FCC C2PC Test Report

FCC ID	:	**UIDSBR-AC1900P**
Equipment	:	**AC1900 Wi-Fi Router with RipCurrent™ Technology**
Model No.	:	**SBR-AC1900P**
Brand Name	:	**ARRIS**
Applicant	:	**ARRIS Group, Inc.**
Address	:	**3871 Lakefield Drive, Suite 300, Suwanee, Georgia 30024, United States**
Standard	:	**47 CFR FCC Part 15.407**
Received Date	:	**Jun. 13, 2016**
Tested Date	:	**Jun. 22 ~ Jun. 30, 2016**

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

Reviewed by: **Approved by:**

Along Chen / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

Table of Contents

Release Record

Report No.	Version	Description	Issued Date
FR572901-01AN	Rev. 01	Initial issue	Nov. 29, 2016

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.474MHz 43.42 (Margin -3.02dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5380.00MHz 52.99 (Margin -1.01dB) – AV [dBuV/m at 3m]: 5470.00MHz 52.99 (Margin -1.01dB) – AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: ***Non-beamforming mode*** 5250~5350MHz: 23.97 5470~5725MHz: 23.98 ***Beamforming mode*** 5250~5350MHz: 21.42 5470~5725MHz: 21.44	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

1 General Description

1.1 Information

This report is issued as a FCC Class II Permissive Change. The modification is only concerned with adding 5250~5350MHz and 5470~5725 MHz band by software setting.

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**
5250-5350 5470-5725	a	5260-5320 5500-5720	52-64 [4] 100-144 [9]	3	6-54 Mbps
5250-5350 5470-5725	n (HT20)	5260-5320 5500-5720	52-64 [4] 100-144 [9]	3	MCS 0-23
5250-5350 5470-5725	n (HT40)	5270-5310 5510-5710	54-62 [2] 102-142 [4]	3	MCS 0-23
5250-5350 5470-5725	ac (VHT20)	5260-5320 5500-5720	52-64 [4] 100-144 [9]	3	MCS 0-9
5250-5350 5470-5725	ac (VHT40)	5270-5310 5510-5710	54-62 [2] 102-142 [4]	3	MCS 0-9
5250-5350 5470-5725	ac (VHT80)	5290 5530-5690	58 [1] 106-138 [2]	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. Note 3: 802.11n/ac supports beamforming mode. Note 4: The device has disabled the 5600-5650MHz band by S/W setting.					

1.1.2 Antenna Details

Ant. No.	Type	Connector	Operating Frequency (MHz) / Gain (dBi)				
			2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	Dipole	I-pex	3.29	---	---	---	---
2	Dipole	I-pex	3.86	---	---	---	---
3	Dipole	I-pex	3.66	---	---	---	---
4	Dipole	I-pex	---	4.3	3.18	3.21	4
5	Dipole	I-pex	---	3.2	2.42	2.42	2.8
6	Dipole	I-pex	---	3.5	2.38	1.98	4.3

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	100-240Vac, 50-60Hz, 1.0A Power line: 1.5m non-shielded without core

1.1.4 Accessories

Accessories		
No.	**Equipment**	**Description**
1	RJ45 cable	1m non-shielded without core

1.1.5 Channel List

802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	**Frequency(MHz)**	**Channel**	**Frequency(MHz)**
52	5260	54	5270
56	5280	62	5310
60	5300	102	5510
64	5320	110	5550
100	5500	134	5670
104	5520	142	5710
108	5540	**VHT80**	
112	5560	58	5290
116	5580	106	5530
132	5660	138	5690
136	5680	---	---
140	5700	---	---
144	5720	---	---

1.1.6 Test Tool and Duty Cycle

Test Tool	MTool, version 2.0.2.1				
Duty Cycle and Duty Factor	**Mode**	**Non-Beamforming**		**Beamforming**	
		Duty cycle (%)	**Duty factor (dB)**	**Duty cycle (%)**	**Duty factor (dB)**
	11a	99.31%	0.03	---	---
	VHT20	99.63%	0.02	96.07%	0.17
	VHT40	98.38%	0.07	92.57%	0.34
	VHT80	99.30%	0.03	93.02%	0.31

1.1.7 Power Setting

For Frequency band 5250~5350 MHz			
Modulation Mode	Test Frequency (MHz)	Power Set	
		Non-Beamforming	Beamforming
11a	5260	64	---
11a	5300	60	---
11a	5320	60	---
HT20	5260	64	62
HT20	5300	60	58
HT20	5320	60	58
HT40	5270	72	64
HT40	5310	72	64
VHT20	5260	64	62
VHT20	5300	60	58
VHT20	5320	60	58
VHT40	5270	72	64
VHT40	5310	72	64
VHT80	5290	72	60

For Frequency band 5470~5725 MHz			
Modulation Mode	Test Frequency (MHz)	Power Set	
		Non-Beamforming	Beamforming
11a	5500	60	---
11a	5580	62	---
11a	5700	62	---
HT20	5500	60	58
HT20	5580	64	62
HT20	5700	64	62
HT40	5510	72	64
HT40	5550	76	64
HT40	5670	76	64
VHT20	5500	60	58
VHT20	5580	64	62
VHT20	5700	64	62
VHT40	5510	72	64
VHT40	5550	76	64
VHT40	5670	76	64
VHT80	5530	64	60

Channel that extends across the 5.725 GHz boundary

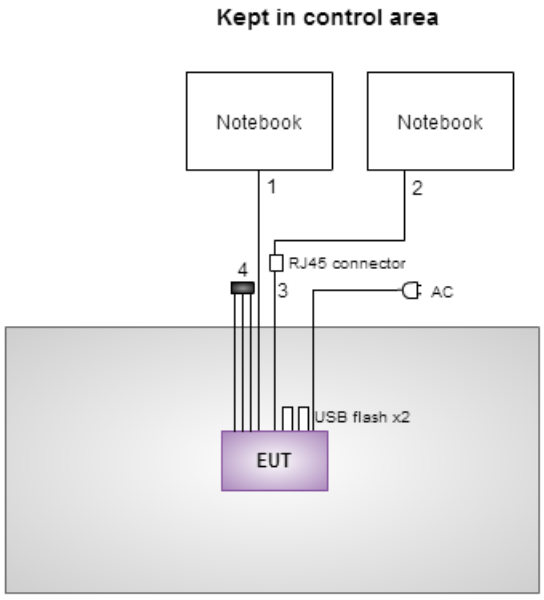
For Frequency band 5470~5725 MHz			
Modulation Mode	Test Frequency (MHz)	Power Set	
		Non-Beamforming	Beamforming
HT20	5720	66	68
HT40	5710	68	68
VHT20	5720	78	68
VHT40	5710	68	68
VHT80	5690	78	64

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Signal cable / Length (m)**
1	Notebook	DELL	Latitude E6440	DoC	RJ45, 8m non-shielded.
2	Notebook	DELL	Latitude E6440	DoC	RJ45, 8m non-shielded.
3	USB 2.0 flash	Kingston	DTSE9	---	---
4	USB 2.0 flash	Kingston	DTSE9	---	---
5	Load	ICC	---	---	RJ45, 5m non-shielded x3.

1.3 Test Setup Chart

Test Setup Diagram



1. RJ45, 8m non-shielded
2. RJ45, 8m non-shielded
3. RJ45, 1.5m non-shielded
4. RJ45, 5m (x3) non-shielded with load

1.4 The Equipment List

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

Test Item	Radiated Emission				
Test Site	966 chamber3 / (03CH03-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	Agilent	N9010A	MY53400091	Sep. 14, 2015	Sep. 13, 2016
Receiver	Agilent	N9038A	MY53290044	Oct. 14, 2015	Oct. 13, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 26, 2016	Apr. 25, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Feb. 24, 2016	Feb. 23, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
Preamplifier	EMC	EMC02325	980187	Sep. 21, 2015	Sep. 20, 2016
Preamplifier	Agilent	83017A	MY53270014	Sep. 07, 2015	Sep. 06, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-8M	HUBER+SUHNER	SUCOFLEX104	MY22600/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Feb. 05, 2016	Feb. 04, 2017
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Feb. 05, 2016	Feb. 04, 2017
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Feb. 05, 2016	Feb. 04, 2017
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Feb. 05, 2016	Feb. 04, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Feb. 17, 2016	Feb. 16, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 27, 2015	Nov. 26, 2016
Power Meter	Anritsu	ML2495A	1241002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor	Anritsu	MA2411B	1207366	Sep. 21, 2015	Sep. 20, 2016
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Testing Applied Standards

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

47 CFR FCC Part 15.407
ANSI C63.10-2013
FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02
FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 Measurement Uncertainty

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

Measurement Uncertainty	
Parameters	**Uncertainty**
Bandwidth	±34.134 Hz
Conducted power	±0.808 dB
Frequency error	±34.134 Hz
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.66 dB
Radiated emission > 1GHz	±5.37dB
Time	±0.1%
Temperature	±0.6 ^{o}C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	23°C / 63%	Howard Huang
Radiated Emissions	03CH03-WS	19-21°C / 62-64%	Warren Lee
RF Conducted	TH01-WS	22°C / 66%	Alex Huang

- FCC site registration No.: 207696
- IC site registration No.: 10807C-1

2.2 The Worst Test Modes and Channel Details

Non-beamforming mode

For Frequency band 5250-5350 MHz, 5470-5725 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate**	**Test Configuration**
Conducted Emissions	VHT40	5510	MCS 0	---
Radiated Emissions ≤1GHz	VHT40	5510	MCS 0	---
RF Output Power	11a	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	6 Mbps	---
	HT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	HT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5690	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	6 Mbps	---
	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5690	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	---
	VHT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5690	MCS 0	
Frequency Stability	Un-modulation	5300	---	1

Beamforming mode

For Frequency band 5250-5350 MHz, 5470-5725 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate**	**Test Configuration**
Conducted Emissions	VHT40	5510	MCS 0	---
Radiated Emissions ≤1GHz	VHT40	5510	MCS 0	---
RF Output Power	HT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	---
	HT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5690	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	---
	VHT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5690	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	---
	VHT40	5270 / 5310 5510 / 5550 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5690	MCS 0	
Frequency Stability	Un-modulation	5300	---	---

3 Transmitter Test Results

3.1 Conducted Emissions

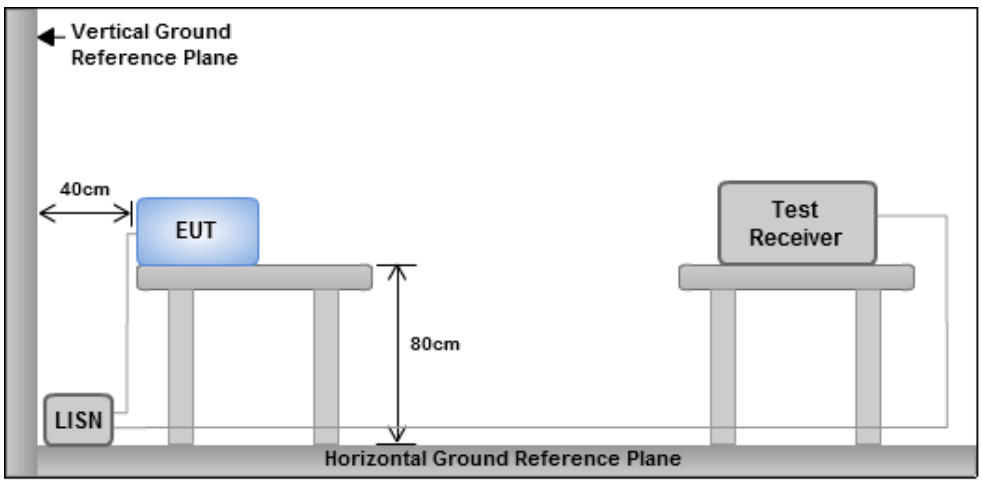
3.1.1 Limit of Conducted Emissions

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



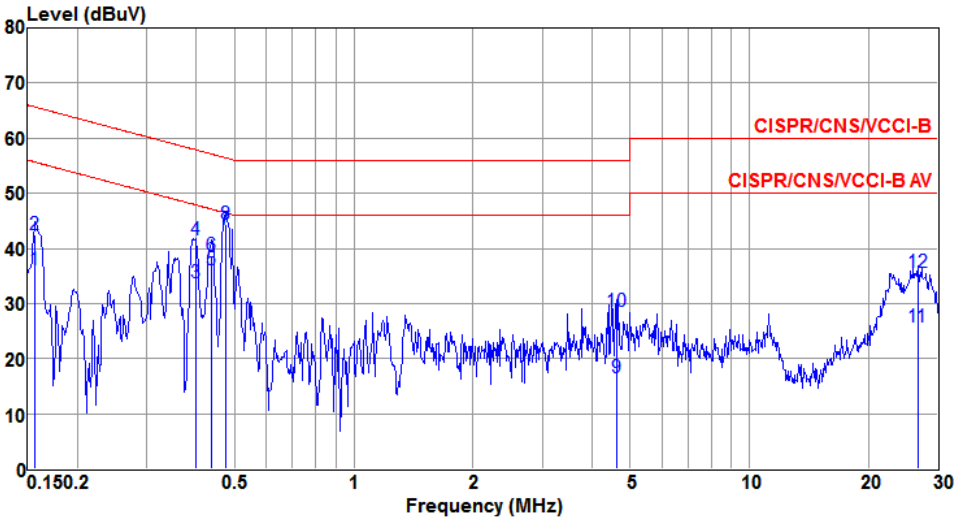
Note: 1. Support units were connected to second LISN.

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

Non- beamforming mode

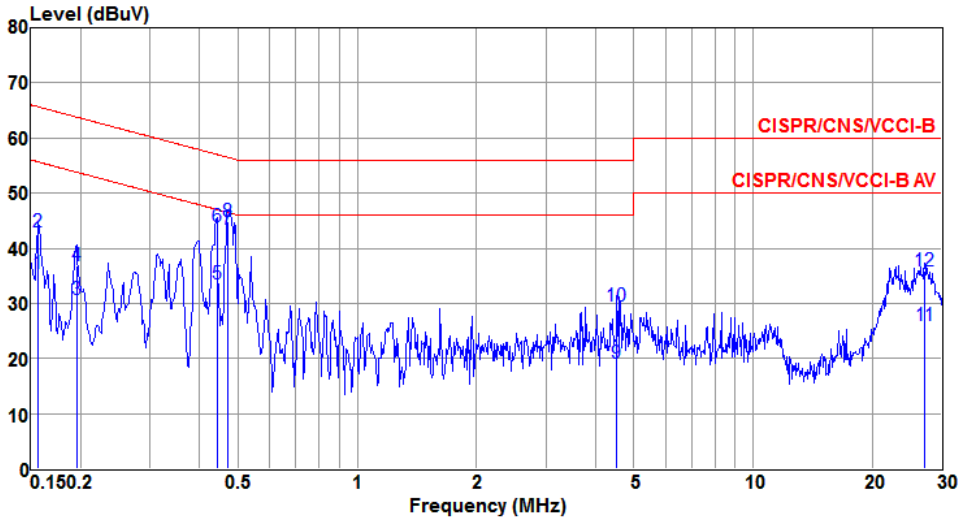
Modulation	VHT40	Test Freq. (MHz)	5510
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	36.23	55.65	-19.42	36.10	0.11	0.02	Average
2	0.156	42.46	65.65	-23.19	42.33	0.11	0.02	QP
3	0.400	33.75	47.86	-14.11	33.59	0.13	0.03	Average
4	0.400	41.58	57.86	-16.28	41.42	0.13	0.03	QP
5	0.437	36.23	47.11	-10.88	36.07	0.13	0.03	Average
6	0.437	38.82	57.11	-18.29	38.66	0.13	0.03	QP
7@	0.474	43.32	46.45	-3.13	43.15	0.13	0.04	Average
8	0.474	44.42	56.45	-12.03	44.25	0.13	0.04	QP
9	4.622	16.52	46.00	-29.48	16.19	0.20	0.13	Average
10	4.622	28.67	56.00	-27.33	28.34	0.20	0.13	QP
11	26.699	25.72	50.00	-24.28	25.05	0.43	0.24	Average
12	26.699	35.63	60.00	-24.37	34.96	0.43	0.24	QP

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

Modulation	VHT40	Test Freq. (MHz)	5510
Power Phase	Neutral		

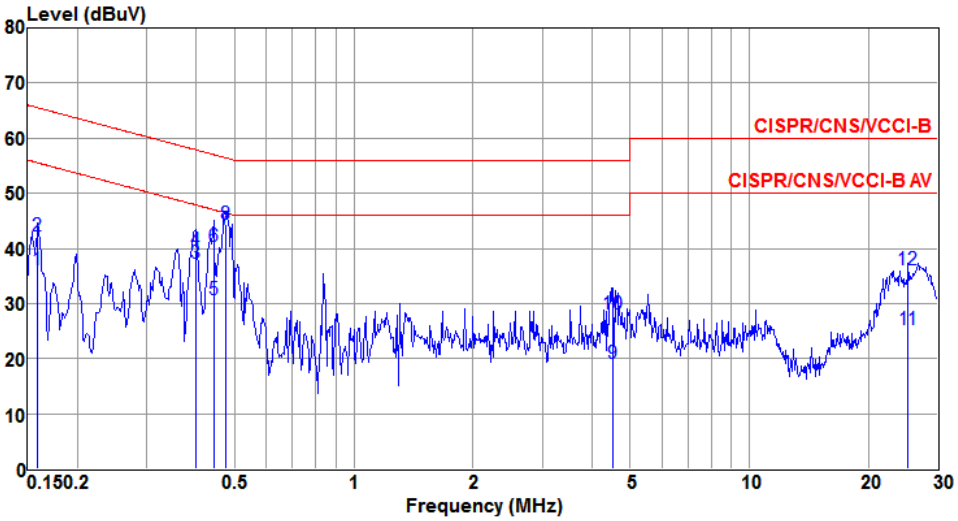


	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	35.47	55.65	-20.18	35.32	0.13	0.02	Average
2	0.156	42.99	65.65	-22.66	42.84	0.13	0.02	QP
3	0.195	30.69	53.80	-23.11	30.57	0.10	0.02	Average
4	0.195	36.90	63.80	-26.90	36.78	0.10	0.02	QP
5	0.442	33.57	47.02	-13.45	33.40	0.14	0.03	Average
6	0.442	43.89	57.02	-13.13	43.72	0.14	0.03	QP
7@	0.472	43.42	46.48	-3.06	43.24	0.14	0.04	Average
8	0.472	44.78	56.48	-11.70	44.60	0.14	0.04	QP
9	4.525	19.15	46.00	-26.85	18.84	0.18	0.13	Average
10	4.525	29.46	56.00	-26.54	29.15	0.18	0.13	QP
11	27.127	25.99	50.00	-24.01	25.28	0.47	0.24	Average
12	27.127	35.99	60.00	-24.01	35.28	0.47	0.24	QP

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

Beamforming mode

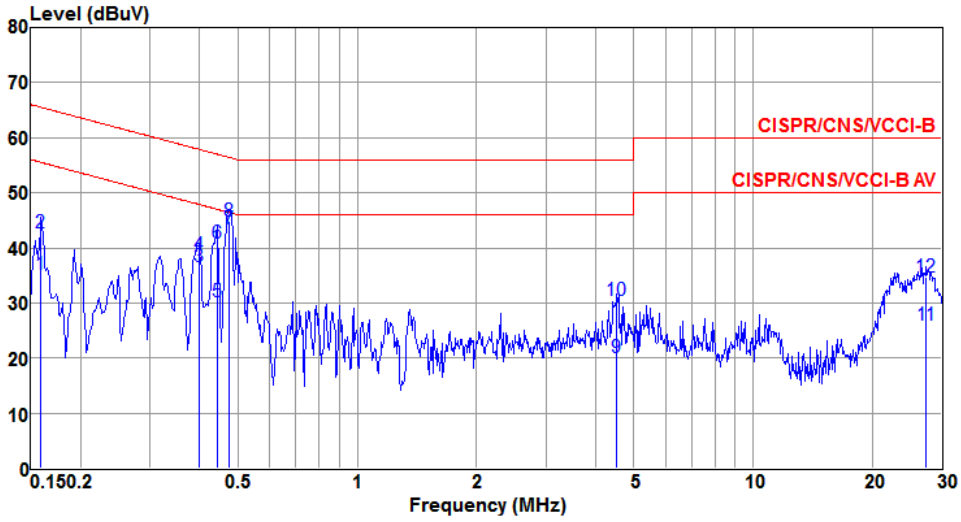
Modulation	VHT40	Test Freq. (MHz)	5510
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.159	36.16	55.52	-19.36	36.03	0.11	0.02	Average
2	0.159	42.36	65.52	-23.16	42.23	0.11	0.02	QP
3	0.398	37.28	47.90	-10.62	37.12	0.13	0.03	Average
4	0.398	39.72	57.90	-18.18	39.56	0.13	0.03	QP
5	0.442	30.64	47.02	-16.38	30.48	0.13	0.03	Average
6	0.442	40.38	57.02	-16.64	40.22	0.13	0.03	QP
7@	0.474	43.42	46.45	-3.03	43.25	0.13	0.04	Average
8	0.474	44.46	56.45	-11.99	44.29	0.13	0.04	QP
9	4.525	19.24	46.00	-26.76	18.91	0.20	0.13	Average
10	4.525	28.11	56.00	-27.89	27.78	0.20	0.13	QP
11	25.188	25.35	50.00	-24.65	24.68	0.42	0.25	Average
12	25.188	36.02	60.00	-23.98	35.35	0.42	0.25	QP

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

Modulation	VHT40	Test Freq. (MHz)	5510
Power Phase	Neutral		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.159	35.28	55.52	-20.24	35.14	0.12	0.02	Average
2	0.159	42.73	65.52	-22.79	42.59	0.12	0.02	QP
3	0.398	36.48	47.90	-11.42	36.31	0.14	0.03	Average
4	0.398	38.83	57.90	-19.07	38.66	0.14	0.03	QP
5	0.442	30.31	47.02	-16.71	30.14	0.14	0.03	Average
6	0.442	40.92	57.02	-16.10	40.75	0.14	0.03	QP
7@	0.474	43.42	46.44	-3.02	43.24	0.14	0.04	Average
8	0.474	44.83	56.44	-11.61	44.65	0.14	0.04	QP
9	4.525	20.02	46.00	-25.98	19.71	0.18	0.13	Average
10	4.525	30.56	56.00	-25.44	30.25	0.18	0.13	QP
11	27.416	25.98	50.00	-24.02	25.27	0.47	0.24	Average
12	27.416	34.74	60.00	-25.26	34.03	0.47	0.24	QP

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

3.2 Emission Bandwidth

3.2.1 Test Procedures

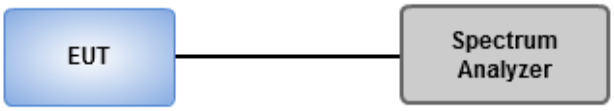
26dB Bandwidth

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

Occupied Bandwidth

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

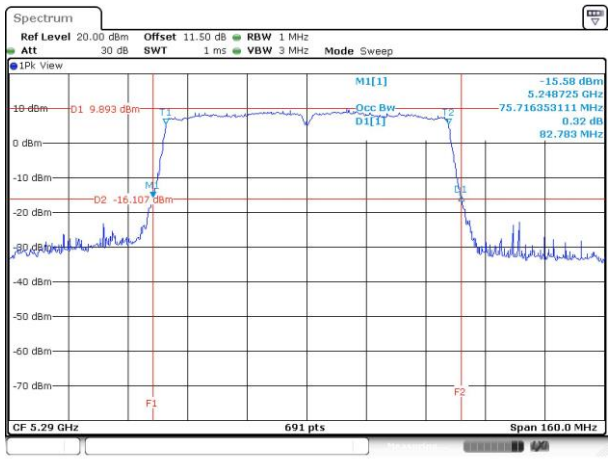
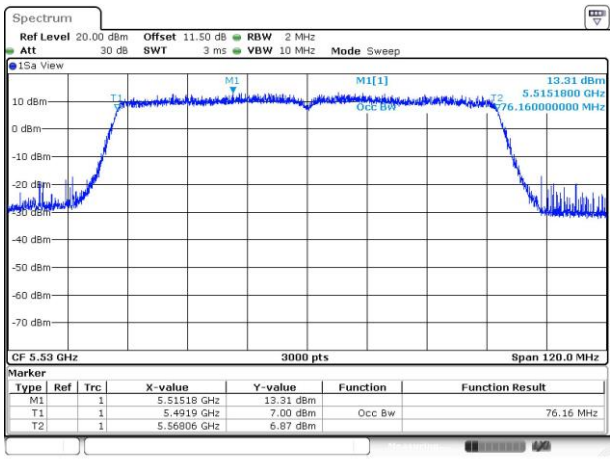
3.2.2 Test Setup



3.2.3 Test Result of Emission Bandwidth

Non-beamforming mode

Emission Bandwidth									
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)			Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2	
11a	3	5260	20.35	20.29	20.46	16.84	16.78	16.72	24.00
11a	3	5300	20.29	20.35	20.41	16.84	16.77	16.74	24.00
11a	3	5320	20.23	20.29	20.41	16.85	16.85	16.73	24.00
VHT20	3	5260	20.75	20.46	20.64	17.86	17.77	17.78	24.00
VHT20	3	5300	20.75	20.46	20.64	17.87	17.76	17.79	24.00
VHT20	3	5320	20.70	20.46	20.41	17.87	17.75	17.78	24.00
VHT40	3	5270	40.70	40.58	40.46	36.56	36.56	36.54	24.00
VHT40	3	5310	40.70	40.46	40.46	36.52	36.56	36.52	24.00
VHT80	3	5290	82.78	82.55	81.86	76.08	76.08	76.08	24.00
11a	3	5500	20.29	20.29	20.35	16.82	16.79	16.72	24.00
11a	3	5580	20.35	20.29	20.46	16.87	16.78	16.72	24.00
11a	3	5700	20.29	20.29	20.46	16.82	16.78	16.72	24.00
VHT20	3	5500	20.75	20.58	20.41	17.76	17.78	17.88	24.00
VHT20	3	5580	20.70	20.41	20.46	17.90	17.76	17.78	24.00
VHT20	3	5700	20.81	20.35	20.46	17.90	17.75	17.79	24.00
VHT40	3	5510	40.93	40.81	40.58	36.54	36.52	36.56	24.00
VHT40	3	5550	40.81	40.58	40.35	36.56	36.50	36.56	24.00
VHT40	3	5670	40.93	40.58	40.35	36.54	36.50	36.50	24.00
VHT80	3	5530	82.78	82.09	81.39	76.16	76.00	76.16	24.00

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

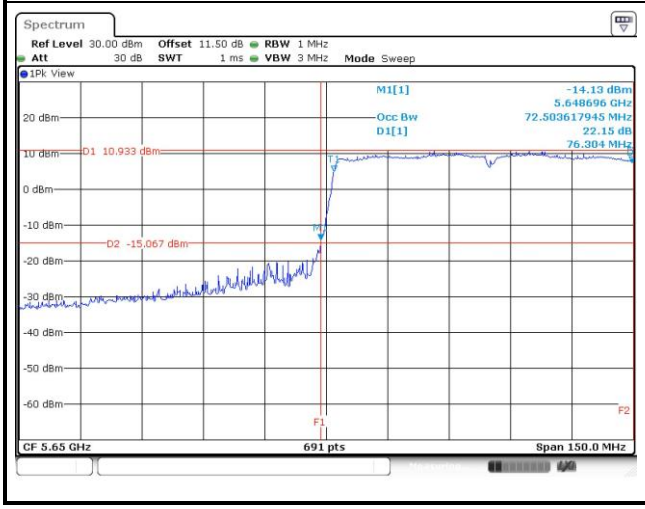
Channel that extends across the 5.725 GHz boundary

UNII Emission Bandwidth Result (Within 5470-5725MHz band)									
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)			Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2	
11a	3	5720	15.21	15.09	15.09	13.435	13.375	13.355	22.79
VHT20	3	5720	15.40	15.21	15.21	13.945	13.895	13.915	22.82
VHT40	3	5710	35.51	35.20	35.10	33.27	33.27	33.29	24.00
VHT80	3	5690	76.30	76.09	75.87	73.1	73.1	73.1	24.00

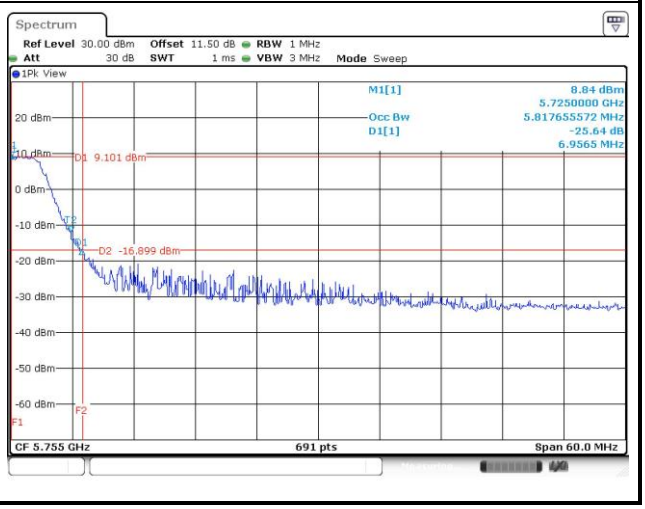
UNII Emission Bandwidth Result (Extends across 5725MHz band)								
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)		
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2
11a	3	5720	5.28	5.22	5.33	3.405	3.405	3.365
VHT20	3	5720	5.39	5.33	5.37	3.935	3.865	3.885
VHT40	3	5710	5.68	5.45	5.39	3.23	3.23	3.25
VHT80	3	5690	6.87	6.96	6.70	3.06	3.02	2.98

Worst Plots

Within 5470-5725MHz band

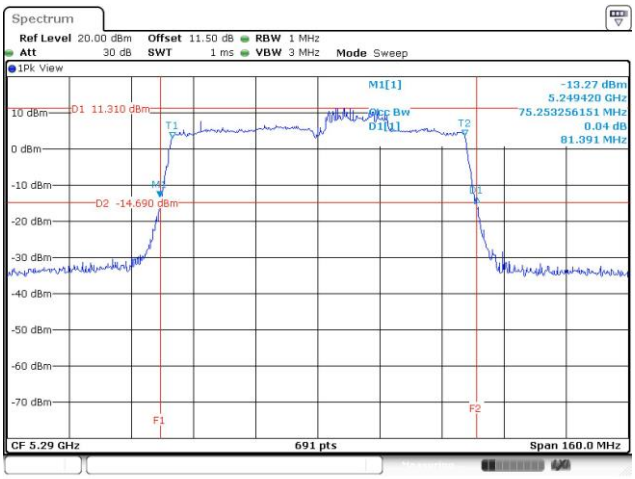
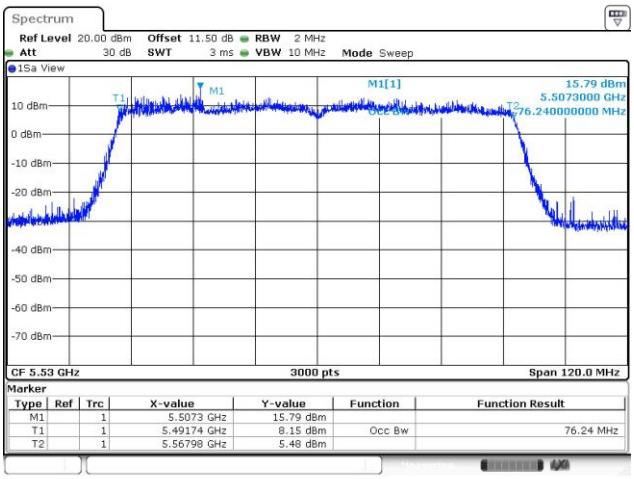


Extends across 5725MHz band



Beamforming mode

Emission Bandwidth									
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)			Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2	
VHT20	3	5260	20.52	20.29	20.58	17.80	17.72	17.75	24.00
VHT20	3	5300	20.58	20.35	20.41	17.80	17.72	17.75	24.00
VHT20	3	5320	20.52	20.41	20.46	17.83	17.71	17.74	24.00
VHT40	3	5270	41.16	41.04	40.46	36.52	36.50	36.50	24.00
VHT40	3	5310	41.16	40.81	40.23	36.54	36.54	36.56	24.00
VHT80	3	5290	81.39	80.70	80.46	75.92	76.00	75.96	24.00
VHT20	3	5500	20.46	20.46	20.41	17.82	17.71	17.75	24.00
VHT20	3	5580	20.41	20.35	20.35	17.83	17.72	17.76	24.00
VHT20	3	5700	20.52	20.41	20.41	17.84	17.73	17.76	24.00
VHT40	3	5510	40.81	40.58	40.81	36.50	36.48	36.46	24.00
VHT40	3	5550	41.16	40.35	40.58	36.46	36.52	36.50	24.00
VHT40	3	5670	41.16	40.93	40.58	36.54	36.52	36.52	24.00
VHT80	3	5530	81.39	80.70	80.93	76.24	76.12	76.16	24.00

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

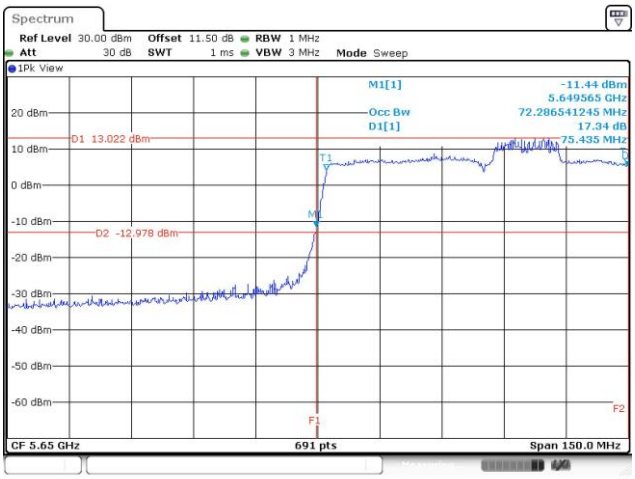
Channel that extends across the 5.725 GHz boundary

UNII Emission Bandwidth Result (Within 5470-5725MHz band)									
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)			Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2	
VHT20	3	5720	15.34	15.21	15.15	13.945	13.885	13.885	22.80
VHT40	3	5710	35.71	35.71	35.71	33.29	33.27	33.27	24.00
VHT80	3	5690	75.44	75.22	75.00	73.02	72.98	73.06	24.00

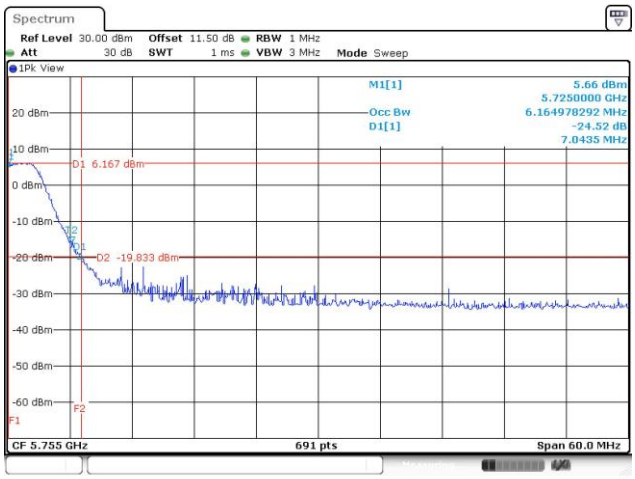
UNII Emission Bandwidth Result (Extends across 5725MHz band)								
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)		
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2
VHT20	3	5720	5.43	5.22	5.28	3.895	3.845	3.865
VHT40	3	5710	5.74	5.57	5.57	3.25	3.23	3.23
VHT80	3	5690	7.04	6.87	6.61	2.94	2.9	2.98

Worst Plots

Within 5470-5725MHz band



Extends across 5725MHz band



3.3 RF Output Power

3.3.1 Limit of RF Output Power

Frequency Band (MHz)		Limit
☒	5250 ~ 5350	250mW or 11dBm+10 log B
☒	5470 ~ 5725	250mW or 11dBm+10 log B
Note: “B” is the 26dB emission bandwidth in MHz.		

3.3.2 Test Procedures

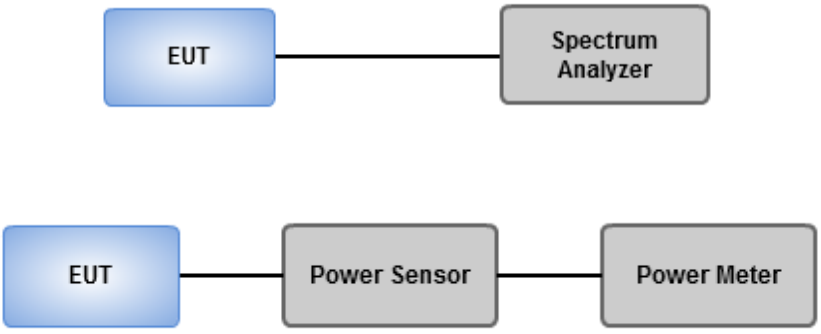
☒ Power meter (For channel that does not extends across the 5.725 GHz boundary)

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

☒ Spectrum analyzer (For channel that extends across the 5.725 GHz boundary)

1. Set RBW=1MHz, VBW=3MHz , Sweep time= Auto, Detector = RMS
2. Trace average at least 100 traces in power averaging mode
3. Compute power by integrating the spectrum across the 26 dB EBW
4. Add 10 log(1/X, X:duty cycle) if duty cycle is <98%)

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

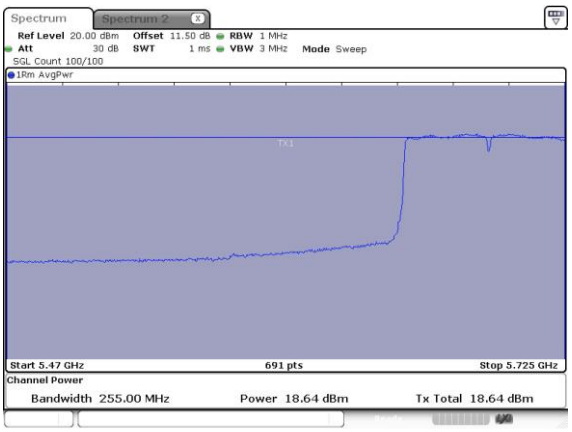
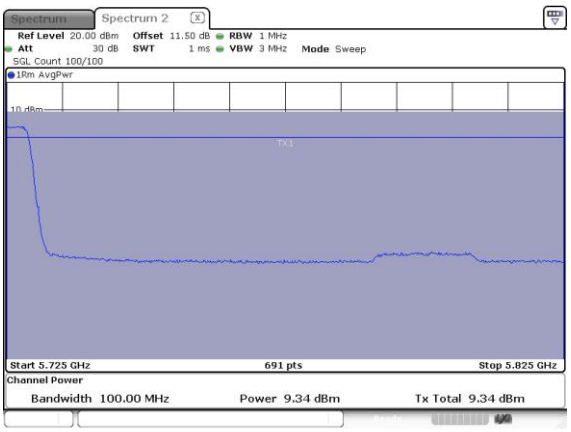
Non-beamforming mode

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	5260	16.36	16.70	16.08	---	130.576	21.16	24.00
11a	3	5300	15.35	15.76	14.96	---	103.280	20.14	24.00
11a	3	5320	15.5	15.69	14.9	---	103.452	20.15	24.00
HT20	3	5260	16.35	16.68	15.98	---	129.338	21.12	24.00
HT20	3	5300	15.61	15.58	14.91	---	103.507	20.15	24.00
HT20	3	5320	15.52	15.61	14.93	---	103.154	20.13	24.00
HT40	3	5270	19.19	19.46	18.77	---	246.629	23.92	24.00
HT40	3	5310	19.09	19.62	18.69	---	246.679	23.92	24.00
VHT20	3	5260	16.37	16.72	16	---	130.151	21.14	24.00
VHT20	3	5300	15.65	15.63	14.95	---	104.549	20.19	24.00
VHT20	3	5320	15.58	15.66	14.99	---	104.504	20.19	24.00
VHT40	3	5270	19.25	19.52	18.81	---	249.709	**23.97**	24.00
VHT40	3	5310	19.15	19.67	18.73	---	249.552	23.97	24.00
VHT80	3	5290	17.96	18.77	18.11	---	202.567	23.07	24.00
11a	3	5500	15.81	15.6	15.18	---	107.375	20.31	24.00
11a	3	5580	16.01	16.23	15.36	---	116.234	20.65	24.00
11a	3	5700	15.46	15.44	14.84	---	100.630	20.03	24.00
HT20	3	5500	15.94	15.69	15.21	---	109.522	20.40	24.00
HT20	3	5580	16.22	16.31	15.79	---	122.567	20.88	24.00
HT20	3	5700	15.79	15.81	15.16	---	108.848	20.37	24.00
HT40	3	5510	19.08	19.37	18.88	---	244.674	23.89	24.00
HT40	3	5550	18.99	19.28	18.69	---	237.933	23.76	24.00
HT40	3	5670	18.58	19.01	18.58	---	223.837	23.50	24.00
VHT20	3	5500	15.97	15.72	15.26	---	110.435	20.43	24.00
VHT20	3	5580	16.26	16.36	15.83	---	123.801	20.93	24.00
VHT20	3	5700	15.82	15.87	15.23	---	110.174	20.42	24.00
VHT40	3	5510	19.17	19.44	19.00	---	249.939	**23.98**	24.00
VHT40	3	5550	19.02	19.31	18.72	---	239.583	23.79	24.00
VHT40	3	5670	18.61	19.05	18.62	---	225.741	23.54	24.00
VHT80	3	5530	17.25	17.05	16.82	---	151.871	21.81	24.00

Channel that extends across the 5.725 GHz boundary

Maximum Conducted Output Power (Within 5470-5725MHz band)											
Mode	N_{TX}	Freq. (MHz)	Conducted Power without duty factor					Duty factor (dB)	Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (dBm)				
11a	3	5720	14.7	14.54	14.13	---	19.23	0.00	83.839	19.23	22.79
HT20	3	5720	15.07	14.93	14.62	---	19.65	0.00	92.227	19.65	22.82
HT40	3	5710	17.92	18.19	17.79	---	22.74	0.00	187.979	22.74	24.00
VHT20	3	5720	15.11	15.16	14.66	---	19.75	0.00	94.485	19.75	22.82
VHT40	3	5710	17.92	18.23	17.81	---	22.76	0.00	188.866	22.76	24.00
VHT80	3	5690	18.6	18.64	18.37	---	23.31	0.00	214.264	23.31	24.00

Maximum Conducted Output Power (Extends across 5725MHz band)											
Mode	N_{TX}	Freq. (MHz)	Conducted Power without duty factor					Duty factor (dB)	Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (dBm)				
11a	3	5720	8.44	8.12	7.7	---	12.87	0.00	19.357	12.87	30.00
HT20	3	5720	9.23	9.05	8.86	---	13.82	0.00	24.102	13.82	30.00
HT40	3	5710	7.47	7.6	7.31	---	12.23	0.00	16.722	12.23	30.00
VHT20	3	5720	9.26	9.34	8.94	---	13.95	0.00	24.858	13.95	30.00
VHT40	3	5710	7.52	7.65	7.41	---	12.30	0.00	16.978	12.30	30.00
VHT80	3	5690	4.34	4.27	4.02	---	8.98	0.00	7.913	8.98	30.00

Worst Channel Power Plots	
Within 5470-5725MHz band	**Extends across 5725MHz band**
	

Beamforming mode

Mode	N_{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
HT20	3	5260	16.01	16.15	15.54	---	116.922	20.68	22.56
HT20	3	5300	14.88	15.21	14.64	---	93.058	19.69	22.56
HT20	3	5320	14.99	15.13	14.61	---	93.041	19.69	22.56
HT40	3	5270	16.64	16.79	16.19	---	135.476	21.32	22.56
HT40	3	5310	16.67	16.87	16.22	---	136.972	21.37	22.56
VHT20	3	5260	16.03	16.18	15.59	---	117.806	20.71	22.56
VHT20	3	5300	14.91	15.25	14.68	---	93.847	19.72	22.56
VHT20	3	5320	15.05	15.19	14.65	---	94.200	19.74	22.56
VHT40	3	5270	16.68	16.82	16.23	---	136.618	21.36	22.56
VHT40	3	5310	16.72	16.92	16.28	---	138.655	**21.42**	22.56
VHT80	3	5290	16.43	16.35	15.92	---	126.190	21.01	22.56
HT20	3	5500	15.47	15.08	14.57	---	96.090	19.83	22.68
HT20	3	5580	16.24	16.21	15.53	---	119.583	20.78	22.68
HT20	3	5700	15.93	16.08	15.43	---	114.639	20.59	22.68
HT40	3	5510	16.67	16.85	16.36	---	138.120	21.40	22.68
HT40	3	5550	16.57	16.83	16.4	---	137.241	21.37	22.68
HT40	3	5670	16.61	16.62	16.08	---	132.285	21.22	22.68
VHT20	3	5500	15.52	15.11	14.62	---	97.053	19.87	22.68
VHT20	3	5580	16.29	16.25	15.58	---	120.870	20.82	22.68
VHT20	3	5700	15.99	16.12	15.49	---	116.045	20.65	22.68
VHT40	3	5510	16.71	16.88	16.4	---	139.286	**21.44**	22.68
VHT40	3	5550	16.62	16.88	16.43	---	138.627	21.42	22.68
VHT40	3	5670	16.65	16.66	16.11	---	133.415	21.25	22.68
VHT80	3	5530	16.53	16.38	15.79	---	126.361	21.02	22.68

Note:

1. For 5250 ~ 5350 MHz band
   Directional gain = $10 * \log((10^{3.18/20}+10^{2.42/20}+10^{2.38/20})^2/3) = 7.44$ dBi > 6 dBi
   Limit shall be reduced to 24 dBm – (7.44 dBi – 6 dBi) = 22.56 dBm
   For 5470 ~ 5725MHz band
   Directional gain = $10 * \log((10^{3.21/20}+10^{2.42/20+}10^{1.98/20})^2/3) = 7.32$ dBi > 6 dBi
   Limit shall be reduced to 24 dBm – (7.32 dBi – 6 dBi) = 22.68 dBm

Channel that extends across the 5.725 GHz boundary

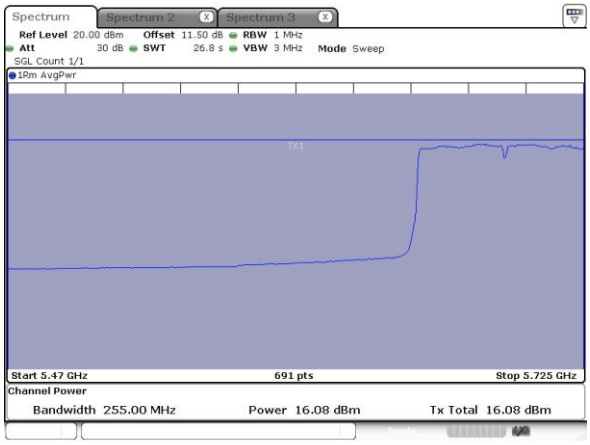
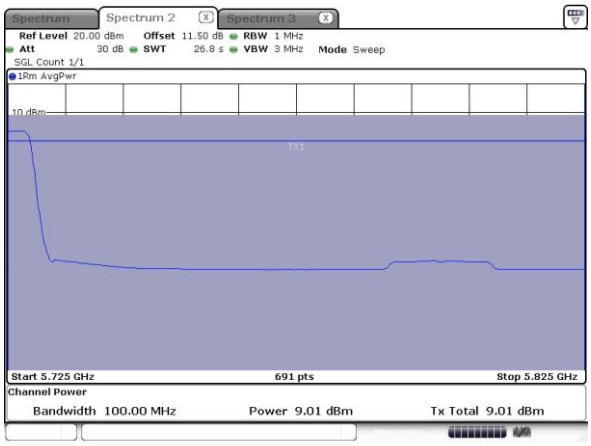
Maximum Conducted Output Power (Within 5470-5725MHz band)											
Mode	N_{TX}	Freq. (MHz)	Conducted Power without duty factor					Duty factor (dB)	Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (dBm)				
HT20	3	5720	14.91	14.79	14.34	---	19.46	0.17	91.792	19.63	21.48
HT40	3	5710	15.58	15.73	15.43	---	20.35	0.34	117.299	20.69	22.68
VHT20	3	5720	14.95	14.81	14.40	---	19.50	0.17	92.628	19.67	21.48
VHT40	3	5710	15.65	15.75	15.45	---	20.39	0.34	118.295	20.73	22.68
VHT80	3	5690	16.08	15.8	15.53	---	20.58	0.31	122.754	20.89	22.68

Note: Directional gain = 10 * log((10$^{3.21/20}$+10$^{2.42/20+}$10$^{1.98/20}$)^2/3) = 7.32 dBi > 6 dBi, limit shall be reduced 1.32 dB (7.32 dBi – 6dBi)

Maximum Conducted Output Power (Extends across 5725MHz band)											
Mode	N_{TX}	Freq. (MHz)	Conducted Power without duty factor					Duty factor (dB)	Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (dBm)				
HT20	3	5720	8.94	8.81	8.38	---	13.49	0.17	23.215	13.66	27.50
HT40	3	5710	5.12	5.13	4.83	---	9.80	0.34	10.328	10.14	27.50
VHT20	3	5720	9.01	8.82	8.42	---	13.53	0.17	23.432	13.70	27.50
VHT40	3	5710	5.16	5.15	4.85	---	9.83	0.34	10.392	10.17	27.50
VHT80	3	5690	1.82	1.53	1.13	---	6.27	0.31	4.554	6.58	27.50

Note: Directional gain = 10 * log((10$^{4/20}$+10$^{2.8/20+}$10$^{4.3/20}$)^2/3) = 8.5 dBi > 6 dBi

Limit shall be reduced to 30 dBm – (8.5 dBi – 6 dBi) = 27.50 dBm

Worst Channel Power Plots	
Within 5470-5725MHz band	**Extends across 5725MHz band**
	

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

Frequency Band (MHz)		Limit
☒	5250 ~ 5350	11 dBm / MHz
☒	5470 ~ 5725	11 dBm / MHz

3.4.2 Test Procedures

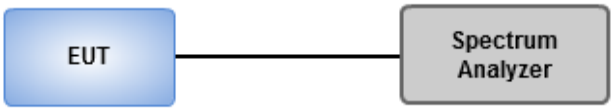
☒ Method SA-1 (Non beamforming)

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 (Beamforming mode)

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add 10 log(1/x), where x is the duty cycle if duty cycle < 98%

3.4.3 Test Setup



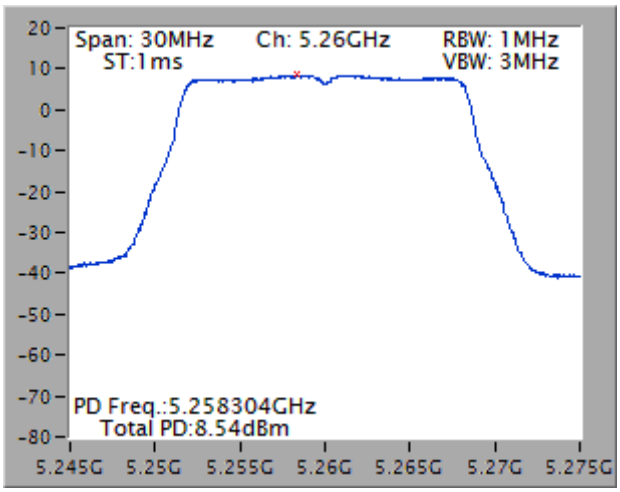
3.4.4 Test Result of Peak Power Spectral Density

Non-beamforming mode

Condition			Peak Power Spectral Density (dBm/MHz)			
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	5260	8.54	0.00	8.54	9.56
11a	3	5300	7.70	0.00	7.70	9.56
11a	3	5320	7.59	0.00	7.59	9.56
VHT20	3	5260	8.32	0.00	8.32	9.56
VHT20	3	5300	7.26	0.00	7.26	9.56
VHT20	3	5320	7.09	0.00	7.09	9.56
VHT40	3	5270	7.30	0.00	7.30	9.56
VHT40	3	5310	7.16	0.00	7.16	9.56
VHT80	3	5290	3.92	0.00	3.92	9.56
11a	3	5500	7.82	0.00	7.82	9.68
11a	3	5580	8.18	0.00	8.18	9.68
11a	3	5700	7.37	0.00	7.37	9.68
11a	3	5720	8.14	0.00	8.14	9.68
VHT20	3	5500	7.35	0.00	7.35	9.68
VHT20	3	5580	8.23	0.00	8.23	9.68
VHT20	3	5700	7.49	0.00	7.49	9.68
VHT20	3	5720	8.20	0.00	8.20	9.68
VHT40	3	5510	7.17	0.00	7.17	9.68
VHT40	3	5550	8.14	0.00	8.14	9.68
VHT40	3	5670	7.59	0.00	7.59	9.68
VHT40	3	5710	7.82	0.00	7.82	9.68
VHT80	3	5530	2.82	0.00	2.82	9.68
VHT80	3	5690	4.92	0.00	4.92	9.68

Note:

1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.
3. For 5250 ~ 5350 MHz band
   3TX mode, Directional gain = $10 * \log((10^{3.18/20}+10^{2.42/20}+10^{2.38/20})^2/3) = 7.44$ dBi > 6 dBi
   Limit shall be reduced to 11 dBm – (7.44 dBi – 6 dBi) =9.56 dBm.
   For 5470 ~ 5725MHz band
   3TX mode, Directional gain $=10 * \log((10^{3.21/20}+10^{2.42/20+}10^{1.98/20})^2/3) = 7.32$ dBi > 6 dBi
   Limit shall be reduced to 11 dBm – (7.32 dBi – 6 dBi) = 9.68 dBm.

Worst Plot


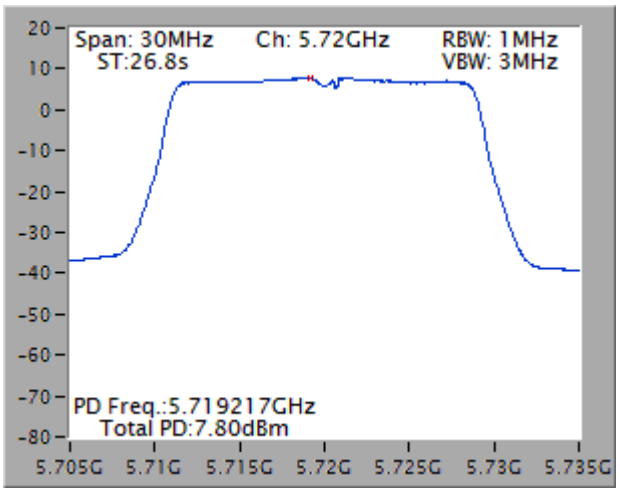
Span: 30MHz
ST:1ms
Ch: 5.26GHz
RBW: 1MHz
VBW: 3MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
PD Freq.:5.258304GHz
Total PD:8.54dBm
5.245G
5.25G
5.255G
5.26G
5.265G
5.27G
5.275G

Beamforming mode

Condition			Peak Power Spectral Density (dBm/MHz)			
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)
VHT20	3	5260	7.16	0.17	7.33	9.56
VHT20	3	5300	6.18	0.17	6.35	9.56
VHT20	3	5320	6.08	0.17	6.25	9.56
VHT40	3	5270	5.16	0.34	5.50	9.56
VHT40	3	5310	5.07	0.34	5.41	9.56
VHT80	3	5290	1.30	0.31	1.61	9.56
VHT20	3	5500	6.48	0.17	6.65	9.68
VHT20	3	5580	7.28	0.17	7.45	9.68
VHT20	3	5700	6.45	0.17	6.62	9.68
VHT20	3	5720	7.80	0.17	7.97	9.68
VHT40	3	5510	5.10	0.34	5.44	9.68
VHT40	3	5550	5.10	0.34	5.44	9.68
VHT40	3	5670	4.38	0.34	4.72	9.68
VHT40	3	5710	5.20	0.34	5.54	9.68
VHT80	3	5530	1.85	0.31	2.16	9.68
VHT80	3	5690	2.24	0.31	2.55	9.68

Note:

1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.
3. For 5250 ~ 5350 MHz band
   Directional gain = $10 * \log((10^{3.18/20}+10^{2.42/20}+10^{2.38/20})^2/3)$ =7.44 dBi > 6 dBi
   Limit shall be reduced to 11 dBm – (7.44 dBi – 6 dBi) =9.56 dBm.
   For 5470 ~ 5725MHz band
   Directional gain =$10 * \log((10^{3.21/20}+10^{2.42/20+}10^{1.98/20})^2/3)$ = 7.32 dBi > 6 dBi
   Limit shall be reduced to 11 dBm – (7.32 dBi – 6 dBi) = 9.68 dBm.

Worst Plot


Note: The plot without duty factor.

3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit
Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

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

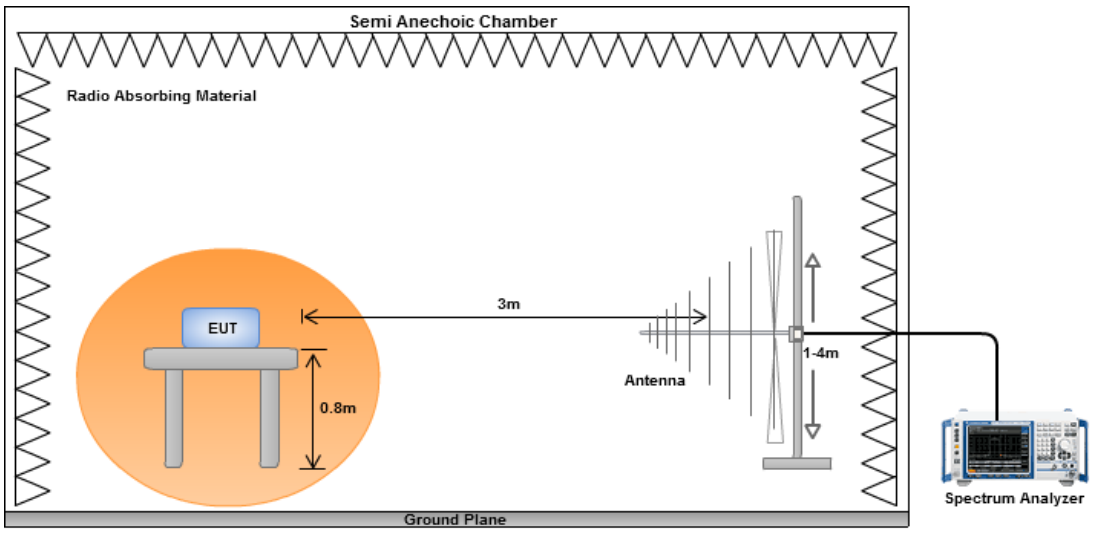
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

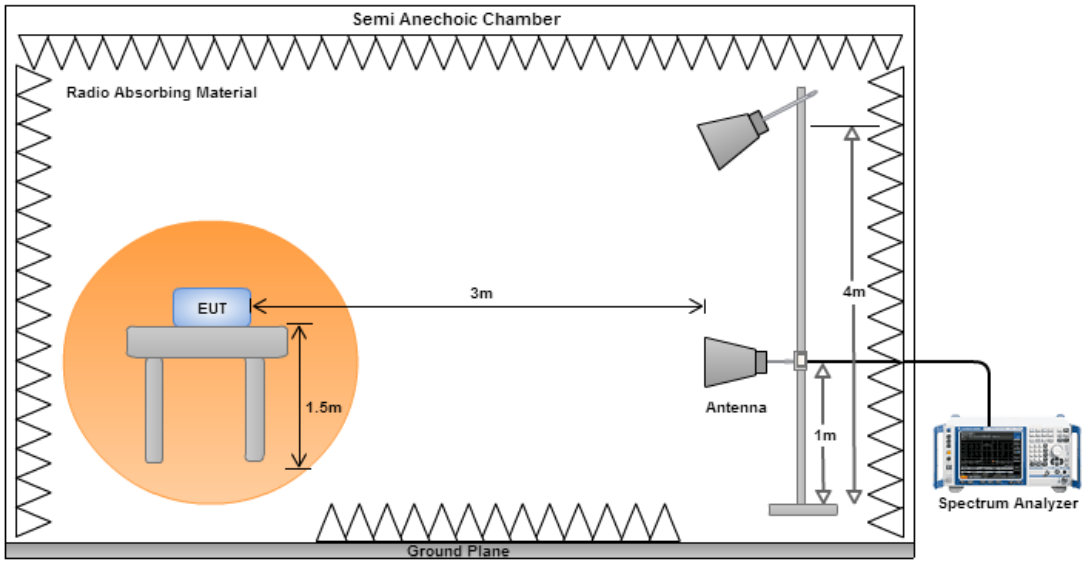
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz



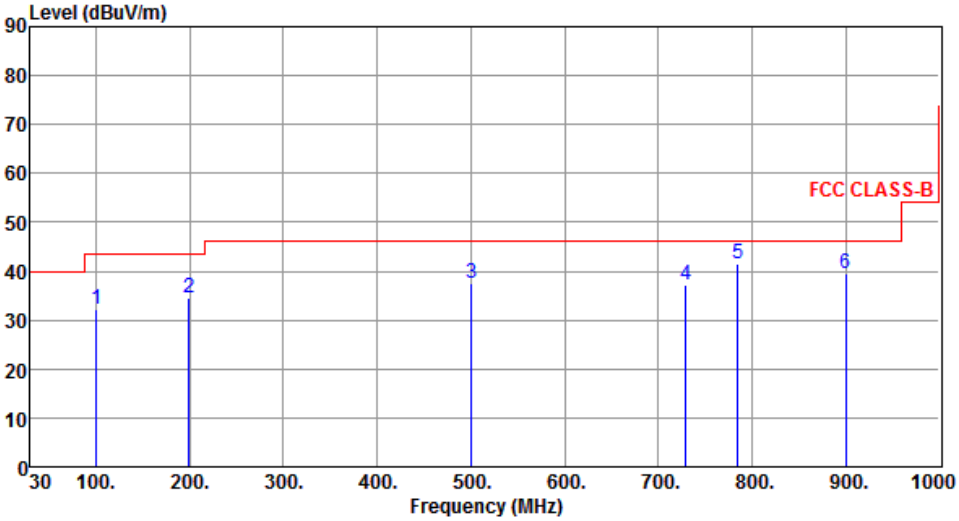
Radiated Emissions above 1 GHz



Non- beamforming mode

3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

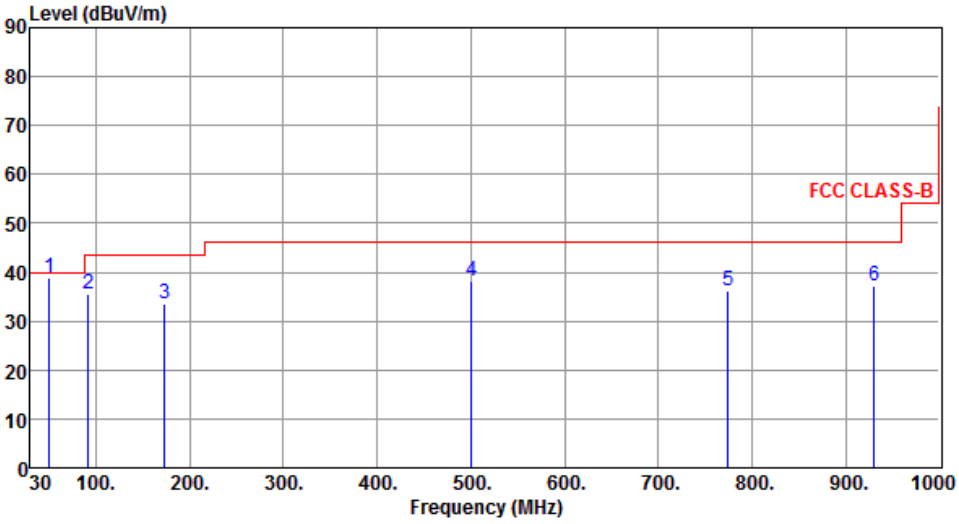
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	100.65	32.24	43.50	-11.26	45.38	-13.14	Peak	---	---
2	199.58	34.62	43.50	-8.88	45.52	-10.90	Peak	---	---
3	500.54	37.65	46.00	-8.35	40.54	-2.89	Peak	---	---
4	729.45	37.26	46.00	-8.74	35.87	1.39	Peak	---	---
5	784.52	41.66	46.00	-4.34	39.29	2.37	Peak	---	---
6	900.15	39.53	46.00	-6.47	35.30	4.23	Peak	---	---

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

Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		

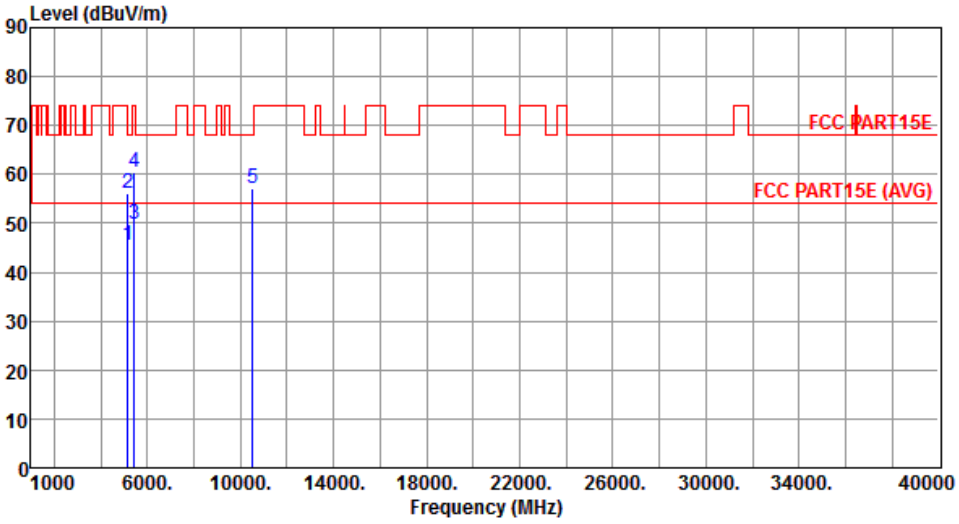


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	50.45	38.88	40.00	-1.12	46.69	-7.81	QP	100	251
2	92.15	35.43	43.50	-8.07	49.50	-14.07	Peak	---	---
3	173.62	33.45	43.50	-10.05	42.28	-8.83	Peak	---	---
4	500.88	38.33	46.00	-7.67	41.22	-2.89	Peak	---	---
5	774.65	36.24	46.00	-9.76	34.01	2.23	Peak	---	---
6	930.25	37.24	46.00	-8.76	32.49	4.75	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.

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

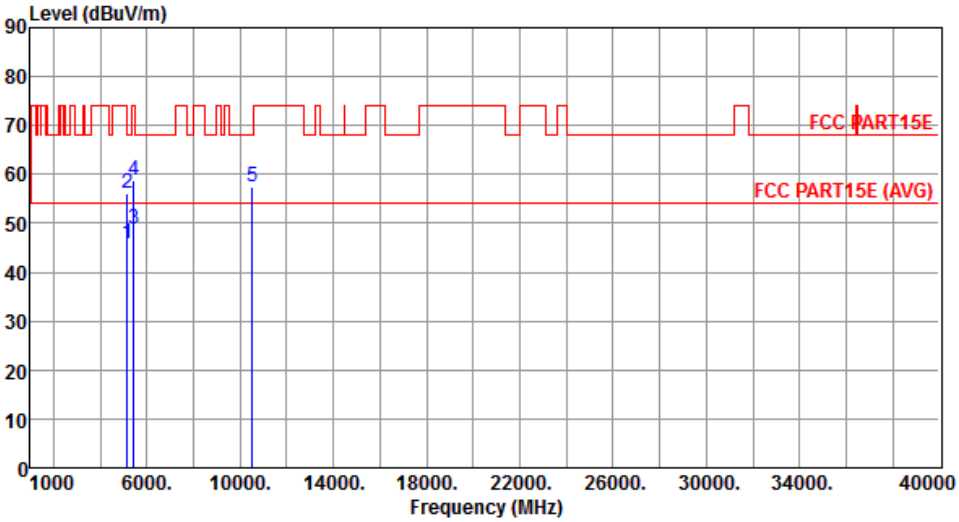
Modulation	11a	Test Freq. (MHz)	5260
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.45	54.00	-8.55	39.59	5.86	Average	171	332
2	5150.00	55.99	74.00	-18.01	50.13	5.86	Peak	171	332
3	5420.00	49.73	54.00	-4.27	43.39	6.34	Average	171	332
4	5420.00	60.60	74.00	-13.40	54.26	6.34	Peak	171	332
5	10520.00	56.99	68.20	-11.21	41.58	15.41	Peak	149	301

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

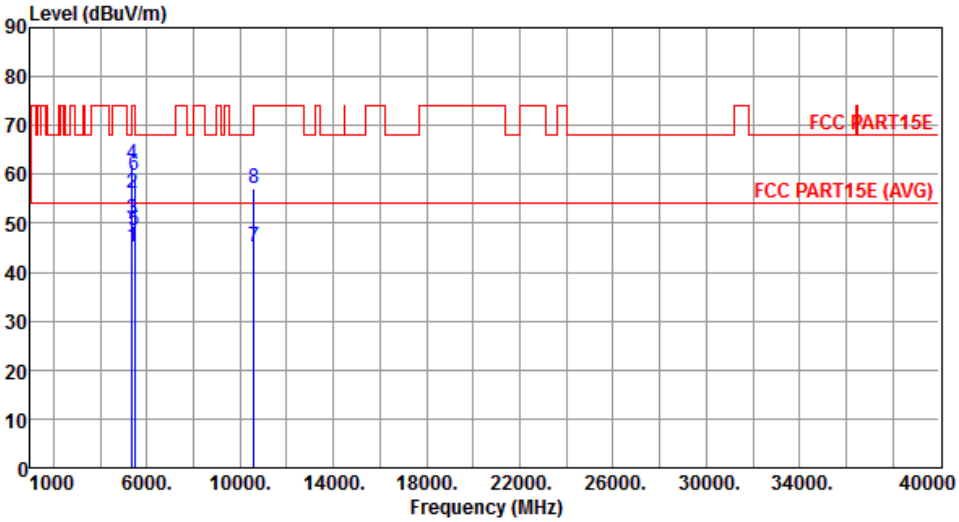
Modulation	11a	Test Freq. (MHz)	5260
Polarization	Vertical		



	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	45.76	54.00	-8.24	39.90	5.86	Average	200	240
2	5150.00	56.05	74.00	-17.95	50.19	5.86	Peak	200	240
3	5420.00	48.69	54.00	-5.31	42.35	6.34	Average	200	240
4	5420.00	58.70	74.00	-15.30	52.36	6.34	Peak	200	240
5	10520.00	57.30	68.20	-10.90	41.89	15.41	Peak	300	265

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

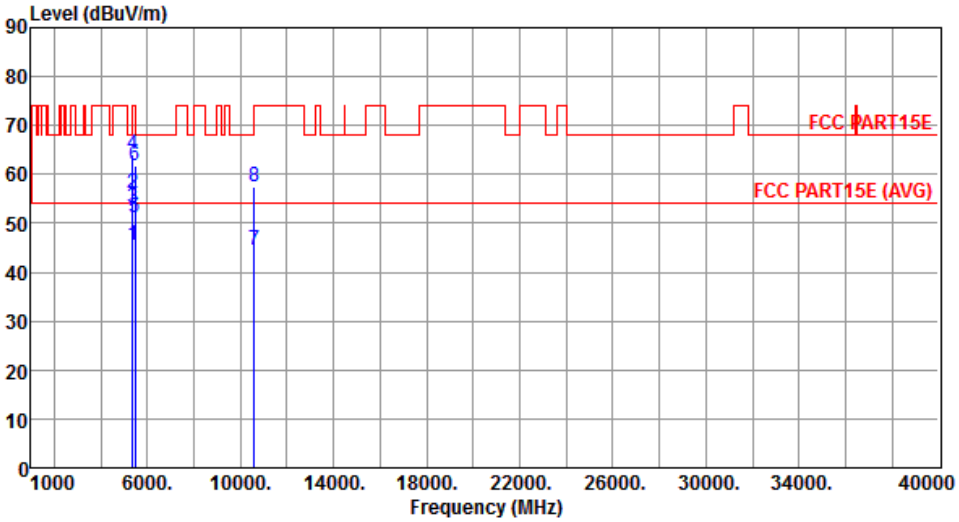
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	45.22	54.00	-8.78	39.01	6.21	Average	170	350
2	5350.00	55.98	74.00	-18.02	49.77	6.21	Peak	170	350
3	5380.00	50.94	54.00	-3.06	44.67	6.27	Average	170	350
4	5380.00	62.20	74.00	-11.80	55.93	6.27	Peak	170	350
5	5460.00	48.63	54.00	-5.37	42.26	6.37	Average	170	350
6	5460.00	59.71	74.00	-14.29	53.34	6.37	Peak	170	350
7	10600.00	45.09	54.00	-8.91	29.63	15.46	Average	145	329
8	10600.00	57.19	74.00	-16.81	41.73	15.46	Peak	145	329

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

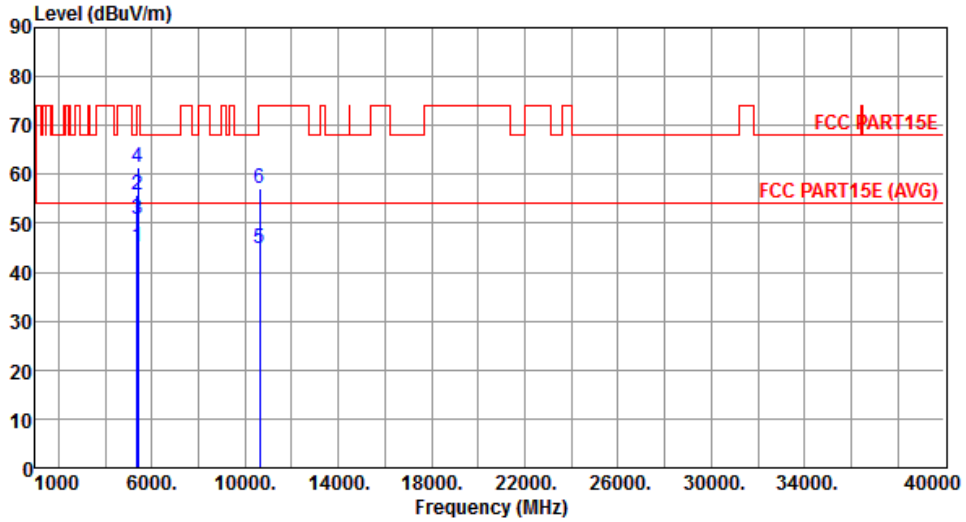
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Vertical		



	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	45.51	54.00	-8.49	39.30	6.21	Average	211	233
2	5350.00	56.11	74.00	-17.89	49.90	6.21	Peak	211	233
3	5380.00	52.99	54.00	-1.01	46.72	6.27	Average	211	233
4	5380.00	64.01	74.00	-9.99	57.74	6.27	Peak	211	233
5	5460.00	51.03	54.00	-2.97	44.66	6.37	Average	211	233
6	5460.00	61.75	74.00	-12.25	55.38	6.37	Peak	211	233
7	10600.00	44.61	54.00	-9.39	29.15	15.46	Average	317	254
8	10600.00	57.35	74.00	-16.65	41.89	15.46	Peak	317	254

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

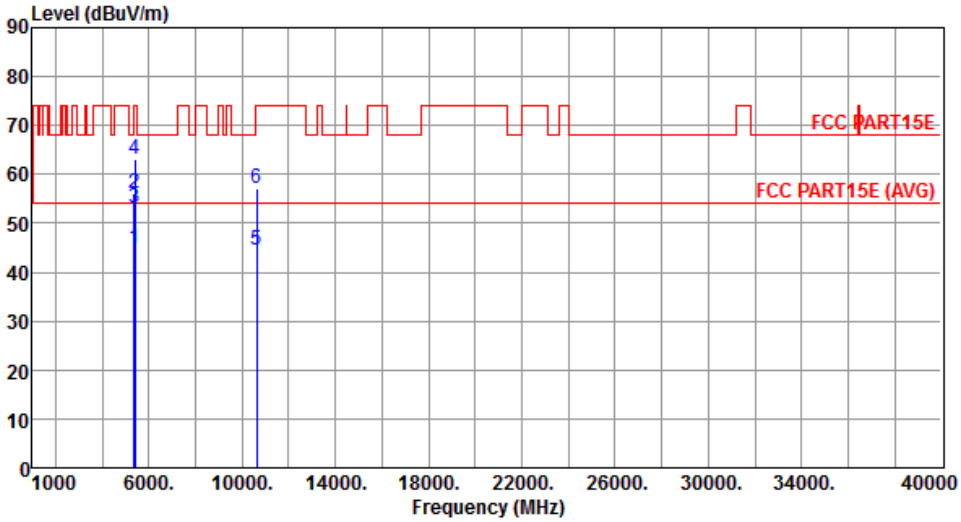
Modulation	11a	Test Freq. (MHz)	5320
Polarization	Horizontal		



	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	45.19	54.00	-8.81	38.98	6.21	Average	169	347
2	5350.00	55.88	74.00	-18.12	49.67	6.21	Peak	169	347
3	5400.00	50.89	54.00	-3.11	44.57	6.32	Average	169	347
4	5400.00	61.56	74.00	-12.44	55.24	6.32	Peak	169	347
5	10640.00	44.78	54.00	-9.22	29.29	15.49	Average	145	329
6	10640.00	57.19	74.00	-16.81	41.70	15.49	Peak	145	329

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

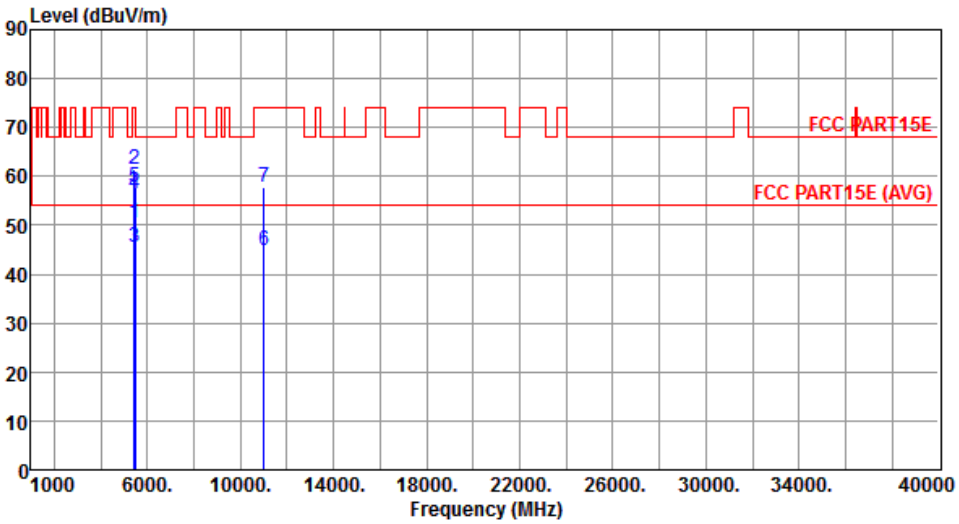
Modulation	11a	Test Freq. (MHz)	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	44.75	54.00	-9.25	38.54	6.21	Average	211	235
2	5350.00	56.26	74.00	-17.74	50.05	6.21	Peak	211	235
3	5400.00	52.98	54.00	-1.02	46.66	6.32	Average	211	235
4	5400.00	62.98	74.00	-11.02	56.66	6.32	Peak	211	235
5	10640.00	44.63	54.00	-9.37	29.14	15.49	Average	318	250
6	10640.00	57.26	74.00	-16.74	41.77	15.49	Peak	318	250

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

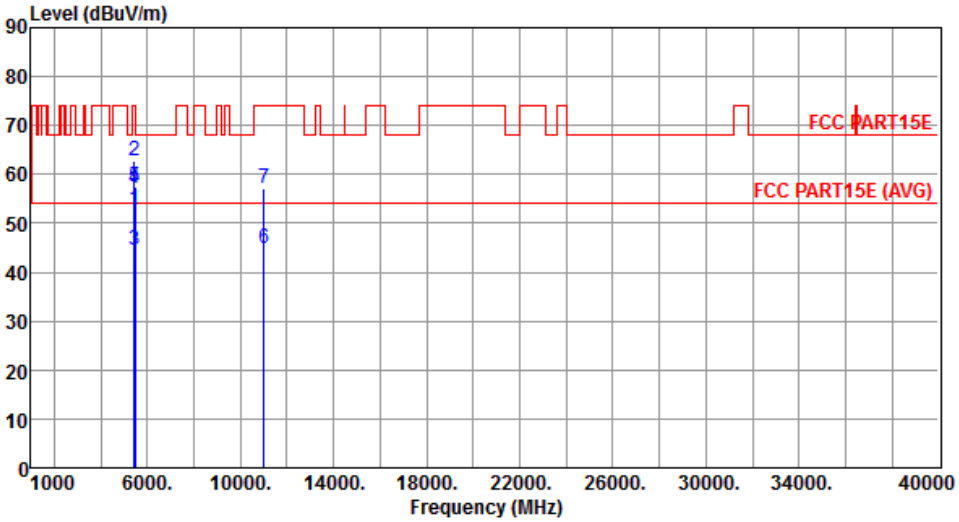
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5420.00	50.60	54.00	-3.40	44.26	6.34	Average	174	347
2	5420.00	61.60	74.00	-12.40	55.26	6.34	Peak	174	347
3	5460.00	45.35	54.00	-8.65	38.98	6.37	Average	174	347
4	5460.00	56.56	74.00	-17.44	50.19	6.37	Peak	174	347
5	5470.00	57.64	68.20	-10.56	51.26	6.38	Peak	174	347
6	11000.00	44.83	54.00	-9.17	29.08	15.75	Average	154	327
7	11000.00	57.64	74.00	-16.36	41.89	15.75	Peak	154	327

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

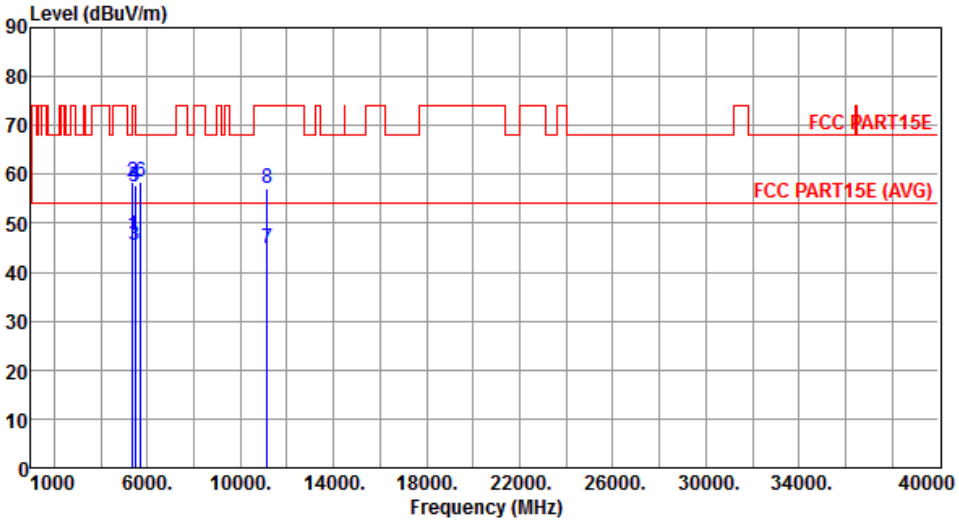
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5420.00	52.75	54.00	-1.25	46.41	6.34	Average	207	234
2	5420.00	62.79	74.00	-11.21	56.45	6.34	Peak	207	234
3	5460.00	44.66	54.00	-9.34	38.29	6.37	Average	181	241
4	5460.00	57.08	74.00	-16.92	50.71	6.37	Peak	181	241
5	5470.00	57.58	68.20	-10.62	51.20	6.38	Peak	181	241
6	11000.00	44.88	54.00	-9.12	29.13	15.75	Average	300	249
7	11000.00	57.23	74.00	-16.77	41.48	15.75	Peak	300	249

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

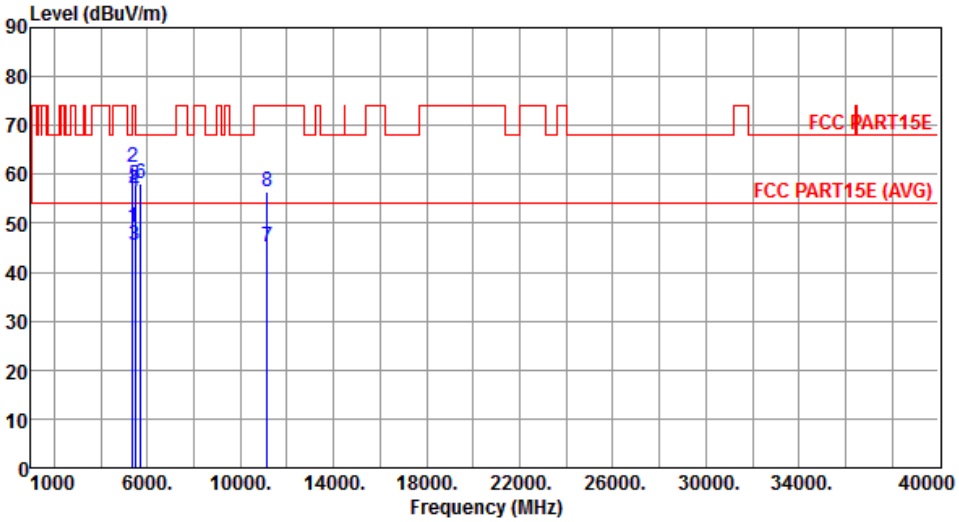
Modulation	11a	Test Freq. (MHz)	5580
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.48	54.00	-6.52	41.27	6.21	Average	205	353
2	5350.00	58.48	74.00	-15.52	52.27	6.21	Peak	205	353
3	5460.00	45.66	54.00	-8.34	39.29	6.37	Average	205	353
4	5460.00	57.85	74.00	-16.15	51.48	6.37	Peak	205	353
5	5470.00	57.44	68.20	-10.76	51.06	6.38	Peak	205	353
6	5725.00	58.34	68.20	-9.86	51.50	6.84	Peak	205	353
7	11160.00	44.92	54.00	-9.08	29.08	15.84	Average	165	317
8	11160.00	57.13	74.00	-16.87	41.29	15.84	Peak	165	317

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

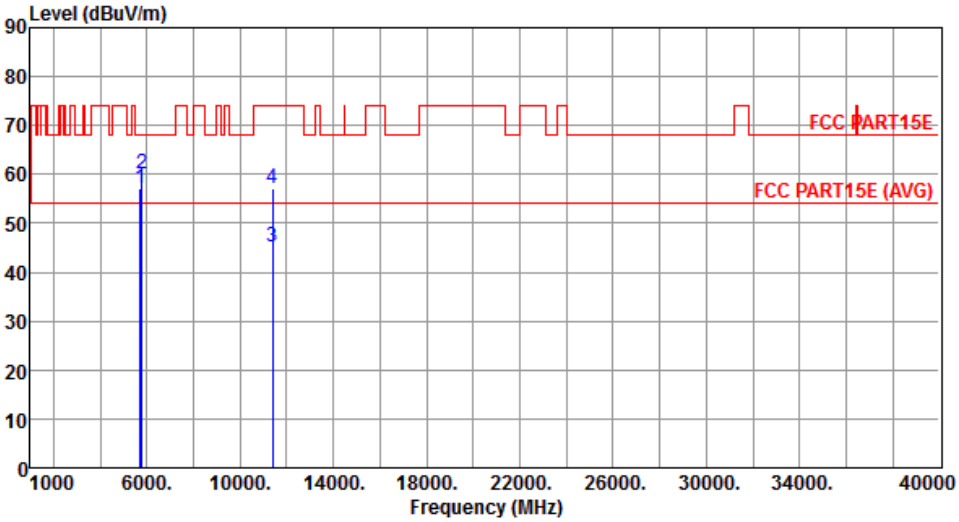
Modulation	11a	Test Freq. (MHz)	5580
Polarization	Vertical		



	Freq. 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	49.22	54.00	-4.78	43.01	6.21	Average	167	231
2	5350.00	61.48	74.00	-12.52	55.27	6.21	Peak	167	231
3	5460.00	45.47	54.00	-8.53	39.10	6.37	Average	167	231
4	5460.00	56.50	74.00	-17.50	50.13	6.37	Peak	167	231
5	5470.00	57.68	68.20	-10.52	51.30	6.38	Peak	167	231
6	5725.00	58.10	68.20	-10.10	51.26	6.84	Peak	167	231
7	11160.00	45.01	54.00	-8.99	29.17	15.84	Average	300	249
8	11160.00	56.50	74.00	-17.50	40.66	15.84	Peak	300	249

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

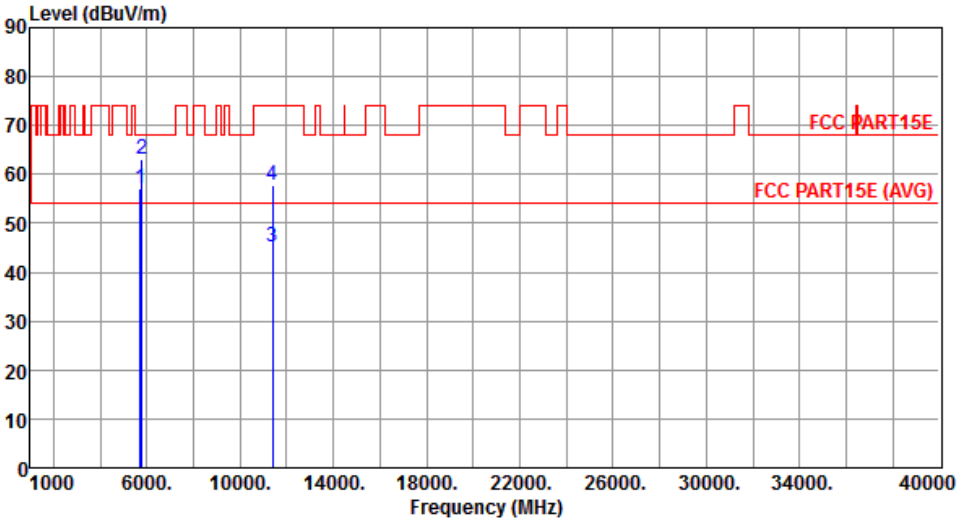
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	57.02	68.20	-11.18	50.18	6.84	Peak	189	351
2	5780.00	60.26	68.20	-7.94	53.27	6.99	Peak	189	351
3	11400.00	45.15	54.00	-8.85	29.18	15.97	Average	153	308
4	11400.00	57.26	74.00	-16.74	41.29	15.97	Peak	153	308

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

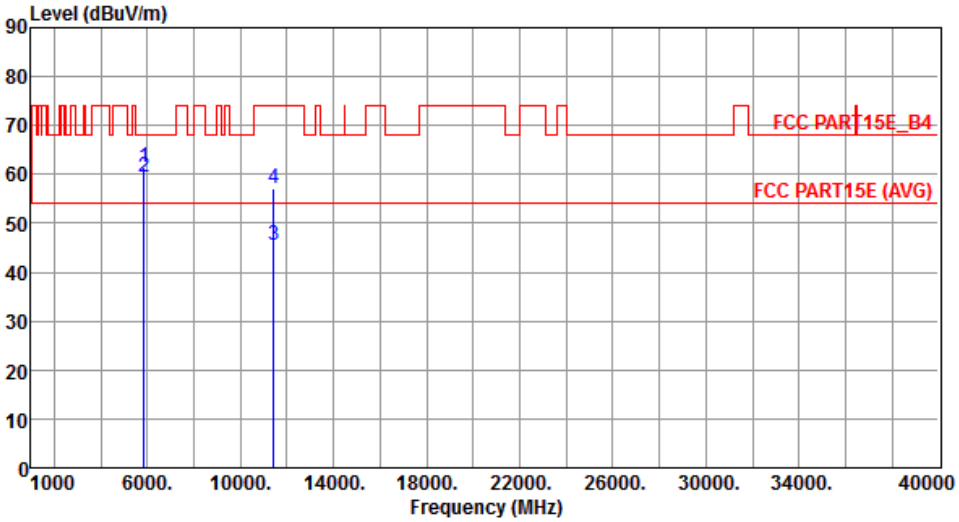
Modulation	11a	**Test Freq. (MHz)**	5700
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	57.03	68.20	-11.17	50.19	6.84	Peak	205	237
2	5780.00	63.15	68.20	-5.05	56.16	6.99	Peak	205	237
3	11400.00	45.23	54.00	-8.77	29.26	15.97	Average	335	215
4	11400.00	57.87	74.00	-16.13	41.90	15.97	Peak	335	215

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).

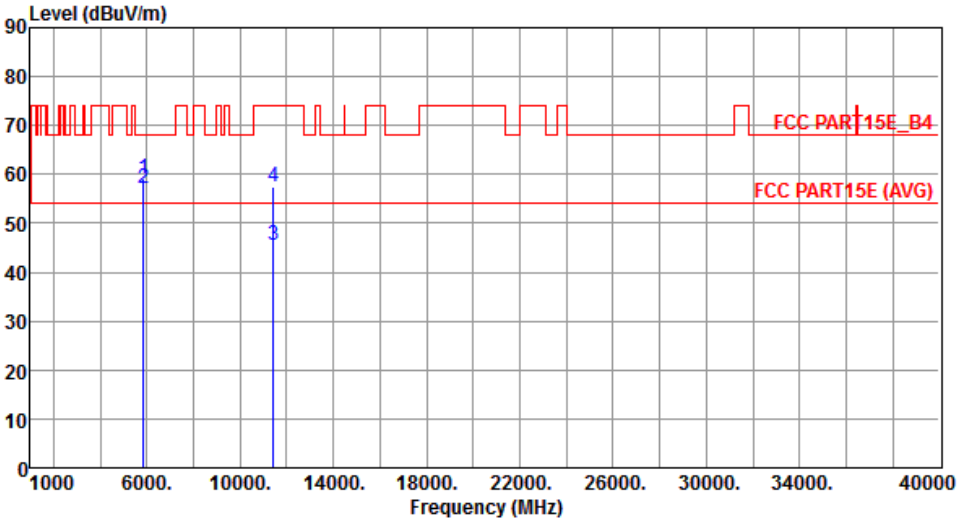
Modulation	11a	Test Freq. (MHz)	5720
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.53	78.20	-16.67	54.36	7.17	Peak	239	228
2	5860.00	59.37	68.20	-8.83	52.19	7.18	Peak	239	228
3	11440.00	45.36	54.00	-8.64	29.36	16.00	Average	219	311
4	11440.00	57.26	74.00	-16.74	41.26	16.00	Peak	219	311

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)**	5720
Polarization	Vertical		

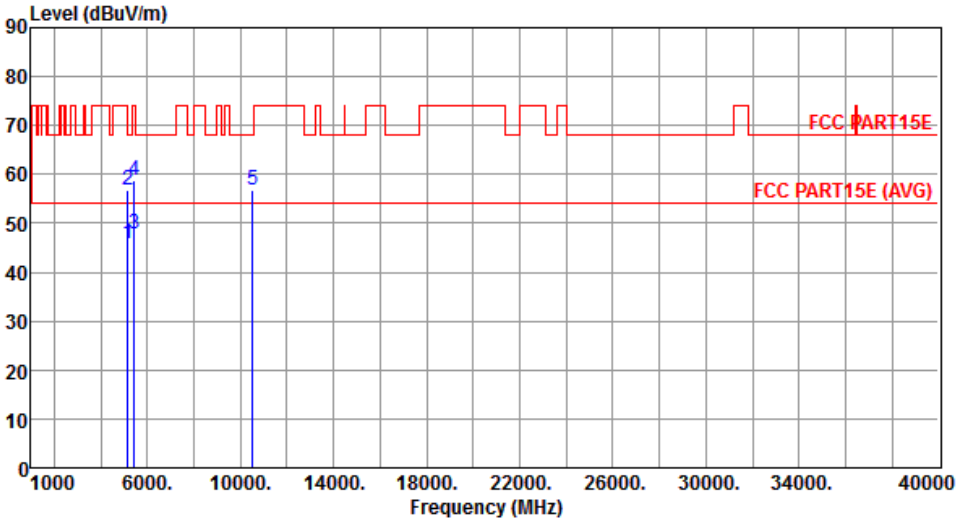


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.27	78.20	-18.93	52.10	7.17	Peak	238	354
2	5860.00	57.18	68.20	-11.02	50.00	7.18	Peak	238	354
3	11440.00	45.48	54.00	-8.52	29.48	16.00	Average	267	120
4	11440.00	57.59	74.00	-16.41	41.59	16.00	Peak	267	120

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

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

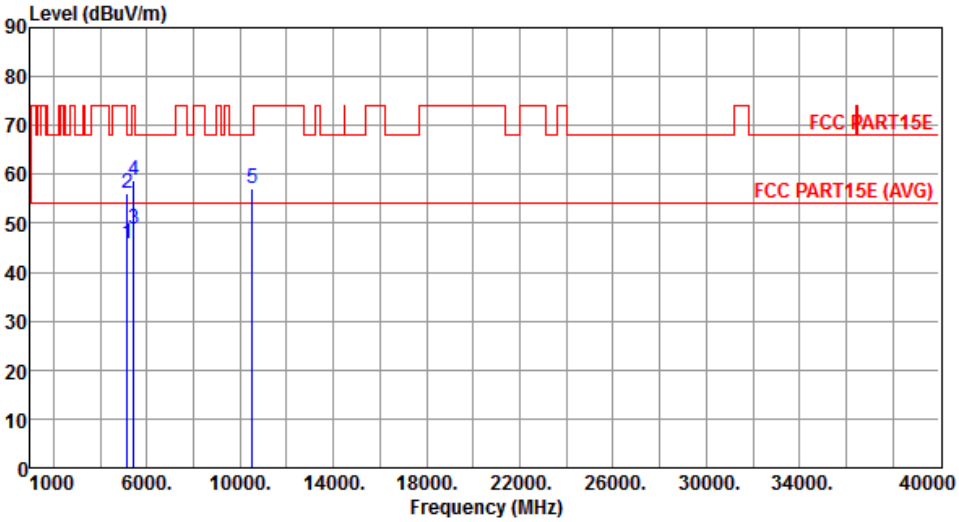
Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.75	54.00	-8.25	39.89	5.86	Average	170	328
2	5150.00	56.64	74.00	-17.36	50.78	5.86	Peak	170	328
3	5420.00	47.82	54.00	-6.18	41.48	6.34	Average	170	328
4	5420.00	58.80	74.00	-15.20	52.46	6.34	Peak	170	328
5	10520.00	56.77	68.20	-11.43	41.36	15.41	Peak	166	327

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

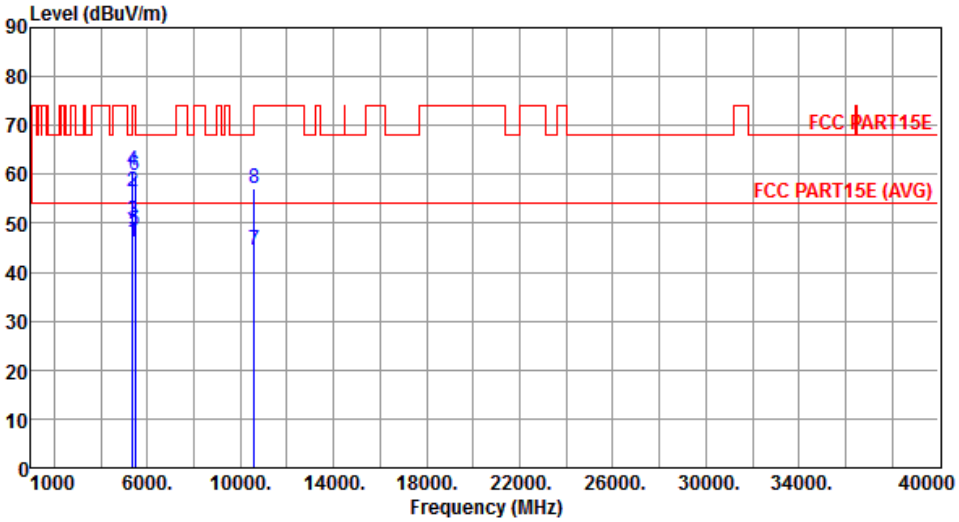
Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Vertical		



	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	45.70	54.00	-8.30	39.84	5.86	Average	174	240
2	5150.00	56.15	74.00	-17.85	50.29	5.86	Peak	174	240
3	5420.00	48.80	54.00	-5.20	42.46	6.34	Average	174	240
4	5420.00	58.82	74.00	-15.18	52.48	6.34	Peak	174	240
5	10520.00	56.99	68.20	-11.21	41.58	15.41	Peak	314	287

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

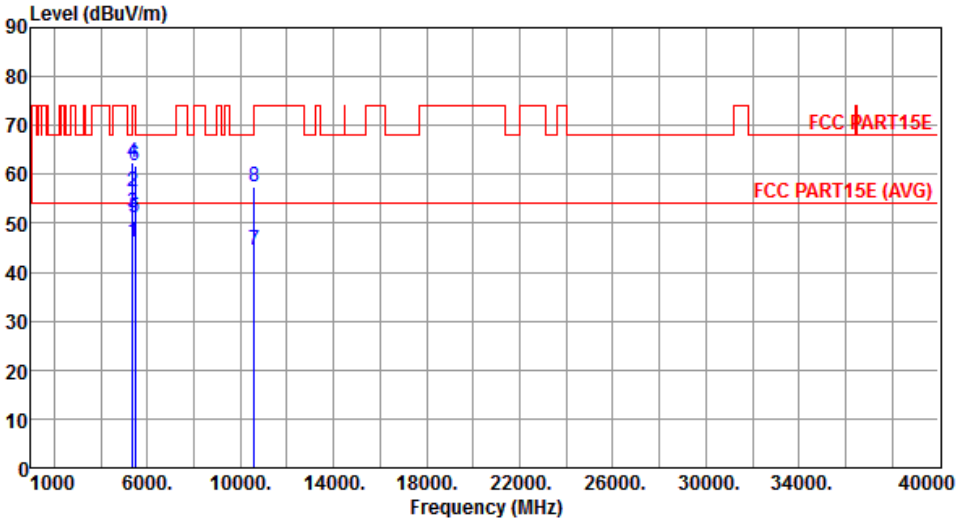
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.09	54.00	-7.91	39.88	6.21	Average	200	354
2	5350.00	56.40	74.00	-17.60	50.19	6.21	Peak	200	354
3	5380.00	50.38	54.00	-3.62	44.11	6.27	Average	200	354
4	5380.00	60.68	74.00	-13.32	54.41	6.27	Peak	200	354
5	5460.00	48.36	54.00	-5.64	41.99	6.37	Average	200	354
6	5460.00	59.66	74.00	-14.34	53.29	6.37	Peak	200	354
7	10600.00	44.44	54.00	-9.56	28.98	15.46	Average	137	308
8	10600.00	57.06	74.00	-16.94	41.60	15.46	Peak	137	308

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

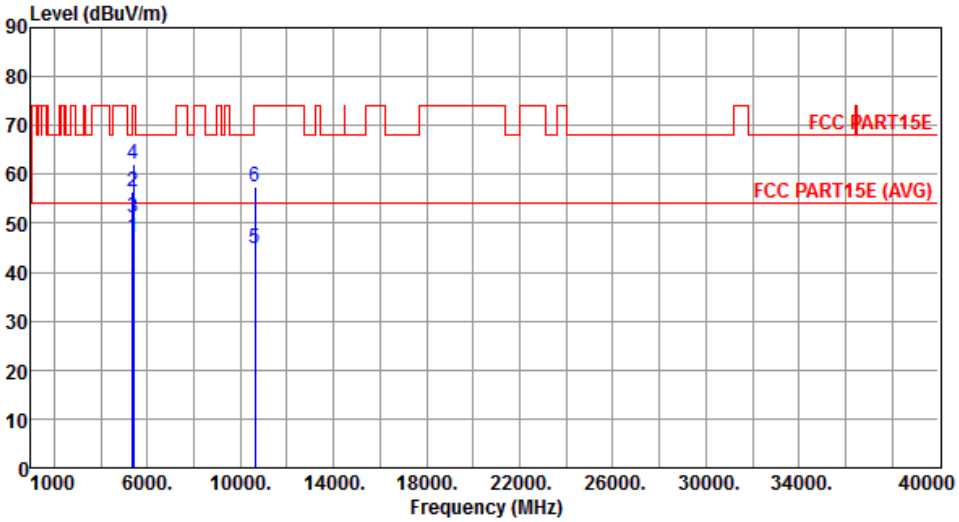
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.11	54.00	-7.89	39.90	6.21	Average	170	235
2	5350.00	56.41	74.00	-17.59	50.20	6.21	Peak	170	235
3	5380.00	52.14	54.00	-1.86	45.87	6.27	Average	170	235
4	5380.00	62.54	74.00	-11.46	56.27	6.27	Peak	170	235
5	5460.00	51.10	54.00	-2.90	44.73	6.37	Average	170	235
6	5460.00	61.75	74.00	-12.25	55.38	6.37	Peak	170	235
7	10600.00	44.64	54.00	-9.36	29.18	15.46	Average	308	264
8	10600.00	57.54	74.00	-16.46	42.08	15.46	Peak	308	264

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

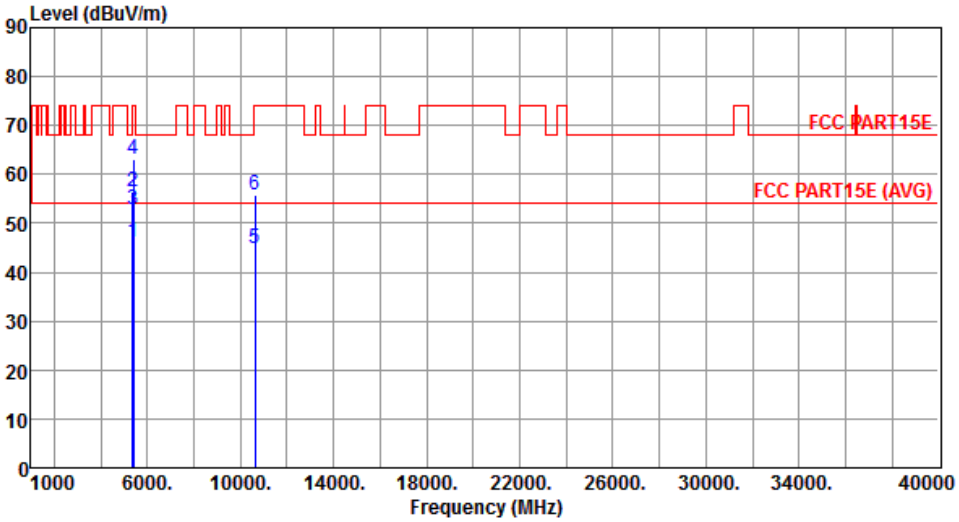
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.12	54.00	-6.88	40.91	6.21	Average	174	339
2	5350.00	56.58	74.00	-17.42	50.37	6.21	Peak	174	339
3	5400.00	51.07	54.00	-2.93	44.75	6.32	Average	174	339
4	5400.00	62.10	74.00	-11.90	55.78	6.32	Peak	174	339
5	10640.00	44.97	54.00	-9.03	29.48	15.49	Average	167	308
6	10640.00	57.38	74.00	-16.62	41.89	15.49	Peak	167	308

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

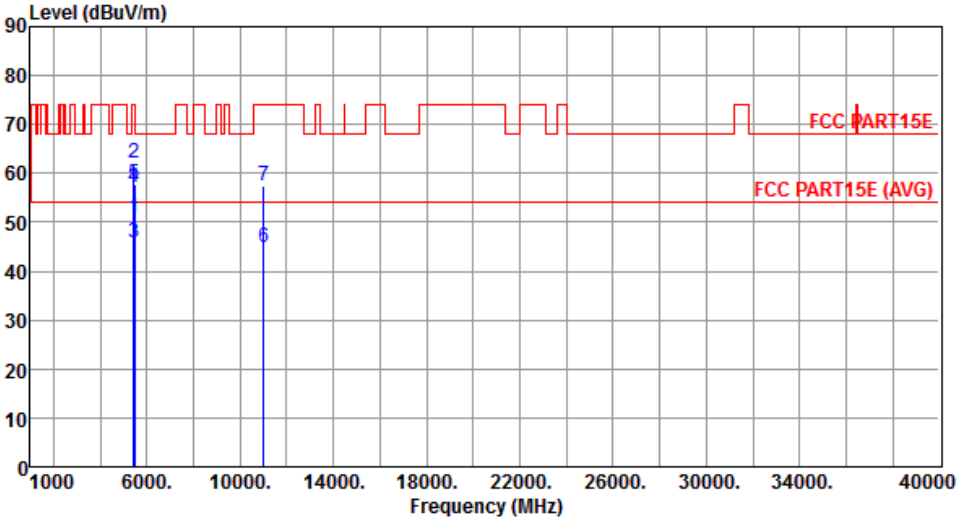
Modulation	VHT20	**Test Freq. (MHz)**	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.00	54.00	-8.00	39.79	6.21	Average	203	211
2	5350.00	56.35	74.00	-17.65	50.14	6.21	Peak	203	211
3	5400.00	52.90	54.00	-1.10	46.58	6.32	Average	203	211
4	5400.00	63.10	74.00	-10.90	56.78	6.32	Peak	203	211
5	10640.00	44.67	54.00	-9.33	29.18	15.49	Average	329	235
6	10640.00	55.68	74.00	-18.32	40.19	15.49	Peak	329	235

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

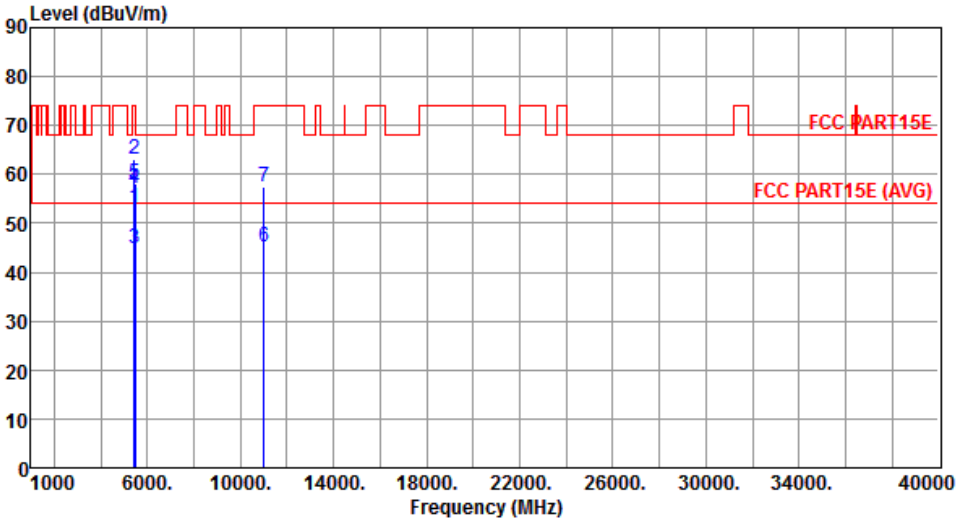
Modulation	VHT20	**Test Freq. (MHz)**	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5420.00	50.70	54.00	-3.30	44.36	6.34	Average	168	353
2	5420.00	62.24	74.00	-11.76	55.90	6.34	Peak	168	353
3	5460.00	45.83	54.00	-8.17	39.46	6.37	Average	168	353
4	5460.00	57.15	74.00	-16.85	50.78	6.37	Peak	168	353
5	5470.00	57.86	68.20	-10.34	51.48	6.38	Peak	168	353
6	11000.00	44.91	54.00	-9.09	29.16	15.75	Average	165	319
7	11000.00	57.34	74.00	-16.66	41.59	15.75	Peak	165	319

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

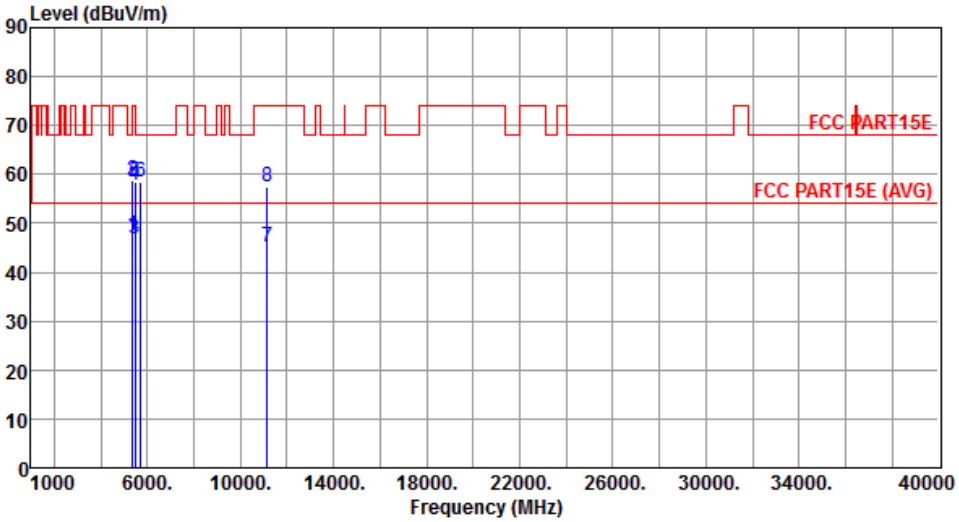
Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5420.00	52.98	54.00	-1.02	46.64	6.34	Average	205	225
2	5420.00	63.12	74.00	-10.88	56.78	6.34	Peak	205	225
3	5460.00	44.76	54.00	-9.24	38.39	6.37	Average	176	244
4	5460.00	57.17	74.00	-16.83	50.80	6.37	Peak	176	244
5	5470.00	58.28	68.20	-9.92	51.90	6.38	Peak	176	244
6	11000.00	45.10	54.00	-8.90	29.35	15.75	Average	309	253
7	11000.00	57.32	74.00	-16.68	41.57	15.75	Peak	309	253

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

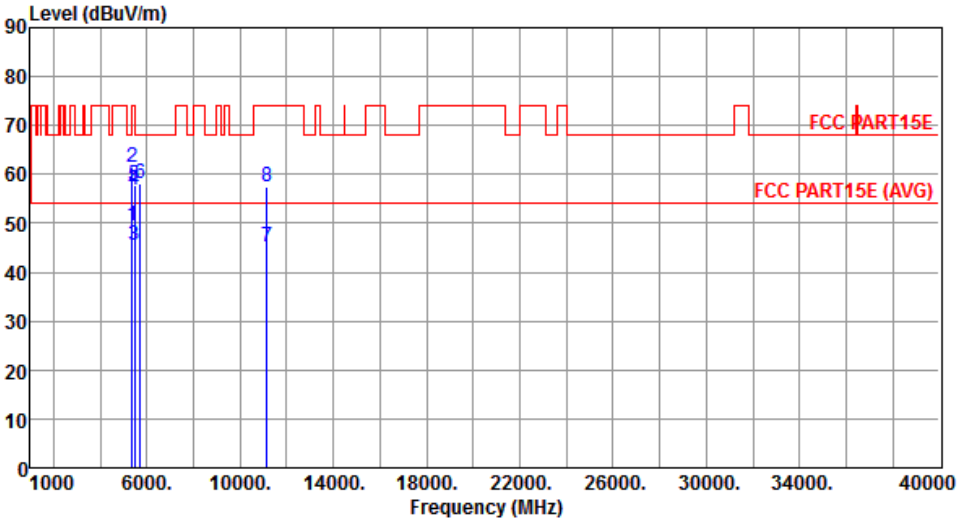
Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Horizontal		



	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	47.36	54.00	-6.64	41.15	6.21	Average	200	354
2	5350.00	58.88	74.00	-15.12	52.67	6.21	Peak	200	354
3	5460.00	46.67	54.00	-7.33	40.30	6.37	Average	200	354
4	5460.00	57.73	74.00	-16.27	51.36	6.37	Peak	200	354
5	5470.00	58.37	68.20	-9.83	51.99	6.38	Peak	200	354
6	5725.00	58.44	68.20	-9.76	51.60	6.84	Peak	200	354
7	11160.00	45.32	54.00	-8.68	29.48	15.84	Average	170	318
8	11160.00	57.48	74.00	-16.52	41.64	15.84	Peak	170	318

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

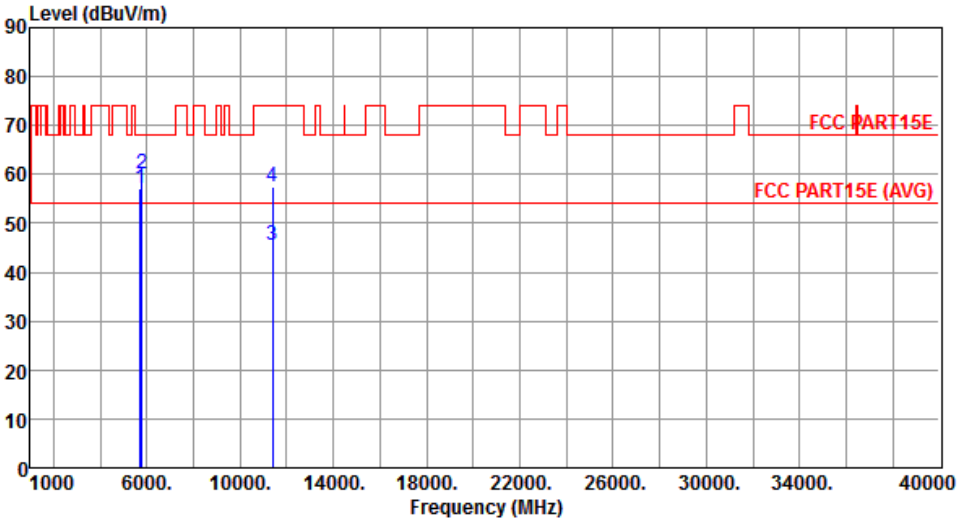
Modulation	VHT20	**Test Freq. (MHz)**	5580
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	49.34	54.00	-4.66	43.13	6.21	Average	169	228
2	5350.00	61.57	74.00	-12.43	55.36	6.21	Peak	169	228
3	5460.00	45.66	54.00	-8.34	39.29	6.37	Average	169	228
4	5460.00	56.73	74.00	-17.27	50.36	6.37	Peak	169	228
5	5470.00	57.74	68.20	-10.46	51.36	6.38	Peak	169	228
6	5725.00	58.20	68.20	-10.00	51.36	6.84	Peak	169	228
7	11160.00	45.20	54.00	-8.80	29.36	15.84	Average	325	266
8	11160.00	57.50	74.00	-16.50	41.66	15.84	Peak	325	266

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

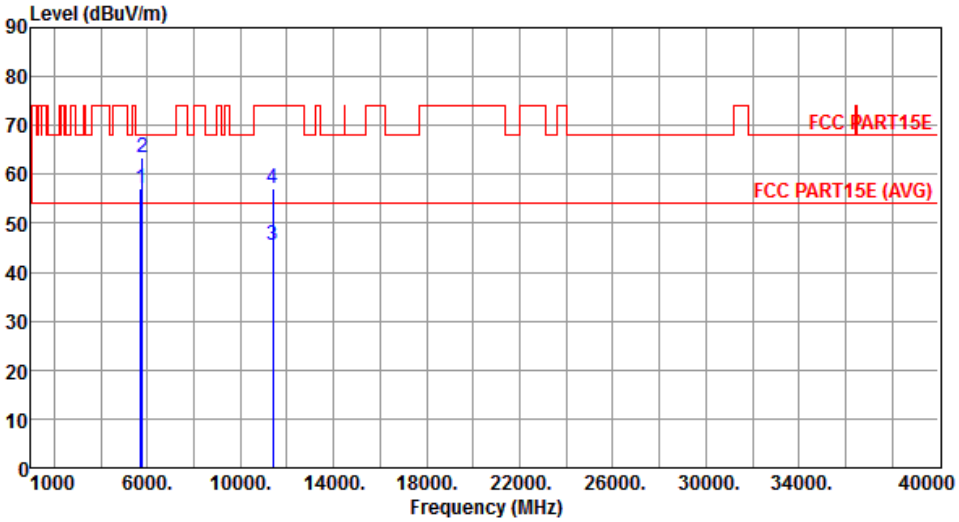
Modulation	VHT20	**Test Freq. (MHz)**	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	57.20	68.20	-11.00	50.36	6.84	Peak	190	347
2	5780.00	60.19	68.20	-8.01	53.20	6.99	Peak	190	347
3	11400.00	45.33	54.00	-8.67	29.36	15.97	Average	152	298
4	11400.00	57.61	74.00	-16.39	41.64	15.97	Peak	152	298

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

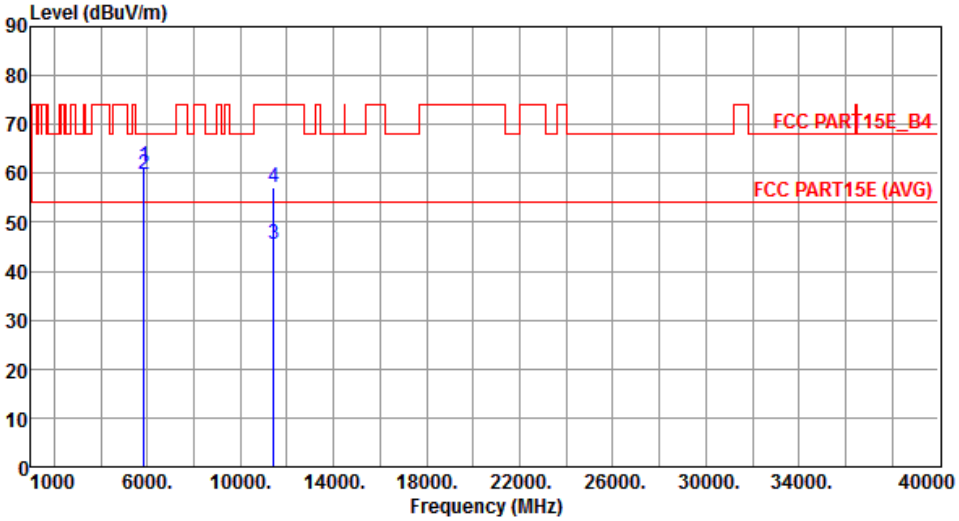
Modulation	VHT20	**Test Freq. (MHz)**	5700
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	57.00	68.20	-11.20	50.16	6.84	Peak	217	243
2	5780.00	63.29	68.20	-4.91	56.30	6.99	Peak	217	243
3	11400.00	45.33	54.00	-8.67	29.36	15.97	Average	328	216
4	11400.00	57.26	74.00	-16.74	41.29	15.97	Peak	328	216

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).

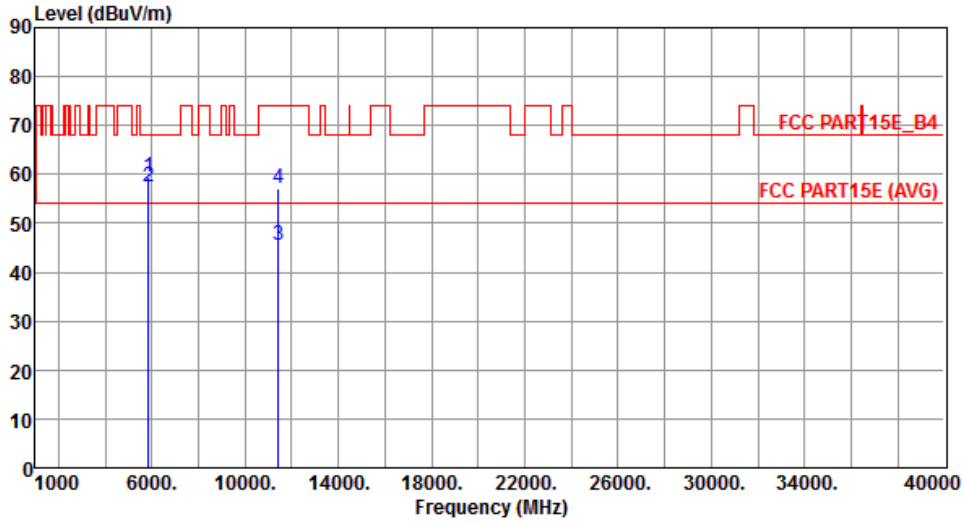
Modulation	VHT20	**Test Freq. (MHz)**	5720
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.53	78.20	-16.67	54.36	7.17	Peak	239	227
2	5860.00	59.85	68.20	-8.35	52.67	7.18	Peak	239	227
3	11440.00	45.36	54.00	-8.64	29.36	16.00	Average	220	326
4	11440.00	57.29	74.00	-16.71	41.29	16.00	Peak	220	326

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)**	5720
Polarization	Vertical		

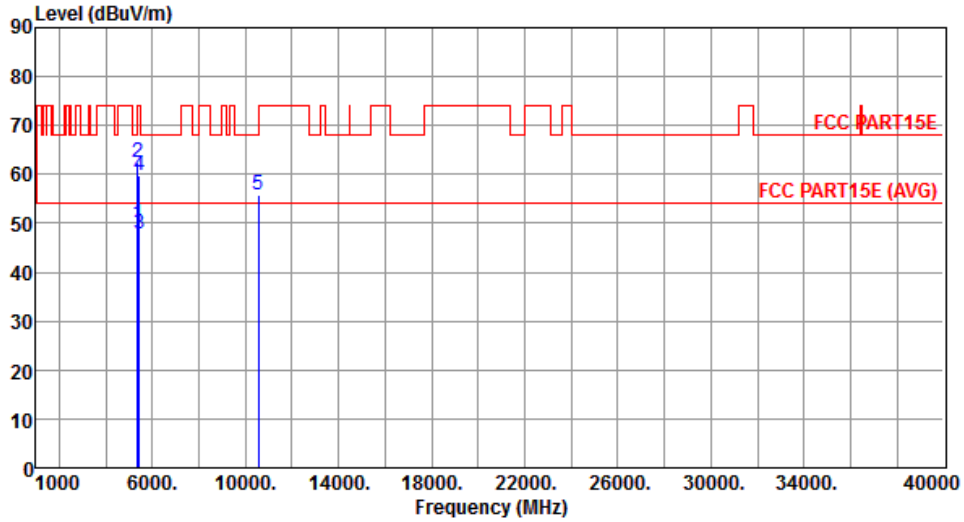


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.43	78.20	-18.77	52.26	7.17	Peak	238	6
2	5860.00	57.37	68.20	-10.83	50.19	7.18	Peak	238	6
3	11440.00	45.54	54.00	-8.46	29.54	16.00	Average	217	123
4	11440.00	57.13	74.00	-16.87	41.13	16.00	Peak	217	123

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

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

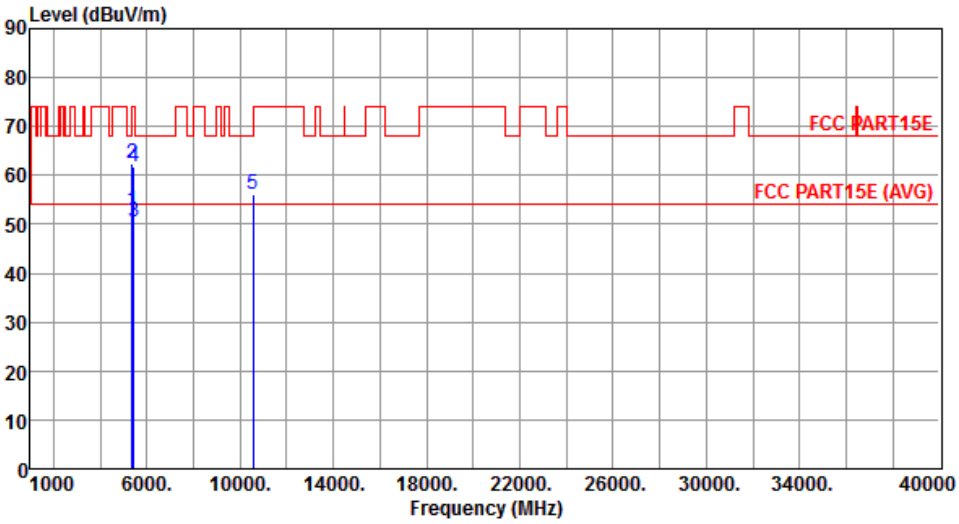
Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	49.78	54.00	-4.22	43.57	6.21	Average	166	337
2	5350.00	62.45	74.00	-11.55	56.24	6.21	Peak	166	337
3	5430.00	47.79	54.00	-6.21	41.45	6.34	Average	166	337
4	5430.00	59.68	74.00	-14.32	53.34	6.34	Peak	166	337
5	10540.00	55.71	68.20	-12.49	40.29	15.42	Peak	136	325

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).

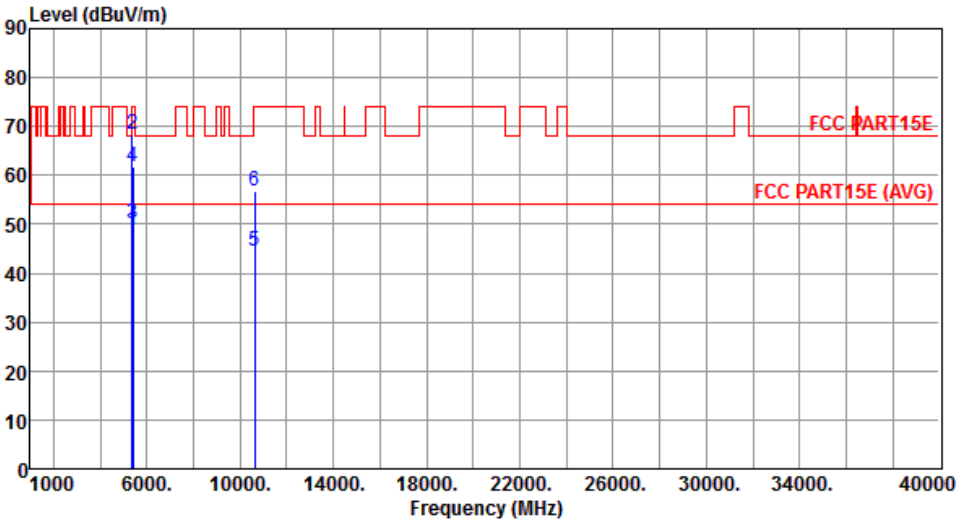
Modulation	VHT40	**Test Freq. (MHz)**	5270
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	52.91	54.00	-1.09	46.70	6.21	Average	175	243
2	5350.00	62.46	74.00	-11.54	56.25	6.21	Peak	175	243
3	5430.00	50.61	54.00	-3.39	44.27	6.34	Average	175	243
4	5430.00	61.61	74.00	-12.39	55.27	6.34	Peak	175	243
5	10540.00	56.05	68.20	-12.15	40.63	15.42	Peak	329	269

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).

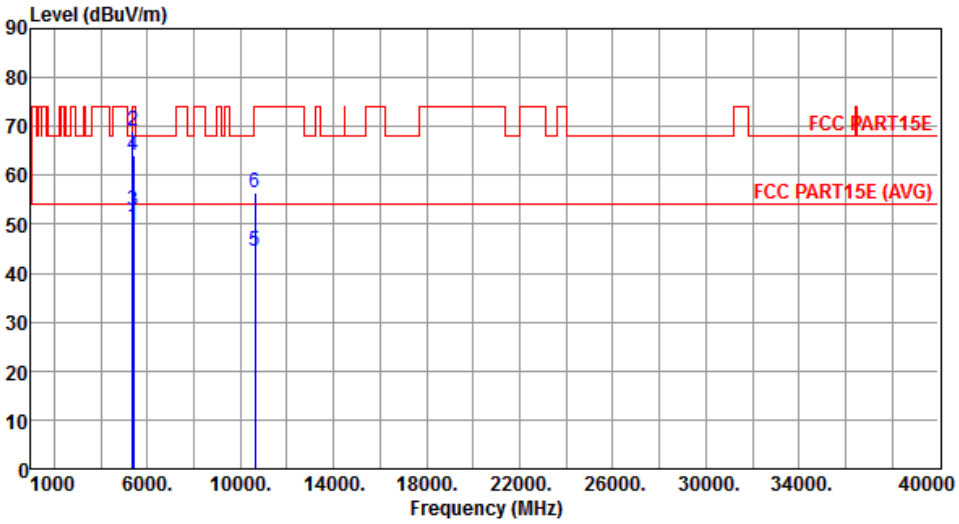
Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	48.98	54.00	-5.02	42.77	6.21	Average	175	351
2	5350.00	68.55	74.00	-5.45	62.34	6.21	Peak	175	351
3	5390.00	50.15	54.00	-3.85	43.85	6.30	Average	175	351
4	5390.00	61.79	74.00	-12.21	55.49	6.30	Peak	175	351
5	10620.00	44.38	54.00	-9.62	28.90	15.48	Average	148	329
6	10620.00	56.74	74.00	-17.26	41.26	15.48	Peak	148	329

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).

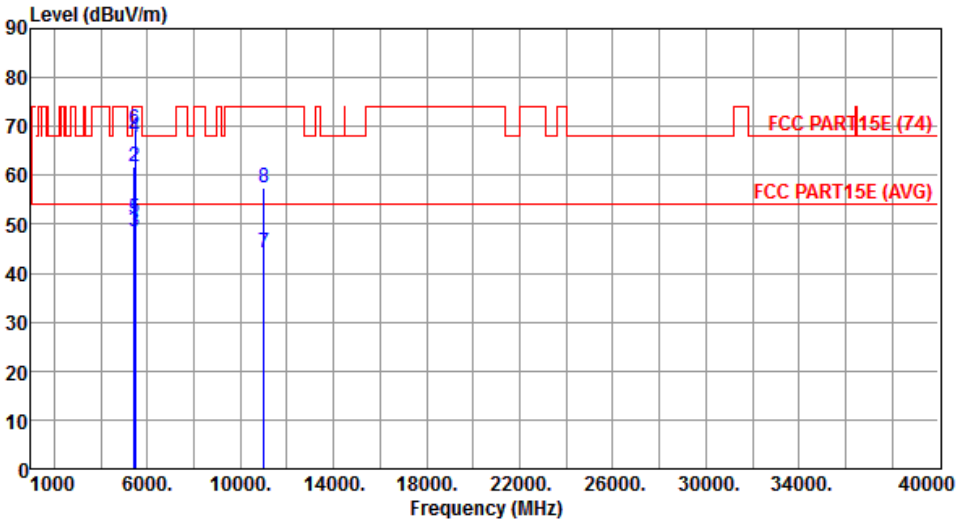
Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	49.45	54.00	-4.55	43.24	6.21	Average	194	241
2	5350.00	69.13	74.00	-4.87	62.92	6.21	Peak	194	241
3	5390.00	52.96	54.00	-1.04	46.66	6.30	Average	194	241
4	5390.00	64.20	74.00	-9.80	57.90	6.30	Peak	194	241
5	10620.00	44.47	54.00	-9.53	28.99	15.48	Average	316	254
6	10620.00	56.38	74.00	-17.62	40.90	15.48	Peak	316	254

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).

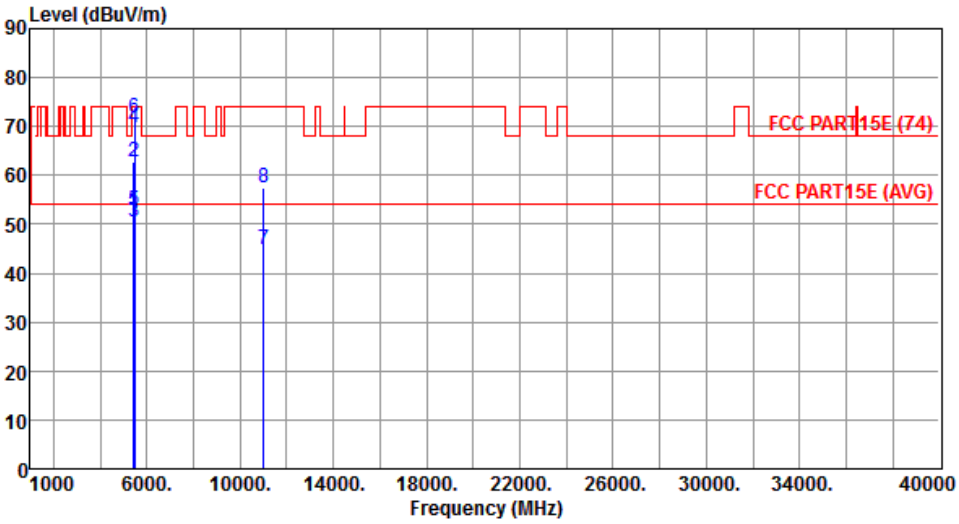
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5430.00	50.24	54.00	-3.76	43.90	6.34	Average	192	350
2	5430.00	61.61	74.00	-12.39	55.27	6.34	Peak	192	350
3	5460.00	48.47	54.00	-5.53	42.10	6.37	Average	192	350
4	5460.00	67.63	74.00	-6.37	61.26	6.37	Peak	192	350
5	5470.00	50.98	54.00	-3.02	44.60	6.38	Average	192	350
6	5470.00	69.48	74.00	-4.52	63.10	6.38	Peak	192	350
7	11020.00	44.12	54.00	-9.88	28.36	15.76	Average	165	327
8	11020.00	57.36	74.00	-16.64	41.60	15.76	Peak	165	327

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).

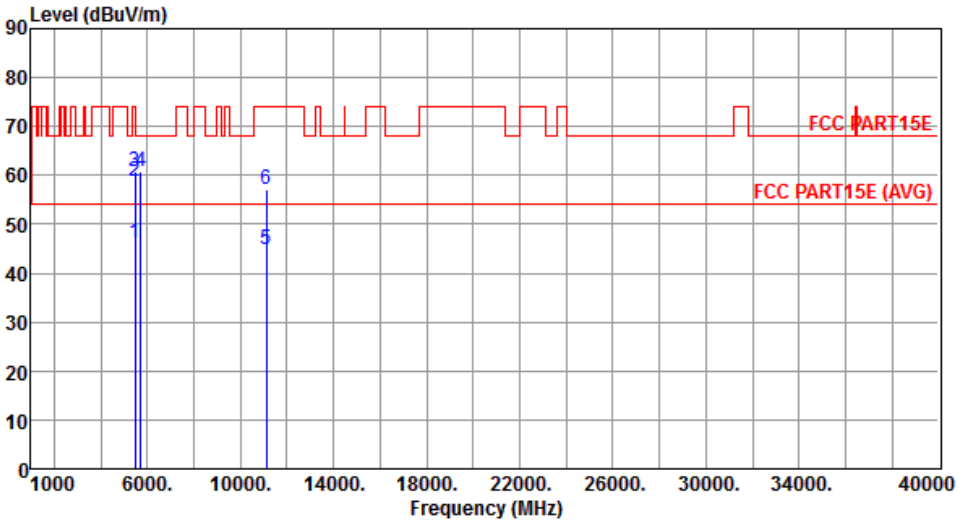
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5430.00	52.78	54.00	-1.22	46.44	6.34	Average	174	239
2	5430.00	62.64	74.00	-11.36	56.30	6.34	Peak	174	239
3	5460.00	50.63	54.00	-3.37	44.26	6.37	Average	174	239
4	5460.00	69.63	74.00	-4.37	63.26	6.37	Peak	174	239
5	5470.00	52.92	54.00	-1.08	46.54	6.38	Average	174	239
6	5470.00	71.81	74.00	-2.19	65.43	6.38	Peak	174	239
7	11020.00	44.72	54.00	-9.28	28.96	15.76	Average	298	221
8	11020.00	57.35	74.00	-16.65	41.59	15.76	Peak	298	221

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

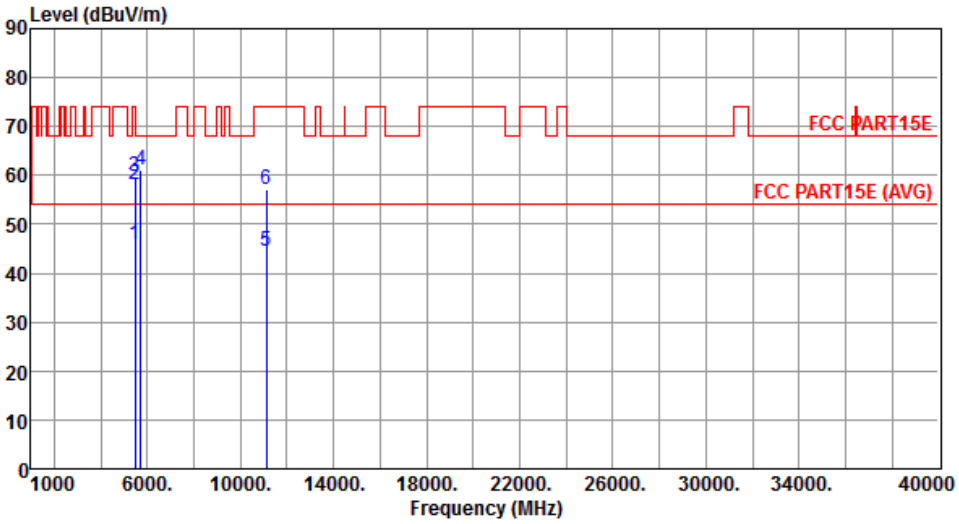
Modulation	VHT40	Test Freq. (MHz)	5550
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.25	54.00	-7.75	39.88	6.37	Average	170	352
2	5460.00	58.67	74.00	-15.33	52.30	6.37	Peak	170	352
3	5470.00	60.64	68.20	-7.56	54.26	6.38	Peak	170	352
4	5725.00	60.63	68.20	-7.57	53.79	6.84	Peak	170	352
5	11100.00	44.75	54.00	-9.25	28.94	15.81	Average	165	322
6	11100.00	57.14	74.00	-16.86	41.33	15.81	Peak	165	322

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).

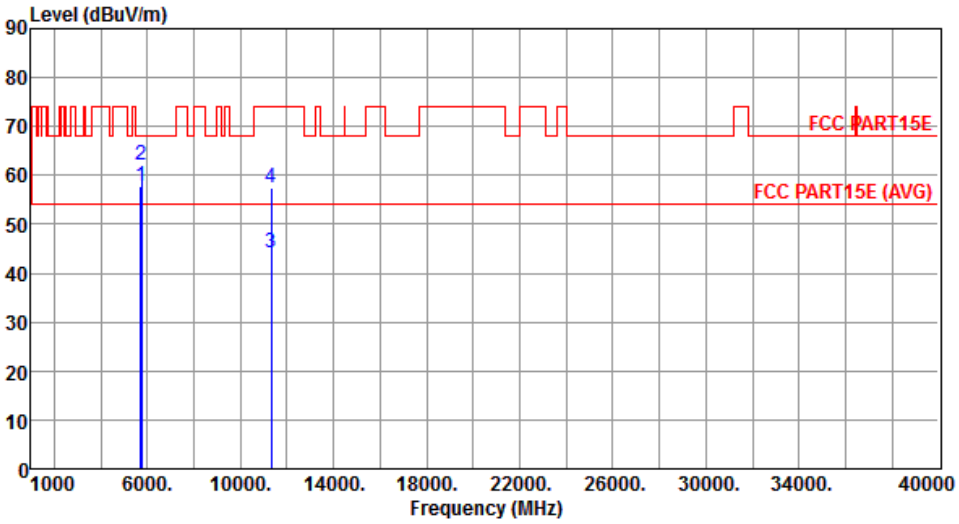
Modulation	VHT40	Test Freq. (MHz)	5550
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	45.91	54.00	-8.09	39.54	6.37	Average	194	242
2	5460.00	57.98	74.00	-16.02	51.61	6.37	Peak	194	242
3	5470.00	59.64	68.20	-8.56	53.26	6.38	Peak	194	242
4	5725.00	61.17	68.20	-7.03	54.33	6.84	Peak	194	242
5	11100.00	44.44	54.00	-9.56	28.63	15.81	Average	302	263
6	11100.00	57.11	74.00	-16.89	41.30	15.81	Peak	302	263

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).

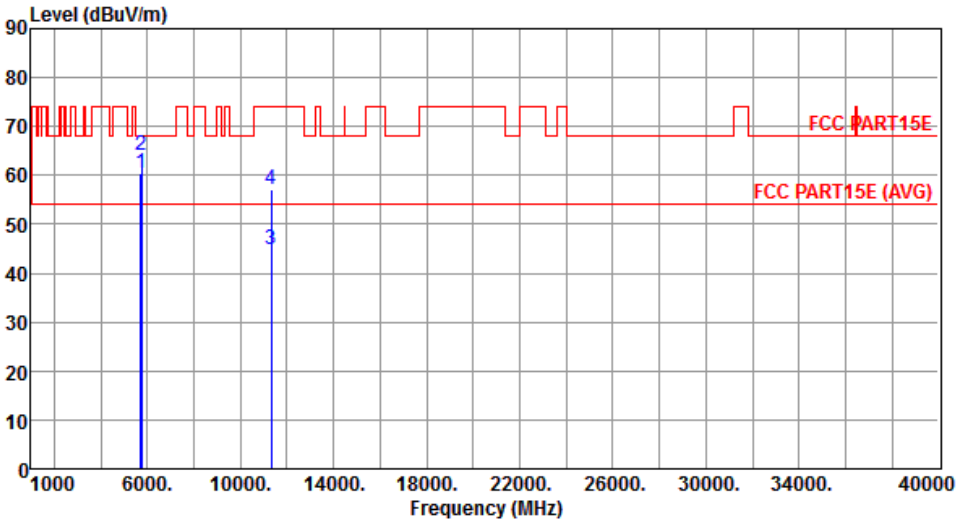
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	57.90	68.20	-10.30	51.06	6.84	Peak	198	344
2	5750.00	62.17	68.20	-6.03	55.25	6.92	Peak	198	344
3	11340.00	44.30	54.00	-9.70	28.36	15.94	Average	165	328
4	11340.00	57.32	74.00	-16.68	41.38	15.94	Peak	165	328

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).

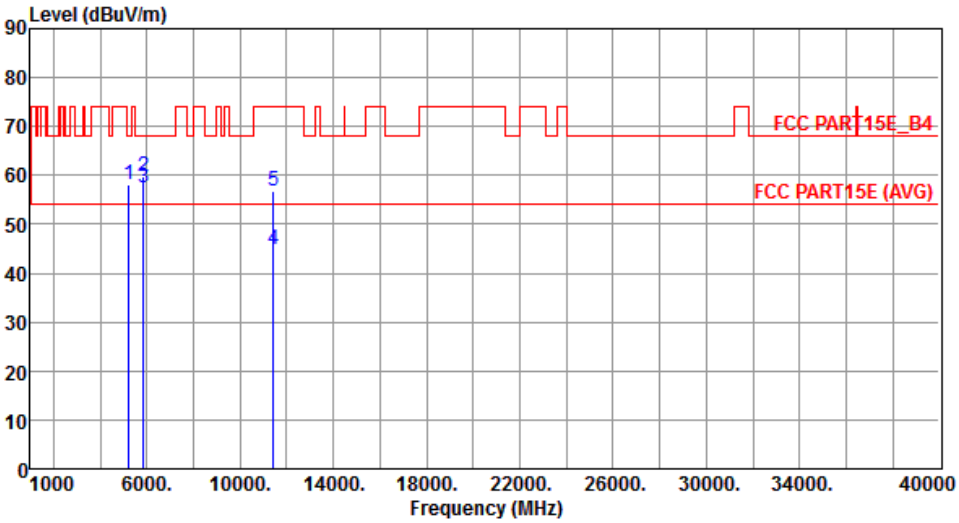
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	60.40	68.20	-7.80	53.56	6.84	Peak	194	239
2	5750.00	63.97	68.20	-4.23	57.05	6.92	Peak	194	239
3	11340.00	44.90	54.00	-9.10	28.96	15.94	Average	309	254
4	11340.00	57.23	74.00	-16.77	41.29	15.94	Peak	309	254

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).

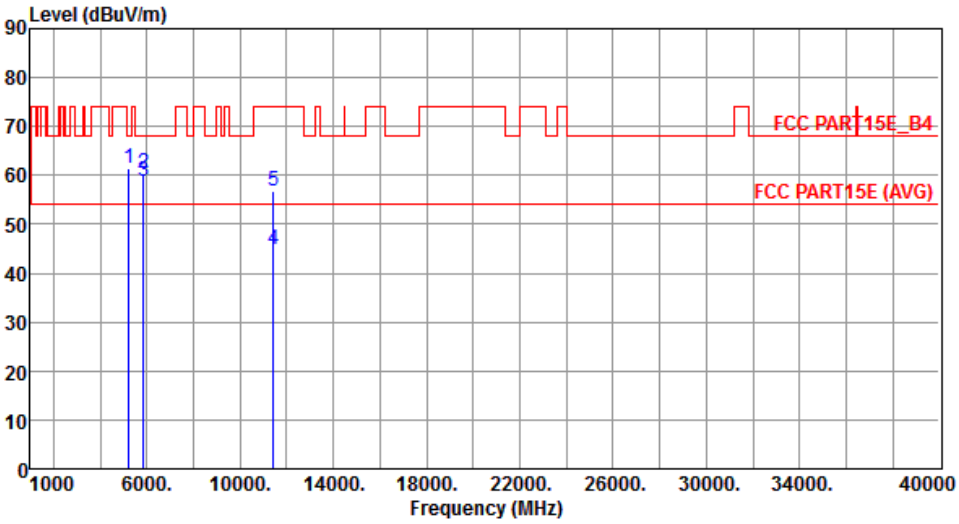
Modulation	VHT40	Test Freq. (MHz)	5710
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5234.00	58.11	68.20	-10.09	52.13	5.98	Peak	247	6
2	5850.00	59.77	78.20	-18.43	52.60	7.17	Peak	247	6
3	5860.00	57.45	68.20	-10.75	50.27	7.18	Peak	247	6
4	11420.00	44.88	54.00	-9.12	28.89	15.99	Average	230	351
5	11420.00	56.87	74.00	-17.13	40.88	15.99	Peak	230	351

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)	5710
Polarization	Vertical		

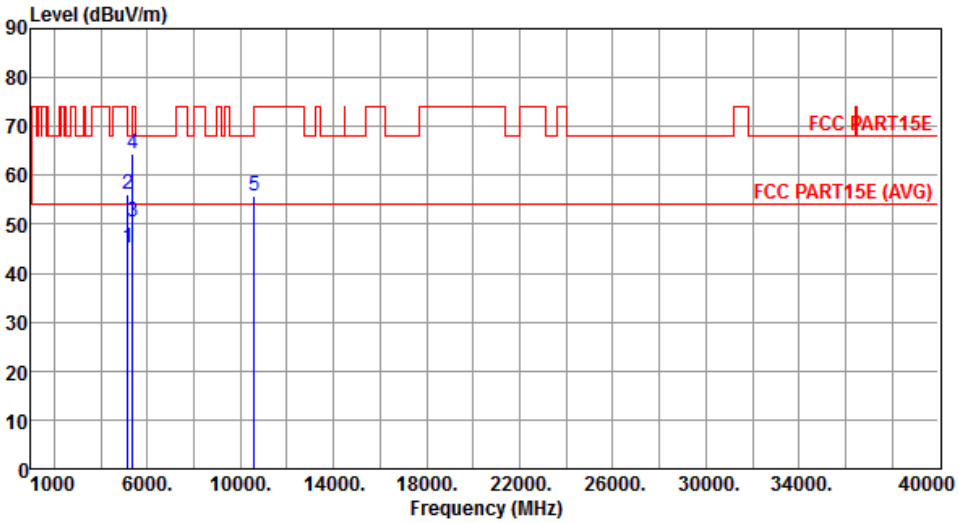


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5234.00	61.28	68.20	-6.92	55.30	5.98	Peak	216	228
2	5850.00	60.43	78.20	-17.77	53.26	7.17	Peak	216	228
3	5860.00	58.85	68.20	-9.35	51.67	7.18	Peak	216	228
4	11420.00	45.00	54.00	-9.00	29.01	15.99	Average	236	111
5	11420.00	56.86	74.00	-17.14	40.87	15.99	Peak	236	111

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

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

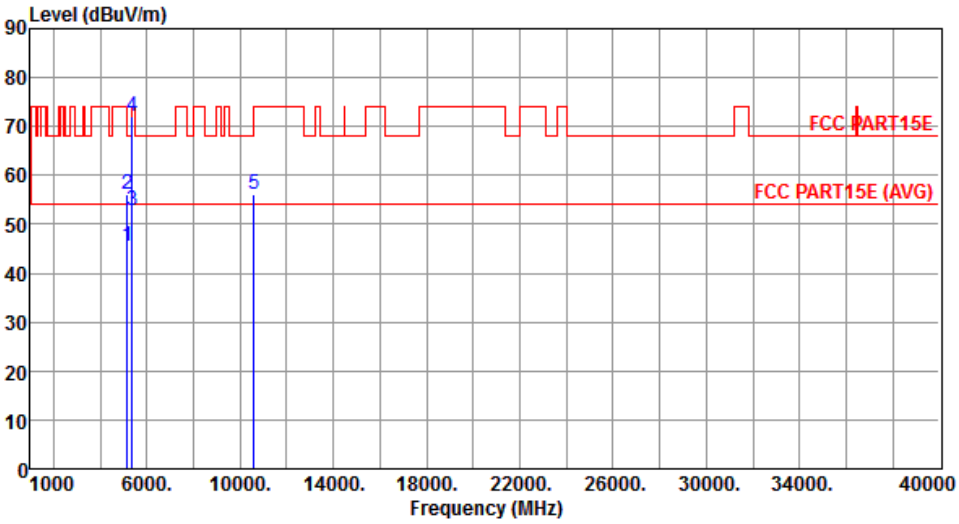
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.12	54.00	-8.88	39.26	5.86	Average	188	349
2	5150.00	56.06	74.00	-17.94	50.20	5.86	Peak	188	349
3	5350.00	50.58	54.00	-3.42	44.37	6.21	Average	188	349
4	5350.00	64.48	74.00	-9.52	58.27	6.21	Peak	188	349
5	10580.00	55.81	68.20	-12.39	40.37	15.44	Peak	145	300

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

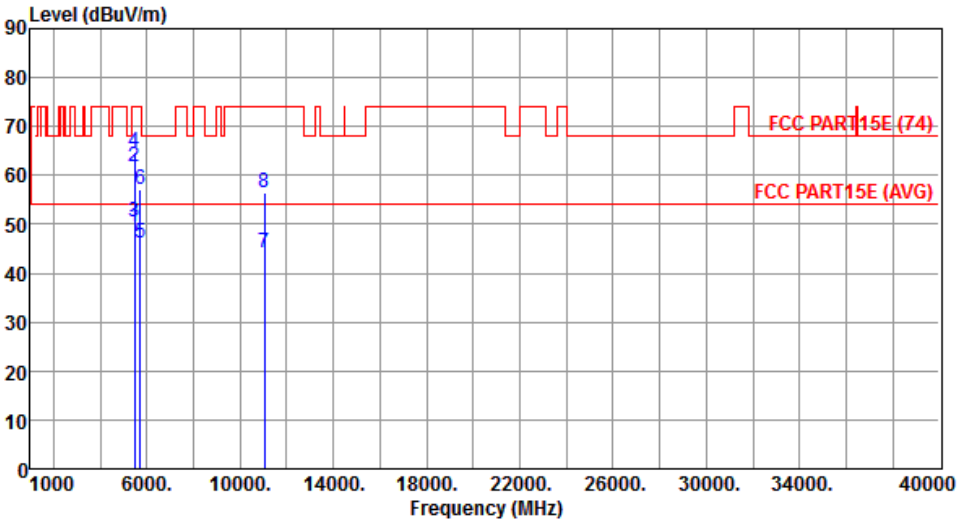
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.42	54.00	-8.58	39.56	5.86	Average	183	233
2	5150.00	56.12	74.00	-17.88	50.26	5.86	Peak	183	233
3	5350.00	52.68	54.00	-1.32	46.47	6.21	Average	183	228
4	5350.00	72.03	74.00	-1.97	65.82	6.21	Peak	183	228
5	10580.00	56.11	68.20	-12.09	40.67	15.44	Peak	138	318

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

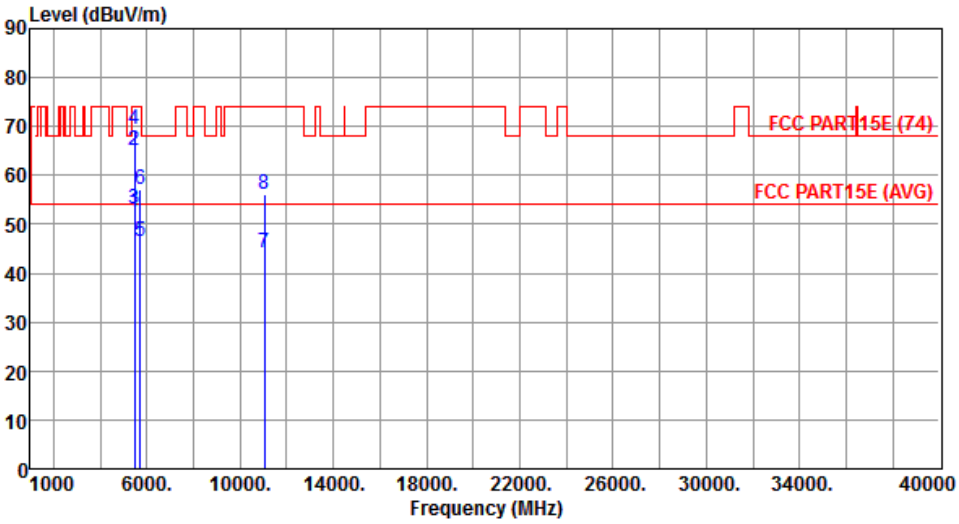
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	49.63	54.00	-4.37	43.26	6.37	Average	157	354
2	5460.00	61.63	74.00	-12.37	55.26	6.37	Peak	157	354
3	5470.00	50.58	54.00	-3.42	44.20	6.38	Average	157	354
4	5470.00	64.64	74.00	-9.36	58.26	6.38	Peak	157	354
5	5725.00	46.15	54.00	-7.85	39.31	6.84	Average	157	354
6	5725.00	57.04	74.00	-16.96	50.20	6.84	Peak	157	354
7	11060.00	44.04	54.00	-9.96	28.26	15.78	Average	132	269
8	11060.00	56.40	74.00	-17.60	40.62	15.78	Peak	132	269

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

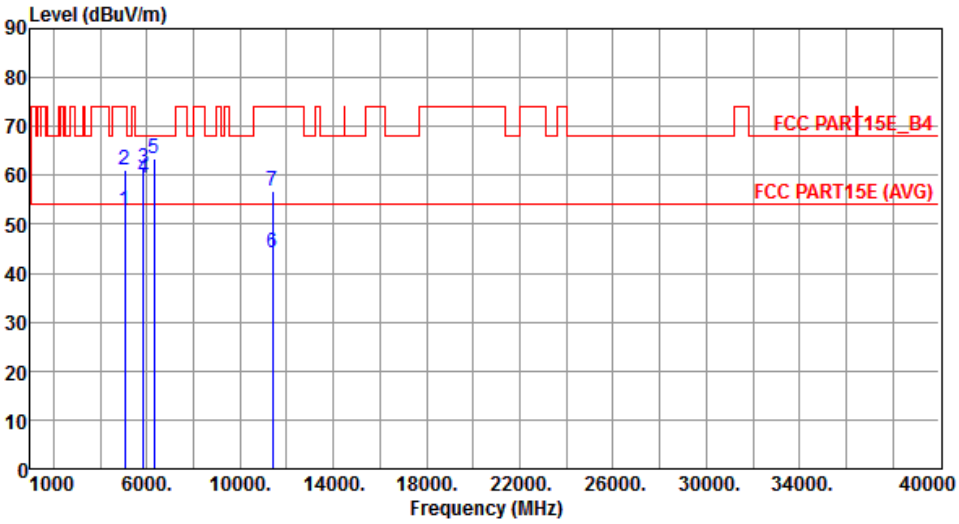
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	52.57	54.00	-1.43	46.20	6.37	Average	188	240
2	5460.00	65.22	74.00	-8.78	58.85	6.37	Peak	188	240
3	5470.00	52.99	54.00	-1.01	46.61	6.38	Average	188	240
4	5470.00	69.52	74.00	-4.48	63.14	6.38	Peak	188	240
5	5725.00	46.38	54.00	-7.62	39.54	6.84	Average	188	240
6	5725.00	57.10	74.00	-16.90	50.26	6.84	Peak	188	240
7	11060.00	44.14	54.00	-9.86	28.36	15.78	Average	319	265
8	11060.00	56.04	74.00	-17.96	40.26	15.78	Peak	319	265

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).

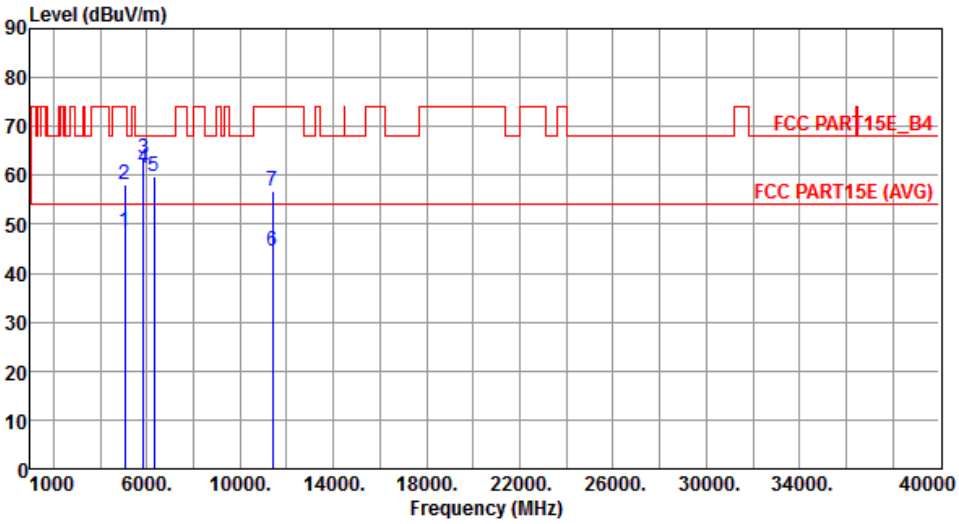
Modulation	VHT80	Test Freq. (MHz)	5690
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5058.00	52.90	54.00	-1.10	47.12	5.78	Average	239	53
2	5058.00	61.13	74.00	-12.87	55.35	5.78	Peak	239	53
3	5850.00	61.53	78.20	-16.67	54.36	7.17	Peak	239	226
4	5860.00	59.55	68.20	-8.65	52.37	7.18	Peak	239	226
5	6322.00	63.53	68.20	-4.67	55.30	8.23	Peak	239	53
6	11380.00	44.25	54.00	-9.75	28.29	15.96	Average	219	305
7	11380.00	56.85	74.00	-17.15	40.89	15.96	Peak	219	305

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)	5690
Polarization	Vertical		



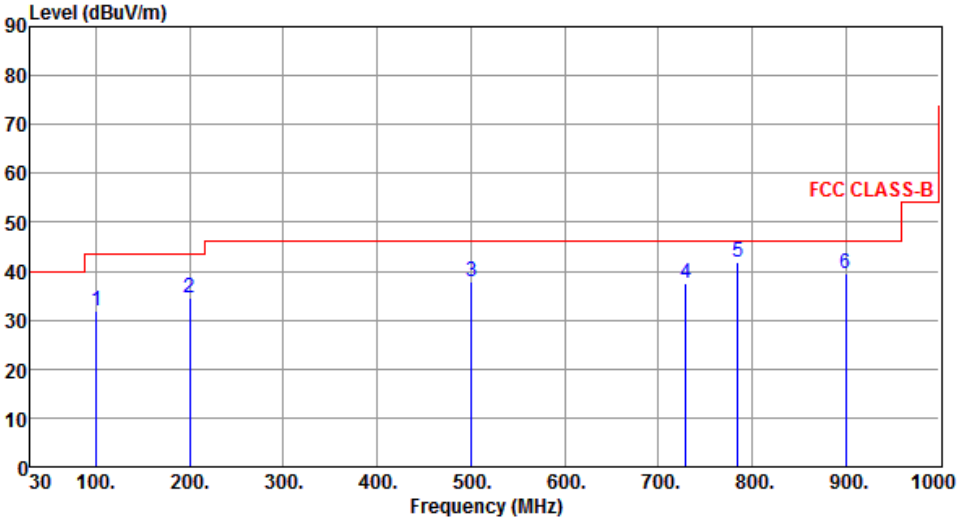
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5058.00	48.43	54.00	-5.57	42.65	5.78	Average	245	3
2	5058.00	58.03	74.00	-15.97	52.25	5.78	Peak	245	3
3	5850.00	63.40	78.20	-14.80	56.23	7.17	Peak	245	3
4	5860.00	61.42	68.20	-6.78	54.24	7.18	Peak	245	3
5	6322.00	59.83	68.20	-8.37	51.60	8.23	Peak	245	3
6	11380.00	44.37	54.00	-9.63	28.41	15.96	Average	218	112
7	11380.00	56.83	74.00	-17.17	40.87	15.96	Peak	218	112

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).

Beamforming mode

3.5.9 Transmitter Radiated Unwanted Emissions (Below 1GHz)

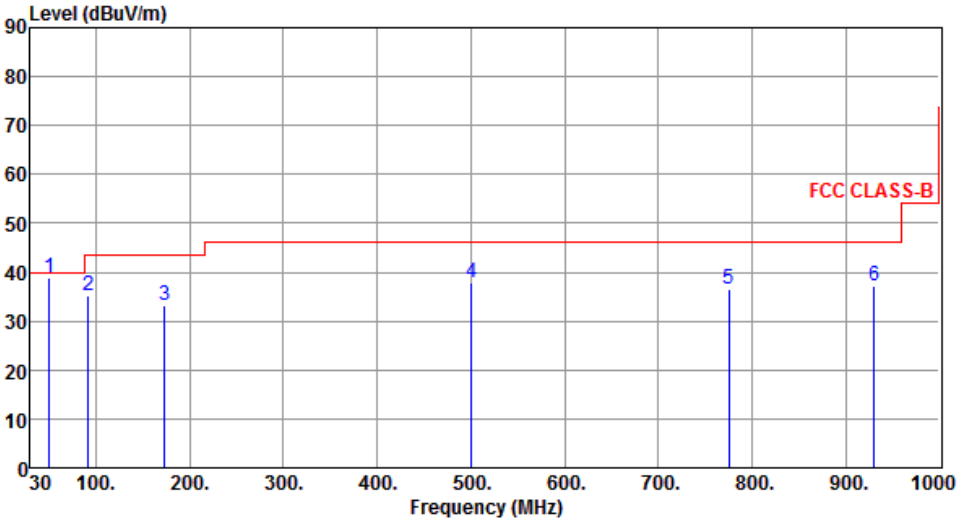
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	100.81	32.03	43.50	-11.47	45.14	-13.11	Peak	---	---
2	199.75	34.45	43.50	-9.05	45.35	-10.90	Peak	---	---
3	500.45	37.83	46.00	-8.17	40.72	-2.89	Peak	---	---
4	729.37	37.49	46.00	-8.51	36.10	1.39	Peak	---	---
5	784.66	41.98	46.00	-4.02	39.61	2.37	Peak	---	---
6	900.09	39.67	46.00	-6.33	35.44	4.23	Peak	---	---

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

Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		

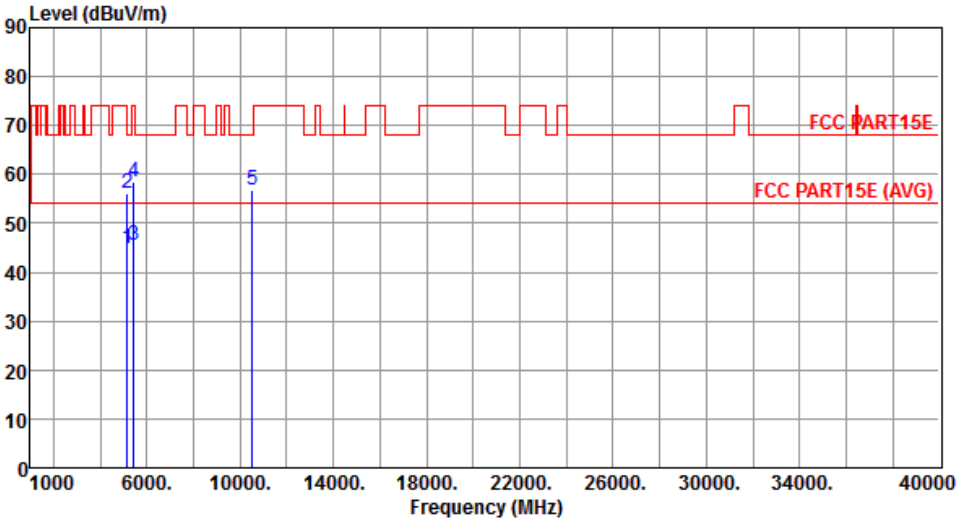


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	50.37	38.92	40.00	-1.08	46.72	-7.80	QP	100	248
2	92.08	35.31	43.50	-8.19	49.39	-14.08	Peak	---	---
3	173.56	33.24	43.50	-10.26	42.07	-8.83	Peak	---	---
4	500.45	38.00	46.00	-8.00	40.89	-2.89	Peak	---	---
5	774.96	36.39	46.00	-9.61	34.16	2.23	Peak	---	---
6	930.16	37.18	46.00	-8.82	32.43	4.75	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.

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

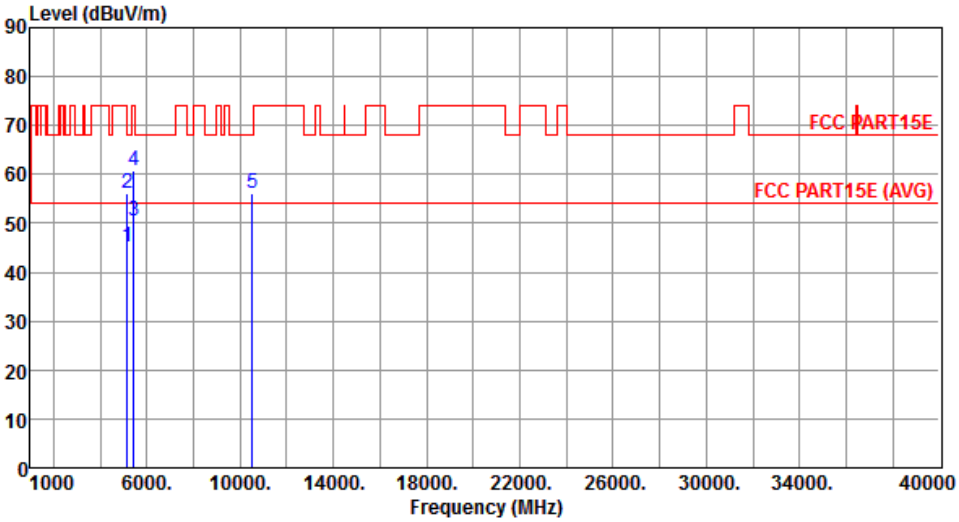
Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.99	54.00	-9.01	39.13	5.86	Average	155	0
2	5150.00	56.00	74.00	-18.00	50.14	5.86	Peak	155	0
3	5420.00	45.66	54.00	-8.34	39.32	6.34	Average	155	0
4	5420.00	58.50	74.00	-15.50	52.16	6.34	Peak	155	0
5	10520.00	56.70	68.20	-11.50	41.29	15.41	Peak	255	78

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

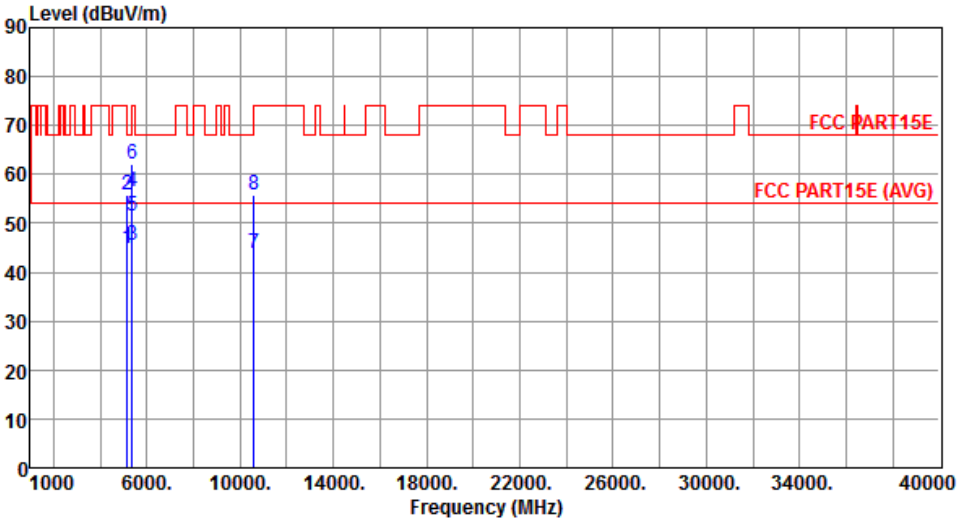
Modulation	VHT20	**Test Freq. (MHz)**	5260
Polarization	Vertical		



	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	45.11	54.00	-8.89	39.25	5.86	Average	149	337
2	5150.00	55.99	74.00	-18.01	50.13	5.86	Peak	149	337
3	5420.00	50.41	54.00	-3.59	44.07	6.34	Average	150	329
4	5420.00	60.76	74.00	-13.24	54.42	6.34	Peak	150	329
5	10520.00	56.06	68.20	-12.14	40.65	15.41	Peak	261	340

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

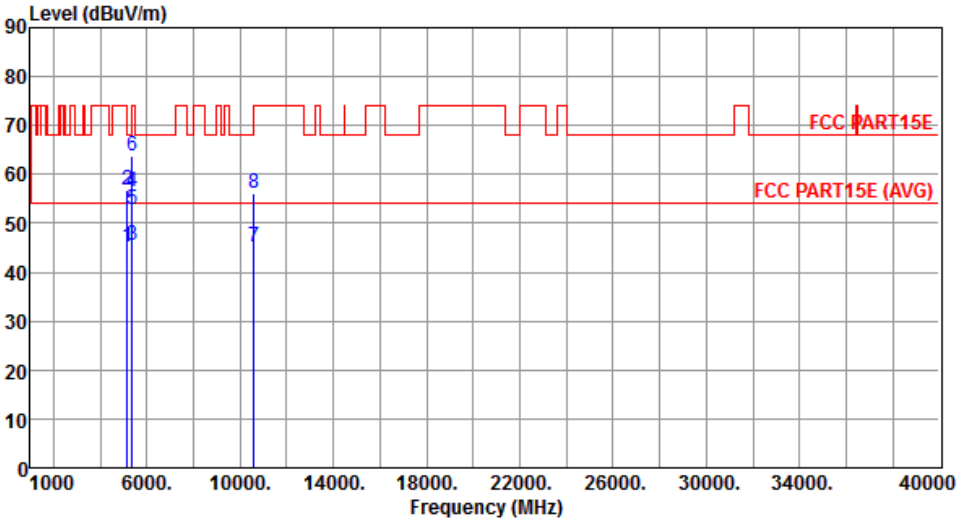
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.00	54.00	-9.00	39.14	5.86	Average	170	40
2	5150.00	55.90	74.00	-18.10	50.04	5.86	Peak	170	40
3	5350.00	45.48	54.00	-8.52	39.27	6.21	Average	170	40
4	5350.00	56.48	74.00	-17.52	50.27	6.21	Peak	170	40
5	5380.00	51.38	54.00	-2.62	45.11	6.27	Average	170	40
6	5380.00	62.03	74.00	-11.97	55.76	6.27	Peak	170	40
7	10600.00	43.79	54.00	-10.21	28.33	15.46	Average	257	101
8	10600.00	55.85	74.00	-18.15	40.39	15.46	Peak	257	101

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

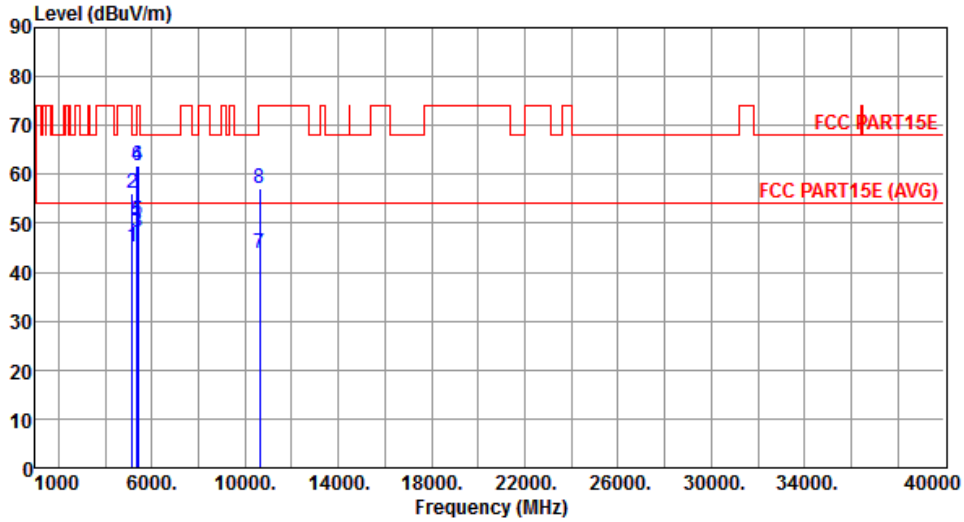
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.28	54.00	-8.72	39.42	5.86	Average	213	182
2	5150.00	56.82	74.00	-17.18	50.96	5.86	Peak	213	182
3	5350.00	45.64	54.00	-8.36	39.43	6.21	Average	213	182
4	5350.00	56.39	74.00	-17.61	50.18	6.21	Peak	213	182
5	5380.00	52.90	54.00	-1.10	46.63	6.27	Average	213	182
6	5380.00	63.63	74.00	-10.37	57.36	6.27	Peak	213	182
7	10600.00	45.12	54.00	-8.88	29.66	15.46	Average	274	340
8	10600.00	56.12	74.00	-17.88	40.66	15.46	Peak	274	340

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

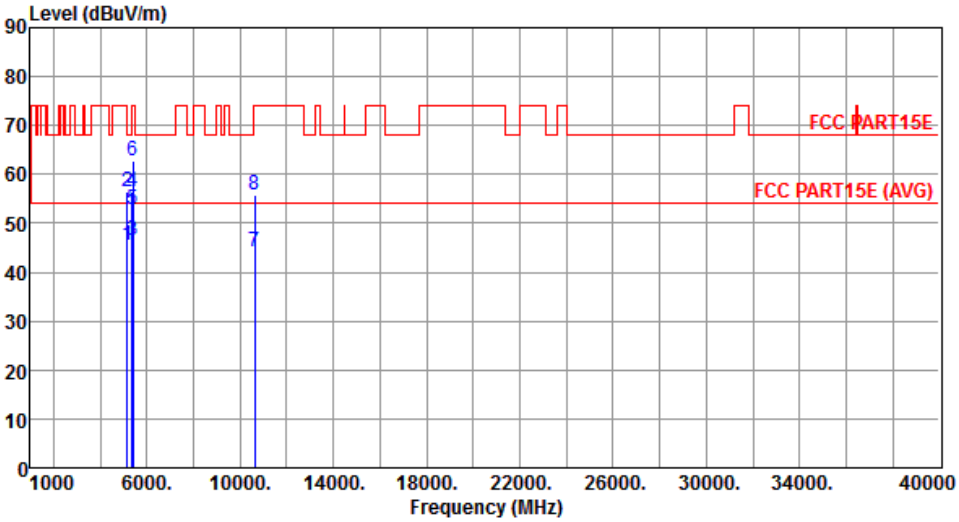
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.12	54.00	-8.88	39.26	5.86	Average	247	193
2	5150.00	56.02	74.00	-17.98	50.16	5.86	Peak	247	193
3	5350.00	48.22	54.00	-5.78	42.01	6.21	Average	240	219
4	5350.00	61.62	74.00	-12.38	55.41	6.21	Peak	240	219
5	5400.00	50.48	54.00	-3.52	44.16	6.32	Average	240	219
6	5400.00	61.91	74.00	-12.09	55.59	6.32	Peak	240	219
7	10640.00	43.79	54.00	-10.21	28.30	15.49	Average	273	81
8	10640.00	57.09	74.00	-16.91	41.60	15.49	Peak	273	81

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

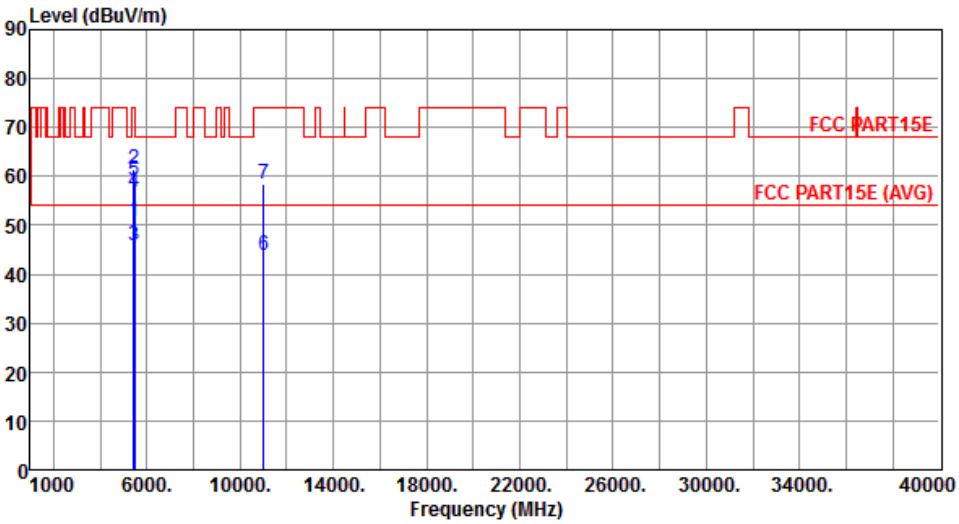
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.46	54.00	-8.54	39.60	5.86	Average	108	237
2	5150.00	56.46	74.00	-17.54	50.60	5.86	Peak	108	237
3	5350.00	46.52	54.00	-7.48	40.31	6.21	Average	108	237
4	5350.00	56.35	74.00	-17.65	50.14	6.21	Peak	108	237
5	5400.00	52.85	54.00	-1.15	46.53	6.32	Average	108	237
6	5400.00	62.91	74.00	-11.09	56.59	6.32	Peak	108	237
7	10640.00	44.09	54.00	-9.91	28.60	15.49	Average	110	245
8	10640.00	55.79	74.00	-18.21	40.30	15.49	Peak	110	245

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

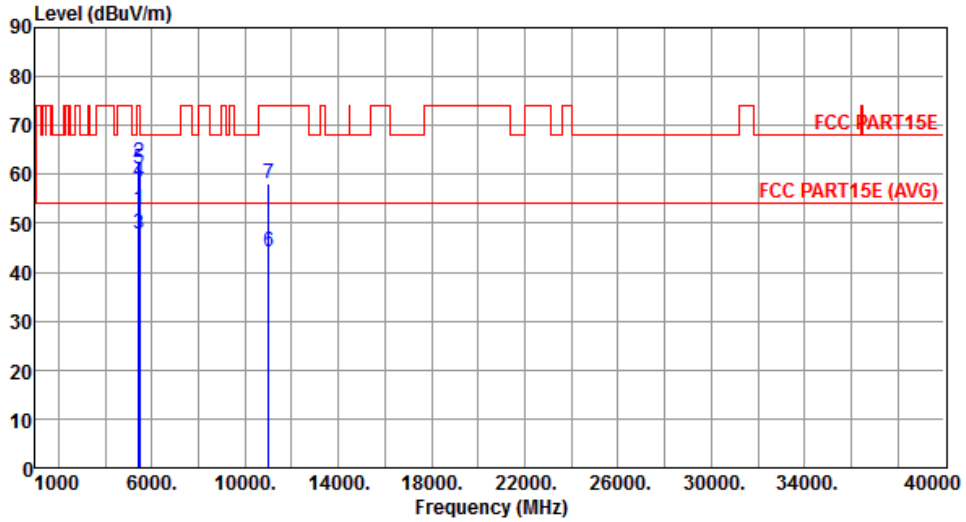
Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5420.00	50.90	54.00	-3.10	44.56	6.34	Average	263	208
2	5420.00	61.60	74.00	-12.40	55.26	6.34	Peak	263	208
3	5460.00	45.87	54.00	-8.13	39.50	6.37	Average	263	208
4	5460.00	56.67	74.00	-17.33	50.30	6.37	Peak	263	208
5	5470.00	59.01	68.20	-9.19	52.63	6.38	Peak	263	208
6	11000.00	43.90	54.00	-10.10	28.15	15.75	Average	326	218
7	11000.00	58.44	74.00	-15.56	42.69	15.75	Peak	326	218

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

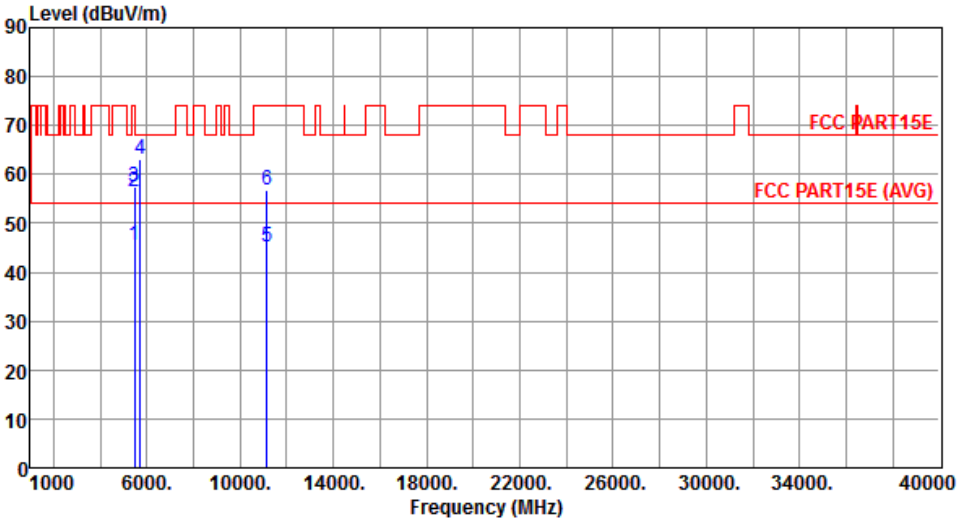
Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5420.00	52.85	54.00	-1.15	46.51	6.34	Average	231	186
2	5420.00	62.51	74.00	-11.49	56.17	6.34	Peak	231	186
3	5460.00	47.92	54.00	-6.08	41.55	6.37	Average	231	186
4	5460.00	58.54	74.00	-15.46	52.17	6.37	Peak	231	186
5	5470.00	61.04	68.20	-7.16	54.66	6.38	Peak	231	186
6	11000.00	44.08	54.00	-9.92	28.33	15.75	Average	195	168
7	11000.00	58.01	74.00	-15.99	42.26	15.75	Peak	195	168

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

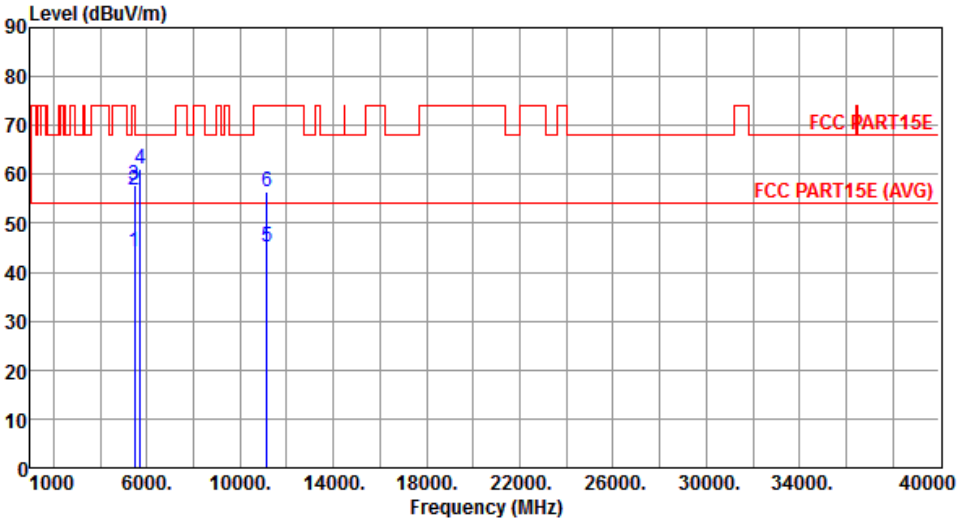
Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	45.66	54.00	-8.34	39.29	6.37	Average	265	221
2	5460.00	56.53	74.00	-17.47	50.16	6.37	Peak	265	221
3	5470.00	57.57	68.20	-10.63	51.19	6.38	Peak	265	221
4	5725.00	63.14	68.20	-5.06	56.30	6.84	Peak	265	221
5	11160.00	45.14	54.00	-8.86	29.30	15.84	Average	254	82
6	11160.00	56.83	74.00	-17.17	40.99	15.84	Peak	254	82

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

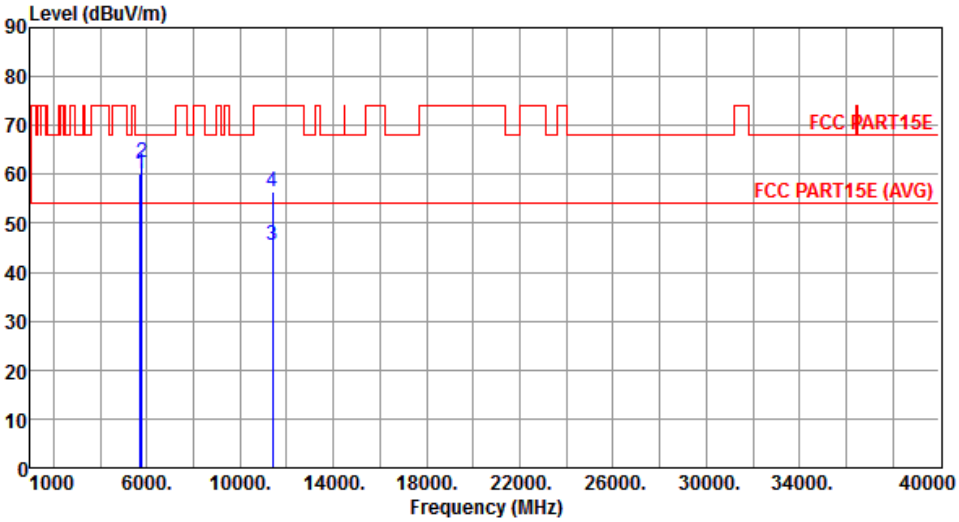
Modulation	VHT20	**Test Freq. (MHz)**	5580
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	44.15	54.00	-9.85	37.78	6.37	Average	199	156
2	5460.00	56.66	74.00	-17.34	50.29	6.37	Peak	199	156
3	5470.00	57.74	68.20	-10.46	51.36	6.38	Peak	199	156
4	5725.00	61.20	68.20	-7.00	54.36	6.84	Peak	199	156
5	11160.00	45.20	54.00	-8.80	29.36	15.84	Average	266	29
6	11160.00	56.50	74.00	-17.50	40.66	15.84	Peak	266	29

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

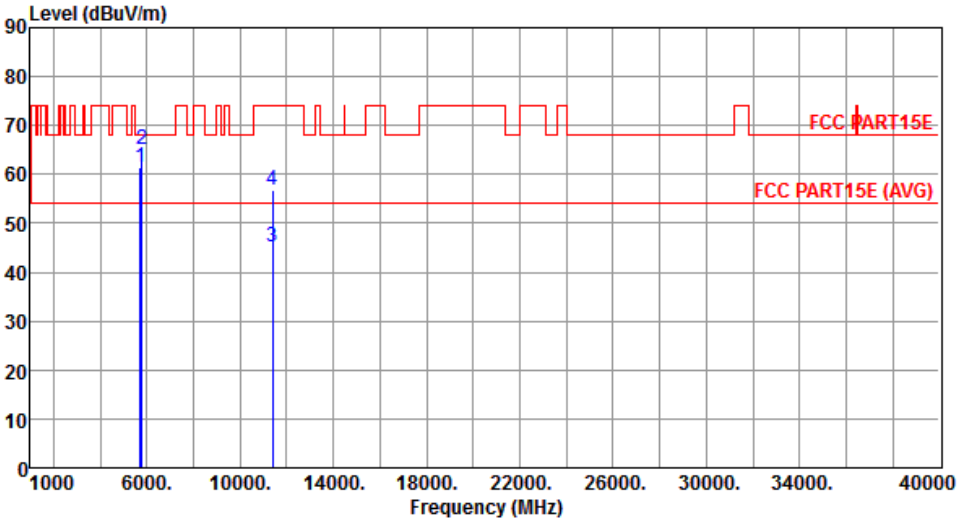
Modulation	VHT20	**Test Freq. (MHz)**	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	60.05	68.20	-8.15	53.21	6.84	Peak	217	16
2	5780.00	62.60	68.20	-5.60	55.61	6.99	Peak	217	16
3	11400.00	45.61	54.00	-8.39	29.64	15.97	Average	271	89
4	11400.00	56.47	74.00	-17.53	40.50	15.97	Peak	271	89

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

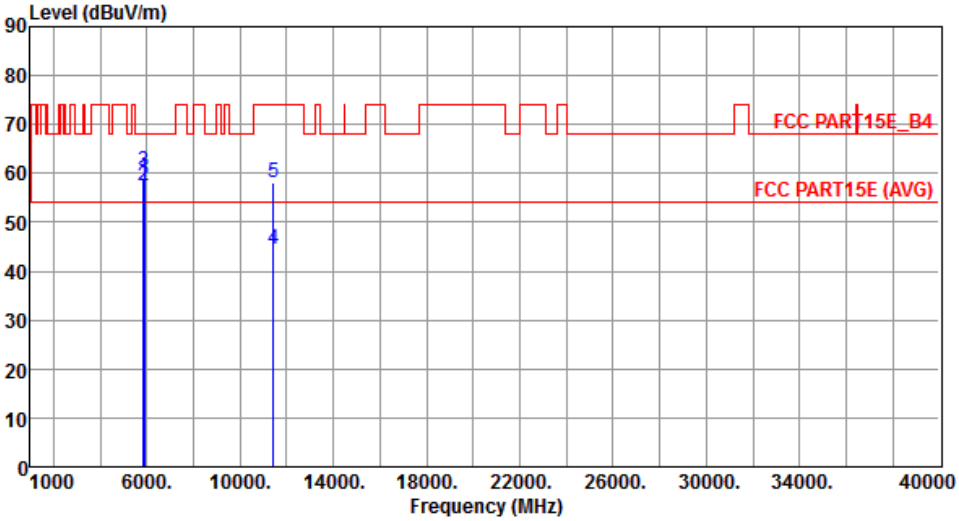
Modulation	VHT20	**Test Freq. (MHz)**	5700
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	61.50	68.20	-6.70	54.66	6.84	Peak	223	233
2	5780.00	65.00	68.20	-3.20	58.01	6.99	Peak	223	235
3	11400.00	45.31	54.00	-8.69	29.34	15.97	Average	271	355
4	11400.00	56.86	74.00	-17.14	40.89	15.97	Peak	271	355

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).

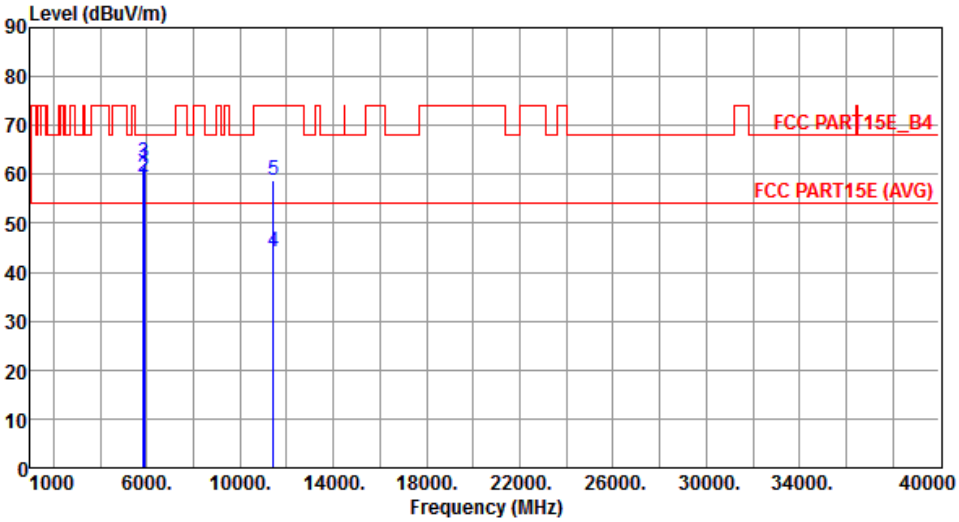
Modulation	VHT20	Test Freq. (MHz)	5720
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	59.23	78.20	-18.97	52.06	7.17	Peak	151	352
2	5860.00	57.37	68.20	-10.83	50.19	7.18	Peak	151	352
3	5880.00	60.49	68.20	-7.71	53.26	7.23	Peak	151	352
4	11440.00	44.60	54.00	-9.40	28.60	16.00	Average	156	344
5	11440.00	58.26	74.00	-15.74	42.26	16.00	Peak	156	344

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)**	5720
Polarization	Vertical		

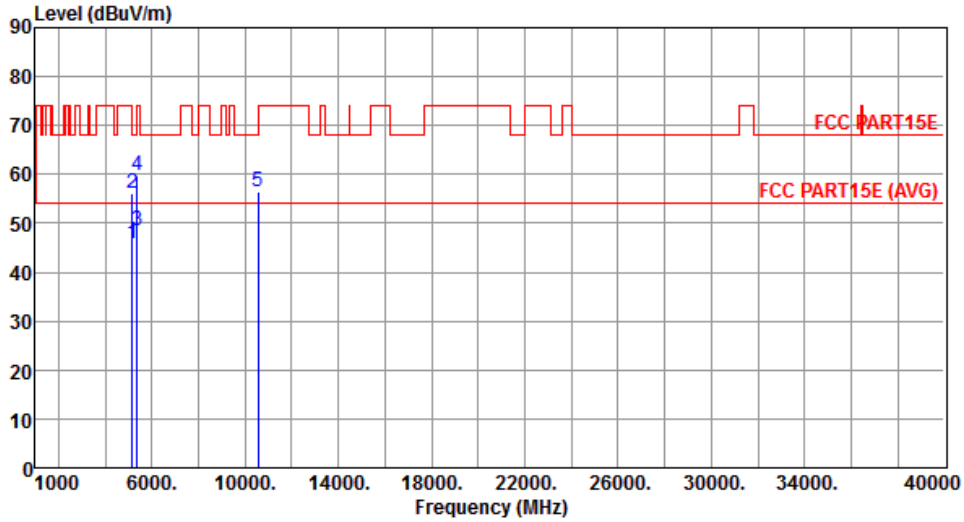


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.43	78.20	-16.77	54.26	7.17	Peak	250	73
2	5860.00	59.48	68.20	-8.72	52.30	7.18	Peak	250	73
3	5880.00	62.31	68.20	-5.89	55.08	7.23	Peak	250	73
4	11440.00	44.27	54.00	-9.73	28.27	16.00	Average	325	157
5	11440.00	58.65	74.00	-15.35	42.65	16.00	Peak	325	157

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

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

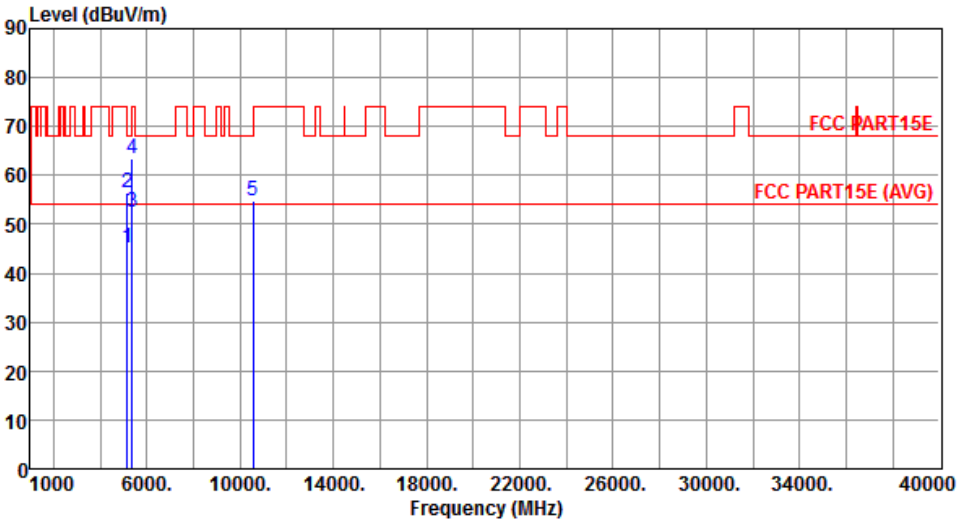
Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.73	54.00	-8.27	39.87	5.86	Average	267	166
2	5150.00	56.12	74.00	-17.88	50.26	5.86	Peak	267	166
3	5350.00	48.51	54.00	-5.49	42.30	6.21	Average	267	166
4	5350.00	59.82	74.00	-14.18	53.61	6.21	Peak	267	166
5	10540.00	56.39	68.20	-11.81	40.97	15.42	Peak	257	62

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

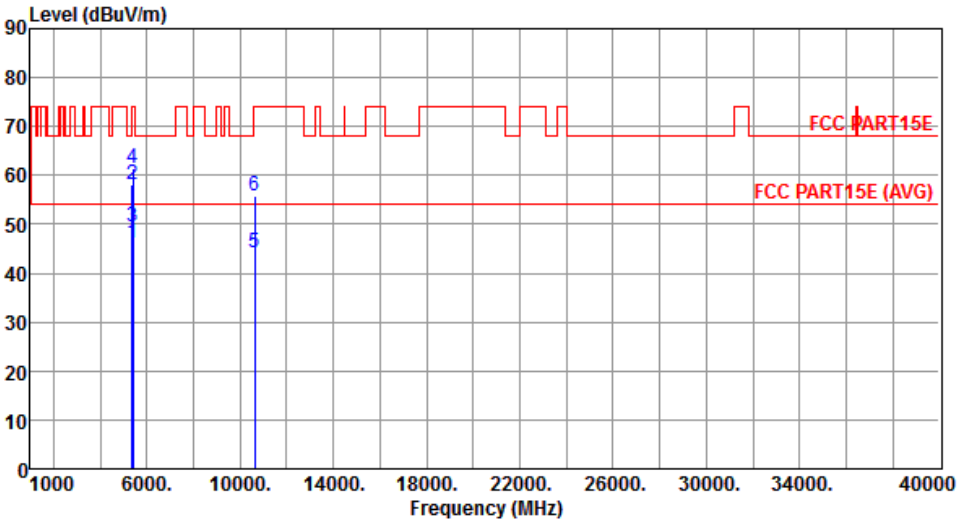
Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.12	54.00	-8.88	39.26	5.86	Average	127	278
2	5150.00	56.46	74.00	-17.54	50.60	5.86	Peak	127	278
3	5350.00	52.32	54.00	-1.68	46.11	6.21	Average	127	278
4	5350.00	63.48	74.00	-10.52	57.27	6.21	Peak	127	278
5	10540.00	54.68	68.20	-13.52	39.26	15.42	Peak	255	327

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).

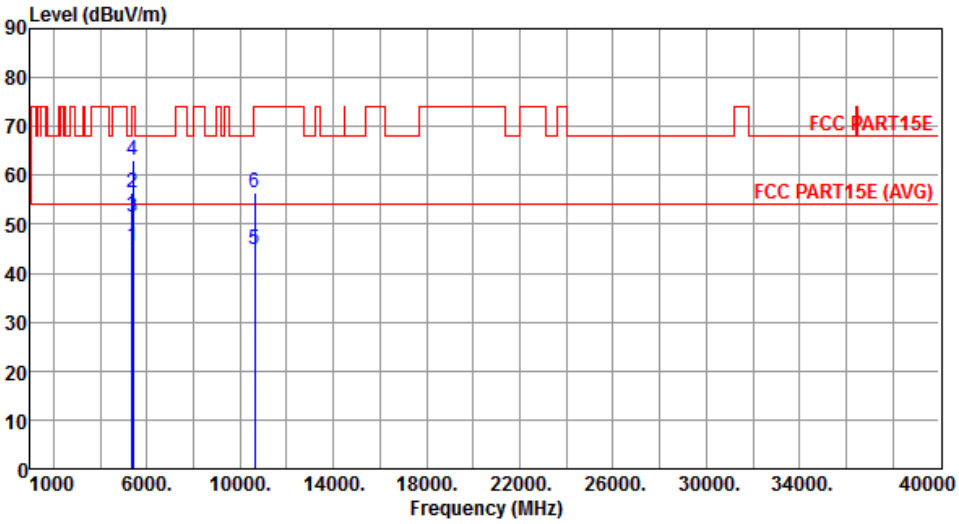
Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.12	54.00	-7.88	39.91	6.21	Average	263	17
2	5350.00	58.21	74.00	-15.79	52.00	6.21	Peak	263	17
3	5390.00	49.56	54.00	-4.44	43.26	6.30	Average	263	17
4	5390.00	61.56	74.00	-12.44	55.26	6.30	Peak	263	17
5	10620.00	44.11	54.00	-9.89	28.63	15.48	Average	279	35
6	10620.00	55.67	74.00	-18.33	40.19	15.48	Peak	279	35

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).

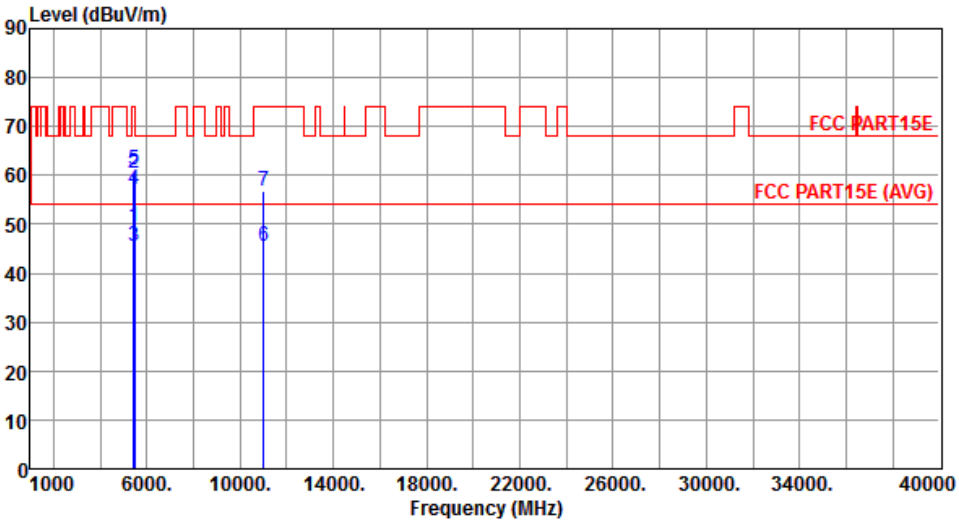
Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	45.48	54.00	-8.52	39.27	6.21	Average	138	272
2	5350.00	56.35	74.00	-17.65	50.14	6.21	Peak	138	272
3	5390.00	51.59	54.00	-2.41	45.29	6.30	Average	136	329
4	5390.00	63.26	74.00	-10.74	56.96	6.30	Peak	136	329
5	10620.00	44.84	54.00	-9.16	29.36	15.48	Average	149	357
6	10620.00	56.47	74.00	-17.53	40.99	15.48	Peak	149	357

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).

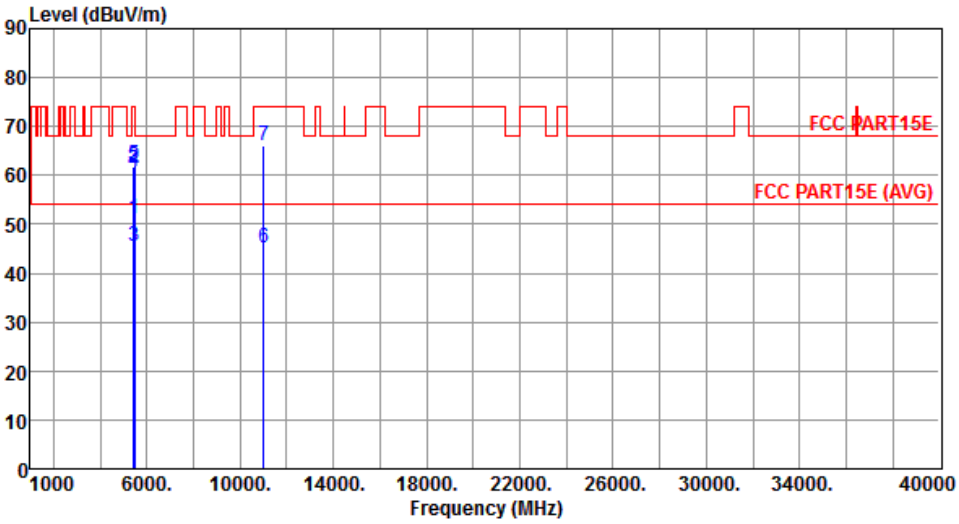
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5430.00	49.60	54.00	-4.40	43.26	6.34	Average	235	3
2	5430.00	60.60	74.00	-13.40	54.26	6.34	Peak	235	3
3	5460.00	45.47	54.00	-8.53	39.10	6.37	Average	235	3
4	5460.00	56.97	74.00	-17.03	50.60	6.37	Peak	235	3
5	5470.00	61.15	68.20	-7.05	54.77	6.38	Peak	235	3
6	11020.00	45.64	54.00	-8.36	29.88	15.76	Average	243	80
7	11020.00	56.64	74.00	-17.36	40.88	15.76	Peak	243	80

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).

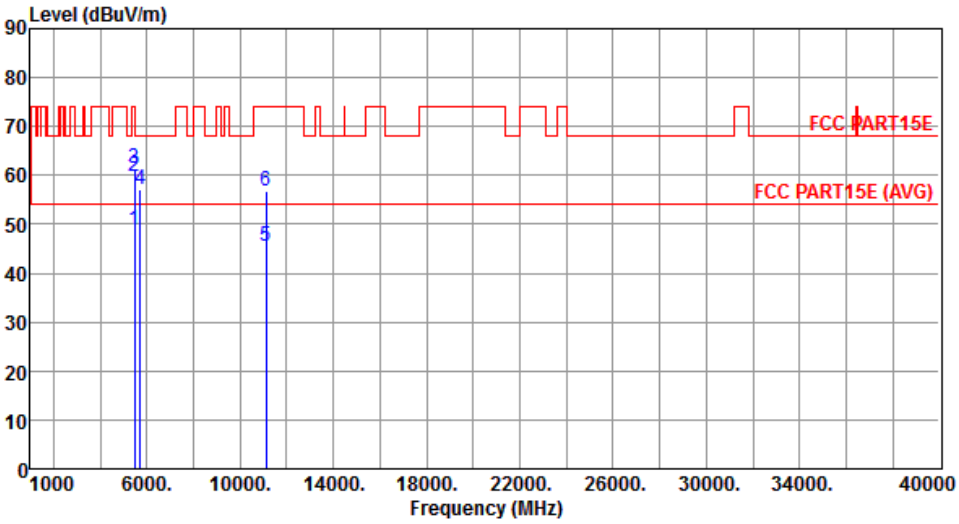
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5430.00	51.21	54.00	-2.79	44.87	6.34	Average	123	76
2	5430.00	61.68	74.00	-12.32	55.34	6.34	Peak	123	76
3	5460.00	45.63	54.00	-8.37	39.26	6.37	Average	123	76
4	5460.00	60.63	74.00	-13.37	54.26	6.37	Peak	123	76
5	5470.00	61.98	68.20	-6.22	55.60	6.38	Peak	123	76
6	11020.00	45.06	54.00	-8.94	29.30	15.76	Average	261	344
7	11020.00	65.95	74.00	-8.05	50.19	15.76	Peak	261	344

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).

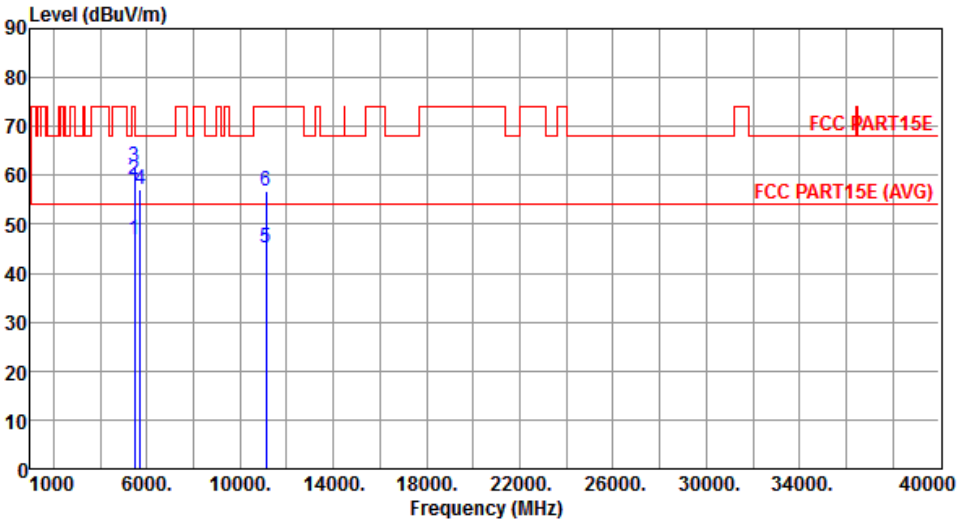
Modulation	VHT40	Test Freq. (MHz)	5550
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	48.66	54.00	-5.34	42.29	6.37	Average	235	142
2	5460.00	59.66	74.00	-14.34	53.29	6.37	Peak	235	142
3	5470.00	61.28	68.20	-6.92	54.90	6.38	Peak	235	142
4	5725.00	57.14	68.20	-11.06	50.30	6.84	Peak	235	142
5	11100.00	45.47	54.00	-8.53	29.66	15.81	Average	257	87
6	11100.00	56.71	74.00	-17.29	40.90	15.81	Peak	257	87

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).

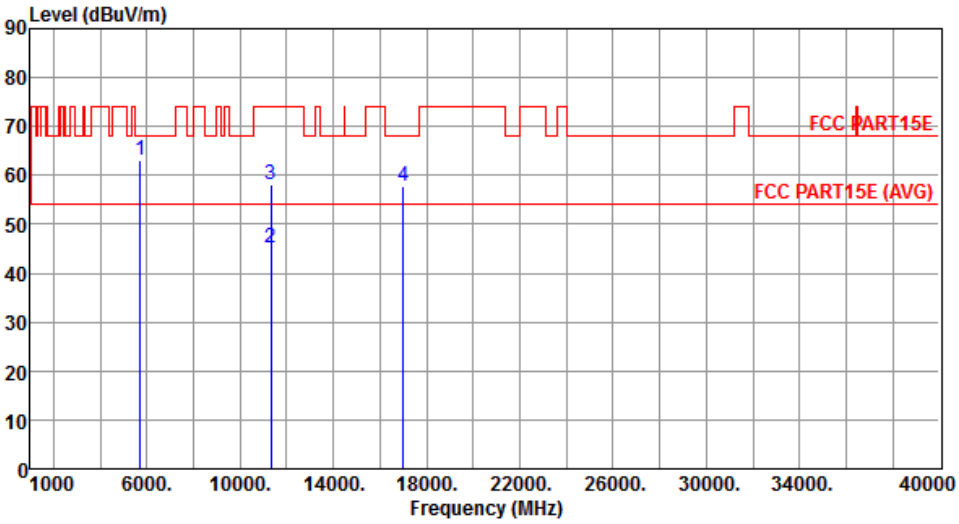
Modulation	VHT40	Test Freq. (MHz)	5550
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.97	54.00	-7.03	40.60	6.37	Average	133	60
2	5460.00	58.97	74.00	-15.03	52.60	6.37	Peak	133	60
3	5470.00	61.74	68.20	-6.46	55.36	6.38	Peak	133	60
4	5725.00	57.08	68.20	-11.12	50.24	6.84	Peak	133	60
5	11100.00	45.22	54.00	-8.78	29.41	15.81	Average	298	356
6	11100.00	56.65	74.00	-17.35	40.84	15.81	Peak	298	356

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).

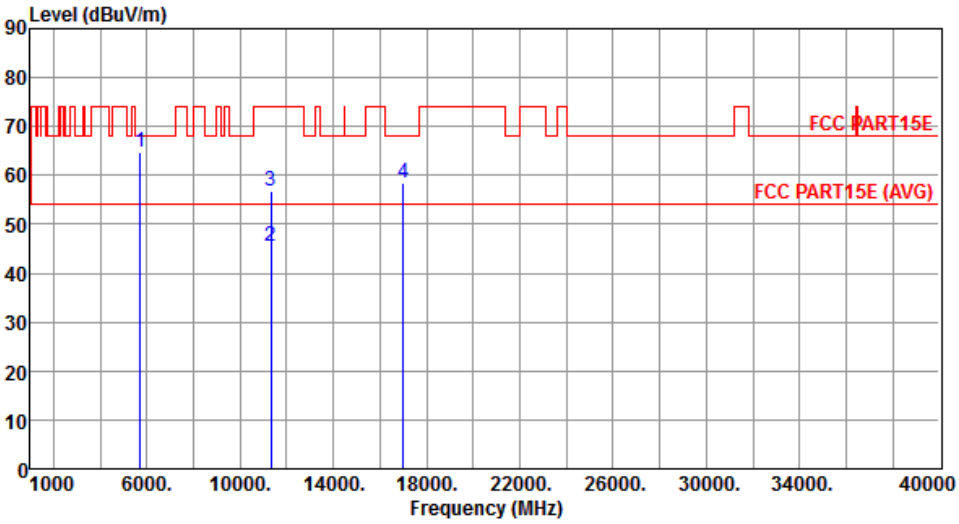
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	63.11	68.20	-5.09	56.27	6.84	Peak	241	264
2	11340.00	45.20	54.00	-8.80	29.26	15.94	Average	247	15
3	11340.00	58.20	74.00	-15.80	42.26	15.94	Peak	247	15
4	17010.00	57.74	68.20	-10.46	40.10	17.64	Peak	305	147

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).

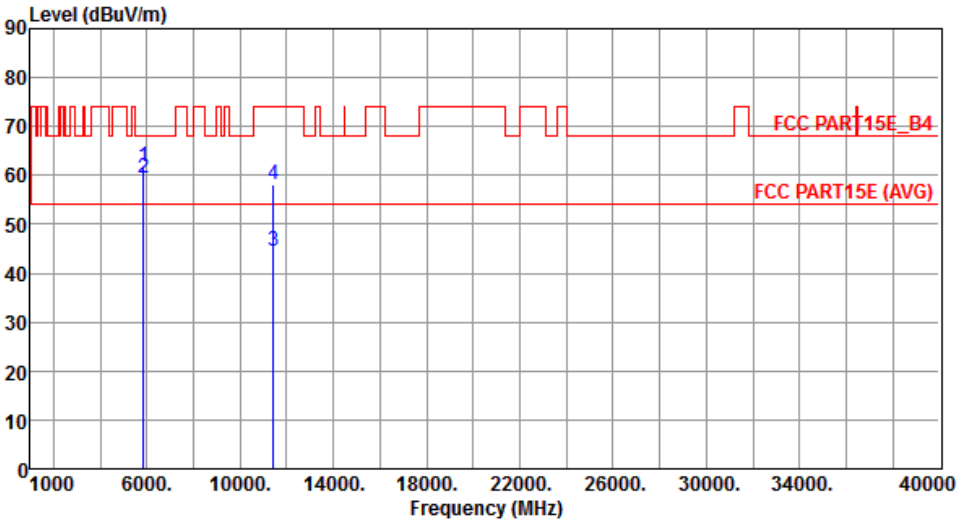
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	64.63	68.20	-3.57	57.79	6.84	Peak	147	212
2	11340.00	45.60	54.00	-8.40	29.66	15.94	Average	278	335
3	11340.00	56.93	74.00	-17.07	40.99	15.94	Peak	278	335
4	17010.00	58.54	68.20	-9.66	40.90	17.64	Peak	267	111

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).

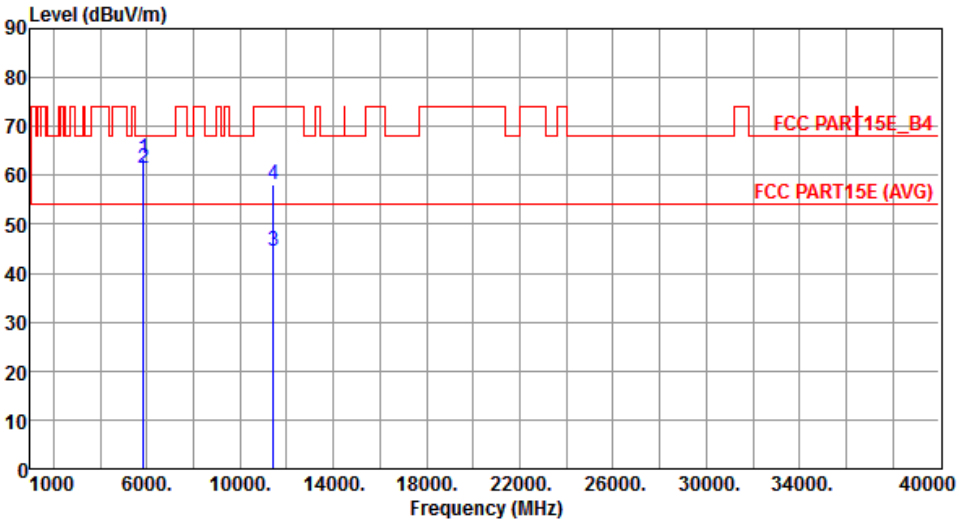
Modulation	VHT40	Test Freq. (MHz)	5710
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	61.77	78.20	-16.43	54.60	7.17	Peak	260	192
2	5860.00	59.35	68.20	-8.85	52.17	7.18	Peak	260	192
3	11420.00	44.35	54.00	-9.65	28.36	15.99	Average	327	130
4	11420.00	58.18	74.00	-15.82	42.19	15.99	Peak	327	130

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)**	5710
Polarization	Vertical		

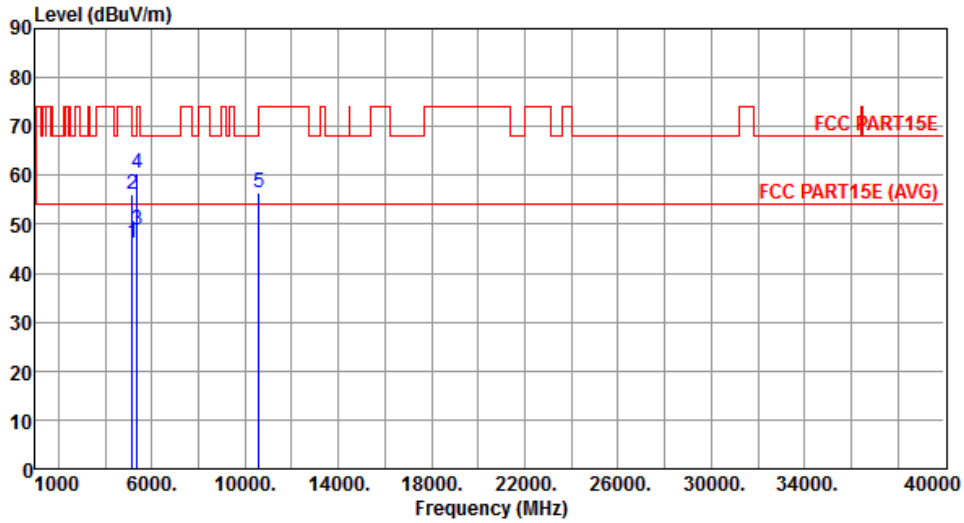


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	63.28	78.20	-14.92	56.11	7.17	Peak	250	45
2	5860.00	61.45	68.20	-6.75	54.27	7.18	Peak	250	45
3	11420.00	44.47	54.00	-9.53	28.48	15.99	Average	196	149
4	11420.00	58.17	74.00	-15.83	42.18	15.99	Peak	196	149

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

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

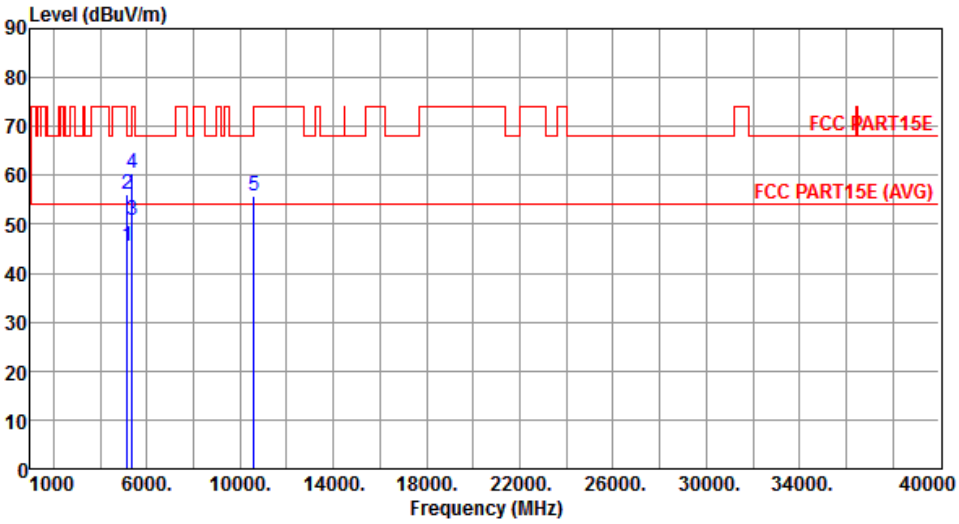
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.12	54.00	-7.88	40.26	5.86	Average	297	172
2	5150.00	55.96	74.00	-18.04	50.10	5.86	Peak	297	172
3	5350.00	48.82	54.00	-5.18	42.61	6.21	Average	297	172
4	5350.00	60.48	74.00	-13.52	54.27	6.21	Peak	297	172
5	10580.00	56.41	68.20	-11.79	40.97	15.44	Peak	284	72

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

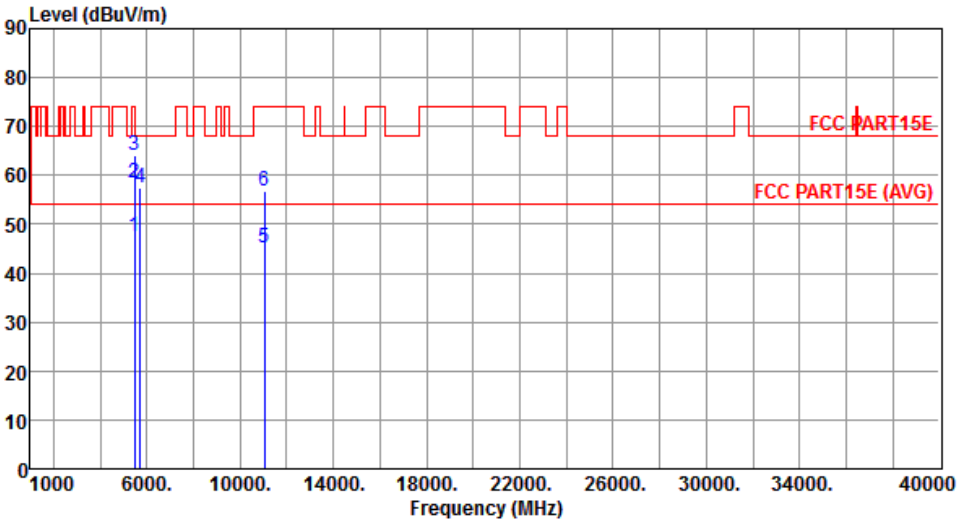
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.45	54.00	-8.55	39.59	5.86	Average	166	100
2	5150.00	56.12	74.00	-17.88	50.26	5.86	Peak	166	100
3	5350.00	50.82	54.00	-3.18	44.61	6.21	Average	166	100
4	5350.00	60.51	74.00	-13.49	54.30	6.21	Peak	166	100
5	10580.00	55.94	68.20	-12.26	40.50	15.44	Peak	287	353

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

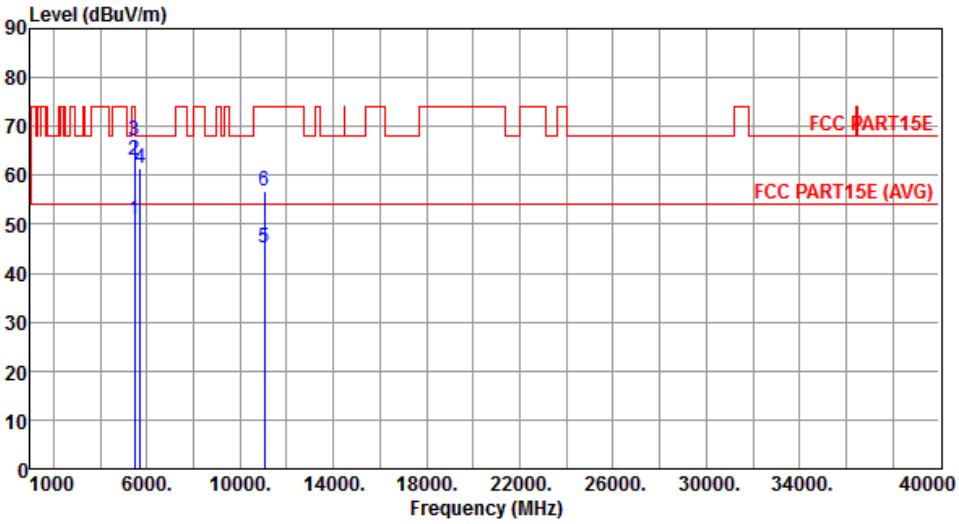
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.36	54.00	-6.64	40.99	6.37	Average	295	154
2	5460.00	58.47	74.00	-15.53	52.10	6.37	Peak	295	154
3	5470.00	64.04	68.20	-4.16	57.66	6.38	Peak	295	154
4	5725.00	57.44	68.20	-10.76	50.60	6.84	Peak	295	154
5	11060.00	45.12	54.00	-8.88	29.34	15.78	Average	287	356
6	11060.00	56.77	74.00	-17.23	40.99	15.78	Peak	287	356

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

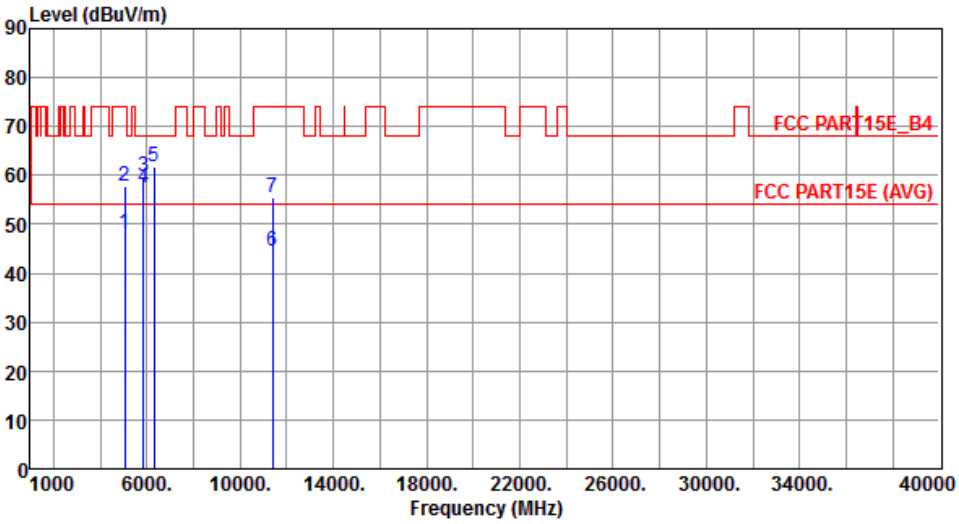
Modulation	VHT80	**Test Freq. (MHz)**	5530
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.97	54.00	-3.03	44.60	6.37	Average	208	191
2	5460.00	62.96	74.00	-11.04	56.59	6.37	Peak	208	191
3	5470.00	67.11	68.20	-1.09	60.73	6.38	Peak	208	191
4	5725.00	61.50	68.20	-6.70	54.66	6.84	Peak	208	191
5	11060.00	45.22	54.00	-8.78	29.44	15.78	Average	257	336
6	11060.00	56.74	74.00	-17.26	40.96	15.78	Peak	257	336

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).

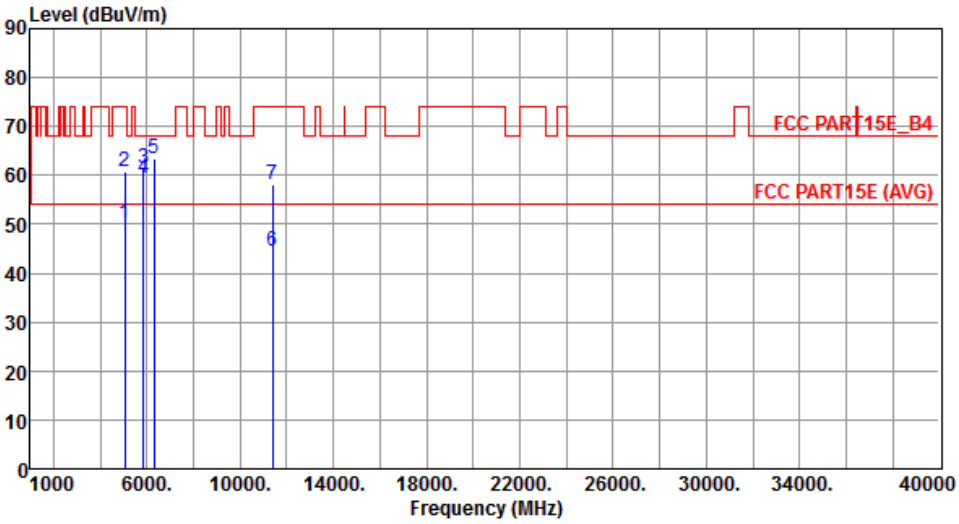
Modulation	VHT80	Test Freq. (MHz)	5690
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5058.00	48.07	54.00	-5.93	42.29	5.78	Average	263	187
2	5058.00	57.90	74.00	-16.10	52.12	5.78	Peak	263	187
3	5850.00	59.77	78.20	-18.43	52.60	7.17	Peak	263	187
4	5860.00	57.35	68.20	-10.85	50.17	7.18	Peak	263	187
5	6322.00	61.86	68.20	-6.34	53.63	8.23	Peak	263	187
6	11380.00	44.56	54.00	-9.44	28.60	15.96	Average	172	130
7	11380.00	55.52	74.00	-18.48	39.56	15.96	Peak	172	130

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)**	5690
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5058.00	50.26	54.00	-3.74	44.48	5.78	Average	148	75
2	5058.00	60.90	74.00	-13.10	55.12	5.78	Peak	148	75
3	5850.00	61.53	78.20	-16.67	54.36	7.17	Peak	140	70
4	5860.00	59.29	68.20	-8.91	52.11	7.18	Peak	140	70
5	6322.00	63.49	68.20	-4.71	55.26	8.23	Peak	140	315
6	11380.00	44.62	54.00	-9.38	28.66	15.96	Average	318	160
7	11380.00	58.16	74.00	-15.84	42.20	15.96	Peak	318	160

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

3.6 Frequency Stability

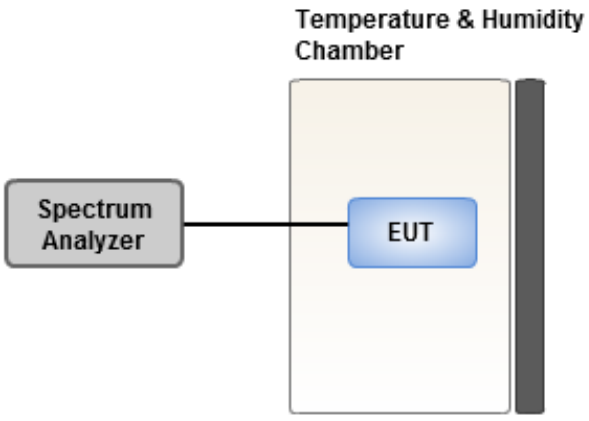
3.6.1 Limit of Frequency Stability

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

3.6.2 Test Procedures

1. The EUT is installed in an environment test chamber with external power source.
2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT.
3. A sufficient stabilization period at each temperature is used prior to each frequency measurement.
4. When temperature is stabled, measure the frequency stability.
5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage. Change setting of chamber and external power source to complete all conditions.

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability

Non-beamforming mode

Frequency: 5320 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	0.58	0.67	0.84	0.60
T20°CVmin	0.02	-0.34	-0.03	0.32
T50°CVnom	0.43	0.68	0.42	1.21
T40°CVnom	0.69	0.56	0.90	0.43
T30°CVnom	0.71	1.12	0.38	1.05
T20°CVnom	-0.45	-0.42	-0.23	0.01
T10°CVnom	-0.03	-0.52	0.43	0.03
T0°CVnom	1.07	1.48	1.64	1.42
T-10°CVnom	0.57	0.49	0.75	0.56
T-20°CVnom	1.01	1.29	0.89	1.02
T-30°CVnom	0.72	0.89	1.39	0.65
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

Beamforming mode

Frequency: 5320 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	1.19	1.41	1.61	1.39
T20°CVmin	0.88	1.28	1.08	0.96
T50°CVnom	0.07	0.59	0.33	0.11
T40°CVnom	1.18	1.05	1.34	1.12
T30°CVnom	1.44	1.93	1.69	1.91
T20°CVnom	-0.02	0.61	0.21	0.44
T10°CVnom	0.00	0.35	-0.02	-0.40
T0°CVnom	2.25	1.87	2.50	2.34
T-10°CVnom	0.98	1.03	1.00	1.69
T-20°CVnom	2.02	1.69	2.44	1.92
T-30°CVnom	1.30	1.36	1.42	1.17
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

4 Test laboratory information

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

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

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

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

==END==