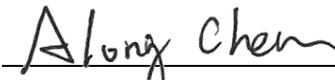


FCC Test Report

FCC ID : QIS-B2338-168IDU
Equipment : Indoor Dual Band Wi-Fi Router
Model No. : B2338-168IDU
Brand Name : Huawei
Applicant : Huawei Technologies Co., Ltd.
Address : Administration Building, Headquarters of
Huawei Technologies Co., Ltd., Bantian,
Longgang District, Shenzhen, 518129, China.
Standard : 47 CFR FCC Part 15.407
Received Date : Aug. 27, 2016
Tested Date : Sep. 14 ~ Oct. 25, 2016

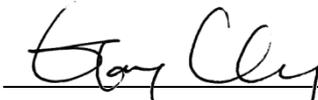
We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval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

Reviewed by:



Along Chen / Assistant Manager

Approved by:



Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR682701-02AN	Rev. 01	Initial issue	Mar. 01, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 3.144MHz 44.00 (Margin -2.00dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 52.98 (Margin -1.02dB) - AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Conducted Power [dBm]: 5150-5250MHz: 19.46 5725-5850MHz: 23.82	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 Product Details

The device B2338-168 / LTE Outdoor CPE = (B2338-168ODU) + (B2338-168IDU) is a product family consists of LTE Outdoor CPE + Indoor Dual Band Wi-Fi Router.

Brand name	Product name	Model name	FCC ID
Huawei	LTE Outdoor CPE	B2338-168ODU	QIS-B2338-168ODU
	Indoor Dual Band Wi-Fi Router	B2338-168IDU	QIS-B2338-168IDU

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
5150-5250	a	5180-5240	36-48 [4]	2	6-54 Mbps
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	MCS 0-15
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	MCS 0-15
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	MCS 0-9
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	MCS 0-9
5150-5250	ac (VHT80)	5210	42 [1]	2	MCS 0-9

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

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
5725-5850	a	5745-5825	149-165 [5]	2	6-54 Mbps
5725-5850	n (HT20)	5745-5825	149-165 [5]	2	MCS 0-15
5725-5850	n (HT40)	5755-5795	151-159 [2]	2	MCS 0-15
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	2	MCS 0-9
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	2	MCS 0-9
5725-5850	ac (VHT80)	5775	155 [1]	2	MCS 0-9

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

1.1.3 Antenna Details

Ant. No.	Type	Connector	Operating Frequency (MHz) / Gain (dBi)		
			2400~2483.5	5150~5250	5725~5850
1	PIFA	N/A	2.5	3	3

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	56Vdc from adapter
--------------------------	--------------------

1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	Adapter	Brand Name: PHIHONG Model Name: PSAA30R-560 Power Rating: I/P: 100-240Vac, 0.8A, 50-60Hz O/P: 56Vdc, 0.536A Power Line: 1.46m non-shielded without core Efficiency Level: VI
2	Adapter	Brand Name: Gospell Model Name: G0753-560-054 Power Rating: I/P: 100-240Vac, 0.75A, 50/60Hz O/P: 56Vdc, 0.54A Power Line: 1.2m non-shielded without core Efficiency Level: VI
3	RJ45 cable	1.5m non-shielded without core.

1.1.6 Channel List

For Frequency band 5150-5250 MHz			
802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	VHT 80	
48	5240	42	5210

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

1.1.7 Test Tool and Duty Cycle

Test Tool	QA_Tool, version: 1.0.3.4		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	96.67%	0.15
	VHT20	95.52%	0.20
	VHT40	87.78%	0.57
	VHT80	70.26%	1.53

1.1.8 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5180	11/10
11a	5200	11/10
11a	5240	11/10
HT20	5180	12/11
HT20	5200	12/11
HT20	5240	12/11
HT40	5190	12/10
HT40	5230	18/16
VHT20	5180	12/11
VHT20	5200	12/11
VHT20	5240	12/11
VHT40	5190	12/10
VHT40	5230	18/16
VHT80	5210	0D/0B

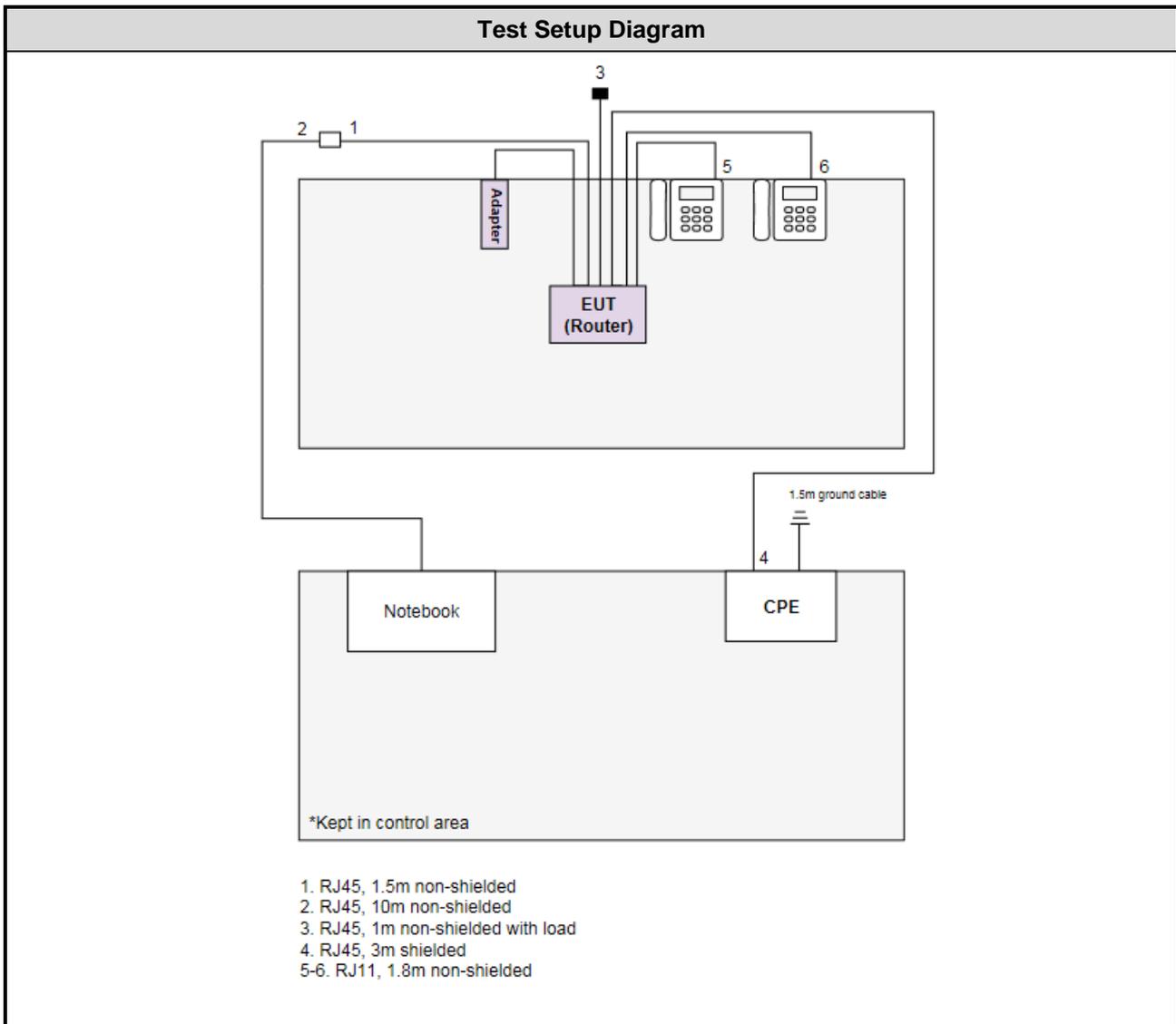
For Frequency band 5725~5850 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5745	16/17
11a	5785	22/23
11a	5825	1C/1D
HT20	5745	14/15
HT20	5785	22/23
HT20	5825	1A/1B
HT40	5755	10/11
HT40	5795	1D/1E
VHT20	5745	14/15
VHT20	5785	22/23
VHT20	5825	1A/1B
VHT40	5755	10/11
VHT40	5795	1D/1E
VHT80	5775	0D/0B

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	C0GB4X1	DoC	RJ45, 10m non-shielded
2	Telephone	HTT	HTT-806	187118	---	RJ11, 1.8m non-shielded
3	Telephone	HTT	HTT-806	188597	---	RJ11, 1.8m non-shielded
4	CPE	Huawei	B2338-168 ODU	---	---	RJ45, 3m shielded

Note: CPE is provided by applicant.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Oct. 25, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101658	Nov. 04, 2015	Nov. 03, 2016
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 13, 2015	Nov. 12, 2016
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 21, 2015	Dec. 20, 2016
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 3 / (03CH03-WS)				
Tested Date	Sep. 14 ~ Sep. 19, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	Agilent	N9010A	MY53400091	Sep. 09, 2016	Sep. 08, 2017
Receiver	Agilent	N9038A	MY53290044	Oct. 14, 2015	Oct. 13, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 26, 2016	Apr. 25, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Feb. 24, 2016	Feb. 23, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 10, 2015	Dec. 09, 2016
Preamplifier	EMC	EMC02325	980187	Sep. 08, 2016	Sep. 07, 2017
Preamplifier	Agilent	83017A	MY53270014	Aug. 22, 2016	Aug. 21, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-8M	HUBER+SUHNER	SUCOFLEX104	MY22600/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Feb. 05, 2016	Feb. 04, 2017
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Feb. 05, 2016	Feb. 04, 2017
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Feb. 05, 2016	Feb. 04, 2017
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Feb. 05, 2016	Feb. 04, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 3 / (03CH03-WS)				
Tested Date	Oct. 21, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	Agilent	N9010A	MY53400091	Sep. 09, 2016	Sep. 08, 2017
Receiver	Agilent	N9038A	MY53290044	Oct. 06, 2016	Oct. 05, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 26, 2016	Apr. 25, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Feb. 24, 2016	Feb. 23, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 10, 2015	Dec. 09, 2016
Preamplifier	EMC	EMC02325	980187	Sep. 08, 2016	Sep. 07, 2017
Preamplifier	Agilent	83017A	MY53270014	Aug. 22, 2016	Aug. 21, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-8M	HUBER+SUHNER	SUCOFLEX104	MY22600/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Feb. 05, 2016	Feb. 04, 2017
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-00 1	Feb. 05, 2016	Feb. 04, 2017
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Feb. 05, 2016	Feb. 04, 2017
LF cable-13M	EMC	EMC8D-NM-NM-1300 0	131104	Feb. 05, 2016	Feb. 04, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Oct. 04 ~ Oct. 14, 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	1241001	Aug. 24, 2016	Aug. 23, 2017
Power Sensor	Anritsu	MA2411B	1207362	Aug. 24, 2016	Aug. 23, 2017
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 v01r03

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	± 3.66 dB
Radiated emission > 1 GHz	± 5.37 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	20°C / 68%	Howard Huang
Radiated Emissions	03CH03-WS	23°C / 64-66%	Aska Huang Vincent Yeh
RF Conducted	TH01-WS	22°C / 64%	Vincent Yeh Brad Wu

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- IC site registration No.: 10807C-1

2.2 The Worst Test Modes and Channel Details

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

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report. Note:
2. Two adapters (PHIHONG & Gospell) had been covered during the pretest and found that PHIHONG adapter was the worst case and was selected for final test.

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11a	5785	6 Mbps	---
Radiated Emissions ≤ 1 GHz	11a	5785	6 Mbps	---
RF Output Power	11a	5745 / 5785 / 5825	6 Mbps	---
	HT20	5745 / 5785 / 5825	MCS 0	
	HT40	5755 / 5795	MCS 0	
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Radiated Emissions > 1 GHz	11a	5745 / 5785 / 5825	6 Mbps	---
Emission Bandwidth	VHT20	5745 / 5785 / 5825	MCS 0	
6dB bandwidth	VHT40	5755 / 5795	MCS 0	
Peak Power Spectral Density	VHT80	5775	MCS 0	
Frequency Stability	Un-modulation	5785	---	---
NOTE:				
1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The Y-plane results were found as the worst case and were shown in this report. Note:				
2. Two adapters (PHIHONG & Gospell) had been covered during the pretest and found that PHIHONG adapter was the worst case and was selected for final test.				

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

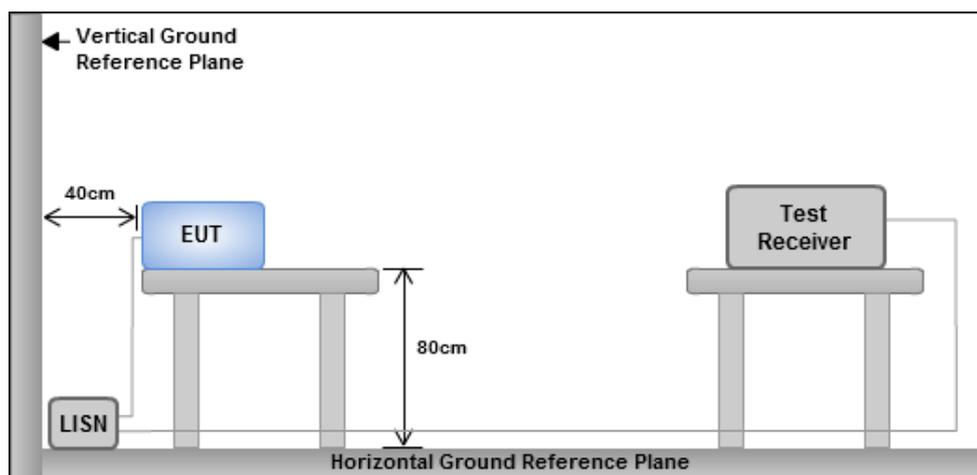
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

3.1.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V / 60Hz.

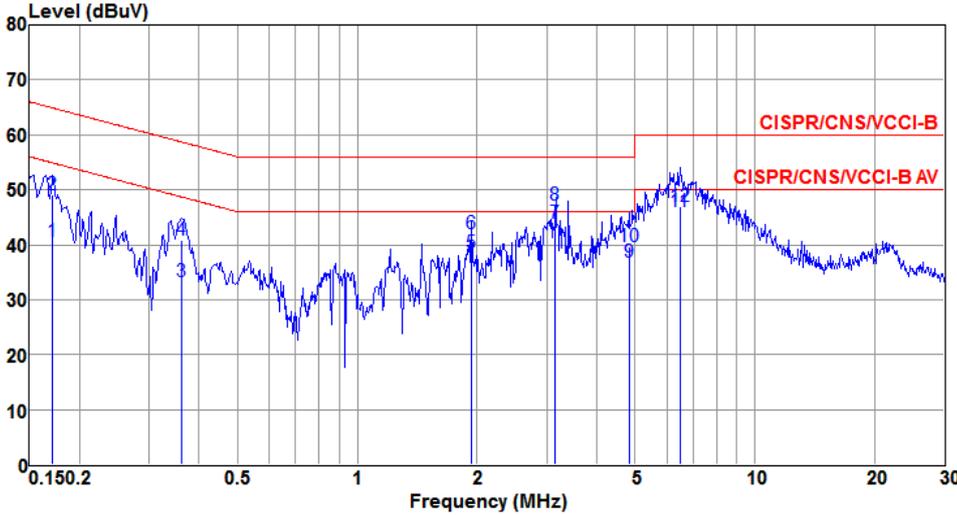
3.1.3 Test Setup



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

3.1.4 Test Result of Conducted Emissions

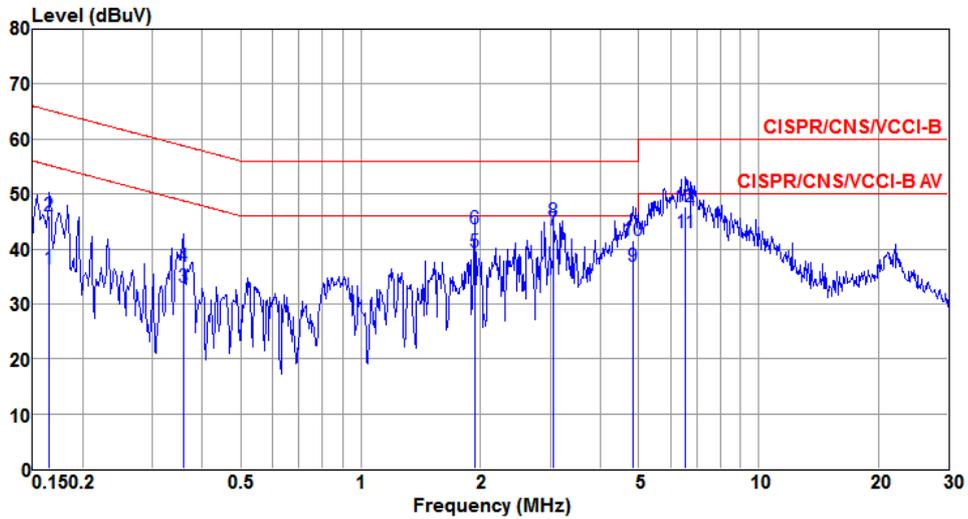
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.171	40.63	54.90	-14.27	40.00	0.61	0.02	Average
2	0.171	49.04	64.90	-15.86	48.41	0.61	0.02	QP
3	0.361	33.30	48.69	-15.39	33.08	0.19	0.03	Average
4	0.361	40.73	58.69	-17.96	40.51	0.19	0.03	QP
5	1.937	38.54	46.00	-7.46	37.86	0.60	0.08	Average
6	1.937	42.10	56.00	-13.90	41.42	0.60	0.08	QP
7	3.144	44.00	46.00	-2.00	43.50	0.39	0.11	Average
8	3.144	47.30	56.00	-8.70	46.80	0.39	0.11	QP
9	4.822	36.85	46.00	-9.15	36.38	0.34	0.13	Average
10	4.822	39.70	56.00	-16.30	39.23	0.34	0.13	QP
11	6.488	45.93	50.00	-4.07	45.32	0.47	0.14	Average
12	6.488	46.97	60.00	-13.03	46.36	0.47	0.14	QP

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

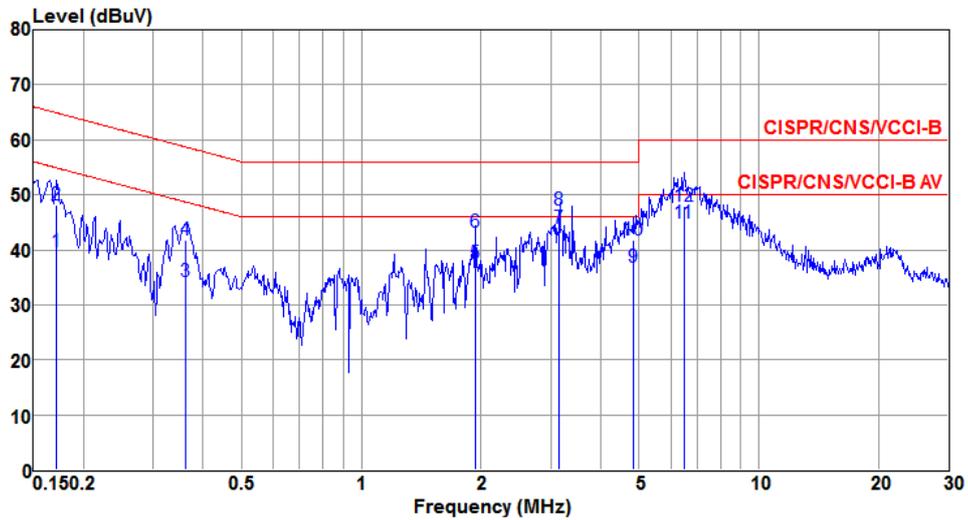
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Neutral		



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	0.165	36.39	55.21	-18.82	35.73	0.64	0.02	Average
2	0.165	45.98	65.21	-19.23	45.32	0.64	0.02	QP
3	0.358	33.07	48.78	-15.71	32.89	0.15	0.03	Average
4	0.358	36.93	58.78	-21.85	36.75	0.15	0.03	QP
5	1.935	39.44	46.00	-6.56	39.14	0.22	0.08	Average
6	1.935	43.57	56.00	-12.43	43.27	0.22	0.08	QP
7@	3.058	43.55	46.00	-2.45	42.92	0.53	0.10	Average
8	3.058	45.18	56.00	-10.82	44.55	0.53	0.10	QP
9	4.822	36.72	46.00	-9.28	35.89	0.70	0.13	Average
10	4.822	41.48	56.00	-14.52	40.65	0.70	0.13	QP
11	6.557	43.00	50.00	-7.00	42.24	0.62	0.14	Average
12	6.557	47.76	60.00	-12.24	47.00	0.62	0.14	QP

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

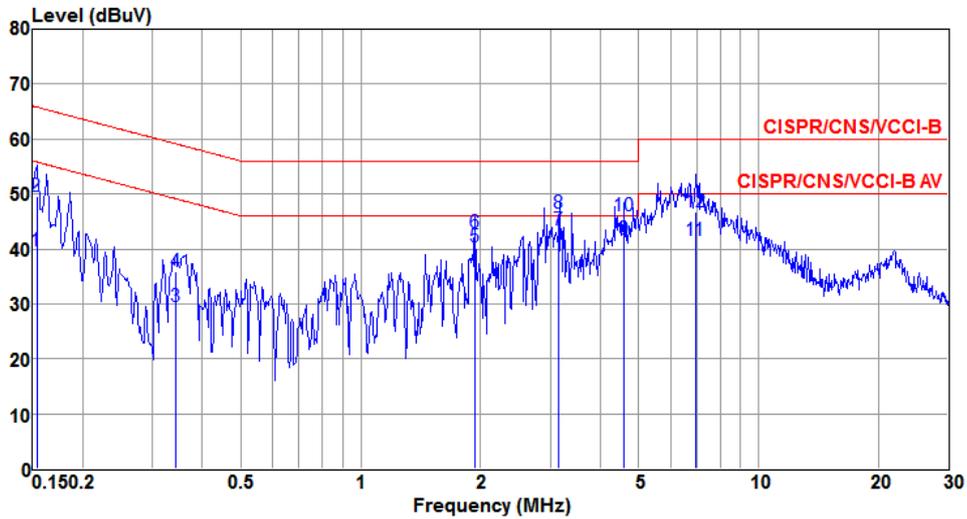
Modulation	11a	Test Freq. (MHz)	5785
Power Phase	Line		



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	0.171	39.63	54.90	-15.27	39.00	0.61	0.02	Average
2	0.171	48.04	64.90	-16.86	47.41	0.61	0.02	QP
3	0.361	34.30	48.69	-14.39	34.08	0.19	0.03	Average
4	0.361	41.73	58.69	-16.96	41.51	0.19	0.03	QP
5	1.937	37.54	46.00	-8.46	36.86	0.60	0.08	Average
6	1.937	43.10	56.00	-12.90	42.42	0.60	0.08	QP
7@	3.144	43.97	46.00	-2.03	43.47	0.39	0.11	Average
8	3.144	47.30	56.00	-8.70	46.80	0.39	0.11	QP
9	4.822	36.85	46.00	-9.15	36.38	0.34	0.13	Average
10	4.822	41.70	56.00	-14.30	41.23	0.34	0.13	QP
11	6.488	44.93	50.00	-5.07	44.32	0.47	0.14	Average
12	6.488	47.97	60.00	-12.03	47.36	0.47	0.14	QP

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

Modulation	11a	Test Freq. (MHz)	5785
Power Phase	Neutral		



	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1	0.153	39.74	55.82	-16.08	38.90	0.82	0.02	Average
2	0.153	49.49	65.82	-16.33	48.65	0.82	0.02	QP
3	0.343	29.43	49.13	-19.70	29.25	0.15	0.03	Average
4	0.343	35.77	59.13	-23.36	35.59	0.15	0.03	QP
5	1.935	40.39	46.00	-5.61	40.09	0.22	0.08	Average
6	1.935	42.94	56.00	-13.06	42.64	0.22	0.08	QP
7@	3.143	43.54	46.00	-2.46	42.87	0.56	0.11	Average
8	3.143	46.43	56.00	-9.57	45.76	0.56	0.11	QP
9	4.597	41.77	46.00	-4.23	40.93	0.71	0.13	Average
10	4.597	46.02	56.00	-9.98	45.18	0.71	0.13	QP
11	6.951	41.58	50.00	-8.42	40.83	0.61	0.14	Average
12	6.951	46.63	60.00	-13.37	45.88	0.61	0.14	QP

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

3.2 Emission Bandwidth

3.2.1 Limit of Emission bandwidth

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

3.2.2 Test Procedures

26dB Bandwidth

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

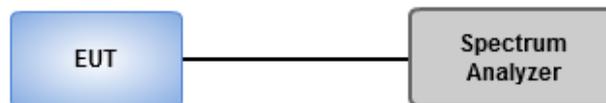
Occupied Bandwidth

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

6dB Bandwidth

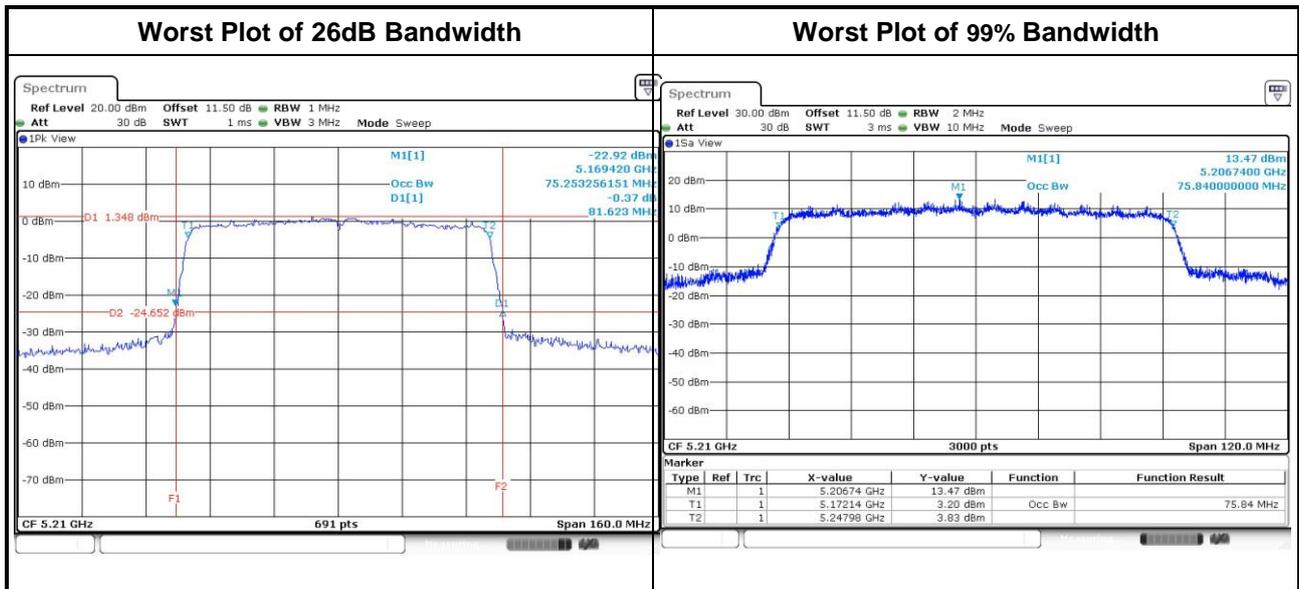
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak, Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB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

3.2.3 Test Setup

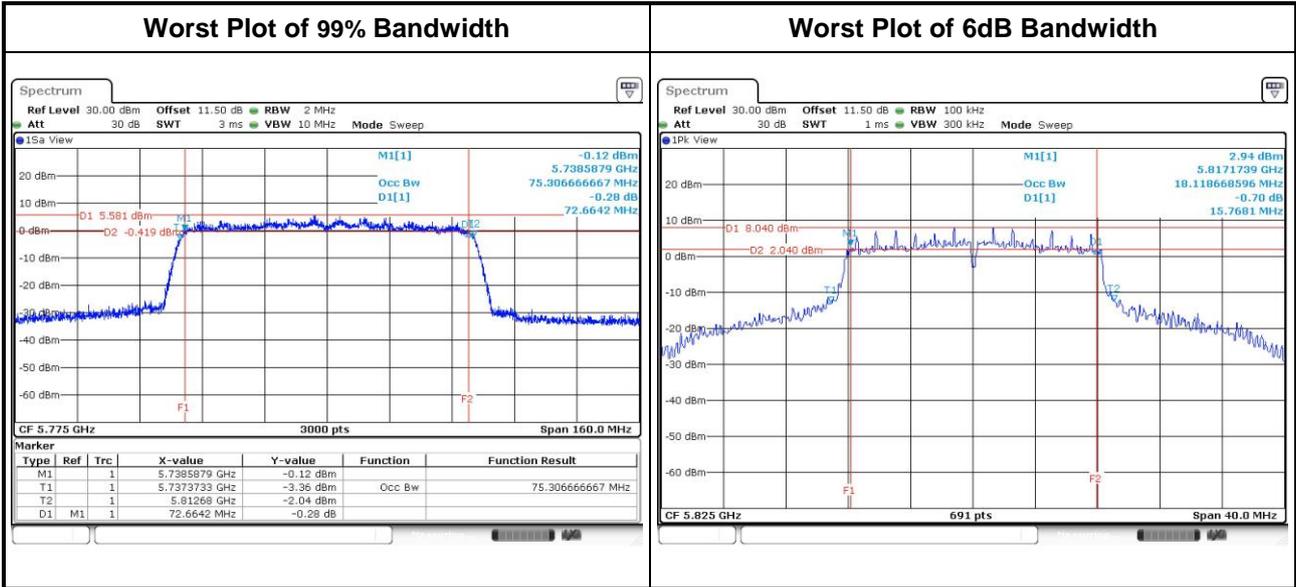


3.2.4 Test Result of Emission Bandwidth

For Frequency band 5150-5250 MHz										
Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	2	5180	20.06	20.00	---	---	16.76	16.75	---	---
11a	2	5200	20.23	20.12	---	---	16.76	16.77	---	---
11a	2	5240	20.06	20.17	---	---	16.79	16.75	---	---
VHT20	2	5180	20.41	20.41	---	---	17.69	17.68	---	---
VHT20	2	5200	20.99	20.35	---	---	17.68	17.66	---	---
VHT20	2	5240	20.93	20.41	---	---	17.72	17.69	---	---
VHT40	2	5190	41.28	41.51	---	---	36.20	36.16	---	---
VHT40	2	5230	64.46	53.68	---	---	36.50	36.42	---	---
VHT80	2	5210	81.62	81.62	---	---	75.84	75.64	---	---



For Frequency band 5725-5850 MHz											
Emission Bandwidth											
Mode	N _{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				6dB BW Limit (MHz)
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	2	5745	16.92	16.97	---	---	16.29	16.35	---	---	0.5
11a	2	5785	28.21	27.84	---	---	16.35	16.35	---	---	0.5
11a	2	5825	17.47	18.32	---	---	16.06	15.77	---	---	0.5
VHT20	2	5745	17.71	17.76	---	---	16.29	17.04	---	---	0.5
VHT20	2	5785	29.97	29.03	---	---	17.33	17.57	---	---	0.5
VHT20	2	5825	17.92	18.21	---	---	16.52	16.29	---	---	0.5
VHT40	2	5755	36.19	36.19	---	---	35.13	35.13	---	---	0.5
VHT40	2	5795	37.39	44.35	---	---	35.13	35.13	---	---	0.5
VHT80	2	5775	75.31	75.31	---	---	75.13	75.13	---	---	0.5



3.3 RF Output Power

3.3.1 Limit of RF Output Power

Frequency band 5150-5250 MHz	
Operating Mode	Limit
<input type="checkbox"/> 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)
<input checked="" type="checkbox"/> Indoor access point	Conducted Power: 1 W
<input type="checkbox"/> Fixed point-to-point access points	Conducted Power: 1 W
<input type="checkbox"/> Mobile and portable client devices	Conducted Power: 250 mW

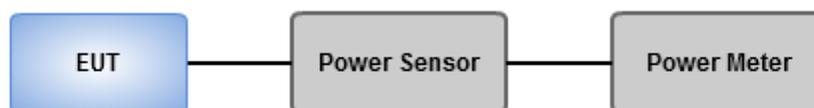
Frequency Band (MHz)	Limit
<input type="checkbox"/> 5250 ~ 5350	250mW or 11dBm+10 log B
<input type="checkbox"/> 5470 ~ 5725	250mW or 11dBm+10 log B
<input checked="" type="checkbox"/> 5725 ~ 5850	1 W

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

3.3.2 Test Procedures

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

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

For Frequency band 5150-5250 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	2	5180	13.11	12.93	---	---	40.098	16.03	30.00
11a	2	5200	13.05	12.86	---	---	39.503	15.97	30.00
11a	2	5240	12.95	13.01	---	---	39.723	15.99	30.00
HT20	2	5180	13.21	13.15	---	---	41.595	16.19	30.00
HT20	2	5200	13.06	13.21	---	---	41.171	16.15	30.00
HT20	2	5240	13.04	13.12	---	---	40.649	16.09	30.00
HT40	2	5190	12.71	12.84	---	---	37.895	15.79	30.00
HT40	2	5230	16.54	16.13	---	---	86.102	19.35	30.00
VHT20	2	5180	13.34	13.26	---	---	42.761	16.31	30.00
VHT20	2	5200	13.15	13.3	---	---	42.033	16.24	30.00
VHT20	2	5240	13.11	13.24	---	---	41.551	16.19	30.00
VHT40	2	5190	12.85	12.93	---	---	38.909	15.90	30.00
VHT40	2	5230	16.61	16.28	---	---	88.276	19.46	30.00
VHT80	2	5210	10.71	10.86	---	---	23.966	13.80	30.00

For Frequency band 5725-5850 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	2	5745	14.26	14.87	---	---	57.359	17.59	30.00
11a	2	5785	20.96	20.65	---	---	240.883	23.82	30.00
11a	2	5825	17.91	17.18	---	---	114.041	20.57	30.00
HT20	2	5745	12.90	13.84	---	---	43.709	16.41	30.00
HT20	2	5785	20.75	20.54	---	---	232.090	23.66	30.00
HT20	2	5825	16.21	16.72	---	---	88.772	19.48	30.00
HT40	2	5755	11.24	12.18	---	---	29.824	14.75	30.00
HT40	2	5795	17.77	18.39	---	---	128.865	21.10	30.00
VHT20	2	5745	12.98	13.92	---	---	44.521	16.49	30.00
VHT20	2	5785	20.86	20.68	---	---	238.849	23.78	30.00
VHT20	2	5825	16.27	16.78	---	---	90.007	19.54	30.00
VHT40	2	5755	11.33	12.23	---	---	30.294	14.81	30.00
VHT40	2	5795	17.85	18.47	---	---	131.261	21.18	30.00
VHT80	2	5775	9.32	9.55	---	---	17.566	12.45	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
<input type="checkbox"/>	Outdoor access point	17 dBm / MHz
<input checked="" type="checkbox"/>	Indoor access point	17 dBm / MHz
<input type="checkbox"/>	Fixed point-to-point access points	17 dBm / MHz
<input type="checkbox"/>	Mobile and portable client devices	11 dBm / MHz

Frequency Band (MHz)		Limit
<input type="checkbox"/>	5250 ~ 5350	11 dBm / MHz
<input type="checkbox"/>	5470 ~ 5725	11 dBm / MHz
<input checked="" type="checkbox"/>	5725 ~ 5850	30 dBm / 500 kHz

3.4.2 Test Procedures

For 5150 ~ 5250 MHz

Method SA-1

1. Set RBW = 1 MHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

Method SA-2 Alternative

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
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

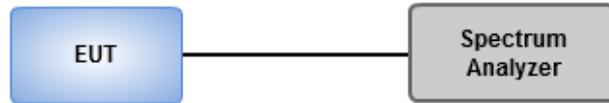
Method SA-1

1. Set RBW = 500 kHz, VBW = 2 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

Method SA-2 Alternative

1. Set RBW = 500 kHz, VBW = 2 MHz, Detector = RMS.
2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add $10 \log(1/x)$, where x is the duty cycle.

3.4.3 Test Setup

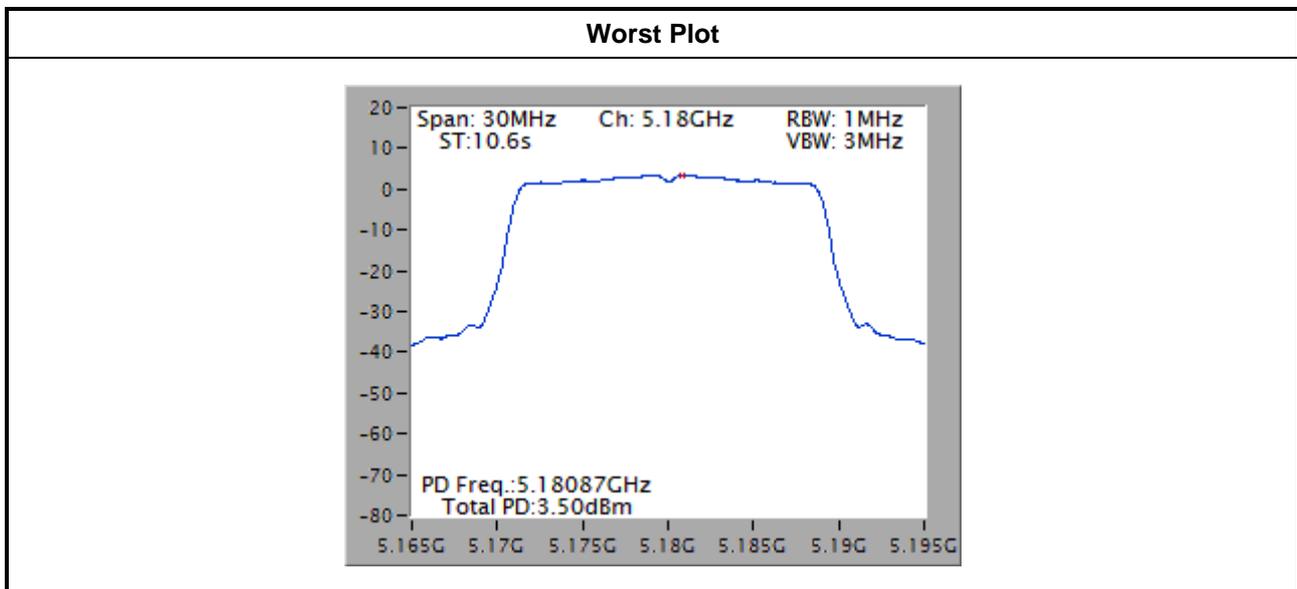


3.4.4 Test Result of Peak Power Spectral Density

For Frequency band 5150-5250 MHz						
Condition			Peak Power Spectral Density (dBm/MHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/MHz)	Duty Factor (dB)	PPSD with D.F (dBm/MHz)	PPSD Limit (dBm/MHz)
11a	2	5180	3.47	0.15	3.62	16.99
11a	2	5200	3.26	0.15	3.41	16.99
11a	2	5240	3.49	0.15	3.64	16.99
VHT20	2	5180	3.50	0.20	3.70	16.99
VHT20	2	5200	3.45	0.20	3.65	16.99
VHT20	2	5240	3.21	0.20	3.41	16.99
VHT40	2	5190	3.13	0.57	3.70	16.99
VHT40	2	5230	2.95	0.57	3.52	16.99
VHT80	2	5210	-6.81	1.53	-5.28	16.99

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain = $3 \text{ dBi} + 10 \cdot \log(2/1) = 6.01 \text{ dBi} > 6 \text{ dBi}$,
Limit shall be reduced to $17 \text{ dBm} - (6.01 \text{ dBi} - 6 \text{ dBi}) = 16.99 \text{ dBm}$

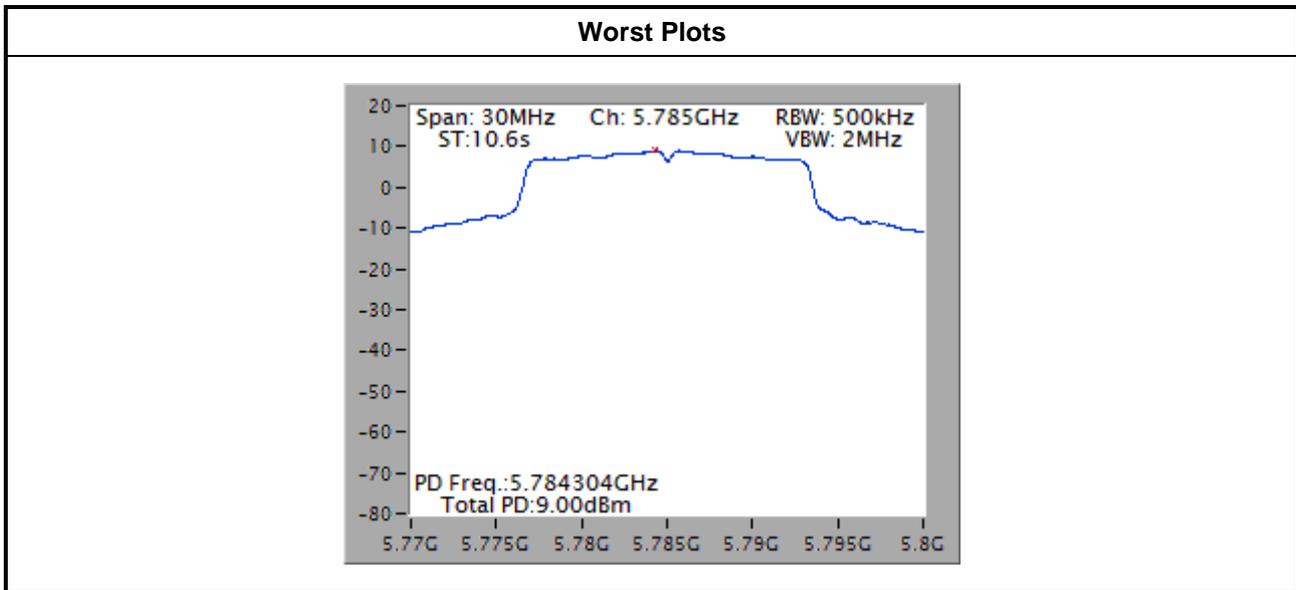


Note: The plot without duty factor.

For Frequency band 5725-5850 MHz						
Condition			Peak Power Spectral Density (dBm/500kHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
11a	2	5745	3.36	0.15	3.51	29.99
11a	2	5785	9.00	0.15	9.15	29.99
11a	2	5825	6.00	0.15	6.15	29.99
VHT20	2	5745	1.89	0.20	2.09	29.99
VHT20	2	5785	8.78	0.20	8.98	29.99
VHT20	2	5825	4.53	0.20	4.73	29.99
VHT40	2	5755	-3.56	0.57	-2.99	29.99
VHT40	2	5795	2.78	0.57	3.35	29.99
VHT80	2	5775	-9.39	1.53	-7.86	29.99

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain = 3 dBi + 10*log(2/1) = 6.01 dBi > 6 dBi,
Limit shall be reduced to 30 dBm – (6.01dBi – 6dBi) = 29.99 dBm



Note: The plot without duty factor.

3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

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

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

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.850 GHz	<input checked="" type="checkbox"/> 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.
	<input type="checkbox"/> 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

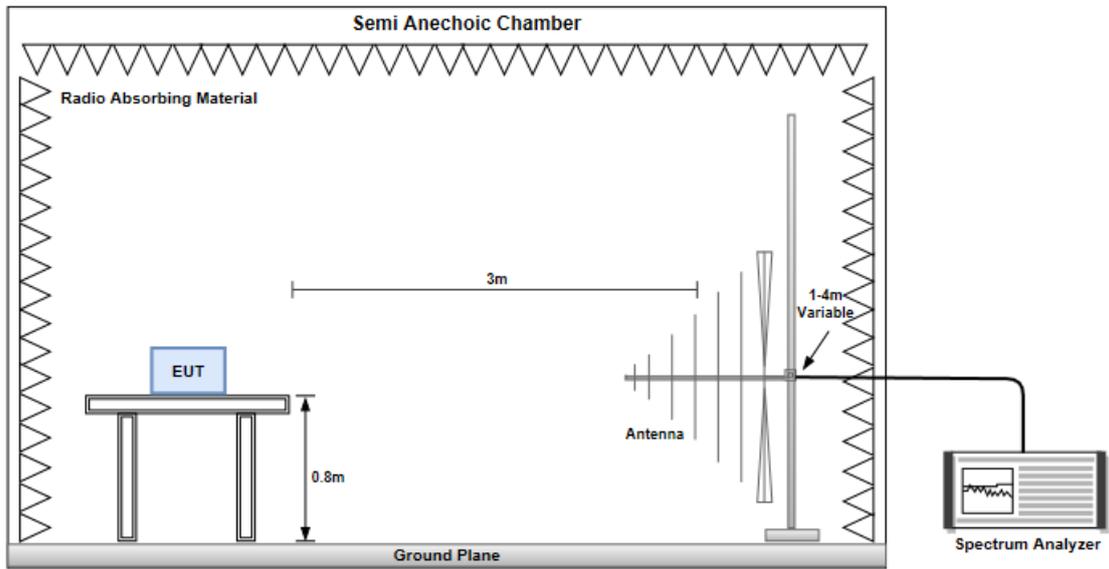
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

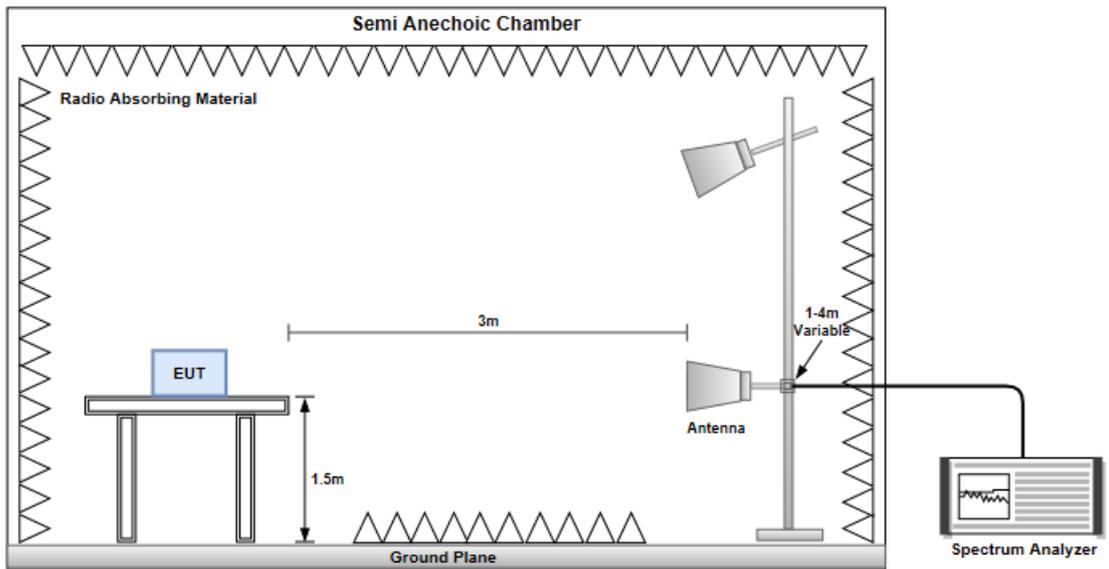
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

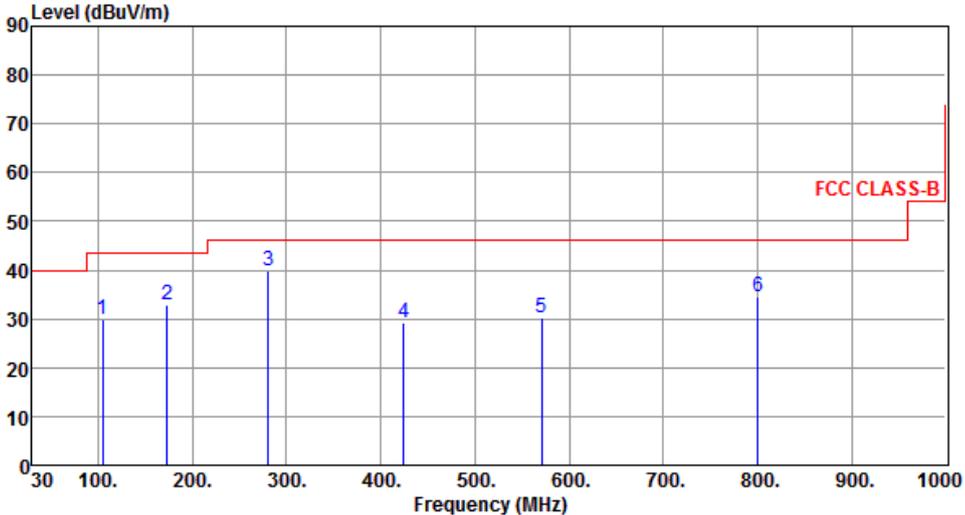
Radiated Emissions below 1 GHz



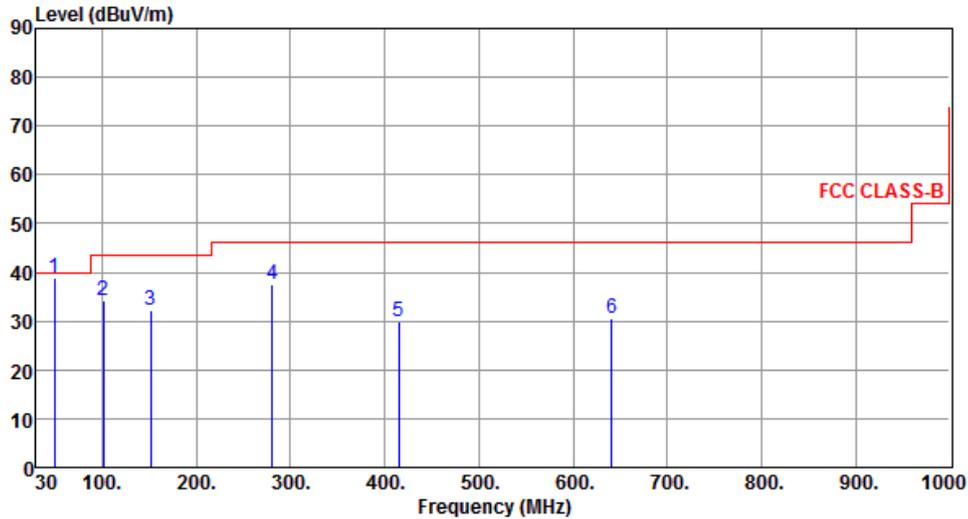
Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	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	104.69	29.98	43.50	-13.52	42.43	-12.45	Peak	---	---
2	173.56	33.03	43.50	-10.47	41.92	-8.89	Peak	---	---
3	280.26	39.70	46.00	-6.30	47.85	-8.15	Peak	---	---
4	424.79	29.26	46.00	-16.74	33.58	-4.32	Peak	---	---
5	571.26	30.27	46.00	-15.73	31.69	-1.42	Peak	---	---
6	800.18	34.50	46.00	-11.50	31.91	2.59	Peak	---	---
<p>Note 1: Emission Level (dBuV/m) = SA Reading (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.</p>									

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	49.68	38.80	40.00	-1.20	46.62	-7.82	QP	100	288
2	101.78	34.25	43.50	-9.25	47.20	-12.95	Peak	---	---
3	151.25	32.14	43.50	-11.36	40.31	-8.17	Peak	---	---
4	280.26	37.48	46.00	-8.52	45.63	-8.15	Peak	---	---
5	415.09	29.89	46.00	-16.11	34.47	-4.58	Peak	---	---
6	641.10	30.55	46.00	-15.45	30.75	-0.20	Peak	---	---

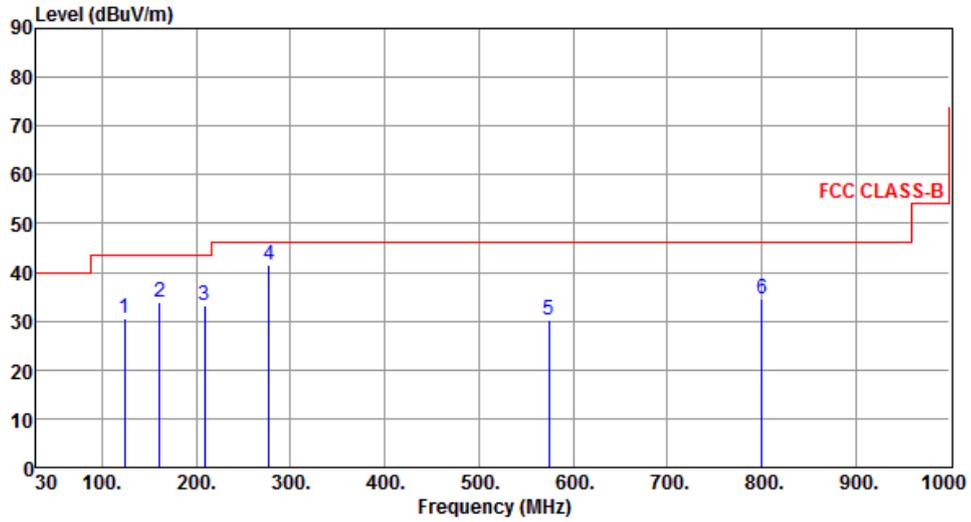
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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.

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	124.09	30.54	43.50	-12.96	40.88	-10.34	Peak	---	---
2	160.95	34.03	43.50	-9.47	42.12	-8.09	Peak	---	---
3	208.48	33.18	43.50	-10.32	44.14	-10.96	Peak	---	---
4	277.35	41.35	46.00	-4.65	49.63	-8.28	Peak	---	---
5	574.17	30.15	46.00	-15.85	31.50	-1.35	Peak	---	---
6	800.18	34.39	46.00	-11.61	31.80	2.59	Peak	---	---

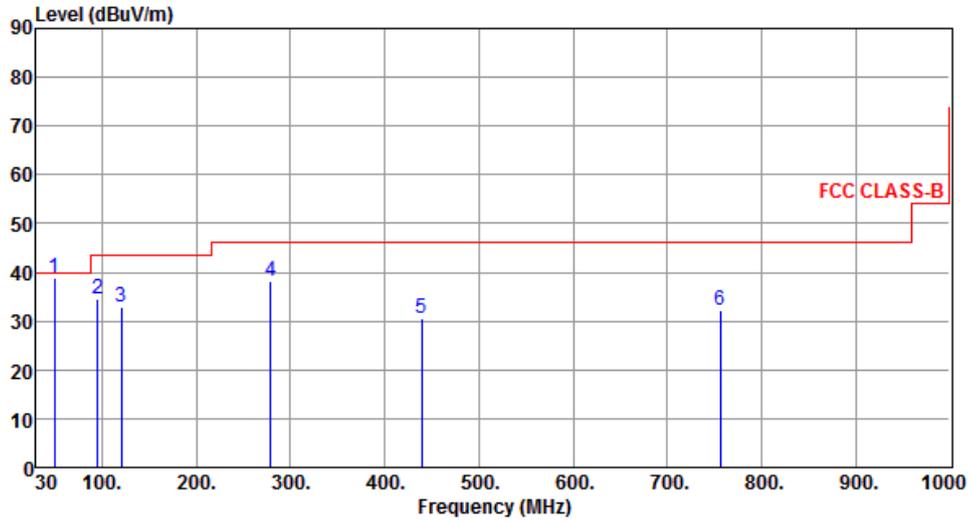
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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	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	49.40	38.92	40.00	-1.08	46.74	-7.82	QP	100	347
2	94.99	34.67	43.50	-8.83	48.42	-13.75	Peak	---	---
3	120.21	32.72	43.50	-10.78	43.43	-10.71	Peak	---	---
4	279.29	38.32	46.00	-7.68	46.51	-8.19	Peak	---	---
5	439.34	30.65	46.00	-15.35	34.56	-3.91	Peak	---	---
6	756.53	32.34	46.00	-13.66	30.35	1.99	Peak	---	---

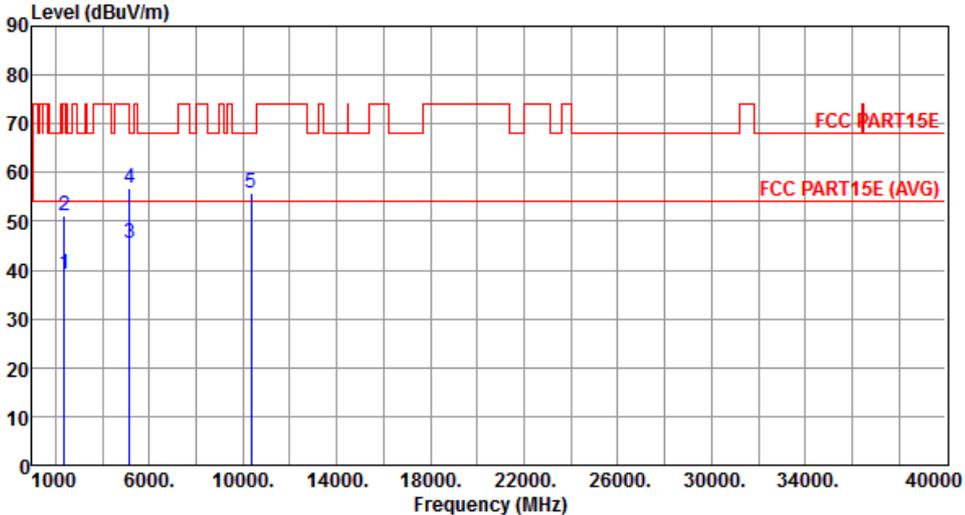
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

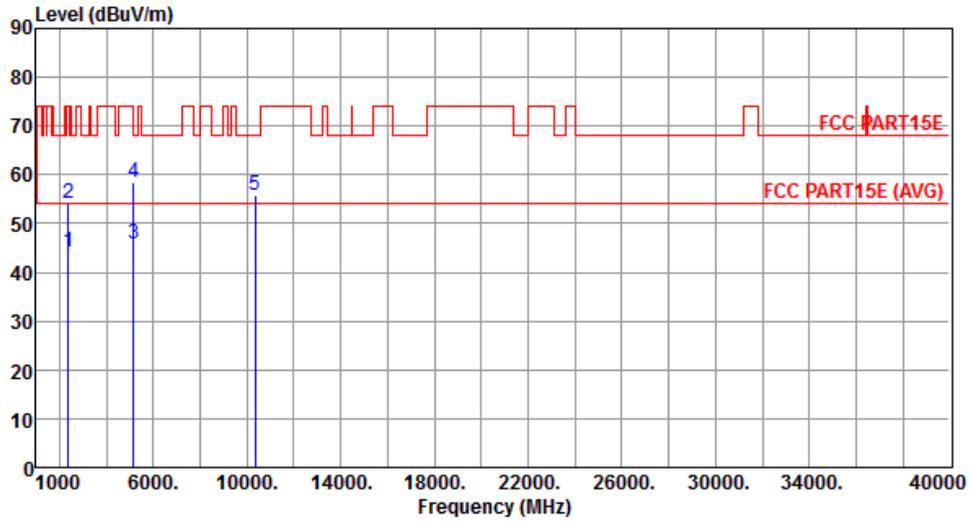
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2375.00	39.13	54.00	-14.87	40.31	-1.18	Average	100	94
2	2375.00	51.06	74.00	-22.94	52.24	-1.18	Peak	100	94
3	5150.00	45.36	54.00	-8.64	39.49	5.87	Average	100	94
4	5150.00	56.83	74.00	-17.17	50.96	5.87	Peak	100	94
5	10360.00	55.66	68.20	-12.54	40.44	15.22	Peak	100	168
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

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



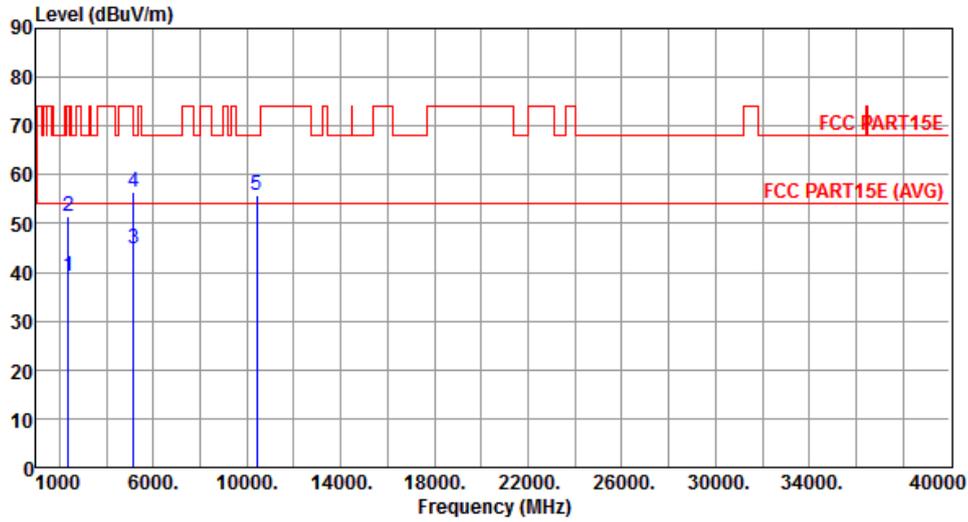
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.03	54.00	-9.97	45.21	-1.18	Average	100	3
2	2375.00	54.25	74.00	-19.75	55.43	-1.18	Peak	100	3
3	5150.00	45.91	54.00	-8.09	40.04	5.87	Average	322	353
4	5150.00	58.55	74.00	-15.45	52.68	5.87	Peak	322	353
5	10360.00	55.90	68.20	-12.30	40.68	15.22	Peak	100	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).

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



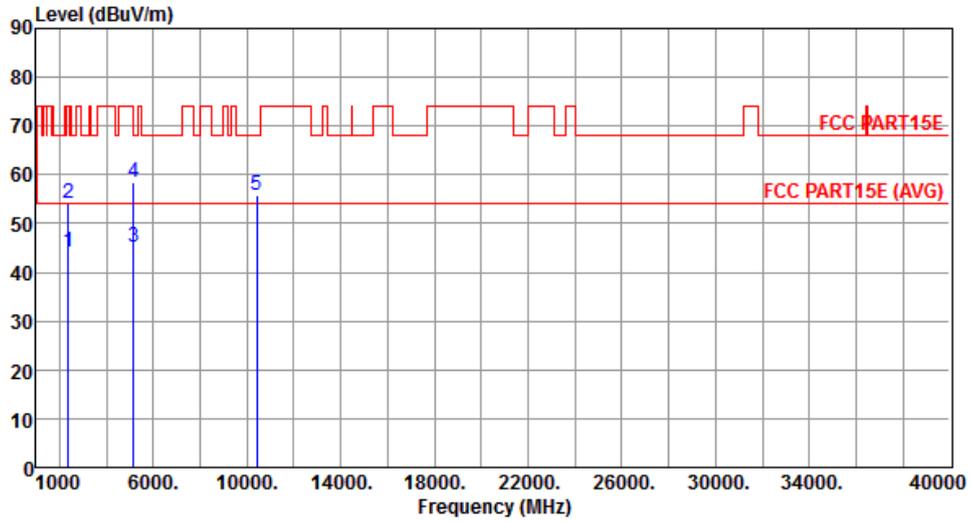
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.24	54.00	-14.76	40.42	-1.18	Average	100	92
2	2375.00	51.50	74.00	-22.50	52.68	-1.18	Peak	100	92
3	5150.00	44.73	54.00	-9.27	38.86	5.87	Average	100	92
4	5150.00	56.30	74.00	-17.70	50.43	5.87	Peak	100	92
5	10400.00	55.68	68.20	-12.52	40.41	15.27	Peak	100	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).

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



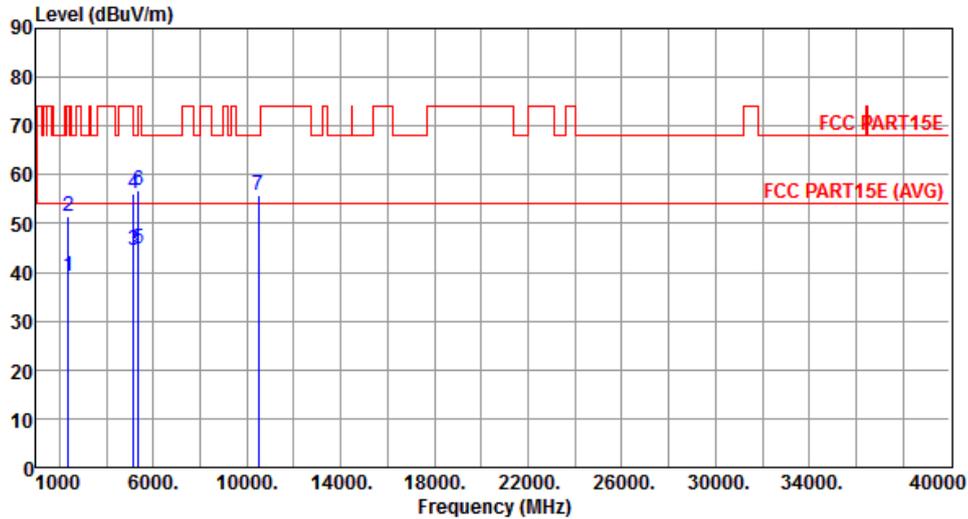
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.23	54.00	-9.77	45.41	-1.18	Average	100	2
2	2375.00	54.19	74.00	-19.81	55.37	-1.18	Peak	100	2
3	5150.00	45.11	54.00	-8.89	39.24	5.87	Average	320	352
4	5150.00	58.30	74.00	-15.70	52.43	5.87	Peak	320	352
5	10400.00	55.70	68.20	-12.50	40.43	15.27	Peak	100	168

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



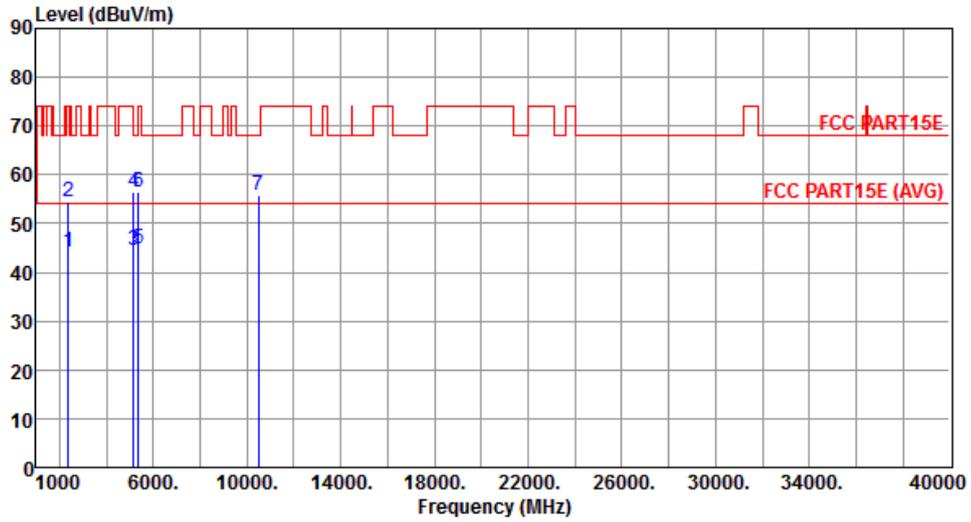
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.26	54.00	-14.74	40.44	-1.18	Average	100	96
2	2375.00	51.35	74.00	-22.65	52.53	-1.18	Peak	100	96
3	5150.00	44.55	54.00	-9.45	38.68	5.87	Average	100	96
4	5150.00	56.11	74.00	-17.89	50.24	5.87	Peak	100	96
5	5350.00	44.96	54.00	-9.04	38.75	6.21	Average	100	96
6	5350.00	56.94	74.00	-17.06	50.73	6.21	Peak	100	96
7	10480.00	55.75	68.20	-12.45	40.39	15.36	Peak	100	167

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



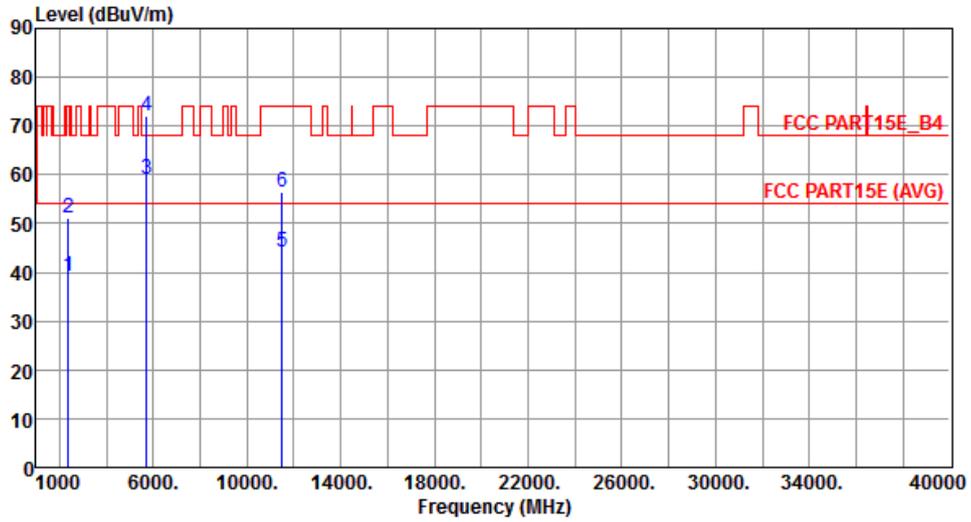
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.13	54.00	-9.87	45.31	-1.18	Average	100	2
2	2375.00	54.50	74.00	-19.50	55.68	-1.18	Peak	100	2
3	5150.00	44.55	54.00	-9.45	38.68	5.87	Average	320	351
4	5150.00	56.34	74.00	-17.66	50.47	5.87	Peak	320	351
5	5350.00	44.96	54.00	-9.04	38.75	6.21	Average	320	351
6	5350.00	56.53	74.00	-17.47	50.32	6.21	Peak	320	351
7	10480.00	55.80	68.20	-12.40	40.44	15.36	Peak	100	177

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



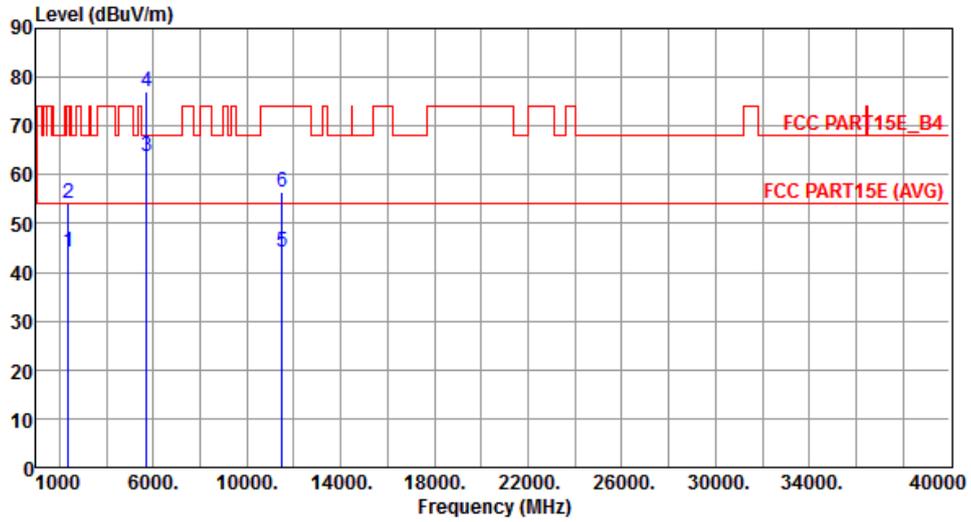
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.12	54.00	-14.88	40.30	-1.18	Average	100	93
2	2375.00	51.16	74.00	-22.84	52.34	-1.18	Peak	100	93
3	5715.00	59.21	68.20	-8.99	52.40	6.81	Peak	100	313
4	5725.00	72.18	78.20	-6.02	65.35	6.83	Peak	100	313
5	11490.00	44.15	54.00	-9.85	28.14	16.01	Average	100	42
6	11490.00	56.52	74.00	-17.48	40.51	16.01	Peak	100	42

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



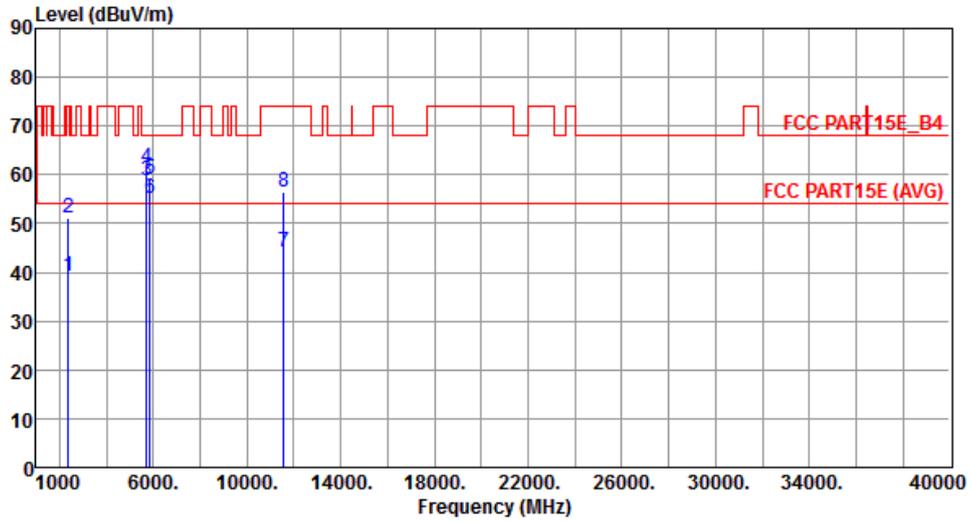
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.24	54.00	-9.76	45.42	-1.18	Average	100	5
2	2375.00	54.26	74.00	-19.74	55.44	-1.18	Peak	100	5
3	5715.00	63.91	68.20	-4.29	57.10	6.81	Peak	393	333
4	5725.00	77.11	78.20	-1.09	70.28	6.83	Peak	393	333
5	11490.00	44.02	54.00	-9.98	28.01	16.01	Average	100	185
6	11490.00	56.41	74.00	-17.59	40.40	16.01	Peak	100	185

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



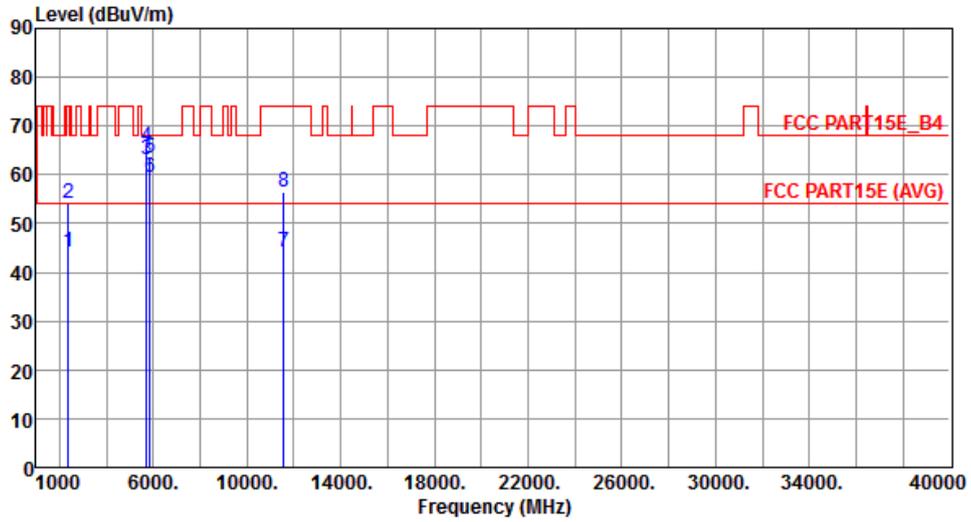
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.10	54.00	-14.90	40.28	-1.18	Average	100	92
2	2375.00	51.13	74.00	-22.87	52.31	-1.18	Peak	100	92
3	5715.00	58.82	68.20	-9.38	52.01	6.81	Peak	100	314
4	5725.00	61.44	78.20	-16.76	54.61	6.83	Peak	100	314
5	5850.00	59.13	78.20	-19.07	51.97	7.16	Peak	100	314
6	5860.00	55.16	68.20	-13.04	47.98	7.18	Peak	100	314
7	11570.00	44.31	54.00	-9.69	28.42	15.89	Average	100	95
8	11570.00	56.32	74.00	-17.68	40.43	15.89	Peak	100	95

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



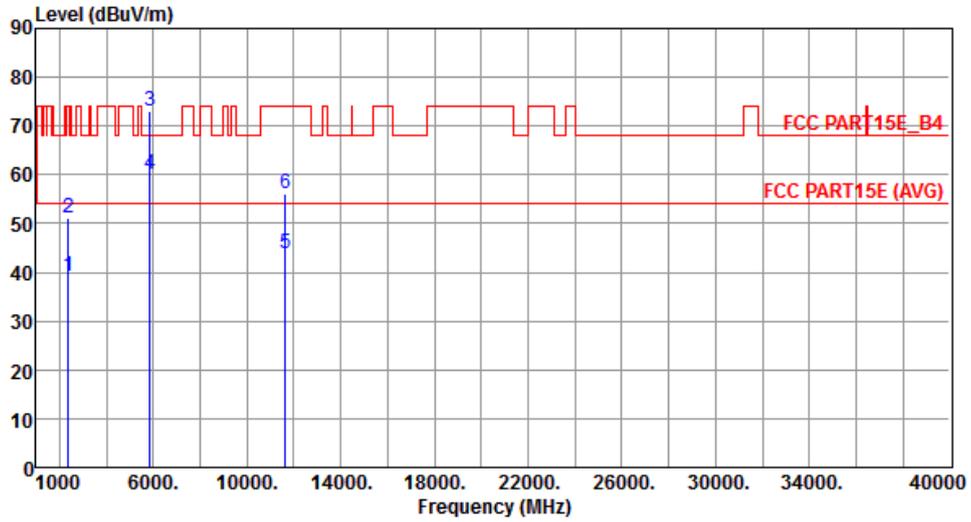
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.27	54.00	-9.73	45.45	-1.18	Average	100	4
2	2375.00	54.22	74.00	-19.78	55.40	-1.18	Peak	100	4
3	5715.00	63.09	68.20	-5.11	56.28	6.81	Peak	362	338
4	5725.00	65.72	78.20	-12.48	58.89	6.83	Peak	362	338
5	5850.00	63.46	78.20	-14.74	56.30	7.16	Peak	362	338
6	5860.00	59.34	68.20	-8.86	52.16	7.18	Peak	362	338
7	11570.00	44.27	54.00	-9.73	28.38	15.89	Average	100	152
8	11570.00	56.30	74.00	-17.70	40.41	15.89	Peak	100	152

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



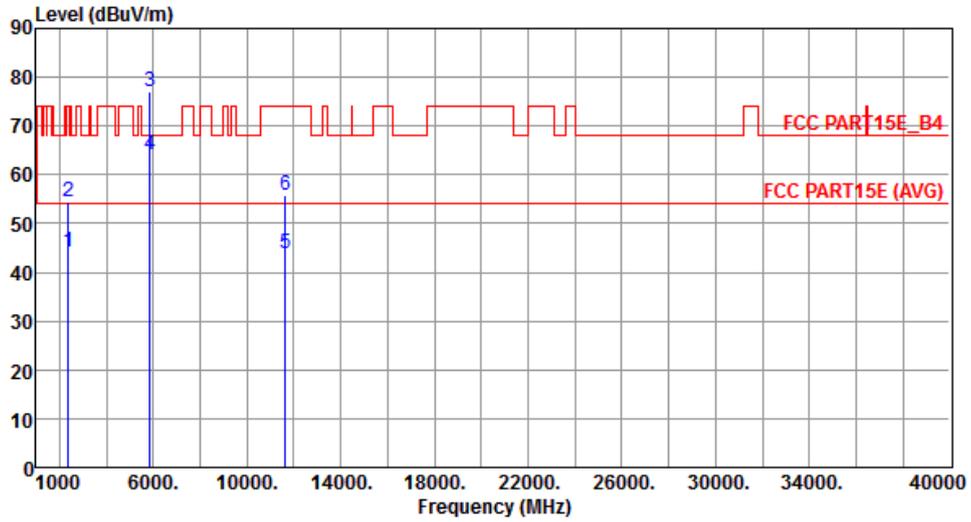
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.09	54.00	-14.91	40.27	-1.18	Average	100	92
2	2375.00	51.13	74.00	-22.87	52.31	-1.18	Peak	100	92
3	5850.00	72.94	78.20	-5.26	65.78	7.16	Peak	100	295
4	5860.00	60.06	68.20	-8.14	52.88	7.18	Peak	100	295
5	11650.00	43.81	54.00	-10.19	28.07	15.74	Average	100	67
6	11650.00	55.96	74.00	-18.04	40.22	15.74	Peak	100	67

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



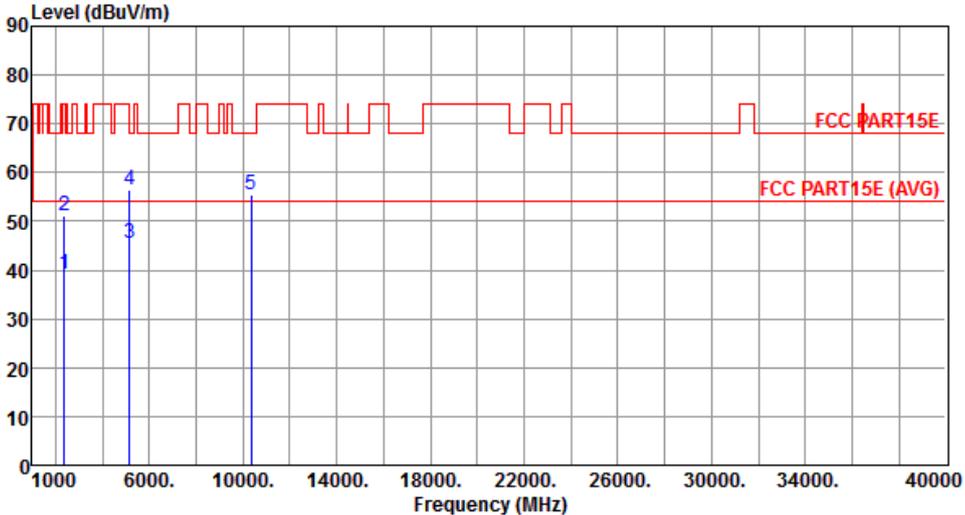
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.26	54.00	-9.74	45.44	-1.18	Average	100	3
2	2375.00	54.30	74.00	-19.70	55.48	-1.18	Peak	100	3
3	5850.00	77.06	78.20	-1.14	69.90	7.16	Peak	386	318
4	5860.00	64.15	68.20	-4.05	56.97	7.18	Peak	386	318
5	11650.00	43.95	54.00	-10.05	28.21	15.74	Average	100	53
6	11650.00	55.81	74.00	-18.19	40.07	15.74	Peak	100	53

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

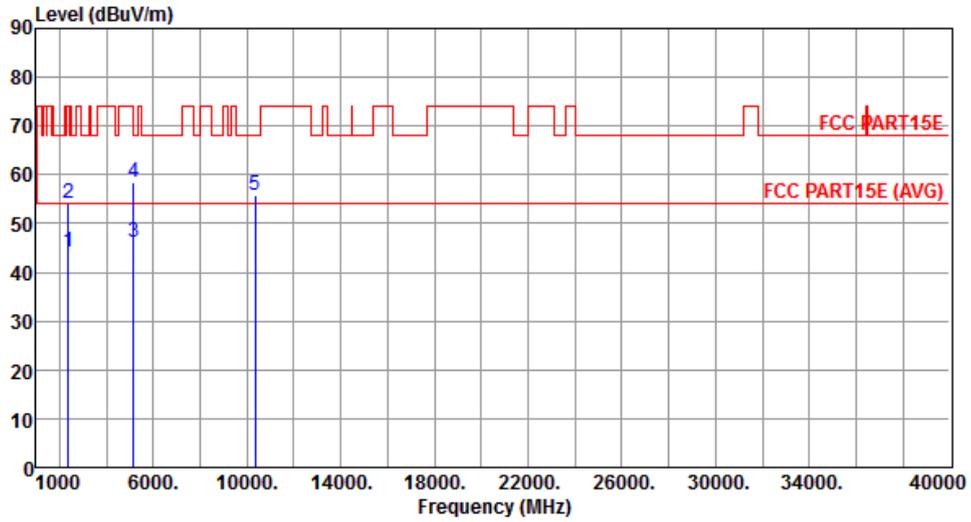
*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT20	Test Freq. (MHz)	5180																																																																		
Polarization	Horizontal																																																																				
																																																																					
	<table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission level</th> <th>Limit</th> <th>Margin</th> <th>SA reading</th> <th>Factor</th> <th>Remark</th> <th>ANT High</th> <th>Turn Table</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th></th> <th>cm</th> <th>deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2375.00</td> <td>39.07</td> <td>54.00</td> <td>-14.93</td> <td>40.25</td> <td>-1.18</td> <td>Average</td> <td>100</td> <td>93</td> </tr> <tr> <td>2</td> <td>2375.00</td> <td>51.30</td> <td>74.00</td> <td>-22.70</td> <td>52.48</td> <td>-1.18</td> <td>Peak</td> <td>100</td> <td>93</td> </tr> <tr> <td>3</td> <td>5150.00</td> <td>45.39</td> <td>54.00</td> <td>-8.61</td> <td>39.52</td> <td>5.87</td> <td>Average</td> <td>100</td> <td>93</td> </tr> <tr> <td>4</td> <td>5150.00</td> <td>56.30</td> <td>74.00</td> <td>-17.70</td> <td>50.43</td> <td>5.87</td> <td>Peak</td> <td>100</td> <td>93</td> </tr> <tr> <td>5</td> <td>10360.00</td> <td>55.51</td> <td>68.20</td> <td>-12.69</td> <td>40.29</td> <td>15.22</td> <td>Peak</td> <td>100</td> <td>169</td> </tr> </tbody> </table>	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	1	2375.00	39.07	54.00	-14.93	40.25	-1.18	Average	100	93	2	2375.00	51.30	74.00	-22.70	52.48	-1.18	Peak	100	93	3	5150.00	45.39	54.00	-8.61	39.52	5.87	Average	100	93	4	5150.00	56.30	74.00	-17.70	50.43	5.87	Peak	100	93	5	10360.00	55.51	68.20	-12.69	40.29	15.22	Peak	100	169
Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table																																																													
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg																																																													
1	2375.00	39.07	54.00	-14.93	40.25	-1.18	Average	100	93																																																												
2	2375.00	51.30	74.00	-22.70	52.48	-1.18	Peak	100	93																																																												
3	5150.00	45.39	54.00	-8.61	39.52	5.87	Average	100	93																																																												
4	5150.00	56.30	74.00	-17.70	50.43	5.87	Peak	100	93																																																												
5	10360.00	55.51	68.20	-12.69	40.29	15.22	Peak	100	169																																																												
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>																																																																					

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



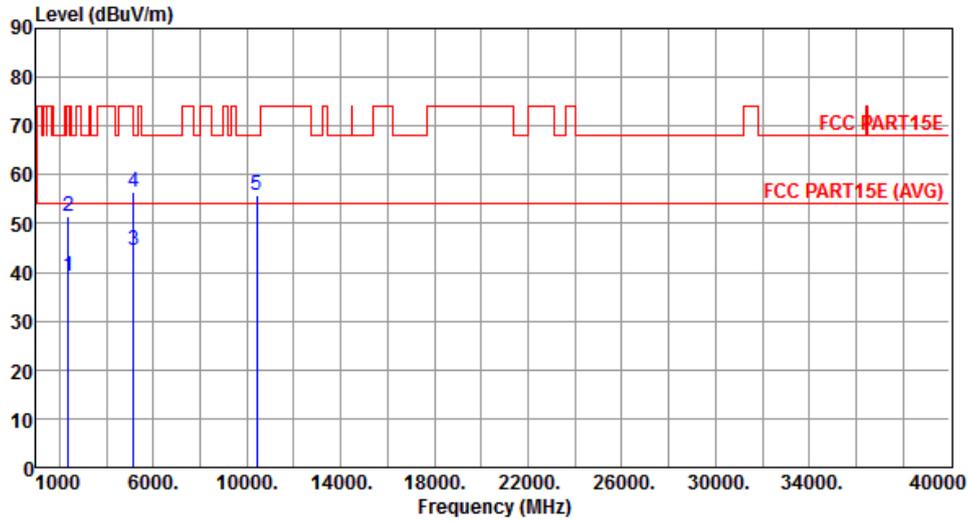
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.23	54.00	-9.77	45.41	-1.18	Average	100	2
2	2375.00	54.20	74.00	-19.80	55.38	-1.18	Peak	100	2
3	5150.00	46.15	54.00	-7.85	40.28	5.87	Average	321	351
4	5150.00	58.55	74.00	-15.45	52.68	5.87	Peak	321	351
5	10360.00	55.71	68.20	-12.49	40.49	15.22	Peak	100	162

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



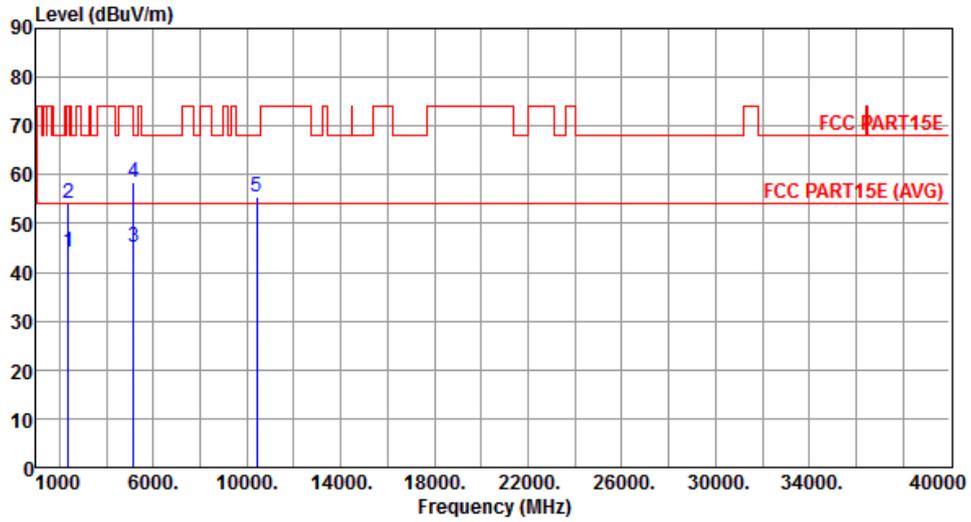
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.17	54.00	-14.83	40.35	-1.18	Average	100	93
2	2375.00	51.55	74.00	-22.45	52.73	-1.18	Peak	100	93
3	5150.00	44.63	54.00	-9.37	38.76	5.87	Average	100	93
4	5150.00	56.31	74.00	-17.69	50.44	5.87	Peak	100	93
5	10400.00	55.64	68.20	-12.56	40.37	15.27	Peak	100	148

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



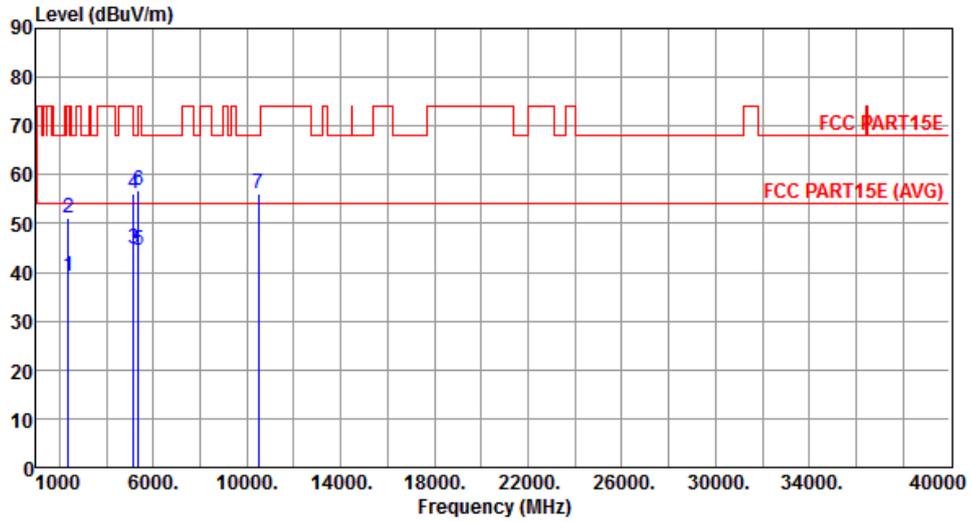
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.20	54.00	-9.80	45.38	-1.18	Average	100	3
2	2375.00	54.23	74.00	-19.77	55.41	-1.18	Peak	100	3
3	5150.00	45.29	54.00	-8.71	39.42	5.87	Average	321	351
4	5150.00	58.55	74.00	-15.45	52.68	5.87	Peak	321	351
5	10400.00	55.59	68.20	-12.61	40.32	15.27	Peak	100	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).

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



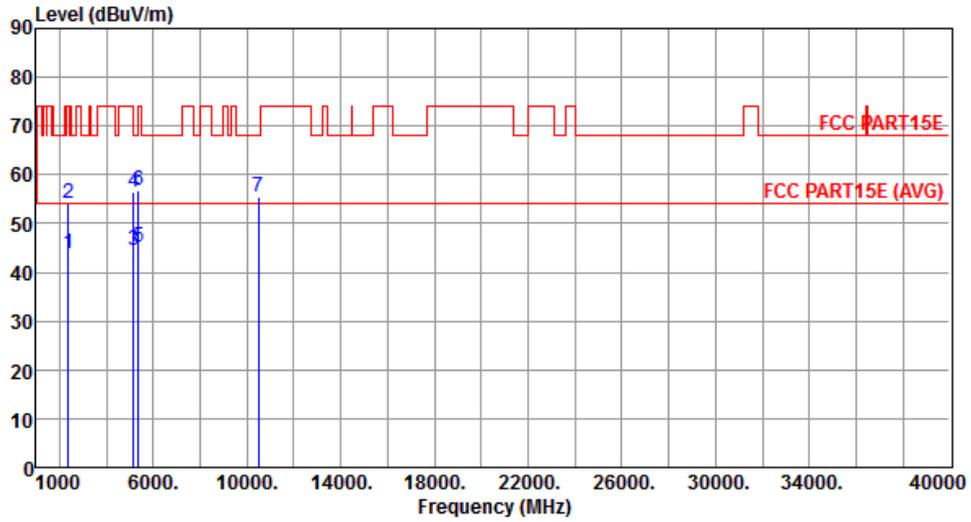
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.09	54.00	-14.91	40.27	-1.18	Average	100	92
2	2375.00	51.13	74.00	-22.87	52.31	-1.18	Peak	100	92
3	5150.00	44.70	54.00	-9.30	38.83	5.87	Average	100	92
4	5150.00	56.28	74.00	-17.72	50.41	5.87	Peak	100	92
5	5350.00	44.67	54.00	-9.33	38.46	6.21	Average	100	92
6	5350.00	56.69	74.00	-17.31	50.48	6.21	Peak	100	92
7	10480.00	55.98	68.20	-12.22	40.62	15.36	Peak	100	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).

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



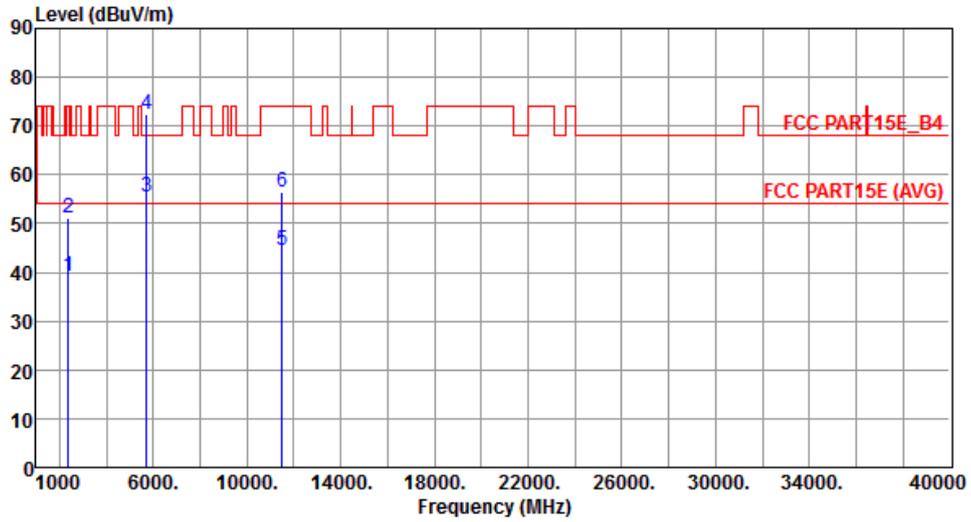
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	43.98	54.00	-10.02	45.16	-1.18	Average	100	2
2	2375.00	54.25	74.00	-19.75	55.43	-1.18	Peak	100	2
3	5150.00	44.35	54.00	-9.65	38.48	5.87	Average	320	350
4	5150.00	56.31	74.00	-17.69	50.44	5.87	Peak	320	350
5	5350.00	45.15	54.00	-8.85	38.94	6.21	Average	320	350
6	5350.00	56.66	74.00	-17.34	50.45	6.21	Peak	320	350
7	10480.00	55.60	68.20	-12.60	40.24	15.36	Peak	100	175

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



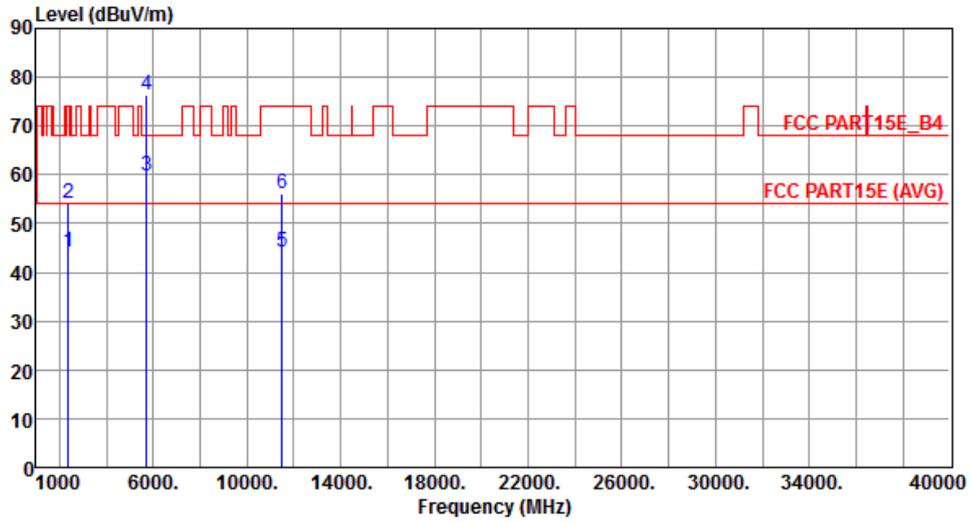
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.14	54.00	-14.86	40.32	-1.18	Average	100	94
2	2375.00	51.18	74.00	-22.82	52.36	-1.18	Peak	100	94
3	5715.00	55.62	68.20	-12.58	48.81	6.81	Peak	100	312
4	5725.00	72.41	78.20	-5.79	65.58	6.83	Peak	100	312
5	11490.00	44.42	54.00	-9.58	28.41	16.01	Average	100	96
6	11490.00	56.31	74.00	-17.69	40.30	16.01	Peak	100	96

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



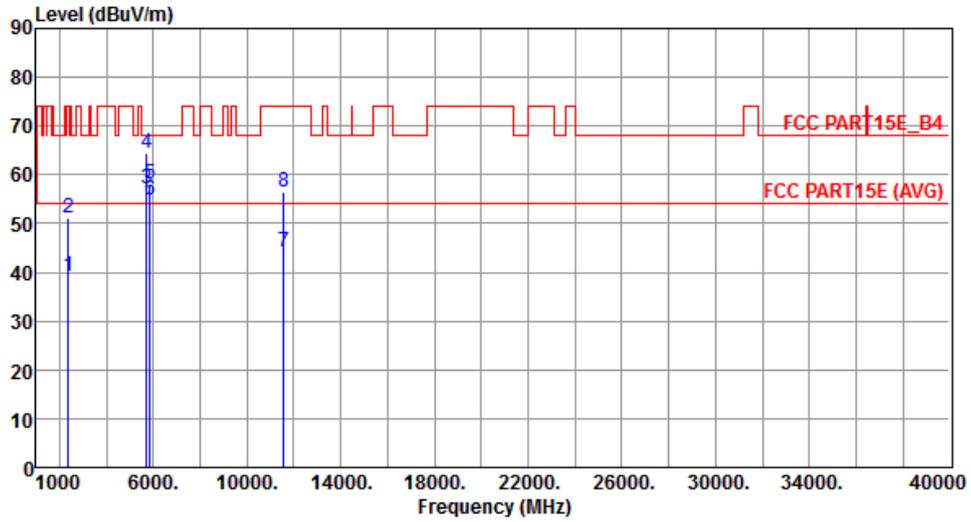
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.26	54.00	-9.74	45.44	-1.18	Average	100	4
2	2375.00	54.29	74.00	-19.71	55.47	-1.18	Peak	100	4
3	5715.00	59.78	68.20	-8.42	52.97	6.81	Peak	367	336
4	5725.00	76.54	78.20	-1.66	69.71	6.83	Peak	367	336
5	11490.00	44.15	54.00	-9.85	28.14	16.01	Average	100	125
6	11490.00	56.23	74.00	-17.77	40.22	16.01	Peak	100	125

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



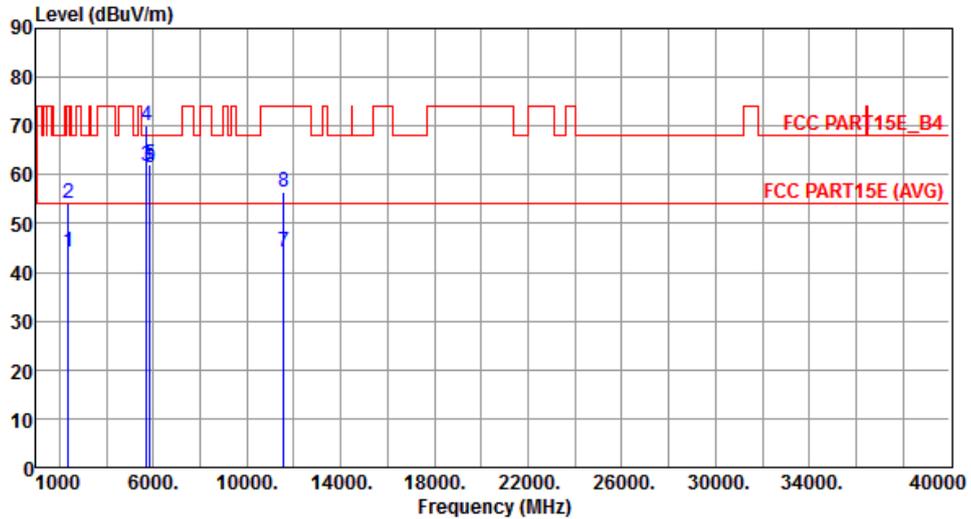
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.10	54.00	-14.90	40.28	-1.18	Average	100	94
2	2375.00	51.12	74.00	-22.88	52.30	-1.18	Peak	100	94
3	5715.00	56.96	68.20	-11.24	50.15	6.81	Peak	100	297
4	5725.00	64.28	78.20	-13.92	57.45	6.83	Peak	100	297
5	5850.00	58.02	78.20	-20.18	50.86	7.16	Peak	100	297
6	5860.00	54.96	68.20	-13.24	47.78	7.18	Peak	100	297
7	11570.00	44.18	54.00	-9.82	28.29	15.89	Average	100	165
8	11570.00	56.49	74.00	-17.51	40.60	15.89	Peak	100	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).

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



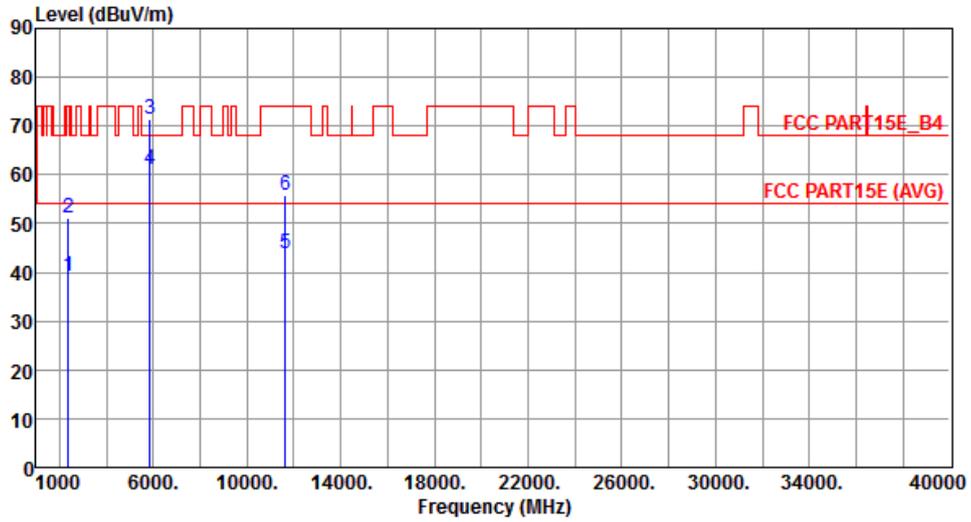
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.22	54.00	-9.78	45.40	-1.18	Average	100	4
2	2375.00	54.23	74.00	-19.77	55.41	-1.18	Peak	100	4
3	5715.00	61.79	68.20	-6.41	54.98	6.81	Peak	377	325
4	5725.00	70.03	78.20	-8.17	63.20	6.83	Peak	377	325
5	5850.00	62.08	78.20	-16.12	54.92	7.16	Peak	377	325
6	5860.00	61.56	68.20	-6.64	54.38	7.18	Peak	377	325
7	11570.00	44.20	54.00	-9.80	28.31	15.89	Average	100	125
8	11570.00	56.40	74.00	-17.60	40.51	15.89	Peak	100	125

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



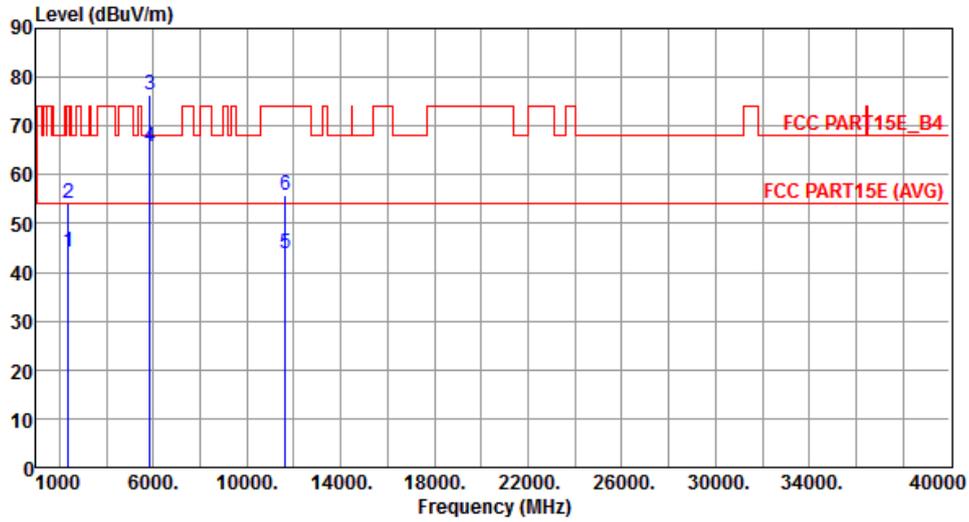
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.12	54.00	-14.88	40.30	-1.18	Average	100	94
2	2375.00	51.16	74.00	-22.84	52.34	-1.18	Peak	100	94
3	5850.00	71.46	78.20	-6.74	64.30	7.16	Peak	100	299
4	5860.00	61.02	68.20	-7.18	53.84	7.18	Peak	100	299
5	11650.00	43.85	54.00	-10.15	28.11	15.74	Average	100	43
6	11650.00	55.92	74.00	-18.08	40.18	15.74	Peak	100	43

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

*Factor includes antenna factor , cable loss and amplifier gain

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

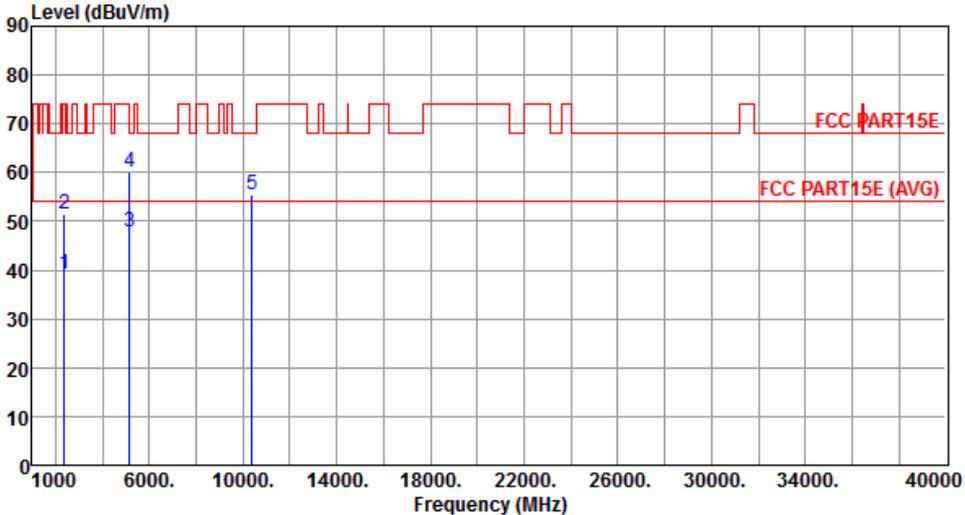
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		



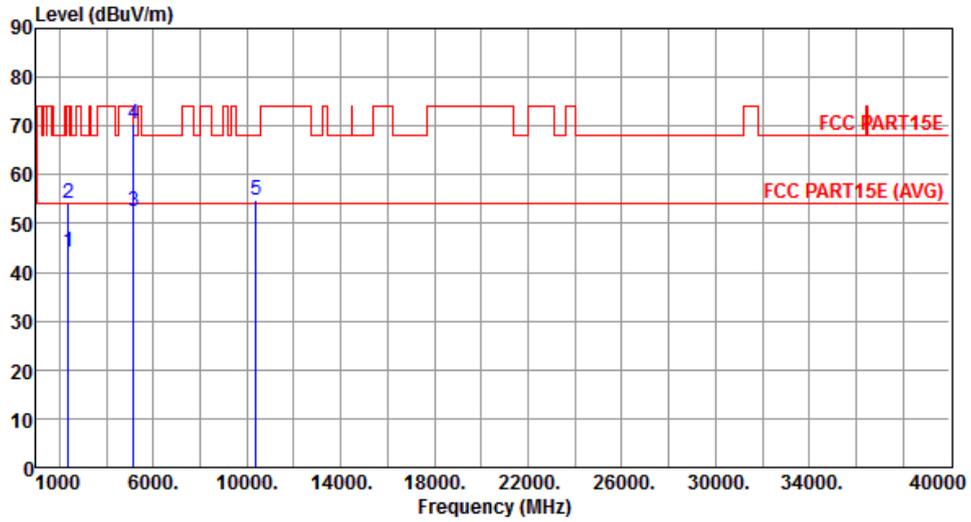
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.24	54.00	-9.76	45.42	-1.18	Average	100	5
2	2375.00	54.20	74.00	-19.80	55.38	-1.18	Peak	100	5
3	5850.00	76.43	78.20	-1.77	69.27	7.16	Peak	392	327
4	5860.00	65.68	68.20	-2.52	58.50	7.18	Peak	392	327
5	11650.00	43.69	54.00	-10.31	27.95	15.74	Average	100	168
6	11650.00	55.84	74.00	-18.16	40.10	15.74	Peak	100	168

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

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

Modulation	VHT40	Test Freq. (MHz)	5190																																																																					
Polarization	Horizontal																																																																							
																																																																								
	<table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission level</th> <th>Limit</th> <th>Margin</th> <th>SA reading</th> <th>Factor</th> <th>Remark</th> <th>ANT High</th> <th>Turn Table</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th></th> <th>cm</th> <th>deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2375.00</td> <td>39.15</td> <td>54.00</td> <td>-14.85</td> <td>40.33</td> <td>-1.18</td> <td>Average</td> <td>100</td> <td>95</td> </tr> <tr> <td>2</td> <td>2375.00</td> <td>51.51</td> <td>74.00</td> <td>-22.49</td> <td>52.69</td> <td>-1.18</td> <td>Peak</td> <td>100</td> <td>95</td> </tr> <tr> <td>3</td> <td>5150.00</td> <td>47.71</td> <td>54.00</td> <td>-6.29</td> <td>41.84</td> <td>5.87</td> <td>Average</td> <td>100</td> <td>58</td> </tr> <tr> <td>4</td> <td>5150.00</td> <td>60.10</td> <td>74.00</td> <td>-13.90</td> <td>54.23</td> <td>5.87</td> <td>Peak</td> <td>100</td> <td>58</td> </tr> <tr> <td>5</td> <td>10380.00</td> <td>55.56</td> <td>68.20</td> <td>-12.64</td> <td>40.31</td> <td>15.25</td> <td>Peak</td> <td>100</td> <td>216</td> </tr> </tbody> </table>	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	1	2375.00	39.15	54.00	-14.85	40.33	-1.18	Average	100	95	2	2375.00	51.51	74.00	-22.49	52.69	-1.18	Peak	100	95	3	5150.00	47.71	54.00	-6.29	41.84	5.87	Average	100	58	4	5150.00	60.10	74.00	-13.90	54.23	5.87	Peak	100	58	5	10380.00	55.56	68.20	-12.64	40.31	15.25	Peak	100	216			
Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table																																																																
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg																																																																
1	2375.00	39.15	54.00	-14.85	40.33	-1.18	Average	100	95																																																															
2	2375.00	51.51	74.00	-22.49	52.69	-1.18	Peak	100	95																																																															
3	5150.00	47.71	54.00	-6.29	41.84	5.87	Average	100	58																																																															
4	5150.00	60.10	74.00	-13.90	54.23	5.87	Peak	100	58																																																															
5	10380.00	55.56	68.20	-12.64	40.31	15.25	Peak	100	216																																																															
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>																																																																								

Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



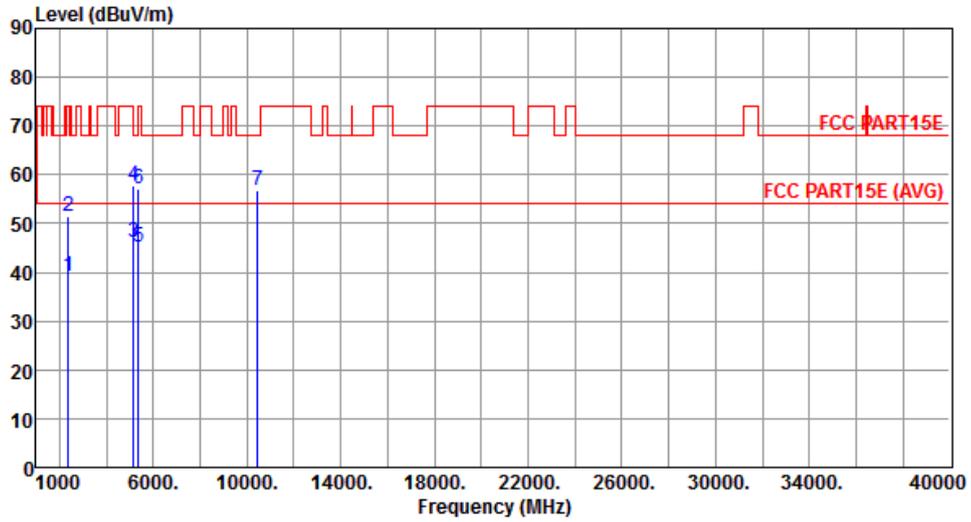
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.23	54.00	-9.77	45.41	-1.18	Average	100	5
2	2375.00	54.28	74.00	-19.72	55.46	-1.18	Peak	100	5
3	5150.00	52.50	54.00	-1.50	46.63	5.87	Average	344	6
4	5150.00	70.35	74.00	-3.65	64.48	5.87	Peak	344	6
5	10380.00	54.83	68.20	-13.37	39.58	15.25	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).

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



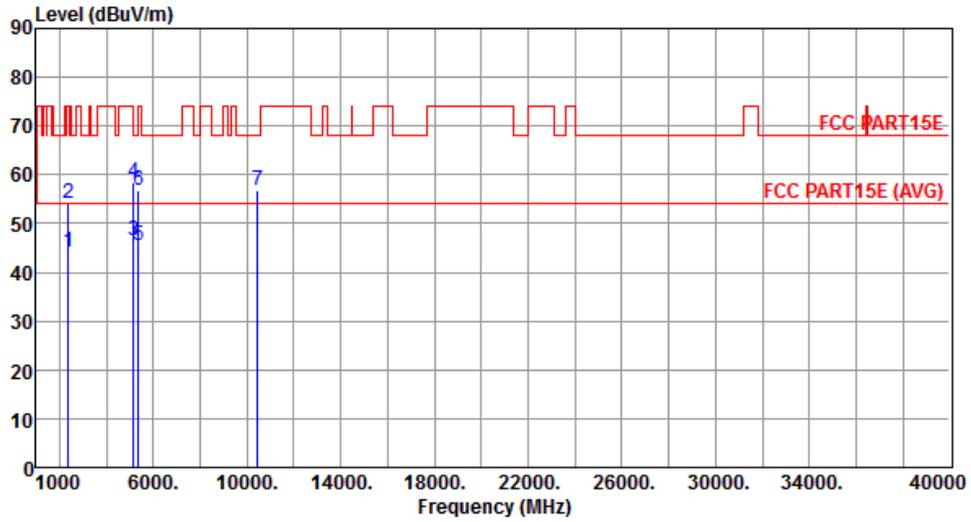
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.18	54.00	-14.82	40.36	-1.18	Average	100	93
2	2375.00	51.54	74.00	-22.46	52.72	-1.18	Peak	100	93
3	5150.00	46.28	54.00	-7.72	40.41	5.87	Average	100	57
4	5150.00	57.75	74.00	-16.25	51.88	5.87	Peak	100	57
5	5350.00	45.20	54.00	-8.80	38.99	6.21	Average	100	57
6	5350.00	57.00	74.00	-17.00	50.79	6.21	Peak	100	57
7	10460.00	56.84	68.20	-11.36	41.50	15.34	Peak	100	209

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



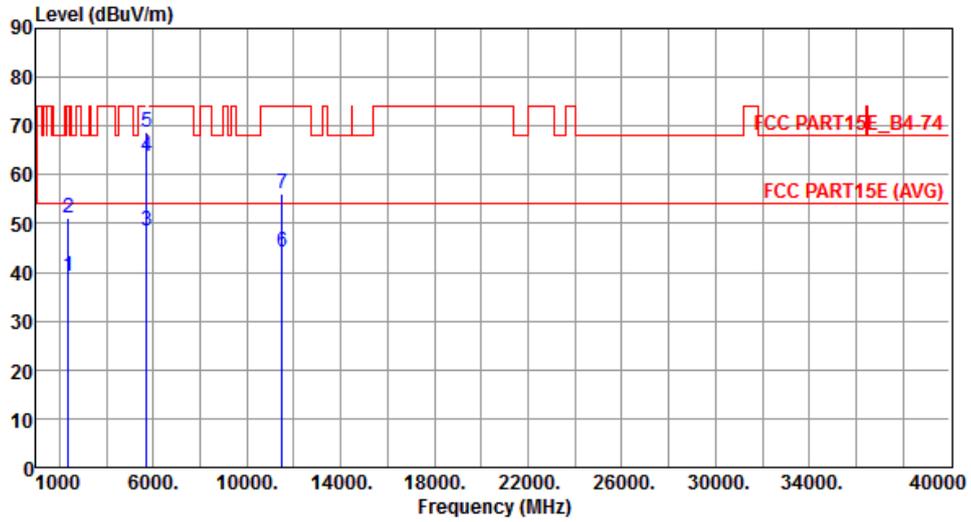
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.23	54.00	-9.77	45.41	-1.18	Average	100	4
2	2375.00	54.26	74.00	-19.74	55.44	-1.18	Peak	100	4
3	5150.00	46.49	54.00	-7.51	40.62	5.87	Average	336	355
4	5150.00	58.36	74.00	-15.64	52.49	5.87	Peak	336	355
5	5350.00	45.63	54.00	-8.37	39.42	6.21	Average	336	355
6	5350.00	56.78	74.00	-17.22	50.57	6.21	Peak	336	355
7	10460.00	56.68	68.20	-11.52	41.34	15.34	Peak	100	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).

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



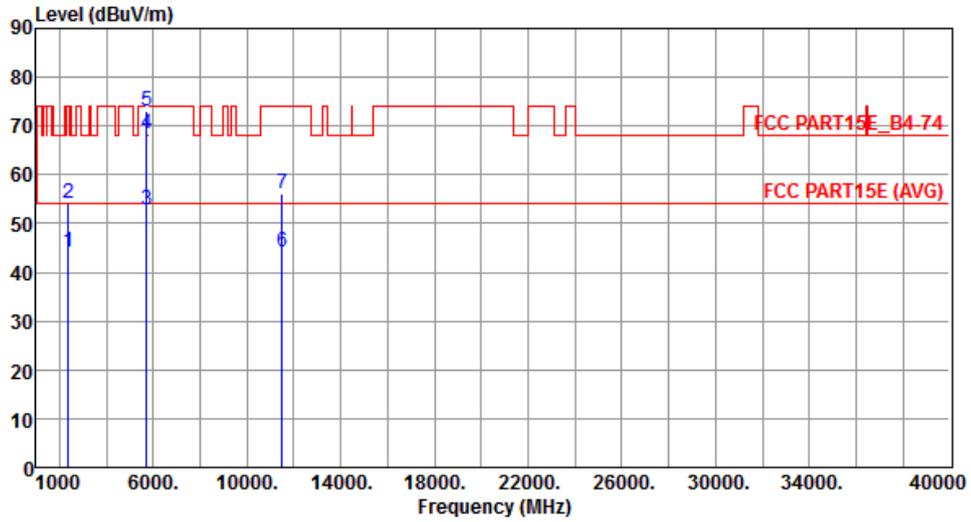
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.13	54.00	-14.87	40.31	-1.18	Average	100	95
2	2375.00	51.18	74.00	-22.82	52.36	-1.18	Peak	100	95
3	5715.00	48.65	54.00	-5.35	41.84	6.81	Average	100	313
4	5715.00	63.69	74.00	-10.31	56.88	6.81	Peak	100	313
5	5725.00	68.82	78.20	-9.38	61.99	6.83	Peak	100	313
6	11510.00	44.28	54.00	-9.72	28.28	16.00	Average	100	133
7	11510.00	56.19	74.00	-17.81	40.19	16.00	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).

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



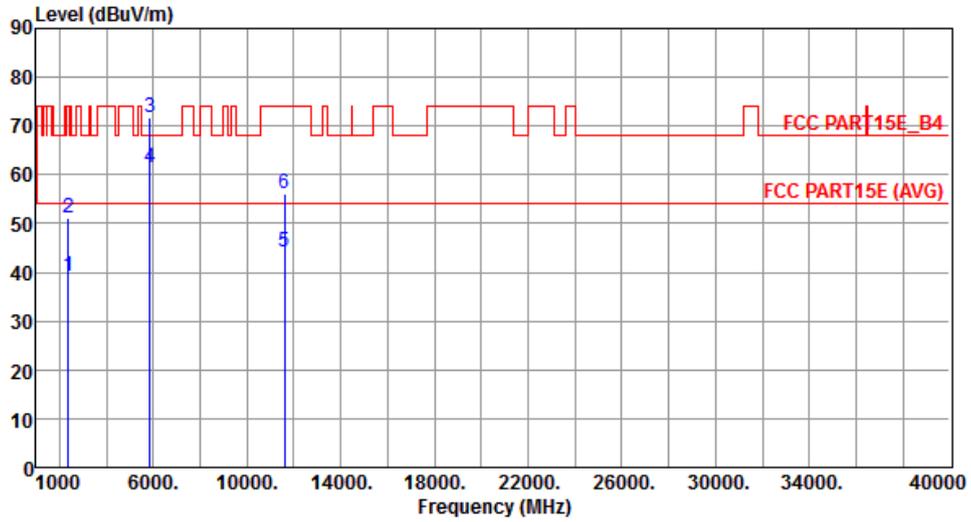
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.21	54.00	-9.79	45.39	-1.18	Average	100	5
2	2375.00	54.27	74.00	-19.73	55.45	-1.18	Peak	100	5
3	5715.00	52.94	54.00	-1.06	46.13	6.81	Average	375	336
4	5715.00	68.35	74.00	-5.65	61.54	6.81	Peak	375	336
5	5725.00	73.17	78.20	-5.03	66.34	6.83	Peak	375	336
6	11510.00	44.23	54.00	-9.77	28.23	16.00	Average	100	165
7	11510.00	56.17	74.00	-17.83	40.17	16.00	Peak	100	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).

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



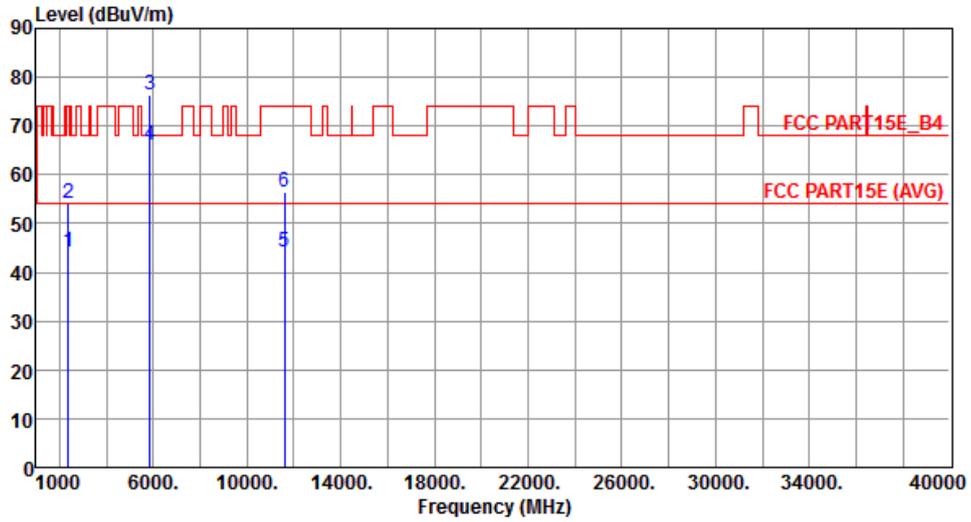
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.13	54.00	-14.87	40.31	-1.18	Average	100	92
2	2375.00	51.08	74.00	-22.92	52.26	-1.18	Peak	100	92
3	5850.00	71.85	78.20	-6.35	64.69	7.16	Peak	100	298
4	5860.00	61.42	68.20	-6.78	54.24	7.18	Peak	100	298
5	11590.00	44.13	54.00	-9.87	28.28	15.85	Average	100	168
6	11590.00	56.16	74.00	-17.84	40.31	15.85	Peak	100	168

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		



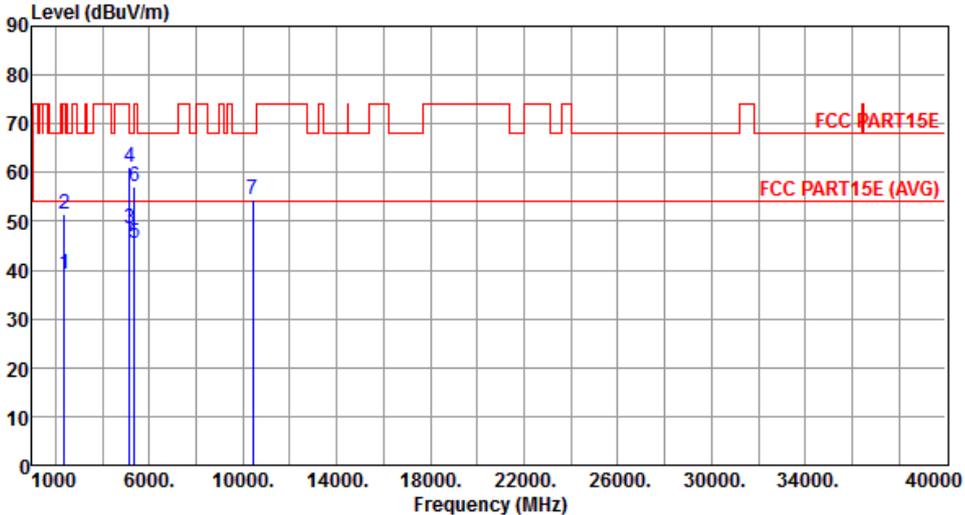
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.23	54.00	-9.77	45.41	-1.18	Average	100	4
2	2375.00	54.26	74.00	-19.74	55.44	-1.18	Peak	100	4
3	5850.00	76.38	78.20	-1.82	69.22	7.16	Peak	326	328
4	5860.00	66.17	68.20	-2.03	58.99	7.18	Peak	326	328
5	11590.00	44.18	54.00	-9.82	28.33	15.85	Average	100	142
6	11590.00	56.39	74.00	-17.61	40.54	15.85	Peak	100	142

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

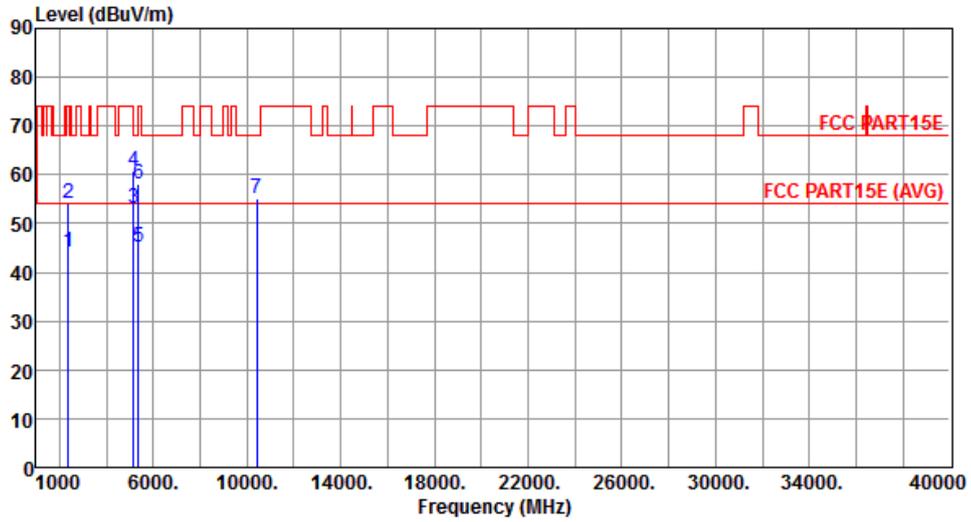
*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	VHT80	Test Freq. (MHz)	5210																																																																																														
Polarization	Horizontal																																																																																																
																																																																																																	
	<table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission level</th> <th>Limit</th> <th>Margin</th> <th>SA reading</th> <th>Factor</th> <th>Remark</th> <th>ANT High</th> <th>Turn Table</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th></th> <th>cm</th> <th>deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2375.00</td> <td>39.11</td> <td>54.00</td> <td>-14.89</td> <td>40.29</td> <td>-1.18</td> <td>Average</td> <td>100</td> <td>94</td> </tr> <tr> <td>2</td> <td>2375.00</td> <td>51.48</td> <td>74.00</td> <td>-22.52</td> <td>52.66</td> <td>-1.18</td> <td>Peak</td> <td>100</td> <td>94</td> </tr> <tr> <td>3</td> <td>5150.00</td> <td>48.58</td> <td>54.00</td> <td>-5.42</td> <td>42.71</td> <td>5.87</td> <td>Average</td> <td>100</td> <td>93</td> </tr> <tr> <td>4</td> <td>5150.00</td> <td>60.98</td> <td>74.00</td> <td>-13.02</td> <td>55.11</td> <td>5.87</td> <td>Peak</td> <td>100</td> <td>93</td> </tr> <tr> <td>5</td> <td>5350.00</td> <td>45.38</td> <td>54.00</td> <td>-8.62</td> <td>39.17</td> <td>6.21</td> <td>Average</td> <td>100</td> <td>93</td> </tr> <tr> <td>6</td> <td>5350.00</td> <td>57.04</td> <td>74.00</td> <td>-16.96</td> <td>50.83</td> <td>6.21</td> <td>Peak</td> <td>100</td> <td>93</td> </tr> <tr> <td>7</td> <td>10420.00</td> <td>54.51</td> <td>68.20</td> <td>-13.69</td> <td>39.21</td> <td>15.30</td> <td>Peak</td> <td>100</td> <td>219</td> </tr> </tbody> </table>	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	1	2375.00	39.11	54.00	-14.89	40.29	-1.18	Average	100	94	2	2375.00	51.48	74.00	-22.52	52.66	-1.18	Peak	100	94	3	5150.00	48.58	54.00	-5.42	42.71	5.87	Average	100	93	4	5150.00	60.98	74.00	-13.02	55.11	5.87	Peak	100	93	5	5350.00	45.38	54.00	-8.62	39.17	6.21	Average	100	93	6	5350.00	57.04	74.00	-16.96	50.83	6.21	Peak	100	93	7	10420.00	54.51	68.20	-13.69	39.21	15.30	Peak	100	219								
Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table																																																																																									
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg																																																																																									
1	2375.00	39.11	54.00	-14.89	40.29	-1.18	Average	100	94																																																																																								
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<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>																																																																																																	

Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



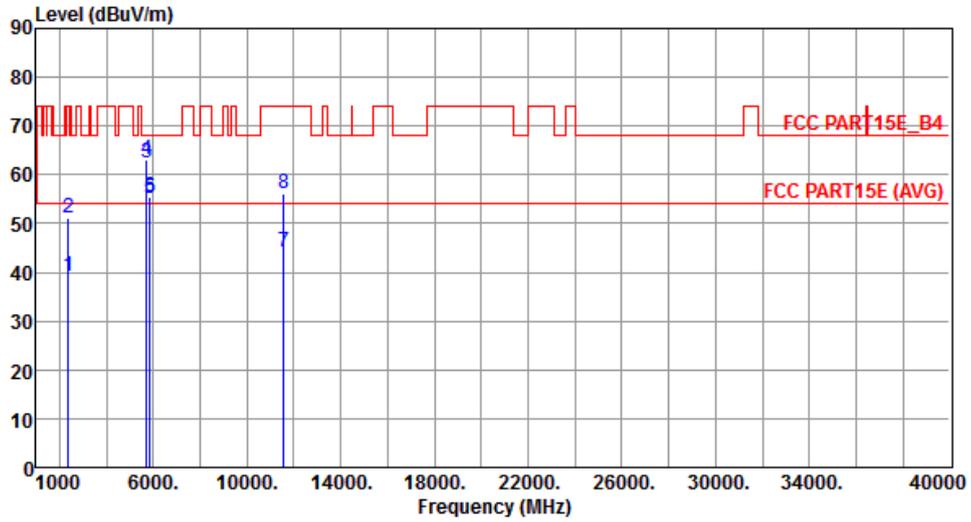
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.19	54.00	-9.81	45.37	-1.18	Average	100	4
2	2375.00	54.21	74.00	-19.79	55.39	-1.18	Peak	100	4
3	5150.00	52.98	54.00	-1.02	47.11	5.87	Average	387	25
4	5150.00	60.93	74.00	-13.07	55.06	5.87	Peak	387	25
5	5350.00	45.20	54.00	-8.80	38.99	6.21	Average	387	25
6	5350.00	58.18	74.00	-15.82	51.97	6.21	Peak	387	25
7	10420.00	54.98	68.20	-13.22	39.68	15.30	Peak	100	191

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



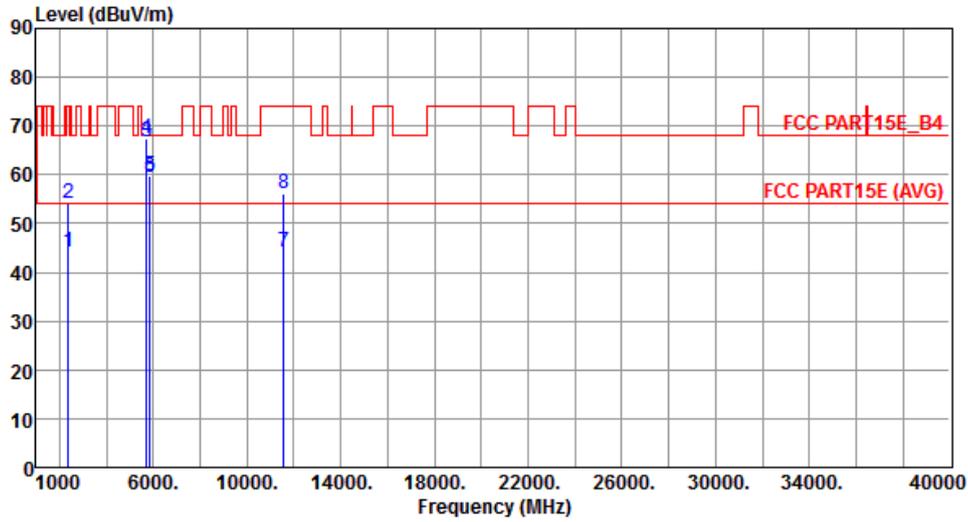
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	39.08	54.00	-14.92	40.26	-1.18	Average	100	93
2	2375.00	51.09	74.00	-22.91	52.27	-1.18	Peak	100	93
3	5715.00	62.36	68.20	-5.84	55.55	6.81	Peak	100	313
4	5725.00	63.15	78.20	-15.05	56.32	6.83	Peak	100	313
5	5850.00	55.27	78.20	-22.93	48.11	7.16	Peak	100	313
6	5860.00	55.47	68.20	-12.73	48.29	7.18	Peak	100	313
7	11550.00	44.21	54.00	-9.79	28.28	15.93	Average	100	56
8	11550.00	56.19	74.00	-17.81	40.26	15.93	Peak	100	56

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2375.00	44.24	54.00	-9.76	45.42	-1.18	Average	374	334
2	2375.00	54.26	74.00	-19.74	55.44	-1.18	Peak	374	334
3	5715.00	66.74	68.20	-1.46	59.93	6.81	Peak	374	334
4	5725.00	67.46	78.20	-10.74	60.63	6.83	Peak	374	334
5	5850.00	59.67	78.20	-18.53	52.51	7.16	Peak	374	334
6	5860.00	59.35	68.20	-8.85	52.17	7.18	Peak	374	334
7	11550.00	44.15	54.00	-9.85	28.22	15.93	Average	100	172
8	11550.00	56.24	74.00	-17.76	40.31	15.93	Peak	100	172

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

*Factor includes antenna factor , cable loss and amplifier gain

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

3.6 Frequency Stability

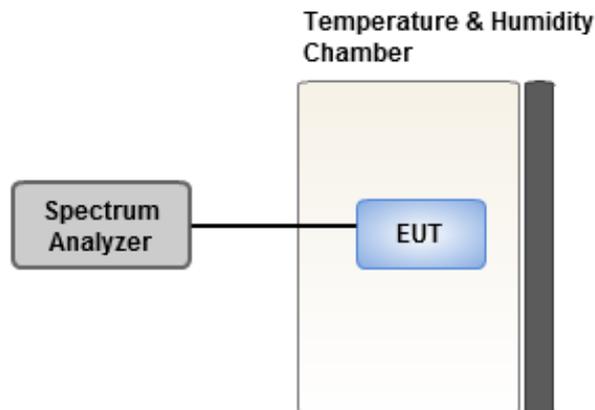
3.6.1 Limit of Frequency Stability

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

3.6.2 Test Procedures

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

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability

Frequency: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C _{Vmax}	3.55	3.65	4.10	3.33
T20°C _{Vmin}	3.86	3.87	3.82	4.68
T50°C _{Vnom}	4.29	3.88	4.07	4.56
T40°C _{Vnom}	2.13	2.01	1.97	2.75
T30°C _{Vnom}	2.35	1.87	2.17	2.62
T20°C _{Vnom}	4.41	4.60	4.42	4.05
T10°C _{Vnom}	3.01	3.47	3.66	3.54
T0°C _{Vnom}	4.20	4.10	3.68	3.99
T-10°C _{Vnom}	3.03	3.11	3.07	2.89
T-20°C _{Vnom}	2.91	2.49	2.14	2.35
T-30°C _{Vnom}	1.83	2.13	1.49	1.71
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}	3.47	3.32	3.58	3.66
T20°C _{Vmin}	2.30	2.04	2.52	2.15
T50°C _{Vnom}	3.45	4.21	4.57	4.18
T40°C _{Vnom}	3.41	2.98	3.67	3.08
T30°C _{Vnom}	2.55	2.56	2.75	2.84
T20°C _{Vnom}	1.35	1.72	1.38	1.93
T10°C _{Vnom}	2.35	1.77	2.55	1.54
T0°C _{Vnom}	1.31	1.56	2.11	1.49
T-10°C _{Vnom}	-0.12	0.67	-0.18	0.66
T-20°C _{Vnom}	1.47	1.69	1.67	1.46
T-30°C _{Vnom}	0.46	1.44	0.34	0.72
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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Kou District, New Taipei City,
Taiwan, R.O.C.

Kwei Shan

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

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan 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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