

FCC Part 15B

Measurement and Test Report

For

SHENZHEN GAOXINQI TECHNOLOGY CO., LTD.

Gaoxinqi Industrial Part, Liuxian 1st Road, 67 District, Baoan, Shenzhen, P.R

China

FCC ID: 2AAGT-GP722

Test Standards: FCC Part 15 Subpart B

Product Description: MID

Tested Model: GP722

Report No.: STR13068096I-2

Tested Date: 2013-06-10 to 2013-06-20

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Tested By: Silin Chen / Engineer

Reviewed By: Lahm Peng / EMC Manager

Approved & Authorized By: Jandy so / PSQ Manager

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)

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

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: SHENZHEN GAOXINQI TECHNOLOGY CO., LTD.
 Address of applicant: Gaoxingqi Industrial Park, liuxian 1st Road, 67 District, Baoan, Shenzhen.P.R China
 Manufacturer: SHENZHEN GAOXINQI TECHNOLOGY CO., LTD
 Address of manufacturer: Gaoxingqi Industrial Park, liuxian 1st Road, 67 District, Baoan, Shenzhen.P.R China

General Description of EUT	
Product Name:	MID
Trade Name:	GAOXINQI, Artcom, Hipstreet
Model No.:	GP722
Adding Model(s):	AP722, HS-7DTB20
Rated Voltage:	DC3.7V Lithium Battery
Power Adapter:	Model: FYAD-15W-0502000
	Input:AC100-240V, Output:DC 5V
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model GP722, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n(HT20)
Frequency Range:	2412-2462MHz
RF Output Power:	7.90 dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels	11
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	2 dBi
Lowest Internal Frequency:	32.768kHz
Highest Internal Frequency:	1.5GHz

1.2 Test Standards

The following report is prepared on behalf of the SHENZHEN GAOXINQI TECHNOLOGY 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.

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 Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	Charging and Playing	With video
TM2	Downloading	Connect to PC
TM3	HDMI	HDMI Connect to Display

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable 1	1.0	Shielded	Without Ferrite
USB Cable 2	0.1	Unshielded	Without Ferrite
DC Cable	1.2	Unshielded	Without Ferrite
HDMI Cable	2.5	Shielded	Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenove	昭阳 E23	N/A
Monitor	DELL	U2410	N/A

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

N/A: not applicable

3. 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.

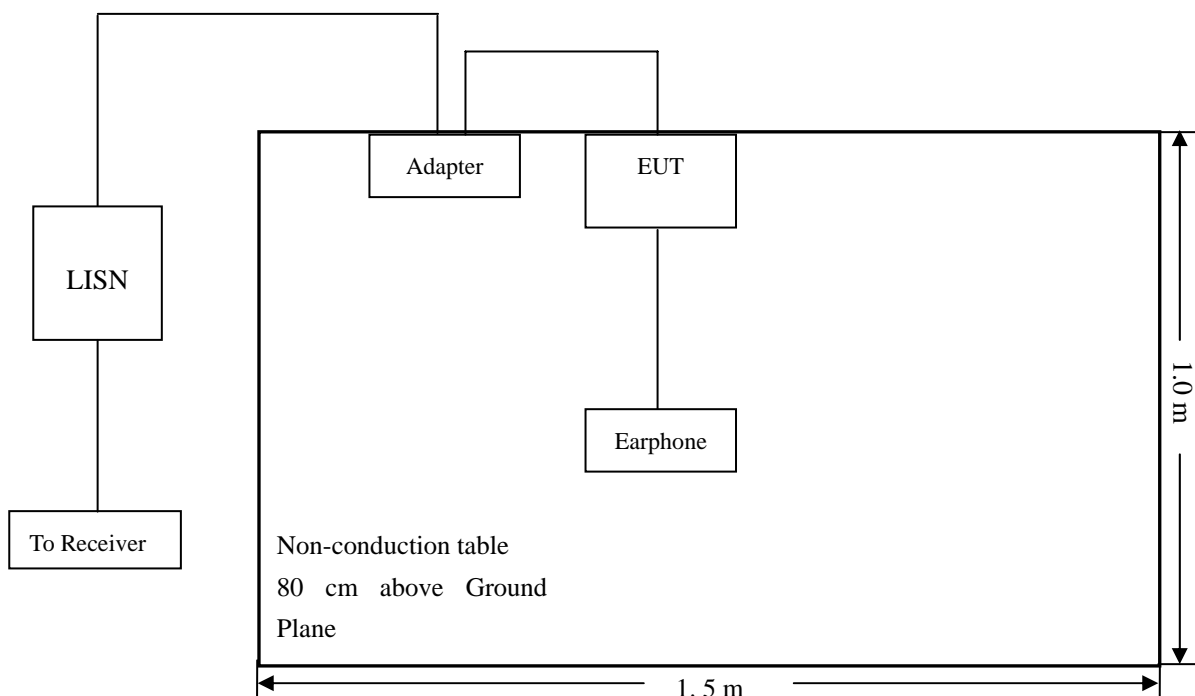
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-05-07	2014-05-06
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-05-07	2014-05-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-05-07	2014-05-06

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

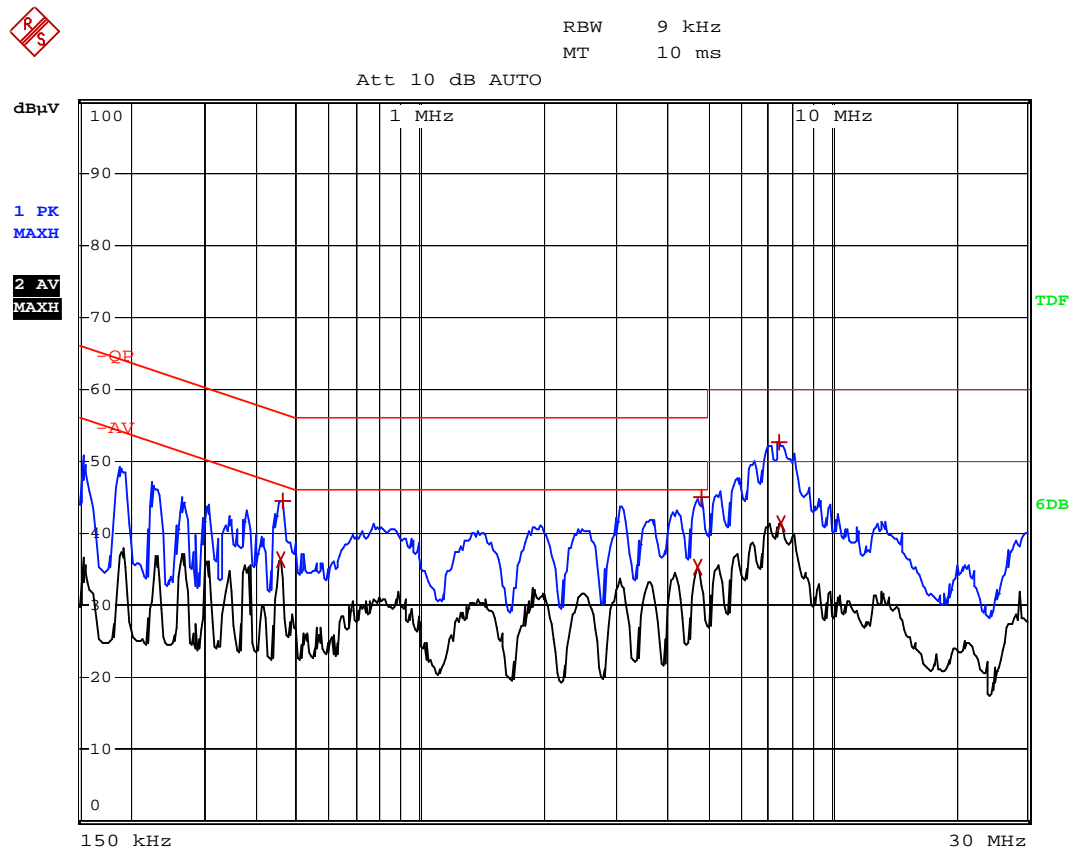
3.6 Summary of Test Results/Plots

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

-7.30 dB at 7.498 MHz in the **Line, QP** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Test Specification: Line



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	458 kHz	36.33	-10.39
1 Max Peak	462 kHz	44.52	-12.12
2 Average	4.762 MHz	35.17	-10.82
1 Max Peak	4.846 MHz	45.06	-10.93
1 Max Peak	7.498 MHz	52.69	-7.30
2 Average	7.546 MHz	41.44	-8.55

4. Radiated Emissions

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

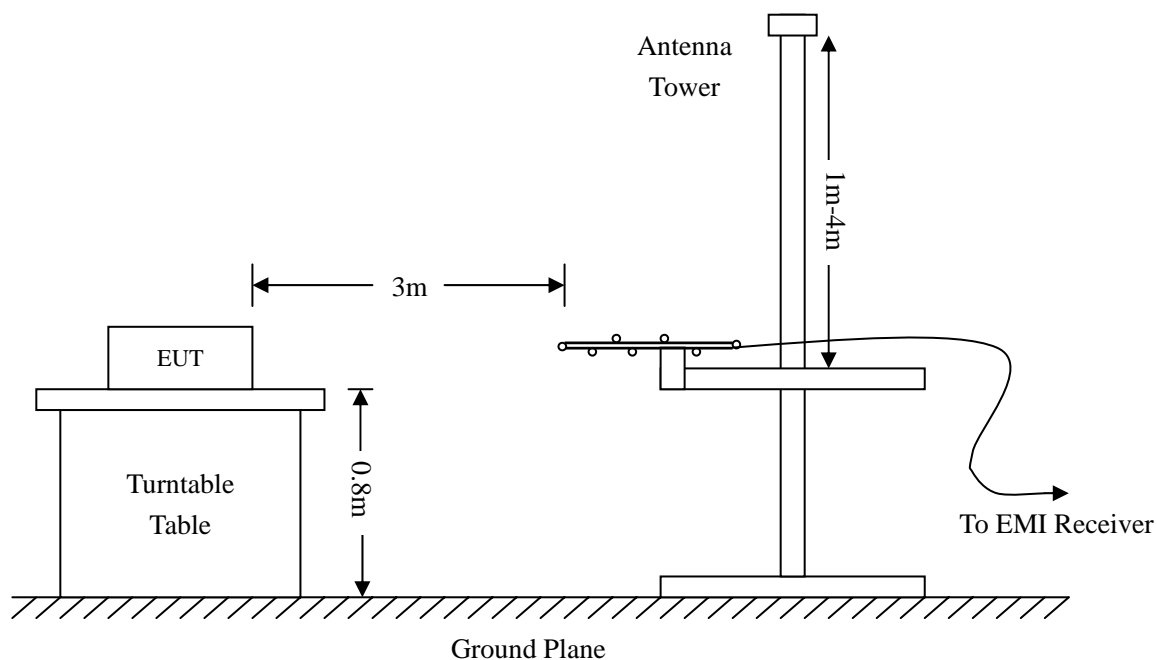
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2013-04-20	2014-04-19

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.



Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz

VBW=300KHz

Sweep time= Auto

Detector function = peak

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:

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

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

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

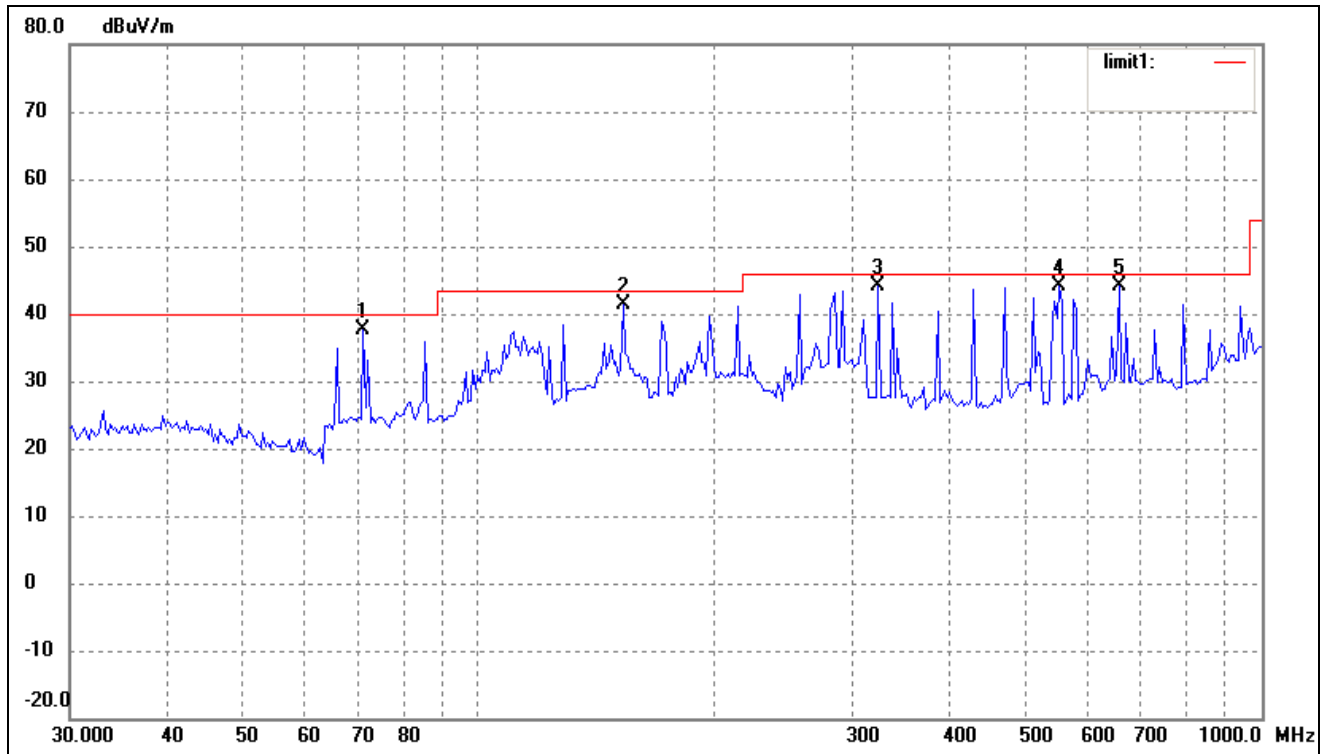
4.6 Environmental Conditions

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

4.7 Summary of Test Results/Plots

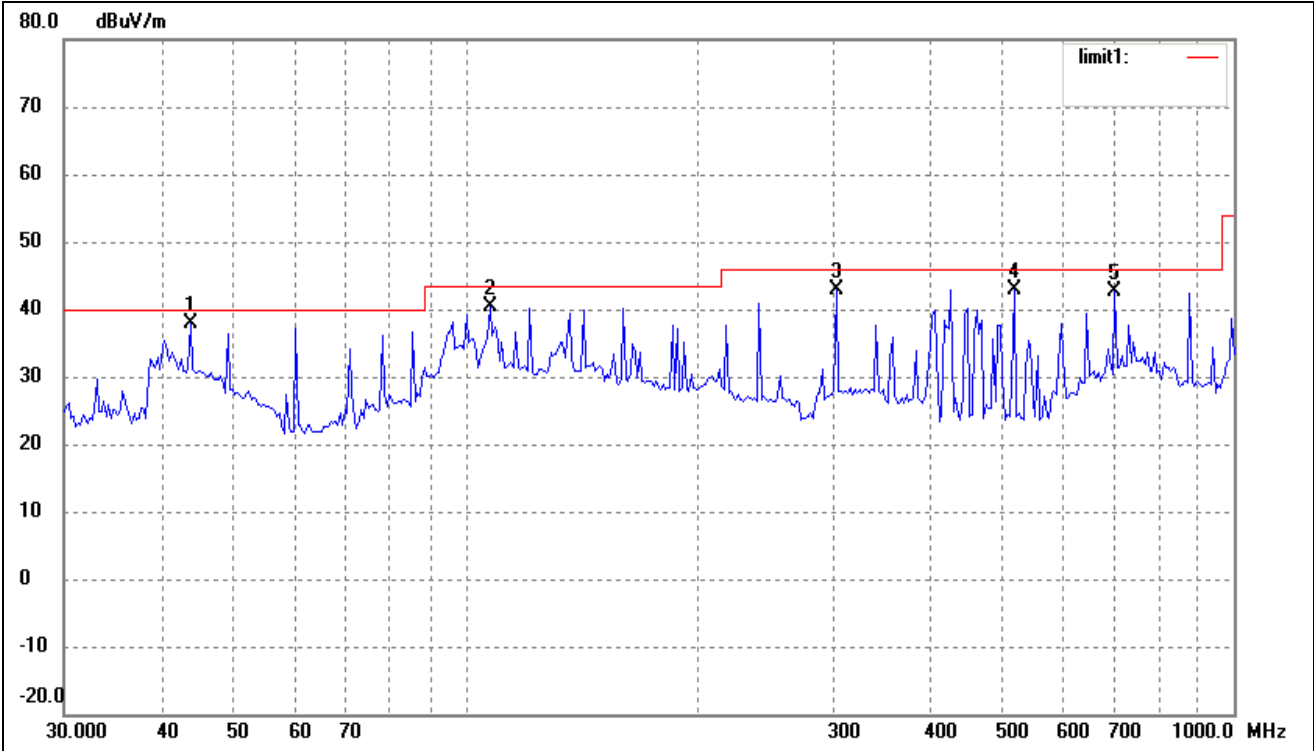
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-1.77 dB at 323.3204 MHz in the Horizontal polarization, Charging and Playing Mode, 9 kHz to 7.5 GHz, 3Meters

Plot of Radiated Emissions Test Data*EUT:* MID*Tested Model:* GP722*Operating Condition:* Charging and Playing*Comment:* Input AC 120V/60Hz adapter, Output DC 5V*Test Specification:* Horizontal

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	71.0802	35.31	2.39	37.70	40.00	-2.30	58	150	peak
2	152.6640	37.88	3.58	41.46	43.50	-2.04	326	100	peak
3	323.3204	33.82	10.41	44.23	46.00	-1.77	29	120	peak
4	550.9479	30.75	13.26	44.01	46.00	-1.99	209	100	peak
5	656.5299	29.28	14.90	44.18	46.00	-1.82	359	200	peak

Test Specification: Vertical

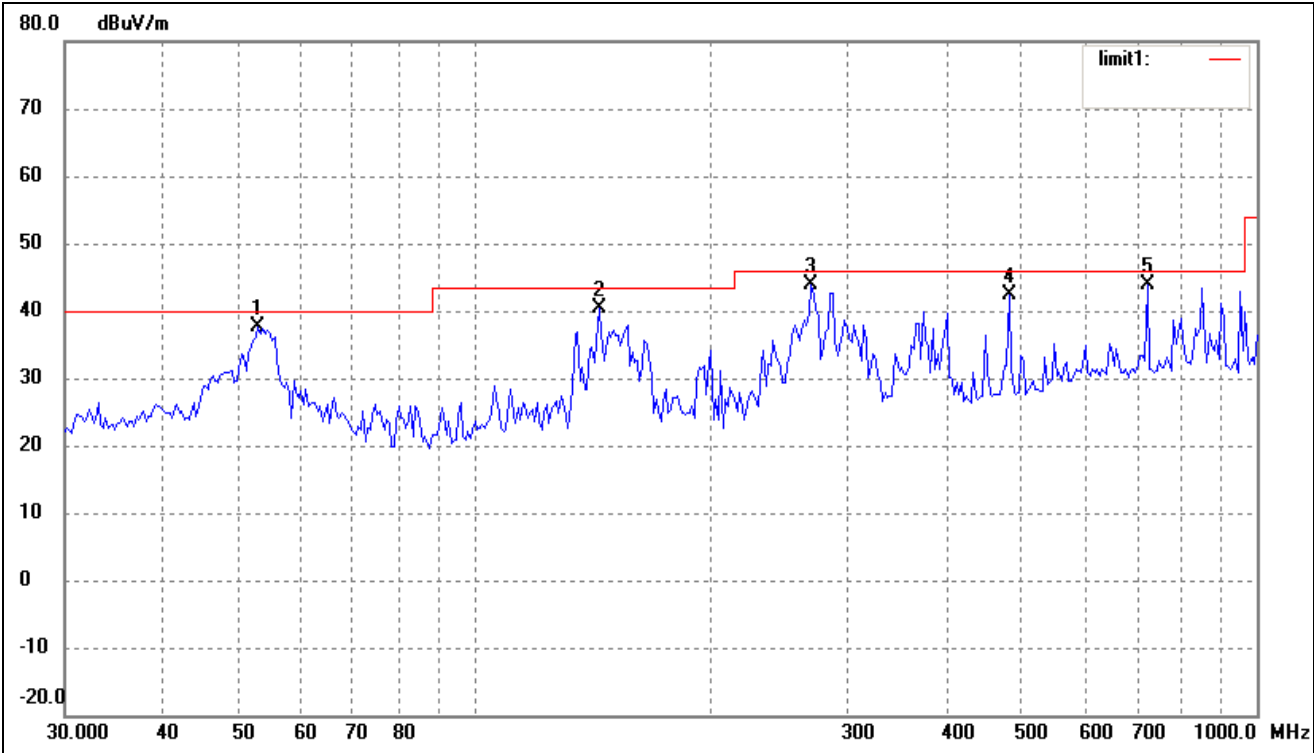


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	43.8119	29.38	8.53	37.91	40.00	-2.09	51	100	peak
2	107.5100	34.16	6.10	40.26	43.50	-3.24	308	100	peak
3	303.5437	32.55	10.24	42.79	46.00	-3.21	120	100	peak
4	517.2480	30.15	12.82	42.97	46.00	-3.03	359	100	peak

Plot of Radiated Emissions Test Data

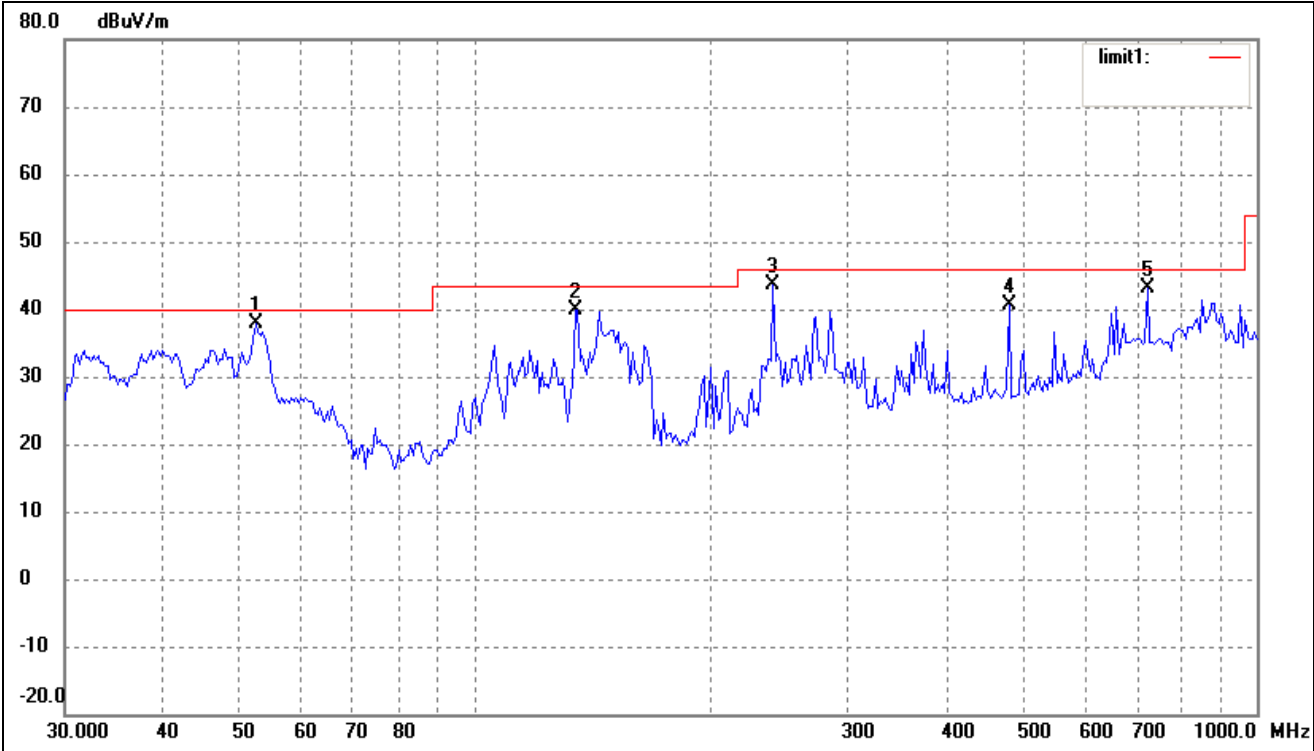
EUT: MID
Tested Model: GP722
Operating Condition: Downloading
Comment: AC 120V/60Hz USB 5V

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	52.9453	31.17	6.34	37.51	40.00	-2.49	58	150	peak
2	144.3348	36.86	3.46	40.32	43.50	-3.18	326	100	peak
3	269.4284	35.53	8.43	43.96	46.00	-2.04	29	120	peak
4	482.2155	31.00	11.49	42.49	46.00	-3.51	209	100	peak
5	724.2611	26.86	16.93	43.79	46.00	-2.21	359	200	peak

Test Specification: Vertical

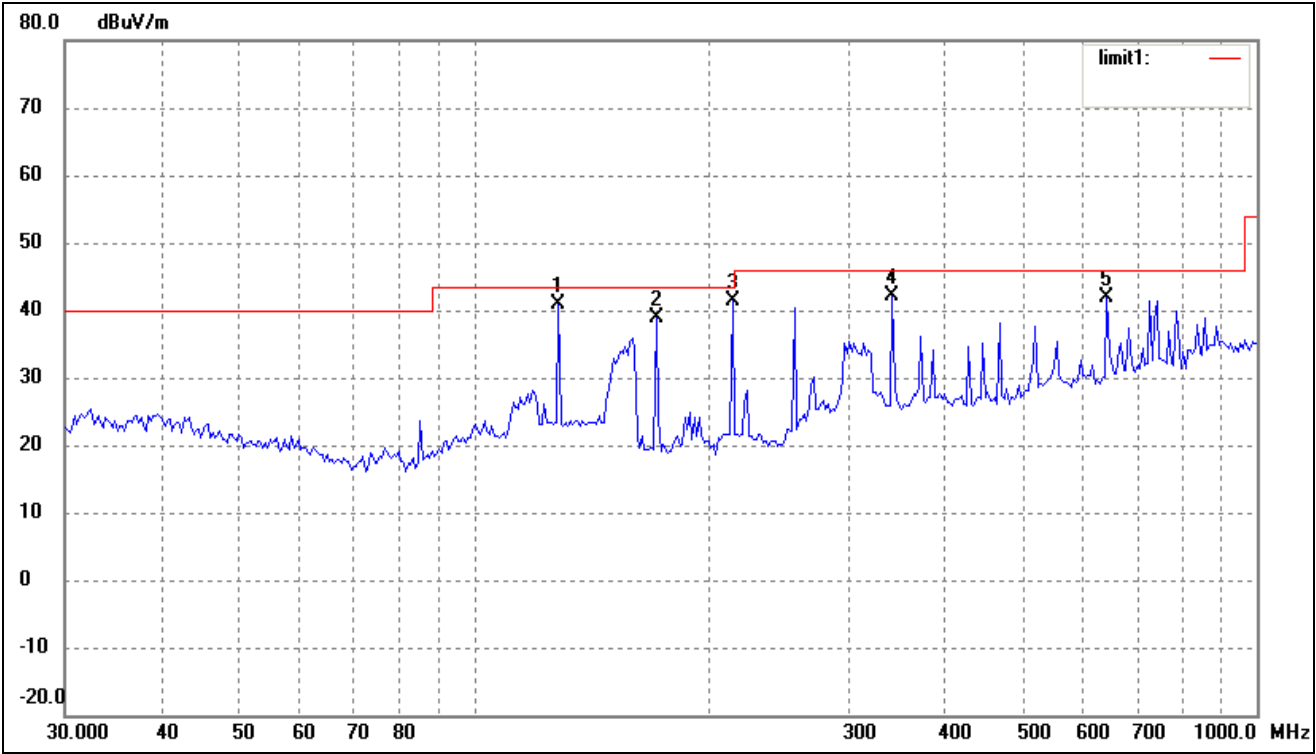


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	52.5752	31.38	6.38	37.76	40.00	-2.24	51	100	peak
2	134.5592	36.13	3.78	39.91	43.50	-3.59	308	100	peak
3	240.8303	36.50	7.02	43.52	46.00	-2.48	120	100	peak
4	482.2155	29.15	11.49	40.64	46.00	-5.36	359	100	peak
5	724.2611	26.15	16.93	43.08	46.00	-2.92	359	100	peak

Plot of Radiated Emissions Test Data

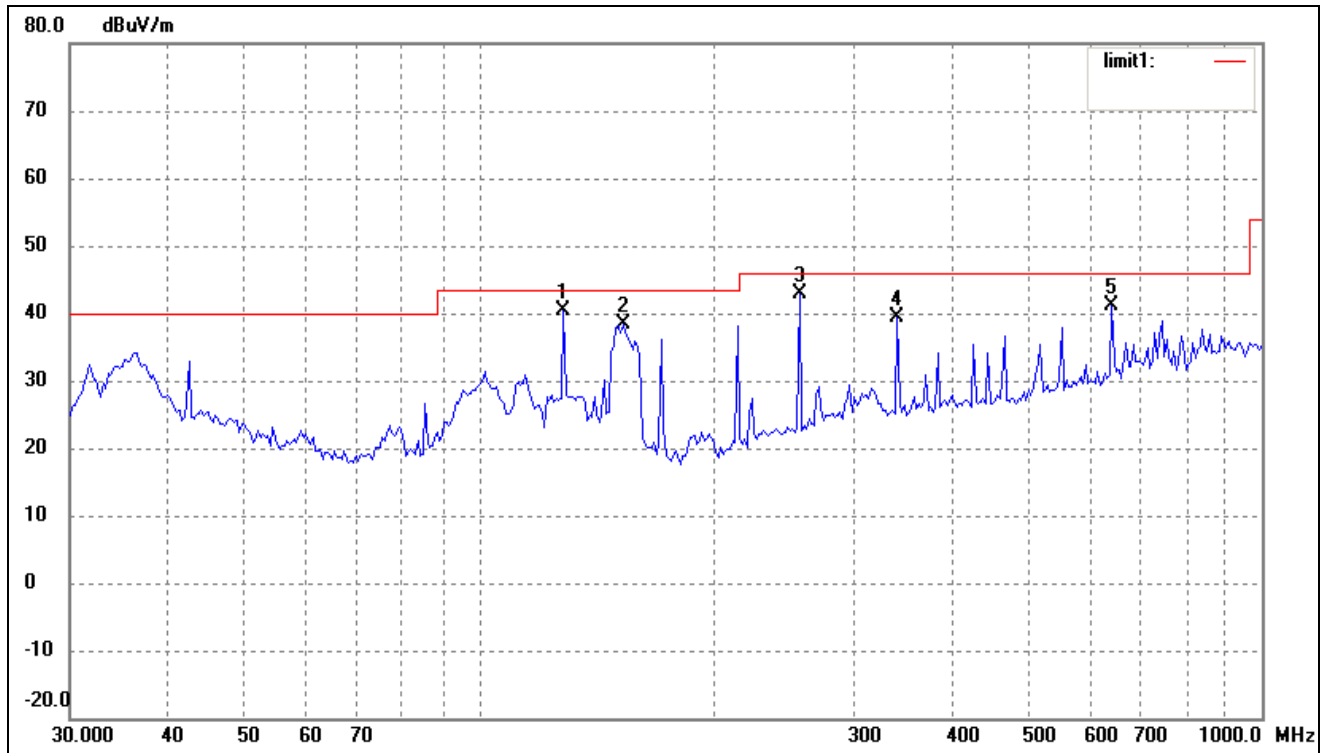
EUT: MID
Tested Model: GP722
Operating Condition: HDMI Connect to Display
Comment: AC 120V/60Hz USB 5V

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	128.1129	36.55	4.27	40.82	43.50	-2.68	98	150	peak
2	170.7925	35.16	3.70	38.86	43.50	-4.64	316	100	peak
3	213.7633	35.85	5.52	41.37	43.50	-2.13	33	120	peak
4	341.9787	32.01	10.16	42.17	46.00	-3.83	207	100	peak
5	642.8613	26.73	15.14	41.87	46.00	-4.13	359	200	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	128.1129	36.14	4.27	40.41	43.50	-3.09	65	100	peak
2	152.6640	34.74	3.58	38.32	43.50	-5.18	318	100	peak
3	256.5210	35.42	7.56	42.98	46.00	-3.02	130	100	peak
4	341.9787	29.31	10.16	39.47	46.00	-6.53	359	100	peak
5	642.8613	25.99	15.14	41.13	46.00	-4.87	359	100	peak

Note: Testing is carried out with frequency rang 9kHz to 7.5GHz, which above 1GHz are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

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