

7.6. Frequency Stability Measurement

7.6.1. Test Limit

Manufactures 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.

7.6.2. Test Procedure Used

Frequency Stability Under Temperature Variations:

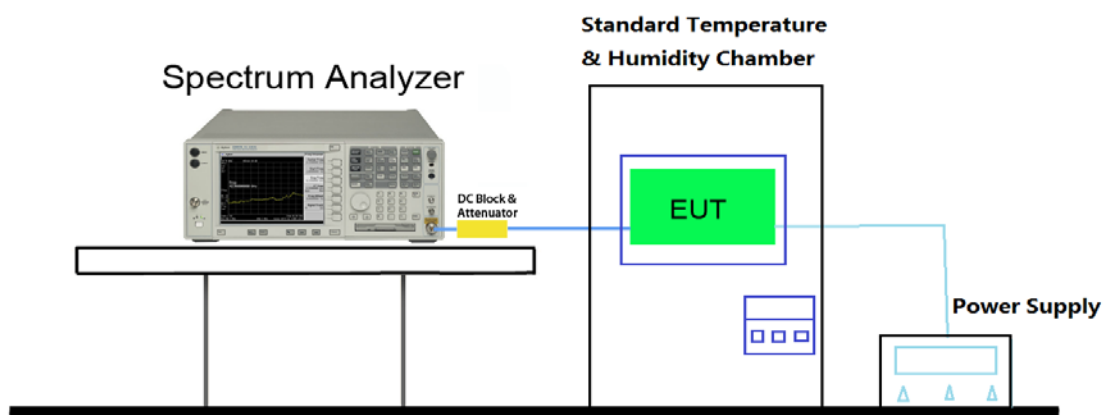
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

7.6.3. Test Setup



7.6.4. Test Result

Voltage (%)	Power (VAC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100%	120	+ 20 (Ref)	5220018641.692	18641.692	0.000357
			5299990302.635	-9697.365	-0.0001830
			5599990235.710	-9764.290	-0.0001744
			5784998115.682	-1884.318	-0.000033
		- 30	5220031571.526	31571.526	0.000605
			5300021641.207	21641.207	0.0004083
			5600024919.116	24919.116	0.0004450
			5785029623.343	29623.343	0.000512
		- 20	5220028754.748	28754.748	0.000551
			5300011110.322	11110.322	0.0002096
			5600010771.104	10771.104	0.0001923
			5785014233.546	14233.546	0.000246
		- 10	5219998234.811	-1765.189	-0.0000338
			5299997160.242	-2839.758	-0.0000536
			5599998022.186	-1977.814	-0.0000353
			5785002213.183	2213.183	0.0000383
		0	5220010347.211	10347.211	0.000198
			5299996343.310	-3656.690	-0.0000690
			5599997321.164	-2678.836	-0.0000478
			5785041811.378	41811.378	0.000723
		+ 10	5219992025.445	-7974.555	-0.0001528
			5299991835.063	-8164.937	-0.0001541
			5599991495.161	-8504.839	-0.0001519
			5784990624.797	-9375.203	-0.0001621
		+ 20	5219992108.713	-7891.287	-0.0001512
			5299990302.635	-9697.365	-0.0001830
			5599990235.710	-9764.290	-0.0001744
			5784990096.706	-9903.294	-0.0001712
		+ 30	5219993554.536	-6445.464	-0.0001235
			5299990840.277	-9159.723	-0.0001728
			5599989032.217	-10967.783	-0.0001959
			5784990096.311	-9903.689	-0.0001712
		+ 40	5219992140.316	-7859.684	-0.0001506

			5299990566.612	-9433.388	-0.0001780
			5599989769.745	-10230.255	-0.0001827
			5784990522.202	-9477.798	-0.0001638
		+ 50	5219991835.255	-8164.745	-0.0001564
			5299993262.507	-6737.493	-0.0001271
			5599994605.246	-5394.754	-0.0000963
			5784996384.212	-3615.788	-0.0000625
115%	138	+ 20	5220002764.666	2764.666	0.000053
			5299992402.377	-7597.623	-0.0001434
			5599991335.243	-8664.757	-0.0001547
			5784988601.401	-11398.599	-0.000197
85%	102	+ 20	5219998114.123	-1885.877	-0.000036
			5299993205.493	-6794.507	-0.0001282
			5599991932.847	-8067.153	-0.0001441
			5784988403.323	-11596.677	-0.000200

7.7. Radiated Spurious Emission Measurement

7.7.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.7.2. Test Procedure Used

KDB 789033 D02v01 – Section G

7.7.3. Test Setting

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Quasi-Peak Measurements below 1GHz

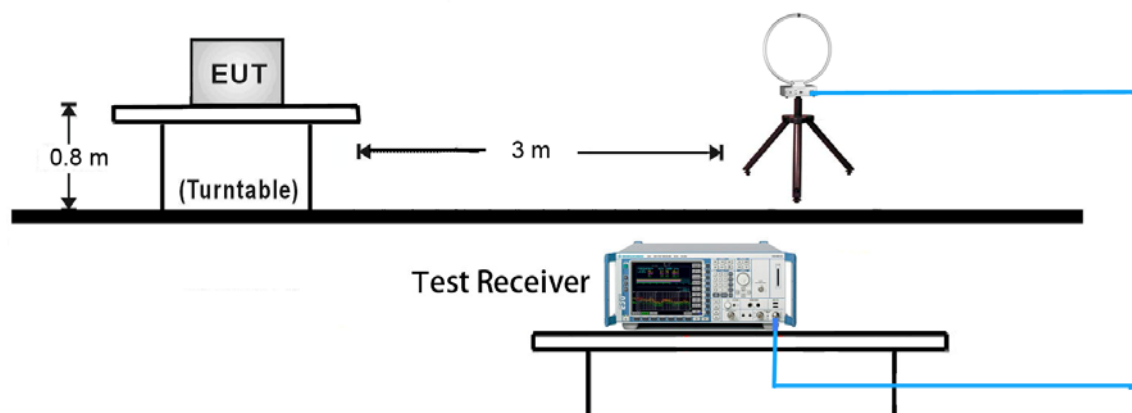
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = 120 kHz
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Average Measurements above 1GHz (Method AD)

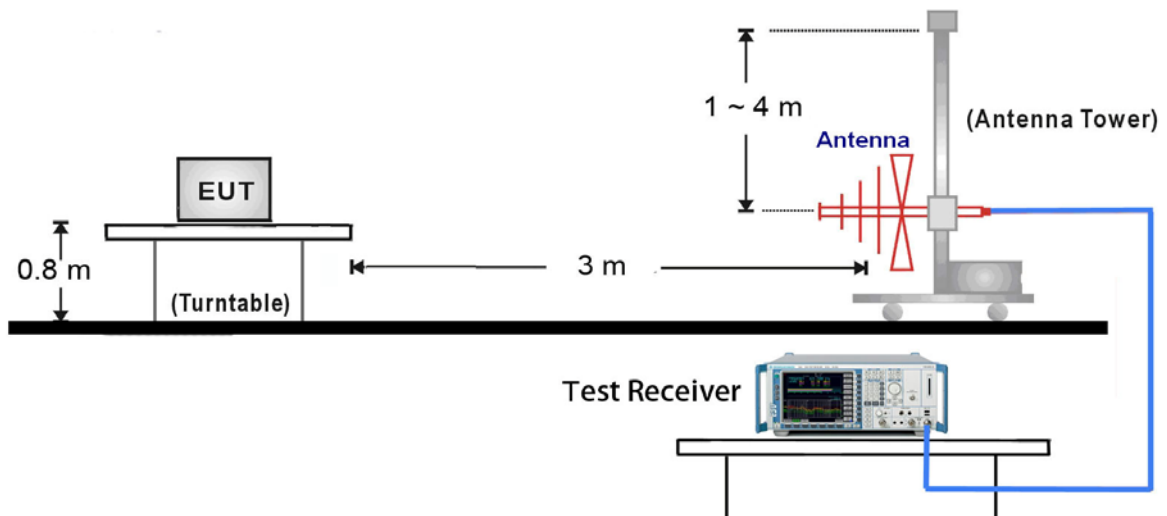
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be $> 2 \times \text{span}/\text{RBW}$)
6. Sweep time = auto
7. Trace was averaged over at 100 sweeps

7.7.4. Test Setup

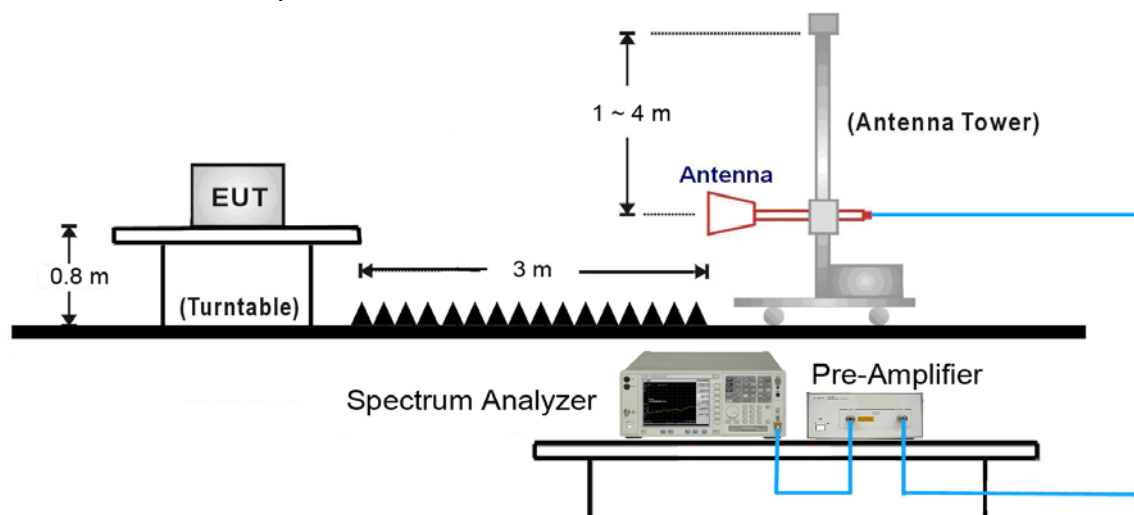
9kHz ~ 30MHz Test Setup:



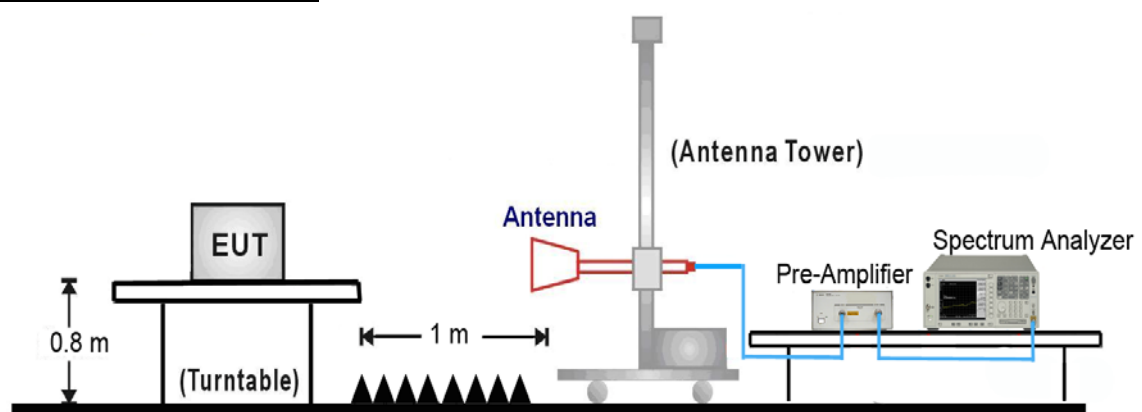
30MHz ~ 1GHz Test Setup:



1GHz ~18GHz Test Setup:



18GHz ~40GHz Test Setup:



7.7.5. Test Result

Test Mode:	802.11n-HT20	Test Site:	AC1
Test Channel:	149	Test Engineer:	Roy Cheng
Test Date	11-20-2014	Relative Humidity	58%
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. The worst case of Radiated Spurious Emission. 3. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	7171.0	36.3	13.6	49.9	88.2	-38.3	Peak	Horizontal
*	7817.0	35.8	15.0	50.8	88.2	-37.4	Peak	Horizontal
	9321.5	35.6	15.4	51.0	74.0	-23.0	Peak	Horizontal
	11490.0	36.2	19.4	55.6	74.0	-18.4	Peak	Horizontal
	11490.2	23.6	19.4	43.1	54.0	-10.9	Average	Horizontal
*	7145.5	37.7	13.5	51.2	88.2	-37.0	Peak	Vertical
*	7774.5	35.2	14.9	50.1	88.2	-38.1	Peak	Vertical
	9389.5	36.5	15.4	51.8	74.0	-22.2	Peak	Vertical
	11490.0	36.1	19.4	55.5	74.0	-18.5	Peak	Vertical
	11491.0	23.7	19.4	43.1	54.0	-10.9	Average	Vertical

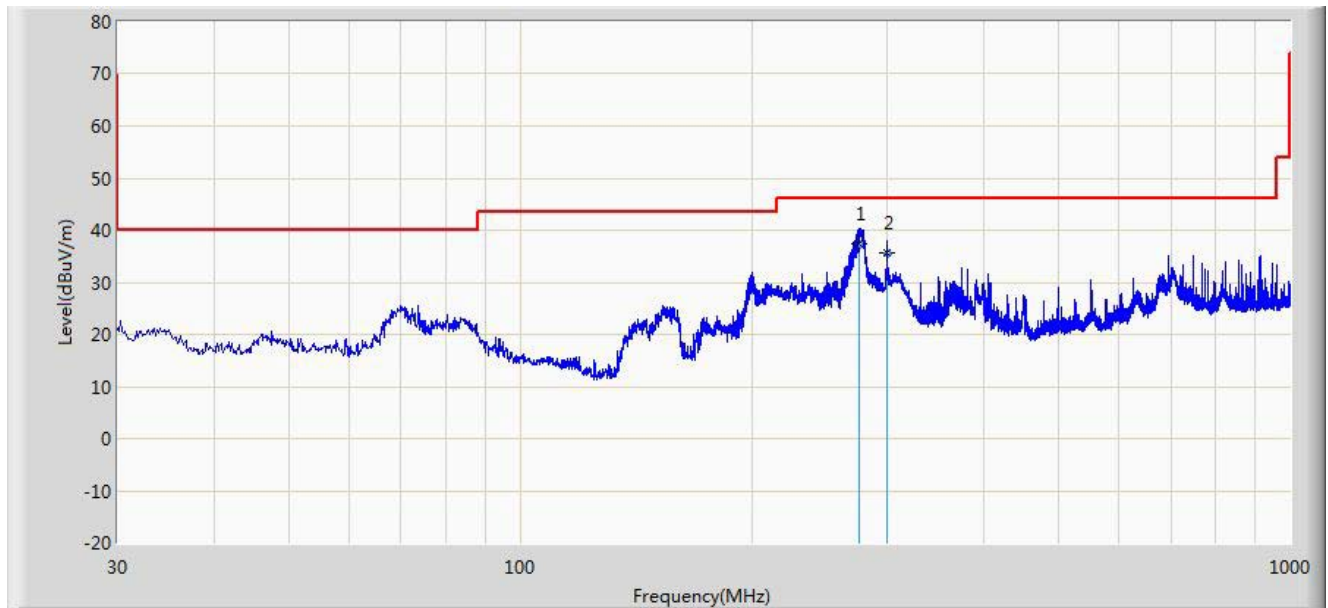
Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

The worst case of Radiated Emission below 1GHz:

Site: AC1	Time: 2014/12/02 - 16:37
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: VULB9162_0.03-8GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Worse Case Mode : 802.11a at channel 5700MHz	

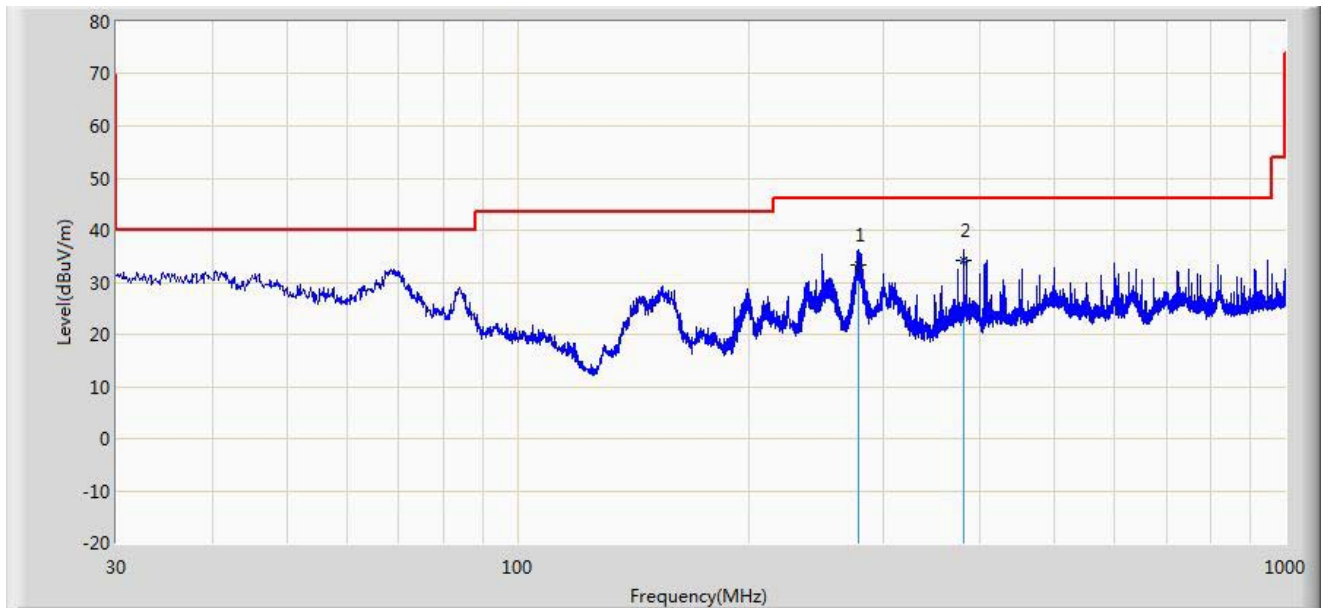


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	276.142	37.300	23.570	-8.700	46.000	13.730	QP
2		299.921	35.593	21.470	-10.407	46.000	14.123	QP

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2014/12/02 - 16:38
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: VULB9162_0.03-8GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Worse Case Mode : 802.11a at channel 5700MHz	

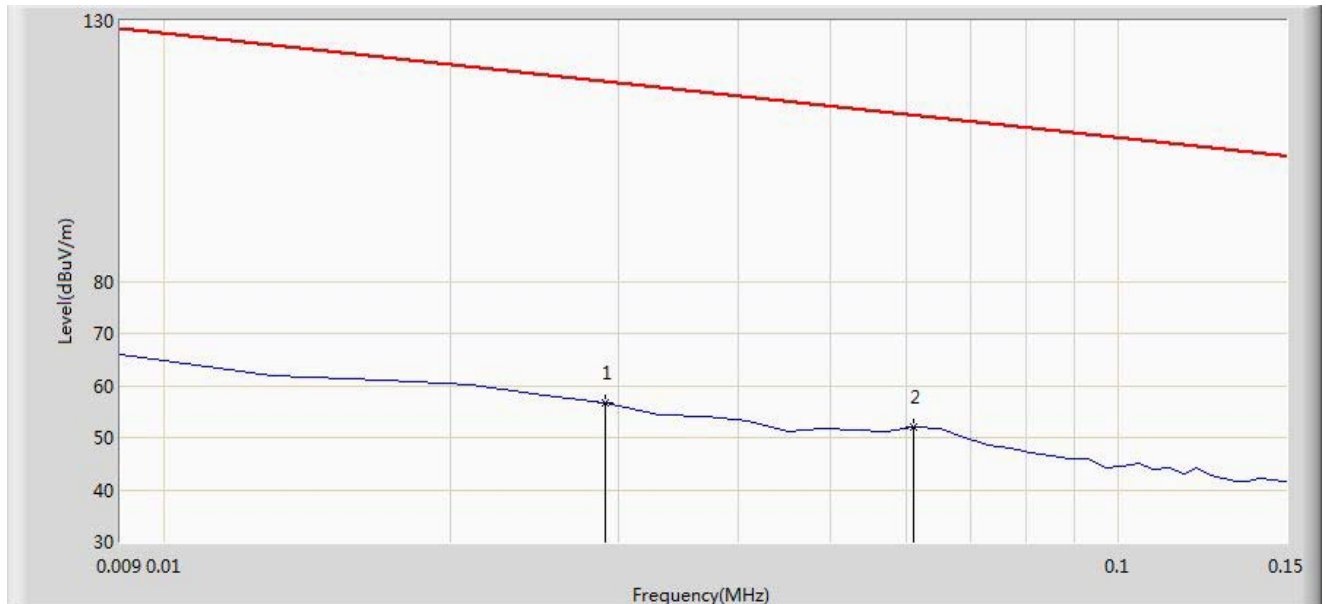


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		277.715	33.471	19.716	-12.529	46.000	13.755	QP
2	*	380.804	34.331	18.520	-11.669	46.000	15.810	QP

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2014/12/01 - 18:28
Limit: FCC_Part15.209_RE(3m)	Engineer: Roy Cheng
Probe: FMZB1519_0.009-30MHz	Polarity: Face on
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 9kHz~30MHz.	

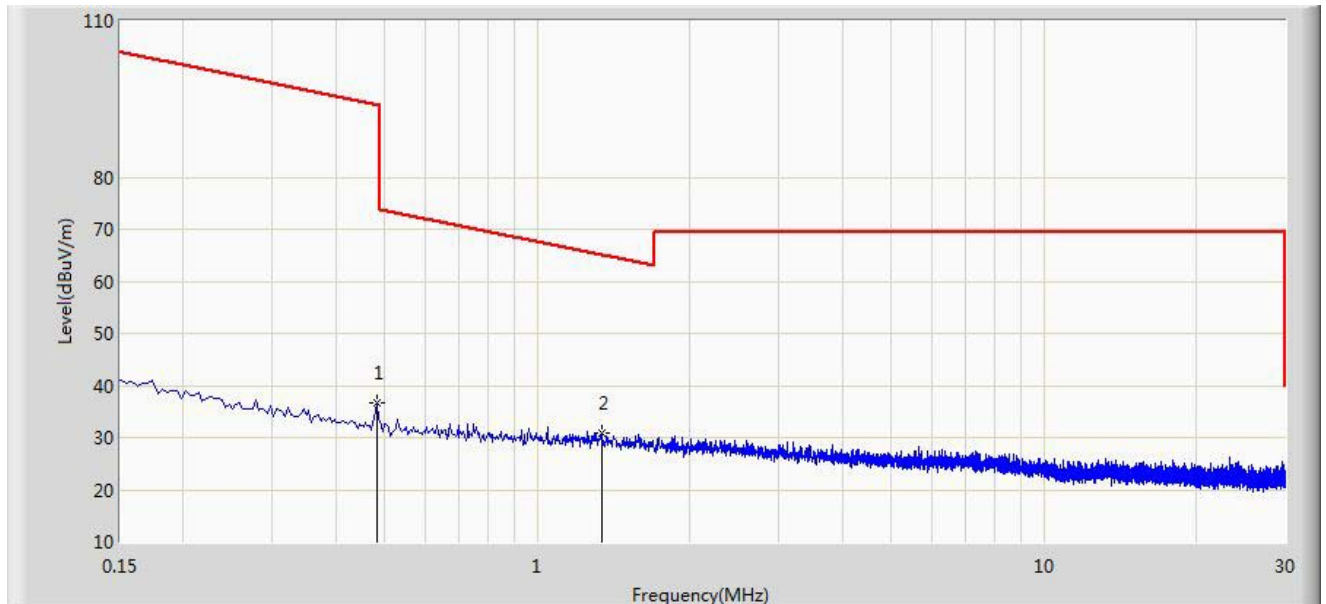


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.029	56.720	35.671	-61.622	118.342	21.049	QP
2	*	0.061	51.902	31.591	-59.985	111.887	20.311	QP

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2014/12/01 - 18:29
Limit: FCC_Part15.209_RE(3m)	Engineer: Roy Cheng
Probe: FMZB1519_0.009-30MHz	Polarity: Face on
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 9kHz~30MHz.	

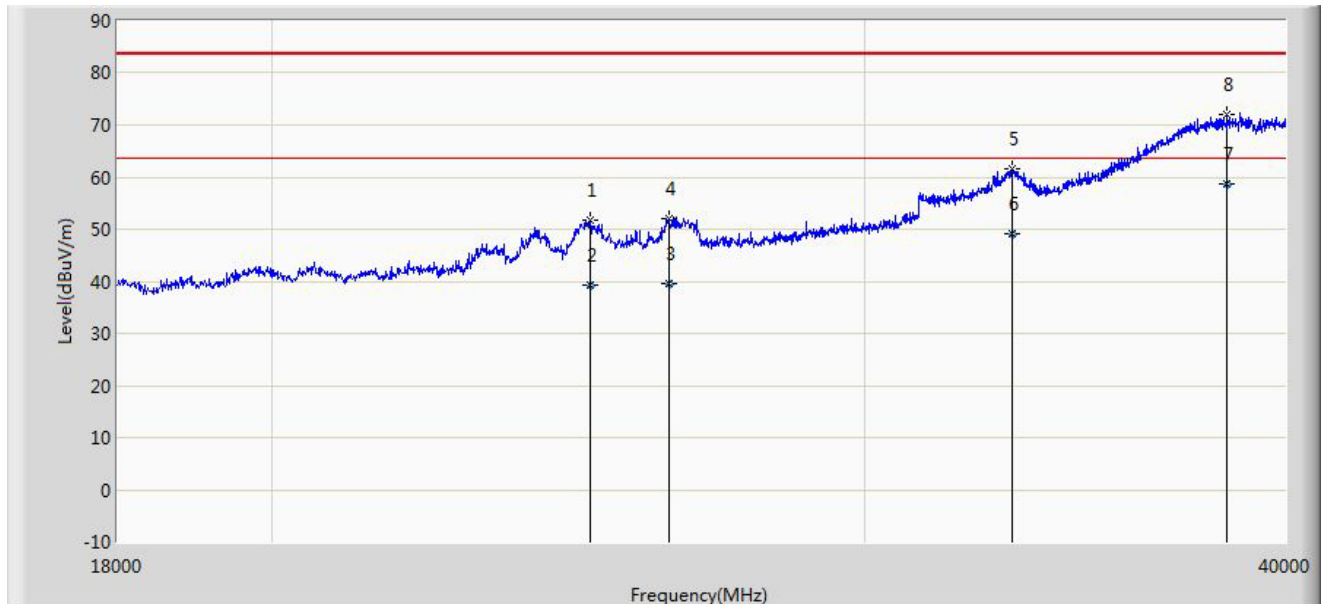


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.482	36.594	16.194	-57.348	93.943	20.401	QP
2	*	1.338	31.005	10.516	-34.094	65.099	20.489	QP

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2014/12/01 - 21:12
Limit: FCC_Part15.209_RE(1m)	Engineer: Roy Cheng
Probe: BBHA9170_18-40GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 18GHz~40GHz.	

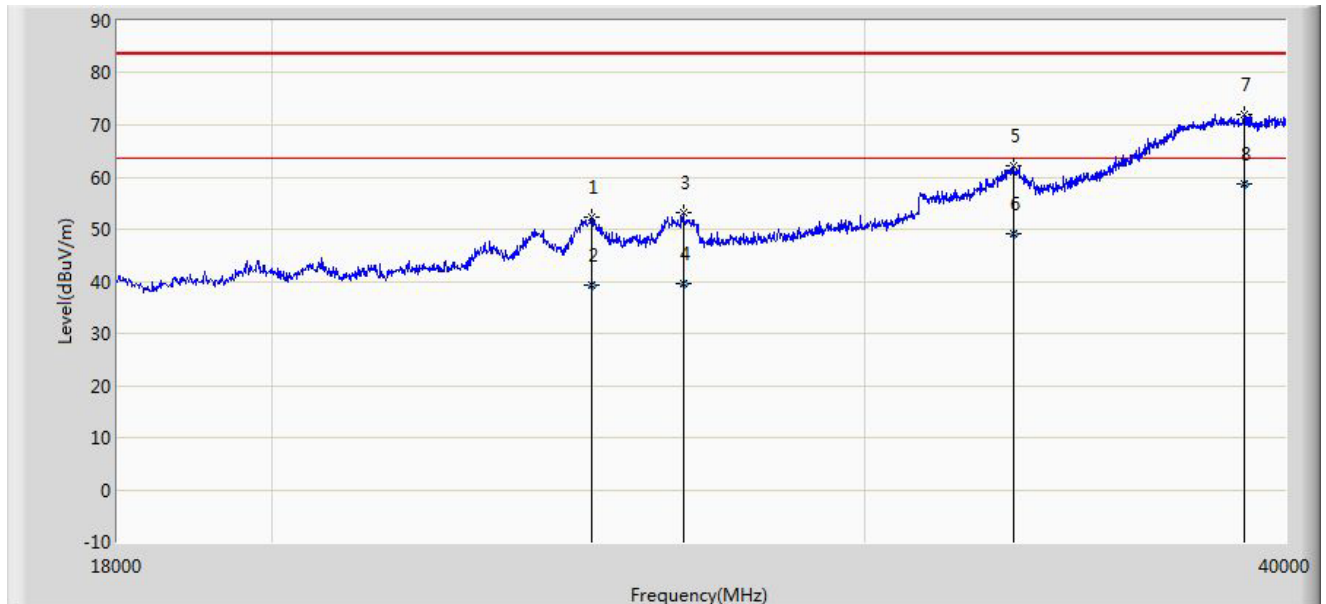


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		24864.000	51.876	37.101	-31.624	83.500	14.775	PK
2		24864.088	39.255	24.480	-24.245	63.500	14.775	AV
3		26260.988	39.509	24.090	-23.991	63.500	15.419	AV
4		26261.000	51.996	36.577	-31.504	83.500	15.419	PK
5		33180.000	61.501	39.980	-21.999	83.500	21.521	PK
6		33180.363	49.081	27.560	-14.419	63.500	21.521	AV
7	*	38437.980	58.563	31.230	-4.937	63.500	27.333	AV
8		38438.000	72.071	44.738	-11.429	83.500	27.333	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Site: AC1	Time: 2014/12/01 - 21:15
Limit: FCC_Part15.209_RE(1m)	Engineer: Roy Cheng
Probe: BBHA9170_18-40GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 18GHz~40GHz.	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		24886.000	52.363	37.578	-31.137	83.500	14.785	PK
2		24886.970	39.274	24.489	-24.226	63.500	14.785	AV
3		26503.000	53.267	37.247	-30.233	83.500	16.020	PK
4		26503.877	39.632	23.610	-23.868	63.500	16.022	AV
5		33213.000	62.169	40.632	-21.331	83.500	21.538	PK
6		33213.989	49.128	27.590	-14.372	63.500	21.538	AV
7		38900.000	72.136	44.251	-11.364	83.500	27.885	PK
8	*	38900.756	58.755	30.870	-4.745	63.500	27.885	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

7.8. Radiated Restricted Band Edge Measurement

7.8.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	⁽²⁾

For 15.407(b) requirement:

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBuV/m)
5150 - 5350	-27	68.2
5470 - 5725	-27	68.2
5725 - 5850	-17	78.2
	-27	68.2

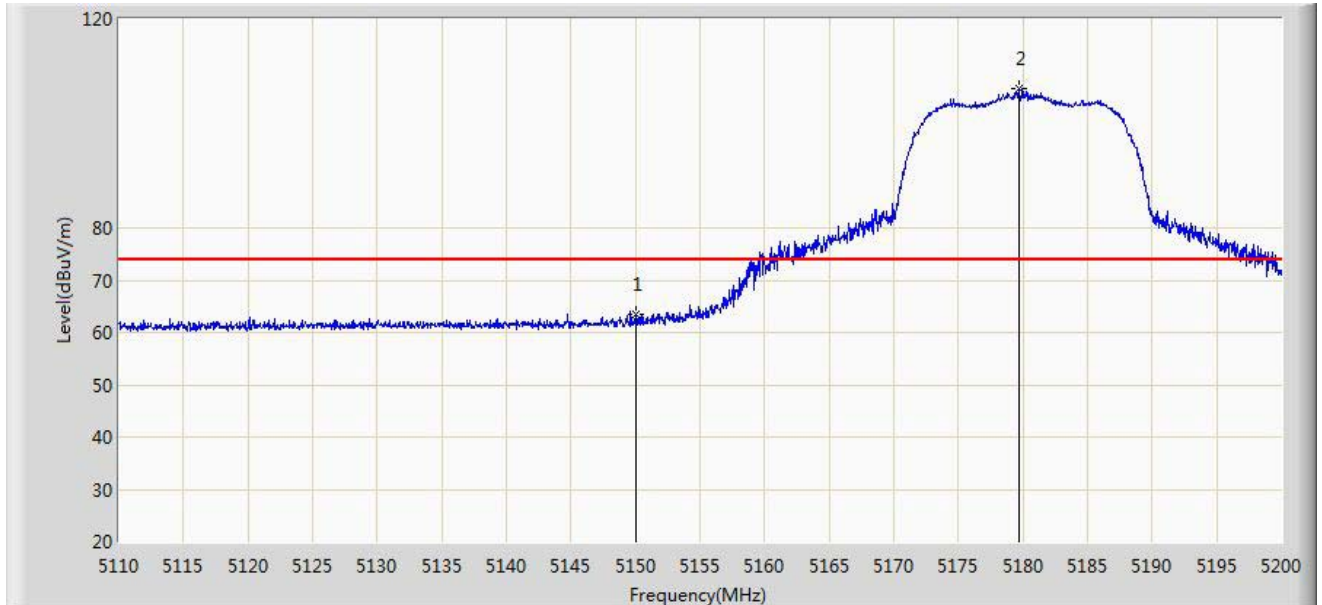
Note: Refer to KDB 789033 D02v01 G)2)c), as specified in § 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a maximum emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in § 15.407(b)(4)). However, an out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.8.2. Test Result of Radiated Restricted Band Edge

Site: AC1	Time: 2014/11/29 - 16:13
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5180MHz	

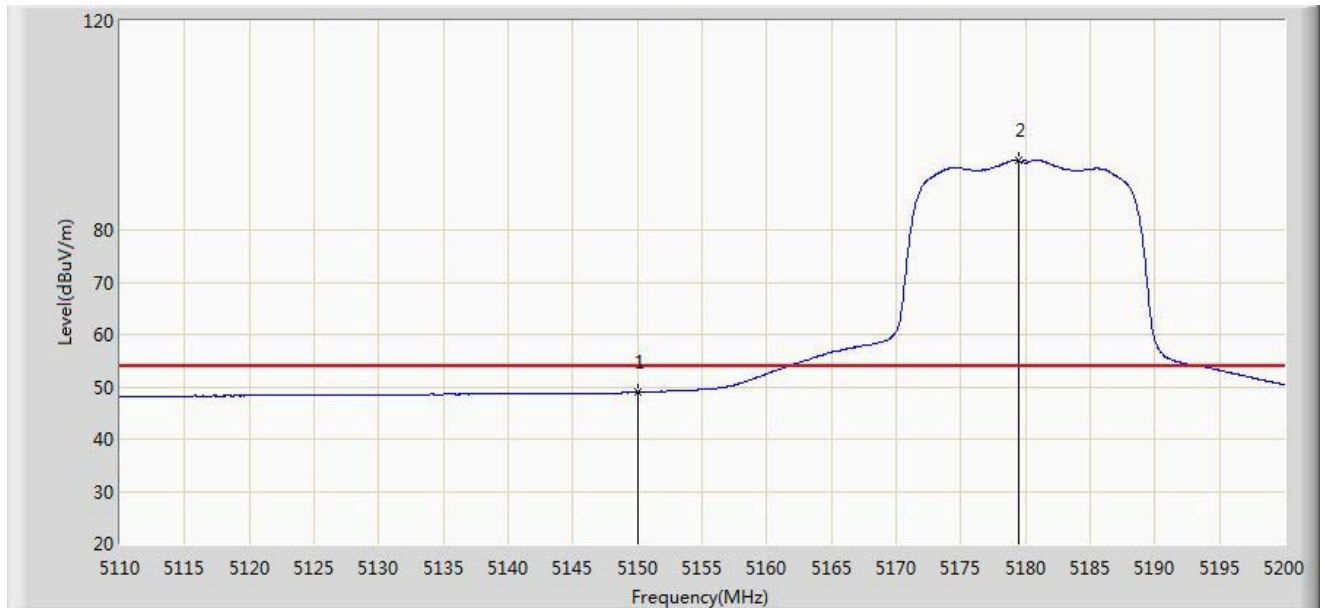


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	63.337	56.161	-10.663	74.000	7.176	PK
2	*	5179.705	106.652	99.596	N/A	N/A	7.056	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5180MHz	

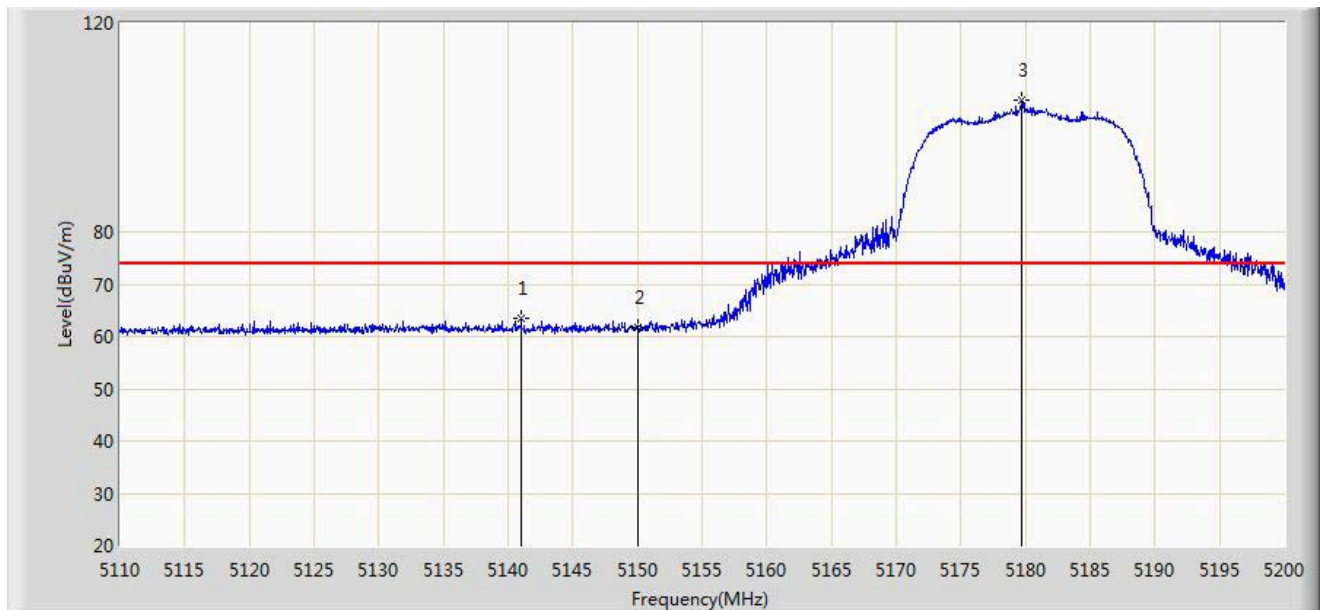


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	48.921	41.745	-5.079	54.000	7.176	AV
2	*	5179.525	93.199	86.142	N/A	N/A	7.057	AV

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:19
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5180MHz	

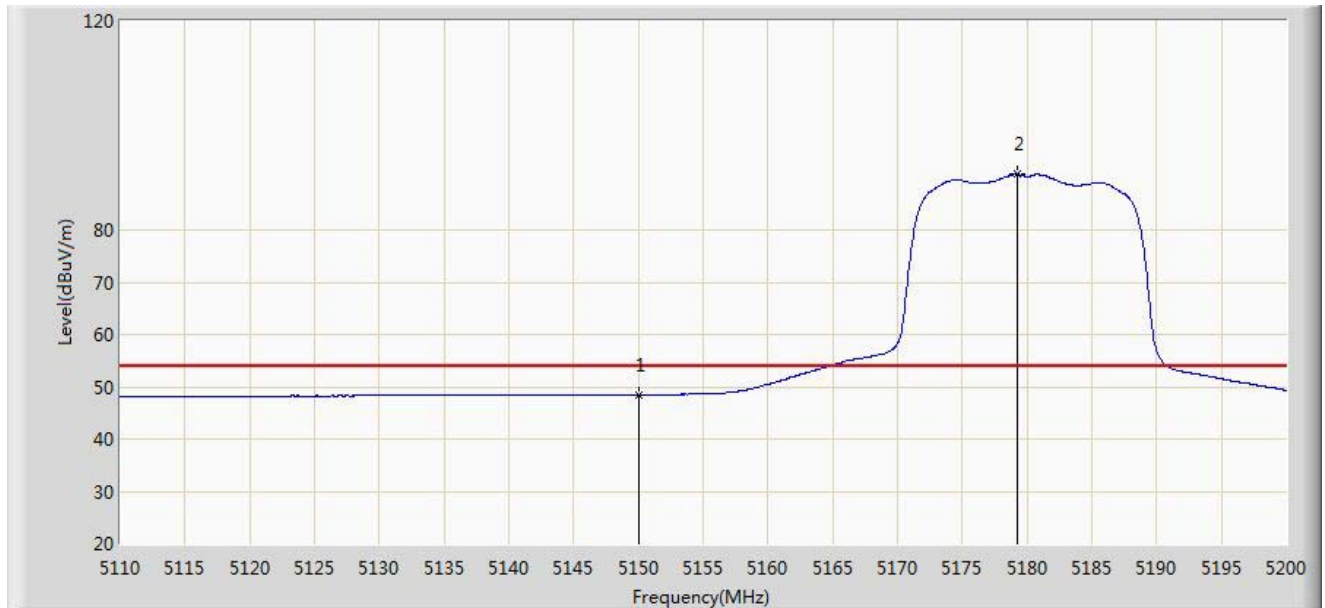


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5141.005	63.619	56.440	-10.381	74.000	7.180	PK
2		5150.000	61.609	54.433	-12.391	74.000	7.176	PK
3	*	5179.705	105.087	98.031	N/A	N/A	7.056	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:23
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5180MHz	

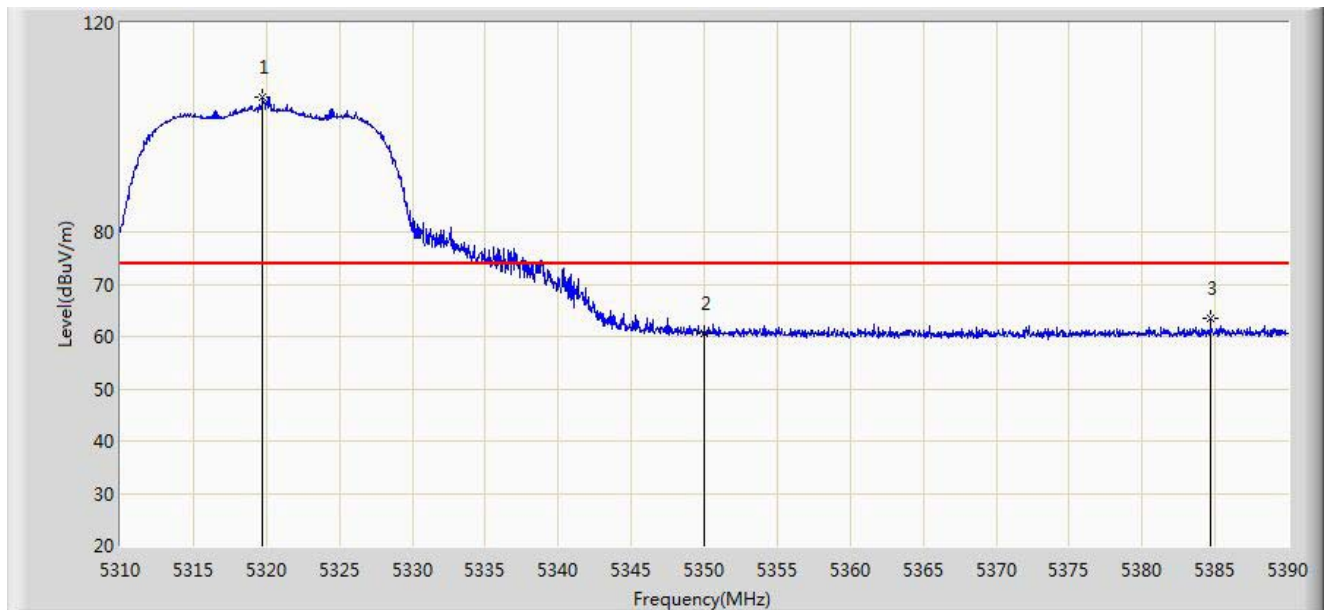


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	48.416	41.240	-5.584	54.000	7.176	AV
2	*	5179.255	90.655	83.596	N/A	N/A	7.059	AV

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:24
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5320MHz	

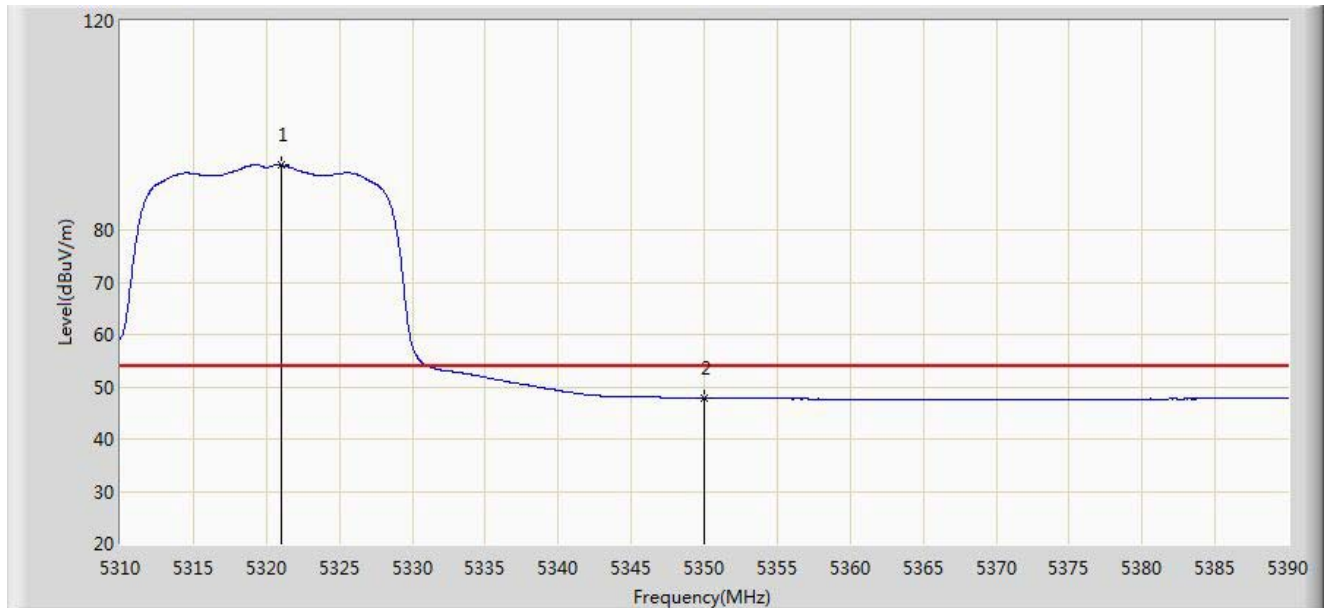


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5319.720	105.934	99.223	N/A	N/A	6.711	PK
2		5350.000	60.683	53.878	-13.317	74.000	6.805	PK
3		5384.680	63.366	56.453	-10.634	74.000	6.913	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:29
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5320MHz	

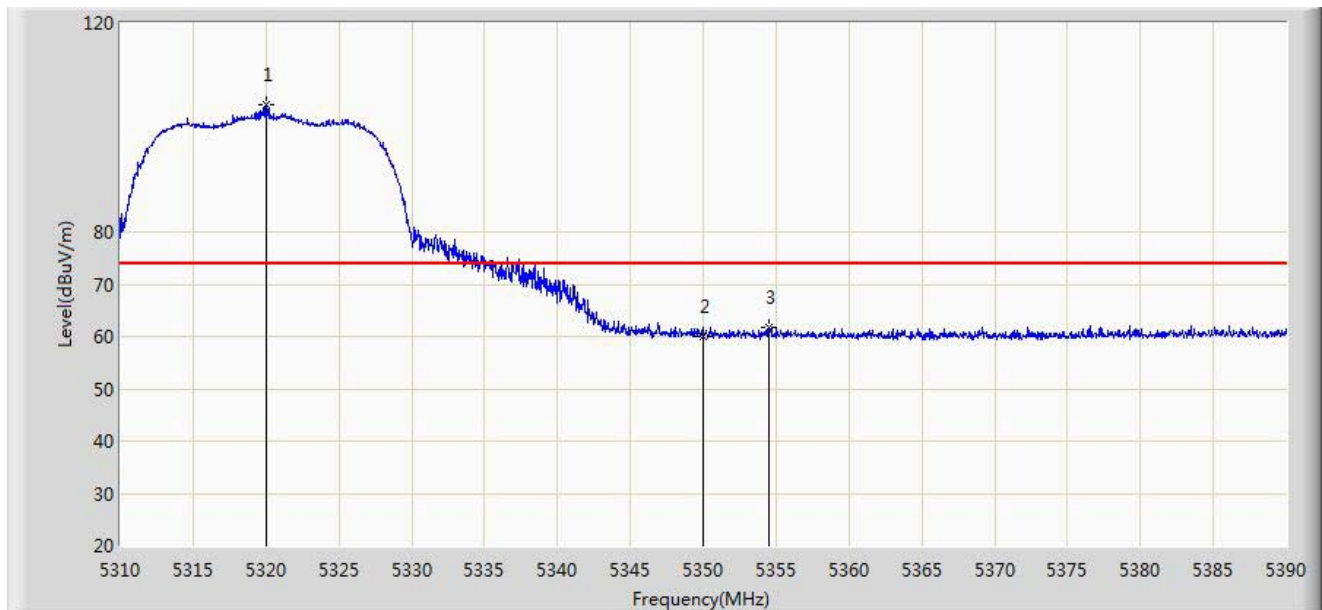


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5321.040	92.439	85.723	N/A	N/A	6.716	AV
2		5350.000	47.927	41.122	-6.073	54.000	6.805	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:29
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5320MHz	

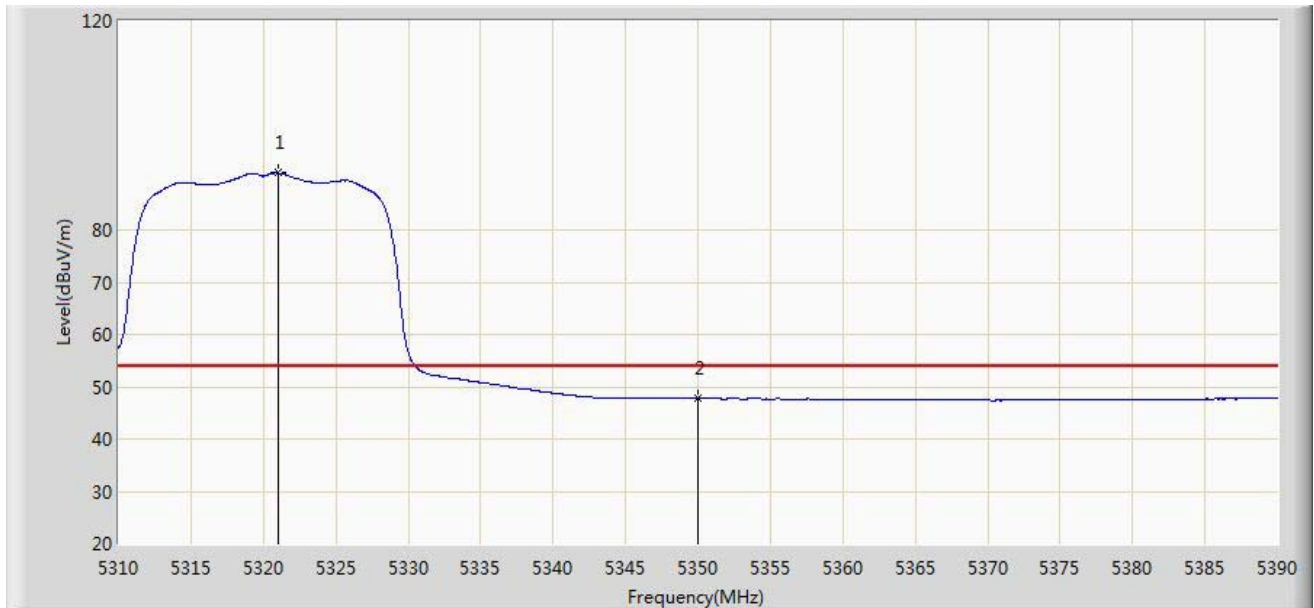


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5320.040	104.213	97.501	N/A	N/A	6.713	PK
2		5350.000	60.080	53.275	-13.920	74.000	6.805	PK
3		5354.560	61.796	54.978	-12.204	74.000	6.819	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:32
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5320MHz	

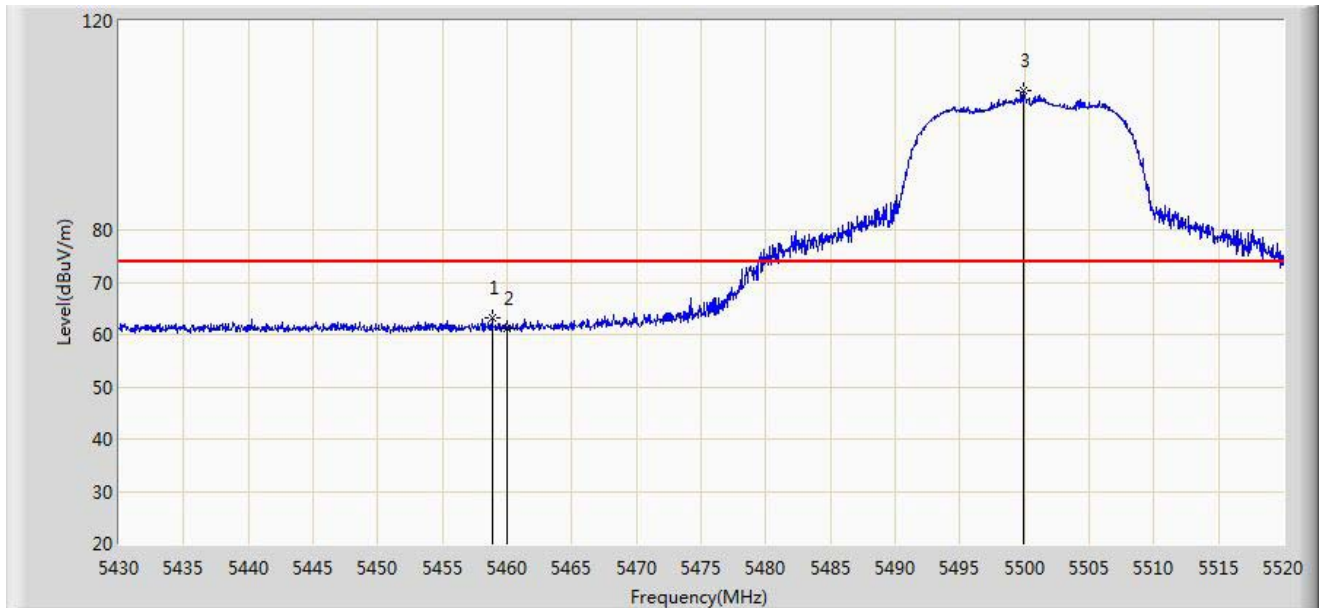


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5321.040	90.892	84.176	N/A	N/A	6.716	AV
2		5350.000	47.710	40.905	-6.290	54.000	6.805	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:33
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5500MHz	

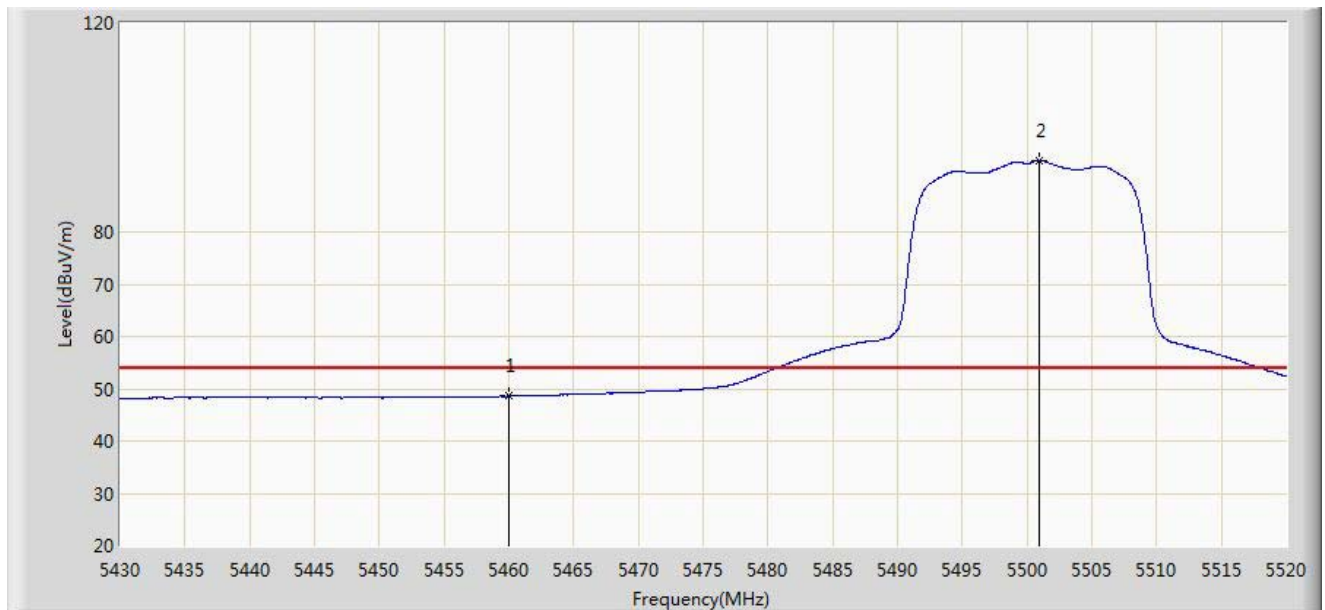


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5458.845	63.259	56.260	-10.741	74.000	6.999	PK
2		5460.000	61.214	54.217	-12.786	74.000	6.998	PK
3	*	5499.975	106.572	99.632	N/A	N/A	6.940	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:38
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5500MHz	

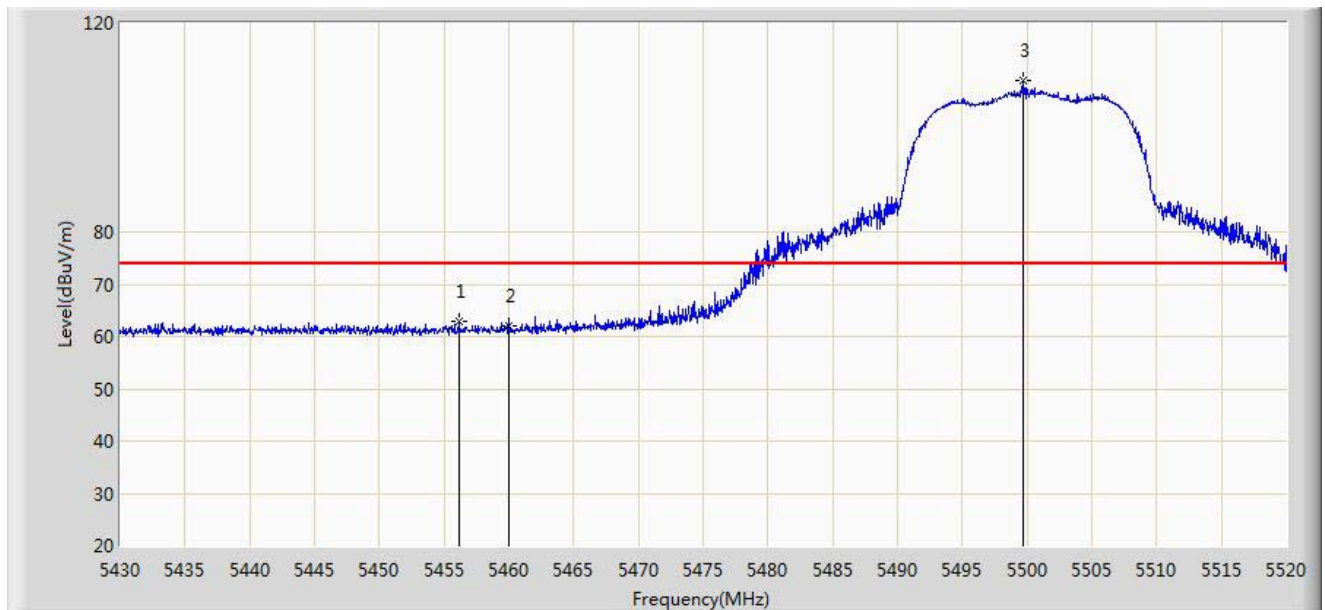


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5460.000	48.590	41.593	-5.410	54.000	6.998	AV
2	*	5500.920	93.585	86.646	N/A	N/A	6.939	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:38
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5500MHz	

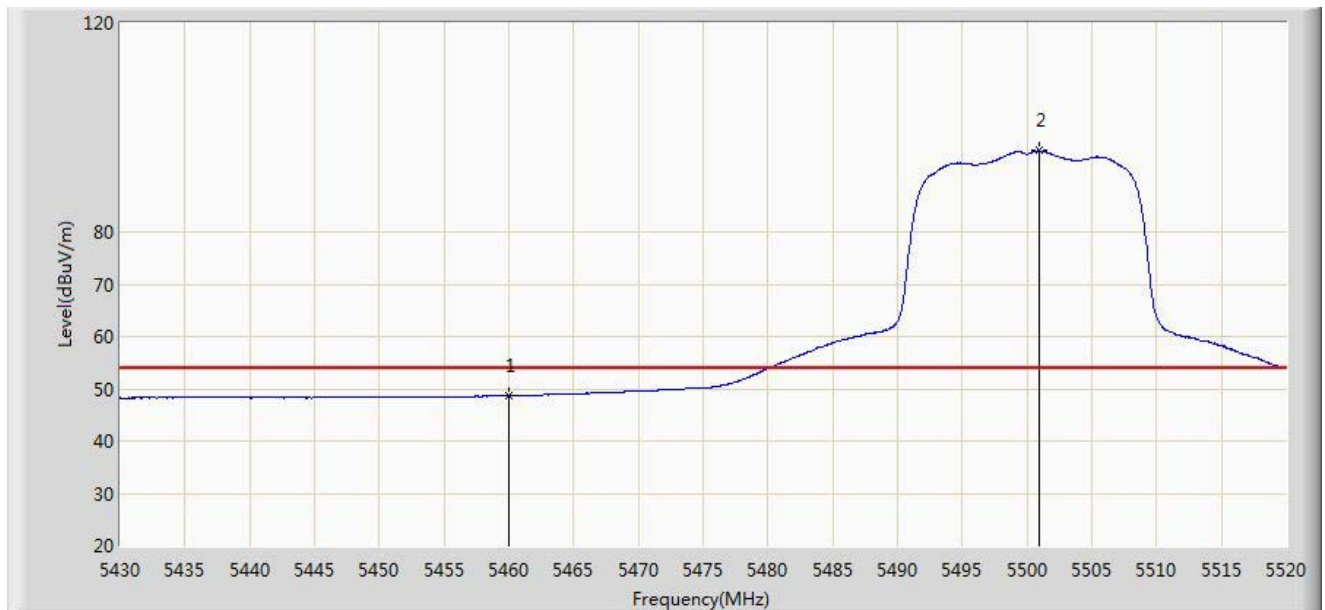


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5456.145	62.923	55.919	-11.077	74.000	7.003	PK
2		5460.000	61.914	54.917	-12.086	74.000	6.998	PK
3	*	5499.660	108.995	102.055	N/A	N/A	6.940	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:41
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5500MHz	

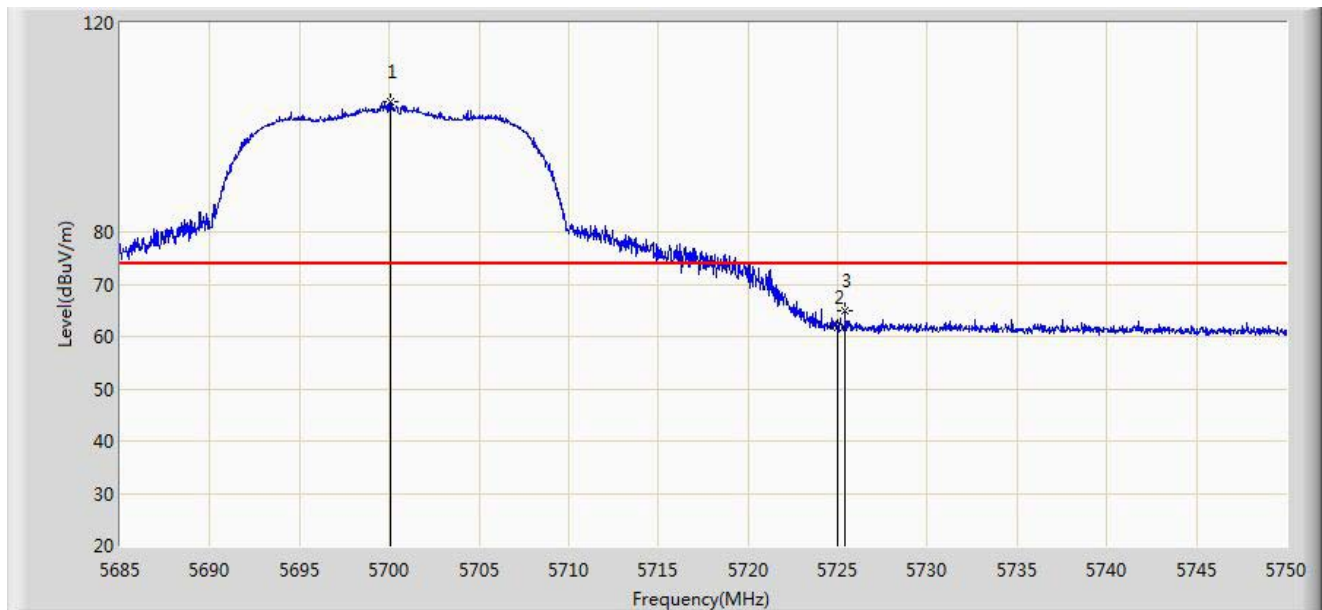


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5460.000	48.659	41.662	-5.341	54.000	6.998	AV
2	*	5500.920	95.509	88.570	N/A	N/A	6.939	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:42
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5700MHz	

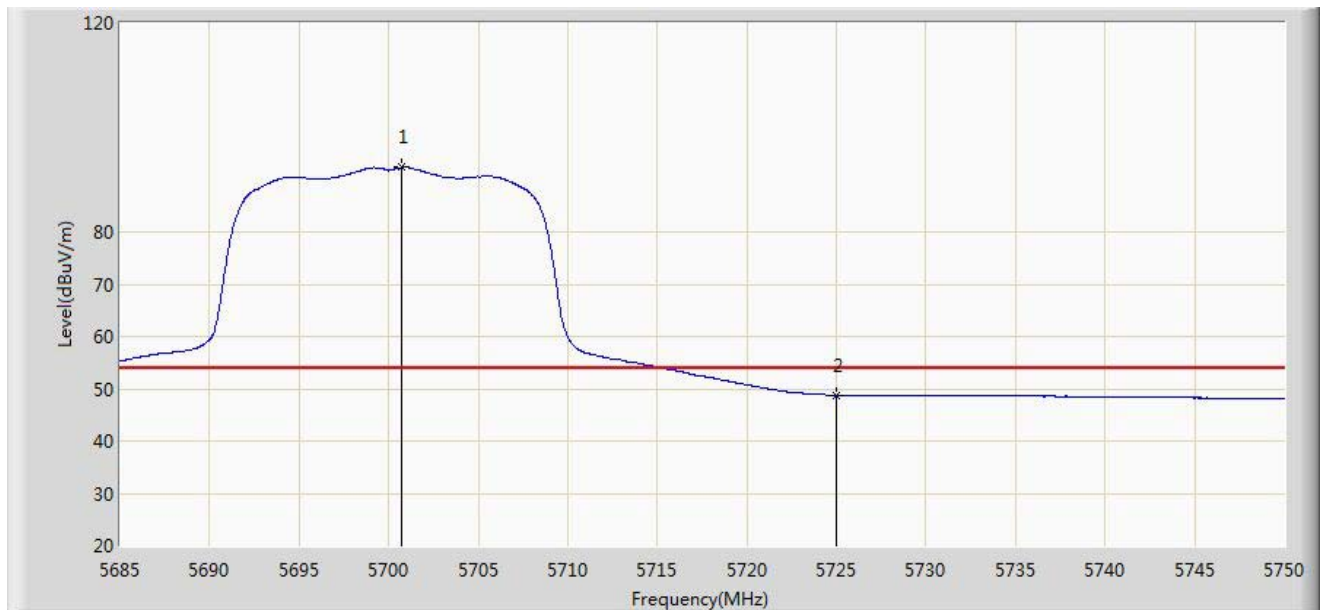


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5700.047	104.928	97.193	N/A	N/A	7.735	PK
2		5725.000	61.860	54.069	-12.140	74.000	7.791	PK
3		5725.430	65.069	57.277	-8.931	74.000	7.792	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:45
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5700MHz	

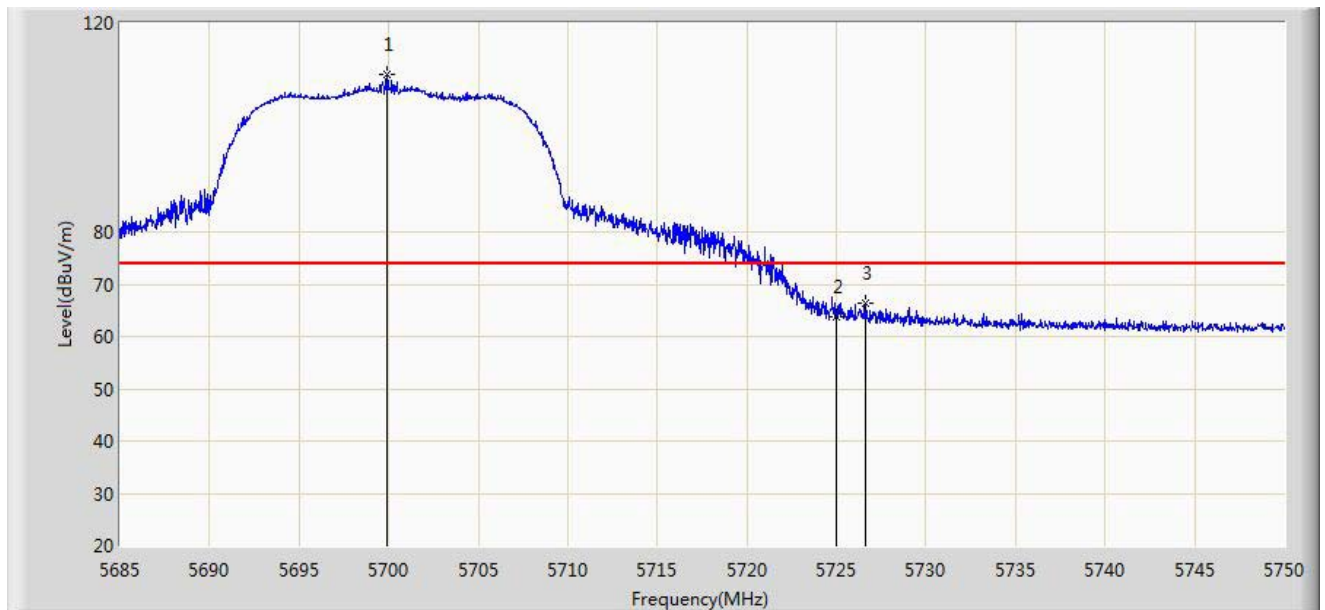


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5700.730	92.352	84.616	N/A	N/A	7.737	AV
2		5725.000	48.787	40.996	-5.213	54.000	7.791	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:46
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5700MHz	

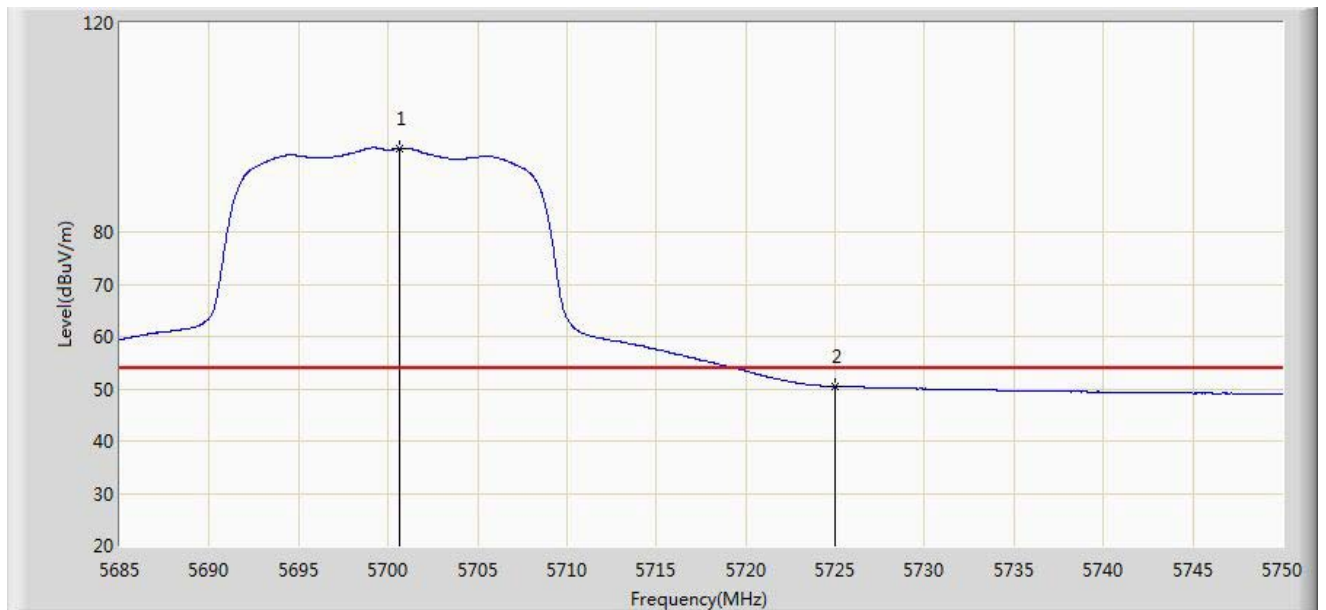


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5699.885	110.255	102.520	N/A	N/A	7.735	PK
2		5725.000	63.812	56.021	-10.188	74.000	7.791	PK
3		5726.632	66.359	58.565	-7.641	74.000	7.794	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:49
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5700MHz	

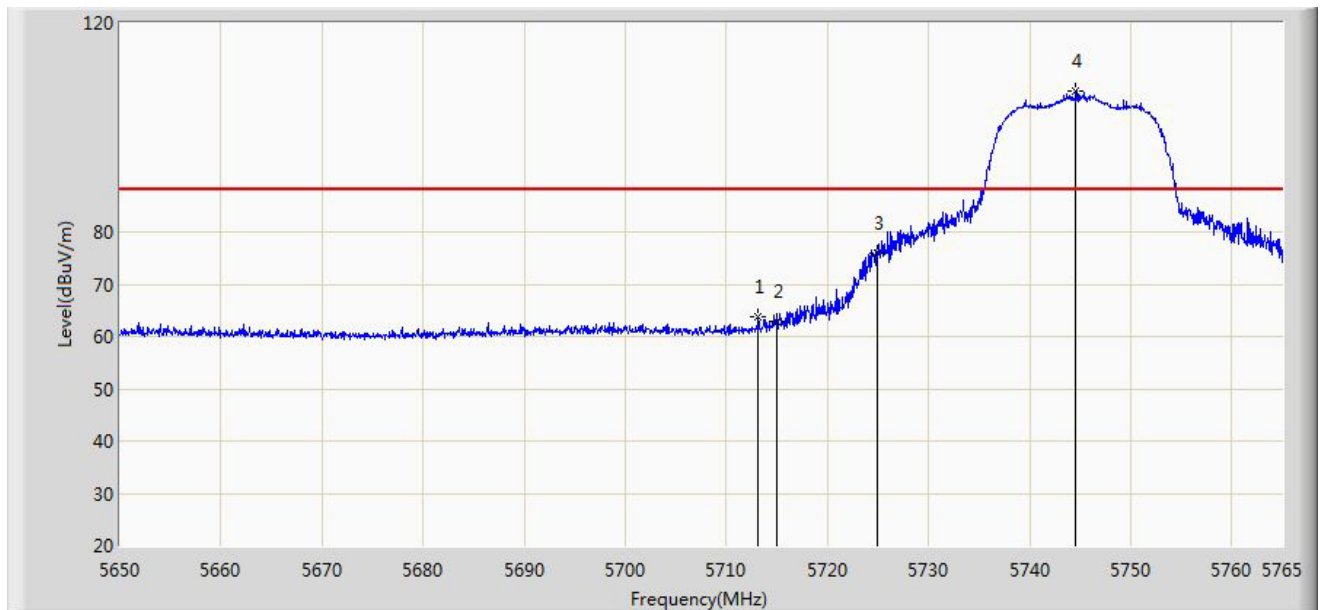


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5700.632	96.019	88.283	N/A	N/A	7.737	AV
2		5725.000	50.406	42.615	-3.594	54.000	7.791	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:50
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5745MHz	

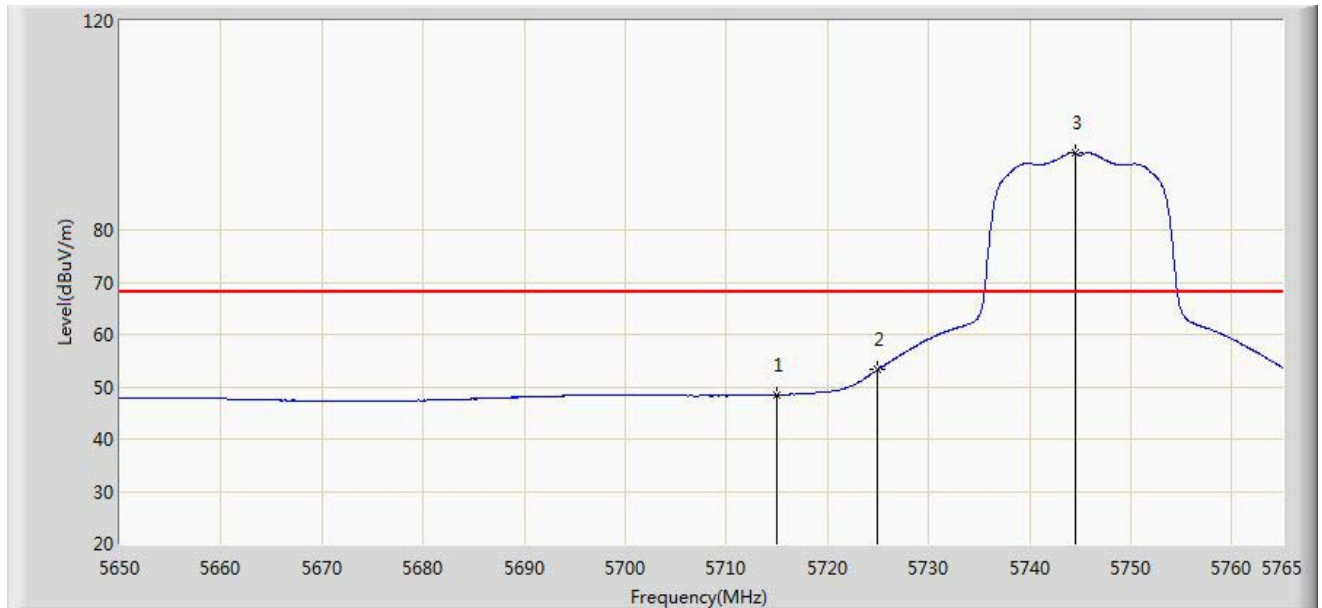


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5713.135	63.873	56.105	-24.327	88.200	7.768	PK
2		5715.000	62.859	55.087	-25.341	88.200	7.772	PK
3		5725.000	75.970	68.179	-22.230	98.200	7.791	PK
4	*	5744.587	106.815	98.983	N/A	N/A	7.832	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:55
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5745MHz	

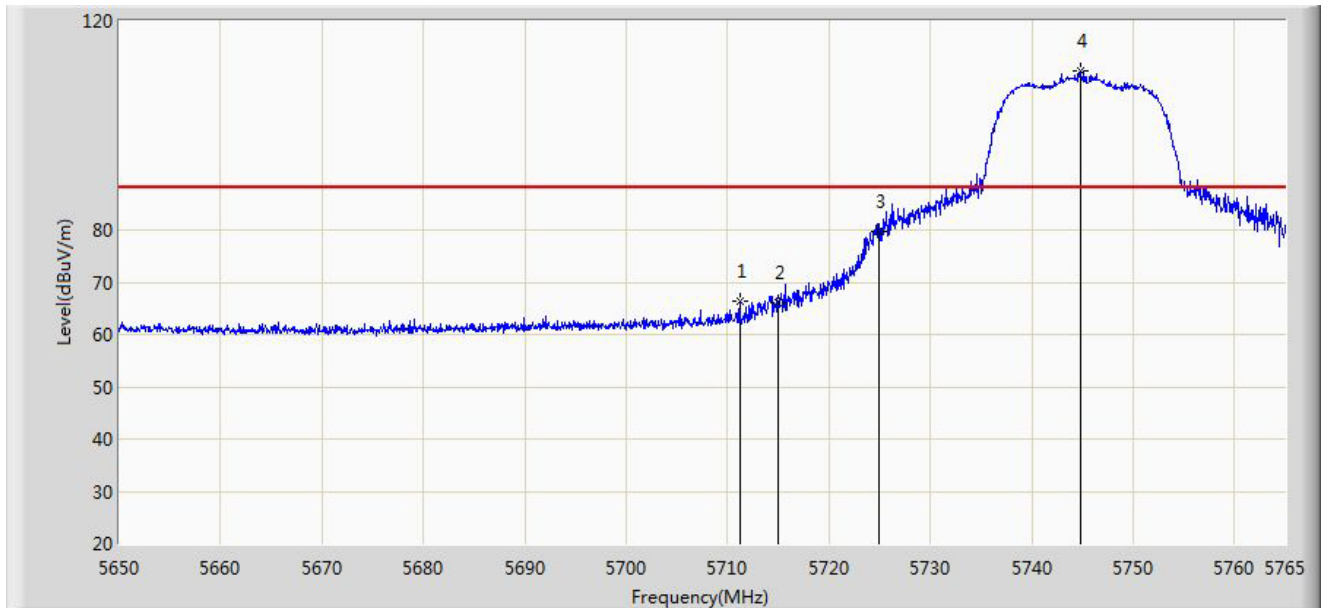


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5715.000	48.456	40.684	-19.744	68.200	7.772	AV
2		5725.000	53.266	45.475	-24.934	78.200	7.791	AV
3	*	5744.530	94.703	86.872	N/A	N/A	7.831	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:56
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5745MHz	

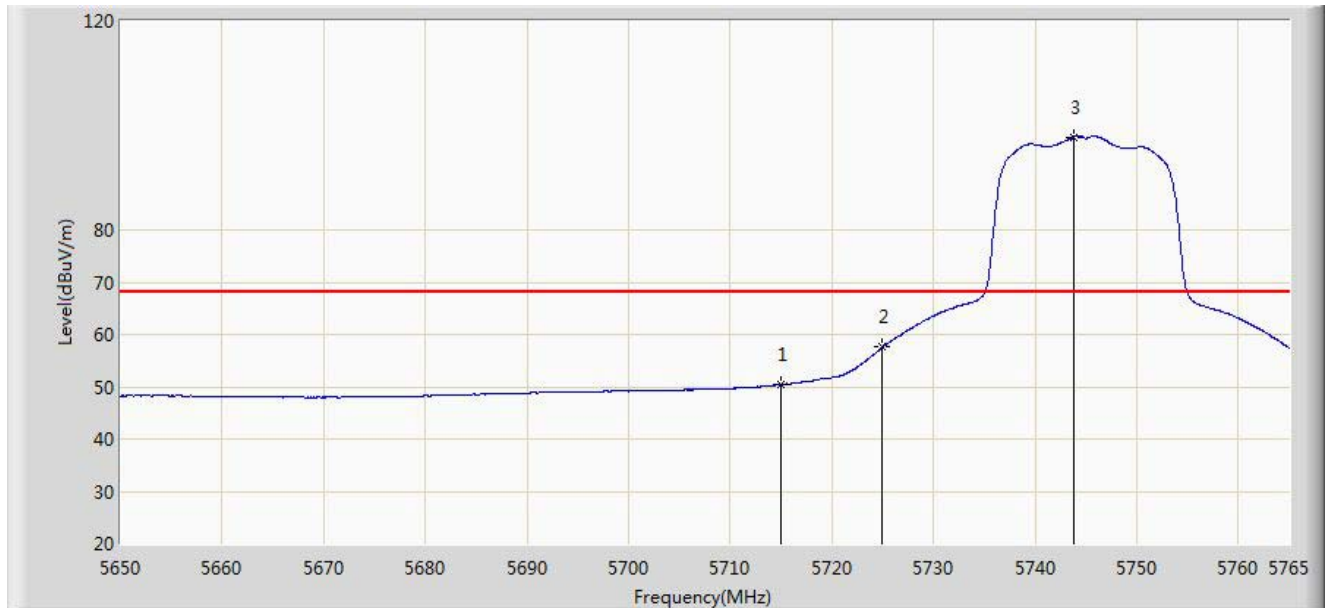


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5711.180	66.498	58.734	-21.702	88.200	7.764	PK
2		5715.000	65.996	58.224	-22.204	88.200	7.772	PK
3		5725.000	79.756	71.965	-18.444	98.200	7.791	PK
4	*	5744.760	110.401	102.569	N/A	N/A	7.832	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 16:59
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5745MHz	

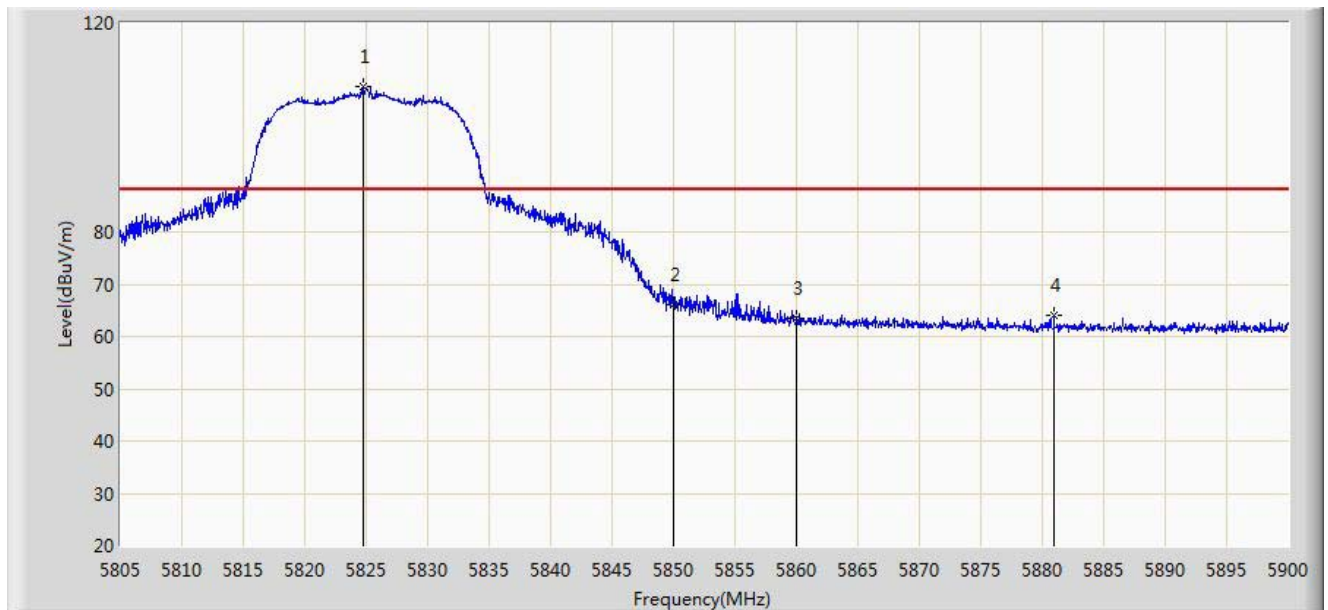


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5715.000	50.410	42.638	-17.790	68.200	7.772	AV
2		5725.000	57.551	49.760	-20.649	78.200	7.791	AV
3	*	5743.783	97.806	89.976	N/A	N/A	7.830	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:00
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5825MHz	

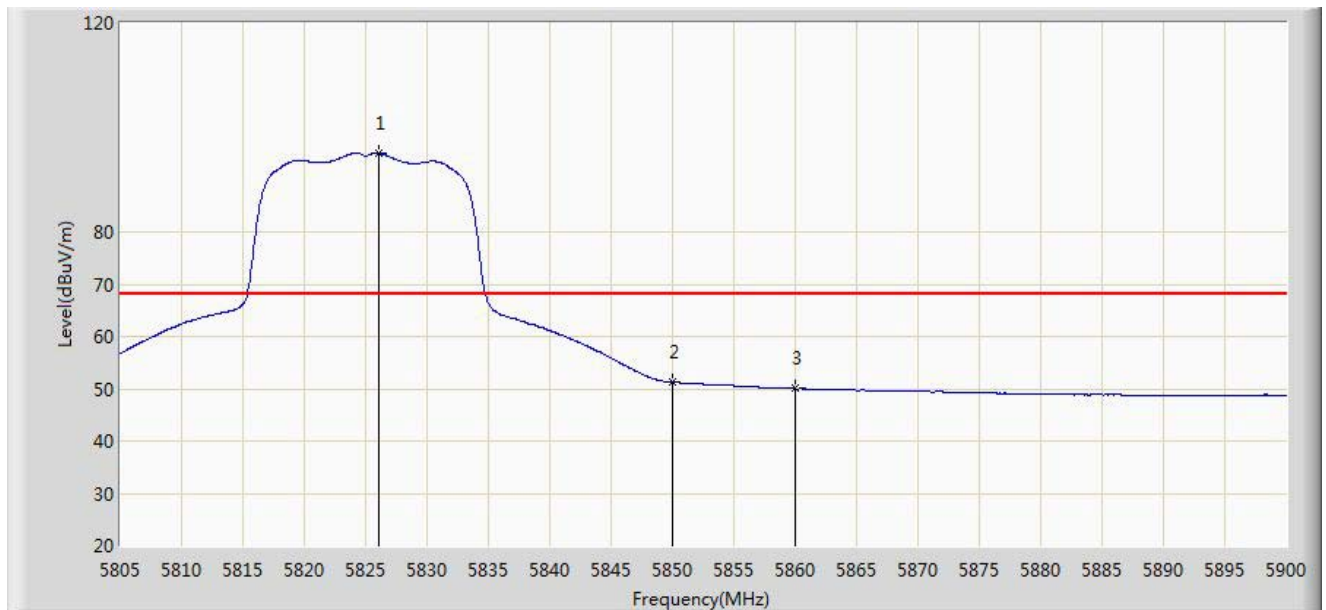


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5824.760	107.873	99.823	N/A	N/A	8.050	PK
2		5850.000	66.159	58.025	-32.041	98.200	8.134	PK
3		5860.000	63.536	55.347	-24.664	88.200	8.189	PK
4		5880.953	64.073	55.810	-24.127	88.200	8.262	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:06
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5825MHz	

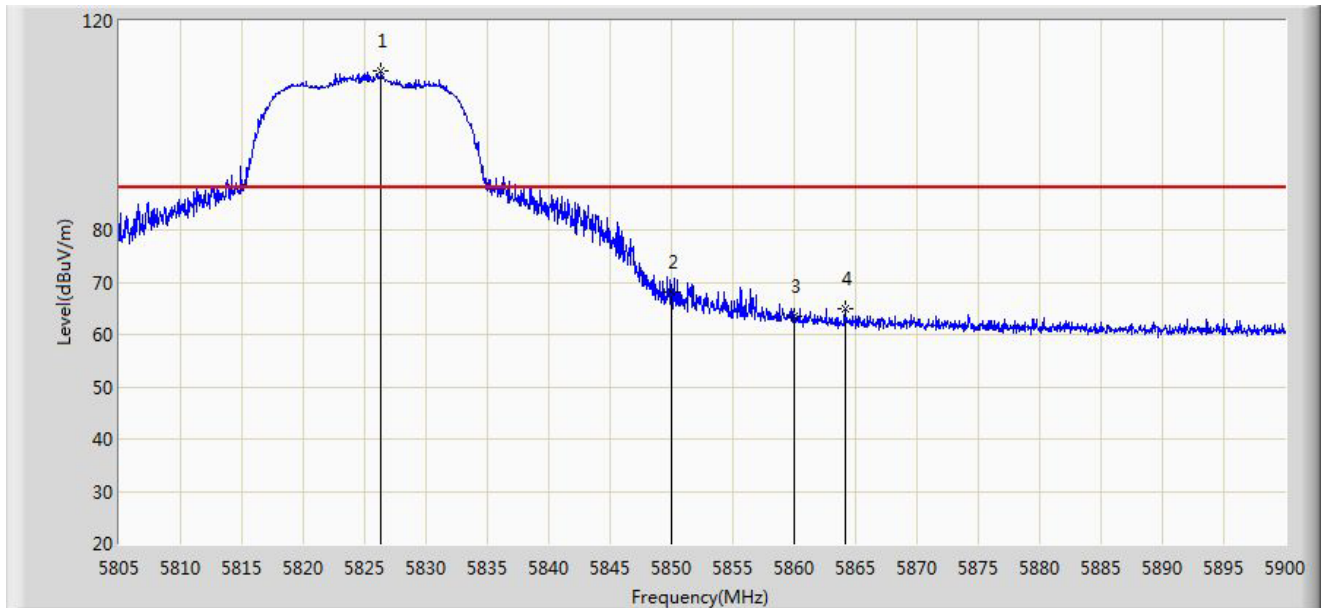


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5826.090	95.092	87.040	N/A	N/A	8.053	AV
2		5850.000	51.259	43.125	-26.941	78.200	8.134	AV
3		5860.000	50.031	41.842	-18.169	68.200	8.189	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:07
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5825MHz	

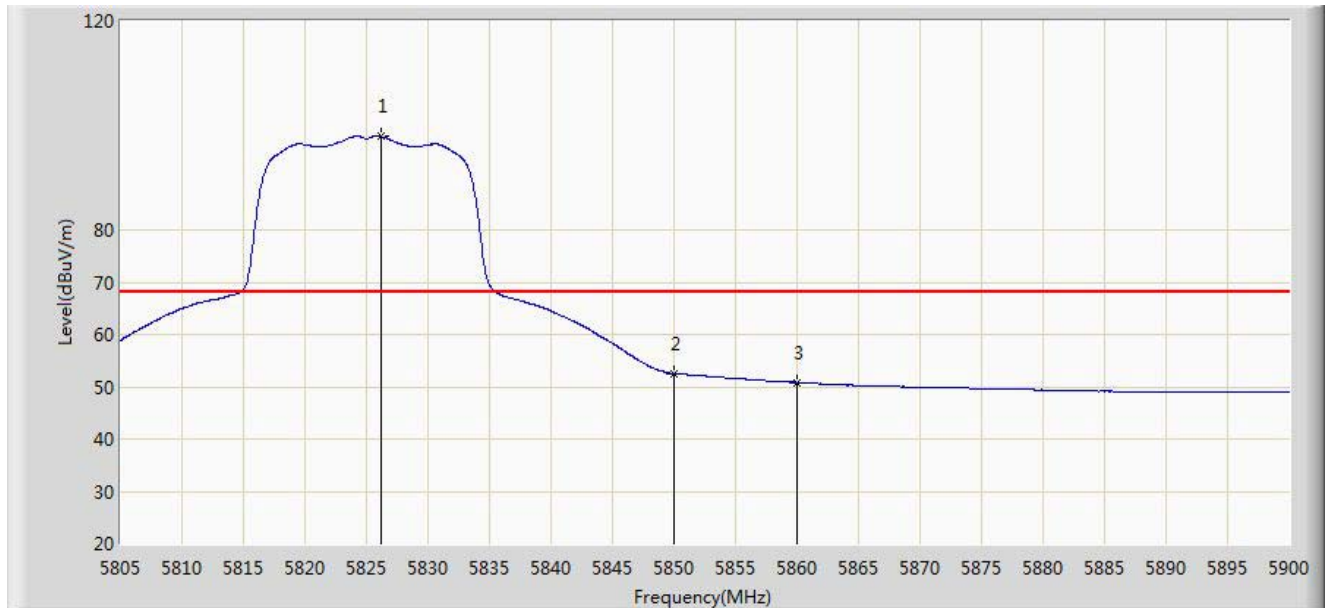


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5826.328	110.488	102.436	N/A	N/A	8.052	PK
2		5850.000	68.233	60.099	-29.967	98.200	8.134	PK
3		5860.000	63.453	55.264	-24.747	88.200	8.189	PK
4		5864.138	64.872	56.665	-23.328	88.200	8.208	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:10
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 1: Transmit by 802.11a at channel 5825MHz	

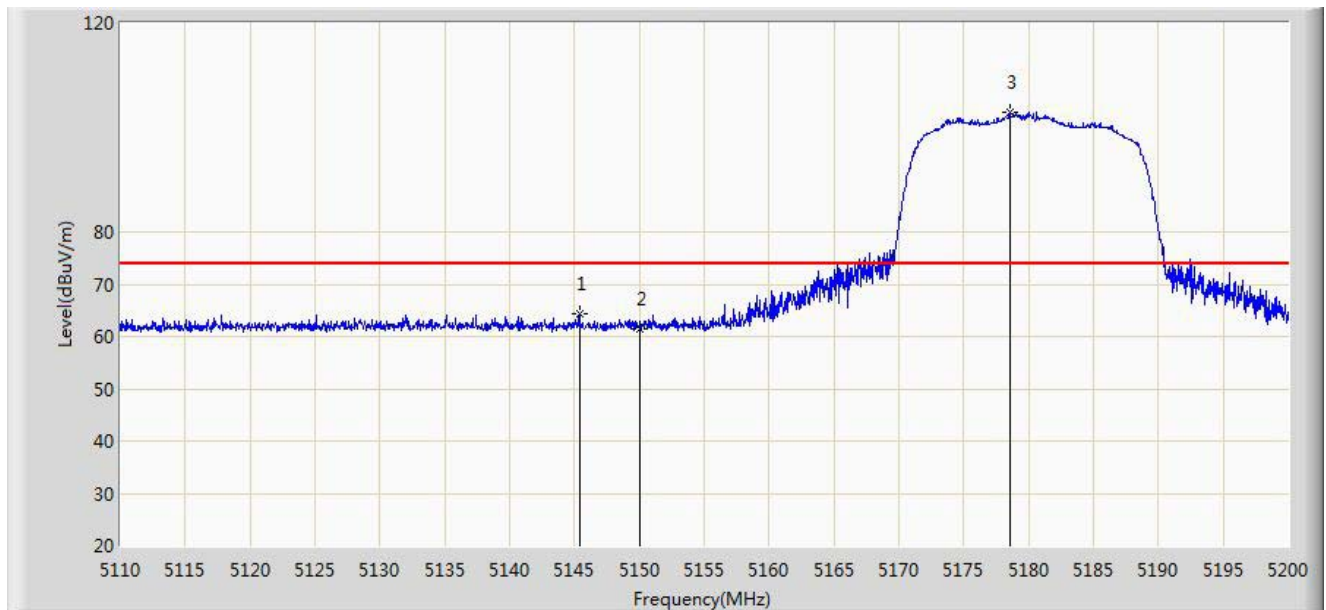


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5826.232	97.838	89.786	N/A	N/A	8.053	AV
2		5850.000	52.572	44.438	-25.628	78.200	8.134	AV
3		5860.000	50.781	42.592	-17.419	68.200	8.189	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:01
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5180MHz	

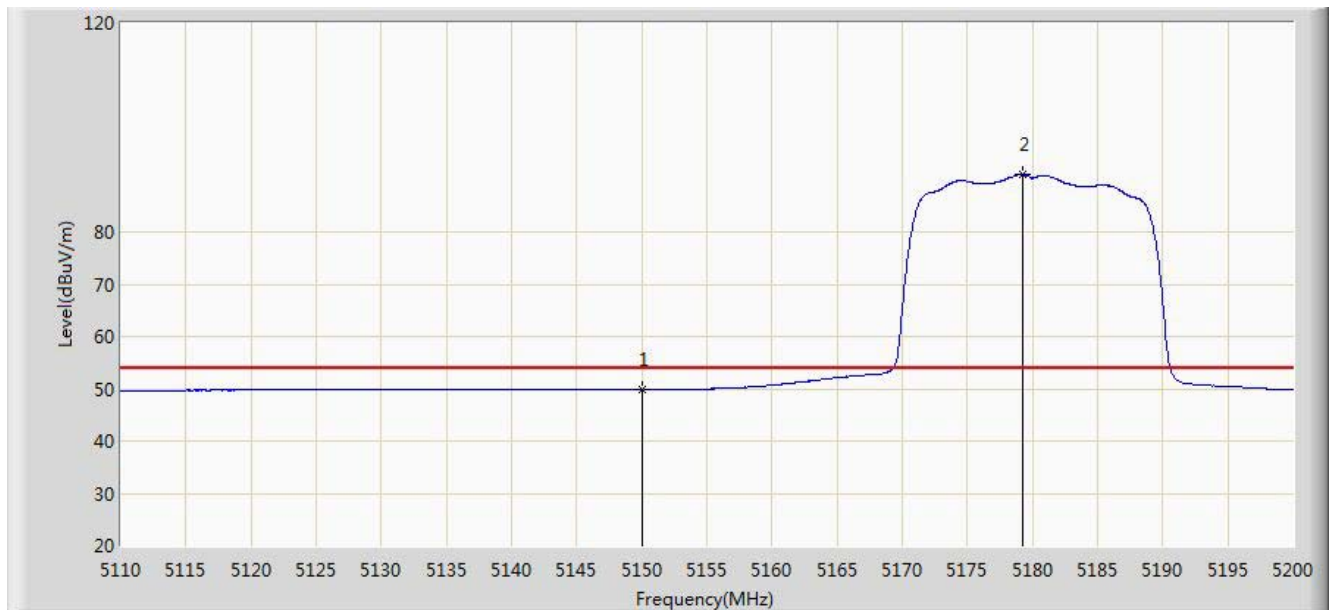


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5145.370	64.368	57.190	-9.632	74.000	7.177	PK
2		5150.000	61.547	54.371	-12.453	74.000	7.176	PK
3	*	5178.535	103.009	95.945	N/A	N/A	7.064	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:02
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5180MHz	

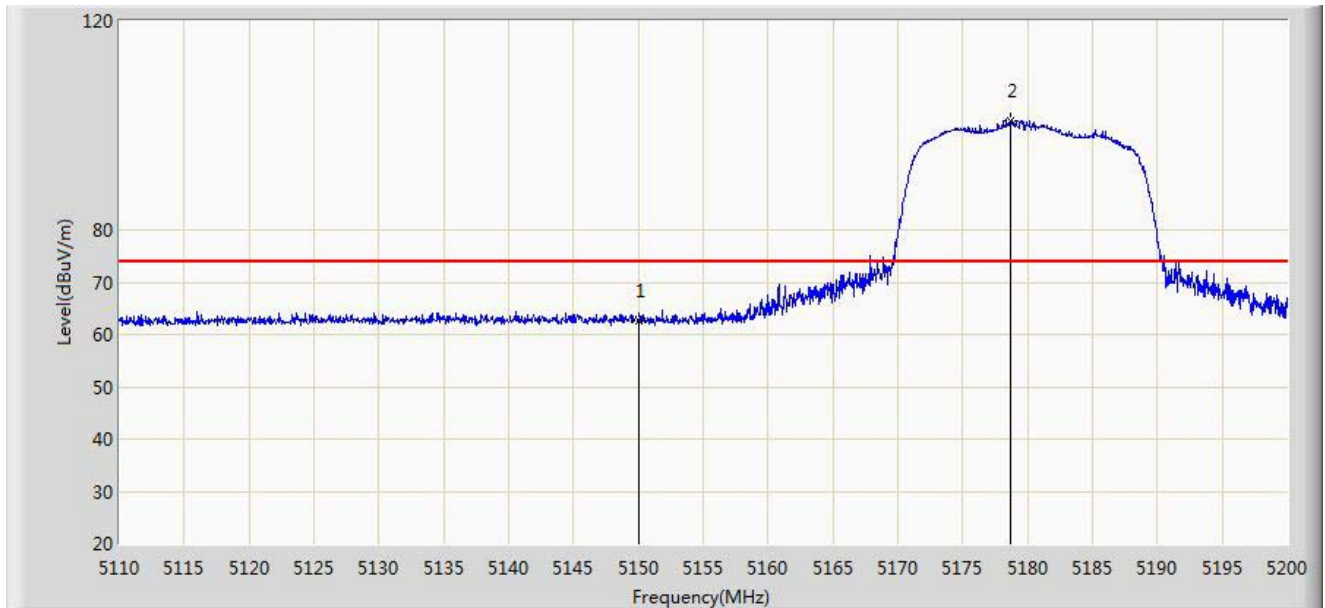


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	49.892	42.716	-4.108	54.000	7.176	AV
2	*	5179.255	90.966	83.907	N/A	N/A	7.059	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:03
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5180MHz	

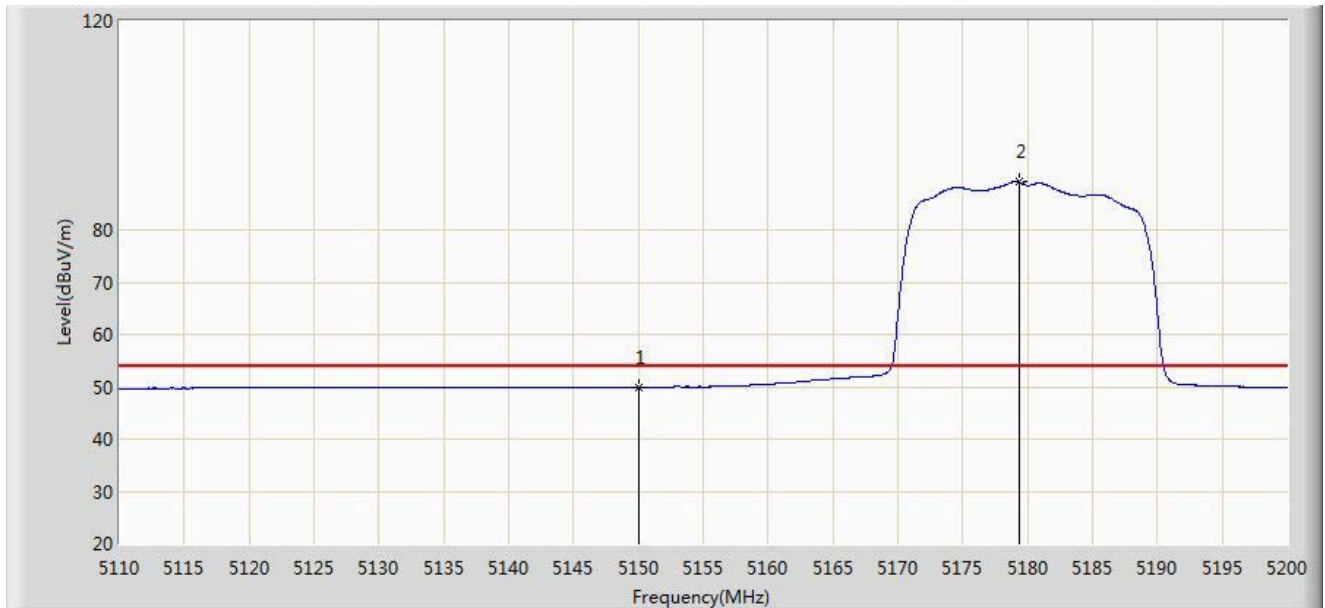


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	62.650	55.474	-11.350	74.000	7.176	PK
2	*	5178.670	100.940	93.877	N/A	N/A	7.063	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:06
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5180MHz	

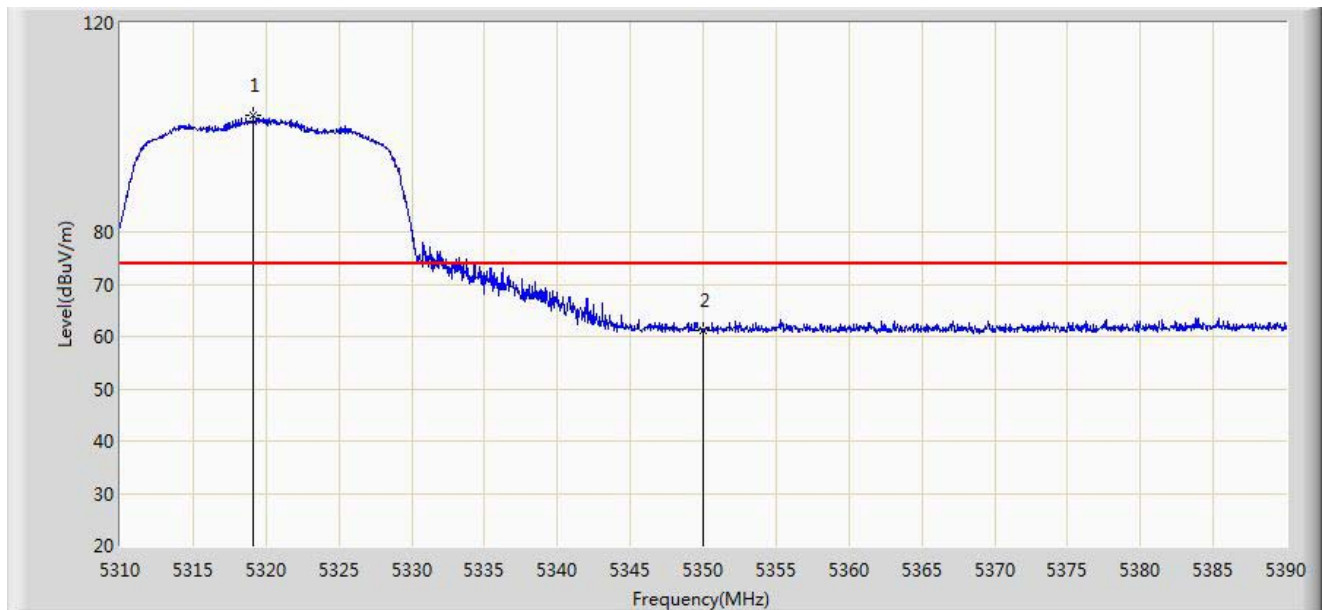


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	49.923	42.747	-4.077	54.000	7.176	AV
2	*	5179.390	89.145	82.087	N/A	N/A	7.058	AV

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:06
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5320MHz	

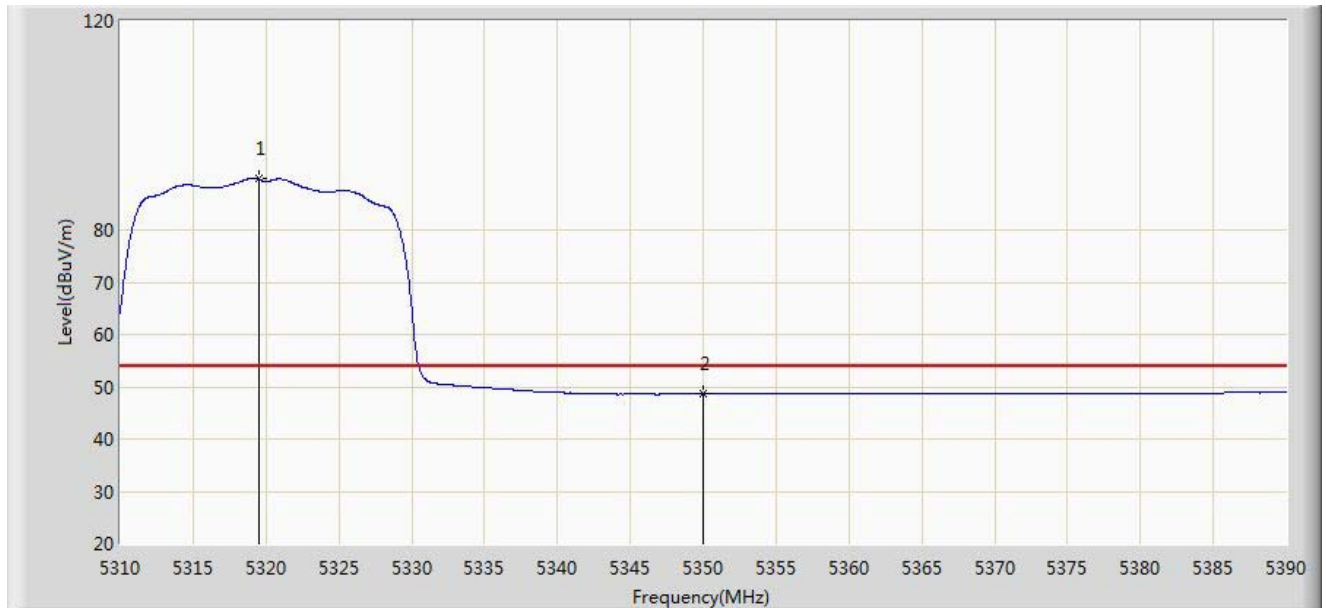


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5319.120	102.399	95.690	N/A	N/A	6.708	PK
2		5350.000	61.180	54.375	-12.820	74.000	6.805	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:10
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5320MHz	

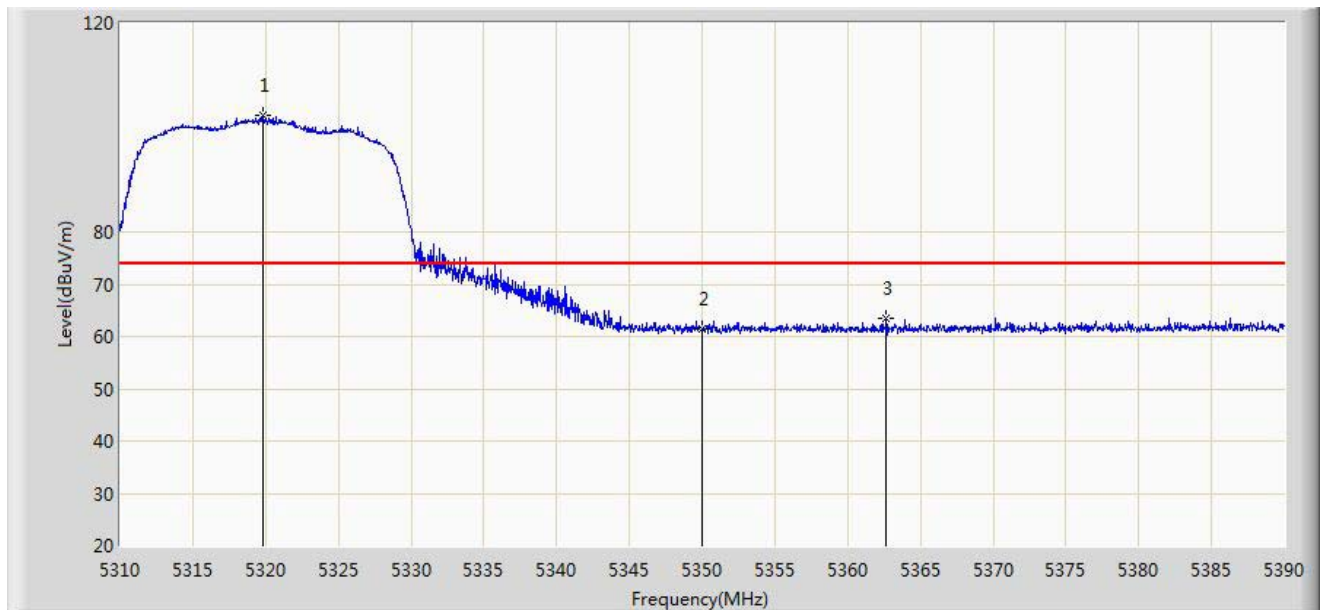


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5319.520	89.722	83.012	N/A	N/A	6.711	AV
2		5350.000	48.590	41.785	-5.410	54.000	6.805	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:11
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5320MHz	

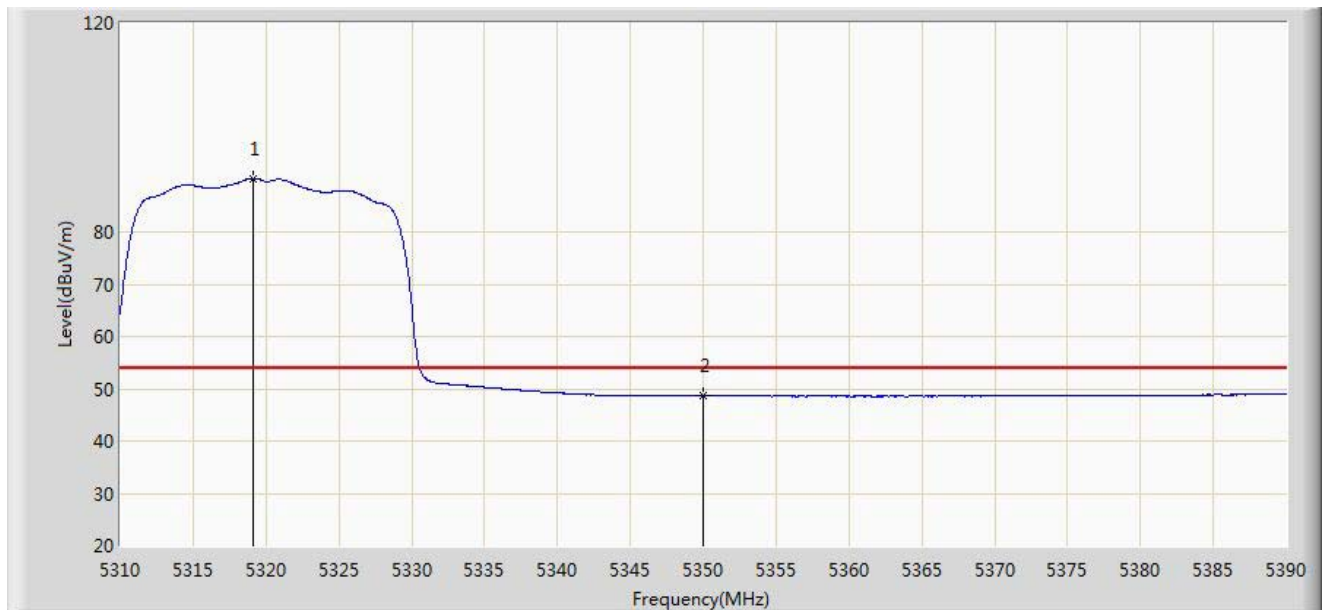


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5319.840	102.258	95.546	N/A	N/A	6.711	PK
2		5350.000	61.316	54.511	-12.684	74.000	6.805	PK
3		5362.680	63.528	56.686	-10.472	74.000	6.842	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/20 - 17:13
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5320MHz	

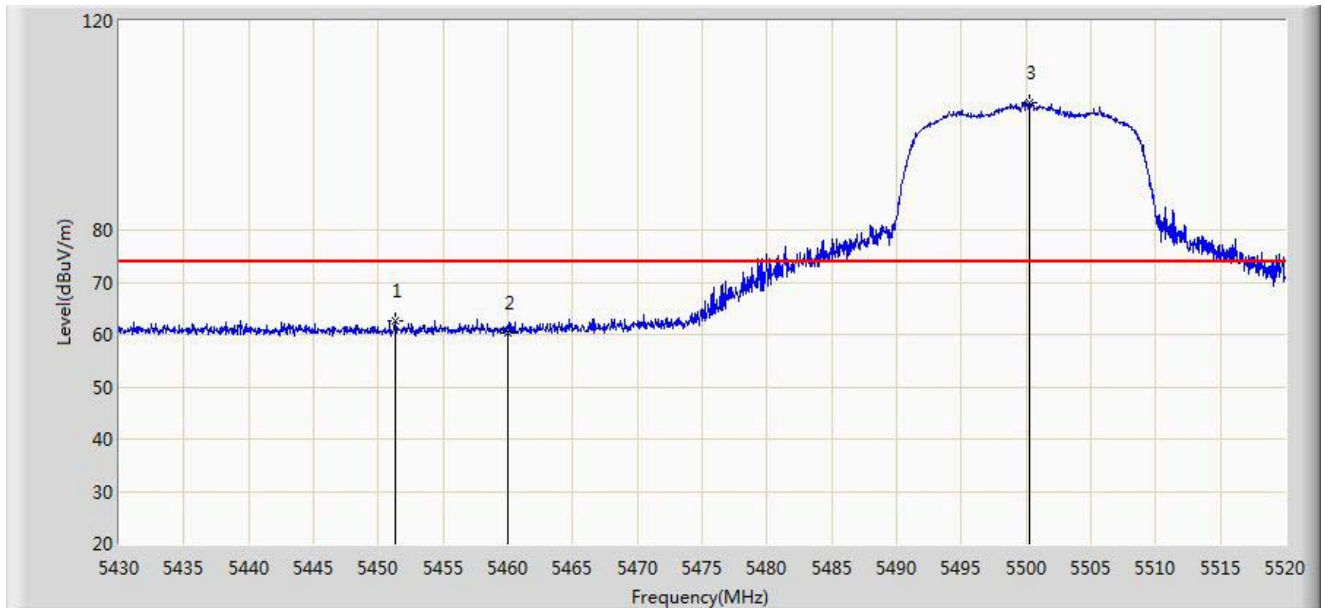


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5319.160	90.237	83.528	N/A	N/A	6.709	AV
2		5350.000	48.612	41.807	-5.388	54.000	6.805	AV

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:12
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5500MHz	

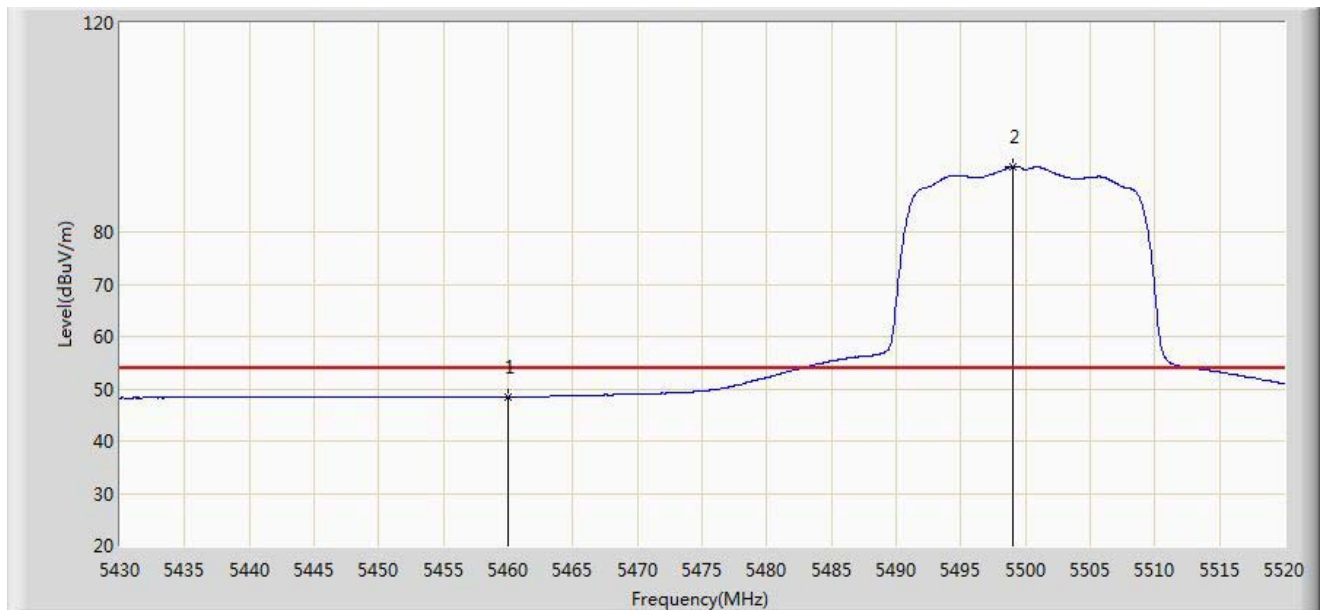


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5451.330	62.643	55.635	-11.357	74.000	7.008	PK
2		5460.000	60.298	53.301	-13.702	74.000	6.998	PK
3	*	5500.245	104.398	97.458	N/A	N/A	6.940	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5500MHz	

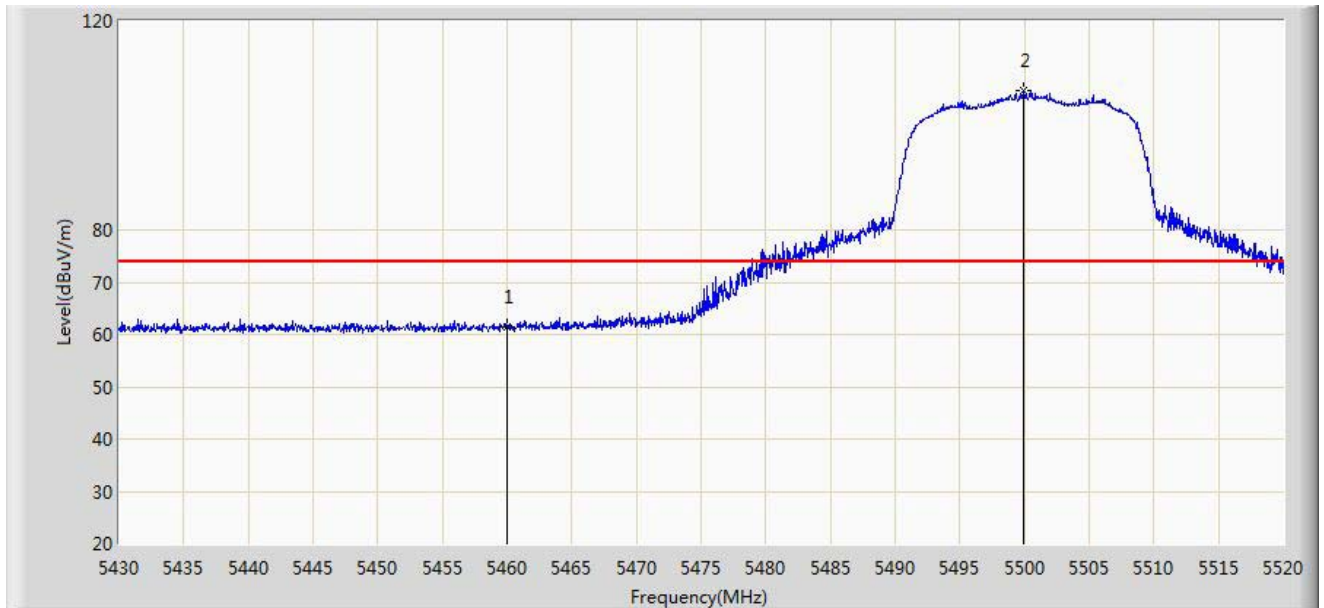


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5460.000	48.449	41.452	-5.551	54.000	6.998	AV
2	*	5499.075	92.519	85.578	N/A	N/A	6.941	AV

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:19
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5500MHz	

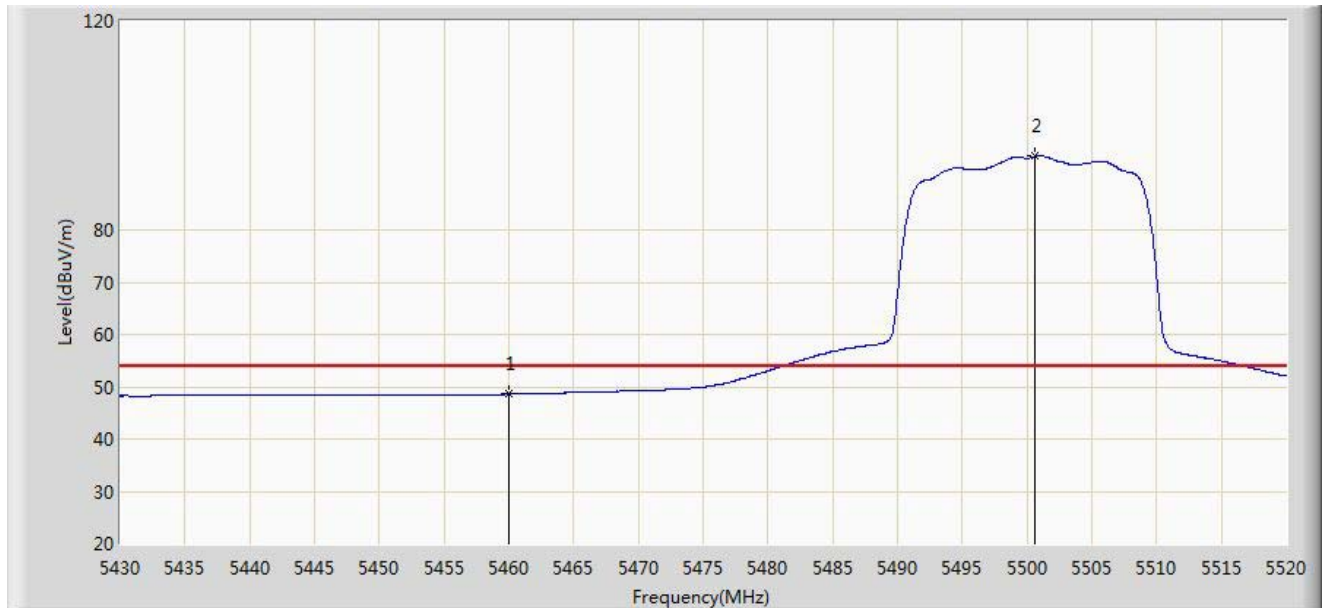


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5460.000	61.550	54.553	-12.450	74.000	6.998	PK
2	*	5499.930	106.574	99.634	N/A	N/A	6.941	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:23
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5500MHz	

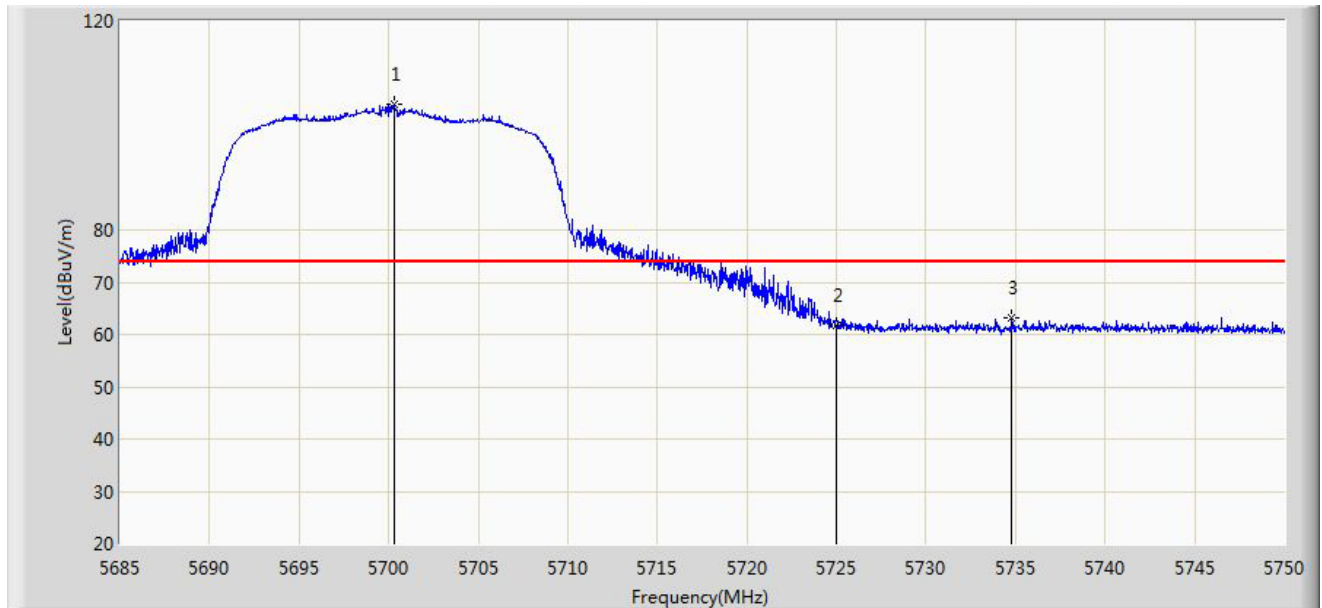


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5460.000	48.585	41.588	-5.415	54.000	6.998	AV
2	*	5500.650	94.176	87.237	N/A	N/A	6.938	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:24
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5700MHz	

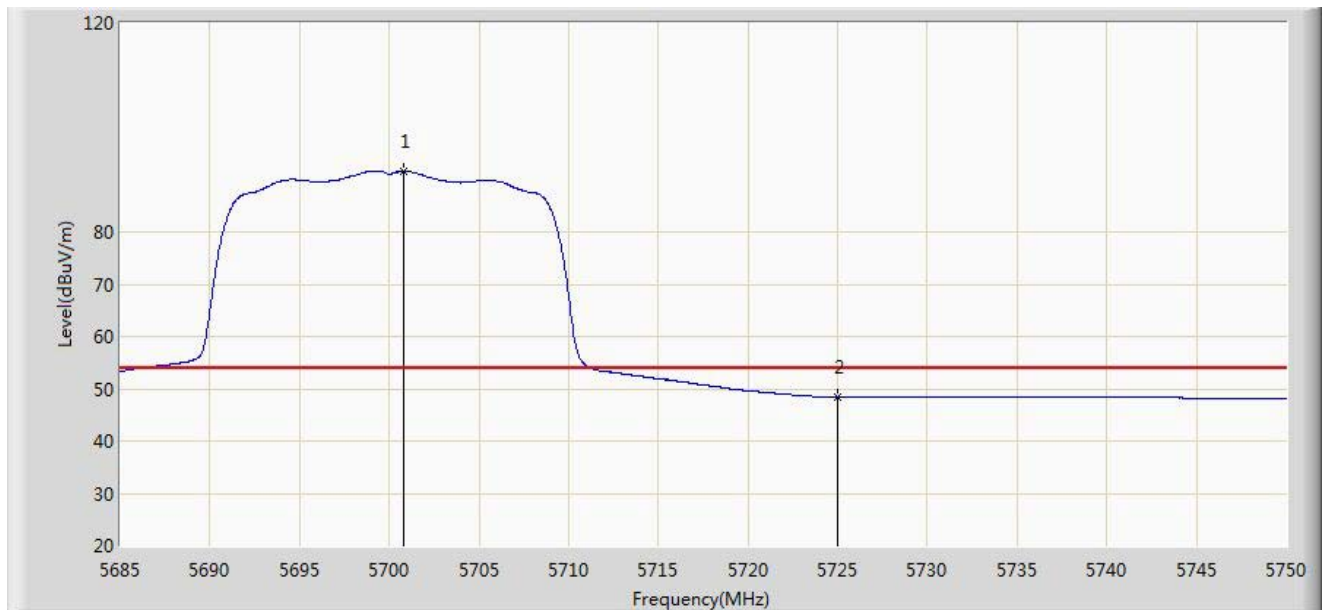


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5700.275	104.187	96.452	N/A	N/A	7.735	PK
2		5725.000	61.626	53.835	-12.374	74.000	7.791	PK
3		5734.790	63.102	55.290	-10.898	74.000	7.812	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:28
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5700MHz	

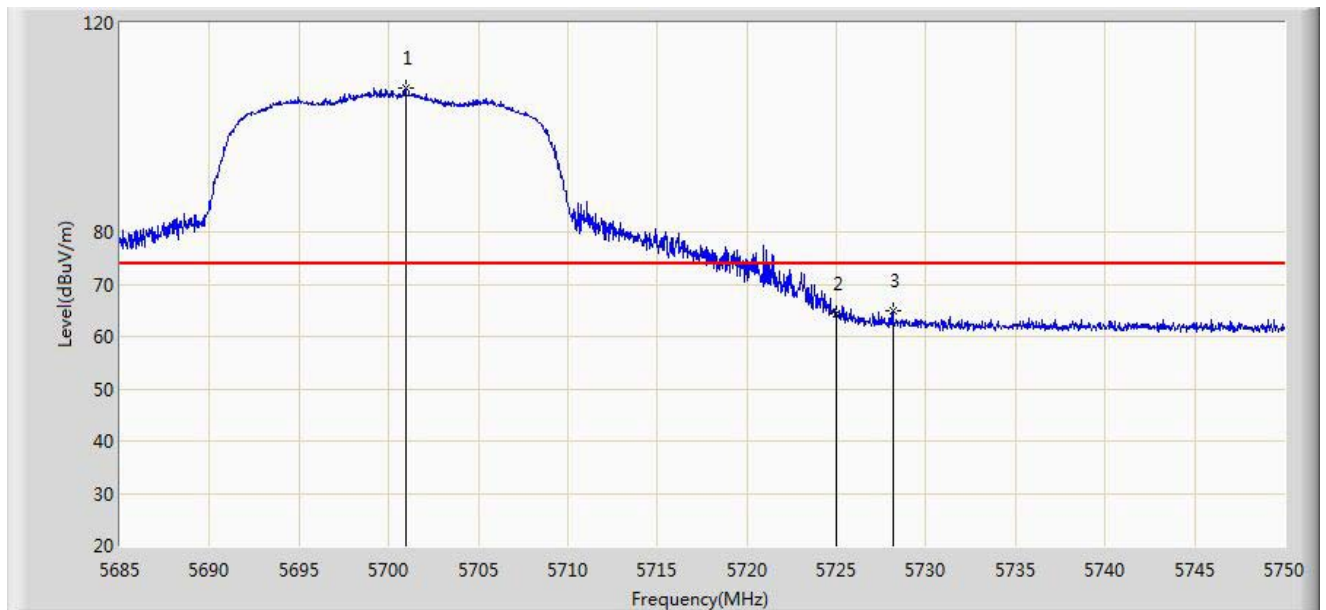


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5700.828	91.643	83.907	N/A	N/A	7.736	AV
2		5725.000	48.448	40.657	-5.552	54.000	7.791	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:29
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5700MHz	

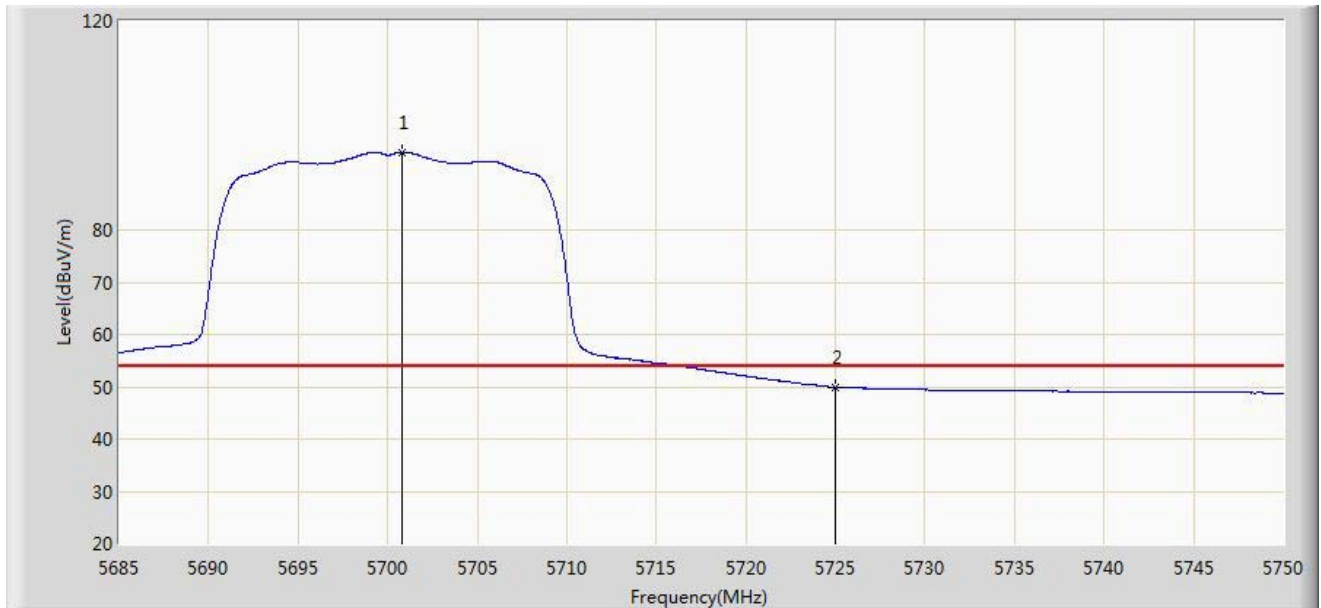


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5700.925	107.537	99.801	N/A	N/A	7.736	PK
2		5725.000	64.207	56.416	-9.793	74.000	7.791	PK
3		5728.160	64.943	57.146	-9.057	74.000	7.798	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:32
Limit: FCC_Part15.209_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5700MHz	

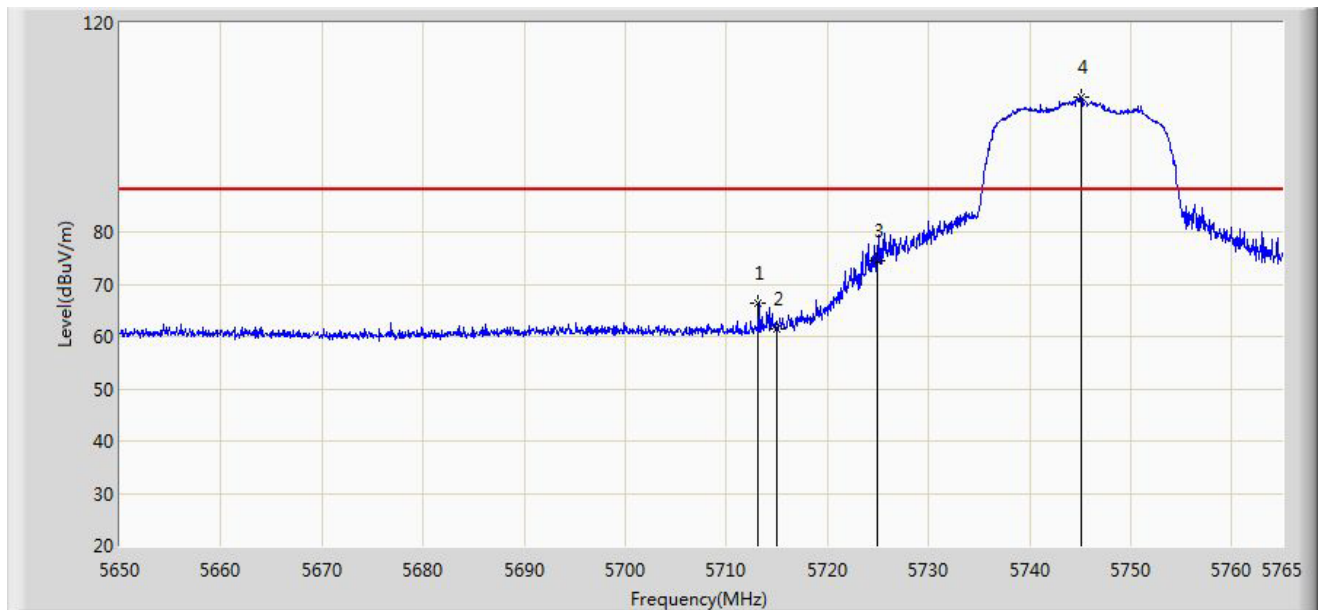


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5700.828	94.871	87.135	N/A	N/A	7.736	AV
2		5725.000	49.935	42.144	-4.065	54.000	7.791	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:33
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5745MHz	

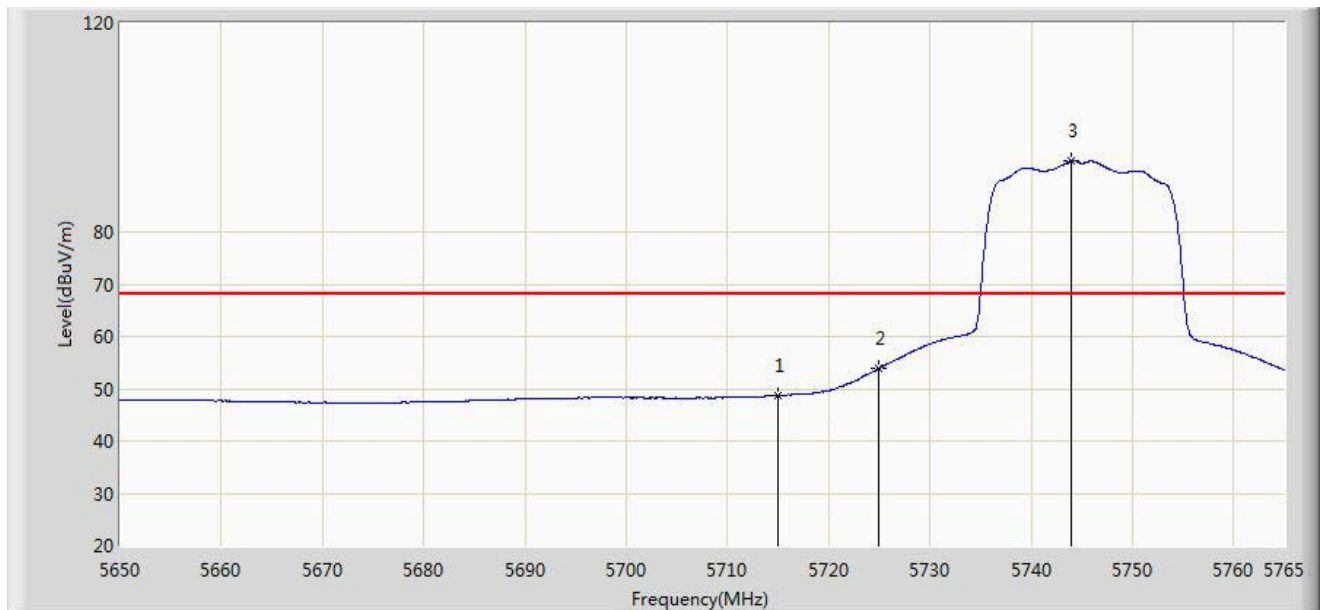


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5713.192	66.430	58.662	-21.770	88.200	7.768	PK
2		5715.000	61.440	53.668	-26.760	88.200	7.772	PK
3		5725.000	74.395	66.604	-23.805	98.200	7.791	PK
4	*	5745.105	105.721	97.888	N/A	N/A	7.832	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:37
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5745MHz	

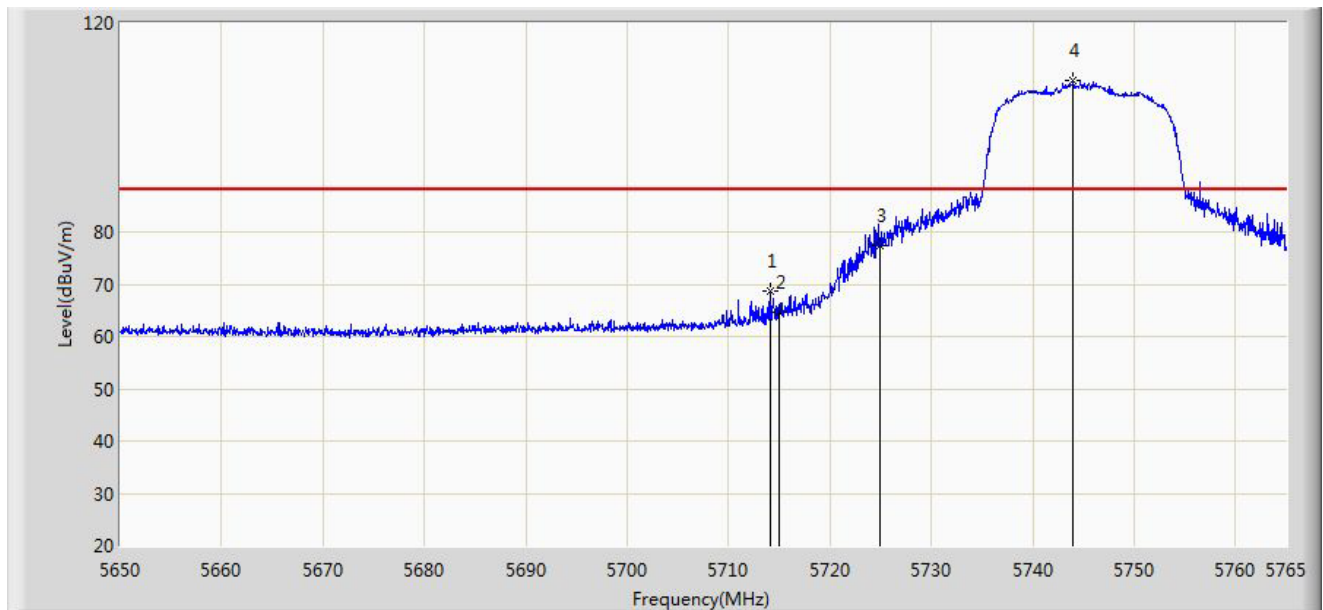


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5715.000	48.718	40.946	-19.482	68.200	7.772	AV
2		5725.000	53.925	46.134	-24.275	78.200	7.791	AV
3	*	5744.013	93.627	85.797	N/A	N/A	7.831	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:38
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5745MHz	

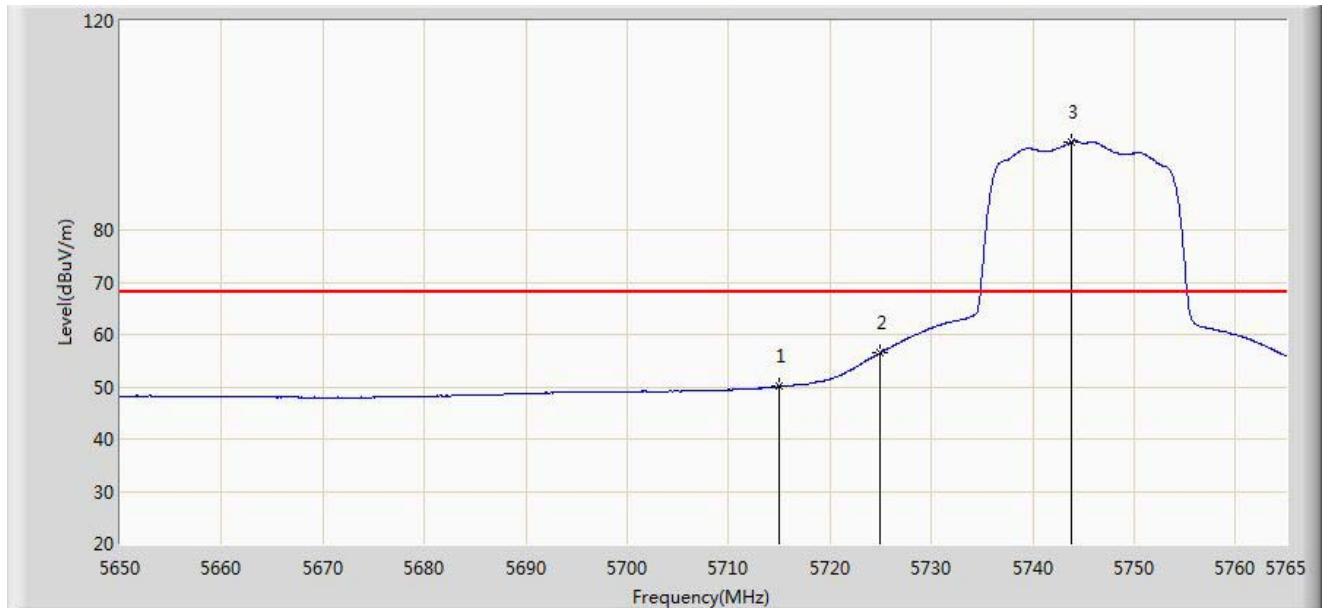


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5714.170	68.554	60.784	-19.646	88.200	7.770	PK
2		5715.000	64.680	56.908	-23.520	88.200	7.772	PK
3		5725.000	77.532	69.741	-20.668	98.200	7.791	PK
4	*	5744.013	108.900	101.070	N/A	N/A	7.831	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:41
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5745MHz	

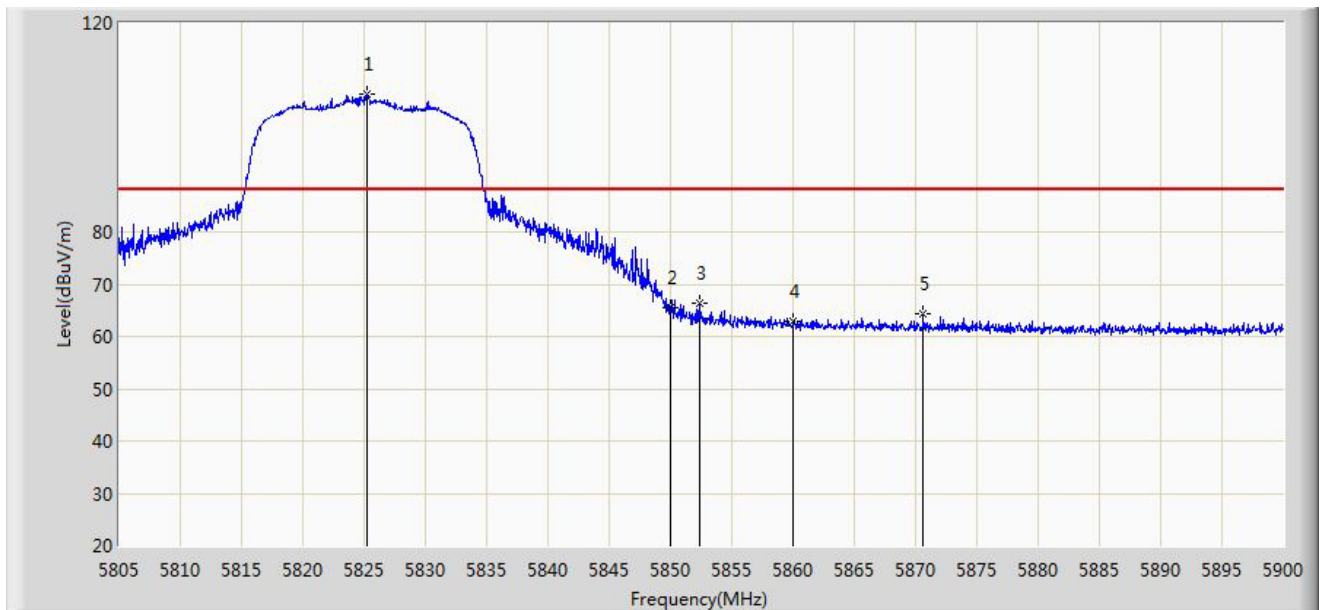


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5715.000	50.042	42.270	-18.158	68.200	7.772	AV
2		5725.000	56.517	48.726	-21.683	78.200	7.791	AV
3	*	5743.840	96.889	89.059	N/A	N/A	7.829	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:42
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5825MHz	

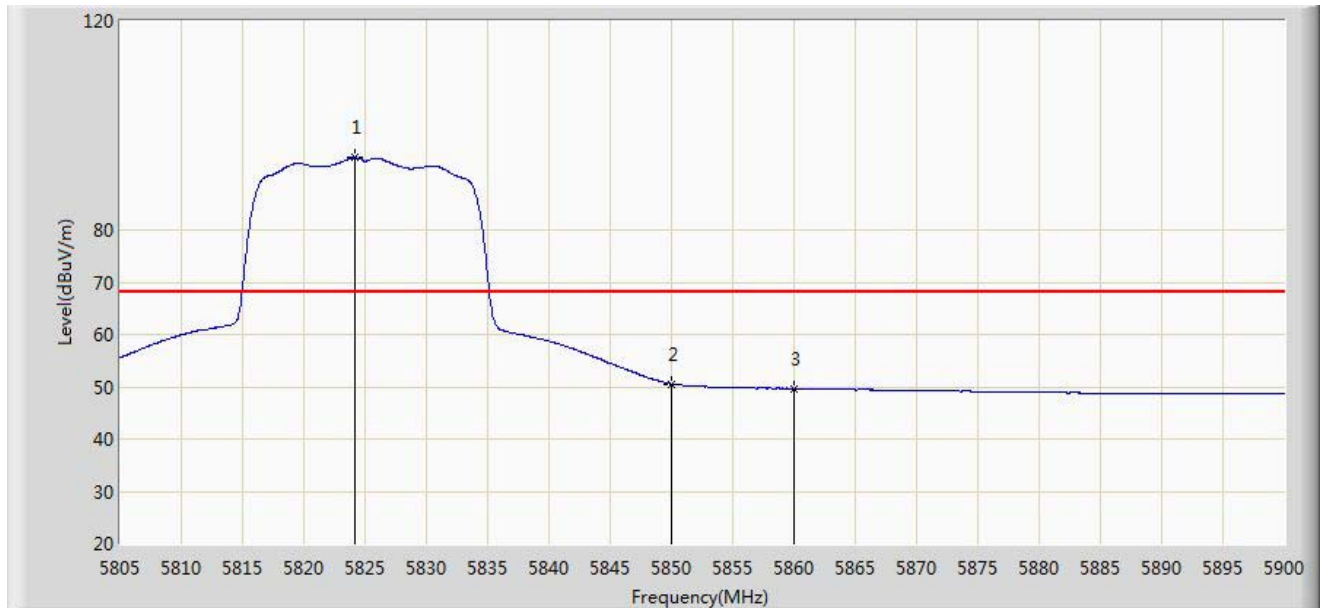


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5825.235	106.258	98.207	N/A	N/A	8.051	PK
2		5850.000	65.501	57.367	-32.699	98.200	8.134	PK
3		5852.357	66.391	58.244	-31.809	98.200	8.147	PK
4		5860.000	62.815	54.626	-25.385	98.200	8.189	PK
5		5870.645	64.216	55.986	-23.984	98.200	8.230	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:46
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5825MHz	

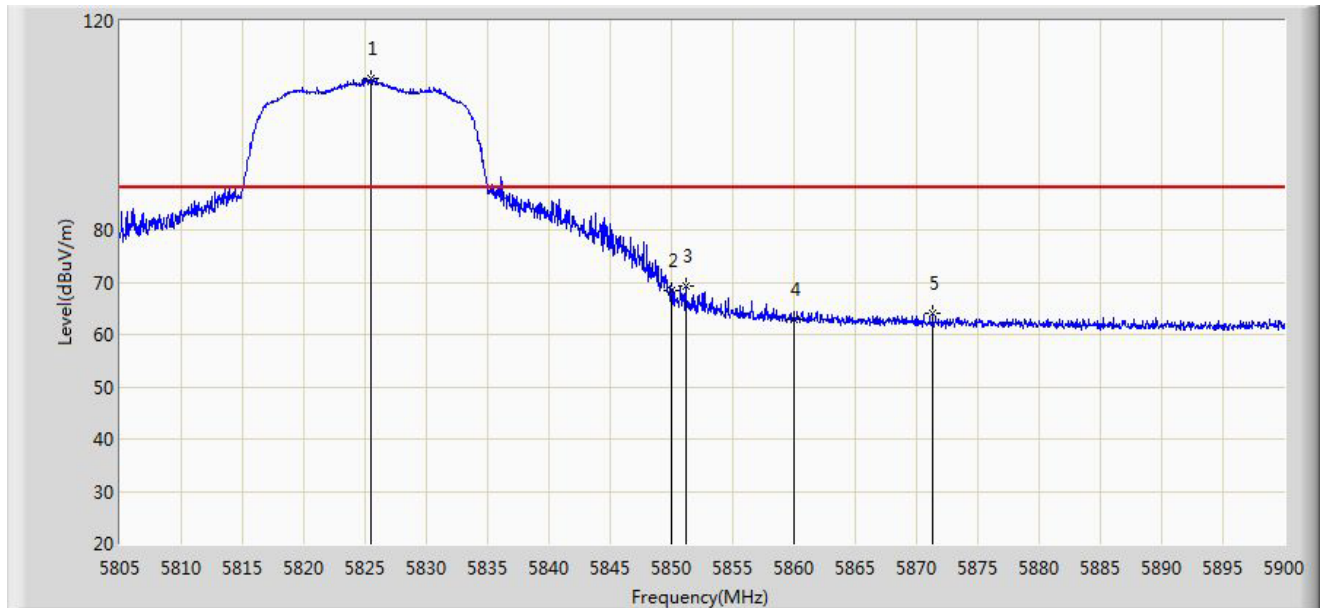


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5824.143	93.845	85.796	N/A	N/A	8.049	AV
2		5850.000	50.534	42.400	-27.666	78.200	8.134	AV
3		5860.000	49.645	41.456	-18.555	68.200	8.189	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:47
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5825MHz	

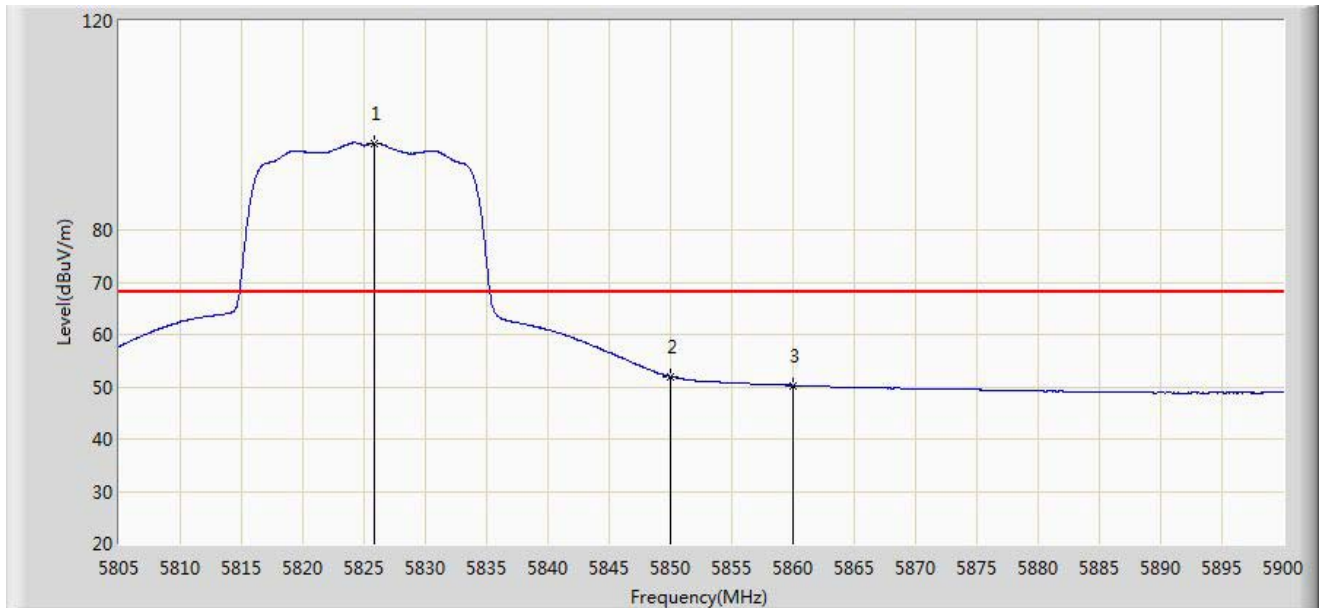


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5825.425	108.879	100.828	N/A	N/A	8.051	PK
2		5850.000	68.527	60.393	-29.673	98.200	8.134	PK
3		5851.170	69.197	61.056	-29.003	98.200	8.141	PK
4		5860.000	62.862	54.673	-25.338	88.200	8.189	PK
5		5871.310	63.948	55.716	-24.252	88.200	8.232	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

Site: AC1	Time: 2014/11/29 - 17:51
Limit: FCC_Part15.407_RE(3m)	Engineer: Milo Li
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode 2: Transmit by 802.11n-HT20 at channel 5825MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5825.805	96.618	88.566	N/A	N/A	8.052	AV
2		5850.000	51.953	43.819	-26.247	78.200	8.134	AV
3		5860.000	50.236	42.047	-17.964	68.200	8.189	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB).

7.9. AC Conducted Emissions Measurement

7.9.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207		
Frequency (MHz)	QP (dB μ V)	AV (dB μ V)
0.15 - 0.50	66 - 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.9.2. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to KDB 789033 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

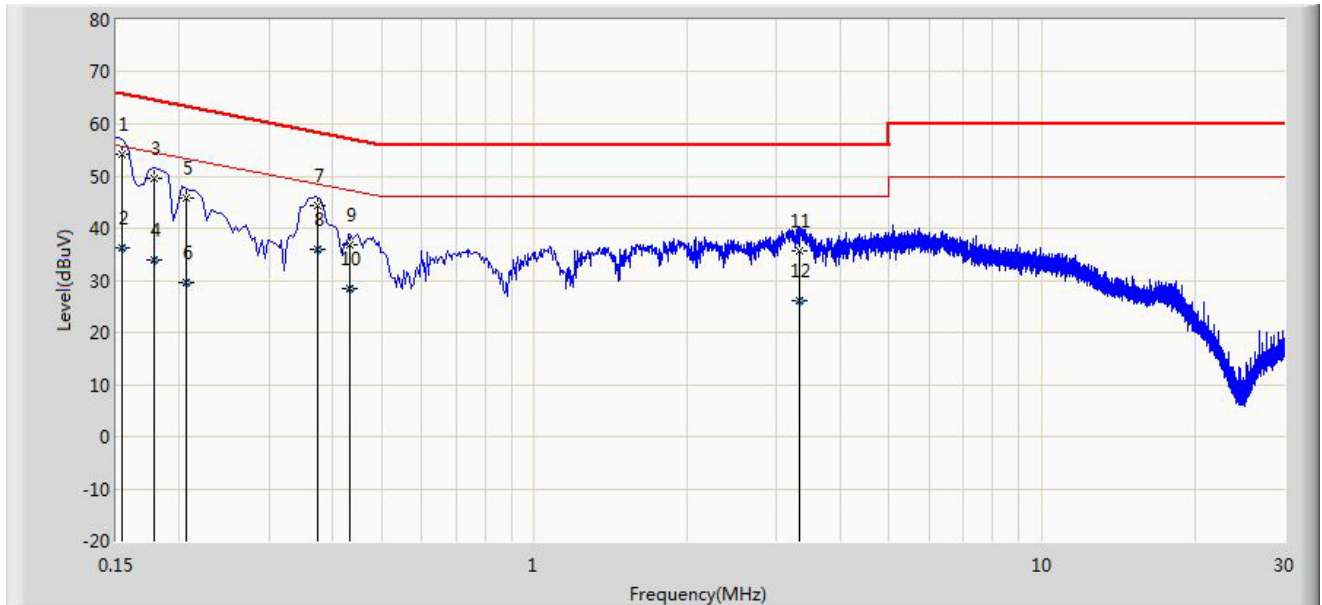
Diagram illustrating the experimental setup for measuring the radiation field of an EUT (Electromagnetic Under Test) using a Non-conductive table and a Spectrum Analyzer.

The setup includes the following components and dimensions:

- Non-conductive table:** The EUT and Adapter are placed on this table.
- EUT (Electromagnetic Under Test):** The device being tested.
- Adapter:** Connected to the EUT and the Extension cord.
- Extension cord:** Connects the Adapter to the AMN.
- AMN (Antenna Measurement Noise):** Connected to the Spectrum Analyzer.
- Spectrum Analyzer:** Measures the radiation field.
- Dimensions:**
 - 0.4m: Distance from the EUT to the vertical ground reference plane.
 - 0.8m: Distance from the Adapter to the vertical ground reference plane.
 - 0.8m: Distance from the AMN to the vertical ground reference plane.
 - 0.4m to vertical ground reference plane: Distance from the AMN to the vertical ground reference plane.
 - Bonded to horizontal ground plane: The AMN is connected to the ground plane.
- Vertical ground reference plane:** A dashed line indicating the reference plane for the measurements.

7.9.4. Test Result

Site: SR2	Time: 2014/12/01 - 18:43
Limit: FCC_Part15.207_CE_AC Power	Engineer: Milo Li
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Model1	

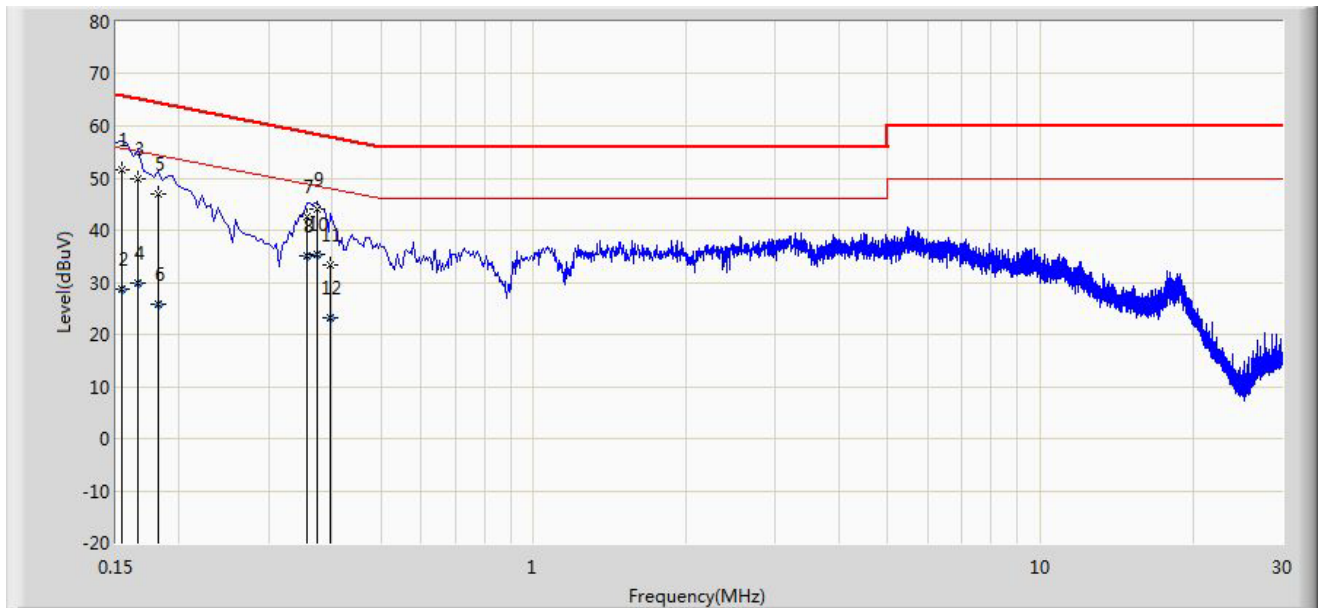


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	*	0.154	54.343	43.604	-11.438	65.781	10.740	QP
2		0.154	36.130	25.390	-19.652	55.781	10.740	AV
3		0.178	49.505	39.446	-15.074	64.578	10.058	QP
4		0.178	33.912	23.854	-20.666	54.578	10.058	AV
5		0.206	45.742	35.761	-17.623	63.365	9.981	QP
6		0.206	29.689	19.709	-23.676	53.365	9.981	AV
7		0.374	44.467	34.403	-13.944	58.412	10.064	QP
8		0.374	35.937	25.873	-12.474	48.412	10.064	AV
9		0.434	36.939	26.826	-20.237	57.176	10.113	QP
10		0.434	28.296	18.183	-18.880	47.176	10.113	AV
11		3.326	35.536	25.641	-20.464	56.000	9.894	QP
12		3.326	26.227	16.332	-19.773	46.000	9.894	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SR2	Time: 2014/12/01 - 18:49
Limit: FCC_Part15.207_CE_AC Power	Engineer: Milo Li
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: IP Multimedia Phone	Power: AC 120V/60Hz
Note: Mode1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.154	51.711	40.995	-14.070	65.781	10.716	QP
2		0.154	28.672	17.956	-27.109	55.781	10.716	AV
3		0.166	49.814	39.743	-15.344	65.158	10.071	QP
4		0.166	29.789	19.718	-25.369	55.158	10.071	AV
5		0.182	46.830	36.788	-17.564	64.394	10.042	QP
6		0.182	25.794	15.752	-28.600	54.394	10.042	AV
7		0.358	42.559	32.478	-16.216	58.775	10.081	QP
8		0.358	34.957	24.876	-13.818	48.775	10.081	AV
9		0.374	44.121	34.028	-14.291	58.412	10.093	QP
10	*	0.374	35.461	25.368	-12.950	48.412	10.093	AV
11		0.398	33.457	23.346	-24.438	57.895	10.111	QP
12		0.398	23.088	12.978	-24.807	47.895	10.111	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **IP Multimedia Phone FCC ID: YZZGXV3240D** is in compliance with Part 15E of the FCC Rules.

The End