

FCC Test Report

FCC ID : TVE-130523
Equipment : 3T3R PCIeModule selectable 5GHz + 2.4G
Model No. : WMIQ-287ACN
Brand Name : Fortinet, Inc.
Applicant : Fortinet Inc.
Address : 899 Kifer Road Sunnyvale, CA 94086, USA
Standard : 47 CFR FCC Part 15.407
Received Date : Apr. 10, 2015
Tested Date : Apr. 23 ~ May 12, 2015

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
FR541001AN	Rev. 01	Initial issue	Jun. 04, 2015

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 4.926MHz 34.19 (Margin -11.81dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 52.50 (Margin -1.50dB) - AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: 5150-5250MHz: 13.73 5725-5850MHz: 20.67	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]	3	6-54 Mbps
5150-5250	n (HT20)	5180-5240	36-48 [4]	3	MCS 0-23
5150-5250	n (HT40)	5190-5230	38-46 [2]	3	MCS 0-23
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	3	MCS 0-9
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	3	MCS 0-9
5150-5250	ac (VHT80)	5210	42 [1]	3	MCS 0-9

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

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

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

1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequency (MHz) / Gain (dBi)		
				2400~2483.5	5150~5250	5725~5850
1	AK51010200	Dipole	R-SMA	4.59	4.78	5.67
2	LG19	PIFA	IPEX	6.38	3.46	4.34
3	FPC_ANT (Cable: 95mm)	PIFA	IPEX	4.16	2.78	3.32
4	FPC_ANT (Cable: 355mm)	PIFA	IPEX	2.87	2.21	0.91
5	FPC_ANT (Cable: 150mm)	PIFA	IPEX	3.57	2.42	3.11
Note: 1) There are six different cable lengths for Dipole antenna. They should be 100mm, 130mm, 180mm, 205mm, 230mm and 265mm. The shortest cable length 100mm and the longest cable length 265mm was chosen for final testing. 2) PIFA antenna with highest gain (model LG19) was chosen for final testing.						

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	3.3Vdc from host
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1.1.4 Accessories

N/A

1.1.5 Channel List

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

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

1.1.6 Test Tool and Duty Cycle

Test Tool	ART2-GUI, version 2.3		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	98.20%	0.08
	VHT20	98.16%	0.08
	VHT40	94.37%	0.25
	VHT80	88.70%	0.52

1.1.7 Power Setting

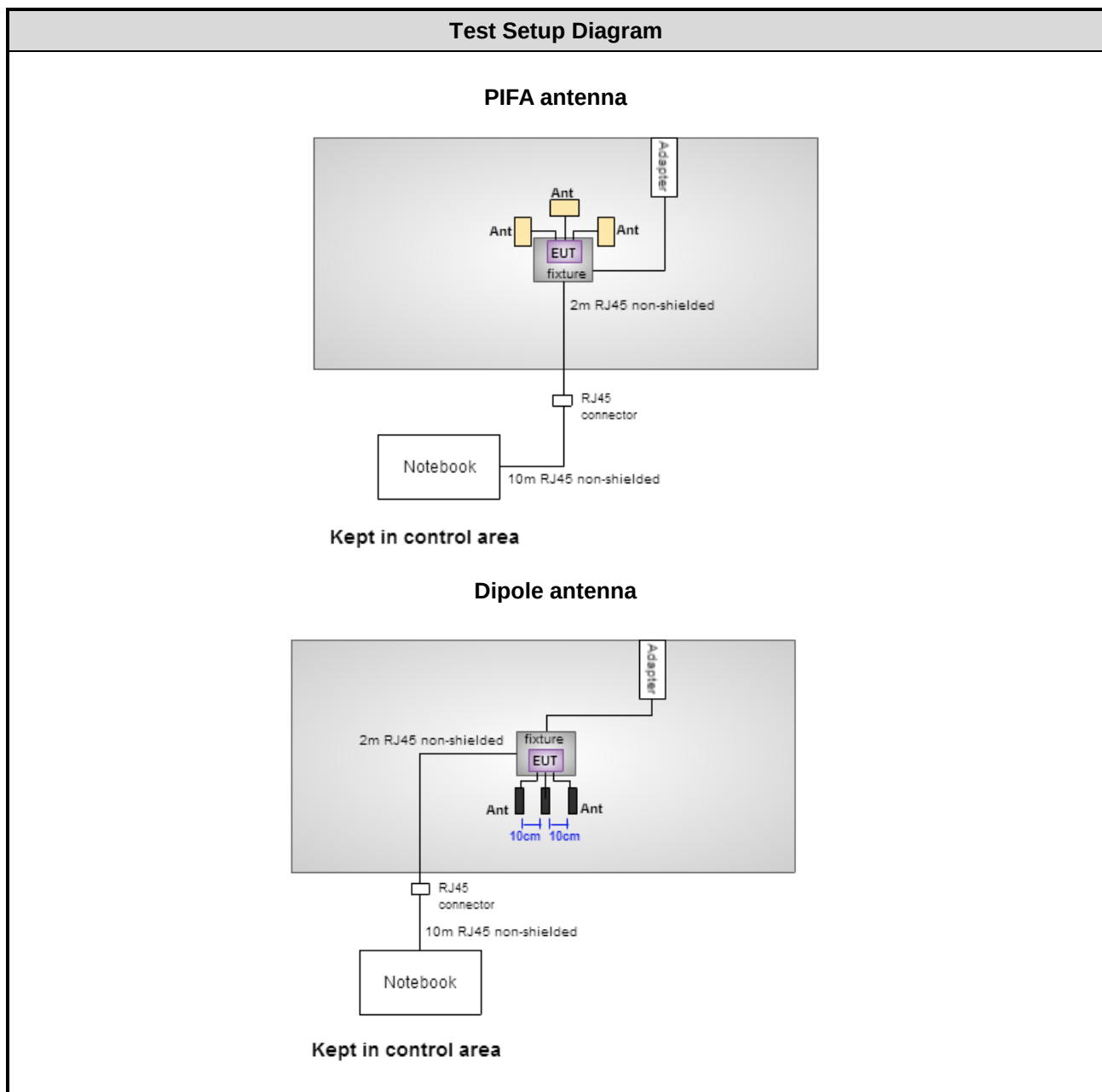
For Frequency band 5150-5250 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5180	8.5
11a	5200	8.5
11a	5240	8.5
HT20	5180	9
HT20	5200	9
HT20	5240	5.5
HT40	5190	9
HT40	5230	7
VHT20	5180	9
VHT20	5200	9
VHT20	5240	5.5
VHT40	5190	9
VHT40	5230	7
VHT80	5210	9

For Frequency band 5725~5850 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5745	15
11a	5785	16
11a	5825	16
HT20	5745	15
HT20	5785	16
HT20	5825	16
HT40	5755	16
HT40	5795	16
VHT20	5745	15
VHT20	5785	16
VHT20	5825	16
VHT40	5755	14
VHT40	5795	16
VHT80	5775	10.5

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Signal cable / Length (m)
1	Fixture	---	WAPQ-230ACN	---	---
2	Fixture adapter	UNIFIVE	UTL324-1220	---	---
3	Notebook	DELL	Latitude E5430	DoC	RJ45, 10m non-shielded.

1.3 Test Setup Chart



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. 17, 2014	Oct. 16, 2015
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 17, 2014	Nov. 16, 2015
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Dec. 31, 2014	Dec. 30, 2015
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 09, 2014	Dec. 08, 2015
Receiver	R&S	ESR3	101658	Nov. 10, 2014	Nov. 09, 2015
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Sep. 05, 2014	Sep. 04, 2015
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 11, 2014	Dec. 10, 2015
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 10, 2014	Nov. 09, 2015
Loop Antenna	R&S	HFH2-Z2	11900	Nov. 10, 2014	Nov. 09, 2015
Preamplifier	Burgeon	BPA-530	SN:100219	Sep. 09, 2014	Sep. 08, 2015
Preamplifier	Agilent	83017A	MY39501308	Oct. 09, 2014	Oct. 08, 2015
Preamplifier	EMC	EMC184045B	980192	Aug. 26, 2014	Aug. 25, 2015
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 15, 2014	Dec. 14, 2015
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 15, 2014	Dec. 14, 2015
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 15, 2014	Dec. 14, 2015
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 15, 2014	Dec. 14, 2015
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 15, 2014	Dec. 14, 2015
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	Dec. 03, 2014	Dec. 02, 2015
Power Meter	Anritsu	ML2495A	1241002	Sep. 29, 2014	Sep. 28, 2015
Power Sensor	Anritsu	MA2411B	1207366	Sep. 29, 2014	Sep. 28, 2015
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 789033 D02 General UNII Test Procedures New Rules v01

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 v01

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 ≤ 1 GHz	± 3.72 dB
Radiated emission > 1 GHz	± 5.65 dB
Time	$\pm 0.1\%$
Temperature	± 0.6 °C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	17°C / 70%	Kevin Ma
Radiated Emissions	03CH01-WS	19-23°C / 60-67%	Aska Huang
RF Conducted	TH01-WS	21°C / 63%	Felix Sung

➤ FCC site registration No.: 657002

➤ IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

For Frequency band 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT20	5200	MCS 0	1, 2
Radiated Emissions ≤1GHz	VHT20	5200	MCS 0	1, 2
RF Output Power	11a	5180 / 5200 / 5240	6 Mbps	1
	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	11a	5180 / 5200 / 5240	6 Mbps	1, 2
	VHT20	5180 / 5200 / 5240	MCS 0	
	VHT40	5190 / 5230	MCS 0	
	VHT80	5210	MCS 0	
Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240	6 Mbps	1
	VHT20	5180 / 5200 / 5240	MCS 0	
	VHT40	5190 / 5230	MCS 0	
	VHT80	5210	MCS 0	
Frequency Stability	Un-modulation	5200	---	1

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The worst planes of each antenna and test configurations are listed as follows:

1) Test configuration 1: Dipole antenna, **Z-plane**.

- Two antenna cable lengths, **100mm** and **265mm** were for final radiated emission below 1GHz test.
- The **100mm** cable for final radiated emission above 1GHz test.
- The **265mm** cable for final conducted emission test.

2) Test configuration 2: PIFA antenna, **Y-plane**.

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT20	5785	MCS 0	1, 2
Radiated Emissions ≤ 1 GHz	VHT20	5785	MCS 0	1, 2
RF Output Power	11a	5745 / 5785 / 5825	6 Mbps	1
	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 > 1 GHz	11a	5745 / 5785 / 5825	6 Mbps	1, 2
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a	5745 / 5785 / 5825	6 Mbps	1
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Frequency Stability	Un-modulation	5785	---	1
NOTE: 1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The worst planes of each antenna and test configurations are listed as follows: 1) Test configuration 1: Dipole antenna, Z-plane . a. Two antenna cable lengths, 100mm and 265mm were for final radiated emission below 1GHz test. b. The 100mm cable for final radiated emission above 1GHz test. c. The 265mm cable for final conducted emission test. 2) Test configuration 2: PIFA antenna, Y-plane .				

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

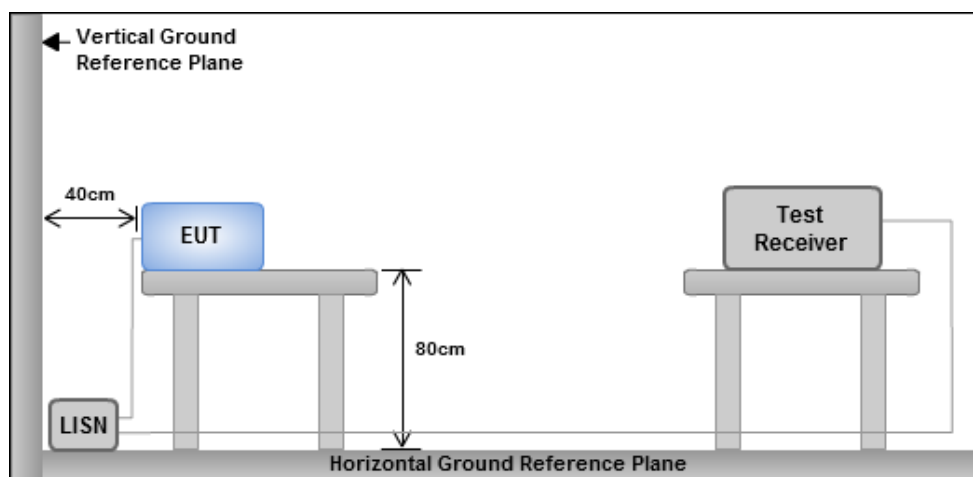
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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.

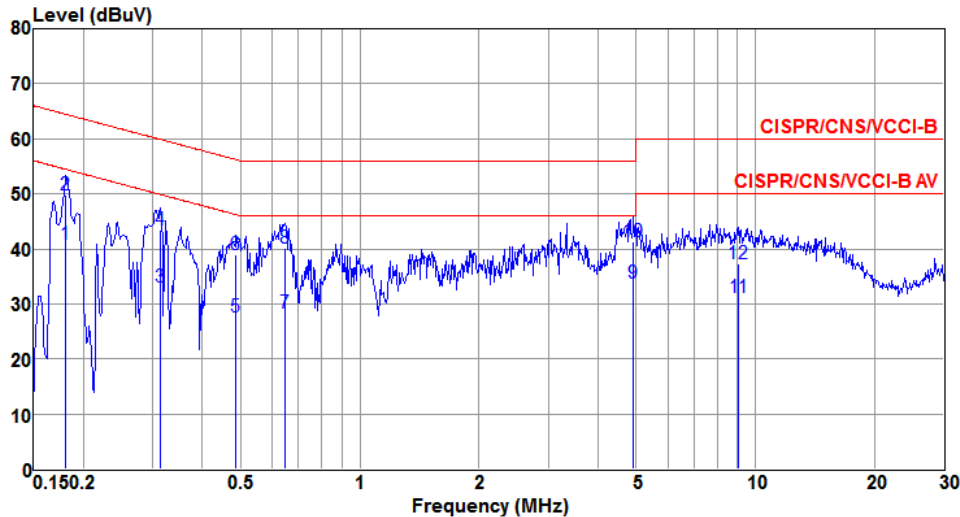
3.1.3 Test Setup



- 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

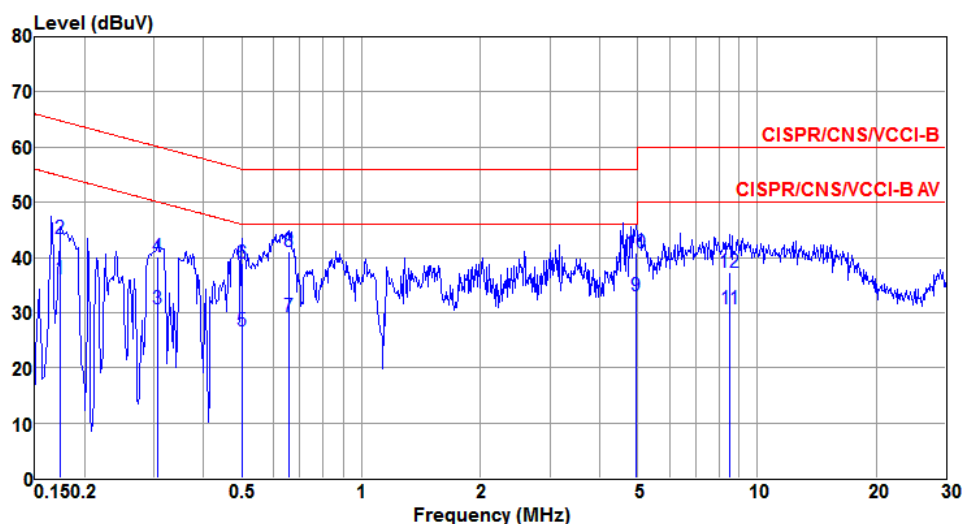
Modulation	VHT20	Test Freq. (MHz)	5200
Power Phase	Line	Test Configuration	1



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	0.181	40.90	54.46	-13.56	40.33	0.48	0.09	Average
2	0.181	49.85	64.46	-14.61	49.28	0.48	0.09	QP
3	0.313	33.16	49.88	-16.72	32.86	0.20	0.10	Average
4	0.313	43.35	59.88	-16.53	43.05	0.20	0.10	QP
5	0.486	27.51	46.23	-18.72	27.23	0.16	0.12	Average
6	0.486	38.94	56.23	-17.29	38.66	0.16	0.12	QP
7	0.647	28.23	46.00	-17.77	27.96	0.13	0.14	Average
8	0.647	40.08	56.00	-15.92	39.81	0.13	0.14	QP
9*	4.926	33.85	46.00	-12.15	33.19	0.35	0.31	Average
10	4.926	41.24	56.00	-14.76	40.58	0.35	0.31	QP
11	9.059	31.23	50.00	-18.77	30.31	0.62	0.30	Average
12	9.059	37.36	60.00	-22.64	36.44	0.62	0.30	QP

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

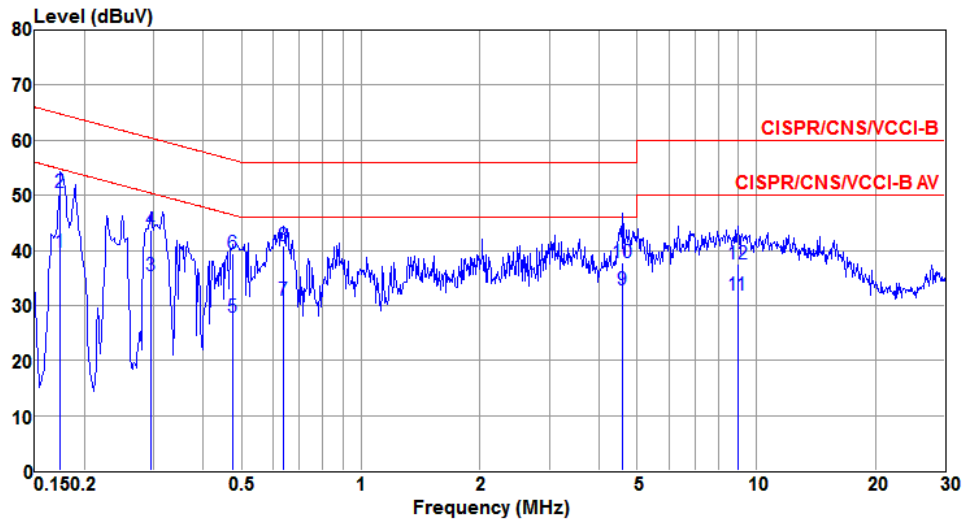
Modulation	VHT20	Test Freq. (MHz)	5200
Power Phase	Neutral	Test Configuration	1



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.174	36.08	54.77	-18.69	35.45	0.54	0.09	Average
2	0.174	43.32	64.77	-21.45	42.69	0.54	0.09	QP
3	0.307	30.67	50.06	-19.39	30.40	0.17	0.10	Average
4	0.307	40.06	60.06	-20.00	39.79	0.17	0.10	QP
5	0.499	26.71	46.01	-19.30	26.43	0.16	0.12	Average
6	0.499	38.92	56.01	-17.09	38.64	0.16	0.12	QP
7	0.658	29.29	46.00	-16.71	28.94	0.21	0.14	Average
8	0.658	41.14	56.00	-14.86	40.79	0.21	0.14	QP
9*	4.952	32.99	46.00	-13.01	31.99	0.69	0.31	Average
10	4.952	40.79	56.00	-15.21	39.79	0.69	0.31	QP
11	8.546	30.75	50.00	-19.25	29.89	0.56	0.30	Average
12	8.546	37.25	60.00	-22.75	36.39	0.56	0.30	QP

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

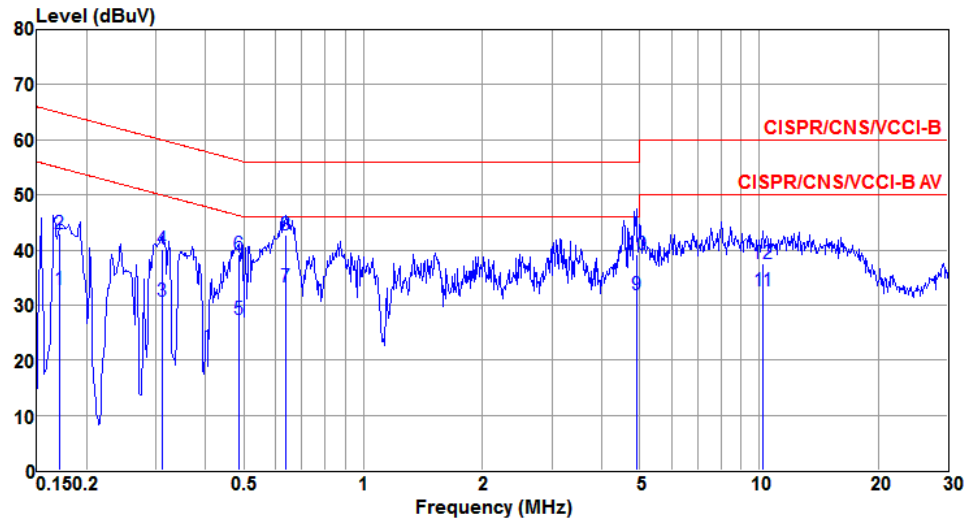
Modulation	VHT20	Test Freq. (MHz)	5785
Power Phase	Line	Test Configuration	1



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.174	39.59	54.77	-15.18	38.92	0.58	0.09	Average
2	0.174	50.43	64.77	-14.34	49.76	0.58	0.09	QP
3	0.294	35.32	50.41	-15.09	35.01	0.21	0.10	Average
4	0.294	43.66	60.41	-16.75	43.35	0.21	0.10	QP
5	0.476	27.95	46.41	-18.46	27.67	0.16	0.12	Average
6	0.476	39.38	56.41	-17.03	39.10	0.16	0.12	QP
7	0.637	30.89	46.00	-15.11	30.62	0.13	0.14	Average
8	0.637	40.88	56.00	-15.12	40.61	0.13	0.14	QP
9*	4.598	32.82	46.00	-13.18	32.19	0.32	0.31	Average
10	4.598	37.70	56.00	-18.30	37.07	0.32	0.31	QP
11	8.964	31.82	50.00	-18.18	30.90	0.62	0.30	Average
12	8.964	37.50	60.00	-22.50	36.58	0.62	0.30	QP

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

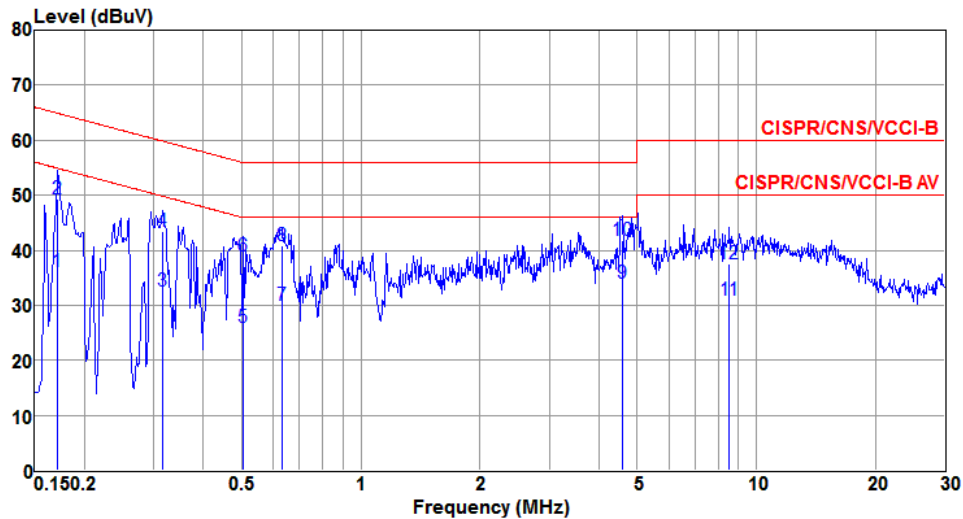
Modulation	VHT20	Test Freq. (MHz)	5785
Power Phase	Neutral	Test Configuration	1



	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1	0.171	32.75	54.90	-22.15	32.10	0.57	0.08	Average
2	0.171	42.97	64.90	-21.93	42.32	0.57	0.08	QP
3	0.310	30.57	49.97	-19.40	30.30	0.17	0.10	Average
4	0.310	40.16	59.97	-19.81	39.89	0.17	0.10	QP
5	0.484	27.27	46.27	-19.00	26.99	0.16	0.12	Average
6	0.484	39.21	56.27	-17.06	38.93	0.16	0.12	QP
7*	0.637	33.25	46.00	-12.75	32.91	0.20	0.14	Average
8	0.637	42.73	56.00	-13.27	42.39	0.20	0.14	QP
9	4.900	31.85	46.00	-14.15	30.85	0.69	0.31	Average
10	4.900	39.16	56.00	-16.84	38.16	0.69	0.31	QP
11	10.233	32.47	50.00	-17.53	31.64	0.53	0.30	Average
12	10.233	37.61	60.00	-22.39	36.78	0.53	0.30	QP

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

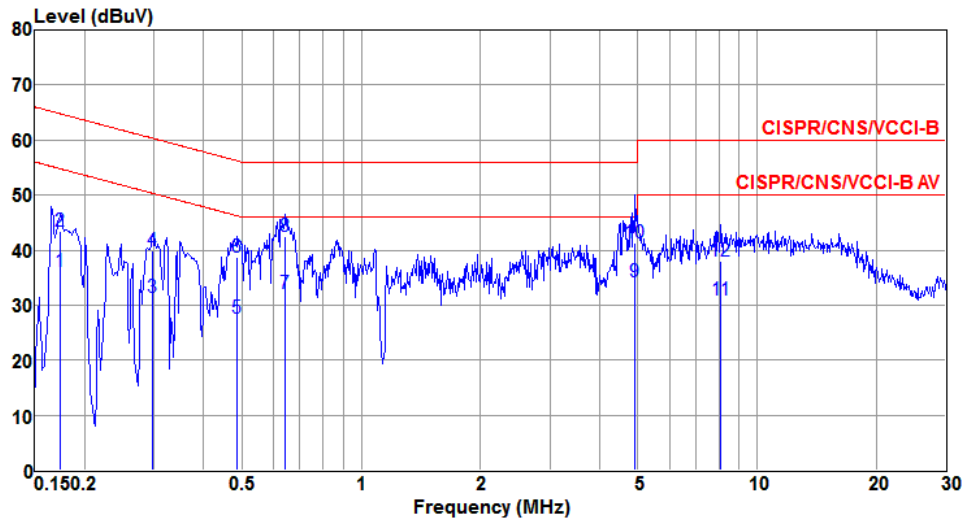
Modulation	VHT20	Test Freq. (MHz)	5200
Power Phase	Line	Test Configuration	2



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.171	36.04	54.90	-18.86	35.35	0.61	0.08	Average
2	0.171	49.33	64.90	-15.57	48.64	0.61	0.08	QP
3	0.315	32.51	49.84	-17.33	32.21	0.20	0.10	Average
4	0.315	43.47	59.84	-16.37	43.17	0.20	0.10	QP
5	0.505	25.92	46.00	-20.08	25.64	0.16	0.12	Average
6	0.505	39.02	56.00	-16.98	38.74	0.16	0.12	QP
7	0.630	29.91	46.00	-16.09	29.64	0.14	0.13	Average
8	0.630	40.78	56.00	-15.22	40.51	0.14	0.13	QP
9*	4.598	33.96	46.00	-12.04	33.33	0.32	0.31	Average
10	4.598	41.86	56.00	-14.14	41.23	0.32	0.31	QP
11	8.546	31.02	50.00	-18.98	30.12	0.60	0.30	Average
12	8.546	37.57	60.00	-22.43	36.67	0.60	0.30	QP

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

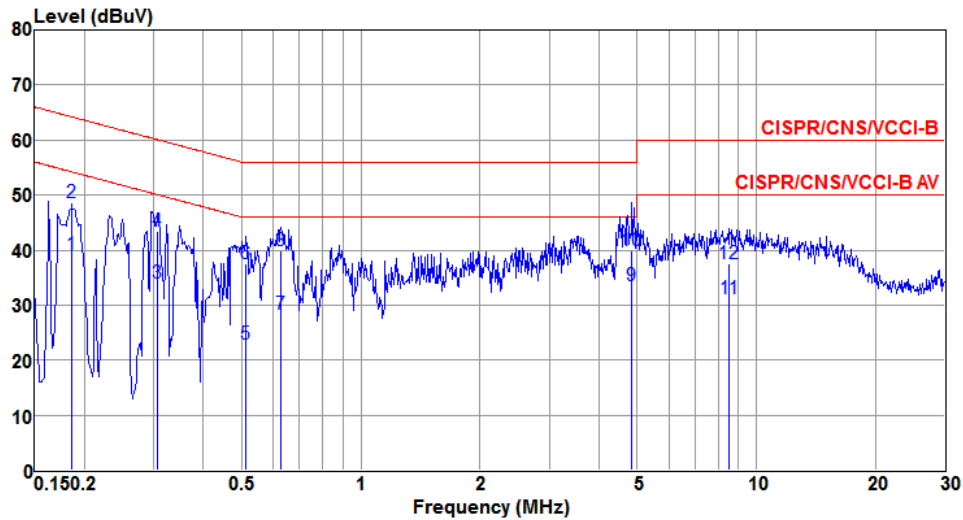
Modulation	VHT20	Test Freq. (MHz)	5200
Power Phase	Neutral	Test Configuration	2



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	0.174	36.13	54.77	-18.64	35.50	0.54	0.09	Average
2	0.174	43.34	64.77	-21.43	42.71	0.54	0.09	QP
3	0.297	31.47	50.32	-18.85	31.19	0.18	0.10	Average
4	0.297	39.92	60.32	-20.40	39.64	0.18	0.10	QP
5	0.486	27.51	46.23	-18.72	27.23	0.16	0.12	Average
6	0.486	38.78	56.23	-17.45	38.50	0.16	0.12	QP
7	0.644	31.99	46.00	-14.01	31.65	0.20	0.14	Average
8	0.644	42.41	56.00	-13.59	42.07	0.20	0.14	QP
9*	4.926	34.19	46.00	-11.81	33.19	0.69	0.31	Average
10	4.926	41.32	56.00	-14.68	40.32	0.69	0.31	QP
11	8.105	30.90	50.00	-19.10	30.03	0.57	0.30	Average
12	8.105	38.00	60.00	-22.00	37.13	0.57	0.30	QP

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

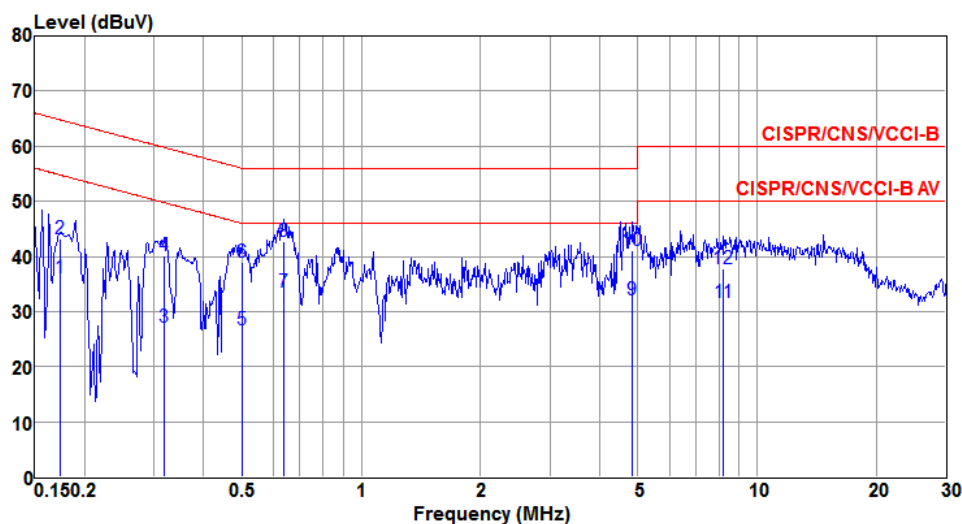
Modulation	VHT20	Test Freq. (MHz)	5785
Power Phase	Line	Test Configuration	2



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.186	39.13	54.20	-15.07	38.64	0.40	0.09	Average
2	0.186	48.64	64.20	-15.56	48.15	0.40	0.09	QP
3	0.307	34.01	50.06	-16.05	33.70	0.21	0.10	Average
4	0.307	43.43	60.06	-16.63	43.12	0.21	0.10	QP
5	0.513	22.80	46.00	-23.20	22.52	0.16	0.12	Average
6	0.513	37.63	56.00	-18.37	37.35	0.16	0.12	QP
7	0.627	28.43	46.00	-17.57	28.16	0.14	0.13	Average
8	0.627	39.86	56.00	-16.14	39.59	0.14	0.13	QP
9*	4.848	33.57	46.00	-12.43	32.92	0.34	0.31	Average
10	4.848	39.78	56.00	-16.22	39.13	0.34	0.31	QP
11	8.546	31.11	50.00	-18.89	30.21	0.60	0.30	Average
12	8.546	37.61	60.00	-22.39	36.71	0.60	0.30	QP

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

Modulation	VHT20	Test Freq. (MHz)	5785
Power Phase	Neutral	Test Configuration	2



	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1	0.174	36.08	54.77	-18.69	35.45	0.54	0.09	Average
2	0.174	43.30	64.77	-21.47	42.67	0.54	0.09	QP
3	0.318	27.11	49.75	-22.64	26.84	0.17	0.10	Average
4	0.318	40.07	59.75	-19.68	39.80	0.17	0.10	QP
5	0.499	26.78	46.01	-19.23	26.50	0.16	0.12	Average
6	0.499	38.94	56.01	-17.07	38.66	0.16	0.12	QP
7*	0.637	33.64	46.00	-12.36	33.30	0.20	0.14	Average
8	0.637	42.77	56.00	-13.23	42.43	0.20	0.14	QP
9	4.848	32.04	46.00	-13.96	31.03	0.70	0.31	Average
10	4.848	40.96	56.00	-15.04	39.95	0.70	0.31	QP
11	8.235	31.69	50.00	-18.31	30.82	0.57	0.30	Average
12	8.235	37.81	60.00	-22.19	36.94	0.57	0.30	QP

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

3.2 Emission Bandwidth

3.2.1 Limit of Emission bandwidth

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

3.2.2 Test Procedures

26dB Bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW, Detector = Peak.
3. Trace mode = max hold.
4. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

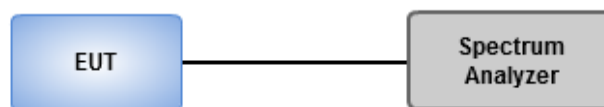
Occupied Bandwidth

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

6dB Bandwidth

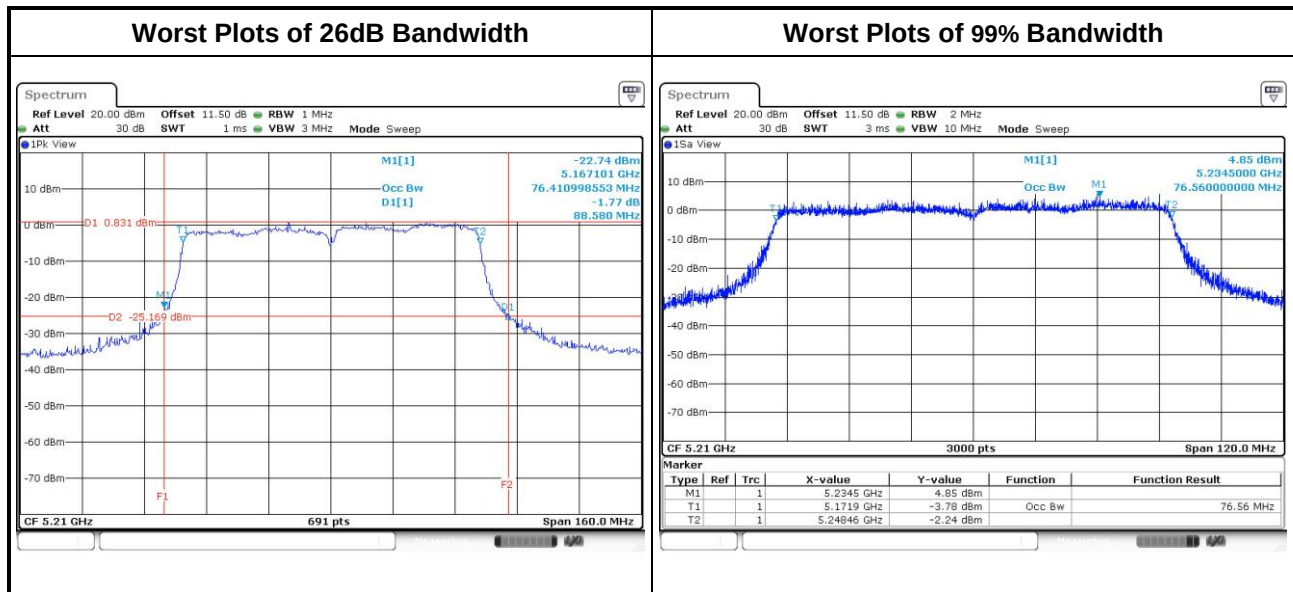
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak, Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB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

3.2.3 Test Setup



3.2.4 Test Result of Emission Bandwidth

For Frequency band 5150-5250 MHz										
Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	3	5180	22.49	22.67	22.38	---	16.74	16.73	16.70	---
11a	3	5200	23.25	23.07	22.32	---	16.79	16.72	16.71	---
11a	3	5240	23.13	22.14	22.84	---	16.77	16.72	16.70	---
VHT20	3	5180	23.13	23.07	23.36	---	17.91	17.93	17.85	---
VHT20	3	5200	23.54	23.83	24.29	---	17.87	17.91	17.84	---
VHT20	3	5240	23.83	23.77	23.54	---	17.94	17.80	17.83	---
VHT40	3	5190	46.26	47.77	46.96	---	36.78	36.66	36.78	---
VHT40	3	5230	46.96	46.49	46.26	---	36.98	36.90	36.92	---
VHT80	3	5210	88.58	88.35	86.96	---	76.56	76.40	76.56	---

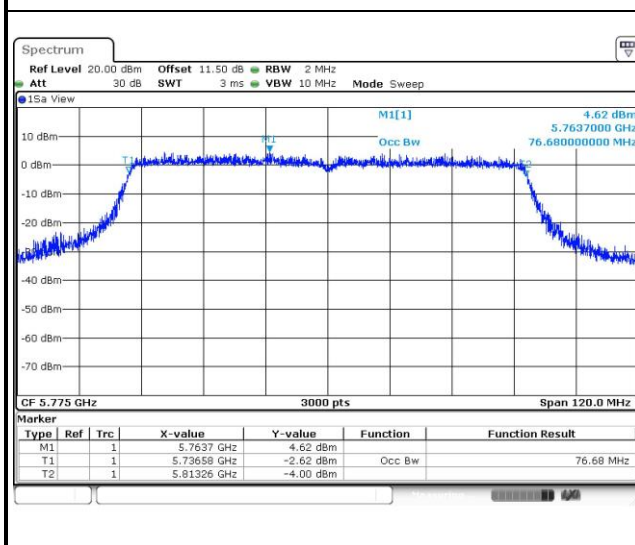


For Frequency band 5725-5850 MHz

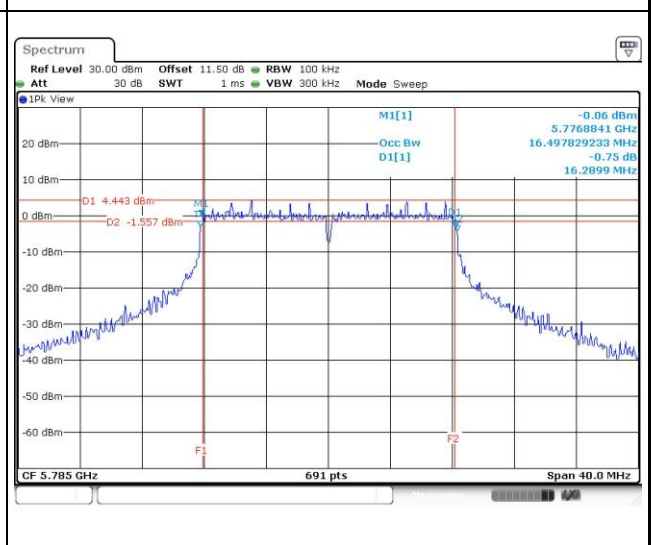
Emission Bandwidth

Mode	N _{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				6dB BW Limit (MHz)
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	3	5745	16.75	16.70	16.74	---	16.35	16.35	16.35	---	0.5
11a	3	5785	16.80	16.72	16.80	---	16.29	16.29	16.29	---	0.5
11a	3	5825	16.77	16.69	16.74	---	16.29	16.35	16.35	---	0.5
VHT20	3	5745	17.90	17.84	17.89	---	16.93	17.57	17.57	---	0.5
VHT20	3	5785	17.97	17.85	17.91	---	17.33	17.57	17.57	---	0.5
VHT20	3	5825	17.90	17.90	17.95	---	17.57	17.57	17.57	---	0.5
VHT40	3	5755	36.80	36.82	36.82	---	36.29	36.29	36.29	---	0.5
VHT40	3	5795	36.88	36.86	36.72	---	36.29	36.29	36.29	---	0.5
VHT80	3	5775	76.56	76.68	76.60	---	75.36	76.29	76.29	---	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

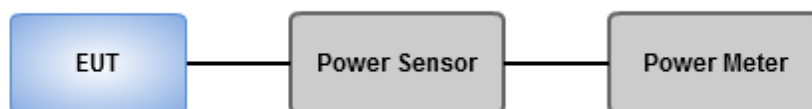
Frequency Band (MHz)	Limit
☐ 5250 ~ 5350	250mW or 11dBm+10 log B
☐ 5470 ~ 5725	250mW or 11dBm+10 log B
☒ 5725 ~ 5850	1 W

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	3	5180	7.62	7.55	8.84	---	19.125	12.82	30.00
11a	3	5200	8.65	8.17	9.83	---	23.506	13.71	30.00
11a	3	5240	8.52	8.34	8.72	---	21.383	13.30	30.00
HT20	3	5180	8.36	7.58	9.26	---	21.016	13.23	30.00
HT20	3	5200	8.95	7.99	9.62	---	23.310	13.68	30.00
HT20	3	5240	5.68	5.82	6.15	---	11.639	10.66	30.00
HT40	3	5190	8.52	7.39	9.28	---	21.067	13.24	30.00
HT40	3	5230	7.35	6.88	7.21	---	15.568	11.92	30.00
VHT20	3	5180	8.45	7.62	9.31	---	21.310	13.29	30.00
VHT20	3	5200	9.03	8.03	9.67	---	23.620	13.73	30.00
VHT20	3	5240	5.73	5.91	6.21	---	11.819	10.73	30.00
VHT40	3	5190	8.59	7.49	9.31	---	21.369	13.30	30.00
VHT40	3	5230	7.42	6.95	7.29	---	15.833	12.00	30.00
VHT80	3	5210	8.81	7.86	9.35	---	22.323	13.49	30.00

For Frequency band 5725-5850 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	3	5745	15.47	14.71	15.27	---	98.468	19.93	30.00
11a	3	5785	16.21	15.49	15.94	---	116.447	20.66	30.00
11a	3	5825	15.89	14.78	15.49	---	104.276	20.18	30.00
HT20	3	5745	15.51	14.78	15.26	---	99.198	19.97	30.00
HT20	3	5785	16.25	15.38	15.73	---	114.095	20.57	30.00
HT20	3	5825	15.73	14.72	15.45	---	102.135	20.09	30.00
HT40	3	5755	15.43	14.52	14.96	---	94.561	19.76	30.00
HT40	3	5795	15.18	15.03	15.00	---	96.426	19.84	30.00
VHT20	3	5745	15.56	14.81	15.32	---	100.285	20.01	30.00
VHT20	3	5785	16.36	15.44	15.85	---	116.705	20.67	30.00
VHT20	3	5825	15.87	14.81	15.53	---	104.633	20.20	30.00
VHT40	3	5755	13.65	13.95	13.23	---	69.043	18.39	30.00
VHT40	3	5795	15.28	15.14	15.01	---	98.083	19.92	30.00
VHT80	3	5775	9.95	9.57	9.72	---	28.318	14.52	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

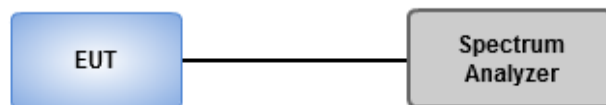
For 5150 ~ 5250 MHz

- ☒ Method SA-1 (for 11a/VHT20)
 1. Set RBW = 1 MHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
 2. Trace average 100 traces.
 3. Use the peak marker function to determine the maximum amplitude level.
- ☒ Method SA-2 Alternative (for VHT40/VHT80)
 1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
 2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
 3. Perform a single sweep.
 4. Use the peak marker function to determine the maximum amplitude level.
 5. Add $10 \log(1/x)$, where x is the duty cycle.

For 5725 ~ 5850 MHz

- ☒ Method SA-1 (for 11a/VHT20)
 1. Set RBW = 500 kHz, VBW = 2 MHz, Sweep time = auto, Detector = RMS.
 2. Trace average 100 traces.
 3. Use the peak marker function to determine the maximum amplitude level.
- ☒ Method SA-2 Alternative (for VHT40/VHT80)
 1. Set RBW = 500 kHz, VBW = 2 MHz, Detector = RMS.
 2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
 3. Perform a single sweep.
 4. Use the peak marker function to determine the maximum amplitude level.
 5. Add $10 \log(1/x)$, where x is the duty cycle.

3.4.3 Test Setup

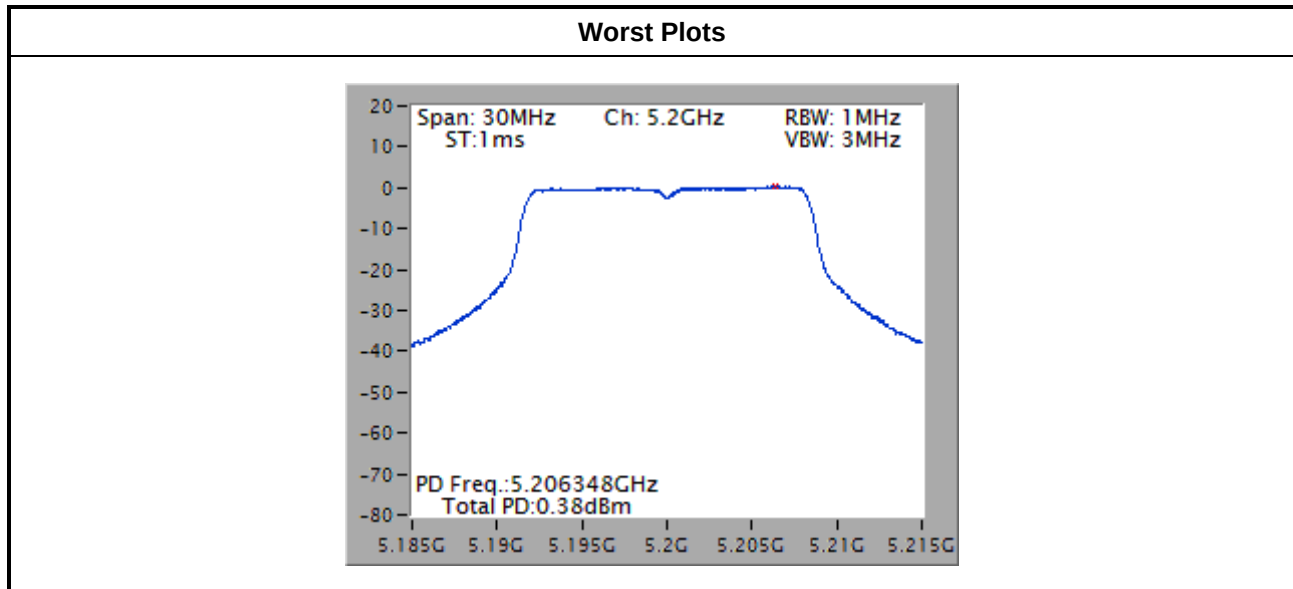


3.4.4 Test Result of Peak Power Spectral Density

For Frequency band 5150-5250 MHz						
Condition			Peak Power Spectral Density (dBm/MHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/MHz)	Duty Factor (dB)	PPSD with D.F (dBm/MHz)	PPSD Limit (dBm/MHz)
11a	3	5180	-0.14	0.00	-0.14	13.45
11a	3	5200	0.38	0.00	0.38	13.45
11a	3	5240	0.02	0.00	0.02	13.45
VHT20	3	5180	-0.09	0.00	-0.09	13.45
VHT20	3	5200	0.04	0.00	0.04	13.45
VHT20	3	5240	-2.68	0.00	-2.68	13.45
VHT40	3	5190	-3.72	0.25	-3.47	13.45
VHT40	3	5230	-5.02	0.25	-4.77	13.45
VHT80	3	5210	-6.55	0.52	-6.03	13.45

Note:

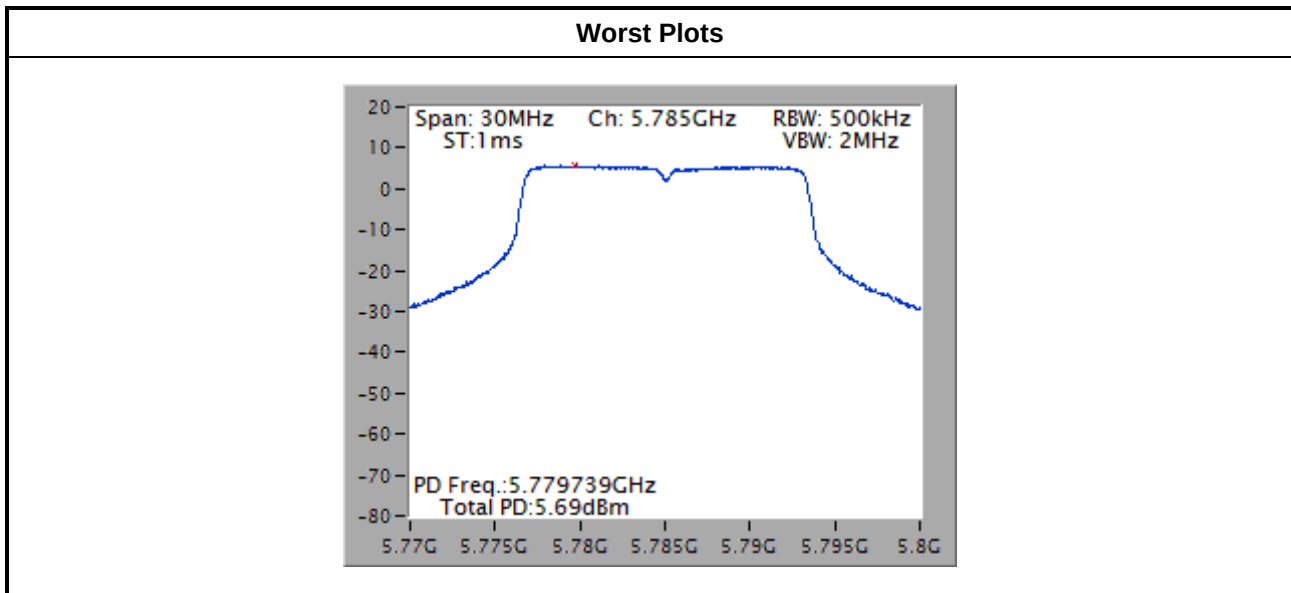
1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.
3. Directional gain = $4.78 + 10 \cdot \log(3/1) = 9.55 \text{ dBi} > 6 \text{ dBi}$.
Limit shall be reduced to $17 \text{ dBm} - (9.55 \text{ dBi} - 6 \text{ dBi}) = 13.45 \text{ dBm}$.



For Frequency band 5725-5850 MHz						
Condition			Peak Power Spectral Density (dBm/500kHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
11a	3	5745	5.06	0.00	5.06	25.56
11a	3	5785	5.69	0.00	5.69	25.56
11a	3	5825	5.25	0.00	5.25	25.56
VHT20	3	5745	5.00	0.00	5.00	25.56
VHT20	3	5785	5.28	0.00	5.28	25.56
VHT20	3	5825	4.90	0.00	4.90	25.56
VHT40	3	5755	0.10	0.25	0.35	25.56
VHT40	3	5795	1.25	0.25	1.50	25.56
VHT80	3	5775	-7.27	0.52	-6.75	25.56

Note:

1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.
3. Directional gain = $5.67 + 10 \cdot \log(3/1) = 10.44 \text{ dBi} > 6 \text{ dBi}$.
Limit shall be reduced to $30 \text{ dBm} - (10.44 \text{ dBi} - 6 \text{ dBi}) = 25.56 \text{ dBm}$.



3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

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

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

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 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 - 5.850 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

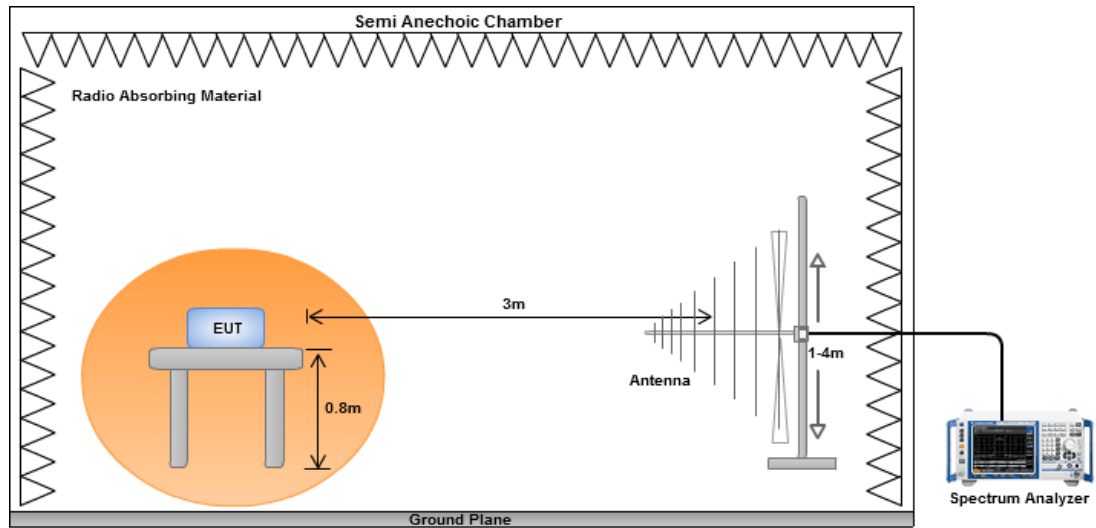
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

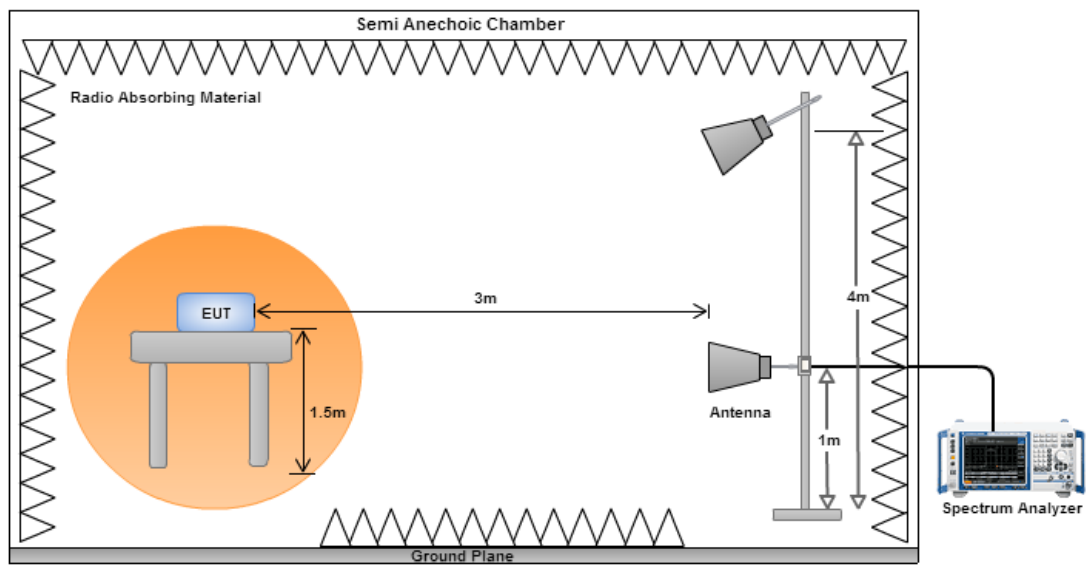
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz



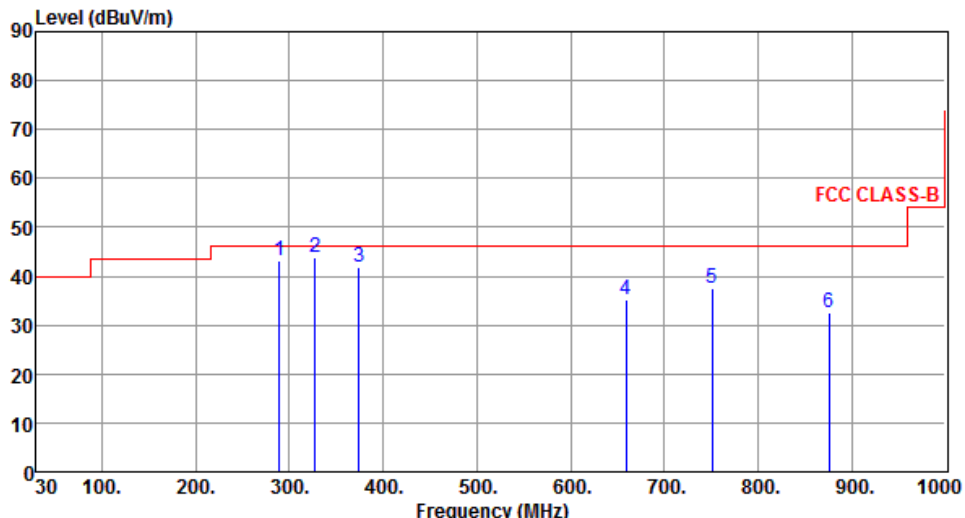
Radiated Emissions above 1 GHz



Dipole antenna

3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)_antenna cable 100mm

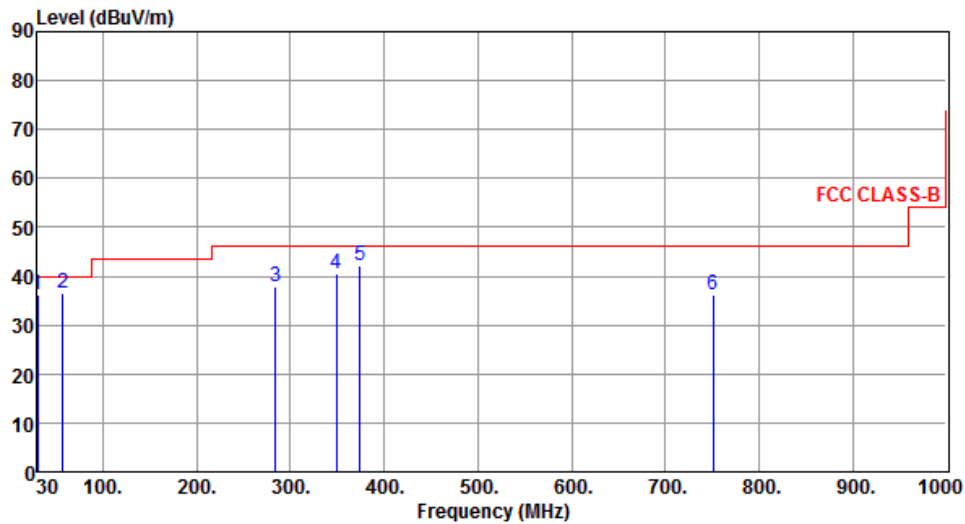
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	288.99	43.29	46.00	-2.71	59.55	-16.26	QP	---	---
2	327.79	43.87	46.00	-2.13	59.24	-15.37	QP	---	---
3	374.35	41.96	46.00	-4.04	56.18	-14.22	Peak	---	---
4	659.53	35.33	46.00	-10.67	44.02	-8.69	Peak	---	---
5	750.71	37.52	46.00	-8.48	44.62	-7.10	Peak	---	---
6	875.84	32.69	46.00	-13.31	38.44	-5.75	Peak	---	---

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

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.00	36.29	40.00	-3.71	53.72	-17.43	QP	---	---
2	57.16	36.37	40.00	-3.63	53.18	-16.81	Peak	---	---
3	284.14	37.73	46.00	-8.27	54.05	-16.32	Peak	---	---
4	349.13	40.42	46.00	-5.58	55.28	-14.86	Peak	---	---
5	374.35	42.19	46.00	-3.81	56.41	-14.22	Peak	---	---
6	750.71	36.24	46.00	-9.76	43.34	-7.10	Peak	---	---

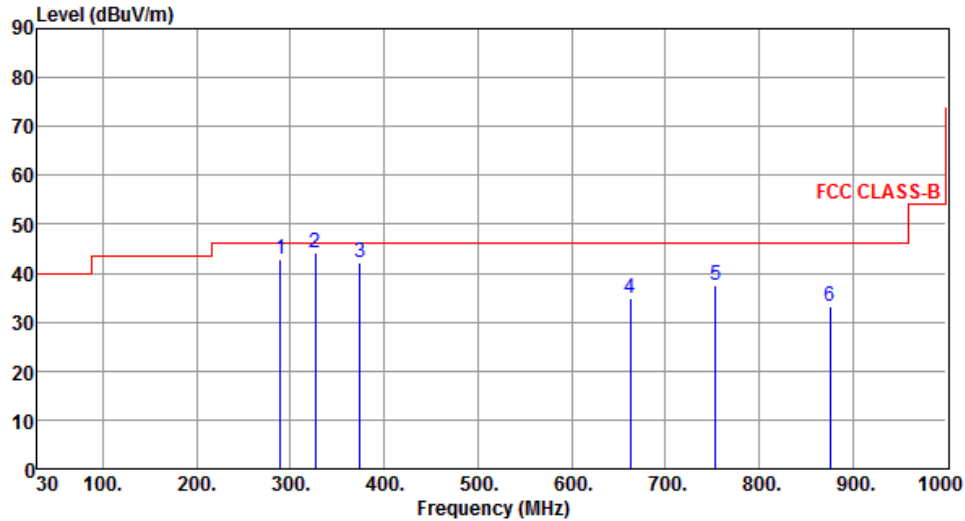
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	288.99	42.76	46.00	-3.24	59.02	-16.26	QP	---	---
2	326.82	44.28	46.00	-1.72	59.67	-15.39	QP	---	---
3	374.35	42.14	46.00	-3.86	56.36	-14.22	Peak	---	---
4	662.44	34.94	46.00	-11.06	43.59	-8.65	Peak	---	---
5	753.62	37.53	46.00	-8.47	44.60	-7.07	Peak	---	---
6	875.84	33.06	46.00	-12.94	38.81	-5.75	Peak	---	---

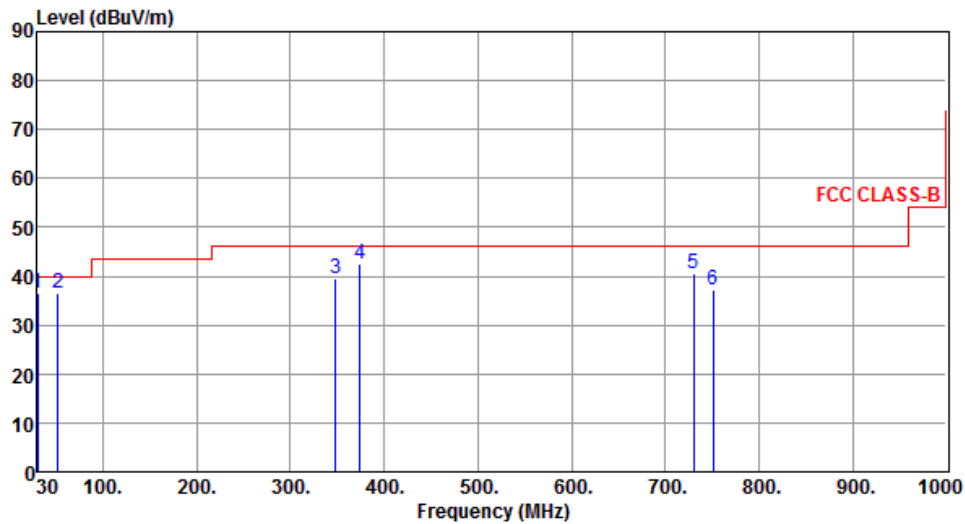
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.00	36.52	40.00	-3.48	53.95	-17.43	QP	---	---
2	52.31	36.64	40.00	-3.36	53.04	-16.40	Peak	---	---
3	348.16	39.49	46.00	-6.51	54.37	-14.88	Peak	---	---
4	374.35	42.40	46.00	-3.60	56.62	-14.22	Peak	---	---
5	730.34	40.39	46.00	-5.61	47.85	-7.46	Peak	---	---
6	750.71	37.05	46.00	-8.95	44.15	-7.10	Peak	---	---

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

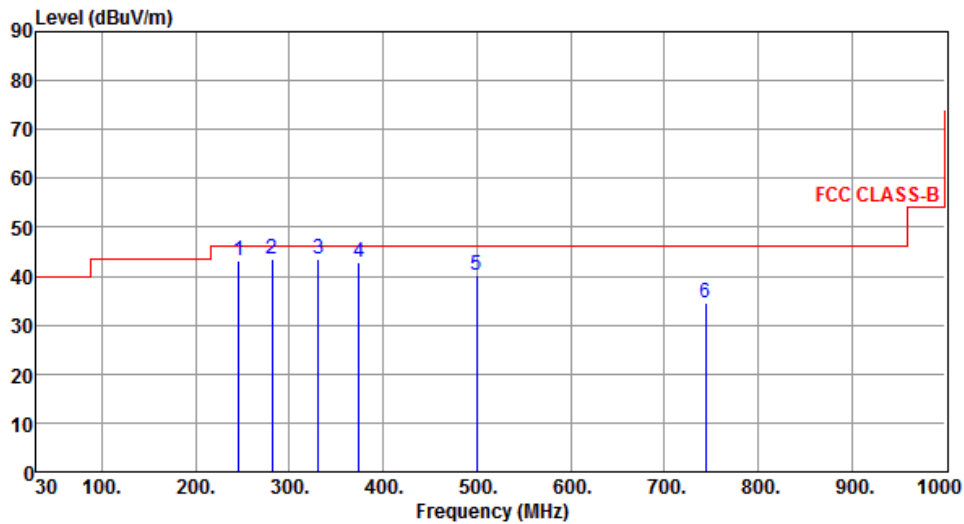
*Factor includes antenna factor , cable loss and amplifier gain

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

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

3.5.5 Transmitter Radiated Unwanted Emissions (Below 1GHz)_antenna cable 265mm

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal	Test Configuration	1

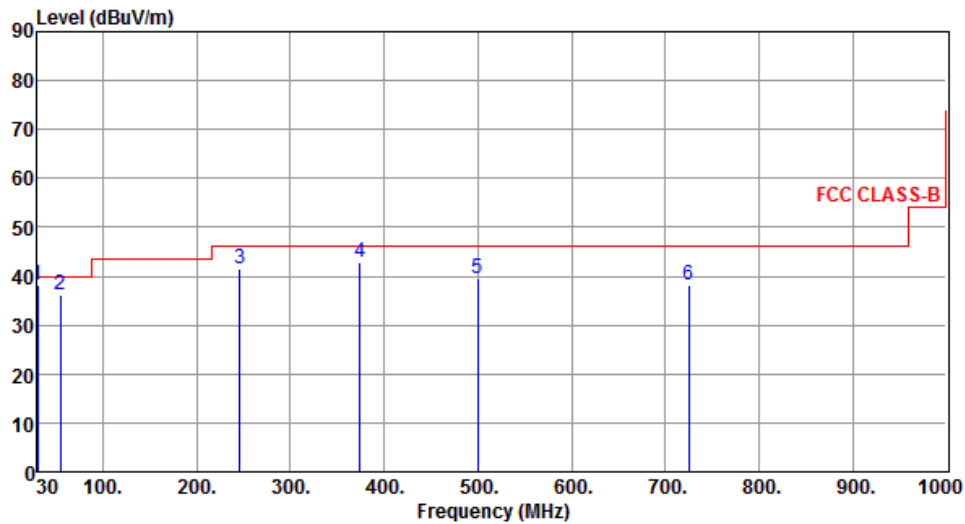


The graph displays the radiated unwanted emissions for FCC CLASS-B. The y-axis represents the Level in dBUV/m, ranging from 0 to 90. The x-axis represents the Frequency in MHz, ranging from 30 to 1000. A red line indicates the FCC CLASS-B limit, which is 40 dBUV/m from 30 MHz to 100 MHz, then rises to 45 dBUV/m from 100 MHz to 1000 MHz. Six measured emission peaks are labeled with blue numbers 1 through 6. The data for these peaks is provided 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	246.31	43.06	46.00	-2.94	60.77	-17.71	QP	---	---
2	281.23	43.43	46.00	-2.57	59.79	-16.36	QP	---	---
3	330.70	43.56	46.00	-2.44	58.85	-15.29	QP	---	---
4	374.35	42.79	46.00	-3.21	57.01	-14.22	Peak	---	---
5	499.48	40.30	46.00	-5.70	51.72	-11.42	Peak	---	---
6	743.92	34.62	46.00	-11.38	41.83	-7.21	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).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.10	38.28	40.00	-1.72	55.71	-17.43	QP	---	---
2	54.25	36.34	40.00	-3.66	52.90	-16.56	QP	---	---
3	246.31	41.58	46.00	-4.42	59.29	-17.71	Peak	---	---
4	374.35	42.92	46.00	-3.08	57.14	-14.22	QP	---	---
5	499.48	39.45	46.00	-6.55	50.87	-11.42	Peak	---	---
6	725.49	38.17	46.00	-7.83	45.72	-7.55	Peak	---	---

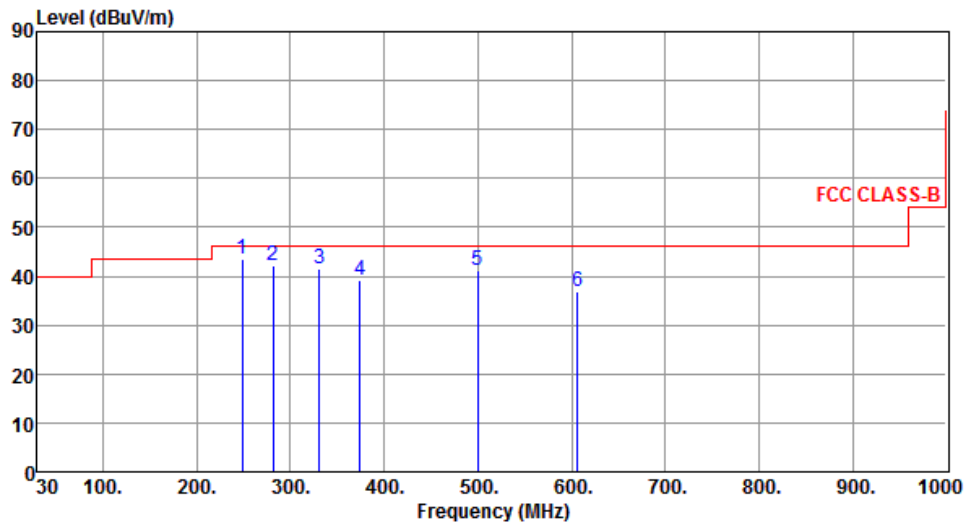
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	248.25	43.58	46.00	-2.42	61.26	-17.68	QP	---	---
2	281.23	42.19	46.00	-3.81	58.55	-16.36	Peak	---	---
3	330.70	41.47	46.00	-4.53	56.76	-15.29	Peak	---	---
4	374.35	39.24	46.00	-6.76	53.46	-14.22	Peak	---	---
5	499.48	41.27	46.00	-4.73	52.69	-11.42	Peak	---	---
6	606.18	36.70	46.00	-9.30	46.18	-9.48	Peak	---	---

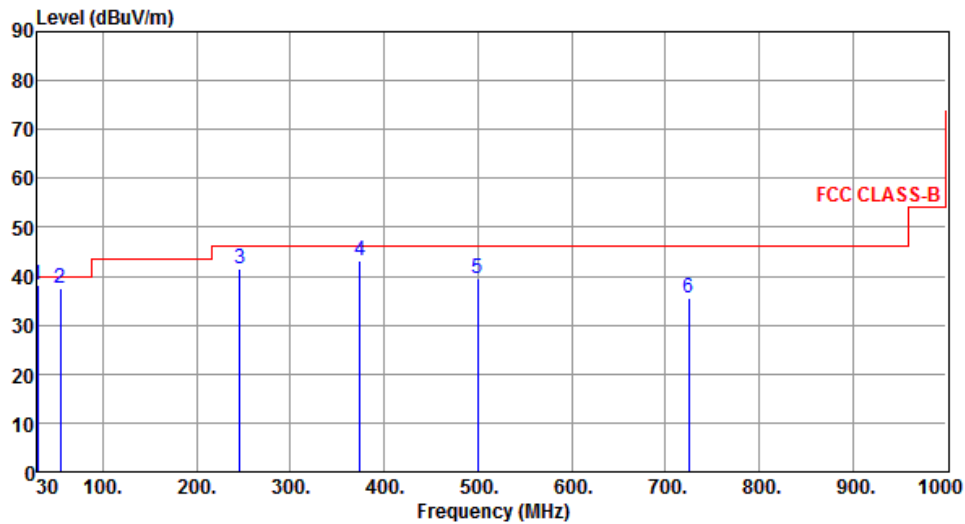
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.24	38.16	40.00	-1.84	55.58	-17.42	QP	---	---
2	54.25	37.65	40.00	-2.35	54.21	-16.56	QP	---	---
3	246.31	41.44	46.00	-4.56	59.15	-17.71	Peak	---	---
4	374.35	43.09	46.00	-2.91	57.31	-14.22	QP	---	---
5	499.48	39.68	46.00	-6.32	51.10	-11.42	Peak	---	---
6	725.49	35.53	46.00	-10.47	43.08	-7.55	Peak	---	---

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

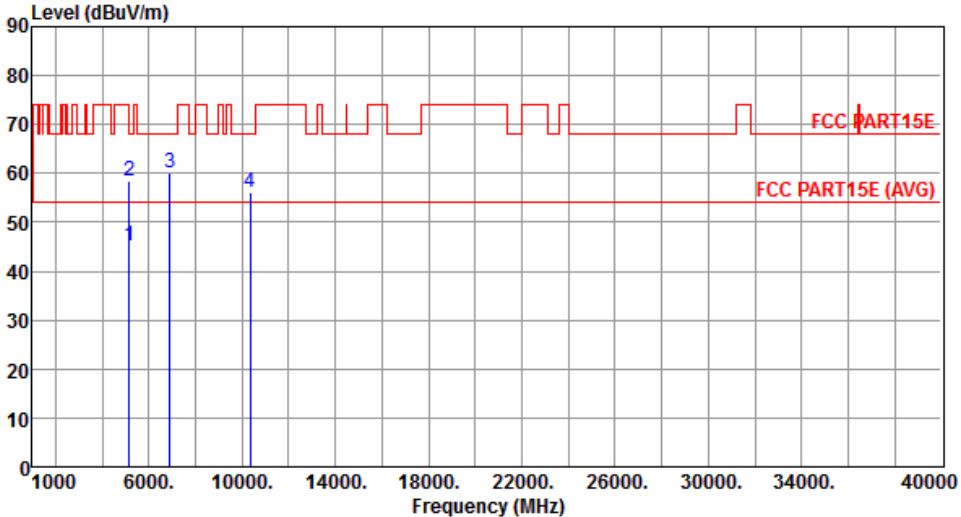
*Factor includes antenna factor , cable loss and amplifier gain

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

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

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

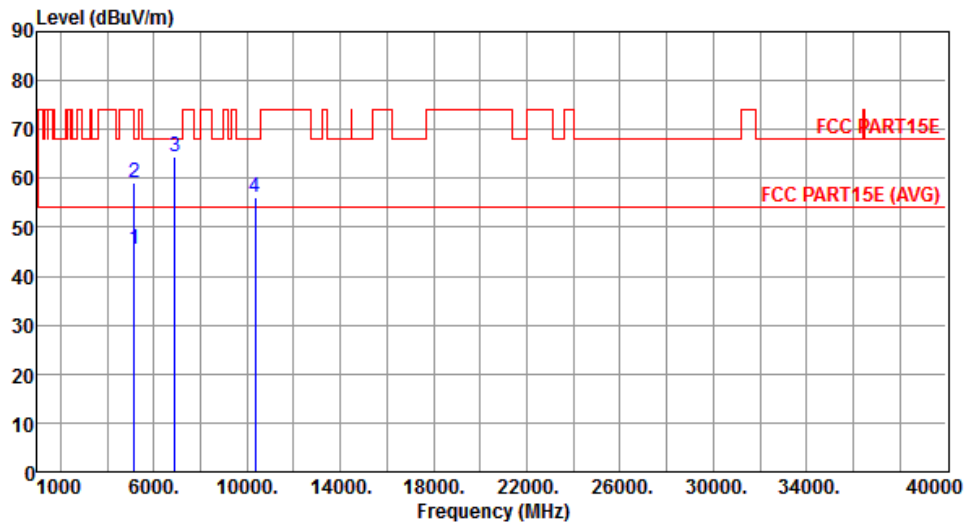
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.02	54.00	-8.98	39.56	5.46	Average	---	---
2	5150.00	58.39	74.00	-15.61	52.93	5.46	Peak	---	---
3	6906.66	60.06	68.20	-8.14	51.65	8.41	Peak	---	---
4	10360.00	55.96	68.20	-12.24	40.55	15.41	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	Test Configuration	1



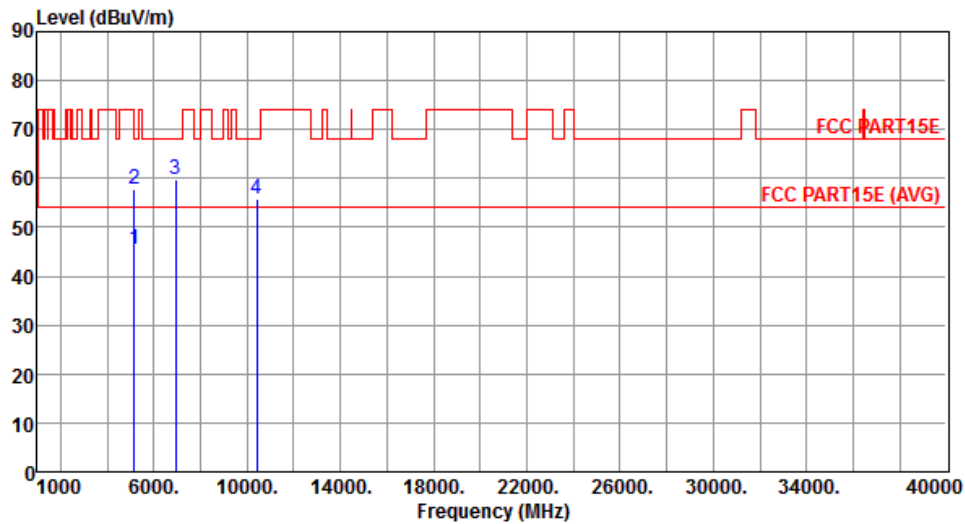
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.57	54.00	-8.43	40.11	5.46	Average	---	---
2	5150.00	59.14	74.00	-14.86	53.68	5.46	Peak	---	---
3	6906.66	64.56	68.20	-3.64	56.15	8.41	Peak	---	---
4	10360.00	56.08	68.20	-12.12	40.67	15.41	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	Test Configuration	1



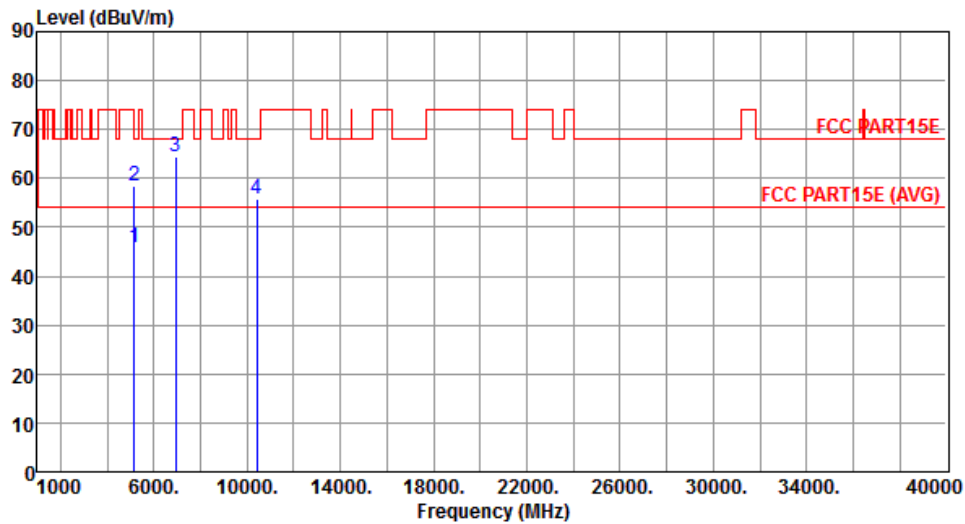
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.42	54.00	-8.58	39.96	5.46	Average	---	---
2	5150.00	57.94	74.00	-16.06	52.48	5.46	Peak	---	---
3	6933.33	59.87	68.20	-8.33	51.42	8.45	Peak	---	---
4	10400.00	55.93	68.20	-12.27	40.38	15.55	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	Test Configuration	1



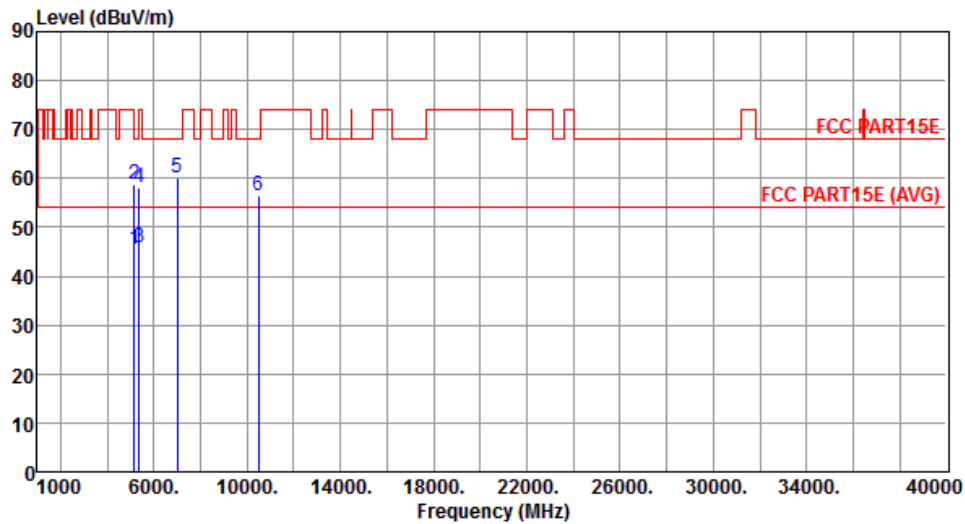
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.81	54.00	-8.19	40.35	5.46	Average	---	---
2	5150.00	58.41	74.00	-15.59	52.95	5.46	Peak	---	---
3	6933.33	64.31	68.20	-3.89	55.86	8.45	Peak	---	---
4	10400.00	55.92	68.20	-12.28	40.37	15.55	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	Test Configuration	1



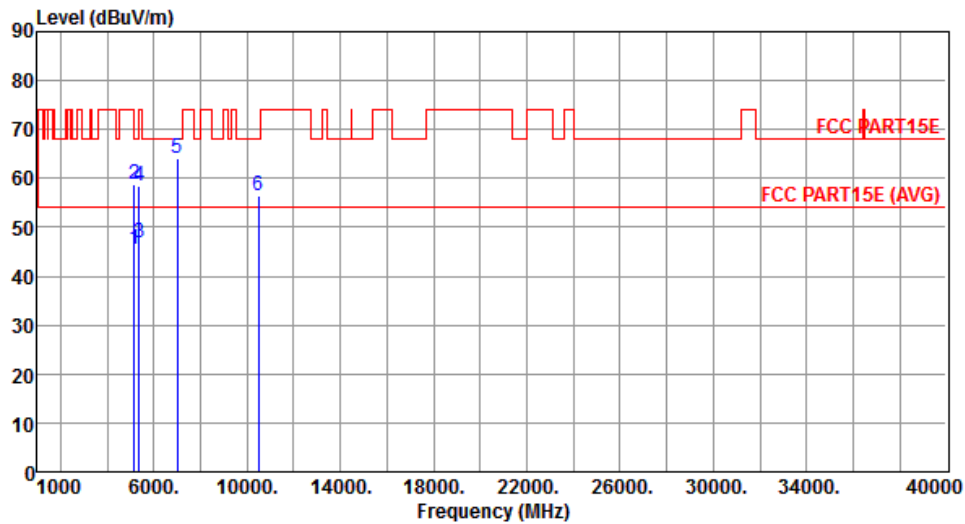
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.57	54.00	-8.43	40.11	5.46	Average	---	---
2	5150.00	58.64	74.00	-15.36	53.18	5.46	Peak	---	---
3	5350.00	45.99	54.00	-8.01	40.43	5.56	Average	---	---
4	5350.00	58.07	74.00	-15.93	52.51	5.56	Peak	---	---
5	6986.66	59.99	68.20	-8.21	51.48	8.51	Peak	---	---
6	10480.00	56.38	68.20	-11.82	40.52	15.86	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	Test Configuration	1



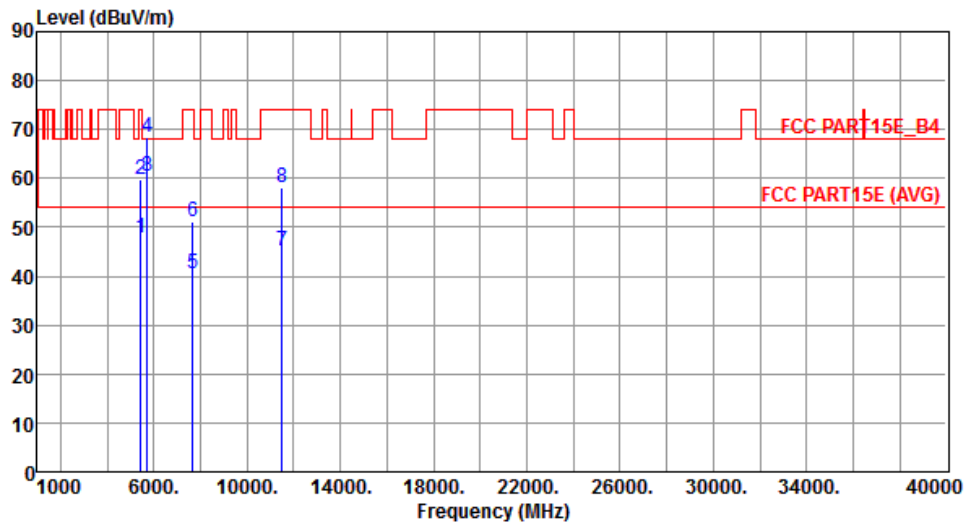
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.52	54.00	-8.48	40.06	5.46	Average	---	---
2	5150.00	58.74	74.00	-15.26	53.28	5.46	Peak	---	---
3	5350.00	46.77	54.00	-7.23	41.21	5.56	Average	---	---
4	5350.00	58.55	74.00	-15.45	52.99	5.56	Peak	---	---
5	6986.66	64.15	68.20	-4.05	55.64	8.51	Peak	---	---
6	10480.00	56.38	68.20	-11.82	40.52	15.86	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)	5745
Polarization	Horizontal	Test Configuration	1



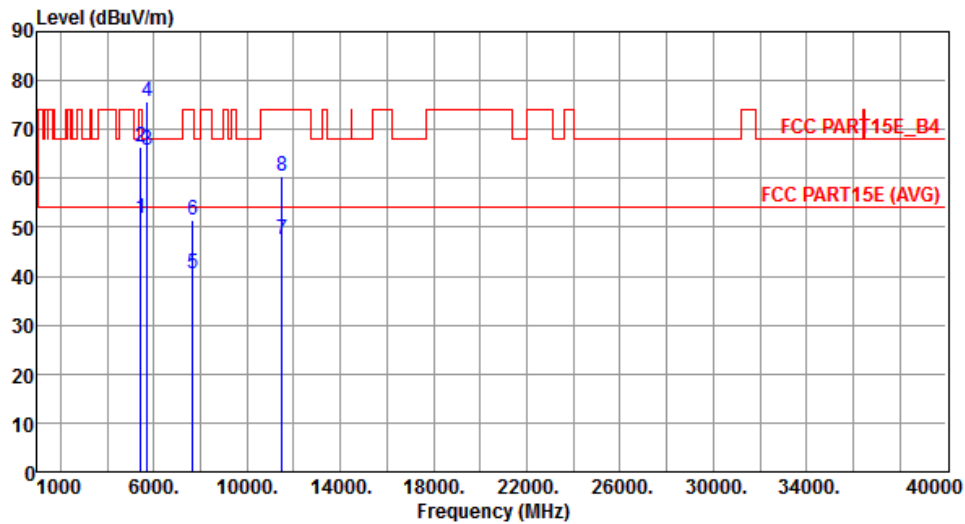
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	47.75	54.00	-6.25	42.16	5.59	Average	---	---
2	5440.00	59.94	74.00	-14.06	54.35	5.59	Peak	---	---
3	5715.00	60.56	68.20	-7.64	54.91	5.65	Peak	---	---
4	5725.00	68.55	78.20	-9.65	62.91	5.64	Peak	---	---
5	7660.00	40.55	54.00	-13.45	30.42	10.13	Average	---	---
6	7660.00	50.99	74.00	-23.01	40.86	10.13	Peak	---	---
7	11490.00	45.04	54.00	-8.96	29.11	15.93	Average	---	---
8	11490.00	58.08	74.00	-15.92	42.15	15.93	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)	5745
Polarization	Vertical	Test Configuration	1



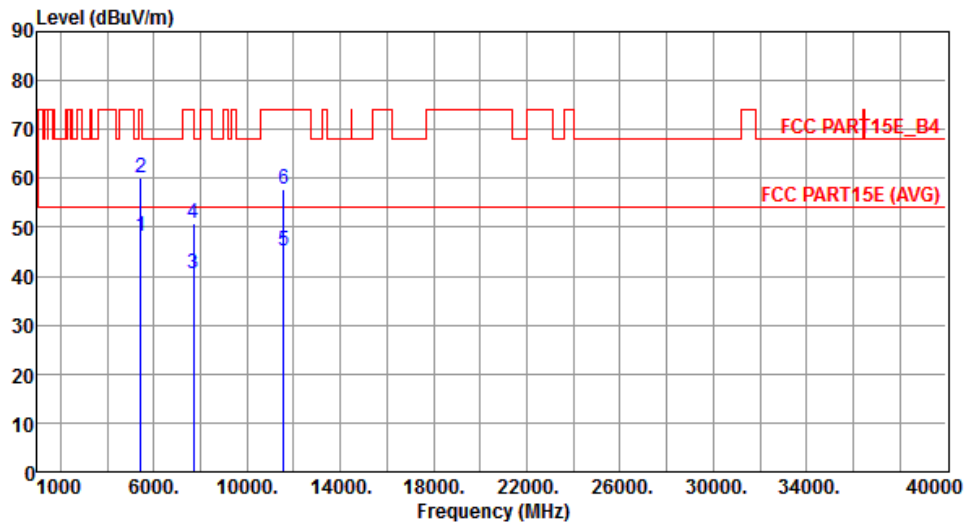
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	51.90	54.00	-2.10	46.31	5.59	Average	---	---
2	5440.00	66.34	74.00	-7.66	60.75	5.59	Peak	---	---
3	5715.00	65.70	68.20	-2.50	60.05	5.65	Peak	---	---
4	5725.00	75.76	78.20	-2.44	70.12	5.64	Peak	---	---
5	7660.00	40.46	54.00	-13.54	30.33	10.13	Average	---	---
6	7660.00	51.38	74.00	-22.62	41.25	10.13	Peak	---	---
7	11490.00	47.55	54.00	-6.45	31.62	15.93	Average	---	---
8	11490.00	60.36	74.00	-13.64	44.43	15.93	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)	5785
Polarization	Horizontal	Test Configuration	1



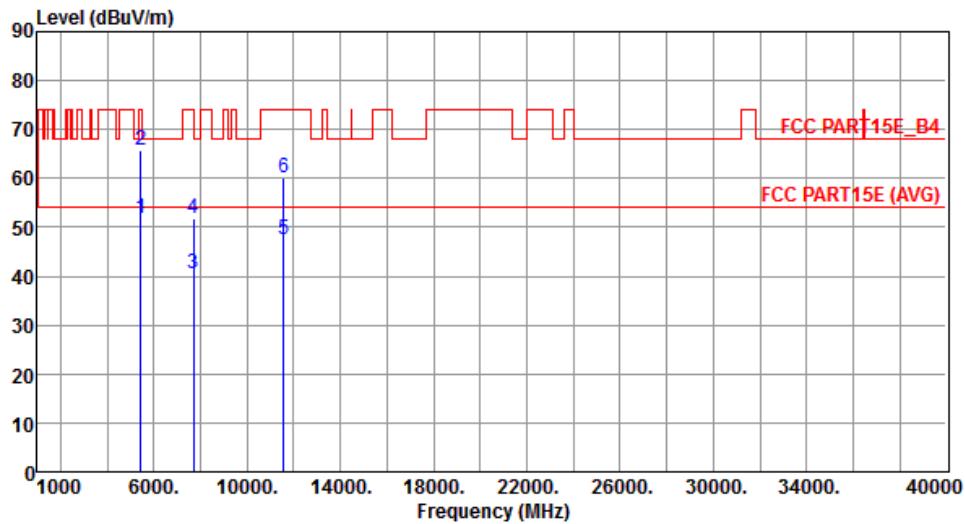
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.25	54.00	-5.75	42.66	5.59	Average	---	---
2	5440.00	60.18	74.00	-13.82	54.59	5.59	Peak	---	---
3	7713.00	40.55	54.00	-13.45	30.46	10.09	Average	---	---
4	7713.00	50.85	74.00	-23.15	40.76	10.09	Peak	---	---
5	11570.00	45.10	54.00	-8.90	29.33	15.77	Average	---	---
6	11570.00	57.92	74.00	-16.08	42.15	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical	Test Configuration	1



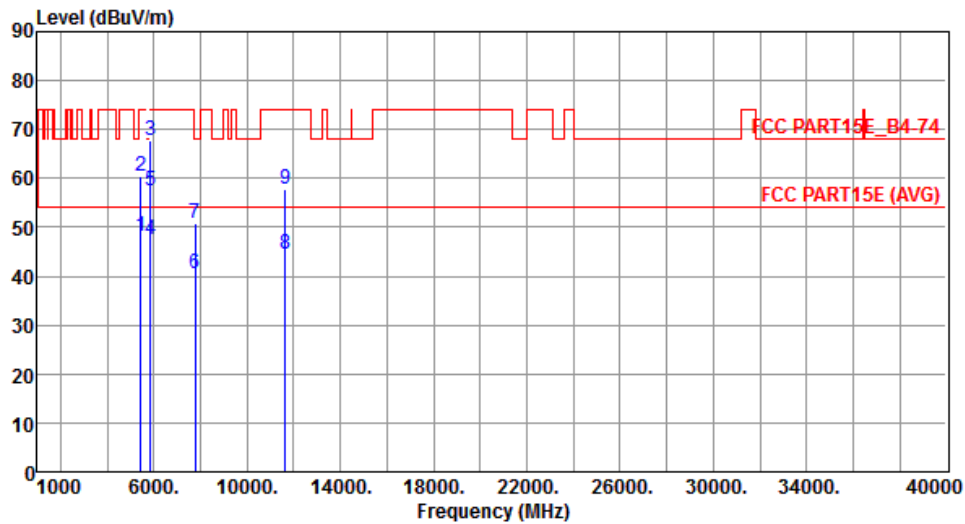
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	51.73	54.00	-2.27	46.14	5.59	Average	---	---
2	5440.00	65.69	74.00	-8.31	60.10	5.59	Peak	---	---
3	7713.00	40.42	54.00	-13.58	30.33	10.09	Average	---	---
4	7713.00	51.65	74.00	-22.35	41.56	10.09	Peak	---	---
5	11570.00	47.33	54.00	-6.67	31.56	15.77	Average	---	---
6	11570.00	60.10	74.00	-13.90	44.33	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal	Test Configuration	1



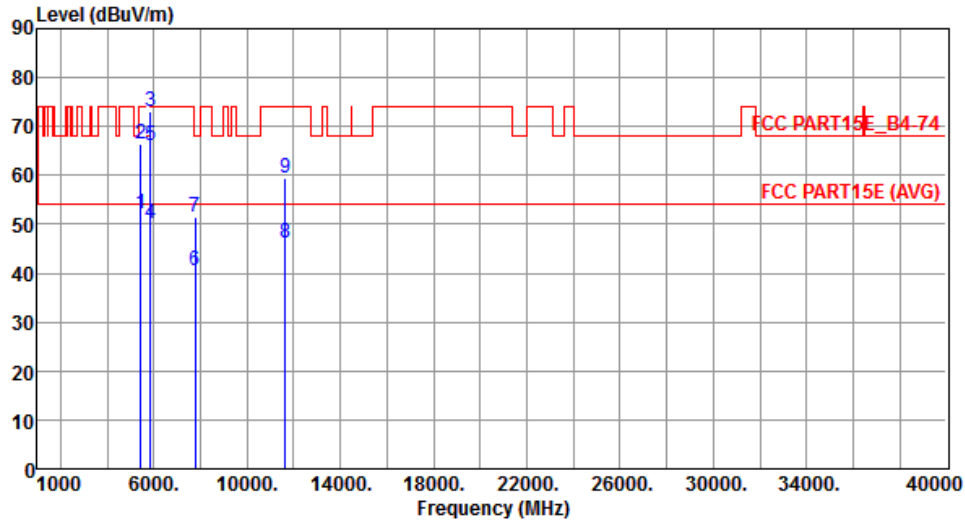
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.10	54.00	-5.90	42.51	5.59	Average	---	---
2	5440.00	60.32	74.00	-13.68	54.73	5.59	Peak	---	---
3	5850.00	67.85	78.20	-10.35	62.10	5.75	Peak	---	---
4	5860.00	47.54	54.00	-6.46	41.78	5.76	Average	---	---
5	5860.00	57.55	74.00	-16.45	51.79	5.76	Peak	---	---
6	7766.00	40.39	54.00	-13.61	30.36	10.03	Average	---	---
7	7766.00	50.69	68.20	-17.51	40.66	10.03	Peak	---	---
8	11650.00	44.52	54.00	-9.48	28.96	15.56	Average	---	---
9	11650.00	57.87	74.00	-16.13	42.31	15.56	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)	5825
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.12	54.00	-1.88	46.53	5.59	Average	---	---
2	5440.00	66.31	74.00	-7.69	60.72	5.59	Peak	---	---
3	5850.00	73.18	78.20	-5.02	67.43	5.75	Peak	---	---
4	5860.00	50.08	54.00	-3.92	44.32	5.76	Average	---	---
5	5860.00	66.10	74.00	-7.90	60.34	5.76	Peak	---	---
6	7766.00	40.49	54.00	-13.51	30.46	10.03	Average	---	---
7	7766.00	51.58	68.20	-16.62	41.55	10.03	Peak	---	---
8	11650.00	46.26	54.00	-7.74	30.70	15.56	Average	---	---
9	11650.00	59.32	74.00	-14.68	43.76	15.56	Peak	---	---

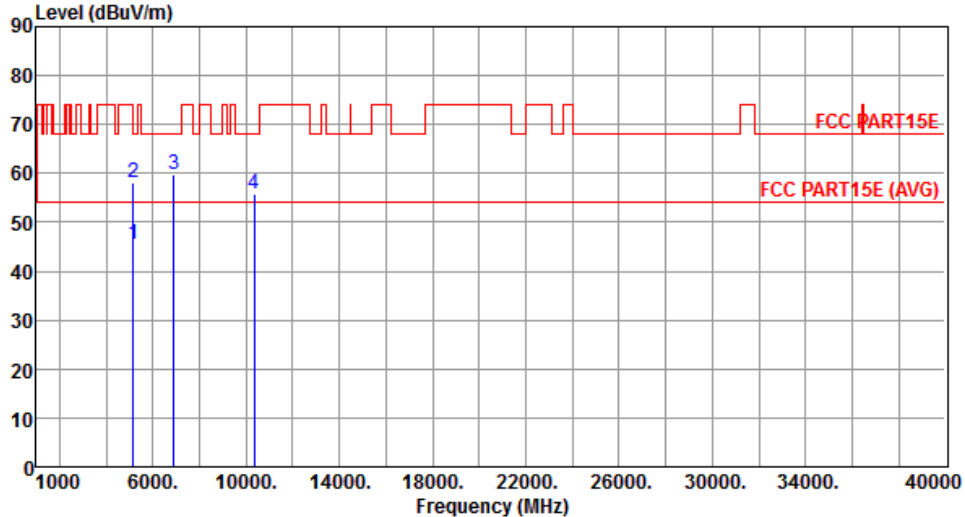
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

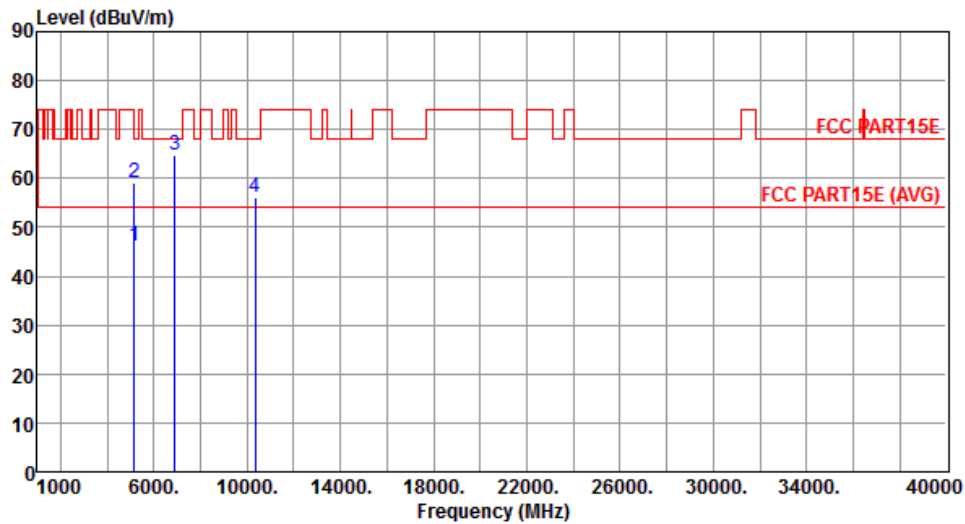
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.59	54.00	-8.41	40.13	5.46	Average	---	---
2	5150.00	58.11	74.00	-15.89	52.65	5.46	Peak	---	---
3	6906.66	59.85	68.20	-8.35	51.44	8.41	Peak	---	---
4	10360.00	55.77	68.20	-12.43	40.36	15.41	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	Test Configuration	1



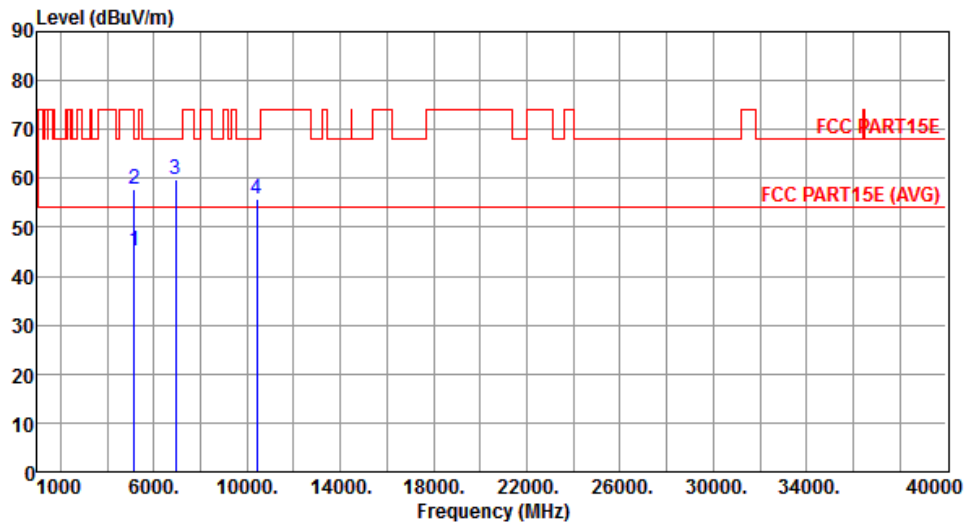
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.02	54.00	-7.98	40.56	5.46	Average	---	---
2	5150.00	59.17	74.00	-14.83	53.71	5.46	Peak	---	---
3	6906.66	64.62	68.20	-3.58	56.21	8.41	Peak	---	---
4	10360.00	56.22	68.20	-11.98	40.81	15.41	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	Test Configuration	1



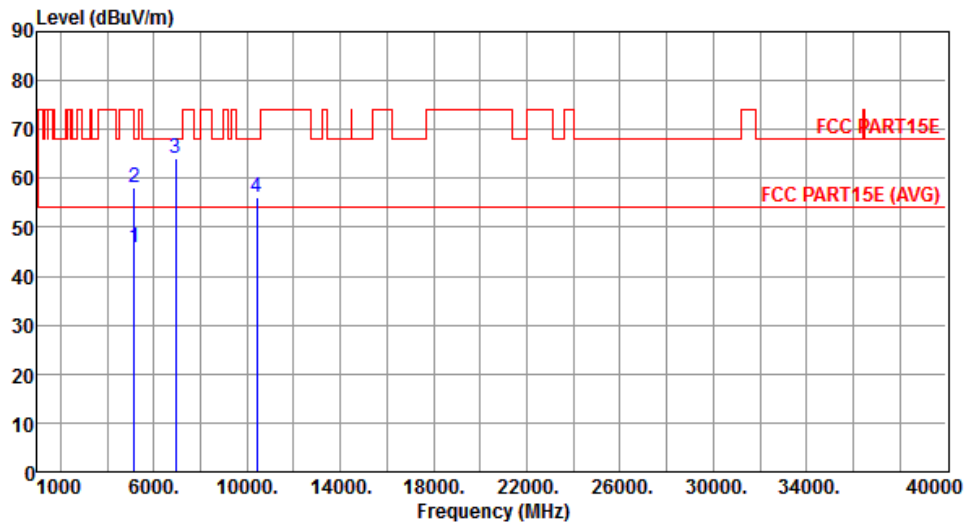
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.00	54.00	-9.00	39.54	5.46	Average	---	---
2	5150.00	57.77	74.00	-16.23	52.31	5.46	Peak	---	---
3	6933.33	59.78	68.20	-8.42	51.33	8.45	Peak	---	---
4	10400.00	55.83	68.20	-12.37	40.28	15.55	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	Test Configuration	1



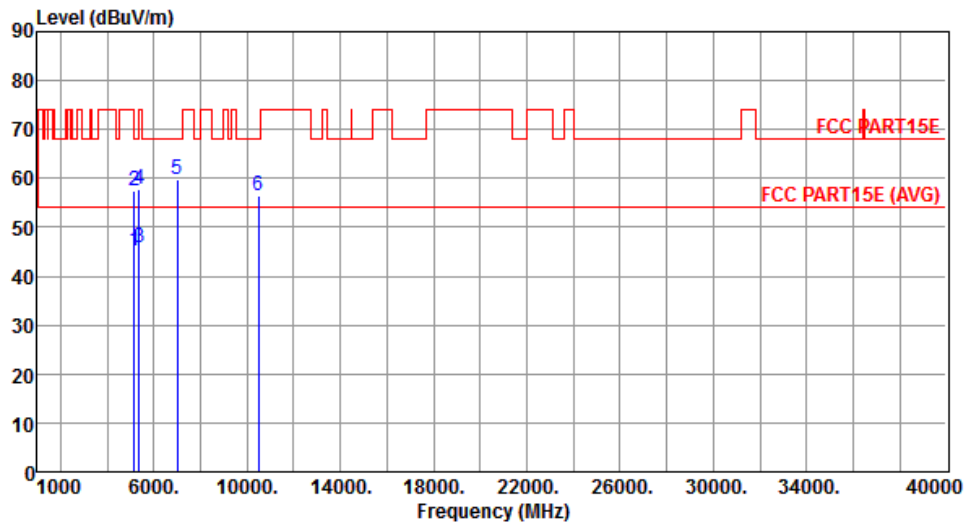
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.67	54.00	-8.33	40.21	5.46	Average	---	---
2	5150.00	58.26	74.00	-15.74	52.80	5.46	Peak	---	---
3	6933.33	64.10	68.20	-4.10	55.65	8.45	Peak	---	---
4	10400.00	56.03	68.20	-12.17	40.48	15.55	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	Test Configuration	1



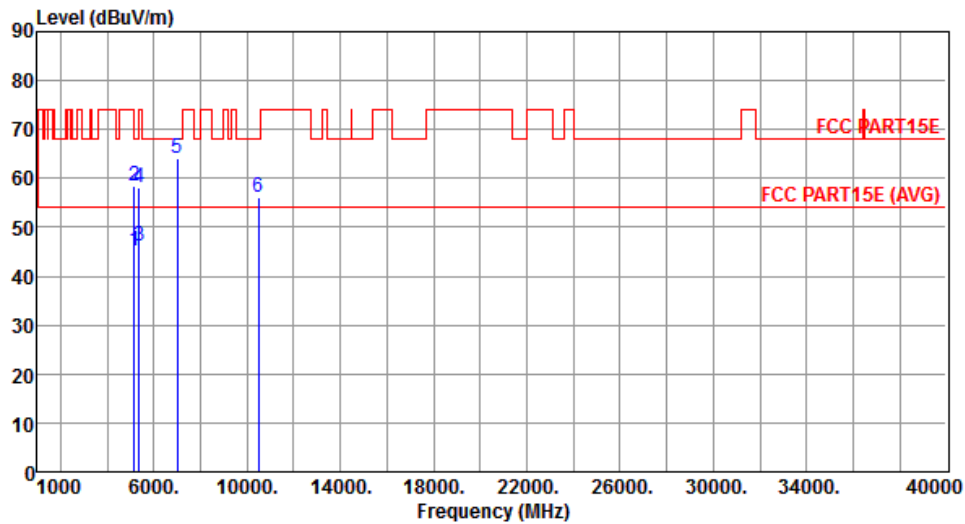
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.14	54.00	-8.86	39.68	5.46	Average	---	---
2	5150.00	57.61	74.00	-16.39	52.15	5.46	Peak	---	---
3	5350.00	45.73	54.00	-8.27	40.17	5.56	Average	---	---
4	5350.00	57.95	74.00	-16.05	52.39	5.56	Peak	---	---
5	6986.66	59.84	68.20	-8.36	51.33	8.51	Peak	---	---
6	10480.00	56.46	68.20	-11.74	40.60	15.86	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	Vertical	Test Configuration	1



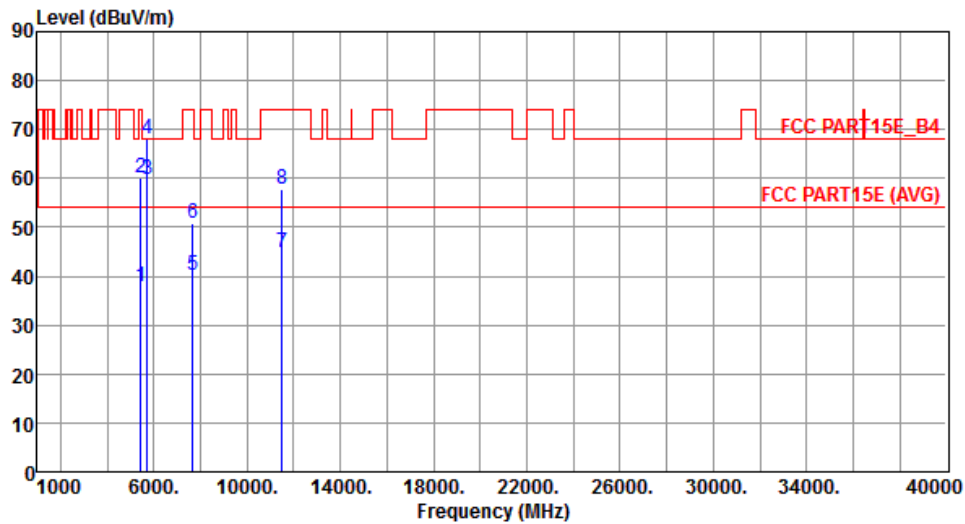
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.09	54.00	-8.91	39.63	5.46	Average	---	---
2	5150.00	58.29	74.00	-15.71	52.83	5.46	Peak	---	---
3	5350.00	46.21	54.00	-7.79	40.65	5.56	Average	---	---
4	5350.00	58.27	74.00	-15.73	52.71	5.56	Peak	---	---
5	6986.66	63.99	68.20	-4.21	55.48	8.51	Peak	---	---
6	10480.00	56.16	68.20	-12.04	40.30	15.86	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)	5745
Polarization	Horizontal	Test Configuration	1



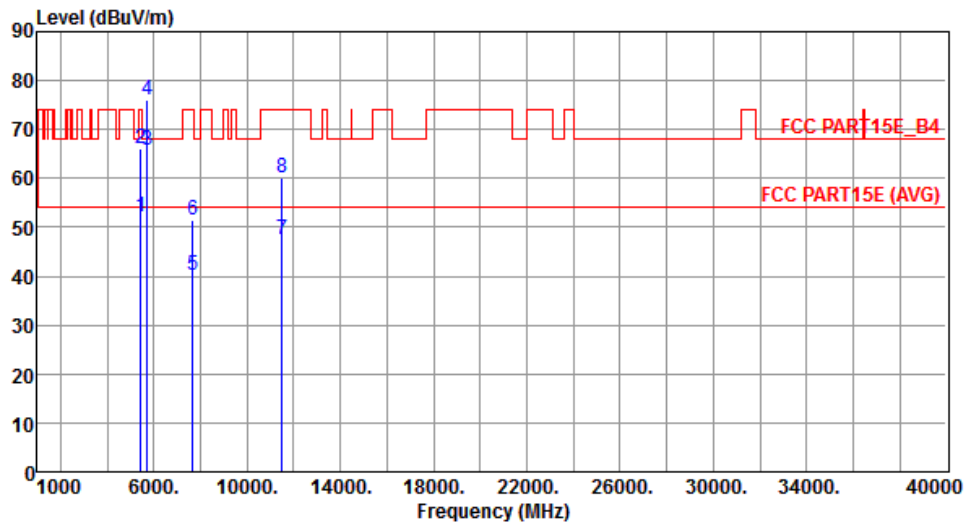
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	37.92	54.00	-16.08	32.33	5.59	Average	---	---
2	5440.00	60.11	74.00	-13.89	54.52	5.59	Peak	---	---
3	5715.00	59.76	68.20	-8.44	54.11	5.65	Peak	---	---
4	5725.00	68.11	78.20	-10.09	62.47	5.64	Peak	---	---
5	7660.00	40.35	54.00	-13.65	30.22	10.13	Average	---	---
6	7660.00	50.77	74.00	-23.23	40.64	10.13	Peak	---	---
7	11490.00	44.85	54.00	-9.15	28.92	15.93	Average	---	---
8	11490.00	57.88	74.00	-16.12	41.95	15.93	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)	5745
Polarization	Vertical	Test Configuration	1



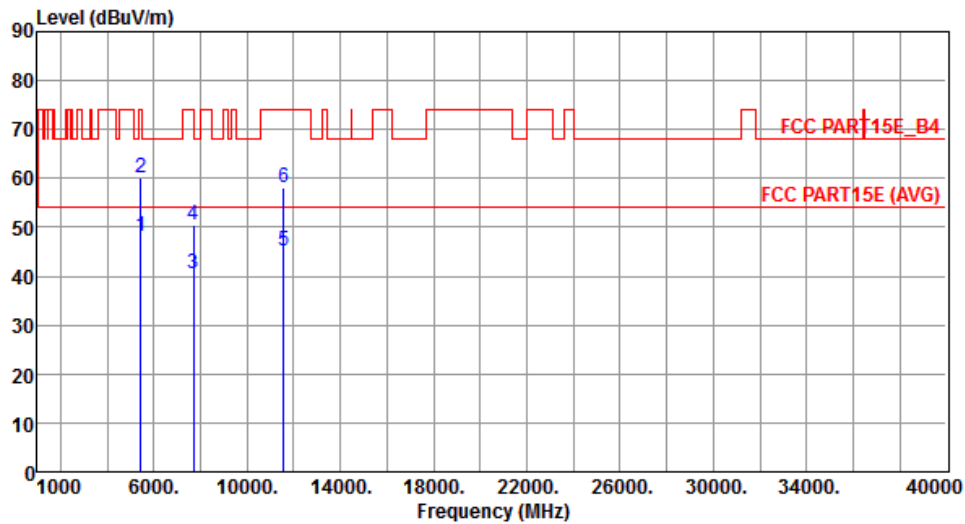
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.01	54.00	-1.99	46.42	5.59	Average	---	---
2	5440.00	66.13	74.00	-7.87	60.54	5.59	Peak	---	---
3	5715.00	65.76	68.20	-2.44	60.11	5.65	Peak	---	---
4	5725.00	76.17	78.20	-2.03	70.53	5.64	Peak	---	---
5	7660.00	40.28	54.00	-13.72	30.15	10.13	Average	---	---
6	7660.00	51.61	74.00	-22.39	41.48	10.13	Peak	---	---
7	11490.00	47.39	54.00	-6.61	31.46	15.93	Average	---	---
8	11490.00	60.11	74.00	-13.89	44.18	15.93	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)	5785
Polarization	Horizontal	Test Configuration	1



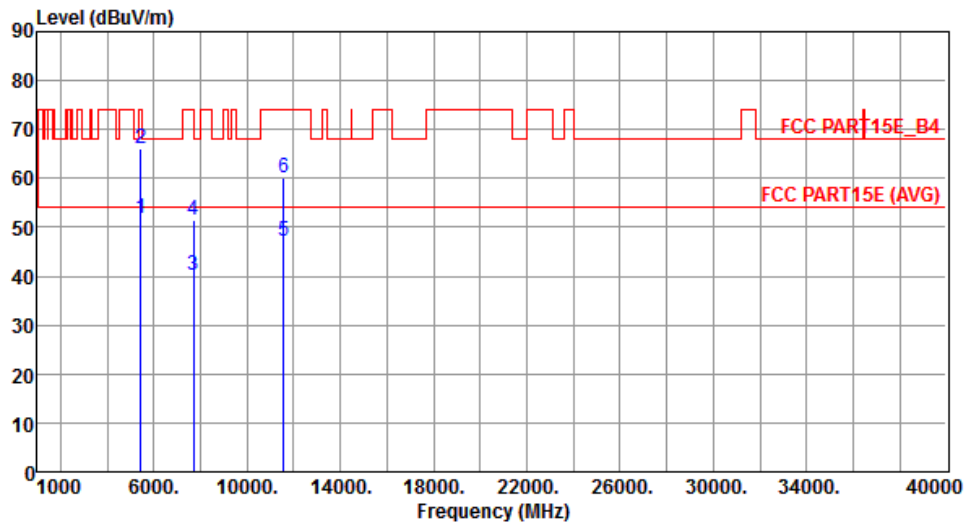
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.05	54.00	-5.95	42.46	5.59	Average	---	---
2	5440.00	59.97	74.00	-14.03	54.38	5.59	Peak	---	---
3	7713.00	40.40	54.00	-13.60	30.31	10.09	Average	---	---
4	7713.00	50.62	74.00	-23.38	40.53	10.09	Peak	---	---
5	11570.00	45.33	54.00	-8.67	29.56	15.77	Average	---	---
6	11570.00	58.08	74.00	-15.92	42.31	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical	Test Configuration	1



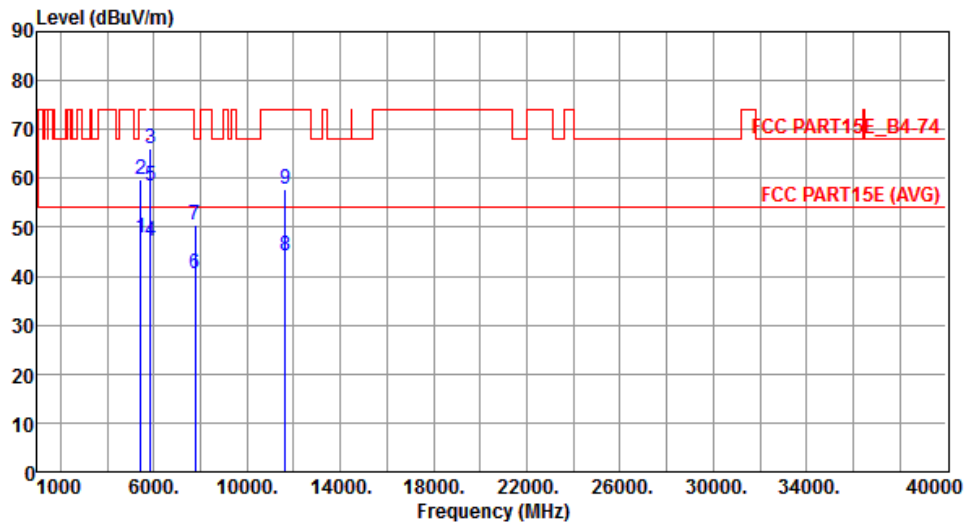
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	51.90	54.00	-2.10	46.31	5.59	Average	---	---
2	5440.00	65.94	74.00	-8.06	60.35	5.59	Peak	---	---
3	7713.00	40.33	54.00	-13.67	30.24	10.09	Average	---	---
4	7713.00	51.47	74.00	-22.53	41.38	10.09	Peak	---	---
5	11570.00	47.20	54.00	-6.80	31.43	15.77	Average	---	---
6	11570.00	60.04	74.00	-13.96	44.27	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal	Test Configuration	1



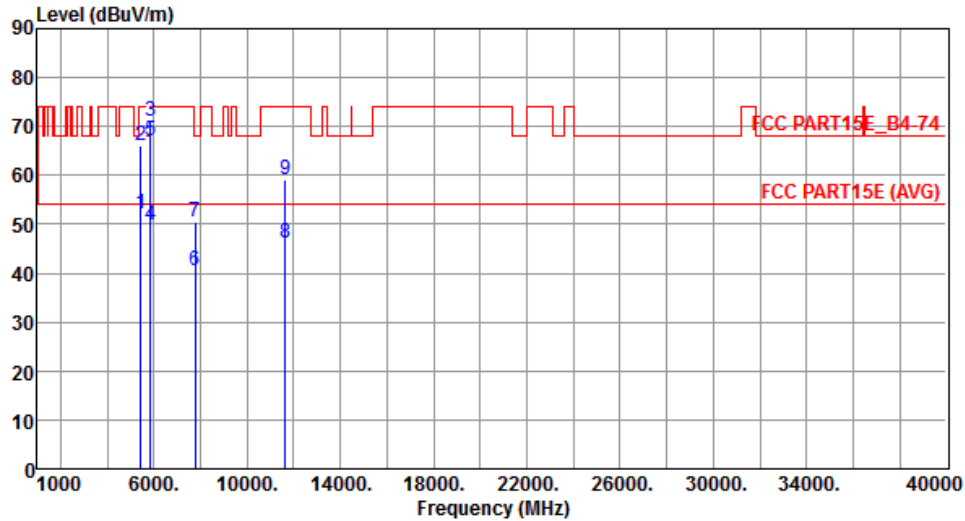
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	47.80	54.00	-6.20	42.21	5.59	Average	---	---
2	5440.00	59.94	74.00	-14.06	54.35	5.59	Peak	---	---
3	5850.00	65.96	78.20	-12.24	60.21	5.75	Peak	---	---
4	5860.00	47.21	54.00	-6.79	41.45	5.76	Average	---	---
5	5860.00	58.55	74.00	-15.45	52.79	5.76	Peak	---	---
6	7766.00	40.66	54.00	-13.34	30.63	10.03	Average	---	---
7	7766.00	50.41	68.20	-17.79	40.38	10.03	Peak	---	---
8	11650.00	44.33	54.00	-9.67	28.77	15.56	Average	---	---
9	11650.00	57.88	74.00	-16.12	42.32	15.56	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)	5825
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.06	54.00	-1.94	46.47	5.59	Average	---	---
2	5440.00	65.97	74.00	-8.03	60.38	5.59	Peak	---	---
3	5850.00	71.06	78.20	-7.14	65.31	5.75	Peak	---	---
4	5860.00	49.83	54.00	-4.17	44.07	5.76	Average	---	---
5	5860.00	67.20	74.00	-6.80	61.44	5.76	Peak	---	---
6	7766.00	40.49	54.00	-13.51	30.46	10.03	Average	---	---
7	7766.00	50.46	68.20	-17.74	40.43	10.03	Peak	---	---
8	11650.00	46.11	54.00	-7.89	30.55	15.56	Average	---	---
9	11650.00	59.11	74.00	-14.89	43.55	15.56	Peak	---	---

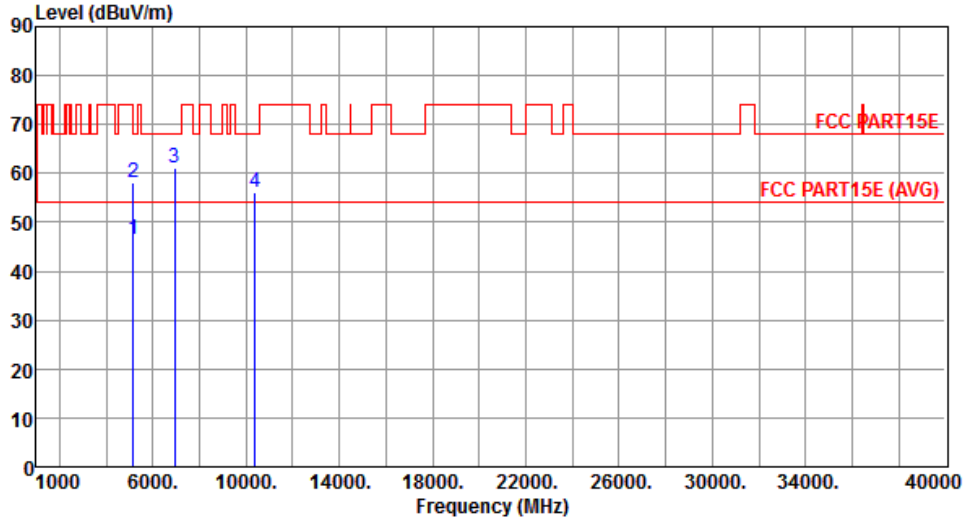
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

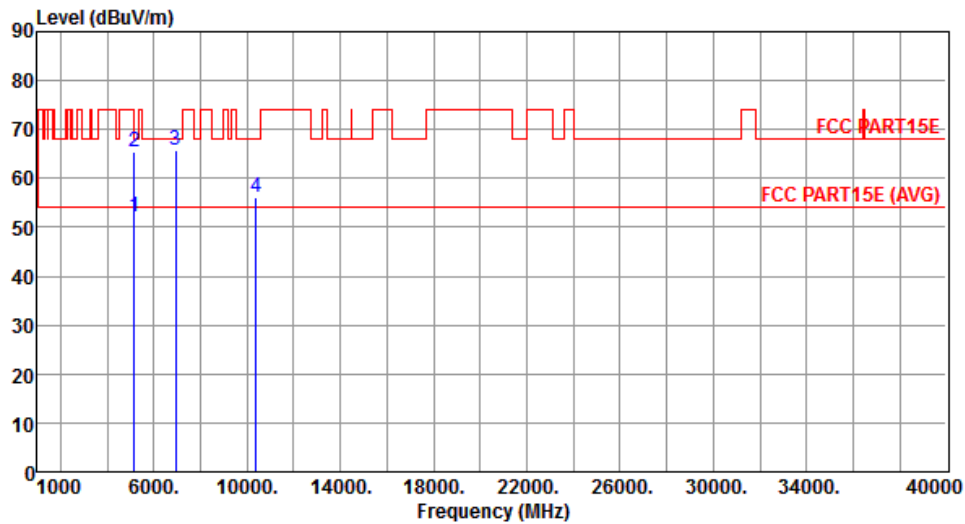
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal	Test Configuration	1



	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	46.36	54.00	-7.64	40.90	5.46	Average	---	---
2	5150.00	58.05	74.00	-15.95	52.59	5.46	Peak	---	---
3	6920.00	61.23	68.20	-6.97	52.80	8.43	Peak	---	---
4	10380.00	56.21	68.20	-11.99	40.73	15.48	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	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical	Test Configuration	1



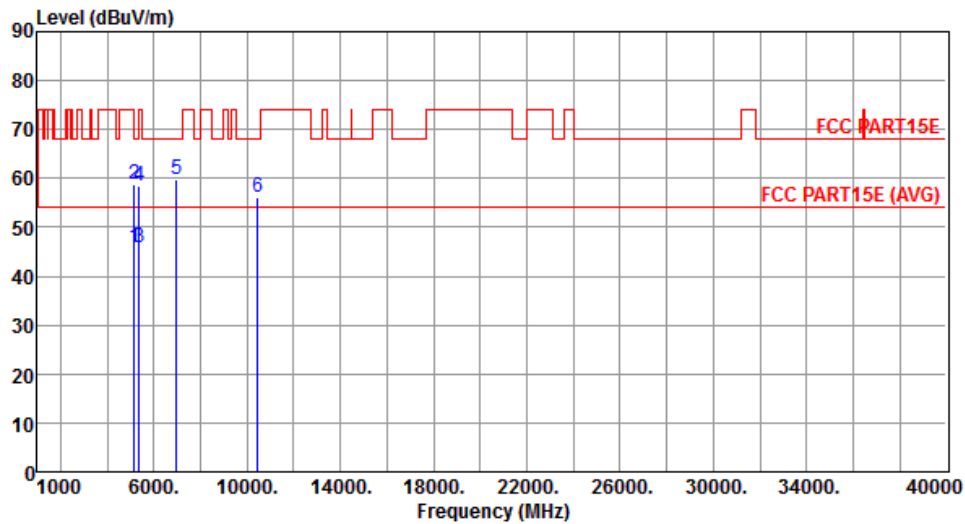
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.04	54.00	-1.96	46.58	5.46	Average	---	---
2	5150.00	65.48	74.00	-8.52	60.02	5.46	Peak	---	---
3	6920.00	65.80	68.20	-2.40	57.37	8.43	Peak	---	---
4	10380.00	56.03	68.20	-12.17	40.55	15.48	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	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal	Test Configuration	1



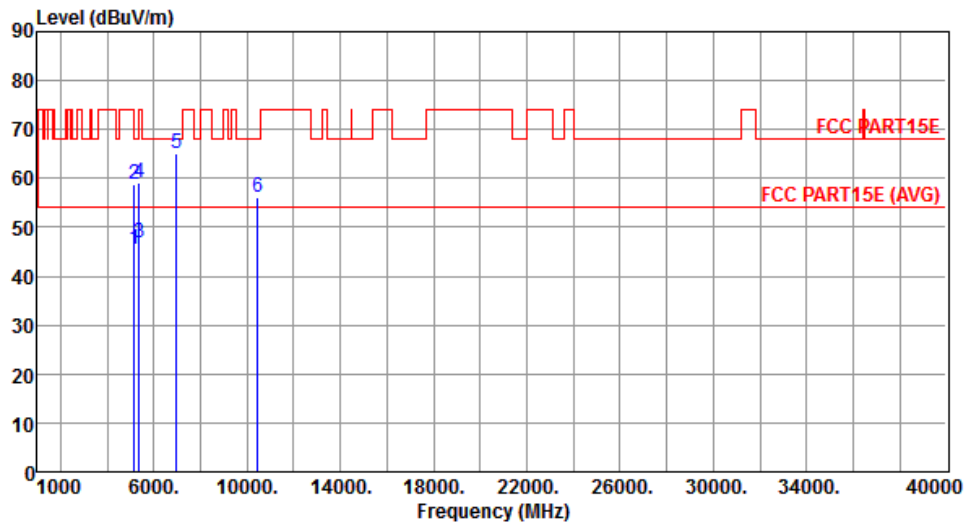
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.67	54.00	-8.33	40.21	5.46	Average	---	---
2	5150.00	58.81	74.00	-15.19	53.35	5.46	Peak	---	---
3	5350.00	45.81	54.00	-8.19	40.25	5.56	Average	---	---
4	5350.00	58.55	74.00	-15.45	52.99	5.56	Peak	---	---
5	6973.33	59.93	68.20	-8.27	51.43	8.50	Peak	---	---
6	10460.00	56.22	68.20	-11.98	40.44	15.78	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical	Test Configuration	1



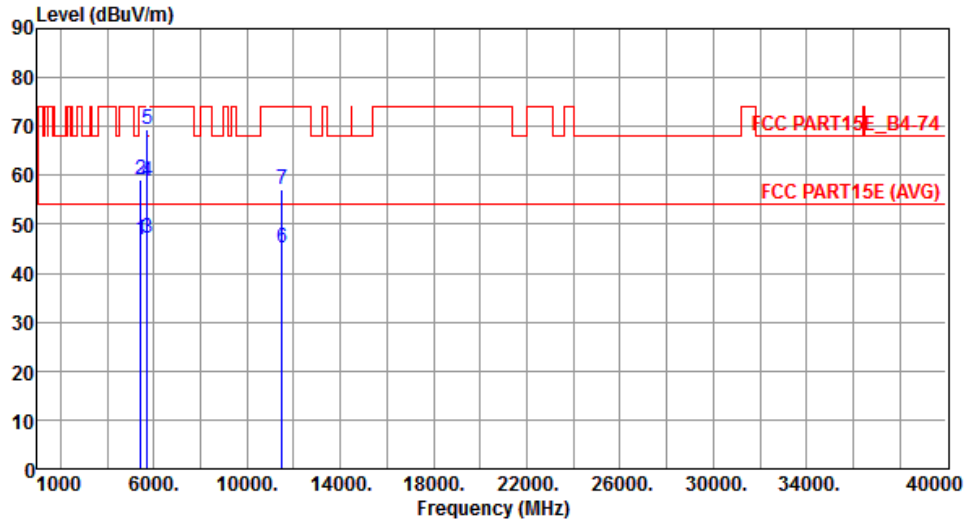
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.66	54.00	-8.34	40.20	5.46	Average	---	---
2	5150.00	58.89	74.00	-15.11	53.43	5.46	Peak	---	---
3	5350.00	46.89	54.00	-7.11	41.33	5.56	Average	---	---
4	5350.00	59.04	74.00	-14.96	53.48	5.56	Peak	---	---
5	6973.33	65.04	68.20	-3.16	56.54	8.50	Peak	---	---
6	10460.00	56.08	68.20	-12.12	40.30	15.78	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal	Test Configuration	1



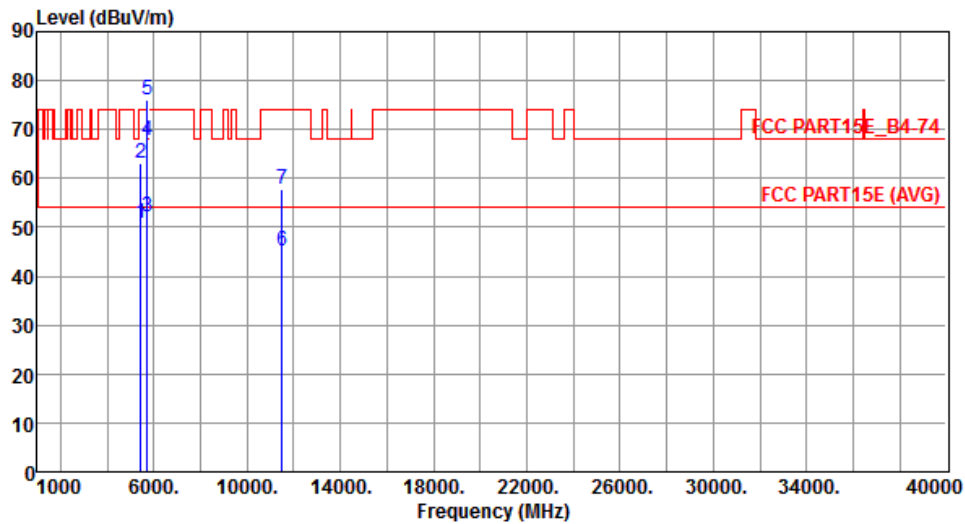
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	46.90	54.00	-7.10	41.31	5.59	Average	---	---
2	5440.00	58.97	74.00	-15.03	53.38	5.59	Peak	---	---
3	5715.00	47.19	54.00	-6.81	41.54	5.65	Average	---	---
4	5715.00	58.66	74.00	-15.34	53.01	5.65	Peak	---	---
5	5725.00	69.55	78.20	-8.65	63.91	5.64	Peak	---	---
6	11510.00	45.17	54.00	-8.83	29.25	15.92	Average	---	---
7	11510.00	57.14	74.00	-16.86	41.22	15.92	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	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical	Test Configuration	1



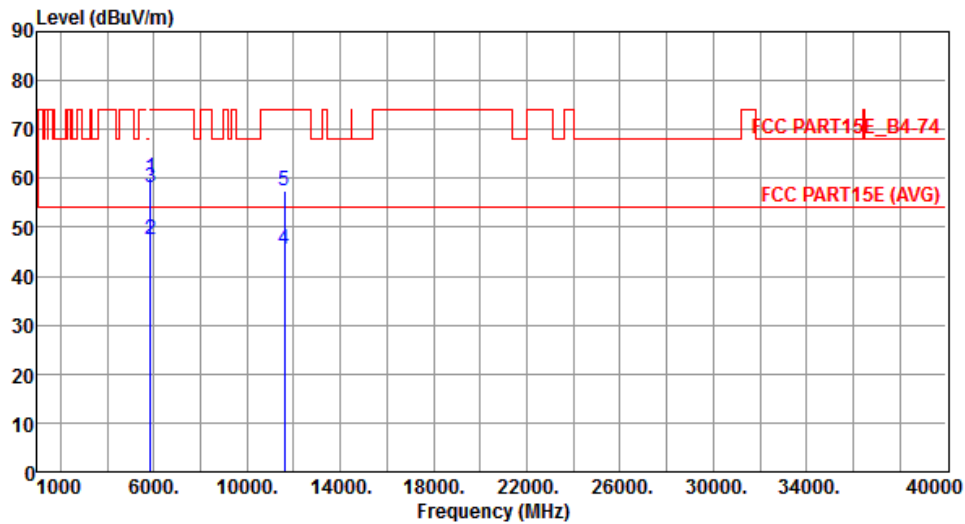
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	50.65	54.00	-3.35	45.06	5.59	Average	---	---
2	5440.00	62.97	74.00	-11.03	57.38	5.59	Peak	---	---
3	5715.00	51.99	54.00	-2.01	46.34	5.65	Average	---	---
4	5715.00	67.84	74.00	-6.16	62.19	5.65	Peak	---	---
5	5725.00	76.09	78.20	-2.11	70.45	5.64	Peak	---	---
6	11510.00	45.17	54.00	-8.83	29.25	15.92	Average	---	---
7	11510.00	57.81	74.00	-16.19	41.89	15.92	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	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal	Test Configuration	1



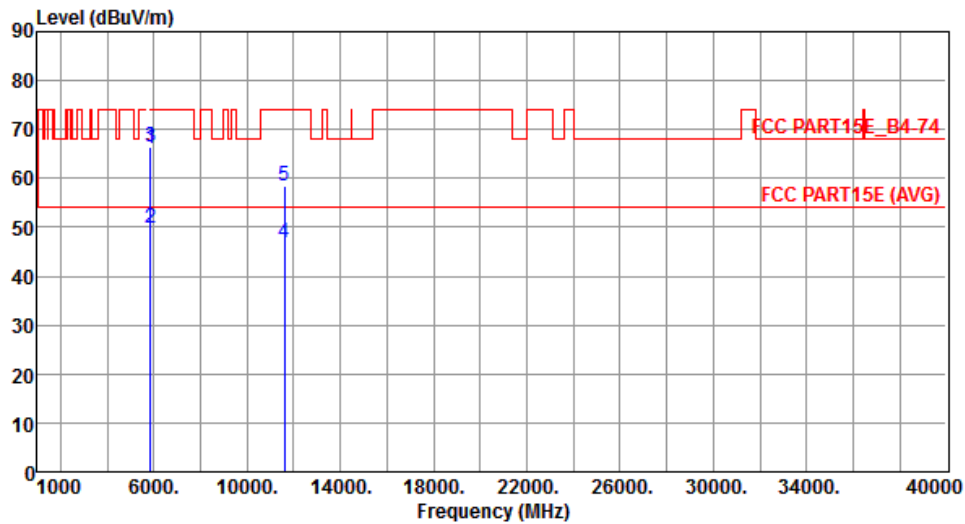
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	60.22	78.20	-17.98	54.47	5.75	Peak	---	---
2	5860.00	47.52	54.00	-6.48	41.76	5.76	Average	---	---
3	5860.00	58.02	74.00	-15.98	52.26	5.76	Peak	---	---
4	11590.00	45.60	54.00	-8.40	29.89	15.71	Average	---	---
5	11590.00	57.57	74.00	-16.43	41.86	15.71	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	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical	Test Configuration	1



	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	66.07	78.20	-12.13	60.32	5.75	Peak	---	---
2	5860.00	49.98	54.00	-4.02	44.22	5.76	Average	---	---
3	5860.00	66.52	74.00	-7.48	60.76	5.76	Peak	---	---
4	11590.00	46.94	54.00	-7.06	31.23	15.71	Average	---	---
5	11590.00	58.60	74.00	-15.40	42.89	15.71	Peak	---	---

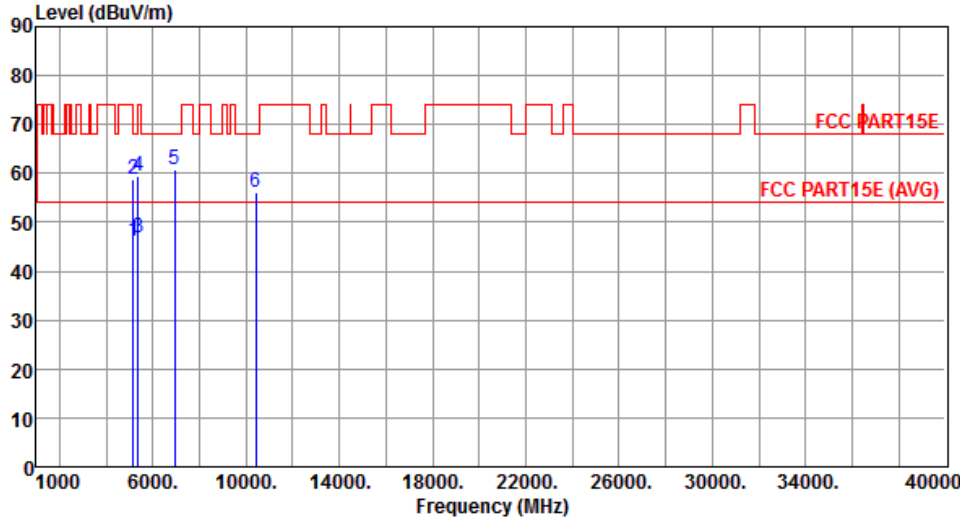
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

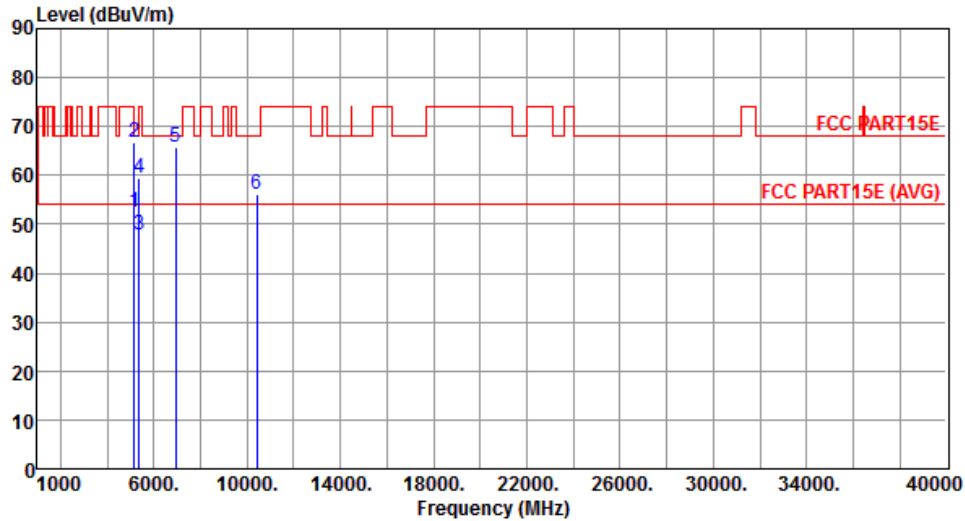
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal	Test Configuration	1



	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	46.11	54.00	-7.89	40.65	5.46	Average	---	---
2	5150.00	58.79	74.00	-15.21	53.33	5.46	Peak	---	---
3	5350.00	46.67	54.00	-7.33	41.11	5.56	Average	---	---
4	5350.00	59.31	74.00	-14.69	53.75	5.56	Peak	---	---
5	6946.66	60.70	68.20	-7.50	52.24	8.46	Peak	---	---
6	10420.00	56.04	68.20	-12.16	40.41	15.63	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	Test Configuration	1



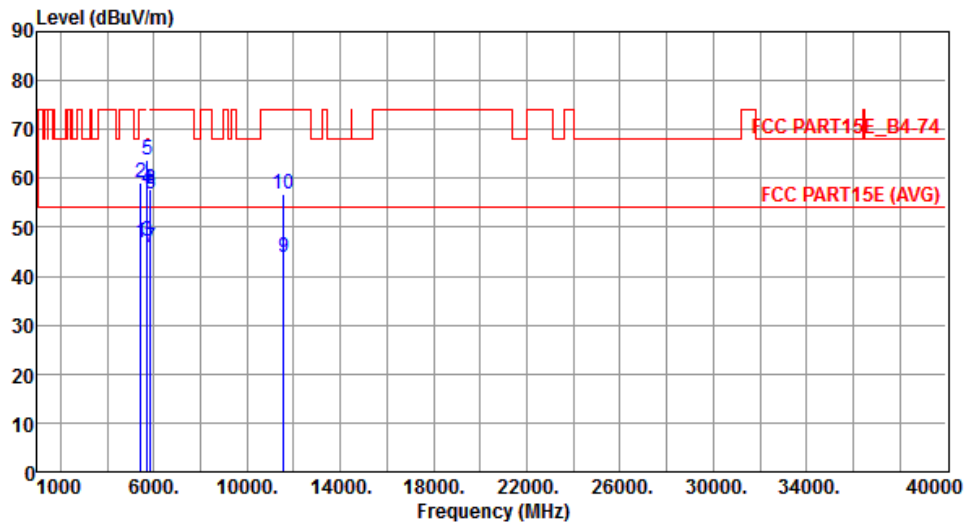
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.50	54.00	-1.50	47.04	5.46	Average	---	---
2	5150.00	66.89	74.00	-7.11	61.43	5.46	Peak	---	---
3	5350.00	47.87	54.00	-6.13	42.31	5.56	Average	---	---
4	5350.00	59.44	74.00	-14.56	53.88	5.56	Peak	---	---
5	6946.66	65.91	68.20	-2.29	57.45	8.46	Peak	---	---
6	10420.00	56.25	68.20	-11.95	40.62	15.63	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)	5775
Polarization	Horizontal	Test Configuration	1



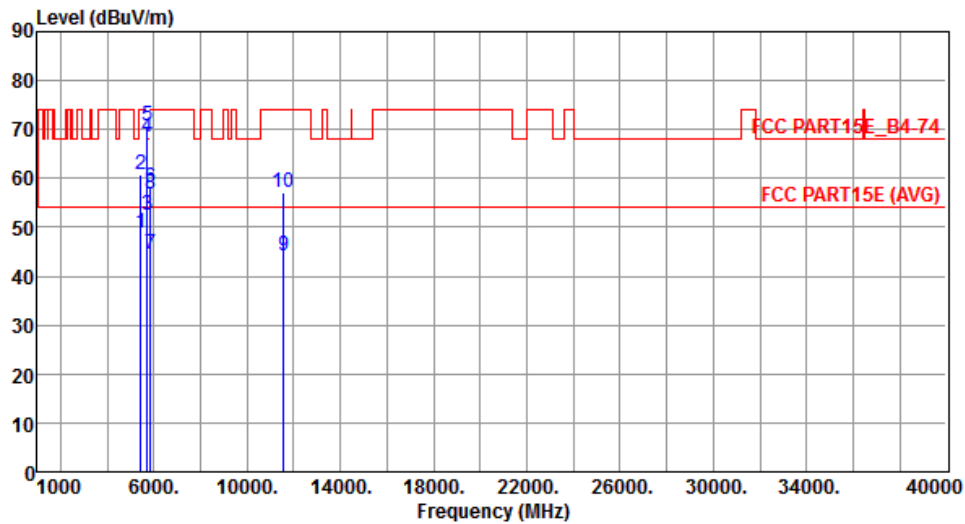
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	46.81	54.00	-7.19	41.22	5.59	Average	---	---
2	5440.00	58.97	74.00	-15.03	53.38	5.59	Peak	---	---
3	5715.00	47.19	54.00	-6.81	41.54	5.65	Average	---	---
4	5715.00	57.86	74.00	-16.14	52.21	5.65	Peak	---	---
5	5725.00	63.66	78.20	-14.54	58.02	5.64	Peak	---	---
6	5850.00	56.66	78.20	-21.54	50.91	5.75	Peak	---	---
7	5860.00	45.88	54.00	-8.12	40.12	5.76	Average	---	---
8	5860.00	57.88	74.00	-16.12	52.12	5.76	Peak	---	---
9	11550.00	43.84	54.00	-10.16	28.03	15.81	Average	---	---
10	11550.00	56.84	74.00	-17.16	41.03	15.81	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.90	54.00	-5.10	43.31	5.59	Average	---	---
2	5440.00	60.75	74.00	-13.25	55.16	5.59	Peak	---	---
3	5715.00	52.45	54.00	-1.55	46.80	5.65	Average	---	---
4	5715.00	68.55	74.00	-5.45	62.90	5.65	Peak	---	---
5	5725.00	70.59	78.20	-7.61	64.95	5.64	Peak	---	---
6	5850.00	57.99	78.20	-20.21	52.24	5.75	Peak	---	---
7	5860.00	44.36	54.00	-9.64	38.60	5.76	Average	---	---
8	5860.00	56.88	74.00	-17.12	51.12	5.76	Peak	---	---
9	11550.00	44.33	54.00	-9.67	28.52	15.81	Average	---	---
10	11550.00	57.17	74.00	-16.83	41.36	15.81	Peak	---	---

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

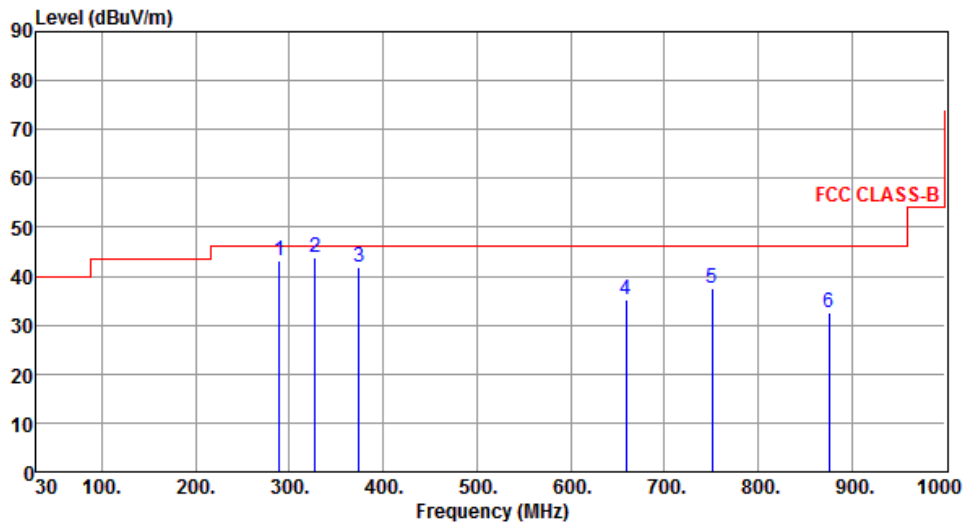
*Factor includes antenna factor , cable loss and amplifier gain

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

PIFA antenna

3.5.10 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal	Test Configuration	2

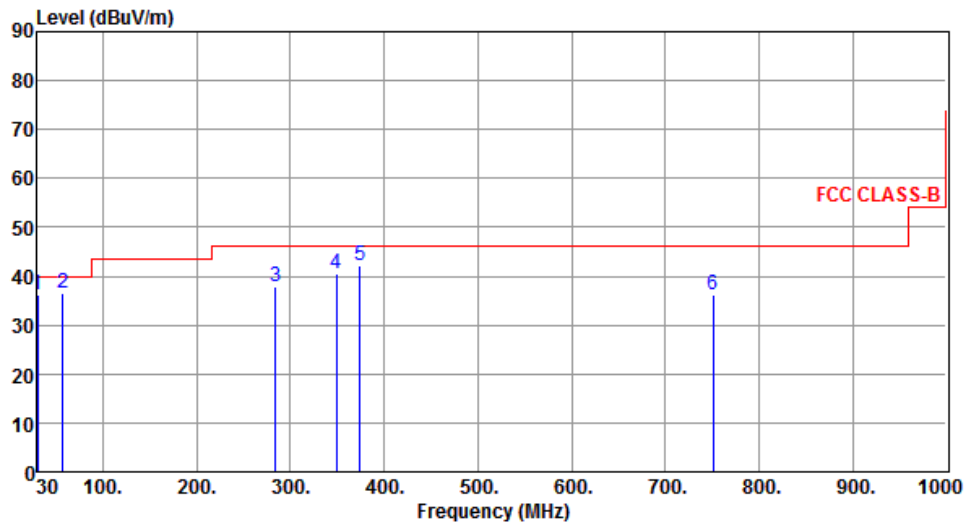


The graph displays the radiated unwanted emissions for a PIFA antenna. The y-axis represents the Level in dBuV/m, ranging from 0 to 90. The x-axis represents the Frequency in MHz, ranging from 30 to 1000. A red line indicates the FCC CLASS-B limit, which is 40 dBuV/m from 30 to 100 MHz, 45 dBuV/m from 100 to 300 MHz, and 55 dBuV/m from 300 to 1000 MHz. Six measured emission peaks are labeled with blue numbers 1 through 6. The data for these peaks is provided 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	288.99	43.29	46.00	-2.71	59.55	-16.26	QP	---	---
2	327.79	43.87	46.00	-2.13	59.24	-15.37	QP	---	---
3	374.35	41.96	46.00	-4.04	56.18	-14.22	Peak	---	---
4	659.53	35.33	46.00	-10.67	44.02	-8.69	Peak	---	---
5	750.71	37.52	46.00	-8.48	44.62	-7.10	Peak	---	---
6	875.84	32.69	46.00	-13.31	38.44	-5.75	Peak	---	---

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

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.00	36.29	40.00	-3.71	53.72	-17.43	QP	---	---
2	57.16	36.37	40.00	-3.63	53.18	-16.81	Peak	---	---
3	284.14	37.73	46.00	-8.27	54.05	-16.32	Peak	---	---
4	349.13	40.42	46.00	-5.58	55.28	-14.86	Peak	---	---
5	374.35	42.19	46.00	-3.81	56.41	-14.22	Peak	---	---
6	750.71	36.24	46.00	-9.76	43.34	-7.10	Peak	---	---

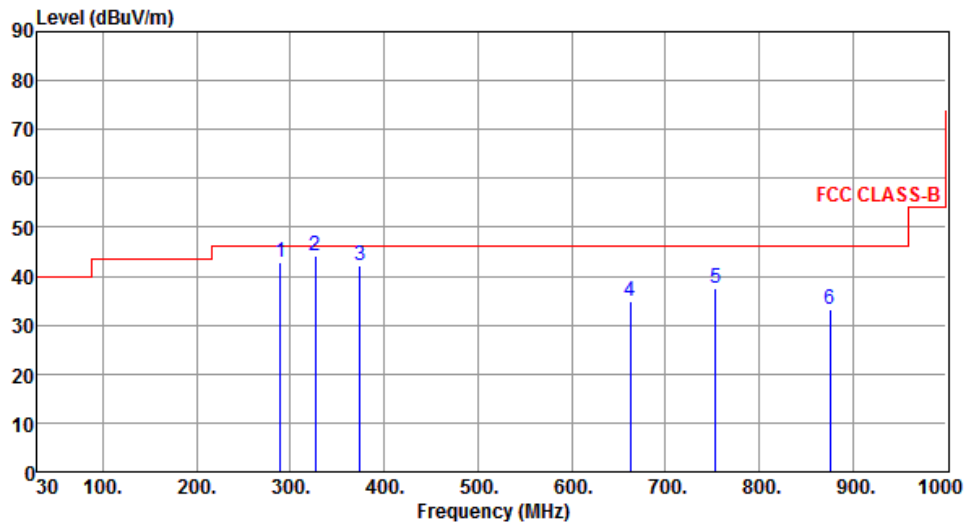
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	288.99	42.76	46.00	-3.24	59.02	-16.26	QP	---	---
2	326.82	44.28	46.00	-1.72	59.67	-15.39	QP	---	---
3	374.35	42.14	46.00	-3.86	56.36	-14.22	Peak	---	---
4	662.44	34.94	46.00	-11.06	43.59	-8.65	Peak	---	---
5	753.62	37.53	46.00	-8.47	44.60	-7.07	Peak	---	---
6	875.84	33.06	46.00	-12.94	38.81	-5.75	Peak	---	---

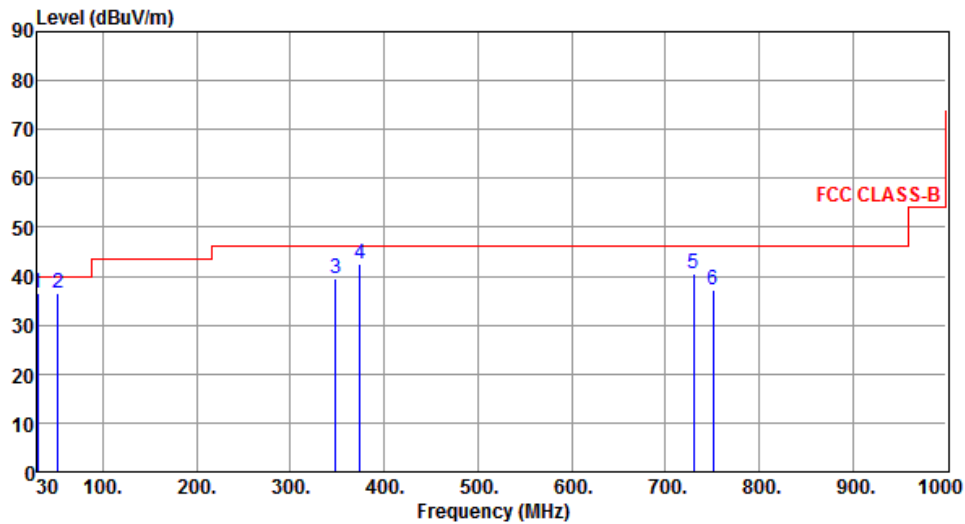
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.00	36.52	40.00	-3.48	53.95	-17.43	QP	---	---
2	52.31	36.64	40.00	-3.36	53.04	-16.40	Peak	---	---
3	348.16	39.49	46.00	-6.51	54.37	-14.88	Peak	---	---
4	374.35	42.40	46.00	-3.60	56.62	-14.22	Peak	---	---
5	730.34	40.39	46.00	-5.61	47.85	-7.46	Peak	---	---
6	750.71	37.05	46.00	-8.95	44.15	-7.10	Peak	---	---

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

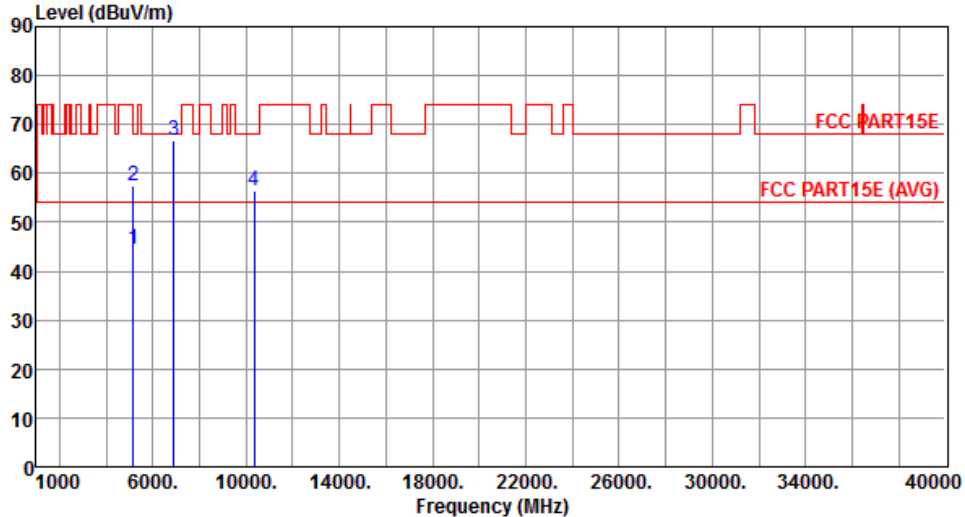
*Factor includes antenna factor , cable loss and amplifier gain

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

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

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

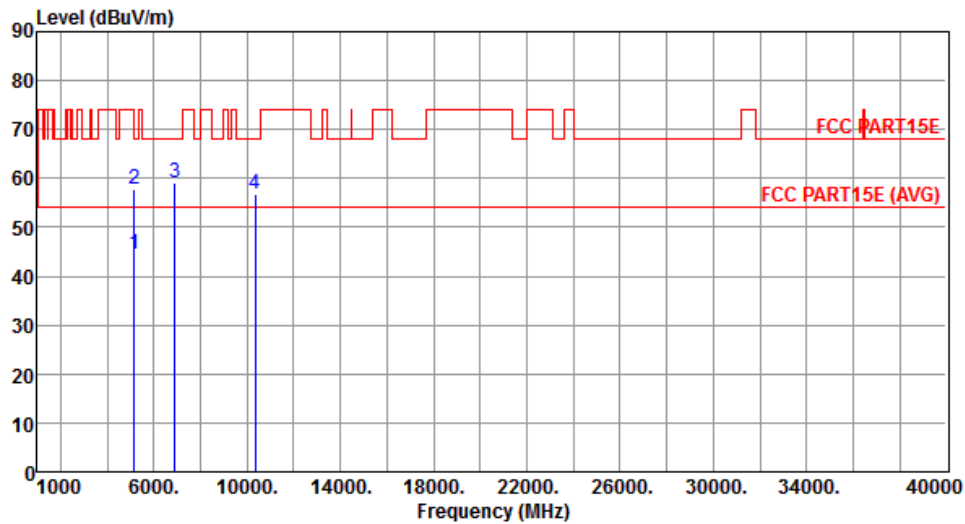
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal	Test Configuration	2



	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	44.36	54.00	-9.64	38.90	5.46	Average	---	---
2	5150.00	57.59	74.00	-16.41	52.13	5.46	Peak	---	---
3	6906.60	66.69	68.20	-1.51	58.28	8.41	Peak	---	---
4	10360.00	56.57	68.20	-11.63	41.16	15.41	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	Test Configuration	2



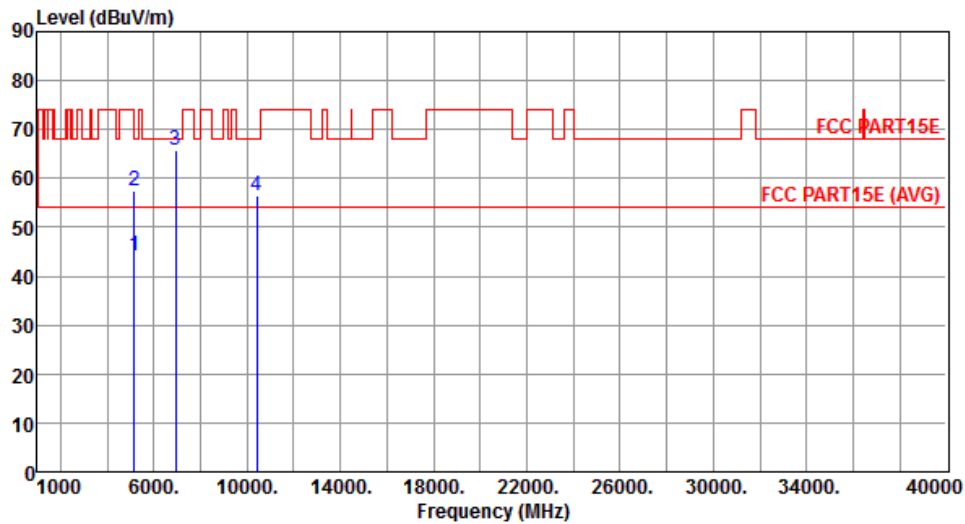
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.45	54.00	-9.55	38.99	5.46	Average	---	---
2	5150.00	57.66	74.00	-16.34	52.20	5.46	Peak	---	---
3	6906.60	59.09	68.20	-9.11	50.68	8.41	Peak	---	---
4	10360.00	56.92	68.20	-11.28	41.51	15.41	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	Test Configuration	2



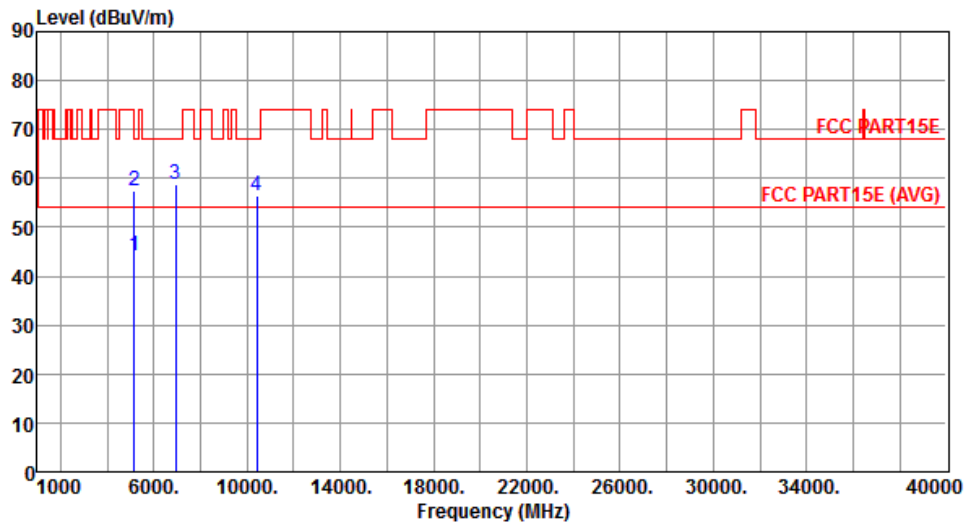
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.25	54.00	-9.75	38.79	5.46	Average	---	---
2	5150.00	57.46	74.00	-16.54	52.00	5.46	Peak	---	---
3	6933.30	65.90	68.20	-2.30	57.45	8.45	Peak	---	---
4	10400.00	56.45	68.20	-11.75	40.90	15.55	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	Test Configuration	2



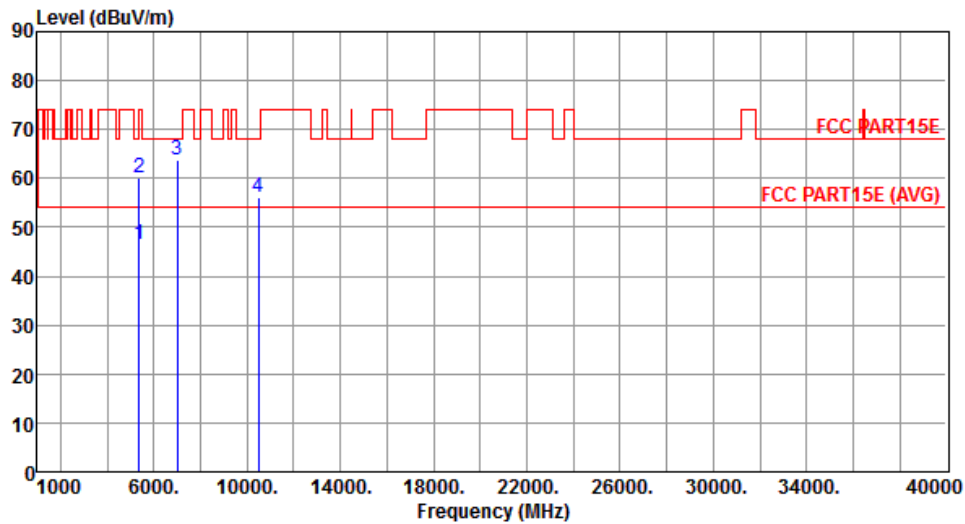
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.21	54.00	-9.79	38.75	5.46	Average	---	---
2	5150.00	57.42	74.00	-16.58	51.96	5.46	Peak	---	---
3	6933.30	58.82	68.20	-9.38	50.37	8.45	Peak	---	---
4	10400.00	56.61	68.20	-11.59	41.06	15.55	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	Test Configuration	2



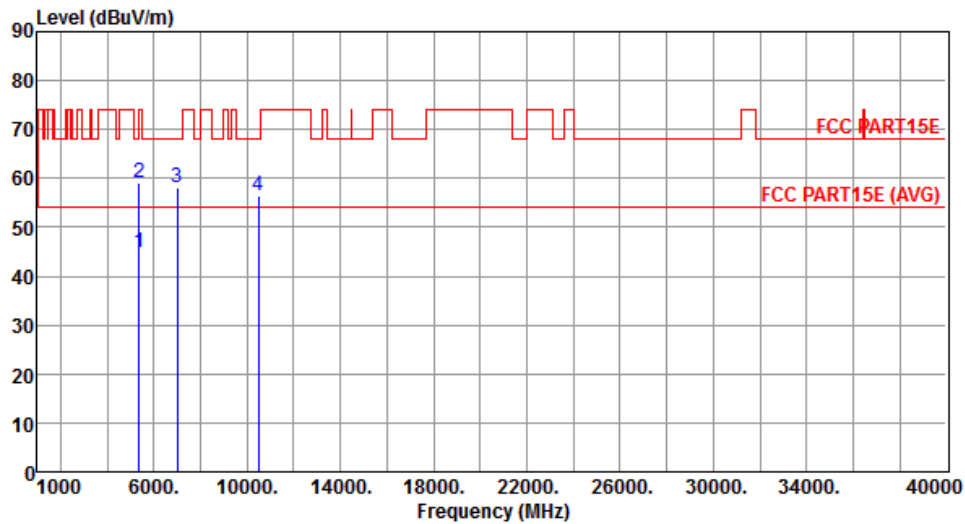
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.48	54.00	-7.52	40.92	5.56	Average	---	---
2	5350.00	60.15	74.00	-13.85	54.59	5.56	Peak	---	---
3	6986.60	63.75	68.20	-4.45	55.24	8.51	Peak	---	---
4	10480.00	56.29	68.20	-11.91	40.43	15.86	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	Test Configuration	2



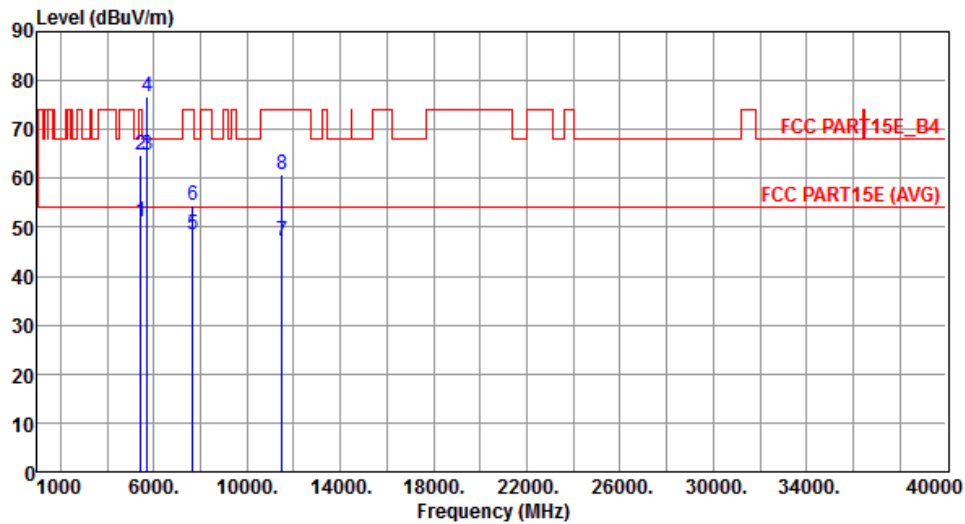
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	44.82	54.00	-9.18	39.26	5.56	Average	---	---
2	5350.00	59.16	74.00	-14.84	53.60	5.56	Peak	---	---
3	6986.60	58.06	68.20	-10.14	49.55	8.51	Peak	---	---
4	10480.00	56.47	68.20	-11.73	40.61	15.86	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)	5745
Polarization	Horizontal	Test Configuration	2



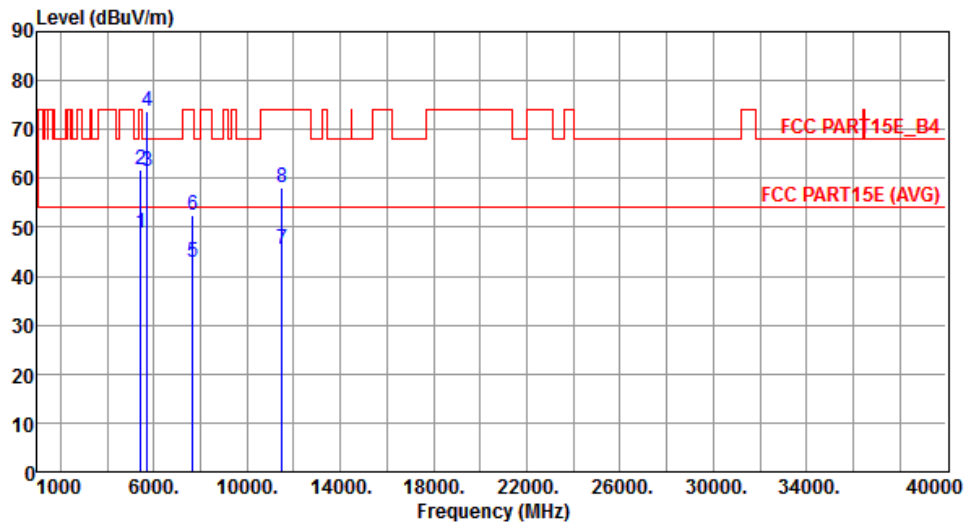
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	51.22	54.00	-2.78	45.63	5.59	Average	---	---
2	5440.00	64.77	74.00	-9.23	59.18	5.59	Peak	---	---
3	5715.00	64.73	68.20	-3.47	59.08	5.65	Peak	---	---
4	5725.00	76.62	78.20	-1.58	70.98	5.64	Peak	---	---
5	7660.00	48.39	54.00	-5.61	38.26	10.13	Average	---	---
6	7660.00	54.62	74.00	-19.38	44.49	10.13	Peak	---	---
7	11490.00	47.21	54.00	-6.79	31.28	15.93	Average	---	---
8	11490.00	60.78	74.00	-13.22	44.85	15.93	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)	5745
Polarization	Vertical	Test Configuration	2



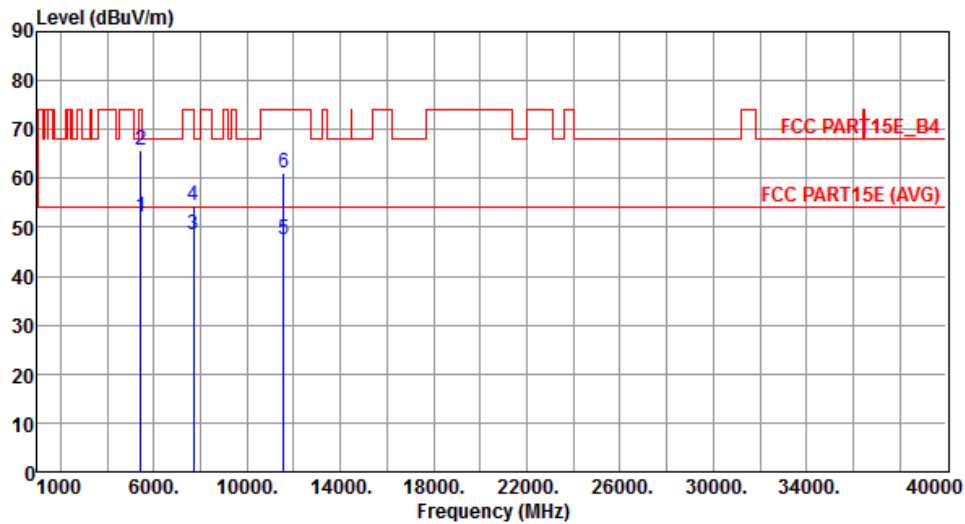
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.87	54.00	-5.13	43.28	5.59	Average	---	---
2	5440.00	61.75	74.00	-12.25	56.16	5.59	Peak	---	---
3	5715.00	61.29	68.20	-6.91	55.64	5.65	Peak	---	---
4	5725.00	73.86	78.20	-4.34	68.22	5.64	Peak	---	---
5	7660.00	42.92	54.00	-11.08	32.79	10.13	Average	---	---
6	7660.00	52.34	74.00	-21.66	42.21	10.13	Peak	---	---
7	11490.00	45.35	54.00	-8.65	29.42	15.93	Average	---	---
8	11490.00	58.11	74.00	-15.89	42.18	15.93	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)	5785
Polarization	Horizontal	Test Configuration	2



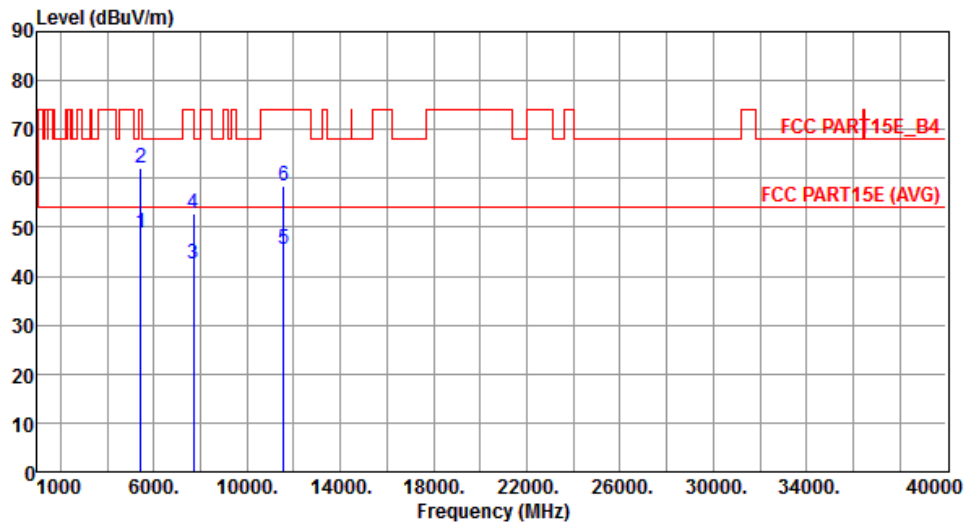
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.01	54.00	-1.99	46.42	5.59	Average	---	---
2	5440.00	65.80	74.00	-8.20	60.21	5.59	Peak	---	---
3	7713.33	48.51	54.00	-5.49	38.42	10.09	Average	---	---
4	7713.33	54.40	74.00	-19.60	44.31	10.09	Peak	---	---
5	11570.00	47.44	54.00	-6.56	31.67	15.77	Average	---	---
6	11570.00	61.15	74.00	-12.85	45.38	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical	Test Configuration	2



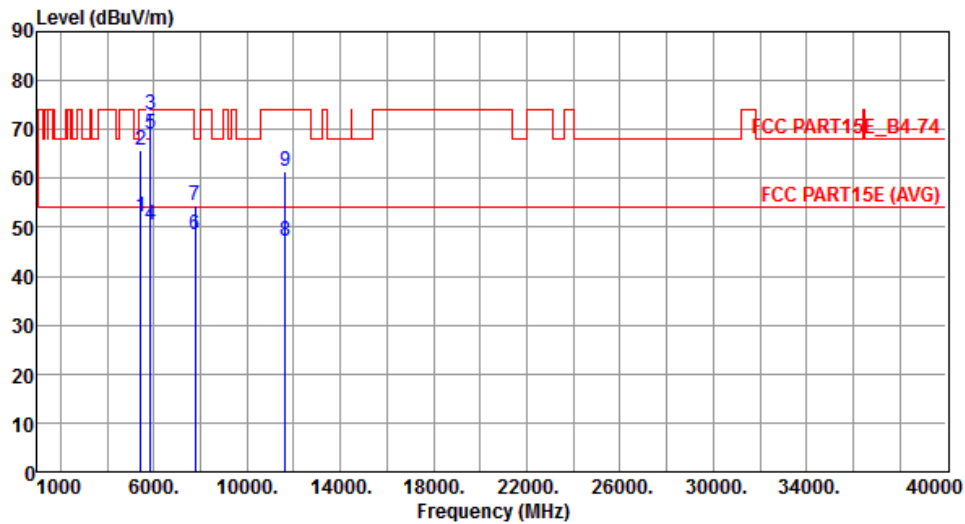
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.97	54.00	-5.03	43.38	5.59	Average	---	---
2	5440.00	62.07	74.00	-11.93	56.48	5.59	Peak	---	---
3	7713.33	42.62	54.00	-11.38	32.53	10.09	Average	---	---
4	7713.33	52.75	74.00	-21.25	42.66	10.09	Peak	---	---
5	11570.00	45.60	54.00	-8.40	29.83	15.77	Average	---	---
6	11570.00	58.60	74.00	-15.40	42.83	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal	Test Configuration	2



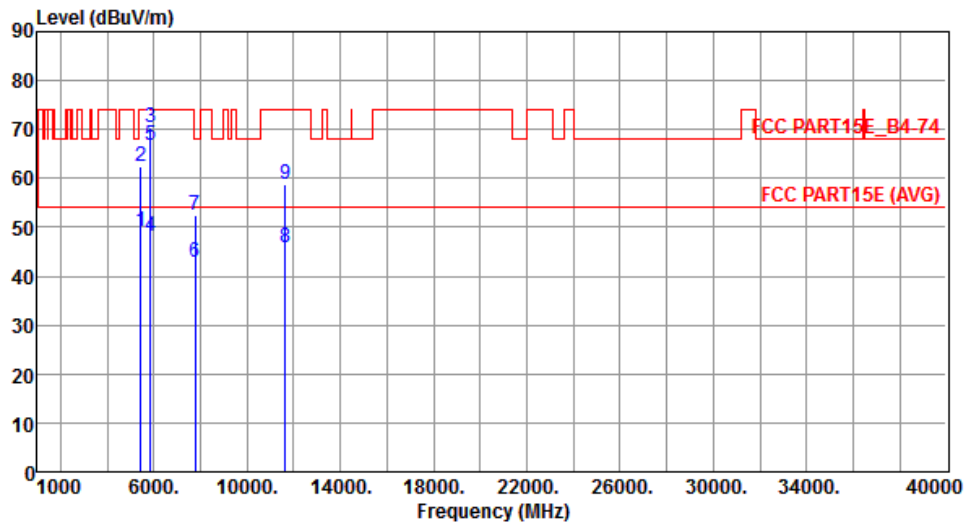
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.06	54.00	-1.94	46.47	5.59	Average	---	---
2	5440.00	65.81	74.00	-8.19	60.22	5.59	Peak	---	---
3	5850.00	73.10	78.20	-5.10	67.35	5.75	Peak	---	---
4	5860.00	50.47	54.00	-3.53	44.71	5.76	Average	---	---
5	5860.00	68.98	74.00	-5.02	63.22	5.76	Peak	---	---
6	7766.66	48.65	54.00	-5.35	38.62	10.03	Average	---	---
7	7766.66	54.39	68.20	-13.81	44.36	10.03	Peak	---	---
8	11650.00	47.06	54.00	-6.94	31.50	15.56	Average	---	---
9	11650.00	61.40	74.00	-12.60	45.84	15.56	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)	5825
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	49.24	54.00	-4.76	43.65	5.59	Average	---	---
2	5440.00	62.32	74.00	-11.68	56.73	5.59	Peak	---	---
3	5850.00	70.26	78.20	-7.94	64.51	5.75	Peak	---	---
4	5860.00	48.08	54.00	-5.92	42.32	5.76	Average	---	---
5	5860.00	66.79	74.00	-7.21	61.03	5.76	Peak	---	---
6	7766.66	42.88	54.00	-11.12	32.85	10.03	Average	---	---
7	7766.66	52.57	68.20	-15.63	42.54	10.03	Peak	---	---
8	11650.00	45.90	54.00	-8.10	30.34	15.56	Average	---	---
9	11650.00	58.72	74.00	-15.28	43.16	15.56	Peak	---	---

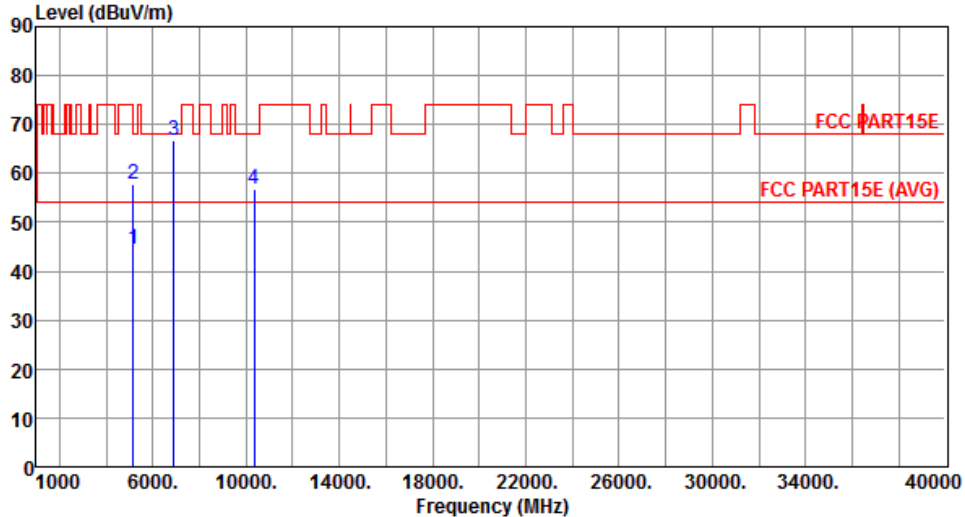
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

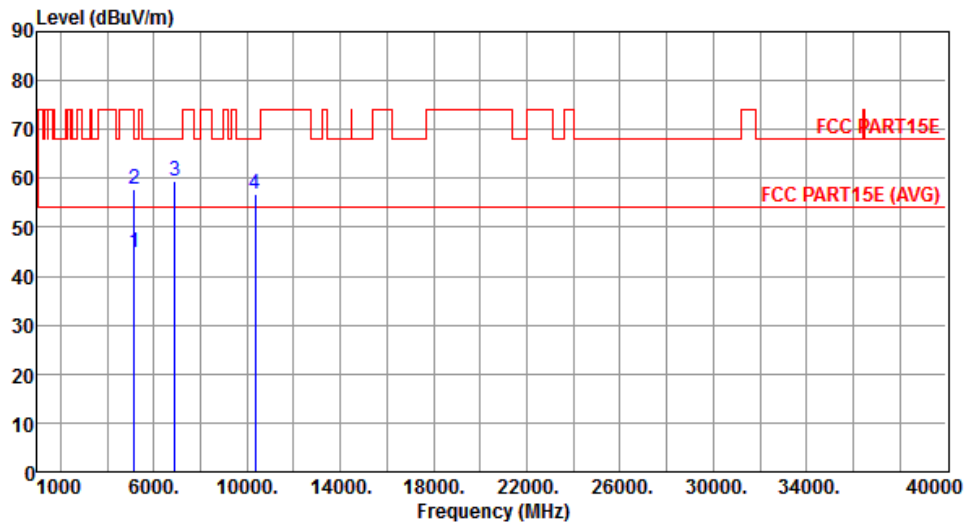
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal	Test Configuration	2



	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	44.65	54.00	-9.35	39.19	5.46	Average	---	---
2	5150.00	57.84	74.00	-16.16	52.38	5.46	Peak	---	---
3	6906.60	66.66	68.20	-1.54	58.25	8.41	Peak	---	---
4	10360.00	56.68	68.20	-11.52	41.27	15.41	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	Test Configuration	2



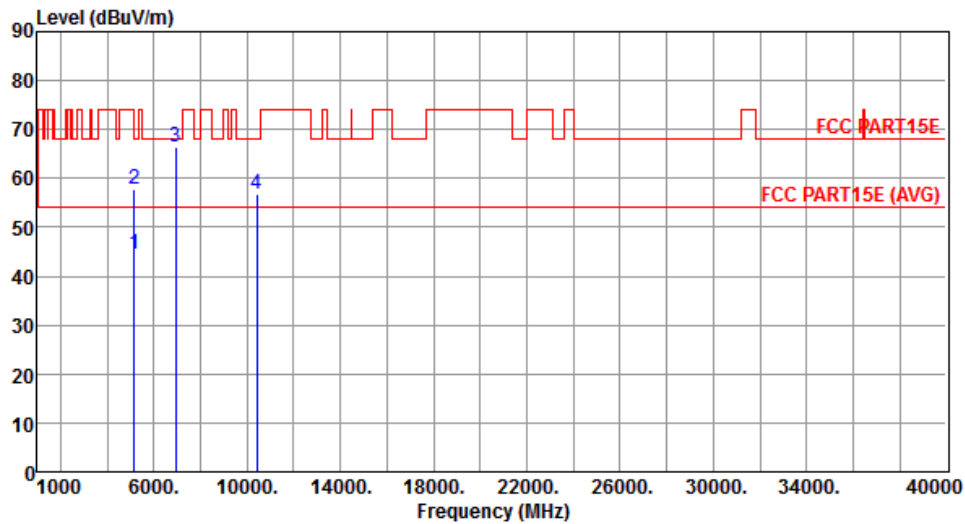
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.83	54.00	-9.17	39.37	5.46	Average	---	---
2	5150.00	57.92	74.00	-16.08	52.46	5.46	Peak	---	---
3	6906.60	59.36	68.20	-8.84	50.95	8.41	Peak	---	---
4	10360.00	56.81	68.20	-11.39	41.40	15.41	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	Test Configuration	2



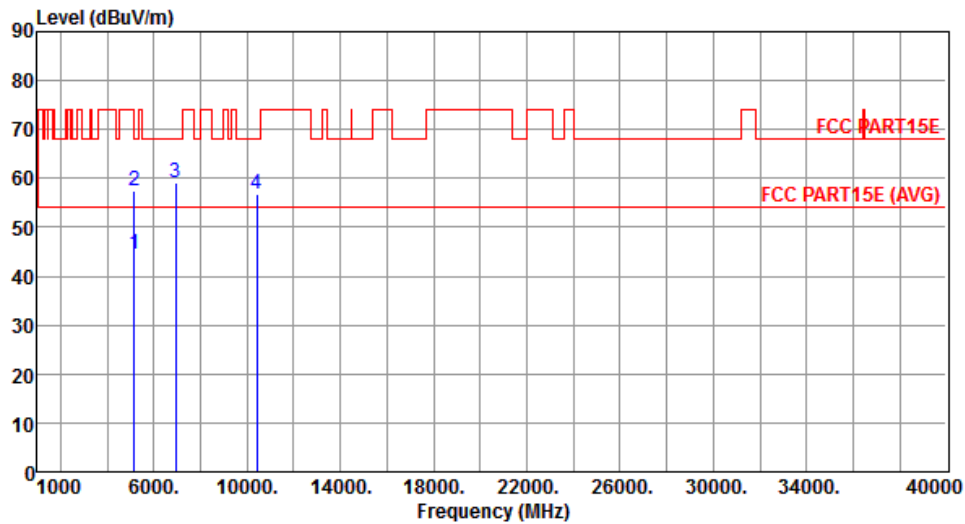
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.38	54.00	-9.62	38.92	5.46	Average	---	---
2	5150.00	57.62	74.00	-16.38	52.16	5.46	Peak	---	---
3	6933.30	66.28	68.20	-1.92	57.83	8.45	Peak	---	---
4	10400.00	56.74	68.20	-11.46	41.19	15.55	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	Test Configuration	2



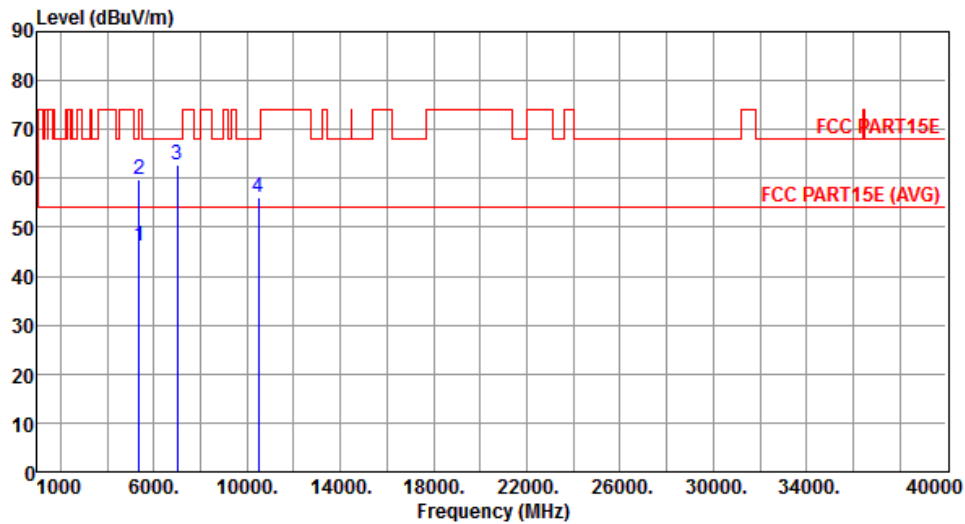
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.39	54.00	-9.61	38.93	5.46	Average	---	---
2	5150.00	57.61	74.00	-16.39	52.15	5.46	Peak	---	---
3	6933.30	58.96	68.20	-9.24	50.51	8.45	Peak	---	---
4	10400.00	56.74	68.20	-11.46	41.19	15.55	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	Test Configuration	2



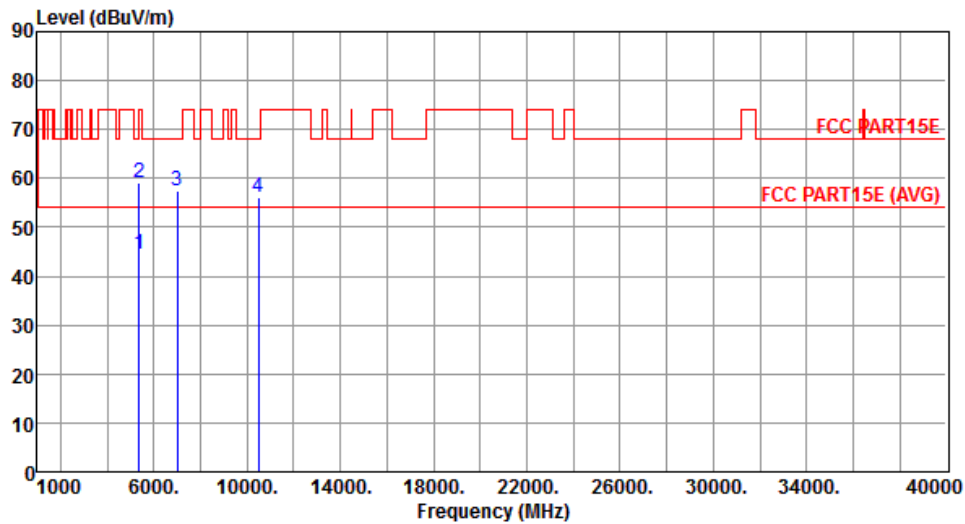
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.25	54.00	-7.75	40.69	5.56	Average	---	---
2	5350.00	59.86	74.00	-14.14	54.30	5.56	Peak	---	---
3	6986.60	62.84	68.20	-5.36	54.33	8.51	Peak	---	---
4	10480.00	56.01	68.20	-12.19	40.15	15.86	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	Vertical	Test Configuration	2



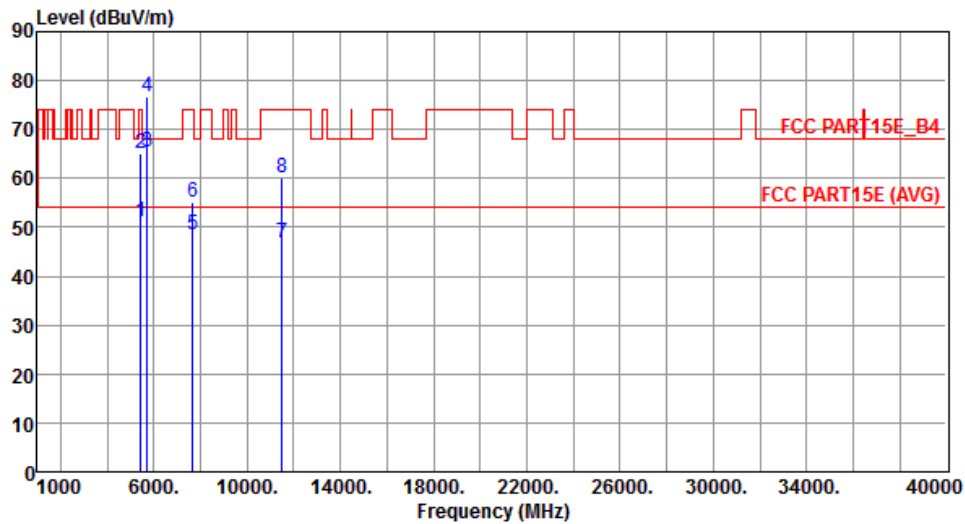
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	44.61	54.00	-9.39	39.05	5.56	Average	---	---
2	5350.00	59.02	74.00	-14.98	53.46	5.56	Peak	---	---
3	6986.60	57.41	68.20	-10.79	48.90	8.51	Peak	---	---
4	10480.00	56.24	68.20	-11.96	40.38	15.86	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)	5745
Polarization	Horizontal	Test Configuration	2



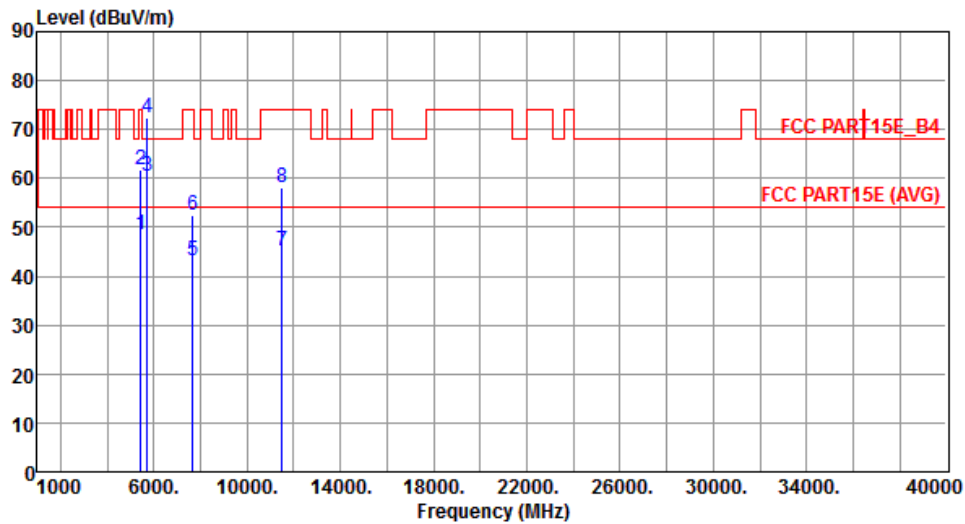
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	51.22	54.00	-2.78	45.63	5.59	Average	---	---
2	5440.00	64.97	74.00	-9.03	59.38	5.59	Peak	---	---
3	5715.00	65.35	68.20	-2.85	59.70	5.65	Peak	---	---
4	5725.00	76.58	78.20	-1.62	70.94	5.64	Peak	---	---
5	7660.00	48.45	54.00	-5.55	38.32	10.13	Average	---	---
6	7660.00	55.02	74.00	-18.98	44.89	10.13	Peak	---	---
7	11490.00	46.92	54.00	-7.08	30.99	15.93	Average	---	---
8	11490.00	59.95	74.00	-14.05	44.02	15.93	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)	5745
Polarization	Vertical	Test Configuration	2



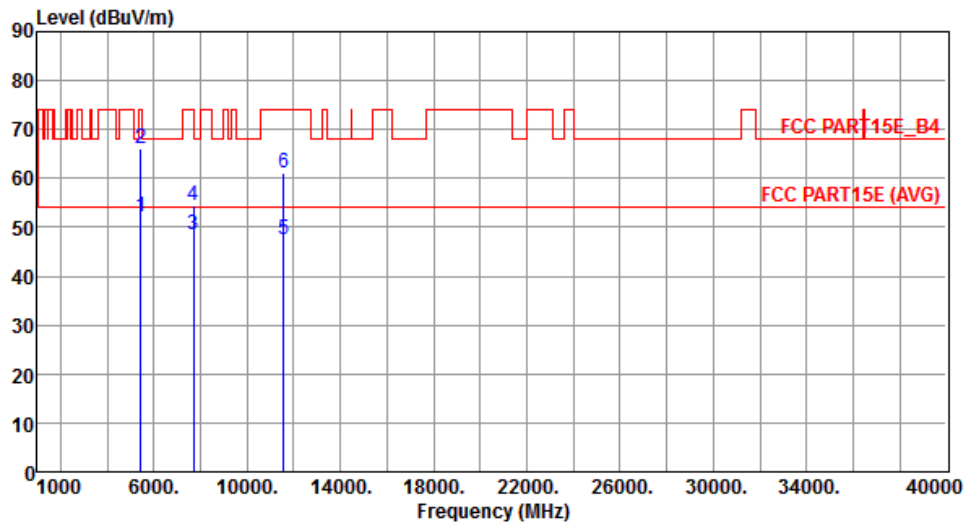
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.55	54.00	-5.45	42.96	5.59	Average	---	---
2	5440.00	61.65	74.00	-12.35	56.06	5.59	Peak	---	---
3	5715.00	60.33	68.20	-7.87	54.68	5.65	Peak	---	---
4	5725.00	72.55	78.20	-5.65	66.91	5.64	Peak	---	---
5	7660.00	43.21	54.00	-10.79	33.08	10.13	Average	---	---
6	7660.00	52.55	74.00	-21.45	42.42	10.13	Peak	---	---
7	11490.00	45.08	54.00	-8.92	29.15	15.93	Average	---	---
8	11490.00	58.02	74.00	-15.98	42.09	15.93	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)	5785
Polarization	Horizontal	Test Configuration	2



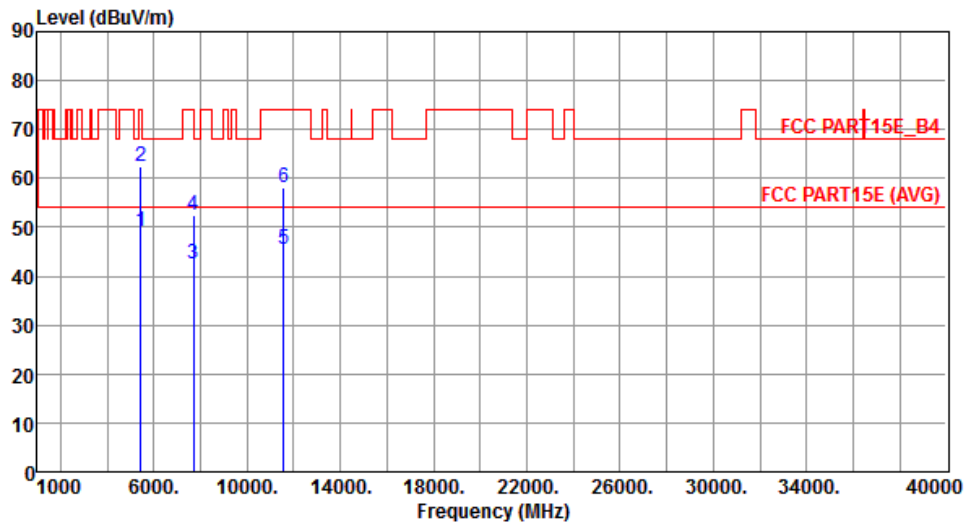
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.10	54.00	-1.90	46.51	5.59	Average	---	---
2	5440.00	66.14	74.00	-7.86	60.55	5.59	Peak	---	---
3	7713.33	48.64	54.00	-5.36	38.55	10.09	Average	---	---
4	7713.33	54.61	74.00	-19.39	44.52	10.09	Peak	---	---
5	11570.00	47.39	54.00	-6.61	31.62	15.77	Average	---	---
6	11570.00	61.25	74.00	-12.75	45.48	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical	Test Configuration	2



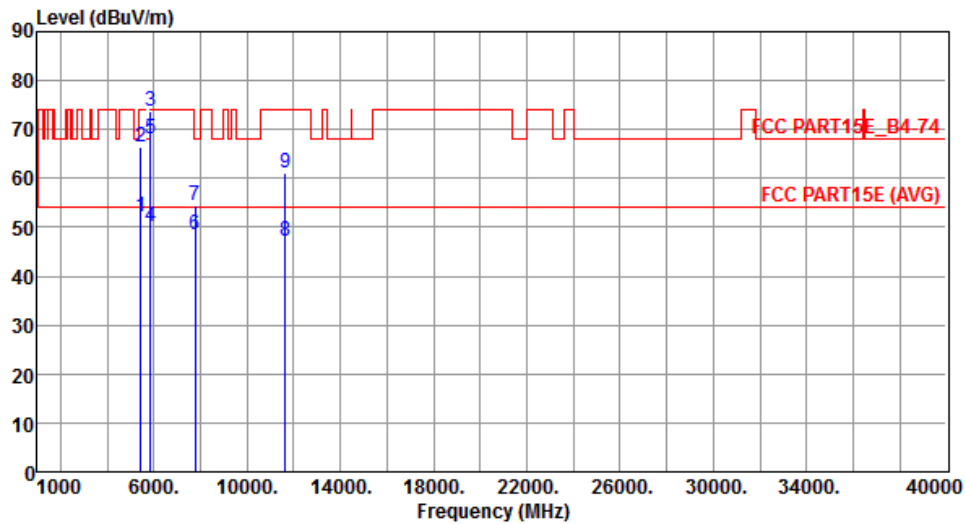
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	49.25	54.00	-4.75	43.66	5.59	Average	---	---
2	5440.00	62.31	74.00	-11.69	56.72	5.59	Peak	---	---
3	7713.33	42.56	54.00	-11.44	32.47	10.09	Average	---	---
4	7713.33	52.60	74.00	-21.40	42.51	10.09	Peak	---	---
5	11570.00	45.45	54.00	-8.55	29.68	15.77	Average	---	---
6	11570.00	58.26	74.00	-15.74	42.49	15.77	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal	Test Configuration	2



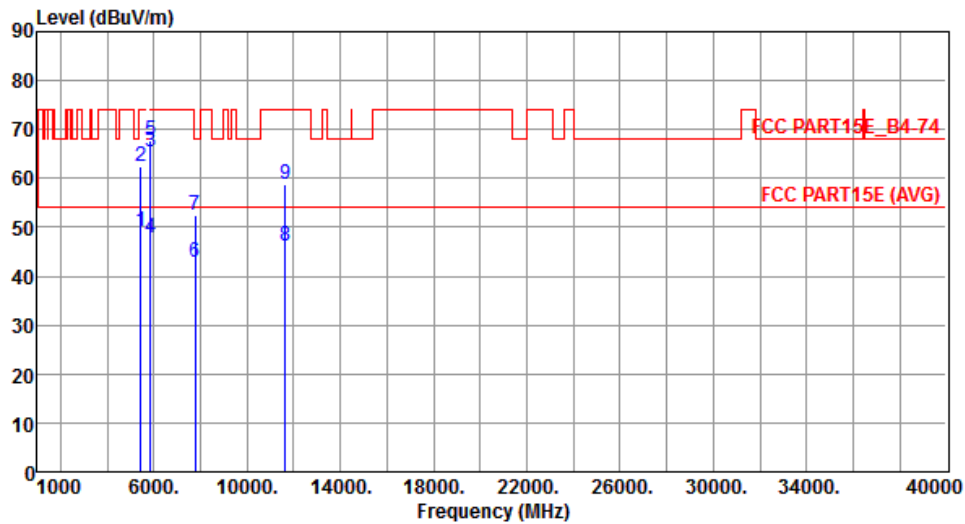
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.25	54.00	-1.75	46.66	5.59	Average	---	---
2	5440.00	66.31	74.00	-7.69	60.72	5.59	Peak	---	---
3	5850.00	73.62	78.20	-4.58	67.87	5.75	Peak	---	---
4	5860.00	50.08	54.00	-3.92	44.32	5.76	Average	---	---
5	5860.00	68.25	74.00	-5.75	62.49	5.76	Peak	---	---
6	7766.66	48.56	54.00	-5.44	38.53	10.03	Average	---	---
7	7766.66	54.46	68.20	-13.74	44.43	10.03	Peak	---	---
8	11650.00	47.19	54.00	-6.81	31.63	15.56	Average	---	---
9	11650.00	61.08	74.00	-12.92	45.52	15.56	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)	5825
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	49.01	54.00	-4.99	43.42	5.59	Average	---	---
2	5440.00	62.55	74.00	-11.45	56.96	5.59	Peak	---	---
3	5850.00	65.35	78.20	-12.85	59.60	5.75	Peak	---	---
4	5860.00	47.89	54.00	-6.11	42.13	5.76	Average	---	---
5	5860.00	67.73	74.00	-6.27	61.97	5.76	Peak	---	---
6	7766.66	42.70	54.00	-11.30	32.67	10.03	Average	---	---
7	7766.66	52.45	68.20	-15.75	42.42	10.03	Peak	---	---
8	11650.00	46.10	54.00	-7.90	30.54	15.56	Average	---	---
9	11650.00	58.82	74.00	-15.18	43.26	15.56	Peak	---	---

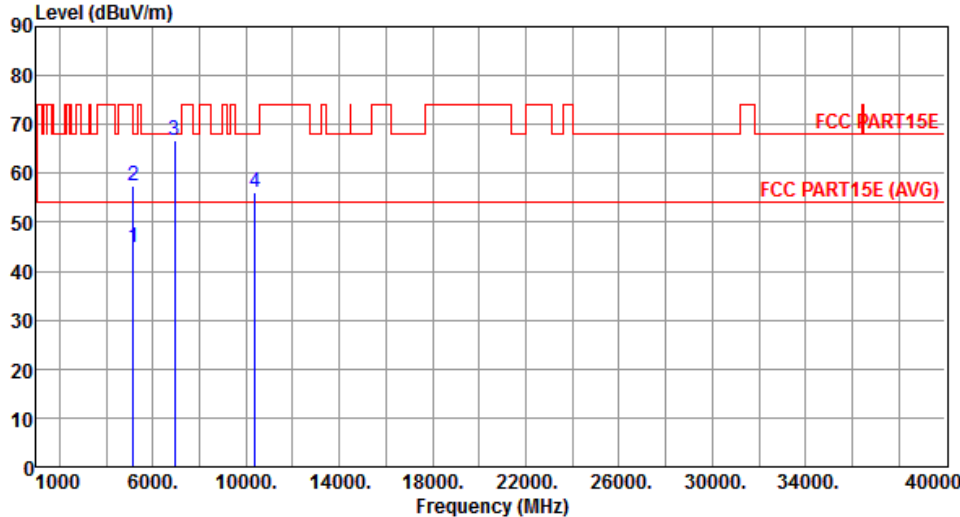
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

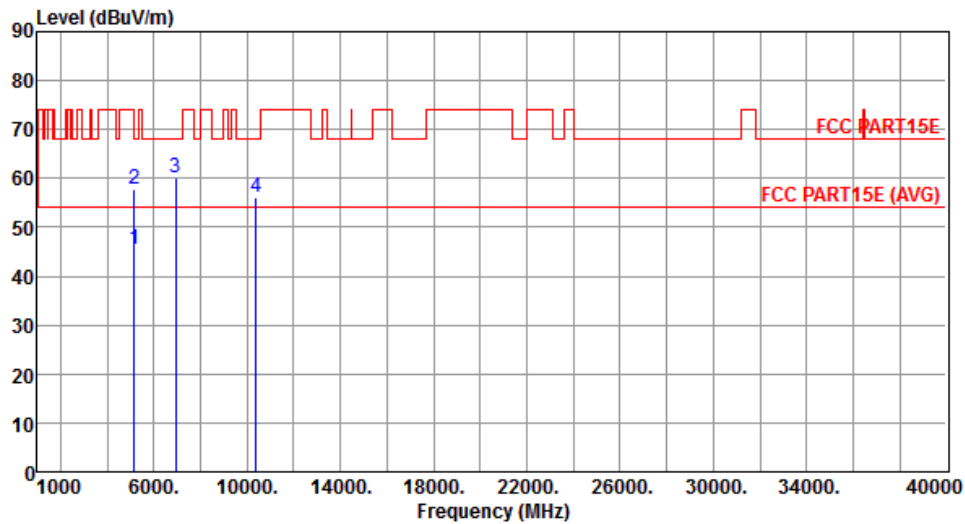
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal	Test Configuration	2



	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	44.89	54.00	-9.11	39.43	5.46	Average	---	---
2	5150.00	57.51	74.00	-16.49	52.05	5.46	Peak	---	---
3	6920.00	66.63	68.20	-1.57	58.20	8.43	Peak	---	---
4	10380.00	56.15	68.20	-12.05	40.67	15.48	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	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical	Test Configuration	2



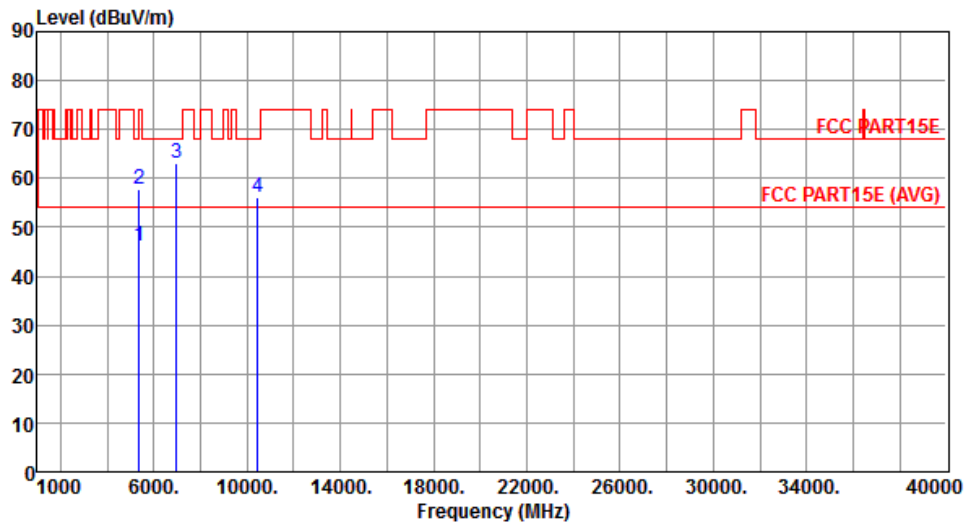
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.40	54.00	-8.60	39.94	5.46	Average	---	---
2	5150.00	57.62	74.00	-16.38	52.16	5.46	Peak	---	---
3	6920.00	60.21	68.20	-7.99	51.78	8.43	Peak	---	---
4	10380.00	56.24	68.20	-11.96	40.76	15.48	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	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal	Test Configuration	2



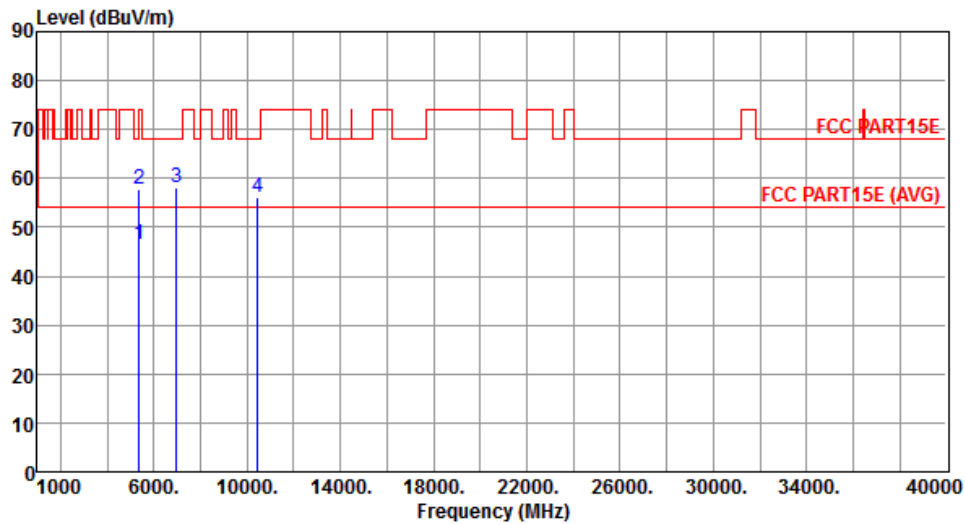
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.15	54.00	-7.85	40.59	5.56	Average	---	---
2	5350.00	57.74	74.00	-16.26	52.18	5.56	Peak	---	---
3	6973.30	62.95	68.20	-5.25	54.45	8.50	Peak	---	---
4	10460.00	55.98	68.20	-12.22	40.20	15.78	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical	Test Configuration	2



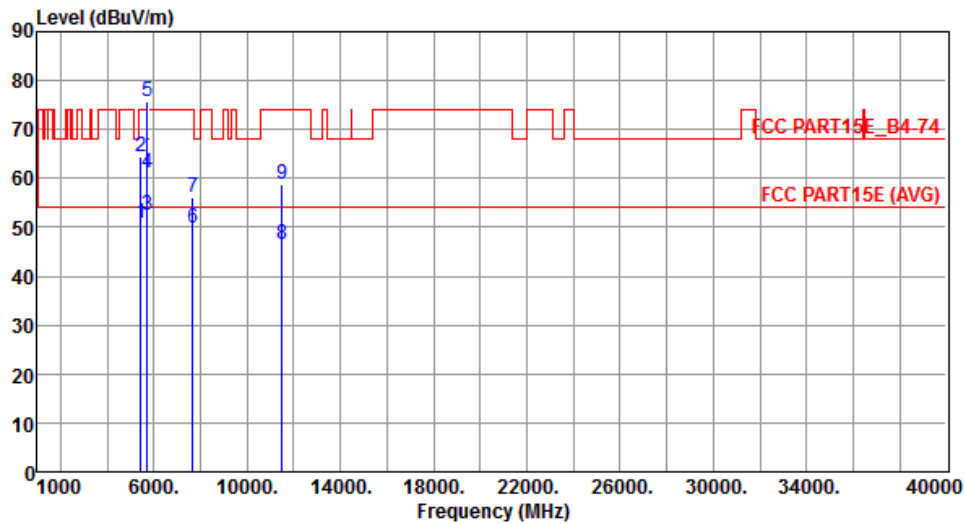
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.46	54.00	-7.54	40.90	5.56	Average	---	---
2	5350.00	57.92	74.00	-16.08	52.36	5.56	Peak	---	---
3	6973.30	58.26	68.20	-9.94	49.76	8.50	Peak	---	---
4	10460.00	56.15	68.20	-12.05	40.37	15.78	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal	Test Configuration	2



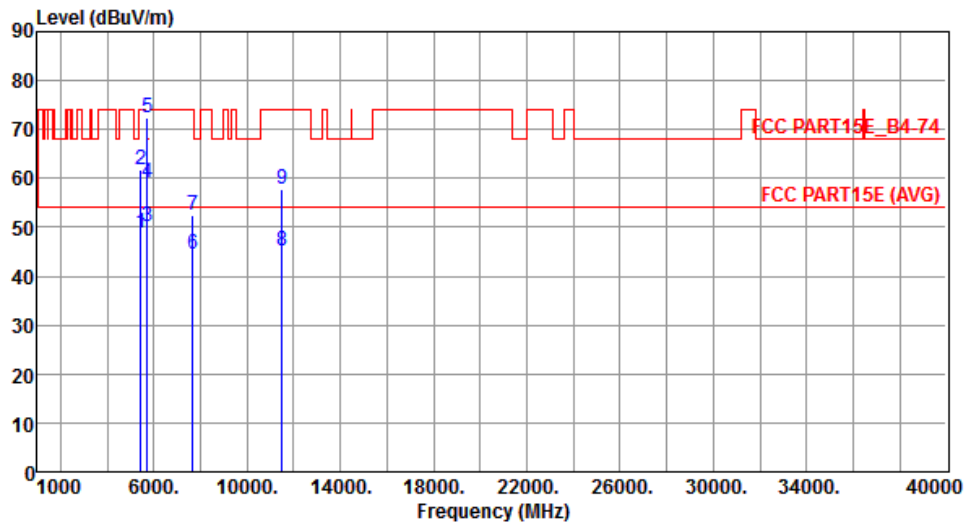
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	50.75	54.00	-3.25	45.16	5.59	Average	---	---
2	5440.00	64.52	74.00	-9.48	58.93	5.59	Peak	---	---
3	5715.00	52.48	54.00	-1.52	46.83	5.65	Average	---	---
4	5715.00	61.26	74.00	-12.74	55.61	5.65	Peak	---	---
5	5725.00	75.75	78.20	-2.45	70.11	5.64	Peak	---	---
6	7673.00	49.88	54.00	-4.12	39.77	10.11	Average	---	---
7	7673.00	56.04	74.00	-17.96	45.93	10.11	Peak	---	---
8	11510.00	46.59	54.00	-7.41	30.67	15.92	Average	---	---
9	11510.00	58.64	74.00	-15.36	42.72	15.92	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	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical	Test Configuration	2



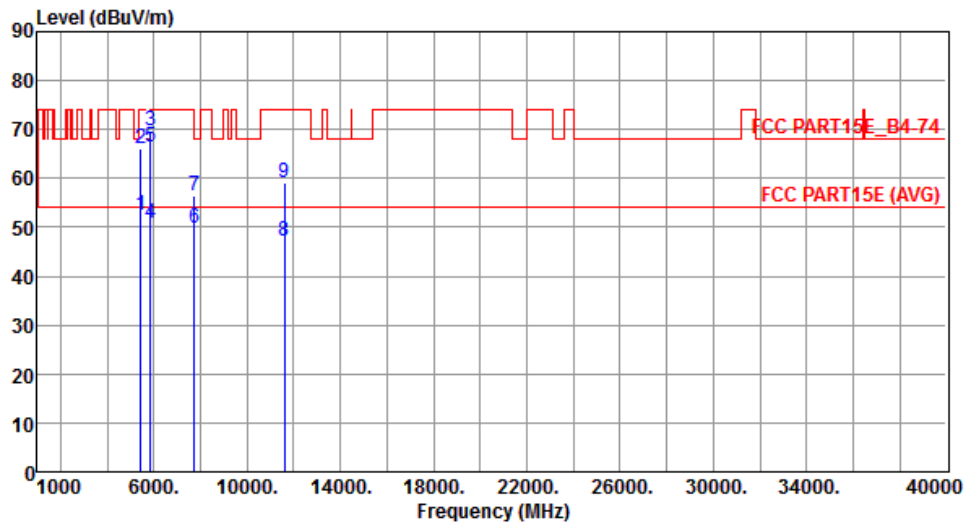
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	48.80	54.00	-5.20	43.21	5.59	Average	---	---
2	5440.00	61.90	74.00	-12.10	56.31	5.59	Peak	---	---
3	5715.00	50.13	54.00	-3.87	44.48	5.65	Average	---	---
4	5715.00	59.19	74.00	-14.81	53.54	5.65	Peak	---	---
5	5725.00	72.36	78.20	-5.84	66.72	5.64	Peak	---	---
6	7673.00	44.52	54.00	-9.48	34.41	10.11	Average	---	---
7	7673.00	52.33	74.00	-21.67	42.22	10.11	Peak	---	---
8	11510.00	45.03	54.00	-8.97	29.11	15.92	Average	---	---
9	11510.00	57.81	74.00	-16.19	41.89	15.92	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	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal	Test Configuration	2



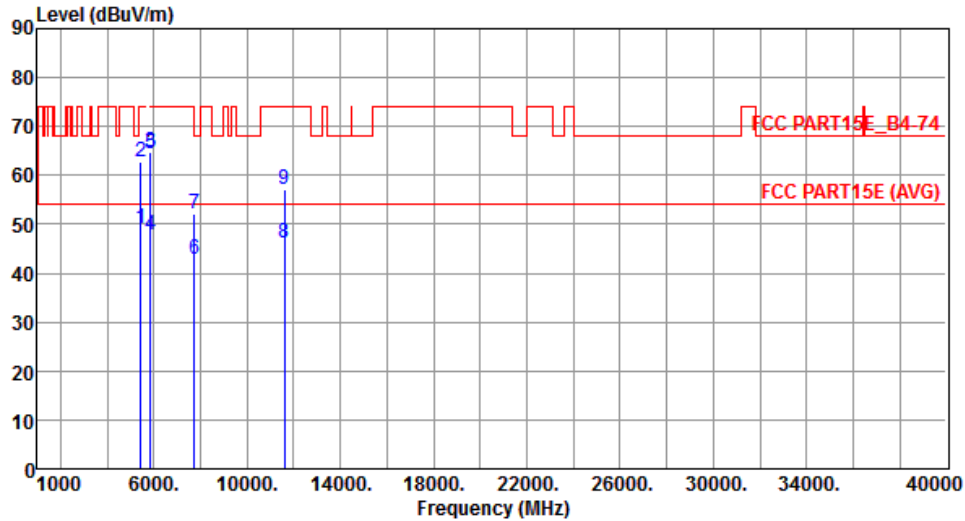
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	52.41	54.00	-1.59	46.82	5.59	Average	---	---
2	5440.00	66.25	74.00	-7.75	60.66	5.59	Peak	---	---
3	5850.00	69.69	78.20	-8.51	63.94	5.75	Peak	---	---
4	5860.00	50.95	54.00	-3.05	45.19	5.76	Average	---	---
5	5860.00	66.30	74.00	-7.70	60.54	5.76	Peak	---	---
6	7726.66	49.82	54.00	-4.18	39.74	10.08	Average	---	---
7	7726.66	56.35	74.00	-17.65	46.27	10.08	Peak	---	---
8	11590.00	47.25	54.00	-6.75	31.54	15.71	Average	---	---
9	11590.00	59.03	74.00	-14.97	43.32	15.71	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	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5440.00	49.21	54.00	-4.79	43.62	5.59	Average	---	---
2	5440.00	62.77	74.00	-11.23	57.18	5.59	Peak	---	---
3	5850.00	64.71	78.20	-13.49	58.96	5.75	Peak	---	---
4	5860.00	47.83	54.00	-6.17	42.07	5.76	Average	---	---
5	5860.00	64.32	74.00	-9.68	58.56	5.76	Peak	---	---
6	7726.66	42.70	54.00	-11.30	32.62	10.08	Average	---	---
7	7726.66	52.22	74.00	-21.78	42.14	10.08	Peak	---	---
8	11590.00	46.23	54.00	-7.77	30.52	15.71	Average	---	---
9	11590.00	57.14	74.00	-16.86	41.43	15.71	Peak	---	---

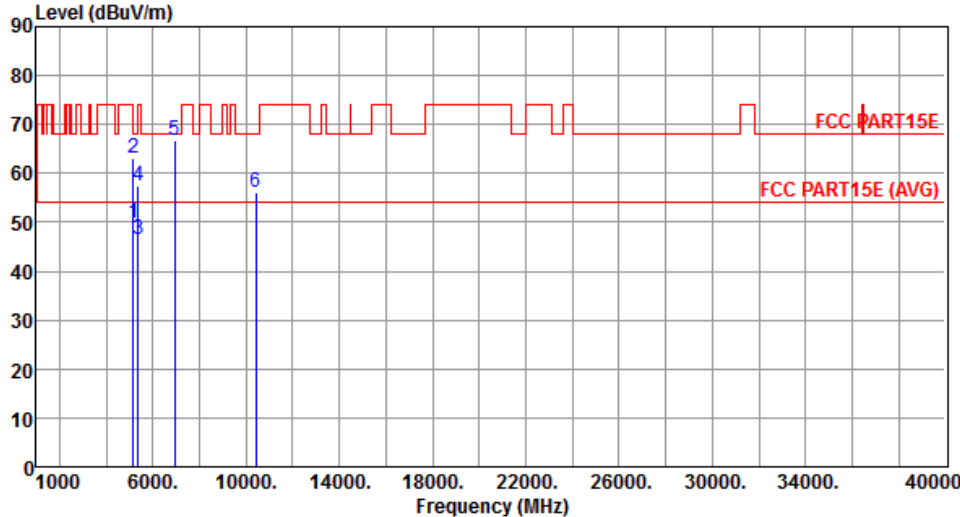
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

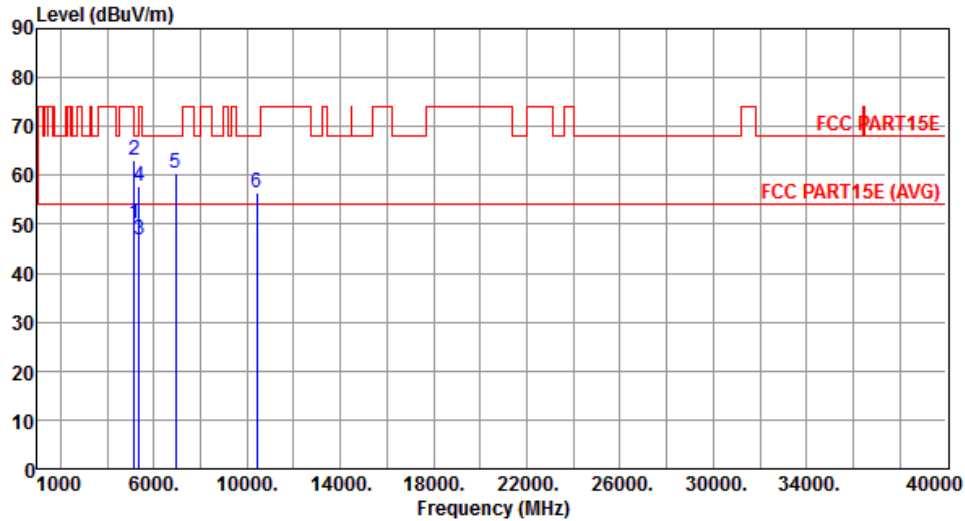
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal	Test Configuration	2



	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	49.95	54.00	-4.05	44.49	5.46	Average	---	---
2	5150.00	63.04	74.00	-10.96	57.58	5.46	Peak	---	---
3	5350.00	46.62	54.00	-7.38	41.06	5.56	Average	---	---
4	5350.00	57.45	74.00	-16.55	51.89	5.56	Peak	---	---
5	6946.60	66.68	68.20	-1.52	58.22	8.46	Peak	---	---
6	10420.00	56.21	68.20	-11.99	40.58	15.63	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	Test Configuration	2



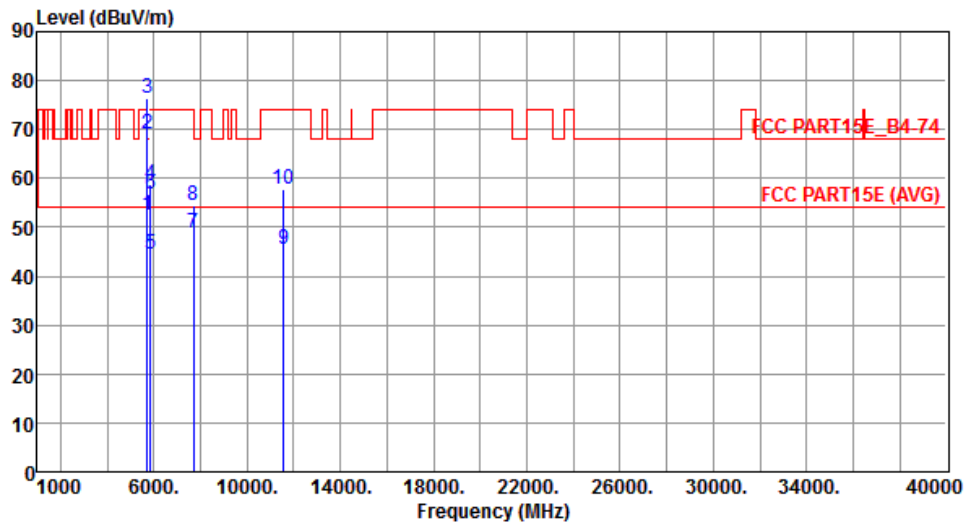
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	50.08	54.00	-3.92	44.62	5.46	Average	---	---
2	5150.00	63.21	74.00	-10.79	57.75	5.46	Peak	---	---
3	5350.00	46.84	54.00	-7.16	41.28	5.56	Average	---	---
4	5350.00	57.81	74.00	-16.19	52.25	5.56	Peak	---	---
5	6946.60	60.45	68.20	-7.75	51.99	8.46	Peak	---	---
6	10420.00	56.38	68.20	-11.82	40.75	15.63	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)	5775
Polarization	Horizontal	Test Configuration	2



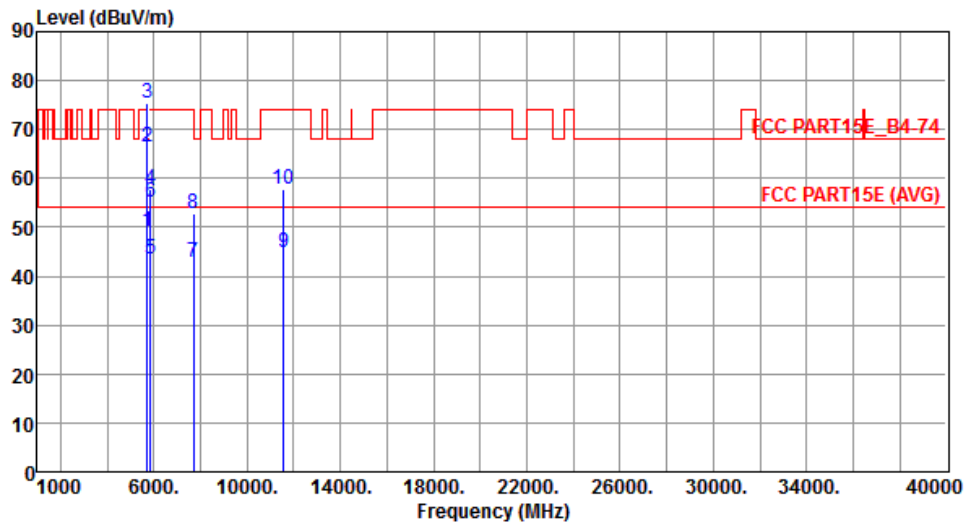
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	52.47	54.00	-1.53	46.82	5.65	Average	---	---
2	5715.00	69.08	74.00	-4.92	63.43	5.65	Peak	---	---
3	5725.00	76.29	78.20	-1.91	70.65	5.64	Peak	---	---
4	5850.00	58.74	78.20	-19.46	52.99	5.75	Peak	---	---
5	5860.00	44.65	54.00	-9.35	38.89	5.76	Average	---	---
6	5860.00	56.75	74.00	-17.25	50.99	5.76	Peak	---	---
7	7700.00	48.98	54.00	-5.02	38.89	10.09	Average	---	---
8	7700.00	54.32	74.00	-19.68	44.23	10.09	Peak	---	---
9	11550.00	45.53	54.00	-8.47	29.72	15.81	Average	---	---
10	11550.00	57.95	74.00	-16.05	42.14	15.81	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical	Test Configuration	2



	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	49.08	54.00	-4.92	43.43	5.65	Average	---	---
2	5715.00	66.55	74.00	-7.45	60.90	5.65	Peak	---	---
3	5725.00	75.46	78.20	-2.74	69.82	5.64	Peak	---	---
4	5850.00	57.67	78.20	-20.53	51.92	5.75	Peak	---	---
5	5860.00	43.58	54.00	-10.42	37.82	5.76	Average	---	---
6	5860.00	54.99	74.00	-19.01	49.23	5.76	Peak	---	---
7	7700.00	42.68	54.00	-11.32	32.59	10.09	Average	---	---
8	7700.00	52.77	74.00	-21.23	42.68	10.09	Peak	---	---
9	11550.00	44.81	54.00	-9.19	29.00	15.81	Average	---	---
10	11550.00	57.66	74.00	-16.34	41.85	15.81	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

3.6 Frequency Stability

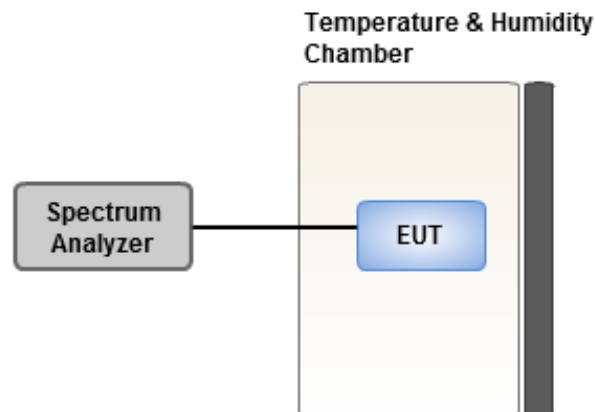
3.6.1 Limit of Frequency Stability

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 55 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°C Vmax	5.54	5.68	5.55	5.70
T20°C Vmin	5.17	5.19	5.16	5.22
T55°C Vnom	4.69	4.73	4.71	4.78
T50°C Vnom	4.55	4.59	4.69	4.64
T40°C Vnom	4.23	4.23	4.42	4.35
T30°C Vnom	3.82	3.71	3.89	3.90
T20°C Vnom	3.49	3.46	3.49	3.58
T10°C Vnom	3.10	3.20	3.11	3.14
T0°C Vnom	2.85	2.94	2.96	2.92
T-10°C Vnom	2.12	2.23	2.27	2.33
T-20°C Vnom	1.33	1.36	1.38	1.47
T-30°C Vnom	1.30	1.41	1.46	1.51
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 55		Tmin [°C]: -30

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	5.89	5.96	5.88	5.86
T20°C Vmin	4.77	4.83	4.87	4.80
T55°C Vnom	4.74	4.78	4.81	4.81
T50°C Vnom	4.67	4.72	4.79	4.70
T40°C Vnom	3.92	3.93	3.99	4.03
T30°C Vnom	4.51	4.49	4.42	4.43
T20°C Vnom	3.44	3.44	3.53	3.57
T10°C Vnom	3.50	3.55	3.48	3.56
T0°C Vnom	3.16	3.19	3.20	3.30
T-10°C Vnom	1.42	1.44	1.52	1.61
T-20°C Vnom	1.55	1.69	1.76	1.77
T-30°C Vnom	2.50	2.49	2.52	2.64
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
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>.

Linkou

Tel: 886-2-2601-1640

No. 30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan,
R.O.C.

Kwei Shan

Tel: 886-3-271-8666

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

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan Hsiang, Tao Yuan
Hsien 333, Taiwan, R.O.C.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

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