

FCC Part 15B

Measurement And Test Report For


Amcrest Technologies LLC

12633 Memorial Dr. #211, Houston, TX 77024, United States

FCC ID: ZZ2AGASIO-A8

Sep 26, 2011

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: AGASION DROPAD A8
Report Number:	MTI110910001RF-2
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Test Date:	Sep 15-23, 2011
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of MTI Technology Laboratory Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Applicant: Amcrest Technologies LLC
Address of applicant: 12633 Memorial Dr. #211,Houston, TX 77024,United States
Manufacturer: Amcrest Technologies LLC
Address of manufacturer: 12633 Memorial Dr. #211,Houston, TX 77024,United States
Equipment Under Test: AGASION DROPAD A8
Tested Model No.: DROPAD A8
Trade Name: /
Supplementary Models No: /
Remark: supplementary models are only different in exterior with tested Model and with the same circuit construction
Power Supply: DC 9V

Remark: ** The test data gathered are from the production sample provided by the manufacturer.*

1.2 Related Submittal(s) / Grant (s)

This submittal(s) is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2003.

The tests were performed in order to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 - 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Test Facility

All measurement required was performed at laboratory of NTEK Testing Technology Co., Ltd., at 1/F, Building E, Fenda Science Park Sanwei Community, Xixiang Street, Baoan District, Shenzhen,Guangdong

The test facility is recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 238937

NTEK Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 238937.

2. SYSTEM TEST CONFIGURATION

The tests documented in this report were performed in accordance with ANSI C63.4-2003 and FCC CFR 47 Part 15 Subpart C.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The calibrated antennas used to sample the radiated field strength are mounted on a non-conductive, motorized antenna mast 3 or 10 meters from the leading edge of the turntable.

2.3 General Test Procedures

Conducted Emissions The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

Radiated Emissions The EUT is placed on a turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

2.4 List of Measuring Equipments Used

Items	Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Calibration Period
1	EMI Test Receiver	ROHDE & SCHWARZ	ESI 26	100079	2010/11	1 year
3	3m Semi- Anechoic Chamber	ETS	N/A	N/A	2010/11	1 year
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100038	2010/11	1 year
2	EMI Test Receiver	ROHDE & SCHWARZ	ESI 26	100009	2010/11	1 year
3	Receiver/ Spectrum Analyzer	ROHDE & SCHWARZ	ESCI	100106	2010/11	1 year
4	Spectrum Analyzer	Agilent	E7405A	US41160415	2010/11	1 year
5	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2010/11	1 year
6	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	2010/11	1 year
7	LISN	COM Power	LI-200	12212	2010/11	1 year
8	LISN	COM Power	LI-200	12019	2010/11	1 year
9	3m/5m Semi- Anechoic Chamber	ETS	N/A	N/A	2010/11	1 year
10	Ultra-Broadband Antenna	R/S	HL562	100015	2010/11	1 year
11	Turntable	ETS	2088	2149	N/A	N/A
12	Antenna Mast	ETS	2075	2346	N/A	N/A

3. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
15.107	Conducted Emission	Pass
15.109	Radiated Emission	Pass

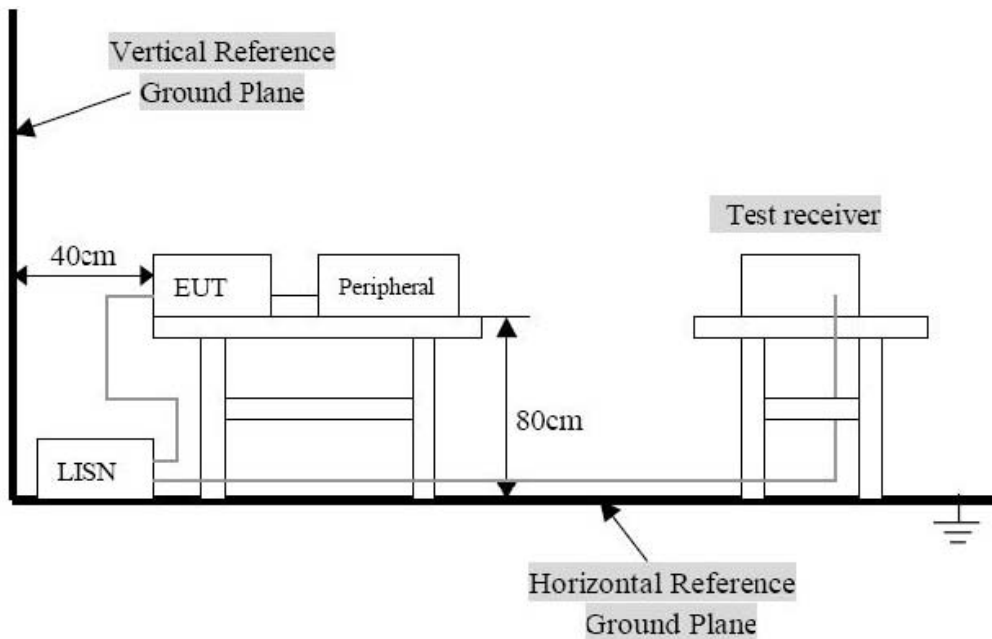
4. CONDUCTED EMISSION Measurement

4.1 Limits of Conducted Emission

Section 15.107: For a Low-power Radio-frequency Device is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150~0.500	66~56	56~46
0.500~5.000	56	46
5.000~30.00	60	50

4.2 Test Setup Diagram



4.3 Instrument Setting

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range.....150 KHz to 30 MHz
 Detector.....Peak & Quasi-Peak & Average
 Sweep Speed.....Auto
 IF Band Width.....9 KHz

4.4 Test Equipment List and Details

See section 2.4 of this report.

4.5 Test Procedure

1. Configure the EUT according to ANSI C63.4.
2. The EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN)
4. All the support units are connected to the other LISN. The LISN should provide 50uH/50ohms coupling impedance.
5. The frequency range from 150 KHz to 30 MHz was searched.
6. Use the Channel & Power Controlling software to make the EUT working on selected channel and expected output power, then use the "H" Patter Generator software to make the supporting equipments stay on working condition.
7. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
8. The measurement has to be done between each power line and ground at the power terminal for each RF channel. Only one RF channel has to be investigated since this test is independent with the RF channel selection.

4.6 Test Result

Detailed information please refers to the following page.

According to the data in this section, the EUT complied with the FCC 15.107 Conducted margin for a Class B device, with the worst margin reading of:

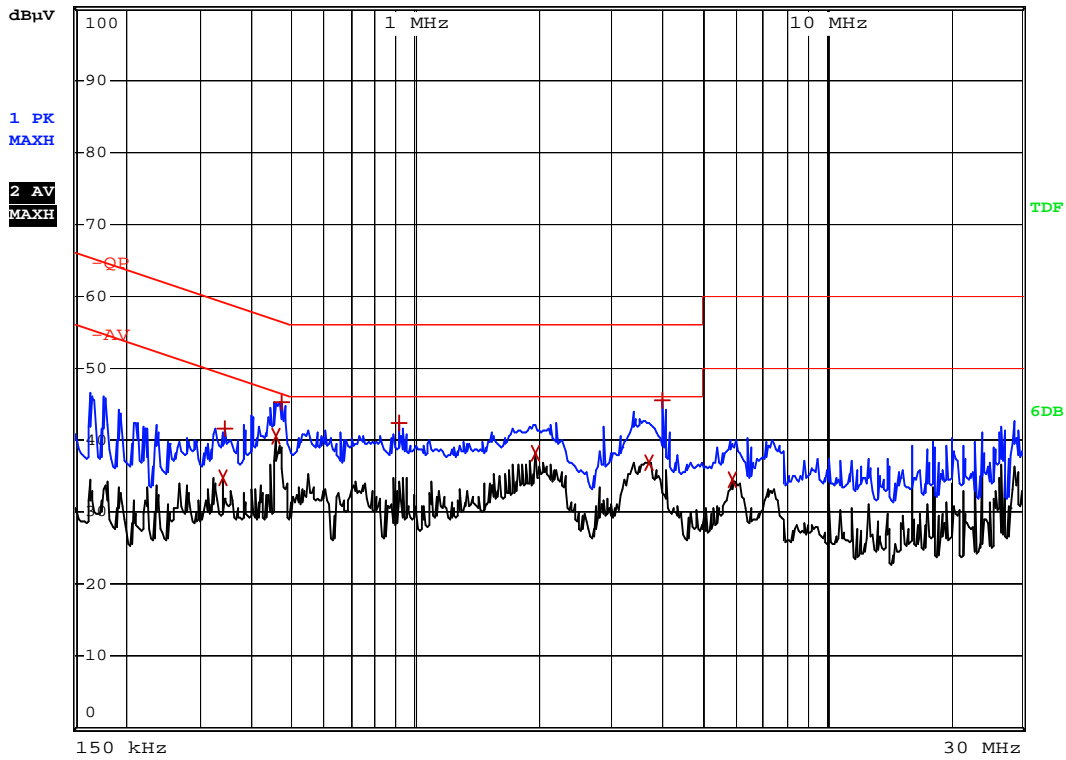
-6.20 dB μ V at 0.458 MHz in the Line mode, AV detector, 0.15-30MHz

EUT: AGASION DROPAD A8
M/N: DROPAD A8
Operator: Amy
Test Specification: L



RBW 9 kHz
MT 5 ms

Att 10 dB AUTO



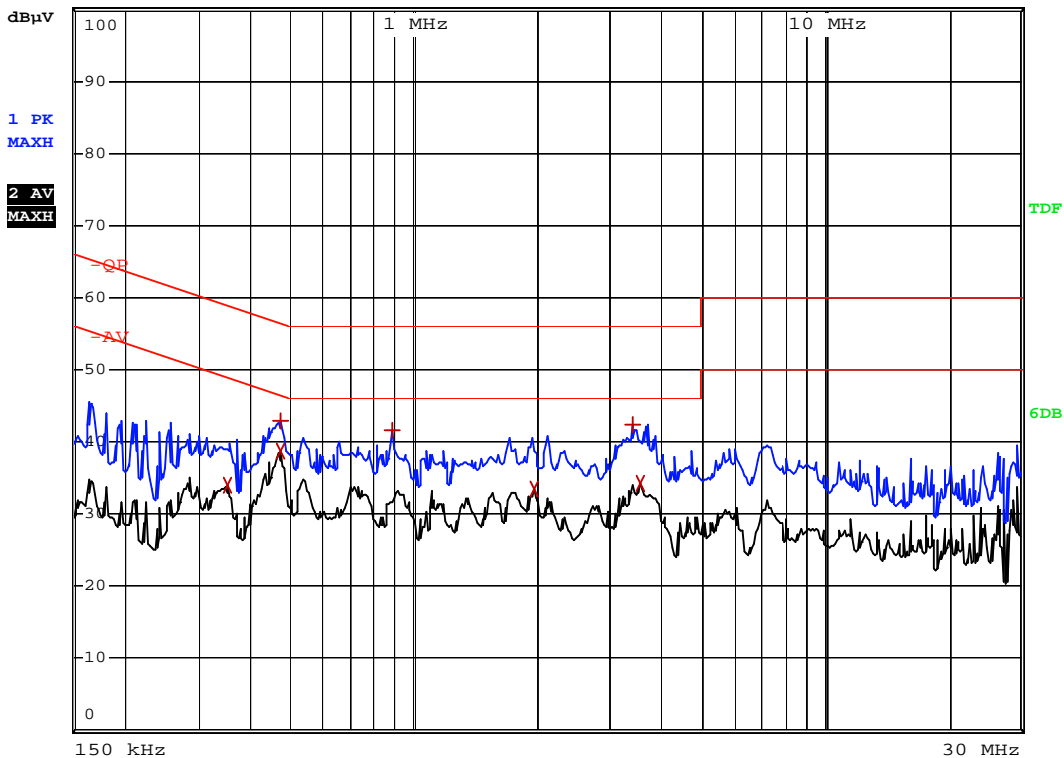
EDIT PEAK LIST (Prescan Results)				
Trace1:	-QP			
Trace2:	-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB	
2 Average	338 kHz	34.71	-14.54	
1 Max Peak	342 kHz	41.50	-17.65	
2 Average	458 kHz	40.52	-6.20	
1 Max Peak	470 kHz	45.25	-11.25	
1 Max Peak	914 kHz	42.39	-13.60	
2 Average	1.958 MHz	38.29	-7.70	
2 Average	3.726 MHz	36.99	-9.00	
1 Max Peak	4.002 MHz	45.63	-10.36	
2 Average	5.954 MHz	34.46	-15.53	

EUT: AGASION DROPAD A8
M/N: DROPAD A8
Operator: Amy
Test Specification: N



RBW 9 kHz
MT 5 ms

Att 10 dB AUTO



EDIT PEAK LIST (Prescan Results)				
Trace1:	-QP			
Trace2:	-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB	
2 Average	350 kHz	34.05	-14.90	
1 Max Peak	470 kHz	42.98	-13.52	
2 Average	474 kHz	38.66	-7.77	
1 Max Peak	886 kHz	41.61	-14.38	
2 Average	1.958 MHz	33.42	-12.57	
1 Max Peak	3.402 MHz	42.38	-13.61	
2 Average	3.578 MHz	34.17	-11.82	

5. RADIATED EMISSION

5.1 Limits of Radiated Emission Measurement

According to § 15.205 15.109(a) & 15.35 (b), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Section 15.109:

30 - 88 MHz 40 dBuV/m @3M

88 -216 MHz 43.5 dBuV/m @3M

216 -960 MHz 46 dBuV/m @3M

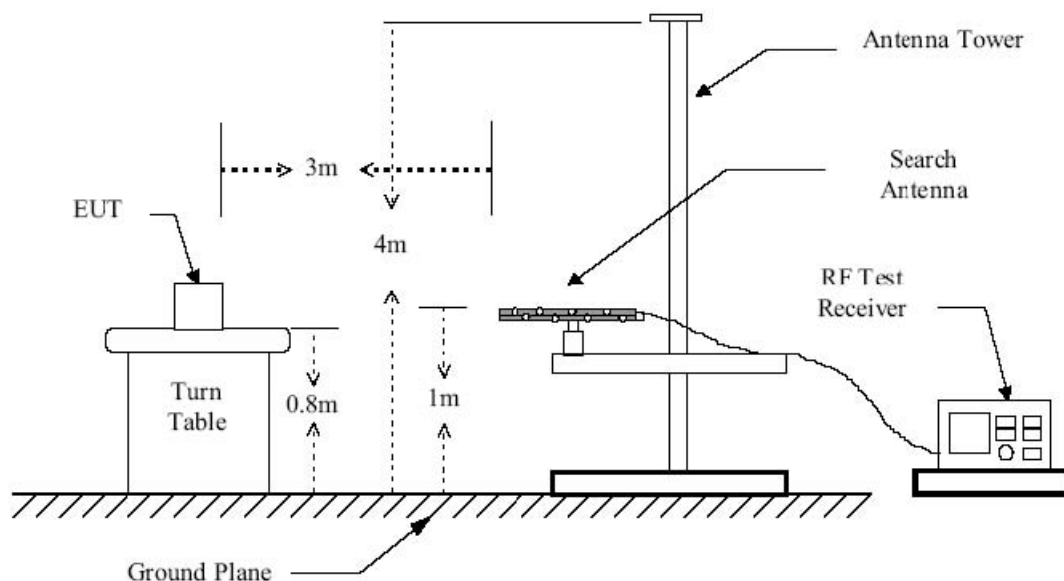
Above 960 MHz 54dBuV/m @3M

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

5.2 EUT Setup

Radiated Measurement Setup



5.3 Test Equipment List and Details

See section 2.4.

5.4 Test Procedure

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the

highest radiation.

2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

5.5 Test Result

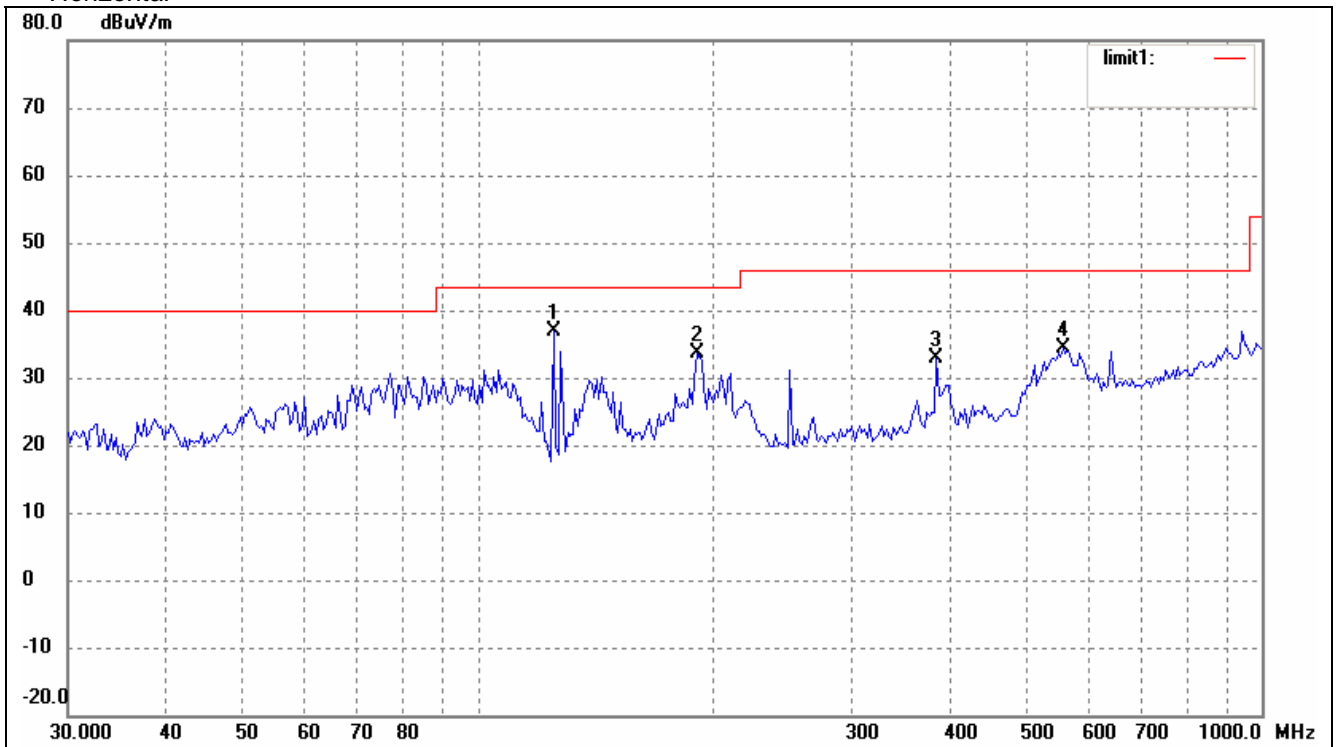
According to the data below, the FCC Part 15.109 class B standards, and had the worst margin of:

-1.61 dB μ V at 30.6392 MHz in the Vertical polarization 30 MHz to 1 GHz, 3Meters

Plot of Radiation Emissions Test

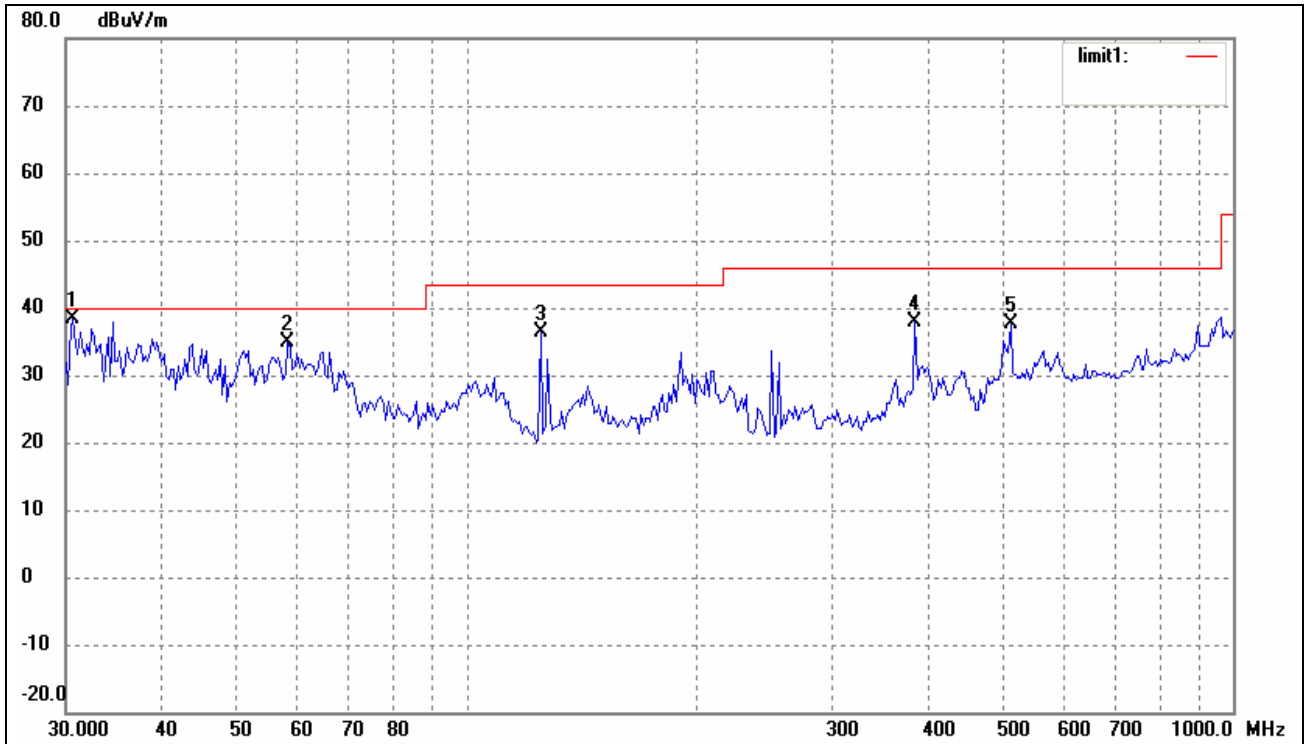
Test mode: Playing

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	124.9249	32.42	4.57	36.99	43.50	-6.51	111	100	peak
2	190.4411	27.99	5.66	33.65	43.50	-9.85	45	100	peak
3	384.5447	22.91	9.96	32.87	46.00	-13.13	55	100	peak
4	558.0788	20.11	14.15	34.26	46.00	-11.74	22	100	peak

Vertical

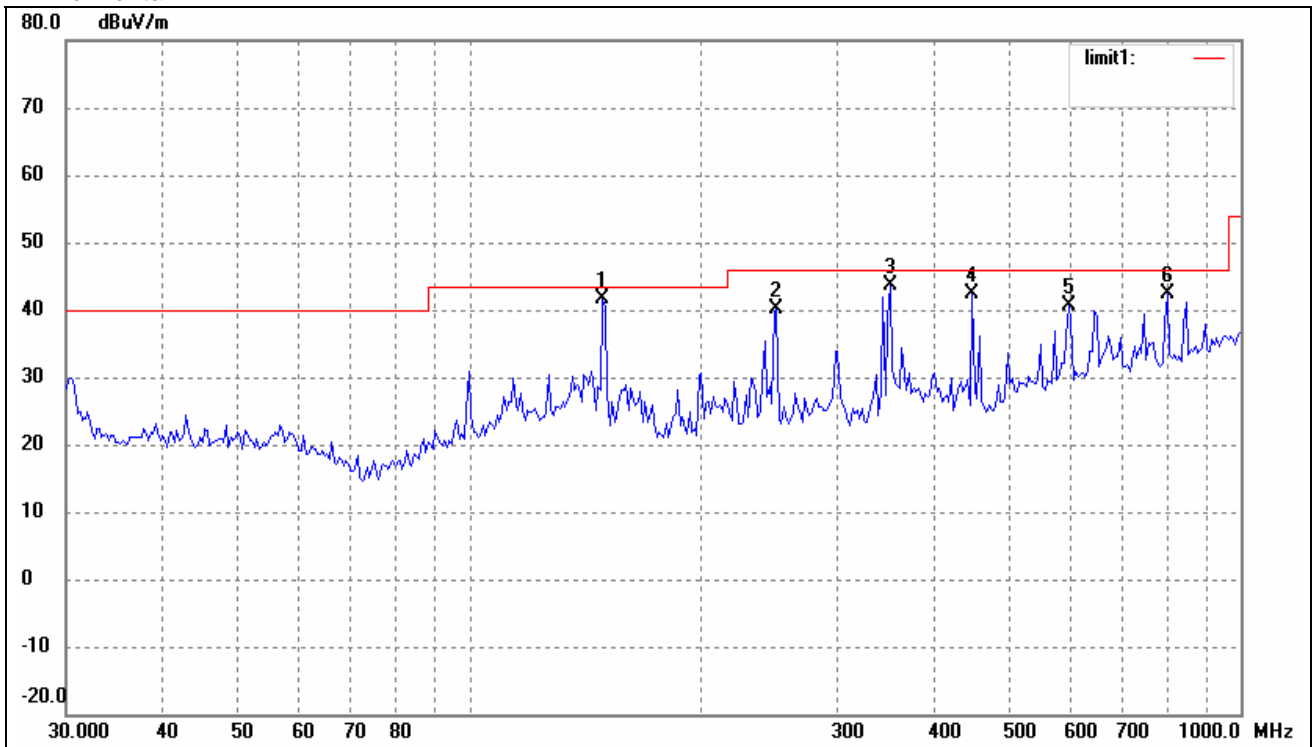


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	30.6392	31.76	6.63	38.39	40.00	-1.61	203	100	peak
2	58.4855	27.57	7.27	34.84	40.00	-5.16	51	100	peak
3	124.9249	31.77	4.57	36.34	43.50	-7.16	44	100	peak
4	384.5447	27.94	9.96	37.90	46.00	-8.10	34	100	peak
5	512.9478	24.46	13.20	37.66	46.00	-8.34	17	100	peak

Plot of Radiation Emissions Test

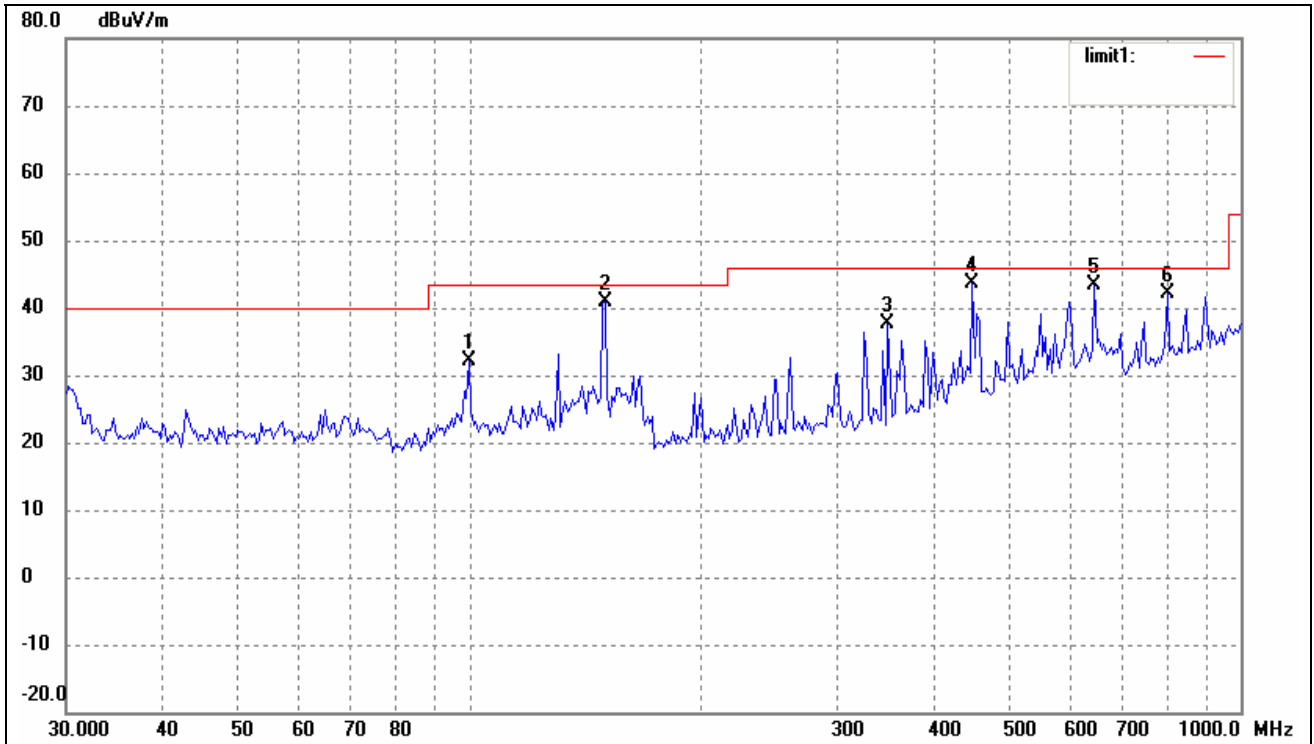
Test mode: Downloading

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	148.9175	38.43	3.30	41.73	43.50	-1.77	154	100	peak
2	250.4859	32.54	7.69	40.23	46.00	-5.77	15	100	peak
3	350.9722	34.18	9.46	43.64	46.00	-2.36	32	100	peak
4	448.8361	31.71	10.59	42.30	46.00	-3.70	11	100	peak
5	598.7067	25.64	14.99	40.63	46.00	-5.37	54	100	peak
6	804.2523	25.15	17.13	42.28	46.00	-3.72	102	100	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	99.7676	24.25	7.79	32.04	43.50	-11.46	305	100	peak
2	149.9676	37.52	3.31	40.83	43.50	-2.67	21	100	peak
3	348.5145	28.13	9.41	37.54	46.00	-8.46	41	100	peak
4	448.8361	33.14	10.59	43.73	46.00	-2.27	34	100	peak
5	646.8217	28.08	15.34	43.42	46.00	-2.58	115	100	peak
6	804.2523	24.90	17.13	42.03	46.00	-3.97	11	100	peak