FCC Test Report

FCC ID	:	**P27NA502S**
Equipment	:	**Multiple RF Home Gateway**
Model No.	:	**NA502S**
Brand Name	:	**Sercomm**
Multiple Listing	:	**Refer to item 1.1.1 for more details**
Applicant	:	**Sercomm Corporation**
Address	:	**8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.**
Standard	:	**47 CFR FCC Part 15.407**
Received Date	:	**Nov. 21, 2016**
Tested Date	:	**Nov. 29 ~ Dec. 12, 2016**

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

Reviewed by: **Approved by:**

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

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FR6N2103AN	Rev. 01	Initial issue	Mar. 03, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.406MHz 41.19 (Margin -6.54dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 52.92 (Margin -1.08dB) - AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: 5150-5250MHz: 19.07 5725-5850MHz: 22.05	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 following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Sercomm	NA502Sxxxxxxxx	Multiple RF Home Gateway	the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-" , for marketing purpose.
MiOS	G550xxxxx	Multiple RF Home Gateway	
Nortek	GC1xxxxxxxx	Multiple RF Home Gateway	
Vera	VeraSecurexxxxx	Multiple RF Home Gateway	
Vera	VeraSecurexxxxx	Advanced Smart Home Security Controller	
✦ All models are electrically identical, different model names are for marketing purpose. ✦ The above models, model **NA502S** was selected as a representative one for the final test and only its data was recorded in this report.			

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.	**Model**	**Type**	**Connector**	**Operating Frequencies (MHz) / Antenna Gain (dBi)**		
				2400~2483.5	**5150~5250**	**5725~5850**
1	2.4G-1	PIFA	UFL	3.7	---	---
2	2.4G-2	PIFA	UFL	3.9	---	---
3	5G-1	Dipole	UFL	---	1.1	2.2
4	5G-2	PIFA	UFL	---	1.4	3.6

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from adapter

1.1.5 Accessories

Accessories		
No.	**Equipment**	**Description**
1	Adapter	Brand: LEI Model: MU24-Y120200-A2 I/P: 100-240Vac, 50/60Hz, 0.7A O/P: 12Vdc, 2A Power line: 1.5m non-shielded without core
2	Adapter	Brand: APD Model: WA-24Q12FU I/P: 100-240Vac, 50-60Hz, 0.7A O/P: 12Vdc, 2A Power line: 1.5m non-shielded without core
3	Lithium-ion Battery	Brand: Simplo Technology Co. LTD. Model: A3EQ2009H Rating: 7.5Vdc, 2400mAh

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	**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	---	---

1.1.7 Test Tool and Duty Cycle

Test Tool	MT7662 QA, V1.0.3.2		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	93.06%	0.31
	VHT20	91.47%	0.39
	VHT40	94.78%	0.23
	VHT80	72.64%	1.39

1.1.8 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5180	14/12
11a	5200	16/13
11a	5240	16/13
HT20	5180	1B/19
HT20	5200	1D/1B
HT20	5240	1C/1A
HT40	5190	16/13
HT40	5230	1E/1B
VHT20	5180	1B/19
VHT20	5200	1D/1B
VHT20	5240	1C/1A
VHT40	5190	16/13
VHT40	5230	1E/1B
VHT80	5210	14/12

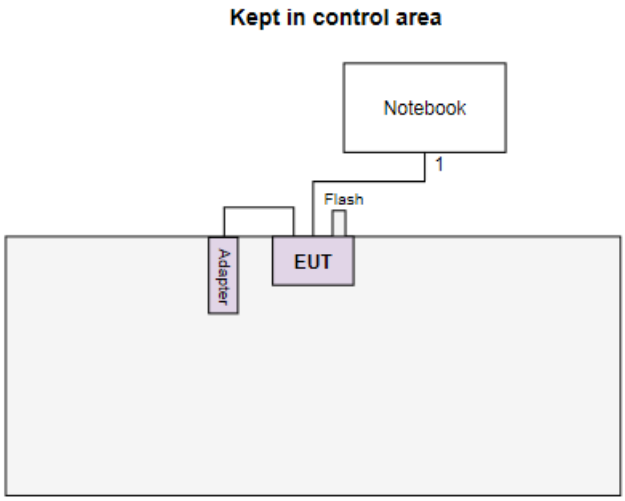
For Frequency band 5725~5850 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5745	1D/1C
11a	5785	1B/1A
11a	5825	1A/1A
HT20	5745	21/21
HT20	5785	21/21
HT20	5825	20/20
HT40	5755	23/22
HT40	5795	22/21
VHT20	5745	21/21
VHT20	5785	21/21
VHT20	5825	20/20
VHT40	5755	23/22
VHT40	5795	22/21
VHT80	5775	22/22

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	9ZFB4X1	DoC	RJ45, 10m non-shielded.
2	USB Flash	SONY	USM16GU	0000020	---	---

1.3 Test Setup Chart

Test Setup Diagram



1. RJ45, 10m non-shielded

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Dec. 12, 2016				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Jan. 12, 2016	Jan. 11, 2017
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 08, 2016	Nov. 07, 2017
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 chamber1 / (03CH01-WS)				
Tested Date	Nov. 29 ~ Dec. 06, 2016				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 04, 2016	Aug. 03, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 16, 2015	Dec. 15, 2016
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. 10, 2015	Dec. 09, 2016
Preamplifier	EMC	EMC02325	980225	Aug. 05, 2016	Aug. 04, 2017
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2016	Oct. 05, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	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	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Dec. 09, 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. 21, 2016	Nov. 20, 2017
Power Meter	Anritsu	ML2495A	1241002	Oct. 06, 2016	Oct. 05, 2017
Power Sensor	Anritsu	MA2411B	1207366	Oct. 06, 2016	Oct. 05, 2017
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 ≤ 1GHz	±3.66 dB
Radiated emission > 1GHz	±5.63 dB
Time	±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 / 60%	Howard Huang
Radiated Emissions	03CH01-WS	21-22°C / 60-61%	Vincent Yeh Kevin Lee
RF Conducted	TH01-WS	21°C / 63%	Alex Huang

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

For Frequency band 5150-5250 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate (Mbps) / MCS**	**Test Configuration**
Conducted Emissions	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. Two adapters (LEI & APD) had been covered during the pretest and found that **LEI adapter** was the worst case and was selected for final test.
2. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **X-plane** results were found as the worst case and were shown in this report.

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	---
Radiated Emissions ≤1GHz	VHT40	5755	MCS 0	---
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 >1GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a	5745 / 5785 / 5825	6 Mbps	---
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Frequency Stability	Un-modulation	5785	---	---

NOTE:

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

3 Transmitter Test Results

3.1 Conducted Emissions

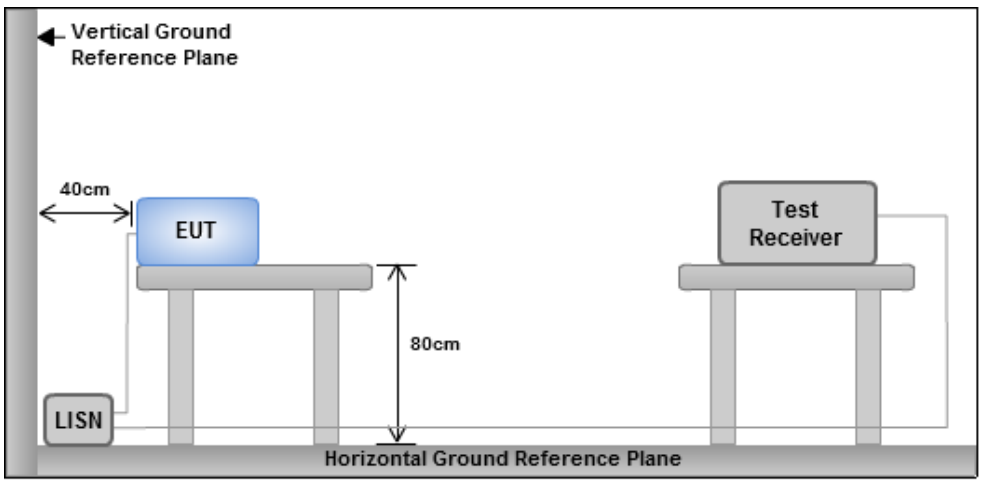
3.1.1 Limit of Conducted Emissions

Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Test Procedures

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

3.1.3 Test Setup

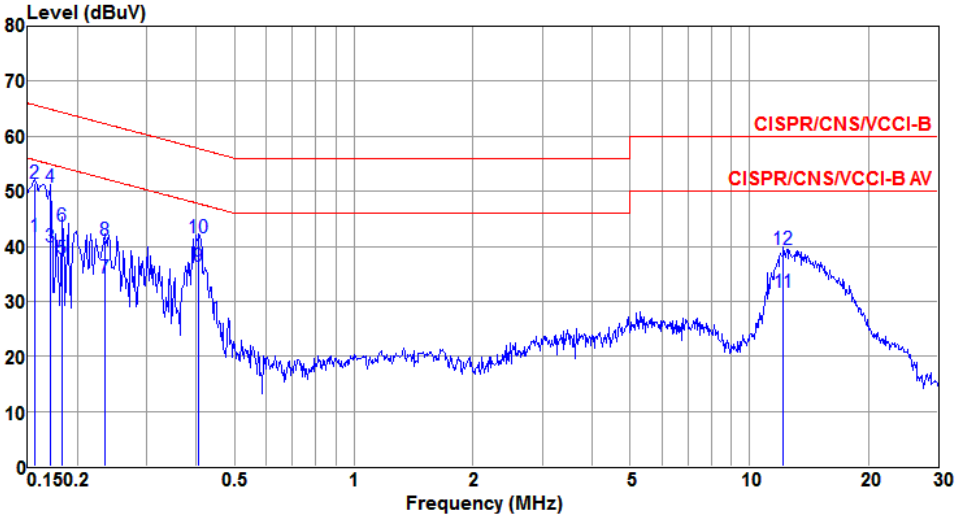


Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

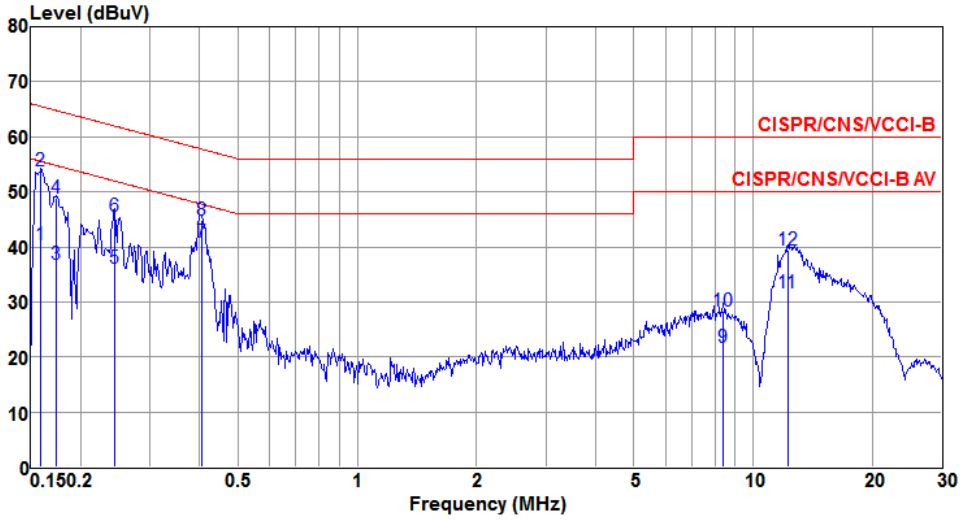
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	41.68	55.65	-13.97	41.59	0.07	0.02	Average
2	0.156	51.53	65.65	-14.12	51.44	0.07	0.02	QP
3	0.171	40.00	54.90	-14.90	39.90	0.08	0.02	Average
4	0.171	50.75	64.90	-14.15	50.65	0.08	0.02	QP
5	0.183	37.74	54.33	-16.59	37.63	0.09	0.02	Average
6	0.183	43.68	64.33	-20.65	43.57	0.09	0.02	QP
7	0.234	34.19	52.30	-18.11	34.08	0.09	0.02	Average
8	0.234	41.11	62.30	-21.19	41.00	0.09	0.02	QP
9@	0.406	36.42	47.73	-11.31	36.33	0.06	0.03	Average
10	0.406	41.55	57.73	-16.18	41.46	0.06	0.03	QP
11	12.188	31.55	50.00	-18.45	31.11	0.26	0.18	Average
12	12.188	39.48	60.00	-20.52	39.04	0.26	0.18	QP

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

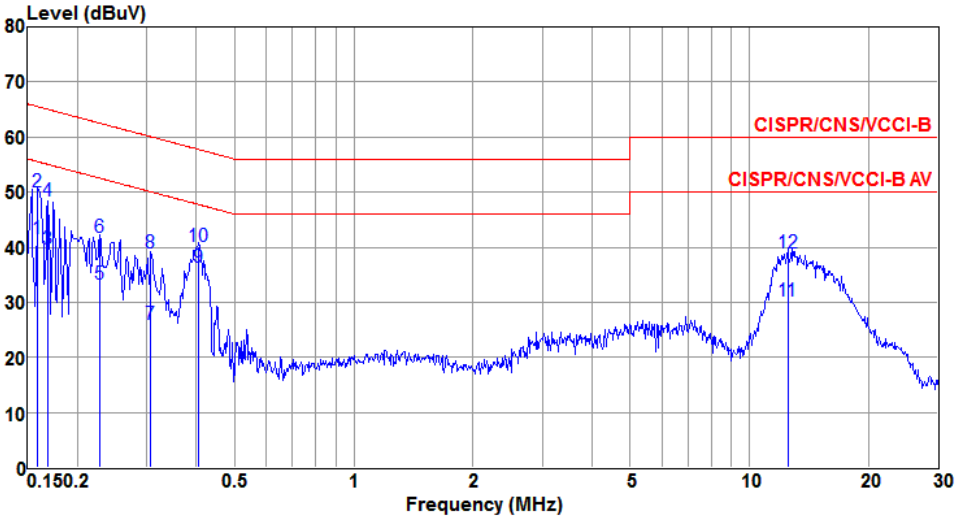
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Neutral		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.159	40.31	55.52	-15.21	40.19	0.10	0.02	Average
2	0.159	53.93	65.52	-11.59	53.81	0.10	0.02	QP
3	0.174	36.73	54.77	-18.04	36.62	0.09	0.02	Average
4	0.174	48.87	64.77	-15.90	48.76	0.09	0.02	QP
5	0.244	36.05	51.95	-15.90	35.93	0.10	0.02	Average
6	0.244	45.59	61.95	-16.36	45.47	0.10	0.02	QP
7@	0.404	40.87	47.77	-6.90	40.71	0.13	0.03	Average
8	0.404	44.84	57.77	-12.93	44.68	0.13	0.03	QP
9	8.412	21.73	50.00	-28.27	21.30	0.28	0.15	Average
10	8.412	28.24	60.00	-31.76	27.81	0.28	0.15	QP
11	12.253	31.63	50.00	-18.37	31.10	0.34	0.19	Average
12	12.253	39.35	60.00	-20.65	38.82	0.34	0.19	QP

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

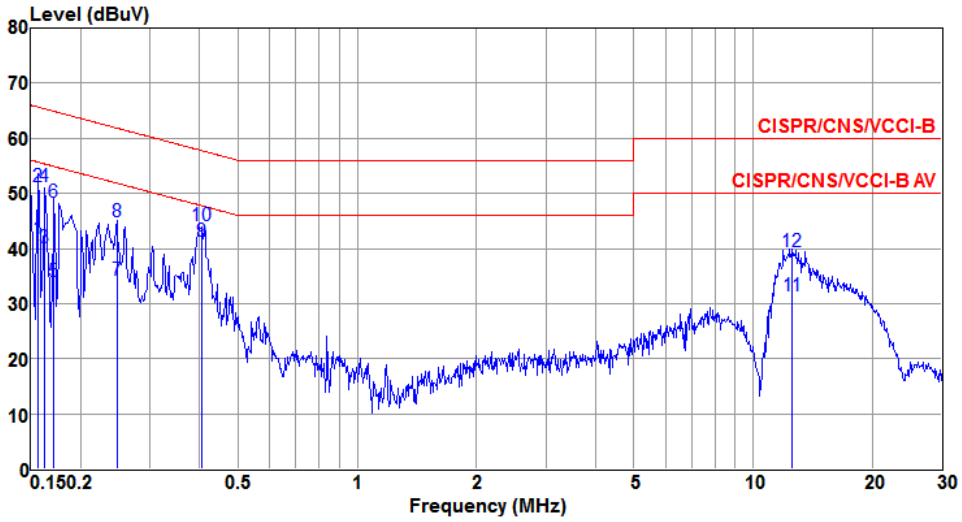
Modulation	VHT40	Test Freq. (MHz)	5755
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.159	41.48	55.52	-14.04	41.38	0.08	0.02	Average
2	0.159	50.09	65.52	-15.43	49.99	0.08	0.02	QP
3	0.169	39.77	55.03	-15.26	39.67	0.08	0.02	Average
4	0.169	48.46	65.03	-16.57	48.36	0.08	0.02	QP
5	0.228	33.23	52.52	-19.29	33.12	0.09	0.02	Average
6	0.228	41.69	62.52	-20.83	41.58	0.09	0.02	QP
7	0.307	25.94	50.06	-24.12	25.83	0.08	0.03	Average
8	0.307	38.97	60.06	-21.09	38.86	0.08	0.03	QP
9@	0.406	36.40	47.73	-11.33	36.31	0.06	0.03	Average
10	0.406	40.18	57.73	-17.55	40.09	0.06	0.03	QP
11	12.516	30.14	50.00	-19.86	29.69	0.26	0.19	Average
12	12.516	38.84	60.00	-21.16	38.39	0.26	0.19	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		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	41.70	55.65	-13.95	41.58	0.10	0.02	Average
2	0.156	51.28	65.65	-14.37	51.16	0.10	0.02	QP
3	0.162	40.13	55.34	-15.21	40.01	0.10	0.02	Average
4	0.162	51.17	65.34	-14.17	51.05	0.10	0.02	QP
5	0.171	33.95	54.90	-20.95	33.83	0.10	0.02	Average
6	0.171	48.40	64.90	-16.50	48.28	0.10	0.02	QP
7	0.247	34.34	51.86	-17.52	34.22	0.10	0.02	Average
8	0.247	44.76	61.86	-17.10	44.64	0.10	0.02	QP
9@	0.406	41.19	47.73	-6.54	41.03	0.13	0.03	Average
10	0.406	44.16	57.73	-13.57	44.00	0.13	0.03	QP
11	12.582	31.34	50.00	-18.66	30.81	0.34	0.19	Average
12	12.582	39.50	60.00	-20.50	38.97	0.34	0.19	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.

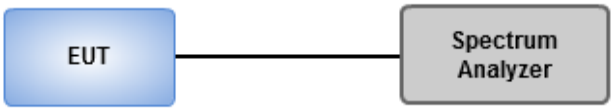
Occupied Bandwidth

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

6dB Bandwidth

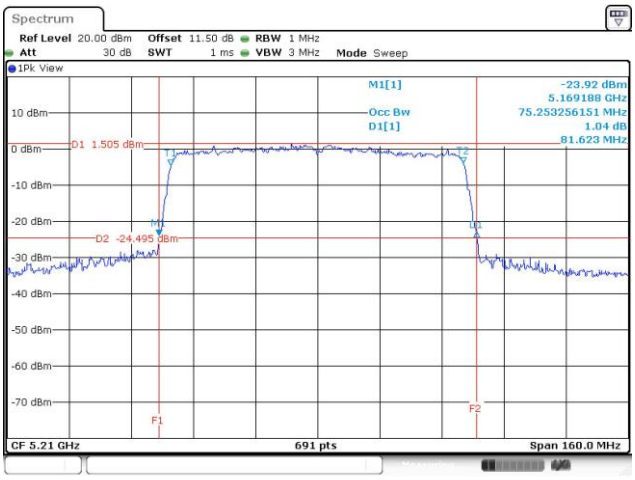
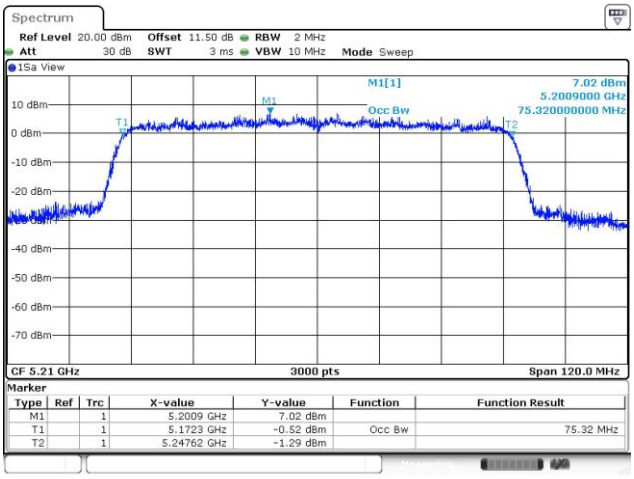
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak,Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB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

3.2.3 Test Setup

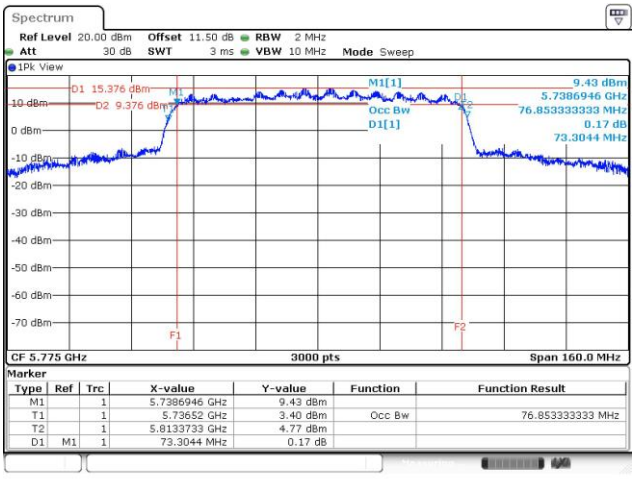
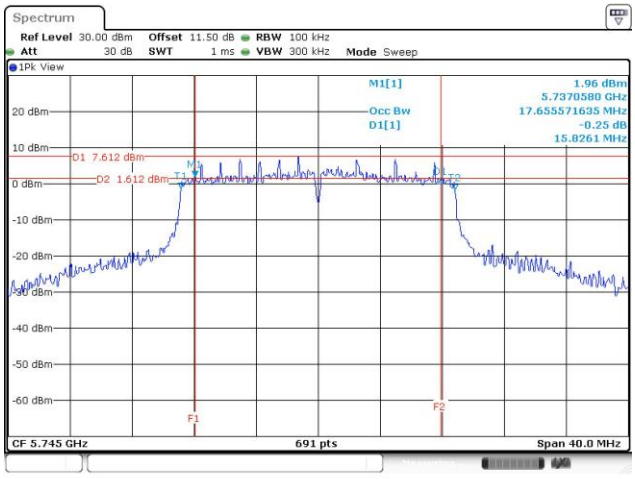


3.2.4 Test Result of Emission Bandwidth

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	20.46	20.23	---	---	16.82	16.80	---	---
11a	2	5200	21.28	25.04	---	---	16.88	16.83	---	---
11a	2	5240	21.57	20.35	---	---	16.87	16.79	---	---
VHT20	2	5180	29.22	21.22	---	---	17.75	17.72	---	---
VHT20	2	5200	29.80	21.97	---	---	17.81	17.73	---	---
VHT20	2	5240	27.13	21.74	---	---	17.76	17.74	---	---
VHT40	2	5190	41.39	41.51	---	---	36.20	36.18	---	---
VHT40	2	5230	68.17	53.10	---	---	36.62	36.34	---	---
VHT80	2	5210	81.62	81.62	---	---	75.32	75.28	---	---

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

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	2	5745	17.29	17.23	---	---	16.06	16.06	---	---	0.5
11a	2	5785	17.05	17.01	---	---	16.29	16.06	---	---	0.5
11a	2	5825	16.99	17.05	---	---	16.06	16.29	---	---	0.5
VHT20	2	5745	18.03	18.00	---	---	16.75	15.83	---	---	0.5
VHT20	2	5785	18.00	18.03	---	---	17.33	17.10	---	---	0.5
VHT20	2	5825	17.88	17.97	---	---	16.93	16.29	---	---	0.5
VHT40	2	5755	37.31	37.25	---	---	35.25	35.25	---	---	0.5
VHT40	2	5795	37.07	36.96	---	---	35.25	35.25	---	---	0.5
VHT80	2	5775	75.59	76.85	---	---	75.13	75.13	---	---	0.5

Worst Plots of 99% Bandwidth	Worst Plots of 6dB Bandwidth
	

3.3 RF Output Power

3.3.1 Limit of RF Output Power

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

Frequency Band (MHz)		**Limit**
☐	5250 ~ 5350	250mW or 11dBm+10 log B
☐	5470 ~ 5725	250mW or 11dBm+10 log B
☒	5725 ~ 5850	1 W
Note: “B” is the 26dB emission bandwidth in MHz.		

3.3.2 Test Procedures

☒ **Method PM-G (Measurement using a gated RF average power meter)**

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

3.3.3 Test Setup

3.3.4 Test Result of Maximum Conducted Output Power

For Frequency band 5150-5250 MHz									
Mode	N_{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	2	5180	13.45	13.58	---	---	44.934	16.53	30.00
11a	2	5200	13.79	14.2	---	---	50.236	17.01	30.00
11a	2	5240	14.42	14.72	---	---	57.318	17.58	30.00
HT20	2	5180	14.21	14.39	---	---	53.842	17.31	30.00
HT20	2	5200	15.48	15.22	---	---	68.584	18.36	30.00
HT20	2	5240	15.05	14.96	---	---	63.322	18.02	30.00
HT40	2	5190	12.01	12.16	---	---	32.329	15.10	30.00
HT40	2	5230	16.01	15.94	---	---	79.167	18.99	30.00
VHT20	2	5180	14.25	14.45	---	---	54.468	17.36	30.00
VHT20	2	5200	15.62	15.25	---	---	69.972	18.45	30.00
VHT20	2	5240	15.16	15.01	---	---	64.505	18.10	30.00
VHT40	2	5190	12.07	12.3	---	---	33.089	15.20	30.00
VHT40	2	5230	16.06	16.05	---	---	80.636	19.07	30.00
VHT80	2	5210	11.22	11.63	---	---	27.798	14.44	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	18.11	18	---	---	127.810	21.07	30.00
11a	2	5785	17.3	17.35	---	---	108.028	20.34	30.00
11a	2	5825	17.03	17.33	---	---	104.542	20.19	30.00
HT20	2	5745	17.91	17.70	---	---	120.686	20.82	30.00
HT20	2	5785	17.89	17.58	---	---	118.797	20.75	30.00
HT20	2	5825	17.67	17.19	---	---	110.839	20.45	30.00
HT40	2	5755	18.81	19.11	---	---	157.503	21.97	30.00
HT40	2	5795	18.33	18.45	---	---	138.061	21.40	30.00
VHT20	2	5745	17.95	17.73	---	---	121.666	20.85	30.00
VHT20	2	5785	17.95	17.63	---	---	120.316	20.80	30.00
VHT20	2	5825	17.73	17.23	---	---	112.137	20.50	30.00
VHT40	2	5755	18.87	19.2	---	---	160.267	22.05	30.00
VHT40	2	5795	18.41	18.51	---	---	140.300	21.47	30.00
VHT80	2	5775	18.73	18.55	---	---	146.259	21.65	30.00

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

Frequency band 5150-5250 MHz		
Operating Mode		**Limit**
☐	Outdoor access point	17 dBm / MHz
☒	Indoor access point	17 dBm / MHz
☐	Fixed point-to-point access points	17 dBm / MHz
☐	Mobile and portable client devices	11 dBm / MHz

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

3.4.2 Test Procedures

For 5150 ~ 5250 MHz

☐ Method SA-1

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 ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add 10 log(1/x), where x is the duty cycle.

For 5725 ~ 5850 MHz

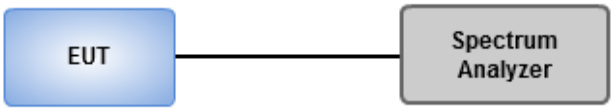
☐ Method SA-1

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 ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add 10 log(1/x), where x is the duty cycle.

3.4.3 Test Setup

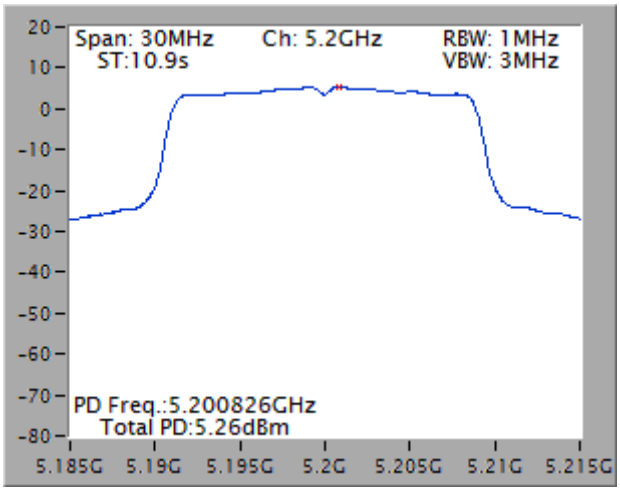


3.4.4 Test Result of Peak Power Spectral Density

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	3.76	0.31	4.07	17
11a	2	5200	4.46	0.31	4.77	17
11a	2	5240	4.57	0.31	4.88	17
VHT20	2	5180	4.43	0.39	4.82	17
VHT20	2	5200	5.26	0.39	5.65	17
VHT20	2	5240	4.89	0.39	5.28	17
VHT40	2	5190	-1.61	0.23	-1.38	17
VHT40	2	5230	2.14	0.23	2.37	17
VHT80	2	5210	-5.73	1.39	-4.34	17

Note:
1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.

Worst Plot

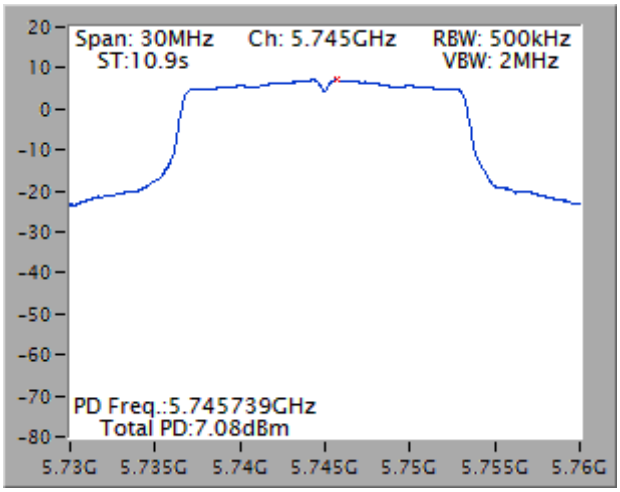


Note: The plot without duty factor.

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	7.08	0.31	7.39	30.00
11a	2	5785	6.09	0.31	6.40	30.00
11a	2	5825	6.12	0.31	6.43	30.00
VHT20	2	5745	6.50	0.39	6.89	30.00
VHT20	2	5785	6.43	0.39	6.82	30.00
VHT20	2	5825	6.21	0.39	6.60	30.00
VHT40	2	5755	4.12	0.23	4.35	30.00
VHT40	2	5795	3.60	0.23	3.83	30.00
VHT80	2	5775	0.46	1.39	1.85	30.00

Note:
1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.

Worst Plots



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	☒	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

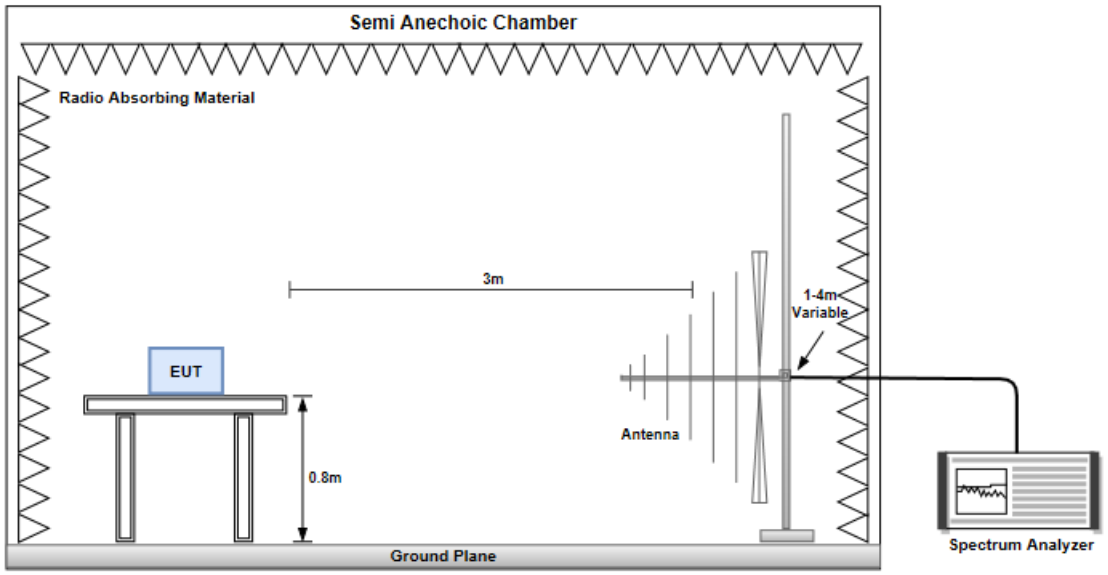
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

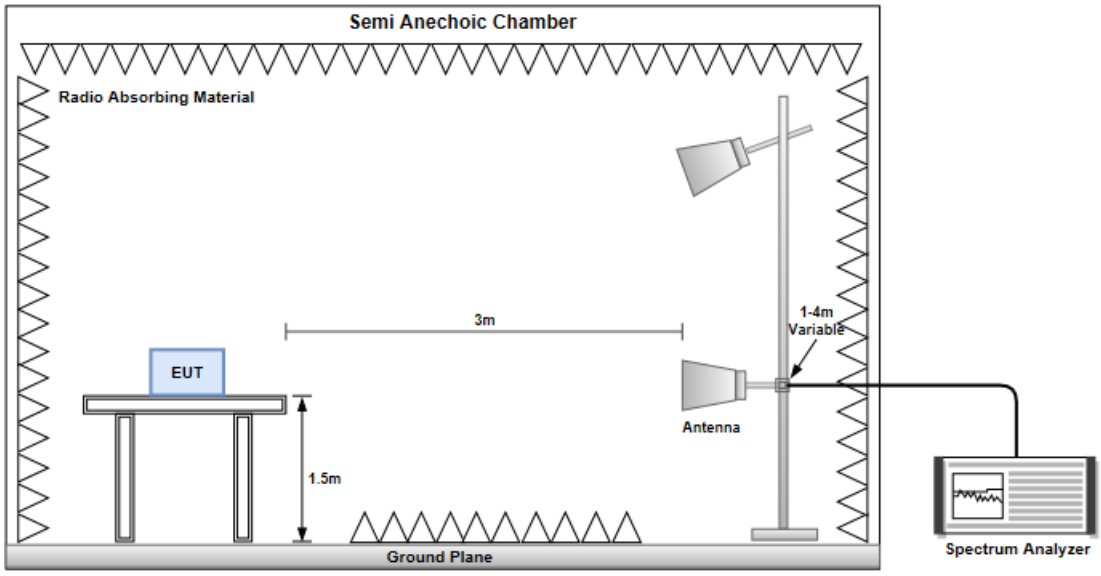
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

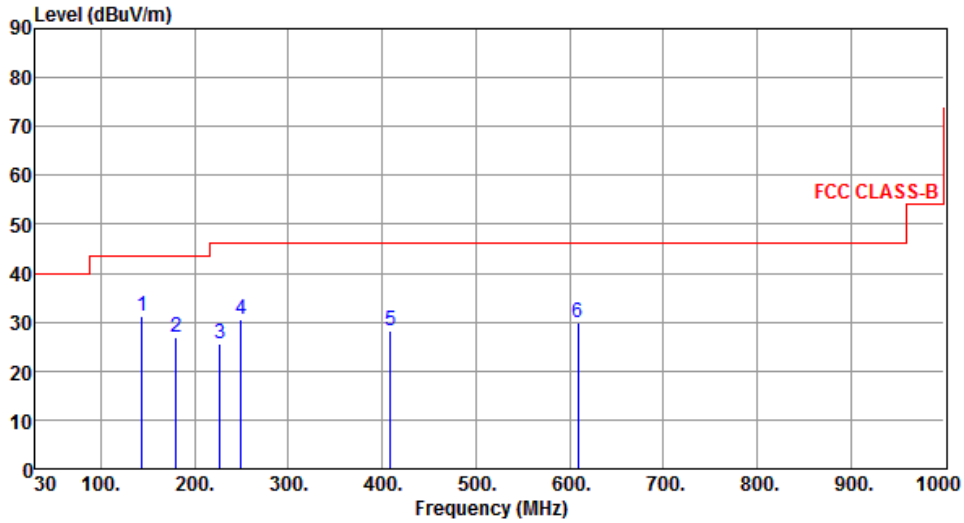


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

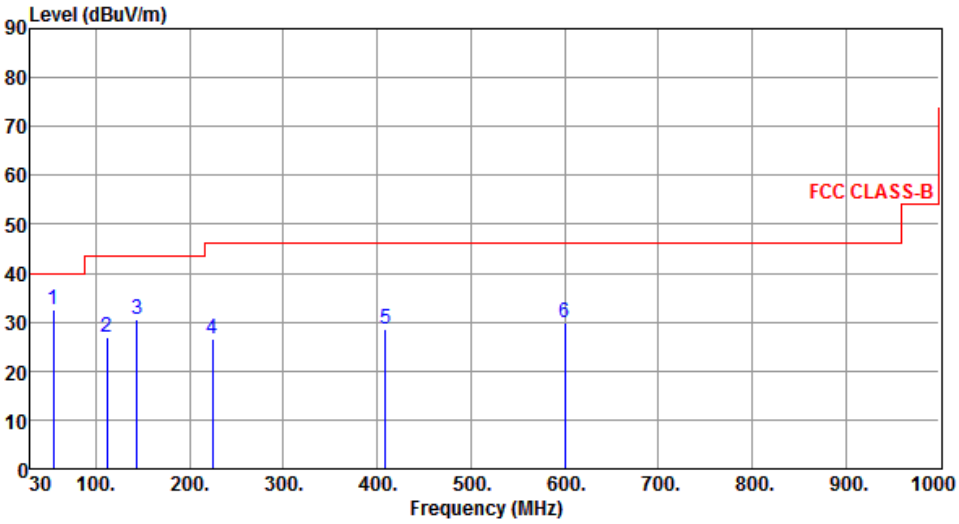
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	143.49	31.10	43.50	-12.40	39.40	-8.30	Peak	---	---
2	180.35	26.77	43.50	-16.73	36.56	-9.79	Peak	---	---
3	226.91	25.60	46.00	-20.40	35.35	-9.75	Peak	---	---
4	249.22	30.71	46.00	-15.29	39.92	-9.21	Peak	---	---
5	409.27	28.06	46.00	-17.94	32.83	-4.77	Peak	---	---
6	609.09	29.92	46.00	-16.08	30.53	-0.61	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.

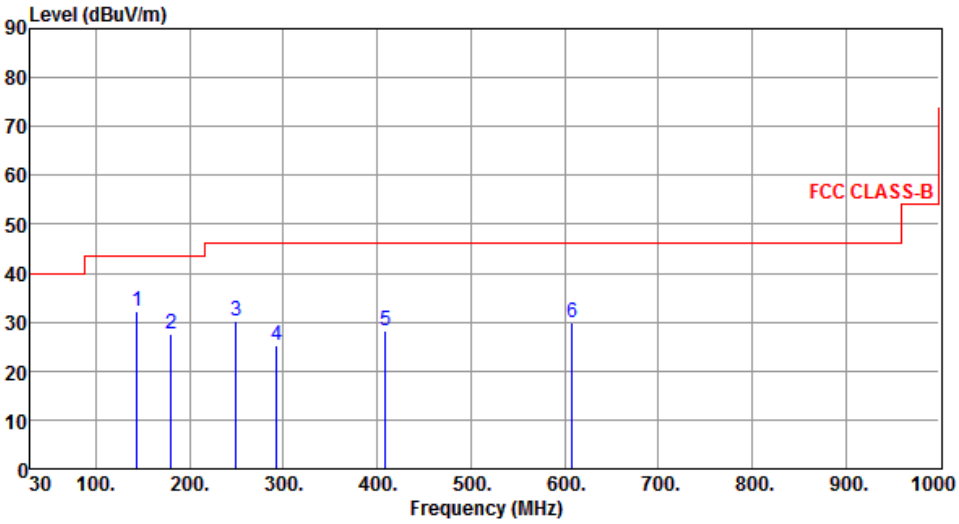
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	54.25	32.69	40.00	-7.31	40.83	-8.14	Peak	---	---
2	111.48	27.04	43.50	-16.46	38.06	-11.02	Peak	---	---
3	143.49	30.39	43.50	-13.11	38.69	-8.30	Peak	---	---
4	224.00	26.44	46.00	-19.56	36.57	-10.13	Peak	---	---
5	409.27	28.59	46.00	-17.41	33.36	-4.77	Peak	---	---
6	600.36	29.96	46.00	-16.04	30.68	-0.72	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.

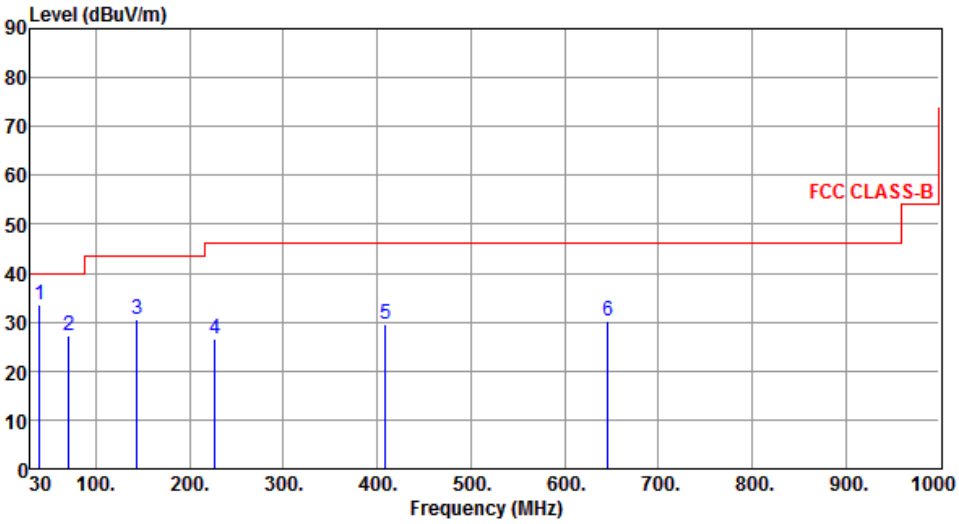
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	143.49	32.19	43.50	-11.31	40.49	-8.30	Peak	---	---
2	180.35	27.43	43.50	-16.07	37.22	-9.79	Peak	---	---
3	249.22	30.16	46.00	-15.84	39.37	-9.21	Peak	---	---
4	292.87	25.32	46.00	-20.68	32.98	-7.66	Peak	---	---
5	409.27	28.15	46.00	-17.85	32.92	-4.77	Peak	---	---
6	608.12	29.95	46.00	-16.05	30.57	-0.62	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		

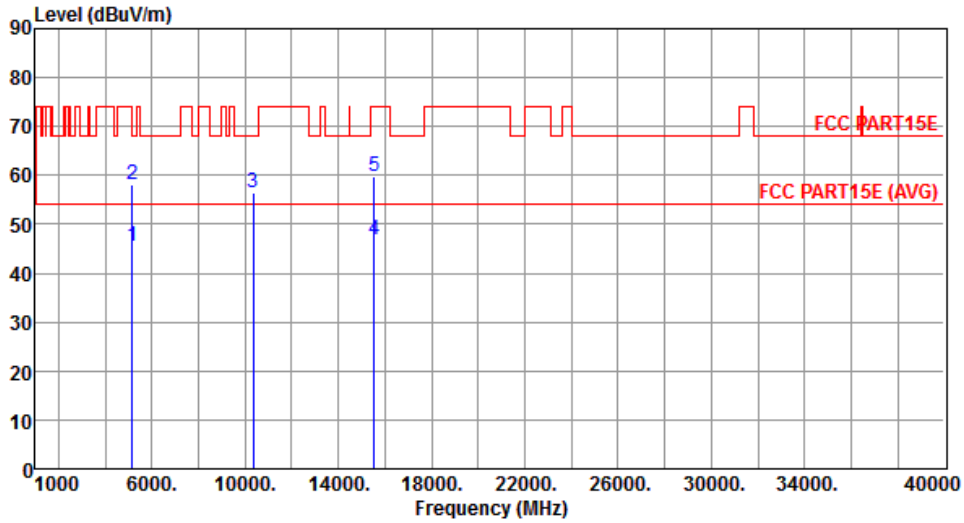


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	33.41	40.00	-6.59	41.20	-7.79	Peak	---	---
2	70.74	27.35	40.00	-12.65	38.13	-10.78	Peak	---	---
3	143.49	30.66	43.50	-12.84	38.96	-8.30	Peak	---	---
4	226.91	26.53	46.00	-19.47	36.28	-9.75	Peak	---	---
5	409.27	29.46	46.00	-16.54	34.23	-4.77	Peak	---	---
6	645.95	30.13	46.00	-15.87	30.31	-0.18	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

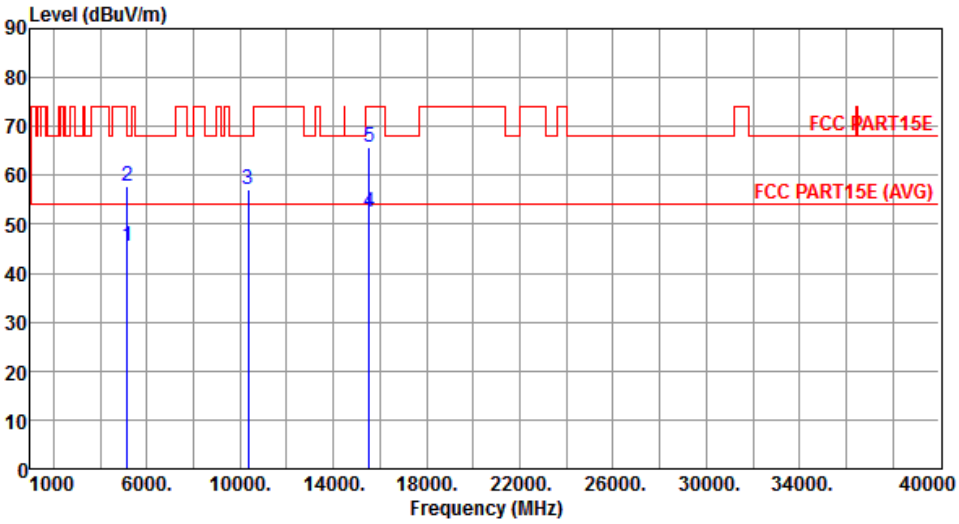
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	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	45.66	54.00	-8.34	41.34	4.32	Average	110	12
2	5150.00	58.07	74.00	-15.93	53.75	4.32	Peak	110	12
3	10360.00	56.37	68.20	-11.83	42.04	14.33	Peak	215	194
4	15540.00	46.72	54.00	-7.28	31.43	15.29	Average	219	284
5	15540.00	59.82	74.00	-14.18	44.53	15.29	Peak	219	284

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

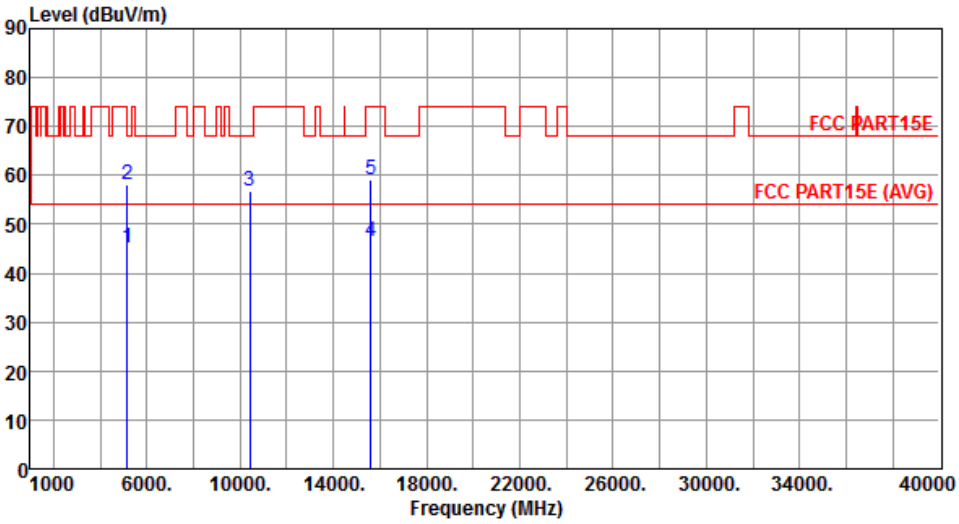
Modulation	11a	**Test Freq. (MHz)**	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.37	54.00	-8.63	41.05	4.32	Average	100	238
2	5150.00	57.76	74.00	-16.24	53.44	4.32	Peak	100	238
3	10360.00	57.13	68.20	-11.07	42.80	14.33	Peak	237	261
4	15540.00	52.61	54.00	-1.39	37.32	15.29	Average	283	302
5	15540.00	65.76	74.00	-8.24	50.47	15.29	Peak	283	302

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

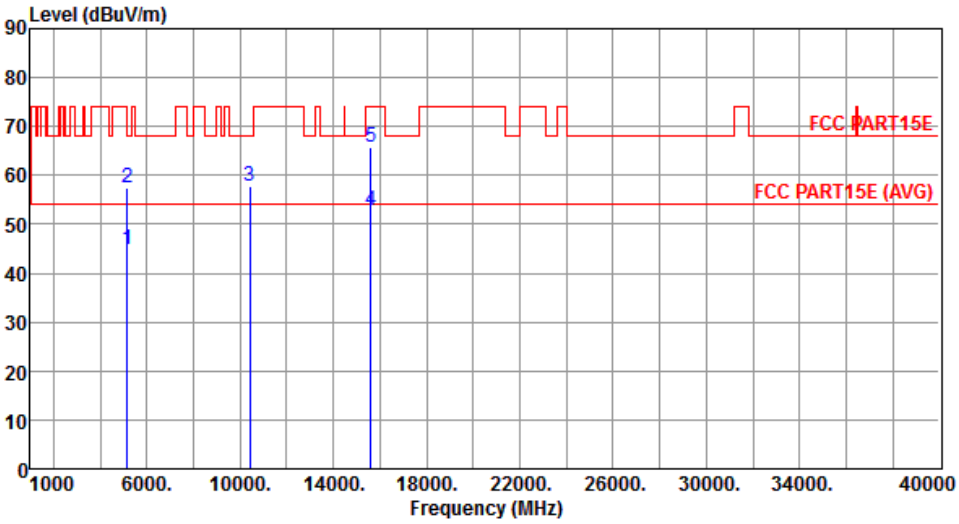
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.06	54.00	-8.94	40.74	4.32	Average	108	9
2	5150.00	58.04	74.00	-15.96	53.72	4.32	Peak	108	9
3	10400.00	56.84	68.20	-11.36	42.43	14.41	Peak	225	317
4	15600.00	46.38	54.00	-7.62	31.17	15.21	Average	100	53
5	15600.00	59.16	74.00	-14.84	43.95	15.21	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).

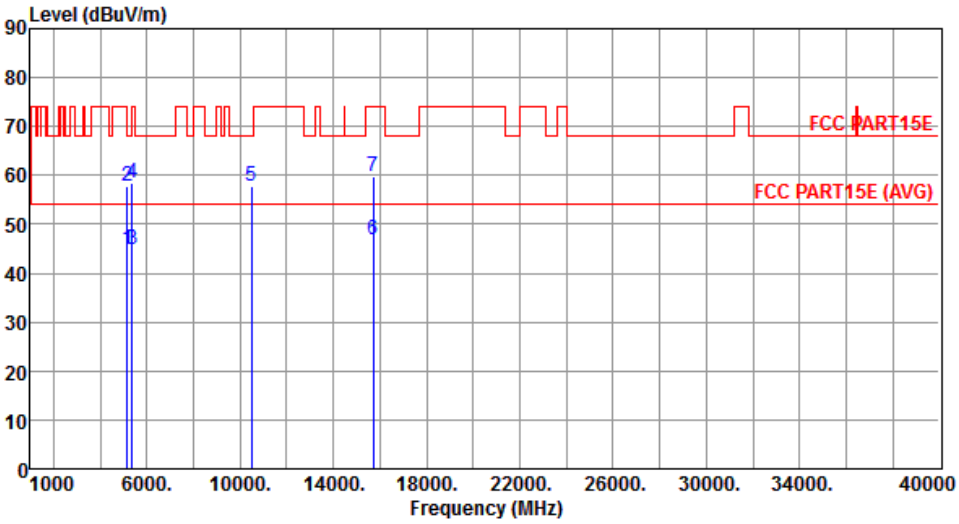
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.75	54.00	-9.25	40.43	4.32	Average	109	225
2	5150.00	57.61	74.00	-16.39	53.29	4.32	Peak	109	225
3	10400.00	57.78	68.20	-10.42	43.37	14.41	Peak	275	261
4	15600.00	52.77	54.00	-1.23	37.56	15.21	Average	275	254
5	15600.00	65.85	74.00	-8.15	50.64	15.21	Peak	275	254

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

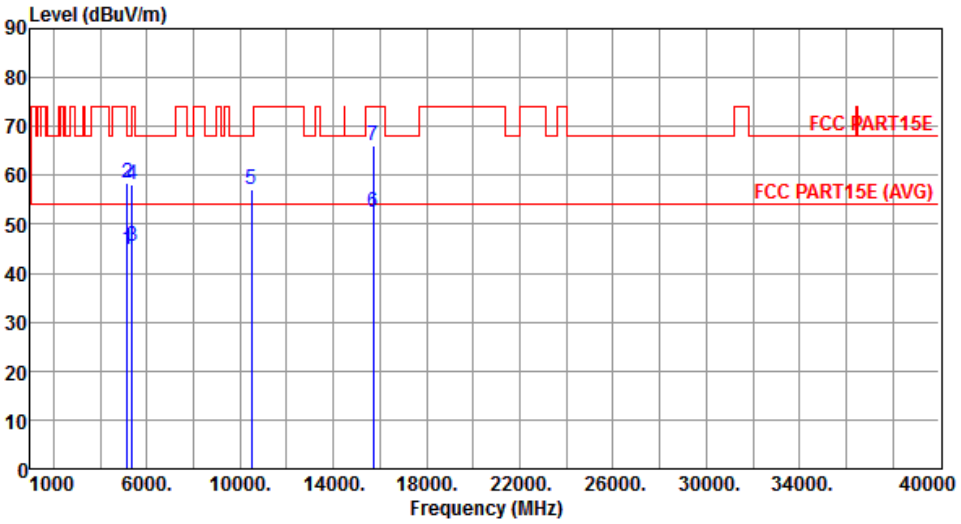
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



	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	44.83	54.00	-9.17	40.51	4.32	Average	110	14
2	5150.00	57.66	74.00	-16.34	53.34	4.32	Peak	110	14
3	5350.00	45.00	54.00	-9.00	40.47	4.53	Average	110	14
4	5350.00	58.49	74.00	-15.51	53.96	4.53	Peak	110	14
5	10480.00	57.69	68.20	-10.51	43.12	14.57	Peak	240	306
6	15720.00	46.91	54.00	-7.09	31.85	15.06	Average	100	55
7	15720.00	59.73	74.00	-14.27	44.67	15.06	Peak	55	334

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

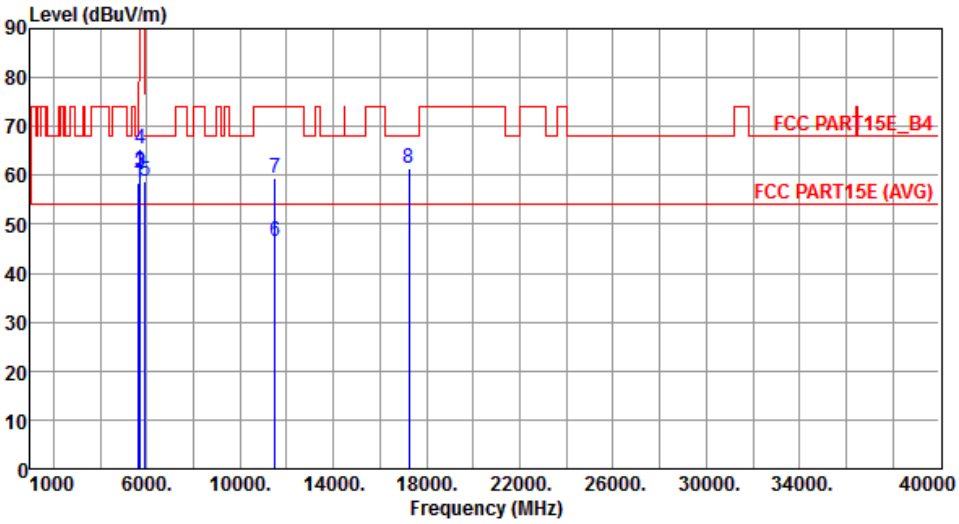
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.79	54.00	-9.21	40.47	4.32	Average	100	236
2	5150.00	58.49	74.00	-15.51	54.17	4.32	Peak	100	236
3	5350.00	45.39	54.00	-8.61	40.86	4.53	Average	100	236
4	5350.00	58.27	74.00	-15.73	53.74	4.53	Peak	100	236
5	10480.00	57.15	68.20	-11.05	42.58	14.57	Peak	336	257
6	15720.00	52.57	54.00	-1.43	37.51	15.06	Average	269	334
7	15720.00	65.93	74.00	-8.07	50.87	15.06	Peak	269	334

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

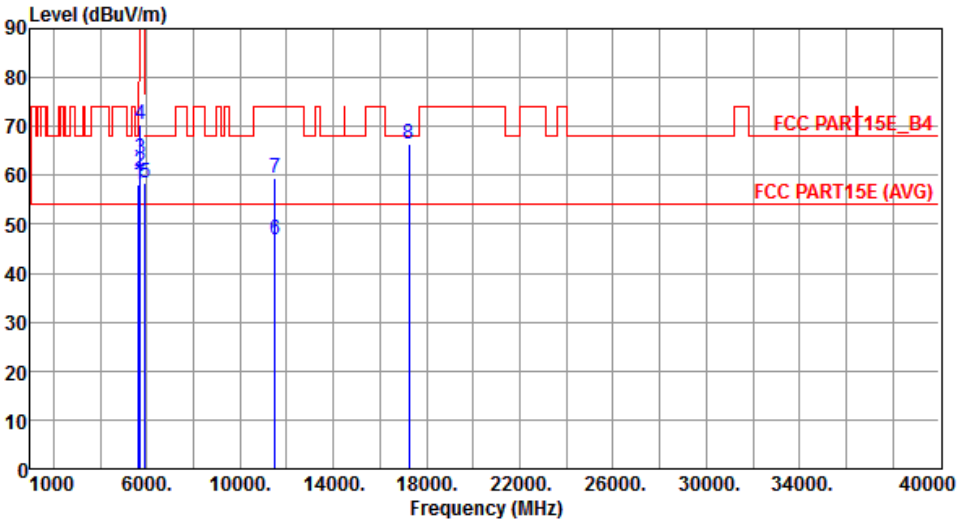
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.44	68.20	-9.76	53.57	4.87	Peak	100	28
2	5700.00	60.35	105.20	-44.85	55.41	4.94	Peak	100	28
3	5720.00	60.75	110.80	-50.05	55.78	4.97	Peak	100	28
4	5725.00	65.39	122.20	-56.81	60.43	4.96	Peak	100	28
5	5925.00	58.71	68.20	-9.49	53.50	5.21	Peak	100	28
6	11490.00	46.58	54.00	-7.42	30.88	15.70	Average	119	241
7	11490.00	59.49	74.00	-14.51	43.79	15.70	Peak	119	241
8	17235.00	61.59	68.20	-6.61	42.47	19.12	Peak	130	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).

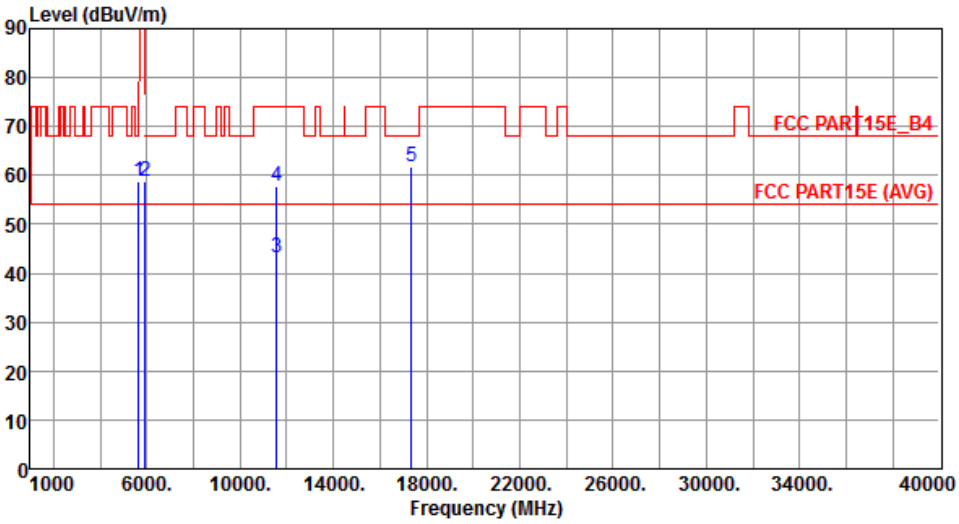
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.28	68.20	-9.92	53.41	4.87	Peak	100	158
2	5700.00	60.65	105.20	-44.55	55.71	4.94	Peak	100	158
3	5720.00	63.50	110.80	-47.30	58.53	4.97	Peak	100	158
4	5725.00	70.38	122.20	-51.82	65.42	4.96	Peak	100	158
5	5925.00	58.49	68.20	-9.71	53.28	5.21	Peak	100	158
6	11490.00	46.90	54.00	-7.10	31.20	15.70	Average	297	26
7	11490.00	59.59	74.00	-14.41	43.89	15.70	Peak	297	26
8	17235.00	66.48	68.20	-1.72	47.36	19.12	Peak	186	48

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

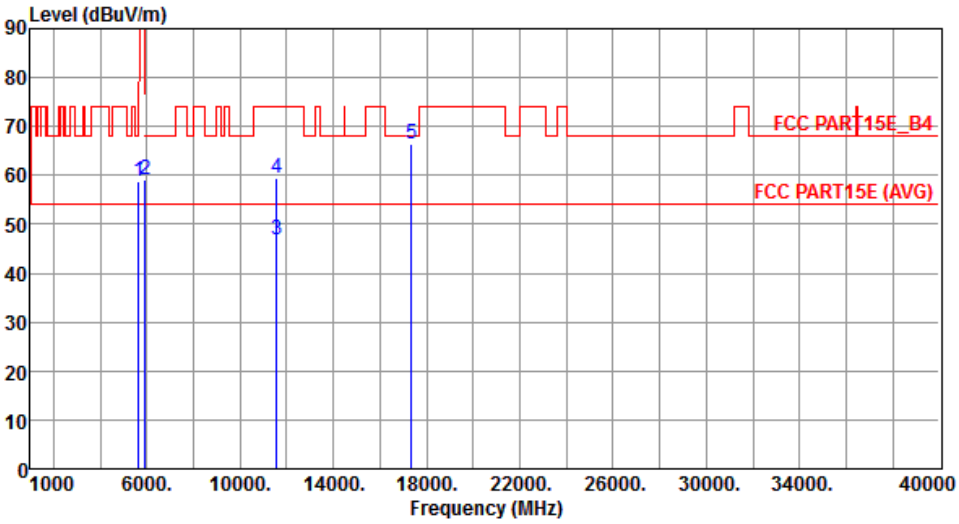
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.64	68.20	-9.56	53.77	4.87	Peak	100	30
2	5925.00	58.69	68.20	-9.51	53.48	5.21	Peak	100	30
3	11570.00	43.31	54.00	-10.69	27.80	15.51	Average	100	338
4	11570.00	57.72	74.00	-16.28	42.21	15.51	Peak	100	338
5	17355.00	61.83	68.20	-6.37	42.39	19.44	Peak	115	73

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

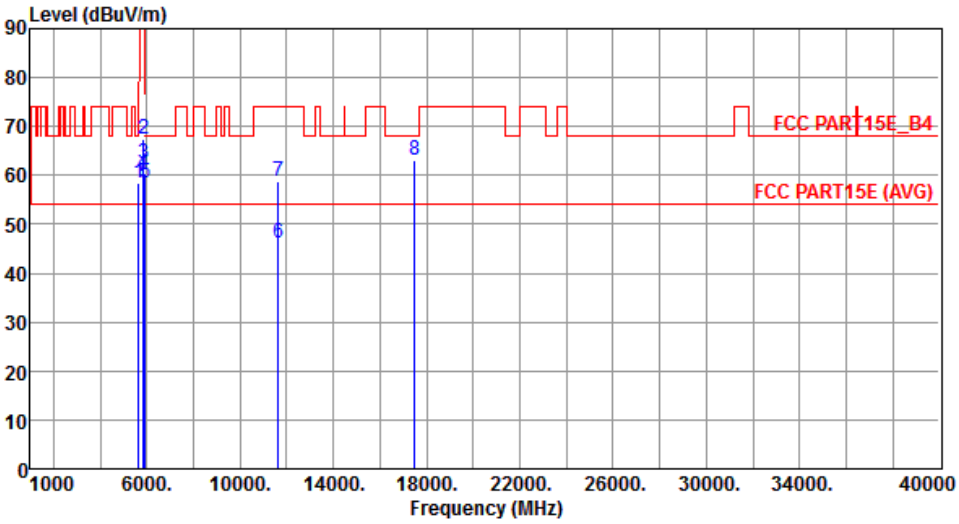
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.77	68.20	-9.43	53.90	4.87	Peak	105	155
2	5925.00	59.11	68.20	-9.09	53.90	5.21	Peak	105	155
3	11570.00	46.97	54.00	-7.03	31.46	15.51	Average	302	24
4	11570.00	59.44	74.00	-14.56	43.93	15.51	Peak	302	24
5	17355.00	66.58	68.20	-1.62	47.14	19.44	Peak	182	311

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

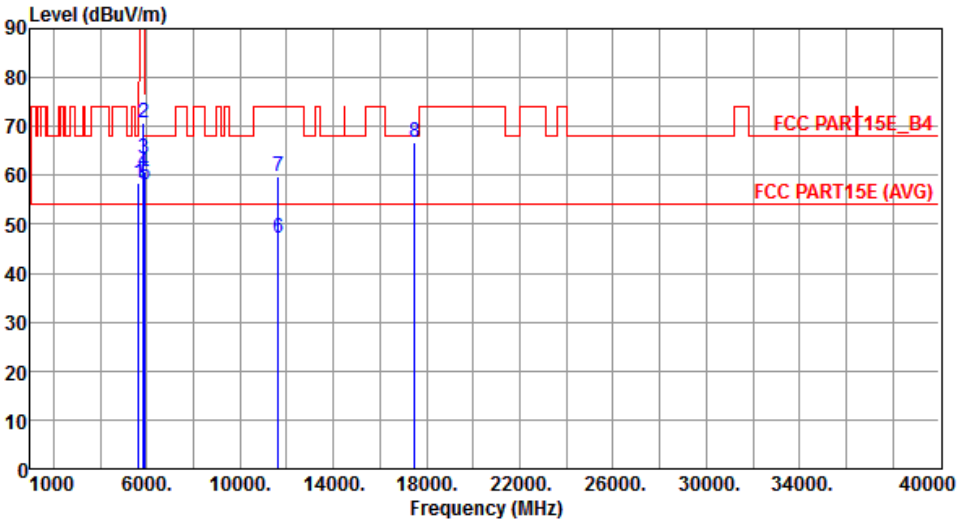
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.54	68.20	-9.66	53.67	4.87	Peak	110	41
2	5850.00	67.28	122.20	-54.92	62.15	5.13	Peak	110	41
3	5855.00	62.44	110.80	-48.36	57.30	5.14	Peak	110	41
4	5875.00	60.56	105.20	-44.64	55.40	5.16	Peak	110	41
5	5925.00	58.57	68.20	-9.63	53.36	5.21	Peak	110	41
6	11650.00	46.01	54.00	-7.99	30.73	15.28	Average	119	182
7	11650.00	58.65	74.00	-15.35	43.37	15.28	Peak	119	182
8	17475.00	63.04	68.20	-5.16	43.29	19.75	Peak	100	194

Note 1: Emission Level (dBuV/m) = SA Reading (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		

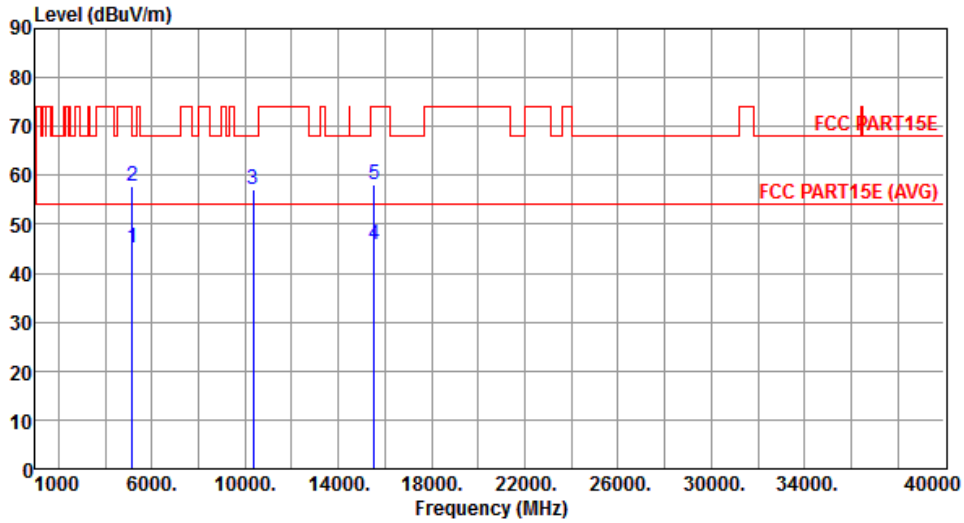


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.57	68.20	-9.63	53.70	4.87	Peak	100	223
2	5850.00	70.66	122.20	-51.54	65.53	5.13	Peak	100	223
3	5855.00	63.55	110.80	-47.25	58.41	5.14	Peak	100	223
4	5875.00	60.71	105.20	-44.49	55.55	5.16	Peak	100	223
5	5925.00	58.25	68.20	-9.95	53.04	5.21	Peak	100	223
6	11650.00	47.16	54.00	-6.84	31.88	15.28	Average	312	26
7	11650.00	59.91	74.00	-14.09	44.63	15.28	Peak	312	26
8	17475.00	66.66	68.20	-1.54	46.91	19.75	Peak	179	306

Note 1: Emission Level (dBuV/m) = SA Reading (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

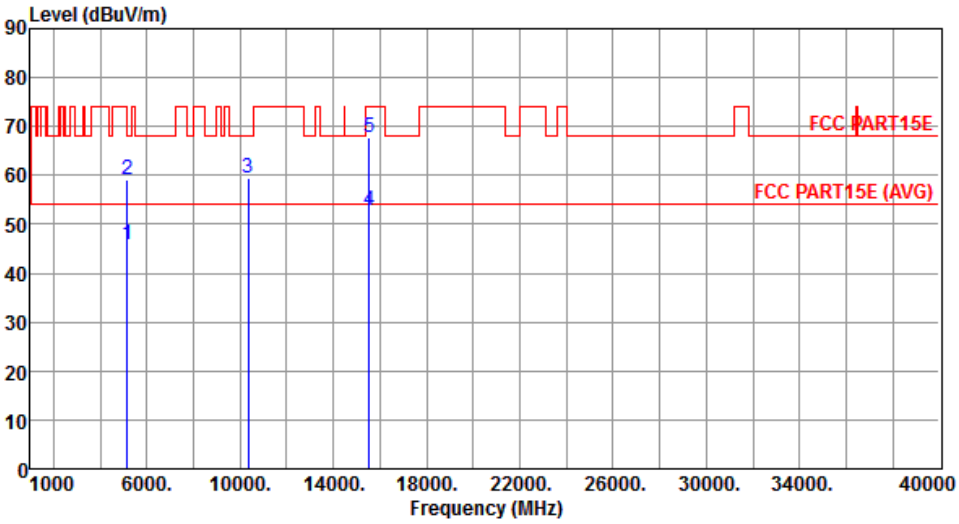
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	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	45.06	54.00	-8.94	40.74	4.32	Average	100	18
2	5150.00	57.71	74.00	-16.29	53.39	4.32	Peak	100	18
3	10360.00	57.08	68.20	-11.12	42.75	14.33	Peak	257	240
4	15540.00	45.72	54.00	-8.28	30.43	15.29	Average	100	178
5	15540.00	58.22	74.00	-15.78	42.93	15.29	Peak	100	178

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

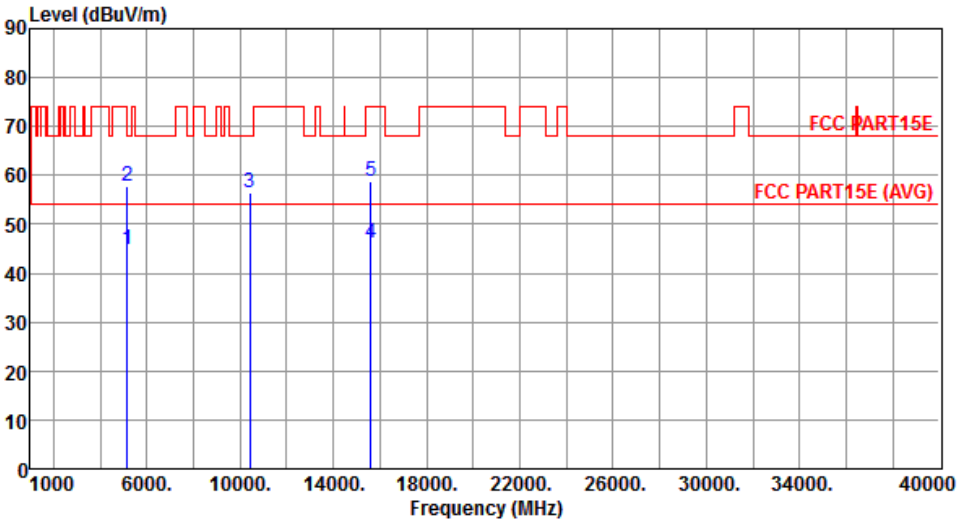
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.87	54.00	-8.13	41.55	4.32	Average	100	234
2	5150.00	58.97	74.00	-15.03	54.65	4.32	Peak	100	234
3	10360.00	59.51	68.20	-8.69	45.18	14.33	Peak	224	256
4	15540.00	52.64	54.00	-1.36	37.35	15.29	Average	388	326
5	15540.00	67.79	74.00	-6.21	52.50	15.29	Peak	388	326

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

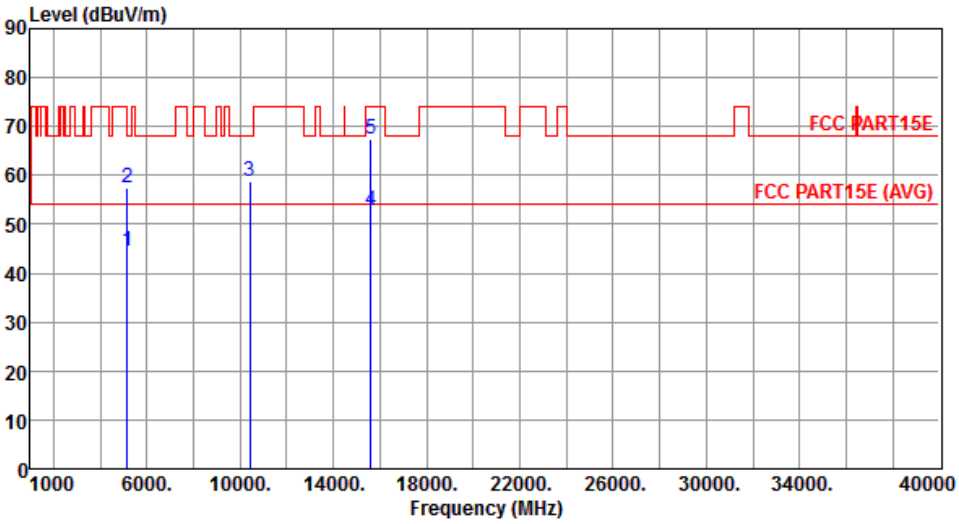
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	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	44.77	54.00	-9.23	40.45	4.32	Average	100	16
2	5150.00	57.86	74.00	-16.14	53.54	4.32	Peak	100	16
3	10400.00	56.32	68.20	-11.88	41.91	14.41	Peak	233	305
4	15600.00	46.19	54.00	-7.81	30.98	15.21	Average	100	63
5	15600.00	58.92	74.00	-15.08	43.71	15.21	Peak	100	63

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

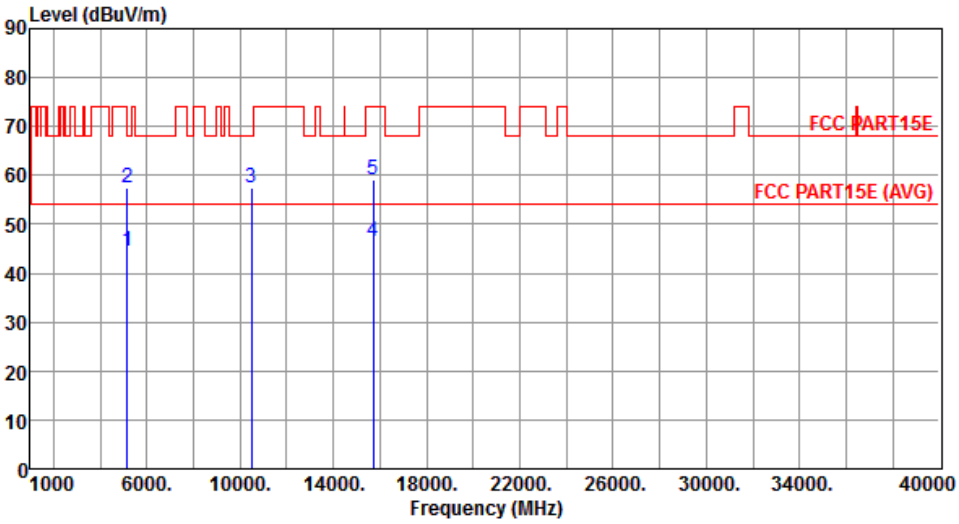
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.41	54.00	-9.59	40.09	4.32	Average	100	231
2	5150.00	57.31	74.00	-16.69	52.99	4.32	Peak	100	231
3	10400.00	58.77	68.20	-9.43	44.36	14.41	Peak	338	198
4	15600.00	52.66	54.00	-1.34	37.45	15.21	Average	377	328
5	15600.00	67.50	74.00	-6.50	52.29	15.21	Peak	377	328

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

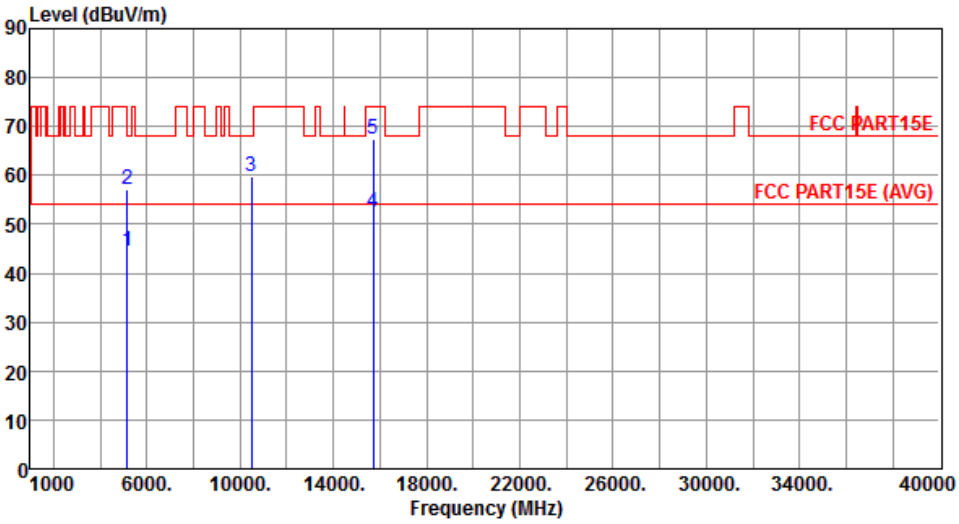
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.36	54.00	-9.64	40.04	4.32	Average	100	159
2	5150.00	57.59	74.00	-16.41	53.27	4.32	Peak	100	159
3	10480.00	57.51	68.20	-10.69	42.94	14.57	Peak	261	334
4	15720.00	46.61	54.00	-7.39	31.55	15.06	Average	141	327
5	15720.00	59.01	74.00	-14.99	43.95	15.06	Peak	141	327

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

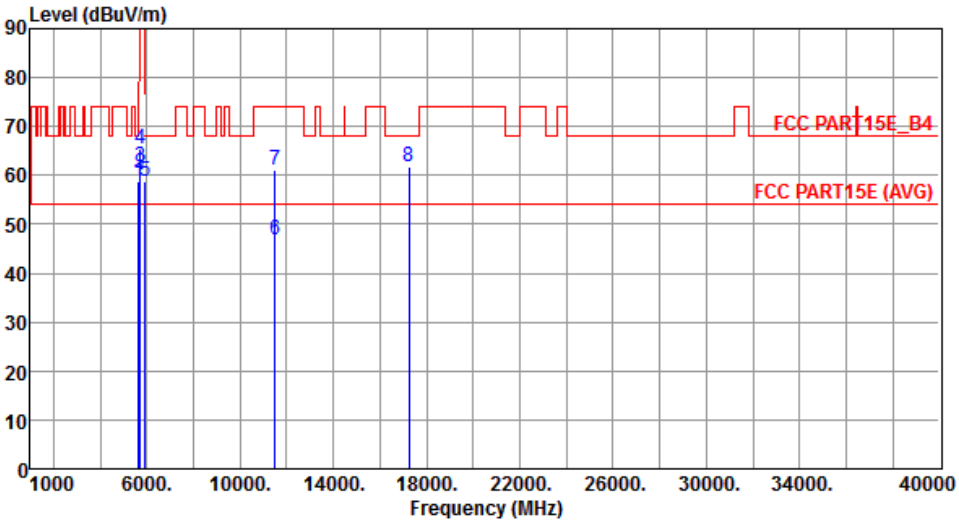
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	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	44.34	54.00	-9.66	40.02	4.32	Average	100	223
2	5150.00	57.03	74.00	-16.97	52.71	4.32	Peak	100	223
3	10480.00	59.73	68.20	-8.47	45.16	14.57	Peak	308	257
4	15720.00	52.55	54.00	-1.45	37.49	15.06	Average	251	258
5	15720.00	67.53	74.00	-6.47	52.47	15.06	Peak	251	258

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

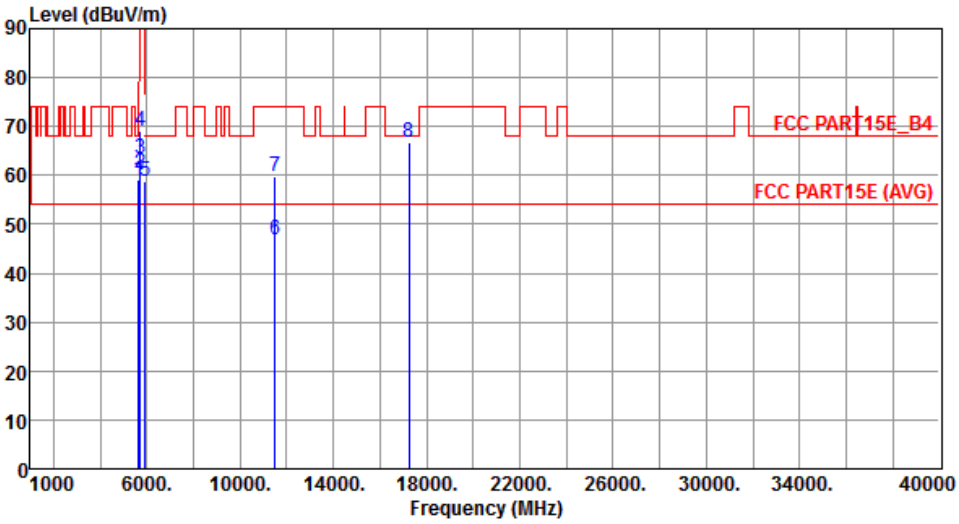
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.88	68.20	-9.32	54.01	4.87	Peak	100	81
2	5700.00	60.55	105.20	-44.65	55.61	4.94	Peak	100	81
3	5720.00	61.72	110.80	-49.08	56.75	4.97	Peak	100	81
4	5725.00	65.35	122.20	-56.85	60.39	4.96	Peak	100	81
5	5925.00	58.77	68.20	-9.43	53.56	5.21	Peak	100	81
6	11490.00	46.90	54.00	-7.10	31.20	15.70	Average	120	53
7	11490.00	60.99	74.00	-13.01	45.29	15.70	Peak	120	53
8	17235.00	61.65	68.20	-6.55	42.53	19.12	Peak	120	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).

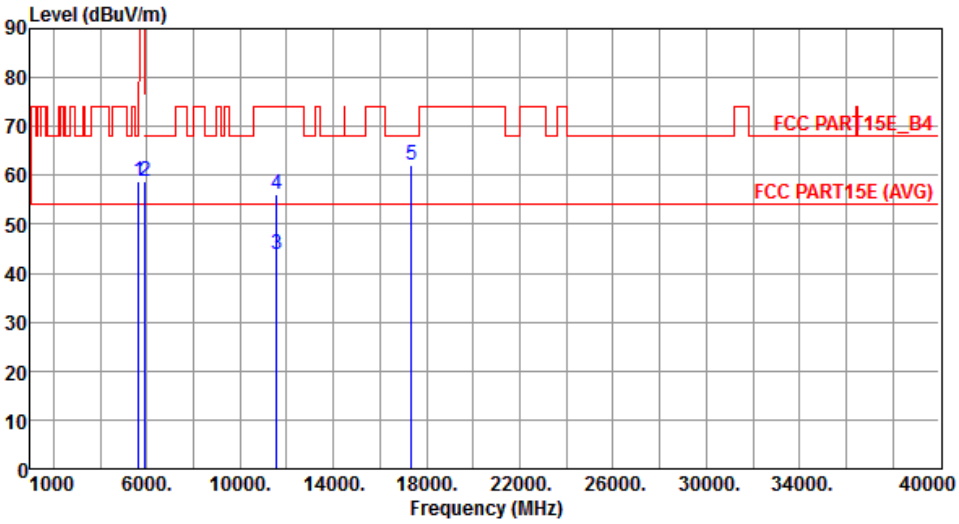
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	59.09	68.20	-9.11	54.22	4.87	Peak	100	160
2	5700.00	60.44	105.20	-44.76	55.50	4.94	Peak	100	160
3	5720.00	63.60	110.80	-47.20	58.63	4.97	Peak	100	160
4	5725.00	69.12	122.20	-53.08	64.16	4.96	Peak	100	160
5	5925.00	58.84	68.20	-9.36	53.63	5.21	Peak	100	160
6	11490.00	46.77	54.00	-7.23	31.07	15.70	Average	298	26
7	11490.00	59.80	74.00	-14.20	44.10	15.70	Peak	298	26
8	17235.00	66.84	68.20	-1.36	47.72	19.12	Peak	186	49

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

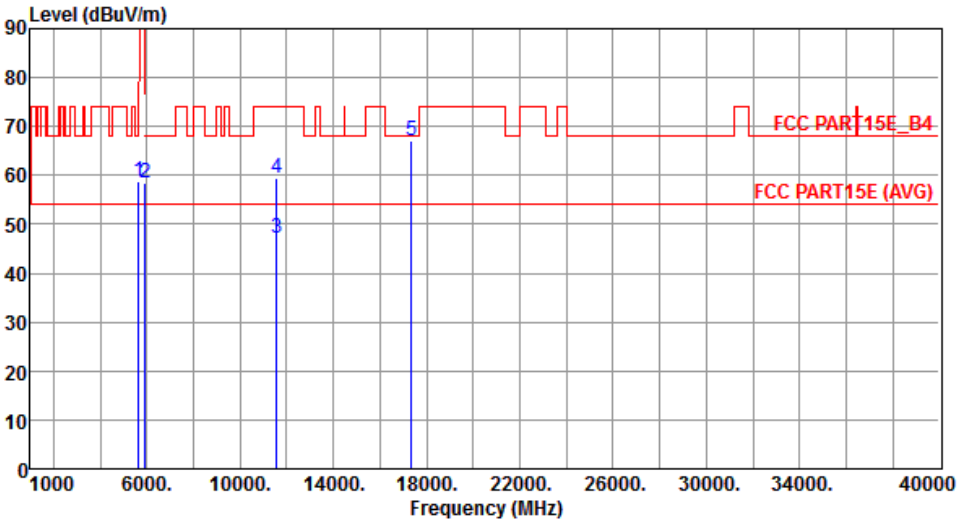
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.69	68.20	-9.51	53.82	4.87	Peak	100	84
2	5925.00	58.72	68.20	-9.48	53.51	5.21	Peak	100	84
3	11570.00	43.88	54.00	-10.12	28.37	15.51	Average	121	68
4	11570.00	56.18	74.00	-17.82	40.67	15.51	Peak	121	68
5	17355.00	62.04	68.20	-6.16	42.60	19.44	Peak	317	174

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

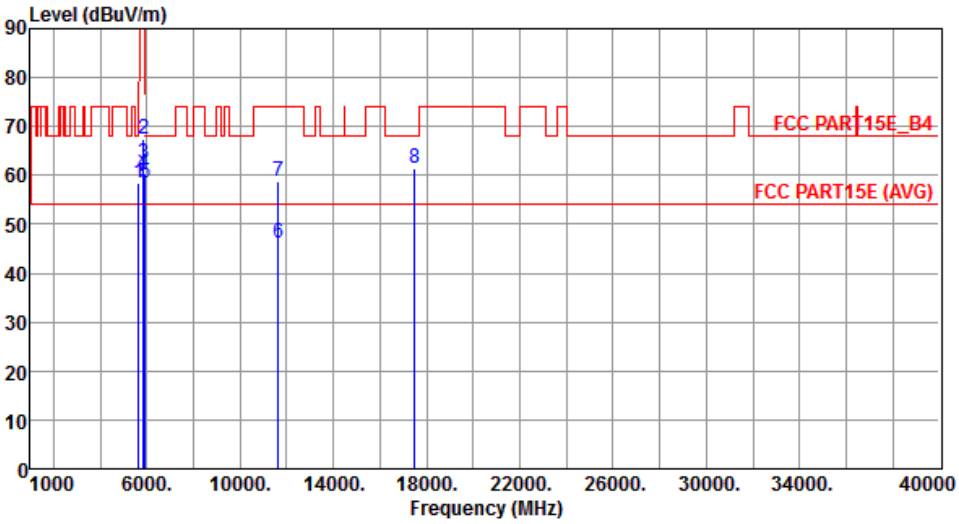
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.93	68.20	-9.27	54.06	4.87	Peak	101	223
2	5925.00	58.45	68.20	-9.75	53.24	5.21	Peak	101	223
3	11570.00	47.25	54.00	-6.75	31.74	15.51	Average	305	25
4	11570.00	59.39	74.00	-14.61	43.88	15.51	Peak	305	25
5	17355.00	67.10	68.20	-1.10	47.66	19.44	Peak	185	307

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

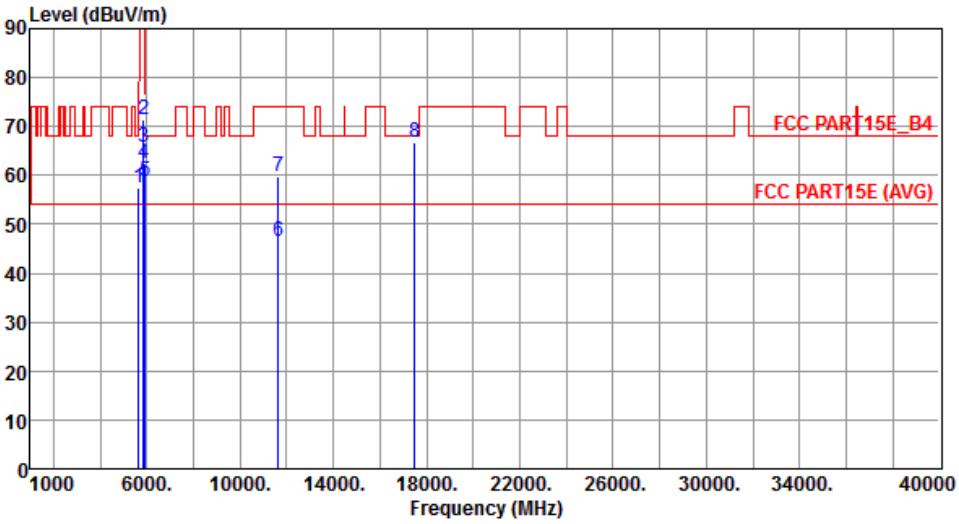
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.52	68.20	-9.68	53.65	4.87	Peak	100	212
2	5850.00	67.38	122.20	-54.82	62.25	5.13	Peak	100	212
3	5855.00	62.58	110.80	-48.22	57.44	5.14	Peak	100	212
4	5875.00	60.41	105.20	-44.79	55.25	5.16	Peak	100	212
5	5925.00	58.39	68.20	-9.81	53.18	5.21	Peak	100	212
6	11650.00	46.03	54.00	-7.97	30.75	15.28	Average	120	75
7	11650.00	58.65	74.00	-15.35	43.37	15.28	Peak	120	75
8	17475.00	61.40	68.20	-6.80	41.65	19.75	Peak	310	199

Note 1: Emission Level (dBuV/m) = SA Reading (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		

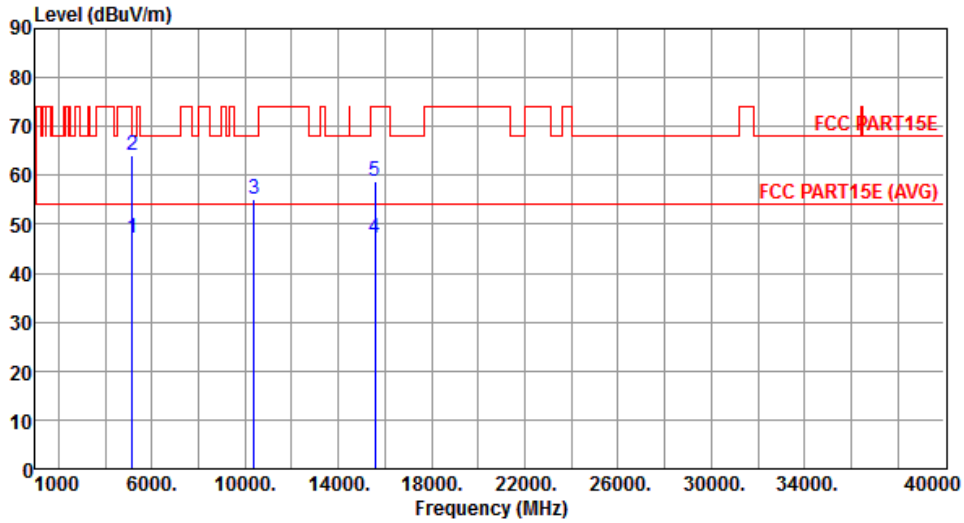


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	57.61	68.20	-10.59	52.74	4.87	Peak	100	222
2	5850.00	71.34	122.20	-50.86	66.21	5.13	Peak	100	222
3	5855.00	65.67	110.80	-45.13	60.53	5.14	Peak	100	222
4	5875.00	62.49	105.20	-42.71	57.33	5.16	Peak	100	222
5	5925.00	58.78	68.20	-9.42	53.57	5.21	Peak	100	222
6	11650.00	46.53	54.00	-7.47	31.25	15.28	Average	312	27
7	11650.00	59.72	74.00	-14.28	44.44	15.28	Peak	312	27
8	17475.00	66.85	68.20	-1.35	47.10	19.75	Peak	188	307

Note 1: Emission Level (dBuV/m) = SA Reading (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

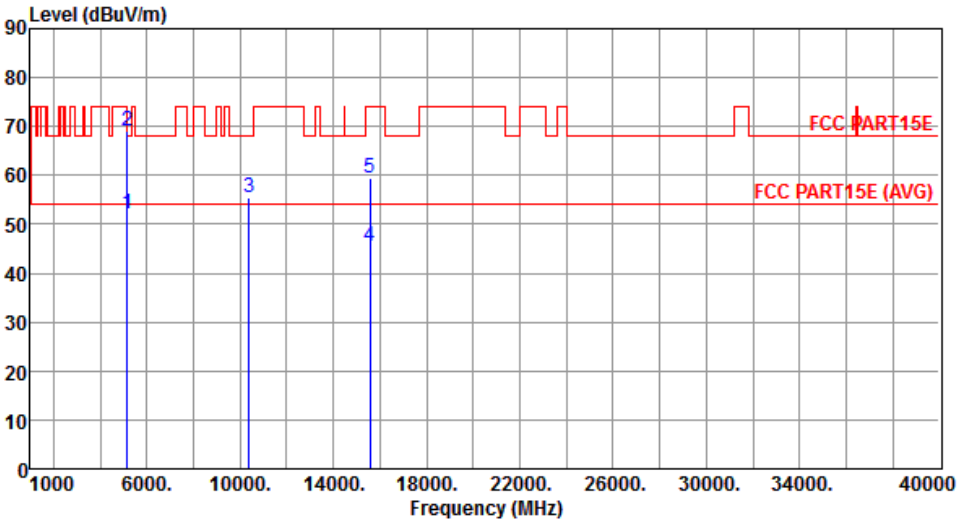
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	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	47.28	54.00	-6.72	42.96	4.32	Average	205	173
2	5150.00	64.26	74.00	-9.74	59.94	4.32	Peak	205	173
3	10380.00	55.24	68.20	-12.96	40.86	14.38	Peak	115	236
4	15570.00	47.00	54.00	-7.00	31.75	15.25	Average	308	247
5	15570.00	58.93	74.00	-15.07	43.68	15.25	Peak	308	247

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

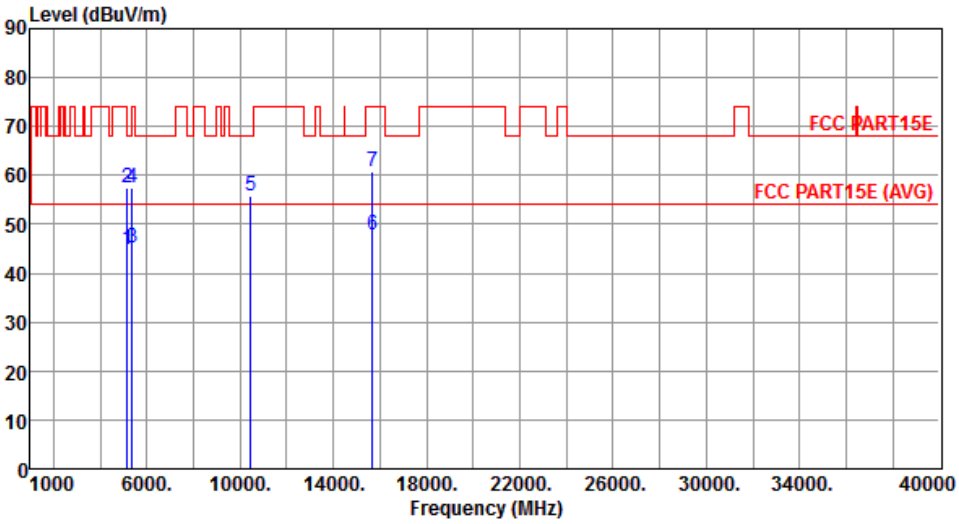
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	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	52.15	54.00	-1.85	47.83	4.32	Average	100	274
2	5150.00	69.19	74.00	-4.81	64.87	4.32	Peak	100	274
3	10380.00	55.32	68.20	-12.88	40.94	14.38	Peak	150	322
4	15570.00	45.38	54.00	-8.62	30.13	15.25	Average	312	303
5	15570.00	59.39	74.00	-14.61	44.14	15.25	Peak	312	303

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

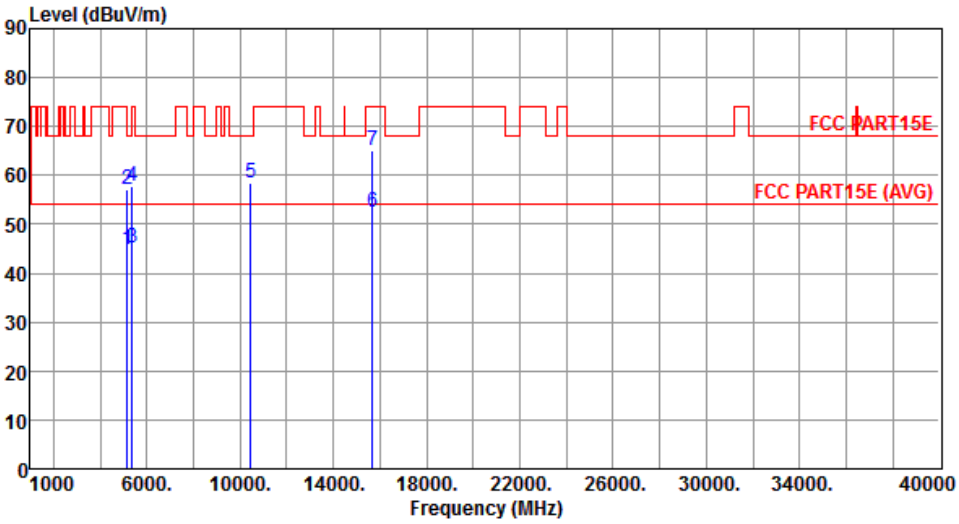
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.82	54.00	-9.18	40.50	4.32	Average	100	20
2	5150.00	57.55	74.00	-16.45	53.23	4.32	Peak	100	20
3	5350.00	45.10	54.00	-8.90	40.57	4.53	Average	100	20
4	5350.00	57.34	74.00	-16.66	52.81	4.53	Peak	100	20
5	10460.00	55.73	68.20	-12.47	41.19	14.54	Peak	233	189
6	15690.00	47.89	54.00	-6.11	32.79	15.10	Average	229	231
7	15690.00	60.91	74.00	-13.09	45.81	15.10	Peak	229	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).

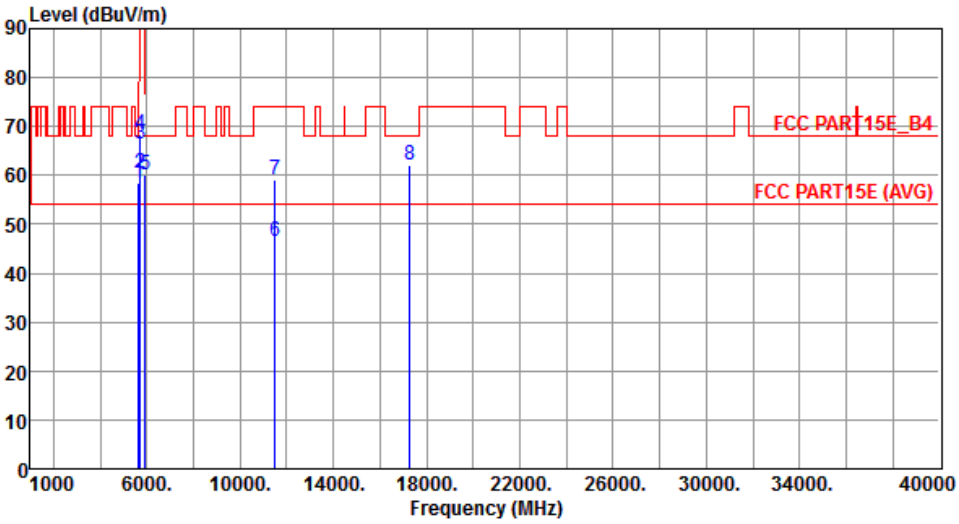
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	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	44.94	54.00	-9.06	40.62	4.32	Average	109	225
2	5150.00	56.96	74.00	-17.04	52.64	4.32	Peak	109	225
3	5350.00	45.07	54.00	-8.93	40.54	4.53	Average	337	249
4	5350.00	57.71	74.00	-16.29	53.18	4.53	Peak	337	249
5	10460.00	58.45	68.20	-9.75	43.91	14.54	Peak	286	259
6	15690.00	52.53	54.00	-1.47	37.43	15.10	Average	337	249
7	15690.00	64.96	74.00	-9.04	49.86	15.10	Peak	337	249

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

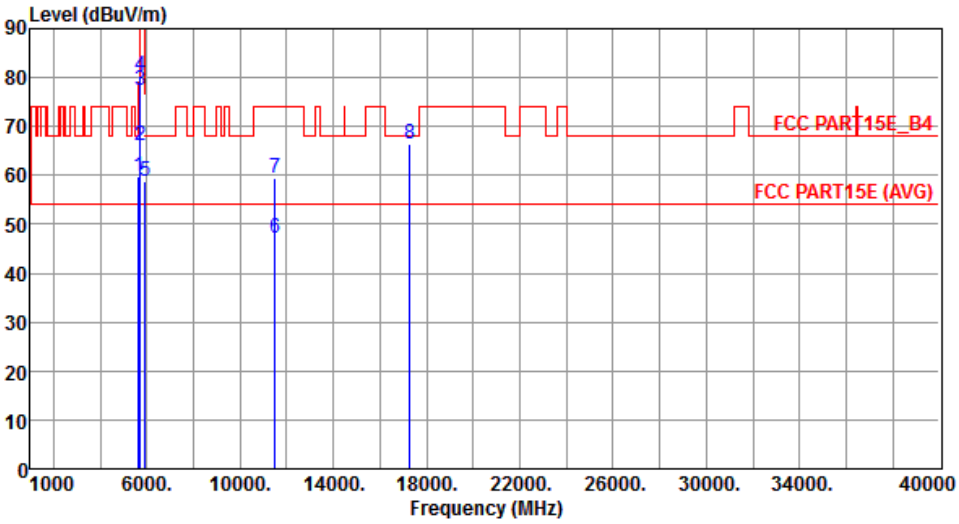
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.60	68.20	-9.60	53.73	4.87	Peak	237	114
2	5700.00	60.56	105.20	-44.64	55.62	4.94	Peak	237	114
3	5720.00	66.52	110.80	-44.28	61.55	4.97	Peak	237	114
4	5725.00	68.41	122.20	-53.79	63.45	4.96	Peak	237	114
5	5925.00	60.03	68.20	-8.17	54.82	5.21	Peak	237	114
6	11510.00	46.41	54.00	-7.59	30.73	15.68	Average	109	153
7	11510.00	58.96	74.00	-15.04	43.28	15.68	Peak	109	153
8	17265.00	62.11	68.20	-6.09	42.91	19.20	Peak	196	235

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

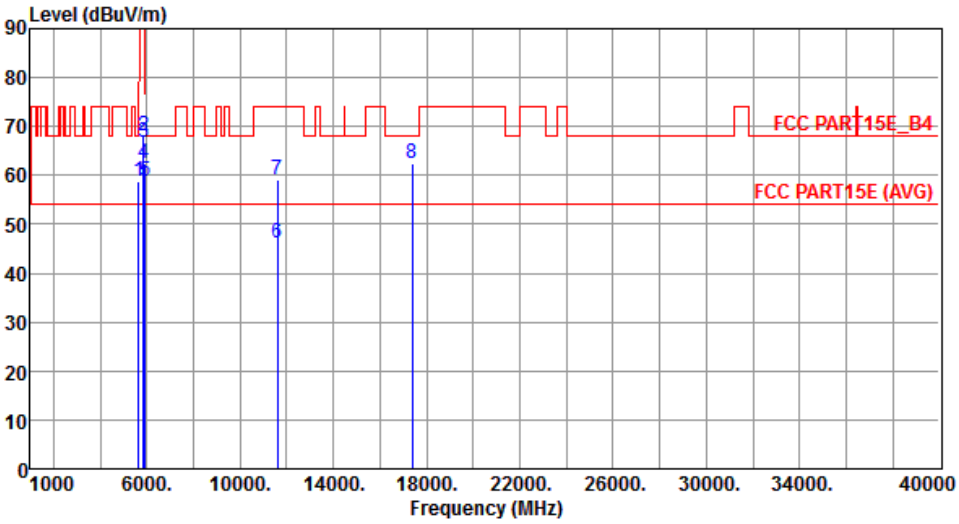
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	59.87	68.20	-8.33	55.00	4.87	Peak	100	9
2	5700.00	66.19	105.20	-39.01	61.25	4.94	Peak	100	9
3	5720.00	77.51	110.80	-33.29	72.54	4.97	Peak	100	9
4	5725.00	80.28	122.20	-41.92	75.32	4.96	Peak	100	9
5	5925.00	58.86	68.20	-9.34	53.65	5.21	Peak	100	9
6	11510.00	47.07	54.00	-6.93	31.39	15.68	Average	314	25
7	11510.00	59.36	74.00	-14.64	43.68	15.68	Peak	314	25
8	17265.00	66.47	68.20	-1.73	47.27	19.20	Peak	189	50

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

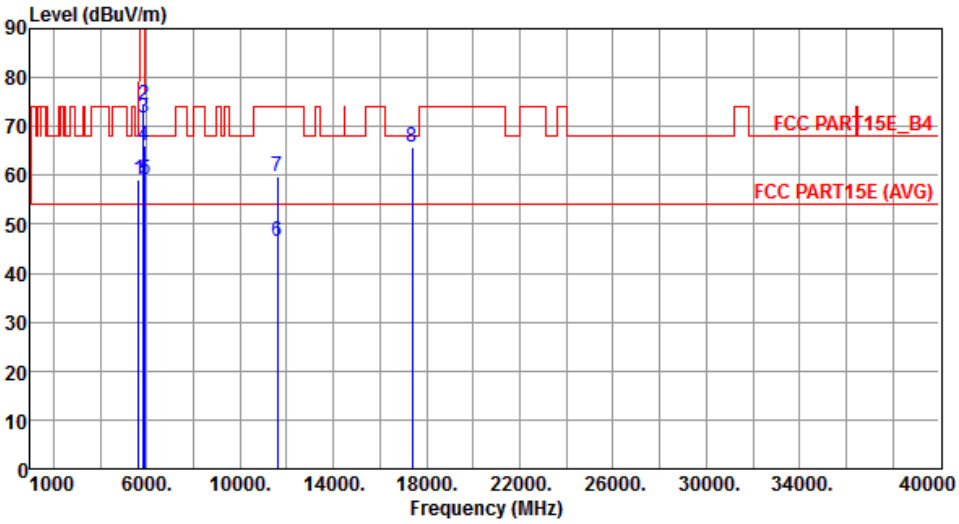
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.73	68.20	-9.47	53.86	4.87	Peak	208	133
2	5850.00	68.24	122.20	-53.96	63.11	5.13	Peak	208	133
3	5855.00	66.67	110.80	-44.13	61.53	5.14	Peak	208	133
4	5875.00	62.31	105.20	-42.89	57.15	5.16	Peak	208	133
5	5925.00	58.84	68.20	-9.36	53.63	5.21	Peak	208	133
6	11590.00	46.29	54.00	-7.71	30.84	15.45	Average	348	352
7	11590.00	58.96	74.00	-15.04	43.51	15.45	Peak	348	352
8	17385.00	62.36	68.20	-5.84	42.85	19.51	Peak	367	312

Note 1: Emission Level (dBuV/m) = SA Reading (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		

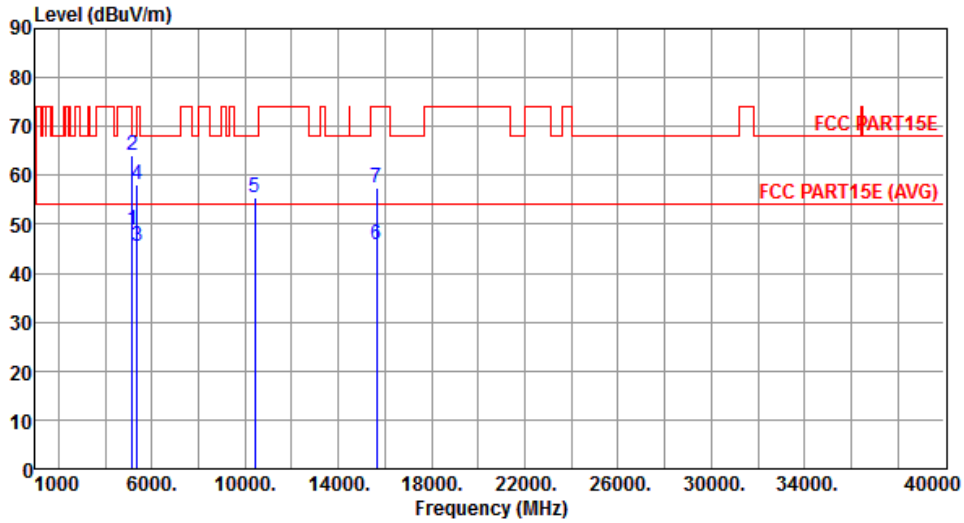


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	59.15	68.20	-9.05	54.28	4.87	Peak	100	156
2	5850.00	74.24	122.20	-47.96	69.11	5.13	Peak	100	156
3	5855.00	71.59	110.80	-39.21	66.45	5.14	Peak	100	156
4	5875.00	66.25	105.20	-38.95	61.09	5.16	Peak	100	156
5	5925.00	59.13	68.20	-9.07	53.92	5.21	Peak	100	156
6	11590.00	46.50	54.00	-7.50	31.05	15.45	Average	309	27
7	11590.00	59.80	74.00	-14.20	44.35	15.45	Peak	309	27
8	17385.00	65.75	68.20	-2.45	46.24	19.51	Peak	389	296

Note 1: Emission Level (dBuV/m) = SA Reading (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

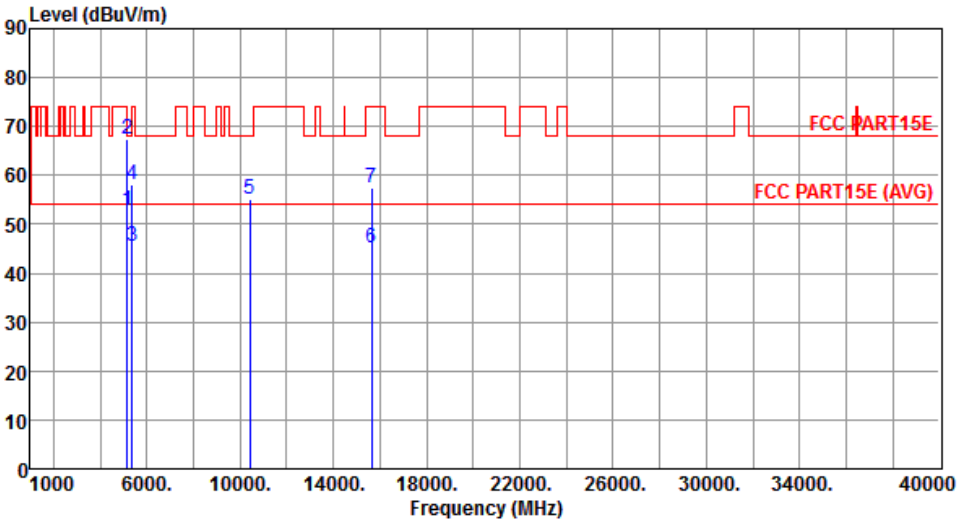
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	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	48.91	54.00	-5.09	44.59	4.32	Average	241	108
2	5150.00	63.94	74.00	-10.06	59.62	4.32	Peak	241	108
3	5350.00	45.61	54.00	-8.39	41.08	4.53	Average	241	108
4	5350.00	57.96	74.00	-16.04	53.43	4.53	Peak	241	108
5	10420.00	55.38	68.20	-12.82	40.93	14.45	Peak	189	167
6	15630.00	45.70	54.00	-8.30	30.52	15.18	Average	257	199
7	15630.00	57.54	74.00	-16.46	42.36	15.18	Peak	257	199

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

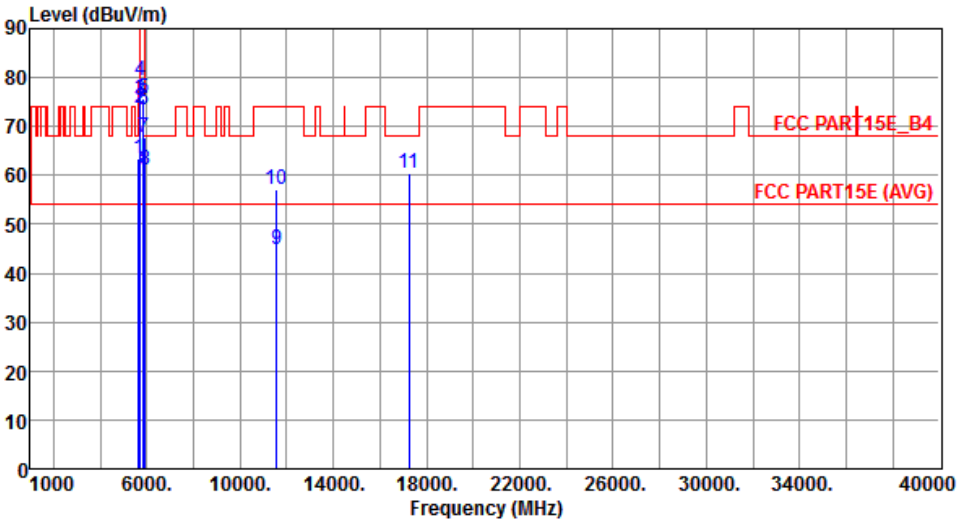
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.92	54.00	-1.08	48.60	4.32	Average	103	4
2	5150.00	67.54	74.00	-6.46	63.22	4.32	Peak	103	4
3	5350.00	45.64	54.00	-8.36	41.11	4.53	Average	103	4
4	5350.00	58.01	74.00	-15.99	53.48	4.53	Peak	103	4
5	10420.00	55.17	68.20	-13.03	40.72	14.45	Peak	210	347
6	15630.00	45.21	54.00	-8.79	30.03	15.18	Average	175	134
7	15630.00	57.61	74.00	-16.39	42.43	15.18	Peak	175	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).

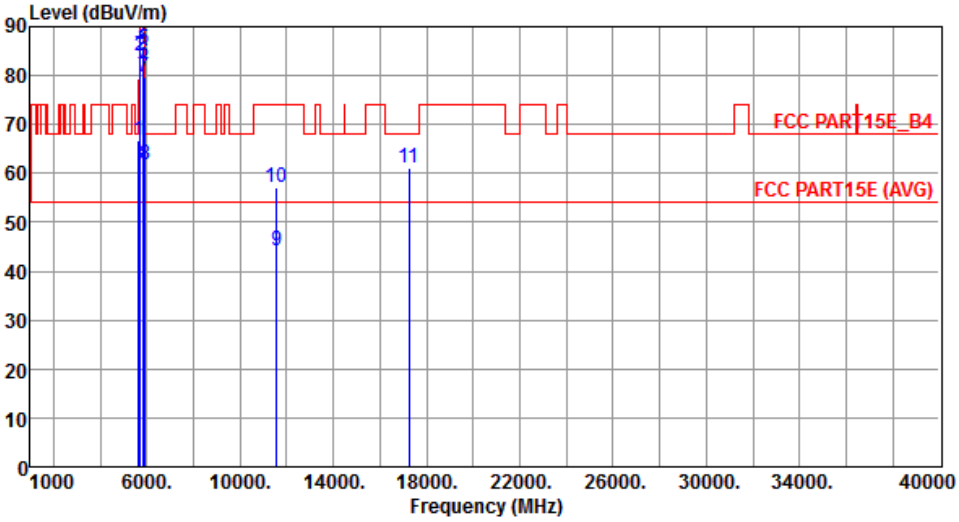
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	63.50	68.20	-4.70	58.63	4.87	Peak	271	138
2	5700.00	73.60	105.20	-31.60	68.66	4.94	Peak	271	138
3	5720.00	75.31	110.80	-35.49	70.34	4.97	Peak	271	138
4	5725.00	79.50	122.20	-42.70	74.54	4.96	Peak	271	138
5	5850.00	75.68	122.20	-46.52	70.55	5.13	Peak	271	138
6	5855.00	73.44	110.80	-37.36	68.30	5.14	Peak	271	138
7	5875.00	67.60	105.20	-37.60	62.44	5.16	Peak	271	138
8	5925.00	60.95	68.20	-7.25	55.74	5.21	Peak	271	138
9	11550.00	44.88	54.00	-9.12	29.31	15.57	Average	173	261
10	11550.00	57.11	74.00	-16.89	41.54	15.57	Peak	173	261
11	17235.00	60.48	68.20	-7.72	41.36	19.12	Peak	114	192

Note 1: Emission Level (dBuV/m) = SA Reading (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	5650.00	66.83	68.20	-1.37	61.96	4.87	Peak	100	156
2	5700.00	83.87	105.20	-21.33	78.93	4.94	Peak	100	156
3	5720.00	86.41	110.80	-24.39	81.44	4.97	Peak	100	156
4	5725.00	89.13	122.20	-33.07	84.17	4.96	Peak	100	156
5	5850.00	85.51	122.20	-36.69	80.38	5.13	Peak	100	156
6	5855.00	82.76	110.80	-28.04	77.62	5.14	Peak	100	156
7	5875.00	79.63	105.20	-25.57	74.47	5.16	Peak	100	156
8	5925.00	61.83	68.20	-6.37	56.62	5.21	Peak	105	226
9	11550.00	44.08	54.00	-9.92	28.51	15.57	Average	298	26
10	11550.00	57.05	74.00	-16.95	41.48	15.57	Peak	298	26
11	17235.00	61.03	68.20	-7.17	41.91	19.12	Peak	179	216

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

3.6 Frequency Stability

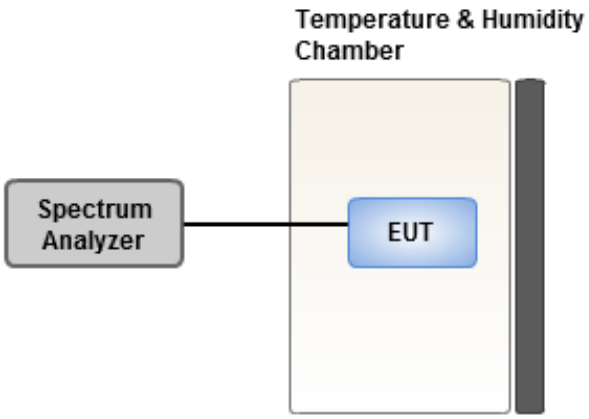
3.6.1 Limit of Frequency Stability

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°CVmax	0.58	0.81	0.78	1.09
T20°CVmin	-0.01	0.12	-0.25	-0.20
T50°CVnom	0.75	1.07	0.69	0.59
T40°CVnom	-0.15	-0.33	0.25	-0.08
T30°CVnom	0.74	1.06	0.70	0.47
T20°CVnom	0.69	0.95	0.62	0.47
T10°CVnom	0.24	0.73	0.90	0.23
T0°CVnom	0.48	-0.03	0.54	0.48
T-10°CVnom	0.01	0.79	0.36	0.86
T-20°CVnom	0.08	0.84	0.92	0.23
T-30°CVnom	-0.07	0.28	0.06	0.30
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°CVmax	4.46	4.43	4.22	4.89
T20°CVmin	3.94	4.27	4.19	4.53
T50°CVnom	3.90	3.73	4.02	4.18
T40°CVnom	2.72	2.50	2.75	2.74
T30°CVnom	2.09	2.61	2.60	2.24
T20°CVnom	2.52	2.60	2.90	2.56
T10°CVnom	2.64	2.87	2.64	3.01
T0°CVnom	2.54	2.59	3.29	2.44
T-10°CVnom	1.96	2.30	1.91	2.39
T-20°CVnom	0.98	1.49	1.48	1.12
T-30°CVnom	0.52	0.37	0.69	0.15
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

4 Test laboratory information

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

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

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

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

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

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

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