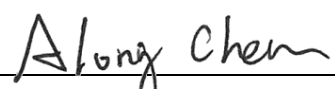


FCC Test Report

FCC ID : I88EMG3415-B10A
Equipment : Dual-Band Wireless AC/N Gigabit Ethernet Gateway
Model No. : EMG3415-B10A
Brand Name : **ZYXEL**
Applicant : Zyxel Communications Corporation
Address : No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan, R.O.C
Standard : 47 CFR FCC Part 15.407
Received Date : Jun. 17, 2016
Tested Date : Jun. 17, 2016 ~ May 17, 2017

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

Reviewed by:


Along Chen / Assistant Manager

Approved by:

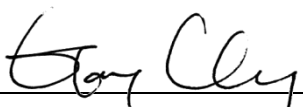

Gary Chang / Manager



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List.....	10
1.3	Test Setup Chart.....	11
1.4	The Equipment List	13
1.5	Testing Applied Standards	15
1.6	Measurement Uncertainty	15
2	TEST CONFIGURATION.....	16
2.1	Testing Condition	16
2.2	The Worst Test Modes and Channel Details.....	17
3	TRANSMITTER TEST RESULTS	19
3.1	Conducted Emissions	19
3.2	Emission Bandwidth.....	28
3.3	RF Output Power	33
3.4	Peak Power Spectral Density	36
3.5	Transmitter Radiated and Band Edge Emissions	42
3.6	Frequency Stability.....	113
4	TEST LABORATORY INFORMATION	115

Release Record

Report No.	Version	Description	Issued Date
FR651003-02AN	Rev. 01	Initial issue	Jun. 16, 2017
FR651003-02AN	Rev. 02	Updated signature	Jul. 07, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.150MHz 45.75 (Margin -20.25dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 10400.00MHz 68.07 (Margin -0.13dB) - PK	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: Non-beamforming mode 5150-5250MHz: 25.95 5725-5850MHz: 26.98 Beamforming mode 5150-5250MHz: 26.05 5725-5850MHz: 26.25	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
5150-5250	a	5180-5240	36-48 [4]	4	6-54 Mbps
5150-5250	n (HT20)	5180-5240	36-48 [4]	4	MCS 0-31
5150-5250	n (HT40)	5190-5230	38-46 [2]	4	MCS 0-31
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	4	MCS 0-9
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	4	MCS 0-9
5150-5250	ac (VHT80)	5210	42 [1]	4	MCS 0-9
5725-5850	a	5745-5825	149-165 [5]	4	6-54 Mbps
5725-5850	n (HT20)	5745-5825	149-165 [5]	4	MCS 0-31
5725-5850	n (HT40)	5755-5795	151-159 [2]	4	MCS 0-31
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	4	MCS 0-9
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	4	MCS 0-9
5725-5850	ac (VHT80)	5775	155 [1]	4	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: 802.11ac supports beamforming function.

1.1.2 Antenna Details

Model	Type	Connector	Frequencies (MHz) / Antenna Gain (dBi)		
			2400~2483.5	5150~5250	5725~5850
A1	Dipole	UFL	--	-0.54	-0.56
A2	Dipole	UFL	--	-0.54	-0.56
A3	Dipole	UFL	--	-0.54	-0.56
A4	Dipole	UFL	--	-0.54	-0.56
B1	Dipole	UFL	2.9	--	--
B2	Dipole	UFL	1.3	--	--

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from adapter
-------------------	--------------------

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	AC adapter	Brand: APD Model: WA-30J12FU Power Rating: I/P: 100-240Vac, 50/60Hz, 0.9A O/P: 12Vdc, 2.5A Power Line: 1.5m non-shielded without core
2	AC adapter	Brand: SHENZHEN FRECOM ELECTRONICS.CO., LTD Model: F30L2-120250SPAU Power Rating: I/P: 100-240Vac, 50/60Hz, 0.8A O/P: 12Vdc, 2.5A Power Line: 1.45m non-shielded without core
3	RJ45	1.7m non-shielded without core
Support Units (provided by applicant)		
No.	Equipment	Description
1	BF Client	Product: Dual-Band Wireless AC/N VDSL2 Bonding Gateway with USB Brand: ZYXEL Model: XMG3512-B10A

1.1.5 Channel List

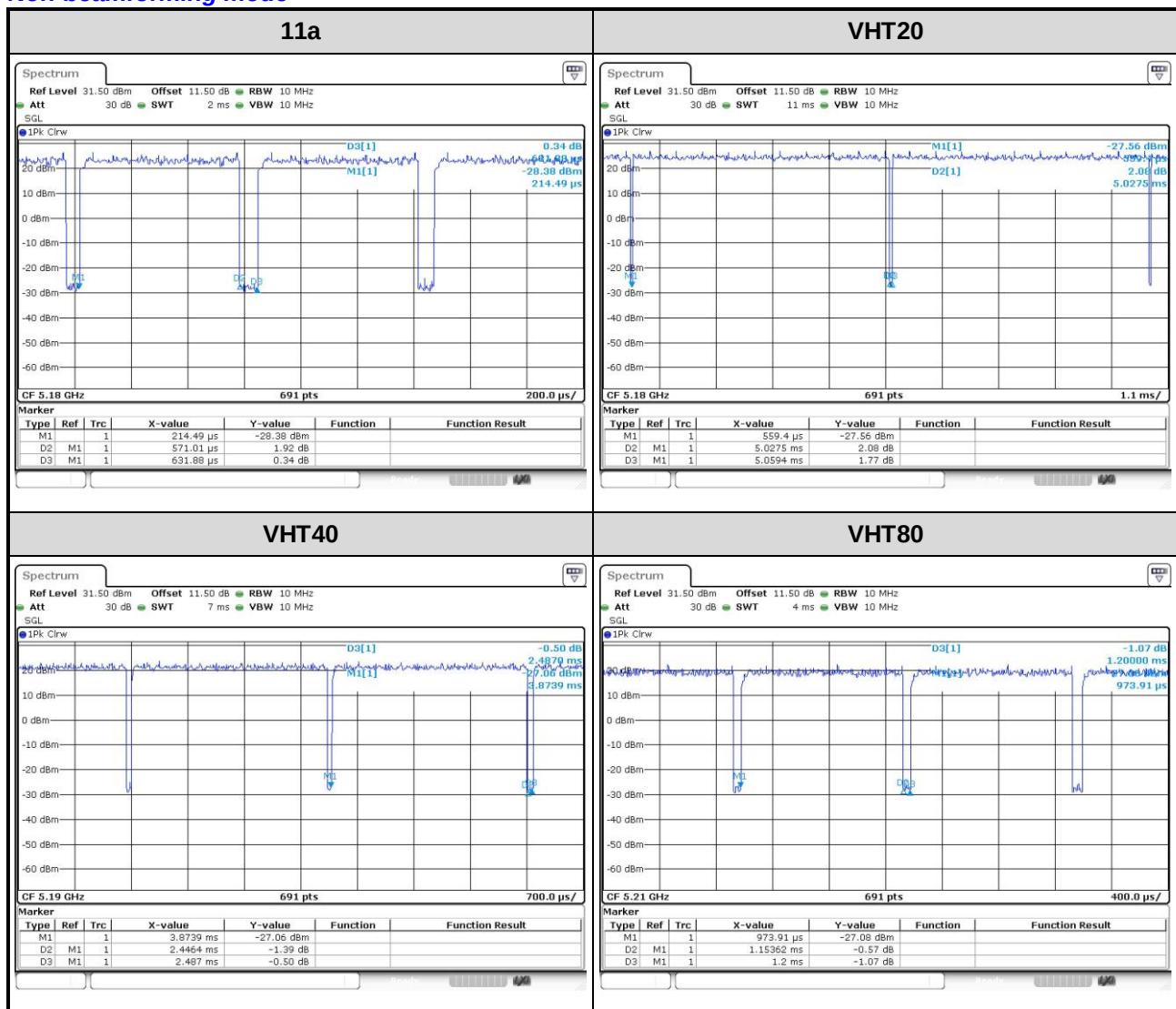
For Frequency band 5150-5250 MHz			
802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	VHT80	
48	5240	42	5210

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

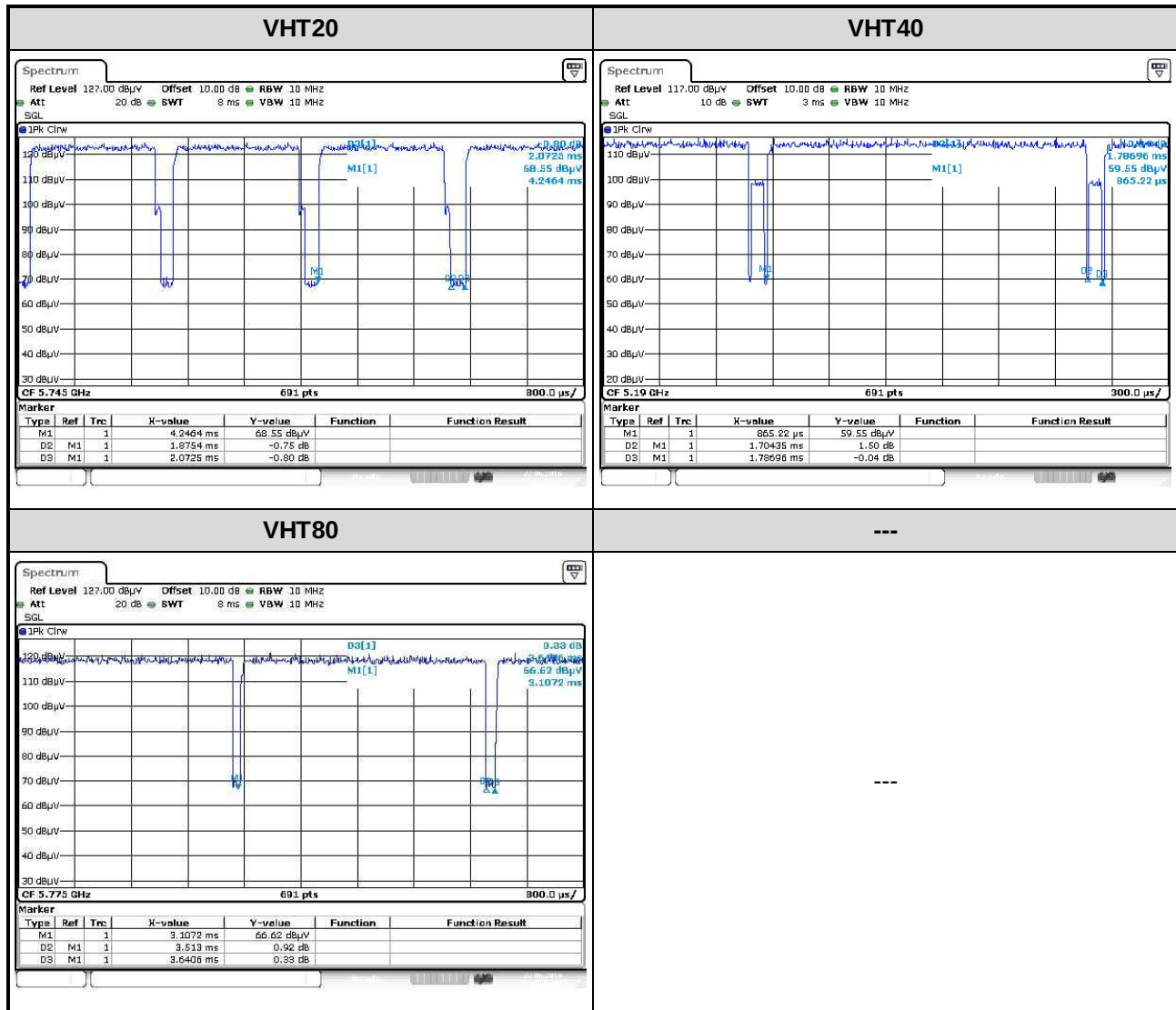
1.1.6 Test Tool and Duty Cycle

Test Tool	Telnet				
Duty Cycle and Duty Factor	Mode	Non-beamforming		Beamforming	
		Duty cycle (%)	Duty factor (dB)	Duty cycle (%)	Duty factor (dB)
	11a	90.37%	0.44	---	---
	VHT20	99.37%	0.03	90.49%	0.43
	VHT40	98.37%	0.07	95.38%	0.21
	VHT80	96.14%	0.17	96.50%	0.15

Non-beamforming mode



Beamforming mode



1.1.7 Power Setting

For Frequency band 5150-5250 MHz			
Modulation Mode	Test Frequency (MHz)	Power Set	
		Non-Beamforming	Beamforming
11a	5180	18	---
11a	5200	18	---
11a	5240	19	---
HT20	5180	18	---
HT20	5200	18	---
HT20	5240	18	---
HT40	5190	16	---
HT40	5230	21	---
VHT20	5180	18	17
VHT20	5200	18	17
VHT20	5240	18	17
VHT40	5190	16	14
VHT40	5230	21	20
VHT80	5210	14	12

For Frequency band 5725~5850 MHz			
Modulation Mode	Test Frequency (MHz)	Power Set	
		Non-Beamforming	Beamforming
11a	5745	19	---
11a	5785	19	---
11a	5825	18	---
HT20	5745	20	---
HT20	5785	20	---
HT20	5825	19	---
HT40	5755	23	---
HT40	5795	23	---
VHT20	5745	20	18
VHT20	5785	20	18
VHT20	5825	19	17
VHT40	5755	23	21
VHT40	5795	23	21
VHT80	5775	23	20

1.2 Local Support Equipment List

Non-beamforming mode

Support Equipment List					
No.	Equipment	Brand	Model	S/N	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	9ZFB4X1	RJ45, 10m non-shielded.
2	Notebook	DELL	Latitude E5420	B6FT9T1	RJ45, 10m non-shielded.
3	USB 3.0 flash	Kingston	DTSE9G2/8GB	CX4T6	---
4	RJ45 Load	ICC	---	---	RJ45, 1m (x3) non-shielded.

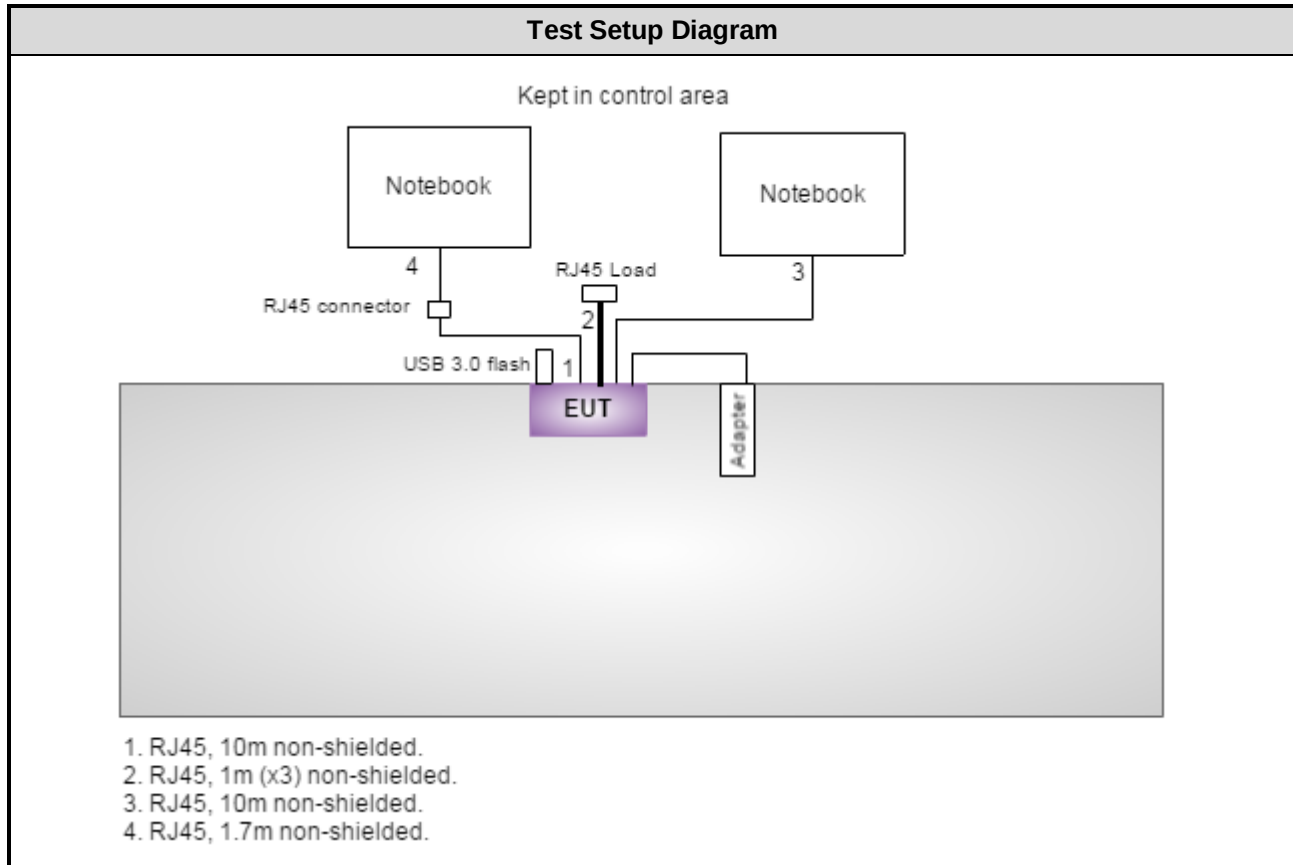
Beamforming mode

Support Equipment List					
No.	Equipment	Brand	Model	S/N	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	9ZFB4X1	RJ45, 10m non-shielded.
2	Notebook	DELL	Latitude E5420	B6FT9T1	RJ45, 10m non-shielded.
3	USB 3.0 flash	Kingston	DTSE9G2/8GB	CX4T6	---
4	RJ45 Load	ICC	---	---	RJ45, 1m (x3) non-shielded.
7	Notebook	DELL	Latitude E6430	C0GB4X1	---
8	BF Client	ZYXEL	XMG3512-B10A	---	---

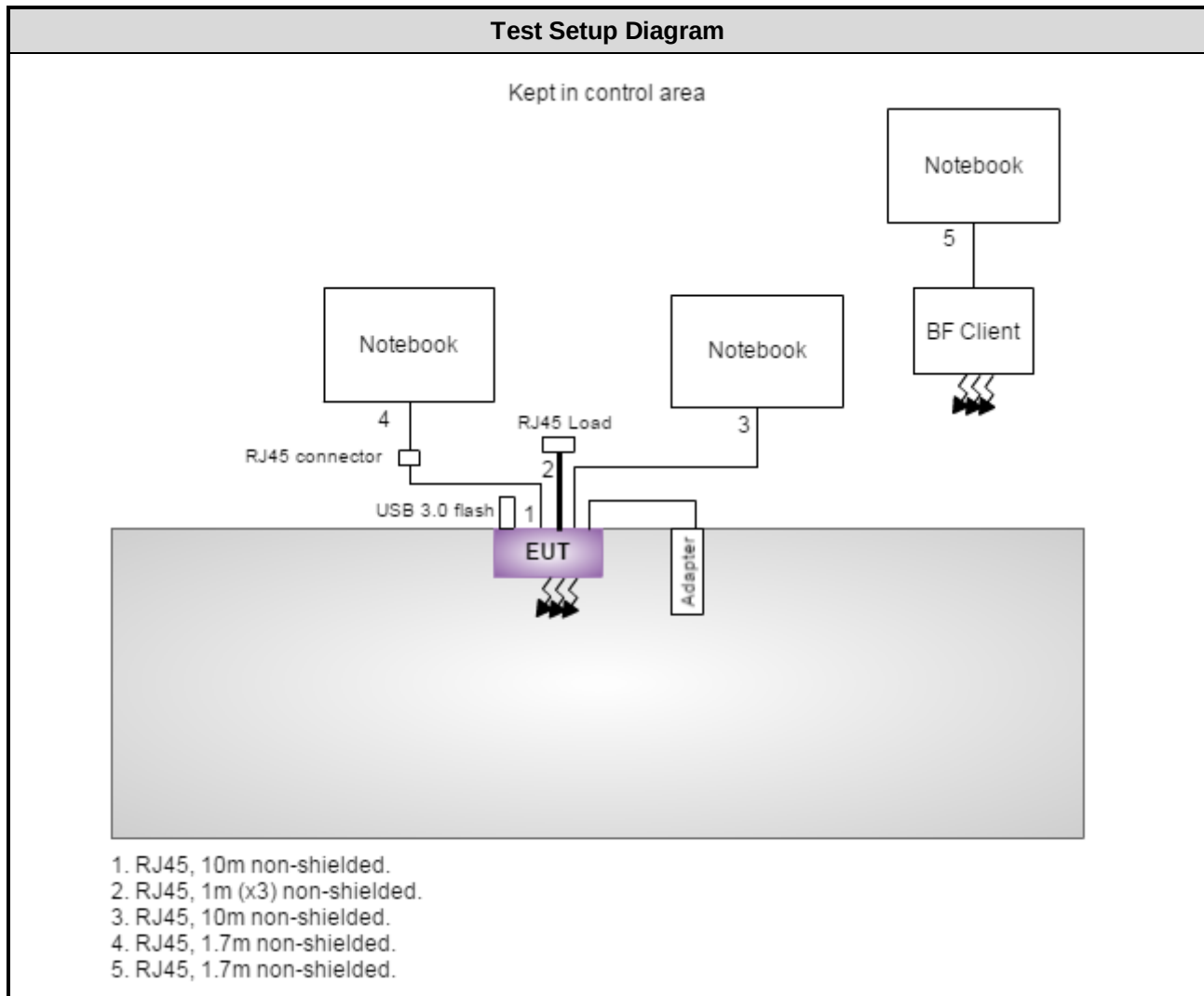
Note: No. 8 is provided by applicant.

1.3 Test Setup Chart

Non-beamforming mode



Beamforming mode



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	May 17, 2017				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Dec. 21, 2016	Dec. 20, 2017
LISN	R&S	ENV216	101579	Jan. 19, 2017	Jan. 18, 2018
RF Cable-CON	EMC	EMCCFD300-BM-B M-6000	50821	Dec. 20, 2016	Dec. 19, 2017
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Tested Date	Jun. 17 ~ Jun. 22, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Dec. 17, 2015	Dec. 16, 2016
Receiver	R&S	ESR3	101657	Jan. 12, 2016	Jan. 11, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-523	Nov. 09, 2015	Nov. 08, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Oct. 07, 2015	Oct. 06, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 10, 2015	Dec. 09, 2016
Preamplifier	Burgeon	BPA-530	100218	Nov. 03, 2015	Nov. 02, 2016
Preamplifier	Agilent	83017A	MY39501309	Sep. 22, 2015	Sep. 21, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	EMCC	CFD400-E	CFD400-001	Dec. 10, 2015	Dec. 09, 2016
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Tested Date	May 13, 2017				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Dec. 16, 2016	Dec. 15, 2017
Receiver	R&S	ESR3	101657	Dec. 21, 2016	Dec. 20, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-523	Nov. 07, 2016	Nov. 06, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Sep. 21, 2016	Sep. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 09, 2016	Dec. 08, 2017
Preamplifier	EMC	EMC02325	980194	Sep. 26, 2016	Sep. 25, 2017
Preamplifier	Agilent	83017A	MY39501309	Sep. 29, 2016	Sep. 28, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	16051	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	EMCC	CFD400-E	CFD400-001	Dec. 09, 2016	Dec. 08, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Sep. 05 ~ Sep. 08, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Feb. 17, 2016	Feb. 16, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 27, 2015	Nov. 26, 2016
Power Meter	Anritsu	ML2495A	1241002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor	Anritsu	MA2411B	1207366	Sep. 21, 2015	Sep. 20, 2016
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 26, 2015	Oct. 25, 2016
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Testing Applied Standards

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

47 CFR FCC Part 15.407

ANSI C63.10-2013

FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04

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 ≤ 1 GHz	± 3.62 dB
Radiated emission > 1 GHz	± 5.60 dB
Time	$\pm 0.1\%$
Temperature	± 0.6 °C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	22°C / 57%	Alex Tsai
Radiated Emissions	03CH02-WS	22-24°C / 61-63% 24°C / 62%	Felix Sung Vincent Yeh Kevin Lee
RF Conducted	TH01-WS	23°C / 64%	Brad Wu

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-2

2.2 The Worst Test Modes and Channel Details

Non-beamforming mode

For Frequency band 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT40	5230	MCS 0	2
Radiated Emissions ≤1GHz	VHT40	5230	MCS 0	1
RF Output Power	11a HT20 HT40 VHT20 VHT40 VHT80	5180 / 5200 / 5240 5180 / 5200 / 5240 5190 / 5230 5180 / 5200 / 5240 5190 / 5230 5210	6 Mbps MCS 0 MCS 0 MCS 0 MCS 0 MCS 0	2
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a VHT20 VHT40 VHT80	5180 / 5200 / 5240 5180 / 5200 / 5240 5190 / 5230 5210	6 Mbps MCS 0 MCS 0 MCS 0	2
Frequency Stability	Un-modulation	5200	---	2
NOTE: Test configurations are listed as below: 1) Configuration 1: APD adapter 2) Configuration 2: F30L2-120250SPAU adapter				

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT80	5775	MCS 0	2
Radiated Emissions ≤1GHz	VHT80	5775	MCS 0	1
RF Output Power	11a HT20 HT40 VHT20 VHT40 VHT80	5745 / 5785 / 5825 5745 / 5785 / 5825 5755 / 5795 5745 / 5785 / 5825 5755 / 5795 5775	6 Mbps MCS 0 MCS 0 MCS 0 MCS 0 MCS 0	2
Radiated Emissions >1GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a VHT20 VHT40 VHT80	5745 / 5785 / 5825 5745 / 5785 / 5825 5755 / 5795 5775	6 Mbps MCS 0 MCS 0 MCS 0	2
Frequency Stability	Un-modulation	5785	---	2
NOTE: Test configurations are listed as below: 1) Configuration 1: APD adapter 2) Configuration 2: F30L2-120250SPAU adapter				

Beamforming mode

For Frequency band 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT40	5230	MCS 0	2
Radiated Emissions ≤ 1 GHz	VHT40	5230	MCS 0	1
RF Output Power	VHT20 VHT40 VHT80	5180 / 5200 / 5240 5190 / 5230 5210	MCS 0 MCS 0 MCS 0	2
Radiated Emissions > 1 GHz Emission Bandwidth Peak Power Spectral Density	VHT20 VHT40 VHT80	5180 / 5200 / 5240 5190 / 5230 5210	MCS 0 MCS 0 MCS 0	2
NOTE: Test configurations are listed as below: 1) Configuration 1: APD adapter 2) Configuration 2: F30L2-120250SPAU adapter				

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT40	5755	MCS 0	2
Radiated Emissions ≤ 1 GHz	VHT40	5755	MCS 0	1
RF Output Power	VHT20 VHT40 VHT80	5745 / 5785 / 5825 5755 / 5795 5775	MCS 0 MCS 0 MCS 0	2
Radiated Emissions > 1 GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	VHT20 VHT40 VHT80	5745 / 5785 / 5825 5755 / 5795 5775	MCS 0 MCS 0 MCS 0	2
NOTE: Test configurations are listed as below: 1) Configuration 1: APD adapter 2) Configuration 2: F30L2-120250SPAU adapter				

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

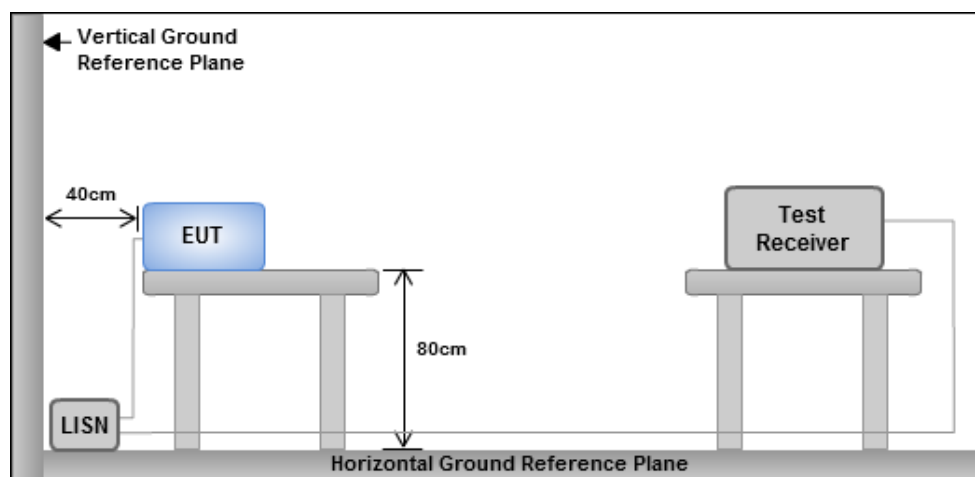
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

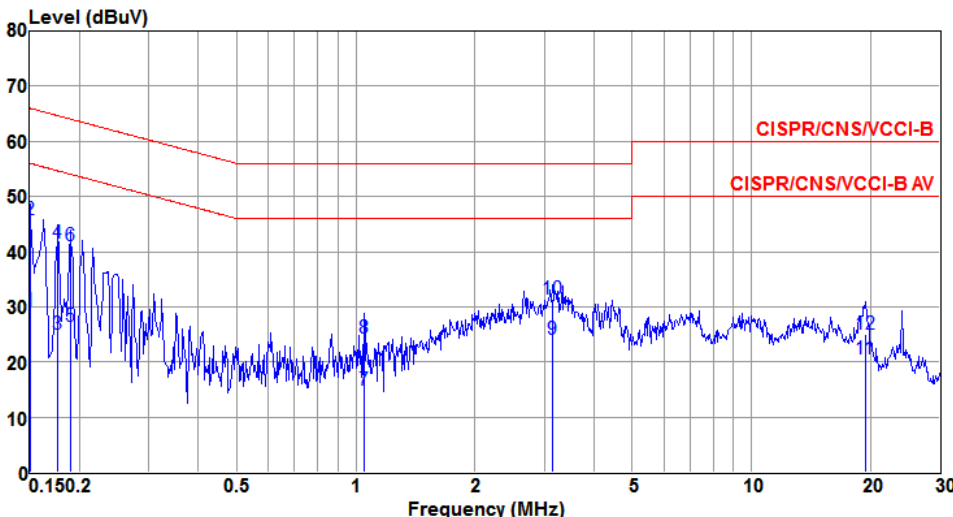


- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

Non-beamforming mode

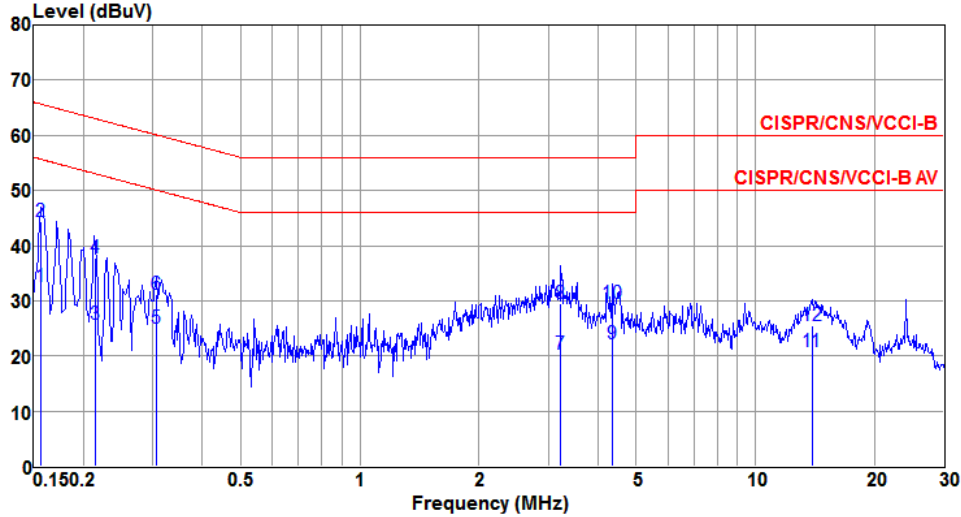
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	29.29	56.00	-26.71	19.75	9.50	0.04	Average
2	0.150	45.75	66.00	-20.25	36.21	9.50	0.04	QP
3	0.177	25.07	54.64	-29.57	15.53	9.50	0.04	Average
4	0.177	41.63	64.64	-23.01	32.09	9.50	0.04	QP
5	0.189	26.52	54.06	-27.54	16.98	9.50	0.04	Average
6	0.189	41.19	64.06	-22.87	31.65	9.50	0.04	QP
7	1.049	14.90	46.00	-31.10	5.39	9.47	0.04	Average
8	1.049	24.38	56.00	-31.62	14.87	9.47	0.04	QP
9	3.140	24.13	46.00	-21.87	14.47	9.54	0.12	Average
10	3.140	31.44	56.00	-24.56	21.78	9.54	0.12	QP
11	19.428	20.64	50.00	-29.36	10.67	9.71	0.26	Average
12	19.428	24.92	60.00	-35.08	14.95	9.71	0.26	QP

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

Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Neutral		

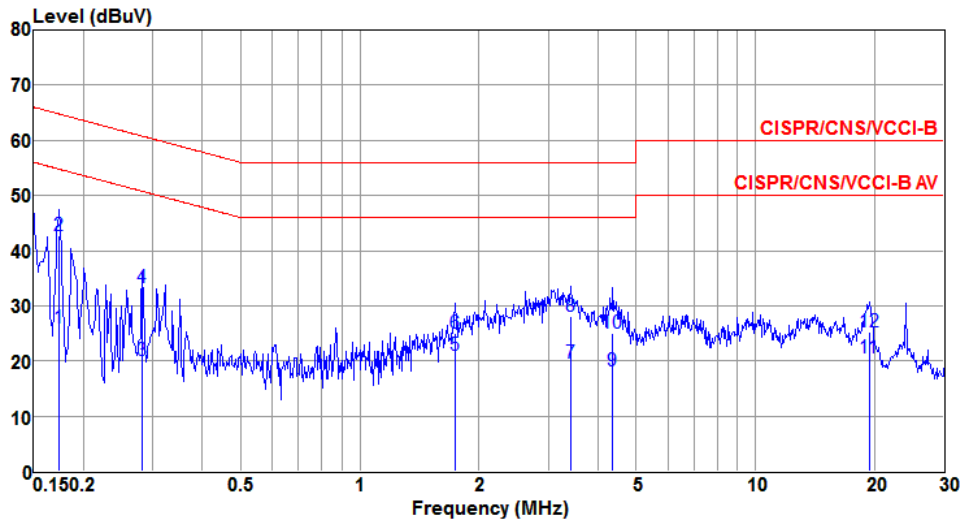


The graph displays the measured level in dBuV against frequency in MHz. The y-axis ranges from 0 to 80 dBuV, and the x-axis ranges from 0.15 to 30 MHz. Two red limit lines are shown: CISPR/CNS/VCCI-B (upper) and CISPR/CNS/VCCI-B AV (lower). The measured signal is a blue line with several peaks labeled with numbers 1 through 12. The signal generally stays below the limits, with some peaks near 0.15 MHz and 4.36 MHz.

	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.156	32.49	55.69	-23.20	22.87	9.58	0.04	Average
2	0.156	44.44	65.69	-21.25	34.82	9.58	0.04	QP
3	0.214	25.75	53.05	-27.30	16.12	9.59	0.04	Average
4	0.214	37.80	63.05	-25.25	28.17	9.59	0.04	QP
5	0.307	25.10	50.06	-24.96	15.50	9.56	0.04	Average
6	0.307	31.07	60.06	-28.99	21.47	9.56	0.04	QP
7	3.224	20.31	46.00	-25.69	10.53	9.66	0.12	Average
8	3.224	29.41	56.00	-26.59	19.63	9.66	0.12	QP
9	4.361	22.13	46.00	-23.87	12.25	9.71	0.17	Average
10	4.361	29.56	56.00	-26.44	19.68	9.71	0.17	QP
11	13.915	20.71	50.00	-29.29	10.80	9.68	0.23	Average
12	13.915	25.57	60.00	-34.43	15.66	9.68	0.23	QP

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

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

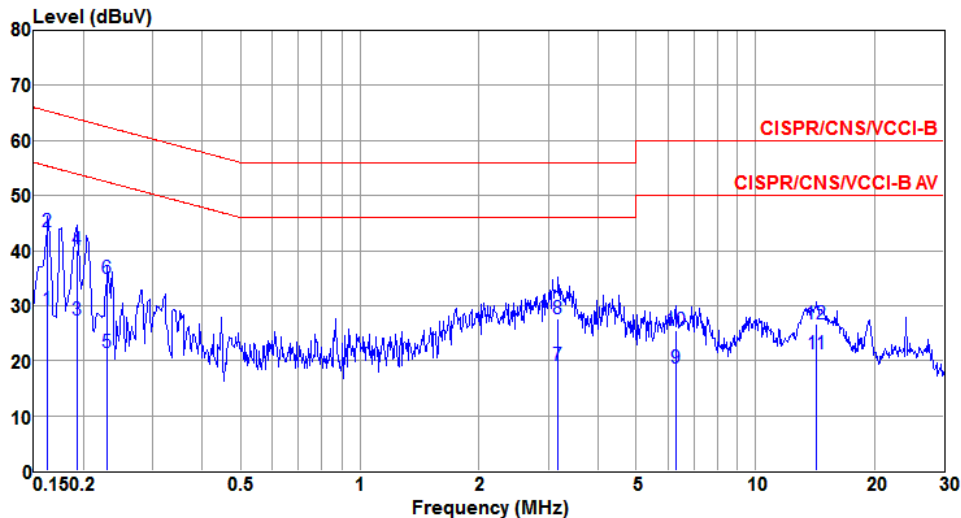


The graph displays the measured level in dBuV against frequency in MHz. Two red limit lines are shown: CISPR/CNS/VCCI-B (upper) and CISPR/CNS/VCCI-B AV (lower). The blue trace represents the measured signal, which generally stays below the limits, with some peaks around 0.1-0.5 MHz and 19-20 MHz.

	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.174	25.91	54.77	-28.86	16.37	9.50	0.04	Average
2	0.174	42.69	64.77	-22.08	33.15	9.50	0.04	QP
3	0.282	20.17	50.76	-30.59	10.58	9.55	0.04	Average
4	0.282	33.21	60.76	-27.55	23.62	9.55	0.04	QP
5	1.744	21.06	46.00	-24.94	11.42	9.60	0.04	Average
6	1.744	25.11	56.00	-30.89	15.47	9.60	0.04	QP
7	3.417	19.66	46.00	-26.34	10.01	9.52	0.13	Average
8	3.417	28.05	56.00	-27.95	18.40	9.52	0.13	QP
9	4.361	18.20	46.00	-27.80	8.53	9.50	0.17	Average
10	4.361	25.07	56.00	-30.93	15.40	9.50	0.17	QP
11	19.428	20.63	50.00	-29.37	10.66	9.71	0.26	Average
12	19.428	25.26	60.00	-34.74	15.29	9.71	0.26	QP

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

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

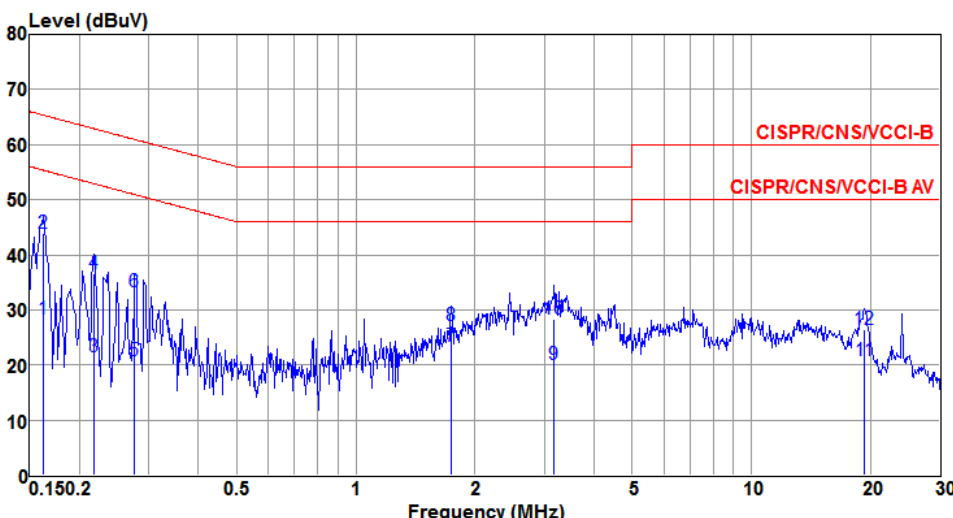


	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1	0.162	29.36	55.34	-25.98	19.73	9.59	0.04	Average
2@	0.162	43.51	65.34	-21.83	33.88	9.59	0.04	QP
3	0.192	27.33	53.93	-26.60	17.69	9.60	0.04	Average
4	0.192	40.06	63.93	-23.87	30.42	9.60	0.04	QP
5	0.230	21.50	52.44	-30.94	11.87	9.59	0.04	Average
6	0.230	34.90	62.44	-27.54	25.27	9.59	0.04	QP
7	3.173	19.05	46.00	-26.95	9.28	9.65	0.12	Average
8	3.173	27.61	56.00	-28.39	17.84	9.65	0.12	QP
9	6.285	18.61	50.00	-31.39	8.73	9.69	0.19	Average
10	6.285	25.41	60.00	-34.59	15.53	9.69	0.19	QP
11	14.288	21.32	50.00	-28.68	11.40	9.69	0.23	Average
12	14.288	26.79	60.00	-33.21	16.87	9.69	0.23	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

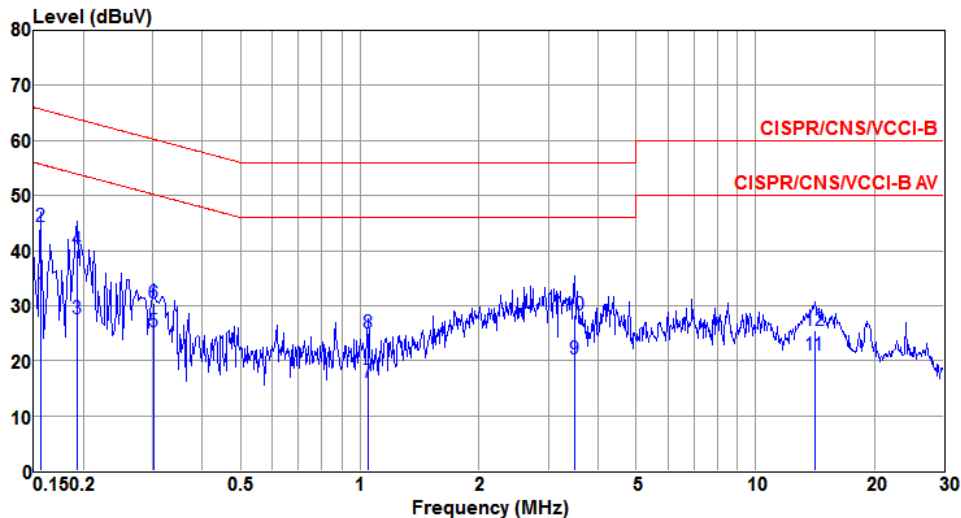
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.162	28.34	55.34	-27.00	18.80	9.50	0.04	Average
2@	0.162	43.98	65.34	-21.36	34.44	9.50	0.04	QP
3	0.219	21.53	52.88	-31.35	11.98	9.51	0.04	Average
4	0.219	36.56	62.88	-26.32	27.01	9.51	0.04	QP
5	0.276	20.68	50.94	-30.26	11.09	9.55	0.04	Average
6	0.276	33.22	60.94	-27.72	23.63	9.55	0.04	QP
7	1.744	23.37	46.00	-22.63	13.73	9.60	0.04	Average
8	1.744	27.03	56.00	-28.97	17.39	9.60	0.04	QP
9	3.173	20.14	46.00	-25.86	10.49	9.53	0.12	Average
10	3.173	28.44	56.00	-27.56	18.79	9.53	0.12	QP
11	19.326	20.80	50.00	-29.20	10.83	9.71	0.26	Average
12	19.326	26.41	60.00	-33.59	16.44	9.71	0.26	QP

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

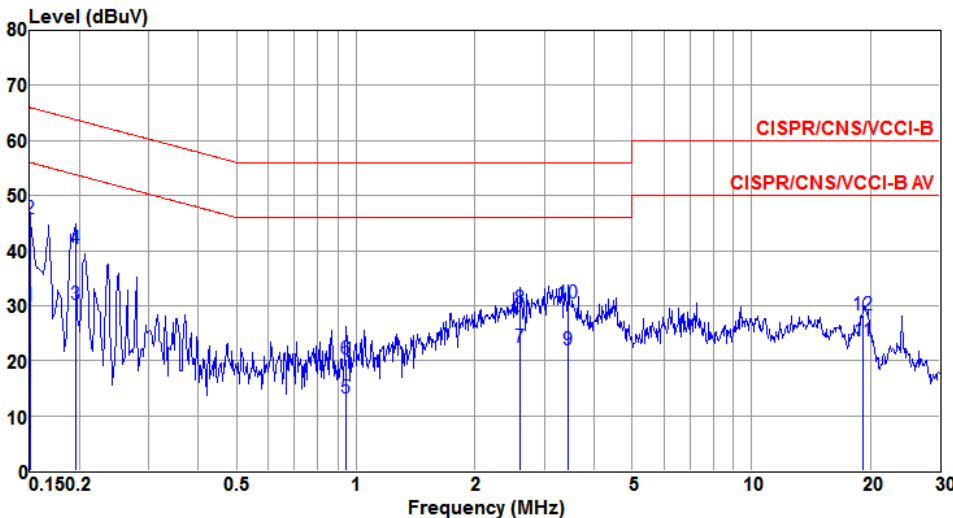
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Neutral		



	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1	0.156	32.09	55.69	-23.60	22.47	9.58	0.04	Average
2@	0.156	44.42	65.69	-21.27	34.80	9.58	0.04	QP
3	0.192	27.51	53.93	-26.42	17.87	9.60	0.04	Average
4	0.192	40.11	63.93	-23.82	30.47	9.60	0.04	QP
5	0.300	25.36	50.24	-24.88	15.75	9.57	0.04	Average
6	0.300	30.53	60.24	-29.71	20.92	9.57	0.04	QP
7	1.049	16.05	46.00	-29.95	6.35	9.66	0.04	Average
8	1.049	25.03	56.00	-30.97	15.33	9.66	0.04	QP
9	3.491	20.41	46.00	-25.59	10.59	9.68	0.14	Average
10	3.491	28.36	56.00	-27.64	18.54	9.68	0.14	QP
11	14.138	20.91	50.00	-29.09	11.00	9.68	0.23	Average
12	14.138	25.59	60.00	-34.41	15.68	9.68	0.23	QP

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

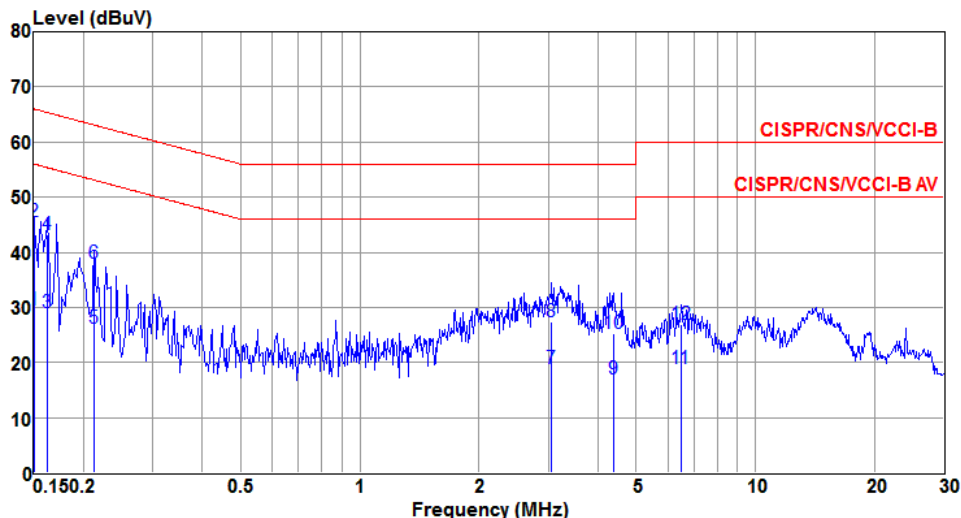
Modulation	VHT40	Test Freq. (MHz)	5755
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	30.03	56.00	-25.97	20.49	9.50	0.04	Average
2@	0.150	45.68	66.00	-20.32	36.14	9.50	0.04	QP
3	0.195	30.13	53.80	-23.67	20.59	9.50	0.04	Average
4	0.195	40.37	63.80	-23.43	30.83	9.50	0.04	QP
5	0.943	13.15	46.00	-32.85	3.64	9.47	0.04	Average
6	0.943	20.36	56.00	-35.64	10.85	9.47	0.04	QP
7	2.608	22.48	46.00	-23.52	12.81	9.58	0.09	Average
8	2.608	29.50	56.00	-26.50	19.83	9.58	0.09	QP
9	3.454	22.00	46.00	-24.00	12.36	9.51	0.13	Average
10	3.454	30.41	56.00	-25.59	20.77	9.51	0.13	QP
11	19.224	23.72	50.00	-26.28	13.75	9.71	0.26	Average
12	19.224	28.41	60.00	-31.59	18.44	9.71	0.26	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)	5755
Power Phase	Neutral		



The graph displays the measured level in dBuV against frequency in MHz. Two red limit lines are shown: CISPR/CNS/VCCI-B (upper) and CISPR/CNS/VCCI-B AV (lower). The measured signal is a blue line with several peaks labeled 1 through 12. The x-axis is logarithmic from 0.15 to 30 MHz, and the y-axis is linear from 0 to 80 dBuV.

	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	29.62	56.00	-26.38	20.00	9.58	0.04	Average
2	0.150	45.62	66.00	-20.38	36.00	9.58	0.04	QP
3	0.162	29.02	55.34	-26.32	19.39	9.59	0.04	Average
4	0.162	43.21	65.34	-22.13	33.58	9.59	0.04	QP
5	0.213	26.10	53.10	-27.00	16.47	9.59	0.04	Average
6	0.213	38.08	63.10	-25.02	28.45	9.59	0.04	QP
7	3.058	18.97	46.00	-27.03	9.22	9.64	0.11	Average
8	3.058	27.45	56.00	-28.55	17.70	9.64	0.11	QP
9	4.384	16.96	46.00	-29.04	7.08	9.71	0.17	Average
10	4.384	25.15	56.00	-30.85	15.27	9.71	0.17	QP
11	6.488	18.84	50.00	-31.16	8.97	9.68	0.19	Average
12	6.488	27.01	60.00	-32.99	17.14	9.68	0.19	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).

Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

3.2 Emission Bandwidth

3.2.1 Limit of Emission bandwidth

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

3.2.2 Test Procedures

26dB Bandwidth

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

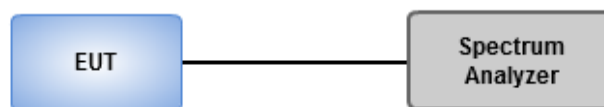
Occupied Bandwidth

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

6dB Bandwidth

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

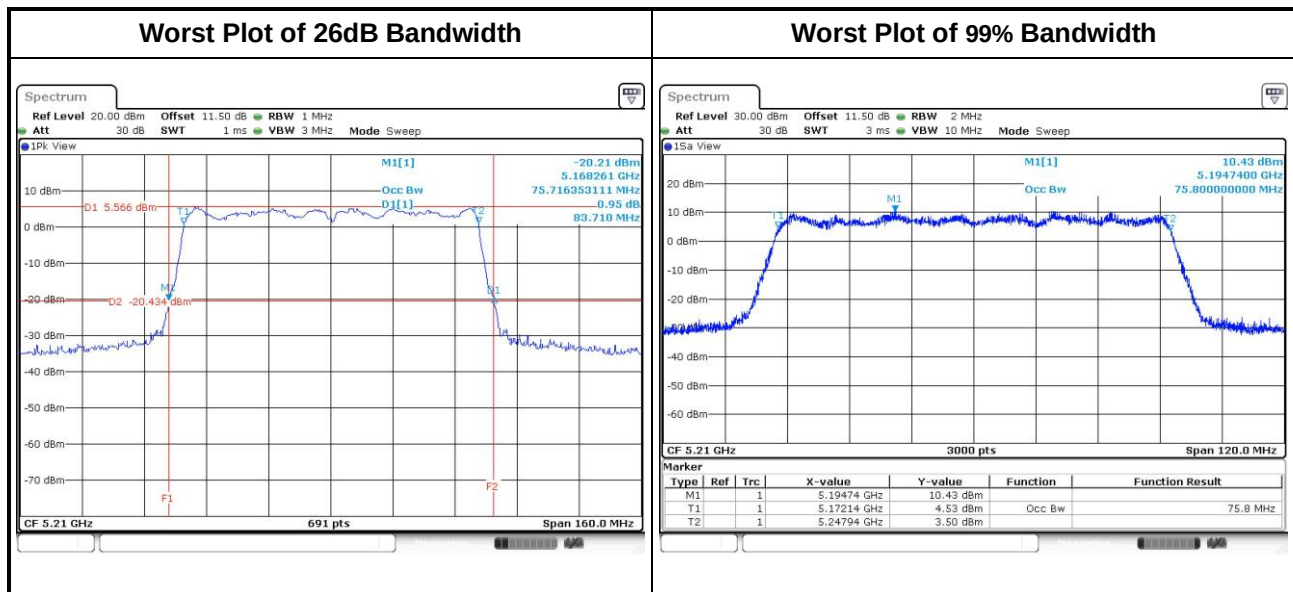
3.2.3 Test Setup



3.2.4 Test Result of Emission Bandwidth

Non-beamforming mode

For Frequency band 5150-5250 MHz										
Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	4	5180	23.01	23.65	23.77	23.59	16.82	17.01	16.95	16.99
11a	4	5200	23.25	23.65	23.83	23.54	16.82	16.98	16.98	16.98
11a	4	5240	23.01	23.65	23.88	23.36	16.83	17.01	17.01	16.90
VHT20	4	5180	24.75	24.81	24.35	23.77	18.16	18.22	18.07	18.00
VHT20	4	5200	24.64	24.75	24.29	23.88	18.16	18.23	18.09	17.98
VHT20	4	5240	24.70	24.81	24.17	23.77	18.18	18.23	18.13	17.98
VHT40	4	5190	44.17	43.83	44.41	43.83	37.18	36.80	36.90	36.68
VHT40	4	5230	51.25	44.06	46.15	64.70	37.24	36.86	36.96	36.98
VHT80	4	5210	83.71	81.16	83.25	82.32	75.80	75.40	75.56	75.72

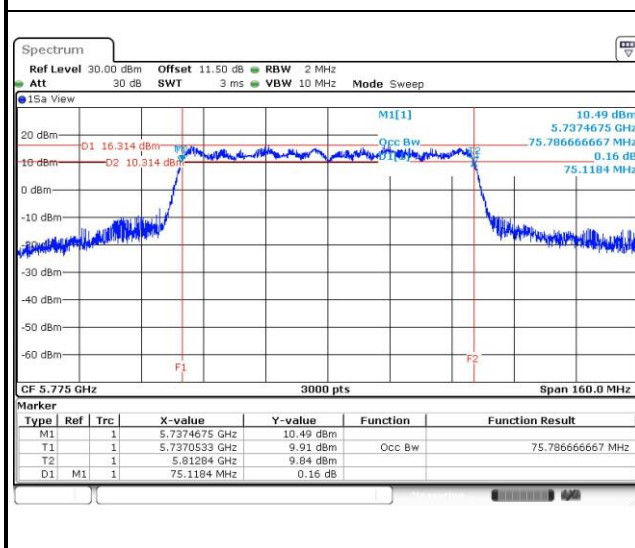


For Frequency band 5725-5850 MHz

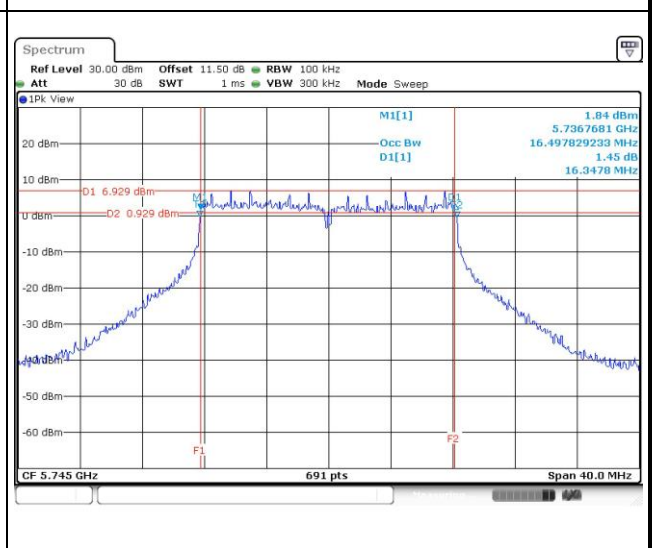
Emission Bandwidth

Mode	N _{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	6dB BW Limit (MHz)
11a	4	5745	16.95	16.93	16.93	16.88	16.35	16.35	16.35	16.35	0.5
11a	4	5785	16.89	16.96	17.03	16.88	16.35	16.35	16.35	16.35	0.5
11a	4	5825	16.88	17.04	17.09	16.88	16.35	16.35	16.35	16.35	0.5
VHT20	4	5745	18.32	18.17	18.08	17.95	17.62	17.62	17.57	17.62	0.5
VHT20	4	5785	18.27	18.20	18.17	17.95	17.62	17.57	17.62	17.62	0.5
VHT20	4	5825	18.24	18.27	18.21	17.96	17.62	17.57	17.62	17.57	0.5
VHT40	4	5755	37.07	37.07	36.80	36.91	36.41	36.41	35.71	36.06	0.5
VHT40	4	5795	37.17	36.91	36.72	36.91	36.41	36.41	36.06	36.17	0.5
VHT80	4	5775	75.73	75.68	75.47	75.79	75.13	75.13	75.13	75.13	0.5

Worst Plots of 99% Bandwidth

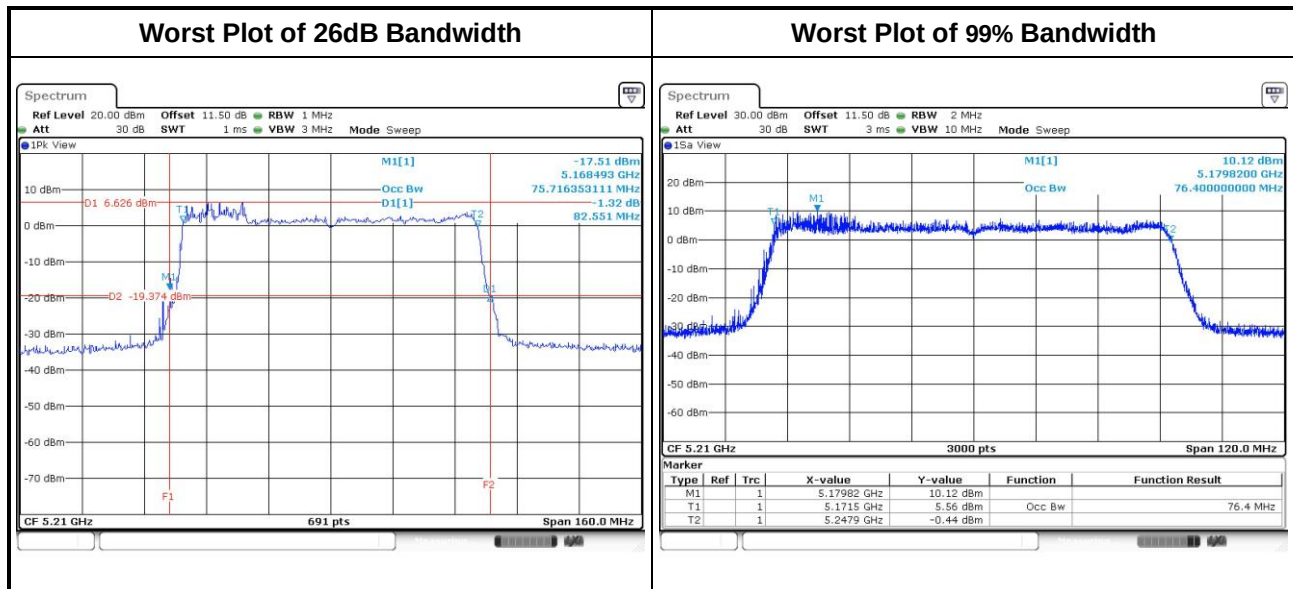


Worst Plots of 6dB Bandwidth



Beamforming mode

For Frequency band 5150-5250 MHz										
Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
VHT20	4	5180	24.87	24.75	25.33	25.39	18.26	18.29	18.31	18.30
VHT20	4	5200	24.75	25.16	24.99	25.16	18.29	18.31	18.31	18.31
VHT20	4	5240	24.70	25.33	24.93	25.22	18.31	18.33	18.33	18.32
VHT40	4	5190	44.99	44.87	45.10	45.22	36.92	36.98	36.92	36.90
VHT40	4	5230	45.57	43.36	45.80	51.48	37.16	37.16	37.10	37.16
VHT80	4	5210	82.32	82.55	80.23	80.46	76.04	76.36	76.40	75.64

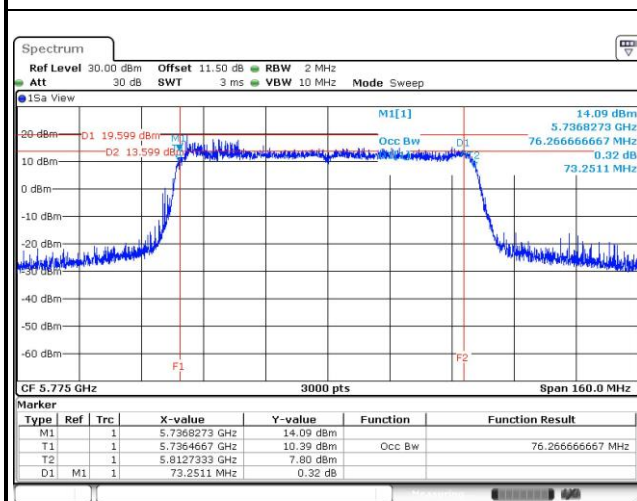


For Frequency band 5725-5850 MHz

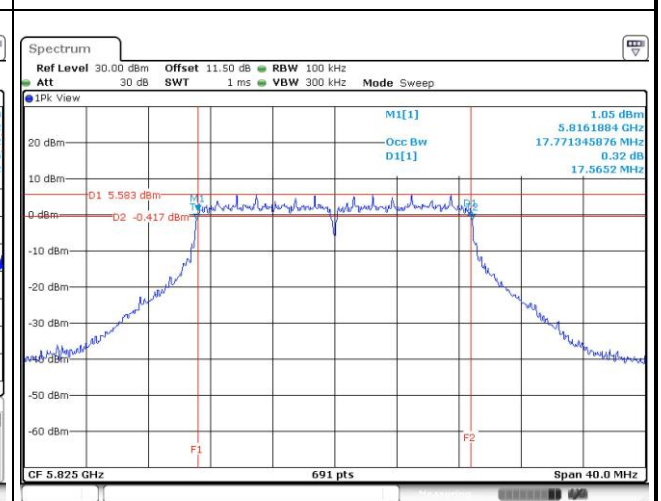
Emission Bandwidth

Mode	N _{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	6dB BW Limit (MHz)
VHT20	4	5745	18.27	18.28	18.29	18.28	17.80	17.62	17.62	17.62	0.5
VHT20	4	5785	18.27	18.28	18.27	18.27	17.62	17.62	17.62	17.62	0.5
VHT20	4	5825	18.27	18.27	18.28	18.27	17.62	17.62	17.57	17.62	0.5
VHT40	4	5755	37.01	36.96	37.04	36.93	36.52	36.41	36.41	36.17	0.5
VHT40	4	5795	36.99	36.93	37.01	37.04	36.17	35.83	35.83	35.83	0.5
VHT80	4	5775	76.16	76.27	76.00	76.00	75.83	75.83	75.83	75.83	0.5

Worst Plot of 99% Bandwidth



Worst Plot of 6dB Bandwidth



3.3 RF Output Power

3.3.1 Limit of RF Output Power

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

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

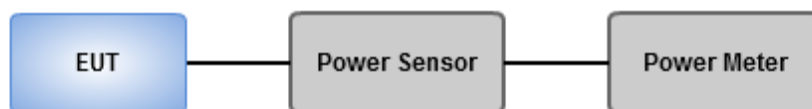
Note: "B" is the 26dB emission bandwidth in MHz.

Note: Directional gain = $-0.56 \text{ dBi} + 10 * \log(4/1) = 5.46 \text{ dBi} < 6 \text{ dBi}$

3.3.2 Test Procedures

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

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

Non-beamforming mode

For Frequency band 5150-5250 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	4	5180	18.03	16.24	17.35	17.02	210.281	23.23	30.00
11a	4	5200	18.09	16.23	17.31	17.18	212.459	23.27	30.00
11a	4	5240	19.16	17.28	18.35	18.29	271.714	24.34	30.00
HT20	4	5180	18.01	16.09	17.38	17.31	212.414	23.27	30.00
HT20	4	5200	18.25	16.42	17.02	17.11	212.442	23.27	30.00
HT20	4	5240	18.20	16.31	17.38	17.54	220.282	23.43	30.00
HT40	4	5190	16.06	14.19	15.01	15.02	130.071	21.14	30.00
HT40	4	5230	20.95	19.22	19.54	19.29	382.880	25.83	30.00
VHT20	4	5180	18.02	16.13	17.46	17.33	214.201	23.31	30.00
VHT20	4	5200	18.32	16.51	17.14	17.26	217.663	23.38	30.00
VHT20	4	5240	18.31	16.39	17.52	17.69	226.558	23.55	30.00
VHT40	4	5190	16.14	14.24	15.02	15.19	132.467	21.22	30.00
VHT40	4	5230	21.01	19.38	19.67	19.43	393.262	25.95	30.00
VHT80	4	5210	14.02	12.13	12.87	13.26	82.113	19.14	30.00

For Frequency band 5725-5850 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	4	5745	18.18	17.53	18.09	17.01	237.041	23.75	30.00
11a	4	5785	18.35	17.60	17.68	16.84	232.855	23.67	30.00
11a	4	5825	17.25	16.77	16.98	16.02	190.505	22.80	30.00
HT20	4	5745	19.26	18.31	18.65	17.92	287.324	24.58	30.00
HT20	4	5785	19.14	18.63	19.06	17.82	296.053	24.71	30.00
HT20	4	5825	18.04	17.52	17.94	16.81	230.377	23.62	30.00
HT40	4	5755	20.74	20.11	20.28	19.52	417.338	26.20	30.00
HT40	4	5795	21.12	20.24	20.41	19.26	429.335	26.33	30.00
VHT20	4	5745	19.39	18.43	18.79	18.07	296.363	24.72	30.00
VHT20	4	5785	19.25	18.72	19.12	17.96	302.788	24.81	30.00
VHT20	4	5825	18.13	17.61	18.06	16.94	236.094	23.73	30.00
VHT40	4	5755	20.88	20.23	20.40	19.63	429.381	26.33	30.00
VHT40	4	5795	21.27	20.45	20.54	19.39	445.021	26.48	30.00
VHT80	4	5775	21.65	20.92	20.97	20.18	499.070	26.98	30.00

Beamforming mode

For Frequency band 5150-5250 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
VHT20	4	5180	18.16	16.38	17.05	17.18	211.853	23.26	30.00
VHT20	4	5200	18.41	16.62	17.39	17.15	221.970	23.46	30.00
VHT20	4	5240	18.42	16.86	17.12	17.32	223.505	23.49	30.00
VHT40	4	5190	15.08	13.27	14.04	13.87	103.173	20.14	30.00
VHT40	4	5230	20.74	19.16	19.89	20.17	402.482	26.05	30.00
VHT80	4	5210	13.16	11.43	11.75	12.34	66.703	18.24	30.00

For Frequency band 5725-5850 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
VHT20	4	5745	18.64	17.91	18.06	17.04	249.471	23.97	30.00
VHT20	4	5785	18.33	18.02	17.71	17.38	245.186	23.89	30.00
VHT20	4	5825	17.6	17.07	17.15	16	200.168	23.01	30.00
VHT40	4	5755	20.93	20.12	20.44	19.25	421.483	26.25	30.00
VHT40	4	5795	20.71	19.65	20.23	19.46	403.764	26.06	30.00
VHT80	4	5775	20.25	19.48	19.30	18.62	352.533	25.47	30.00

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

Frequency band 5150-5250 MHz		
Operating Mode		Limit
☐	Outdoor access point	17 dBm / MHz
☒	Indoor access point	17 dBm / MHz
☐	Fixed point-to-point access points	17 dBm / MHz
☐	Client devices	11 dBm / MHz

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

Note: Directional gain = $-0.56 \text{ dBi} + 10 * \log(4/1) = 5.46 \text{ dBi} < 6 \text{ dBi}$

3.4.2 Test Procedures

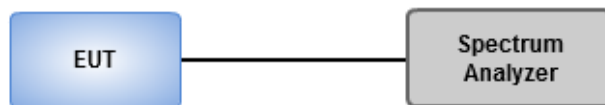
For 5150 ~ 5250 MHz

- ☒ Method SA-1 (Non- Beamforming: VHT20/VHT40)
 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 (Non- Beamforming: 11a/VHT80 / Beamforming: VHT20/VHT40VHT80)
 1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
 2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
 3. Perform a single sweep.
 4. Use the peak marker function to determine the maximum amplitude level.
 5. Add $10 \log(1/x)$, where x is the duty cycle.

For 5725 ~ 5850 MHz

- ☒ Method SA-1 (Non- Beamforming: VHT20/VHT40)
 1. Set RBW = 500 kHz, VBW = 2 MHz, Sweep time = auto, Detector = RMS.
 2. Trace average 100 traces.
 3. Use the peak marker function to determine the maximum amplitude level.
- ☒ Method SA-2 Alternative (Non- Beamforming: 11a/VHT80 / Beamforming: VHT20/VHT40VHT80)
 1. Set RBW = 500 kHz, VBW = 2 MHz, Detector = RMS.
 2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
 3. Perform a single sweep.
 4. Use the peak marker function to determine the maximum amplitude level.
 5. Add $10 \log(1/x)$, where x is the duty cycle.

3.4.3 Test Setup



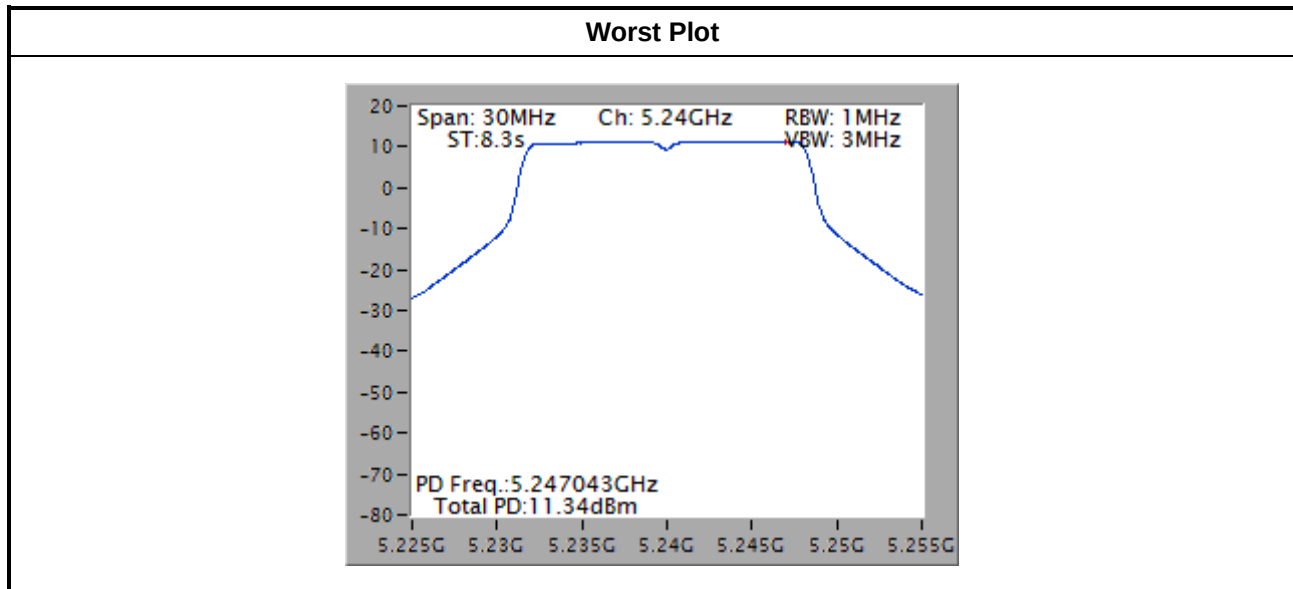
3.4.4 Test Result of Peak Power Spectral Density

Non-beamforming mode

For Frequency band 5150-5250 MHz						
Condition			Peak Power Spectral Density (dBm/MHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/MHz)	Duty Factor (dB)	PPSD with D.F (dBm/MHz)	PPSD Limit (dBm/MHz)
11a	4	5180	10.30	0.44	10.74	17
11a	4	5200	10.33	0.44	10.77	17
11a	4	5240	11.34	0.44	11.78	17
VHT20	4	5180	10.68	0.00	10.68	17
VHT20	4	5200	10.69	0.00	10.69	17
VHT20	4	5240	10.75	0.00	10.75	17
VHT40	4	5190	5.83	0.00	5.83	17
VHT40	4	5230	10.54	0.00	10.54	17
VHT80	4	5210	0.63	0.17	0.80	17

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.

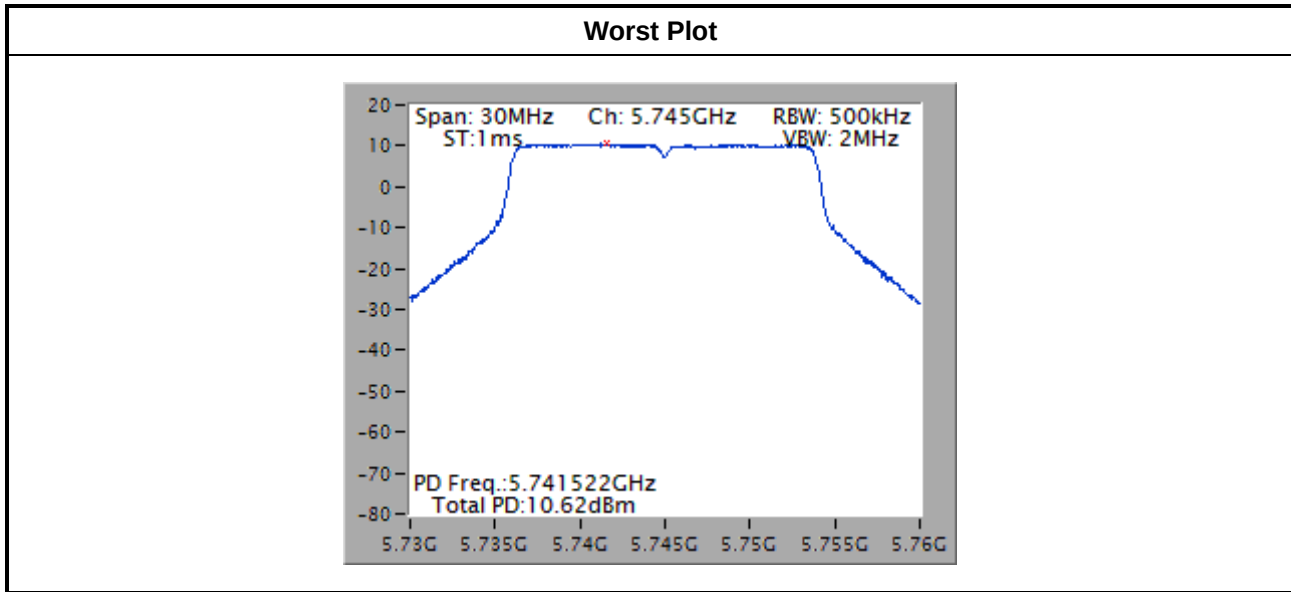


Note: The worst plot is w/o duty factor.

For Frequency band 5725-5850 MHz						
Condition			Peak Power Spectral Density (dBm/500kHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
11a	4	5745	9.48	0.44	9.92	30
11a	4	5785	9.42	0.44	9.86	30
11a	4	5825	8.53	0.44	8.97	30
VHT20	4	5745	10.62	0.00	10.62	30
VHT20	4	5785	10.60	0.00	10.60	30
VHT20	4	5825	9.82	0.00	9.82	30
VHT40	4	5755	10.02	0.00	10.02	30
VHT40	4	5795	9.49	0.00	9.49	30
VHT80	4	5775	7.13	0.17	7.30	30

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.

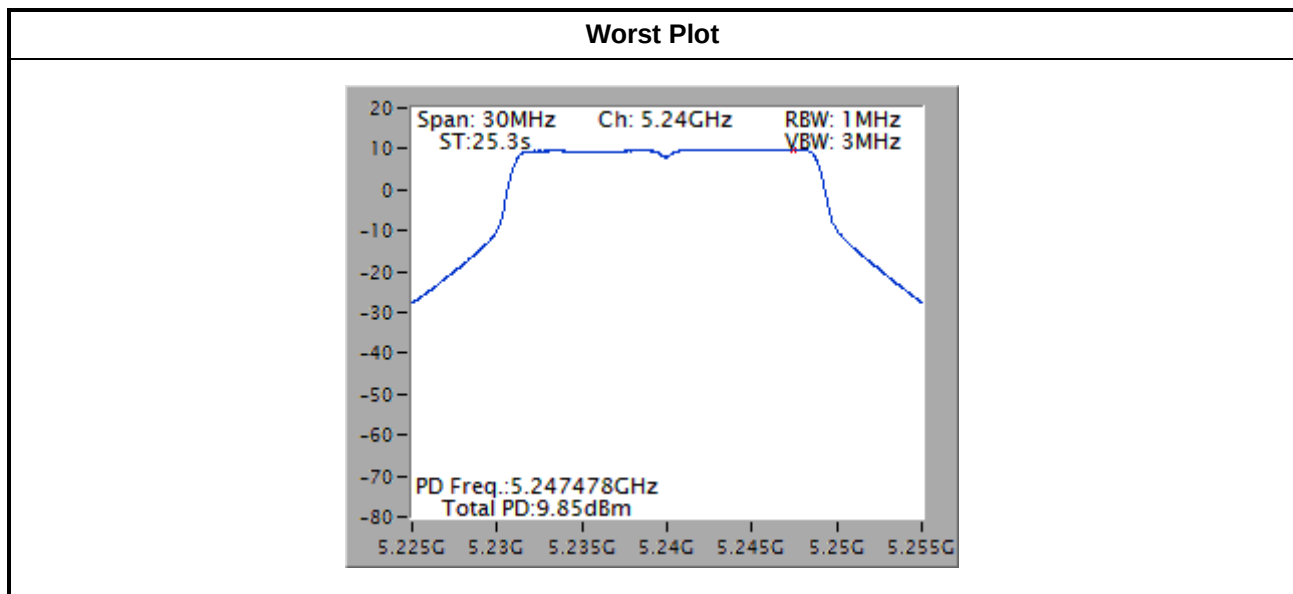


Beamforming mode

For Frequency band 5150-5250 MHz						
Condition			Peak Power Spectral Density (dBm/MHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/MHz)	Duty Factor (dB)	PPSD with D.F (dBm/MHz)	PPSD Limit (dBm/MHz)
VHT20	4	5180	9.69	0.43	10.12	17
VHT20	4	5200	9.68	0.43	10.11	17
VHT20	4	5240	9.85	0.43	10.28	17
VHT40	4	5190	3.98	0.21	4.19	17
VHT40	4	5230	9.65	0.21	9.86	17
VHT80	4	5210	-0.27	0.15	-0.12	17

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.

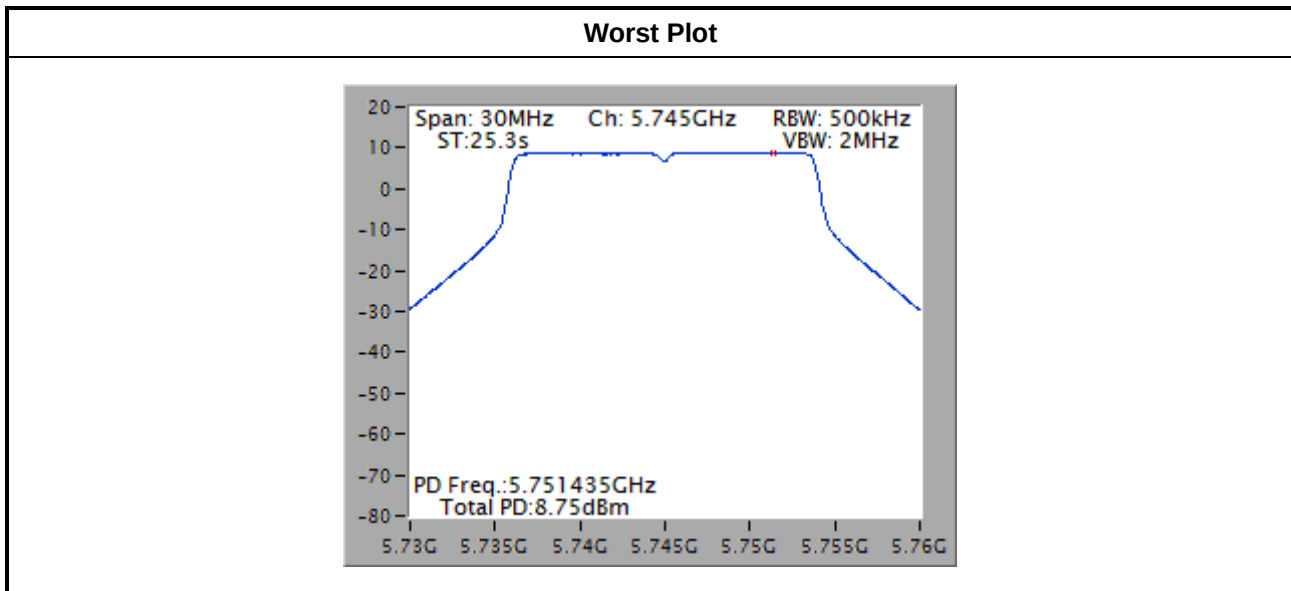


Note: The worst plot is w/o duty factor.

For Frequency band 5725-5850 MHz						
Condition			Peak Power Spectral Density (dBm/500kHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
VHT20	4	5745	8.75	0.43	9.18	30
VHT20	4	5785	8.73	0.43	9.16	30
VHT20	4	5825	7.86	0.43	8.29	30
VHT40	4	5755	8.13	0.21	8.34	30
VHT40	4	5795	8.08	0.21	8.29	30
VHT80	4	5775	5.39	0.15	5.54	30

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.



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

3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

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

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

Un-restricted band emissions above 1GHz Limit		
Operating Band	Limit	
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]	
5.725 - 5.850 GHz	☒	15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
	☐	15.407(b)(4)(ii) ,compliance with the emission limits in § 15.247(d) Shall be at least 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power,. Attenuation below the general limits specified in §15.209(a) is not required. In addition,radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see § 15.205(c))

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

3.5.2 Test Procedures

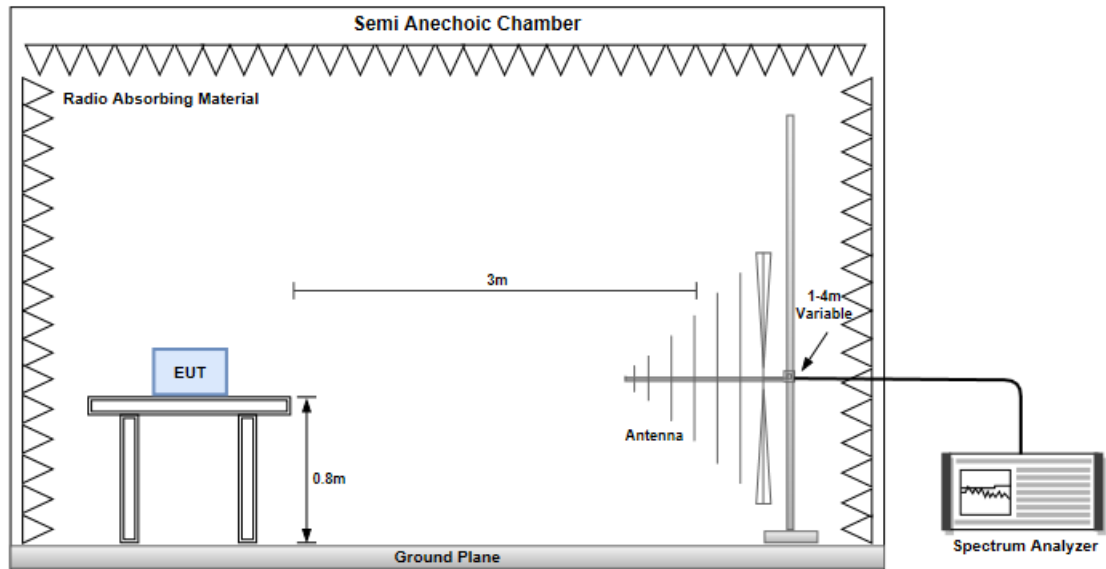
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

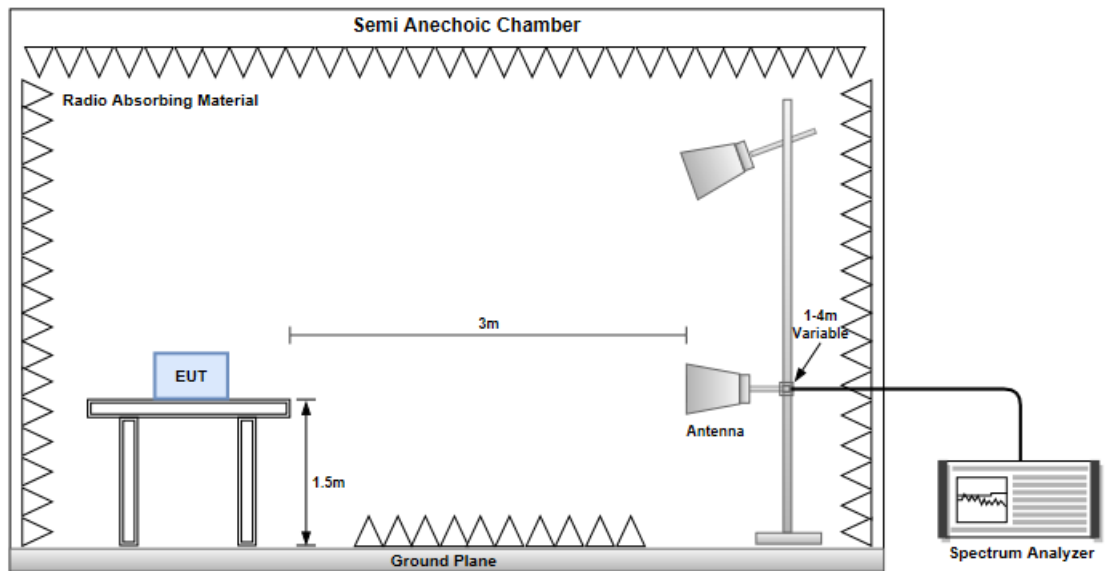
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.
4. Final tests are performed with the beam locked at the worst-case orientation determined in the baseline scan(methodology for circular beamforming pattern) for beamforming mode.

3.5.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz

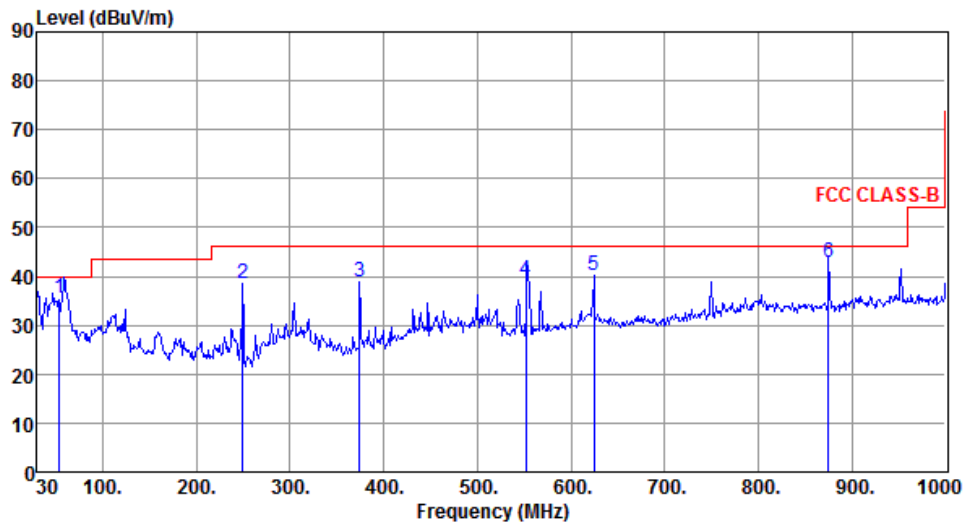


Non- beamforming mode

3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	53.81	35.42	40.00	-4.58	44.03	-8.61	QP	100	42
2	249.22	38.65	46.00	-7.35	48.14	-9.49	Peak	---	---
3	374.35	38.83	46.00	-7.17	44.57	-5.74	Peak	---	---
4	551.86	39.03	46.00	-6.97	40.57	-1.54	QP	100	79
5	624.61	40.09	46.00	-5.91	40.29	-0.20	Peak	---	---
6	874.87	42.72	46.00	-3.28	38.85	3.87	Peak	---	---

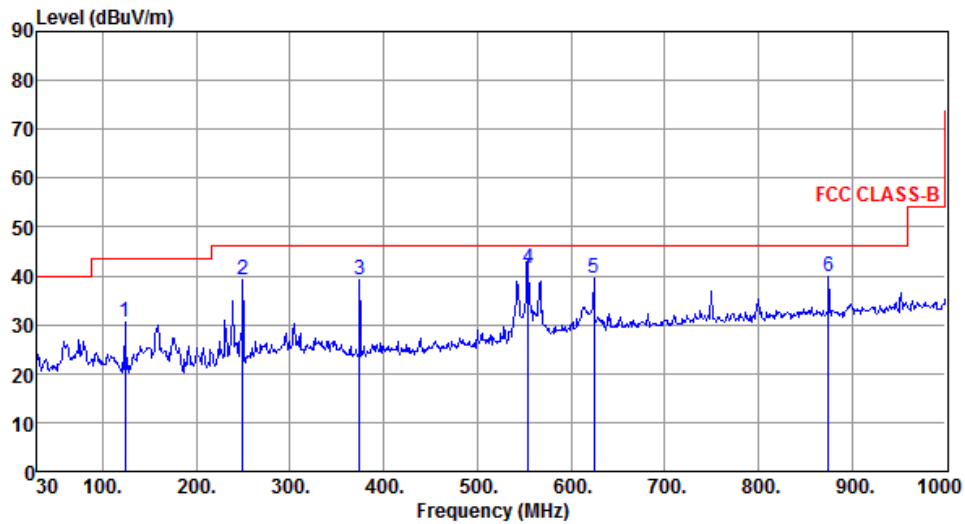
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	124.09	30.56	43.50	-12.94	40.27	-9.71	Peak	---	---
2	249.22	39.18	46.00	-6.82	48.67	-9.49	Peak	---	---
3	374.35	39.09	46.00	-6.91	44.83	-5.74	Peak	---	---
4	554.77	41.52	46.00	-4.48	43.00	-1.48	Peak	---	---
5	624.61	39.48	46.00	-6.52	39.68	-0.20	Peak	---	---
6	874.87	39.89	46.00	-6.11	36.02	3.87	Peak	---	---

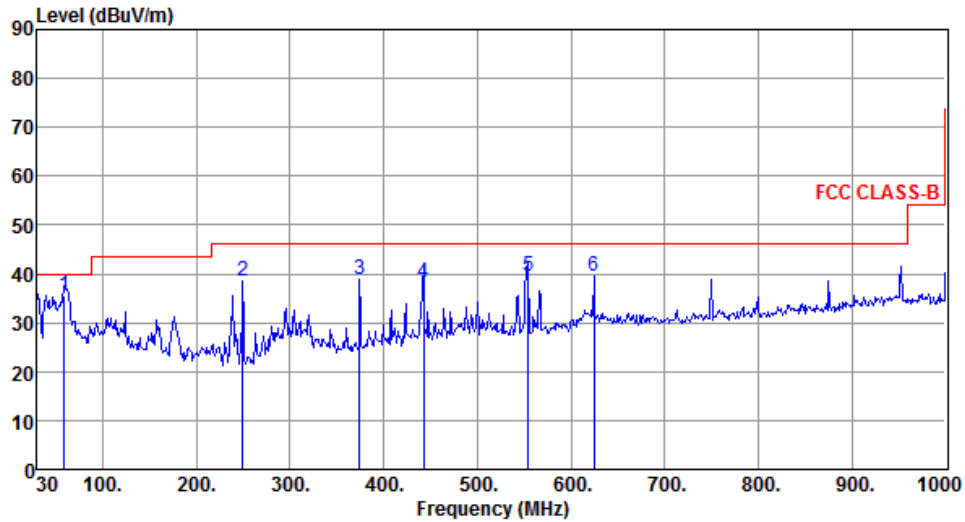
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	59.10	35.62	40.00	-4.38	44.78	-9.16	QP	100	51
2	249.22	38.67	46.00	-7.33	48.16	-9.49	Peak	---	---
3	374.35	38.94	46.00	-7.06	44.68	-5.74	Peak	---	---
4	442.25	38.12	46.00	-7.88	42.02	-3.90	Peak	---	---
5	554.77	39.53	46.00	-6.47	41.01	-1.48	QP	100	73
6	624.61	39.42	46.00	-6.58	39.62	-0.20	Peak	---	---

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

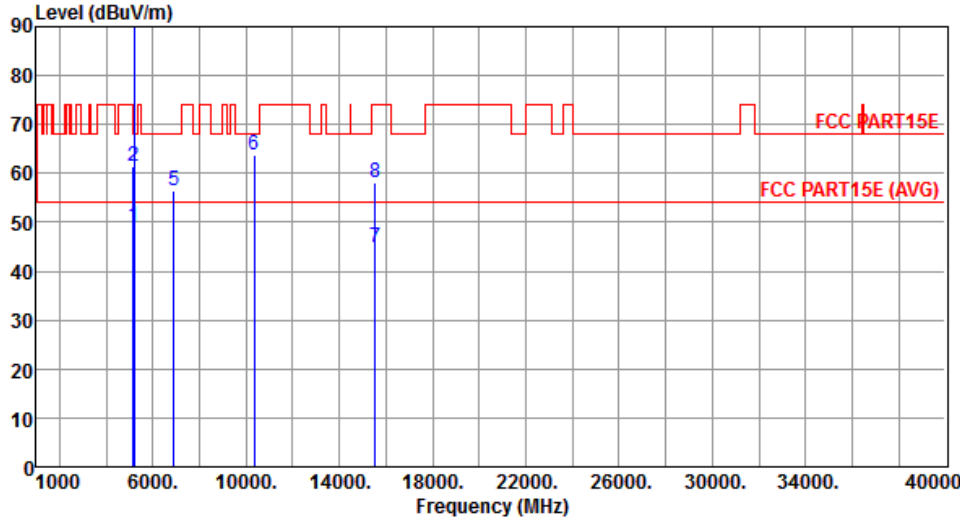
*Factor includes antenna factor , cable loss and amplifier gain

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)	5180
Polarization	Horizontal		

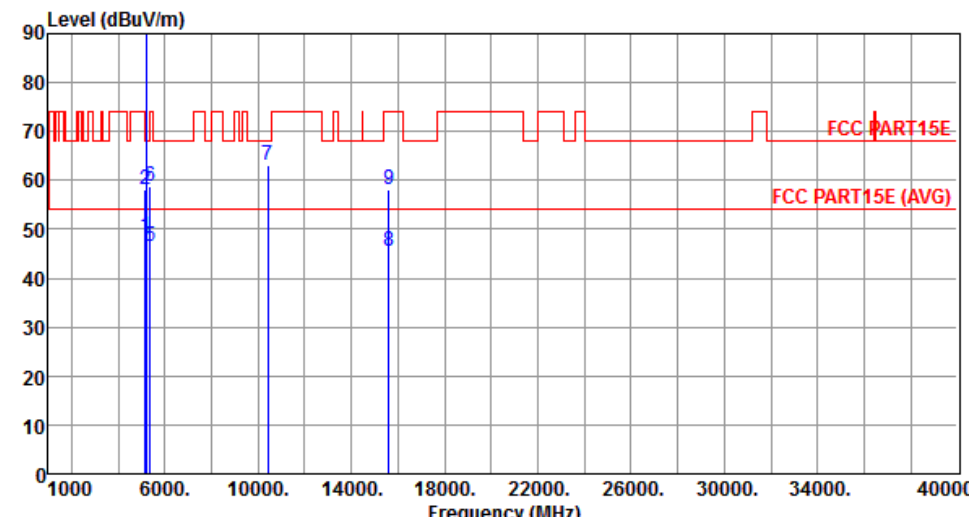


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.02	54.00	-4.98	44.12	4.90	Average	160	283
2	5150.00	61.46	74.00	-12.54	56.56	4.90	Peak	160	283
3 *	5180.00	102.38			97.45	4.93	Average	160	295
4 *	5180.00	111.49			106.56	4.93	Peak	160	295
5	6906.00	56.35	68.20	-11.85	47.84	8.51	Peak	130	288
6	10360.00	63.85	68.20	-4.35	50.18	13.67	Peak	270	57
7	15540.00	44.79	54.00	-9.21	29.07	15.72	Average	100	116
8	15540.00	58.03	74.00	-15.97	42.31	15.72	Peak	100	116

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		
Level (dBuV/m) </			

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

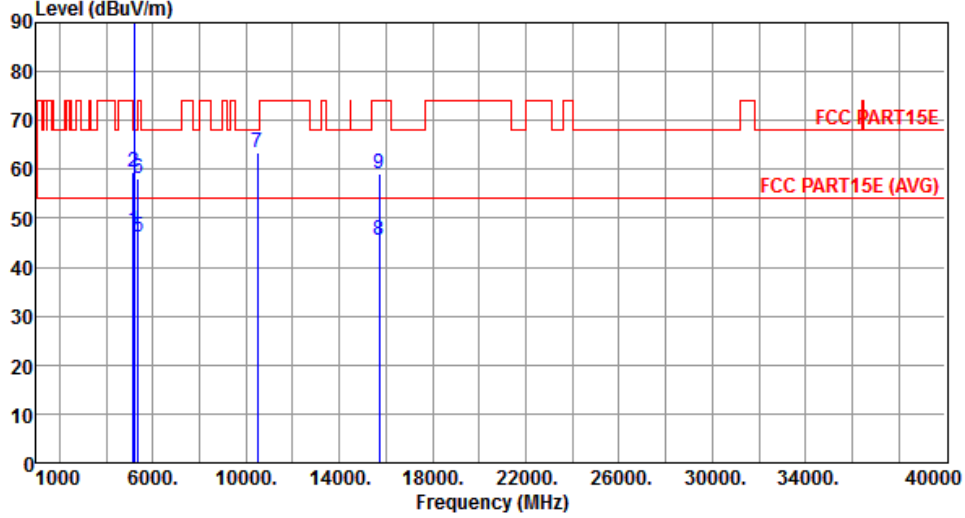


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.48	54.00	-5.52	43.58	4.90	Average	148	296
2	5150.00	58.10	74.00	-15.90	53.20	4.90	Peak	148	296
3 *	5200.00	102.63			97.68	4.95	Average	148	296
4 *	5200.00	111.62			106.67	4.95	Peak	148	296
5	5350.00	46.54	54.00	-7.46	41.41	5.13	Average	148	296
6	5350.00	58.81	74.00	-15.19	53.68	5.13	Peak	148	296
7	10400.00	63.11	68.20	-5.09	49.36	13.75	Peak	276	57
8	15600.00	45.50	54.00	-8.50	29.89	15.61	Average	100	82
9	15600.00	58.22	74.00	-15.78	42.61	15.61	Peak	100	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).
 Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		
Level (dBuV/m)			

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.53	54.00	-6.47	42.63	4.90	Average	150	297
2	5150.00	59.53	74.00	-14.47	54.63	4.90	Peak	150	297
3 *	5240.00	102.44			97.44	5.00	Average	150	297
4 *	5240.00	111.42			106.42	5.00	Peak	150	297
5	5350.00	46.24	54.00	-7.76	41.11	5.13	Average	150	297
6	5350.00	58.24	74.00	-15.76	53.11	5.13	Peak	150	297
7	10480.00	63.51	68.20	-4.69	49.61	13.90	Peak	281	60
8	15720.00	45.51	54.00	-8.49	30.12	15.39	Average	100	132
9	15720.00	58.98	74.00	-15.02	43.59	15.39	Peak	100	132

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

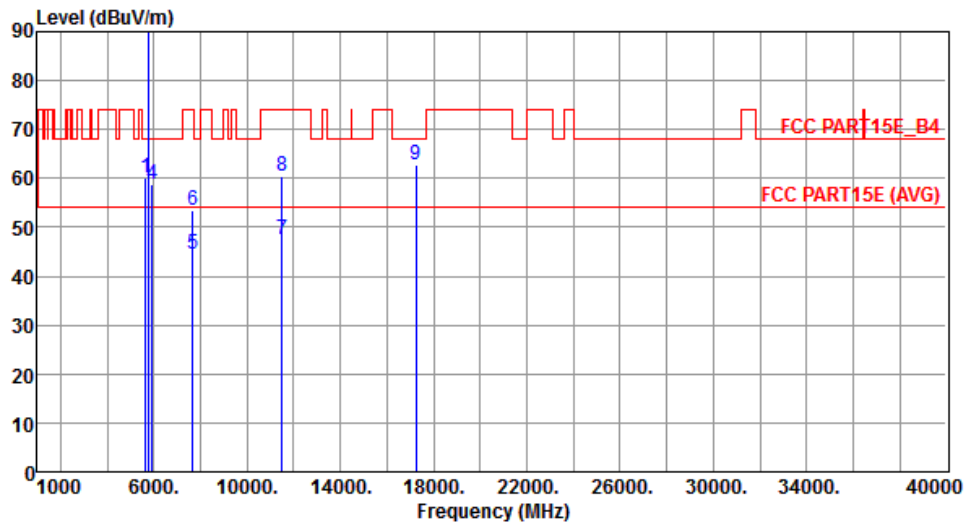
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.53	54.00	-4.47	44.63	4.90	Average	220	262
2	5150.00	62.03	74.00	-11.97	57.13	4.90	Peak	220	262
3 *	5240.00	108.04			103.04	5.00	Average	220	262
4 *	5240.00	117.22			112.22	5.00	Peak	220	262
5	5350.00	47.24	54.00	-6.76	42.11	5.13	Average	220	262
6	5350.00	60.30	74.00	-13.70	55.17	5.13	Peak	220	262
7	10480.00	67.91	68.20	-0.29	54.01	13.90	Peak	120	98
8	15720.00	45.64	54.00	-8.36	30.25	15.39	Average	100	120
9	15720.00	59.06	74.00	-14.94	43.67	15.39	Peak	100	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).
 Note 3: "*" is Peak / Average value of fundamental frequency

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.16	68.20	-8.04	54.61	5.55	Peak	100	286
2 *	5745.00	104.96			99.20	5.76	Average	100	286
3 *	5745.00	113.98			108.22	5.76	Peak	100	286
4	5925.10	58.71	68.20	-9.49	52.62	6.09	Peak	100	286
5	7660.00	44.65	54.00	-9.35	34.93	9.72	Average	180	106
6	7660.00	53.56	74.00	-20.44	43.84	9.72	Peak	180	106
7	11490.00	47.54	54.00	-6.46	32.92	14.62	Average	180	35
8	11490.00	60.46	74.00	-13.54	45.84	14.62	Peak	180	35
9	17235.00	62.73	68.20	-5.47	42.09	20.64	Peak	100	176

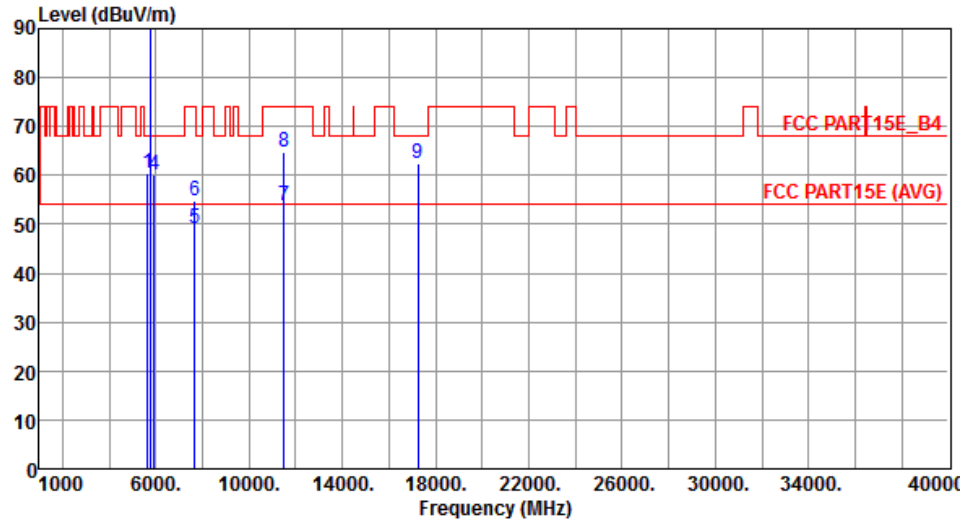
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "*" is Peak / Average value of fundamental frequency

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



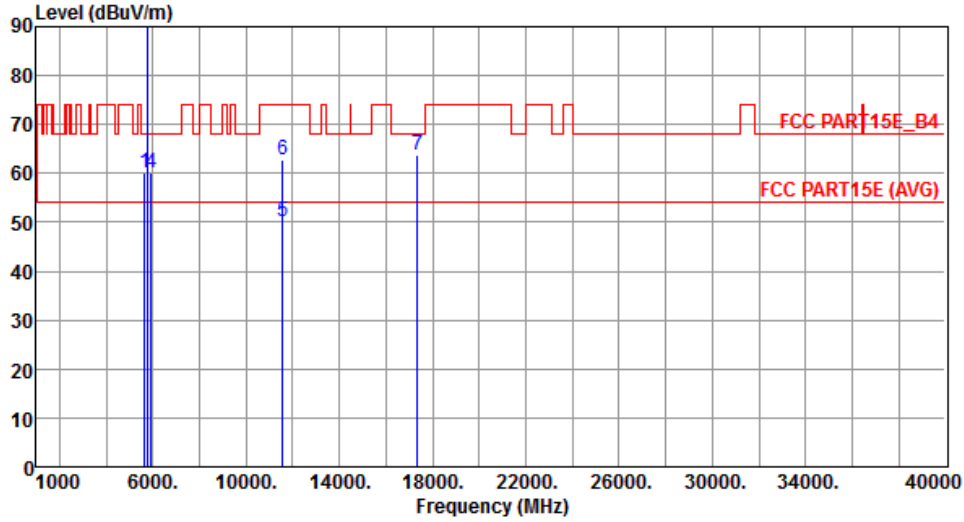
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.30	68.20	-7.90	54.75	5.55	Peak	234	264
2	* 5745.00	106.92			101.16	5.76	Average	234	264
3	* 5745.00	115.85			110.09	5.76	Peak	234	264
4	5925.10	60.13	68.20	-8.07	54.04	6.09	Peak	234	264
5	7660.00	49.17	54.00	-4.83	39.45	9.72	Average	121	93
6	7660.00	54.75	74.00	-19.25	45.03	9.72	Peak	121	93
7	11490.00	53.73	54.00	-0.27	39.11	14.62	Average	114	85
8	11490.00	64.87	74.00	-9.13	50.25	14.62	Peak	114	85
9	17235.00	62.60	68.20	-5.60	41.96	20.64	Peak	100	129

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

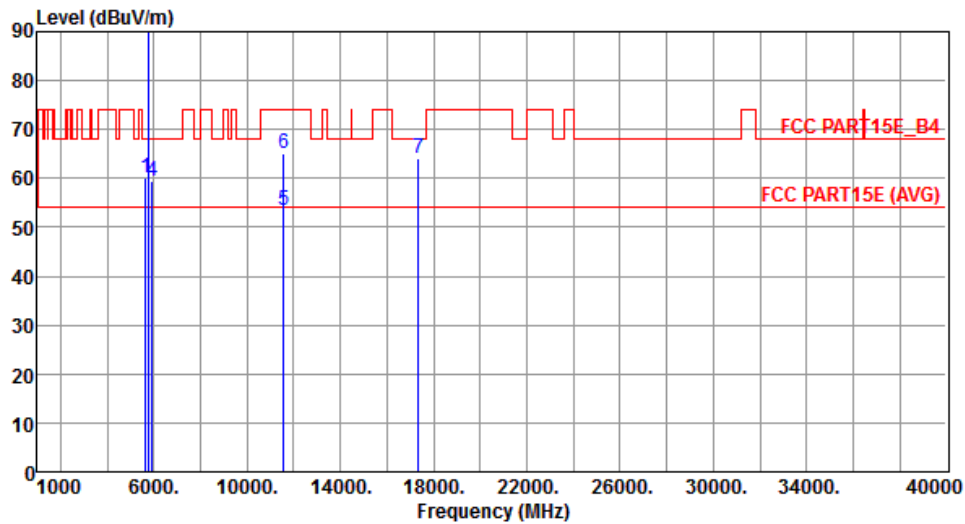
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.96	68.20	-8.24	54.41	5.55	Peak	100	283
2	* 5785.00	104.84			98.99	5.85	Average	100	283
3	* 5785.00	114.60			108.75	5.85	Peak	100	283
4	5925.10	60.06	68.20	-8.14	53.97	6.09	Peak	100	283
5	11570.00	50.12	54.00	-3.88	35.60	14.52	Average	178	39
6	11570.00	62.72	74.00	-11.28	48.20	14.52	Peak	178	39
7	17355.00	63.79	68.20	-4.41	42.50	21.29	Peak	100	193

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.24	68.20	-7.96	54.69	5.55	Peak	232	265
2 *	5785.00	106.91			101.06	5.85	Average	232	265
3 *	5785.00	116.31			110.46	5.85	Peak	232	265
4	5925.10	59.51	68.20	-8.69	53.42	6.09	Peak	232	265
5	11570.00	53.62	54.00	-0.38	39.10	14.52	Average	115	107
6	11570.00	65.19	74.00	-8.81	50.67	14.52	Peak	115	107
7	17355.00	63.98	68.20	-4.22	42.69	21.29	Peak	100	127

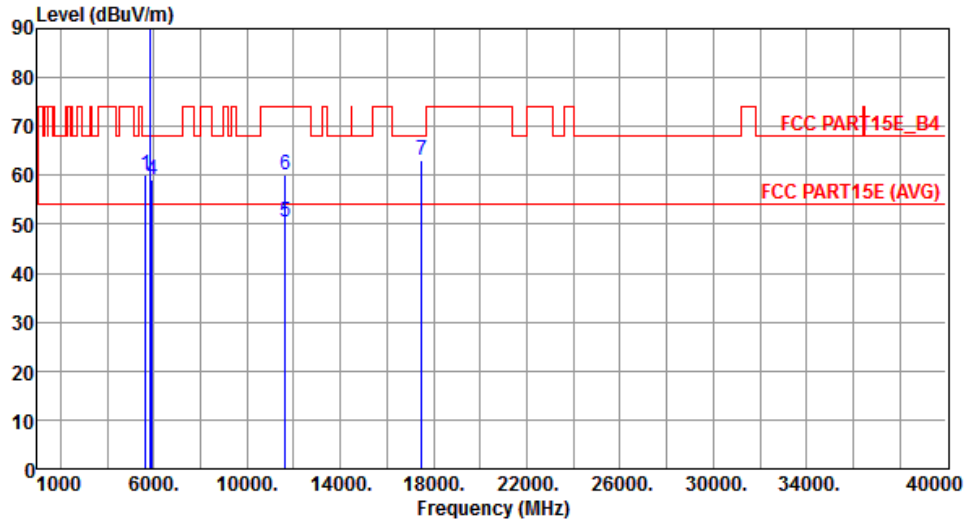
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "*" is Peak / Average value of fundamental frequency

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.26	68.20	-7.94	54.71	5.55	Peak	100	284
2 *	5825.00	103.38			97.45	5.93	Average	100	284
3 *	5825.00	112.13			106.20	5.93	Peak	100	284
4	5925.10	59.22	68.20	-8.98	53.13	6.09	Peak	100	284
5	11650.00	50.34	54.00	-3.66	35.94	14.40	Average	176	40
6	11650.00	59.97	74.00	-14.03	45.57	14.40	Peak	176	40
7	17475.00	63.15	68.20	-5.05	41.21	21.94	Peak	176	40

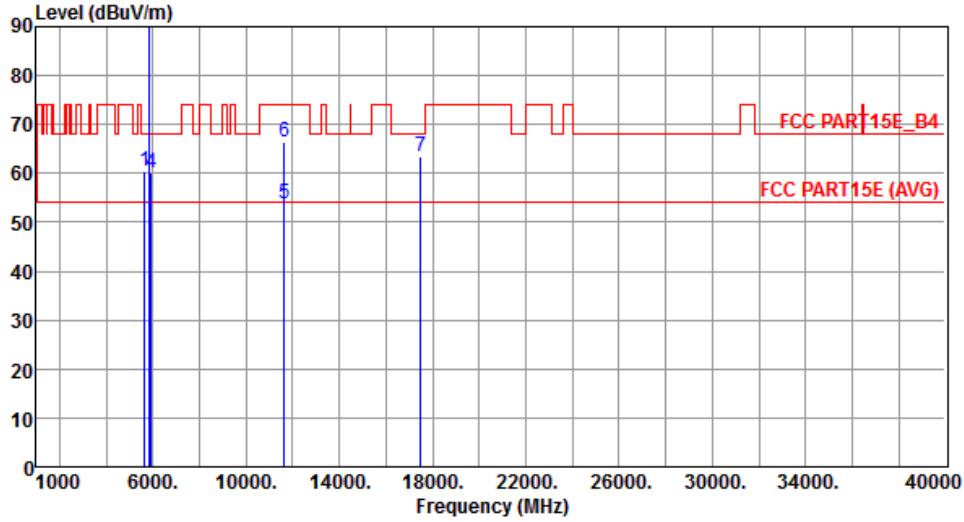
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "*" is Peak / Average value of fundamental frequency

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

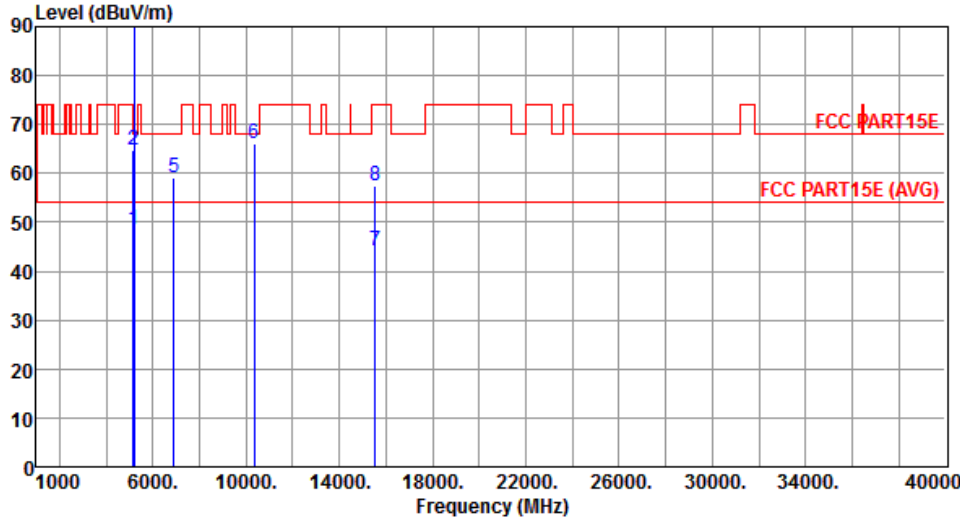


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.50	68.20	-7.70	54.95	5.55	Peak	249	260
2 *	5825.00	105.47			99.54	5.93	Average	249	260
3 *	5825.00	114.76			108.83	5.93	Peak	249	260
4	5925.10	60.06	68.20	-8.14	53.97	6.09	Peak	249	260
5	11650.00	53.85	54.00	-0.15	39.45	14.40	Average	109	107
6	11650.00	66.36	74.00	-7.64	51.96	14.40	Peak	109	107
7	17475.00	63.37	68.20	-4.83	41.43	21.94	Peak	100	128

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

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

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		

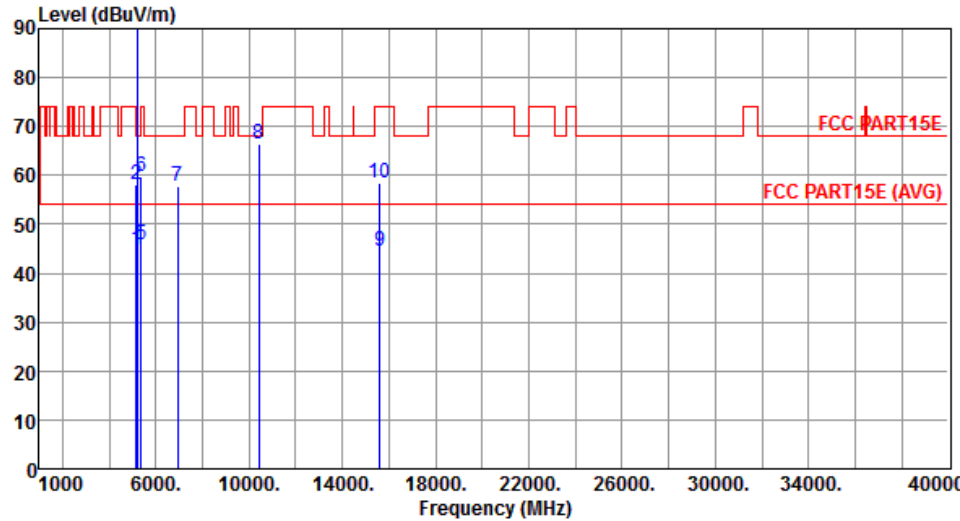


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.34	54.00	-5.66	43.44	4.90	Average	160	287
2	5150.00	64.82	74.00	-9.18	59.92	4.90	Peak	160	287
3 *	5180.00	101.97			97.04	4.93	Average	152	293
4 *	5180.00	111.92			106.99	4.93	Peak	152	293
5	6906.66	59.13	68.20	-9.07	50.62	8.51	Peak	223	59
6	10360.00	65.93	68.20	-2.27	52.26	13.67	Peak	177	30
7	15540.00	44.01	54.00	-9.99	28.29	15.72	Average	111	69
8	15540.00	57.60	74.00	-16.40	41.88	15.72	Peak	111	69

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		
Level (dBuV/m)			

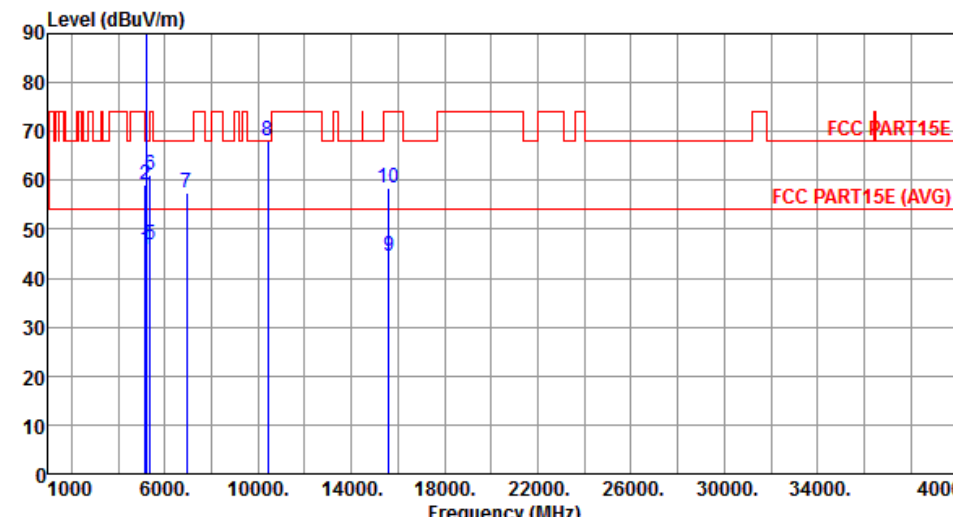
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	44.78	54.00	-9.22	39.88	4.90	Average	130 299
2	5150.00	58.24	74.00	-15.76	53.34	4.90	Peak	130 299
3 *	5200.00	102.26			97.31	4.95	Average	130 299
4 *	5200.00	112.38			107.43	4.95	Peak	130 299
5	5350.00	45.92	54.00	-8.08	40.79	5.13	Average	130 299
6	5350.00	59.79	74.00	-14.21	54.66	5.13	Peak	130 299
7	6933.33	57.67	68.20	-10.53	49.06	8.61	Peak	168 250
8	10400.00	66.39	68.20	-1.81	52.64	13.75	Peak	179 35
9	15600.00	44.45	54.00	-9.55	28.84	15.61	Average	211 153
10	15600.00	58.48	74.00	-15.52	42.87	15.61	Peak	211 153

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: "*" is Peak / Average value of fundamental frequency

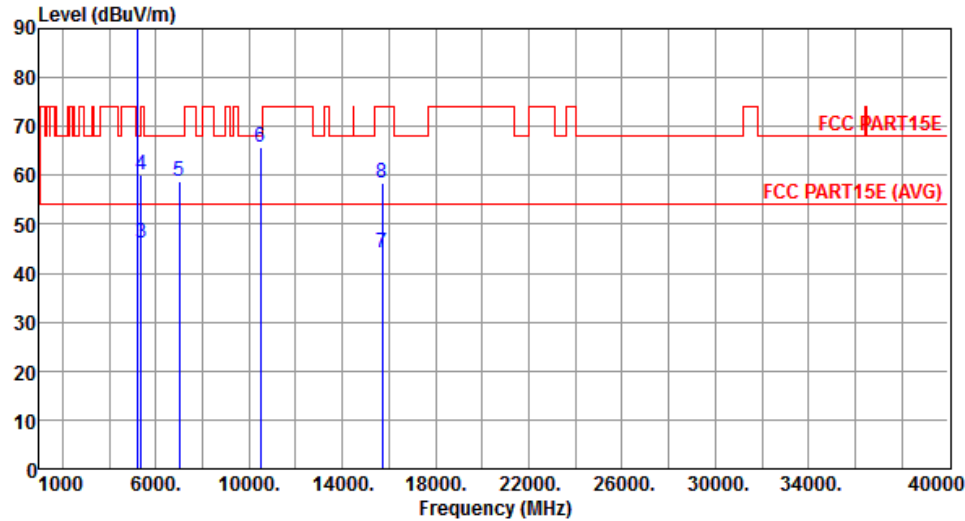
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.89	54.00	-8.11	40.99	4.90	Average	118	262
2	5150.00	59.11	74.00	-14.89	54.21	4.90	Peak	118	262
3 *	5200.00	107.63			102.68	4.95	Average	118	262
4 *	5200.00	118.99			114.04	4.95	Peak	118	262
5	5350.00	46.68	54.00	-7.32	41.55	5.13	Average	118	262
6	5350.00	60.96	74.00	-13.04	55.83	5.13	Peak	118	262
7	6933.33	57.35	68.20	-10.85	48.74	8.61	Peak	242	172
8	10400.00	68.03	68.20	-0.17	54.28	13.75	Peak	143	93
9	15600.00	44.47	54.00	-9.53	28.86	15.61	Average	166	231
10	15600.00	58.60	74.00	-15.40	42.99	15.61	Peak	166	231

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

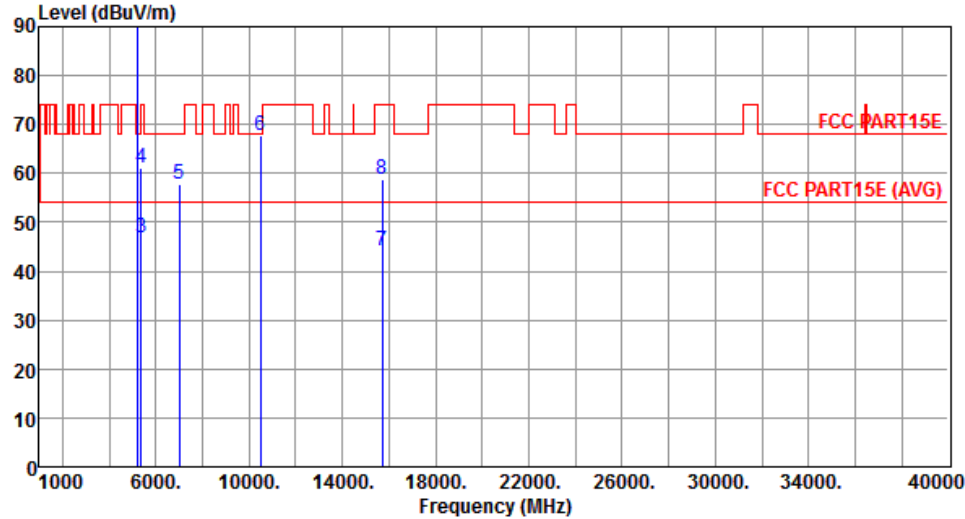
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
	MHz	level	dBuV/m	dB	reading	dB		High	Table
								cm	deg
1	*	5240.00	103.23		98.23	5.00	Average	114	291
2	*	5240.00	113.35		108.35	5.00	Peak	114	291
3		5350.00	46.02	54.00	-7.98	40.89	Average	114	291
4		5350.00	60.12	74.00	-13.88	54.99	Peak	114	291
5		6986.66	58.68	68.20	-9.52	49.87	Peak	165	251
6		10480.00	65.65	68.20	-2.55	51.75	Peak	177	32
7		15720.00	44.07	54.00	-9.93	28.68	Average	111	249
8		15720.00	58.55	74.00	-15.45	43.16	Peak	111	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).
Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



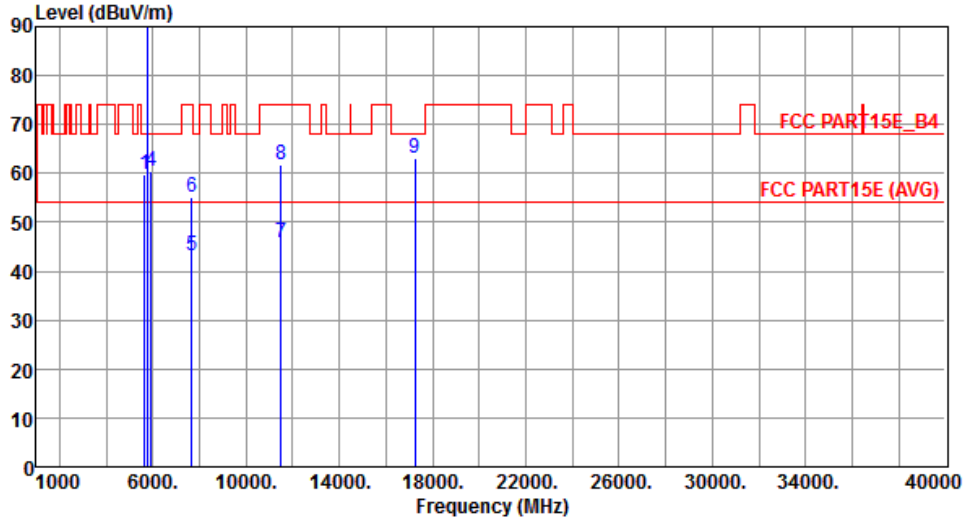
		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	*	5240.00	107.68			102.68	5.00	Average	117	262
2	*	5240.00	118.53			113.53	5.00	Peak	117	262
3		5350.00	46.89	54.00	-7.11	41.76	5.13	Average	117	262
4		5350.00	60.95	74.00	-13.05	55.82	5.13	Peak	117	262
5		6986.66	57.79	68.20	-10.41	48.98	8.81	Peak	153	322
6		10480.00	67.77	68.20	-0.43	53.87	13.90	Peak	129	94
7		15720.00	44.15	54.00	-9.85	28.76	15.39	Average	122	214
8		15720.00	58.63	74.00	-15.37	43.24	15.39	Peak	122	214

Note 1: Emission Level (dBUV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

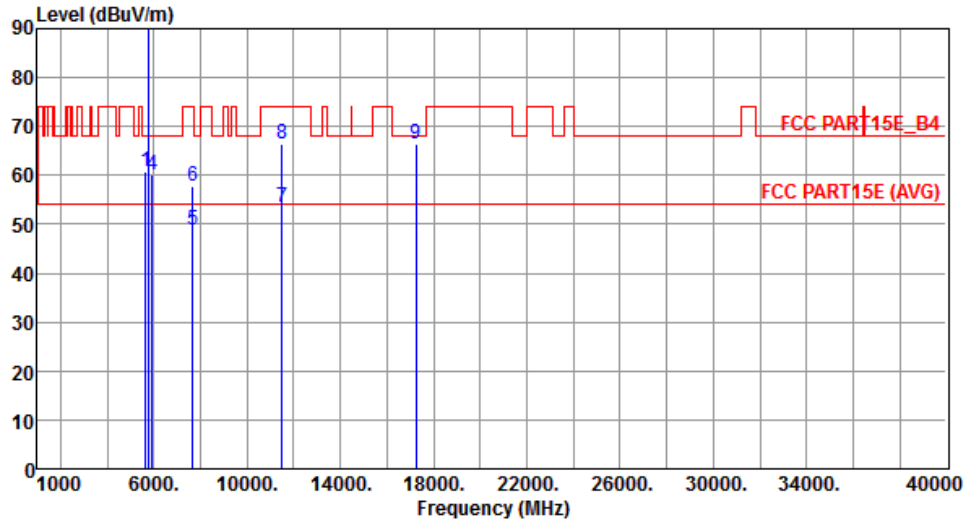
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.91	68.20	-8.29	54.36	5.55	Peak	270	137
2	* 5745.00	104.04			98.28	5.76	Average	270	137
3	* 5745.00	115.05			109.29	5.76	Peak	270	137
4	5925.10	60.41	68.20	-7.79	54.32	6.09	Peak	270	137
5	7660.00	43.20	54.00	-10.80	33.48	9.72	Average	224	113
6	7660.00	55.24	74.00	-18.76	45.52	9.72	Peak	224	113
7	11490.00	45.86	54.00	-8.14	31.24	14.62	Average	188	39
8	11490.00	61.85	74.00	-12.15	47.23	14.62	Peak	188	39
9	17235.00	63.13	68.20	-5.07	42.49	20.64	Peak	140	233

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.66	68.20	-7.54	55.11	5.55	Peak	272	289
2 *	5745.00	106.18			100.42	5.76	Average	272	289
3 *	5745.00	116.14			110.38	5.76	Peak	272	289
4	5925.10	60.23	68.20	-7.97	54.14	6.09	Peak	272	289
5	7660.00	48.68	54.00	-5.32	38.96	9.72	Average	100	97
6	7660.00	57.92	74.00	-16.08	48.20	9.72	Peak	100	97
7	11490.00	53.51	54.00	-0.49	38.89	14.62	Average	130	62
8	11490.00	66.51	74.00	-7.49	51.89	14.62	Peak	130	62
9	17235.00	66.46	68.20	-1.74	45.82	20.64	Peak	113	131

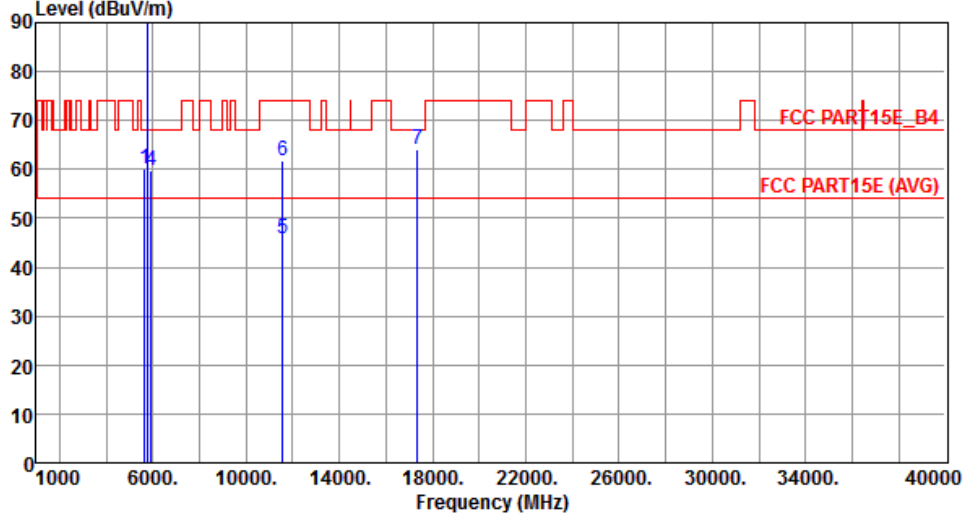
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "*" is Peak / Average value of fundamental frequency

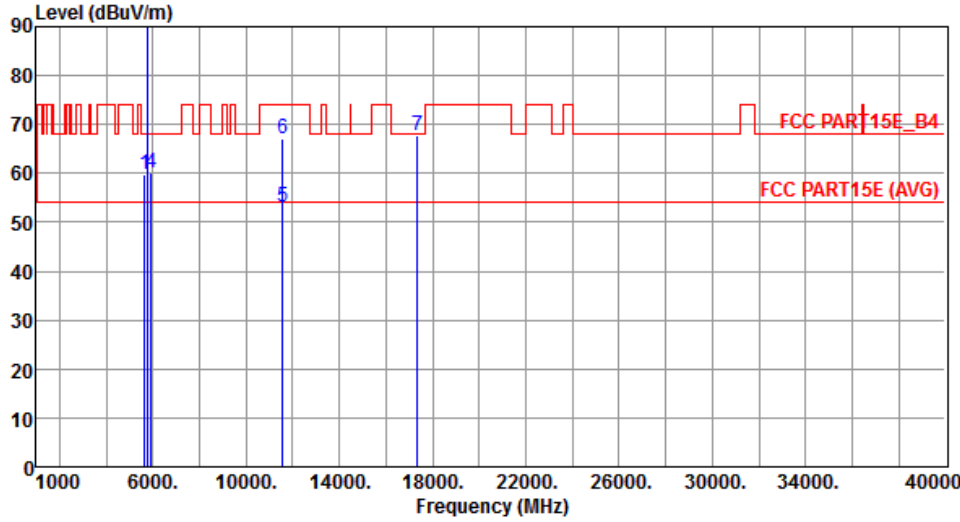
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.18	68.20	-8.02	54.63	5.55	Peak	254	139
2	* 5785.00	104.44			98.59	5.85	Average	254	139
3	* 5785.00	115.51			109.66	5.85	Peak	254	139
4	5925.10	59.77	68.20	-8.43	53.68	6.09	Peak	254	139
5	11570.00	45.85	54.00	-8.15	31.33	14.52	Average	199	43
6	11570.00	61.72	74.00	-12.28	47.20	14.52	Peak	199	43
7	17355.00	63.98	68.20	-4.22	42.69	21.29	Peak	162	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).
 Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.88	68.20	-8.32	54.33	5.55	Peak	232	280
2 *	5785.00	106.87			101.02	5.85	Average	232	280
3 *	5785.00	117.89			112.04	5.85	Peak	232	280
4	5925.10	60.19	68.20	-8.01	54.10	6.09	Peak	232	280
5	11570.00	53.08	54.00	-0.92	38.56	14.52	Average	182	71
6	11570.00	67.18	74.00	-6.82	52.66	14.52	Peak	182	71
7	17355.00	67.91	68.20	-0.29	46.62	21.29	Peak	104	132

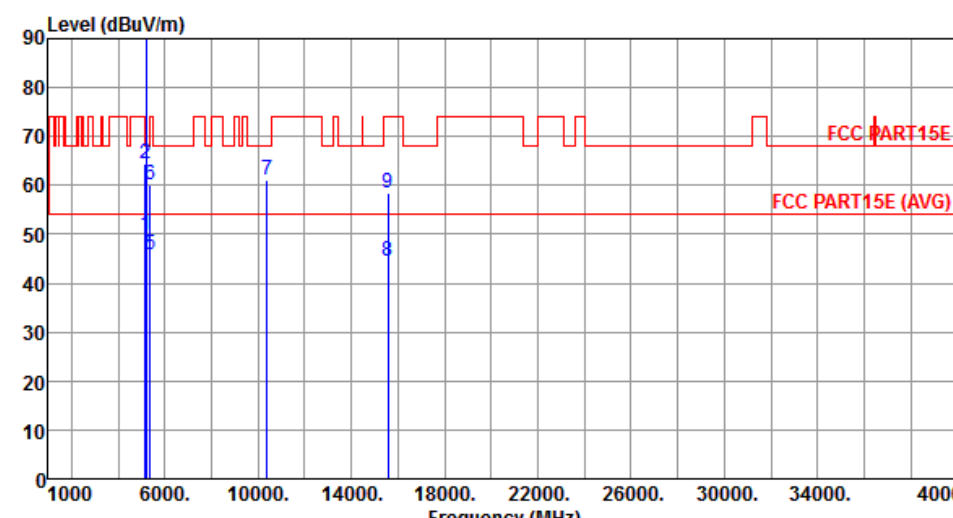
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		
Level (dBuV/m)			

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

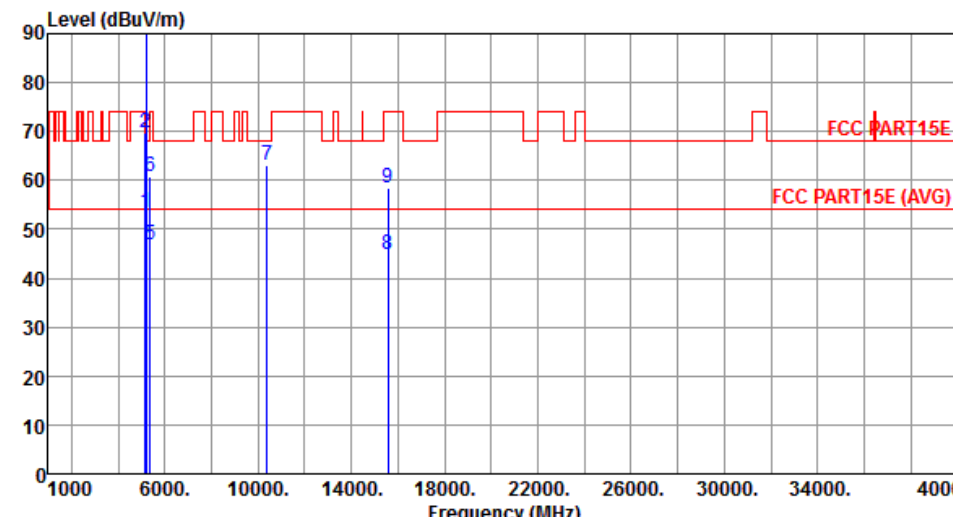
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.74	54.00	-4.26	44.84	4.90	Average	143	232
2	5150.00	64.41	74.00	-9.59	59.51	4.90	Peak	143	232
3 *	5190.00	98.07			93.13	4.94	Average	138	293
4 *	5190.00	108.43			103.49	4.94	Peak	138	293
5	5350.00	45.76	54.00	-8.24	40.63	5.13	Average	138	293
6	5350.00	60.22	74.00	-13.78	55.09	5.13	Peak	138	293
7	10380.00	61.08	68.20	-7.12	47.37	13.71	Peak	155	39
8	15570.00	44.52	54.00	-9.48	28.85	15.67	Average	188	197
9	15570.00	58.43	74.00	-15.57	42.76	15.67	Peak	188	197

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

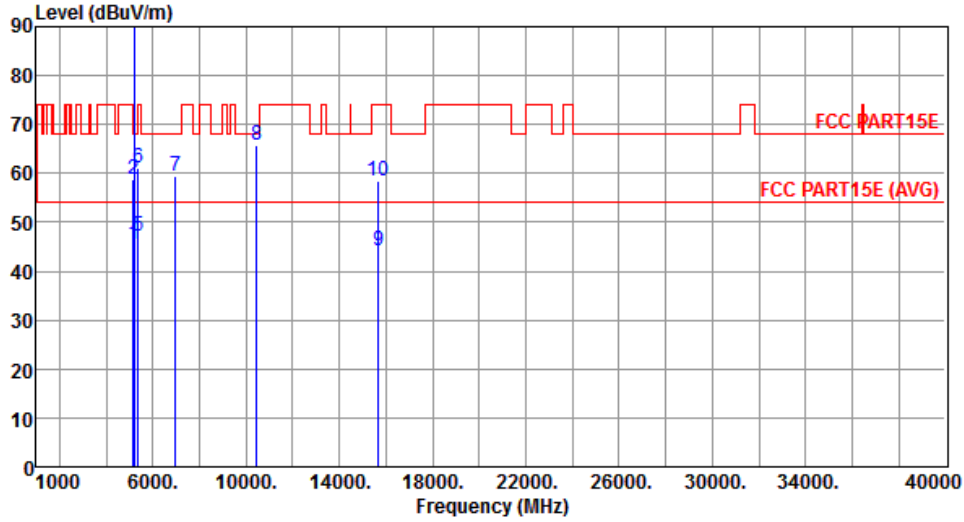
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	53.54	54.00	-0.46	48.64	4.90	Average	200	99
2	5150.00	69.66	74.00	-4.34	64.76	4.90	Peak	200	99
3 *	5190.00	101.63			96.69	4.94	Average	172	268
4 *	5190.00	112.53			107.59	4.94	Peak	172	268
5	5350.00	46.68	54.00	-7.32	41.55	5.13	Average	172	268
6	5350.00	60.66	74.00	-13.34	55.53	5.13	Peak	172	268
7	10380.00	63.00	68.20	-5.20	49.29	13.71	Peak	166	31
8	15570.00	44.81	54.00	-9.19	29.14	15.67	Average	222	187
9	15570.00	58.55	74.00	-15.45	42.88	15.67	Peak	222	187

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

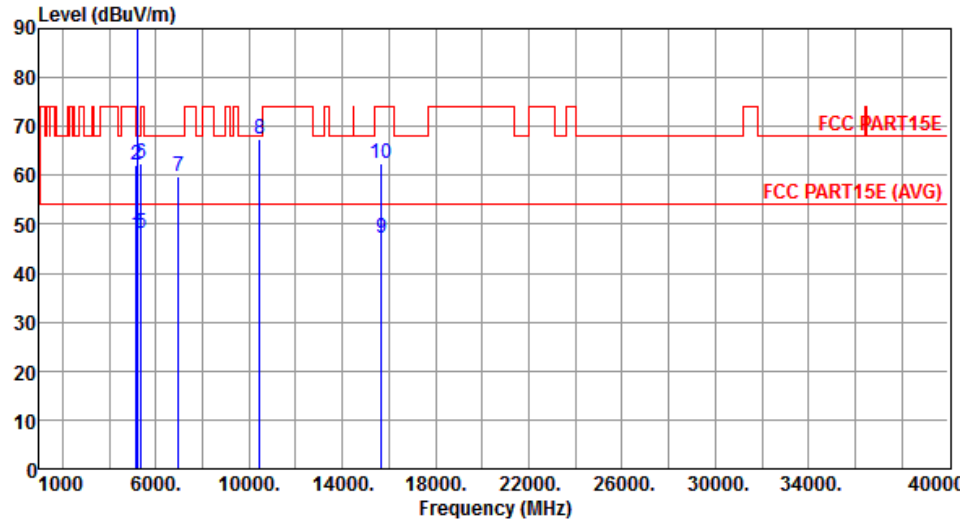
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.45	54.00	-8.55	40.55	4.90	Average	118	280
2	5150.00	58.86	74.00	-15.14	53.96	4.90	Peak	118	280
3 *	5230.00	103.54			98.55	4.99	Average	118	280
4 *	5230.00	113.72			108.73	4.99	Peak	118	280
5	5350.00	47.02	54.00	-6.98	41.89	5.13	Average	118	280
6	5350.00	61.11	74.00	-12.89	55.98	5.13	Peak	118	280
7	6973.33	59.47	68.20	-8.73	50.71	8.76	Peak	153	249
8	10460.00	65.63	68.20	-2.57	51.77	13.86	Peak	153	33
9	15690.00	44.32	54.00	-9.68	28.89	15.43	Average	111	266
10	15690.00	58.32	74.00	-15.68	42.89	15.43	Peak	111	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).
 Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



The spectrum plot shows the emission level in dBUV/m on the y-axis (0 to 90) against frequency in MHz on the x-axis (1000 to 40000). A red line represents the emission level, which is mostly below the FCC PART15E limit (blue line). The limit is 54 dBUV/m. The emission level is around 70 dBUV/m for frequencies between 1000 and 10000 MHz, and around 60 dBUV/m for frequencies between 10000 and 40000 MHz. There are several peaks in the emission level, with the highest peak at 5230 MHz reaching 117.62 dBUV/m. The plot is labeled with 'FCC PART15E' and 'FCC PART15E (AVG)'.

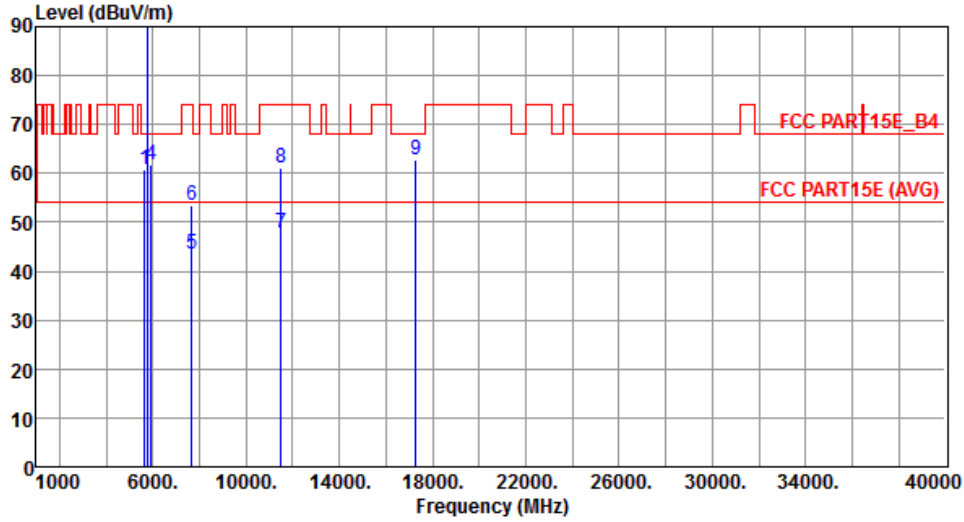
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.67	54.00	-6.33	42.77	4.90	Average	175	264
2	5150.00	62.03	74.00	-11.97	57.13	4.90	Peak	175	264
3 *	5230.00	106.67			101.68	4.99	Average	175	264
4 *	5230.00	117.62			112.63	4.99	Peak	175	264
5	5350.00	48.22	54.00	-5.78	43.09	5.13	Average	175	264
6	5350.00	62.31	74.00	-11.69	57.18	5.13	Peak	175	264
7	6973.33	59.64	68.20	-8.56	50.88	8.76	Peak	211	171
8	10460.00	67.41	68.20	-0.79	53.55	13.86	Peak	166	34
9	15690.00	47.32	54.00	-6.68	31.89	15.43	Average	100	66
10	15690.00	62.53	74.00	-11.47	47.10	15.43	Peak	100	66

Note 1: Emission Level (dBUV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

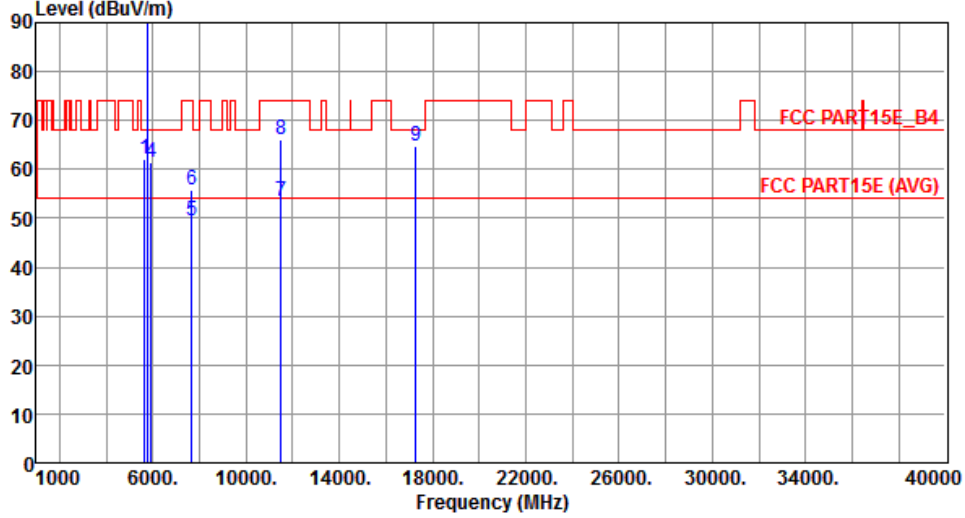
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.68	68.20	-7.52	55.13	5.55	Peak	257	137
2	* 5755.00	104.01			98.22	5.79	Average	257	137
3	* 5755.00	115.23			109.44	5.79	Peak	257	137
4	5925.10	61.61	68.20	-6.59	55.52	6.09	Peak	257	137
5	7673.33	43.61	54.00	-10.39	33.89	9.72	Average	202	114
6	7673.33	53.48	74.00	-20.52	43.76	9.72	Peak	202	114
7	11510.00	47.83	54.00	-6.17	33.21	14.62	Average	180	35
8	11510.00	61.17	74.00	-12.83	46.55	14.62	Peak	180	35
9	17265.00	62.92	68.20	-5.28	42.11	20.81	Peak	111	238

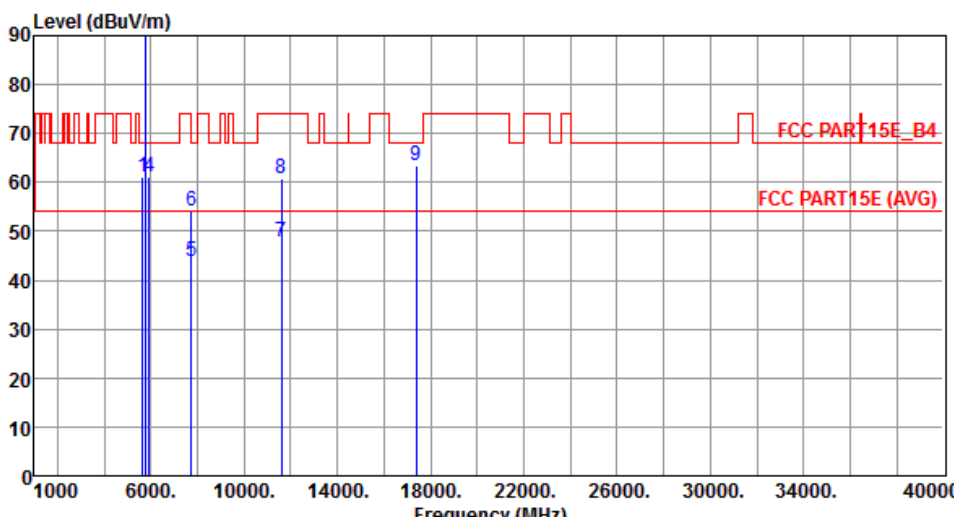
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	62.08	68.20	-6.12	56.53	5.55	Peak	183	265
2	* 5755.00	107.12			101.33	5.79	Average	183	265
3	* 5755.00	117.95			112.16	5.79	Peak	183	265
4	5925.10	61.36	68.20	-6.84	55.27	6.09	Peak	183	265
5	7673.33	49.43	54.00	-4.57	39.71	9.72	Average	118	93
6	7673.33	55.77	74.00	-18.23	46.05	9.72	Peak	118	93
7	11510.00	53.49	54.00	-0.51	38.87	14.62	Average	159	57
8	11510.00	66.04	74.00	-7.96	51.42	14.62	Peak	159	57
9	17265.00	64.86	68.20	-3.34	44.05	20.81	Peak	117	129

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5795						
Polarization	Horizontal								
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.98	68.20	-7.22	55.43	5.55	Peak	198	138
2 *	5795.00	104.00			98.13	5.87	Average	198	138
3 *	5795.00	115.36			109.49	5.87	Peak	198	138
4	5925.10	61.14	68.20	-7.06	55.05	6.09	Peak	198	138
5	7726.66	43.69	54.00	-10.31	33.91	9.78	Average	209	103
6	7726.66	54.04	74.00	-19.96	44.26	9.78	Peak	209	103
7	11590.00	47.92	54.00	-6.08	33.42	14.50	Average	188	37
8	11590.00	60.83	74.00	-13.17	46.33	14.50	Peak	188	37
9	17385.00	63.51	68.20	-4.69	42.05	21.46	Peak	221	165

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		



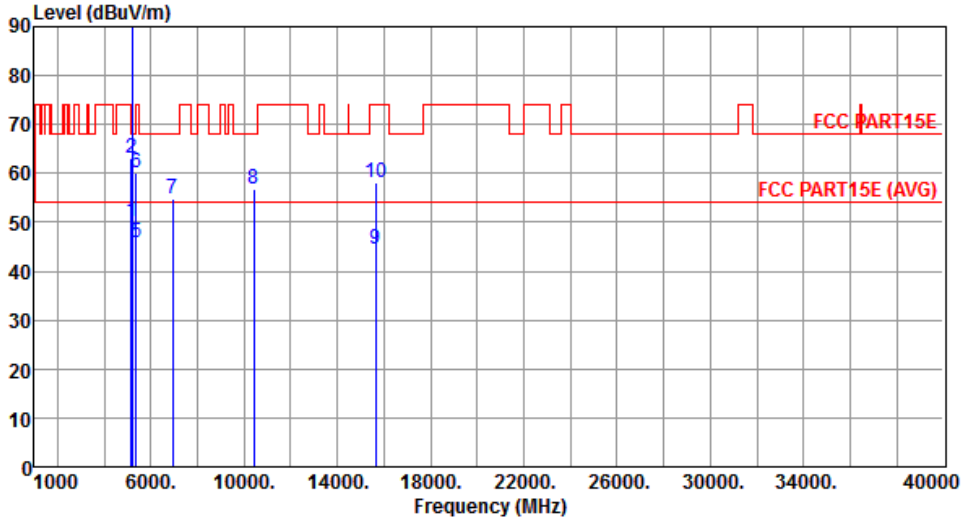
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	61.99	68.20	-6.21	56.44	5.55	Peak	170	266
2	*	5795.00	106.50		100.63	5.87	Average	170	266
3	*	5795.00	117.51		111.64	5.87	Peak	170	266
4	5925.10	61.61	68.20	-6.59	55.52	6.09	Peak	170	266
5	7726.66	49.17	54.00	-4.83	39.39	9.78	Average	115	91
6	7726.66	55.85	74.00	-18.15	46.07	9.78	Peak	115	91
7	11590.00	53.74	54.00	-0.26	39.24	14.50	Average	178	69
8	11590.00	66.44	74.00	-7.56	51.94	14.50	Peak	178	69
9	17385.00	65.56	68.20	-2.64	44.10	21.46	Peak	178	69

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

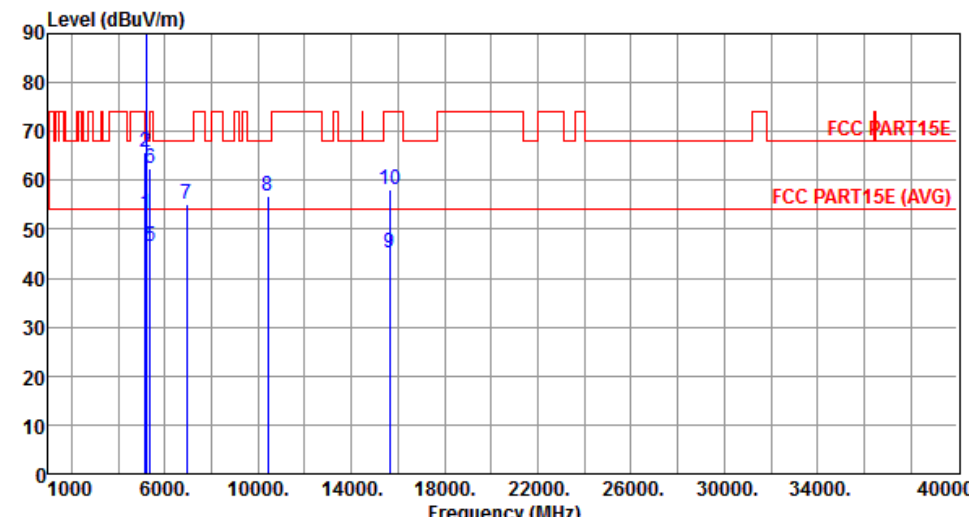
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: "*" is Peak / Average value of fundamental frequency

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

Modulation	VHT80	Test Freq. (MHz)	5210																																																																																																														
Polarization	Horizontal																																																																																																																
 <table><thead><tr><th></th><th>Freq. MHz</th><th>Emission level dBUV/m</th><th>Limit dBUV/m</th><th>Margin dB</th><th>SA reading dBUV</th><th>Factor dB</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr></thead><tbody><tr><td>1</td><td>5150.00</td><td>50.29</td><td>54.00</td><td>-3.71</td><td>45.39</td><td>4.90</td><td>Average</td><td>123</td><td>295</td></tr><tr><td>2</td><td>5150.00</td><td>63.19</td><td>74.00</td><td>-10.81</td><td>58.29</td><td>4.90</td><td>Peak</td><td>123</td><td>295</td></tr><tr><td>3</td><td>* 5210.00</td><td>94.60</td><td></td><td></td><td>89.63</td><td>4.97</td><td>Average</td><td>123</td><td>295</td></tr><tr><td>4</td><td>* 5210.00</td><td>104.19</td><td></td><td></td><td>99.22</td><td>4.97</td><td>Peak</td><td>123</td><td>295</td></tr><tr><td>5</td><td>5350.00</td><td>45.99</td><td>54.00</td><td>-8.01</td><td>40.86</td><td>5.13</td><td>Average</td><td>123</td><td>295</td></tr><tr><td>6</td><td>5350.00</td><td>60.04</td><td>74.00</td><td>-13.96</td><td>54.91</td><td>5.13</td><td>Peak</td><td>123</td><td>295</td></tr><tr><td>7</td><td>6946.66</td><td>54.65</td><td>68.20</td><td>-13.55</td><td>45.99</td><td>8.66</td><td>Peak</td><td>155</td><td>243</td></tr><tr><td>8</td><td>10420.00</td><td>56.64</td><td>68.20</td><td>-11.56</td><td>42.86</td><td>13.78</td><td>Peak</td><td>211</td><td>165</td></tr><tr><td>9</td><td>15630.00</td><td>44.42</td><td>54.00</td><td>-9.58</td><td>28.87</td><td>15.55</td><td>Average</td><td>166</td><td>243</td></tr><tr><td>10</td><td>15630.00</td><td>58.01</td><td>74.00</td><td>-15.99</td><td>42.46</td><td>15.55</td><td>Peak</td><td>166</td><td>243</td></tr></tbody></table>					Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg	1	5150.00	50.29	54.00	-3.71	45.39	4.90	Average	123	295	2	5150.00	63.19	74.00	-10.81	58.29	4.90	Peak	123	295	3	* 5210.00	94.60			89.63	4.97	Average	123	295	4	* 5210.00	104.19			99.22	4.97	Peak	123	295	5	5350.00	45.99	54.00	-8.01	40.86	5.13	Average	123	295	6	5350.00	60.04	74.00	-13.96	54.91	5.13	Peak	123	295	7	6946.66	54.65	68.20	-13.55	45.99	8.66	Peak	155	243	8	10420.00	56.64	68.20	-11.56	42.86	13.78	Peak	211	165	9	15630.00	44.42	54.00	-9.58	28.87	15.55	Average	166	243	10	15630.00	58.01	74.00	-15.99	42.46	15.55	Peak	166	243
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																																																								
1	5150.00	50.29	54.00	-3.71	45.39	4.90	Average	123	295																																																																																																								
2	5150.00	63.19	74.00	-10.81	58.29	4.90	Peak	123	295																																																																																																								
3	* 5210.00	94.60			89.63	4.97	Average	123	295																																																																																																								
4	* 5210.00	104.19			99.22	4.97	Peak	123	295																																																																																																								
5	5350.00	45.99	54.00	-8.01	40.86	5.13	Average	123	295																																																																																																								
6	5350.00	60.04	74.00	-13.96	54.91	5.13	Peak	123	295																																																																																																								
7	6946.66	54.65	68.20	-13.55	45.99	8.66	Peak	155	243																																																																																																								
8	10420.00	56.64	68.20	-11.56	42.86	13.78	Peak	211	165																																																																																																								
9	15630.00	44.42	54.00	-9.58	28.87	15.55	Average	166	243																																																																																																								
10	15630.00	58.01	74.00	-15.99	42.46	15.55	Peak	166	243																																																																																																								
Note 1: Emission Level (dBUV/m) = SA Reading (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:"*" is Peak / Average value of fundamental frequency																																																																																																																	

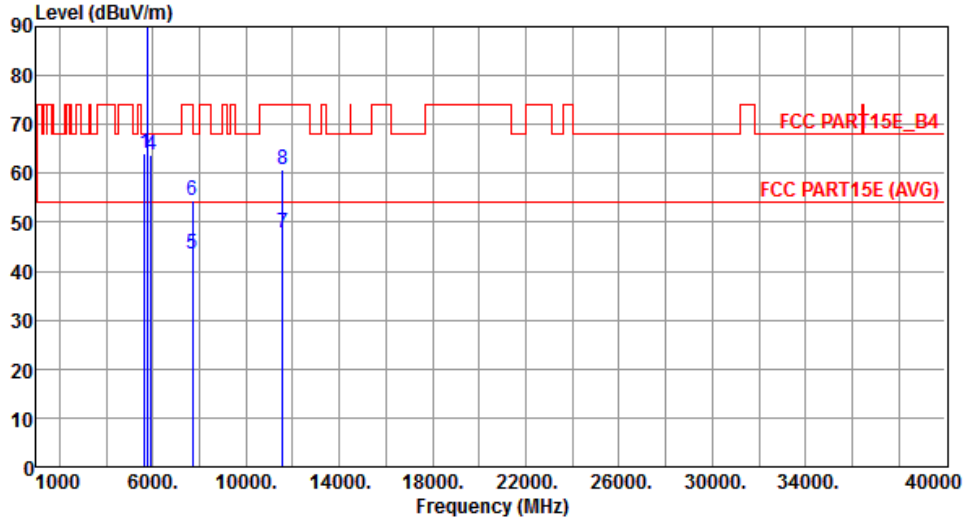
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	53.23	54.00	-0.77	48.33	4.90	Average	126	249
2	5150.00	65.75	74.00	-8.25	60.85	4.90	Peak	126	249
3 *	5210.00	98.02			93.05	4.97	Average	177	262
4 *	5210.00	107.66			102.69	4.97	Peak	177	262
5	5350.00	46.56	54.00	-7.44	41.43	5.13	Average	177	262
6	5350.00	62.55	74.00	-11.45	57.42	5.13	Peak	177	262
7	6946.66	55.18	68.20	-13.02	46.52	8.66	Peak	100	311
8	10420.00	56.93	68.20	-11.27	43.15	13.78	Peak	123	93
9	15630.00	45.10	54.00	-8.90	29.55	15.55	Average	123	93
10	15630.00	58.14	74.00	-15.86	42.59	15.55	Peak	123	93

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

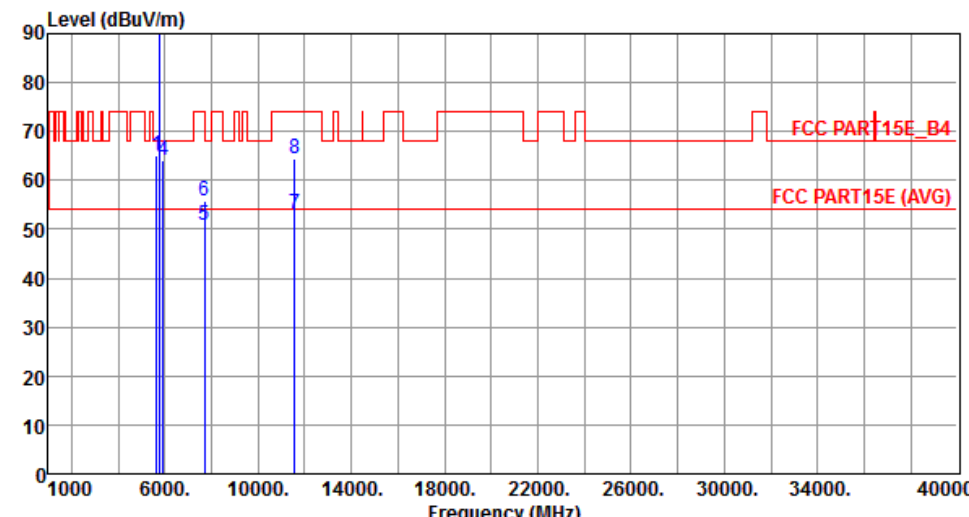
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	64.18	68.20	-4.02	58.63	5.55	Peak	201	137
2	*	5775.00	101.80		95.96	5.84	Average	201	137
3	*	5775.00	111.98		106.14	5.84	Peak	201	137
4	5925.10	63.60	68.20	-4.60	57.51	6.09	Peak	201	137
5	7700.00	43.64	54.00	-10.36	33.89	9.75	Average	200	103
6	7700.00	54.34	74.00	-19.66	44.59	9.75	Peak	200	103
7	11550.00	47.99	54.00	-6.01	33.44	14.55	Average	182	34
8	11550.00	60.88	74.00	-13.12	46.33	14.55	Peak	182	34

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	65.10	68.20	-3.10	59.55	5.55	Peak	196	268
2	* 5775.00	104.66			98.82	5.84	Average	196	268
3	* 5775.00	115.65			109.81	5.84	Peak	196	268
4	5925.10	64.15	68.20	-4.05	58.06	6.09	Peak	196	268
5	7700.00	50.72	54.00	-3.28	40.97	9.75	Average	100	90
6	7700.00	55.90	74.00	-18.10	46.15	9.75	Peak	100	90
7	11550.00	53.10	54.00	-0.90	38.55	14.55	Average	120	61
8	11550.00	64.32	74.00	-9.68	49.77	14.55	Peak	120	61

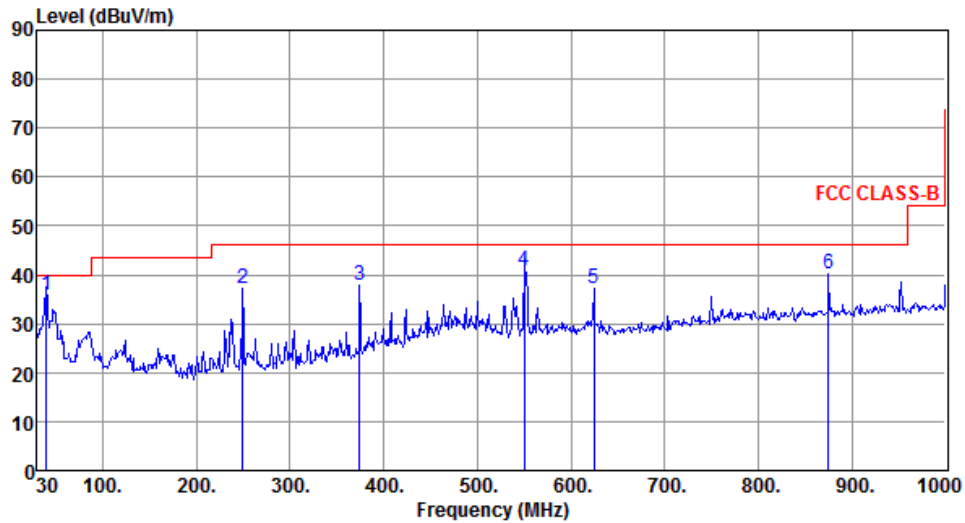
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

Beamforming mode

3.5.9 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	35.87	40.00	-4.13	44.24	-8.37	QP	100	47
2	249.22	37.19	46.00	-8.81	46.68	-9.49	Peak	---	---
3	374.35	37.89	46.00	-8.11	43.63	-5.74	Peak	---	---
4	549.92	40.78	46.00	-5.22	42.36	-1.58	QP	100	74
5	624.61	37.11	46.00	-8.89	37.31	-0.20	Peak	---	---
6	874.87	40.25	46.00	-5.75	36.38	3.87	Peak	---	---

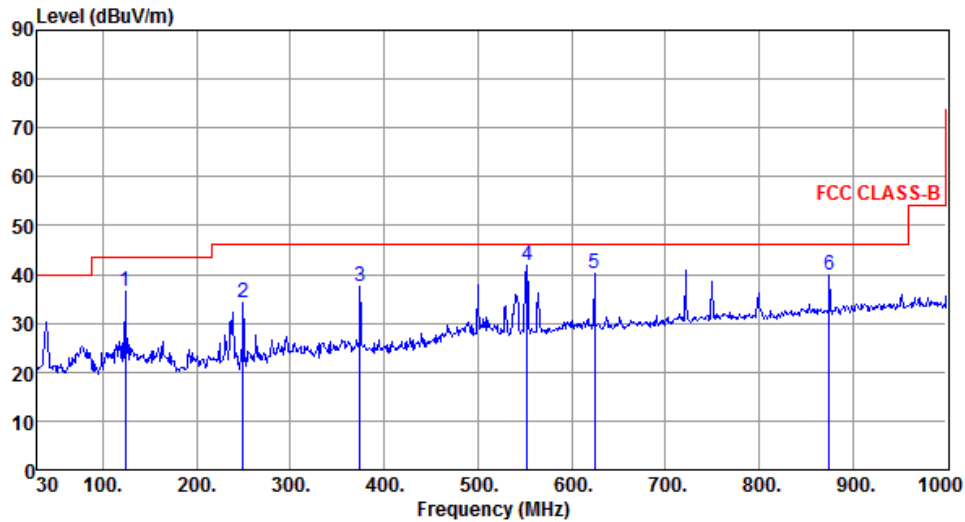
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	124.09	36.57	43.50	-6.93	46.28	-9.71	Peak	---	---
2	249.22	34.21	46.00	-11.79	43.70	-9.49	Peak	---	---
3	374.35	37.56	46.00	-8.44	43.30	-5.74	Peak	---	---
4	552.83	41.95	46.00	-4.05	43.47	-1.52	Peak	---	---
5	624.61	40.28	46.00	-5.72	40.48	-0.20	Peak	---	---
6	874.87	39.91	46.00	-6.09	36.04	3.87	Peak	---	---

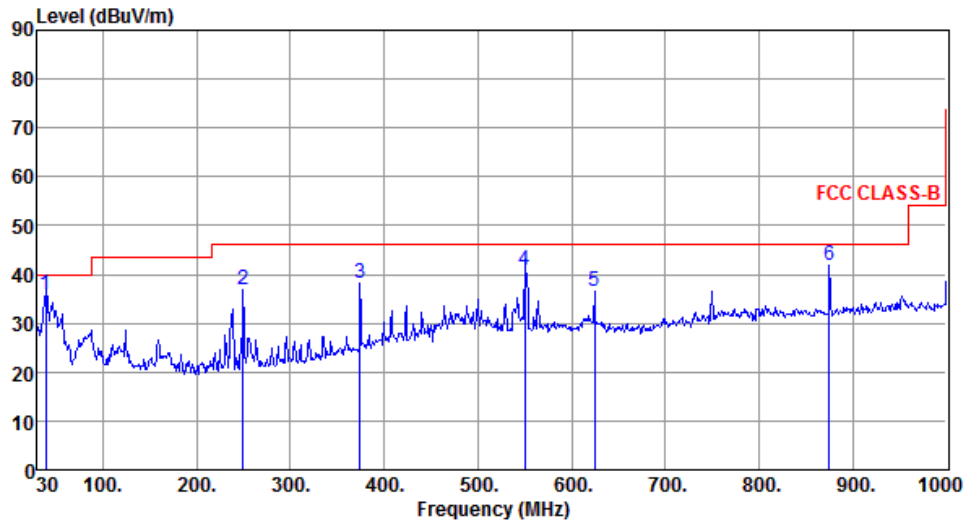
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	5755
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	38.73	35.83	40.00	-4.17	44.30	-8.47	QP	100	55
2	249.22	36.78	46.00	-9.22	46.27	-9.49	Peak	---	---
3	374.35	38.33	46.00	-7.67	44.07	-5.74	Peak	---	---
4	549.92	40.77	46.00	-5.23	42.35	-1.58	QP	100	82
5	624.61	36.67	46.00	-9.33	36.87	-0.20	Peak	---	---
6	874.87	41.89	46.00	-4.11	38.02	3.87	Peak	---	---

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

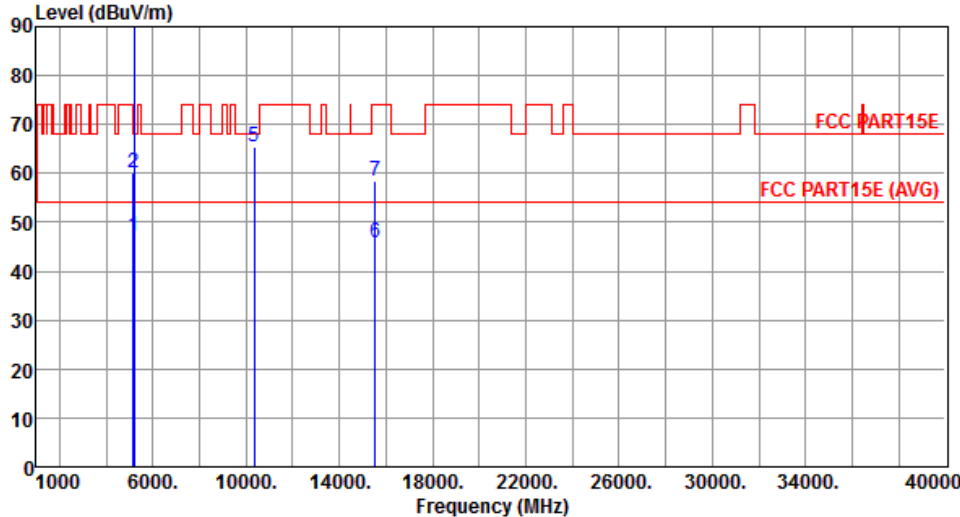
*Factor includes antenna factor , cable loss and amplifier gain

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

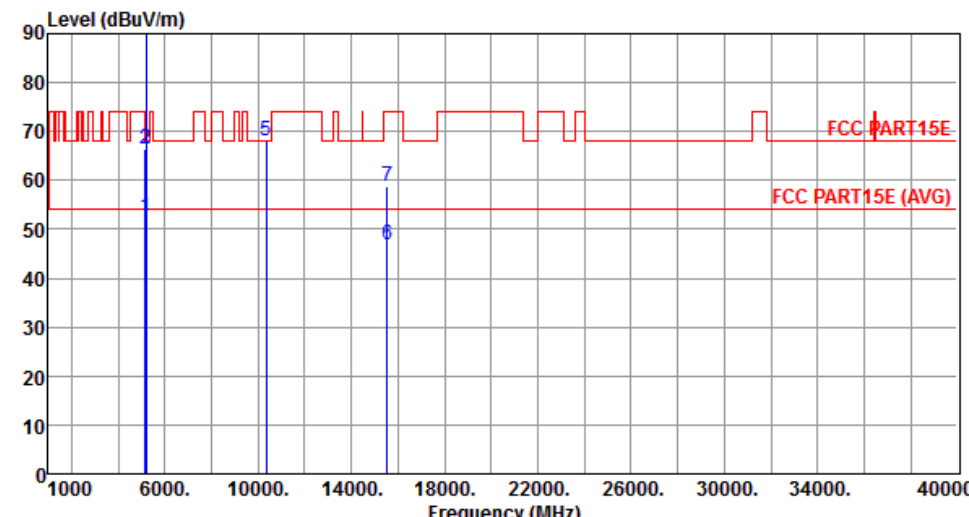
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.22	54.00	-6.78	42.32	4.90	Average	158	102
2	5150.00	60.25	74.00	-13.75	55.35	4.90	Peak	158	102
3 *	5180.00	100.90			95.97	4.93	Average	158	102
4 *	5180.00	112.07			107.14	4.93	Peak	158	102
5	10360.00	65.40	68.20	-2.80	51.73	13.67	Peak	145	33
6	15540.00	45.94	54.00	-8.06	30.22	15.72	Average	222	153
7	15540.00	58.58	74.00	-15.42	42.86	15.72	Peak	222	153

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

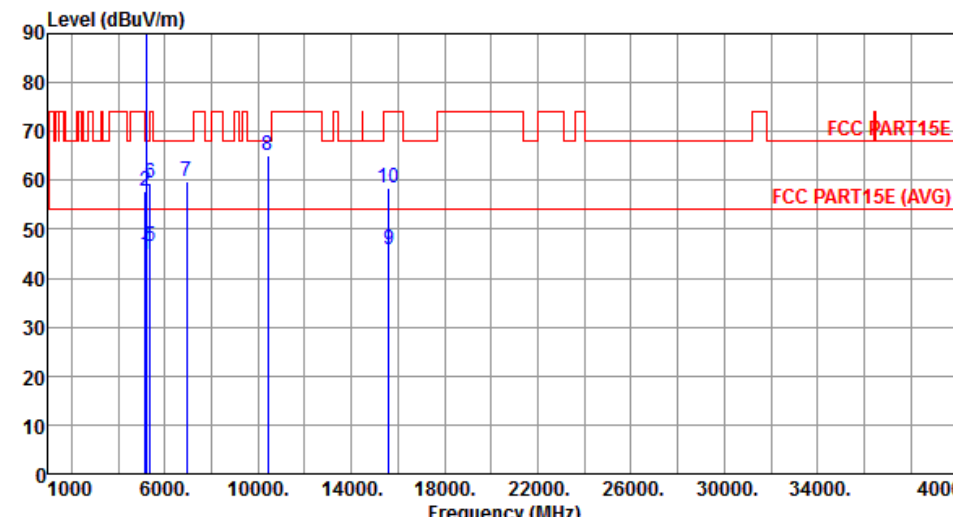
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.55	54.00	-1.45	47.65	4.90	Average	231	100
2	5150.00	66.57	74.00	-7.43	61.67	4.90	Peak	231	100
3 *	5180.00	107.48			102.55	4.93	Average	231	100
4 *	5180.00	118.07			113.14	4.93	Peak	231	100
5	10360.00	68.02	68.20	-0.18	54.35	13.67	Peak	180	35
6	15540.00	46.94	54.00	-7.06	31.22	15.72	Average	222	69
7	15540.00	58.90	74.00	-15.10	43.18	15.72	Peak	222	69

Note 1: Emission Level (dBUV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

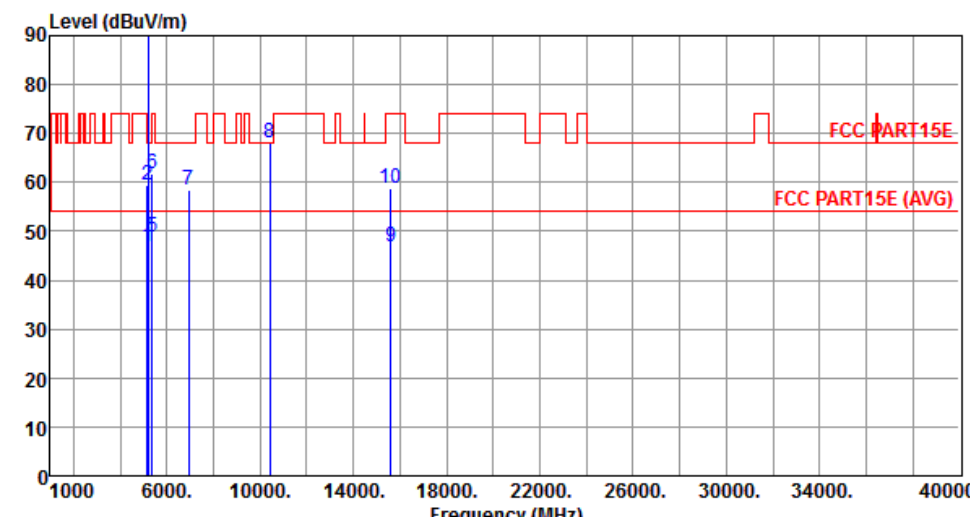
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.78	54.00	-9.22	39.88	4.90	Average	170	101
2	5150.00	57.66	74.00	-16.34	52.76	4.90	Peak	170	101
3 *	5200.00	100.64			95.69	4.95	Average	170	101
4 *	5200.00	111.73			106.78	4.95	Peak	170	101
5	5350.00	46.35	54.00	-7.65	41.22	5.13	Average	170	101
6	5350.00	59.42	74.00	-14.58	54.29	5.13	Peak	170	101
7	6933.33	59.74	68.20	-8.46	51.13	8.61	Peak	231	63
8	10400.00	65.13	68.20	-3.07	51.38	13.75	Peak	143	42
9	15600.00	45.82	54.00	-8.18	30.21	15.61	Average	222	153
10	15600.00	58.46	74.00	-15.54	42.85	15.61	Peak	222	153

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



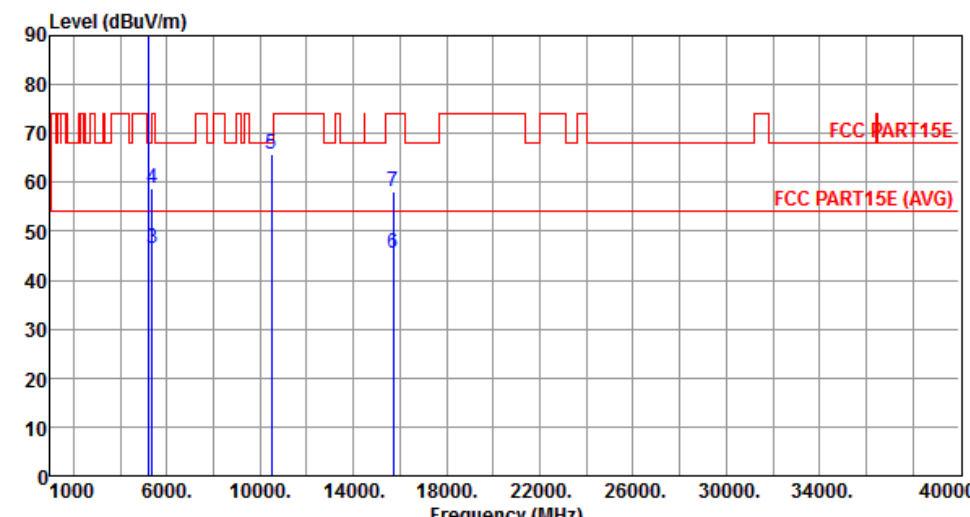
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.68	54.00	-7.32	41.78	4.90	Average	251	67
2	5150.00	59.54	74.00	-14.46	54.64	4.90	Peak	251	67
3 *	5200.00	107.98			103.03	4.95	Average	251	67
4 *	5200.00	118.84			113.89	4.95	Peak	251	67
5	5350.00	48.75	54.00	-5.25	43.62	5.13	Average	251	67
6	5350.00	61.76	74.00	-12.24	56.63	5.13	Peak	251	67
7	6933.33	58.52	68.20	-9.68	49.91	8.61	Peak	177	35
8	10400.00	68.07	68.20	-0.13	54.32	13.75	Peak	177	35
9	15600.00	46.96	54.00	-7.04	31.35	15.61	Average	222	165
10	15600.00	58.80	74.00	-15.20	43.19	15.61	Peak	222	165

Note 1: Emission Level (dBUV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



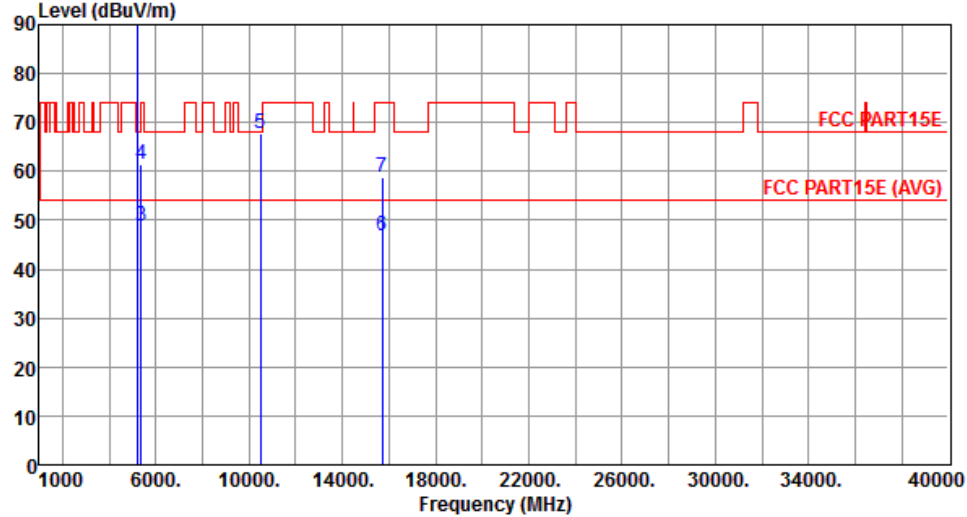
		Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	*	5240.00	100.62			95.62	5.00	Average	155	106
2	*	5240.00	111.73			106.73	5.00	Peak	155	106
3		5350.00	46.45	54.00	-7.55	41.32	5.13	Average	222	234
4		5350.00	58.86	74.00	-15.14	53.73	5.13	Peak	222	234
5		10480.00	65.60	68.20	-2.60	51.70	13.90	Peak	172	32
6		15720.00	45.65	54.00	-8.35	30.26	15.39	Average	222	234
7		15720.00	58.06	74.00	-15.94	42.67	15.39	Peak	222	234

Note 1: Emission Level (dBUV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



The spectrum plot shows the emission level in dBUV/m on the y-axis (0 to 90) against frequency in MHz on the x-axis (1000 to 40000). A red line represents the emission level, which is mostly below the FCC PART15E limit (blue line). The FCC PART15E (AVG) line is at approximately 55 dBUV/m. Several peaks are labeled with numbers 1 through 7, corresponding to the data in the table below.

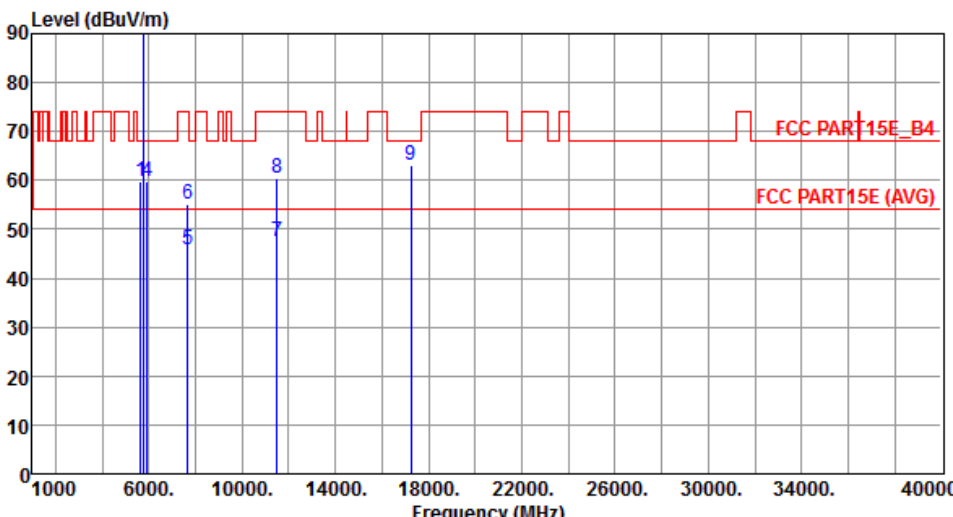
		Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	*	5240.00	108.32			103.32	5.00	Average	207	71
2	*	5240.00	119.78			114.78	5.00	Peak	207	71
3		5350.00	48.68	54.00	-5.32	43.55	5.13	Average	207	71
4		5350.00	61.52	74.00	-12.48	56.39	5.13	Peak	207	71
5		10480.00	67.87	68.20	-0.33	53.97	13.90	Peak	176	33
6		15720.00	46.66	54.00	-7.34	31.27	15.39	Average	222	147
7		15720.00	58.64	74.00	-15.36	43.25	15.39	Peak	222	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).

Note 3: "*" is Peak / Average value of fundamental frequency

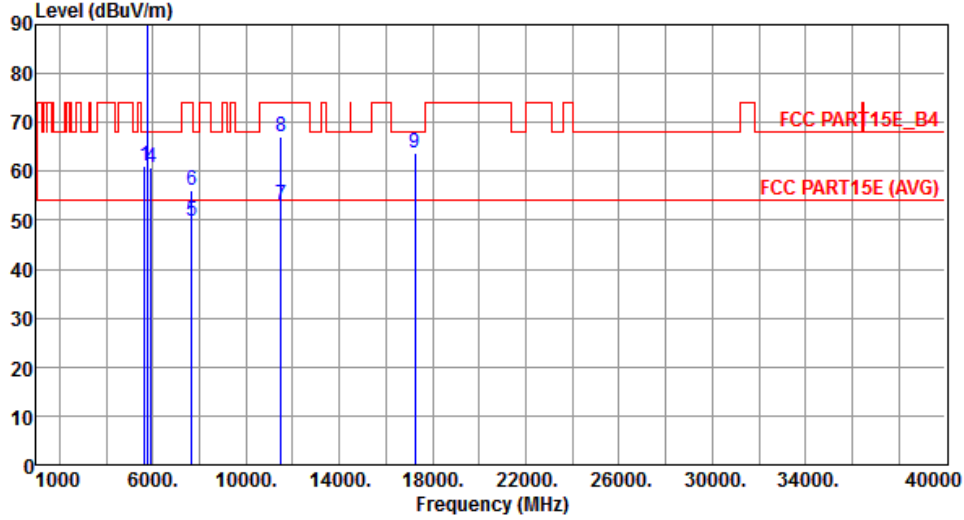
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.88	68.20	-8.32	54.33	5.55	Peak	190	64
2	* 5745.00	102.22			96.46	5.76	Average	190	64
3	* 5745.00	113.41			107.65	5.76	Peak	190	64
4	5925.10	59.67	68.20	-8.53	53.58	6.09	Peak	190	64
5	7660.00	45.75	54.00	-8.25	36.03	9.72	Average	183	108
6	7660.00	55.26	74.00	-18.74	45.54	9.72	Peak	183	108
7	11490.00	47.59	54.00	-6.41	32.97	14.62	Average	204	152
8	11490.00	60.40	74.00	-13.60	45.78	14.62	Peak	204	152
9	17235.00	63.17	68.20	-5.03	42.53	20.64	Peak	211	134

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

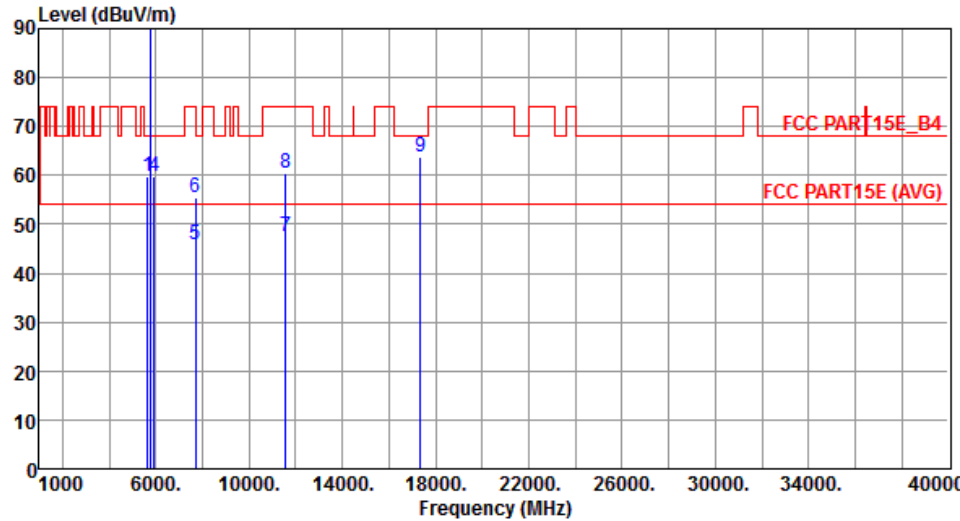
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	61.18	68.20	-7.02	55.63	5.55	Peak	224	69
2	* 5745.00	109.51			103.75	5.76	Average	224	69
3	* 5745.00	120.53			114.77	5.76	Peak	224	69
4	5925.10	60.91	68.20	-7.29	54.82	6.09	Peak	224	69
5	7660.00	49.89	54.00	-4.11	40.17	9.72	Average	100	92
6	7660.00	56.11	74.00	-17.89	46.39	9.72	Peak	100	92
7	11490.00	53.16	54.00	-0.84	38.54	14.62	Average	114	64
8	11490.00	67.18	74.00	-6.82	52.56	14.62	Peak	114	64
9	17235.00	63.87	68.20	-4.33	43.23	20.64	Peak	100	133

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



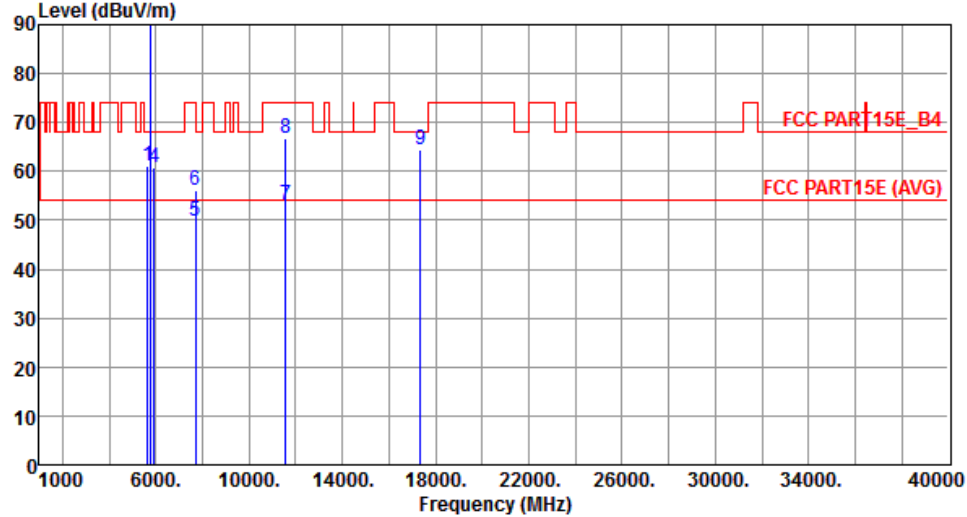
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.88	68.20	-8.32	54.33	5.55	Peak	192	69
2	* 5785.00	102.37			96.52	5.85	Average	192	69
3	* 5785.00	113.68			107.83	5.85	Peak	192	69
4	5925.10	59.75	68.20	-8.45	53.66	6.09	Peak	192	69
5	7713.33	45.81	54.00	-8.19	36.05	9.76	Average	188	110
6	7713.33	55.32	74.00	-18.68	45.56	9.76	Peak	188	110
7	11570.00	47.49	54.00	-6.51	32.97	14.52	Average	222	163
8	11570.00	60.30	74.00	-13.70	45.78	14.52	Peak	222	163
9	17355.00	63.82	68.20	-4.38	42.53	21.29	Peak	222	143

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		

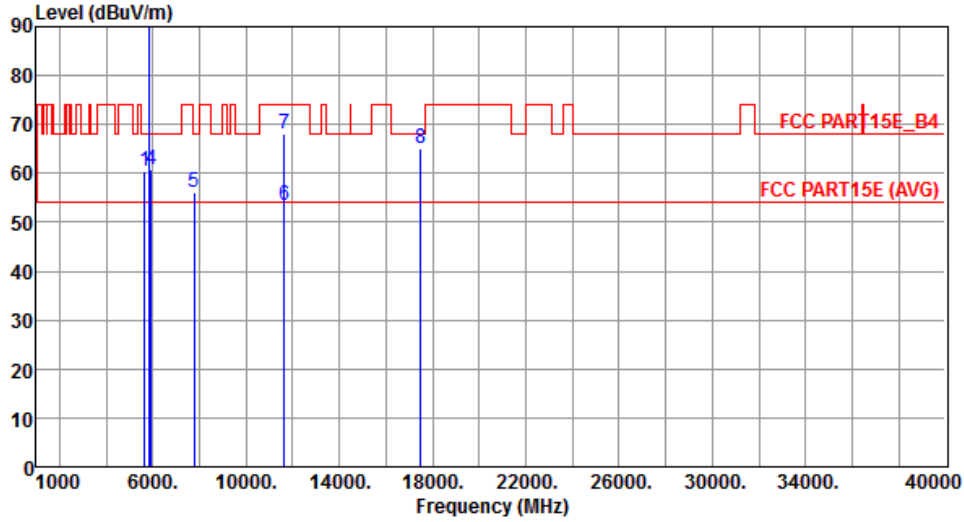


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	61.24	68.20	-6.96	55.69	5.55	Peak	209	66
2 *	5785.00	109.15			103.30	5.85	Average	209	66
3 *	5785.00	120.31			114.46	5.85	Peak	209	66
4	5925.10	60.74	68.20	-7.46	54.65	6.09	Peak	209	66
5	7713.33	49.93	54.00	-4.07	40.17	9.76	Average	103	98
6	7713.33	56.04	74.00	-17.96	46.28	9.76	Peak	103	98
7	11570.00	53.03	54.00	-0.97	38.51	14.52	Average	121	61
8	11570.00	66.76	74.00	-7.24	52.24	14.52	Peak	121	61
9	17355.00	64.43	68.20	-3.77	43.14	21.29	Peak	111	133

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		

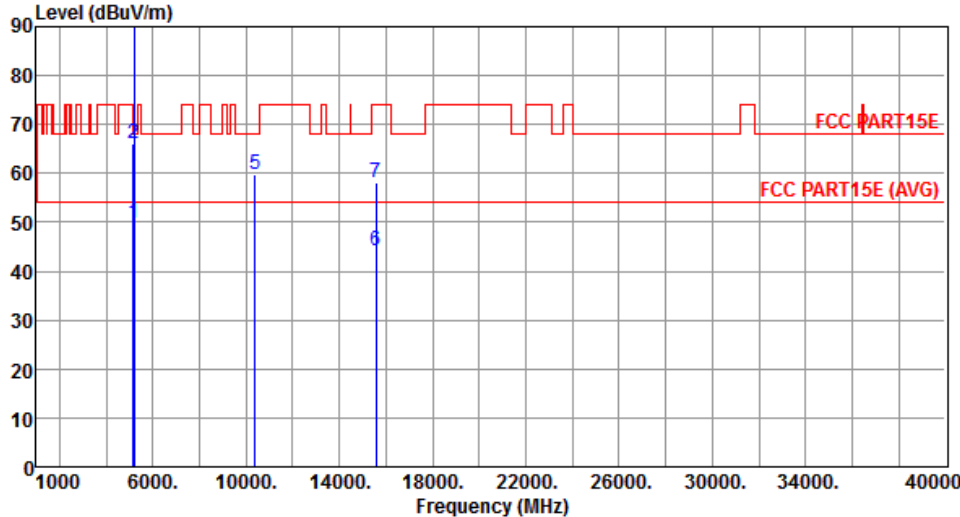


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.38	68.20	-7.82	54.83	5.55	Peak	176	73
2	* 5825.00	108.46			102.53	5.93	Average	176	73
3	* 5825.00	119.87			113.94	5.93	Peak	176	73
4	5925.10	60.75	68.20	-7.45	54.66	6.09	Peak	176	73
5	7766.66	56.25	68.20	-11.95	46.42	9.83	Peak	100	113
6	11650.00	53.47	54.00	-0.53	39.07	14.40	Average	116	63
7	11650.00	68.07	74.00	-5.93	53.67	14.40	Peak	116	63
8	17475.00	64.99	68.20	-3.21	43.05	21.94	Peak	211	135

Note 1: Emission Level (dBUV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

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

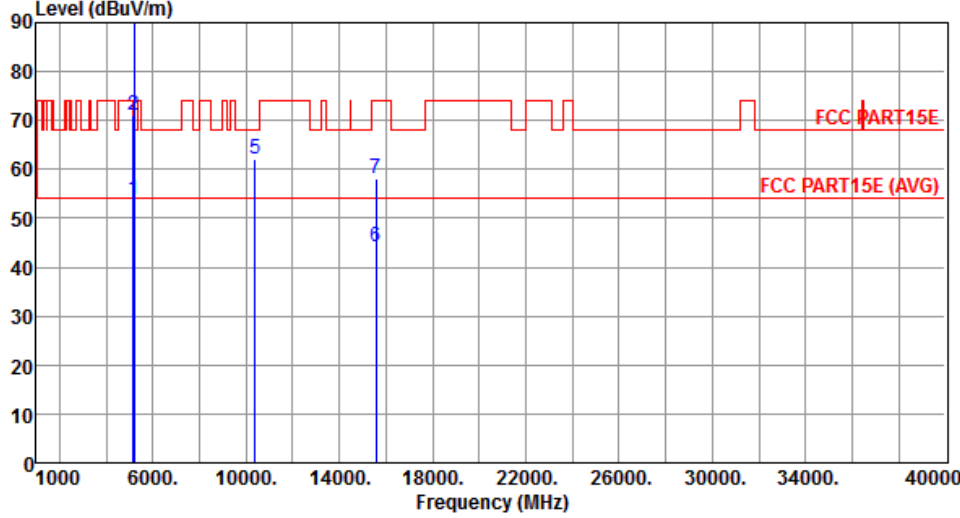
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.88	54.00	-4.12	44.98	4.90	Average	179	301
2	5150.00	66.17	74.00	-7.83	61.27	4.90	Peak	179	301
3 *	5190.00	97.82			92.88	4.94	Average	171	298
4 *	5190.00	108.05			103.11	4.94	Peak	171	298
5	10380.00	59.93	68.20	-8.27	46.22	13.71	Peak	221	153
6	15570.00	44.13	54.00	-9.87	28.46	15.67	Average	159	111
7	15570.00	58.04	74.00	-15.96	42.37	15.67	Peak	159	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).
 Note 3: "*" is Peak / Average value of fundamental frequency

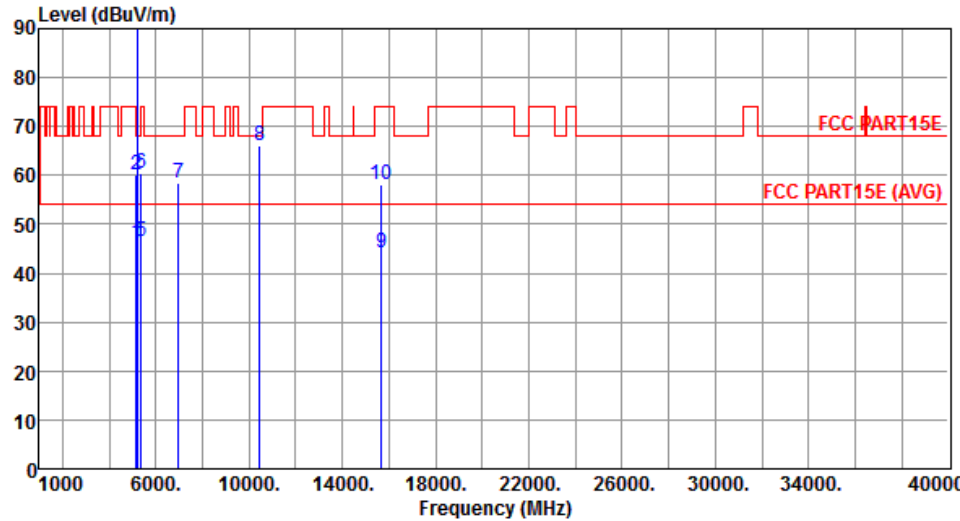
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	53.83	54.00	-0.17	48.93	4.90	Average	260	276
2	5150.00	70.92	74.00	-3.08	66.02	4.90	Peak	260	276
3 *	5190.00	103.26			98.32	4.94	Average	260	276
4 *	5190.00	114.10			109.16	4.94	Peak	260	276
5	10380.00	62.26	68.20	-5.94	48.55	13.71	Peak	172	39
6	15570.00	44.20	54.00	-9.80	28.53	15.67	Average	153	233
7	15570.00	58.20	74.00	-15.80	42.53	15.67	Peak	153	233

Note 1: Emission Level (dBUV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



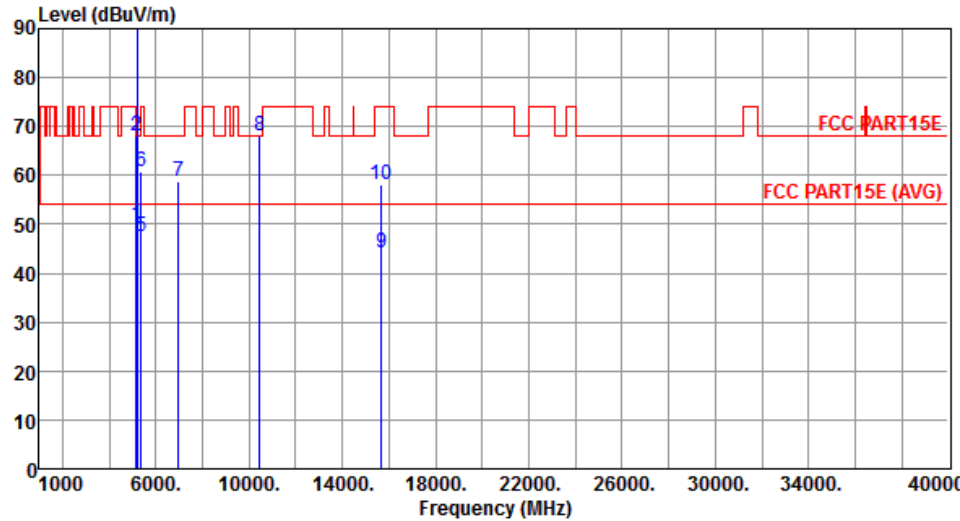
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.25	54.00	-7.75	41.35	4.90	Average	172	334
2	5150.00	60.09	74.00	-13.91	55.19	4.90	Peak	172	334
3 *	5230.00	103.86			98.87	4.99	Average	172	334
4 *	5230.00	114.88			109.89	4.99	Peak	172	334
5	5350.00	46.66	54.00	-7.34	41.53	5.13	Average	172	334
6	5350.00	60.51	74.00	-13.49	55.38	5.13	Peak	172	334
7	6973.33	58.41	68.20	-9.79	49.65	8.76	Peak	188	221
8	10460.00	65.94	68.20	-2.26	52.08	13.86	Peak	155	224
9	15690.00	44.15	54.00	-9.85	28.72	15.43	Average	231	211
10	15690.00	58.01	74.00	-15.99	42.58	15.43	Peak	231	211

Note 1: Emission Level (dBuV/m) = SA Reading (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:"*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



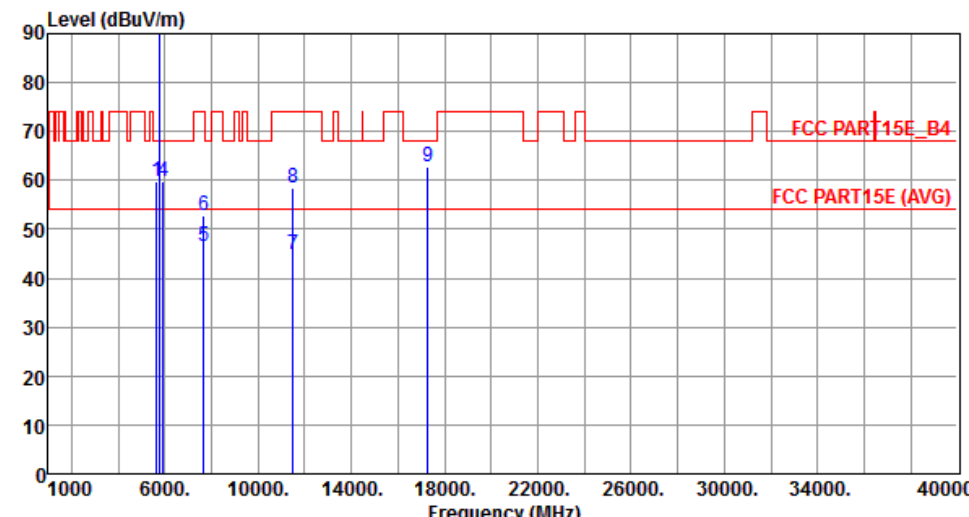
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.91	54.00	-4.09	45.01	4.90	Average	251	277
2	5150.00	68.02	74.00	-5.98	63.12	4.90	Peak	251	277
3 *	5230.00	110.26			105.27	4.99	Average	164	271
4 *	5230.00	121.57			116.58	4.99	Peak	164	271
5	5350.00	47.42	54.00	-6.58	42.29	5.13	Average	164	271
6	5350.00	60.71	74.00	-13.29	55.58	5.13	Peak	164	271
7	6973.33	58.73	68.20	-9.47	49.97	8.76	Peak	176	172
8	10460.00	68.03	68.20	-0.17	54.17	13.86	Peak	177	36
9	15690.00	44.19	54.00	-9.81	28.76	15.43	Average	155	232
10	15690.00	58.10	74.00	-15.90	42.67	15.43	Peak	155	232

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

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

Note 3: "*" is Peak / Average value of fundamental frequency

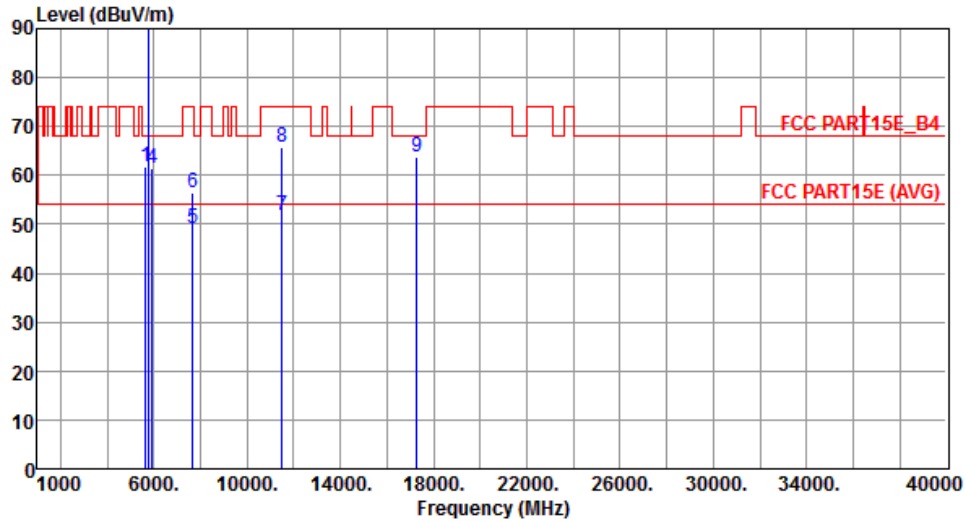
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.63	68.20	-8.57	54.08	5.55	Peak	216	210
2	* 5755.00	101.34			95.55	5.79	Average	216	210
3	* 5755.00	112.34			106.55	5.79	Peak	216	210
4	5925.10	59.73	68.20	-8.47	53.64	6.09	Peak	216	210
5	7673.33	46.52	54.00	-7.48	36.80	9.72	Average	133	112
6	7673.33	52.83	74.00	-21.17	43.11	9.72	Peak	133	112
7	11510.00	44.71	54.00	-9.29	30.09	14.62	Average	292	65
8	11510.00	58.37	74.00	-15.63	43.75	14.62	Peak	292	65
9	17265.00	62.84	68.20	-5.36	42.03	20.81	Peak	135	246

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	61.93	68.20	-6.27	56.38	5.55	Peak	213	70
2	*	5755.00	109.08		103.29	5.79	Average	213	70
3	*	5755.00	119.90		114.11	5.79	Peak	213	70
4	5925.10	61.44	68.20	-6.76	55.35	6.09	Peak	213	70
5	7673.33	49.26	54.00	-4.74	39.54	9.72	Average	112	91
6	7673.33	56.41	74.00	-17.59	46.69	9.72	Peak	112	91
7	11510.00	51.69	54.00	-2.31	37.07	14.62	Average	118	62
8	11510.00	65.75	74.00	-8.25	51.13	14.62	Peak	118	62
9	17265.00	63.79	68.20	-4.41	42.98	20.81	Peak	118	155

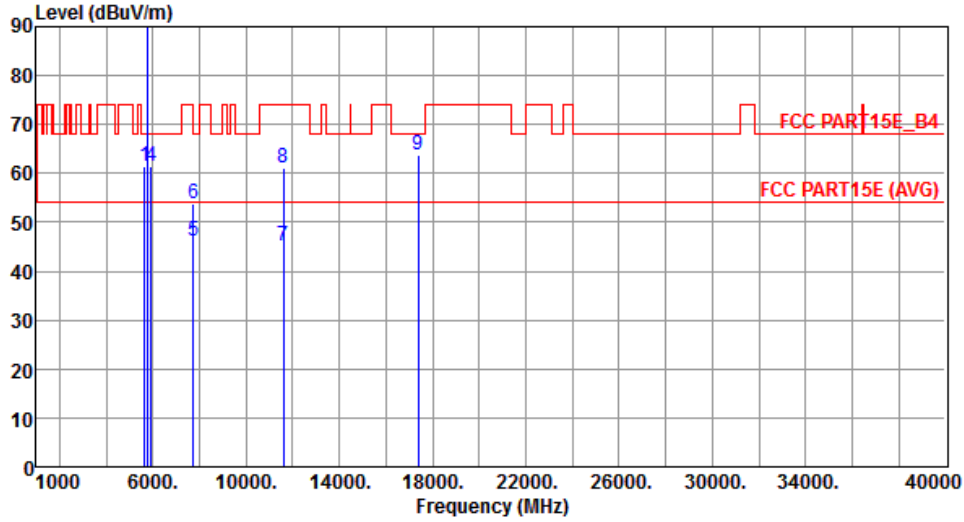
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "*" is Peak / Average value of fundamental frequency

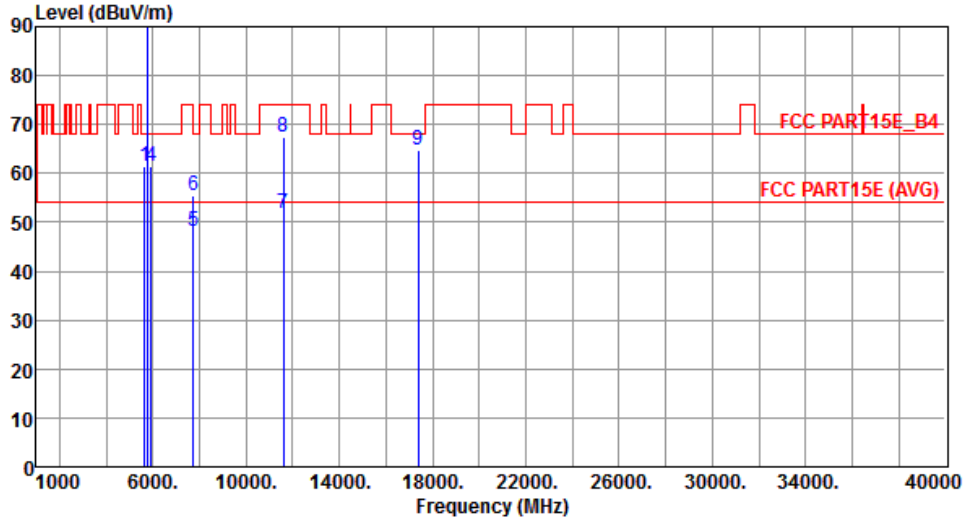
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	61.29	68.20	-6.91	55.74	5.55	Peak	210	210
2 *	5795.00	101.46			95.59	5.87	Average	210	210
3 *	5795.00	112.75			106.88	5.87	Peak	210	210
4	5925.10	61.29	68.20	-6.91	55.20	6.09	Peak	210	210
5	7726.66	46.31	54.00	-7.69	36.53	9.78	Average	135	121
6	7726.66	53.67	74.00	-20.33	43.89	9.78	Peak	135	121
7	11590.00	45.08	54.00	-8.92	30.58	14.50	Average	288	66
8	11590.00	60.97	74.00	-13.03	46.47	14.50	Peak	288	66
9	17385.00	63.80	68.20	-4.40	42.34	21.46	Peak	179	133

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	61.38	68.20	-6.82	55.83	5.55	Peak	166	39
2	* 5795.00	108.13			102.26	5.87	Average	251	73
3	* 5795.00	119.30			113.43	5.87	Peak	251	73
4	5925.10	61.39	68.20	-6.81	55.30	6.09	Peak	166	39
5	7726.66	48.13	54.00	-5.87	38.35	9.78	Average	166	39
6	7726.66	55.50	74.00	-18.50	45.72	9.78	Peak	166	39
7	11590.00	51.72	54.00	-2.28	37.22	14.50	Average	117	62
8	11590.00	67.54	74.00	-6.46	53.04	14.50	Peak	117	62
9	17385.00	64.70	68.20	-3.50	43.24	21.46	Peak	166	39

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

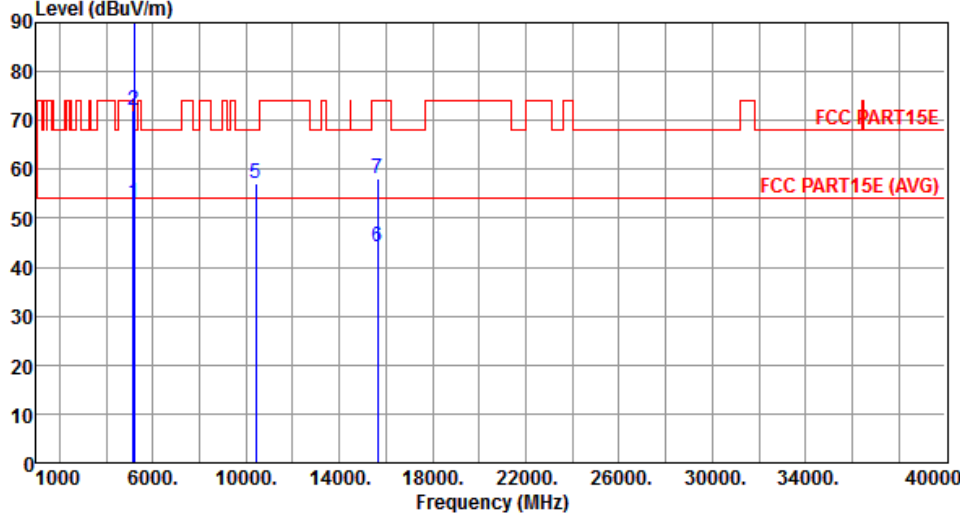
3.5.12 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT80

Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.77	54.00	-4.23	44.87	4.90	Average	178	273
2	5150.00	67.19	74.00	-6.81	62.29	4.90	Peak	178	273
3 *	5210.00	90.94			85.97	4.97	Average	178	273
4 *	5210.00	103.14			98.17	4.97	Peak	178	273
5	10420.00	56.54	68.20	-11.66	42.76	13.78	Peak	222	147
6	15630.00	43.94	54.00	-10.06	28.39	15.55	Average	188	214
7	15630.00	58.02	74.00	-15.98	42.47	15.55	Peak	188	214

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

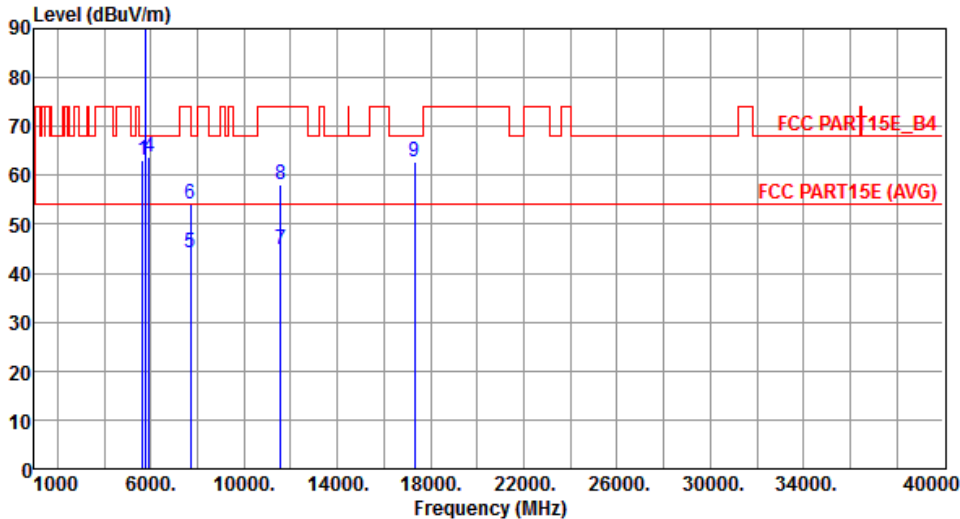
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	53.09	54.00	-0.91	48.19	4.90	Average	217	74
2	5150.00	72.19	74.00	-1.81	67.29	4.90	Peak	217	74
3 *	5210.00	97.19			92.22	4.97	Average	217	74
4 *	5210.00	109.29			104.32	4.97	Peak	217	74
5	10420.00	57.10	68.20	-11.10	43.32	13.78	Peak	172	36
6	15630.00	44.04	54.00	-9.96	28.49	15.55	Average	166	221
7	15630.00	58.13	74.00	-15.87	42.58	15.55	Peak	166	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).
Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	62.98	68.20	-5.22	57.43	5.55	Peak	339	210
2	* 5775.00	96.16			90.32	5.84	Average	339	210
3	* 5775.00	108.72			102.88	5.84	Peak	339	210
4	5925.10	63.84	68.20	-4.36	57.75	6.09	Peak	339	210
5	7700.00	44.32	54.00	-9.68	34.57	9.75	Average	134	112
6	7700.00	54.28	74.00	-19.72	44.53	9.75	Peak	134	112
7	11550.00	44.69	54.00	-9.31	30.14	14.55	Average	263	53
8	11550.00	58.24	74.00	-15.76	43.69	14.55	Peak	263	53
9	17325.00	62.72	68.20	-5.48	41.59	21.13	Peak	222	165

Note 1: Emission Level (dBuV/m) = SA Reading (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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		
Level (dBuV/m)			

3.6 Frequency Stability

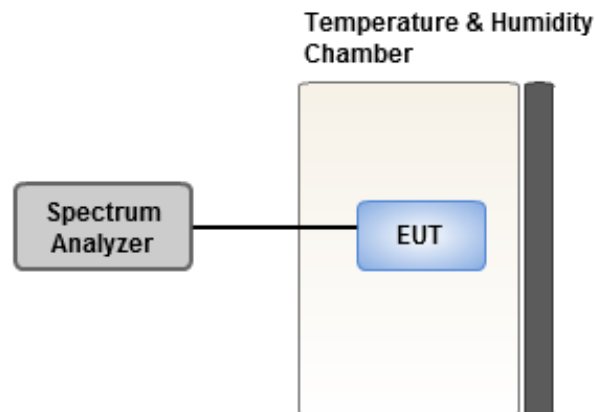
3.6.1 Limit of Frequency Stability

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

3.6.2 Test Procedures

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

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability

Frequency: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	1.45	1.15	1.82	1.95
T20°C Vmin	0.67	0.36	0.46	0.70
T50°C Vnom	3.48	3.47	3.61	3.72
T40°C Vnom	1.46	1.52	2.34	1.38
T30°C Vnom	1.83	2.42	2.47	1.90
T20°C Vnom	3.18	3.56	3.27	3.23
T10°C Vnom	2.73	2.78	2.68	3.21
T0°C Vnom	4.08	4.06	4.22	4.37
T-10°C Vnom	2.71	2.51	3.34	2.46
T-20°C Vnom	2.04	2.33	1.82	2.03
T-30°C Vnom	0.87	0.58	1.46	1.18
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	0.26	0.63	-0.06	0.50
T20°C Vmin	0.34	0.33	0.93	0.43
T50°C Vnom	0.72	0.52	0.86	0.81
T40°C Vnom	0.15	0.33	0.55	0.51
T30°C Vnom	0.50	0.74	1.07	0.57
T20°C Vnom	-0.33	-0.10	0.51	-0.36
T10°C Vnom	-0.17	0.04	0.19	-0.33
T0°C Vnom	0.31	0.19	0.75	0.24
T-10°C Vnom	0.02	0.38	0.08	0.02
T-20°C Vnom	0.83	0.74	0.77	1.15
T-30°C Vnom	0.37	-0.05	0.55	0.39
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

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Kwei Shan

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Kwei Shan District, Tao Yuan City
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Kwei Shan Site II

Tel: 886-3-271-8640

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

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

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