

FCC Part 15B

Measurement and Test Report

For

OLIVESKY INTERNATIONAL ELECTRONIC CO., LTD

5C11 Huafeng Times Plaza Bao'an 25 Area, Shenzhen, 518101 Guangdong

China.

FCC ID: 2AAL9901GKLPT

Test Rule(s): FCC Part 15 Subpart B

Product Description: Mobile Internet Device

Tested Model: S901

Report No.: STR13098208I-3

Tested Date: 2013-09-12 to 2013-10-25

Issued Date: 2013-10-25

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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: OLIVESKY INTERNATIONAL ELECTRONIC CO., LTD

Address of applicant: 5C11 Huafeng Times Plaza Bao'an 25 Area, Shenzhen, 518101 Guangdong China.

Manufacturer: OLIVESKY INTERNATIONAL ELECTRONIC CO., LTD

Address of manufacturer: 5C11 Huafeng Times Plaza Bao'an 25 Area, Shenzhen, 518101 Guangdong China.

General Description of EUT	
Product Name:	Mobile Internet Device
Trade Name:	/
Model No.:	S901
Adding Model(s):	S902, S903, S904, S102, S103, S104
<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 S901, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	Adapter: DC 5V Battery: DC 7.4V
Rated Current:	3A
Rated Power:	/
Power Adapter Model:	AW018WR-0500300UV Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5V, 3A
Lowest Internal Frequency:	32.768kHz
Highest Internal Frequency:	1.6GHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the OLIVESKY INTERNATIONAL ELECTRONIC 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 & Playing & HDMI & TF Card	Connect to Adapter, LCD TV, With Earphone TF Card input
TM2	Charging & Playing & HDMI & U-Disk	Connect to Adapter, LCD TV, With Earphone U-Disk Input
TM3	Downloading	Connect to PC

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Adapter Cable	1.5	Unshielded	Without Core
USB Cable	0.8	Unshielded	Without Core
USB Patch Cord	0.1	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
LCD TV	DELL	IN1920C	Q40G18N-700-1B2A
TF Card	Kingston	4GB	/
U-Disk	SanDisk	2GB	/
Notebook Computer	Lenovo	20007	EB12648265

Special Cable List and Details

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

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.

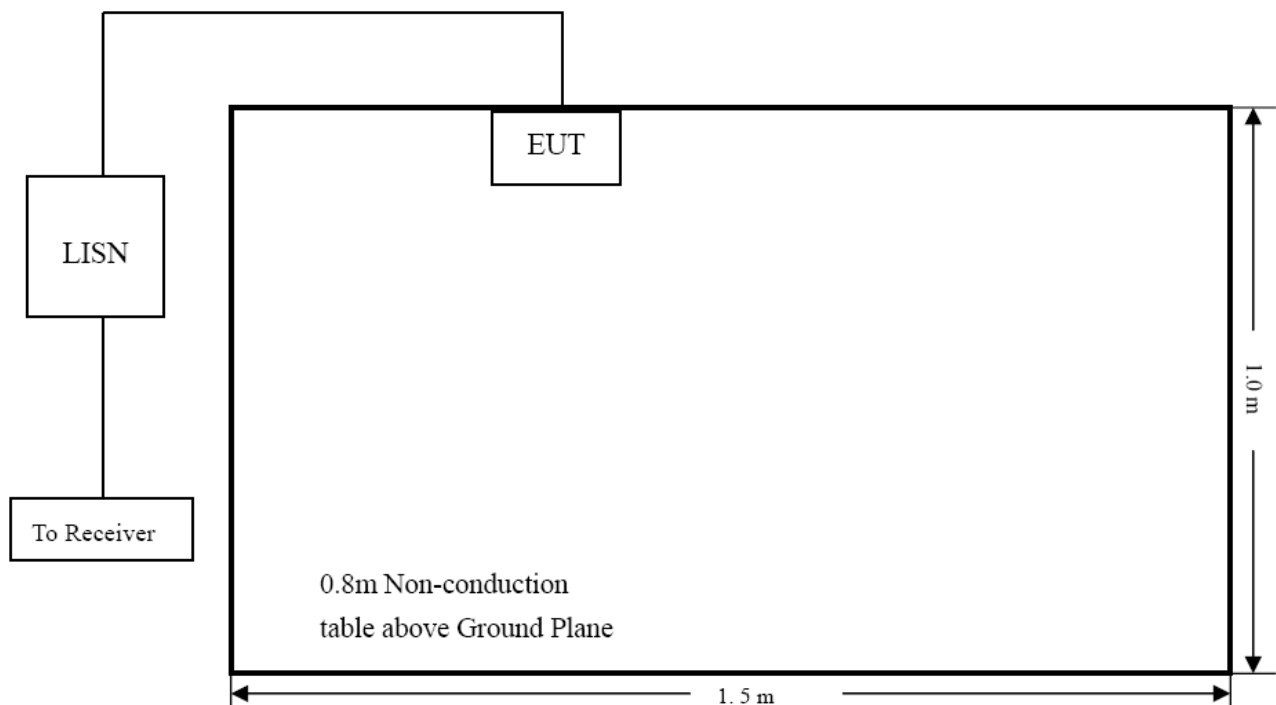
3.2 Test Equipment List and Details

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:

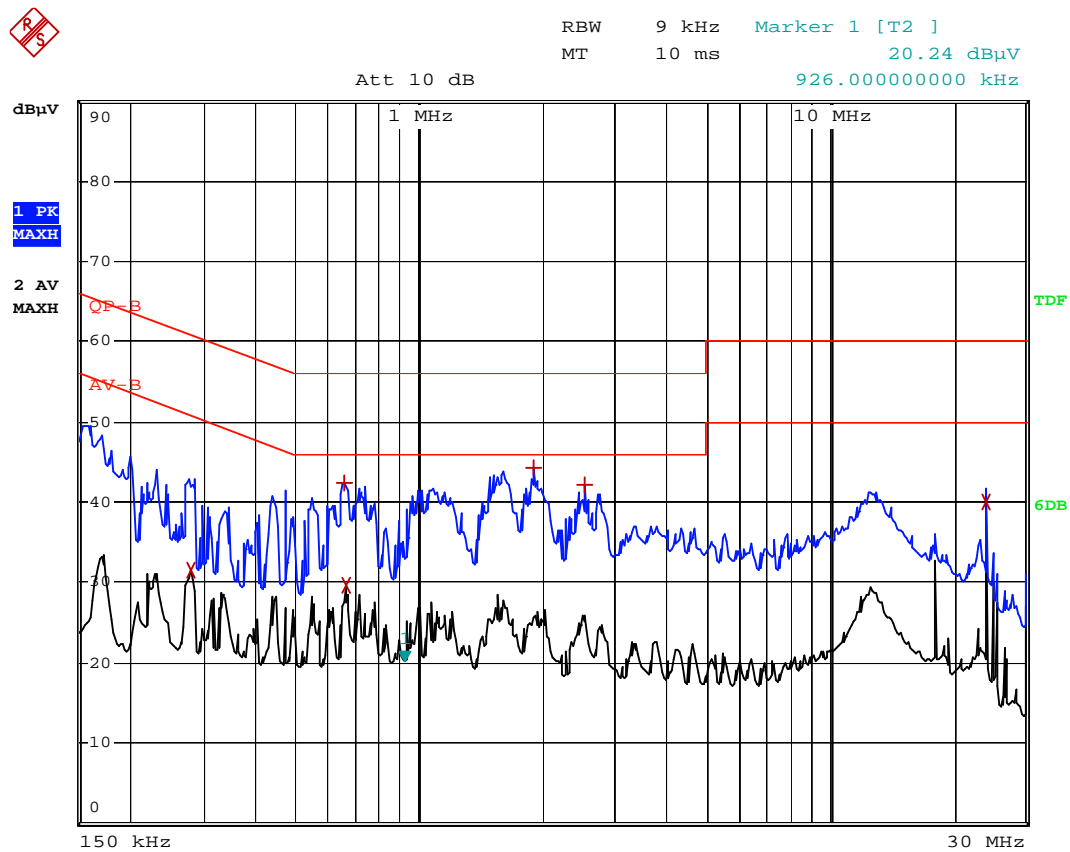
-6.88 dB at 1.706 MHz in the **Line, Peak** detector, **CHARGING&PLAYING&U-Disk** Mode, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

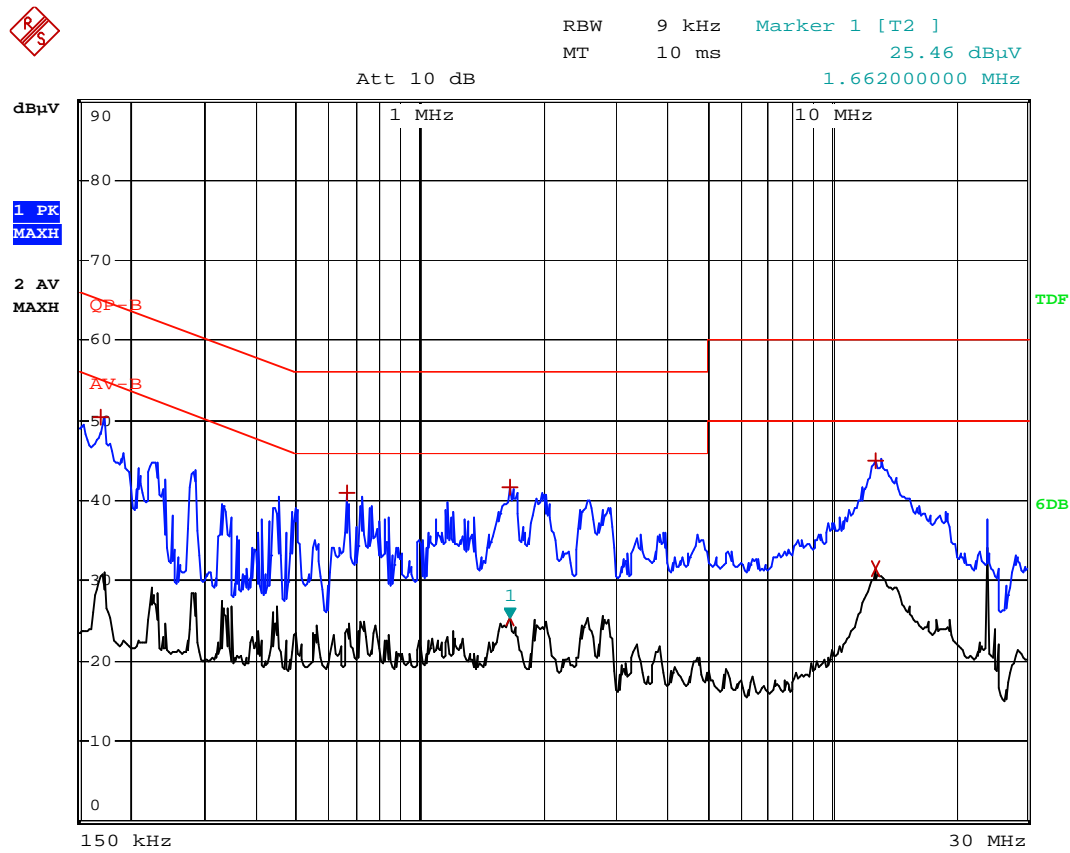
EUT: Mobile Internet Device
Tested Model: S901
Operating Condition: CHARGING&PLAYING&SD
Comment: AC 120V/60Hz; Adapter DC 5V

Test Specification: Line



EDIT PEAK LIST (Prescan Results)				
Trace1:		QP-B		
Trace2:		AV-B		
Trace3:		---		
	TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2	Average	278 kHz	31.56	-19.31
1	Max Peak	658 kHz	42.50	-13.49
2	Average	662 kHz	29.54	-16.45
1	Max Peak	1.898 MHz	44.21	-11.78
1	Max Peak	2.542 MHz	42.08	-13.91
2	Average	23.982 MHz	39.93	-10.06

Test Specification: Neutral

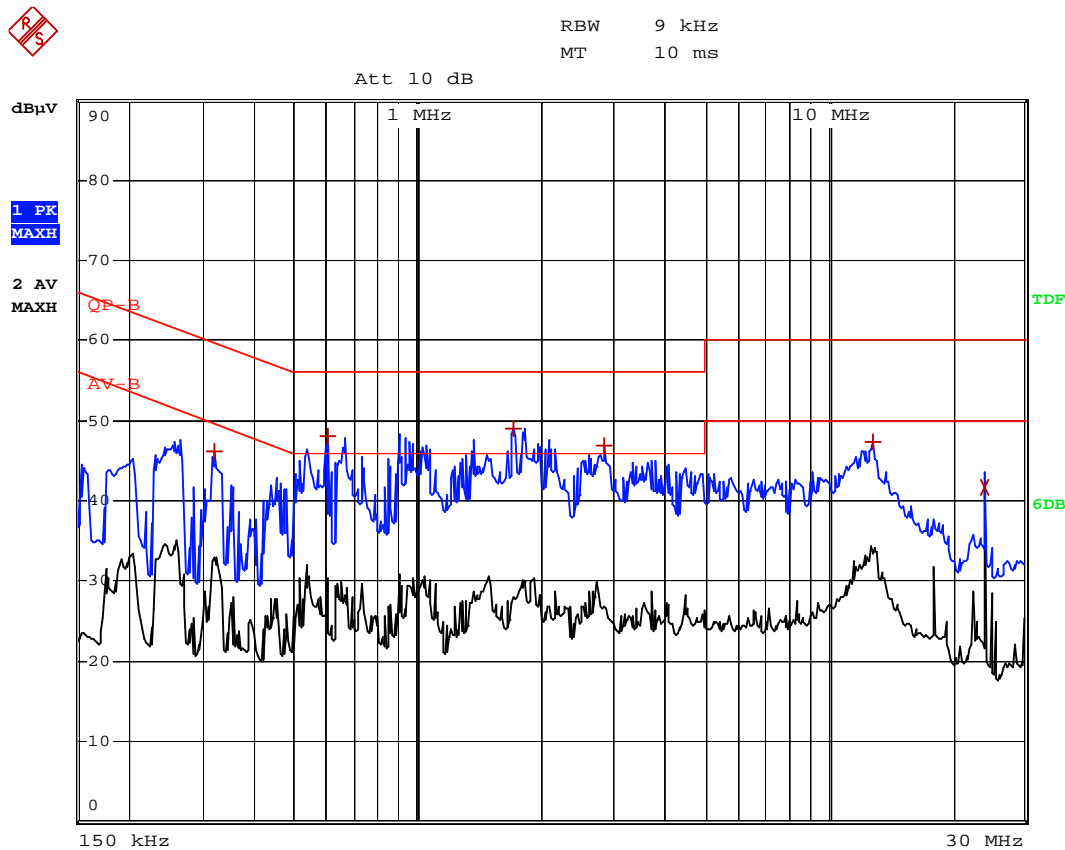


EDIT PEAK LIST (Prescan Results)			
Trace1:	QP-B		
Trace2:	AV-B		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Max Peak	170 kHz	50.40	-14.55
1 Max Peak	662 kHz	40.98	-15.01
1 Max Peak	1.65 MHz	41.63	-14.36
2 Average	1.662 MHz	25.46	-20.53
2 Average	12.902 MHz	31.46	-18.53
1 Max Peak	12.914 MHz	44.97	-15.02

Plot of Conducted Emissions Test Data

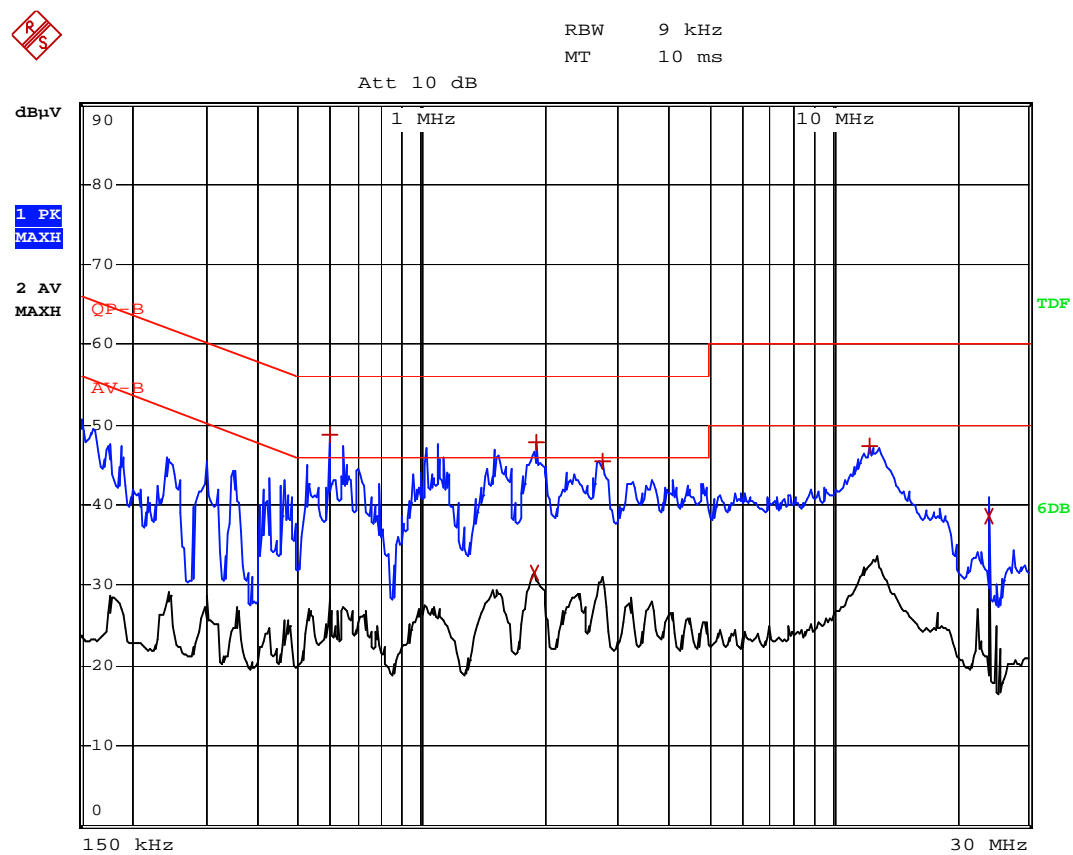
EUT: Mobile Internet Device
Tested Model: S901
Operating Condition: CHARGING&PLAYING&U-Disk
Comment: AC 120V/60Hz; Adapter DC 5V

Test Specification: Line



EDIT PEAK LIST (Prescan Results)				
Trace1:		QP-B		
Trace2:		AV-B		
Trace3:		---		
TRACE		FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1	Max Peak	318 kHz	46.16	-13.59
1	Max Peak	602 kHz	48.00	-7.99
1	Max Peak	1.706 MHz	49.11	-6.88
1	Max Peak	2.85 MHz	46.80	-9.19
1	Max Peak	12.81 MHz	47.29	-12.70
2	Average	23.982 MHz	41.64	-8.35

Test Specification: Neutral



EDIT PEAK LIST (Prescan Results)			
Trace1:	QP-B		
Trace2:	AV-B		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Max Peak	598 kHz	48.71	-7.28
2 Average	1.874 MHz	31.46	-14.53
1 Max Peak	1.906 MHz	47.82	-8.17
1 Max Peak	2.774 MHz	45.43	-10.56
1 Max Peak	12.322 MHz	47.28	-12.71
2 Average	23.982 MHz	38.66	-11.33

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

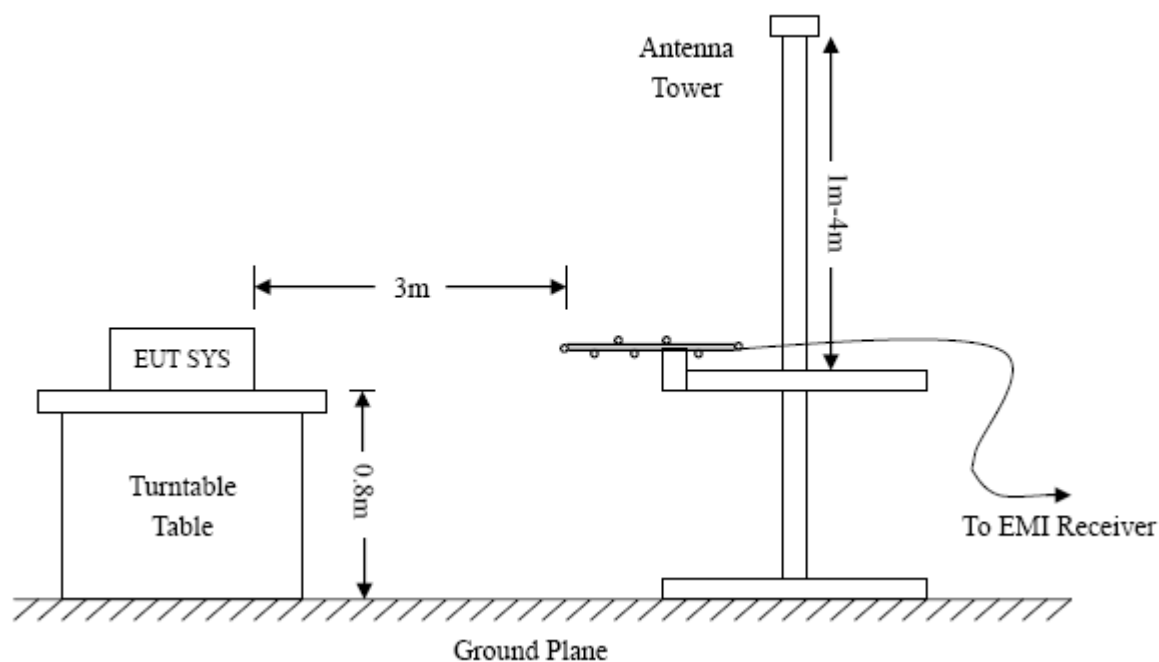
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	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.



4.4 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

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

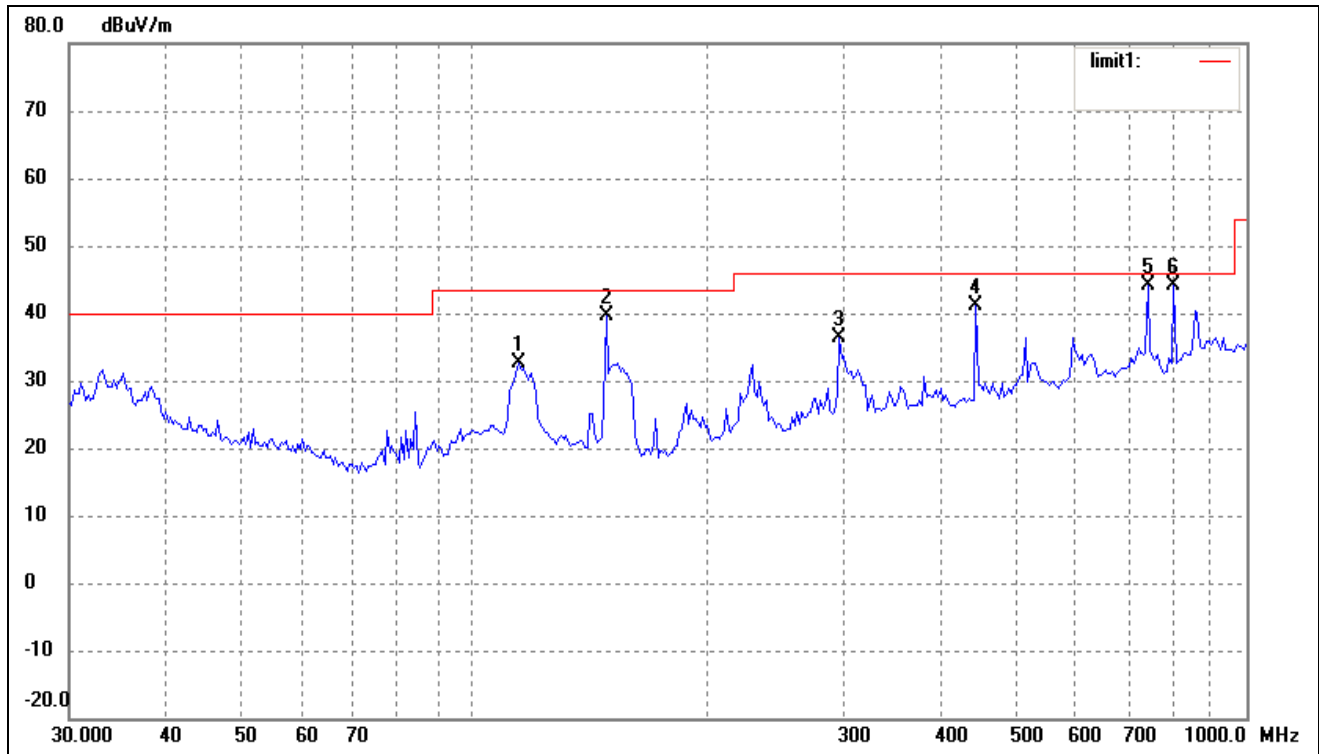
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

**-1.83 dB at 804.6028 MHz in the Horizontal polarization, CHARGING&PLAYING&SD Mode,
9 kHz to 8 GHz, 3Meters**

Plot of Radiated Emissions Test Data

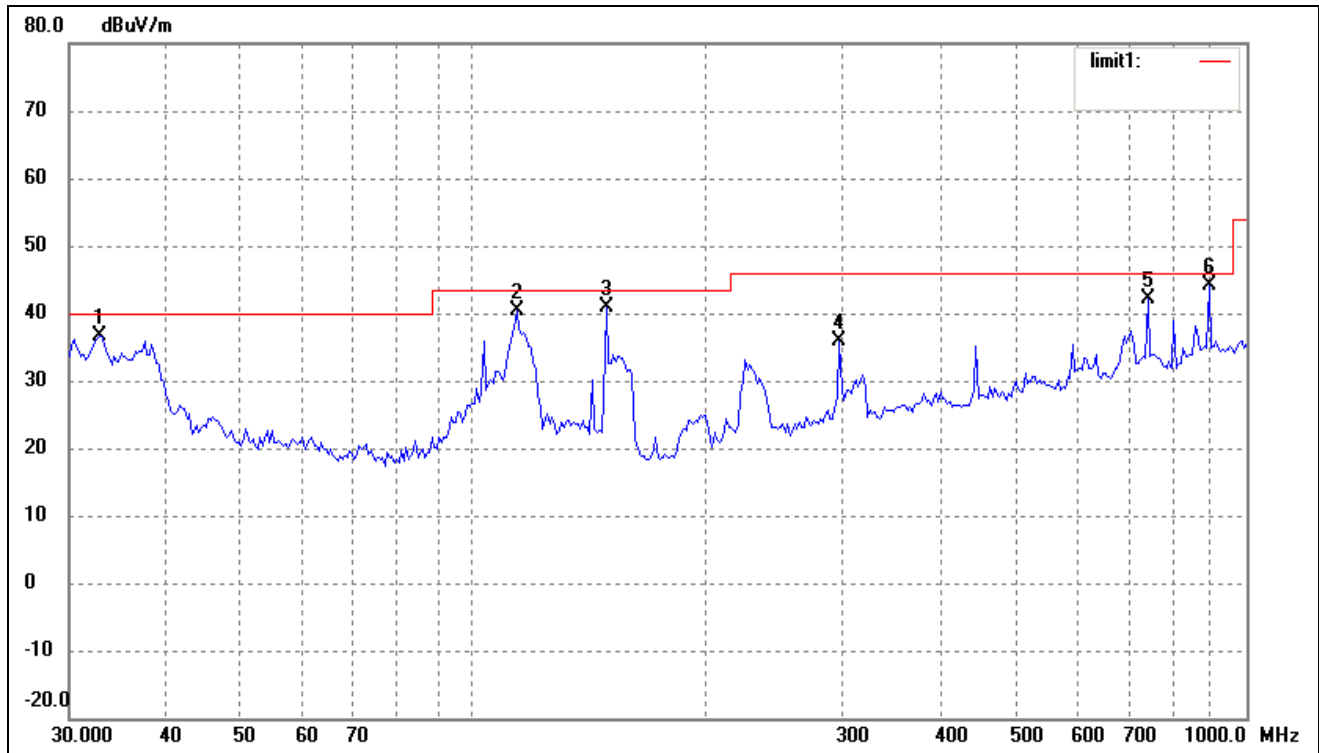
EUT: *Mobile Internet Device*
 Tested Model: *S901*
 Operating Condition: *CHARGING&PLAYING&SD*
 Comment: *AC 120V/60Hz; Adapter DC 5V*

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	114.5146	27.18	5.41	32.59	43.50	-10.91	185	100	peak
2	148.4410	36.19	3.53	39.72	43.50	-3.78	145	100	peak
3	297.2241	26.29	10.04	36.33	46.00	-9.67	120	100	peak
4	446.4141	29.65	11.41	41.06	46.00	-4.94	162	100	peak
5	744.8661	26.11	17.95	44.06	46.00	-1.94	255	100	peak
6	804.6028	27.75	16.42	44.17	46.00	-1.83	195	100	peak

Test Specification: Vertical

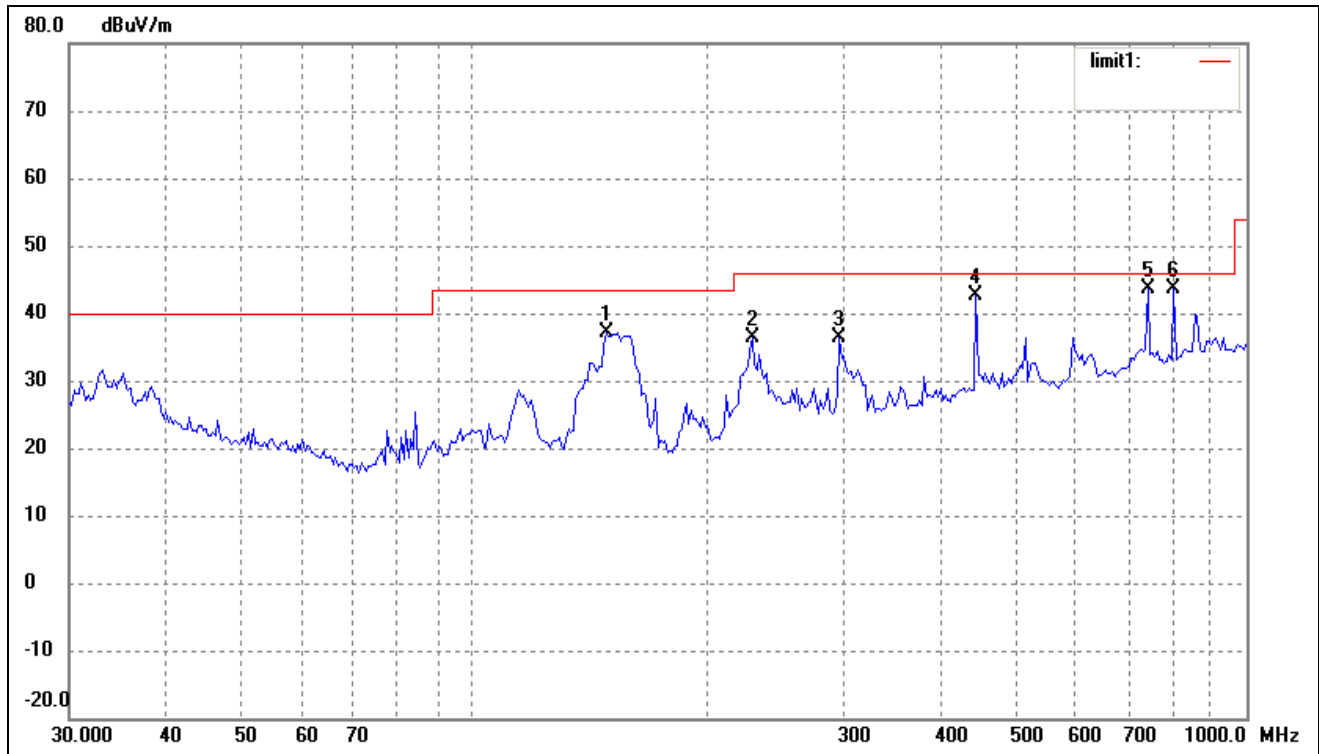


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.8637	28.22	8.52	36.74	40.00	-3.26	145	100	peak
2	113.7143	34.97	5.48	40.45	43.50	-3.05	125	100	peak
3	148.4410	37.28	3.53	40.81	43.50	-2.69	105	100	peak
4	297.2241	25.96	10.04	36.00	46.00	-10.00	250	100	peak
5	744.8661	24.25	17.95	42.20	46.00	-3.80	215	100	peak
6	893.8567	24.86	19.27	44.13	46.00	-1.87	200	100	peak

Plot of Radiated Emissions Test Data

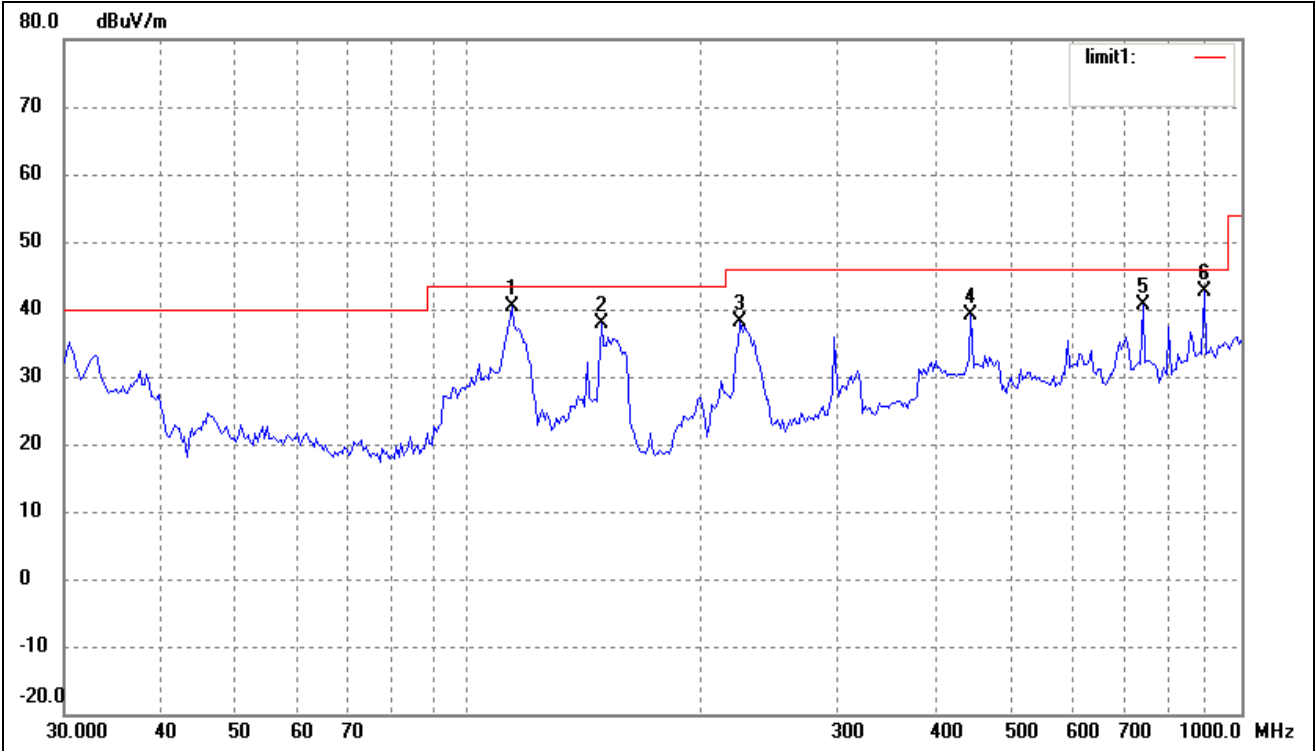
EUT: *Mobile Internet Device*
 Tested Model: *S901*
 Operating Condition: *CHARGING&PLAYING&U-Disk*
 Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Horizontal*

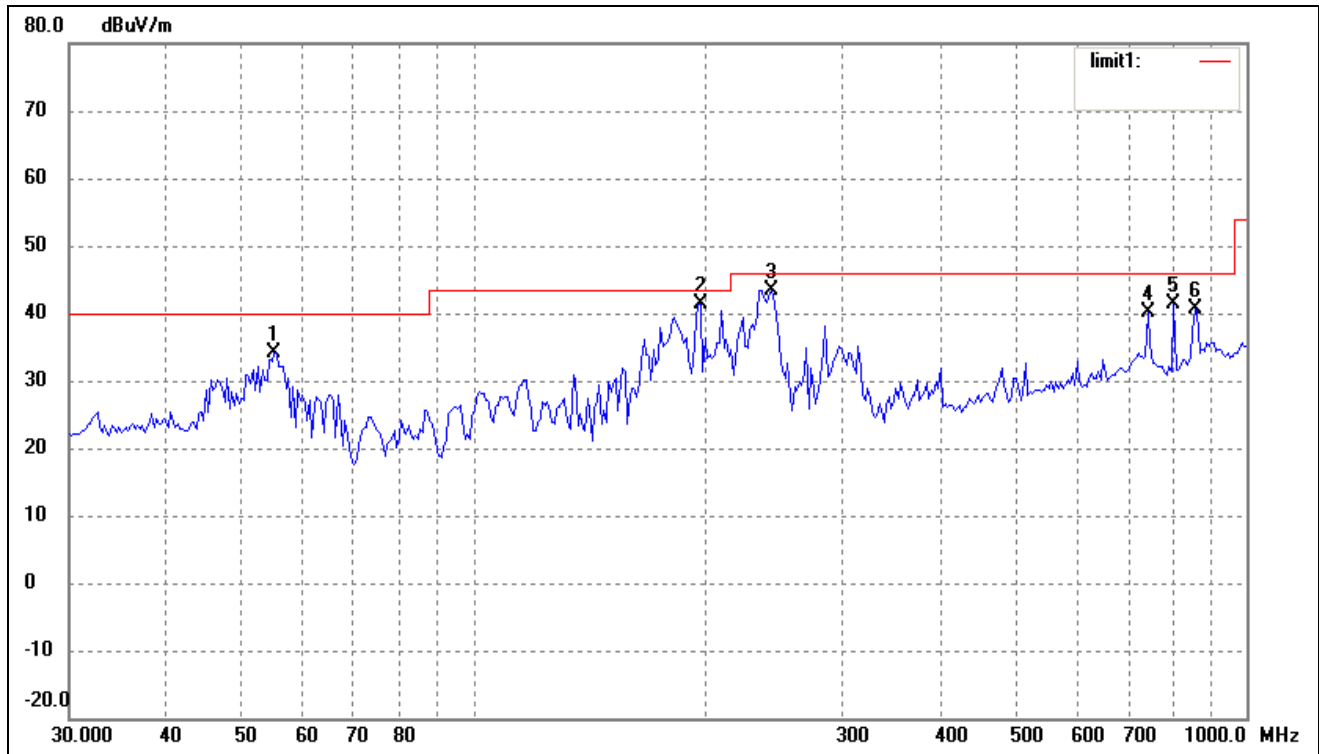


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	148.4410	33.69	3.53	37.22	43.50	-6.28	168	100	peak
2	229.2931	29.85	6.42	36.27	46.00	-9.73	152	100	peak
3	297.2241	26.29	10.04	36.33	46.00	-9.67	145	100	peak
4	446.4141	31.15	11.41	42.56	46.00	-3.44	125	100	peak
5	744.8660	25.62	17.94	43.56	46.00	-2.44	185	100	peak
6	804.6028	27.25	16.42	43.67	46.00	-2.33	205	100	peak

Test Specification: Vertical

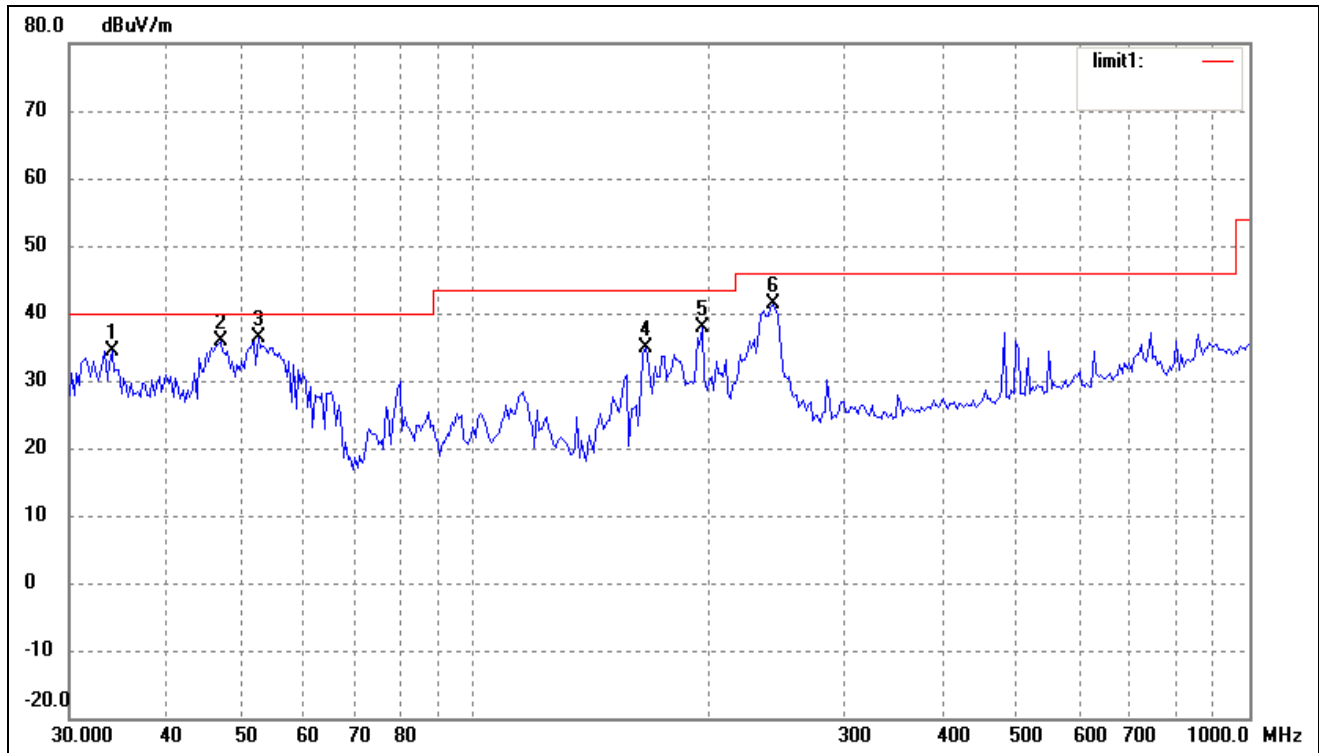


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	113.7142	34.97	5.48	40.45	43.50	-3.05	146	100	peak
2	148.4410	34.28	3.53	37.81	43.50	-5.69	152	100	peak
3	224.5192	32.01	6.17	38.18	46.00	-7.82	185	100	peak
4	446.4141	27.79	11.41	39.20	46.00	-6.80	168	100	peak
5	744.8660	22.76	17.94	40.70	46.00	-5.30	102	100	peak
6	893.8567	23.36	19.27	42.63	46.00	-3.37	250	100	peak

Plot of Radiated Emissions Test DataEUT: *Mobile Internet Device*Tested Model: *S901*Operating Condition: *Downloading*Comment: *AC 120V/60Hz; PC 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	55.2207	28.01	6.14	34.15	40.00	-5.85	250	100	peak
2	196.5098	36.82	4.49	41.31	43.50	-2.19	185	100	peak
3	242.5253	36.30	7.08	43.38	46.00	-2.62	172	100	peak
4	744.8661	22.27	17.95	40.22	46.00	-5.78	168	100	peak
5	804.6028	25.03	16.42	41.45	46.00	-4.55	144	100	peak
6	857.0247	22.66	17.97	40.63	46.00	-5.37	125	100	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	34.0365	25.70	8.72	34.42	40.00	-5.58	152	100	peak
2	46.9948	28.46	7.54	36.00	40.00	-4.00	145	100	peak
3	52.5753	30.06	6.38	36.44	40.00	-3.56	188	100	peak
4	166.0680	31.09	3.68	34.77	43.50	-8.73	165	100	peak
5	196.5098	33.37	4.49	37.86	43.50	-5.64	120	100	peak
6	242.5253	34.37	7.08	41.45	46.00	-4.55	178	100	peak

Note: Testing is carried out with frequency rang 9kHz to the 8GHz, which above 1GHz 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 and test data are not provided.

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