



International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

FCC Test Report

FCC ID : NKR-SP1
Equipment : 11abgn WLAN/Bluetooth Combo Module
Model No. : DHUB-SP1
Brand Name : SHARP Corporation
Applicant : Wistron Neweb Corporation
Address : 20 Park Avenue II, Hsinchu Science Park,
Hsinchu 308,Taiwan,R.O.C./
Standard : 47 CFR FCC Part 15.407
Received Date : Aug. 21, 2013
Tested Date : Aug. 22 ~ Sep. 02, 2013

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



Testing Laboratory
2732



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List	8
1.3	Test Setup Chart	8
1.4	The Equipment List	9
1.5	Testing Applied Standards	11
1.6	Measurement Uncertainty	12
2	TEST CONFIGURATION	13
2.1	Testing Condition	13
2.2	The Worst Test Modes and Channel Details	13
3	TRANSMITTER TEST RESULTS.....	14
3.1	Conducted Emissions.....	14
3.2	Emission Bandwidth	17
3.3	RF Output Power	20
3.4	Peak Power Spectral Density	22
3.5	Peak Excursion.....	25
3.6	Transmitter Radiated and Band Edge Emissions	28
3.7	Frequency Stability.....	83



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Release Record

Report No.	Version	Description	Issued Date
FR382103AN	Rev. 01	Initial issue	Sep. 23, 2013



Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.156MHz 41.63 (Margin -14.06dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5350.00MHz 53.00 (Margin -1.00dB) - AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Power [dBm]: 5150~5250 MHz:16.80 5250~5350 MHz:21.81 5470~5725 MHz:20.88	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]	2	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]	2	MCS 0-15
5150-5250 5250-5350 5470-5725	n (HT40)	5190-5230 5270-5310 5510-5670	38-46 [2] 54-62 [2] 102-134 [3]	2	MCS 0-15

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

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)				
				2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	Left antenna	Printed	N/A	3.97	3.31	3.31	3.42	2.92
2	Right antenna	Printed	N/A	2.2	1.11	1.27	1.66	0.34

1.1.3 EUT Operational Condition

Power Supply Type	5Vdc from Host
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1.1.4 Accessories

N/A



1.1.5 Channel List

Frequency band (MHz)		5150~5725	
802.11 a / n HT20		802.11n HT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	54	5270
48	5240	62	5310
52	5260	102	5510
56	5280	110	5550
60	5300	134	5670
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	MP tool v. 0.0016.0307.2012
Duty Cycle Of Test Signal (%)	99.31% - IEEE 802.11a 99.63% - IEEE 802.11n (HT20) 98.19% - IEEE 802.11n (HT40)
Duty Factor	0.03 - IEEE 802.11a 0.02 - IEEE 802.11n (HT20) 0.08 - IEEE 802.11n (HT40)

1.1.7 Power Setting

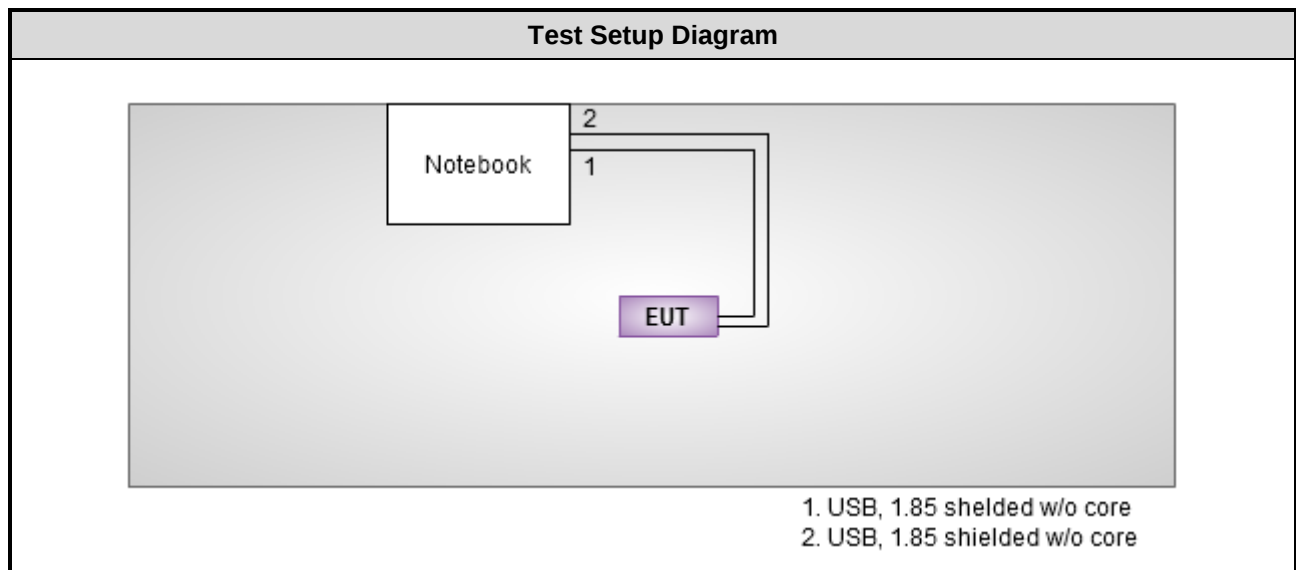
Channel	Frequency(MHz)	Modulation Mode		
		11a	HT20	HT40
CH 36	5180	34	34	---
CH 40	5200	34	34	---
CH 48	5240	35	35	---
CH 52	5260	62	64	---
CH 60	5300	52	49	---
CH 64	5320	44	44	---
CH 100	5500	52	52	---
CH 116	5580	64	66	---
CH 140	5700	42	44	---
CH 38	5190	---	---	44
CH 46	5230	---	---	44
CH 54	5270	---	---	50
CH 62	5310	---	---	44
CH 102	5510	---	---	44
CH 110	5550	---	---	55
CH 134	5670	---	---	50



1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	E5420	---	DoC	1. USB, 1.85m shielded w/o core. 2. USB, 1.85m shielded 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. 02, 2012	Oct. 01, 2013
LISN	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-667	Dec. 04, 2012	Dec. 03, 2013
LISN (Support Unit)	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-666	Dec. 04, 2012	Dec. 03, 2013
ISN	TESEQ	ISN T800	34406	Apr. 08, 2013	Apr. 07, 2014
ISN	TESEQ	ISN T200A	30494	Apr. 09, 2013	Apr. 08, 2014
ISN	TESEQ	ISN T8-Cat6	27262	Sep. 17, 2012	Sep. 16, 2013
ISN	TESEQ	ISN ST08	22589	Jan. 24, 2013	Jan. 23, 2014
RF Current Probe	FCC	F-33-4	121630	Dec. 04, 2012	Dec. 03, 2013
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Dec. 25, 2012	Dec. 24, 2013
ESH3-Z6 V-Network(+)	R&S	ESH3-Z6	100920	Nov. 21, 2012	Nov. 20, 2013
ESH3-Z6 V-Network(-)	R&S	ESH3-Z6	100951	Jan. 30, 2013	Jan. 29, 2014
Two-Line V-Network	R&S	ENV216	101579	Jan. 07, 2013	Jan. 06, 2014
50 ohm terminal	NA	50	01	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal	NA	50	02	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal	NA	50	03	Apr. 22, 2013	Apr. 21, 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.					



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Test Item	Radiated Emission above 1GHz				
Test Site	966 chamber 2 / (03CH02-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
3m semi-anechoic chamber	CHAMPRO	SAC-03	03CH02-WS	Jan. 02, 2013	Jan. 01, 2014
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	Jan. 14, 2013	Jan. 13, 2014
Amplifier	Burgeon	BPA-530	100218	Dec. 14, 2012	Dec. 13, 2013
Amplifier	Agilent	83017A	MY39501309	Dec. 18, 2012	Dec. 17, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-003	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-004	Dec. 25, 2012	Dec. 24, 2013
control	EM Electronics	EM1000	060608	N/A	N/A
Note: Calibration Interval of instruments listed above is one year.					

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014
Amplifier	MITEQ	AMF-6F-260400	9121372	Apr. 19, 2013	Apr. 18, 2015
Note: Calibration Interval of instruments listed above is two year.					



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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	Nov. 29, 2012	Nov. 28, 2013
Power Meter	Anritsu	ML2495A	1241002	Oct. 15, 2012	Oct. 14, 2013
Power Sensor	Anritsu	MA2411B	1027366	Oct. 24, 2012	Oct. 23, 2013
Signal Generator	R&S	SMB100A	175727	Jan. 14, 2013	Jan. 13, 2014
Radio Communication Analyzer	Anritsu	MT8820C	6201240341	Mar. 13, 2013	Mar. 12, 2014
Wideband Radio Communication Tester	R&S	CMW500	106070	Jan. 29, 2013	Jan. 28, 2014
Bluetooth Tester	R&S	CBT	100959	Jan. 09, 2013	Jan. 08, 2014
MXG-B RF Vector Signal Generator	Agilent	N5182B	MY53050081	Apr. 19, 2013	Apr. 18, 2014
Mobile WiMAX test set	Agilent	E6651A	MY47310158	Oct. 09, 2012	Oct. 09, 2013
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

FCC KDB 662911 D01 Multiple Transmitter Output v02

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	23°C / 55%	Skys Huang
Radiated Emissions	03CH02-WS	26°C / 64%	Anderson Hong Mark Liao
RF Conducted	TH01-WS	25°C / 60%	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	HT20	5260	MCS 0	---
Radiated Emissions <1GHz	HT20	5260	MCS 0	---
Radiated Emissions >1GHz RF Output Power Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	6	---
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	MCS 0	---
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670	MCS 0	---
Peak Excursion	11a	5180 / 5260 / 5580	6	---
	HT20	5200 / 5260 / 5580	MCS 0	---
	HT40	5230 / 5270 / 5550	MCS 0	---
Frequency Stability	Un-modulation	5320	---	---

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.



3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

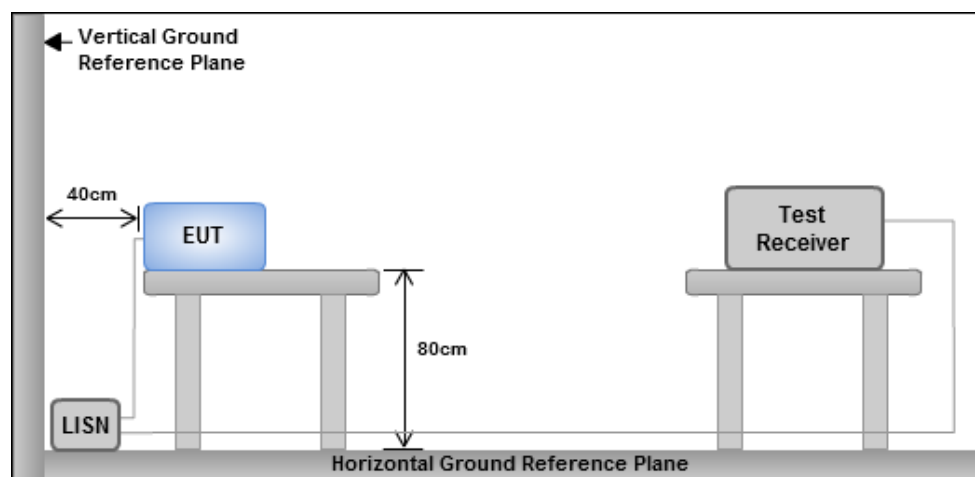
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

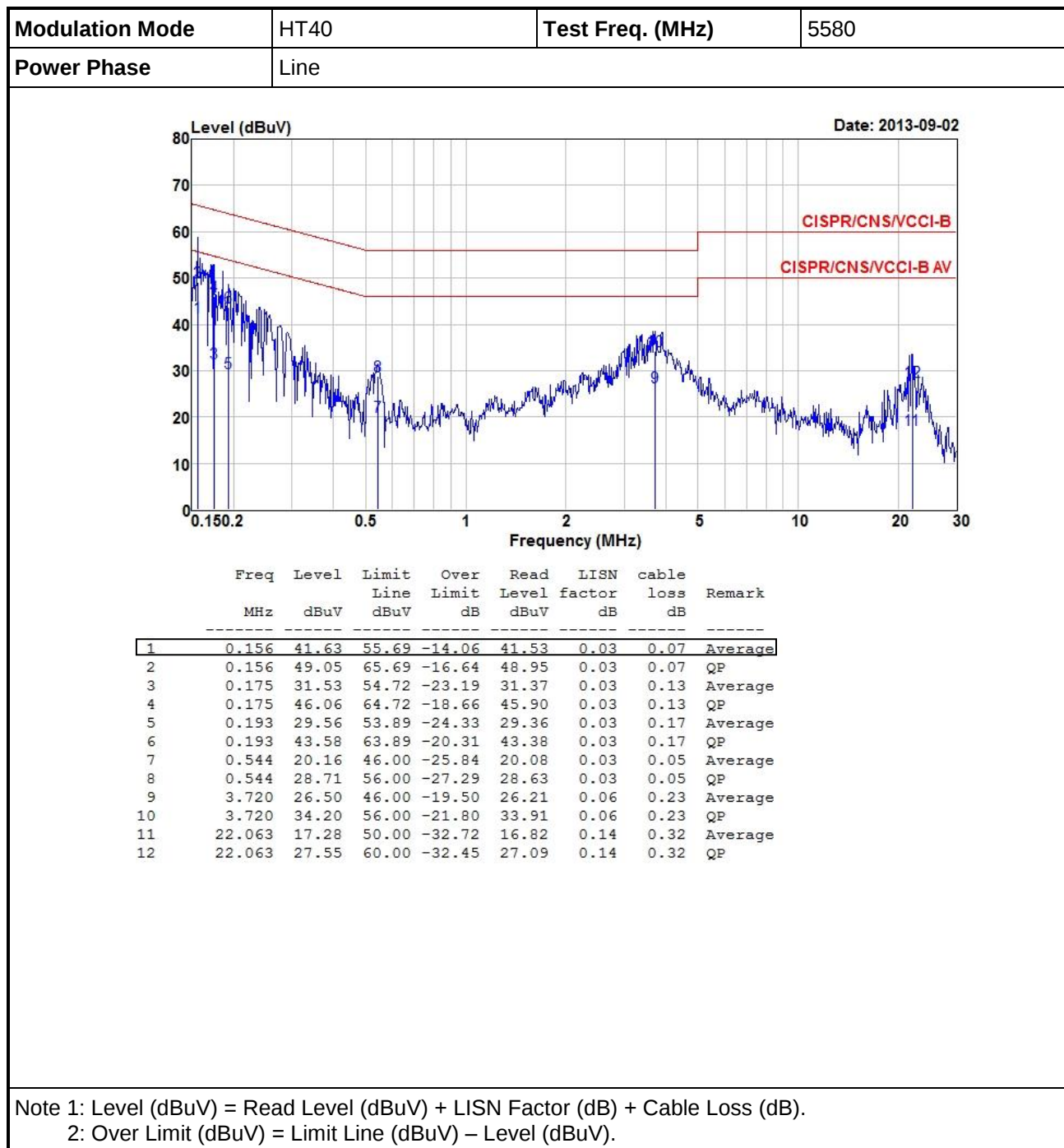


Note: 1. Support units were connected to second LISN.

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





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

Level (dBuV)

Date: 2013-09-02

Frequency (MHz)

	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1	0.156	39.94	55.69	-15.75	39.85	0.02	0.07	Average
2	0.156	49.90	65.69	-15.79	49.81	0.02	0.07	QP
3	0.192	20.17	53.93	-33.76	19.98	0.02	0.17	Average
4	0.192	41.36	63.93	-22.57	41.17	0.02	0.17	QP
5	0.224	31.19	52.66	-21.47	31.01	0.02	0.16	Average
6	0.224	37.76	62.66	-24.90	37.58	0.02	0.16	QP
7	0.529	17.61	46.00	-28.39	17.54	0.02	0.05	Average
8	0.529	27.40	56.00	-28.60	27.33	0.02	0.05	QP
9	3.881	25.94	46.00	-20.06	25.65	0.05	0.24	Average
10	3.881	32.31	56.00	-23.69	32.02	0.05	0.24	QP
11	21.600	14.46	50.00	-35.54	14.02	0.14	0.30	Average
12	21.600	29.60	60.00	-30.40	29.16	0.14	0.30	QP

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

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

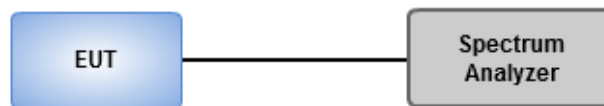


3.2 Emission Bandwidth

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



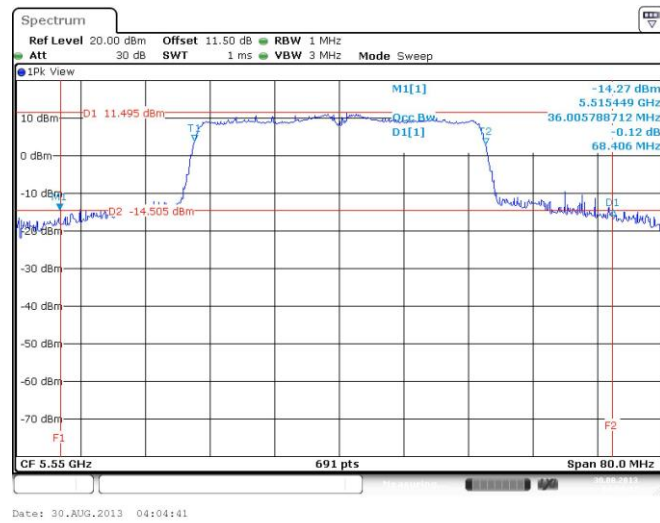


3.2.3 Test Result of Emission Bandwidth

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	2	5180	19.13	18.90	---	---	16.56	16.44	---	---	16.76	16.16
11a	2	5200	19.25	19.07	---	---	16.50	16.50	---	---	16.80	16.17
11a	2	5240	19.25	19.13	---	---	16.56	16.50	---	---	16.82	16.17
11a	2	5260	35.13	35.77	---	---	19.62	18.81	---	---	24.00	23.74
11a	2	5300	23.07	19.07	---	---	16.79	16.56	---	---	23.80	23.19
11a	2	5320	19.25	19.01	---	---	16.67	16.50	---	---	23.79	23.17
11a	2	5500	23.48	19.71	---	---	16.79	16.50	---	---	23.95	23.17
11a	2	5580	27.71	30.03	---	---	17.02	17.37	---	---	24.00	23.31
11a	2	5700	19.25	19.19	---	---	16.56	16.50	---	---	23.83	23.17
HT20	2	5180	19.48	19.25	---	---	17.60	17.60	---	---	16.84	16.46
HT20	2	5200	19.48	19.30	---	---	17.60	17.60	---	---	16.86	16.46
HT20	2	5240	19.48	19.30	---	---	17.60	17.54	---	---	16.86	16.44
HT20	2	5260	38.26	35.42	---	---	20.43	19.51	---	---	24.00	23.90
HT20	2	5300	22.09	19.36	---	---	17.66	17.60	---	---	23.87	23.46
HT20	2	5320	20.00	19.48	---	---	17.66	17.60	---	---	23.90	23.46
HT20	2	5500	21.97	19.48	---	---	17.77	17.60	---	---	23.90	23.46
HT20	2	5580	29.68	31.19	---	---	18.06	18.99	---	---	24.00	23.57
HT20	2	5700	23.19	19.36	---	---	17.77	17.60	---	---	23.87	23.46
HT40	2	5190	39.30	39.54	---	---	35.66	35.66	---	---	17.00	17.00
HT40	2	5230	39.65	39.19	---	---	35.66	35.66	---	---	17.00	17.00
HT40	2	5270	59.48	40.81	---	---	35.79	35.77	---	---	24.00	24.00
HT40	2	5310	39.30	39.07	---	---	35.66	35.66	---	---	24.00	24.00
HT40	2	5510	39.42	55.19	---	---	35.66	35.89	---	---	24.00	24.00
HT40	2	5550	68.41	57.51	---	---	36.01	36.12	---	---	24.00	24.00
HT40	2	5670	39.54	40.12	---	---	35.77	35.77	---	---	24.00	24.00



Worst Plots





3.3 RF Output Power

3.3.1 Limit of RF Output Power

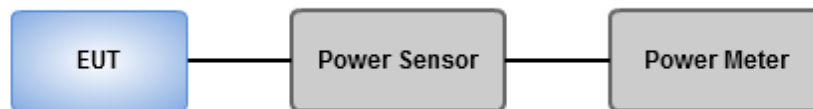
Frequency Band (GHz)		Limit
☒	5.15~5.25	50mW or 4dBm+10 log B
☒	5.25~5.35	250mW or 11dBm+10 log B
☒	5.47~5.725	250mW or 11dBm+10 log B

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	2	5180	11.35	11.83	---	---	28.886	14.61	16.76
11a	2	5200	11.04	11.78	---	---	27.772	14.44	16.80
11a	2	5240	11.16	11.68	---	---	27.785	14.44	16.82
11a	2	5260	17.86	18.89	---	---	138.540	21.42	24.00
11a	2	5300	15.68	14.42	---	---	64.652	18.11	23.80
11a	2	5320	14.34	13.12	---	---	47.676	16.78	23.79
11a	2	5500	14.48	14.60	---	---	56.895	17.55	23.95
11a	2	5580	17.43	17.64	---	---	113.411	20.55	24.00
11a	2	5700	11.18	11.89	---	---	28.575	14.56	23.83
HT20	2	5180	10.86	11.73	---	---	27.084	14.33	16.84
HT20	2	5200	10.98	11.75	---	---	27.494	14.39	16.86
HT20	2	5240	11.14	11.53	---	---	27.225	14.35	16.86
HT20	2	5260	18.15	19.36	---	---	151.611	21.81	24.00
HT20	2	5300	15.52	14.48	---	---	63.699	18.04	23.87
HT20	2	5320	14.57	13.04	---	---	48.779	16.88	23.90
HT20	2	5500	14.48	14.62	---	---	57.028	17.56	23.90
HT20	2	5580	17.89	17.84	---	---	122.331	20.88	24.00
HT20	2	5700	11.71	12.10	---	---	31.043	14.92	23.87
HT40	2	5190	12.90	12.13	---	---	35.829	15.54	17.00
HT40	2	5230	13.24	14.28	---	---	47.878	16.80	17.00
HT40	2	5270	15.78	14.32	---	---	64.884	18.12	24.00
HT40	2	5310	12.13	10.95	---	---	28.776	14.59	24.00
HT40	2	5510	12.62	12.57	---	---	36.353	15.61	24.00
HT40	2	5550	15.30	15.07	---	---	66.021	18.20	24.00
HT40	2	5670	13.70	13.56	---	---	46.141	16.64	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.

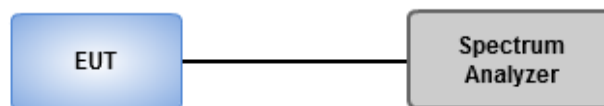
☐ Method SA-2

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

3.4.3 Test Setup





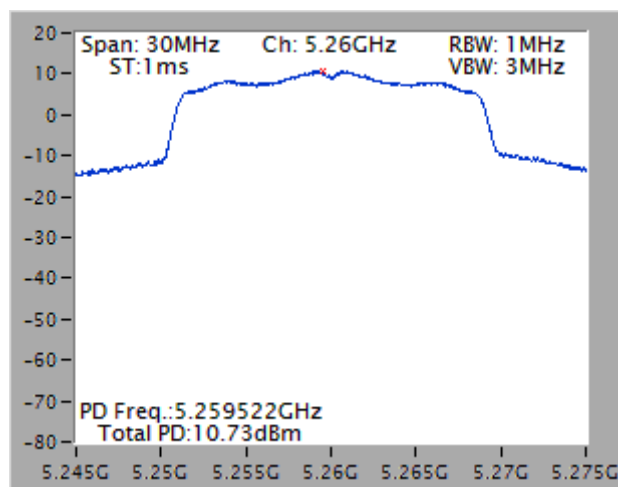
3.4.4 Test Result of Peak Power Spectral Density

Modulation Mode	N _{TX}	Freq. (MHz)	PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)
11a	2	5180	3.26	0.00	3.26	4
11a	2	5200	3.57	0.00	3.57	4
11a	2	5240	3.51	0.00	3.51	4
11a	2	5260	10.63	0.00	10.63	11
11a	2	5300	6.62	0.00	6.62	11
11a	2	5320	5.33	0.00	5.33	11
11a	2	5500	6.42	0.00	6.42	11
11a	2	5580	10.23	0.00	10.23	11
11a	2	5700	3.00	0.00	3.00	11
HT20	2	5180	3.58	0.00	3.58	4
HT20	2	5200	3.63	0.00	3.63	4
HT20	2	5240	3.51	0.00	3.51	4
HT20	2	5260	10.73	0.00	10.73	11
HT20	2	5300	6.08	0.00	6.08	11
HT20	2	5320	4.85	0.00	4.85	11
HT20	2	5500	5.75	0.00	5.75	11
HT20	2	5580	10.42	0.00	10.42	11
HT20	2	5700	2.55	0.00	2.55	11
HT40	2	5190	0.40	0.00	0.40	4
HT40	2	5230	1.67	0.00	1.67	4
HT40	2	5270	3.20	0.00	3.20	11
HT40	2	5310	-0.35	0.00	-0.35	11
HT40	2	5510	0.42	0.00	0.42	11
HT40	2	5550	4.01	0.00	4.01	11
HT40	2	5670	1.51	0.00	1.51	11

Note: Test result is bin-by-bin summing measured value of each TX port.



Worst Plots





3.5 Peak Excursion

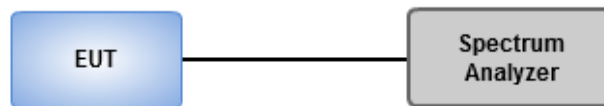
3.5.1 Peak Excursion Limit

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	2	5180	8.83	0.00	8.83	13
11a	QPSK	2	5180	8.45	0.15	8.30	13
11a	16QAM	2	5180	9.86	0.16	9.70	13
11a	64QAM	2	5180	10.28	0.32	9.96	13
HT20	BPSK	2	5200	8.35	0.00	8.35	13
HT20	QPSK	2	5200	8.54	0.16	8.38	13
HT20	16QAM	2	5200	8.75	0.15	8.60	13
HT20	64QAM	2	5200	9.55	0.38	9.17	13
HT40	BPSK	2	5230	8.59	0.00	8.59	13
HT40	QPSK	2	5230	8.28	0.16	8.12	13
HT40	16QAM	2	5230	8.72	0.28	8.44	13
HT40	64QAM	2	5230	9.89	0.65	9.24	13

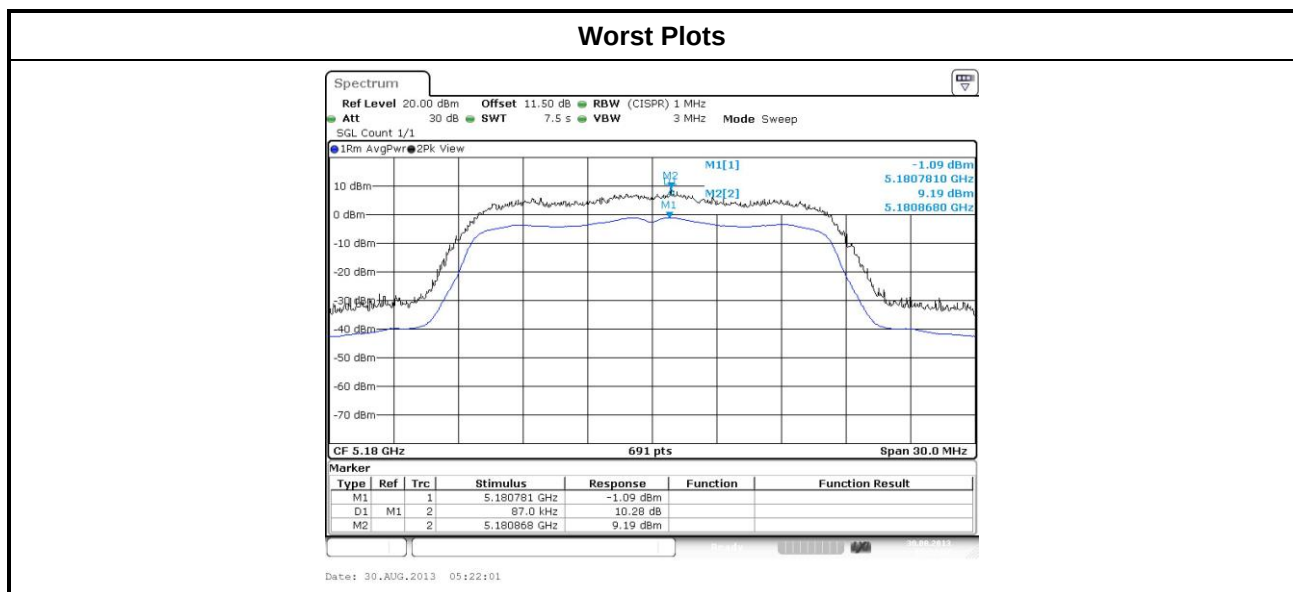
Mode	Modulation Mode	N _{TX}	Freq. (MHz)	Measured value(dB)	Duty factor (dB)	Peak Excursion (dB)	Limit
11a	BPSK	2	5260	8.38	0.00	8.38	13
11a	QPSK	2	5260	8.98	0.15	8.83	13
11a	16QAM	2	5260	8.73	0.16	8.57	13
11a	64QAM	2	5260	9.44	0.32	9.12	13
HT20	BPSK	2	5260	8.23	0.00	8.23	13
HT20	QPSK	2	5260	8.59	0.16	8.43	13
HT20	16QAM	2	5260	8.4	0.15	8.25	13
HT20	64QAM	2	5260	8.88	0.38	8.50	13
HT40	BPSK	2	5270	9.34	0.00	9.34	13
HT40	QPSK	2	5270	9.43	0.16	9.27	13
HT40	16QAM	2	5270	9.11	0.28	8.83	13
HT40	64QAM	2	5270	9.25	0.65	8.60	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	2	5580	9.08	0.00	9.08	13
11a	QPSK	2	5580	8.55	0.15	8.40	13
11a	16QAM	2	5580	8.78	0.16	8.62	13
11a	64QAM	2	5580	9.3	0.32	8.98	13
HT20	BPSK	2	5580	8.75	0.00	8.75	13
HT20	QPSK	2	5580	8.85	0.16	8.69	13
HT20	16QAM	2	5580	9.3	0.15	9.15	13
HT20	64QAM	2	5580	8.87	0.38	8.49	13
HT40	BPSK	2	5550	9.31	0.00	9.31	13
HT40	QPSK	2	5550	8.89	0.16	8.73	13
HT40	16QAM	2	5550	8.79	0.28	8.51	13
HT40	64QAM	2	5550	10	0.65	9.35	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.

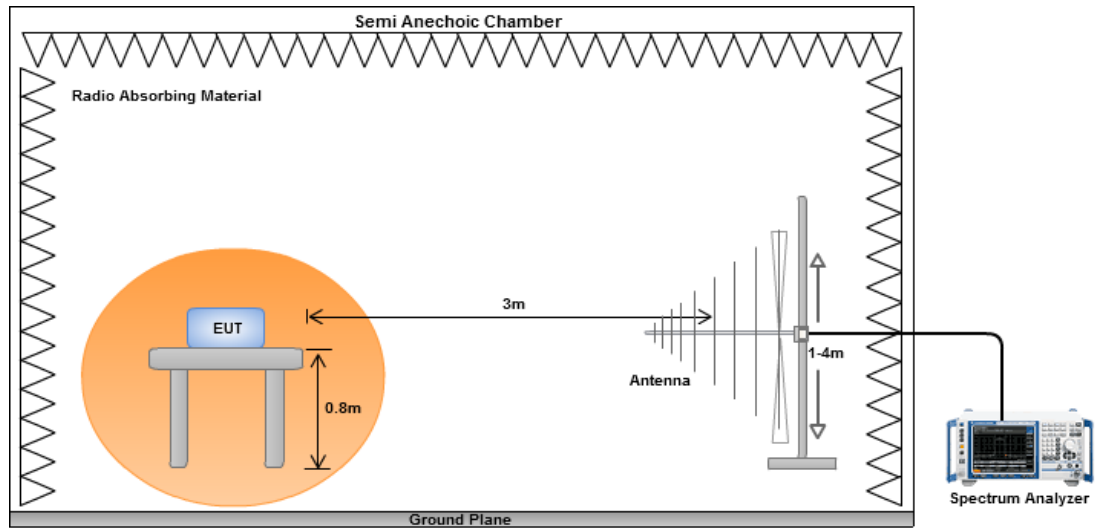
Note:

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.

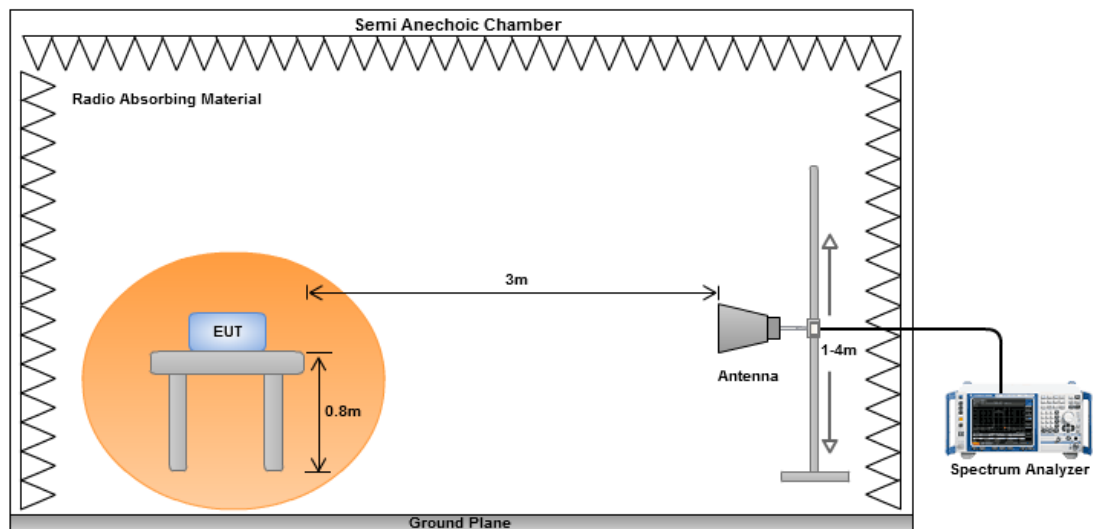


3.6.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz





3.6.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Frequency range	Below 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5260

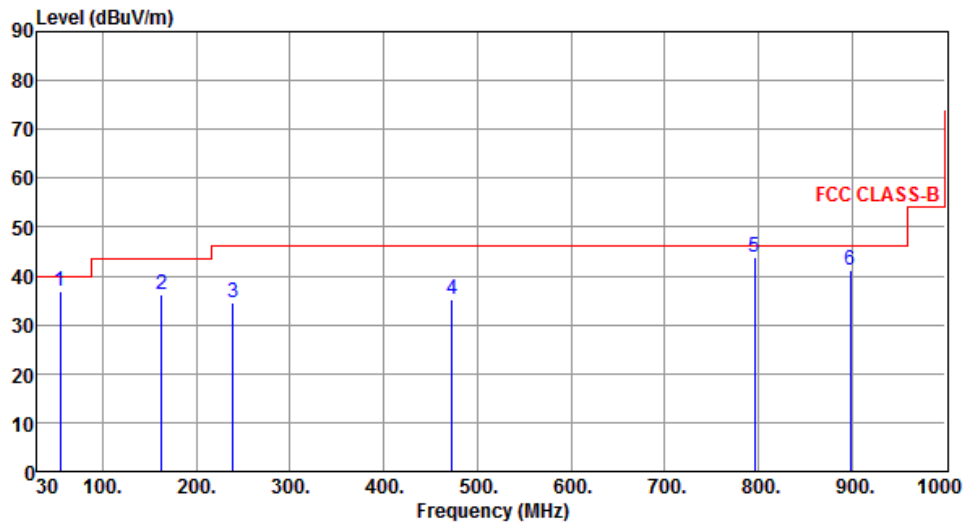
The graph displays the radiated unwanted emissions for a transmitter. The y-axis represents the Level in dBUV/m, ranging from 0 to 90. The x-axis represents the Frequency in MHz, ranging from 30 to 1000. A red line indicates the FCC CLASS-B limit, which is 40 dBUV/m from 30 to 100 MHz, 45 dBUV/m from 100 to 200 MHz, 50 dBUV/m from 200 to 900 MHz, and 55 dBUV/m from 900 to 1000 MHz. Six measured peaks are labeled with blue numbers 1 through 6, corresponding to the data in the table below.

	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	54.25	38.28	40.00	-1.72	54.53	-16.25	Peak	---	---
2	107.60	31.92	43.50	-11.58	51.93	-20.01	Peak	---	---
3	239.52	41.32	46.00	-4.68	58.83	-17.51	Peak	---	---
4	437.40	37.65	46.00	-8.35	49.76	-12.11	Peak	---	---
5	797.27	38.30	46.00	-7.70	44.41	-6.11	Peak	---	---
6	898.15	34.72	46.00	-11.28	39.66	-4.94	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).



Frequency range	Below 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5260



	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	36.77	40.00	-3.23	53.02	-16.25	Peak	---	---
2	162.89	36.27	43.50	-7.23	52.75	-16.48	Peak	---	---
3	239.52	34.44	46.00	-11.56	51.95	-17.51	Peak	---	---
4	473.29	35.31	46.00	-10.69	46.70	-11.39	Peak	---	---
5	796.30	43.73	46.00	-2.27	49.85	-6.12	Peak	---	---
6	898.15	41.12	46.00	-4.88	46.06	-4.94	Peak	---	---

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

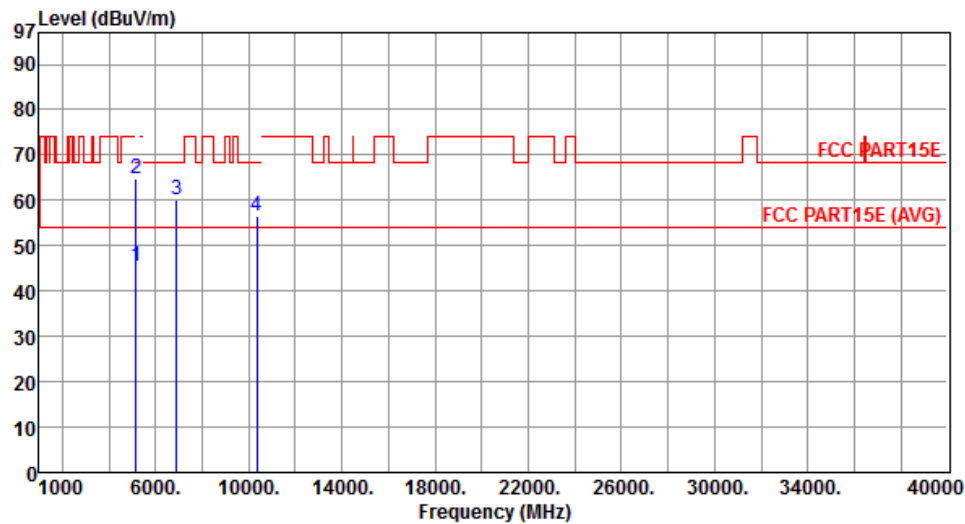
*Factor includes antenna factor , cable loss and amplifier gain

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



3.6.1 Transmitter Radiated Unwanted Emissions (Above 1GHz)

Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5180



	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	45.35	54.00	-8.65	40.10	5.25	Average	---	---
2	5150.00	64.69	74.00	-9.31	59.44	5.25	Peak	---	---
3	6906.00	60.29	68.30	-8.01	51.64	8.65	Peak	---	---
4	10360.00	56.72	68.30	-11.58	43.17	13.55	Peak	---	---

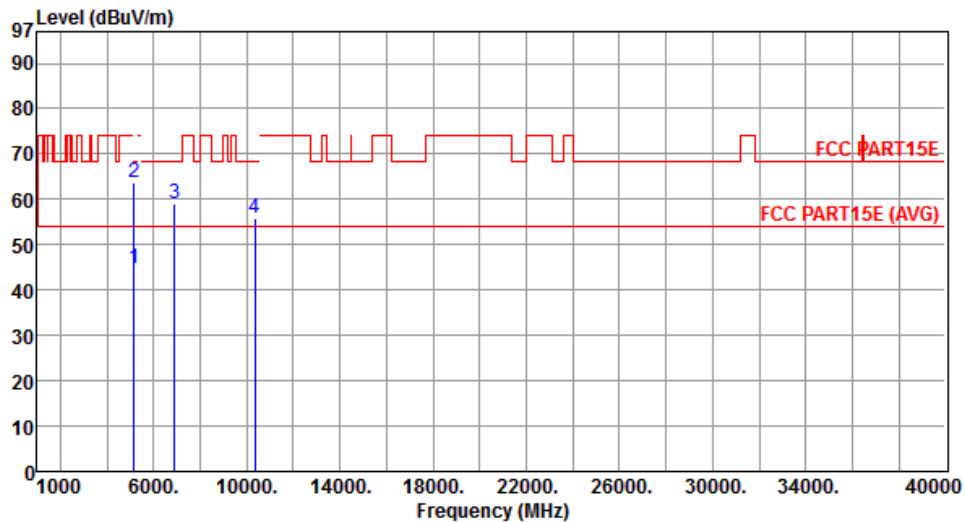
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5180



	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	44.74	54.00	-9.26	39.49	5.25	Average	---	---
2	5150.00	63.82	74.00	-10.18	58.57	5.25	Peak	---	---
3	6906.00	58.89	68.30	-9.41	50.24	8.65	Peak	---	---
4	10360.00	55.71	68.30	-12.59	42.16	13.55	Peak	---	---

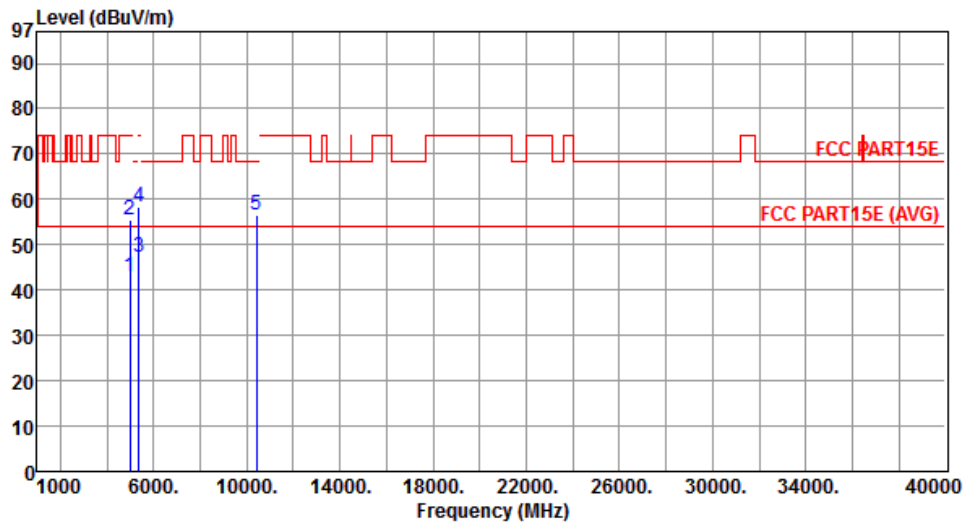
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5200



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4982.00	42.81	54.00	-11.19	37.86	4.95	Average	---	---
2	4982.00	55.40	74.00	-18.60	50.45	4.95	Peak	---	---
3	5350.00	47.27	54.00	-6.73	41.86	5.41	Average	---	---
4	5350.00	58.49	74.00	-15.51	53.08	5.41	Peak	---	---
5	10400.00	56.45	68.30	-11.85	42.82	13.63	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

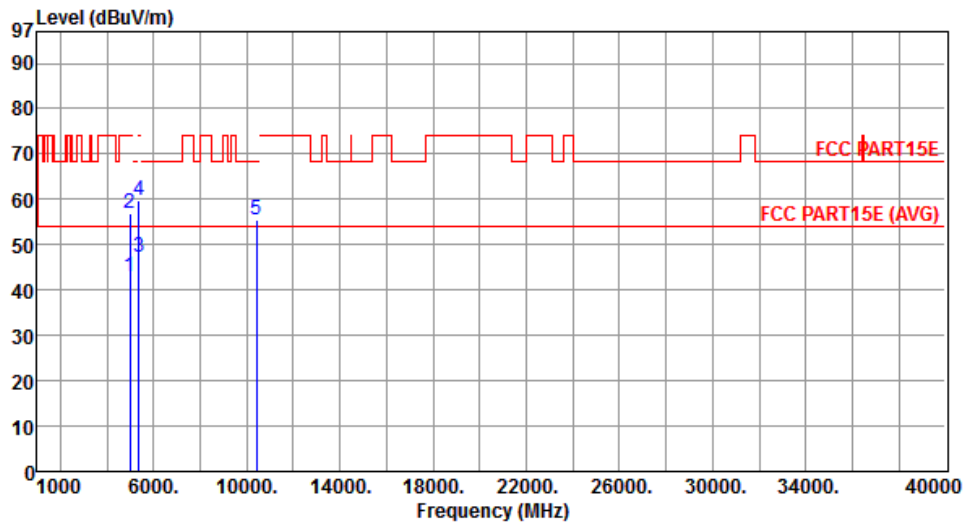
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



International Certification Corp.

No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.
Tel: 886-3-271-8666 Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5200



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4982.00	42.97	54.00	-11.03	38.02	4.95	Average	---	---
2	4982.00	56.86	74.00	-17.14	51.91	4.95	Peak	---	---
3	5350.00	47.08	54.00	-6.92	41.67	5.41	Average	---	---
4	5350.00	59.79	74.00	-14.21	54.38	5.41	Peak	---	---
5	10400.00	55.61	68.30	-12.69	41.98	13.63	Peak	---	---

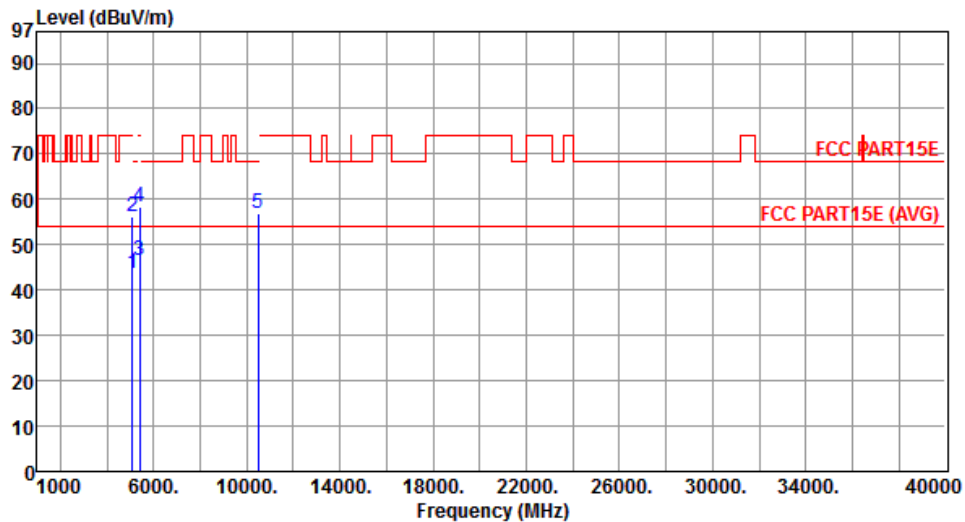
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5240



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5089.00	43.74	54.00	-10.26	38.59	5.15	Average	---	---
2	5089.00	56.12	74.00	-17.88	50.97	5.15	Peak	---	---
3	5388.00	46.50	54.00	-7.50	41.08	5.42	Average	---	---
4	5388.00	58.47	74.00	-15.53	53.05	5.42	Peak	---	---
5	10480.00	56.97	68.30	-11.33	43.17	13.80	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

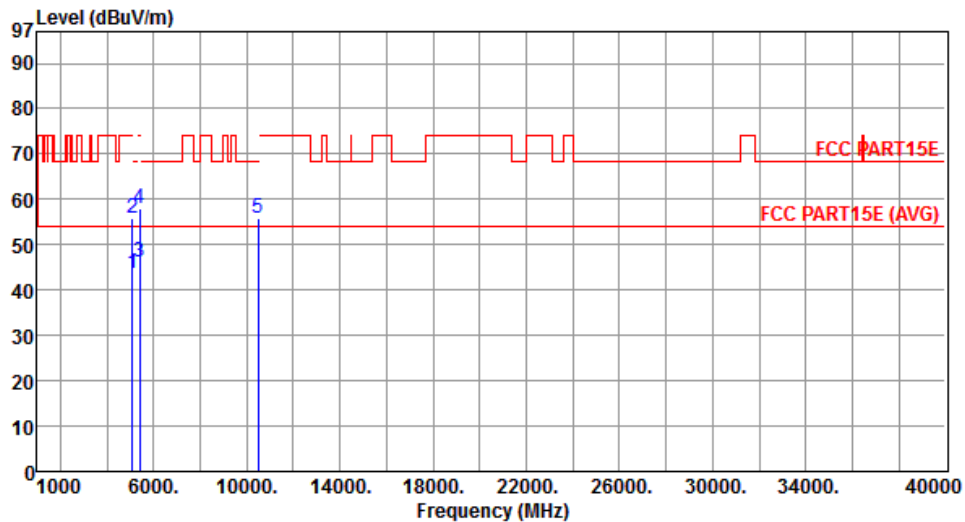
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5240



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5089.00	43.50	54.00	-10.50	38.35	5.15	Average	---	---
2	5089.00	55.67	74.00	-18.33	50.52	5.15	Peak	---	---
3	5388.00	46.13	54.00	-7.87	40.71	5.42	Average	---	---
4	5388.00	57.95	74.00	-16.05	52.53	5.42	Peak	---	---
5	10480.00	55.66	68.30	-12.64	41.86	13.80	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).



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Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5260

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5108.00	44.18	54.00	-9.82	39.00	5.18	Average	---	---
2	5108.00	56.11	74.00	-17.89	50.93	5.18	Peak	---	---
3	5350.00	48.98	54.00	-5.02	43.57	5.41	Average	---	---
4	5350.00	63.86	74.00	-10.14	58.45	5.41	Peak	---	---
5	5407.00	50.69	54.00	-3.31	45.25	5.44	Average	---	---
6	5407.00	63.53	74.00	-10.47	58.09	5.44	Peak	---	---
7	10520.00	63.19	68.30	-5.11	49.32	13.87	Peak	---	---

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



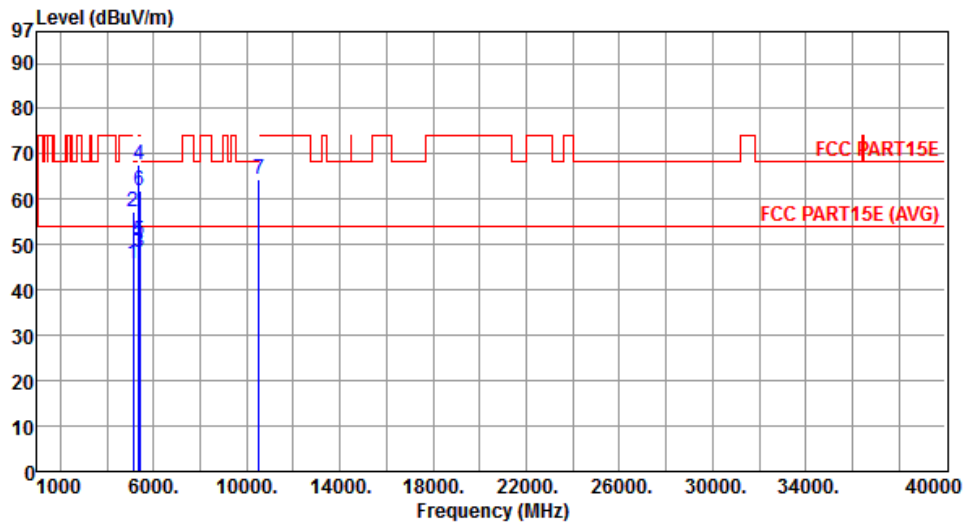
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5260



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5108.00	45.67	54.00	-8.33	40.49	5.18	Average	---	---
2	5108.00	57.10	74.00	-16.90	51.92	5.18	Peak	---	---
3	5350.00	48.37	54.00	-5.63	42.96	5.41	Average	---	---
4	5350.00	67.52	74.00	-6.48	62.11	5.41	Peak	---	---
5	5407.00	50.70	54.00	-3.30	45.26	5.44	Average	---	---
6	5407.00	61.75	74.00	-12.25	56.31	5.44	Peak	---	---
7	10520.00	64.46	68.30	-3.84	50.59	13.87	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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



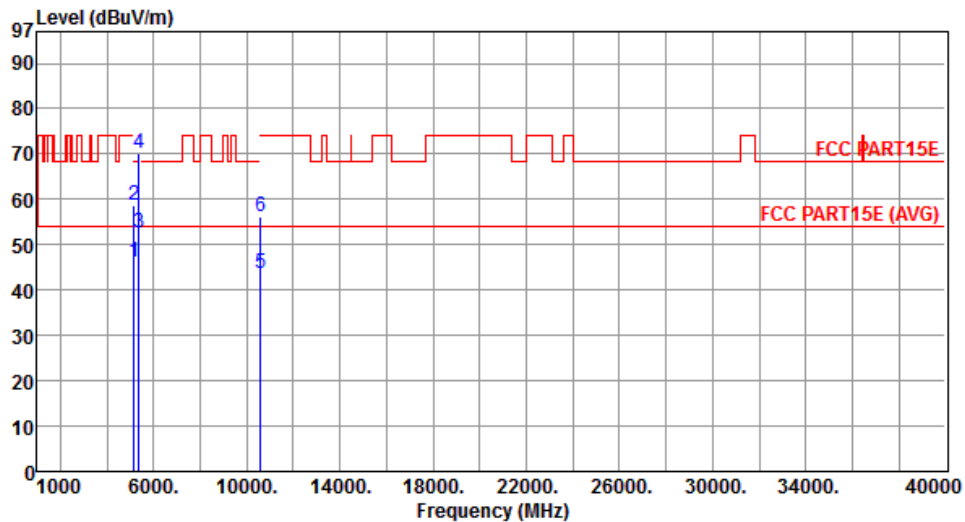
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5300



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.00	54.00	-8.00	40.75	5.25	Average	---	---
2	5150.00	58.54	74.00	-15.46	53.29	5.25	Peak	---	---
3	5350.00	52.53	54.00	-1.47	47.12	5.41	Average	---	---
4	5350.00	70.23	74.00	-3.77	64.82	5.41	Peak	---	---
5	10600.00	43.68	54.00	-10.32	29.68	14.00	Average	---	---
6	10600.00	56.32	74.00	-17.68	42.32	14.00	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

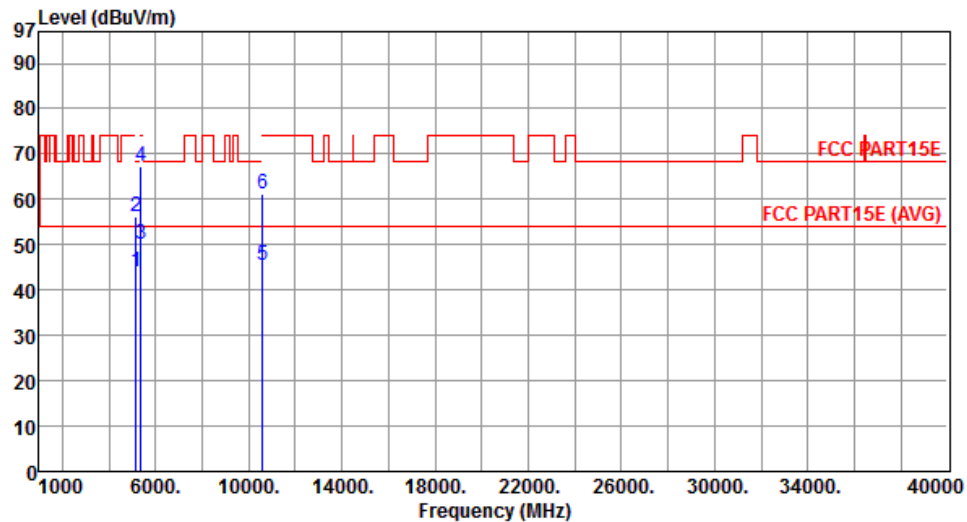
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5300



	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	44.16	54.00	-9.84	38.91	5.25	Average	---	---
2	5150.00	56.34	74.00	-17.66	51.09	5.25	Peak	---	---
3	5350.00	50.10	54.00	-3.90	44.69	5.41	Average	---	---
4	5350.00	67.27	74.00	-6.73	61.86	5.41	Peak	---	---
5	10600.00	45.51	54.00	-8.49	31.51	14.00	Average	---	---
6	10600.00	61.13	74.00	-12.87	47.13	14.00	Peak	---	---

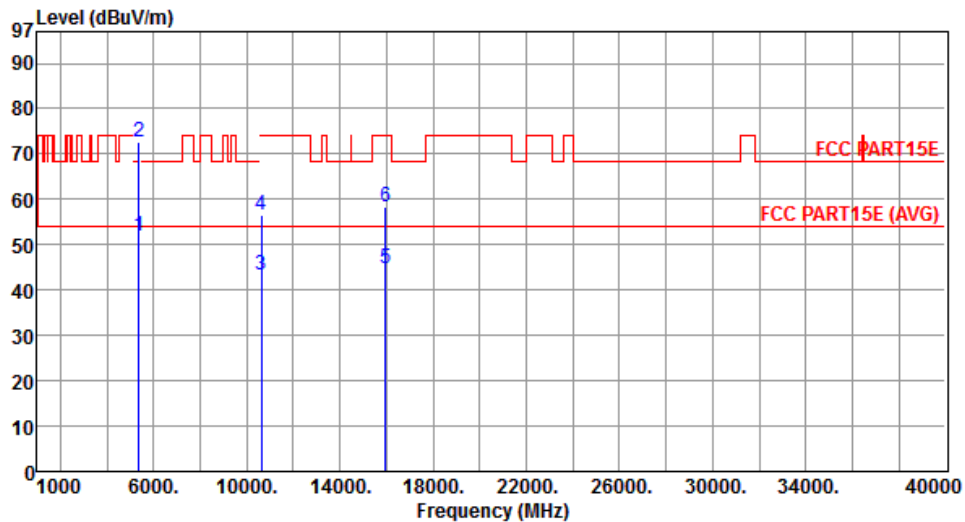
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5320



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	52.01	54.00	-1.99	46.60	5.41	Average	---	---
2	5350.00	72.75	74.00	-1.25	67.34	5.41	Peak	---	---
3	10640.00	43.21	54.00	-10.79	29.14	14.07	Average	---	---
4	10640.00	56.63	74.00	-17.37	42.56	14.07	Peak	---	---
5	15960.00	44.91	54.00	-9.09	29.46	15.45	Average	---	---
6	15960.00	58.20	74.00	-15.80	42.75	15.45	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).



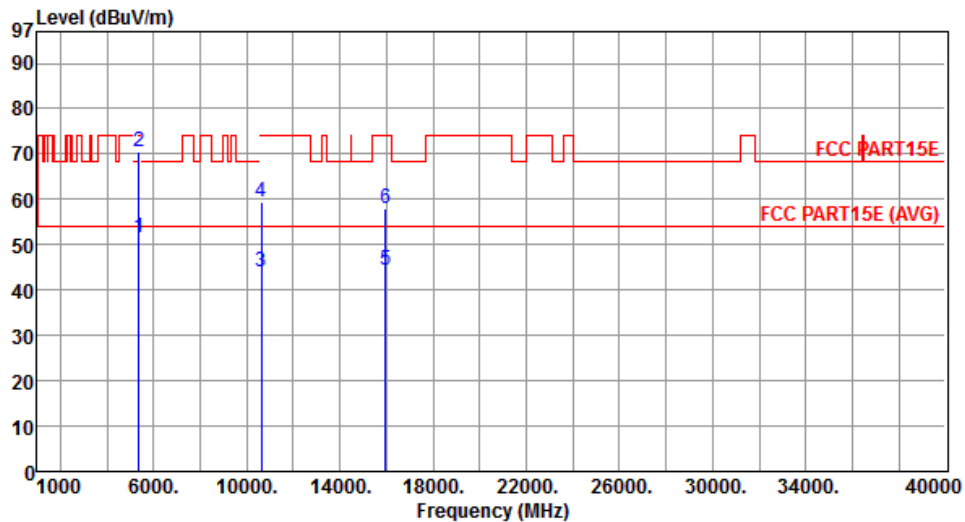
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5320



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	51.63	54.00	-2.37	46.22	5.41	Average	---	---
2	5350.00	70.54	74.00	-3.46	65.13	5.41	Peak	---	---
3	10640.00	44.16	54.00	-9.84	30.09	14.07	Average	---	---
4	10640.00	59.37	74.00	-14.63	45.30	14.07	Peak	---	---
5	15960.00	44.31	54.00	-9.69	28.86	15.45	Average	---	---
6	15960.00	58.13	74.00	-15.87	42.68	15.45	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).



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No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.
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Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5500

The graph displays the emission level in dBUV/m on the y-axis (0 to 97) against frequency in MHz on the x-axis (1000 to 40000). A red line represents the FCC Part 15E (74) limit, and a lower red line represents the FCC Part 15E (AVG) limit. Blue vertical lines indicate test results at 5460 MHz and 11000 MHz. The test results show levels of 66.73 dBUV/m and 61.16 dBUV/m respectively, both below the 74 dBUV/m limit.

	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.96	54.00	-7.04	41.38	5.58	Average	---	---
2	5460.00	66.73	74.00	-7.27	61.15	5.58	Peak	---	---
3	5470.00	50.29	54.00	-3.71	44.68	5.61	Average	---	---
4	5470.00	71.27	74.00	-2.73	65.66	5.61	Peak	---	---
5	11000.00	47.38	54.00	-6.62	32.70	14.68	Average	---	---
6	11000.00	61.16	74.00	-12.84	46.48	14.68	Peak	---	---

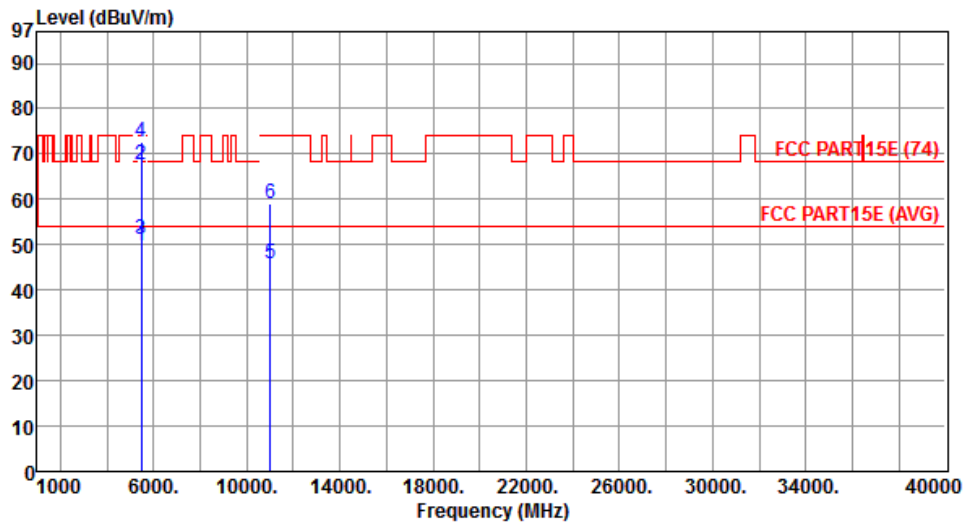
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).



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Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5500



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	49.59	54.00	-4.41	44.01	5.58	Average	---	---
2	5460.00	67.47	74.00	-6.53	61.89	5.58	Peak	---	---
3	5470.00	51.07	54.00	-2.93	45.46	5.61	Average	---	---
4	5470.00	72.79	74.00	-1.21	67.18	5.61	Peak	---	---
5	11000.00	45.80	54.00	-8.20	31.12	14.68	Average	---	---
6	11000.00	58.97	74.00	-15.03	44.29	14.68	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).



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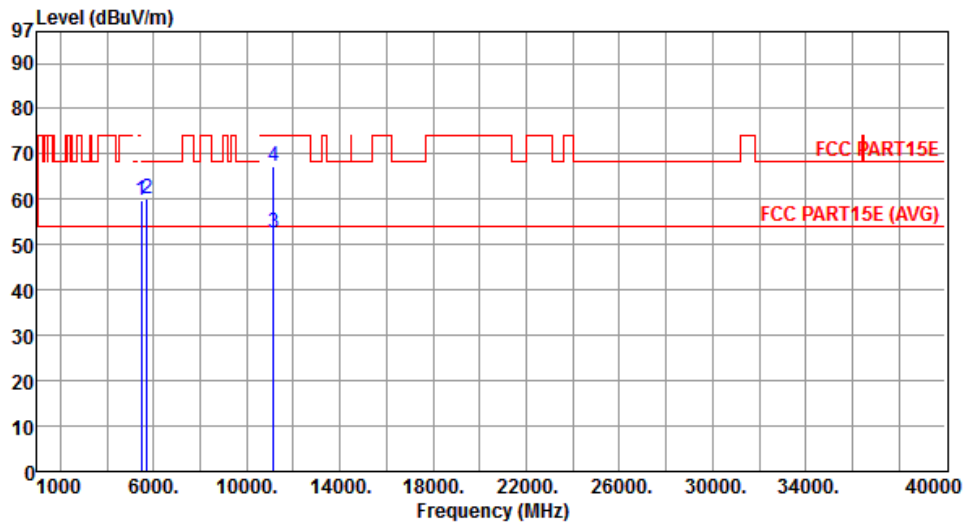
Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5580

Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	
1	5470.00	60.23	68.30	-8.07	54.62	5.61	Peak	---	---
2	5725.00	61.01	68.30	-7.29	54.91	6.10	Peak	---	---
3	11160.00	52.18	54.00	-1.82	37.46	14.72	Average	---	---
4	11160.00	66.33	74.00	-7.67	51.61	14.72	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).



Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5580



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5470.00	59.88	68.30	-8.42	54.27	5.61	Peak	---	---
2	5725.00	60.02	68.30	-8.28	53.92	6.10	Peak	---	---
3	11160.00	52.56	54.00	-1.44	37.84	14.72	Average	---	---
4	11160.00	67.18	74.00	-6.82	52.46	14.72	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).



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No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.
Tel: 886-3-271-8666 Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	11a
Polarization	Horizontal	Test Freq. (MHz)	5700

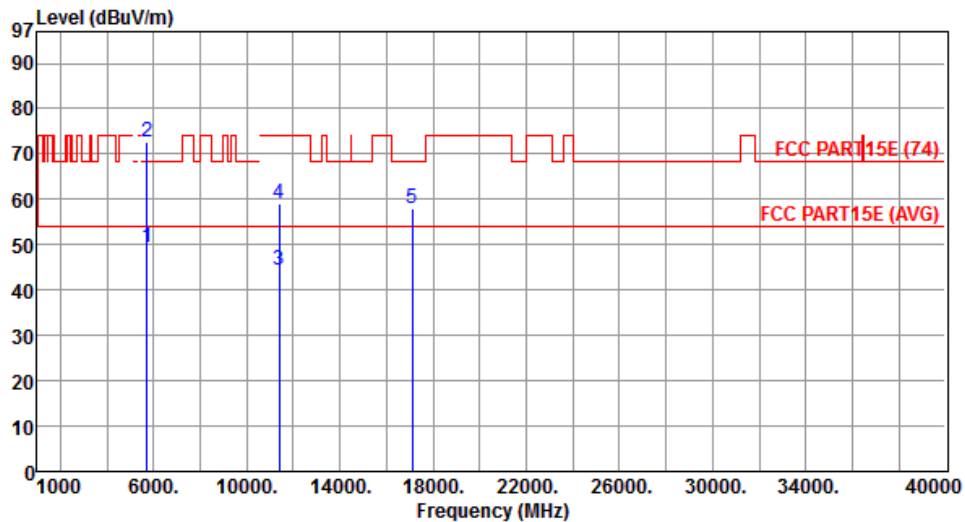
The graph displays the emission level in dBuV/m on the y-axis (0 to 97) against frequency in MHz on the x-axis (1000 to 40000). A red line represents the FCC Part 15E (74) limit, and a lower red line represents the FCC Part 15E (AVG) limit. Blue vertical lines indicate test results at 5725 MHz, 11400 MHz, and 17100 MHz. The test results show levels of 72.88 dBuV/m, 56.02 dBuV/m, and 58.36 dBuV/m respectively, all below the 74 dBuV/m limit.

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	49.99	54.00	-4.01	43.89	6.10	Average	---	---
2	5725.00	72.88	74.00	-1.12	66.78	6.10	Peak	---	---
3	11400.00	43.13	54.00	-10.87	28.33	14.80	Average	---	---
4	11400.00	56.02	74.00	-17.98	41.22	14.80	Peak	---	---
5	17100.00	58.36	68.30	-9.94	39.23	19.13	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).



Frequency range	Above 1GHz	Mode	11a
Polarization	Vertical	Test Freq. (MHz)	5700



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	49.44	54.00	-4.56	43.34	6.10	Average	---	---
2	5725.00	72.57	74.00	-1.43	66.47	6.10	Peak	---	---
3	11400.00	44.48	54.00	-9.52	29.68	14.80	Average	---	---
4	11400.00	59.15	74.00	-14.85	44.35	14.80	Peak	---	---
5	17100.00	57.95	68.30	-10.35	38.82	19.13	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).



Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5180

	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	47.47	54.00	-6.53	42.22	5.25	Average	---	---
2	5150.00	63.91	74.00	-10.09	58.66	5.25	Peak	---	---
3	6906.00	59.47	68.30	-8.83	50.82	8.65	Peak	---	---
4	10360.00	56.88	68.30	-11.42	43.33	13.55	Peak	---	---

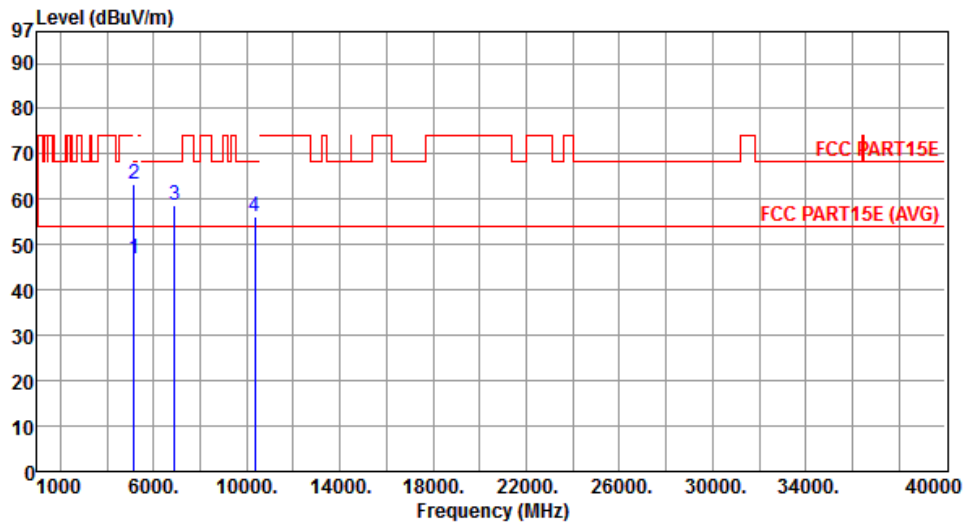
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5180



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.88	54.00	-7.12	41.63	5.25	Average	---	---
2	5150.00	63.30	74.00	-10.70	58.05	5.25	Peak	---	---
3	6906.00	58.76	68.30	-9.54	50.11	8.65	Peak	---	---
4	10360.00	56.12	68.30	-12.18	42.57	13.55	Peak	---	---

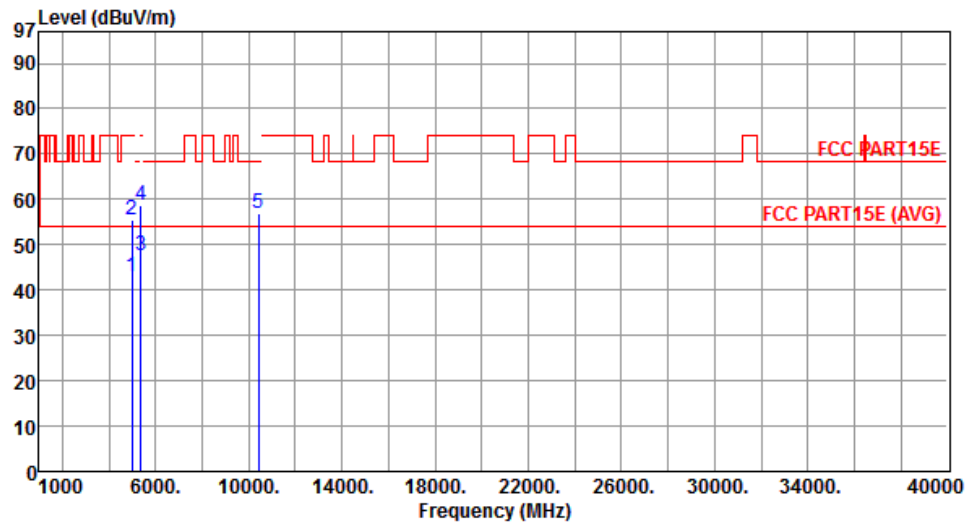
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5200



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4982.00	42.95	54.00	-11.05	38.00	4.95	Average	---	---
2	4982.00	55.43	74.00	-18.57	50.48	4.95	Peak	---	---
3	5350.00	47.66	54.00	-6.34	42.25	5.41	Average	---	---
4	5350.00	58.74	74.00	-15.26	53.33	5.41	Peak	---	---
5	10400.00	56.85	68.30	-11.45	43.22	13.63	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

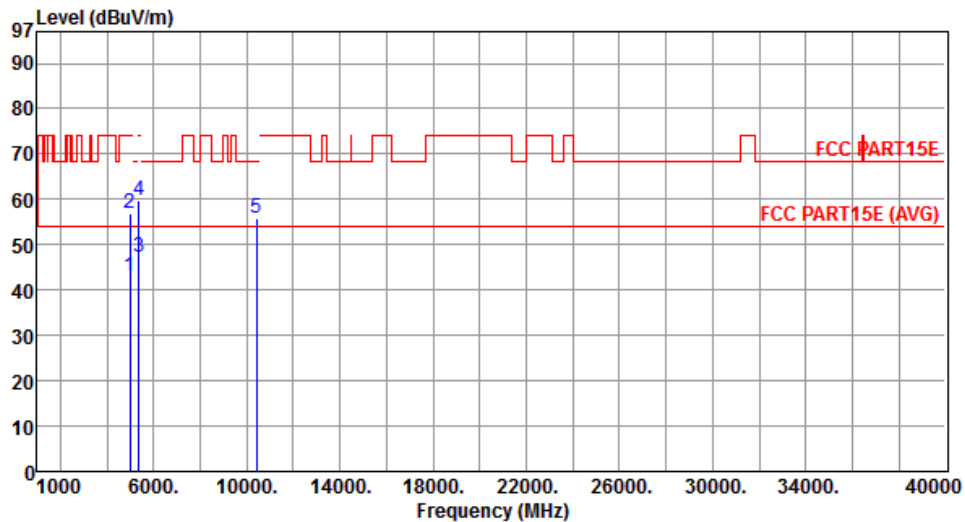
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5200



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4982.00	43.12	54.00	-10.88	38.17	4.95	Average	---	---
2	4982.00	56.97	74.00	-17.03	52.02	4.95	Peak	---	---
3	5350.00	47.33	54.00	-6.67	41.92	5.41	Average	---	---
4	5350.00	59.82	74.00	-14.18	54.41	5.41	Peak	---	---
5	10400.00	55.84	68.30	-12.46	42.21	13.63	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

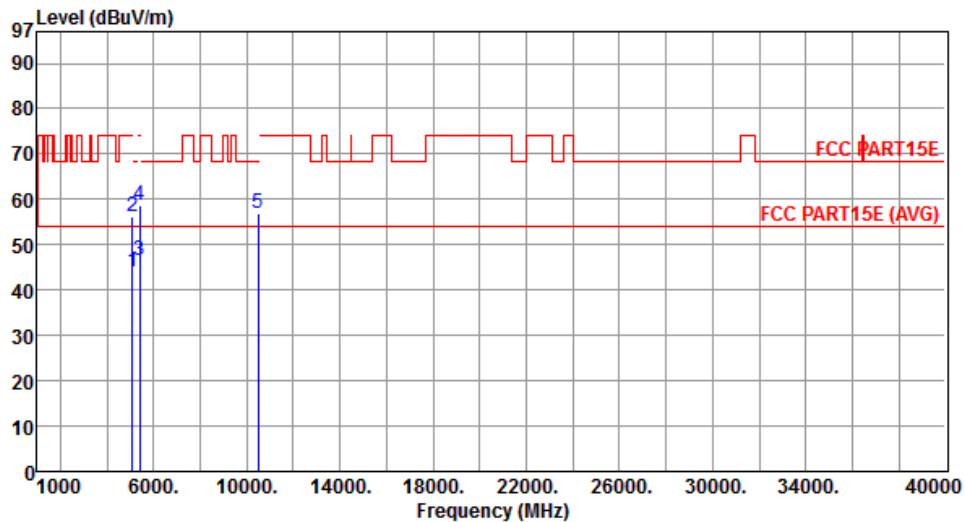
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5240



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5089.00	43.88	54.00	-10.12	38.73	5.15	Average	---	---
2	5089.00	56.28	74.00	-17.72	51.13	5.15	Peak	---	---
3	5388.00	46.69	54.00	-7.31	41.27	5.42	Average	---	---
4	5388.00	58.72	74.00	-15.28	53.30	5.42	Peak	---	---
5	10480.00	56.81	68.30	-11.49	43.01	13.80	Peak	---	---

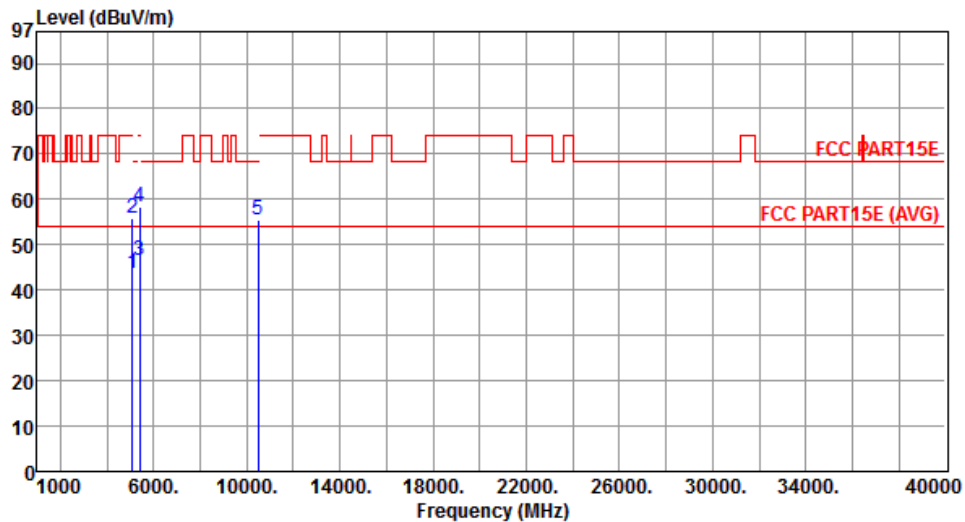
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5240



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5089.00	43.77	54.00	-10.23	38.62	5.15	Average	---	---
2	5089.00	55.89	74.00	-18.11	50.74	5.15	Peak	---	---
3	5388.00	46.65	54.00	-7.35	41.23	5.42	Average	---	---
4	5388.00	58.28	74.00	-15.72	52.86	5.42	Peak	---	---
5	10480.00	55.41	68.30	-12.89	41.61	13.80	Peak	---	---

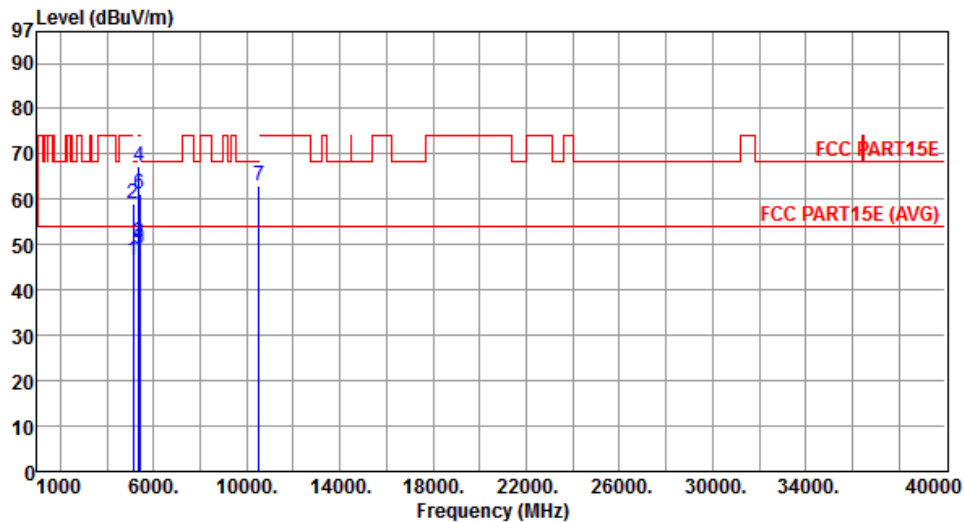
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5260



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5108.00	46.60	54.00	-7.40	41.42	5.18	Average	---	---
2	5108.00	59.18	74.00	-14.82	54.00	5.18	Peak	---	---
3	5350.00	50.63	54.00	-3.37	45.22	5.41	Average	---	---
4	5350.00	67.38	74.00	-6.62	61.97	5.41	Peak	---	---
5	5407.00	49.17	54.00	-4.83	43.73	5.44	Average	---	---
6	5407.00	61.30	74.00	-12.70	55.86	5.44	Peak	---	---
7	10520.00	62.87	68.30	-5.43	49.00	13.87	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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



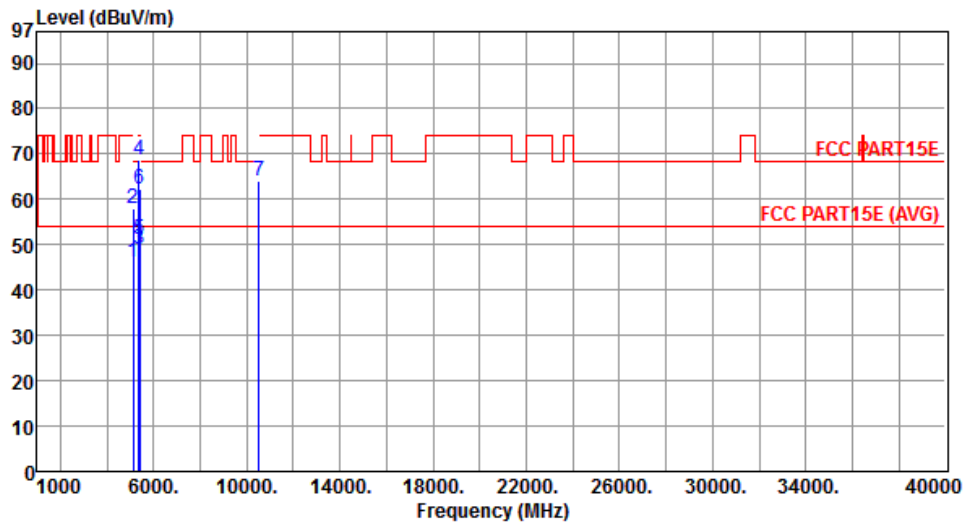
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5260



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5108.00	46.23	54.00	-7.77	41.05	5.18	Average	---	---
2	5108.00	57.89	74.00	-16.11	52.71	5.18	Peak	---	---
3	5350.00	49.21	54.00	-4.79	43.80	5.41	Average	---	---
4	5350.00	68.55	74.00	-5.45	63.14	5.41	Peak	---	---
5	5407.00	51.23	54.00	-2.77	45.79	5.44	Average	---	---
6	5407.00	62.13	74.00	-11.87	56.69	5.44	Peak	---	---
7	10520.00	64.21	68.30	-4.09	50.34	13.87	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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



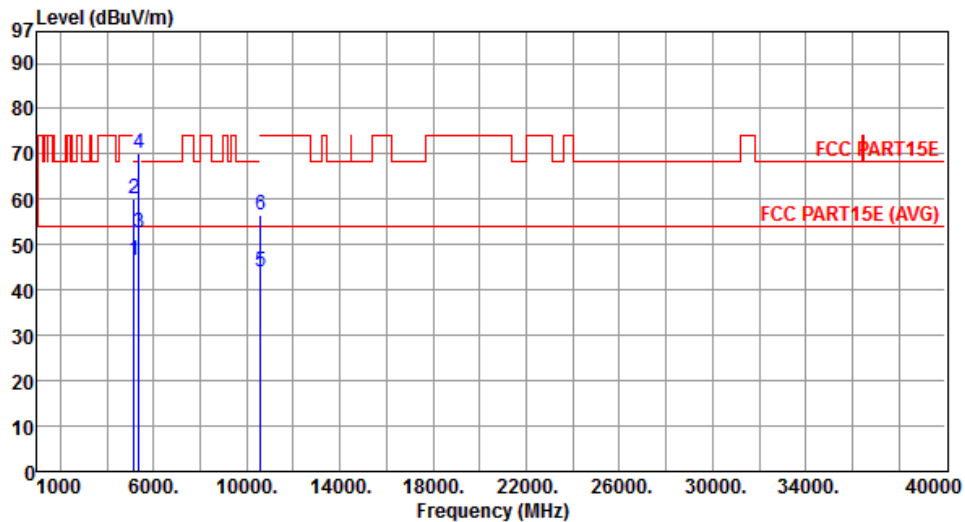
International Certification Corp.

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Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5300



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.55	54.00	-7.45	41.30	5.25	Average	---	---
2	5150.00	59.95	74.00	-14.05	54.70	5.25	Peak	---	---
3	5350.00	52.60	54.00	-1.40	47.19	5.41	Average	---	---
4	5350.00	70.20	74.00	-3.80	64.79	5.41	Peak	---	---
5	10600.00	44.10	54.00	-9.90	30.10	14.00	Average	---	---
6	10600.00	56.63	74.00	-17.37	42.63	14.00	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).



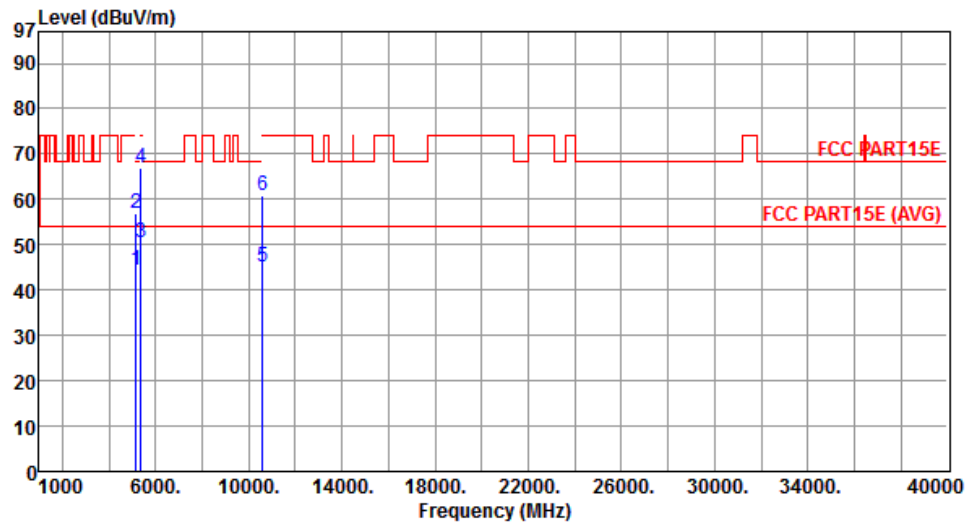
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Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5300



	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	39.11	5.25	Average	---	---
2	5150.00	56.78	74.00	-17.22	51.53	5.25	Peak	---	---
3	5350.00	50.31	54.00	-3.69	44.90	5.41	Average	---	---
4	5350.00	67.03	74.00	-6.97	61.62	5.41	Peak	---	---
5	10600.00	45.21	54.00	-8.79	31.21	14.00	Average	---	---
6	10600.00	60.98	74.00	-13.02	46.98	14.00	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

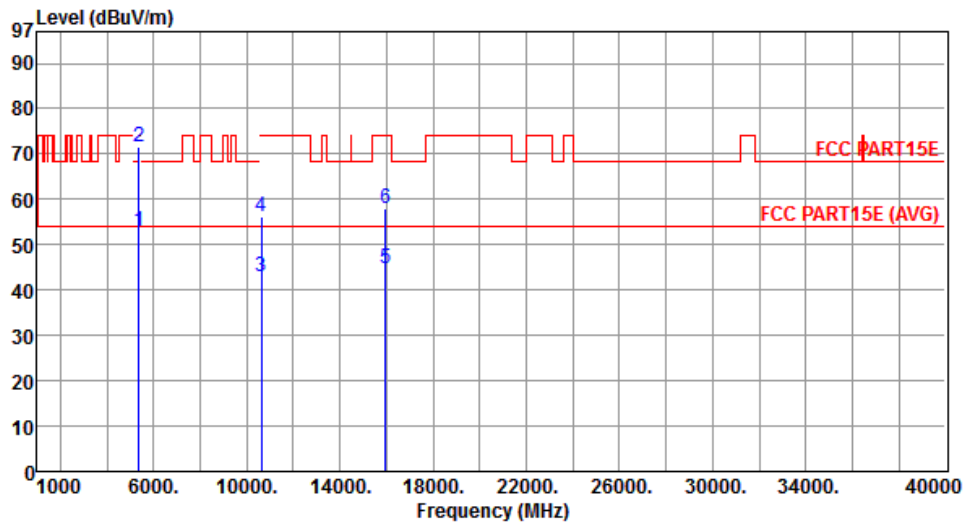
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5320



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	53.00	54.00	-1.00	47.59	5.41	Average	---	---
2	5350.00	71.70	74.00	-2.30	66.29	5.41	Peak	---	---
3	10640.00	42.98	54.00	-11.02	28.91	14.07	Average	---	---
4	10640.00	56.34	74.00	-17.66	42.27	14.07	Peak	---	---
5	15960.00	44.58	54.00	-9.42	29.13	15.45	Average	---	---
6	15960.00	57.89	74.00	-16.11	42.44	15.45	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).



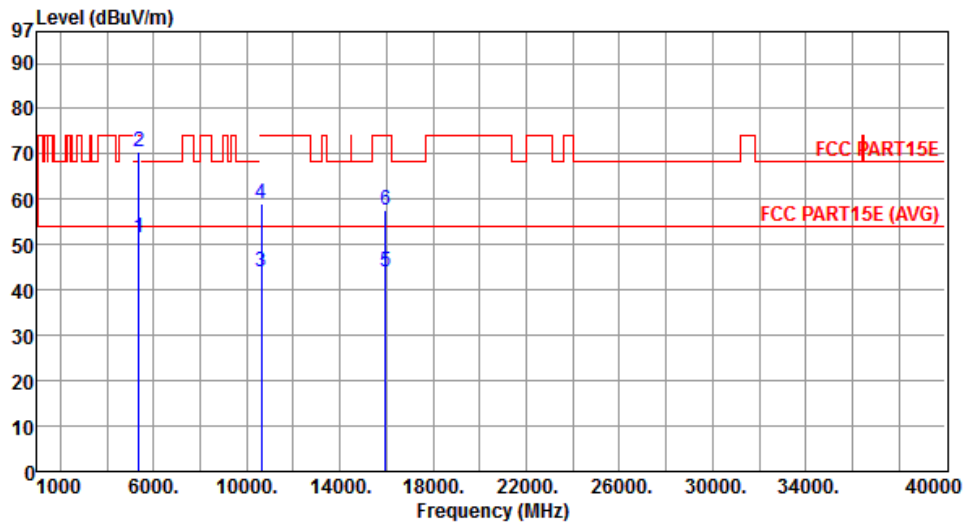
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Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5320



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	51.43	54.00	-2.57	46.02	5.41	Average	---	---
2	5350.00	70.34	74.00	-3.66	64.93	5.41	Peak	---	---
3	10640.00	43.93	54.00	-10.07	29.86	14.07	Average	---	---
4	10640.00	59.06	74.00	-14.94	44.99	14.07	Peak	---	---
5	15960.00	44.08	54.00	-9.92	28.63	15.45	Average	---	---
6	15960.00	57.76	74.00	-16.24	42.31	15.45	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).



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Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5500

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.51	54.00	-6.49	41.93	5.58	Average	---	---
2	5460.00	67.59	74.00	-6.41	62.01	5.58	Peak	---	---
3	5470.00	50.88	54.00	-3.12	45.27	5.61	Average	---	---
4	5470.00	71.78	74.00	-2.22	66.17	5.61	Peak	---	---
5	11000.00	47.58	54.00	-6.42	32.90	14.68	Average	---	---
6	11000.00	61.47	74.00	-12.53	46.79	14.68	Peak	---	---

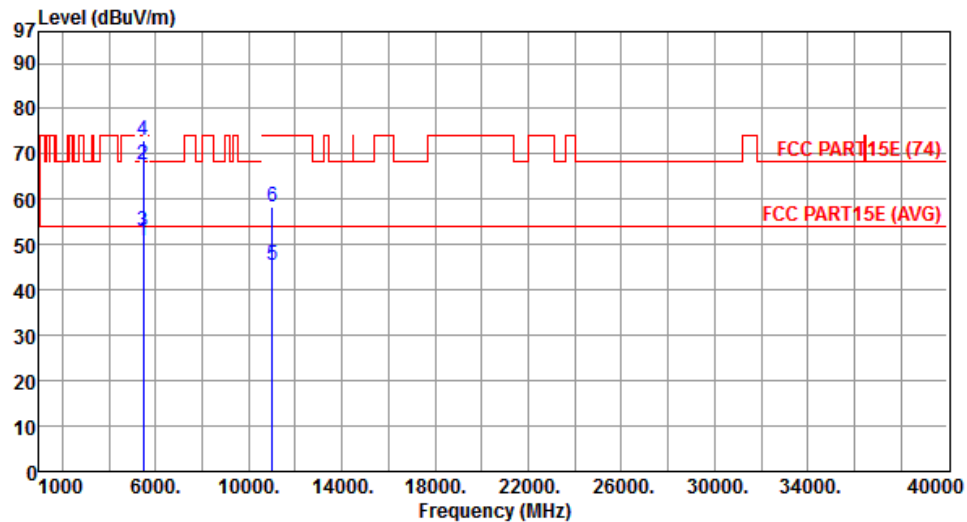
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5500



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.98	54.00	-3.02	45.40	5.58	Average	---	---
2	5460.00	67.78	74.00	-6.22	62.20	5.58	Peak	---	---
3	5470.00	52.81	54.00	-1.19	47.20	5.61	Average	---	---
4	5470.00	72.97	74.00	-1.03	67.36	5.61	Peak	---	---
5	11000.00	45.43	54.00	-8.57	30.75	14.68	Average	---	---
6	11000.00	58.51	74.00	-15.49	43.83	14.68	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).



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Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5580

Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	
1	5470.00	60.58	68.30	-7.72	54.97	5.61	Peak	---	---
2	5725.00	61.33	68.30	-6.97	55.23	6.10	Peak	---	---
3	11160.00	51.99	54.00	-2.01	37.27	14.72	Average	---	---
4	11160.00	66.02	74.00	-7.98	51.30	14.72	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).



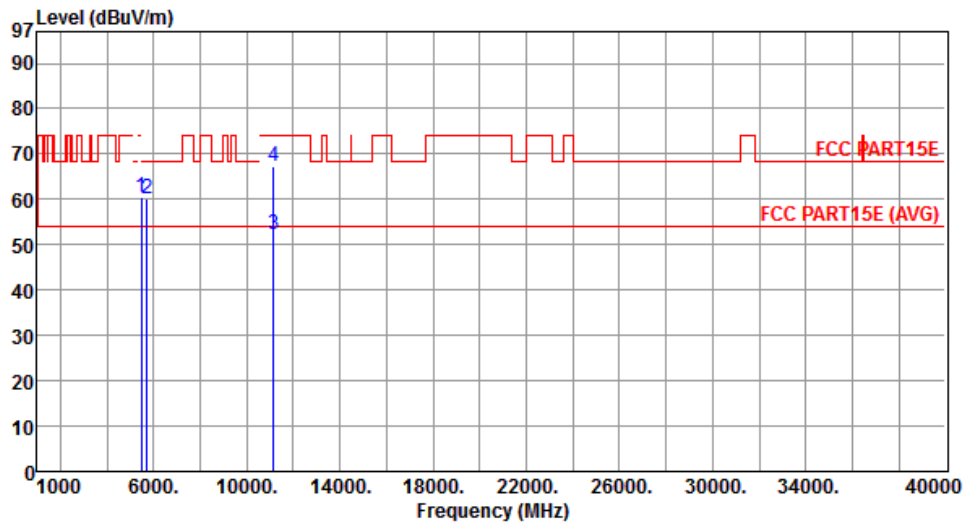
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Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5580



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5470.00	60.33	68.30	-7.97	54.72	5.61	Peak	---	---
2	5725.00	60.02	68.30	-8.28	53.92	6.10	Peak	---	---
3	11160.00	52.42	54.00	-1.58	37.70	14.72	Average	---	---
4	11160.00	67.12	74.00	-6.88	52.40	14.72	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).



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Frequency range	Above 1GHz	Mode	HT20
Polarization	Horizontal	Test Freq. (MHz)	5700

The graph displays the emission level in dBuV/m on the y-axis (0 to 97) against frequency in MHz on the x-axis (1000 to 40000). A red line represents the FCC Part 15E (74) limit, and a lower red line represents the FCC Part 15E (AVG) limit. Blue vertical lines mark specific frequency points: 2 at 5725 MHz, 3 at 11400 MHz, 4 at 11400 MHz, and 5 at 17100 MHz. The test results are shown as a red stepped line, with peaks at the marked frequencies.

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	50.40	54.00	-3.60	44.30	6.10	Average	---	---
2	5725.00	72.71	74.00	-1.29	66.61	6.10	Peak	---	---
3	11400.00	42.87	54.00	-11.13	28.07	14.80	Average	---	---
4	11400.00	55.73	74.00	-18.27	40.93	14.80	Peak	---	---
5	17100.00	58.13	68.30	-10.17	39.00	19.13	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).



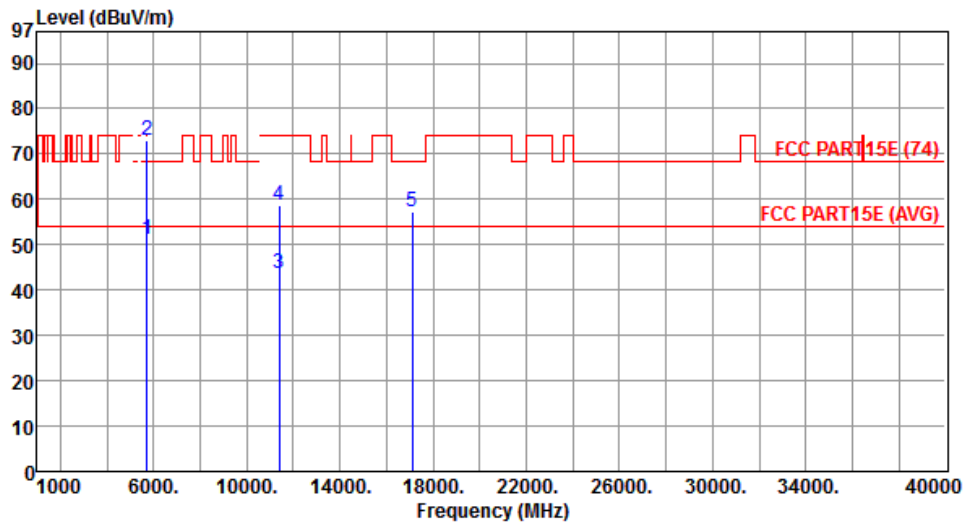
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Frequency range	Above 1GHz	Mode	HT20
Polarization	Vertical	Test Freq. (MHz)	5700



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	51.31	54.00	-2.69	45.21	6.10	Average	---	---
2	5725.00	72.90	74.00	-1.10	66.80	6.10	Peak	---	---
3	11400.00	43.82	54.00	-10.18	29.02	14.80	Average	---	---
4	11400.00	58.61	74.00	-15.39	43.81	14.80	Peak	---	---
5	17100.00	57.23	68.30	-11.07	38.10	19.13	Peak	---	---

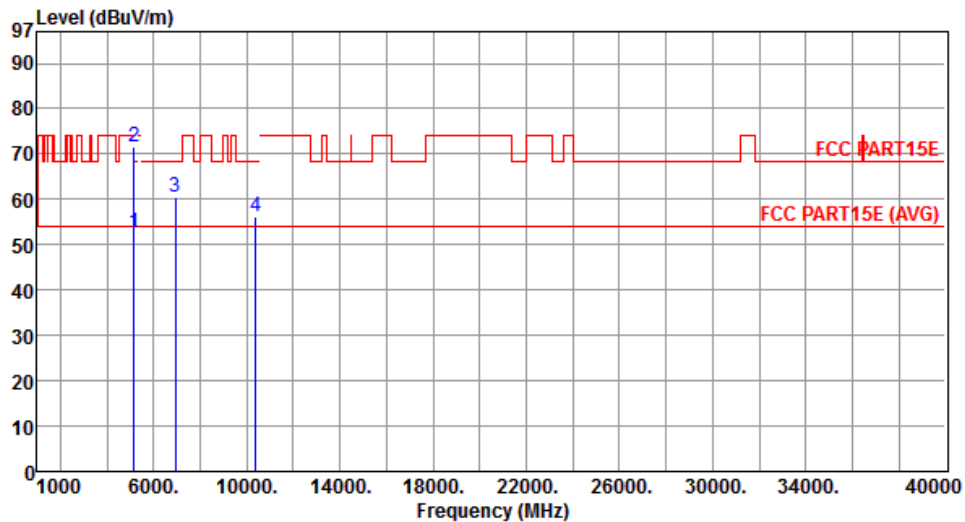
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT40
Polarization	Horizontal	Test Freq. (MHz)	5190



	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	52.78	54.00	-1.22	47.53	5.25	Average	---	---
2	5150.00	71.55	74.00	-2.45	66.30	5.25	Peak	---	---
3	6920.00	60.43	68.30	-7.87	51.75	8.68	Peak	---	---
4	10380.00	56.24	68.30	-12.06	42.65	13.59	Peak	---	---

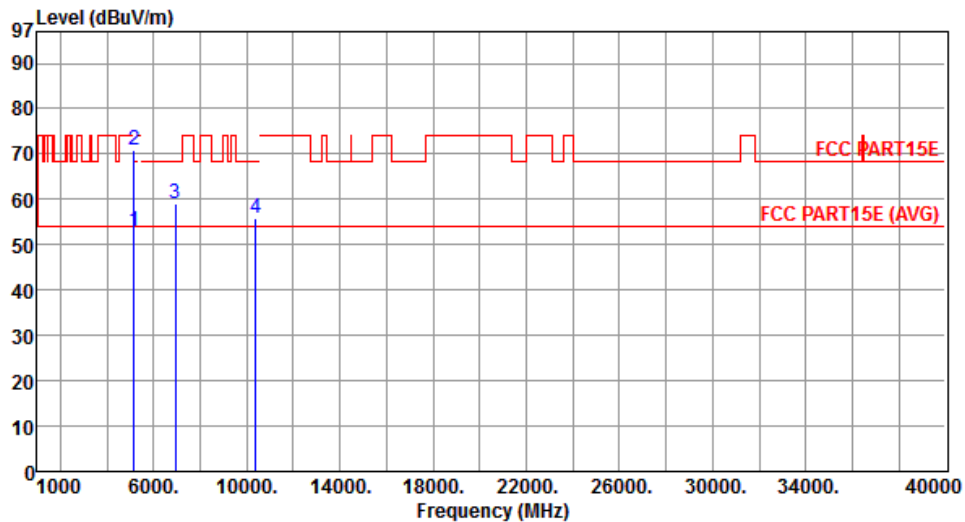
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT40
Polarization	Vertical	Test Freq. (MHz)	5190



	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	52.85	54.00	-1.15	47.60	5.25	Average	---	---
2	5150.00	70.95	74.00	-3.05	65.70	5.25	Peak	---	---
3	6920.00	59.21	68.30	-9.09	50.53	8.68	Peak	---	---
4	10380.00	55.73	68.30	-12.57	42.14	13.59	Peak	---	---

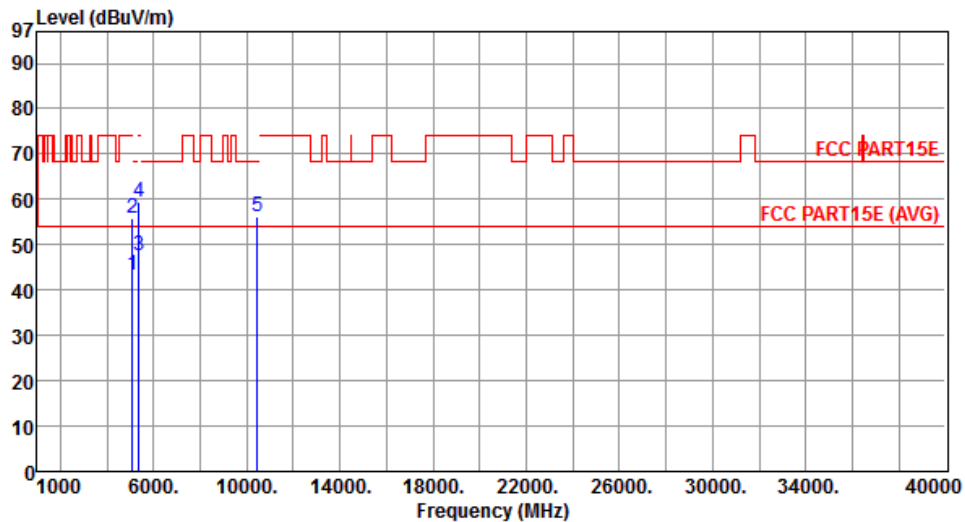
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT40
Polarization	Horizontal	Test Freq. (MHz)	5230



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5080.00	43.35	54.00	-10.65	38.22	5.13	Average	---	---
2	5080.00	55.73	74.00	-18.27	50.60	5.13	Peak	---	---
3	5380.00	47.52	54.00	-6.48	42.11	5.41	Average	---	---
4	5380.00	59.52	74.00	-14.48	54.11	5.41	Peak	---	---
5	10460.00	56.32	68.30	-11.98	42.57	13.75	Peak	---	---

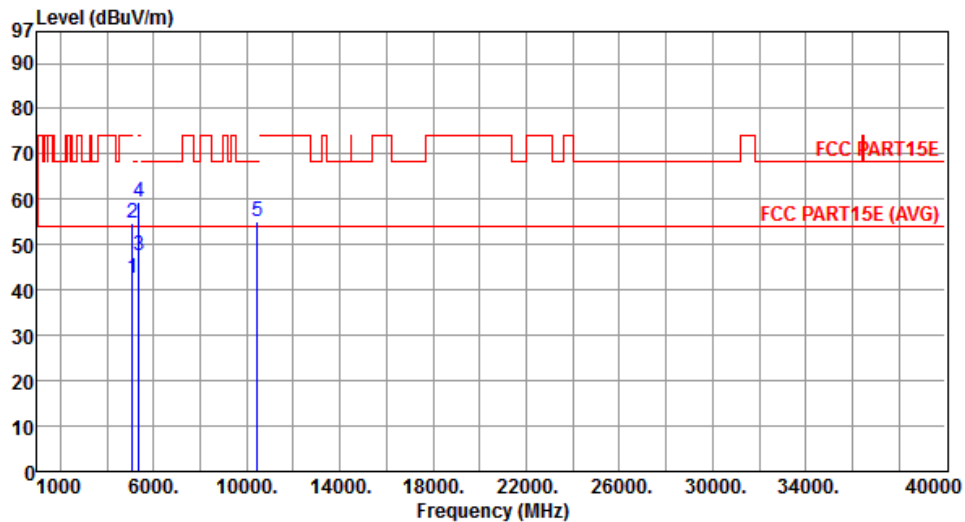
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT40
Polarization	Vertical	Test Freq. (MHz)	5230



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5080.00	42.66	54.00	-11.34	37.53	5.13	Average	---	---
2	5080.00	54.73	74.00	-19.27	49.60	5.13	Peak	---	---
3	5380.00	47.73	54.00	-6.27	42.32	5.41	Average	---	---
4	5380.00	59.51	74.00	-14.49	54.10	5.41	Peak	---	---
5	10460.00	55.02	68.30	-13.28	41.27	13.75	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

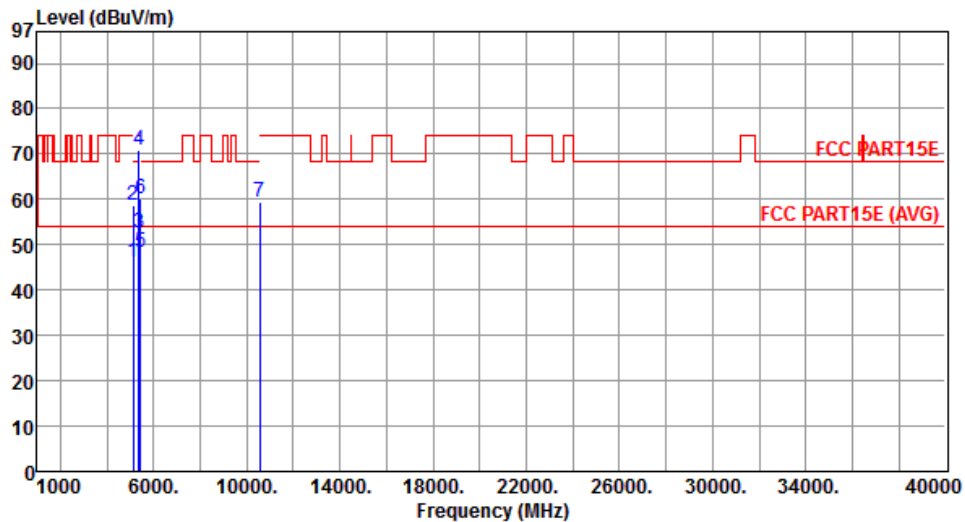
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).



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Frequency range	Above 1GHz	Mode	HT40
Polarization	Horizontal	Test Freq. (MHz)	5270



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	46.11	54.00	-7.89	40.91	5.20	Average	---	---
2	5120.00	58.73	74.00	-15.27	53.53	5.20	Peak	---	---
3	5350.00	52.60	54.00	-1.40	47.19	5.41	Average	---	---
4	5350.00	70.70	74.00	-3.30	65.29	5.41	Peak	---	---
5	5420.00	48.19	54.00	-5.81	42.72	5.47	Average	---	---
6	5420.00	60.22	74.00	-13.78	54.75	5.47	Peak	---	---
7	10540.00	59.33	68.30	-8.97	45.43	13.90	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).



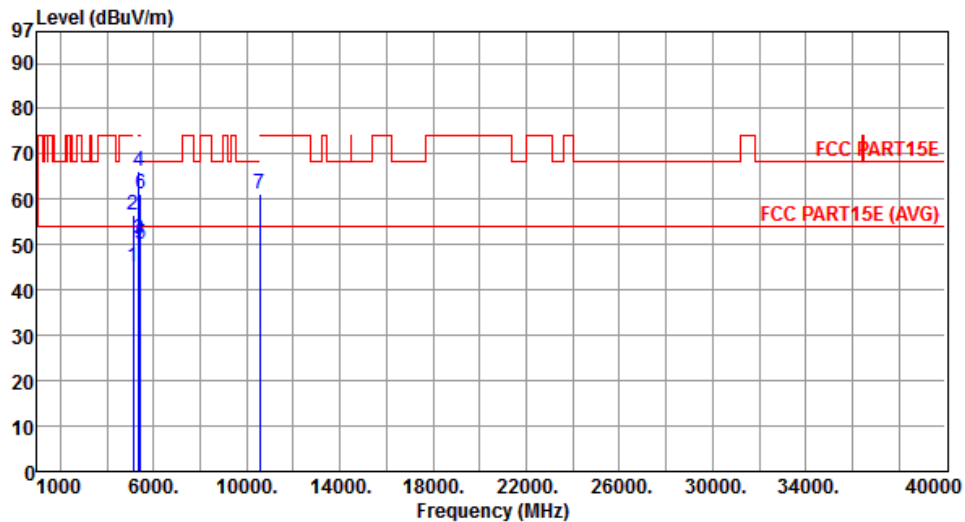
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT40
Polarization	Vertical	Test Freq. (MHz)	5270



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	45.20	54.00	-8.80	40.00	5.20	Average	---	---
2	5120.00	56.73	74.00	-17.27	51.53	5.20	Peak	---	---
3	5350.00	51.10	54.00	-2.90	45.69	5.41	Average	---	---
4	5350.00	66.10	74.00	-7.90	60.69	5.41	Peak	---	---
5	5420.00	50.11	54.00	-3.89	44.64	5.47	Average	---	---
6	5420.00	61.09	74.00	-12.91	55.62	5.47	Peak	---	---
7	10540.00	61.21	68.30	-7.09	47.31	13.90	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

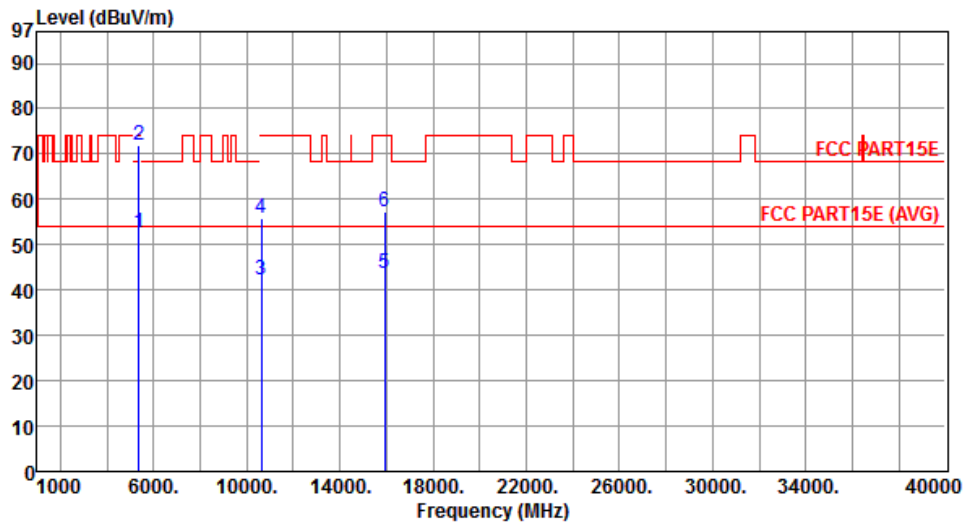
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).



International Certification Corp.

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Tel: 886-3-271-8666 Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT40
Polarization	Horizontal	Test Freq. (MHz)	5310



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	52.70	54.00	-1.30	47.29	5.41	Average	---	---
2	5350.00	72.00	74.00	-2.00	66.59	5.41	Peak	---	---
3	10620.00	42.35	54.00	-11.65	28.32	14.03	Average	---	---
4	10620.00	55.73	74.00	-18.27	41.70	14.03	Peak	---	---
5	15930.00	43.81	54.00	-10.19	28.31	15.50	Average	---	---
6	15930.00	57.16	74.00	-16.84	41.66	15.50	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

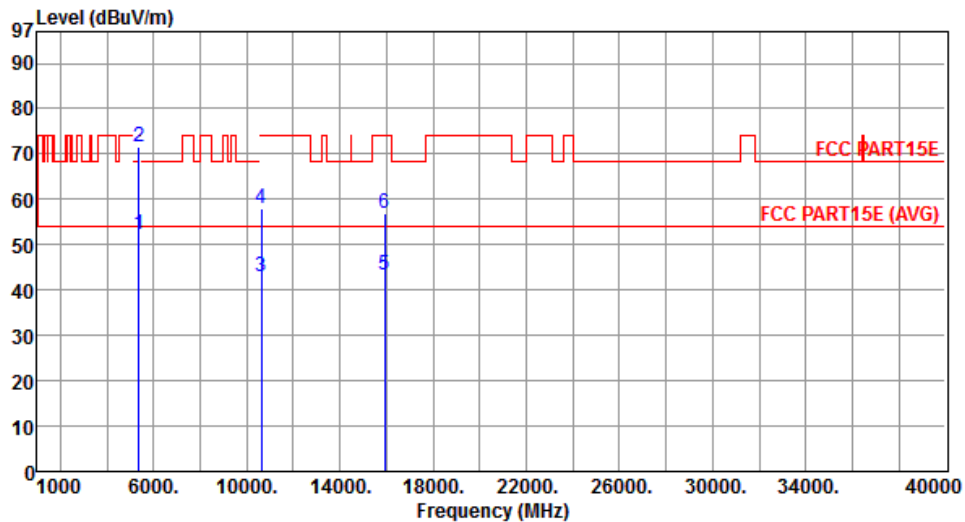
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Frequency range	Above 1GHz	Mode	HT40
Polarization	Vertical	Test Freq. (MHz)	5310



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	52.20	54.00	-1.80	46.79	5.41	Average	---	---
2	5350.00	71.50	74.00	-2.50	66.09	5.41	Peak	---	---
3	10620.00	42.88	54.00	-11.12	28.85	14.03	Average	---	---
4	10620.00	58.13	74.00	-15.87	44.10	14.03	Peak	---	---
5	15930.00	43.20	54.00	-10.80	27.70	15.50	Average	---	---
6	15930.00	56.79	74.00	-17.21	41.29	15.50	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

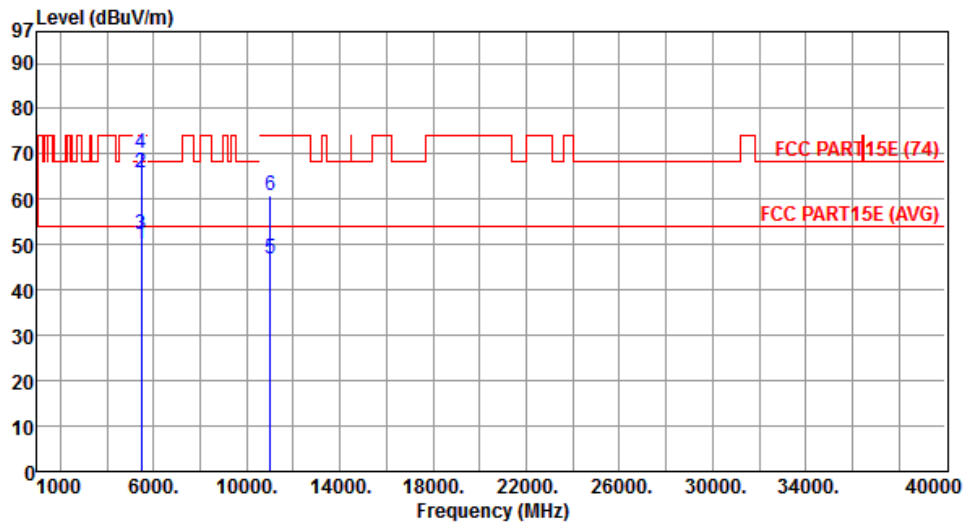
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Tel: 886-3-271-8666 Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT40
Polarization	Horizontal	Test Freq. (MHz)	5510



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.08	54.00	-3.92	44.50	5.58	Average	---	---
2	5460.00	65.77	74.00	-8.23	60.19	5.58	Peak	---	---
3	5470.00	52.31	54.00	-1.69	46.70	5.61	Average	---	---
4	5470.00	70.06	74.00	-3.94	64.45	5.61	Peak	---	---
5	11020.00	46.83	54.00	-7.17	32.15	14.68	Average	---	---
6	11020.00	60.87	74.00	-13.13	46.19	14.68	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).



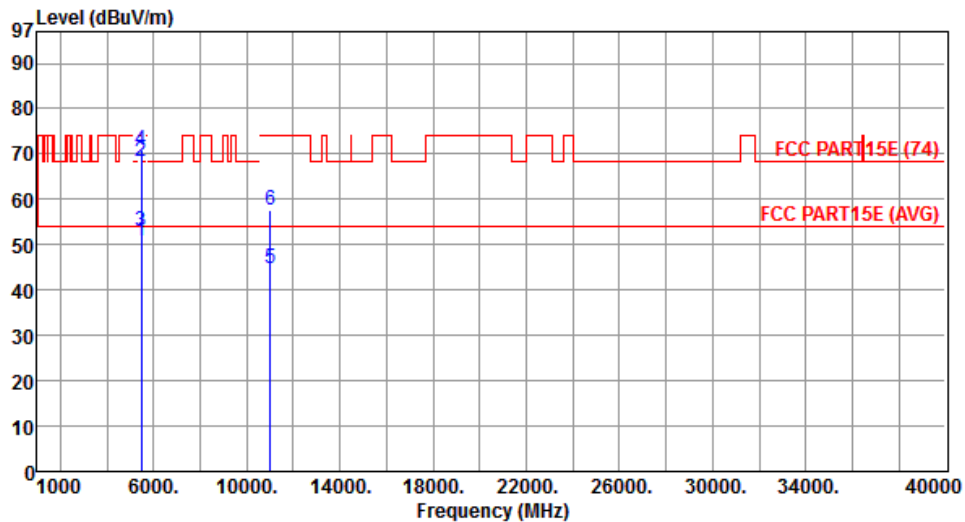
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT40
Polarization	Vertical	Test Freq. (MHz)	5510



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.75	54.00	-3.25	45.17	5.58	Average	---	---
2	5460.00	68.48	74.00	-5.52	62.90	5.58	Peak	---	---
3	5470.00	52.91	54.00	-1.09	47.30	5.61	Average	---	---
4	5470.00	71.05	74.00	-2.95	65.44	5.61	Peak	---	---
5	11020.00	44.59	54.00	-9.41	29.91	14.68	Average	---	---
6	11020.00	57.66	74.00	-16.34	42.98	14.68	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

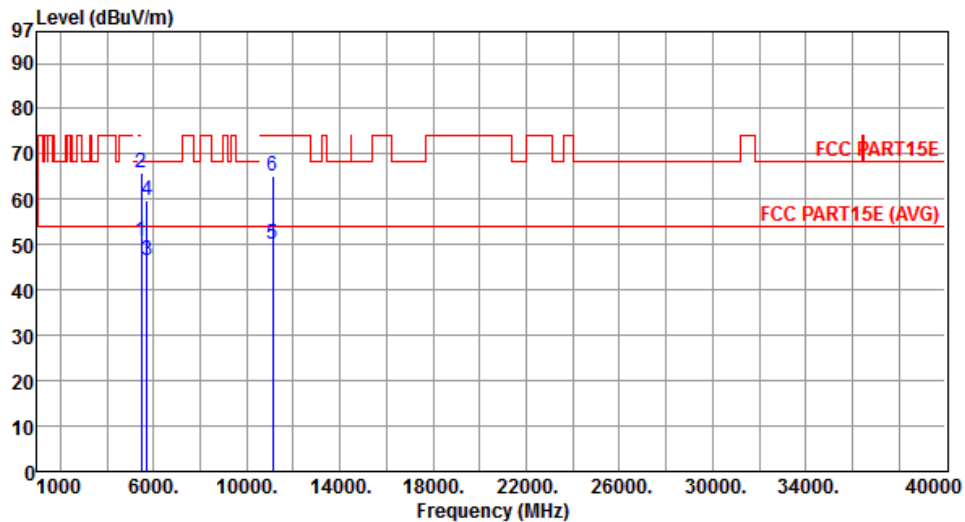
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



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Tel: 886-3-271-8666 Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT40
Polarization	Horizontal	Test Freq. (MHz)	5550



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5470.00	50.71	54.00	-3.29	45.10	5.61	Average	---	---
2	5470.00	66.01	68.30	-2.29	60.40	5.61	Peak	---	---
3	5725.00	46.40	54.00	-7.60	40.30	6.10	Average	---	---
4	5725.00	59.90	68.30	-8.40	53.80	6.10	Peak	---	---
5	11100.00	50.23	54.00	-3.77	35.53	14.70	Average	---	---
6	11100.00	65.18	74.00	-8.82	50.48	14.70	Peak	---	---

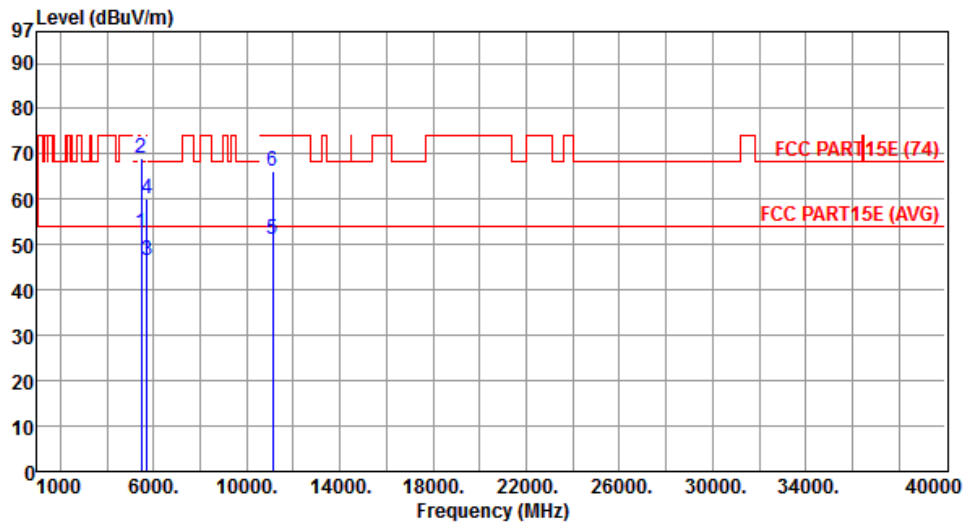
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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



Frequency range	Above 1GHz	Mode	HT40
Polarization	Vertical	Test Freq. (MHz)	5550



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5470.00	52.54	54.00	-1.46	46.93	5.61	Average	---	---
2	5470.00	69.01	74.00	-4.99	63.40	5.61	Peak	---	---
3	5725.00	46.40	54.00	-7.60	40.30	6.10	Average	---	---
4	5725.00	60.20	74.00	-13.80	54.10	6.10	Peak	---	---
5	11100.00	51.34	54.00	-2.66	36.64	14.70	Average	---	---
6	11100.00	66.35	74.00	-7.65	51.65	14.70	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).



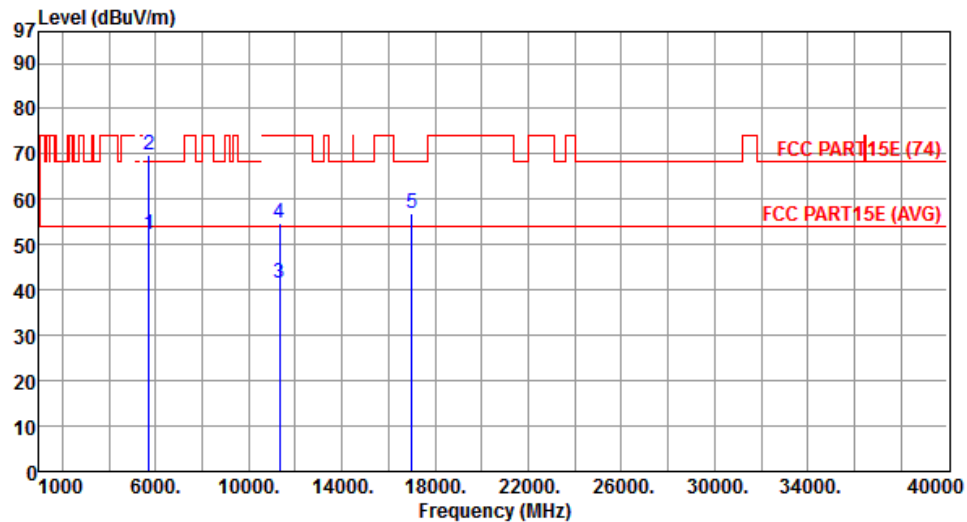
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT40
Polarization	Horizontal	Test Freq. (MHz)	5670



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	52.40	54.00	-1.60	46.30	6.10	Average	---	---
2	5725.00	69.81	74.00	-4.19	63.71	6.10	Peak	---	---
3	11340.00	41.59	54.00	-12.41	26.81	14.78	Average	---	---
4	11340.00	54.62	74.00	-19.38	39.84	14.78	Peak	---	---
5	17010.00	57.00	68.30	-11.30	38.33	18.67	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).



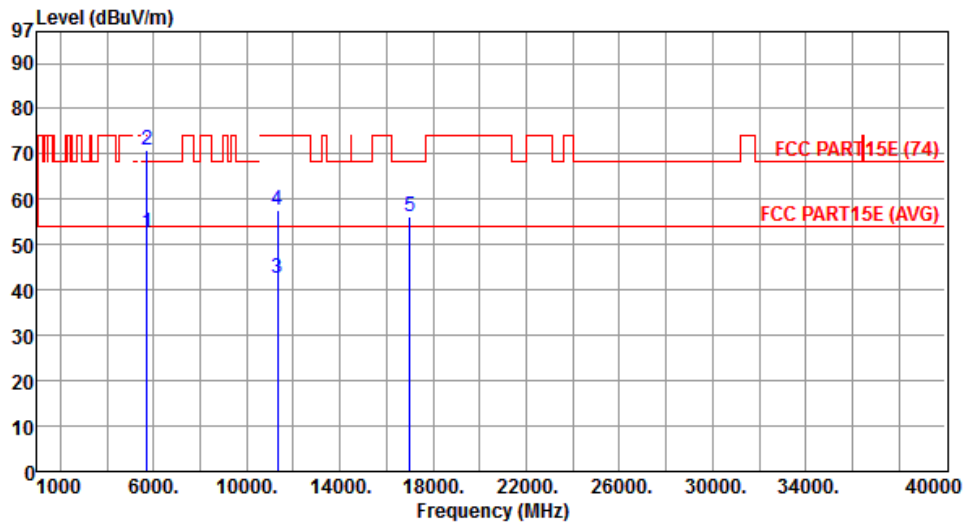
International Certification Corp.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Frequency range	Above 1GHz	Mode	HT40
Polarization	Vertical	Test Freq. (MHz)	5670



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	52.60	54.00	-1.40	46.50	6.10	Average	---	---
2	5725.00	71.00	74.00	-3.00	64.90	6.10	Peak	---	---
3	11340.00	42.55	54.00	-11.45	27.77	14.78	Average	---	---
4	11340.00	57.55	74.00	-16.45	42.77	14.78	Peak	---	---
5	17010.00	56.10	68.30	-12.20	37.43	18.67	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).



3.7 Frequency Stability

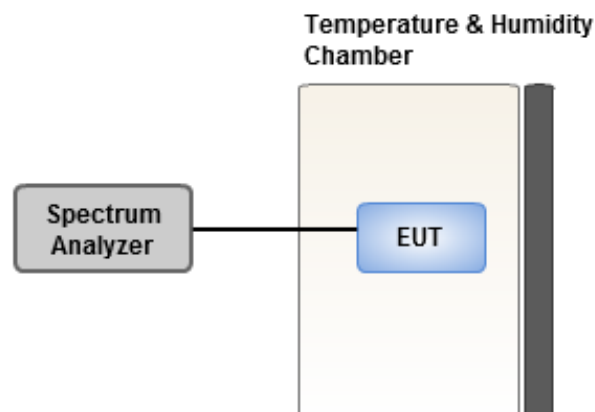
3.7.1 Limit of Frequency Stability

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 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.

3.7.3 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	3.30	2.89	2.64	3.29
T20°CVmin	6.77	6.93	6.90	6.57
T60°CVnom	5.22	5.30	4.39	5.38
T50°CVnom	5.34	5.27	4.74	5.47
T40°CVnom	-0.99	-1.34	-1.02	-0.55
T30°CVnom	1.13	1.56	1.17	1.44
T20°CVnom	3.89	4.79	4.41	4.42
T10°CVnom	3.66	4.29	4.23	3.73
T0°CVnom	2.54	3.00	2.16	2.95
T-10°CVnom	1.31	1.42	2.07	1.77
T-20°CVnom	4.19	3.75	3.65	3.76
Vnom [V]: 110		Vmax [V]: 126.5		Vmin [V]: 93.5
Tnom [°C]: 20		Tmax [°C]: 60		Tmin [°C]: -30

==END==