FCC Part 15B

Measurement and Test Report

For

Matsunichi Digital Development (Shenzhen) Co., Ltd

NO. 4401, International Chamber of Commerce Tower, No. 168 FuHua Rd3,

FuTian District, Shenzhen, China

FCC ID: ZDRTC970

Report Concerns: Original Report	**Equipment Type:** Mode De Vie
Model:	TC970
Report No.:	STR11038136I-3
Test Date:	2011-03-16 to 2011-03-30
Issue Date:	2011-03-30
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:	Matsunichi Digital Development (Shenzhen) Co., Ltd
Address of applicant:	No. 4401, International Chamber of Commerce Tower, No.168 FuHua Rd3, FuTian District, Shenzhen, China
Manufacturer:	Guangzhou Singulargold Electronics Co., Ltd
Address of manufacturer:	No.6, Lianhua yan Road, Science City, Guangzhou Hi-Tech Industrial Development Zone, Guangzhou, China

General Description of E.U.T

Items	Description
EUT Description:	Mode De Vie
Trade Name:	Le Pan
Model No.:	TC970, TC976
Rated Voltage:	DC 3.7V with power adaptor
Rated Current:	800mA
Size:	23.7x18.9x1.1 cm

The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of TC970 without circuit and electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the Matsunichi Digital Development (Shenzhen) 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 15.205, 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, 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 the testing was designed to exercise the system components.

1.6 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook PC	ASUS	X50R	74NOAS297138
/	/	/	/

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.2	Shielded	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 EMISSIONS

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

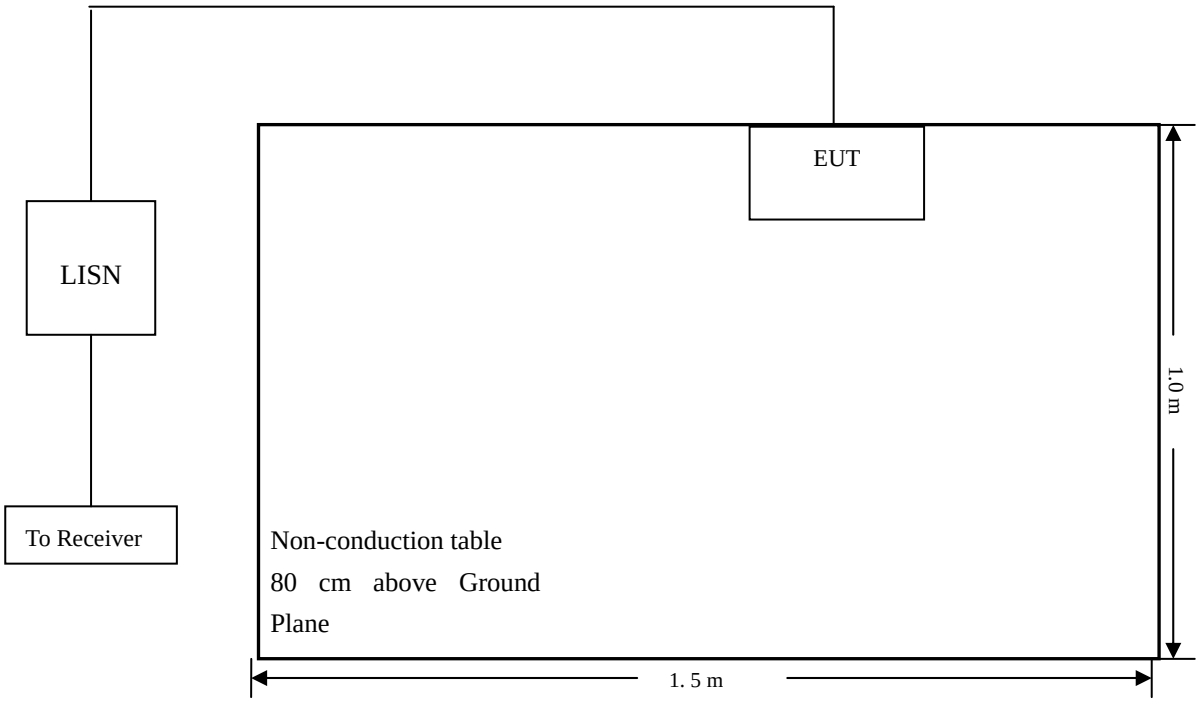
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-12-20	2011-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-12-20	2011-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-12-20	2011-12-19

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

3.3 Test Procedure

Test is conducting under the description of 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.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC 15.107 Conducted margin for a Class B device, with the *worst* margin reading of:

-1.93 dBμV at **3.07 MHz** in the **Line**, **Peak** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15.107	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
3.07	54.06	Pk	Line	56.00	-1.93
4.278	43.08	Ave	Line	46.00	-2.91
2.002	50.99	Pk	Line	56.00	-5.00
4.002	40.51	Ave	Neutral	46.00	-5.48
3.014	49.91	Pk	Neutral	56.00	-6.08
5.334	51.88	Pk	Line	60.00	-8.11
1.962	47.88	Pk	Neutral	56.00	-8.11
1.962	37.81	Ave	Neutral	46.00	-8.18
0.154	56.46	Pk	Line	65.77	-9.31
8.062	40.66	Ave	Line	50.00	-9.33
0.762	34.33	Ave	Neutral	46.00	-11.66

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

Plot of Conducted Emissions Test Data

Conducted Disturbance

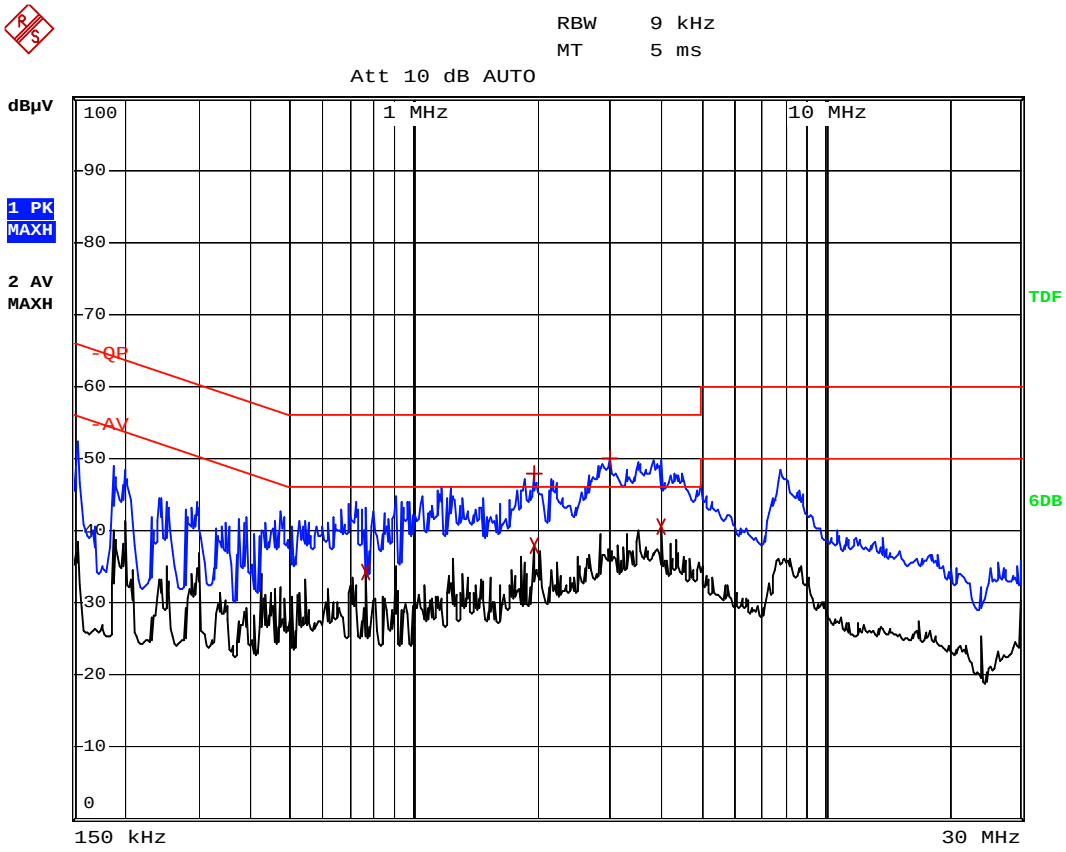
EUT: Mode De Vie

M/N: TC970

Operating Condition: Charging

Test Specification: N

Comment: 120V/60Hz; USB 5V



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Plot of Conducted Emissions Test Data

Conducted Disturbance

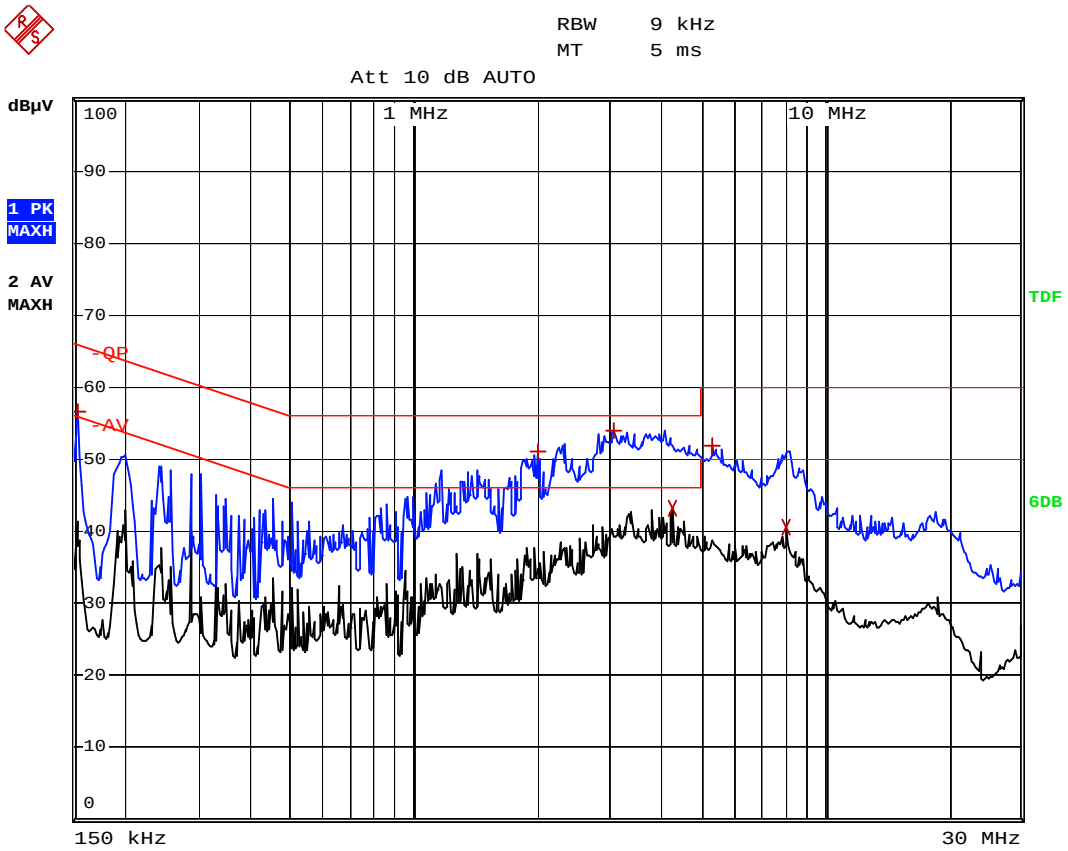
EUT: Mode De Vie

M/N: TC970

Operating Condition: Charging

Test Specification: L

Comment: 120V/60Hz; USB 5V



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4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

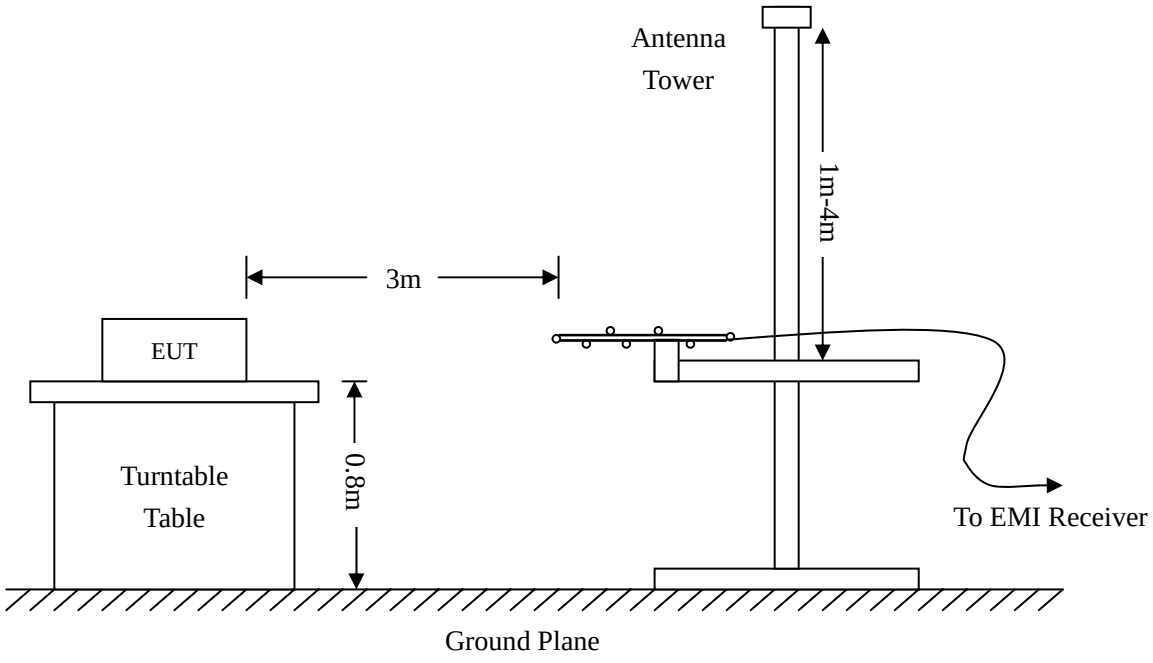
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

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

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 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:
RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:
RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

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:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 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:

-2.39 dBμV at **37.0249 MHz** in the **Vertical** polarization, **Playing&Charging** mode, **30 MHz to 1 GHz, 3Meters**

-1.80 dBμV at **482.2156 MHz** in the **Horizontal** polarization, **Downloading** mode, **30 MHz to 1 GHz, 3Meters**

Plot of Radiation Emissions Test

Radiated Disturbance

EUT: Mode De Vie

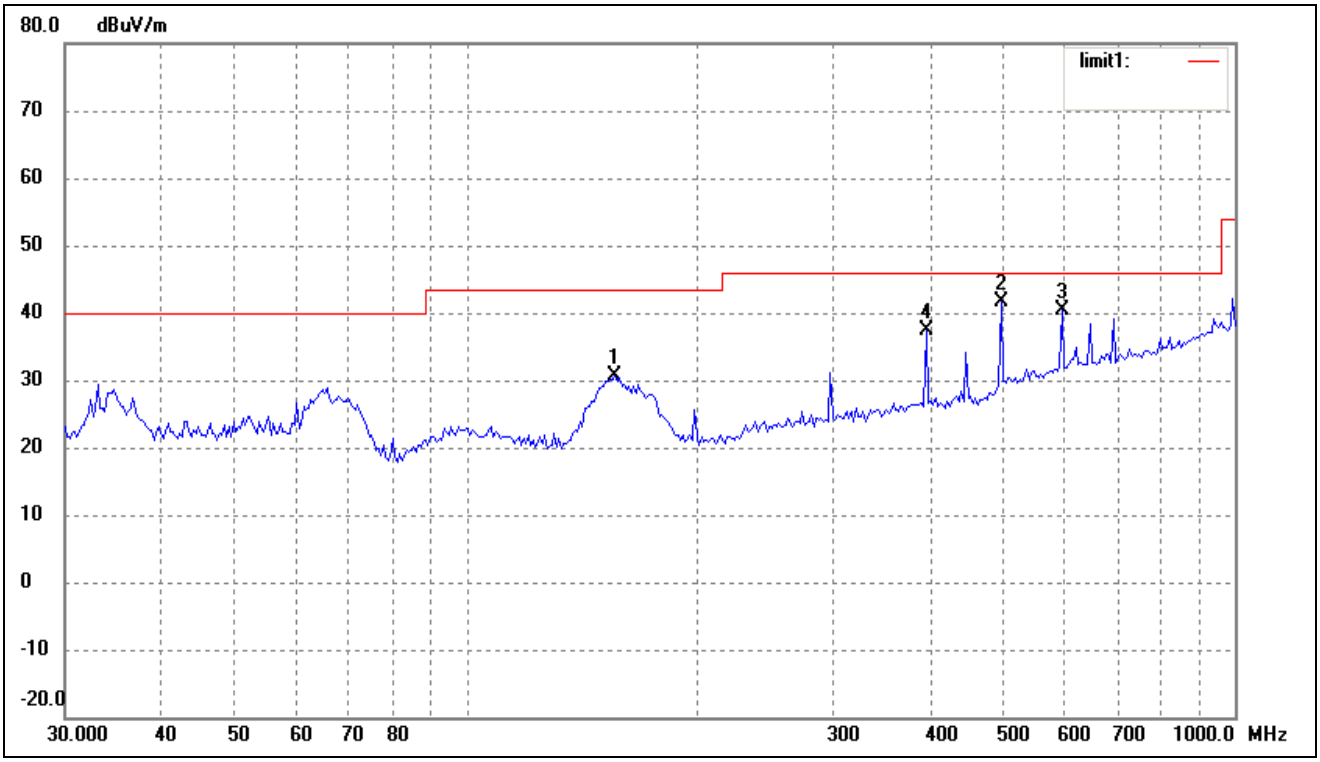
M/N: TC970

Operating Condition: Playing&Charging

Test Specification: Horizontal & Vertical

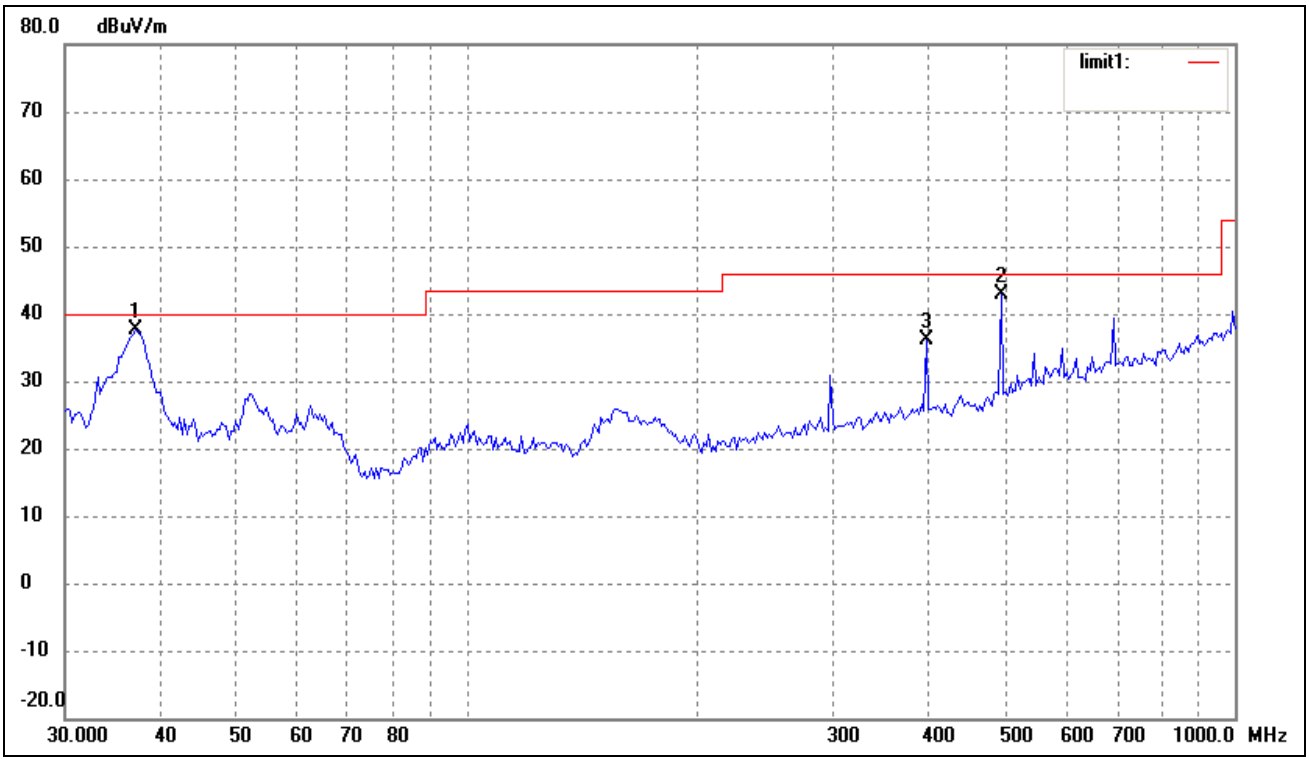
Comment: DC 3.7V battery

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	26.31	4.35	30.66	43.50	-12.84	360	200	peak
2	495.9344	27.50	14.01	41.51	46.00	-4.49	203	153	QP
3	595.1329	23.88	16.55	40.43	46.00	-5.57	226	112	QP
4	396.2415	25.96	11.37	37.33	46.00	-8.67	0	200	peak

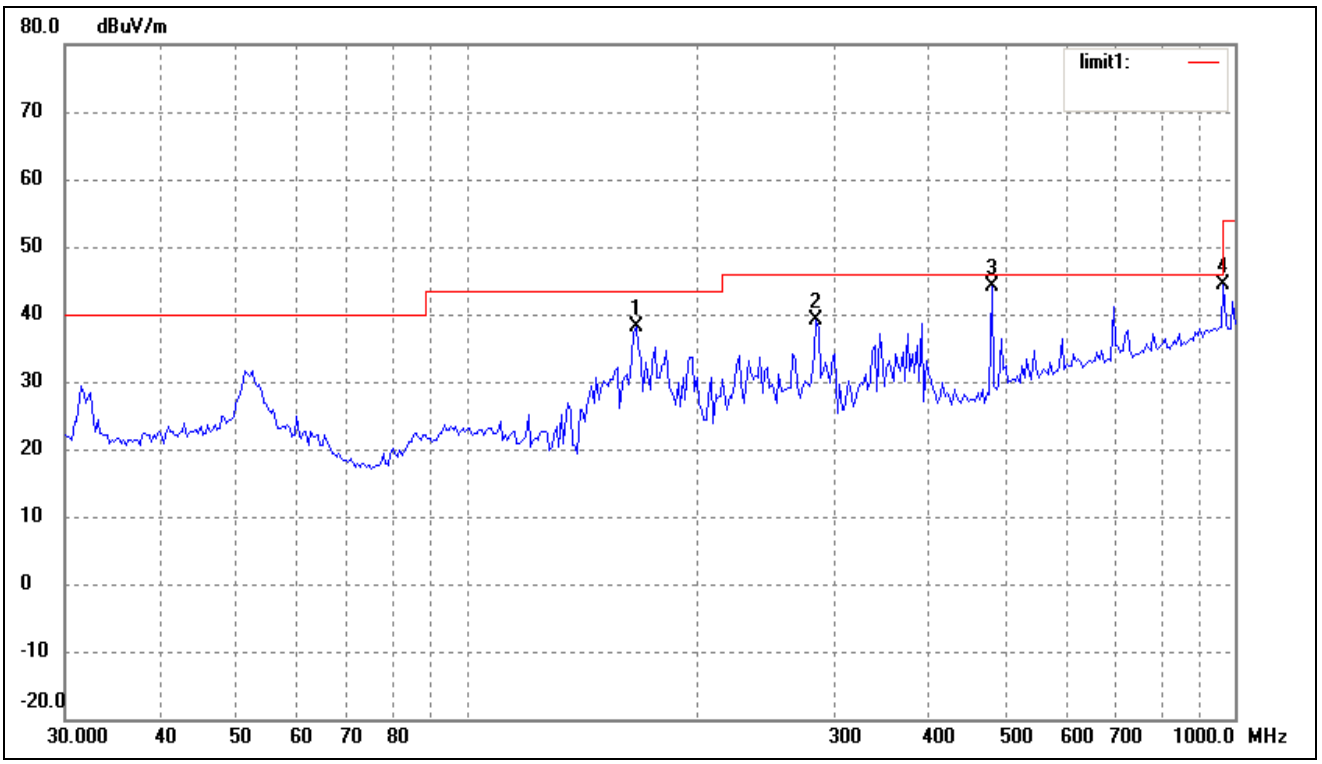
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	37.0249	30.28	7.33	37.61	40.00	-2.39	203	143	QP
2	495.9344	28.92	14.01	42.93	46.00	-3.07	315	112	QP
3	396.2415	24.65	11.37	36.02	46.00	-9.98	360	200	peak

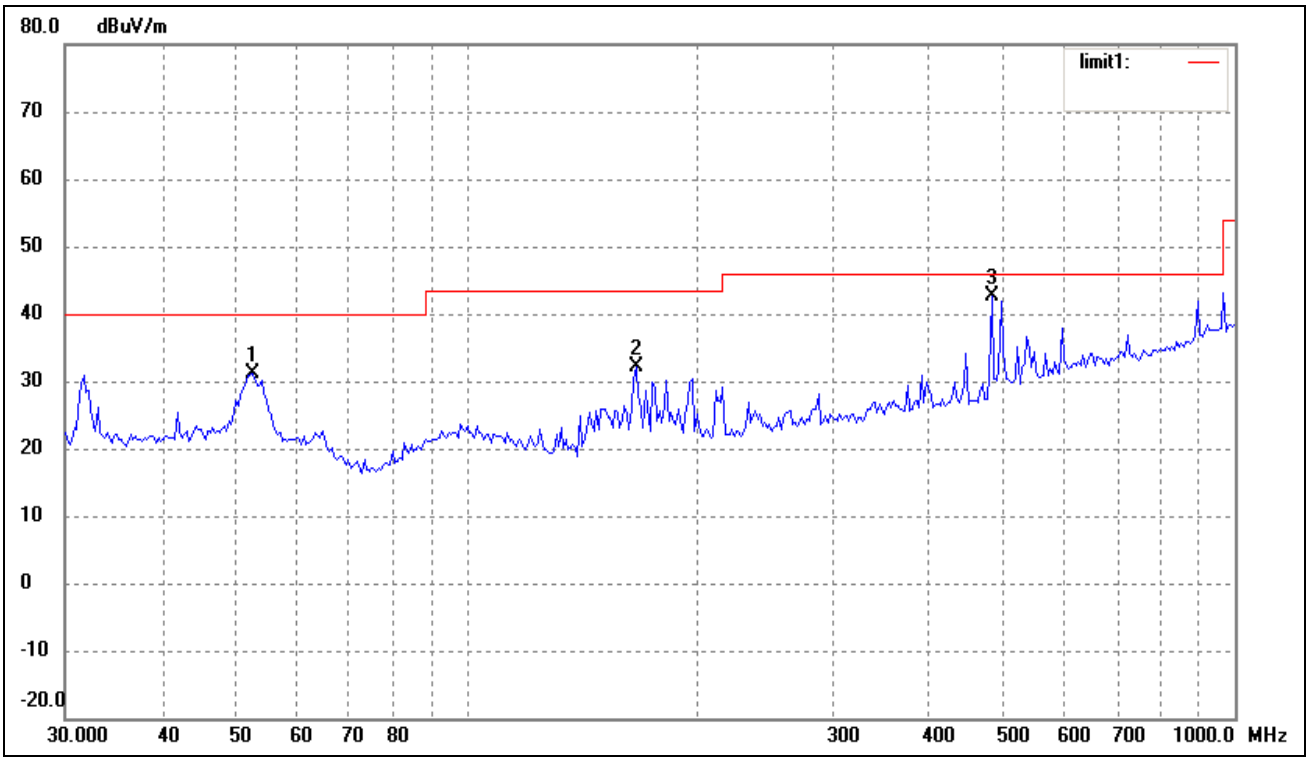
Radiated Disturbance
EUT: Mode De Vie
M/N: TC970
Operating Condition: Downlaoding
Test Specification: Horizontal & Vertical
Comment: AC120V/60Hz; Connect to PC, USB 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	166.0680	33.46	4.75	38.21	43.50	-5.29	206	134	QP
2	284.9767	29.54	9.58	39.12	46.00	-6.88	360	100	peak
3	482.2156	31.53	12.67	44.20	46.00	-1.80	210	112	QP
4	965.5421	22.23	22.10	44.33	54.00	-9.67	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	52.5753	23.36	7.87	31.23	40.00	-8.77	360	100	peak
2	166.0680	27.27	4.75	32.02	43.50	-11.48	0	100	peak
3	482.2156	29.94	12.67	42.61	46.00	-3.39	223	120	QP

Radiated Disturbance Above 1GHz

EUT: Mode De Vie

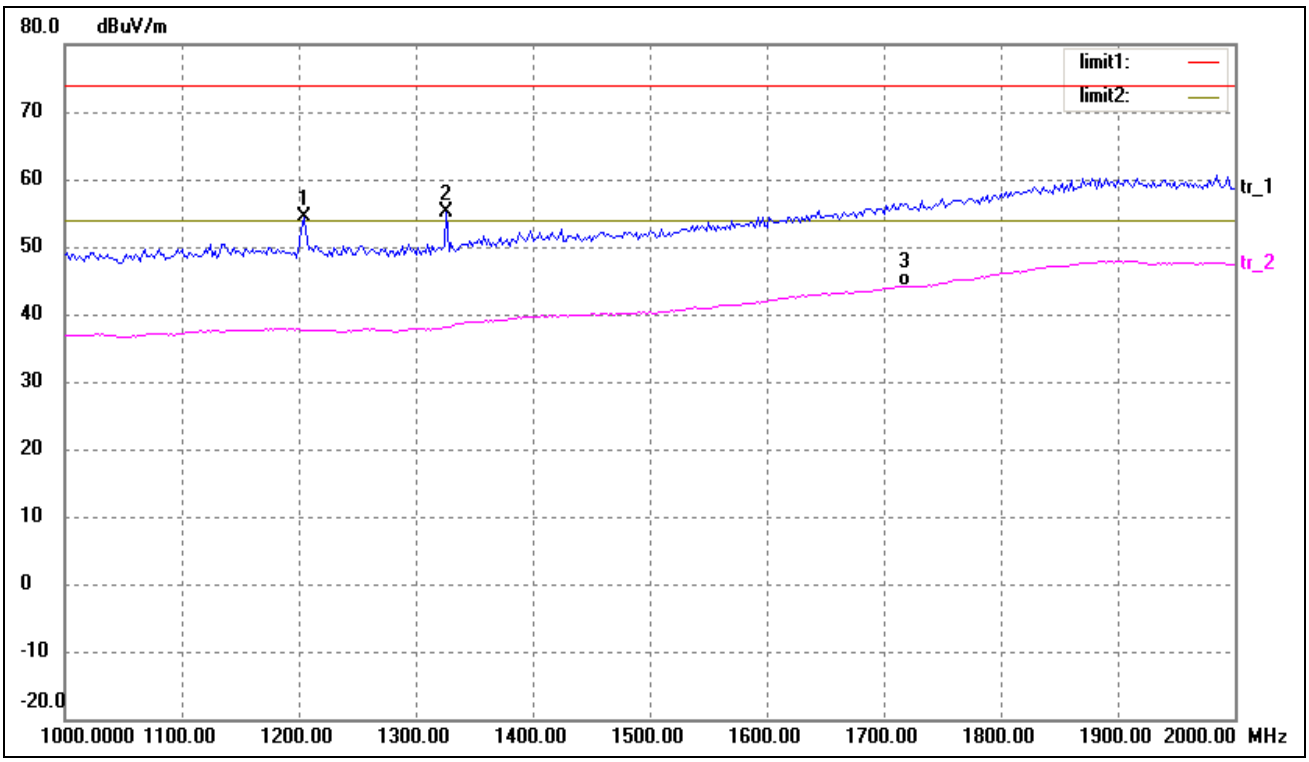
M/N: TC970

Operating Condition: Playing

Test Specification: Horizontal & Vertical

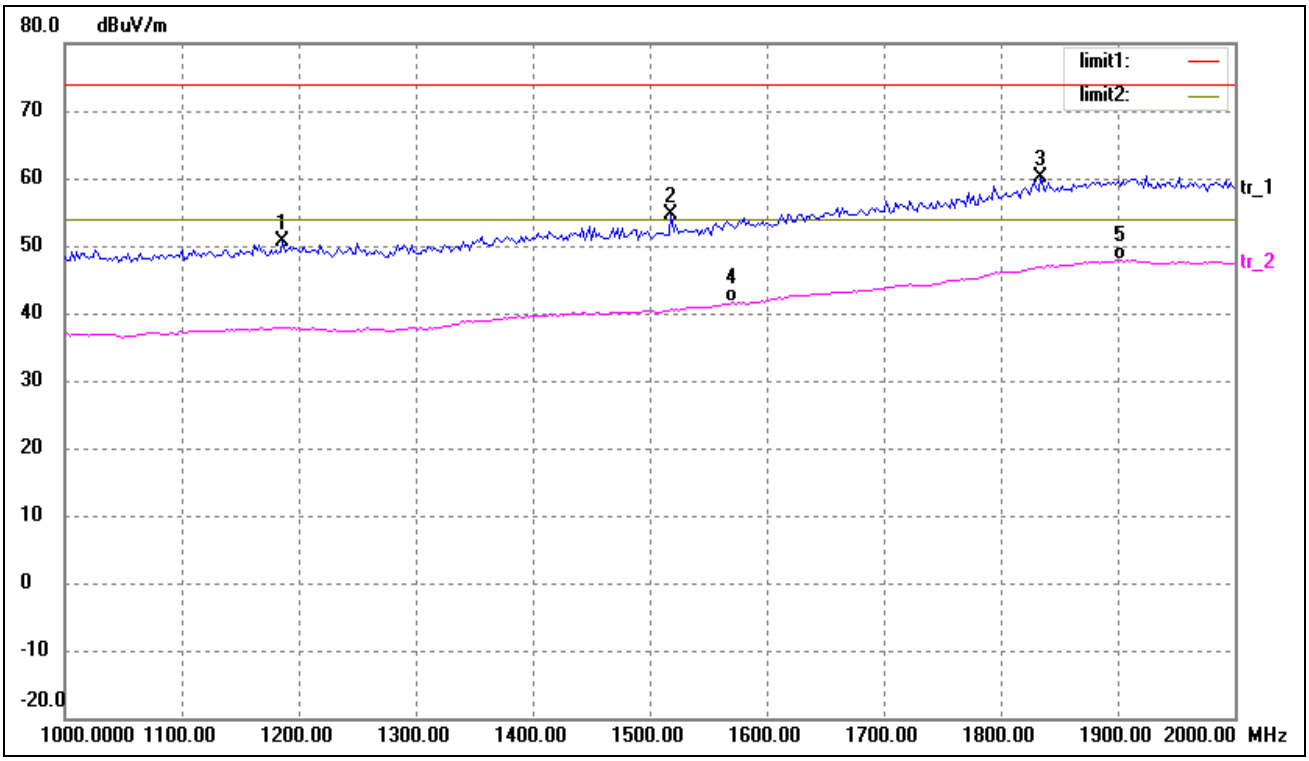
Comment: AC120V/60Hz;

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1204.000	29.87	24.55	54.42	74.00	-19.58	360	100	peak
2	1326.000	29.99	25.11	55.10	74.00	-18.90	360	100	peak
3	1718.000	13.32	30.92	44.24	54.00	-9.76	360	100	AVG

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1186.000	26.10	24.53	50.63	74.00	-23.37	360	100	peak
2	1518.000	27.04	27.60	54.64	74.00	-19.36	360	100	peak
3	1834.000	27.36	32.84	60.20	74.00	-13.80	360	100	peak
4	1570.000	13.08	28.46	41.54	54.00	-12.46	360	100	AVG
5	1902.000	13.90	33.94	47.84	54.00	-6.16	360	100	AVG

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