FCC PART 15.109

MEASUREMENT AND TEST REPORT

FOR

Americhip Inc

RM813, Coastal Building East Block, Hai De San Dao, Hou Hai Bin Road,

Nanshan District, Shenzhen, China

FCC ID: WN72179

Report Concerns: Original Report	**Equipment Type:** Target Digital Camera

Model: DC2179

Report No.: STR08088139I

Test/Witness Engineer: Susan Su

Test Date: 2008-08-29 to 2008-09-02

Issue Date: 2008-09-03

Prepared By:

SEM.Test Compliance Service Co., Ltd.
3/F, Jinbao Commerce Building, Xin'an Fanshen Road,
Bao'an District, Shenzhen, P.R.C. (518101)

Approved & Authorized By: Jandy So

Jandy So / PSQ Manager

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Americhip Inc
Address of applicant:	RM813, Coastal Building East Block, Hai De San Dao, Hou Hai Bin Road, Nanshan District, Shenzhen, China
Manufacturer:	Americhip Inc
Address of manufacturer:	RM813, Coastal Building East Block, Hai De San Dao, Hou Hai Bin Road, Nanshan District, Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	Target Digital Camera
Trade Name:	/
Model No.:	DC2179
Rated Voltage:	DC 3V battery/USB 5V
Rated Current:	300 mA
Packaging Size:	9.3X6.5X1.9 cm
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.

1.2 Test Standards

The following report is prepared on behalf of the Americhip Inc 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, Subpart B, and section 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 Related Submittal(s)/Grant(s)

No Related Submittal(s).

1.4 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.

1.5 Test Facility

The 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 files which the Registration No.: **994117**. Measurement required was performed at laboratory of SEM. Test Compliance Service Co., Ltd. at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C

1.6 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.

1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
IBM	Notebook	T22	LV14893
TP-LINK	Modem	TM-EC5658V	KT99CTQC-508
Lenovo	Printer	3110	OD65133711480

1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.0	Shielded	With 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 ± 1.5 dB.

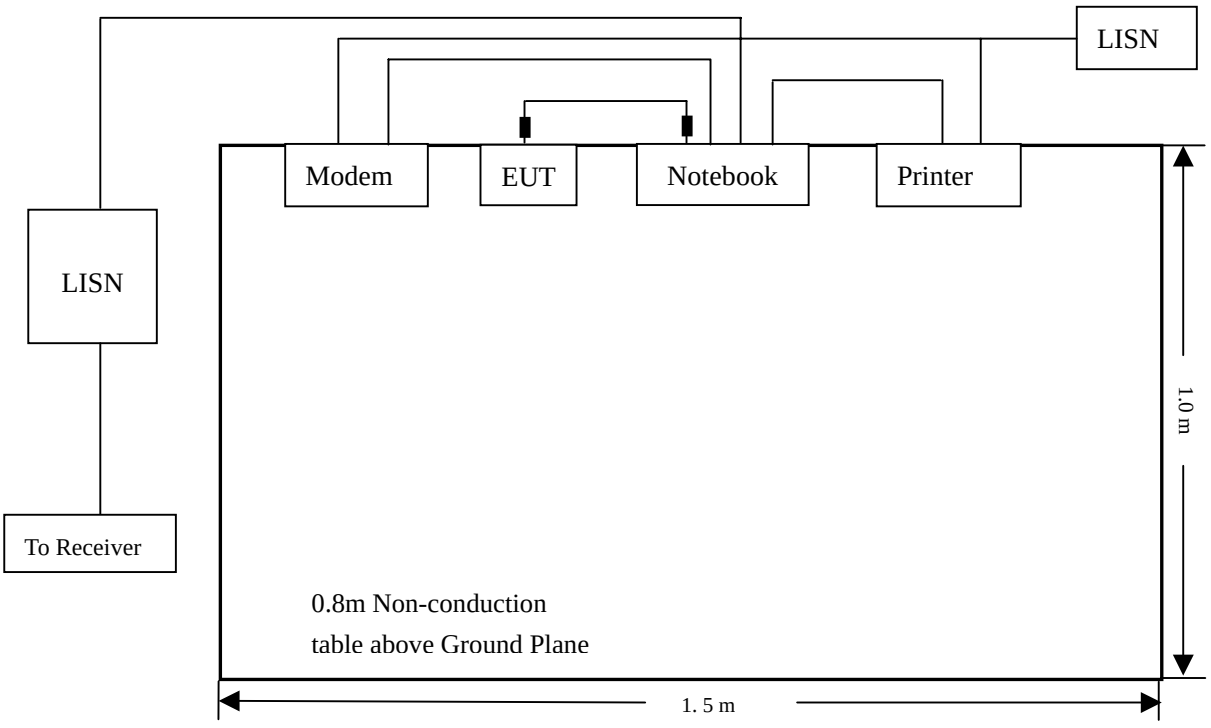
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2008-01-25	2009-01-24
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2008-01-25	2009-01-24
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2008-01-25	2009-01-24
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2008-01-25	2009-01-24

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:	23 °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 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-6.57 dBμV at 0.214 MHz in the **Neutral** mode**, Average detector, 0.15-30MHz**

3.8 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
0.214	46.47	Ave	Neutral	53.04	-6.57
0.162	54.25	Pk	Neutral	65.36	-11.11
0.170	53.82	Pk	Line	64.95	-11.13
0.214	40.42	Ave	Line	52.04	-12.62
4.386	31.13	Ave	Line	45.99	-14.86
4.026	30.29	Ave	Neutral	45.99	-15.70
0.634	30.15	Ave	Neutral	45.99	-15.84
0.638	29.86	Ave	Line	46.99	-16.13
0.918	28.82	Ave	Neutral	46.00	-17.18
4.458	38.64	Pk	Line	55.99	-17.35
3.954	38.29	Pk	Neutral	55.99	-17.70
0.990	27.84	Ave	Line	46.99	-18.15
7.786	30.96	Ave	Line	49.99	-19.03
0.390	38.48	Pk	Line	48.06	-19.58

Emission attenuated more than 20dB of the limit is not reported.

Plot of Conducted Emissions Test Data

Conducted Disturbance

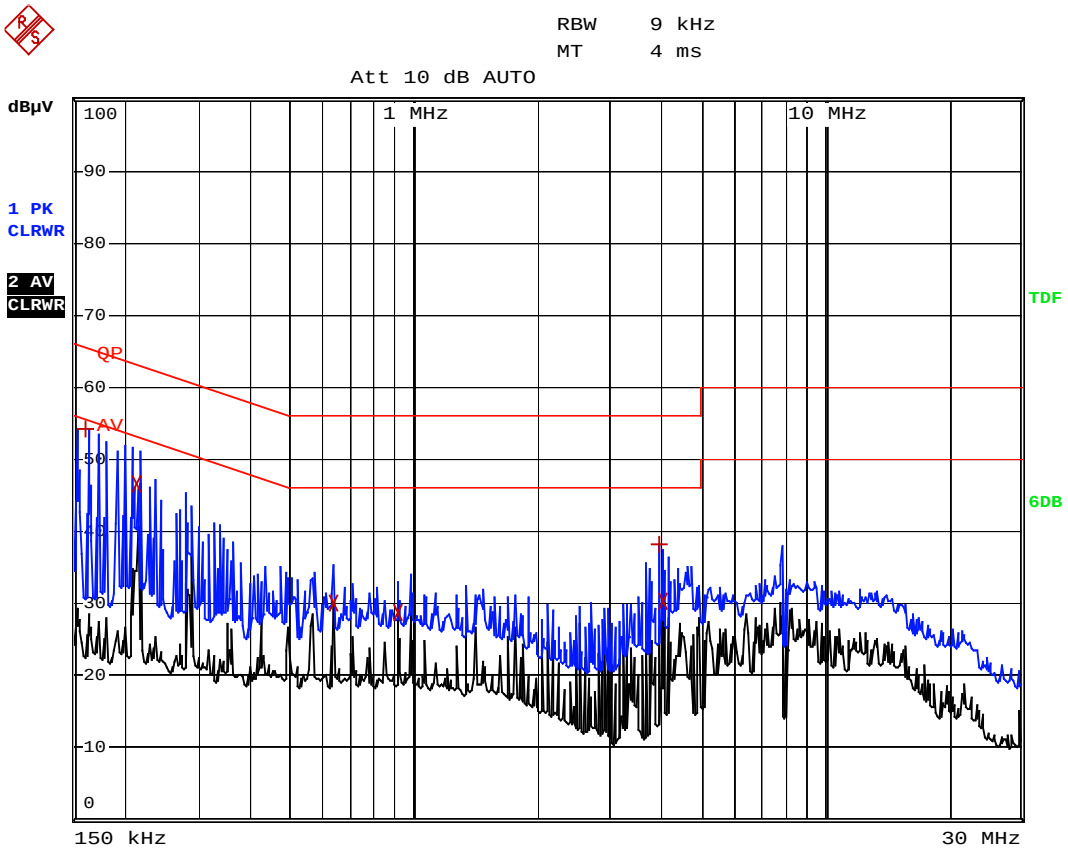
EUT: Target Digital Camera

M/N: DC2179

Operating Condition: Running

Test Specification: N

Comment: AC120V/60Hz; USB 5V



Plot of Conducted Emissions Test Data

Conducted Disturbance

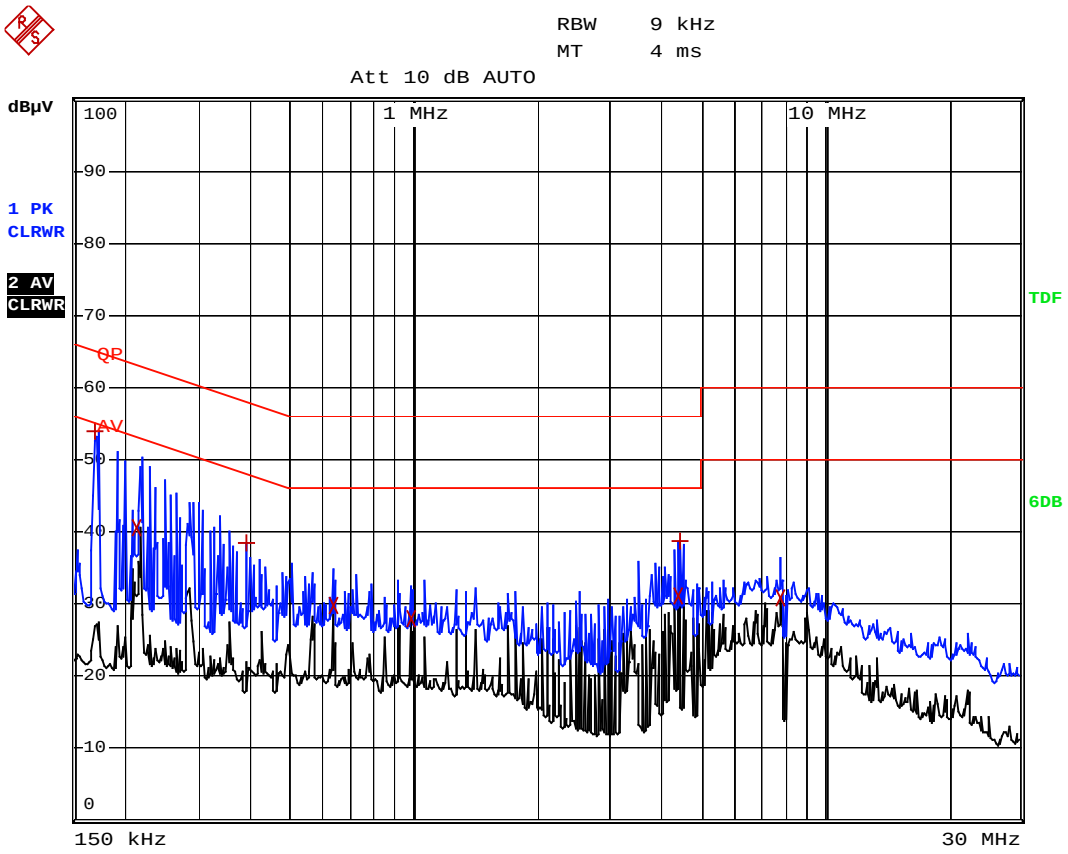
EUT: Target Digital Camera

M/N: DC2179

Operating Condition: Running

Test Specification: L

Comment: AC120V/60Hz; USB 5V



4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

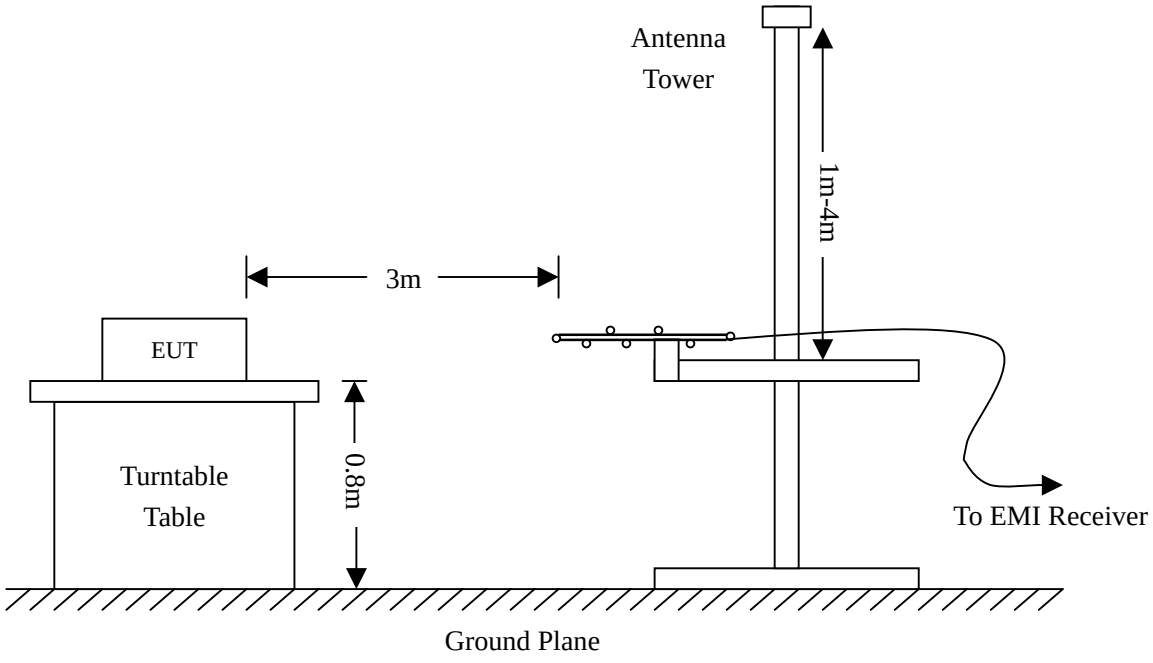
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 3.0 dB.

4.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-01-25	2009-01-24
Positioning Controller	C&C	CC-C-1F	N/A	2008-01-25	2009-01-24
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-01-25	2009-01-24
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2008-01-25	2009-01-24
RF Switch	EM	EMSW18	SW060023	2008-01-25	2009-01-24
Amplifier	Agilent	8447F	3113A06717	2008-01-25	2009-01-24
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008-01-25	2009-01-24
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2008-01-25	2009-01-24

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 Test Receiver Setup

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

Start Frequency ..... 30 MHz
Stop Frequency ..... 1000 MHz
Sweep Speed ..... Auto
IF Bandwidth ..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 120 kHz
Quasi-Peak Adapter Mode ..... Normal

4.5 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

4.6 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1015 mbar

4.7 Summary of Test Results/Plots

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

-2.94 dBμV at **674.6768 MHz** in the **Horizontal** polarization, **30 MHz to 1 GHz, 3Meters**

Plot of Radiation Emissions Test Data

Radiated Disturbance

EUT: Target Digital Camera

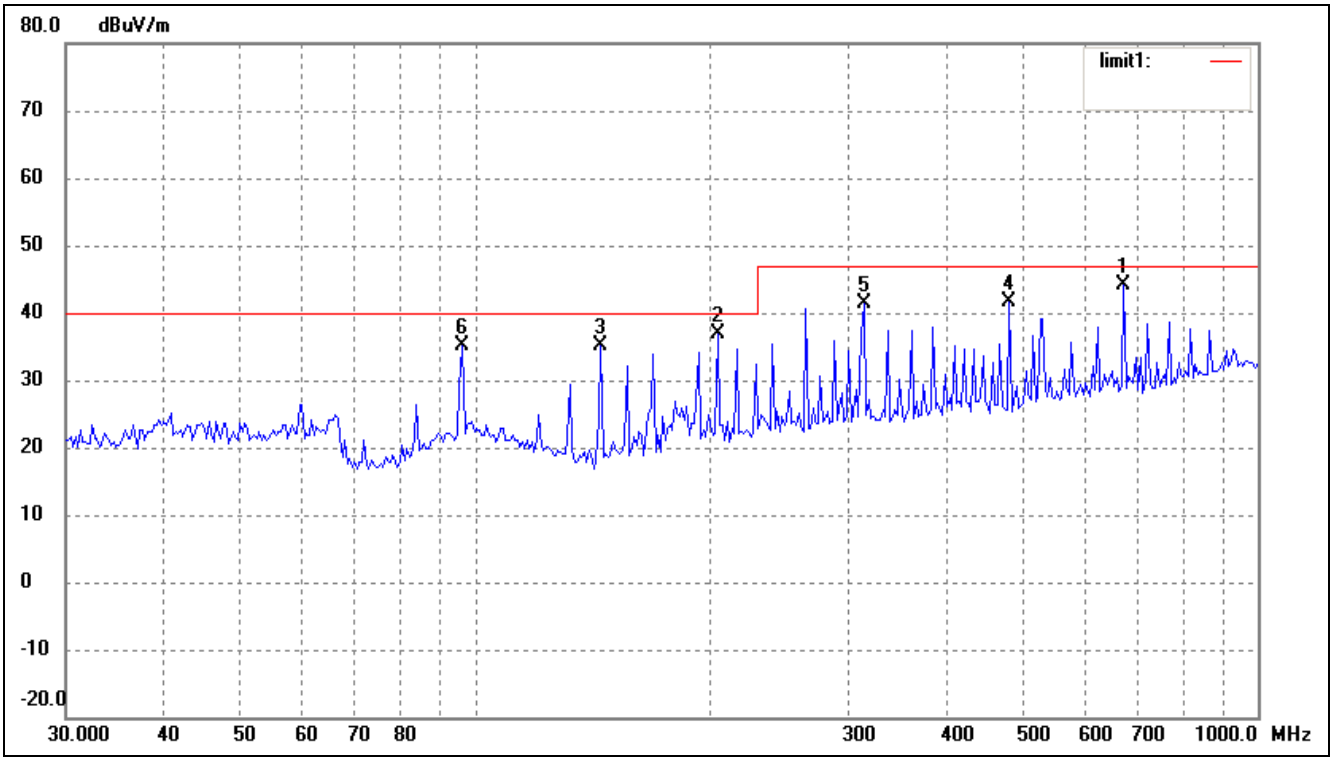
M/N: DC2179

Operating Condition: Running

Test Specification: Horizontal & Vertical

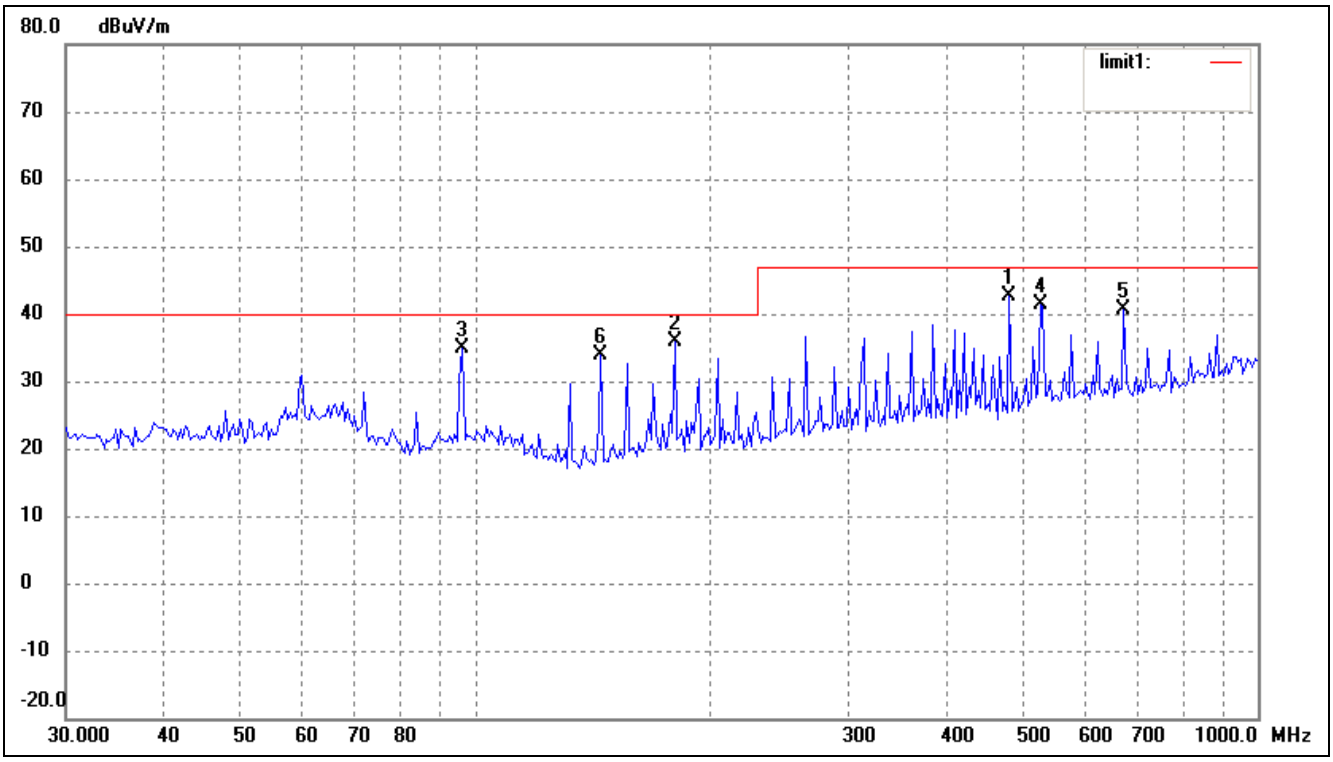
Comment: AC 120V/60Hz; USB 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	674.6768	31.41	12.65	44.06	47.00	-2.94	242	100	peak
2	204.3052	31.06	5.82	36.88	40.00	-3.12	351	100	peak
3	144.7899	31.97	3.26	35.23	40.00	-4.77	90	200	peak
4	481.5112	31.57	10.09	41.66	47.00	-5.34	79	200	peak
5	313.6483	32.52	8.77	41.29	47.00	-5.71	54	130	peak
6	96.3230	27.63	7.56	35.19	40.00	-4.81	33	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	481.5112	32.55	10.09	42.64	47.00	-4.36	81	200	peak
2	180.0304	31.00	4.78	35.78	40.00	-4.22	330	160	peak
3	96.3230	27.40	7.56	34.96	40.00	-5.04	26	100	peak
4	527.5707	30.02	11.37	41.39	47.00	-5.61	71	100	peak
5	674.6768	28.04	12.65	40.69	47.00	-6.31	39	120	peak
6	144.7899	30.52	3.26	33.78	40.00	-6.22	305	150	peak

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