FCC PART 15B

MEASUREMENT AND TEST REPORT

FOR

Joyplus International Enterprise Limited

805 TECHNOLOGY BUILDING, DUOLI INDUSTRIAL PARK,

SHANGMEILIN, MEIHUA ROAD, FUTIAN DIST., SHENZHEN, CHINA

FCC ID: Z4UTC881101

Report Concerns: Original Report	**Equipment Type:** Tablet PC

Model:	M778
Report No.:	STR11108010I-2
Test Date:	2011-10-08 to 2011-10-27
Issue Date:	2011-11-02
Tested By:	Jason Chen / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy so / PSQ Manager

Prepared By:

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Joyplus International Enterprise Limited
Address of applicant:	805 TECHNOLOGY BUILDING, DUOLI INDUSTRIAL PARK, SHANGMEILLIN, MAIHUA ROAD, FUTIAN DIST., SHENZHEN, CHINA
Manufacturer:	Joyplus International Enterprise Limited
Address of manufacturer:	805 TECHNOLOGY BUILDING, DUOLI INDUSTRIAL PARK, SHANGMEILLIN, MAIHUA ROAD, FUTIAN DIST., SHENZHEN, CHINA

General Description of E.U.T

Items	Description
EUT Description:	Tablet PC
Trade Name:	JOYPLUS
Model No.:	M778
Adding Models:	M718, M798, M78, M788, M768, M88, M18
Rated Voltage:	DC 5V with power adapter
Rated Current:	3A
For more information refer to the circuit diagram form and the user's manual.	

The test data is gathered from a production sample, provided by the manufacturer. The others models listed in the report have different appearance only of M778 without circuit and electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the Joyplus International Enterprise Limited in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with 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.

The equipment under test (EUT) was configured to measure its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Test Facility

- **FCC – Registration No.: 994117**
  SEM.Test Compliance Services 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 and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**
  The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**
  Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the system components. The test software, provided by the customer, is started while the EUT is on to simulate the normal work.

1.6 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	IBM	R51e	74N0AS297138
/	/	/	/

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.3	Shielded	Without Core
Earphone Cable	1	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. §15.107 (a)- CONDUCTED EMISSION

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

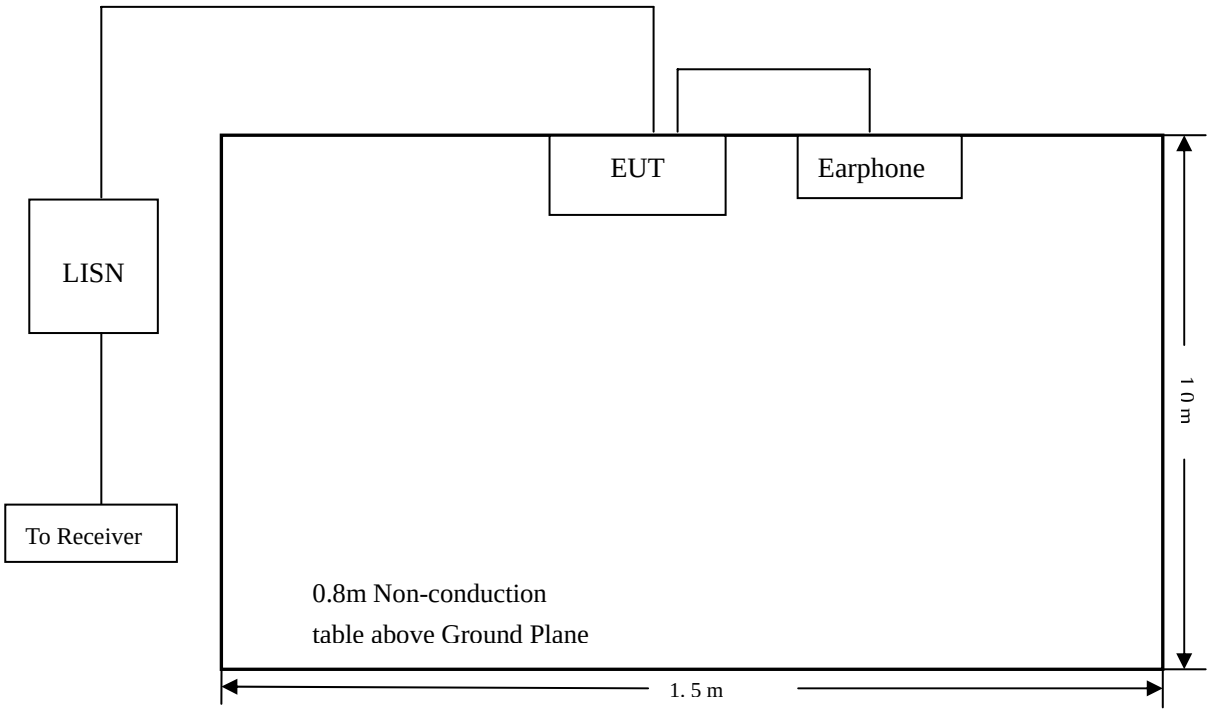
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-12-20	2011-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-12-20	2011-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-12-20	2011-12-19

3.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.107 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

3.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 9 kHz
Quasi-Peak Adapter Mode ..... Normal

3.7 Summary of Test Results/Plots

According to the data in section 3.8, the EUT complied with the FCC Part 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-8.78 dBμV at 0.186 MHz in the **Line** mode**, Pk** detector, **0.15-30MHz**

3.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

Conducted Disturbance

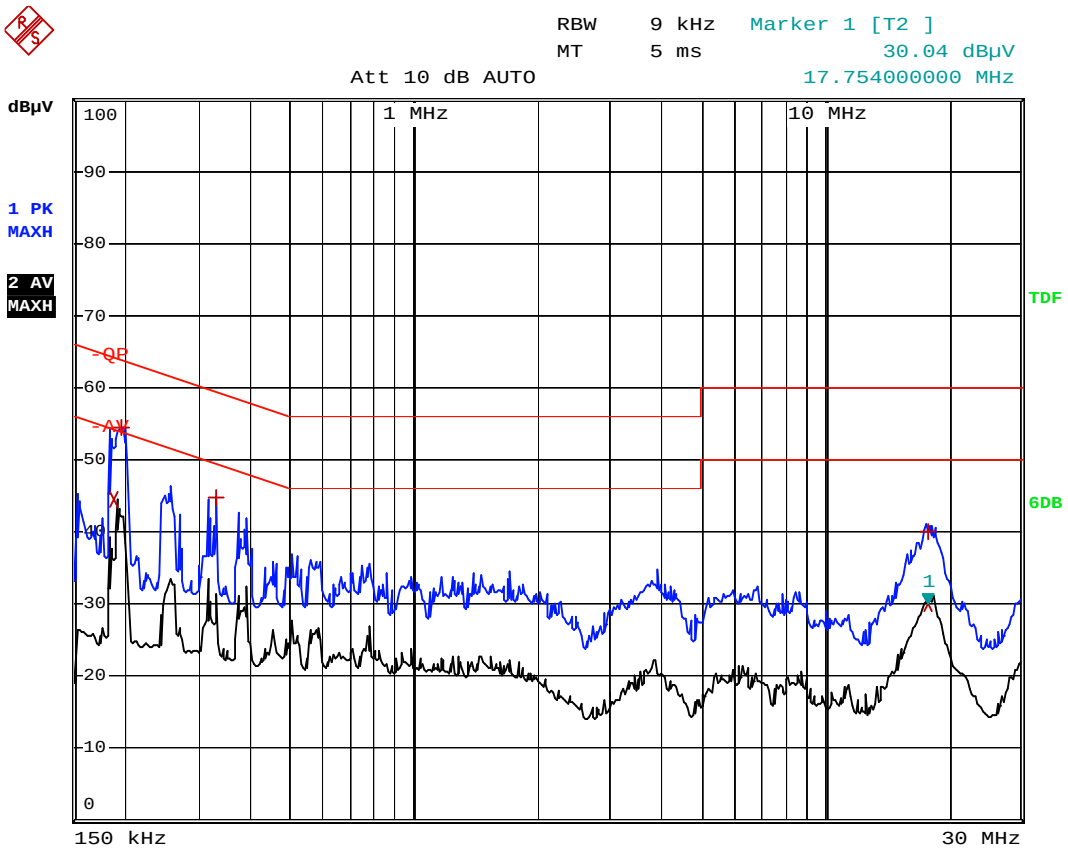
EUT: Tablet PC

M/N: M778

Operating Condition: Running with Program

Test Specification: N

Comment: AC 120V/60Hz connect to Adapter 5V



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	190 kHz	44.37	-9.65
1 Max Peak	198 kHz	54.58	-9.11
1 Max Peak	330 kHz	44.64	-14.80
2 Average	17.754 MHz	30.04	-19.95
1 Max Peak	17.782 MHz	40.07	-19.92

Plot of Conducted Emissions Test Data

Conducted Disturbance

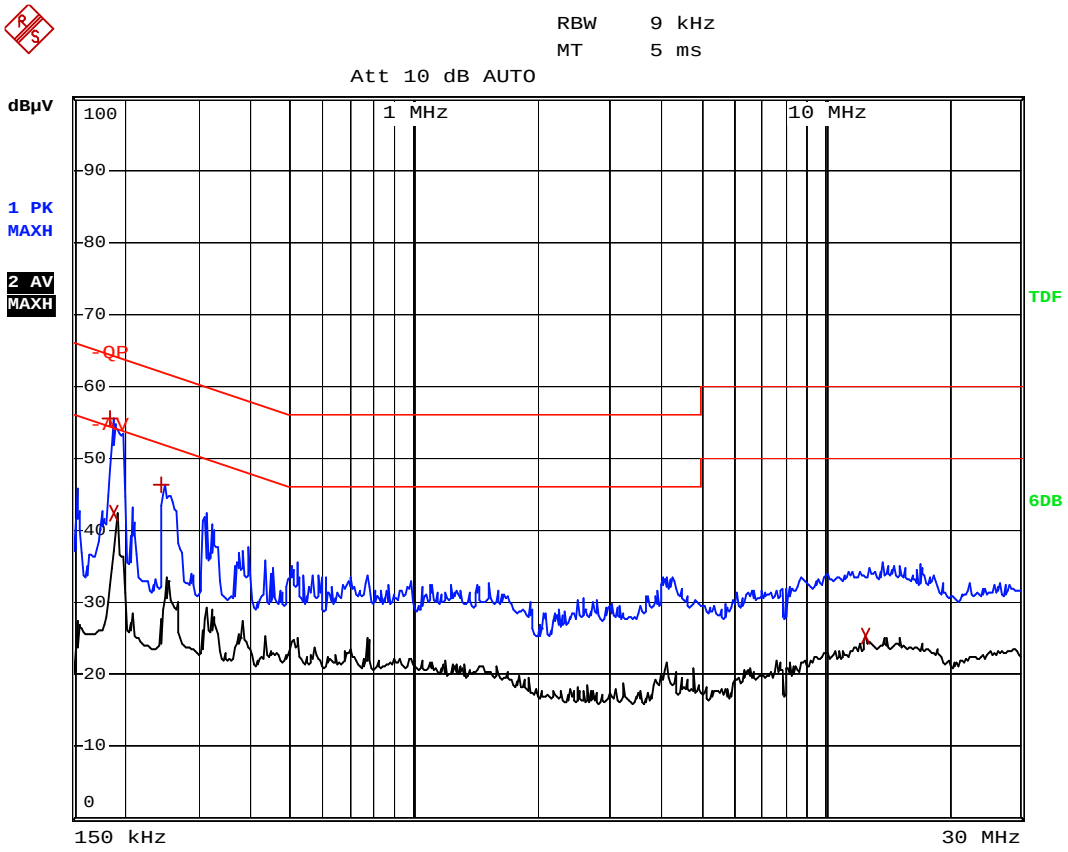
EUT: Tablet PC

M/N: M778

Operating Condition: Running with Program

Test Specification: L

Comment: AC 120V/60Hz connect to Adapter 5V



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	186 kHz	55.43	-8.78
2 Average	190 kHz	42.47	-11.55
1 Max Peak	246 kHz	46.37	-15.51
2 Average	12.622 MHz	25.23	-24.76

4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

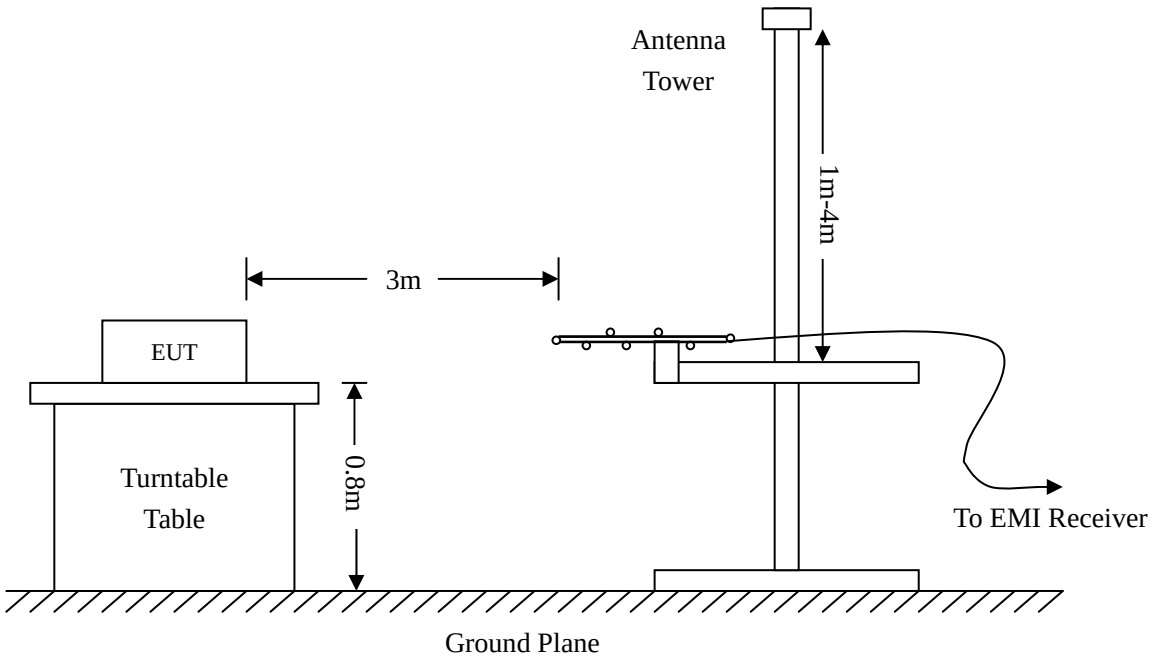
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-12-20	2011-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2010-12-20	2011-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2010-12-20	2011-12-19
RF Switch	EM	EMSW18	SW060023	2010-12-20	2011-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2010-12-20	2011-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2010-12-20	2011-12-19
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2011-01-09	2012-01-08
Horn Antenna	ETS	3117	00086197	2011-01-09	2012-01-08
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2011-01-09	2012-01-08

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 and FCC Part 15.109 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



4.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading – Corr. Factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15B Limit

4.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.6 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15B Class B standards, and had the worst margin of:

Note: The emission limit in this paragraph is based on measurement instrumentation employing an average detector above 1GHz. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

-2.56 dBμV at **33.0950MHz** in the **Horizontal** polarization, **Running with Program** Mode **9 kHz to 12 GHz, 3Meters**

-3.90 dBμV at **33.0950MHz** in the **Vertical** polarization, **Downloading** Mode **9 kHz to 12 GHz, 3Meters**

Plot of Radiation Emissions Test Data

Radiated Disturbance

EUT: Tablet PC

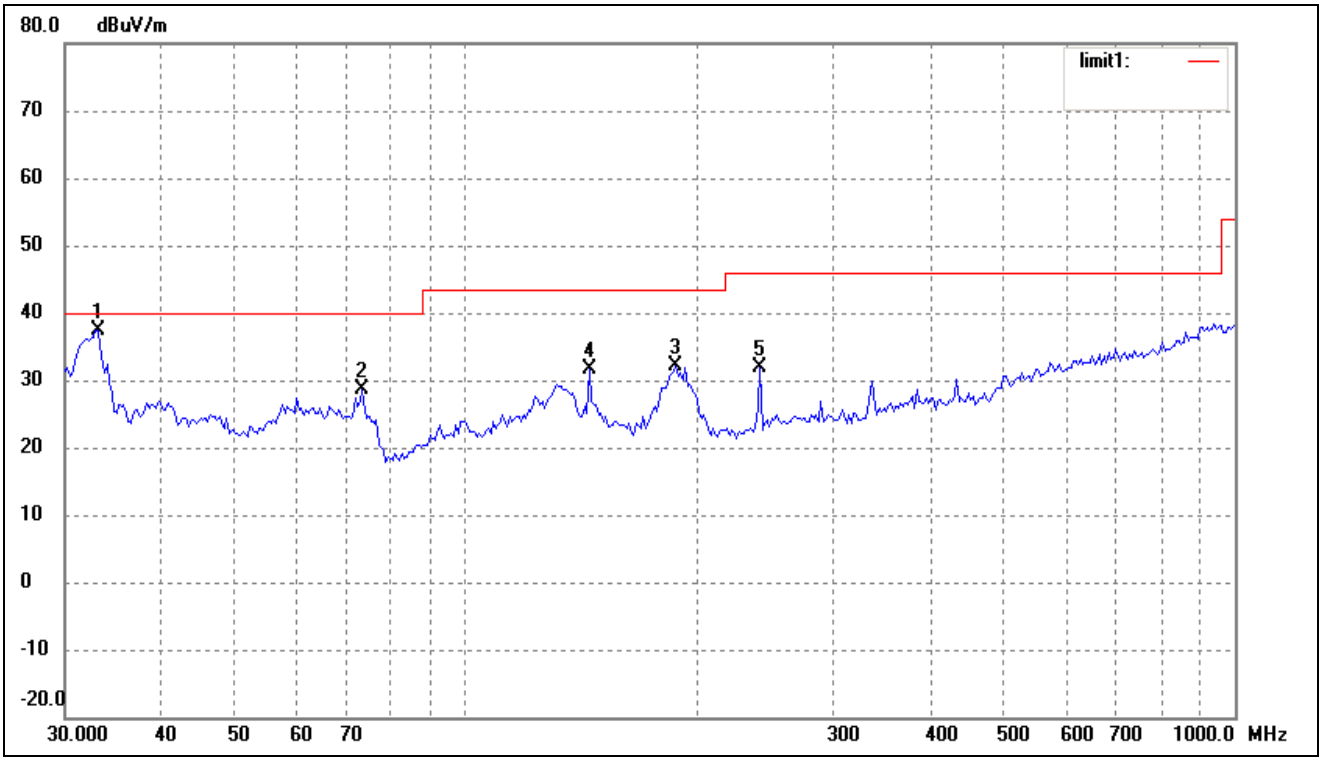
M/N: M778

Operating Condition: Running with Program

Test Specification: Horizontal & Vertical

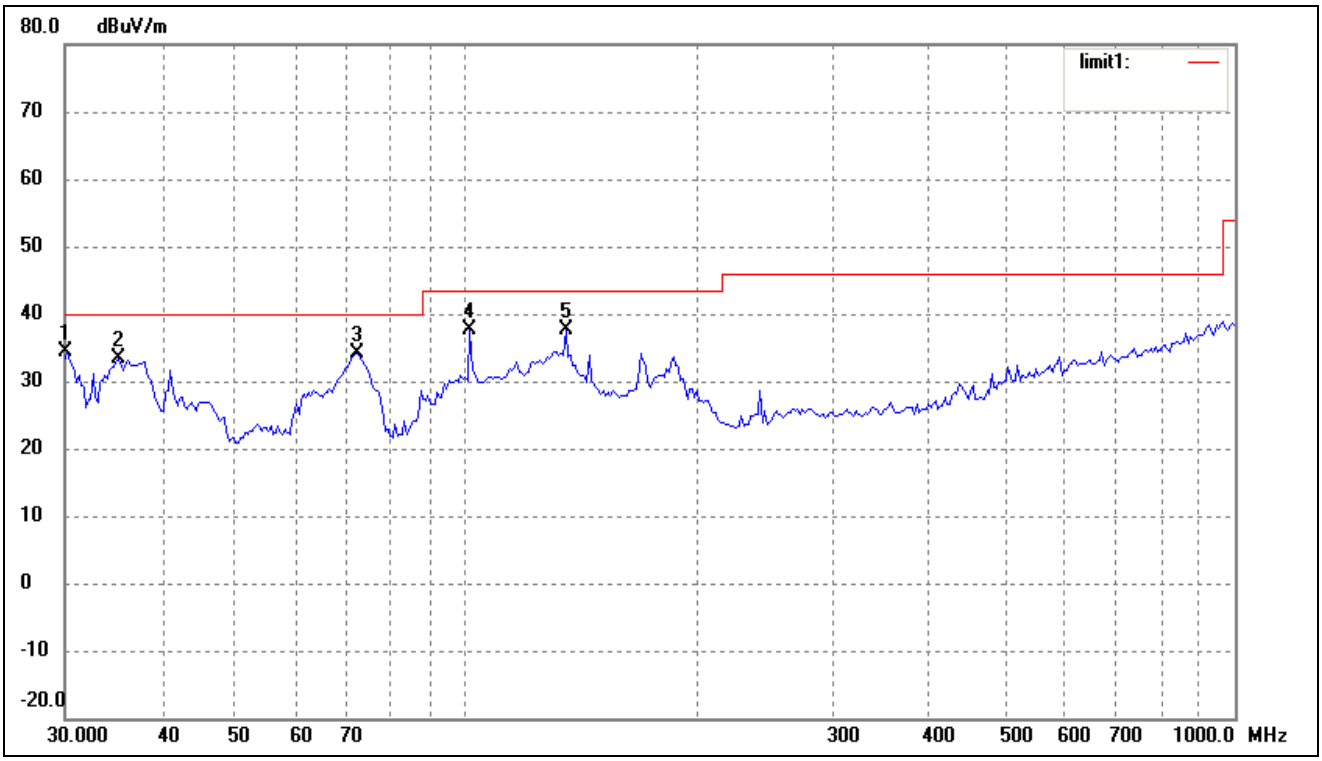
Comment: AC 120V/60Hz connect to Adapter 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	30.67	6.77	37.44	40.00	-2.56	231	114	QP
2	73.1025	25.39	3.13	28.52	40.00	-11.48	360	100	peak
3	187.0958	25.74	6.27	32.01	43.50	-11.49	0	100	peak
4	144.3348	27.54	4.01	31.55	43.50	-11.95	0	200	peak
5	240.8304	23.50	8.45	31.95	46.00	-14.05	360	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.2110	27.54	6.77	34.31	40.00	-5.69	360	100	peak
2	35.2511	26.53	6.83	33.36	40.00	-6.64	0	200	peak
3	72.0842	30.78	3.30	34.08	40.00	-5.92	0	200	peak
4	100.9339	29.40	8.34	37.74	43.50	-5.76	360	100	peak
5	134.5592	33.39	4.29	37.68	43.50	-5.82	360	200	peak

Plot of Radiation Emissions Test Data (1-6GHz)

Radiated Disturbance

EUT: Tablet PC

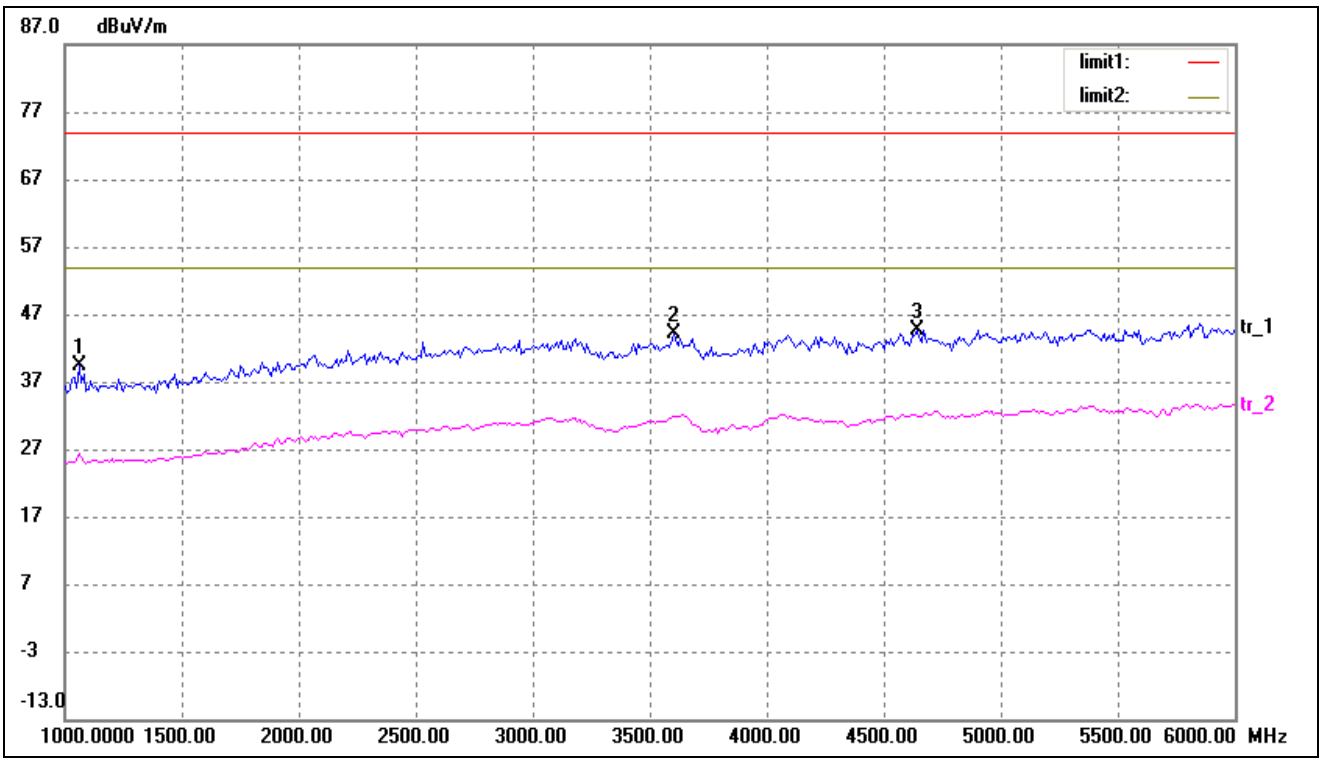
M/N: M778

Operating Condition: Running with Program

Test Specification: Horizontal & Vertical

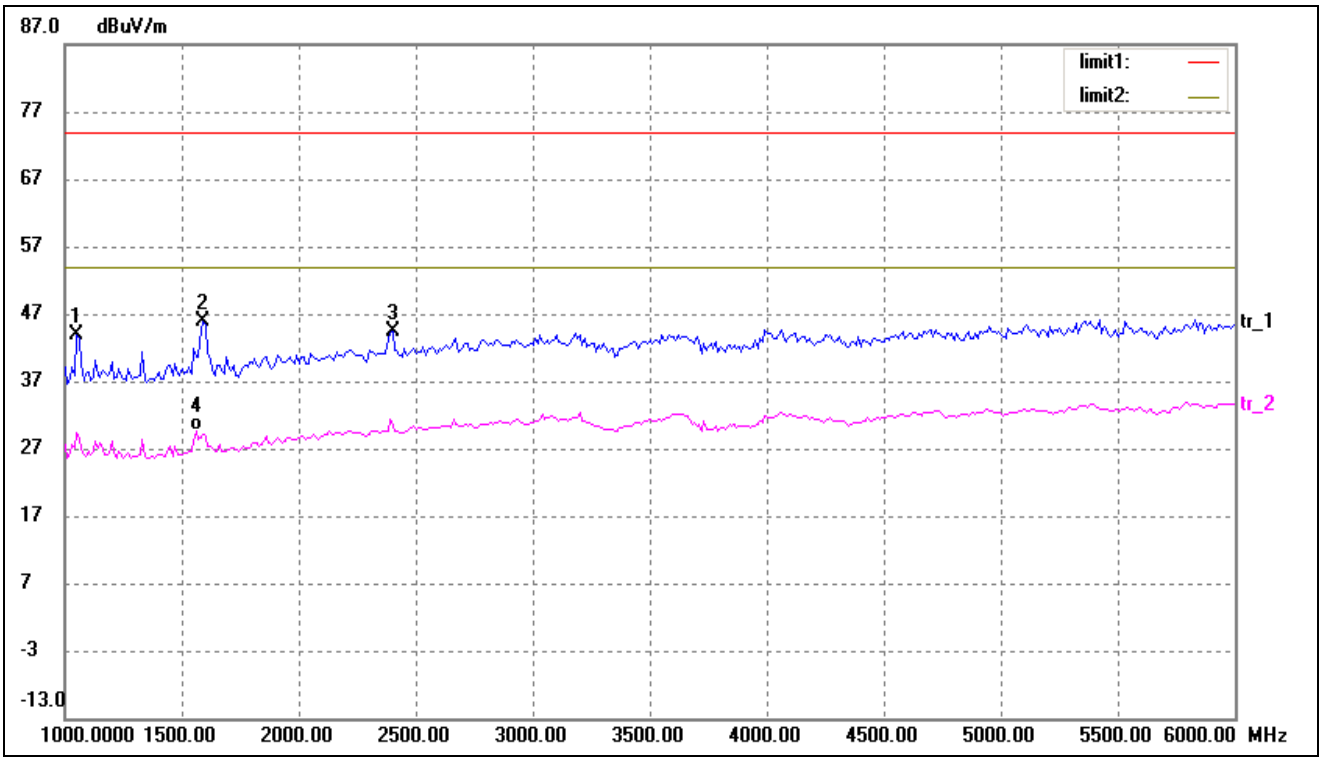
Comment: AC 120V/60Hz connect to Adapter 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1060.000	51.30	-11.91	39.39	74.00	-34.61	360	100	peak
2	3600.000	49.92	-5.79	44.13	74.00	-29.87	0	200	peak
3	4640.000	49.45	-4.79	44.66	74.00	-29.34	0	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1050.000	55.78	-11.92	43.86	74.00	-30.14	360	100	peak
2	1590.000	56.63	-10.70	45.93	74.00	-28.07	0	200	peak
3	2400.000	51.68	-7.31	44.37	74.00	-29.63	0	100	peak
4	1560.000	40.40	-10.88	29.52	54.00	-24.48	360	200	AVG

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.
The measurements greater than 20dB below the limit from 9kHz to 30MHz..

Plot of Radiation Emissions Test Data

Radiated Disturbance

EUT: Tablet PC

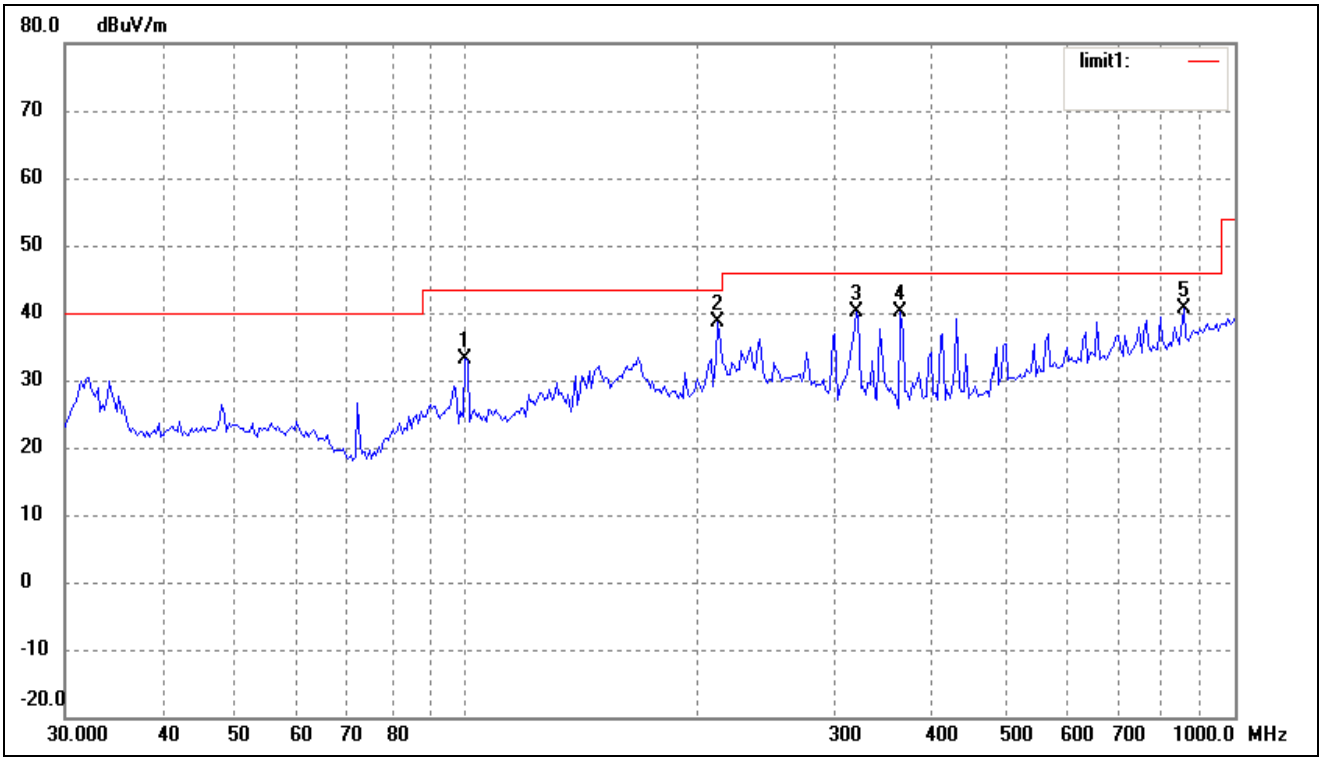
M/N: M778

Operating Condition: Downloading

Test Specification: Horizontal & Vertical

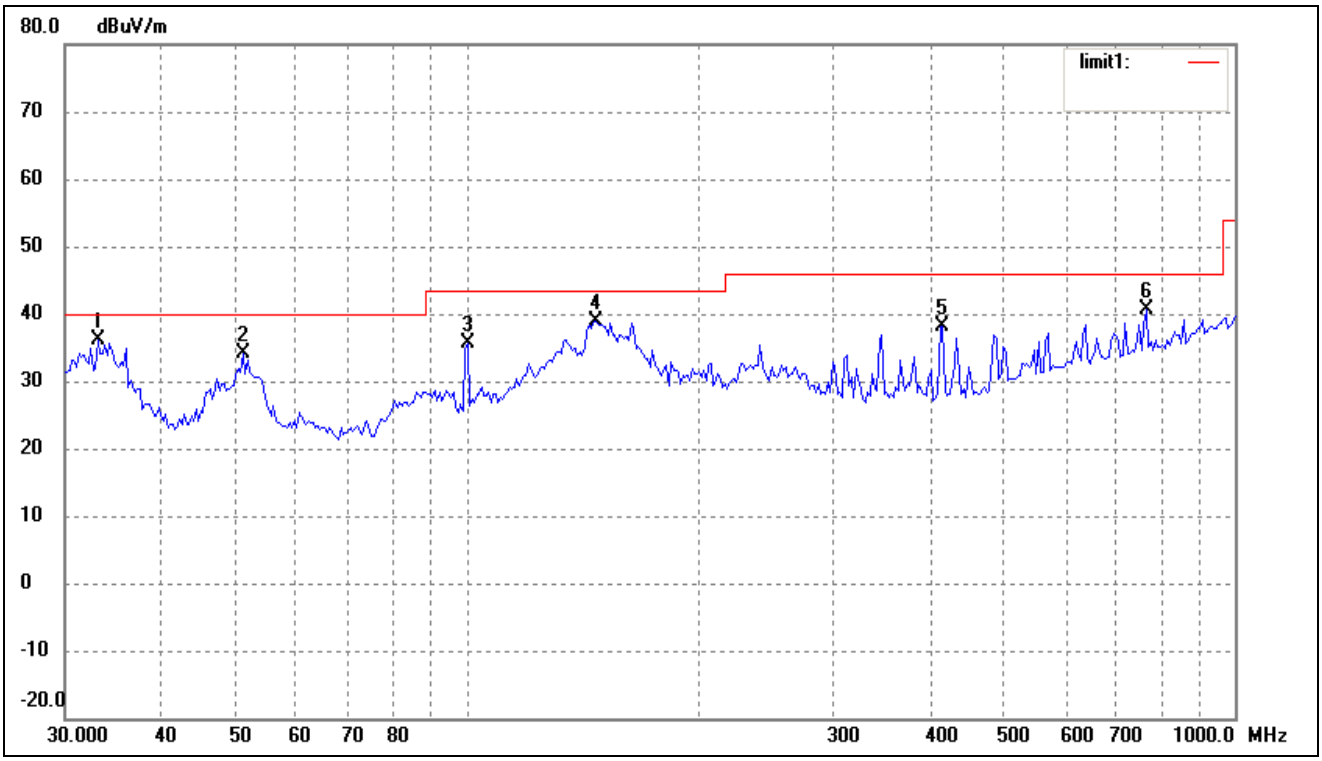
Comment: connect to PC

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	99.5281	24.63	8.40	33.03	43.50	-10.47	360	300	peak
2	212.2695	31.63	7.01	38.64	43.50	-4.86	119	121	peak
3	321.0608	30.21	10.01	40.22	46.00	-5.78	360	200	peak
4	366.8231	29.14	10.99	40.13	46.00	-5.87	0	100	peak
5	857.0247	20.55	20.08	40.63	46.00	-5.37	360	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	29.33	6.77	36.10	40.00	-3.90	250	119	peak
2	51.1209	26.08	7.93	34.01	40.00	-5.99	360	300	peak
3	100.2286	27.15	8.41	35.56	43.50	-7.94	0	200	peak
4	147.4036	34.94	4.05	38.99	43.50	-4.51	109	118	peak
5	416.1791	26.84	11.37	38.21	46.00	-7.79	360	150	peak
6	766.0571	22.08	18.51	40.59	46.00	-5.41	0	200	peak

Plot of Radiation Emissions Test Data (1-6GHz)

Radiated Disturbance

EUT: Tablet PC

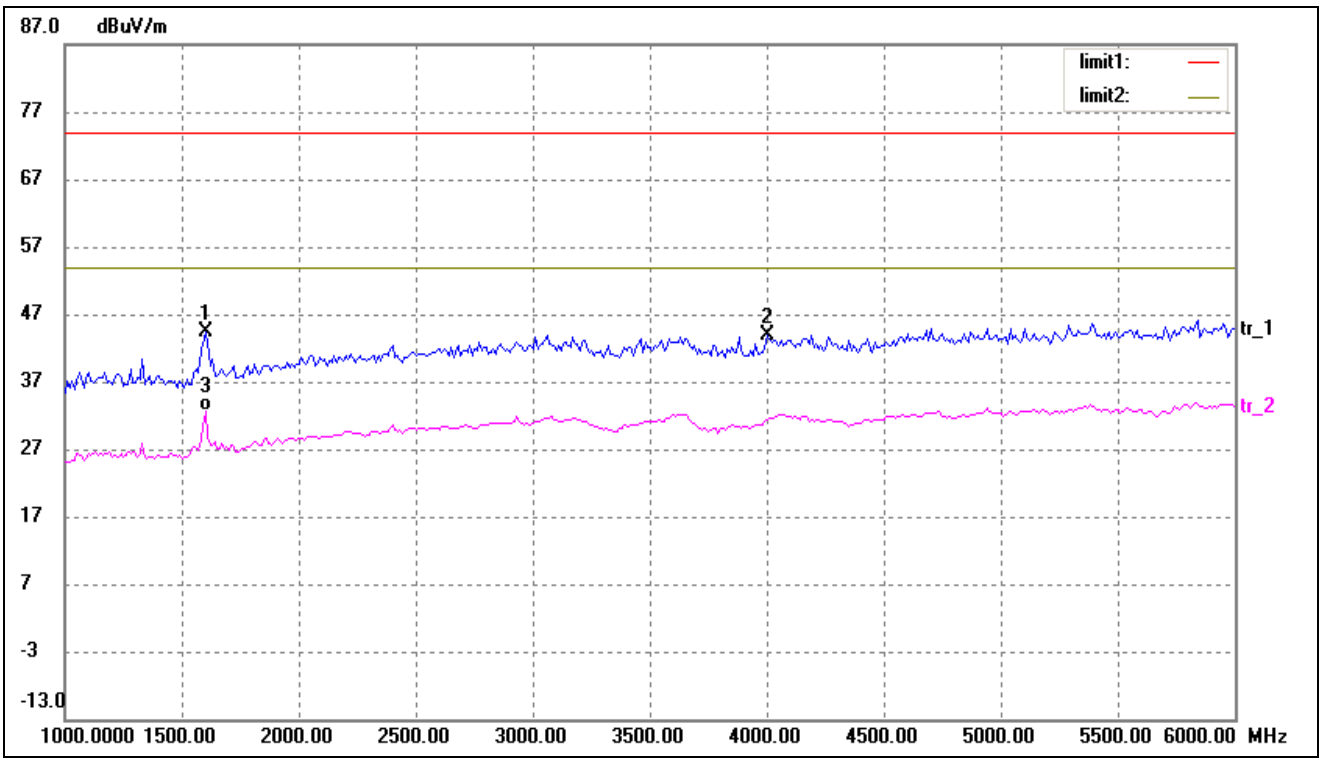
M/N: M778

Operating Condition: Downloading

Test Specification: Horizontal & Vertical

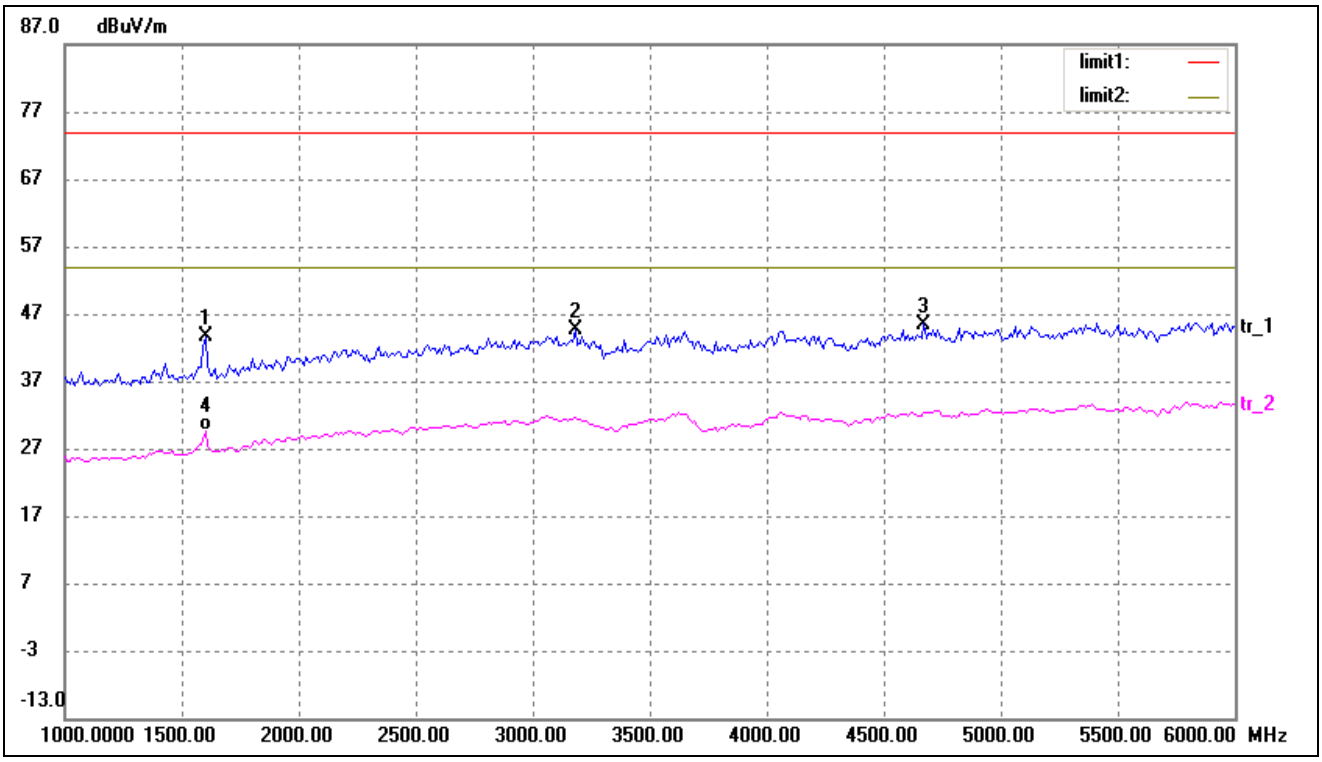
Comment: connect to PC

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1600.000	54.96	-10.64	44.32	74.00	-29.68	360	100	peak
2	4000.000	49.14	-5.36	43.78	74.00	-30.22	0	200	peak
3	1600.000	43.15	-10.64	32.51	54.00	-21.49	0	200	AVG

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1600.000	54.24	-10.64	43.60	74.00	-30.40	360	100	peak
2	3180.000	50.80	-6.11	44.69	74.00	-29.31	360	100	peak
3	4670.000	50.26	-4.76	45.50	74.00	-28.50	0	200	peak
4	1600.000	40.17	-10.64	29.53	54.00	-24.47	360	200	AVG

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.
The measurements greater than 20dB below the limit from 9kHz to 30MHz..

******* END OF REPORT *******