FCC Test Report

FCC ID	:	**ZTT-REC22P**
Equipment	:	**High Power AC1200 Plug-In Wi-Fi Range Extender**
Model No.	:	**REC22P、REC22PG**
		(Different case color for marketing purpose only.)
Brand Name	:	**Amped**
Applicant	:	**Amped Wireless**
Address	:	**13089 Peyton Dr. #C307 Chino Hills, California 91709 United State**
Standard	:	**47 CFR FCC Part 15.407**
Received Date	:	**Dec. 28, 2015**
Tested Date	:	**Jan. 18 ~ Feb. 02, 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.

Approved & Reviewed by:

Gary Chang / Manager

Testing Laboratory
2732

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Release Record

Report No.	Version	Description	Issued Date
FR5D2803-01AN	Rev. 01	Initial issue	Feb. 19, 2016

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 2.174MHz 44.95 (Margin -1.05dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 500.04MHz 45.48 (Margin -0.52dB) - QP	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: 22.48 5725-5850MHz: 22.37	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 0-8
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.	Model	Type	Connector	Antenna Gain (dBi)		
				2400~2483.5MHz	**5150~5250 MHz**	**5725~5850 MHz**
1	WAN8010F245M05	Chip	N/A	3.45	--	--
2	ACM3-5036-A1-CC-S	Chip	N/A	3	3.3	3.3
3	8619 replacement antenna	Dipole	N/A	3.48	3.49	3.17

Note1: Ant 1 and 3 are used for 2.4 GHz transmission.
Note2: Ant 2 and 3 are used for 5 GHz transmission.

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	AC 110~120V, 60Hz, 7A

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	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	MP_TEST, V1.3.8.0		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	92.41%	0.34
	VHT20	93.40%	0.30
	VHT40	82.51%	0.83
	VHT80	83.15%	0.80

1.1.7 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5180	57/61
11a	5200	55/57
11a	5240	55/60
HT20	5180	54/57
HT20	5200	52/56
HT20	5240	51/54
HT40	5190	53/58
HT40	5230	53/56
VHT20	5180	54/57
VHT20	5200	52/56
VHT20	5240	51/54
VHT40	5190	53/58
VHT40	5230	53/56
VHT80	5210	48/51

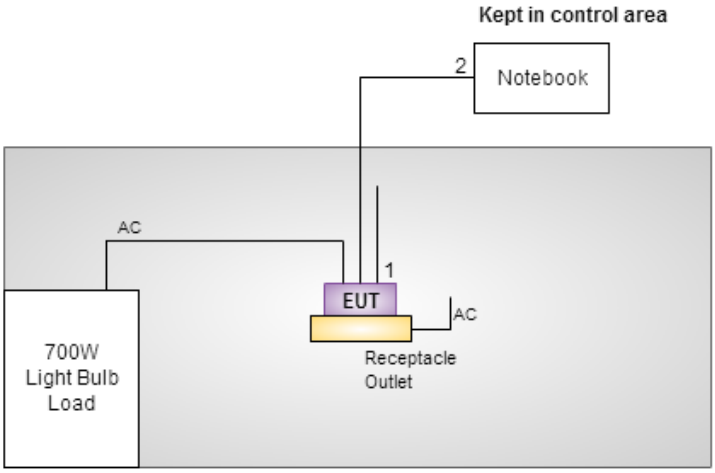
For Frequency band 5725~5850 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5745	57/63
11a	5785	60/63
11a	5825	59/60
HT20	5745	54/57
HT20	5785	57/60
HT20	5825	57/60
HT40	5755	56/58
HT40	5795	58/60
VHT20	5745	54/57
VHT20	5785	57/60
VHT20	5825	57/60
VHT40	5755	56/58
VHT40	5795	58/60
VHT80	5775	51/54

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Signal cable / Length (m)**
1	Notebook	DELL	Latitude E6430	DoC	RJ45, 10m non-shielded.
2	700W Light bulb load	ICC	---	---	---

1.3 Test Setup Chart

Test Setup Diagram



1. USB, 1m shielded.
2. RJ45, 10m non-shielded.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
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)				
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	11900	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	RF Conducted				
Test Site	(TH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Feb. 03, 2015	Feb. 02, 2016
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 27, 2015	Nov. 26, 2016
Power Meter	Anritsu	ML2495A	1241002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor	Anritsu	MA2411B	1207366	Sep. 21, 2015	Sep. 20, 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 v01r01
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	±2.92 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	18°C / 59%	Sky Huang
Radiated Emissions	03CH01-WS	20°C / 65%	Aska Huang Mark Liao
RF Conducted	TH01-WS	21°C / 64%	Alex Huang

- FCC site registration No.: 657002
- 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	11a	5200	6 Mbps	---
Radiated Emissions ≤1GHz	11a	5200	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. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.				

For Frequency band 5725-5850 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate (Mbps) / MCS**	**Test Configuration**
Conducted Emissions	11a	5745	6 Mbps	---
Radiated Emissions ≤1GHz	11a	5745	6 Mbps	---
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 **Z-plane** results were found as the worst case and were shown in this report.				

3 Transmitter Test Results

3.1 Conducted Emissions

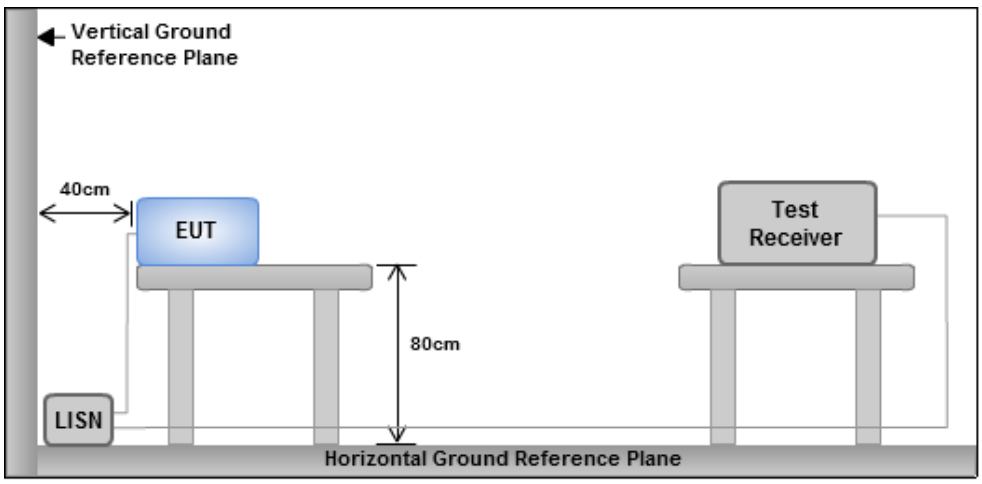
3.1.1 Limit of Conducted Emissions

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

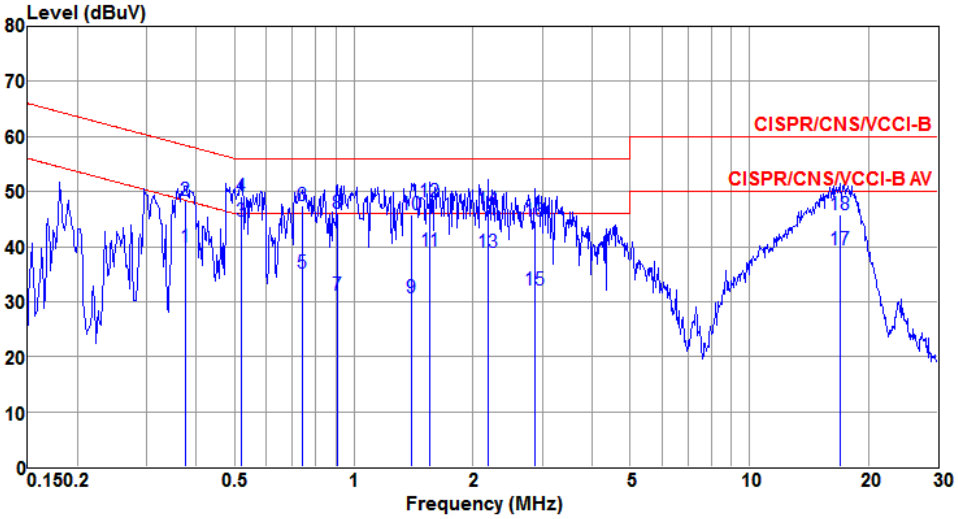


Note: 1. Support units were connected to second LISN.

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

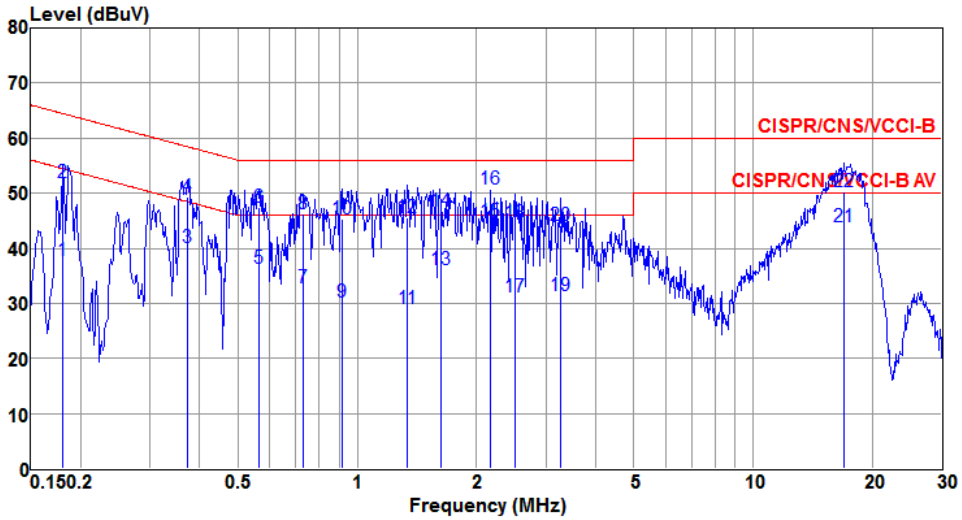
Modulation	11a	Test Freq. (MHz)	5200
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.375	39.78	48.39	-8.61	39.56	0.19	0.03	Average
2	0.375	48.42	58.39	-9.97	48.20	0.19	0.03	QP
3@	0.520	44.62	46.00	-1.38	44.43	0.15	0.04	Average
4	0.520	49.04	56.00	-6.96	48.85	0.15	0.04	QP
5	0.743	35.27	46.00	-10.73	35.10	0.12	0.05	Average
6	0.743	47.46	56.00	-8.54	47.29	0.12	0.05	QP
7	0.909	31.27	46.00	-14.73	31.11	0.10	0.06	Average
8	0.909	46.04	56.00	-9.96	45.88	0.10	0.06	QP
9	1.396	30.77	46.00	-15.23	30.35	0.35	0.07	Average
10	1.396	45.73	56.00	-10.27	45.31	0.35	0.07	QP
11	1.560	39.23	46.00	-6.77	38.72	0.44	0.07	Average
12	1.560	48.19	56.00	-7.81	47.68	0.44	0.07	QP
13	2.178	38.89	46.00	-7.11	38.22	0.58	0.09	Average
14	2.178	46.63	56.00	-9.37	45.96	0.58	0.09	QP
15	2.869	32.09	46.00	-13.91	31.55	0.44	0.10	Average
16	2.869	44.62	56.00	-11.38	44.08	0.44	0.10	QP
17	16.928	39.42	50.00	-10.58	38.48	0.75	0.19	Average
18	16.928	45.78	60.00	-14.22	44.84	0.75	0.19	QP

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

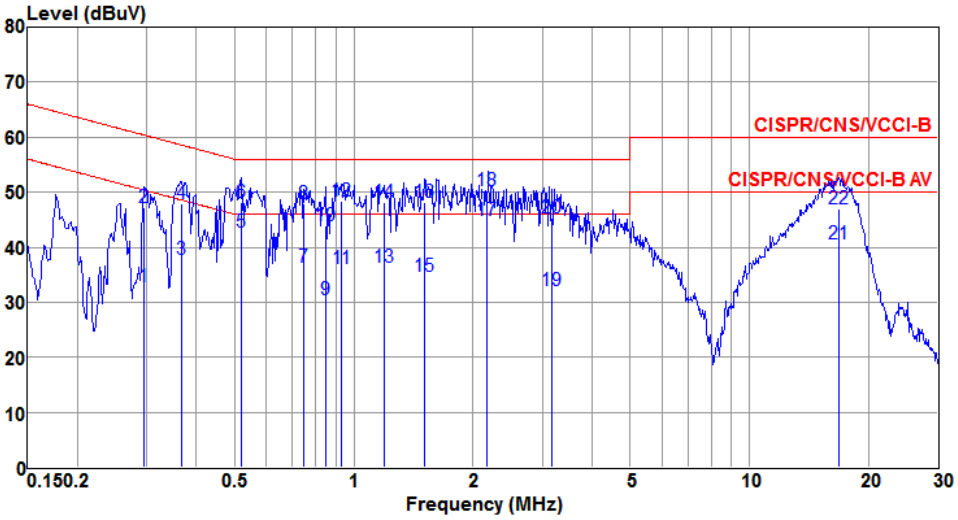
Modulation	11a	Test Freq. (MHz)	5200
Power Phase	Neutral		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.181	37.83	54.46	-16.63	37.36	0.45	0.02	Average
2	0.181	51.97	64.46	-12.49	51.50	0.45	0.02	QP
3	0.373	40.20	48.43	-8.23	40.03	0.14	0.03	Average
4	0.373	49.35	58.43	-9.08	49.18	0.14	0.03	QP
5	0.564	36.38	46.00	-9.62	36.16	0.18	0.04	Average
6	0.564	47.46	56.00	-8.54	47.24	0.18	0.04	QP
7	0.727	32.93	46.00	-13.07	32.66	0.22	0.05	Average
8	0.727	46.27	56.00	-9.73	46.00	0.22	0.05	QP
9	0.918	30.26	46.00	-15.74	29.94	0.26	0.06	Average
10	0.918	45.39	56.00	-10.61	45.07	0.26	0.06	QP
11	1.338	29.14	46.00	-16.86	28.82	0.25	0.07	Average
12	1.338	45.48	56.00	-10.52	45.16	0.25	0.07	QP
13	1.622	36.00	46.00	-10.00	35.69	0.24	0.07	Average
14	1.622	46.84	56.00	-9.16	46.53	0.24	0.07	QP
15@	2.174	44.95	46.00	-1.05	44.59	0.28	0.08	Average
16	2.174	50.83	56.00	-5.17	50.47	0.28	0.08	QP
17	2.513	31.18	46.00	-14.82	30.70	0.39	0.09	Average
18	2.513	44.53	56.00	-11.47	44.05	0.39	0.09	QP
19	3.276	31.40	46.00	-14.60	30.70	0.59	0.11	Average
20	3.276	44.14	56.00	-11.86	43.44	0.59	0.11	QP
21	16.928	43.99	50.00	-6.01	43.11	0.69	0.19	Average
22	16.928	50.24	60.00	-9.76	49.36	0.69	0.19	QP

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

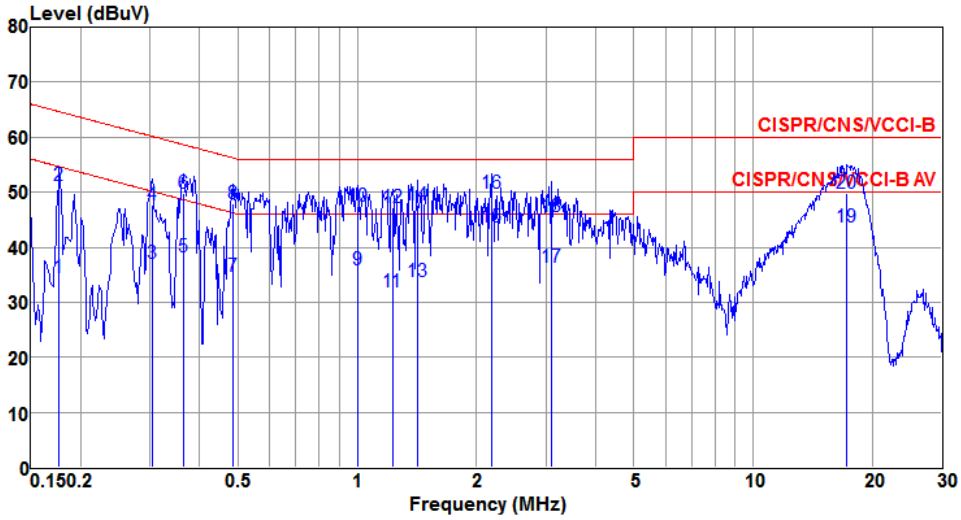
Modulation	11a	Test Freq. (MHz)	5745
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.294	32.81	50.41	-17.60	32.57	0.21	0.03	Average
2	0.294	47.27	60.41	-13.14	47.03	0.21	0.03	QP
3	0.367	37.69	48.56	-10.87	37.47	0.19	0.03	Average
4	0.367	48.02	58.56	-10.54	47.80	0.19	0.03	QP
5	0.518	42.76	46.00	-3.24	42.57	0.15	0.04	Average
6	0.518	48.16	56.00	-7.84	47.97	0.15	0.04	QP
7	0.747	36.30	46.00	-9.70	36.13	0.12	0.05	Average
8	0.747	47.88	56.00	-8.12	47.71	0.12	0.05	QP
9	0.848	30.52	46.00	-15.48	30.36	0.11	0.05	Average
10	0.848	44.00	56.00	-12.00	43.84	0.11	0.05	QP
11	0.933	36.04	46.00	-9.96	35.88	0.10	0.06	Average
12	0.933	48.38	56.00	-7.62	48.22	0.10	0.06	QP
13	1.191	36.45	46.00	-9.55	36.17	0.22	0.06	Average
14	1.191	48.14	56.00	-7.86	47.86	0.22	0.06	QP
15	1.503	34.81	46.00	-11.19	34.33	0.41	0.07	Average
16	1.503	48.12	56.00	-7.88	47.64	0.41	0.07	QP
17@	2.176	44.78	46.00	-1.22	44.11	0.58	0.09	Average
18	2.176	50.36	56.00	-5.64	49.69	0.58	0.09	QP
19	3.156	32.11	46.00	-13.89	31.61	0.39	0.11	Average
20	3.156	45.24	56.00	-10.76	44.74	0.39	0.11	QP
21	16.839	40.69	50.00	-9.31	39.75	0.75	0.19	Average
22	16.839	46.89	60.00	-13.11	45.95	0.75	0.19	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)	5745
Power Phase	Neutral		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.177	34.48	54.64	-20.16	33.96	0.50	0.02	Average
2	0.177	51.13	64.64	-13.51	50.61	0.50	0.02	QP
3	0.303	37.10	50.15	-13.05	36.90	0.17	0.03	Average
4	0.303	47.72	60.15	-12.43	47.52	0.17	0.03	QP
5	0.363	38.15	48.65	-10.50	37.97	0.15	0.03	Average
6	0.363	49.74	58.65	-8.91	49.56	0.15	0.03	QP
7	0.486	34.76	46.23	-11.47	34.56	0.16	0.04	Average
8	0.486	47.86	56.23	-8.37	47.66	0.16	0.04	QP
9	1.000	35.80	46.00	-10.20	35.47	0.27	0.06	Average
10	1.000	47.41	56.00	-8.59	47.08	0.27	0.06	QP
11	1.229	31.87	46.00	-14.13	31.54	0.26	0.07	Average
12	1.229	47.09	56.00	-8.91	46.76	0.26	0.07	QP
13	1.418	33.67	46.00	-12.33	33.36	0.24	0.07	Average
14	1.418	47.61	56.00	-8.39	47.30	0.24	0.07	QP
15@	2.178	43.74	46.00	-2.26	43.36	0.29	0.09	Average
16	2.178	49.74	56.00	-6.26	49.36	0.29	0.09	QP
17	3.090	36.30	46.00	-9.70	35.64	0.55	0.11	Average
18	3.090	45.64	56.00	-10.36	44.98	0.55	0.11	QP
19	17.291	43.70	50.00	-6.30	42.82	0.69	0.19	Average
20	17.291	49.88	60.00	-10.12	49.00	0.69	0.19	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.

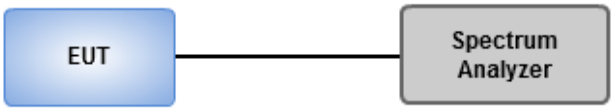
Occupied Bandwidth

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

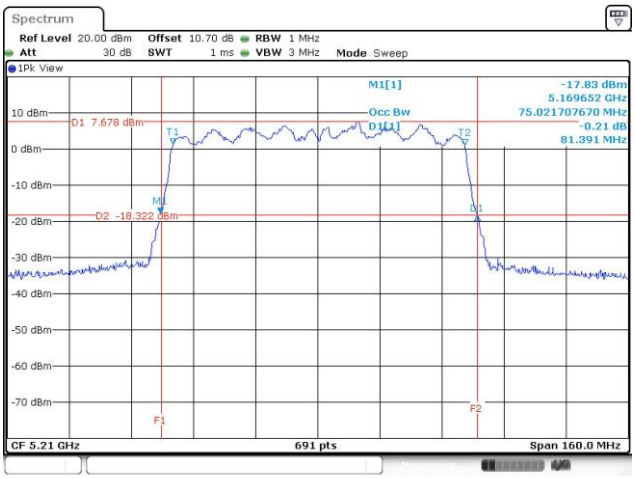
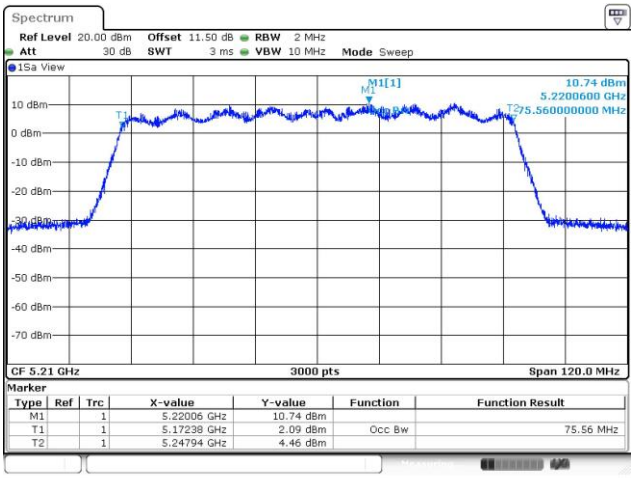
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak,Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB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

3.2.3 Test Setup

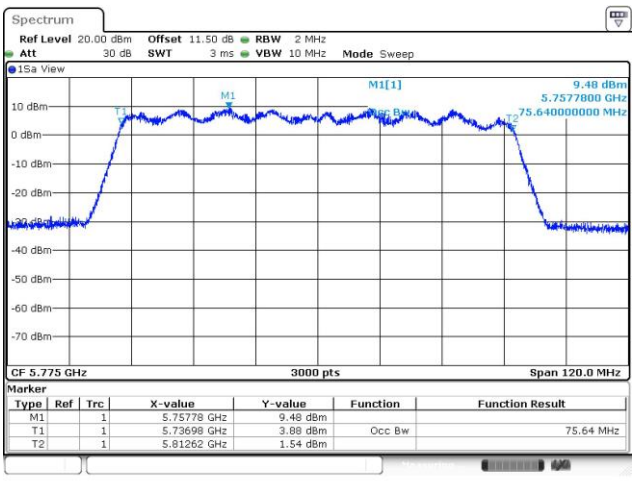
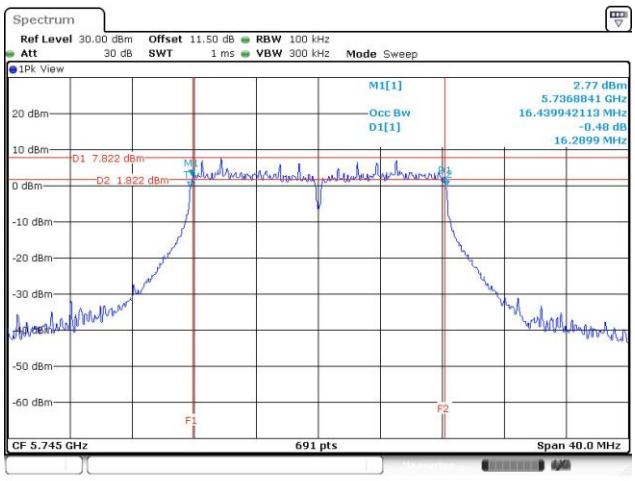


3.2.4 Test Result of Emission Bandwidth

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	20.93	21.68	---	---	16.81	16.84	---	---
11a	2	5200	20.81	21.74	---	---	16.81	16.85	---	---
11a	2	5240	20.99	21.74	---	---	16.81	16.91	---	---
VHT20	2	5180	21.97	22.09	---	---	17.88	17.89	---	---
VHT20	2	5200	21.97	22.20	---	---	17.90	17.90	---	---
VHT20	2	5240	22.09	22.09	---	---	17.88	17.90	---	---
VHT40	2	5190	44.99	44.64	---	---	36.74	36.78	---	---
VHT40	2	5230	45.10	44.75	---	---	36.72	36.80	---	---
VHT80	2	5210	81.16	81.39	---	---	75.56	75.52	---	---

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	16.79	16.95	---	---	16.29	16.35	---	---	0.5
11a	2	5785	16.79	16.90	---	---	16.29	16.35	---	---	0.5
11a	2	5825	16.79	16.85	---	---	16.35	16.35	---	---	0.5
VHT20	2	5745	17.86	17.88	---	---	16.93	17.04	---	---	0.5
VHT20	2	5785	17.86	17.87	---	---	17.28	17.04	---	---	0.5
VHT20	2	5825	17.84	17.87	---	---	17.28	17.04	---	---	0.5
VHT40	2	5755	36.80	36.86	---	---	36.06	36.06	---	---	0.5
VHT40	2	5795	36.80	36.76	---	---	36.06	36.06	---	---	0.5
VHT80	2	5775	75.64	75.60	---	---	75.13	75.13	---	---	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	19.21	19.14	---	---	165.403	22.19	30.00
11a	2	5200	19.88	19.02	---	---	177.074	**22.48**	30.00
11a	2	5240	19.22	19.31	---	---	168.870	22.28	30.00
HT20	2	5180	17.45	17.32	---	---	109.541	20.40	30.00
HT20	2	5200	17.24	17.29	---	---	106.546	20.28	30.00
HT20	2	5240	17.27	17.01	---	---	103.568	20.15	30.00
HT40	2	5190	17.01	17.38	---	---	104.936	20.21	30.00
HT40	2	5230	17.32	17.61	---	---	111.628	20.48	30.00
VHT20	2	5180	17.51	17.43	---	---	111.699	20.48	30.00
VHT20	2	5200	17.31	17.41	---	---	108.908	20.37	30.00
VHT20	2	5240	17.34	17.03	---	---	104.666	20.20	30.00
VHT40	2	5190	17.05	17.45	---	---	106.289	20.26	30.00
VHT40	2	5230	17.41	17.66	---	---	113.425	20.55	30.00
VHT80	2	5210	15.09	15.29	---	---	66.091	18.20	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	19.15	19.56	---	---	172.589	**22.37**	30.00
11a	2	5785	19.16	19.31	---	---	167.724	22.25	30.00
11a	2	5825	18.16	18.06	---	---	129.437	21.12	30.00
HT20	2	5745	17.36	17.33	---	---	108.526	20.36	30.00
HT20	2	5785	17.85	17.49	---	---	117.058	20.68	30.00
HT20	2	5825	16.98	16.92	---	---	99.092	19.96	30.00
HT40	2	5755	17.32	17.02	---	---	104.301	20.18	30.00
HT40	2	5795	17.26	17.02	---	---	103.561	20.15	30.00
VHT20	2	5745	17.45	17.41	---	---	110.671	20.44	30.00
VHT20	2	5785	17.94	17.57	---	---	119.378	20.77	30.00
VHT20	2	5825	17.04	17.06	---	---	101.398	20.06	30.00
VHT40	2	5755	17.39	17.11	---	---	106.232	20.26	30.00
VHT40	2	5795	17.32	17.01	---	---	104.185	20.18	30.00
VHT80	2	5775	15.1	15.2	---	---	65.472	18.16	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

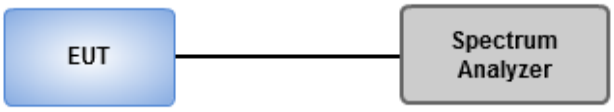
☐ Method SA-1

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



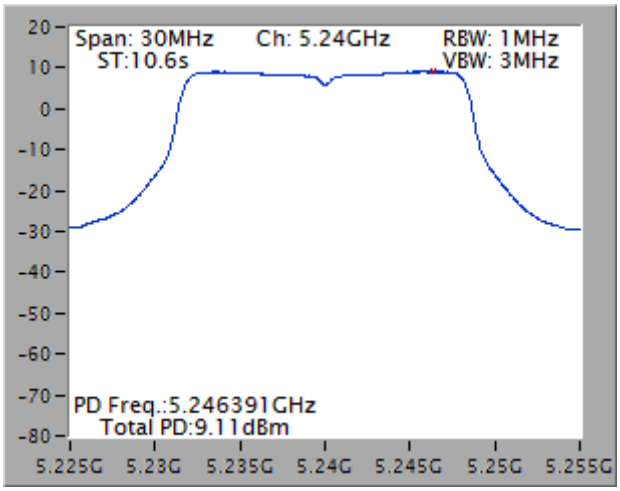
3.4.4 Test Result of Peak Power Spectral Density

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	8.91	0.34	9.25	16.59
11a	2	5200	8.86	0.34	9.20	16.59
11a	2	5240	9.11	0.34	9.45	16.59
VHT20	2	5180	6.56	0.30	6.86	16.59
VHT20	2	5200	6.98	0.30	7.28	16.59
VHT20	2	5240	6.73	0.30	7.03	16.59
VHT40	2	5190	3.27	0.83	4.10	16.59
VHT40	2	5230	3.10	0.83	3.93	16.59
VHT80	2	5210	-1.21	0.80	-0.41	16.59

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$^{3.3/20}$+10$^{3.49/20}$)^2/2) = 6.41 dBi > 6 dBi
   Limit shall be reduced to 17 dBm – (6.41 dBi – 6 dBi) = 16.59 dBm

Worst Plot

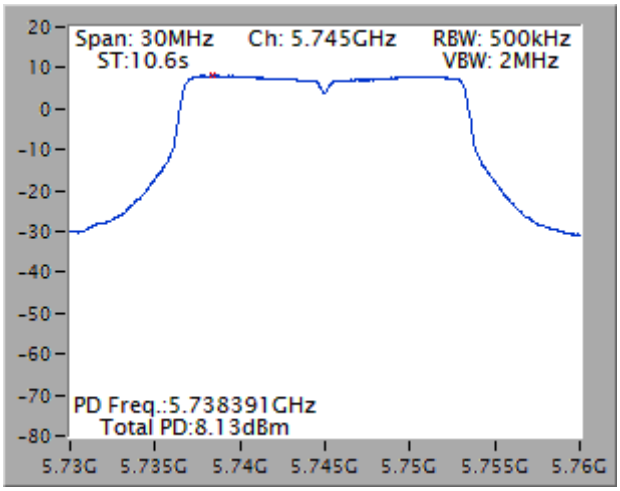


Note: The plot without duty factor

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	8.13	0.34	8.47	29.75
11a	2	5785	7.80	0.34	8.14	29.75
11a	2	5825	5.15	0.34	5.49	29.75
VHT20	2	5745	5.24	0.30	5.54	29.75
VHT20	2	5785	4.91	0.30	5.21	29.75
VHT20	2	5825	5.90	0.30	6.20	29.75
VHT40	2	5755	1.74	0.83	2.57	29.75
VHT40	2	5795	1.86	0.83	2.69	29.75
VHT80	2	5775	-1.97	0.80	-1.17	29.75

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$^{3.3/20}$+10$^{3.17/20}$)^2/2) = 6.25 dBi > 6 dBi
   Limit shall be reduced to 30 dBm – (6.25 dBi – 6 dBi) = 29.75 dBm

Worst Plot



Note: The plot without 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	5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.85 5.86 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m]

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

3.5.2 Test Procedures

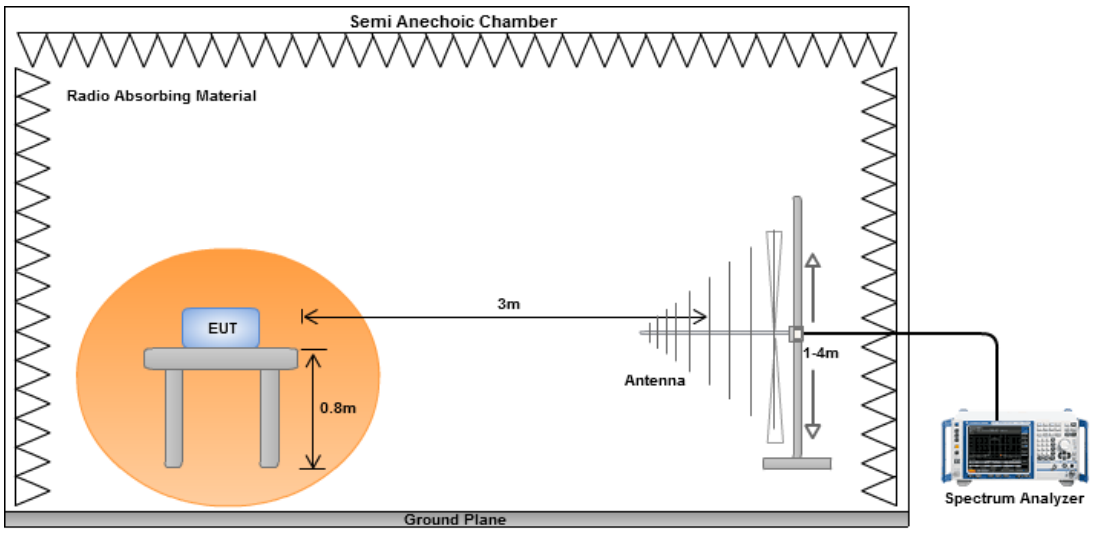
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

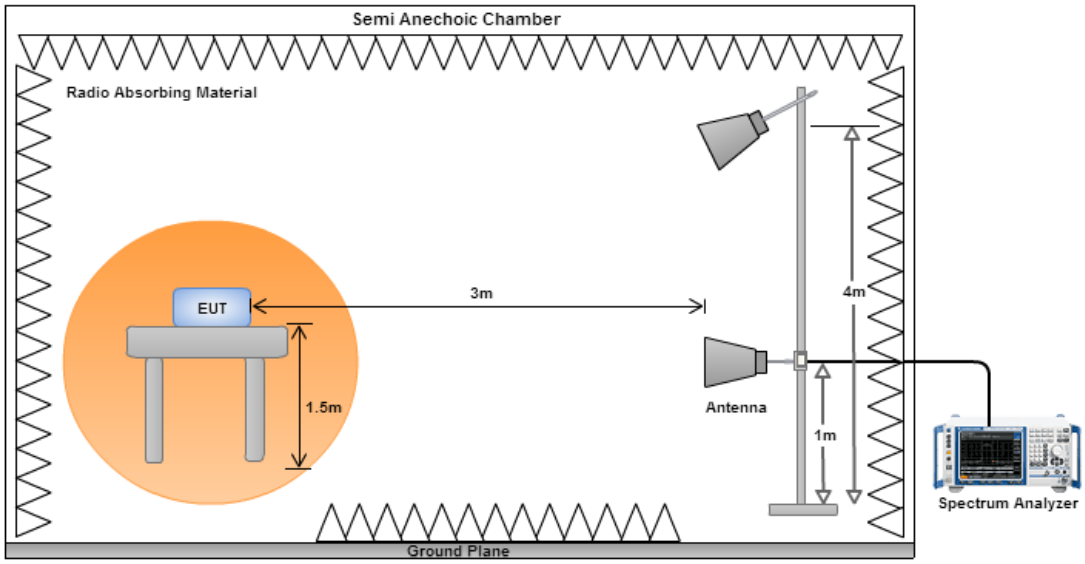
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

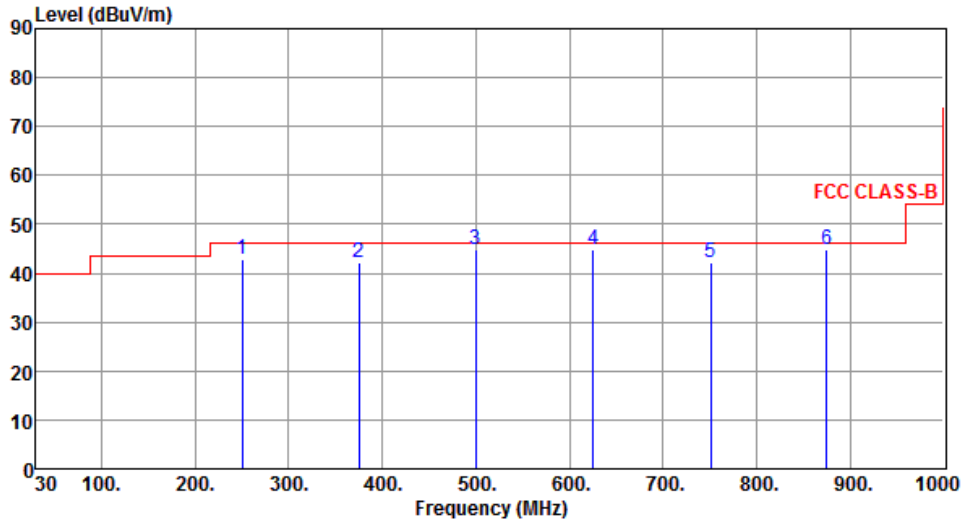


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

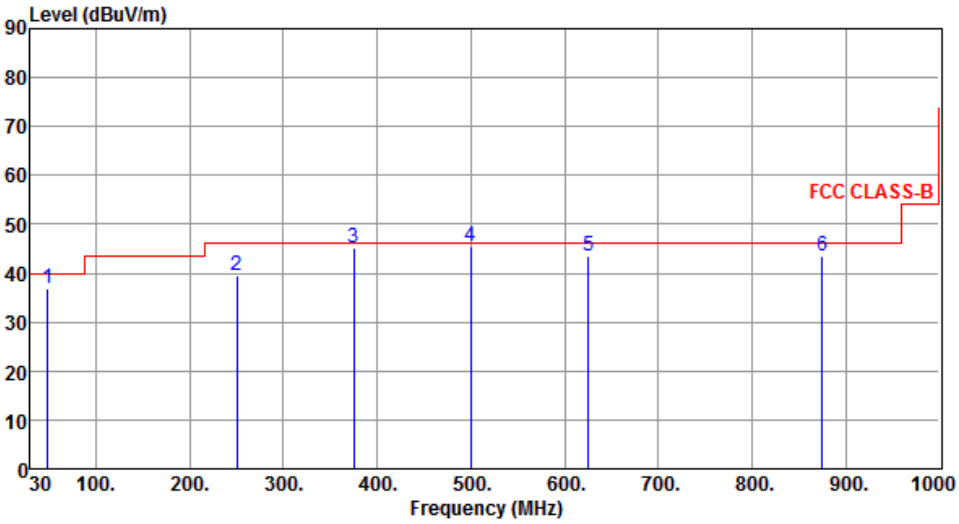
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	250.22	42.77	46.00	-3.23	55.54	-12.77	QP	120	255
2	375.35	42.20	46.00	-3.80	51.53	-9.33	Peak	---	---
3	500.16	44.92	46.00	-1.08	51.43	-6.51	QP	190	207
4	625.02	44.96	46.00	-1.04	49.24	-4.28	QP	130	225
5	750.65	42.20	46.00	-3.80	44.56	-2.36	Peak	---	---
6	875.28	44.83	46.00	-1.17	45.75	-0.92	QP	152	205

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.

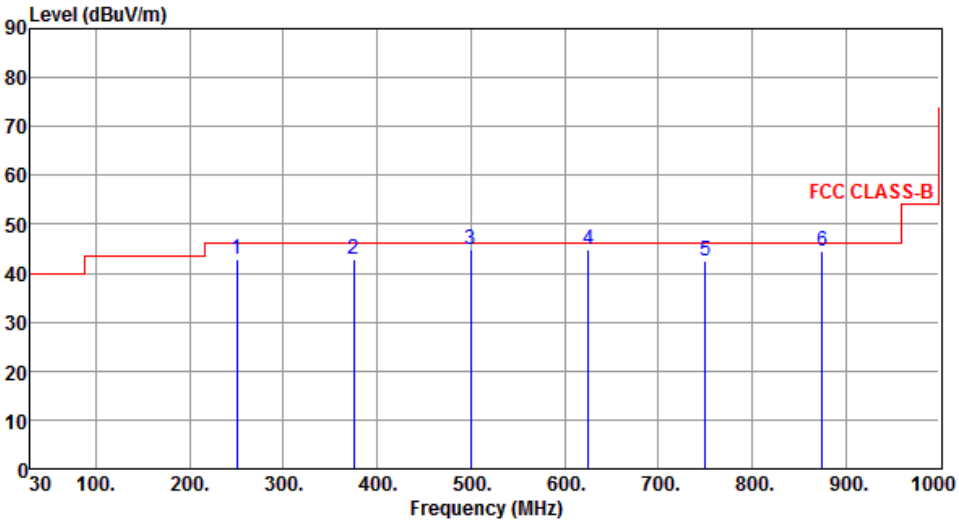
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	48.56	36.90	40.00	-3.10	48.56	-11.66	Peak	---	---
2	250.23	39.68	46.00	-6.32	52.45	-12.77	Peak	---	---
3	375.16	45.14	46.00	-0.86	54.48	-9.34	QP	125	196
4	500.04	45.48	46.00	-0.52	51.99	-6.51	QP	100	225
5	625.10	43.47	46.00	-2.53	47.75	-4.28	QP	100	224
6	875.16	43.61	46.00	-2.39	44.53	-0.92	QP	100	195

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.

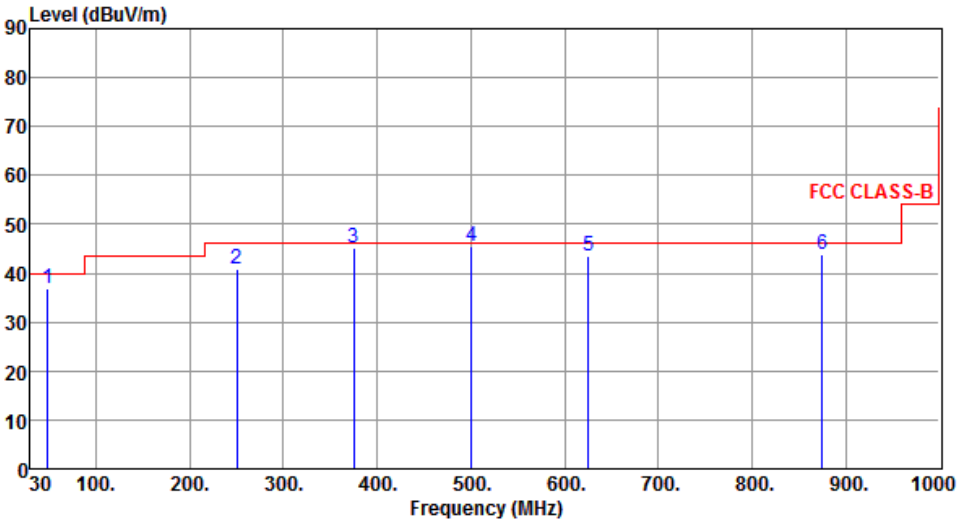
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	250.18	42.89	46.00	-3.11	55.66	-12.77	QP	122	251
2	375.24	42.92	46.00	-3.08	52.25	-9.33	Peak	---	---
3	500.21	44.95	46.00	-1.05	51.46	-6.51	QP	195	205
4	625.11	44.97	46.00	-1.03	49.25	-4.28	QP	128	227
5	750.56	42.60	46.00	-3.40	44.97	-2.37	Peak	---	---
6	875.16	44.49	46.00	-1.51	45.41	-0.92	QP	152	205

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)	5745
Polarization	Vertical		

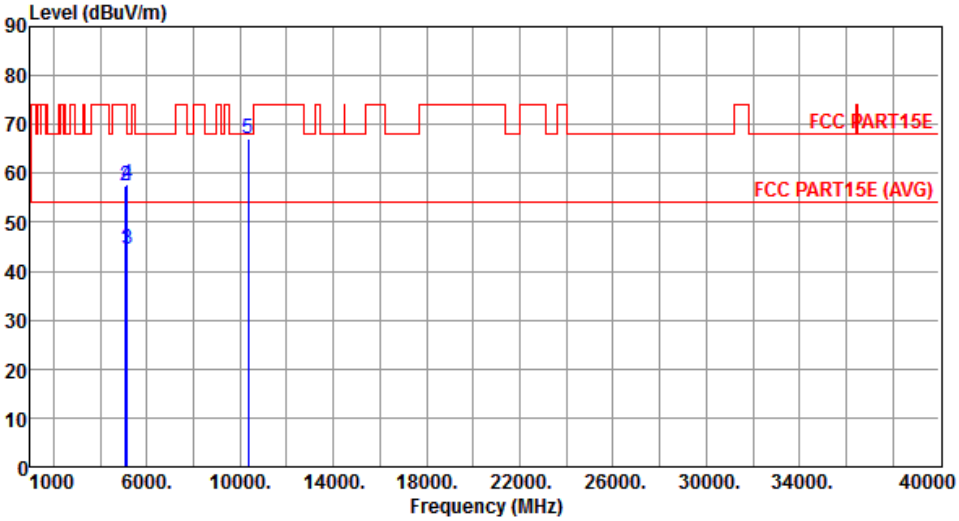


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	48.56	36.88	40.00	-3.12	48.54	-11.66	Peak	---	---
2	250.38	40.89	46.00	-5.11	53.65	-12.76	Peak	---	---
3	375.24	45.15	46.00	-0.85	54.48	-9.33	QP	122	195
4	500.31	45.44	46.00	-0.56	51.95	-6.51	QP	100	228
5	625.16	43.37	46.00	-2.63	47.65	-4.28	QP	100	223
6	875.31	43.76	46.00	-2.24	44.68	-0.92	QP	100	192

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

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

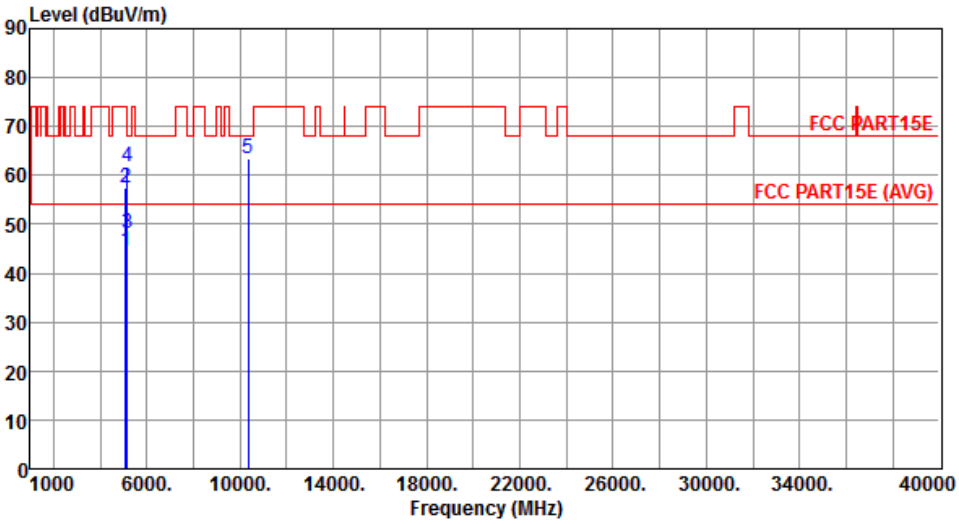
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	44.57	54.00	-9.43	39.73	4.84	Average	240	52
2	5100.00	57.38	74.00	-16.62	52.54	4.84	Peak	240	52
3	5150.00	44.53	54.00	-9.47	39.63	4.90	Average	240	52
4	5150.00	57.75	74.00	-16.25	52.85	4.90	Peak	240	52
5	10360.00	67.10	68.20	-1.10	53.43	13.67	Peak	193	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).

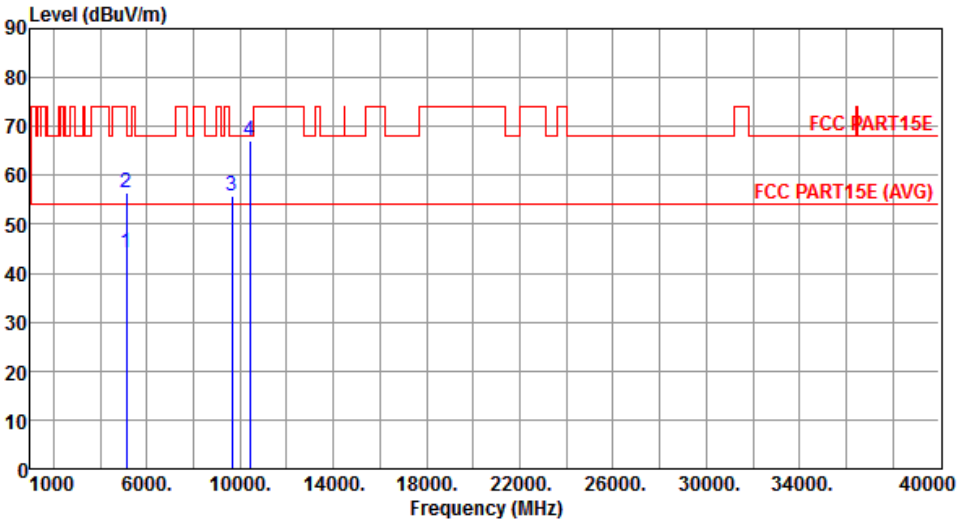
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	44.37	54.00	-9.63	39.53	4.84	Average	246	207
2	5100.00	57.38	74.00	-16.62	52.54	4.84	Peak	246	207
3	5150.00	48.09	54.00	-5.91	43.19	4.90	Average	246	207
4	5150.00	61.93	74.00	-12.07	57.03	4.90	Peak	246	207
5	10360.00	63.54	68.20	-4.66	49.87	13.67	Peak	179	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).

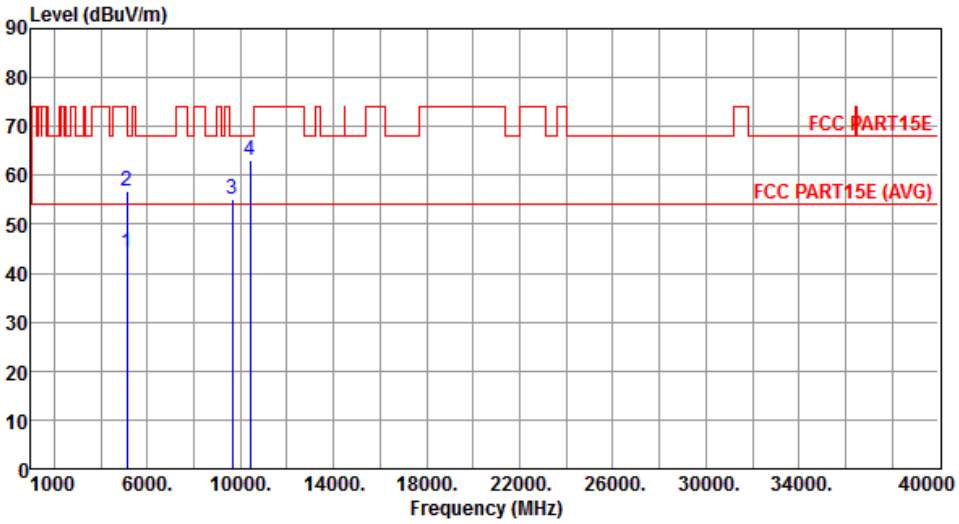
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	44.19	54.00	-9.81	39.33	4.86	Average	241	52
2	5120.00	56.32	74.00	-17.68	51.46	4.86	Peak	241	52
3	9648.00	55.76	68.20	-12.44	43.00	12.76	Peak	216	3
4	10400.00	67.06	68.20	-1.14	53.31	13.75	Peak	197	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).

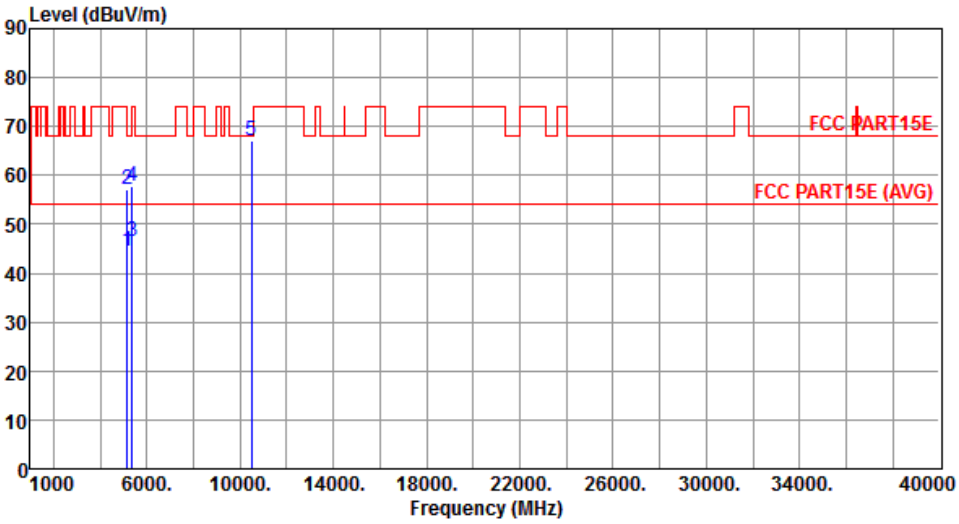
Modulation	11a	**Test Freq. (MHz)**	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	44.13	54.00	-9.87	39.27	4.86	Average	209	342
2	5120.00	56.73	74.00	-17.27	51.87	4.86	Peak	209	342
3	9648.00	55.06	68.20	-13.14	42.30	12.76	Peak	195	1
4	10400.00	63.05	68.20	-5.15	49.30	13.75	Peak	209	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).

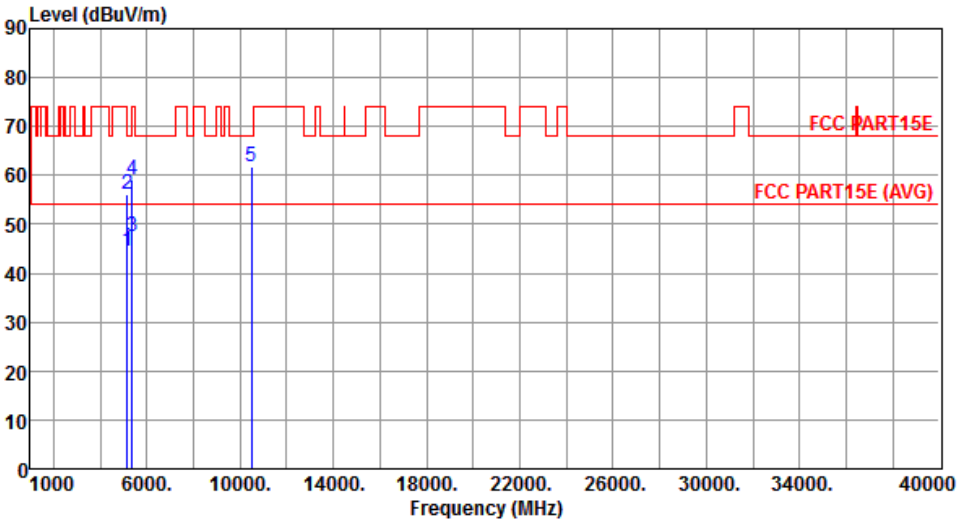
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



	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	44.43	54.00	-9.57	39.53	4.90	Average	240	53
2	5150.00	57.12	74.00	-16.88	52.22	4.90	Peak	240	53
3	5350.00	46.46	54.00	-7.54	41.33	5.13	Average	240	53
4	5350.00	57.69	74.00	-16.31	52.56	5.13	Peak	240	53
5	10480.00	67.11	68.20	-1.09	53.21	13.90	Peak	193	54

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

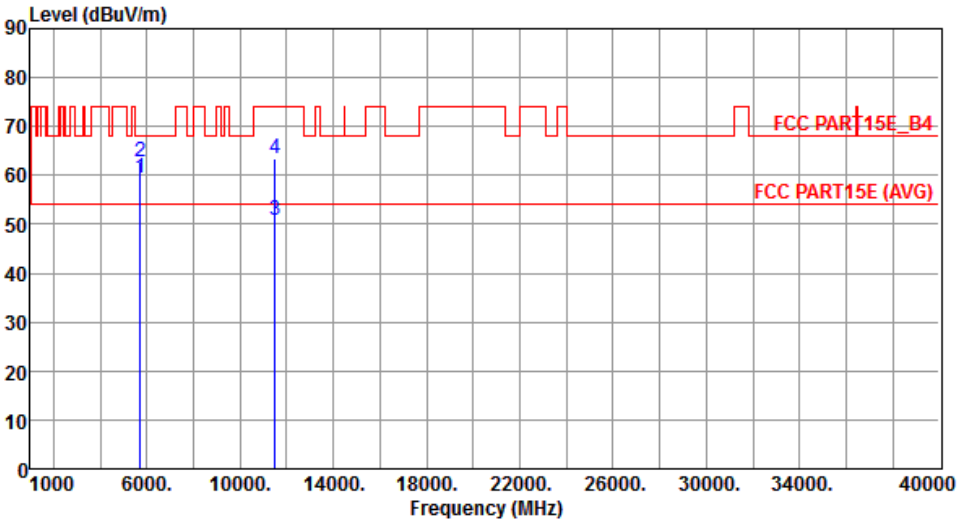
Modulation	11a	**Test Freq. (MHz)**	5240
Polarization	Vertical		



	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	44.43	54.00	-9.57	39.53	4.90	Average	246	208
2	5150.00	56.12	74.00	-17.88	51.22	4.90	Peak	246	208
3	5350.00	47.39	54.00	-6.61	42.26	5.13	Average	246	208
4	5350.00	59.14	74.00	-14.86	54.01	5.13	Peak	246	208
5	10480.00	61.71	68.20	-6.49	47.81	13.90	Peak	173	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).

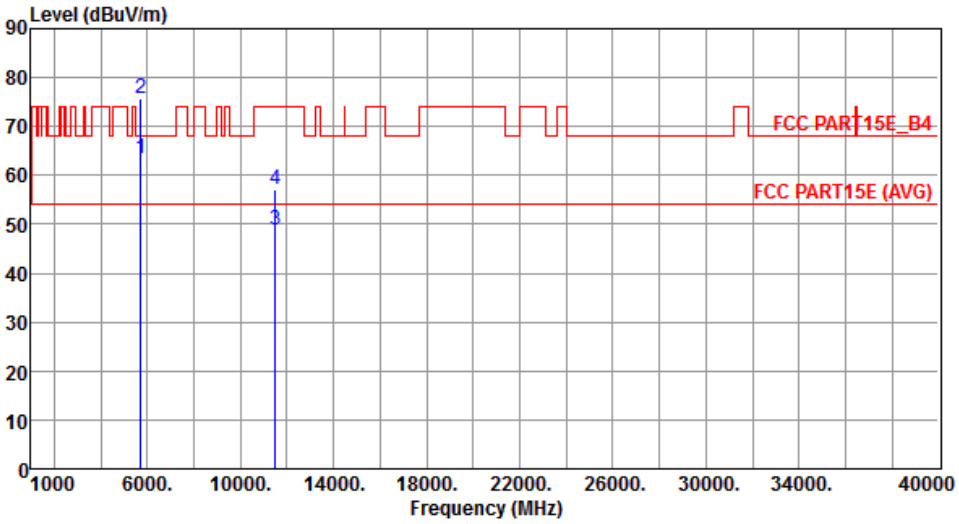
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	59.54	68.20	-8.66	53.84	5.70	Peak	336	295
2	5725.00	62.73	78.20	-15.47	57.02	5.71	Peak	336	295
3	11490.00	50.69	54.00	-3.31	36.07	14.62	Average	195	314
4	11490.00	63.33	74.00	-10.67	48.71	14.62	Peak	195	314

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).

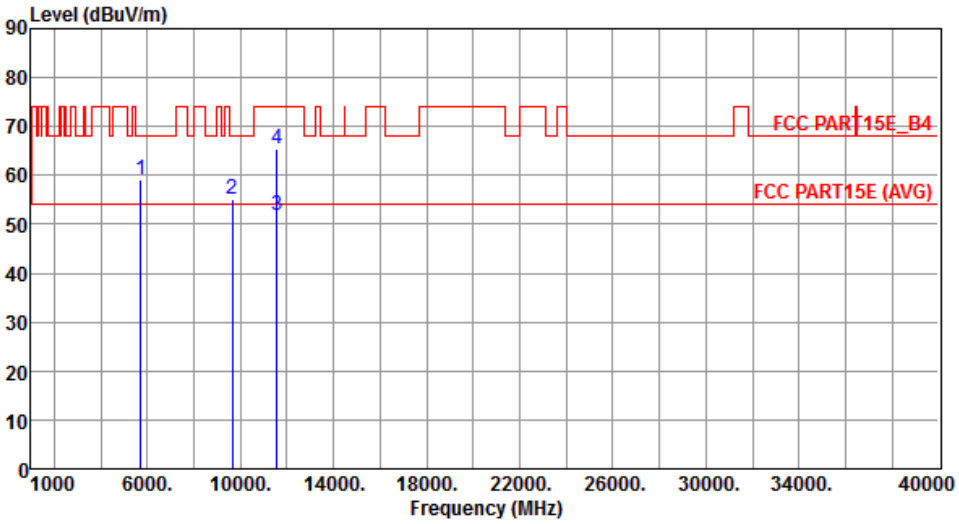
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	63.54	68.20	-4.66	57.84	5.70	Peak	228	158
2	5725.00	75.84	78.20	-2.36	70.13	5.71	Peak	228	158
3	11490.00	48.67	54.00	-5.33	34.05	14.62	Average	178	6
4	11490.00	57.04	74.00	-16.96	42.42	14.62	Peak	178	6

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).

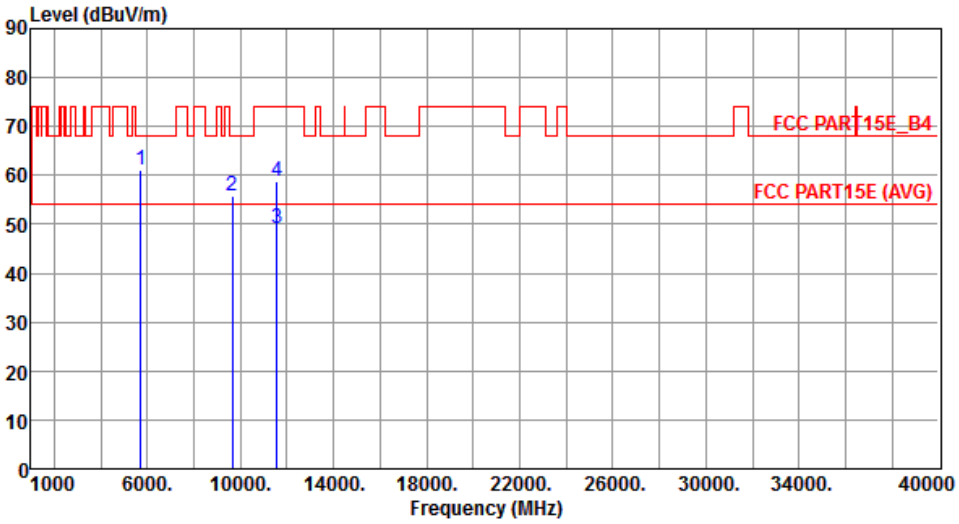
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5700.00	59.10	68.20	-9.10	53.44	5.66	Peak	204	344
2	9648.00	55.03	68.20	-13.17	42.27	12.76	Peak	205	5
3	11570.00	51.74	54.00	-2.26	37.22	14.52	Average	200	277
4	11570.00	65.50	74.00	-8.50	50.98	14.52	Peak	200	277

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).

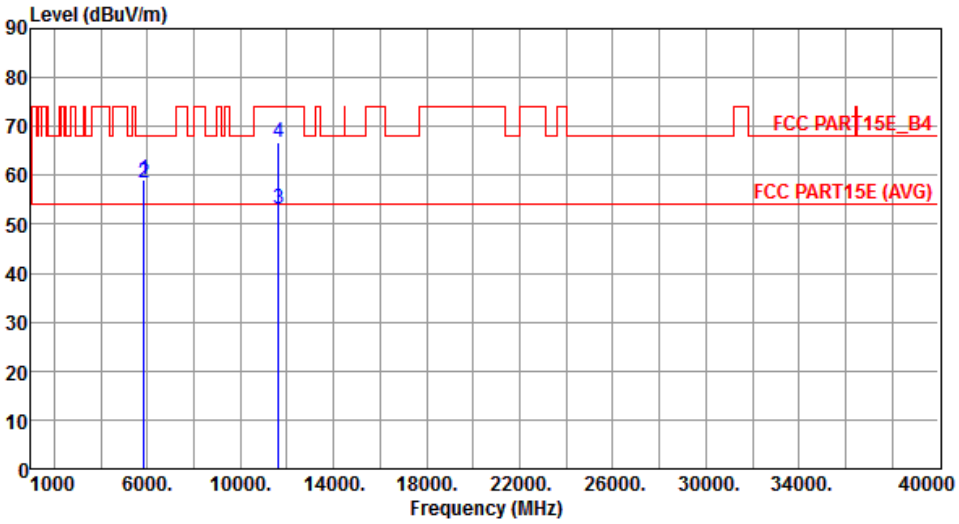
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5700.00	61.20	68.20	-7.00	55.54	5.66	Peak	193	190
2	9648.00	55.85	68.20	-12.35	43.09	12.76	Peak	191	12
3	11570.00	49.31	54.00	-4.69	34.79	14.52	Average	182	1
4	11570.00	58.85	74.00	-15.15	44.33	14.52	Peak	182	1

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).

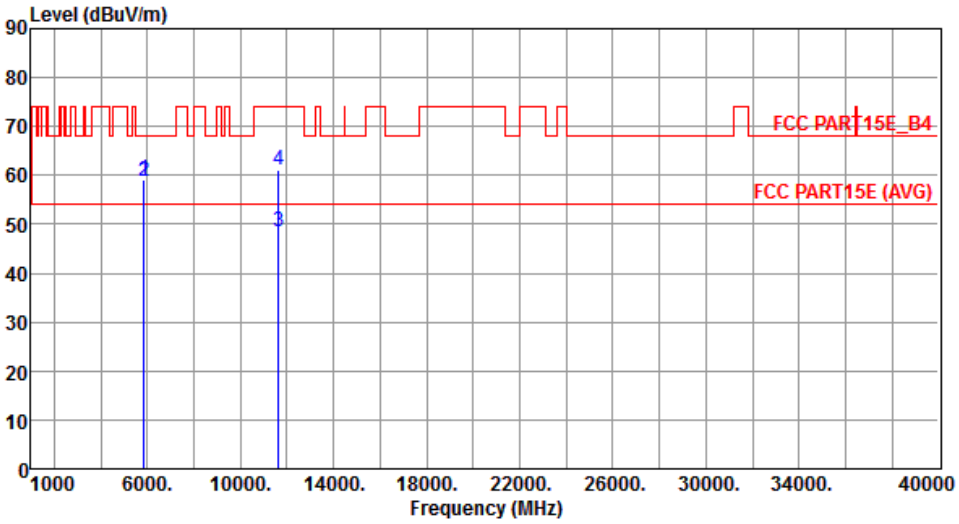
Modulation	11a	**Test Freq. (MHz)**	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.08	78.20	-19.12	53.11	5.97	Peak	333	308
2	5860.00	58.43	68.20	-9.77	52.45	5.98	Peak	333	308
3	11650.00	52.99	54.00	-1.01	38.59	14.40	Average	179	316
4	11650.00	66.64	74.00	-7.36	52.24	14.40	Peak	179	316

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		

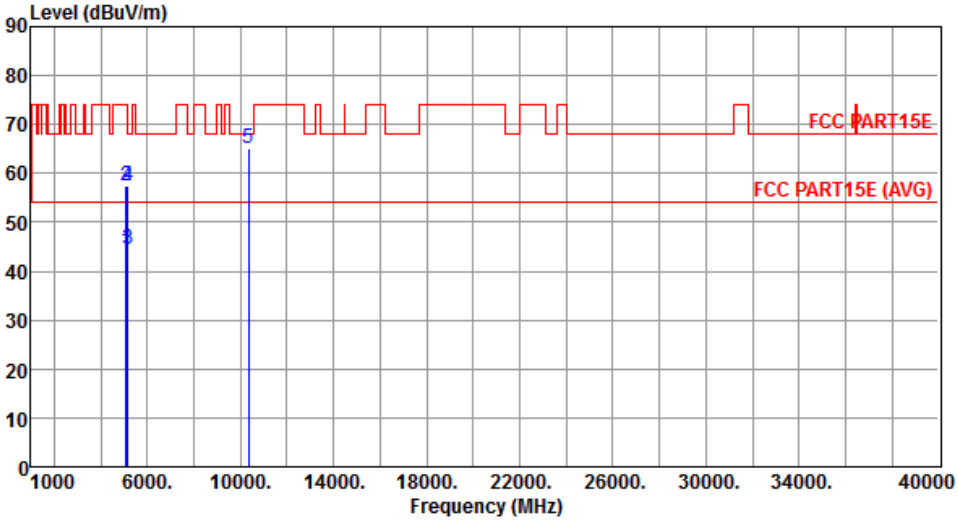


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.12	78.20	-19.08	53.15	5.97	Peak	220	166
2	5860.00	58.84	68.20	-9.36	52.86	5.98	Peak	220	166
3	11650.00	48.63	54.00	-5.37	34.23	14.40	Average	171	2
4	11650.00	61.15	74.00	-12.85	46.75	14.40	Peak	171	2

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

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

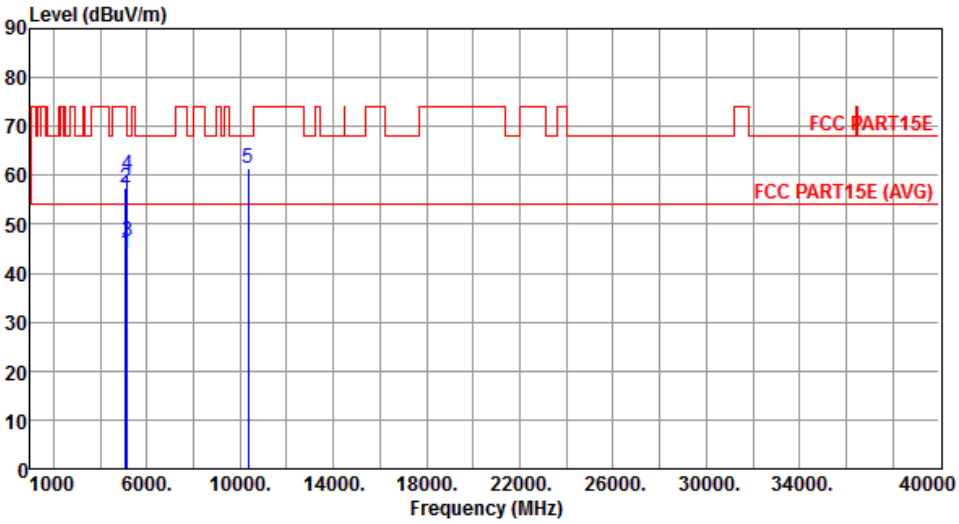
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	44.18	54.00	-9.82	39.34	4.84	Average	240	50
2	5100.00	57.33	74.00	-16.67	52.49	4.84	Peak	240	50
3	5150.00	44.41	54.00	-9.59	39.51	4.90	Average	240	50
4	5150.00	57.55	74.00	-16.45	52.65	4.90	Peak	240	50
5	10360.00	65.21	68.20	-2.99	51.54	13.67	Peak	190	44

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).

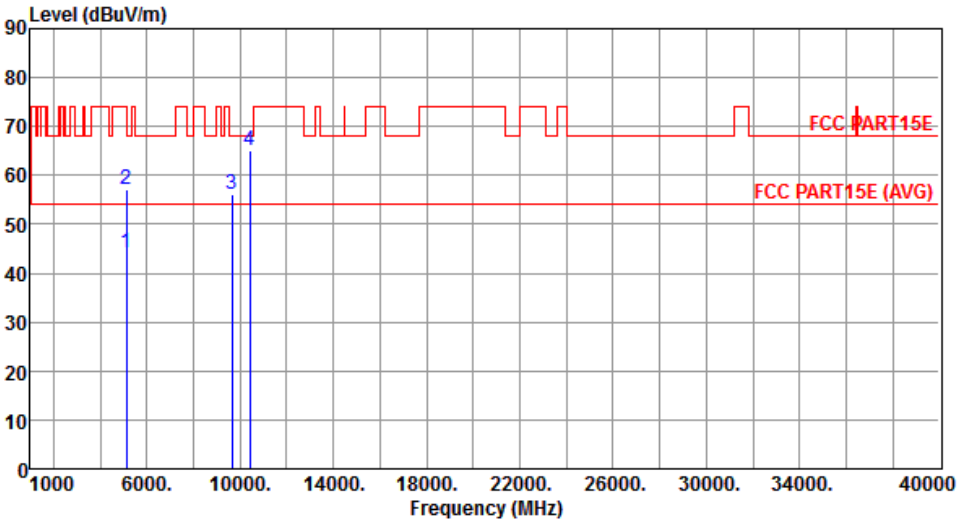
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	44.30	54.00	-9.70	39.46	4.84	Average	236	175
2	5100.00	57.38	74.00	-16.62	52.54	4.84	Peak	236	175
3	5150.00	46.55	54.00	-7.45	41.65	4.90	Average	236	175
4	5150.00	60.11	74.00	-13.89	55.21	4.90	Peak	236	175
5	10360.00	61.32	68.20	-6.88	47.65	13.67	Peak	180	222

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).

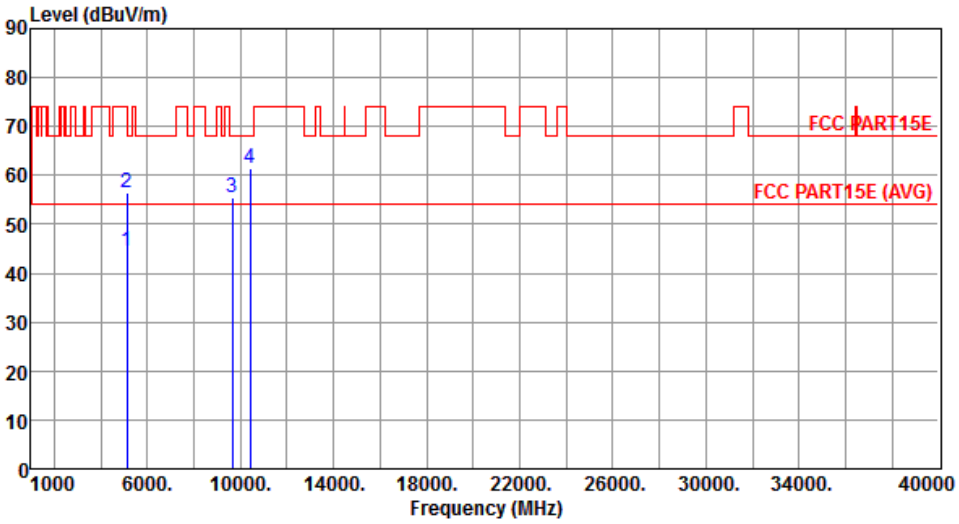
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	44.20	54.00	-9.80	39.34	4.86	Average	240	50
2	5120.00	57.02	74.00	-16.98	52.16	4.86	Peak	240	50
3	9648.00	56.14	68.20	-12.06	43.38	12.76	Peak	222	5
4	10400.00	65.09	68.20	-3.11	51.34	13.75	Peak	200	20

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

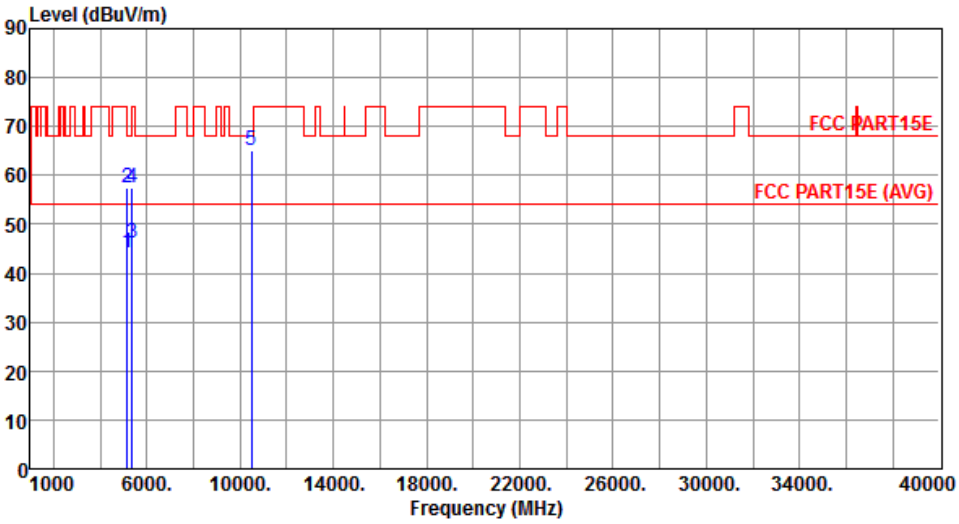
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	44.52	54.00	-9.48	39.66	4.86	Average	210	340
2	5120.00	56.31	74.00	-17.69	51.45	4.86	Peak	210	340
3	9648.00	55.30	68.20	-12.90	42.54	12.76	Peak	190	0
4	10400.00	61.30	68.20	-6.90	47.55	13.75	Peak	210	340

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).

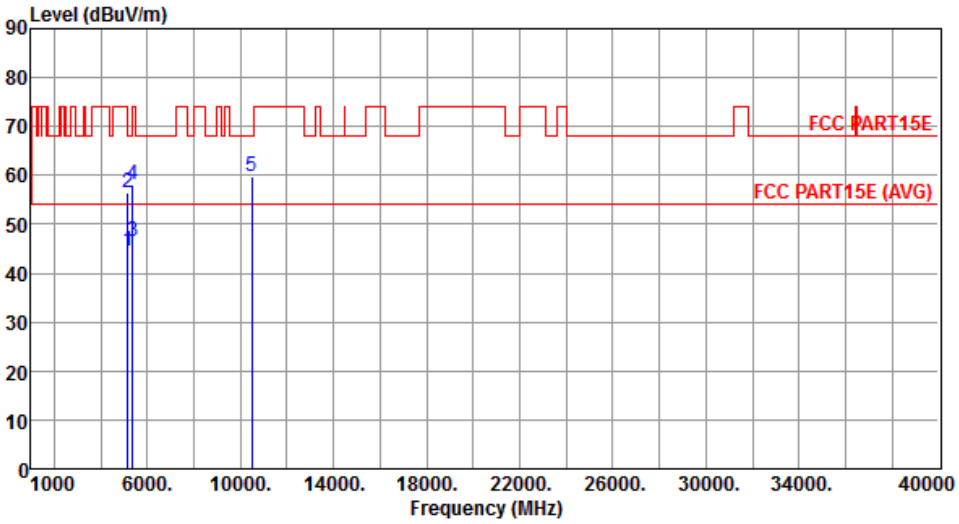
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



	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	44.12	54.00	-9.88	39.22	4.90	Average	240	50
2	5150.00	57.31	74.00	-16.69	52.41	4.90	Peak	240	50
3	5350.00	46.13	54.00	-7.87	41.00	5.13	Average	240	50
4	5350.00	57.54	74.00	-16.46	52.41	5.13	Peak	240	50
5	10480.00	64.94	68.20	-3.26	51.04	13.90	Peak	190	53

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).

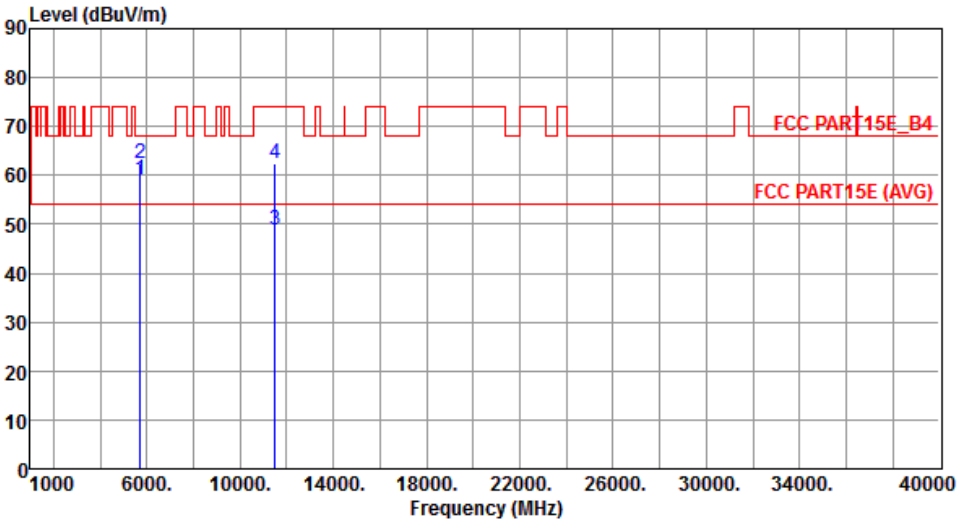
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	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	44.38	54.00	-9.62	39.48	4.90	Average	241	210
2	5150.00	56.35	74.00	-17.65	51.45	4.90	Peak	241	210
3	5350.00	46.45	54.00	-7.55	41.32	5.13	Average	241	210
4	5350.00	57.99	74.00	-16.01	52.86	5.13	Peak	241	210
5	10480.00	59.85	68.20	-8.35	45.95	13.90	Peak	170	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).

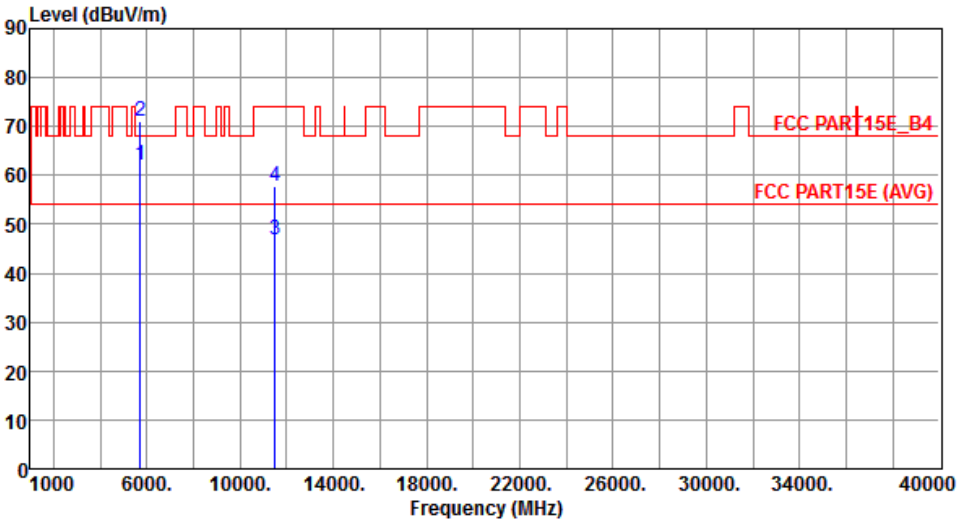
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	59.23	68.20	-8.97	53.53	5.70	Peak	330	295
2	5725.00	62.37	78.20	-15.83	56.66	5.71	Peak	330	295
3	11490.00	48.79	54.00	-5.21	34.17	14.62	Average	190	312
4	11490.00	62.38	74.00	-11.62	47.76	14.62	Peak	190	312

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).

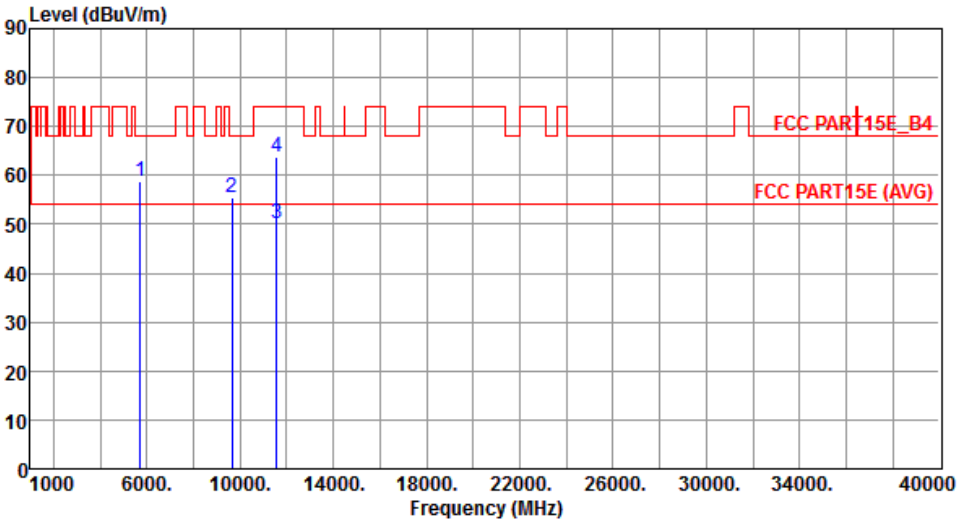
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	62.23	68.20	-5.97	56.53	5.70	Peak	230	160
2	5725.00	70.95	78.20	-7.25	65.24	5.71	Peak	230	160
3	11490.00	46.79	54.00	-7.21	32.17	14.62	Average	175	5
4	11490.00	57.94	74.00	-16.06	43.32	14.62	Peak	175	5

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).

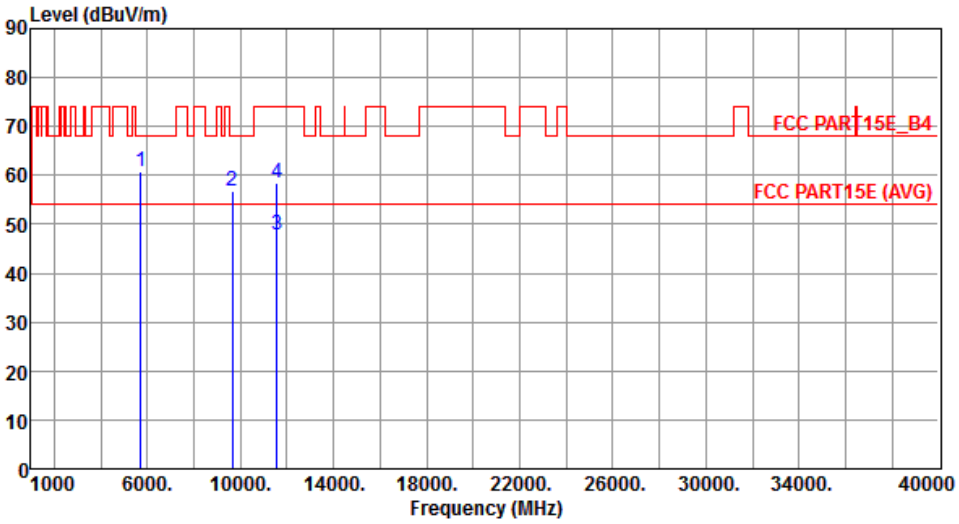
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5700.00	58.88	68.20	-9.32	53.22	5.66	Peak	200	340
2	9648.00	55.30	68.20	-12.90	42.54	12.76	Peak	200	5
3	11570.00	50.17	54.00	-3.83	35.65	14.52	Average	198	175
4	11570.00	63.90	74.00	-10.10	49.38	14.52	Peak	198	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).

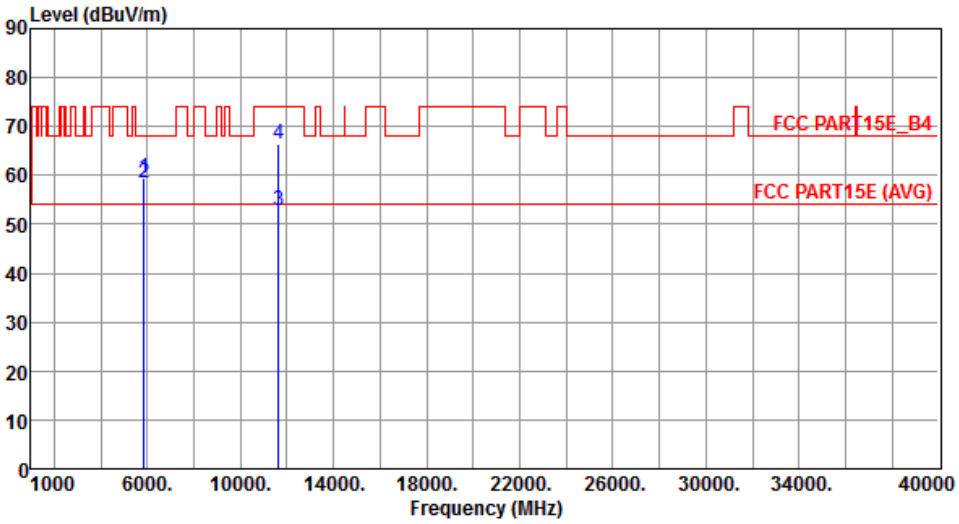
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5700.00	60.89	68.20	-7.31	55.23	5.66	Peak	190	185
2	9648.00	56.88	68.20	-11.32	44.12	12.76	Peak	190	5
3	11570.00	47.83	54.00	-6.17	33.31	14.52	Average	185	5
4	11570.00	58.38	74.00	-15.62	43.86	14.52	Peak	185	5

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).

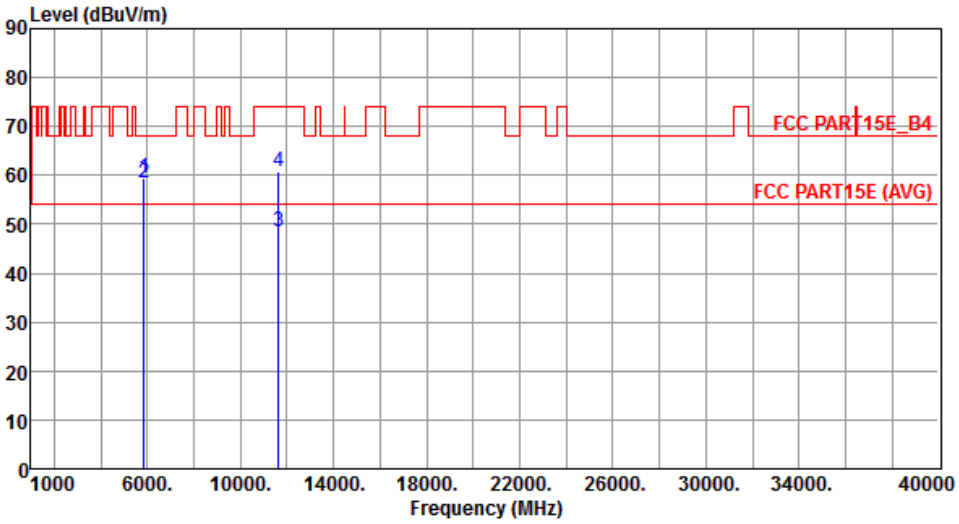
Modulation	VHT20	**Test Freq. (MHz)**	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.39	78.20	-18.81	53.42	5.97	Peak	300	310
2	5860.00	58.33	68.20	-9.87	52.35	5.98	Peak	300	310
3	11650.00	52.81	54.00	-1.19	38.41	14.40	Average	180	315
4	11650.00	66.57	74.00	-7.43	52.17	14.40	Peak	180	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	VHT20	**Test Freq. (MHz)**	5825
Polarization	Vertical		

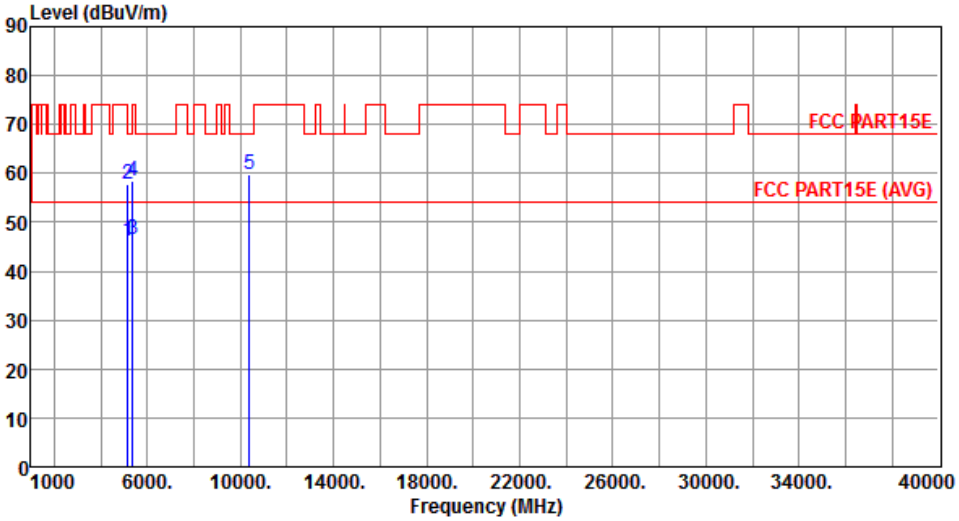


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.41	78.20	-18.79	53.44	5.97	Peak	220	160
2	5860.00	58.51	68.20	-9.69	52.53	5.98	Peak	220	160
3	11650.00	48.56	54.00	-5.44	34.16	14.40	Average	170	5
4	11650.00	60.94	74.00	-13.06	46.54	14.40	Peak	170	5

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

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

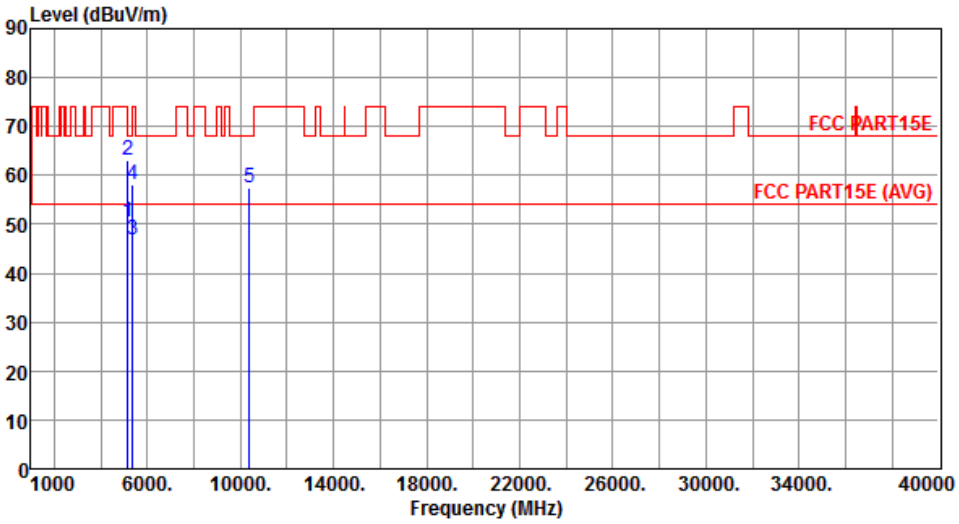
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	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	46.00	54.00	-8.00	41.10	4.90	Average	240	53
2	5150.00	57.63	74.00	-16.37	52.73	4.90	Peak	240	53
3	5350.00	46.51	54.00	-7.49	41.38	5.13	Average	240	53
4	5350.00	58.34	74.00	-15.66	53.21	5.13	Peak	240	53
5	10380.00	59.92	68.20	-8.28	46.21	13.71	Peak	190	50

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).

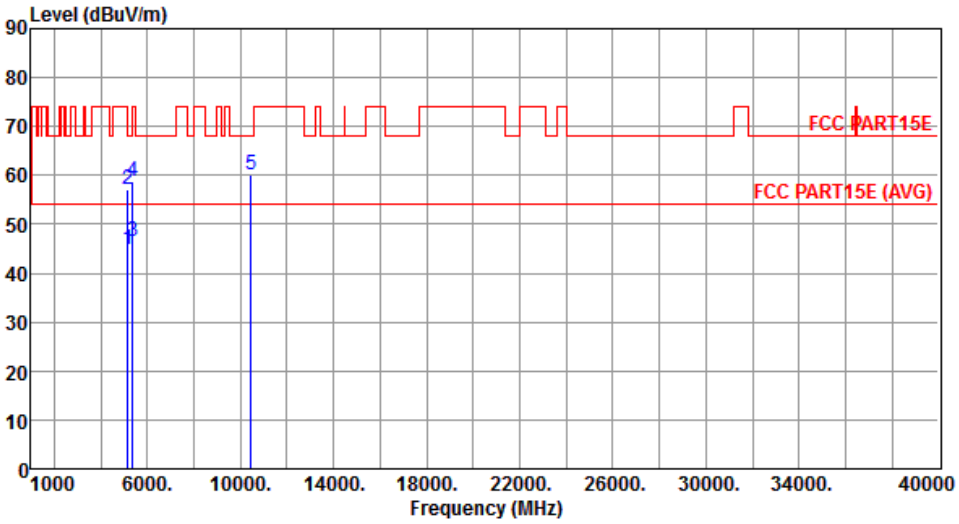
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	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	50.57	54.00	-3.43	45.67	4.90	Average	260	175
2	5150.00	63.04	74.00	-10.96	58.14	4.90	Peak	260	175
3	5350.00	46.93	54.00	-7.07	41.80	5.13	Average	260	175
4	5350.00	58.19	74.00	-15.81	53.06	5.13	Peak	260	175
5	10380.00	57.57	68.20	-10.63	43.86	13.71	Peak	210	170

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).

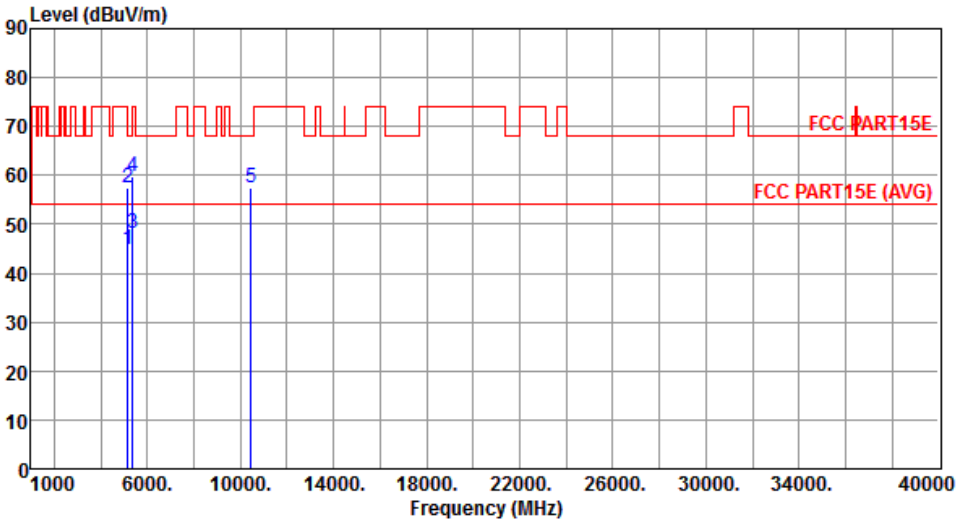
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	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	44.97	54.00	-9.03	40.07	4.90	Average	240	55
2	5150.00	57.16	74.00	-16.84	52.26	4.90	Peak	240	55
3	5350.00	46.60	54.00	-7.40	41.47	5.13	Average	240	55
4	5350.00	58.73	74.00	-15.27	53.60	5.13	Peak	240	55
5	10460.00	60.24	68.20	-7.96	46.38	13.86	Peak	235	153

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).

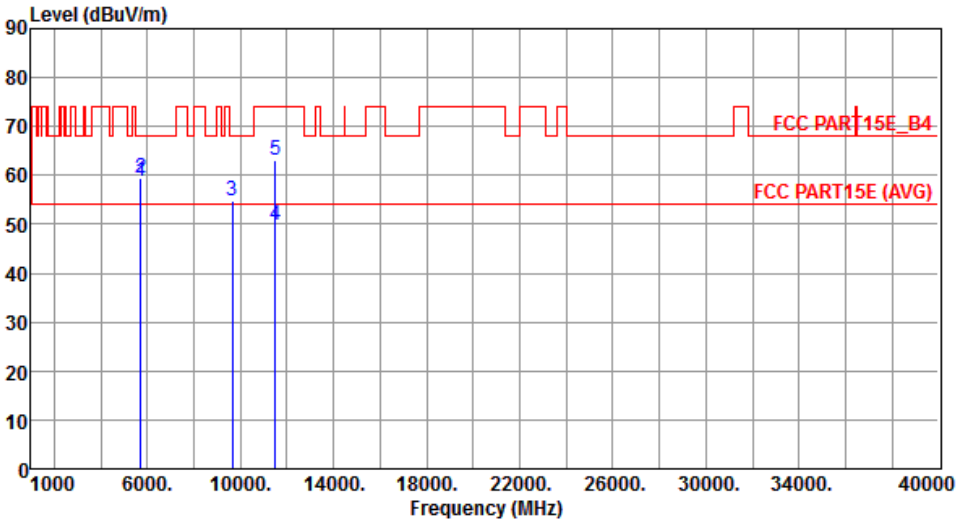
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	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	44.96	54.00	-9.04	40.06	4.90	Average	240	175
2	5150.00	57.41	74.00	-16.59	52.51	4.90	Peak	240	175
3	5350.00	48.22	54.00	-5.78	43.09	5.13	Average	240	175
4	5350.00	59.81	74.00	-14.19	54.68	5.13	Peak	240	175
5	10460.00	57.51	68.20	-10.69	43.65	13.86	Peak	210	170

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).

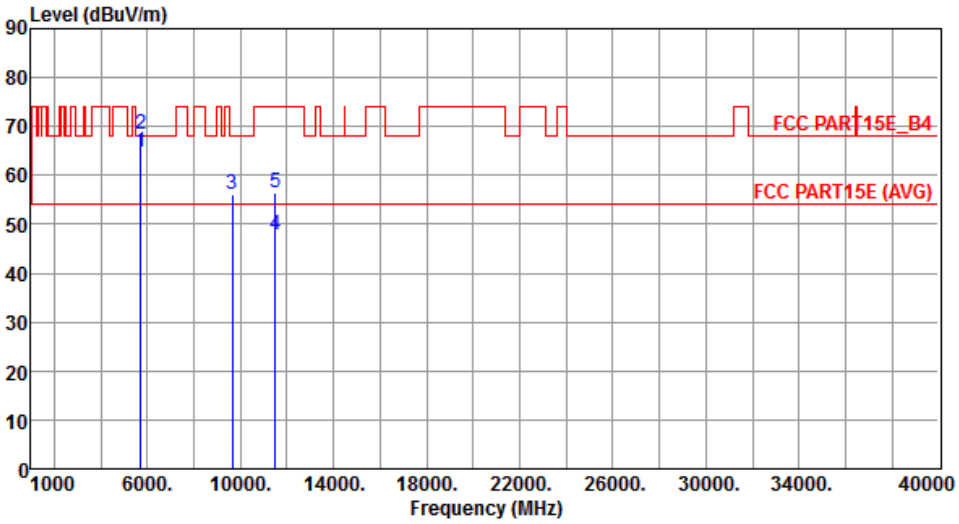
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	58.95	68.20	-9.25	53.25	5.70	Peak	228	297
2	5725.00	59.37	78.20	-18.83	53.66	5.71	Peak	228	297
3	9648.00	54.89	68.20	-13.31	42.13	12.76	Peak	211	16
4	11510.00	49.85	54.00	-4.15	35.23	14.62	Average	179	277
5	11510.00	63.12	74.00	-10.88	48.50	14.62	Peak	179	277

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).

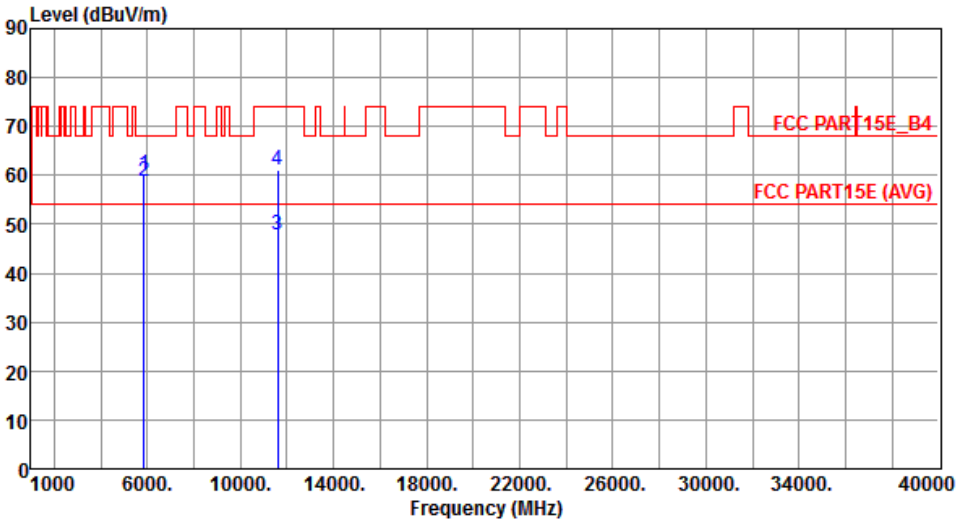
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	64.80	68.20	-3.40	59.10	5.70	Peak	173	220
2	5725.00	68.26	78.20	-9.94	62.55	5.71	Peak	173	220
3	9648.00	55.99	68.20	-12.21	43.23	12.76	Peak	188	16
4	11510.00	47.83	54.00	-6.17	33.21	14.62	Average	176	5
5	11510.00	56.42	74.00	-17.58	41.80	14.62	Peak	176	5

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).

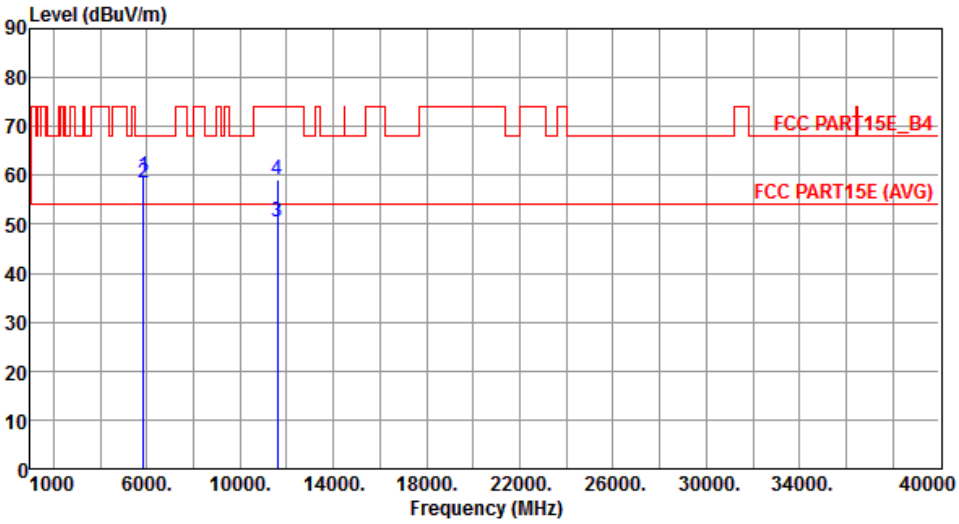
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	60.22	78.20	-17.98	54.25	5.97	Peak	301	295
2	5860.00	58.73	68.20	-9.47	52.75	5.98	Peak	301	295
3	11590.00	47.76	54.00	-6.24	33.26	14.50	Average	180	279
4	11590.00	60.96	74.00	-13.04	46.46	14.50	Peak	180	279

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		

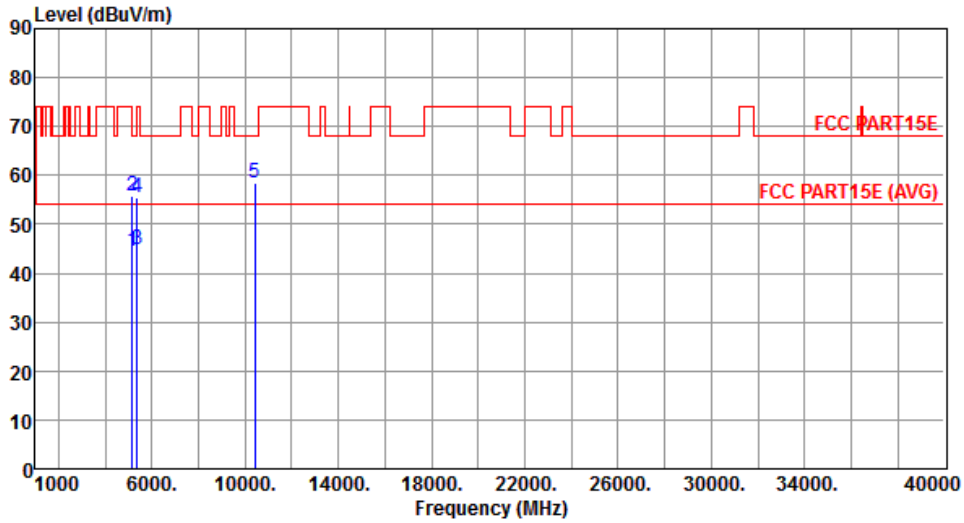


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.75	78.20	-18.45	53.78	5.97	Peak	196	210
2	5860.00	58.42	68.20	-9.78	52.44	5.98	Peak	196	210
3	11590.00	50.62	54.00	-3.38	36.12	14.50	Average	180	3
4	11590.00	59.10	74.00	-14.90	44.60	14.50	Peak	180	3

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

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

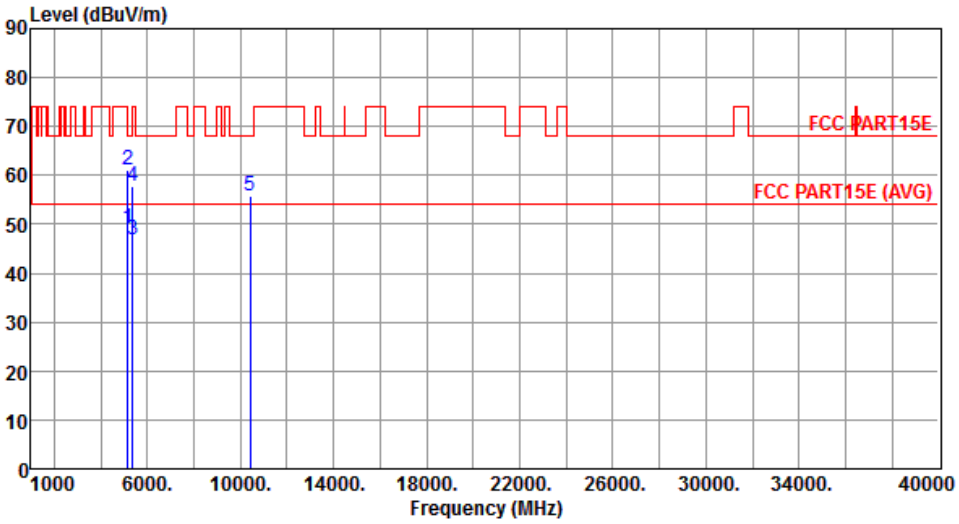
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	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	44.38	54.00	-9.62	39.48	4.90	Average	398	5
2	5150.00	55.92	74.00	-18.08	51.02	4.90	Peak	398	5
3	5350.00	44.70	54.00	-9.30	39.57	5.13	Average	398	5
4	5350.00	55.49	74.00	-18.51	50.36	5.13	Peak	398	5
5	10420.00	58.34	68.20	-9.86	44.56	13.78	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).

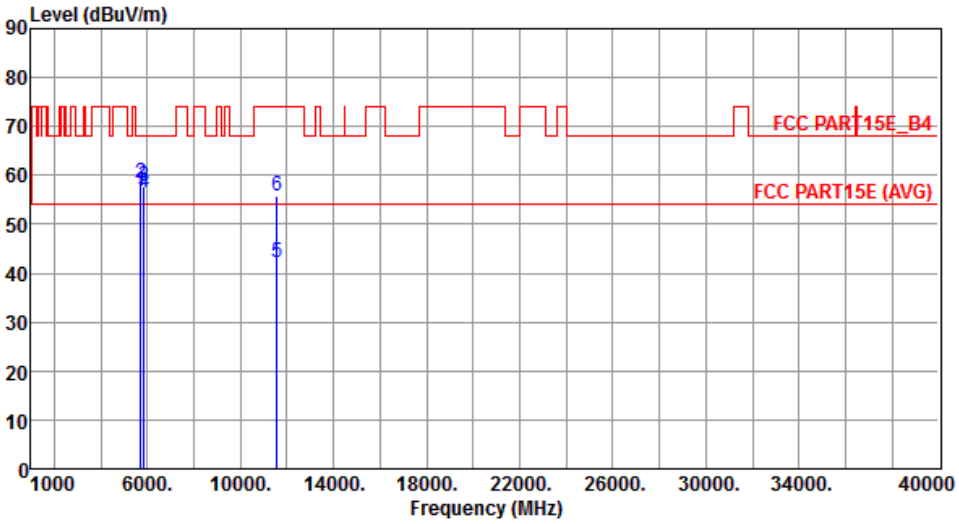
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	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	49.23	54.00	-4.77	44.33	4.90	Average	207	0
2	5150.00	61.11	74.00	-12.89	56.21	4.90	Peak	207	0
3	5350.00	46.88	54.00	-7.12	41.75	5.13	Average	207	0
4	5350.00	57.94	74.00	-16.06	52.81	5.13	Peak	207	0
5	10420.00	55.90	68.20	-12.30	42.12	13.78	Peak	150	193

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).

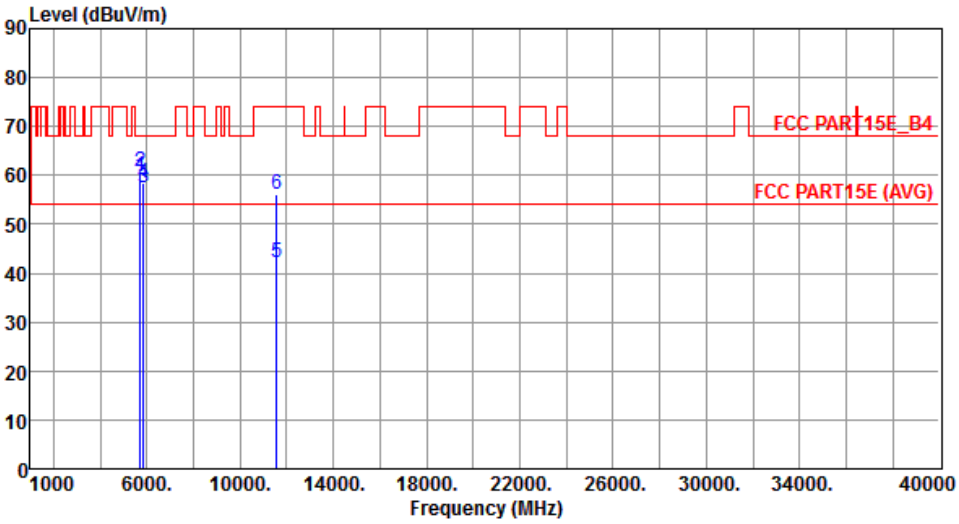
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	56.68	68.20	-11.52	50.98	5.70	Peak	360	295
2	5725.00	58.38	78.20	-19.82	52.67	5.71	Peak	213	295
3	5850.00	57.95	78.20	-20.25	51.98	5.97	Peak	213	295
4	5860.00	56.34	68.20	-11.86	50.36	5.98	Peak	213	295
5	11550.00	42.21	54.00	-11.79	27.66	14.55	Average	200	173
6	11550.00	55.90	74.00	-18.10	41.35	14.55	Peak	200	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).

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	5715.00	59.82	68.20	-8.38	54.12	5.70	Peak	219	175
2	5725.00	60.90	78.20	-17.30	55.19	5.71	Peak	219	175
3	5850.00	57.36	78.20	-20.84	51.39	5.97	Peak	219	175
4	5860.00	58.49	68.20	-9.71	52.51	5.98	Peak	219	175
5	11550.00	42.21	54.00	-11.79	27.66	14.55	Average	100	168
6	11550.00	56.08	74.00	-17.92	41.53	14.55	Peak	100	168

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

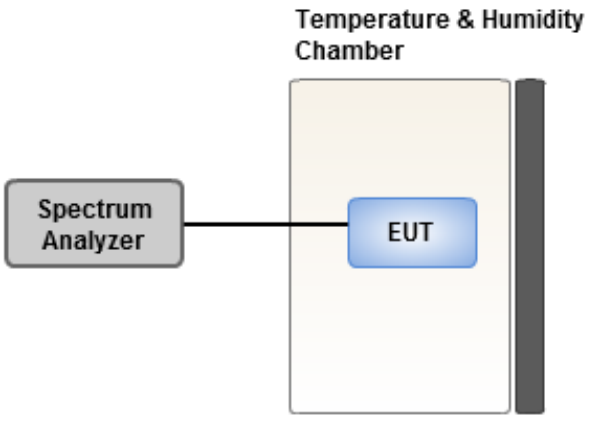
3.6.1 Limit of Frequency Stability

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	1.25	1.25	1.35	1.37
T20°CVmin	0.76	0.83	0.84	0.89
T50°CVnom	0.84	0.94	0.99	1.02
T40°CVnom	0.83	0.76	0.75	0.88
T30°CVnom	1.30	1.35	1.48	1.62
T20°CVnom	1.29	1.26	1.30	1.40
T10°CVnom	1.19	1.26	1.28	1.44
T0°CVnom	1.62	1.60	1.52	1.50
T-10°CVnom	1.16	1.26	1.25	1.41
T-20°CVnom	1.27	1.21	1.18	1.36
T-30°CVnom	1.14	1.07	1.31	1.44
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	1.01	1.08	1.16	1.16
T20°CVmin	1.39	1.34	1.34	1.35
T50°CVnom	0.81	0.86	0.79	0.94
T40°CVnom	0.72	0.84	0.84	0.96
T30°CVnom	0.86	0.85	0.85	0.77
T20°CVnom	1.22	1.19	1.33	1.44
T10°CVnom	1.28	1.31	1.30	1.42
T0°CVnom	1.12	1.12	1.18	1.30
T-10°CVnom	1.35	1.39	1.40	1.57
T-20°CVnom	1.01	1.03	1.02	1.11
T-30°CVnom	1.48	1.55	1.41	1.55
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, 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 Hsiang. 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 Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.

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

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