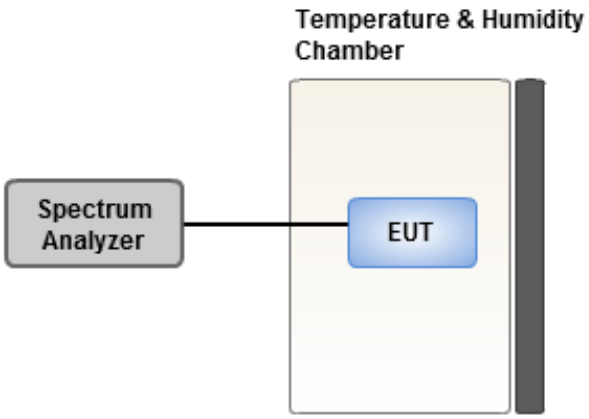
3.6.1 Limit of Frequency Stability

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 50 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	3.57	3.93	3.43	3.14
T20°CVmin	3.54	3.92	3.30	3.13
T50°CVnom	3.45	2.88	3.39	3.06
T40°CVnom	2.01	2.72	2.14	1.90
T30°CVnom	2.50	2.51	2.65	3.12
T20°CVnom	3.18	3.55	3.85	3.31
T10°CVnom	2.75	3.02	2.55	2.43
T0°CVnom	3.75	3.94	3.53	3.82
T-10°CVnom	2.27	2.26	1.70	2.90
T-20°CVnom	2.05	1.82	2.78	2.08
T-30°CVnom	1.01	1.65	1.52	0.97
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	3.83	3.71	4.68	4.57
T20°CVmin	3.69	3.53	4.51	4.39
T50°CVnom	2.24	2.24	2.46	2.27
T40°CVnom	2.16	2.11	2.36	2.18
T30°CVnom	2.01	2.01	2.57	1.75
T20°CVnom	3.22	3.24	2.82	3.59
T10°CVnom	2.57	2.60	2.50	2.68
T0°CVnom	3.37	3.38	3.07	3.33
T-10°CVnom	2.00	2.21	1.99	2.12
T-20°CVnom	2.11	2.39	2.43	2.27
T-30°CVnom	0.85	0.88	1.57	0.57
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

4 Test laboratory information

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

International Certification 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	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	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

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