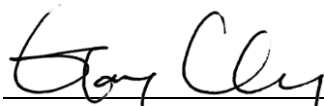


FCC Test Report

FCC ID : VQK-F05F
Equipment : Mobile Phone
Model No. : F-05F
Brand Name : FUJITSU
Applicant : FUJITSU LIMITED
Address : 1-1, Kamikodanaka 4-chome, Nakahara-ku,
Kawasaki 211-8588, Japan
Standard : 47 CFR FCC Part 15.407
Received Date : Dec. 25, 2013
Tested Date : Feb. 26 ~ Mar. 05, 2014

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

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Release Record

Report No.	Version	Description	Issued Date
FR3D2502AN	Rev. 01	Initial issue	Mar. 20, 2014

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.155MHz 47.55 (Margin -8.19dB) - AV	Pass
15.407(b)(1)(2)(3) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5470.00MHz 71.89 (Margin -2.11dB) - PK	Pass
15.407(a)(1)(2)(3)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(a)(1)(2)(3)	RF Output Power	Power [dBm]: 5150~5250 MHz:13.33 5250~5350 MHz:13.29 5470~5725 MHz:13.64	Pass
15.407(a)(1)(2)(3)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(a)(6)	Peak Excursion	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 Product Details

Product Name	Mobile Phone
Brand Name	FUJITSU
Model Name	F-05F
IMEI Code	359401050022851, 359401050022695
H/W Version	V2.1.0
S/W Version	R18Ae

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
IEEE Std. 802.11	Frequency Range (MHz)	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
a	5150-5250 5250-5350 5470-5725	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [8]	1	6-54 Mbps
n (HT20)	5150-5250 5250-5350 5470-5725	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [8]	1	MCS 0-7
n (HT40)	5150-5250 5250-5350 5470-5725	5190-5230 5270-5310 5510-5670	38-46 [2] 54-62 [2] 102-134 [3]	1	MCS 0-7
ac (VHT20)	5150-5250 5250-5350 5470-5725	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [8]	1	MCS 0-8
ac (VHT40)	5150-5250 5250-5350 5470-5725	5190-5230 5270-5310 5510-5670	38-46 [2] 54-62 [2] 102-134 [3]	1	MCS 0-9
ac (VHT80)	5150-5250 5250-5350 5470-5725	5210 5290 5530	42 [1] 58 [1] 106 [1]	1	MCS 0-9

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

1.1.3 Antenna Details

Ant. No.	Type	Gain (dBi)	Connector	Remark
1	$\lambda/4$ Monopole	1.0	---	---

1.1.4 EUT Operational Condition

Power Supply Type	Battery: 3.75Vdc / 3200mAh Adapter: DC5.0V 1.8A, DC9.0V 1.8A
--------------------------	---

1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	Battery (Built-in battery)	Brand Name: Panasonic Model Name: CA54310-0052 Power Rating: O/P: 3.75Vdc, 3200mA

1.1.6 Channel List

802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	54	5270
48	5240	62	5310
52	5260	102	5510
56	5280	110	5550
60	5300	134	5670
64	5320	VHT80	
100	5500	42	5210
104	5520	58	5290
108	5540	106	5530
112	5560	---	---
116	5580	---	---
132	5660	---	---
136	5680	---	---
140	5700	---	---

1.1.7 Test Tool and Duty Cycle

Test Tool	QRCT, Ver 3.0.7.0		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	88.54%	0.53
	HT20	87.80%	0.57
	HT40	77.65%	1.10
	VHT20	84.35%	0.74
	VHT40	72.60%	1.39
	VHT80	56.52%	2.48

1.1.8 Power Setting

Channel	Frequency(MHz)	11a	HT20	VHT20
CH 36	5180	14	13	13
CH 40	5200	14	13	13
CH 48	5240	14	13	13
CH 52	5260	14	13	13
CH 60	5300	14	13	13
CH 64	5320	14	13	13
CH 100	5500	14	13	13
CH 116	5580	14	13	13
CH 140	5700	14	13	13

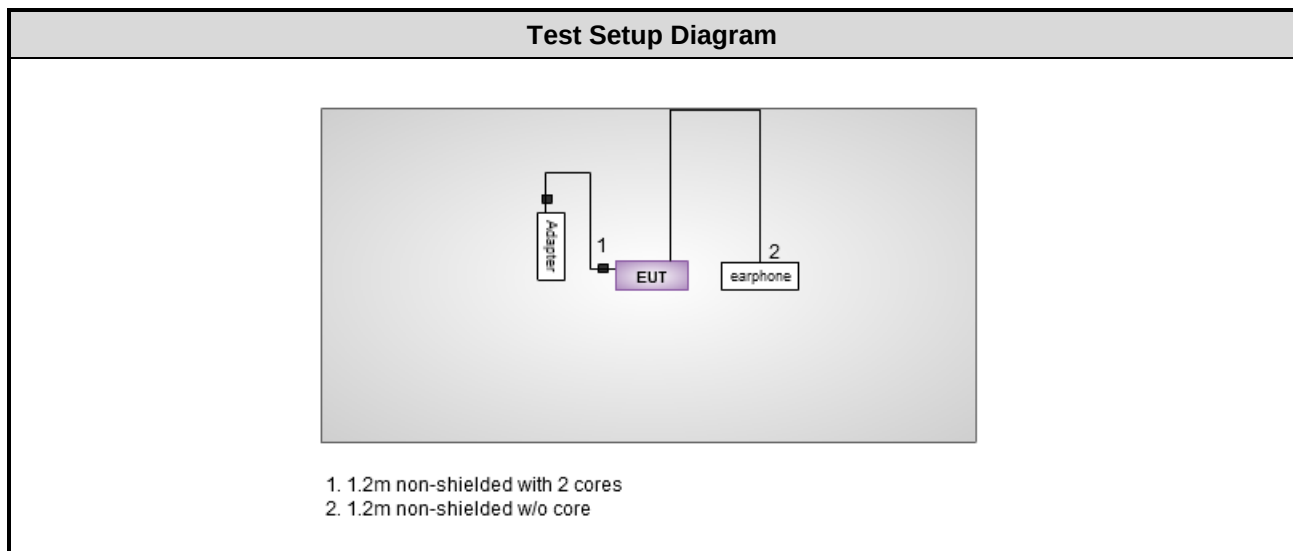
Channel	Frequency(MHz)	HT40	VHT40	VHT80
CH 38	5190	12.5	11	--
CH 46	5230	12.5	11	--
CH 54	5270	12.5	11	--
CH 62	5310	12.5	11	--
CH 102	5510	12	11	--
CH 110	5550	12	11	--
CH 134	5670	12	11	--
CH 42	5210	--	--	11
CH 58	5290	--	--	11
CH 106	5530	--	--	10

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Adapter	NTT docomo	AC Adaptor 05	---	---	1.2m non-shielded with 2 cores
2	Earphone	Apple	MD827FE/A	---	---	1.2m non-shielded w/o core

Note: Item 1 was provided by applicant.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Jan. 25, 2014	Jan. 24, 2015
Receiver	R&S	ESR3	101658	Jan. 10, 2014	Jan. 09, 2015
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jan. 02, 2014	Jan. 01, 2015
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Feb. 13, 2014	Feb. 12, 2015
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Dec. 27, 2013	Dec. 26, 2014
Preamplifier	Burgeon	BPA-530	SN:100219	Nov. 22, 2013	Nov. 21, 2014
Preamplifier	Agilent	83017A	MY39501308	Dec. 16, 2013	Dec. 15, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 16, 2013	Dec. 15, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 16, 2013	Dec. 15, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 16, 2013	Dec. 15, 2014
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 16, 2013	Dec. 15, 2014
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 16, 2013	Dec. 15, 2014
Note: Calibration Interval of instruments listed above is one year.					

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014
Preamplifier	EM	EM18G40G	060572	Jun. 20, 2013	Jun. 19, 2014
Note: Calibration Interval of instruments listed above is two 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. 17, 2014	Feb. 16, 2015
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 11, 2013	Dec. 10, 2014
Power Meter	Anritsu	ML2495A	1241002	Oct. 24, 2013	Oct. 23, 2014
Power Sensor	Anritsu	MA2411B	1207366	Oct. 24, 2013	Oct. 23, 2014
Note: Calibration Interval of instruments listed above is one year.					

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. 15, 2013	Oct. 14, 2014
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 23, 2013	Nov. 22, 2014
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127-666	Dec. 04, 2013	Dec. 03, 2014
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Apr. 24, 2013	Apr. 23, 2014
50 ohm terminal (Support Unit)	NA	50	04	Apr. 22, 2013	Apr. 21, 2014
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 C63.10-2009

FCC KDB 412172

FCC KDB 789033 D01 General UNII Test procedures v01r03

Note: The EUT has been tested and complied with FCC part 15B requirement. FCC Part 15B test results are issued to another report.

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	± 74.147 Hz
Conducted power	± 0.717 dB
Power density	± 2.687 dB
Frequency error	± 74.147 Hz
Temperature	± 0.3 °C
AC conducted emission	± 2.43 dB
Radiated emission	± 2.49 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	13°C / 60%	Skys Huang
Radiated Emissions	03CH01-WS	23°C / 64%	Brad Wu / Haru Yang
RF Conducted	TH01-WS	22°C / 64%	Felix Sung

➤ FCC site registration No.: 657002

➤ IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11a	5700	6 Mbps	---
Radiated Emissions ≤1GHz	11a	5700	6 Mbps	---
RF Output Power	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	6 Mbps	---
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	MCS 0	
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670	MCS 0	
	VHT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	MCS 0	
	VHT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670	MCS 0	
	VHT80	5210 / 5290 / 5530	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	6 Mbps	---
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	MCS 0	
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670	MCS 0	
	VHT80	5210 / 5290 / 5530	MCS 0	
Peak Excursion	11a	5200 / 5300 / 5700	6 Mbps	---
	HT40	5190 / 5310 / 5670	MCS 0	
	VHT20	5180 / 5300 / 5700	MCS 0	
	VHT40	5190 / 5310 / 5670	MCS 0	
	VHT80	5210 / 5290 / 5530	MCS 0	
Frequency Stability	Un-modulation	5200	---	---

NOTE:

- The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-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

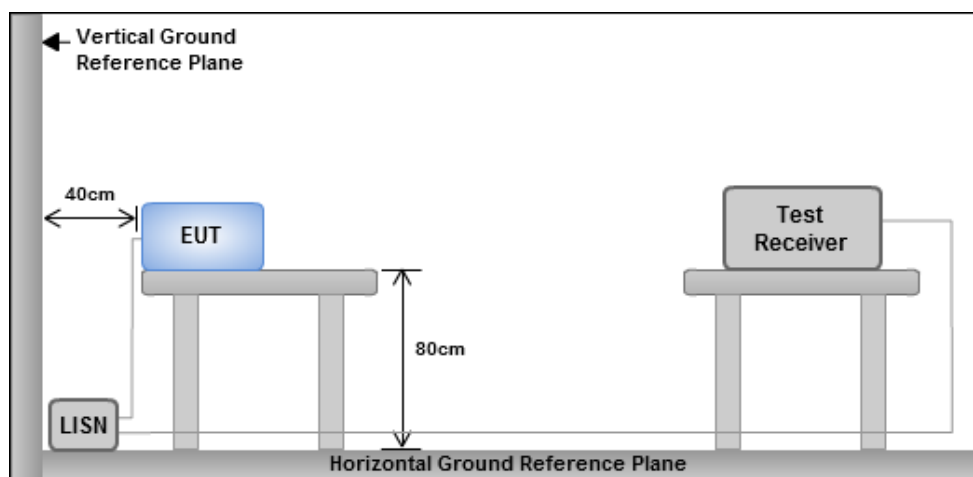
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

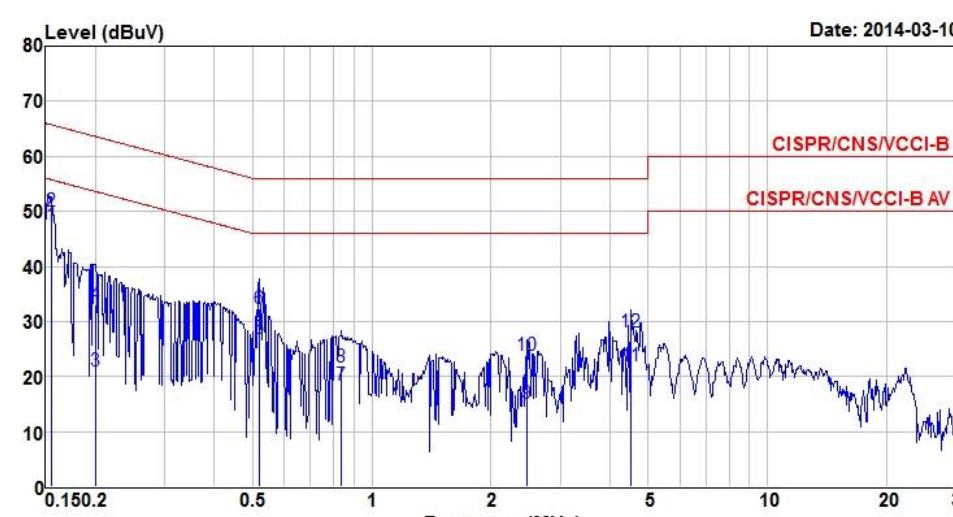


- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

Modulation	11a	Test Freq. (MHz)	5700
Power Phase	Line	Test Configuration	1

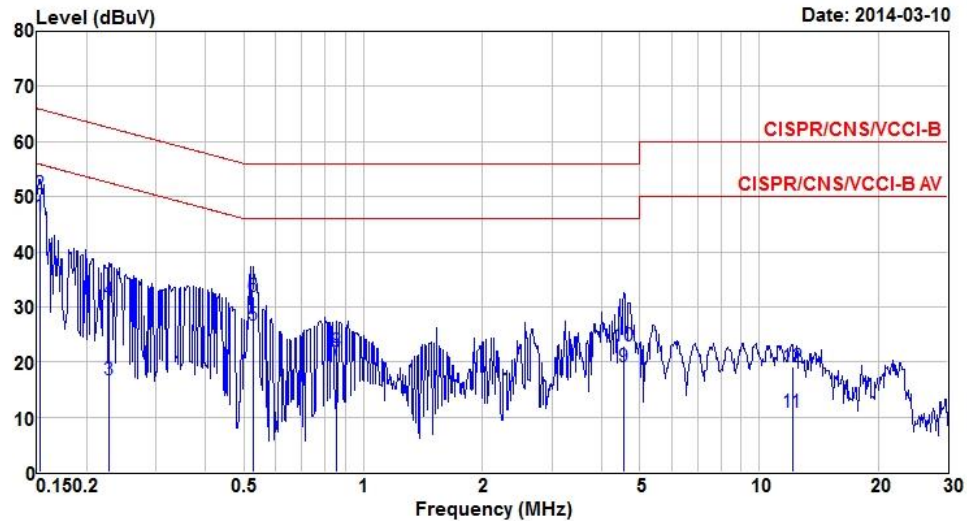
Date: 2014-03-10



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1*	0.155	47.55	55.74	-8.19	47.07	0.41	0.07	Average
2	0.155	50.13	65.74	-15.61	49.65	0.41	0.07	QP
3	0.200	21.08	53.62	-32.54	20.48	0.42	0.18	Average
4	0.200	33.14	63.62	-30.48	32.54	0.42	0.18	QP
5	0.521	26.83	46.00	-19.17	26.19	0.59	0.05	Average
6	0.521	32.22	56.00	-23.78	31.58	0.59	0.05	QP
7	0.839	18.41	46.00	-27.59	17.68	0.69	0.04	Average
8	0.839	21.80	56.00	-34.20	21.07	0.69	0.04	QP
9	2.474	15.18	46.00	-30.82	13.97	1.03	0.18	Average
10	2.474	23.80	56.00	-32.20	22.59	1.03	0.18	QP
11	4.525	22.04	46.00	-23.96	20.67	1.15	0.22	Average
12	4.525	28.03	56.00	-27.97	26.66	1.15	0.22	QP

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

Modulation	11a	Test Freq. (MHz)	5700
Power Phase	Neutral	Test Configuration	1



	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1*	0.152	46.50	55.87	-9.37	45.94	0.49	0.07	Average
2	0.152	50.52	65.87	-15.35	49.96	0.49	0.07	QP
3	0.228	16.75	52.52	-35.77	16.06	0.53	0.16	Average
4	0.228	31.18	62.52	-31.34	30.49	0.53	0.16	QP
5	0.527	26.75	46.00	-19.25	26.03	0.67	0.05	Average
6	0.527	31.98	56.00	-24.02	31.26	0.67	0.05	QP
7	0.857	20.23	46.00	-25.77	19.42	0.77	0.04	Average
8	0.857	22.00	56.00	-34.00	21.19	0.77	0.04	QP
9	4.549	19.14	46.00	-26.86	17.71	1.21	0.22	Average
10	4.549	22.87	56.00	-33.13	21.44	1.21	0.22	QP
11	12.124	10.77	50.00	-39.23	8.69	1.96	0.12	Average
12	12.124	19.11	60.00	-40.89	17.03	1.96	0.12	QP

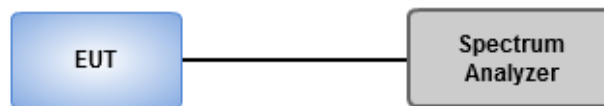
Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB).
 2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).

3.2 Emission Bandwidth

3.2.1 Test Procedures

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.

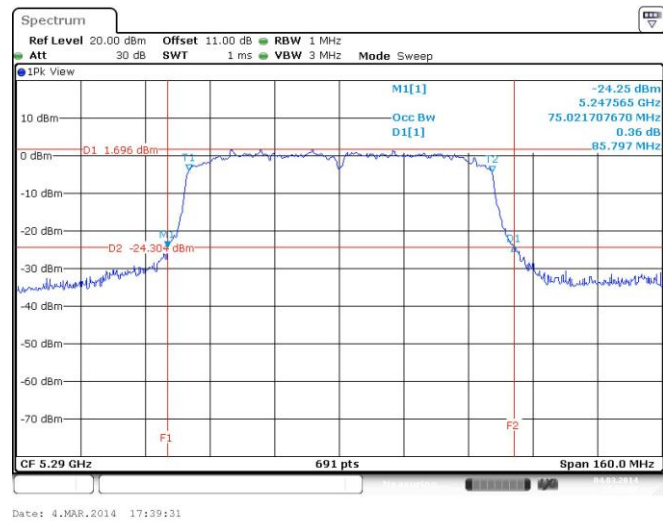
3.2.2 Test Setup



3.2.3 Test Result of Emission Bandwidth

Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)			26dB Limit	99% Limit
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2		
11a	1	5180	25.86	---	---	17.15	---	---	17.00	16.34
11a	1	5200	26.38	---	---	17.26	---	---	17.00	16.37
11a	1	5240	26.49	---	---	17.19	---	---	17.00	16.35
11a	1	5260	28.52	---	---	17.19	---	---	24.00	23.35
11a	1	5300	28.12	---	---	17.19	---	---	24.00	23.35
11a	1	5320	27.77	---	---	17.22	---	---	24.00	23.36
11a	1	5500	26.38	---	---	17.15	---	---	24.00	23.34
11a	1	5580	23.54	---	---	17.15	---	---	24.00	23.34
11a	1	5700	22.96	---	---	17.11	---	---	24.00	23.33
HT40	1	5190	45.80	---	---	36.53	---	---	17.00	17.00
HT40	1	5230	46.03	---	---	36.60	---	---	17.00	17.00
HT40	1	5270	45.22	---	---	36.66	---	---	24.00	24.00
HT40	1	5310	46.49	---	---	36.66	---	---	24.00	24.00
HT40	1	5510	45.33	---	---	36.66	---	---	24.00	24.00
HT40	1	5550	45.45	---	---	36.73	---	---	24.00	24.00
HT40	1	5670	45.45	---	---	36.73	---	---	24.00	24.00
VHT20	1	5180	23.01	---	---	18.13	---	---	17.00	16.58
VHT20	1	5200	23.07	---	---	18.13	---	---	17.00	16.58
VHT20	1	5240	23.13	---	---	18.13	---	---	17.00	16.58
VHT20	1	5260	23.13	---	---	18.09	---	---	24.00	23.57
VHT20	1	5300	23.19	---	---	18.13	---	---	24.00	23.58
VHT20	1	5320	23.13	---	---	18.13	---	---	24.00	23.58
VHT20	1	5500	22.96	---	---	18.13	---	---	24.00	23.58
VHT20	1	5580	22.96	---	---	18.13	---	---	24.00	23.58
VHT20	1	5700	22.38	---	---	18.09	---	---	24.00	23.57
VHT80	1	5210	85.57	---	---	74.67	---	---	17.00	17.00
VHT80	1	5290	85.80	---	---	74.79	---	---	24.00	24.00
VHT80	1	5530	85.10	---	---	74.79	---	---	24.00	24.00

Worst Plots



3.3 RF Output Power

3.3.1 Limit of RF Output Power

Frequency Band (GHz)		Limit
☒	5.15~5.25	50mW or 4dBm+10 log B
☒	5.25~5.35	250mW or 11dBm+10 log B
☒	5.47~5.725	250mW or 11dBm+10 log B

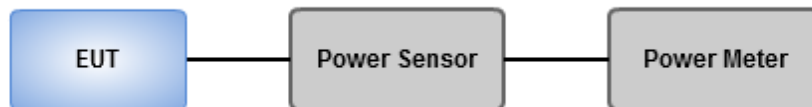
Note: "B" is the 26dB emission bandwidth in MHz.

3.3.2 Test Procedures

☒ **Power meter**

- ☒ Measurements is performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

RF Output Power (dBm)								
Mode	N _{TX}	Freq. (MHz)	Chain 0	Chain 1	Chain 2	Total Power (mW)	Total Power (dBm)	Limit
11a	1	5180	13.21	--	--	20.941	13.21	17.00
11a	1	5200	13.33	--	--	21.528	13.33	17.00
11a	1	5240	13.26	--	--	21.184	13.26	17.00
11a	1	5260	13.17	--	--	20.749	13.17	24.00
11a	1	5300	13.29	--	--	21.330	13.29	24.00
11a	1	5320	13.07	--	--	20.277	13.07	24.00
11a	1	5500	13.41	--	--	21.928	13.41	24.00
11a	1	5580	13.59	--	--	22.856	13.59	24.00
11a	1	5700	13.64	--	--	23.121	13.64	24.00
HT20	1	5180	12.34	--	--	17.140	12.34	17.00
HT20	1	5200	12.26	--	--	16.827	12.26	17.00
HT20	1	5240	11.97	--	--	15.740	11.97	17.00
HT20	1	5260	11.91	--	--	15.524	11.91	24.00
HT20	1	5300	12.23	--	--	16.711	12.23	24.00
HT20	1	5320	12.21	--	--	16.634	12.21	24.00
HT20	1	5500	12.46	--	--	17.620	12.46	24.00
HT20	1	5580	12.65	--	--	18.408	12.65	24.00
HT20	1	5700	12.68	--	--	18.535	12.68	24.00
HT40	1	5190	11.82	--	--	15.205	11.82	17.00
HT40	1	5230	11.71	--	--	14.825	11.71	17.00
HT40	1	5270	11.39	--	--	13.772	11.39	24.00
HT40	1	5310	11.52	--	--	14.191	11.52	24.00
HT40	1	5510	11.32	--	--	13.552	11.32	24.00
HT40	1	5550	11.01	--	--	12.618	11.01	24.00
HT40	1	5670	11.74	--	--	14.928	11.74	24.00

RF Output Power (dBm)								
Mode	N _{TX}	Freq. (MHz)	Chain 0	Chain 1	Chain 2	Total Power (mW)	Total Power (dBm)	Limit
VHT20	1	5180	12.42	--	--	17.458	12.42	17.00
VHT20	1	5200	12.29	--	--	16.943	12.29	17.00
VHT20	1	5240	12.01	--	--	15.885	12.01	17.00
VHT20	1	5260	11.97	--	--	15.740	11.97	24.00
VHT20	1	5300	12.31	--	--	17.022	12.31	24.00
VHT20	1	5320	12.25	--	--	16.788	12.25	24.00
VHT20	1	5500	12.57	--	--	18.072	12.57	24.00
VHT20	1	5580	12.70	--	--	18.621	12.70	24.00
VHT20	1	5700	12.83	--	--	19.187	12.83	24.00
VHT40	1	5190	10.56	--	--	11.376	10.56	17.00
VHT40	1	5230	10.24	--	--	10.568	10.24	17.00
VHT40	1	5270	10.21	--	--	10.495	10.21	24.00
VHT40	1	5310	10.01	--	--	10.023	10.01	24.00
VHT40	1	5510	10.22	--	--	10.520	10.22	24.00
VHT40	1	5550	10.17	--	--	10.399	10.17	24.00
VHT40	1	5670	10.77	--	--	11.940	10.77	24.00
VHT80	1	5210	10.47	--	--	11.143	10.47	17.00
VHT80	1	5290	10.24	--	--	10.568	10.24	24.00
VHT80	1	5530	9.43	--	--	8.770	9.43	24.00

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

	Frequency Band (GHz)	Limit (dBm)
☒	5.15~5.25	4
☒	5.25~5.35	11
☒	5.47~5.725	11

3.4.2 Test Procedures

☐ 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.

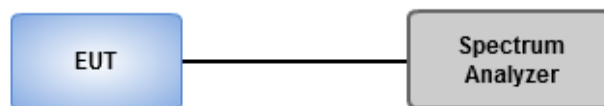
☐ Method SA-2

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

3.4.3 Test Setup

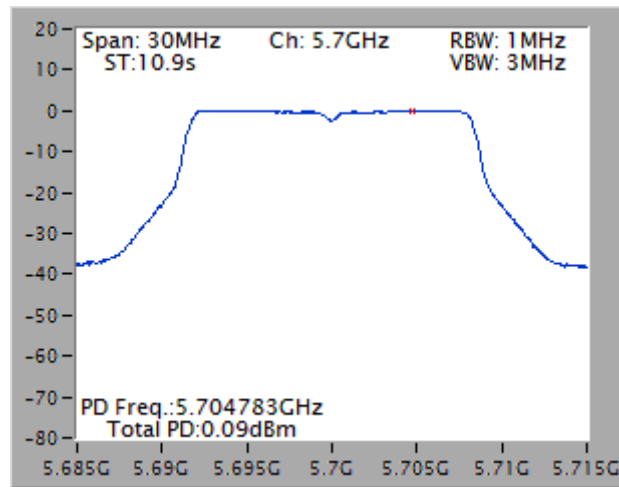


3.4.4 Test Result of Peak Power Spectral Density

Condition			Peak Power Spectral Density (dBm)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm)	Duty factor (dB)	PPSD with D.F (dBm)	PPSD Limit (dBm)
11a	1	5180	-0.40	0.53	0.13	4
11a	1	5200	-0.09	0.53	0.44	4
11a	1	5240	-0.28	0.53	0.25	4
11a	1	5260	-0.38	0.53	0.15	11
11a	1	5300	-0.21	0.53	0.32	11
11a	1	5320	-0.32	0.53	0.21	11
11a	1	5500	-0.55	0.53	-0.02	11
11a	1	5580	-0.38	0.53	0.15	11
11a	1	5700	0.09	0.53	0.62	11
HT40	1	5190	-5.11	1.10	-4.01	4
HT40	1	5230	-5.40	1.10	-4.30	4
HT40	1	5270	-5.59	1.10	-4.49	11
HT40	1	5310	-5.40	1.10	-4.30	11
HT40	1	5510	-6.22	1.10	-5.12	11
HT40	1	5550	-6.22	1.10	-5.12	11
HT40	1	5670	-5.80	1.10	-4.70	11
VHT20	1	5180	-1.60	0.74	-0.86	4
VHT20	1	5200	-1.79	0.74	-1.05	4
VHT20	1	5240	-1.92	0.74	-1.18	4
VHT20	1	5260	-1.89	0.74	-1.15	11
VHT20	1	5300	-1.60	0.74	-0.86	11
VHT20	1	5320	-1.66	0.74	-0.92	11
VHT20	1	5500	-1.69	0.74	-0.95	11
VHT20	1	5580	-1.77	0.74	-1.03	11
VHT20	1	5700	-1.41	0.74	-0.67	11
VHT80	1	5210	-10.58	2.48	-8.10	4
VHT80	1	5290	-10.72	2.48	-8.24	11
VHT80	1	5530	-12.43	2.48	-9.95	11

Note: D.F is duty factor

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Note: Power density plot without duty factor

3.5 Peak Excursion

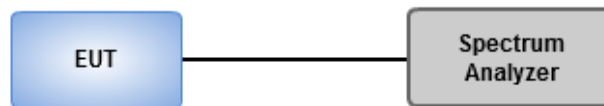
3.5.1 Peak Excursion Limit

Peak excursion of the modulation envelope shall not exceed 13 dB across any 1 MHz bandwidth.

3.5.2 Test Procedures

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = peak.
2. Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak search function to find the peak of the spectrum.
4. Use the procedure of section 3.4.2 to measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD

3.5.3 Test Setup



3.5.4 Test Result of Peak Excursion

Frequency band(MHz)		5150~5250					
Mode	Modulation Mode	N _{TX}	Freq. (MHz)	Measured value(dB)	Duty factor (dB)	Peak Excursion (dB)	Limit
11a	BPSK	1	5200	9.32	0.53	8.79	13
11a	QPSK	1	5200	9.87	1.02	8.85	13
11a	16QAM	1	5200	11.40	1.84	9.56	13
11a	64QAM	1	5200	12.55	2.95	9.60	13
HT40	BPSK	1	5190	10.22	1.10	9.12	13
HT40	QPSK	1	5190	11.28	1.92	9.36	13
HT40	16QAM	1	5190	12.50	2.99	9.51	13
HT40	64QAM	1	5190	14.15	4.34	9.81	13
VHT20	BPSK	1	5180	8.97	0.74	8.23	13
VHT20	QPSK	1	5180	9.70	1.34	8.36	13
VHT20	16QAM	1	5180	10.11	2.25	7.86	13
VHT20	64QAM	1	5180	11.67	3.35	8.32	13
VHT20	256QAM	1	5180	11.51	4.08	7.43	13
VHT40	BPSK	1	5230	10.11	1.39	8.72	13
VHT40	QPSK	1	5230	12.55	2.28	10.27	13
VHT40	16QAM	1	5230	12.08	3.50	8.58	13
VHT40	64QAM	1	5230	12.25	4.55	7.70	13
VHT40	256QAM	1	5230	13.47	5.25	8.22	13
VHT80	BPSK	1	5210	11.17	2.48	8.69	13
VHT80	QPSK	1	5210	11.72	3.65	8.07	13
VHT80	16QAM	1	5210	12.36	4.79	7.57	13
VHT80	64QAM	1	5210	13.15	5.65	7.50	13
VHT80	256QAM	1	5210	14.35	6.09	8.26	13

Note: Measured value = Peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission. Since the duty cycle is < 98 %, duty factor is required to average spectrum
Peak exclusion = Measured value – duty factor

Frequency band(MHz)		5250~5350					
Mode	Modulation Mode	N _{TX}	Freq. (MHz)	Measured value(dB)	Duty factor (dB)	Peak Excursion (dB)	Limit
11a	BPSK	1	5300	9.10	0.53	8.57	13
11a	QPSK	1	5300	10.31	1.02	9.29	13
11a	16QAM	1	5300	11.03	1.84	9.19	13
11a	64QAM	1	5300	13.01	2.95	10.06	13
HT40	BPSK	1	5310	9.70	1.10	8.60	13
HT40	QPSK	1	5310	10.6	1.92	8.68	13
HT40	16QAM	1	5310	12.61	2.99	9.62	13
HT40	64QAM	1	5310	12.85	4.34	8.51	13
VHT20	BPSK	1	5300	8.93	0.74	8.19	13
VHT20	QPSK	1	5300	9.76	1.34	8.42	13
VHT20	16QAM	1	5300	10.14	2.25	7.89	13
VHT20	64QAM	1	5300	11.55	3.35	8.20	13
VHT20	256QAM	1	5300	11.50	4.08	7.42	13
VHT40	BPSK	1	5270	9.78	1.39	8.39	13
VHT40	QPSK	1	5270	12.53	2.28	10.25	13
VHT40	16QAM	1	5270	11.97	3.50	8.47	13
VHT40	64QAM	1	5270	12.39	4.55	7.84	13
VHT40	256QAM	1	5270	13.60	5.25	8.35	13
VHT80	BPSK	1	5290	11.30	2.48	8.82	13
VHT80	QPSK	1	5290	11.42	3.65	7.77	13
VHT80	16QAM	1	5290	12.43	4.79	7.64	13
VHT80	64QAM	1	5290	13.42	5.65	7.77	13
VHT80	256QAM	1	5290	14.29	6.09	8.20	13

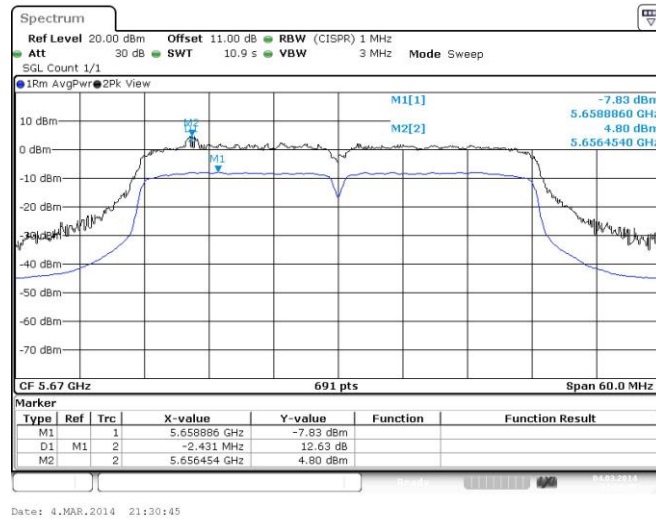
Note: Measured value = Peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission. Since the duty cycle is < 98 %, duty factor is required to average spectrum
Peak exclusion = Measured value – duty factor

Frequency band(MHz)		5470~5725					
Mode	Modulation Mode	N _{TX}	Freq. (MHz)	Measured value(dB)	Duty factor (dB)	Peak Excursion (dB)	Limit
11a	BPSK	1	5700	8.75	0.53	8.22	13
11a	QPSK	1	5700	10.06	1.02	9.04	13
11a	16QAM	1	5700	10.95	1.84	9.11	13
11a	64QAM	1	5700	12.09	2.95	9.14	13
HT40	BPSK	1	5670	9.67	1.10	8.57	13
HT40	QPSK	1	5670	10.64	1.92	8.72	13
HT40	16QAM	1	5670	11.96	2.99	8.97	13
HT40	64QAM	1	5670	13.41	4.34	9.07	13
VHT20	BPSK	1	5700	9.15	0.74	8.41	13
VHT20	QPSK	1	5700	9.67	1.34	8.33	13
VHT20	16QAM	1	5700	10.13	2.25	7.88	13
VHT20	64QAM	1	5700	12.01	3.35	8.66	13
VHT20	256QAM	1	5700	11.49	4.08	7.41	13
VHT40	BPSK	1	5670	10.29	1.39	8.90	13
VHT40	QPSK	1	5670	12.63	2.28	10.35	13
VHT40	16QAM	1	5670	12.08	3.50	8.58	13
VHT40	64QAM	1	5670	12.48	4.55	7.93	13
VHT40	256QAM	1	5670	13.83	5.25	8.58	13
VHT80	BPSK	1	5530	11.17	2.48	8.69	13
VHT80	QPSK	1	5530	11.62	3.65	7.97	13
VHT80	16QAM	1	5530	12.57	4.79	7.78	13
VHT80	64QAM	1	5530	12.96	5.65	7.31	13
VHT80	256QAM	1	5530	14.40	6.09	8.31	13

Note: Measured value = Peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission. Since the duty cycle is < 98 %, duty factor is required to average spectrum

Peak exclusion = Measured value – duty factor

Worst Plots



3.6 Transmitter Radiated and Band Edge Emissions

3.6.1 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]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.825 GHz	5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.825 5.835 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).

3.6.2 Test Procedures

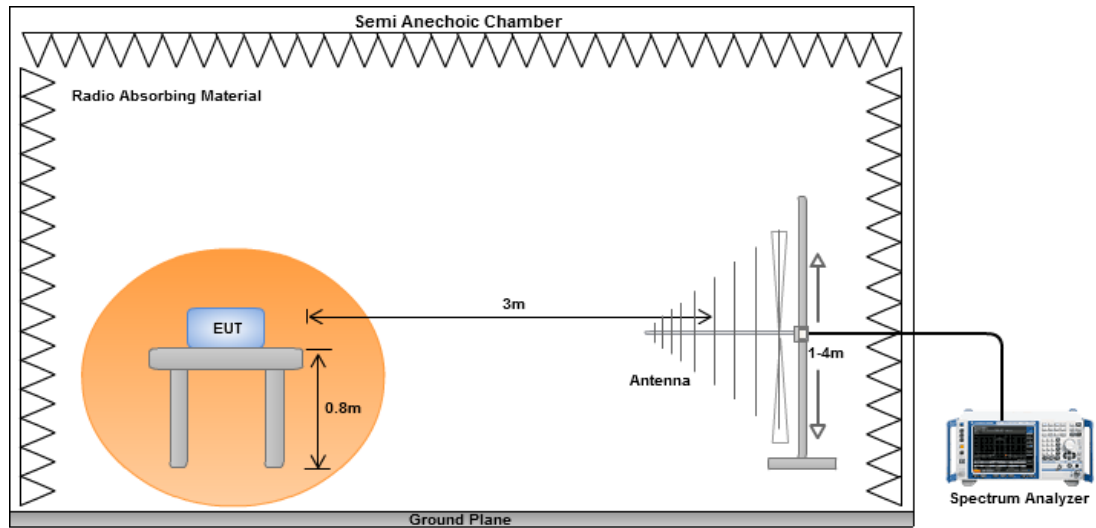
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360° . A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
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:

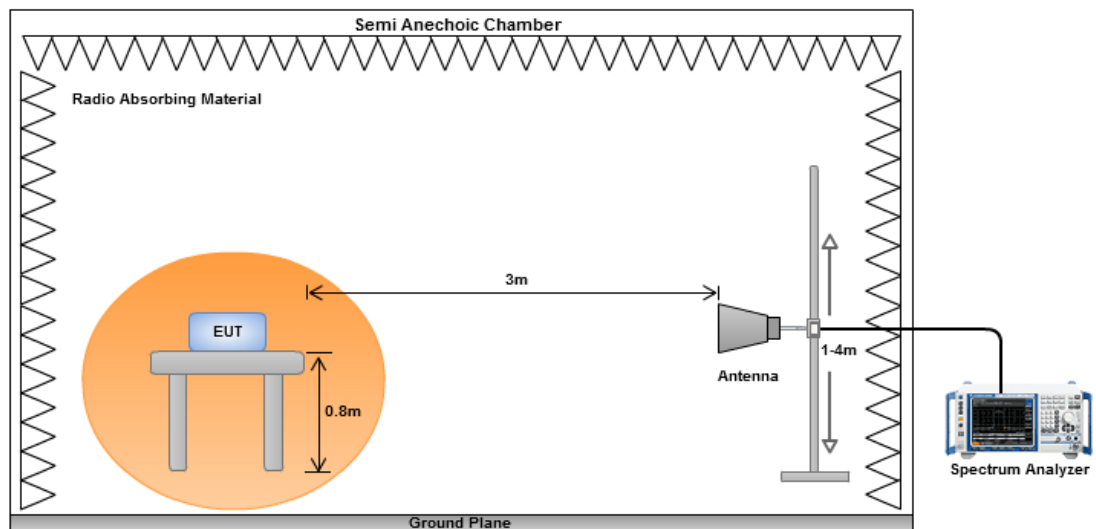
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.6.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



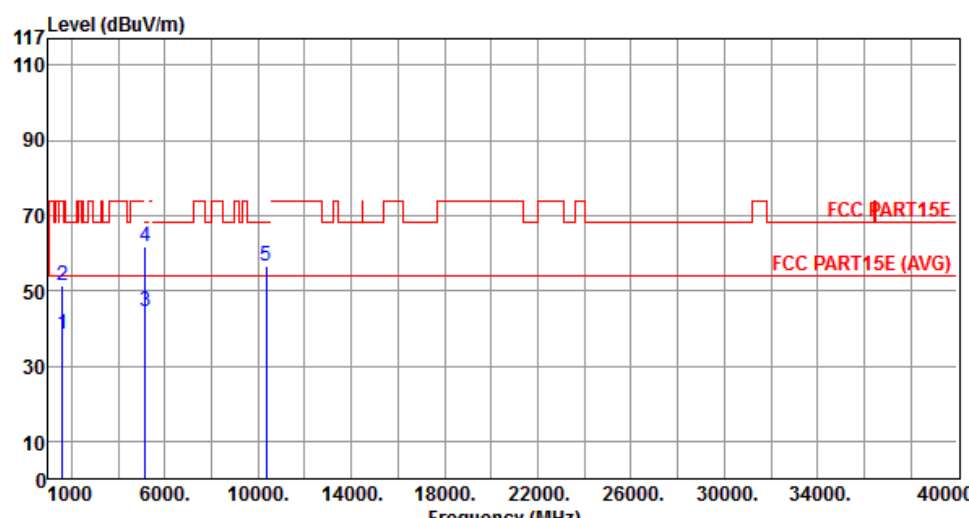
3.6.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		
Level (dBuV/m) </			

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

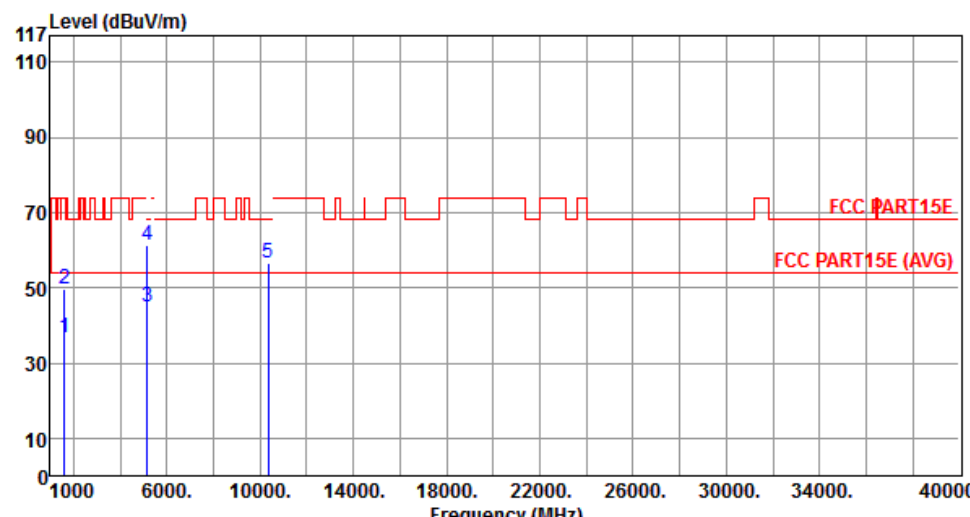
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.31	54.00	-15.69	45.12	-6.81	Average	---	---
2	1594.00	51.49	74.00	-22.51	58.30	-6.81	Peak	---	---
3	5150.00	44.41	54.00	-9.59	38.85	5.56	Average	---	---
4	5150.00	61.62	74.00	-12.38	56.06	5.56	Peak	---	---
5	10360.00	56.70	68.20	-11.50	41.63	15.07	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).

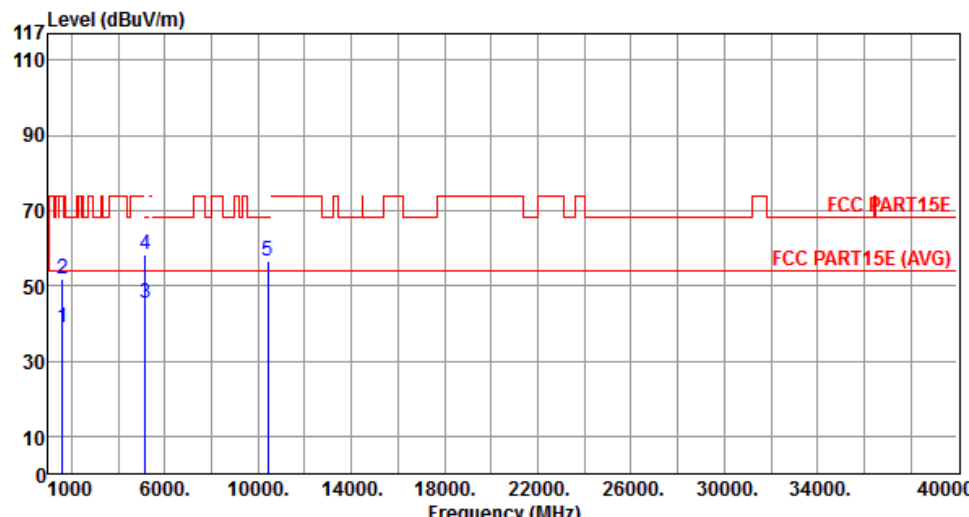
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.58	54.00	-17.42	43.39	-6.81	Average	---	---
2	1594.00	49.56	74.00	-24.44	56.37	-6.81	Peak	---	---
3	5150.00	44.82	54.00	-9.18	39.26	5.56	Average	---	---
4	5150.00	61.14	74.00	-12.86	55.58	5.56	Peak	---	---
5	10360.00	56.75	68.20	-11.45	41.68	15.07	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).

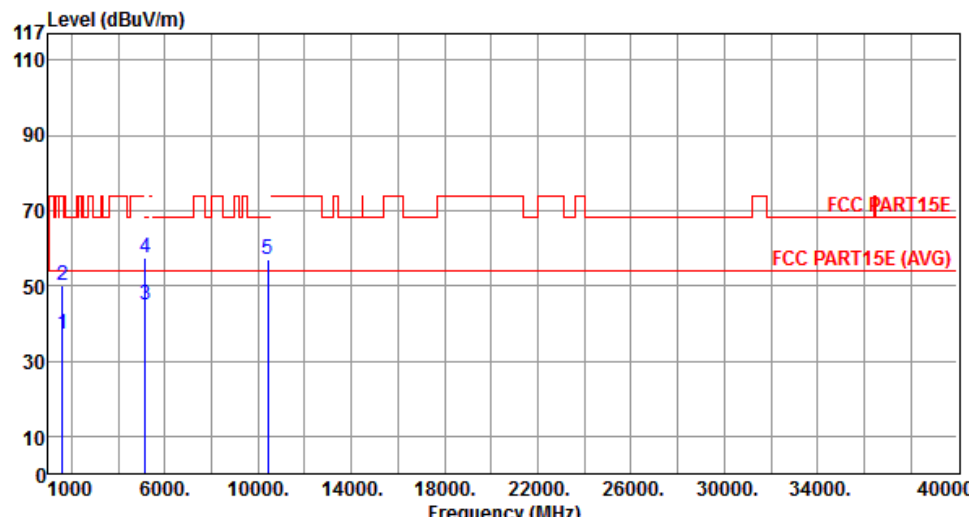
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.02	54.00	-14.98	45.83	-6.81	Average	---	---
2	1594.00	51.90	74.00	-22.10	58.71	-6.81	Peak	---	---
3	5150.00	45.17	54.00	-8.83	39.61	5.56	Average	---	---
4	5150.00	58.32	74.00	-15.68	52.76	5.56	Peak	---	---
5	10400.00	56.72	68.20	-11.48	41.59	15.13	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).

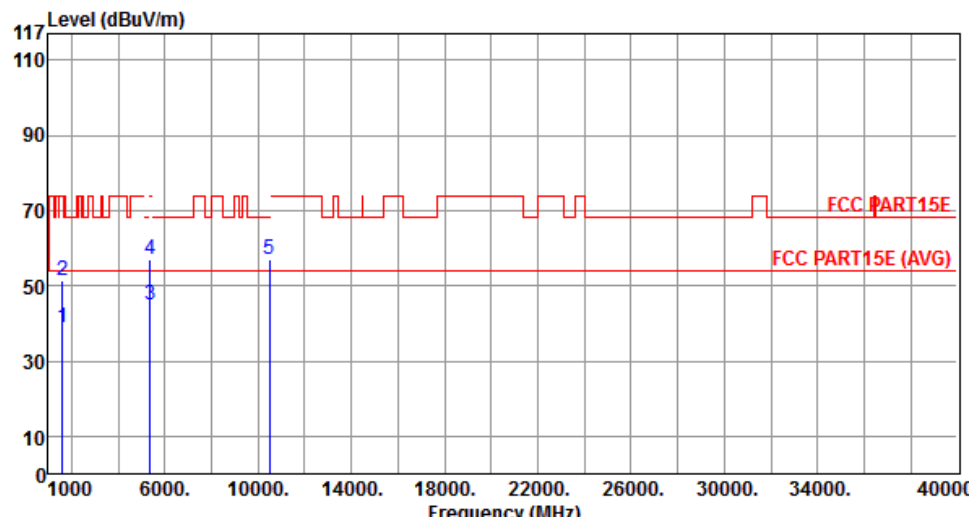
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	37.15	54.00	-16.85	43.96	-6.81	Average	---	---
2	1594.00	50.03	74.00	-23.97	56.84	-6.81	Peak	---	---
3	5150.00	44.99	54.00	-9.01	39.43	5.56	Average	---	---
4	5150.00	57.62	74.00	-16.38	52.06	5.56	Peak	---	---
5	10400.00	56.90	68.20	-11.30	41.77	15.13	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).

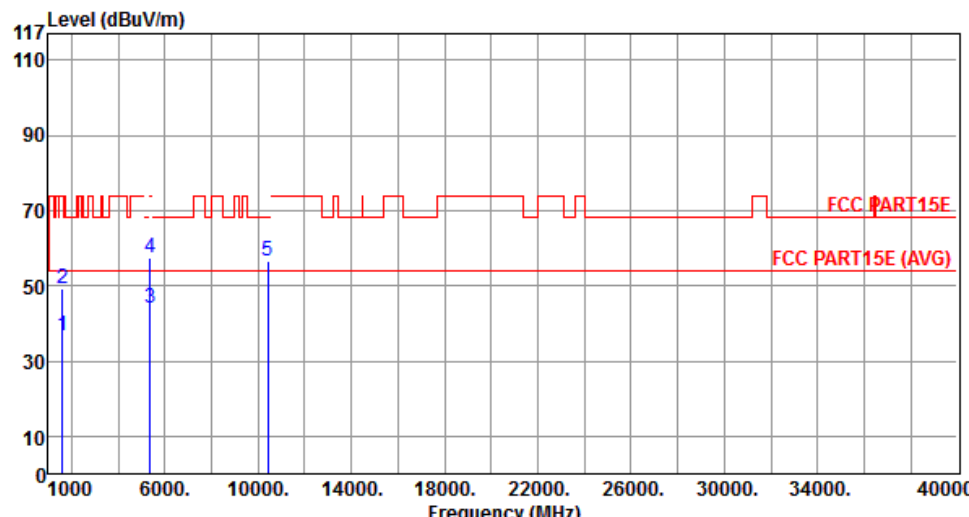
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.77	54.00	-15.23	45.58	-6.81	Average	---	---
2	1594.00	51.45	74.00	-22.55	58.26	-6.81	Peak	---	---
3	5350.00	44.81	54.00	-9.19	39.10	5.71	Average	---	---
4	5350.00	56.96	74.00	-17.04	51.25	5.71	Peak	---	---
5	10480.00	57.20	68.20	-11.00	41.96	15.24	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).

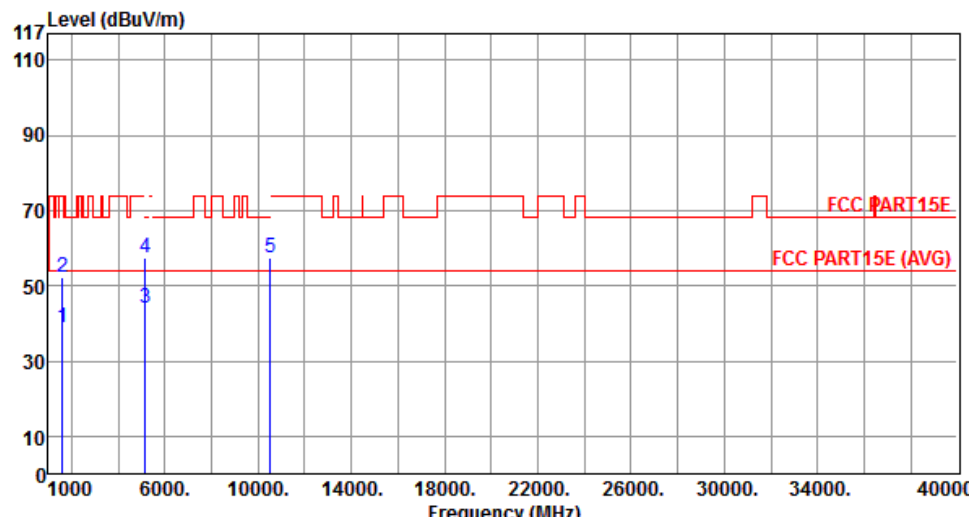
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.83	54.00	-17.17	43.64	-6.81	Average	---	---
2	1594.00	49.37	74.00	-24.63	56.18	-6.81	Peak	---	---
3	5350.00	44.23	54.00	-9.77	38.52	5.71	Average	---	---
4	5350.00	57.38	74.00	-16.62	51.67	5.71	Peak	---	---
5	10400.00	56.65	68.20	-11.55	41.52	15.13	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).

Modulation	11a	Test Freq. (MHz)	5260
Polarization	Horizontal		

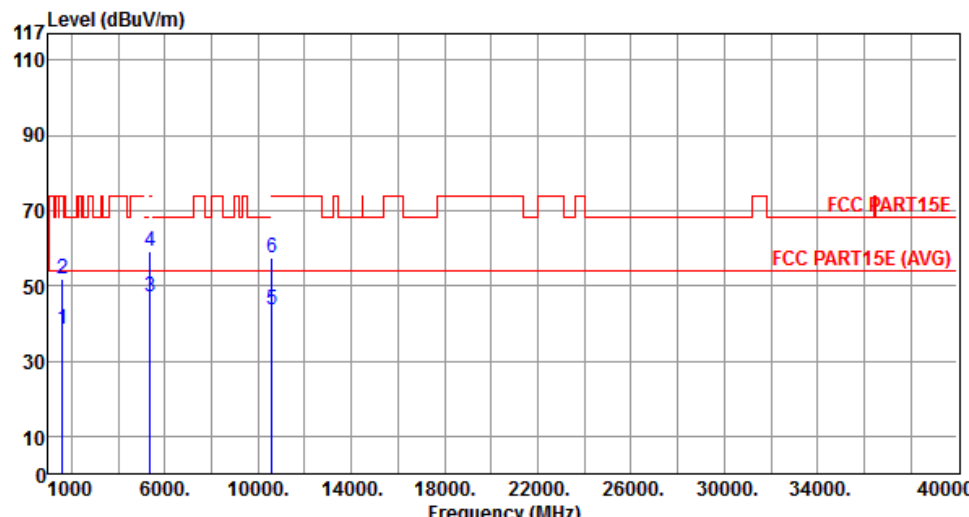


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.87	54.00	-15.13	45.68	-6.81	Average	---	---
2	1594.00	52.10	74.00	-21.90	58.91	-6.81	Peak	---	---
3	5150.00	43.98	54.00	-10.02	38.42	5.56	Average	---	---
4	5150.00	57.60	74.00	-16.40	52.04	5.56	Peak	---	---
5	10520.00	57.32	68.20	-10.88	42.05	15.27	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).

Modulation	11a	Test Freq. (MHz)	5260
Polarization	Vertical		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5300
Polarization	Horizontal		

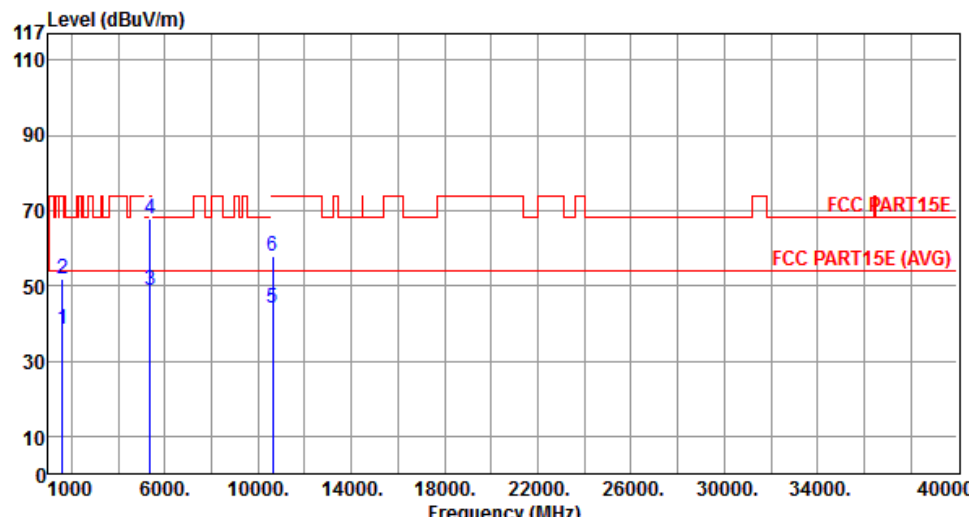


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.55	54.00	-15.45	45.36	-6.81	Average	---	---
2	1594.00	51.90	74.00	-22.10	58.71	-6.81	Peak	---	---
3	5350.00	47.19	54.00	-6.81	41.48	5.71	Average	---	---
4	5350.00	59.23	74.00	-14.77	53.52	5.71	Peak	---	---
5	10600.00	43.76	54.00	-10.24	28.46	15.30	Average	---	---
6	10600.00	57.41	74.00	-16.59	42.11	15.30	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).

Modulation	11a	Test Freq. (MHz)	5300																																																																																										
Polarization	Vertical																																																																																												
Level (dBuV/m) 117 110 90 70 50 30 10 0 1000 6000 10000 14000 18000 22000 26000 30000 34000 40000 Frequency (MHz) 1 2 3 4 5 6 FCC PART15E FCC PART15E (AVG) <table><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th></th><th></th><th>reading</th><th></th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th>dBuV/m</th><th>dBuV/m</th><th>dB</th><th>dBuV</th><th>dB</th><th></th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>1594.00</td><td>36.47</td><td>54.00</td><td>-17.53</td><td>43.28</td><td>-6.81</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>2</td><td>1594.00</td><td>49.56</td><td>74.00</td><td>-24.44</td><td>56.37</td><td>-6.81</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>3</td><td>5350.00</td><td>44.29</td><td>54.00</td><td>-9.71</td><td>38.58</td><td>5.71</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>4</td><td>5350.00</td><td>57.84</td><td>74.00</td><td>-16.16</td><td>52.13</td><td>5.71</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>5</td><td>10600.00</td><td>43.70</td><td>54.00</td><td>-10.30</td><td>28.40</td><td>15.30</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>6</td><td>10600.00</td><td>57.15</td><td>74.00</td><td>-16.85</td><td>41.85</td><td>15.30</td><td>Peak</td><td>---</td><td>---</td></tr></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level			reading			High	Table			dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	1	1594.00	36.47	54.00	-17.53	43.28	-6.81	Average	---	---	2	1594.00	49.56	74.00	-24.44	56.37	-6.81	Peak	---	---	3	5350.00	44.29	54.00	-9.71	38.58	5.71	Average	---	---	4	5350.00	57.84	74.00	-16.16	52.13	5.71	Peak	---	---	5	10600.00	43.70	54.00	-10.30	28.40	15.30	Average	---	---	6	10600.00	57.15	74.00	-16.85	41.85	15.30	Peak	---	---
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																				
	MHz	level			reading			High	Table																																																																																				
		dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg																																																																																				
1	1594.00	36.47	54.00	-17.53	43.28	-6.81	Average	---	---																																																																																				
2	1594.00	49.56	74.00	-24.44	56.37	-6.81	Peak	---	---																																																																																				
3	5350.00	44.29	54.00	-9.71	38.58	5.71	Average	---	---																																																																																				
4	5350.00	57.84	74.00	-16.16	52.13	5.71	Peak	---	---																																																																																				
5	10600.00	43.70	54.00	-10.30	28.40	15.30	Average	---	---																																																																																				
6	10600.00	57.15	74.00	-16.85	41.85	15.30	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).																																																																																													

Modulation	11a	Test Freq. (MHz)	5320
Polarization	Horizontal		

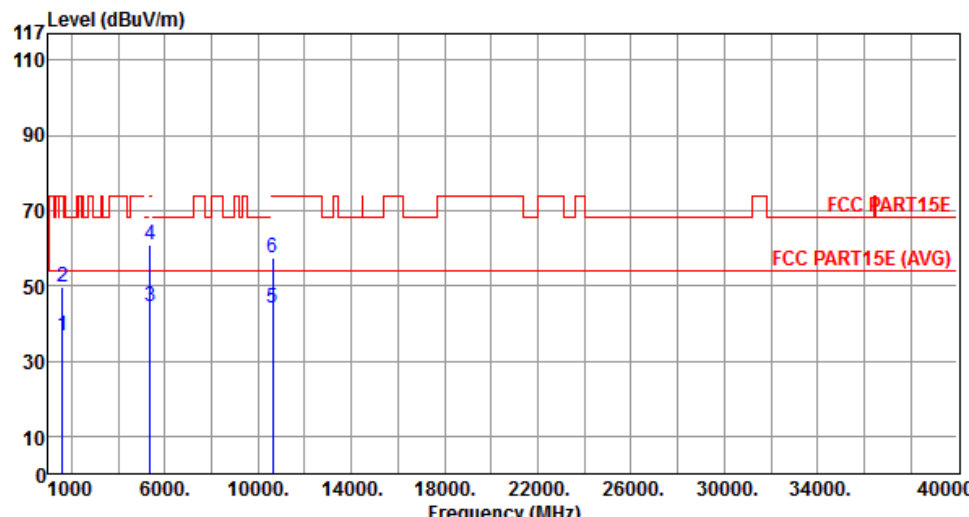


The graph displays the emission level in dBuV/m on the y-axis (0 to 117) against frequency in MHz on the x-axis (1000 to 40000). A red line represents the FCC Part 15E limit, which is 70 dBuV/m from 1500 to 3000 MHz and 50 dBuV/m from 3000 to 4000 MHz. A blue line represents the test results, showing peaks at 1594 MHz and 10640 MHz. The test results are summarized in the table below:

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.43	54.00	-15.57	45.24	-6.81	Average	---	---
2	1594.00	51.66	74.00	-22.34	58.47	-6.81	Peak	---	---
3	5350.00	48.64	54.00	-5.36	42.93	5.71	Average	---	---
4	5350.00	67.83	74.00	-6.17	62.12	5.71	Peak	---	---
5	10640.00	44.24	54.00	-9.76	28.92	15.32	Average	---	---
6	10640.00	57.69	74.00	-16.31	42.37	15.32	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).

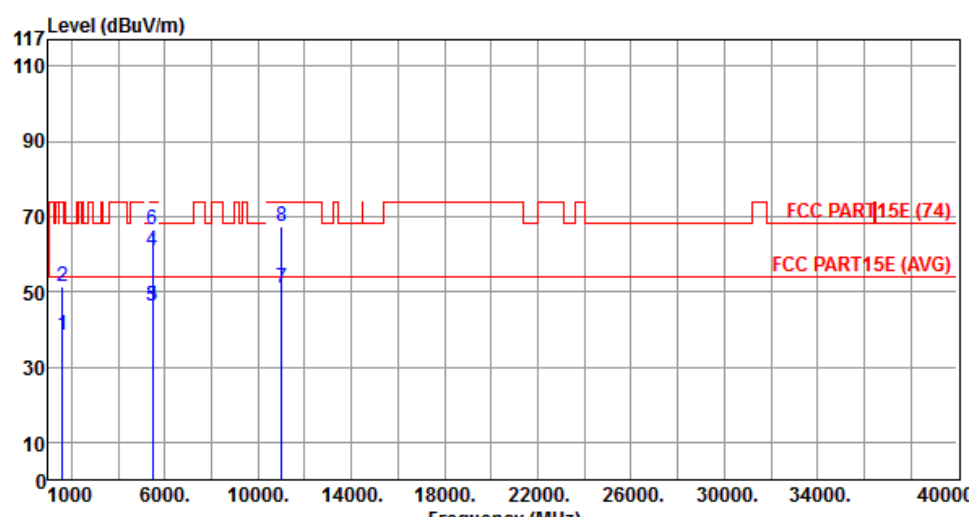
Modulation	11a	Test Freq. (MHz)	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.76	54.00	-17.24	43.57	-6.81	Average	---	---
2	1594.00	49.58	74.00	-24.42	56.39	-6.81	Peak	---	---
3	5350.00	44.33	54.00	-9.67	38.62	5.71	Average	---	---
4	5350.00	60.79	74.00	-13.21	55.08	5.71	Peak	---	---
5	10640.00	43.98	54.00	-10.02	28.66	15.32	Average	---	---
6	10640.00	57.31	74.00	-16.69	41.99	15.32	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).

Modulation	11a	Test Freq. (MHz)	5500
Polarization	Horizontal		

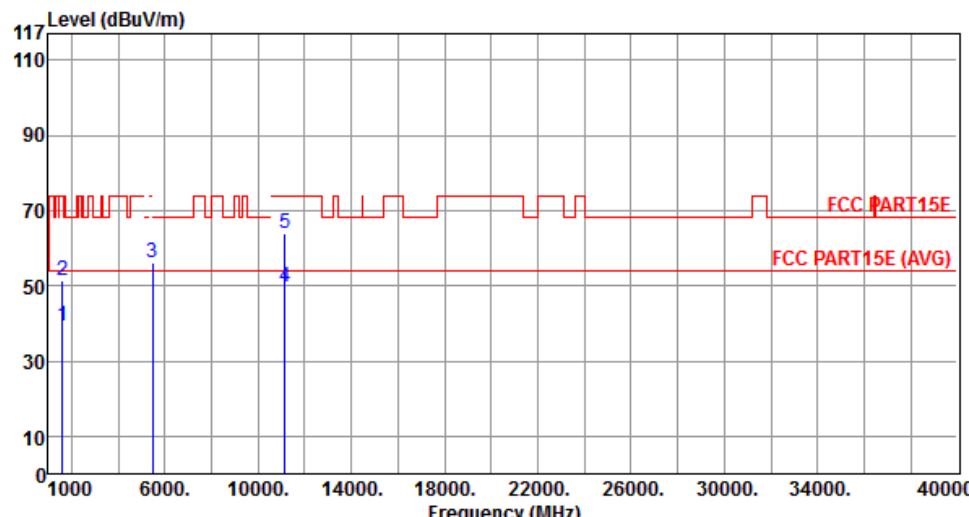


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.35	54.00	-15.65	45.16	-6.81	Average	---	---
2	1594.00	51.48	74.00	-22.52	58.29	-6.81	Peak	---	---
3	5460.00	46.18	54.00	-7.82	40.50	5.68	Average	---	---
4	5460.00	61.07	74.00	-12.93	55.39	5.68	Peak	---	---
5	5470.00	46.21	54.00	-7.79	40.55	5.66	Average	---	---
6	5470.00	66.31	74.00	-7.69	60.65	5.66	Peak	---	---
7	11000.00	51.01	54.00	-2.99	35.56	15.45	Average	---	---
8	11000.00	67.45	74.00	-6.55	52.00	15.45	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).

Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5580
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	1594.00	39.40	54.00	-14.60	46.21	-6.81	Average	---	---
2	1594.00	51.57	74.00	-22.43	58.38	-6.81	Peak	---	---
3	5470.00	56.10	68.20	-12.10	50.44	5.66	Peak	---	---
4	11160.00	49.46	54.00	-4.54	34.29	15.17	Average	---	---
5	11160.00	63.79	74.00	-10.21	48.62	15.17	Peak	---	---

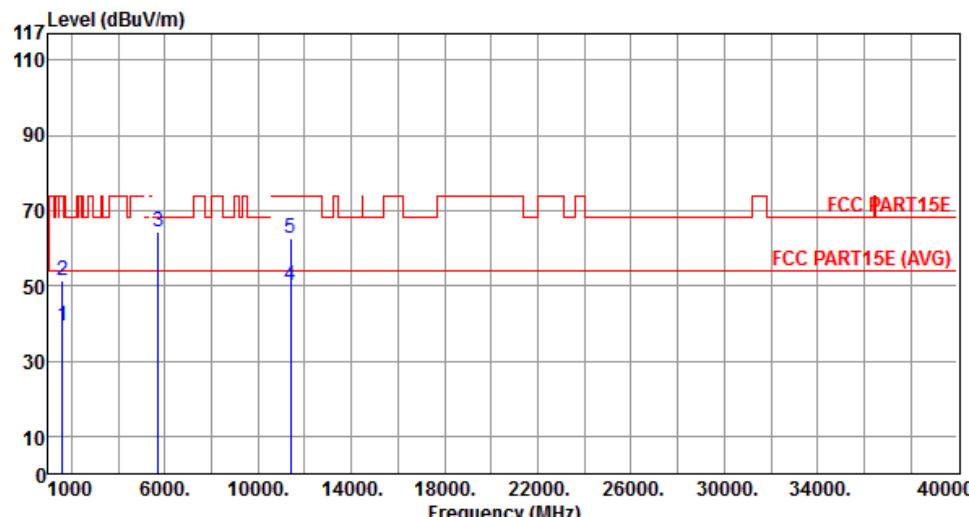
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	11a	Test Freq. (MHz)	5580
Polarization	Vertical		

	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
	MHz	level	dBuV/m	dB	reading	dB		High	Table
								cm	deg
1	1594.00	37.11	54.00	-16.89	43.92	-6.81	Average	---	---
2	1594.00	50.04	74.00	-23.96	56.85	-6.81	Peak	---	---
3	5470.00	55.30	68.20	-12.90	49.64	5.66	Peak	---	---
4	11160.00	46.05	54.00	-7.95	30.88	15.17	Average	---	---
5	11160.00	60.81	74.00	-13.19	45.64	15.17	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).

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



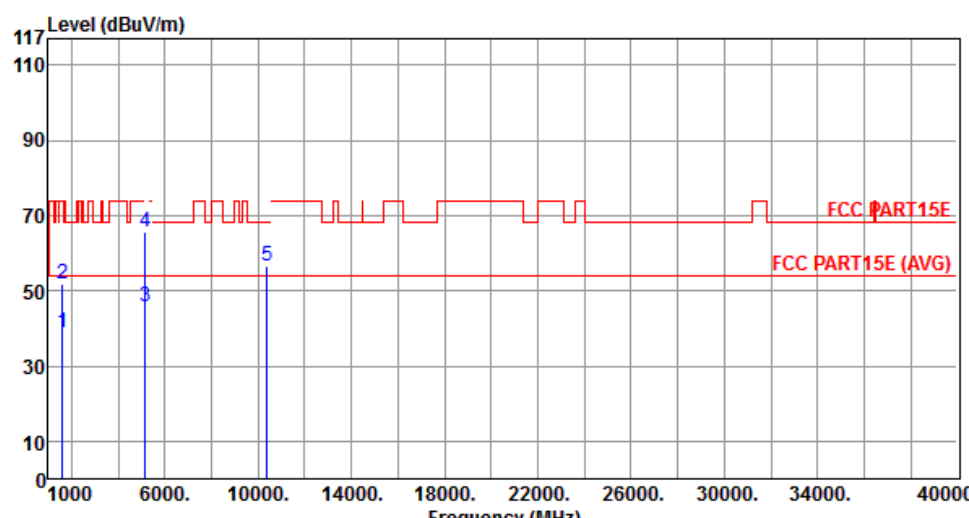
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.12	54.00	-14.88	45.93	-6.81	Average	---	---
2	1594.00	51.31	74.00	-22.69	58.12	-6.81	Peak	---	---
3	5725.00	64.32	68.20	-3.88	58.74	5.58	Peak	---	---
4	11400.00	49.95	54.00	-4.05	35.21	14.74	Average	---	---
5	11400.00	62.62	74.00	-11.38	47.88	14.74	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).

Modulation	11a	Test Freq. (MHz)	5700																																																												
Polarization	Vertical																																																														
Level (dBuV/m) 117 110 90 70 50 30 10 0 1 2 3 4 5 1000 6000 10000 14000 18000 22000 26000 30000 34000 40000 Frequency (MHz) FCC PART15E FCC PART15E (AVG) <table><thead><tr><th></th><th>Freq. MHz</th><th>Emission level dBuV/m</th><th>Limit dBuV/m</th><th>Margin dB</th><th>SA reading dBuV</th><th>Factor dB</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr></thead><tbody><tr><td>1</td><td>1594.00</td><td>36.76</td><td>54.00</td><td>-17.24</td><td>43.57</td><td>-6.81</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>2</td><td>1594.00</td><td>49.47</td><td>74.00</td><td>-24.53</td><td>56.28</td><td>-6.81</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>3</td><td>5725.00</td><td>57.45</td><td>68.20</td><td>-10.75</td><td>51.87</td><td>5.58</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>4</td><td>11400.00</td><td>45.37</td><td>54.00</td><td>-8.63</td><td>30.63</td><td>14.74</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>5</td><td>11400.00</td><td>58.86</td><td>74.00</td><td>-15.14</td><td>44.12</td><td>14.74</td><td>Peak</td><td>---</td><td>---</td></tr></tbody></table> 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).					Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	1594.00	36.76	54.00	-17.24	43.57	-6.81	Average	---	---	2	1594.00	49.47	74.00	-24.53	56.28	-6.81	Peak	---	---	3	5725.00	57.45	68.20	-10.75	51.87	5.58	Peak	---	---	4	11400.00	45.37	54.00	-8.63	30.63	14.74	Average	---	---	5	11400.00	58.86	74.00	-15.14	44.12	14.74	Peak	---	---
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																						
1	1594.00	36.76	54.00	-17.24	43.57	-6.81	Average	---	---																																																						
2	1594.00	49.47	74.00	-24.53	56.28	-6.81	Peak	---	---																																																						
3	5725.00	57.45	68.20	-10.75	51.87	5.58	Peak	---	---																																																						
4	11400.00	45.37	54.00	-8.63	30.63	14.74	Average	---	---																																																						
5	11400.00	58.86	74.00	-15.14	44.12	14.74	Peak	---	---																																																						

3.6.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT40

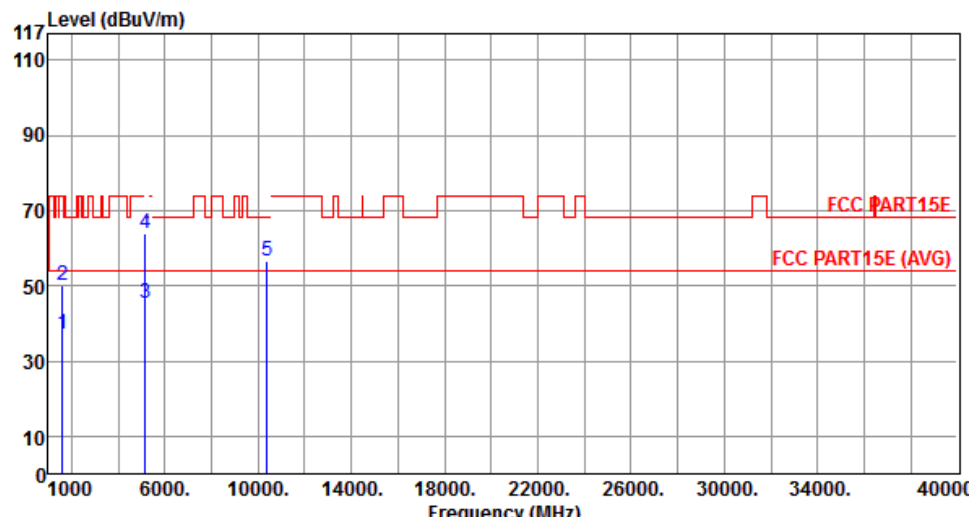
Modulation	HT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.72	54.00	-15.28	45.53	-6.81	Average	---	---
2	1594.00	51.70	74.00	-22.30	58.51	-6.81	Peak	---	---
3	5150.00	45.74	54.00	-8.26	40.18	5.56	Average	---	---
4	5150.00	65.79	74.00	-8.21	60.23	5.56	Peak	---	---
5	10380.00	56.59	68.20	-11.61	41.48	15.11	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).

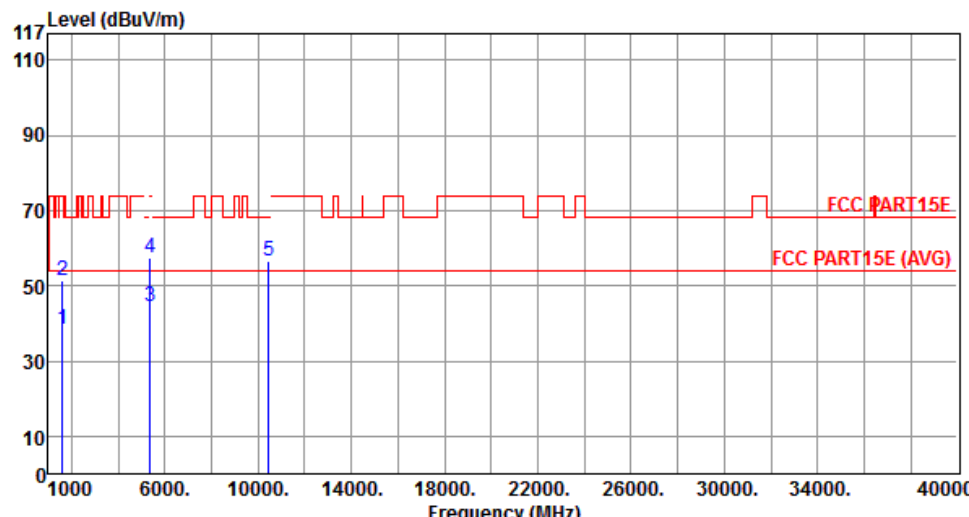
Modulation	HT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	37.18	54.00	-16.82	43.99	-6.81	Average	---	---
2	1594.00	49.87	74.00	-24.13	56.68	-6.81	Peak	---	---
3	5150.00	45.41	54.00	-8.59	39.85	5.56	Average	---	---
4	5150.00	63.80	74.00	-10.20	58.24	5.56	Peak	---	---
5	10380.00	56.67	68.20	-11.53	41.56	15.11	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).

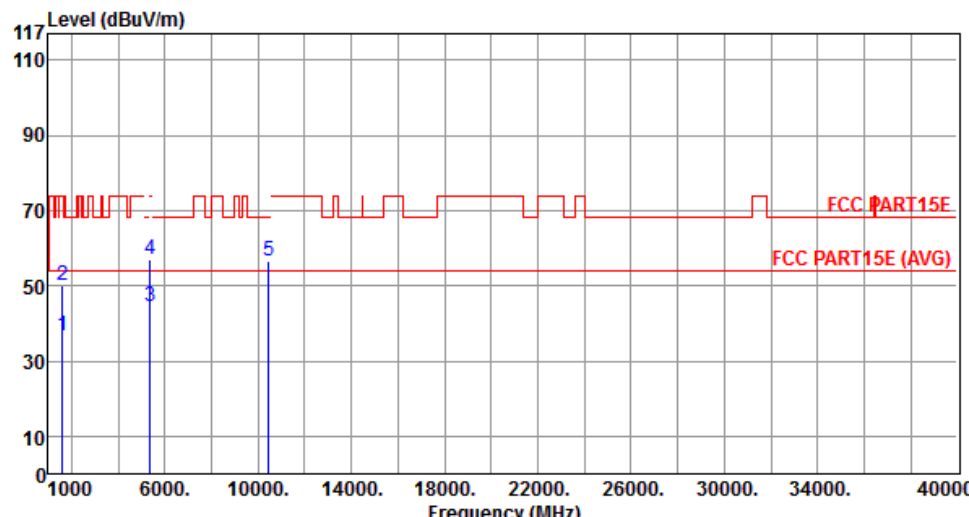
Modulation	HT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.57	54.00	-15.43	45.38	-6.81	Average	---	---
2	1594.00	51.46	74.00	-22.54	58.27	-6.81	Peak	---	---
3	5350.00	44.33	54.00	-9.67	38.62	5.71	Average	---	---
4	5350.00	57.42	74.00	-16.58	51.71	5.71	Peak	---	---
5	10460.00	56.50	68.20	-11.70	41.29	15.21	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).

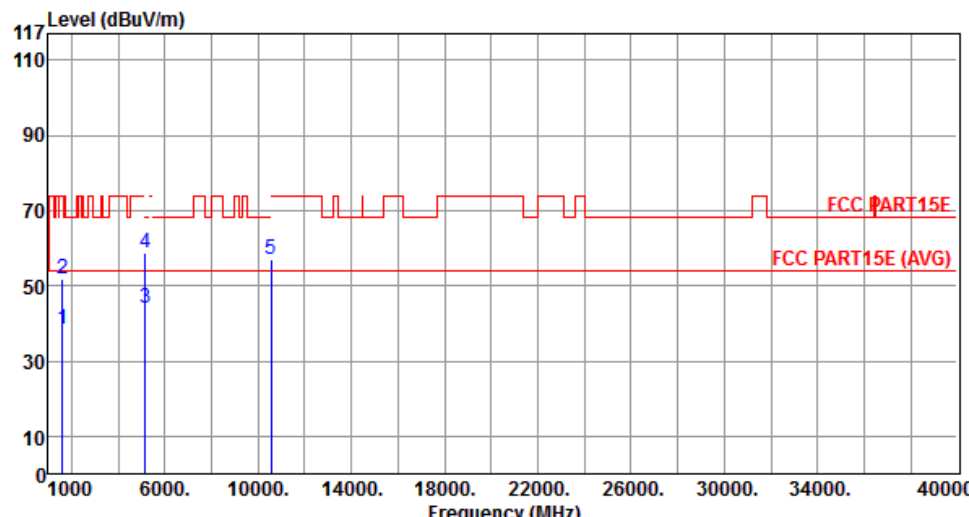
Modulation	HT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.76	54.00	-17.24	43.57	-6.81	Average	---	---
2	1594.00	50.01	74.00	-23.99	56.82	-6.81	Peak	---	---
3	5350.00	44.26	54.00	-9.74	38.55	5.71	Average	---	---
4	5350.00	56.94	74.00	-17.06	51.23	5.71	Peak	---	---
5	10460.00	56.39	68.20	-11.81	41.18	15.21	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).

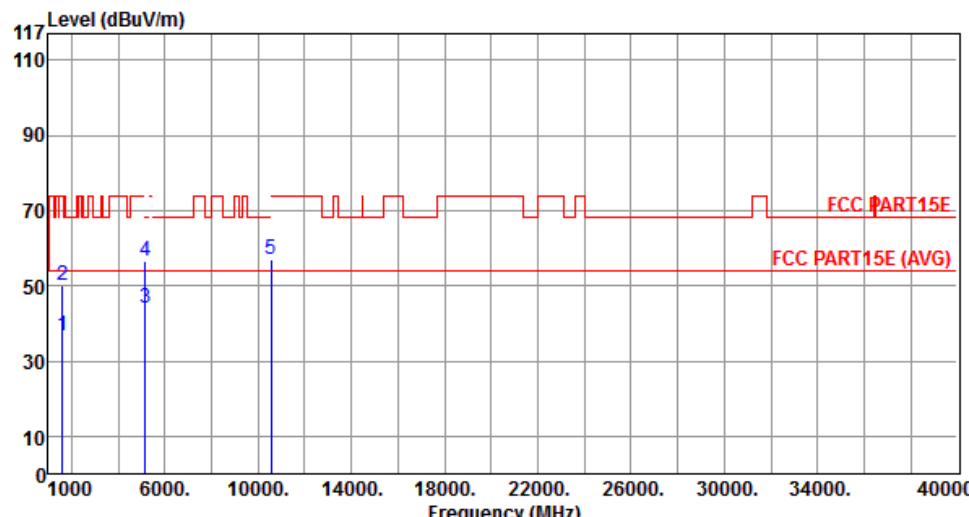
Modulation	HT40	Test Freq. (MHz)	5270
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.55	54.00	-15.45	45.36	-6.81	Average	---	---
2	1594.00	51.67	74.00	-22.33	58.48	-6.81	Peak	---	---
3	5150.00	43.96	54.00	-10.04	38.40	5.56	Average	---	---
4	5150.00	58.61	74.00	-15.39	53.05	5.56	Peak	---	---
5	10540.00	56.91	68.20	-11.29	41.63	15.28	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).

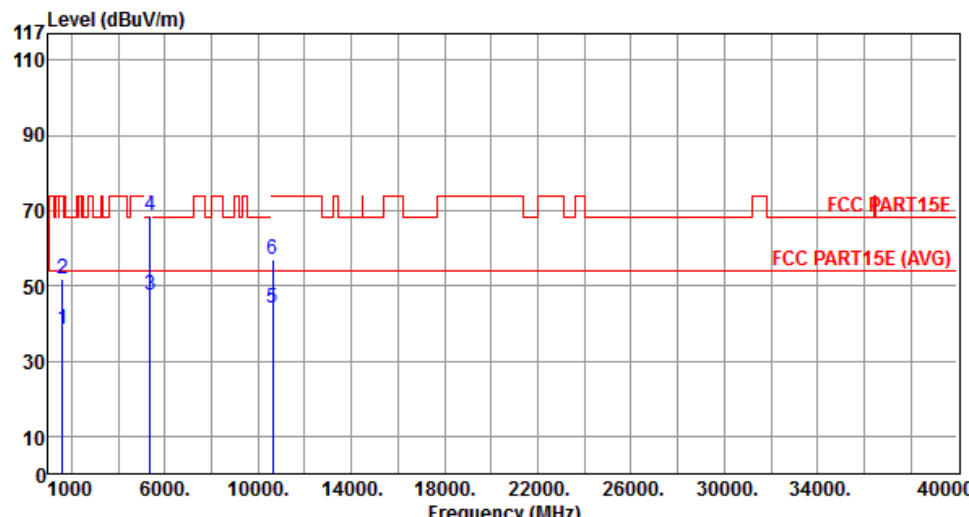
Modulation	HT40	Test Freq. (MHz)	5270
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.81	54.00	-17.19	43.62	-6.81	Average	---	---
2	1594.00	49.90	74.00	-24.10	56.71	-6.81	Peak	---	---
3	5150.00	44.04	54.00	-9.96	38.48	5.56	Average	---	---
4	5150.00	56.75	74.00	-17.25	51.19	5.56	Peak	---	---
5	10540.00	57.20	68.20	-11.00	41.92	15.28	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).

Modulation	HT40	Test Freq. (MHz)	5310
Polarization	Horizontal		

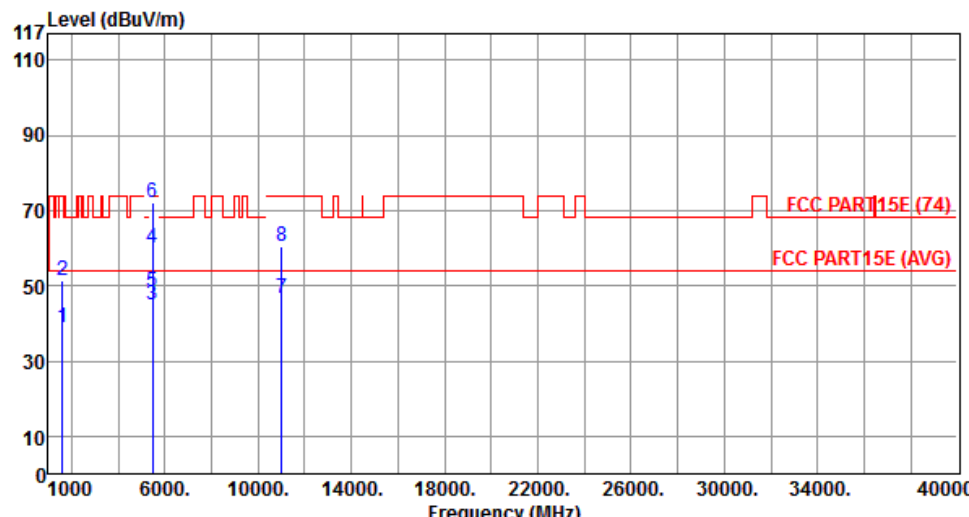


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.37	54.00	-15.63	45.18	-6.81	Average	---	---
2	1594.00	51.83	74.00	-22.17	58.64	-6.81	Peak	---	---
3	5350.00	47.55	54.00	-6.45	41.84	5.71	Average	---	---
4	5350.00	68.60	74.00	-5.40	62.89	5.71	Peak	---	---
5	10620.00	44.10	54.00	-9.90	28.79	15.31	Average	---	---
6	10620.00	57.19	74.00	-16.81	41.88	15.31	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).

Modulation	HT40	Test Freq. (MHz)	5310
Polarization	Vertical		
Level (dBuV/m)			

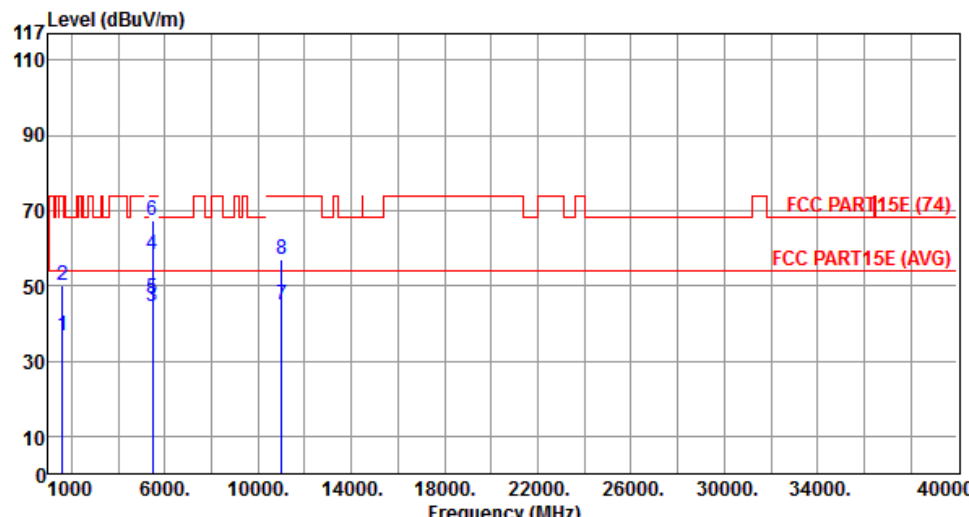
Modulation	HT40	Test Freq. (MHz)	5510
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.91	54.00	-15.09	45.72	-6.81	Average	---	---
2	1594.00	51.43	74.00	-22.57	58.24	-6.81	Peak	---	---
3	5460.00	45.04	54.00	-8.96	39.36	5.68	Average	---	---
4	5460.00	60.11	74.00	-13.89	54.43	5.68	Peak	---	---
5	5470.00	48.34	54.00	-5.66	42.68	5.66	Average	---	---
6	5470.00	71.89	74.00	-2.11	66.23	5.66	Peak	---	---
7	11020.00	46.70	54.00	-7.30	31.28	15.42	Average	---	---
8	11020.00	60.33	74.00	-13.67	44.91	15.42	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).

Modulation	HT40	Test Freq. (MHz)	5510
Polarization	Vertical		

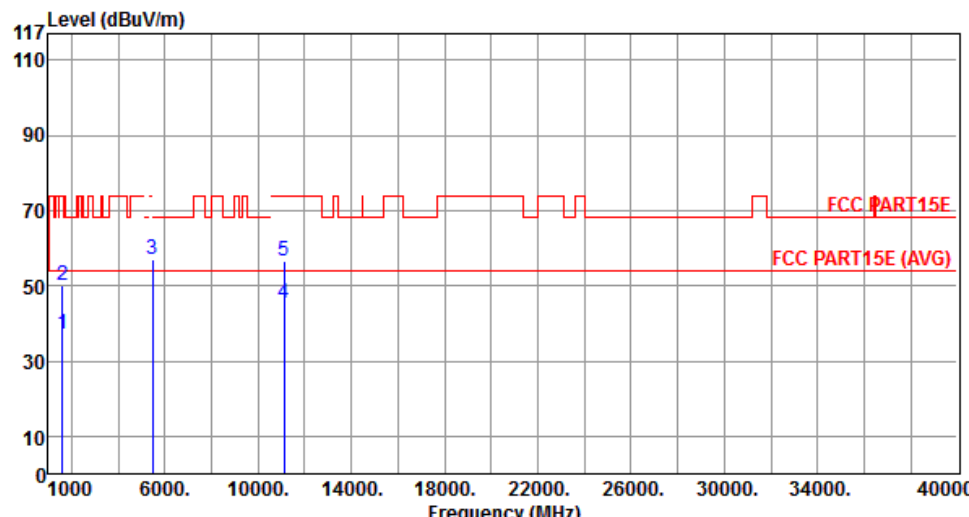


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.70	54.00	-17.30	43.51	-6.81	Average	---	---
2	1594.00	50.07	74.00	-23.93	56.88	-6.81	Peak	---	---
3	5460.00	44.61	54.00	-9.39	38.93	5.68	Average	---	---
4	5460.00	58.34	74.00	-15.66	52.66	5.68	Peak	---	---
5	5470.00	46.75	54.00	-7.25	41.09	5.66	Average	---	---
6	5470.00	67.51	74.00	-6.49	61.85	5.66	Peak	---	---
7	11020.00	45.04	54.00	-8.96	29.62	15.42	Average	---	---
8	11020.00	56.87	74.00	-17.13	41.45	15.42	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).

Modulation	HT40	Test Freq. (MHz)	5550
Polarization	Horizontal		
Level (dBuV/m)			

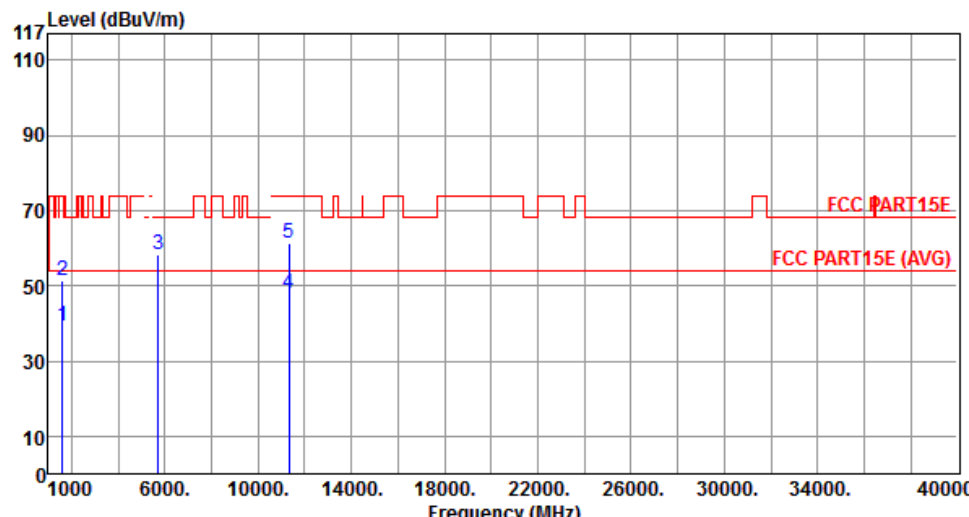
Modulation	HT40	Test Freq. (MHz)	5550
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	37.22	54.00	-16.78	44.03	-6.81	Average	---	---
2	1594.00	50.13	74.00	-23.87	56.94	-6.81	Peak	---	---
3	5470.00	56.84	68.20	-11.36	51.18	5.66	Peak	---	---
4	11100.00	45.24	54.00	-8.76	29.97	15.27	Average	---	---
5	11100.00	56.65	74.00	-17.35	41.38	15.27	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).

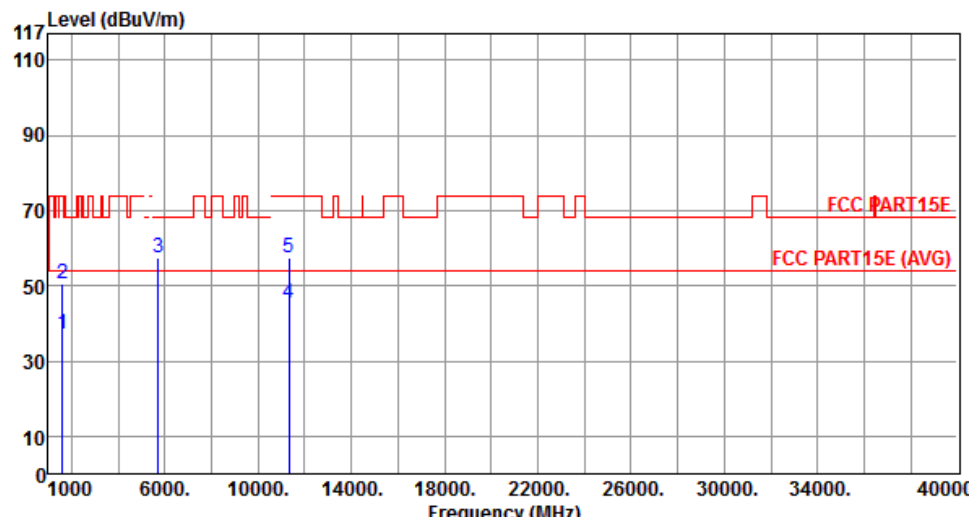
Modulation	HT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.17	54.00	-14.83	45.98	-6.81	Average	---	---
2	1594.00	51.56	74.00	-22.44	58.37	-6.81	Peak	---	---
3	5725.00	58.26	68.20	-9.94	52.68	5.58	Peak	---	---
4	11340.00	47.72	54.00	-6.28	32.88	14.84	Average	---	---
5	11340.00	61.22	74.00	-12.78	46.38	14.84	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).

Modulation	HT40	Test Freq. (MHz)	5670
Polarization	Vertical		

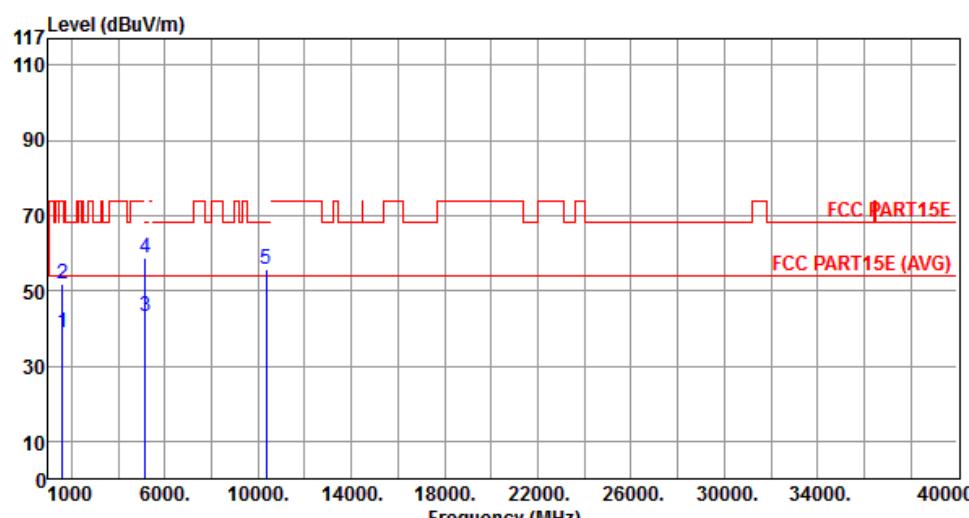


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	37.17	54.00	-16.83	43.98	-6.81	Average	---	---
2	1594.00	50.43	74.00	-23.57	57.24	-6.81	Peak	---	---
3	5725.00	57.39	68.20	-10.81	51.81	5.58	Peak	---	---
4	11340.00	45.17	54.00	-8.83	30.33	14.84	Average	---	---
5	11340.00	57.28	74.00	-16.72	42.44	14.84	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).

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

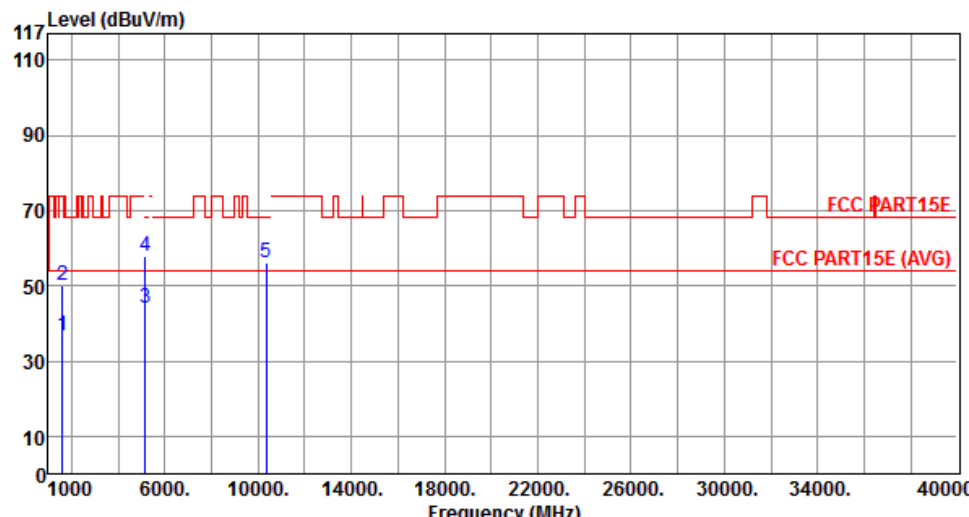
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.06	54.00	-14.94	45.87	-6.81	Average	---	---
2	1594.00	51.61	74.00	-22.39	58.42	-6.81	Peak	---	---
3	5150.00	43.38	54.00	-10.62	37.82	5.56	Average	---	---
4	5150.00	58.53	74.00	-15.47	52.97	5.56	Peak	---	---
5	10360.00	55.75	68.20	-12.45	40.68	15.07	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).

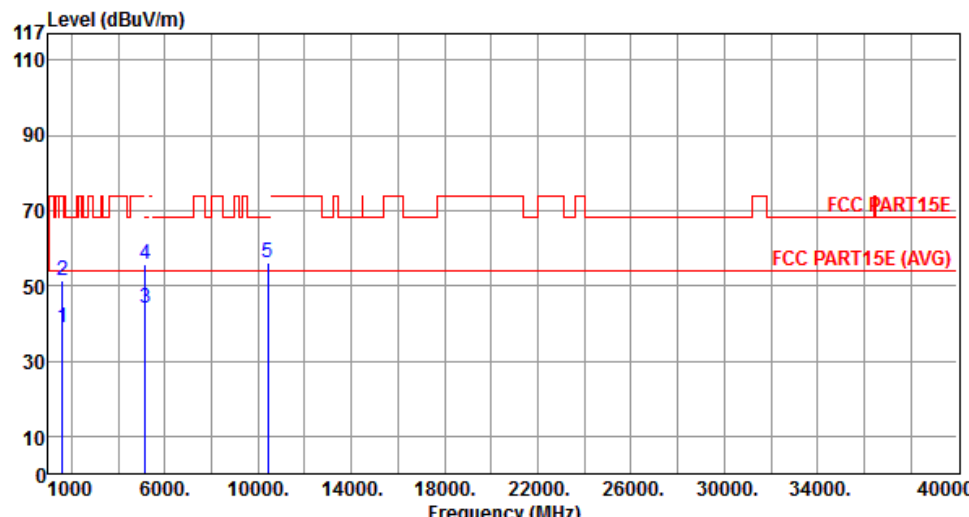
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.74	54.00	-17.26	43.55	-6.81	Average	---	---
2	1594.00	50.13	74.00	-23.87	56.94	-6.81	Peak	---	---
3	5150.00	43.84	54.00	-10.16	38.28	5.56	Average	---	---
4	5150.00	58.05	74.00	-15.95	52.49	5.56	Peak	---	---
5	10360.00	56.19	68.20	-12.01	41.12	15.07	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).

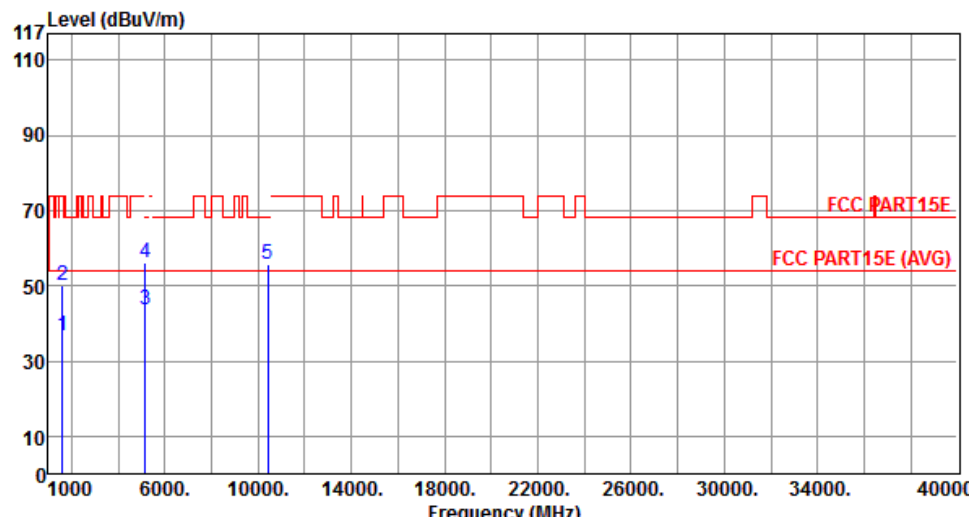
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.67	54.00	-15.33	45.48	-6.81	Average	---	---
2	1594.00	51.45	74.00	-22.55	58.26	-6.81	Peak	---	---
3	5150.00	43.96	54.00	-10.04	38.40	5.56	Average	---	---
4	5150.00	55.91	74.00	-18.09	50.35	5.56	Peak	---	---
5	10400.00	56.00	68.20	-12.20	40.87	15.13	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).

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		

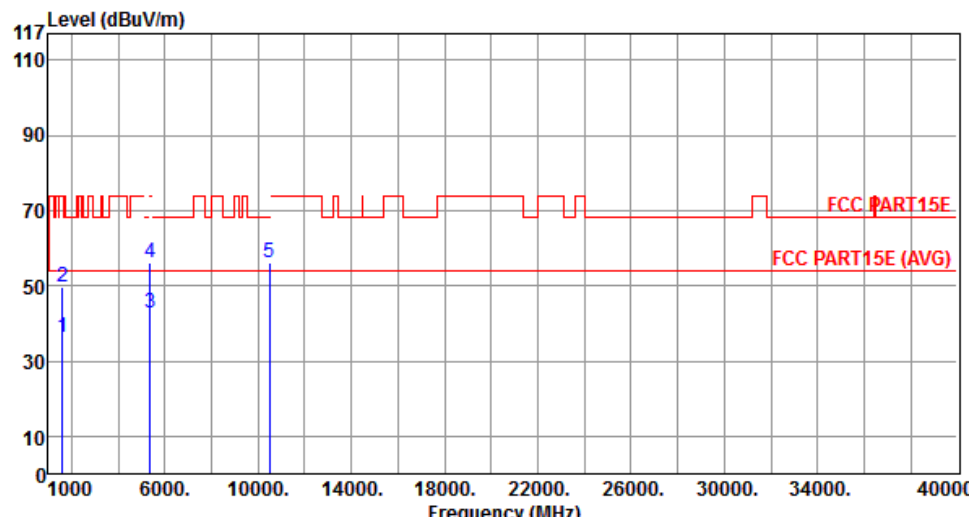


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.71	54.00	-17.29	43.52	-6.81	Average	---	---
2	1594.00	50.10	74.00	-23.90	56.91	-6.81	Peak	---	---
3	5150.00	43.59	54.00	-10.41	38.03	5.56	Average	---	---
4	5150.00	56.24	74.00	-17.76	50.68	5.56	Peak	---	---
5	10400.00	55.89	68.20	-12.31	40.76	15.13	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).

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		
Level (dBuV/m) </			

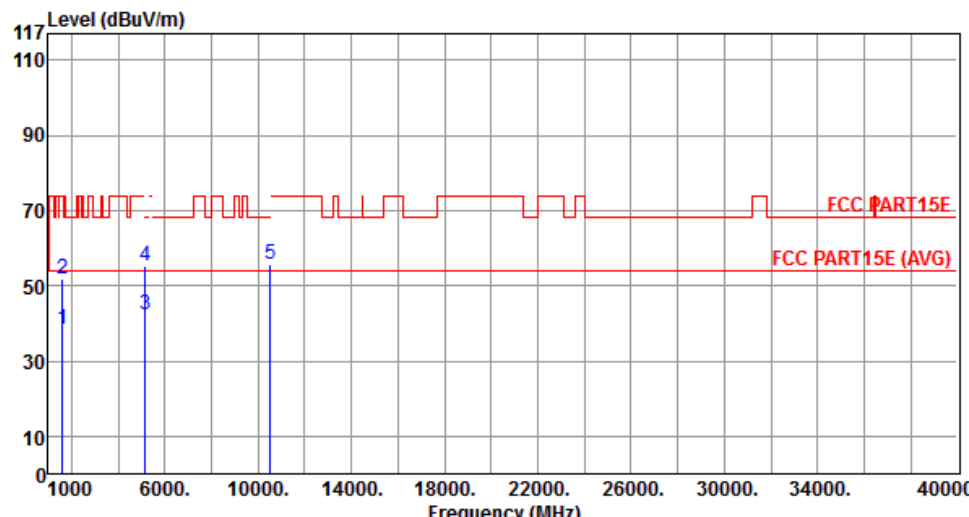
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.43	54.00	-17.57	43.24	-6.81	Average	---	---
2	1594.00	49.72	74.00	-24.28	56.53	-6.81	Peak	---	---
3	5350.00	42.62	54.00	-11.38	36.91	5.71	Average	---	---
4	5350.00	56.05	74.00	-17.95	50.34	5.71	Peak	---	---
5	10480.00	56.09	68.20	-12.11	40.85	15.24	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).

Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Horizontal		

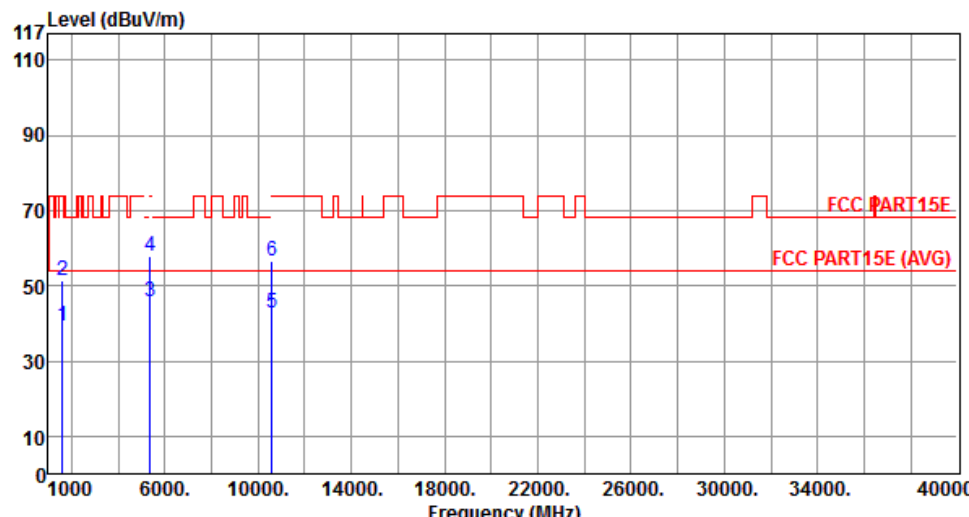


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.51	54.00	-15.49	45.32	-6.81	Average	---	---
2	1594.00	51.80	74.00	-22.20	58.61	-6.81	Peak	---	---
3	5150.00	42.43	54.00	-11.57	36.87	5.56	Average	---	---
4	5150.00	55.20	74.00	-18.80	49.64	5.56	Peak	---	---
5	10520.00	55.76	68.20	-12.44	40.49	15.27	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).

Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Vertical		
Level (dBuV/m)			

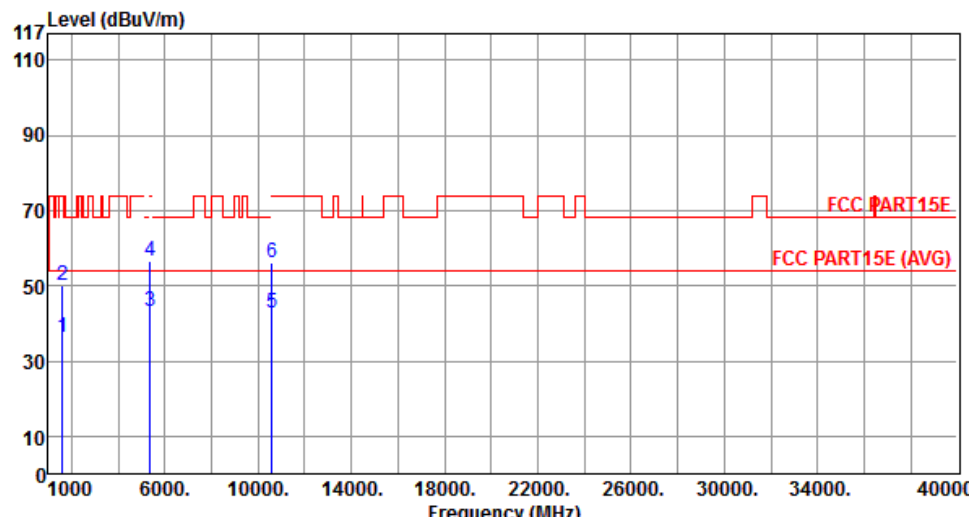
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.16	54.00	-14.84	45.97	-6.81	Average	---	---
2	1594.00	51.54	74.00	-22.46	58.35	-6.81	Peak	---	---
3	5350.00	45.78	54.00	-8.22	40.07	5.71	Average	---	---
4	5350.00	57.92	74.00	-16.08	52.21	5.71	Peak	---	---
5	10600.00	42.88	54.00	-11.12	27.58	15.30	Average	---	---
6	10600.00	56.69	74.00	-17.31	41.39	15.30	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).

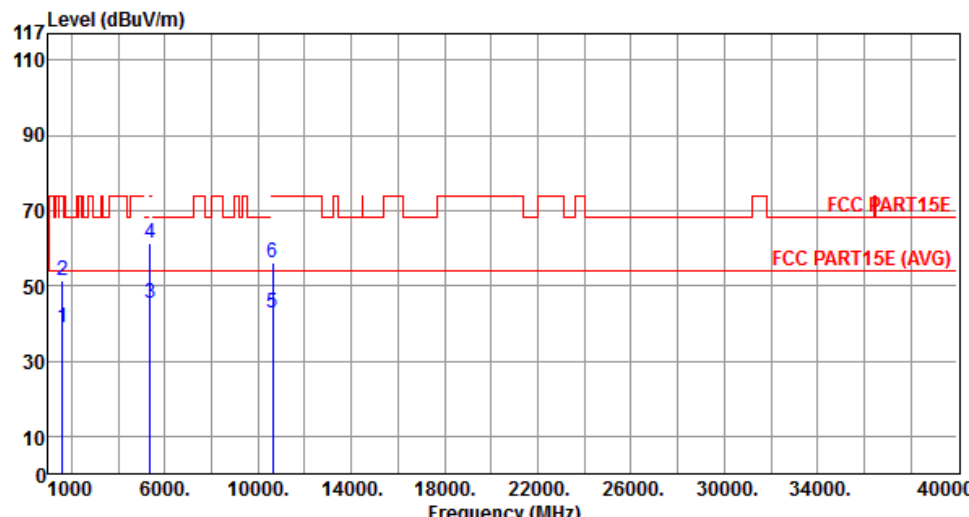
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.34	54.00	-17.66	43.15	-6.81	Average	---	---
2	1594.00	50.03	74.00	-23.97	56.84	-6.81	Peak	---	---
3	5350.00	43.10	54.00	-10.90	37.39	5.71	Average	---	---
4	5350.00	56.76	74.00	-17.24	51.05	5.71	Peak	---	---
5	10600.00	42.61	54.00	-11.39	27.31	15.30	Average	---	---
6	10600.00	56.24	74.00	-17.76	40.94	15.30	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).

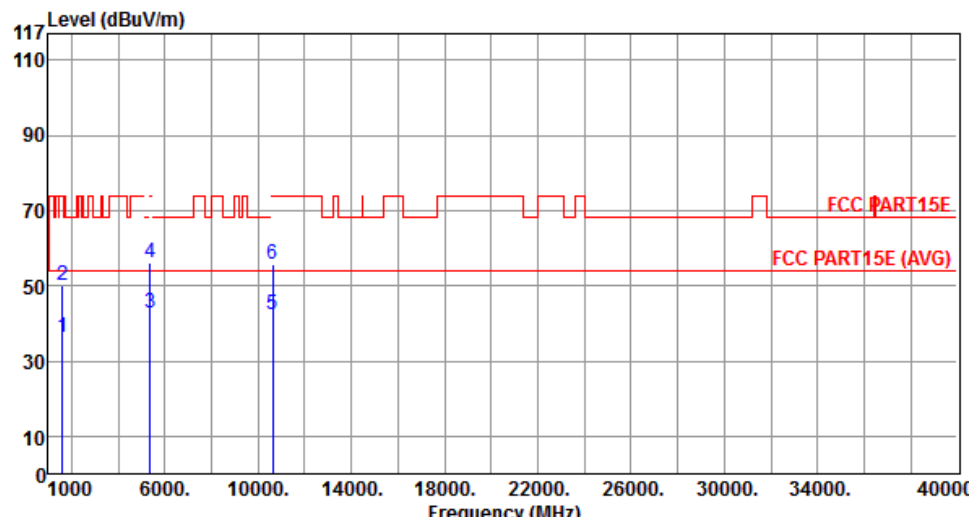
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.06	54.00	-14.94	45.87	-6.81	Average	---	---
2	1594.00	51.41	74.00	-22.59	58.22	-6.81	Peak	---	---
3	5350.00	45.30	54.00	-8.70	39.59	5.71	Average	---	---
4	5350.00	61.10	74.00	-12.90	55.39	5.71	Peak	---	---
5	10640.00	42.55	54.00	-11.45	27.23	15.32	Average	---	---
6	10640.00	56.16	74.00	-17.84	40.84	15.32	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).

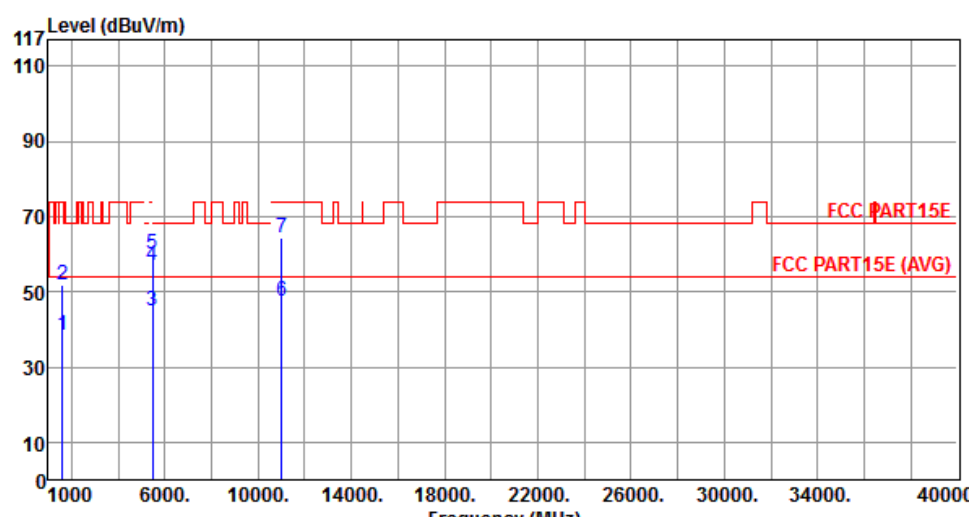
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.45	54.00	-17.55	43.26	-6.81	Average	---	---
2	1594.00	49.93	74.00	-24.07	56.74	-6.81	Peak	---	---
3	5350.00	42.91	54.00	-11.09	37.20	5.71	Average	---	---
4	5350.00	56.08	74.00	-17.92	50.37	5.71	Peak	---	---
5	10640.00	42.37	54.00	-11.63	27.05	15.32	Average	---	---
6	10640.00	55.58	74.00	-18.42	40.26	15.32	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).

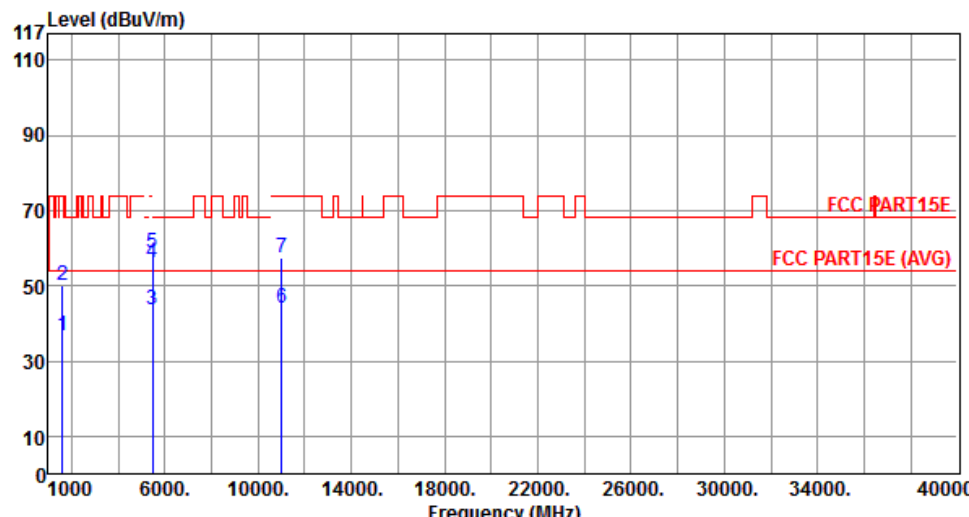
Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.56	54.00	-15.44	45.37	-6.81	Average	---	---
2	1594.00	51.71	74.00	-22.29	58.52	-6.81	Peak	---	---
3	5460.00	45.09	54.00	-8.91	39.41	5.68	Average	---	---
4	5460.00	56.89	74.00	-17.11	51.21	5.68	Peak	---	---
5	5470.00	60.16	68.20	-8.04	54.50	5.66	Peak	---	---
6	11000.00	47.51	54.00	-6.49	32.06	15.45	Average	---	---
7	11000.00	64.12	74.00	-9.88	48.67	15.45	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).

Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Vertical		



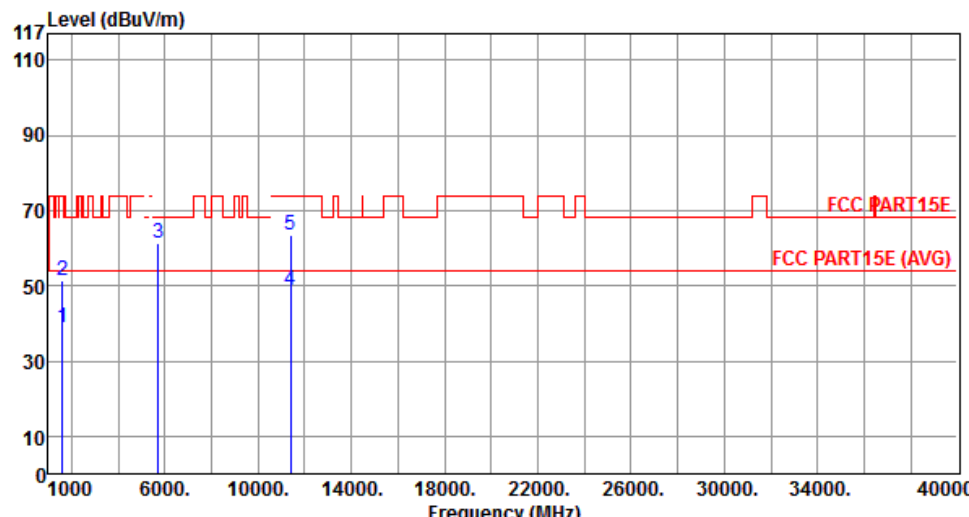
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.86	54.00	-17.14	43.67	-6.81	Average	---	---
2	1594.00	50.08	74.00	-23.92	56.89	-6.81	Peak	---	---
3	5460.00	43.55	54.00	-10.45	37.87	5.68	Average	---	---
4	5460.00	56.07	74.00	-17.93	50.39	5.68	Peak	---	---
5	5470.00	58.83	68.20	-9.37	53.17	5.66	Peak	---	---
6	11000.00	43.89	54.00	-10.11	28.44	15.45	Average	---	---
7	11000.00	57.55	74.00	-16.45	42.10	15.45	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).

Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Horizontal		
 			

Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Vertical		
Level (dBuV/m) </			

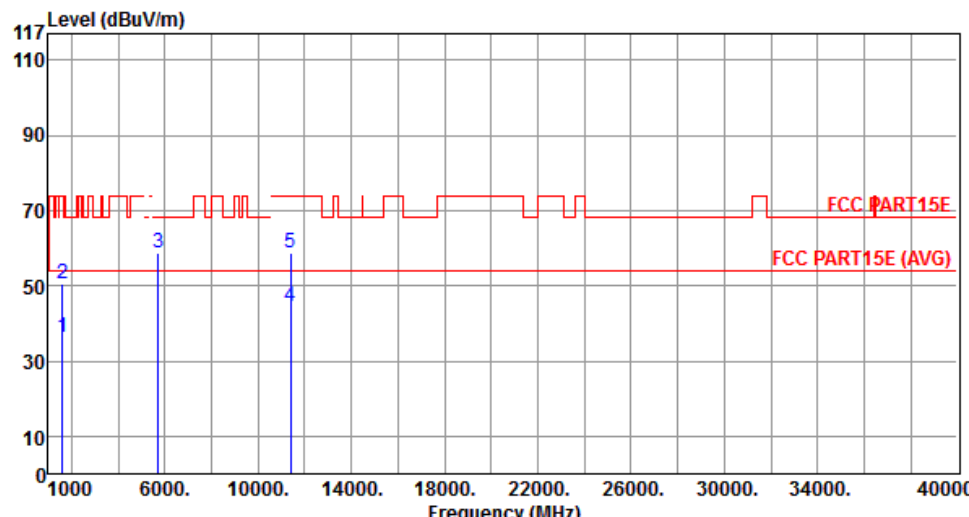
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.80	54.00	-15.20	45.61	-6.81	Average	---	---
2	1594.00	51.56	74.00	-22.44	58.37	-6.81	Peak	---	---
3	5725.00	61.51	68.20	-6.69	55.93	5.58	Peak	---	---
4	11400.00	48.60	54.00	-5.40	33.86	14.74	Average	---	---
5	11400.00	63.65	74.00	-10.35	48.91	14.74	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).

Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		

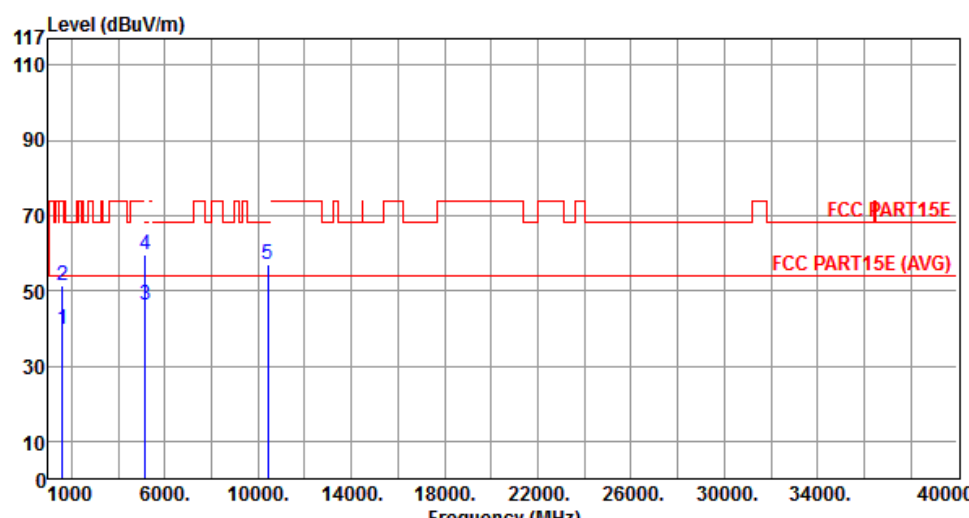


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	36.21	54.00	-17.79	43.02	-6.81	Average	---	---
2	1594.00	50.35	74.00	-23.65	57.16	-6.81	Peak	---	---
3	5725.00	58.65	68.20	-9.55	53.07	5.58	Peak	---	---
4	11400.00	44.37	54.00	-9.63	29.63	14.74	Average	---	---
5	11400.00	58.65	74.00	-15.35	43.91	14.74	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).

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

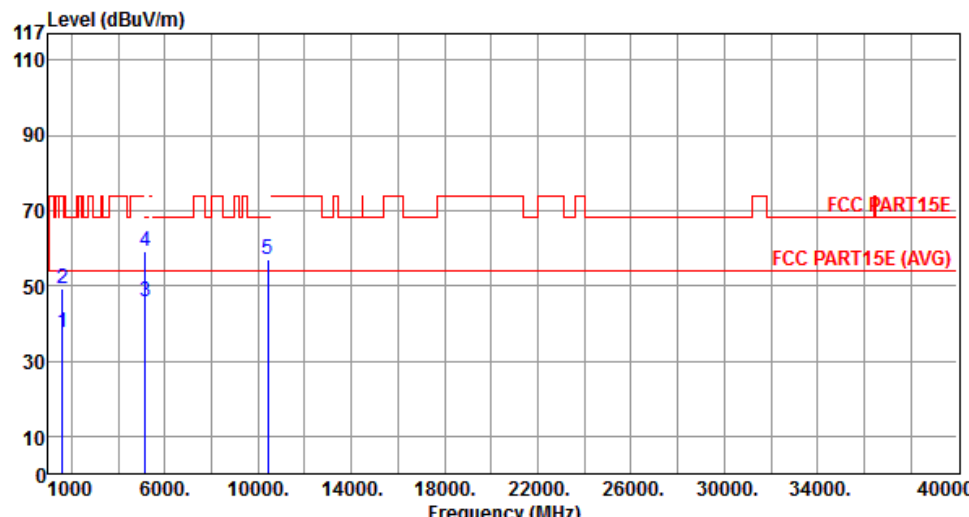
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.78	54.00	-14.22	46.59	-6.81	Average	---	---
2	1594.00	51.51	74.00	-22.49	58.32	-6.81	Peak	---	---
3	5150.00	46.15	54.00	-7.85	40.59	5.56	Average	---	---
4	5150.00	59.77	74.00	-14.23	54.21	5.56	Peak	---	---
5	10420.00	57.03	68.20	-11.17	41.88	15.15	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).

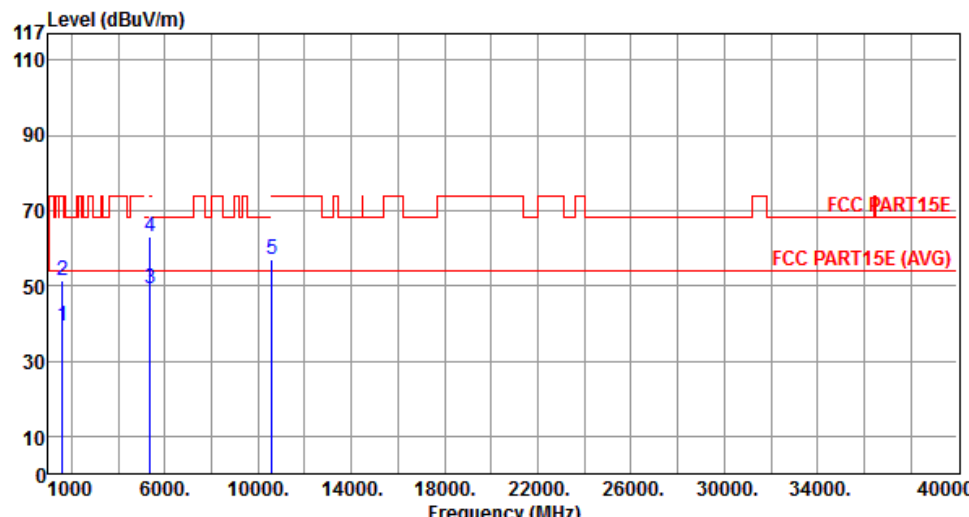
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	37.45	54.00	-16.55	44.26	-6.81	Average	---	---
2	1594.00	49.27	74.00	-24.73	56.08	-6.81	Peak	---	---
3	5150.00	45.90	54.00	-8.10	40.34	5.56	Average	---	---
4	5150.00	58.98	74.00	-15.02	53.42	5.56	Peak	---	---
5	10420.00	56.85	68.20	-11.35	41.70	15.15	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).

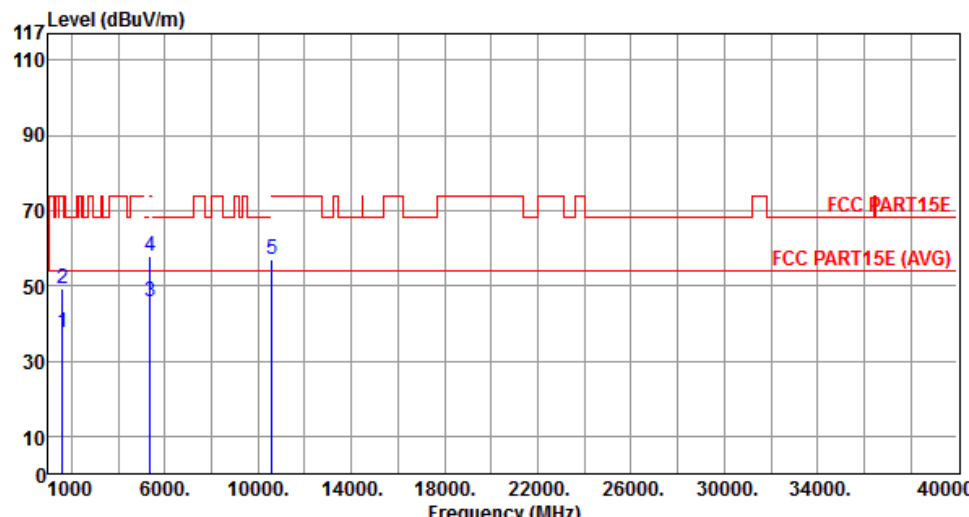
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	39.13	54.00	-14.87	45.94	-6.81	Average	---	---
2	1594.00	51.43	74.00	-22.57	58.24	-6.81	Peak	---	---
3	5350.00	49.40	54.00	-4.60	43.69	5.71	Average	---	---
4	5350.00	63.11	74.00	-10.89	57.40	5.71	Peak	---	---
5	10580.00	57.03	68.20	-11.17	41.75	15.28	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).

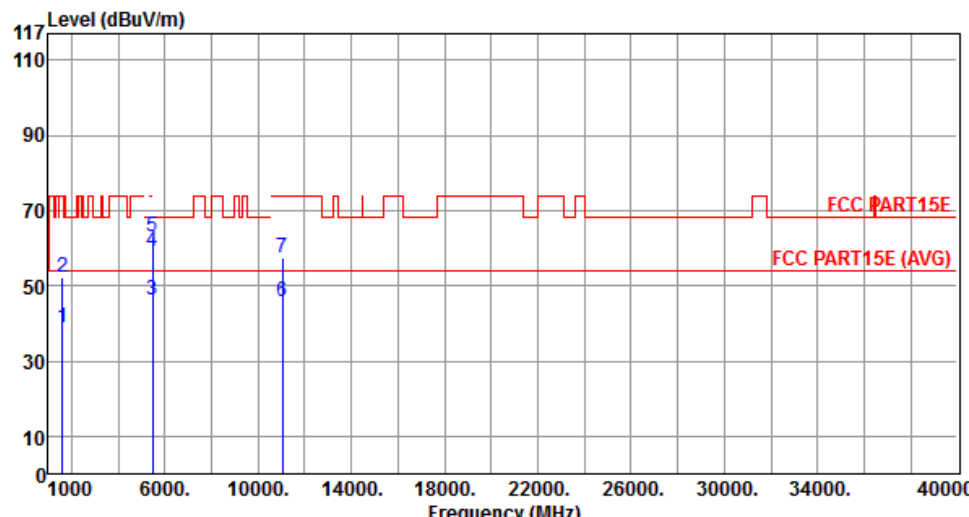
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	37.37	54.00	-16.63	44.18	-6.81	Average	---	---
2	1594.00	49.06	74.00	-24.94	55.87	-6.81	Peak	---	---
3	5350.00	45.73	54.00	-8.27	40.02	5.71	Average	---	---
4	5350.00	58.00	74.00	-16.00	52.29	5.71	Peak	---	---
5	10580.00	56.85	68.20	-11.35	41.57	15.28	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).

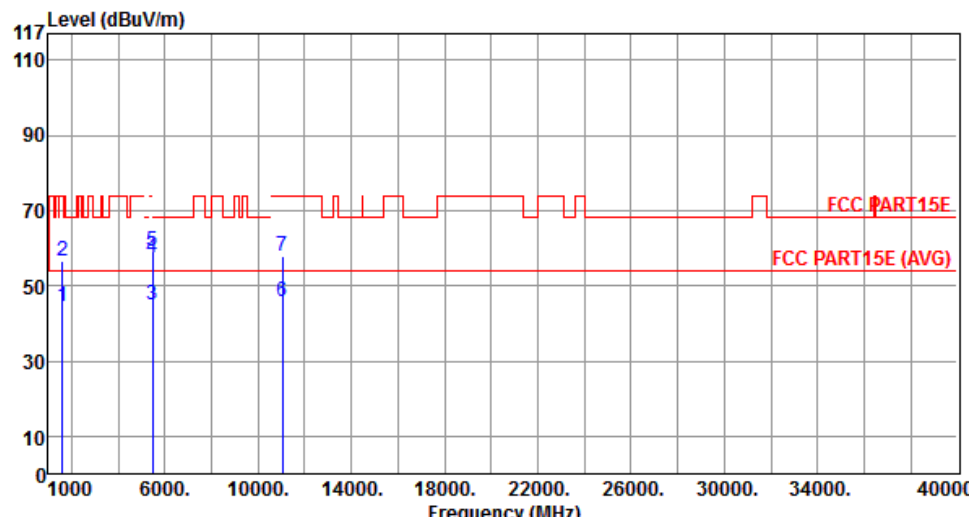
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	38.99	54.00	-15.01	45.80	-6.81	Average	---	---
2	1594.00	52.40	74.00	-21.60	59.21	-6.81	Peak	---	---
3	5460.00	46.27	54.00	-7.73	40.59	5.68	Average	---	---
4	5460.00	59.33	74.00	-14.67	53.65	5.68	Peak	---	---
5	5470.00	62.86	68.20	-5.34	57.20	5.66	Peak	---	---
6	11060.00	45.58	54.00	-8.42	30.23	15.35	Average	---	---
7	11060.00	57.53	74.00	-16.47	42.18	15.35	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).

Modulation	VHT80	Test Freq. (MHz)	5530
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	1594.00	44.31	54.00	-9.69	51.12	-6.81	Average	---	---
2	1594.00	56.74	74.00	-17.26	63.55	-6.81	Peak	---	---
3	5460.00	45.10	54.00	-8.90	39.42	5.68	Average	---	---
4	5460.00	57.53	74.00	-16.47	51.85	5.68	Peak	---	---
5	5470.00	59.32	68.20	-8.88	53.66	5.66	Peak	---	---
6	11060.00	45.93	54.00	-8.07	30.58	15.35	Average	---	---
7	11060.00	57.68	74.00	-16.32	42.33	15.35	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).

3.7 Frequency Stability

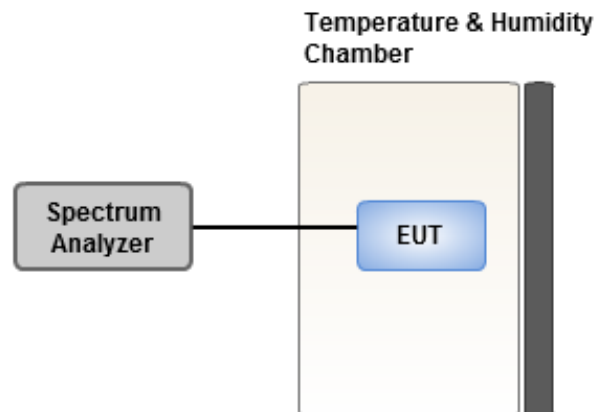
3.7.1 Limit of Frequency Stability

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.

3.7.2 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.

3.7.3 Test Setup



3.7.4 Test Result of Frequency Stability

Frequency: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	0.60	0.95	0.44	0.93
T20°CVmin	1.12	0.91	1.05	1.03
T55°CVnom	0.33	-0.03	0.27	0.09
T50°CVnom	1.68	0.45	1.86	1.54
T40°CVnom	0.85	0.17	0.82	0.45
T30°CVnom	0.23	0.18	0.04	-0.09
T20°CVnom	1.04	0.79	1.11	0.45
T10°CVnom	0.80	0.82	0.09	0.97
T0°CVnom	0.53	0.54	0.76	0.82
T-10°CVnom	1.24	0.59	1.54	1.52
T-20°CVnom	1.60	1.67	0.28	0.48
T-30°CVnom	0.55	0.21	0.53	0.67
Vnom [Vdc]: 3.9		Vmax [Vdc]: 4.29		Vmin [Vdc]: 3.51
Tnom [°C]: 20		Tmax [°C]: 55		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>.

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

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