

FCC PART 15.109 MEASUREMENT AND TEST REPORT FOR

Cosmos Digitech (HK) Co., Ltd

Room 1703, Hip Kwan Commercial Building No.38 Pitt Road Yaomatei,

Kowloon, Hong Kong

FCC ID: WEVOT72

Report Concerns: Original Report	Equipment Type: Digital Photo Frame
Model:	<u>OT72</u>
Report No.:	<u>STR08068028I</u>
Test/Witness Engineer:	<u>Lahm Peng</u>
Test Date:	<u>2008-06-05 to 2008-07-04</u>
Issued Date:	<u>2008-07-10</u>
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 /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.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Cosmos Digitech (HK) Co., Ltd
Address of applicant: Room 1703, Hip Kwan Commercial Building No.38 Pitt Road
Yaomatei, Kowloon, Hong Kong

Manufacturer: HUAXING ELETRONICS FACTORY
Address of manufacturer: No.8, Gaoli Road 6, Gaoli Industrial Area, Qinghutou
Tangxia Town, Dongguan City, Guangdong, China

General Description of E.U.T

Items	Description
EUT Description:	Digital Photo Frame
Trade Name:	/
Model No.:	OT72
Adding Models:	SP72, CM72(A~Z), 36971
Rate Current:	500mA
Rate Voltage:	DC 12V
Rated Power:	/
Size:	23.5x17.0x3.2 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. The other models listed in the report have different appearance of OT72 without circuit and electronic construction changed, declared by the manufacture.

1.2 Test Standards

The following report is prepared on behalf of the Cosmos Digitech (HK) Co., Ltd 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 result 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 immunity level. Test is carried with playing mode which worst case has been showed. Test setup was 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. (518101).

1.6 Accessories Equipment List and Details

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

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.6	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 $\pm 1.5\text{dB}$.

3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESCS30	830245/009	2008-01-25	2009-01-24
AMN	Rohde & Schwarz	ESH2-Z5	100002	2008-01-25	2009-01-24
Limiter	Rohde & Schwarz	ESH3-Z2	357.8810.52	2008-01-25	2009-01-24
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2008-01-25	2009-01-24
Spectrum Analyzer	Aglient	E4402B-ESA	US41192821	2008-01-25	2009-01-24

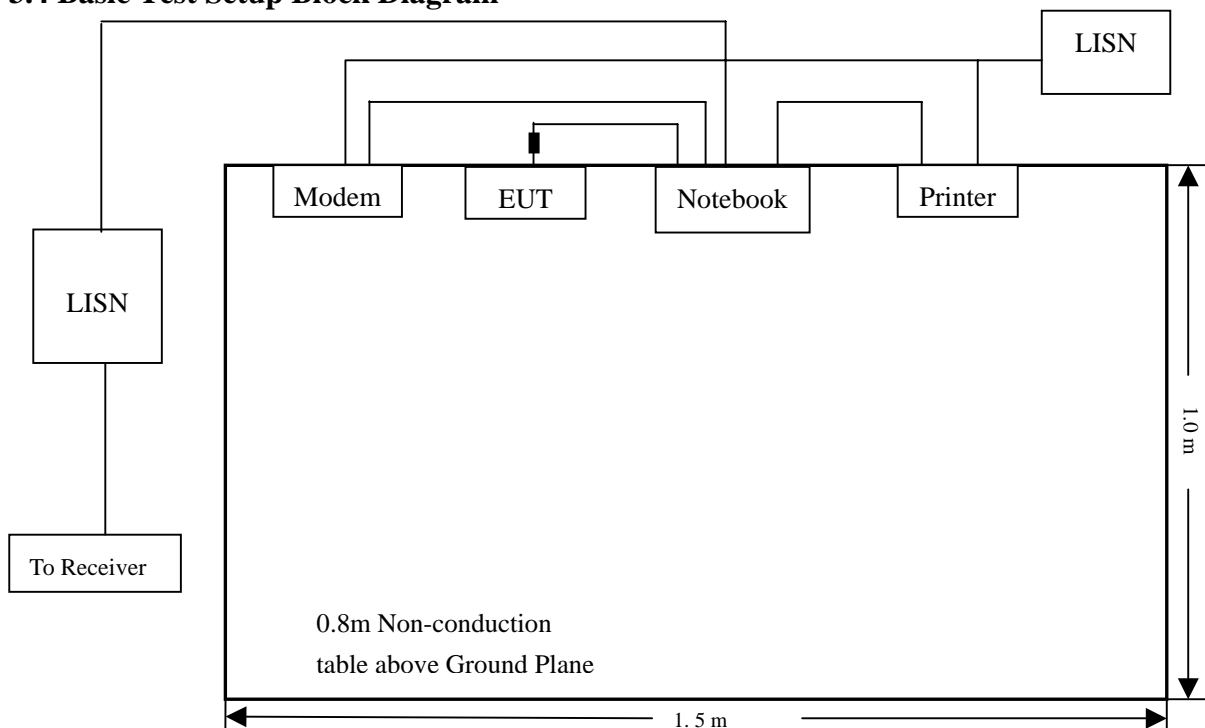
3.3 Test Procedure

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:	25° C
Relative Humidity:	55%
ATM Pressure:	1010 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 3.7, the EUT complied with the FCC 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-6.0 dBμV at 0.430 MHz in the Neutral mode, Av detector 0.15-30MHz

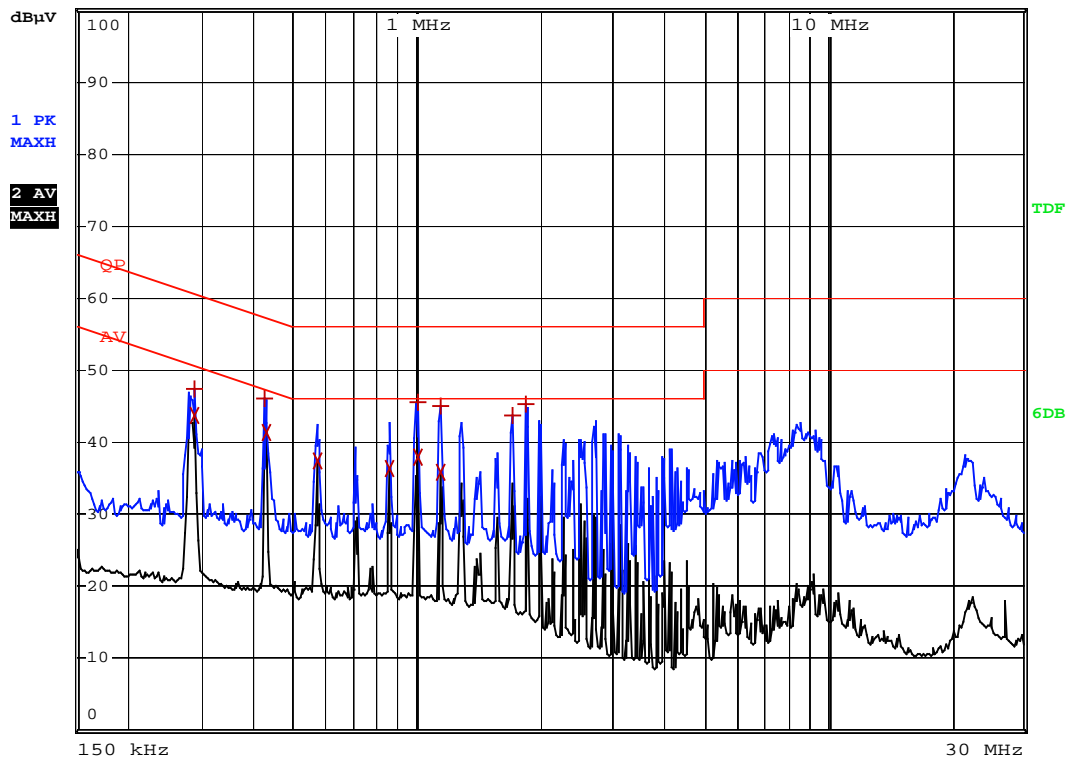
3.8 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC15 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dB μ V	QP/Ave/Pk	Line/Neutral	dB μ V	dB
0.430	41.28	Av	Neutral	47.25	-6.0
1.142	49.65	Pk	Line	56	-6.4
0.286	43.65	Av	Neutral	50.64	-7.0
1.138	39.00	Av	Line	46	-7.0
0.426	50.01	Pk	Line	57.33	-7.3
2.422	48.49	Pk	Line	56	-7.5
0.426	39.87	Av	Line	47.33	-7.5
1.002	37.94	Av	Neutral	46	-8.1
0.574	37.39	Av	Neutral	46	-8.6
0.286	51.86	Pk	Line	60.64	-8.8
0.286	41.50	Av	Line	50.64	-9.1
0.858	36.30	Av	Neutral	46	-9.7
1.138	35.87	Av	Neutral	46	-10.1
1.006	45.46	Pk	Neutral	56	-10.5
1.850	45.27	Pk	Neutral	56	-10.7
1.138	44.99	Pk	Neutral	56	-11.0
0.426	46.18	Pk	Neutral	57.33	-11.2
2.422	34.15	Av	Line	46	-11.9
1.710	43.79	Pk	Neutral	56	-12.2
0.286	47.39	Pk	Neutral	60.64	-13.2
22.366	46.42	Pk	Line	60	-13.6
8.102	44.26	Pk	Line	60	-15.7

Note: The emission attenuated more than 20dB below the permissible value are not reported.

Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: Digital Photo Frame**M/N: OT72**Operating Condition: Downloading**Test Specification: N**Comment: AC120V/60Hz USB 5V*RBW 9 kHz
MT 12 ms

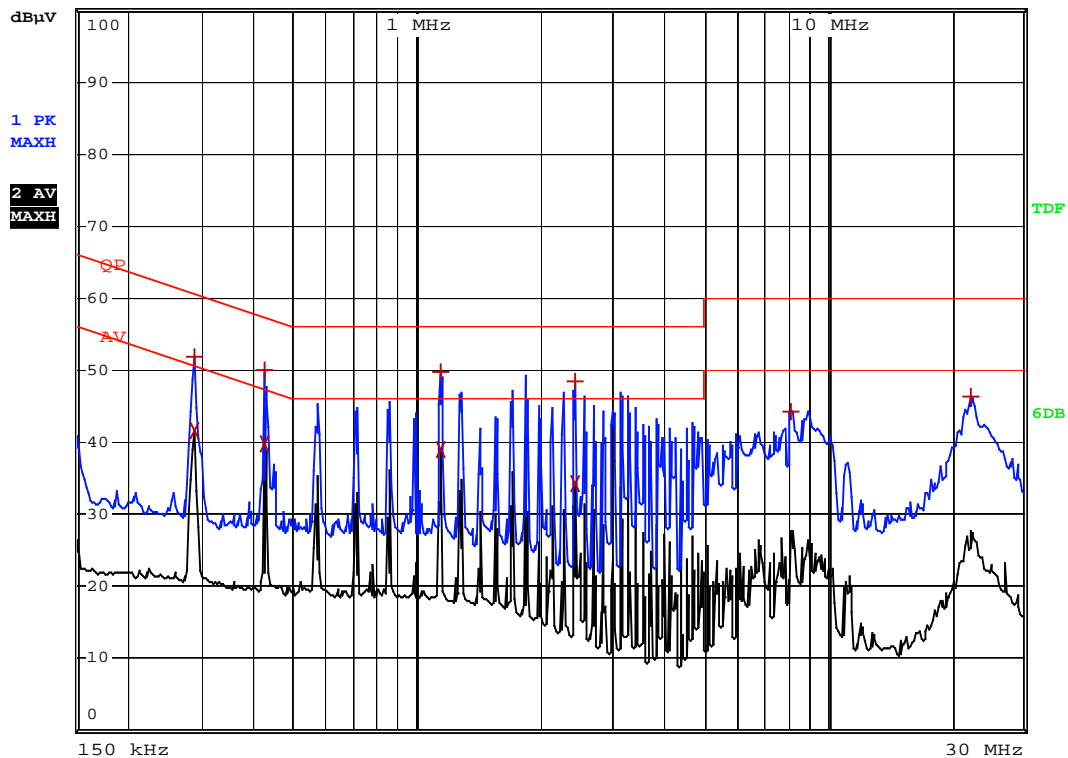
Att 10 dB AUTO



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Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: Digital Photo Frame**M/N: OT72**Operating Condition: Downloading**Test Specification: L**Comment: AC120V/60Hz USB 5V*RBW 9 kHz
MT 12 ms

Att 10 dB AUTO



Date: 2.JUL.2008 16:03:02

4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

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

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.

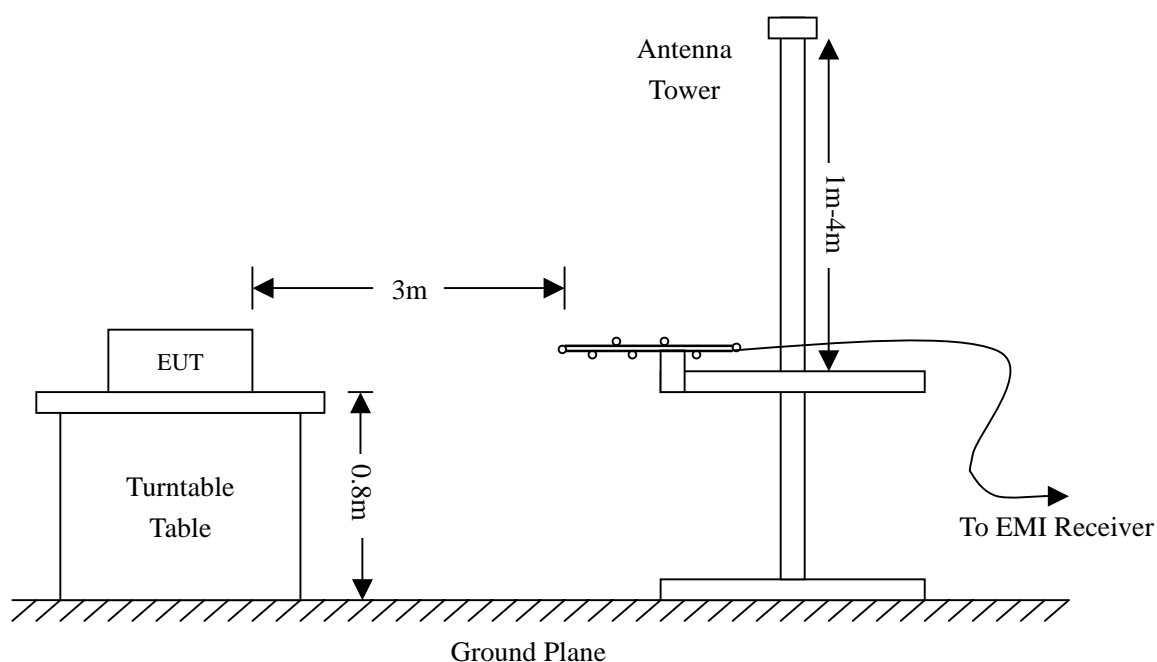
4.2 Test Equipment List and Details

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 15.109 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

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:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15B Limit}$$

4.5 Environmental Conditions

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

4.6 Summary of Test Results/Plots

According to the data in section 4.6, the EUT complied with the FCC 15 Class B standards, and had the worst margin is:

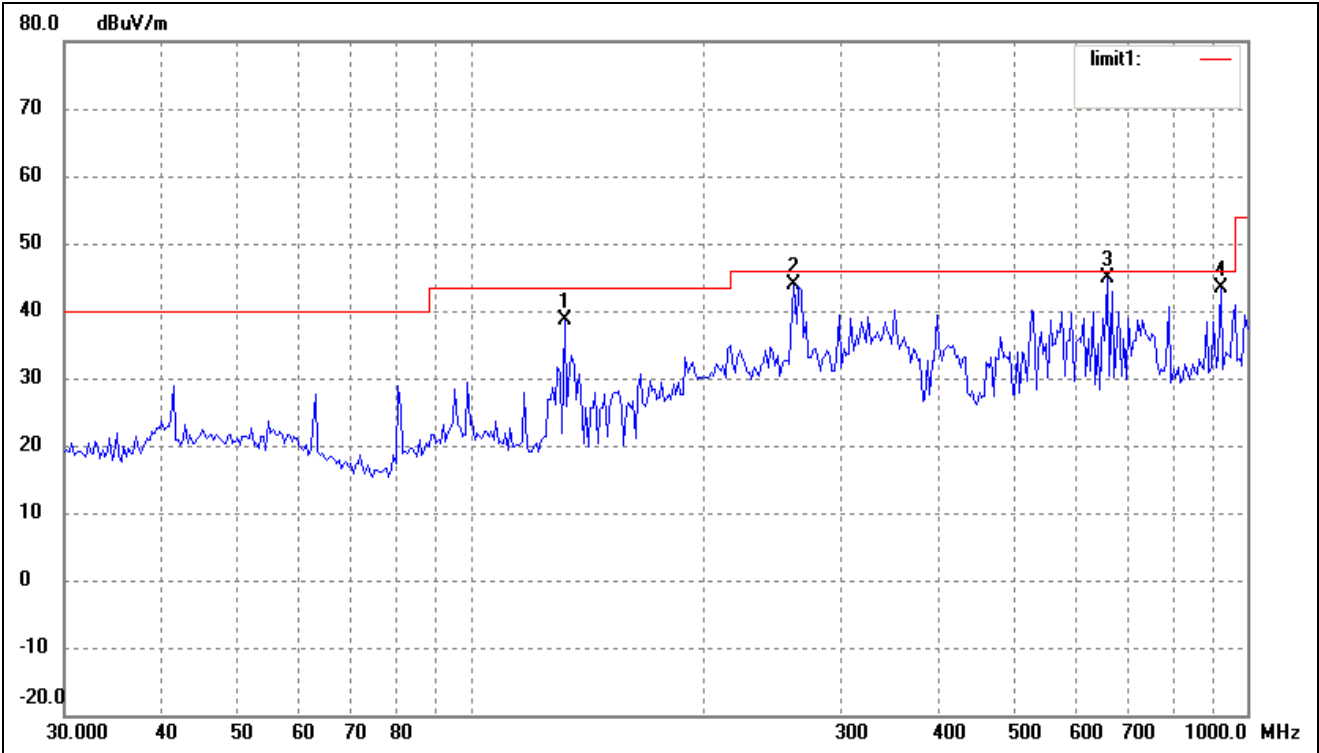
-1.18 dBμV at 660.6025 MHz in the Downloading mode, Horizontal polarization, 30 MHz to 1 GHz, 3Meters

-1.39 dBμV at 660.6025 MHz in the Playing mode, Vertical polarization, 30 MHz to 1 GHz, 3Meters

Plot of Radiation Emissions Test Data

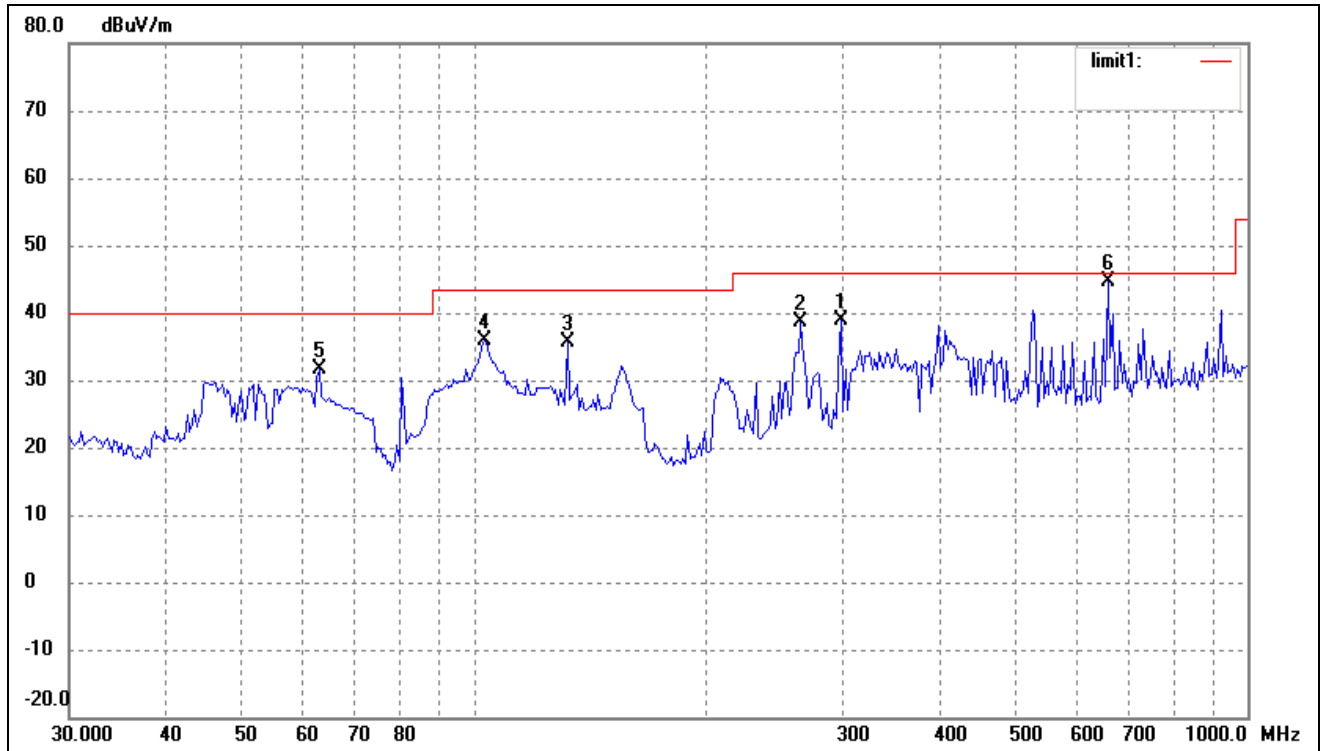
Radiated Disturbance
EUT: Digital Photo Frame
M/N: OT72
Operating Condition: Downloading
Test Specification: Horizontal & Vertical
Comment: AC120V/60Hz

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	132.1489	34.13	4.43	38.56	43.50	-4.94	355	112	QP
2	261.2730	34.82	8.98	43.80	46.00	-2.20	15	105	QP
3	660.6025	30.45	14.37	44.82	46.00	-1.18	0	185	QP
4	925.6132	26.23	17.25	43.48	46.00	-2.52	140	100	QP

Vertical:

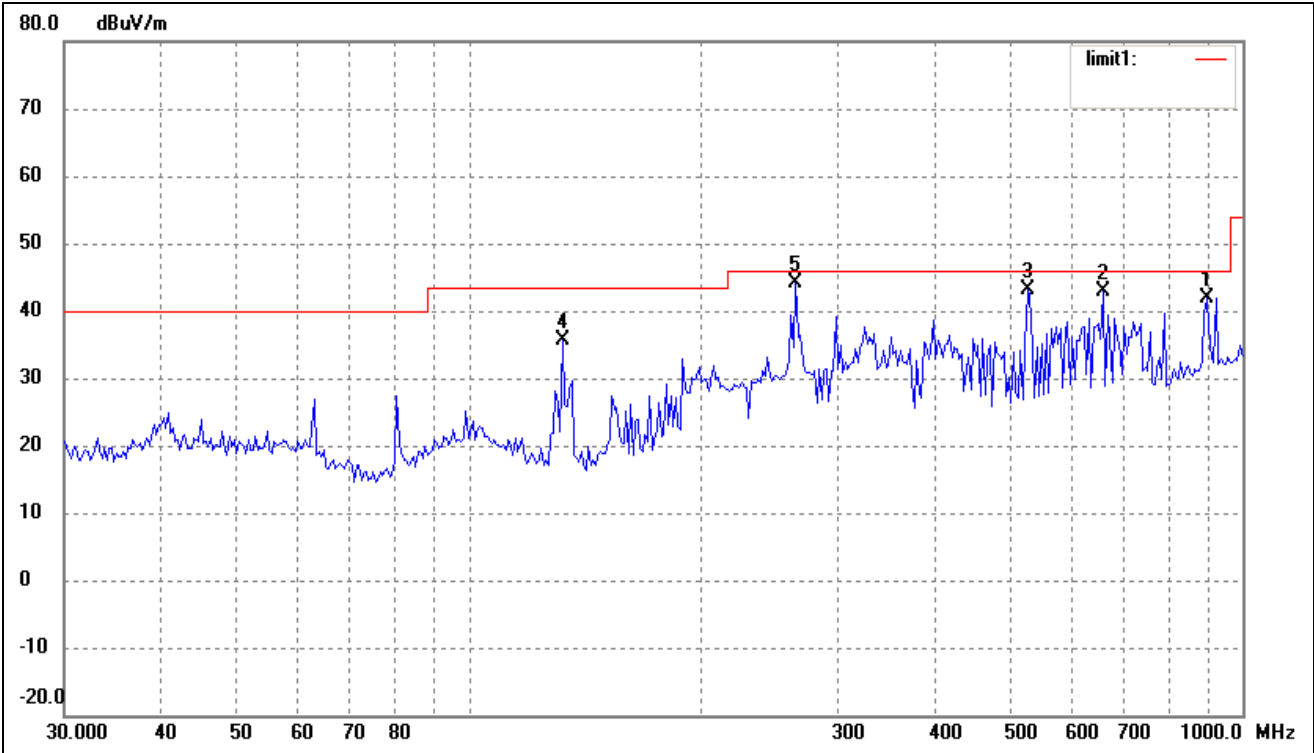


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	298.5932	29.09	9.75	38.84	46.00	-7.16	25	100	peak
2	264.9709	29.47	9.10	38.57	46.00	-7.43	102	100	peak
3	132.1489	31.23	4.43	35.66	43.50	-7.84	356	100	peak
4	103.3353	27.61	8.15	35.76	43.50	-7.74	247	100	peak
5	63.1857	25.40	6.29	31.69	40.00	-8.31	120	100	peak
6	660.6024	30.27	14.37	44.64	46.00	-1.36	15	112	QP

Plot of Radiation Emissions Test Data

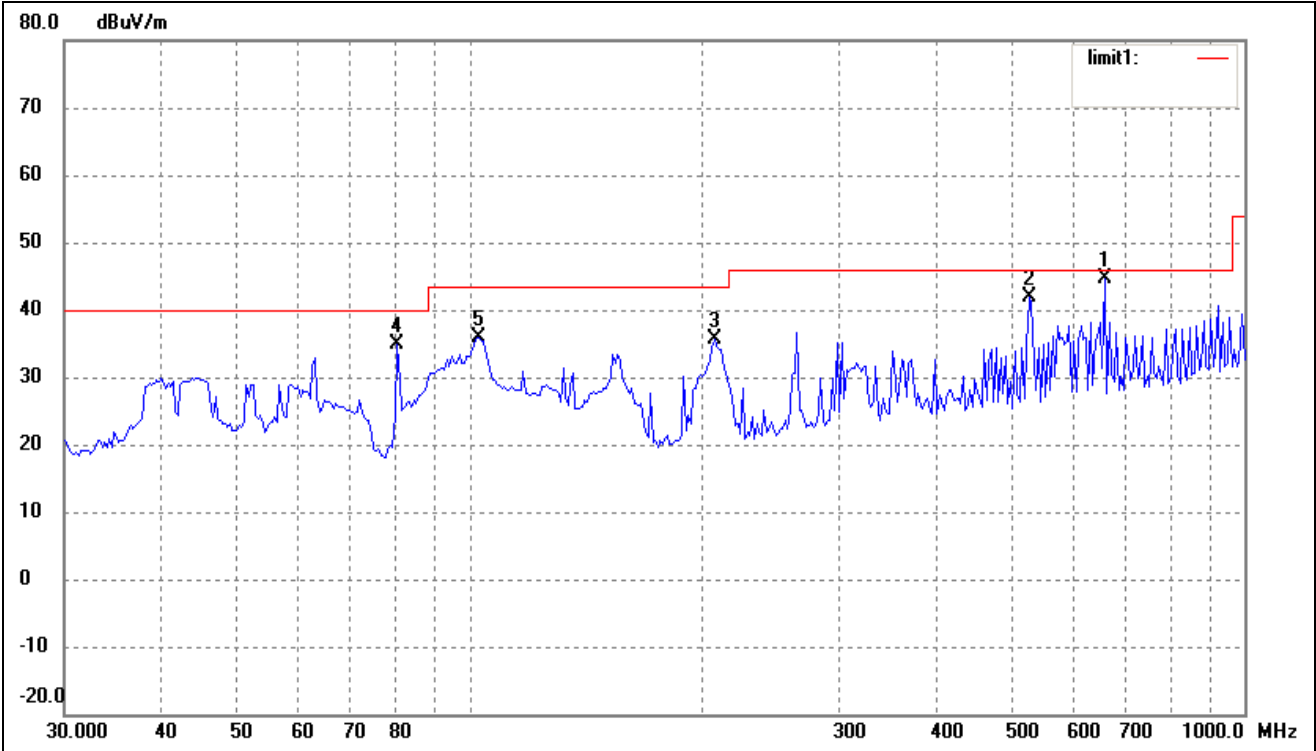
Radiated Disturbance
EUT: Digital Photo Frame
M/N: OT72
Operating Condition: Playing
Test Specification: Horizontal & Vertical
Comment:

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	899.9577	24.97	16.90	41.87	46.00	-4.13	360	100	QP
2	660.6024	28.59	14.37	42.96	46.00	-3.04	241	100	QP
3	527.5706	30.11	12.90	43.01	46.00	-2.99	38	100	QP
4	132.1489	31.18	4.43	35.61	43.50	-7.89	10	100	peak
5	264.9707	35.11	9.10	44.21	46.00	-1.79	145	100	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	660.6025	30.24	14.37	44.61	46.00	-1.39	220	110	QP
2	527.5707	28.90	12.90	41.80	46.00	-4.20	105	105	QP
3	207.1968	28.90	6.84	35.74	43.50	-7.76	0	100	peak
4	80.8042	30.98	3.92	34.90	40.00	-5.10	332	120	QP
5	102.6117	27.60	8.21	35.81	43.50	-7.69	0	100	peak