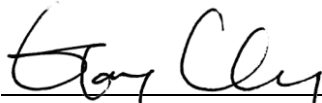


FCC Test Report

FCC ID : A3LSMTI5343
Equipment : Internet Phone
Model No. : SMT-i5343
Brand Name : Samsung
Applicant : Samsung Electronics Co.,Ltd.
Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, Korea 443-742
Standard : 47 CFR FCC Part 15.407
Received Date : Dec. 03, 2013
Tested Date : Dec. 25, 2013 ~ Jan. 03, 2014

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

Approved & Reviewed by:



Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR3D0301AN	Rev. 01	Initial issue	Jan. 16, 2014

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.299MHz 42.73 (Margin -7.55dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 330.70MHz 39.75 (Margin -6.25dB) - PK	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Power [dBm]: 5150~5250 MHz:12.43 5250~5350 MHz:12.42 5470~5725 MHz:13.21	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(a)	Peak Excursion	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
5150-5250 5250-5350 5470-5725	a	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [8]	1	6-54 Mbps
5150-5250 5250-5350 5470-5725	n (HT20)	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [8]	1	MCS 0-7

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

1.1.2 Antenna Details

Model	Type	Gain (dBi)	Connector
Ant Type D (short cable)	PCB	2.785	IPEX
Ant Type C (long cable)	PCB	2.651	IPEX

1.1.3 EUT Operational Condition

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

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	AC Adapter	Brand Name: WEIHAI SUNGHO ELECTRONICS CO., LTD. Model Name: SHA24S12-SS Power Rating: I/P: 100-250Vac, 50-60Hz, 1A O/P: 12Vdc, 2.0A Power Line: 1.8m non-shielded cable with one core
2	RJ45 cable	1.62m non-shielded cable without core

1.1.5 Channel List

Channel	Frequency(MHz)
36	5180
40	5200
44	5220
48	5240
52	5260
56	5280
60	5300
64	5320
100	5500
104	5520
108	5540
112	5560
116	5580
132	5660
136	5680
140	5700

1.1.6 Test Tool and Duty Cycle

Test Tool	Hyperterminal, V5.1		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	99.36%	0.03
	HT20	99.23%	0.03

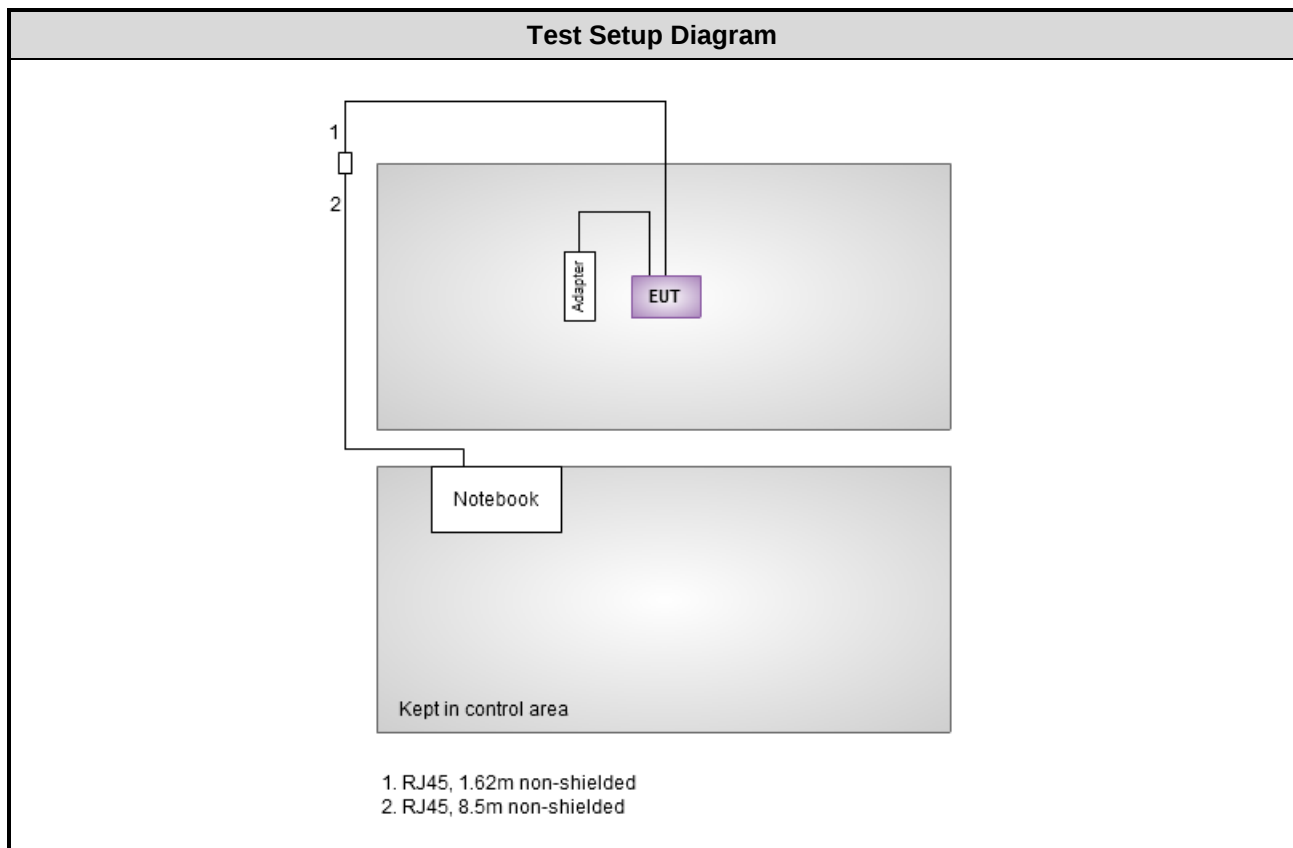
1.1.7 Power Setting

Channel	Frequency(MHz)	Modulation Mode	
		11a	HT20
CH 36	5180	14000	13000
CH 40	5200	14000	13000
CH 48	5240	14000	13000
CH 52	5260	14000	13000
CH 60	5300	14000	13000
CH 64	5320	14000	13000
CH 100	5500	14000	13000
CH 116	5580	14000	13000
CH 140	5700	14000	13000

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	E6430	---	DoC	RJ45, 8.5m non-shielded cable w/o core.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
EMC Receiver	R&S	ESCS 30	100169	Oct. 15, 2013	Oct. 14, 2014
LISN	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-667	Nov. 23, 2013	Nov. 22, 2014
LISN (Support Unit)	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-666	Dec. 04, 2013	Dec. 03, 2014
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Apr. 24, 2013	Apr. 23, 2014
50 ohm terminal (Support Unit)	NA	50	04	Apr. 22, 2013	Apr. 21, 2014
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Jan. 28, 2013	Jan. 27, 2014
Receiver	R&S	ESR3	101657	Jan. 30, 2013	Jan. 29, 2014
Bilog Antenna	Schwarzbeck	VULB9168	VULB9168-524	Jan. 11, 2013	Jan. 10, 2014
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120D	BBHA 9120 D 1095	Jan. 29, 2013	Jan. 28, 2014
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Dec. 27, 2013	Dec. 26, 2014
Amplifier	Burgeon	BPA-530	100218	Dec. 09, 2013	Dec. 08, 2014
Amplifier	Agilent	83017A	MY39501309	Dec. 09, 2013	Dec. 08, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 17, 2013	Dec. 16, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 17, 2013	Dec. 16, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 17, 2013	Dec. 16, 2014
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-003	Dec. 17, 2013	Dec. 16, 2014
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-004	Dec. 17, 2013	Dec. 16, 2014
control	EM Electronics	EM1000	060608	N/A	N/A
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014
Amplifier	EM	EM18G40G	060572	Jun. 20, 2013	Jun. 19, 2015
Note: Calibration Interval of instruments listed above is two year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV 40	101063	Feb. 18, 2013	Feb. 17, 2014
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 11, 2013	Dec. 10, 2014
Power Meter	Anritsu	ML2495A	1241002	Oct. 24, 2013	Oct. 23, 2014
Power Sensor	Anritsu	MA2411B	1027366	Oct. 24, 2013	Oct. 23, 2014
Signal Generator	R&S	SMB100A	175727	Jan. 14, 2013	Jan. 13, 2014
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 C63.10-2009

FCC KDB 412172

FCC KDB 789033 D01 General UNII Test procedures v01r03

Note: The EUT has been tested and complied with FCC part 15B requirement. FCC Part 15B test results are issued to another report.

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	± 74.147 Hz
Conducted power	± 0.717 dB
Power density	± 2.687 dB
Frequency error	± 74.147 Hz
Temperature	± 0.3 °C
AC conducted emission	± 2.43 dB
Radiated emission	± 2.49 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	19°C / 65%	Skys Huang
Radiated Emissions ≤1GHz	03CH02-WS	20°C / 67%	Aska Huang
Radiated Emissions >1GHz	03CH02-WS	20°C / 68%	Aska Huang
RF Conducted	TH01-WS	23°C / 62%	Felix Sung

➤ FCC site registration No.: 657002

➤ IC site registration No.: 10807A-2

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11a	5180	6 Mbps	---
Radiated Emissions <1GHz	11a	5180	6 Mbps	---
Radiated Emissions >1GHz	11a	5180 / 5200 / 5240 / 5260 / 5300 / 5320 / 5500 / 5580 / 5700	6 Mbps	---
RF Output Power	HT20	5180 / 5200 / 5240 / 5260 / 5300 / 5320 / 5500 / 5580 / 5700	MCS 0	---
Emission Bandwidth	HT20	5180 / 5260 / 5700	6 Mbps	---
Peak Power Spectral Density	HT20	5180 / 5260 / 5700	MCS 0	---
Frequency Stability	Un-modulation	5320	---	---

NOTE:

- The device supports TX antenna diversity function. It's wifi 1 (for short cable) and wifi 0 (for long cable). After pre-testing, **wifi 1 (for short cable)** has the worst emission value, therefore the following test results came out from this.

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.

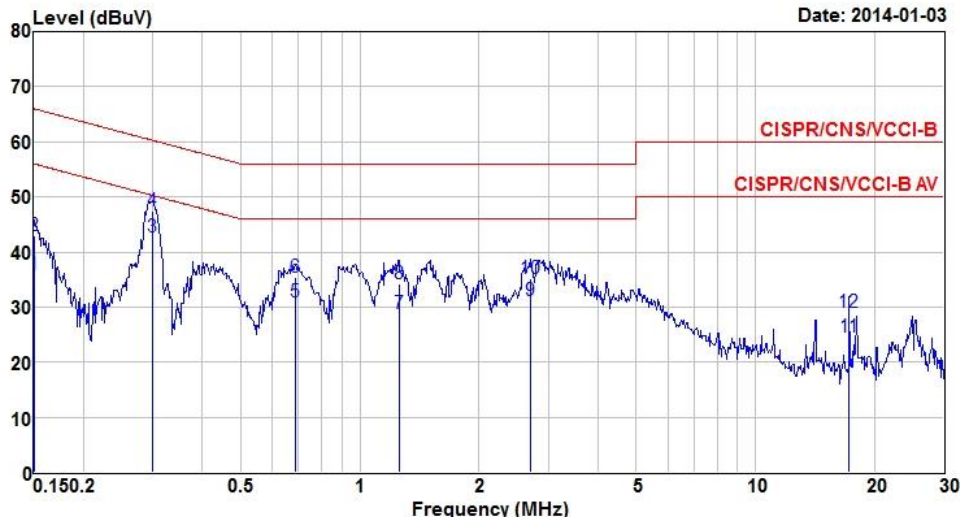
3.1.3 Test Setup



- 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 Mode	11a	Test Freq. (MHz)	5180
Power Phase	Line		



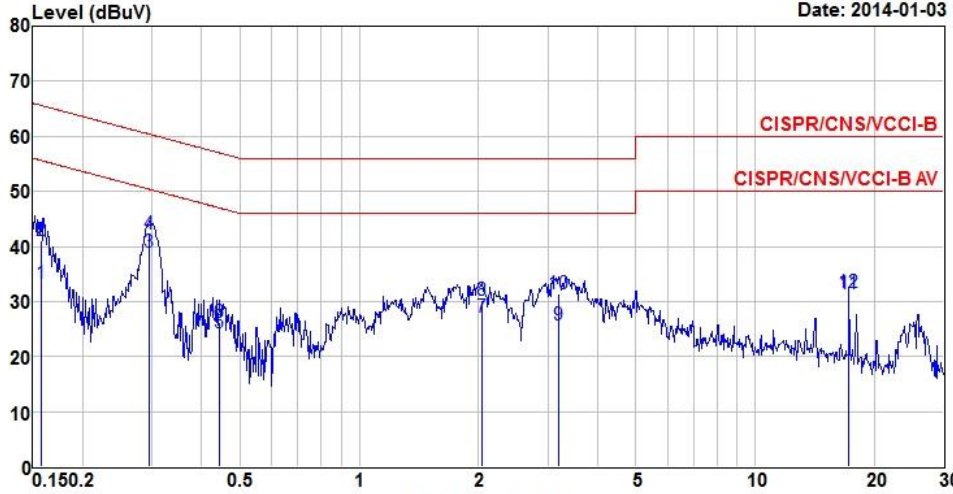
Date: 2014-01-03

	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	35.90	56.00	-20.10	35.43	0.41	0.06	Average
2	0.150	43.03	66.00	-22.97	42.56	0.41	0.06	QP
3 *	0.299	42.73	50.28	-7.55	42.15	0.48	0.10	Average
4	0.299	47.49	60.28	-12.79	46.91	0.48	0.10	QP
5	0.686	31.04	46.00	-14.96	30.35	0.65	0.04	Average
6	0.686	35.40	56.00	-20.60	34.71	0.65	0.04	QP
7	1.255	28.85	46.00	-17.15	27.95	0.82	0.08	Average
8	1.255	34.14	56.00	-21.86	33.24	0.82	0.08	QP
9	2.692	31.12	46.00	-14.88	29.89	1.04	0.19	Average
10	2.692	35.16	56.00	-20.84	33.93	1.04	0.19	QP
11	17.291	24.55	50.00	-25.45	22.38	2.01	0.16	Average
12	17.291	29.14	60.00	-30.86	26.97	2.01	0.16	QP

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

Modulation Mode	HT40	Test Freq. (MHz)	5580
Power Phase	Neutral		

Level (dBuV) Date: 2014-01-03



Frequency (MHz)

	Freq	Level	Limit	Over	Read	LISN	cable	Remark
	MHz	dBuV	Line dBuV	Limit dB	Level dBuV	factor dB	loss dB	
1	0.157	33.22	55.62	-22.40	32.65	0.49	0.08	Average
2	0.157	41.07	65.62	-24.55	40.50	0.49	0.08	QP
3	0.294	38.85	50.41	-11.56	38.17	0.57	0.11	Average
4	0.294	42.16	60.41	-18.25	41.48	0.57	0.11	QP
5	0.444	24.22	46.98	-22.76	23.54	0.63	0.05	Average
6	0.444	26.27	56.98	-30.71	25.59	0.63	0.05	QP
7	2.044	27.20	46.00	-18.80	25.95	1.09	0.16	Average
8	2.044	30.29	56.00	-25.71	29.04	1.09	0.16	QP
9	3.190	25.75	46.00	-20.25	24.42	1.12	0.21	Average
10	3.190	31.50	56.00	-24.50	30.17	1.12	0.21	QP
11	17.278	31.31	50.00	-18.69	28.74	2.41	0.16	Average
12	17.278	31.68	60.00	-28.32	29.11	2.41	0.16	QP

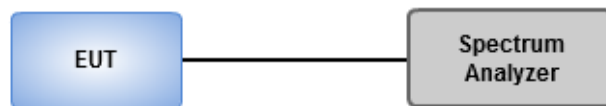
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
 2: Over Limit (dBuV) = Limit Line (dBuV) – Level (dBuV).

3.2 Emission Bandwidth

3.2.1 Test Procedures

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.

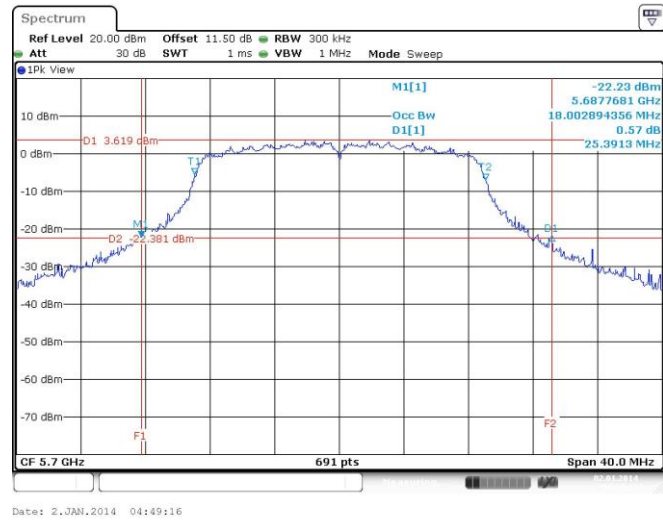
3.2.2 Test Setup



3.2.3 Test Result of Emission Bandwidth

Modulation Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)				Limit (dBm)	
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	26dB BW	99% BW
11a	1	5180	23.25	---	---	---	16.85	---	---	---	17.00	16.27
11a	1	5200	23.59	---	---	---	16.90	---	---	---	17.00	16.28
11a	1	5240	23.88	---	---	---	16.85	---	---	---	17.00	16.27
11a	1	5260	23.48	---	---	---	16.85	---	---	---	24.00	23.27
11a	1	5300	24.06	---	---	---	16.96	---	---	---	24.00	23.29
11a	1	5320	23.71	---	---	---	16.90	---	---	---	24.00	23.28
11a	1	5500	23.42	---	---	---	16.90	---	---	---	24.00	23.28
11a	1	5580	23.88	---	---	---	16.90	---	---	---	24.00	23.28
11a	1	5700	23.94	---	---	---	17.02	---	---	---	24.00	23.31
HT20	1	5180	23.77	---	---	---	17.95	---	---	---	17.00	16.54
HT20	1	5200	24.64	---	---	---	17.95	---	---	---	17.00	16.54
HT20	1	5240	24.46	---	---	---	17.95	---	---	---	17.00	16.54
HT20	1	5260	24.00	---	---	---	18.00	---	---	---	24.00	23.55
HT20	1	5300	24.17	---	---	---	18.00	---	---	---	24.00	23.55
HT20	1	5320	24.41	---	---	---	18.00	---	---	---	24.00	23.55
HT20	1	5500	24.29	---	---	---	17.95	---	---	---	24.00	23.54
HT20	1	5580	24.75	---	---	---	18.00	---	---	---	24.00	23.55
HT20	1	5700	25.39	---	---	---	18.00	---	---	---	24.00	23.55

Worst Plots



3.3 RF Output Power

3.3.1 Limit of RF Output Power

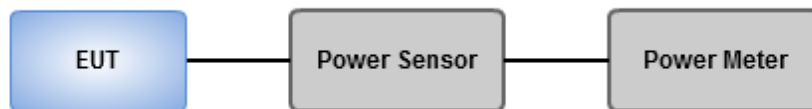
	Frequency Band (GHz)	Limit
☒	5.15~5.25	50mW or 4dBm+10 log B
☒	5.25~5.35	250mW or 11dBm+10 log B
☒	5.47~5.725	250mW or 11dBm+10 log B

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

Modulation Mode	N _{TX}	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	1	5180	12.43	---	---	---	17.498	12.43	17.00
11a	1	5200	12.11	---	---	---	16.255	12.11	17.00
11a	1	5240	12.17	---	---	---	16.482	12.17	17.00
11a	1	5260	12.42	---	---	---	17.458	12.42	24.00
11a	1	5300	12.21	---	---	---	16.634	12.21	24.00
11a	1	5320	12.32	---	---	---	17.061	12.32	24.00
11a	1	5500	12.78	---	---	---	18.967	12.78	24.00
11a	1	5580	12.26	---	---	---	16.827	12.26	24.00
11a	1	5700	13.21	---	---	---	20.941	13.21	24.00
HT20	1	5180	11.31	---	---	---	13.521	11.31	17.00
HT20	1	5200	11.15	---	---	---	13.032	11.15	17.00
HT20	1	5240	11.01	---	---	---	12.618	11.01	17.00
HT20	1	5260	11.39	---	---	---	13.772	11.39	24.00
HT20	1	5300	11.25	---	---	---	13.335	11.25	24.00
HT20	1	5320	11.22	---	---	---	13.243	11.22	24.00
HT20	1	5500	11.79	---	---	---	15.101	11.79	24.00
HT20	1	5580	11.39	---	---	---	13.772	11.39	24.00
HT20	1	5700	12.22	---	---	---	16.672	12.22	24.00

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

	Frequency Band (GHz)	Limit (dBm)
☒	5.15~5.25	4
☒	5.25~5.35	11
☒	5.47~5.725	11

3.4.2 Test Procedures

☒ 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.

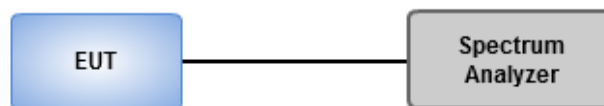
☐ Method SA-2

1. Set RBW = 1 MHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
2. Trace average at 100 traces
3. Use the peak marker function to determine the maximum amplitude level.
4. Add $10 \log(1/x)$, where x is the duty cycle

☐ Method SA-2 Alternative

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

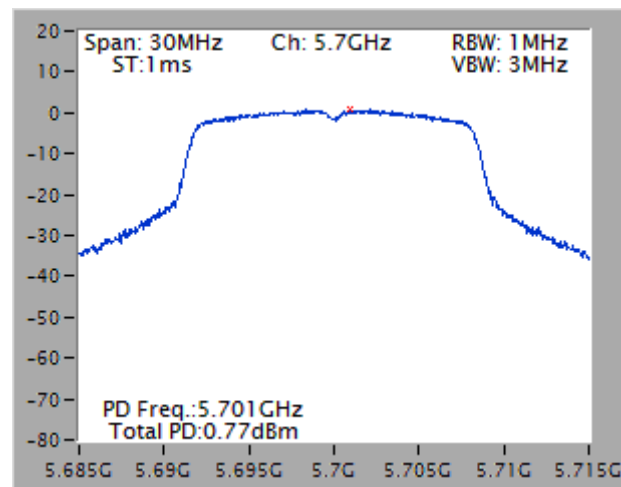
3.4.3 Test Setup



3.4.4 Test Result of Peak Power Spectral Density

Modulation Mode	N _{TX}	Freq. (MHz)	PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)
11a	1	5180	0.28	0	0.28	4
11a	1	5200	0.11	0	0.11	4
11a	1	5240	-0.08	0	-0.08	4
11a	1	5260	0.32	0	0.32	11
11a	1	5300	-0.06	0	-0.06	11
11a	1	5320	0.34	0	0.34	11
11a	1	5500	0.74	0	0.74	11
11a	1	5580	0.09	0	0.09	11
11a	1	5700	0.77	0	0.77	11
HT20	1	5180	-1.08	0	-1.08	4
HT20	1	5200	-0.96	0	-0.96	4
HT20	1	5240	-1.23	0	-1.23	4
HT20	1	5260	-0.81	0	-0.81	11
HT20	1	5300	-1.19	0	-1.19	11
HT20	1	5320	-0.95	0	-0.95	11
HT20	1	5500	-0.46	0	-0.46	11
HT20	1	5580	-0.89	0	-0.89	11
HT20	1	5700	-0.34	0	-0.34	11

Worst Plots



3.5 Peak Excursion

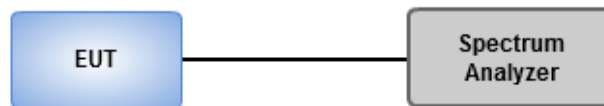
3.5.1 Peak Excursion Limit

Peak excursion of the modulation envelope shall not exceed 13 dB across any 1 MHz bandwidth.

3.5.2 Test Procedures

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = peak.
2. Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak search function to find the peak of the spectrum.
4. Use the procedure of section 3.4.2 to measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD

3.5.3 Test Setup



3.5.4 Test Result of Peak Excursion

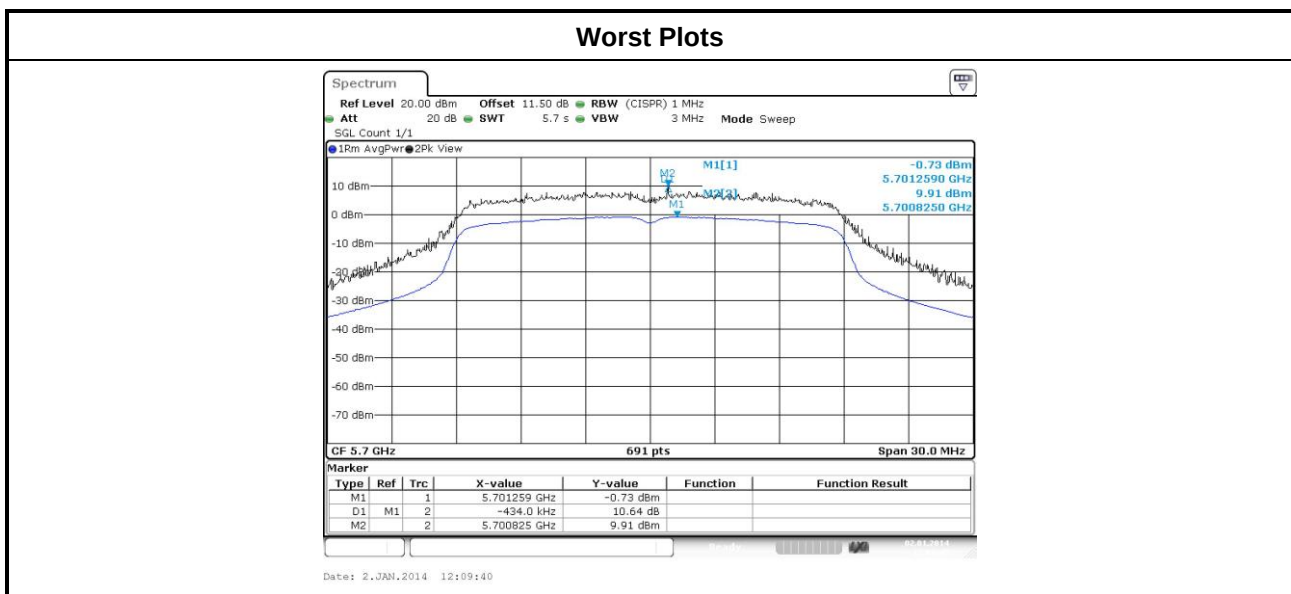
Mode	Modulation Mode	N _{TX}	Freq. (MHz)	Measured value(dB)	Duty factor (dB)	Peak Excursion (dB)	Limit
11a	BPSK	1	5180	7.93	0.00	7.93	13
11a	QPSK	1	5180	7.53	0.00	7.53	13
11a	16QAM	1	5180	8.94	0.14	8.80	13
11a	64QAM	1	5180	8.92	0.28	8.64	13
HT20	BPSK	1	5180	8.84	0.00	8.84	13
HT20	QPSK	1	5180	8.61	0.00	8.61	13
HT20	16QAM	1	5180	8.82	0.14	8.68	13
HT20	64QAM	1	5180	9.02	0.28	8.74	13

Mode	Modulation Mode	N _{TX}	Freq. (MHz)	Measured value(dB)	Duty factor (dB)	Peak Excursion (dB)	Limit
11a	BPSK	1	5260	7.26	0.00	7.26	13
11a	QPSK	1	5260	7.58	0.00	7.58	13
11a	16QAM	1	5260	9.02	0.14	8.88	13
11a	64QAM	1	5260	9.01	0.28	8.73	13
HT20	BPSK	1	5260	7.84	0.00	7.84	13
HT20	QPSK	1	5260	8.04	0.00	8.04	13
HT20	16QAM	1	5260	9.63	0.14	9.49	13
HT20	64QAM	1	5260	10.39	0.28	10.11	13

Note: Measured value = Peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission. Since the duty cycle is < 98 %, duty factor is required to average spectrum
Peak excursion = Measured value – duty factor

Mode	Modulation Mode	N _{TX}	Freq. (MHz)	Measured value(dB)	Duty factor (dB)	Peak Excursion (dB)	Limit
11a	BPSK	1	5700	7.76	0.00	7.76	13
11a	QPSK	1	5700	8.31	0.00	8.31	13
11a	16QAM	1	5700	8.44	0.14	8.30	13
11a	64QAM	1	5700	8.91	0.28	8.63	13
HT20	BPSK	1	5700	8.23	0.00	8.23	13
HT20	QPSK	1	5700	8.68	0.00	8.68	13
HT20	16QAM	1	5700	9.13	0.14	8.99	13
HT20	64QAM	1	5700	10.64	0.28	10.36	13

Note: Measured value = Peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission. Since the duty cycle is < 98 %, duty factor is required to average spectrum
Peak exclusion = Measured value – duty factor



Note: Measured value
= Peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission
= Mark 2 – Mark 1

3.6 Transmitter Radiated and Band Edge Emissions

3.6.1 Limit of Transmitter Radiated and Band Edge Emissions

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

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

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

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.825 GHz	5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.825 5.835 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m]

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

3.6.2 Test Procedures

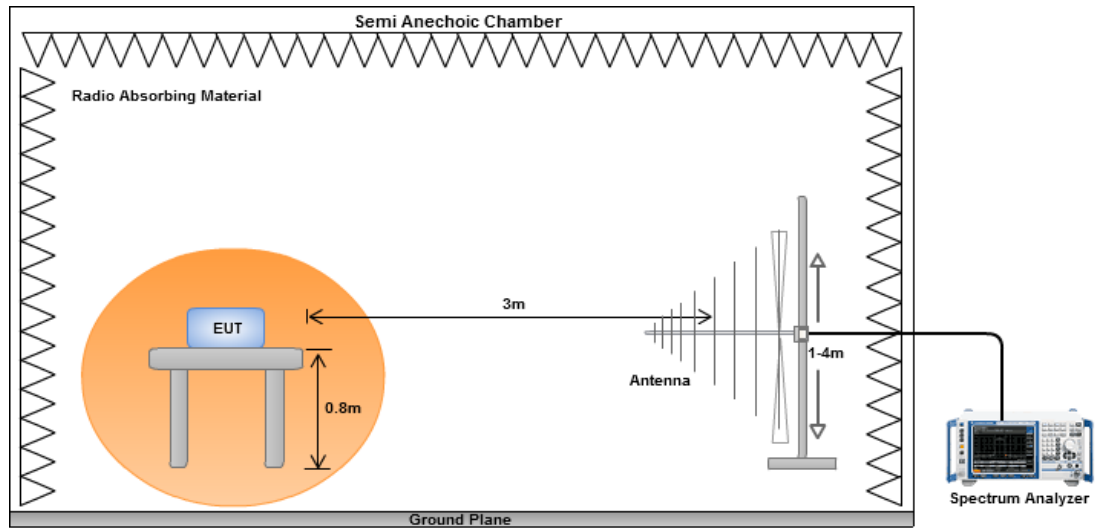
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
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:

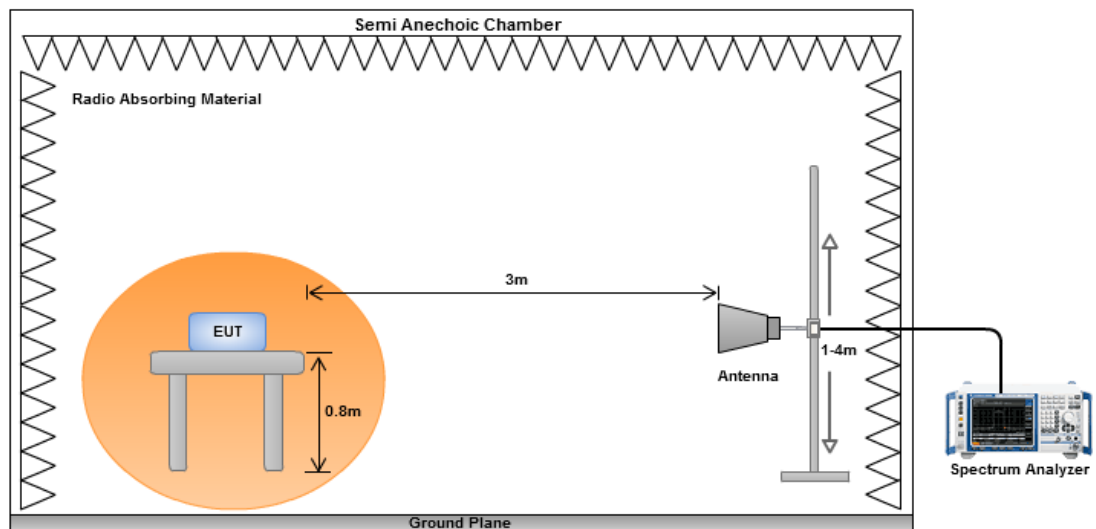
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.6.3 Test Setup

Radiated Emissions below 1 GHz

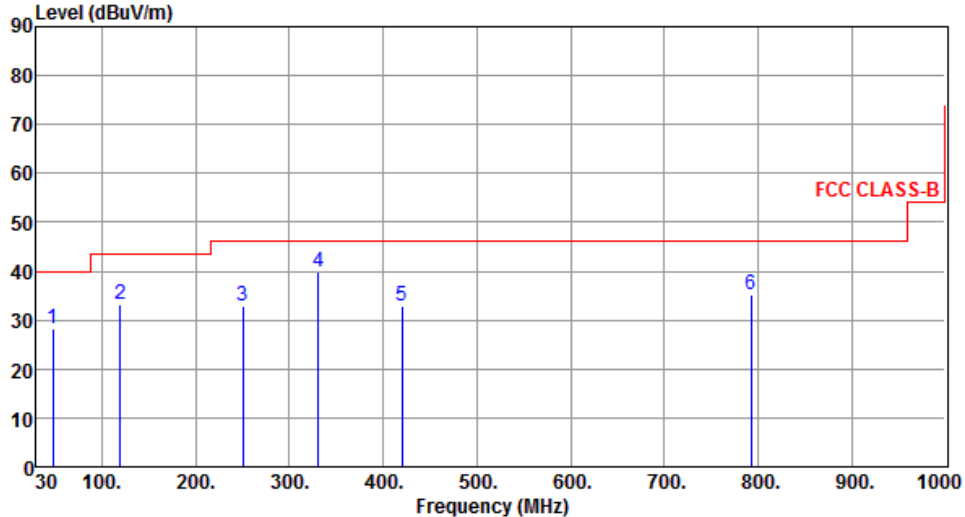


Radiated Emissions above 1 GHz



3.6.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

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



The graph displays the radiated unwanted emission levels in dBuV/m across a frequency range from 30 MHz to 1000 MHz. A red line represents the FCC CLASS-B limit, which is 40 dBuV/m from 30 MHz to 100 MHz, 45 dBuV/m from 100 MHz to 250 MHz, and 55 dBuV/m from 250 MHz to 1000 MHz. Six measured peaks are labeled with blue numbers 1 through 6. Peak 4 is the highest measured emission, occurring at 330.70 MHz.

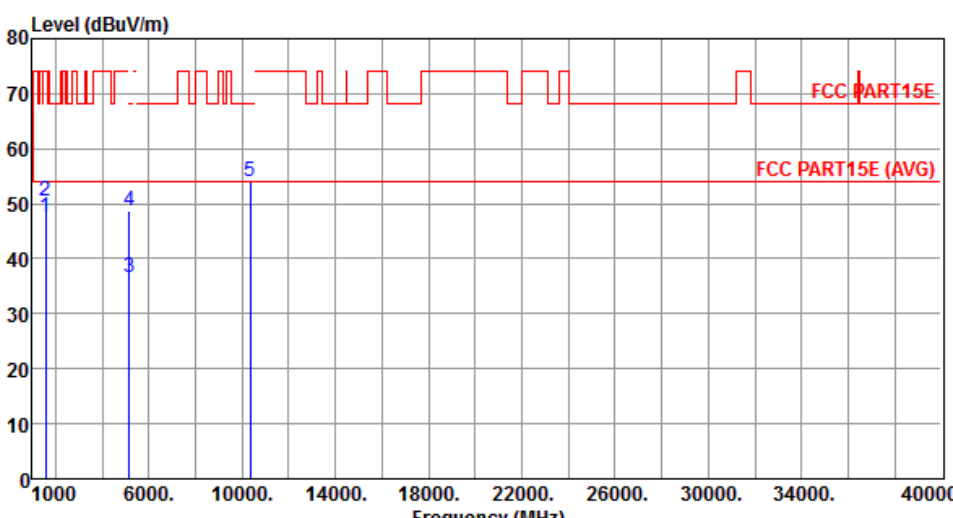
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	47.46	28.37	40.00	-11.63	45.61	-17.24	Peak	---	---
2	119.24	33.20	43.50	-10.30	53.43	-20.23	Peak	---	---
3	250.19	32.89	46.00	-13.11	51.99	-19.10	Peak	---	---
4	330.70	39.75	46.00	-6.25	56.52	-16.77	Peak	---	---
5	419.94	33.01	46.00	-12.99	47.62	-14.61	Peak	---	---
6	792.42	35.14	46.00	-10.86	43.98	-8.84	Peak	---	---

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

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

3.6.5 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	1584.00	47.45	54.00	-6.55	53.63	-6.18	Average	---	---
2	1584.00	50.34	74.00	-23.66	56.52	-6.18	Peak	---	---
3	5150.00	36.58	54.00	-17.42	31.37	5.21	Average	---	---
4	5150.00	48.58	74.00	-25.42	43.37	5.21	Peak	---	---
5	10360.00	54.16	68.20	-14.04	40.19	13.97	Peak	---	---

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

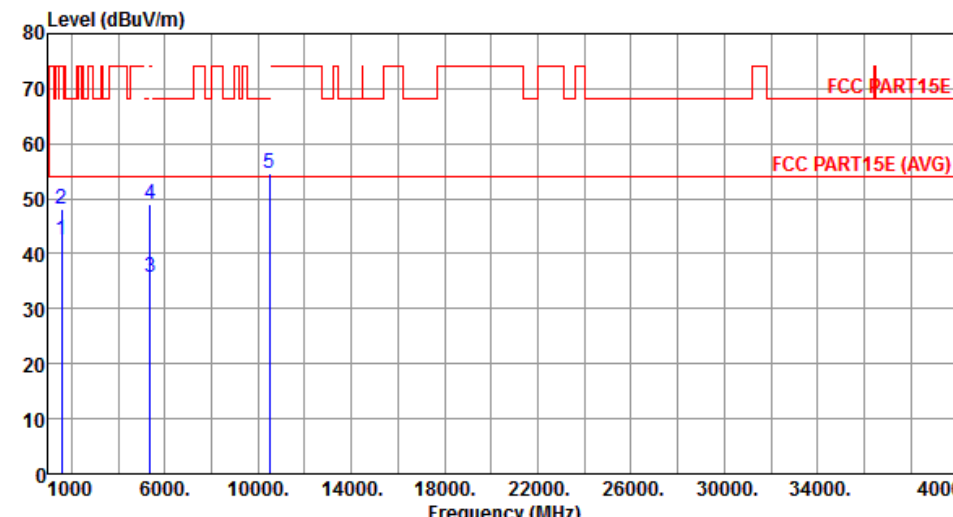
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		
Level (dBuV/m) </			

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

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

Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		
Level (dBuV/m) </			

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



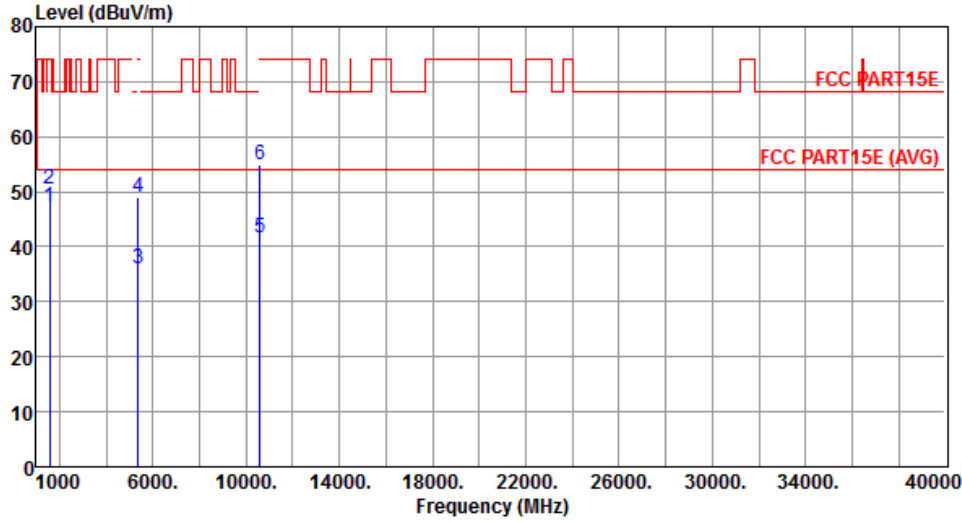
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.45	54.00	-11.55	48.63	-6.18	Average	---	---
2	1584.00	48.24	74.00	-25.76	54.42	-6.18	Peak	---	---
3	5350.00	35.74	54.00	-18.26	30.25	5.49	Average	---	---
4	5350.00	48.93	74.00	-25.07	43.44	5.49	Peak	---	---
5	10480.00	54.50	68.20	-13.70	40.36	14.14	Peak	---	---

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

Modulation	11a	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5260
Polarization	Vertical		
Level (dBuV/m) </			

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.30	54.00	-6.70	53.48	-6.18	Average	---	---
2	1584.00	50.34	74.00	-23.66	56.52	-6.18	Peak	---	---
3	5350.00	35.97	54.00	-18.03	30.48	5.49	Average	---	---
4	5350.00	49.12	74.00	-24.88	43.63	5.49	Peak	---	---
5	10600.00	41.50	54.00	-12.50	27.12	14.38	Average	---	---
6	10600.00	54.86	74.00	-19.14	40.48	14.38	Peak	---	---

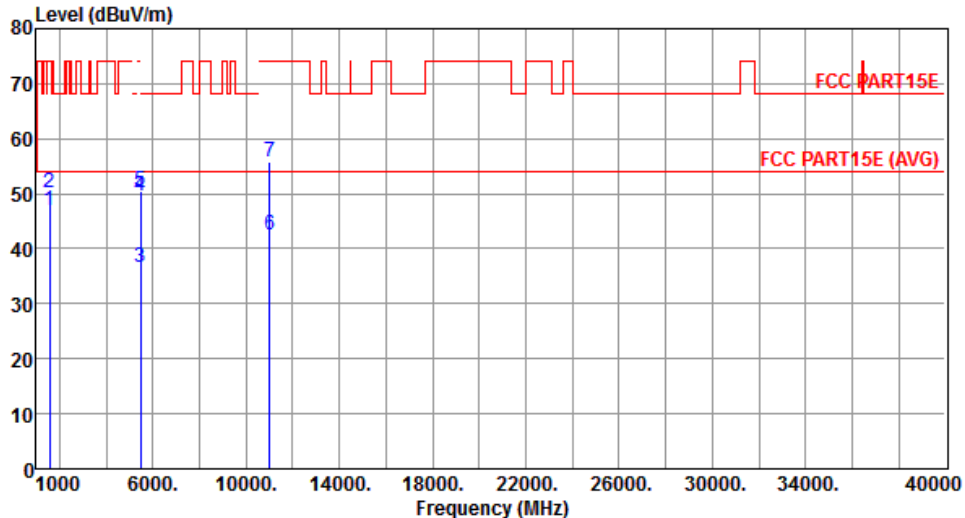
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	11a	Test Freq. (MHz)	5300
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5320
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5320																																																																						
Polarization	Vertical																																																																								
Level (dBuV/m) 80 70 60 50 40 30 20 10 0 1000 6000 10000 14000 18000 22000 26000 30000 34000 40000 1 2 3 4 5 6 FCC PART15E FCC PART15E (AVG) <table><tr><th></th><th>Freq. MHz</th><th>Emission level dBuV/m</th><th>Limit dBuV/m</th><th>Margin dB</th><th>SA reading dBuV</th><th>Factor dB</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr><tr><td>1</td><td>1584.00</td><td>42.25</td><td>54.00</td><td>-11.75</td><td>48.43</td><td>-6.18</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>2</td><td>1584.00</td><td>48.17</td><td>74.00</td><td>-25.83</td><td>54.35</td><td>-6.18</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>3</td><td>5350.00</td><td>40.91</td><td>54.00</td><td>-13.09</td><td>35.42</td><td>5.49</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>4</td><td>5350.00</td><td>52.75</td><td>74.00</td><td>-21.25</td><td>47.26</td><td>5.49</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>5</td><td>10640.00</td><td>41.63</td><td>54.00</td><td>-12.37</td><td>27.15</td><td>14.48</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>6</td><td>10640.00</td><td>54.73</td><td>74.00</td><td>-19.27</td><td>40.25</td><td>14.48</td><td>Peak</td><td>---</td><td>---</td></tr></table>					Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	1584.00	42.25	54.00	-11.75	48.43	-6.18	Average	---	---	2	1584.00	48.17	74.00	-25.83	54.35	-6.18	Peak	---	---	3	5350.00	40.91	54.00	-13.09	35.42	5.49	Average	---	---	4	5350.00	52.75	74.00	-21.25	47.26	5.49	Peak	---	---	5	10640.00	41.63	54.00	-12.37	27.15	14.48	Average	---	---	6	10640.00	54.73	74.00	-19.27	40.25	14.48	Peak	---	---
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																
1	1584.00	42.25	54.00	-11.75	48.43	-6.18	Average	---	---																																																																
2	1584.00	48.17	74.00	-25.83	54.35	-6.18	Peak	---	---																																																																
3	5350.00	40.91	54.00	-13.09	35.42	5.49	Average	---	---																																																																
4	5350.00	52.75	74.00	-21.25	47.26	5.49	Peak	---	---																																																																
5	10640.00	41.63	54.00	-12.37	27.15	14.48	Average	---	---																																																																
6	10640.00	54.73	74.00	-19.27	40.25	14.48	Peak	---	---																																																																
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).																																																																									

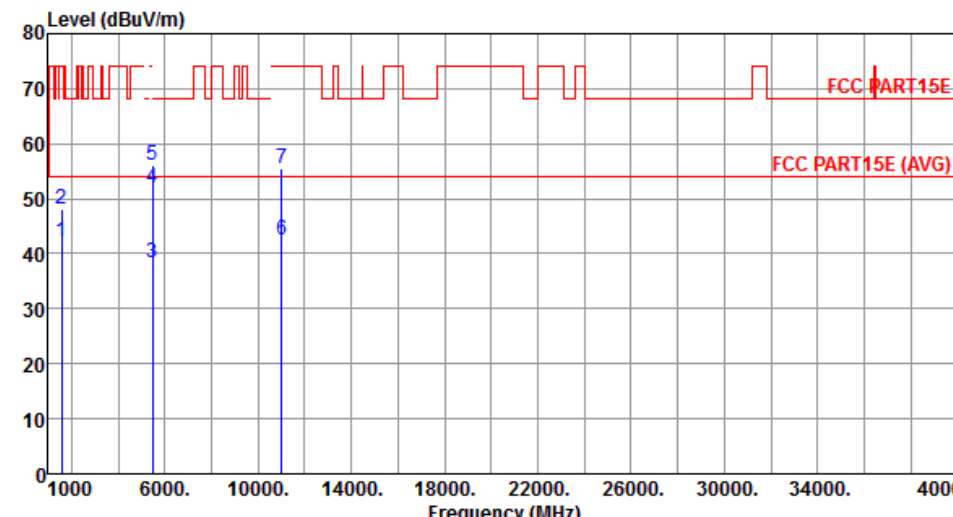
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.04	54.00	-6.96	53.22	-6.18	Average	---	---
2	1584.00	50.29	74.00	-23.71	56.47	-6.18	Peak	---	---
3	5460.00	36.57	54.00	-17.43	30.95	5.62	Average	---	---
4	5460.00	49.52	74.00	-24.48	43.90	5.62	Peak	---	---
5	5470.00	50.60	68.20	-17.60	44.96	5.64	Peak	---	---
6	11000.00	42.51	54.00	-11.49	27.22	15.29	Average	---	---
7	11000.00	55.66	74.00	-18.34	40.37	15.29	Peak	---	---

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

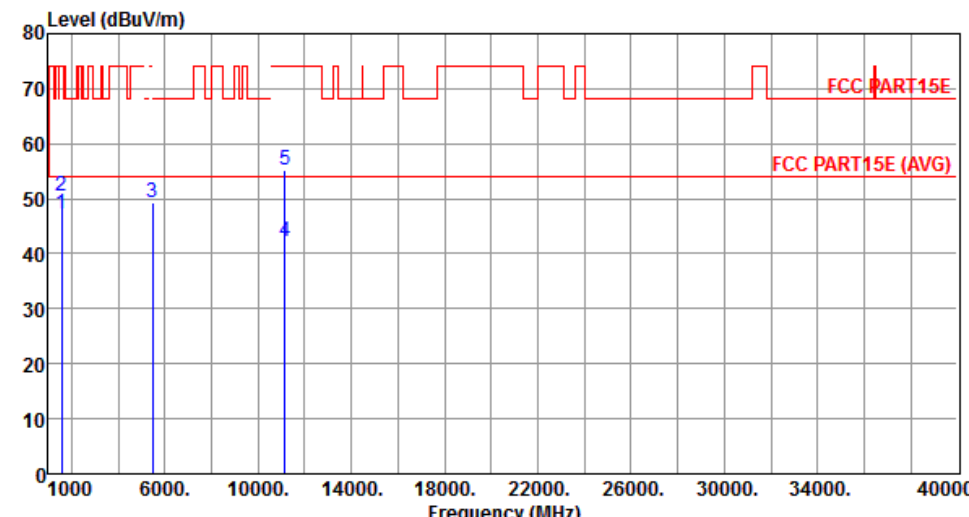
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.26	54.00	-11.74	48.44	-6.18	Average	---	---
2	1584.00	48.19	74.00	-25.81	54.37	-6.18	Peak	---	---
3	5460.00	38.42	54.00	-15.58	32.80	5.62	Average	---	---
4	5460.00	52.05	74.00	-21.95	46.43	5.62	Peak	---	---
5	5470.00	56.10	68.20	-12.10	50.46	5.64	Peak	---	---
6	11000.00	42.57	54.00	-11.43	27.28	15.29	Average	---	---
7	11000.00	55.42	74.00	-18.58	40.13	15.29	Peak	---	---

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

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.23	54.00	-6.77	53.41	-6.18	Average	---	---
2	1584.00	50.34	74.00	-23.66	56.52	-6.18	Peak	---	---
3	5470.00	49.18	68.20	-19.02	43.54	5.64	Peak	---	---
4	11160.00	42.14	54.00	-11.86	26.98	15.16	Average	---	---
5	11160.00	55.11	74.00	-18.89	39.95	15.16	Peak	---	---

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

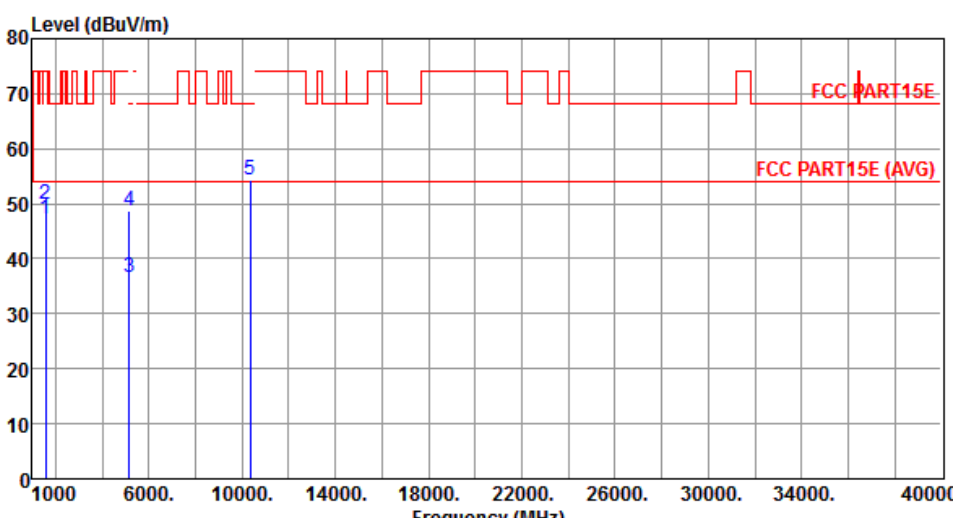
Modulation	11a	Test Freq. (MHz)	5580
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		
Level (dBuV/m) </			

3.6.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT20

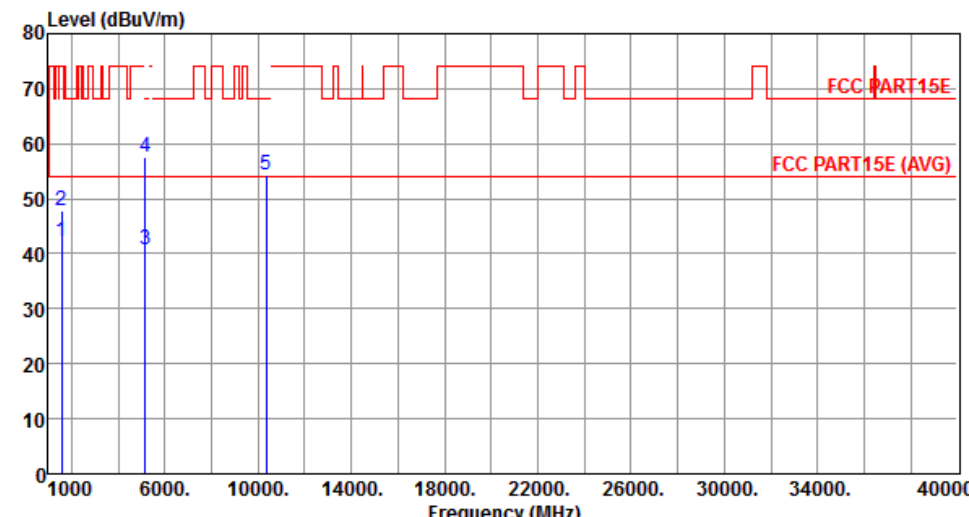
Modulation	HT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.34	54.00	-6.66	53.52	-6.18	Average	---	---
2	1584.00	49.99	74.00	-24.01	56.17	-6.18	Peak	---	---
3	5150.00	36.69	54.00	-17.31	31.48	5.21	Average	---	---
4	5150.00	48.73	74.00	-25.27	43.52	5.21	Peak	---	---
5	10360.00	54.34	68.20	-13.86	40.37	13.97	Peak	---	---

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

Modulation	HT20	Test Freq. (MHz)	5180
Polarization	Vertical		

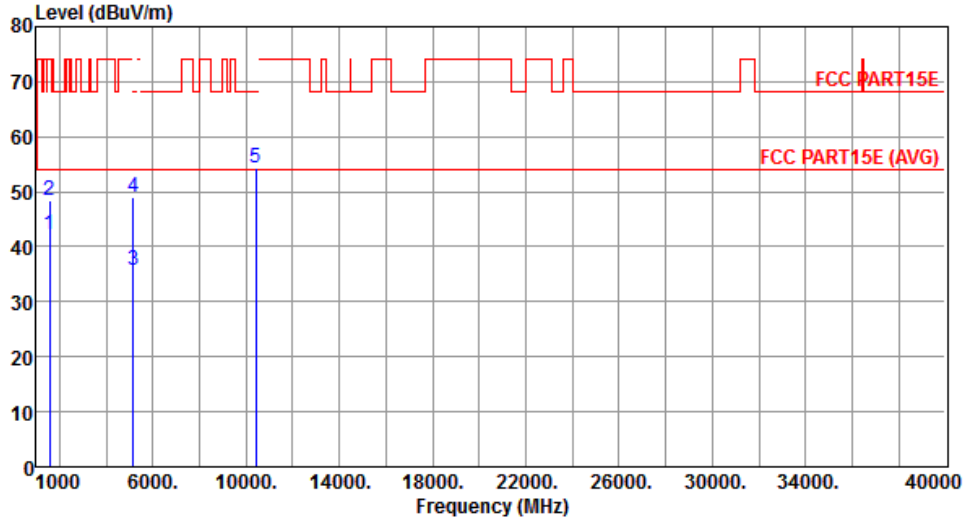


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.07	54.00	-11.93	48.25	-6.18	Average	---	---
2	1584.00	47.90	74.00	-26.10	54.08	-6.18	Peak	---	---
3	5150.00	40.87	54.00	-13.13	35.66	5.21	Average	---	---
4	5150.00	57.44	74.00	-16.56	52.23	5.21	Peak	---	---
5	10360.00	54.27	68.20	-13.93	40.30	13.97	Peak	---	---

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

Modulation	HT20	Test Freq. (MHz)	5200
Polarization	Horizontal		
Level (dBuV/m) </			

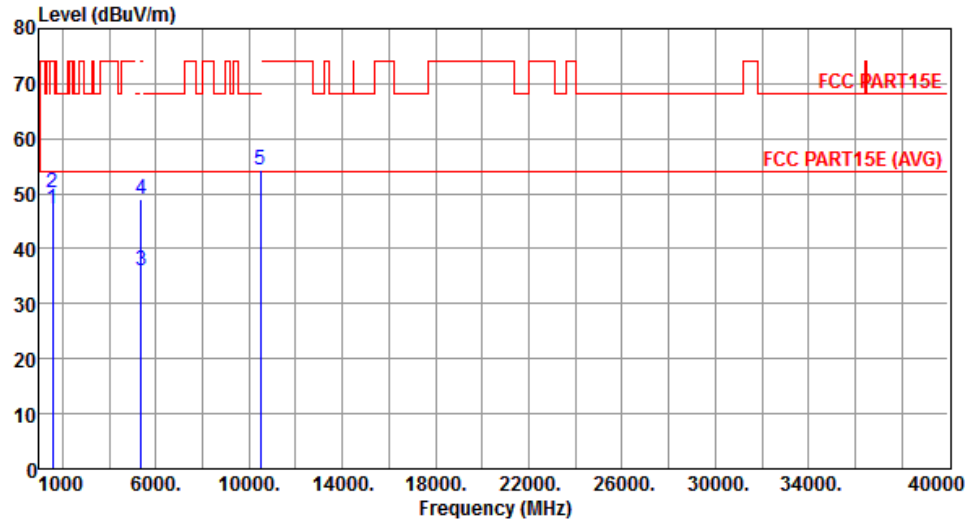
Modulation	HT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.34	54.00	-11.66	48.52	-6.18	Average	---	---
2	1584.00	48.35	74.00	-25.65	54.53	-6.18	Peak	---	---
3	5150.00	35.62	54.00	-18.38	30.41	5.21	Average	---	---
4	5150.00	48.98	74.00	-25.02	43.77	5.21	Peak	---	---
5	10400.00	54.26	68.20	-13.94	40.24	14.02	Peak	---	---

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

Modulation	HT20	Test Freq. (MHz)	5240
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	1584.00	47.34	54.00	-6.66	53.52	-6.18	Average	---	---
2	1584.00	50.23	74.00	-23.77	56.41	-6.18	Peak	---	---
3	5350.00	36.04	54.00	-17.96	30.55	5.49	Average	---	---
4	5350.00	49.03	74.00	-24.97	43.54	5.49	Peak	---	---
5	10480.00	54.31	68.20	-13.89	40.17	14.14	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

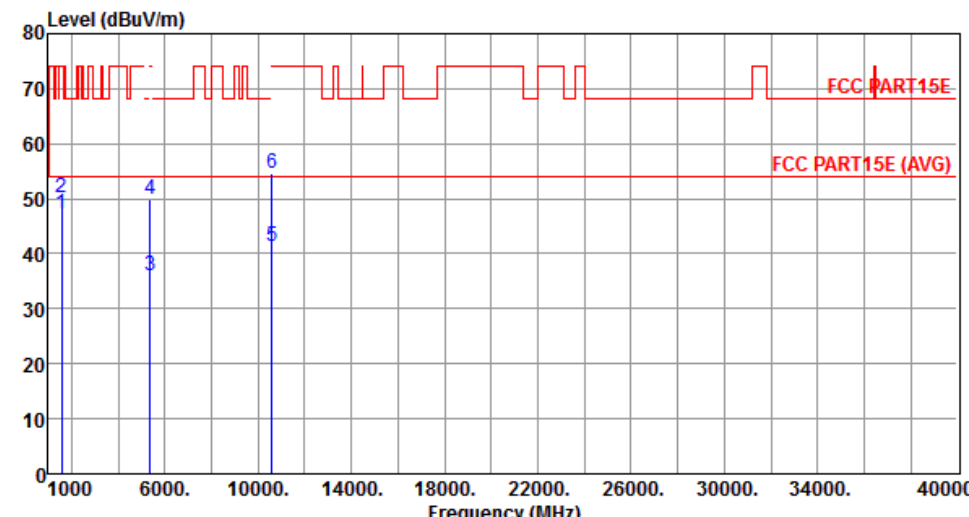
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	HT20	Test Freq. (MHz)	5240																																																																																
Polarization	Vertical																																																																																		
Level (dBuV/m) 80 70 60 50 40 30 20 10 0 1000 6000 10000 14000 18000 22000 26000 30000 34000 40000 Frequency (MHz) 1 2 3 4 5 1584.00 1584.00 5350.00 5350.00 10480.00 42.37 48.19 36.04 49.00 54.60 54.00 74.00 54.00 74.00 68.20 -11.63 -25.81 -17.96 -25.00 -13.60 48.55 54.37 30.55 43.51 40.46 -6.18 -6.18 5.49 5.49 14.14 Average Peak Average Peak Peak --- --- --- --- --- --- --- --- --- --- FCC PART15E FCC PART15E (AVG) <table><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>1584.00</td><td>42.37</td><td>54.00</td><td>-11.63</td><td>48.55</td><td>-6.18</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>2</td><td>1584.00</td><td>48.19</td><td>74.00</td><td>-25.81</td><td>54.37</td><td>-6.18</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>3</td><td>5350.00</td><td>36.04</td><td>54.00</td><td>-17.96</td><td>30.55</td><td>5.49</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>4</td><td>5350.00</td><td>49.00</td><td>74.00</td><td>-25.00</td><td>43.51</td><td>5.49</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>5</td><td>10480.00</td><td>54.60</td><td>68.20</td><td>-13.60</td><td>40.46</td><td>14.14</td><td>Peak</td><td>---</td><td>---</td></tr></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level	dBuV/m	dB	reading	dB		High	Table									cm	deg	1	1584.00	42.37	54.00	-11.63	48.55	-6.18	Average	---	---	2	1584.00	48.19	74.00	-25.81	54.37	-6.18	Peak	---	---	3	5350.00	36.04	54.00	-17.96	30.55	5.49	Average	---	---	4	5350.00	49.00	74.00	-25.00	43.51	5.49	Peak	---	---	5	10480.00	54.60	68.20	-13.60	40.46	14.14	Peak	---	---
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																										
	MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																										
								cm	deg																																																																										
1	1584.00	42.37	54.00	-11.63	48.55	-6.18	Average	---	---																																																																										
2	1584.00	48.19	74.00	-25.81	54.37	-6.18	Peak	---	---																																																																										
3	5350.00	36.04	54.00	-17.96	30.55	5.49	Average	---	---																																																																										
4	5350.00	49.00	74.00	-25.00	43.51	5.49	Peak	---	---																																																																										
5	10480.00	54.60	68.20	-13.60	40.46	14.14	Peak	---	---																																																																										
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).																																																																																			

Modulation	HT20	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	HT20		Test Freq. (MHz)		5260																																																			
Polarization	Vertical																																																							
Level (dBuV/m) Freq. Emission Limit Margin SA Factor Remark ANT Turn MHz level dBuV/m dBuV/m dB reading dBuV dB cm Table deg <table><tr><td>1</td><td>1584.00</td><td>40.34</td><td>54.00</td><td>-13.66</td><td>46.52</td><td>-6.18</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>2</td><td>1584.00</td><td>48.19</td><td>74.00</td><td>-25.81</td><td>54.37</td><td>-6.18</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>3</td><td>5150.00</td><td>35.83</td><td>54.00</td><td>-18.17</td><td>30.62</td><td>5.21</td><td>Average</td><td>---</td><td>---</td></tr><tr><td>4</td><td>5150.00</td><td>48.73</td><td>74.00</td><td>-25.27</td><td>43.52</td><td>5.21</td><td>Peak</td><td>---</td><td>---</td></tr><tr><td>5</td><td>10520.00</td><td>54.84</td><td>68.20</td><td>-13.36</td><td>40.63</td><td>14.21</td><td>Peak</td><td>---</td><td>---</td></tr></table>							1	1584.00	40.34	54.00	-13.66	46.52	-6.18	Average	---	---	2	1584.00	48.19	74.00	-25.81	54.37	-6.18	Peak	---	---	3	5150.00	35.83	54.00	-18.17	30.62	5.21	Average	---	---	4	5150.00	48.73	74.00	-25.27	43.52	5.21	Peak	---	---	5	10520.00	54.84	68.20	-13.36	40.63	14.21	Peak	---	---
1	1584.00	40.34	54.00	-13.66	46.52	-6.18	Average	---	---																																															
2	1584.00	48.19	74.00	-25.81	54.37	-6.18	Peak	---	---																																															
3	5150.00	35.83	54.00	-18.17	30.62	5.21	Average	---	---																																															
4	5150.00	48.73	74.00	-25.27	43.52	5.21	Peak	---	---																																															
5	10520.00	54.84	68.20	-13.36	40.63	14.21	Peak	---	---																																															
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).																																																								

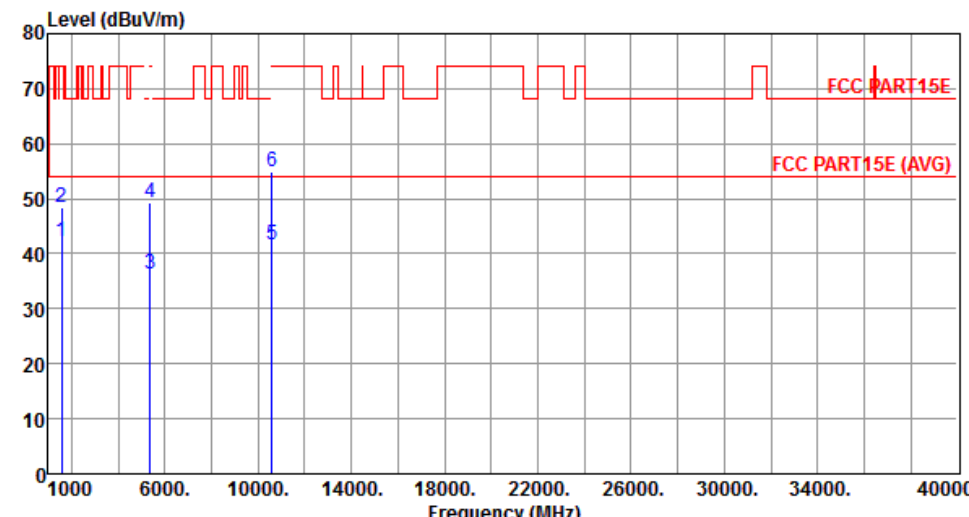
Modulation	HT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.10	54.00	-6.90	53.28	-6.18	Average	---	---
2	1584.00	50.29	74.00	-23.71	56.47	-6.18	Peak	---	---
3	5350.00	36.01	54.00	-17.99	30.52	5.49	Average	---	---
4	5350.00	50.03	74.00	-23.97	44.54	5.49	Peak	---	---
5	10600.00	41.24	54.00	-12.76	26.86	14.38	Average	---	---
6	10600.00	54.67	74.00	-19.33	40.29	14.38	Peak	---	---

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

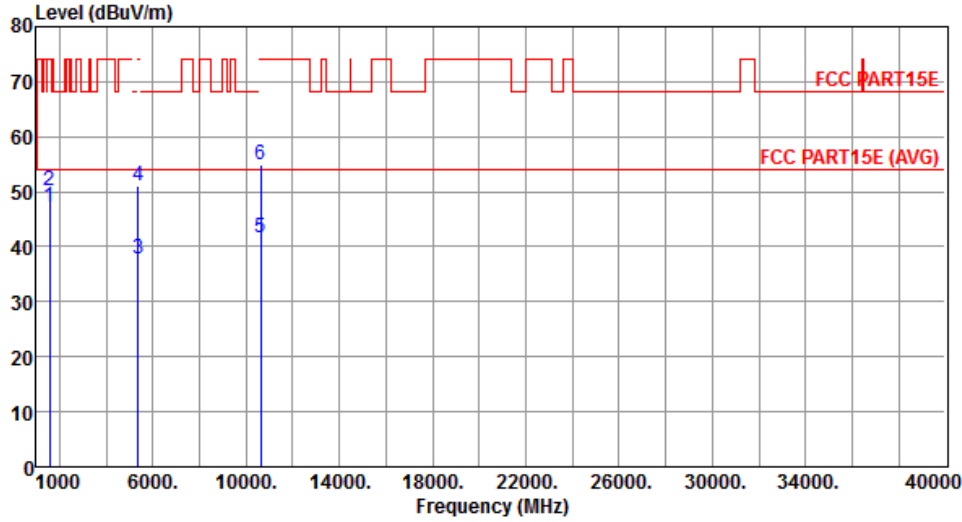
Modulation	HT20	Test Freq. (MHz)	5300
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.27	54.00	-11.73	48.45	-6.18	Average	---	---
2	1584.00	48.34	74.00	-25.66	54.52	-6.18	Peak	---	---
3	5350.00	36.34	54.00	-17.66	30.85	5.49	Average	---	---
4	5350.00	49.31	74.00	-24.69	43.82	5.49	Peak	---	---
5	10600.00	41.65	54.00	-12.35	27.27	14.38	Average	---	---
6	10600.00	54.77	74.00	-19.23	40.39	14.38	Peak	---	---

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

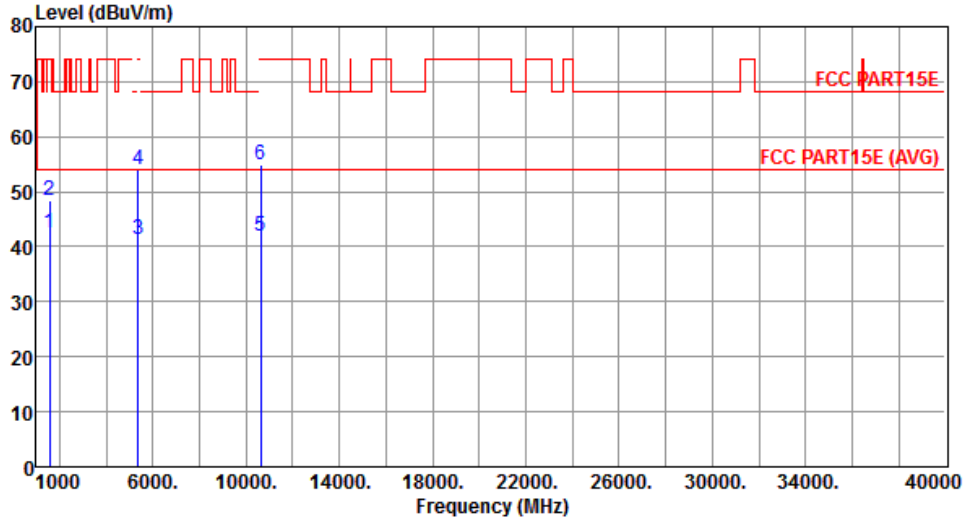
Modulation	HT20	Test Freq. (MHz)	5320
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.26	54.00	-6.74	53.44	-6.18	Average	---	---
2	1584.00	50.13	74.00	-23.87	56.31	-6.18	Peak	---	---
3	5350.00	37.92	54.00	-16.08	32.43	5.49	Average	---	---
4	5350.00	51.18	74.00	-22.82	45.69	5.49	Peak	---	---
5	10640.00	41.63	54.00	-12.37	27.15	14.48	Average	---	---
6	10640.00	54.81	74.00	-19.19	40.33	14.48	Peak	---	---

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

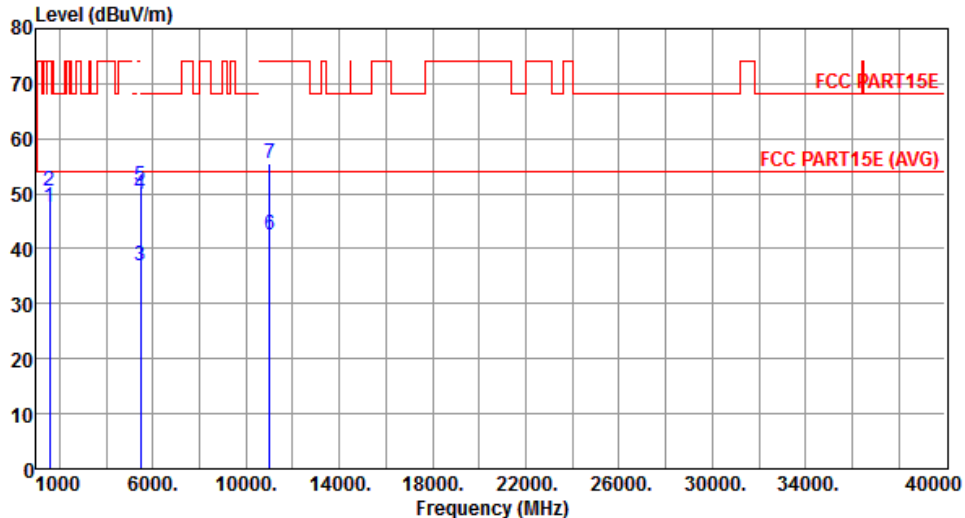
Modulation	HT20	Test Freq. (MHz)	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.45	54.00	-11.55	48.63	-6.18	Average	---	---
2	1584.00	48.38	74.00	-25.62	54.56	-6.18	Peak	---	---
3	5350.00	41.42	54.00	-12.58	35.93	5.49	Average	---	---
4	5350.00	53.91	74.00	-20.09	48.42	5.49	Peak	---	---
5	10640.00	42.00	54.00	-12.00	27.52	14.48	Average	---	---
6	10640.00	54.89	74.00	-19.11	40.41	14.48	Peak	---	---

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

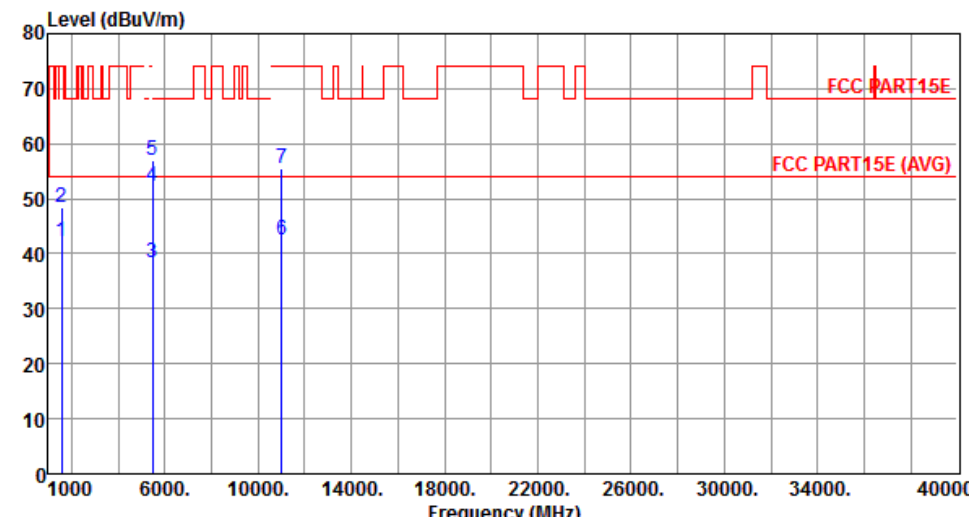
Modulation	HT20	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.47	54.00	-6.53	53.65	-6.18	Average	---	---
2	1584.00	50.34	74.00	-23.66	56.52	-6.18	Peak	---	---
3	5460.00	36.83	54.00	-17.17	31.21	5.62	Average	---	---
4	5460.00	49.87	74.00	-24.13	44.25	5.62	Peak	---	---
5	5470.00	51.25	68.20	-16.95	45.61	5.64	Peak	---	---
6	11000.00	42.45	54.00	-11.55	27.16	15.29	Average	---	---
7	11000.00	55.47	74.00	-18.53	40.18	15.29	Peak	---	---

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

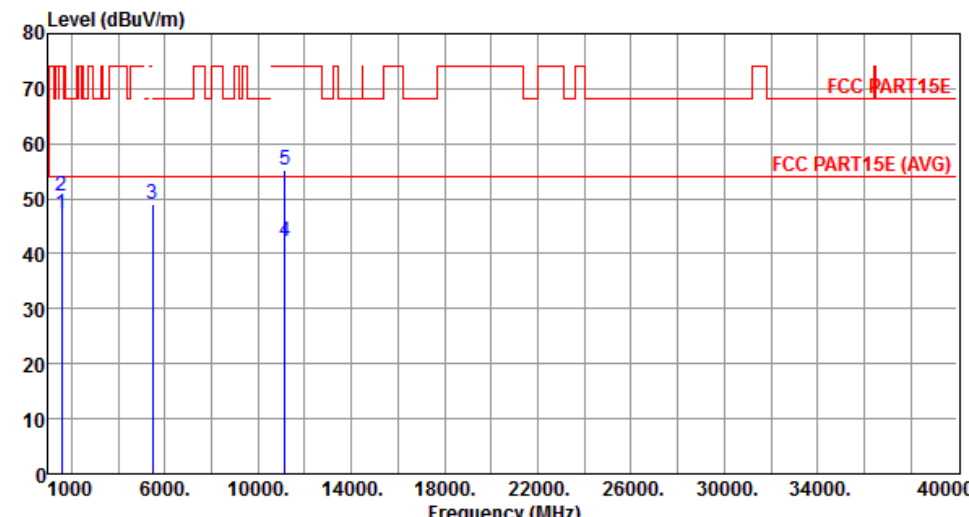
Modulation	HT20	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.34	54.00	-11.66	48.52	-6.18	Average	---	---
2	1584.00	48.35	74.00	-25.65	54.53	-6.18	Peak	---	---
3	5460.00	38.25	54.00	-15.75	32.63	5.62	Average	---	---
4	5460.00	52.14	74.00	-21.86	46.52	5.62	Peak	---	---
5	5470.00	56.96	68.20	-11.24	51.32	5.64	Peak	---	---
6	11000.00	42.54	54.00	-11.46	27.25	15.29	Average	---	---
7	11000.00	55.50	74.00	-18.50	40.21	15.29	Peak	---	---

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

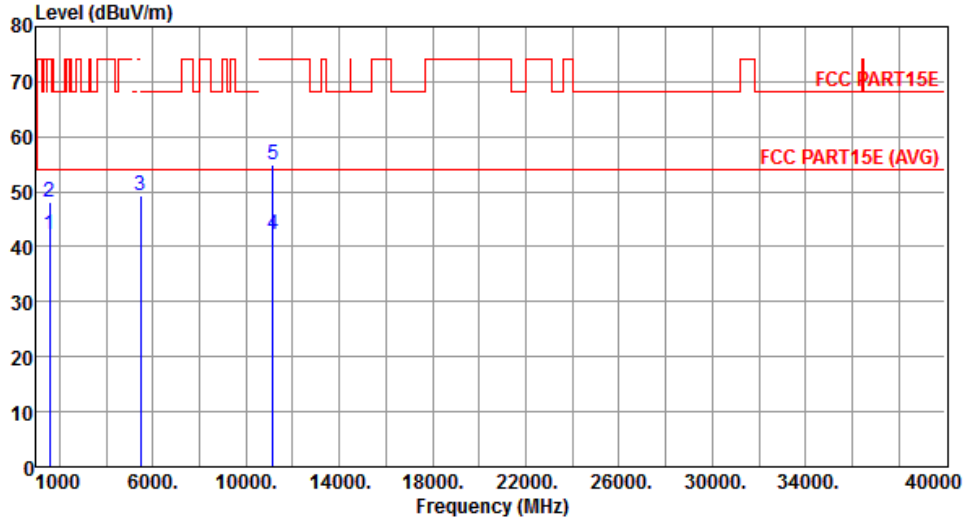
Modulation	HT20	Test Freq. (MHz)	5580
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.30	54.00	-6.70	53.48	-6.18	Average	---	---
2	1584.00	50.40	74.00	-23.60	56.58	-6.18	Peak	---	---
3	5470.00	49.11	68.20	-19.09	43.47	5.64	Peak	---	---
4	11160.00	42.31	54.00	-11.69	27.15	15.16	Average	---	---
5	11160.00	55.34	74.00	-18.66	40.18	15.16	Peak	---	---

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

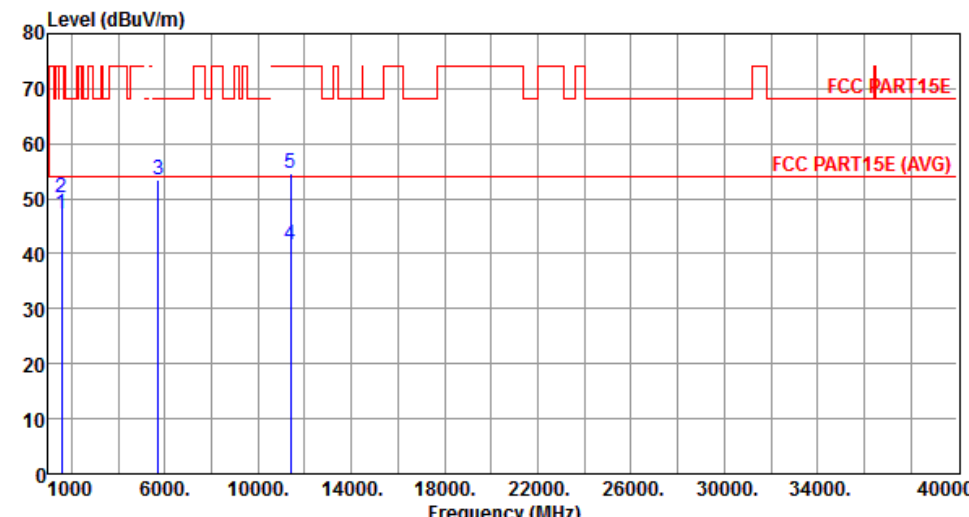
Modulation	HT20	Test Freq. (MHz)	5580
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	42.26	54.00	-11.74	48.44	-6.18	Average	---	---
2	1584.00	48.13	74.00	-25.87	54.31	-6.18	Peak	---	---
3	5470.00	49.19	68.20	-19.01	43.55	5.64	Peak	---	---
4	11160.00	42.09	54.00	-11.91	26.93	15.16	Average	---	---
5	11160.00	54.79	74.00	-19.21	39.63	15.16	Peak	---	---

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

Modulation	HT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1584.00	47.30	54.00	-6.70	53.48	-6.18	Average	---	---
2	1584.00	50.08	74.00	-23.92	56.26	-6.18	Peak	---	---
3	5725.00	53.57	68.20	-14.63	47.43	6.14	Peak	---	---
4	11400.00	41.60	54.00	-12.40	26.63	14.97	Average	---	---
5	11400.00	54.69	74.00	-19.31	39.72	14.97	Peak	---	---

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

Modulation	HT20		Test Freq. (MHz)		5700	
Polarization	Vertical					
Level (dBuV/m)						

3.7 Frequency Stability

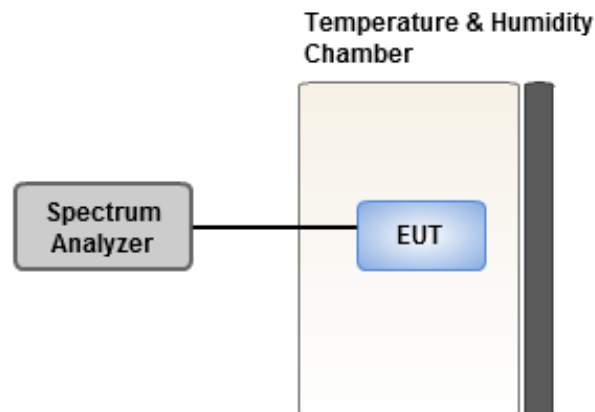
3.7.1 Limit of Frequency Stability

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.

3.7.2 Test Procedures

1. The EUT is installed in an environment test chamber with external power source.
2. Set the chamber to operate at 55 centigrade and external power source to output at nominal voltage of EUT.
3. A sufficient stabilization period at each temperature is used prior to each frequency measurement.
4. When temperature is stabled, measure the frequency stability.
5. The test shall be performed under -30 to 55 centigrade and 85 to 115 percent of the nominal voltage. Change setting of chamber and external power source to complete all conditions.

3.7.3 Test Setup



3.7.4 Test Result of Frequency Stability

Frequency: 5320 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	2.37	2.86	1.93	1.42
T20°CVmin	4.92	4.73	4.02	4.05
T55°CVmin	2.73	4.76	3.77	4.75
T50°CVnom	3.12	4.23	2.88	3.99
T40°CVnom	-0.27	-2.48	-3.33	-1.92
T30°CVnom	-0.22	-0.36	-2.57	2.07
T20°CVnom	2.30	2.17	2.26	1.41
T10°CVnom	1.35	2.00	2.19	2.35
T0°CVnom	1.28	2.91	2.12	1.67
T-10°CVnom	0.50	1.99	5.21	2.40
T-20°CVnom	1.12	1.24	0.48	2.35
T-30°CVnom	0.31	1.02	2.02	-0.25
Vnom [V]: 110	Vmax [V]: 126.5		Vmin [V]: 93.5	
Tnom [°C]: 20	Tmax [°C]: 55		Tmin [°C]: -30	

4 Test laboratory information

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

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

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

Linkou

Tel: 886-2-2601-1640

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

Kwei Shan

Tel: 886-3-271-8666

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

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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