

FCC Part 15B
Measurement and Test Report
For
Bulltech Electronic Products S.L
Gran Via, 64, 2-1, 28013 Madrid, Spain.

FCC ID: 2AAM3SYRENI500

Test Standards:	<u>FCC Part 15 Subpart B</u>
Product Description:	<u>Mobile phone</u>
Tested Model:	<u>Syreni 500</u>
Report No.:	<u>STR13128307I-1</u>
Tested Date:	<u>2014-01-02 to 2014-01-04</u>
Issued Date:	<u>2014-01-10</u>
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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 Shenzhen SEM. Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Bulltech Electronic Products S.L
 Address of applicant: Gran Via, 64, 2-1, 28013 Madrid, Spain.

Manufacturer: Gipo Holdings Limited
 Address of manufacturer: East 1201, Phase II, Tian'an Hi-tech Plaza, Futian District, Shenzhen, China

General Description of EUT	
Product Name:	Mobile phone
Brand Name:	SZENIO, GIPO, AKAI, XION, Everaj
Model No.:	Syreni 500
Adding Mode:	PHA-5880, XI-CE600, U5, U6, Syreni 550
Software Version:	Hugiga HWA860 20131214-190427
Hardware Version:	A25_MB_V2.0
Rated Voltage:	DC 3.7V
Battery:	1900mAh
Power Adaptor:	Input 100-240V, 50/60Hz, Output DC 5V
Device Category:	Portable Device
<p><i>The EUT is GSM850/900/PCS1800/1900, WCDMA Band I, Band V network mobile phone. the mobile phone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS class 12 for GSM850 and GSM1900 and Bluetooth, Wi-Fi, and camera functions. The EUT has two SIM sockets while with the same RF circuit and function controlled by the firmware software. For more information see the following datasheet</i></p> <p><i>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 Syreni 500 without circuit and electronic construction changed, declared by the manufacturer.</i></p>	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V Li-ion Battery, Adapter DC5V
Rated Current:	/
Highest Internal Frequency:	26MHz
Lowest Internal Frequency:	32.768MHz
Classification of ITE:	B
Support Interface:	Earphone Port, DC Power Port, USB Port

1.2 Test Standards

The following report is prepared on behalf of the Bulltech Electronic Products S.L 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.: 934118**

Shenzhen SEM.Test Technology 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 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology 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 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd 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	Playing & Charging	Playing multimedia from TF card
TM2	Downloading	Reading & writing

EUT Cable List and Details

Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable	1.2	Shielded	Without Ferrite
Earphone	1.2	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	SAMSUNG	R20	N/A

Special Cable List and Details

Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

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. §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

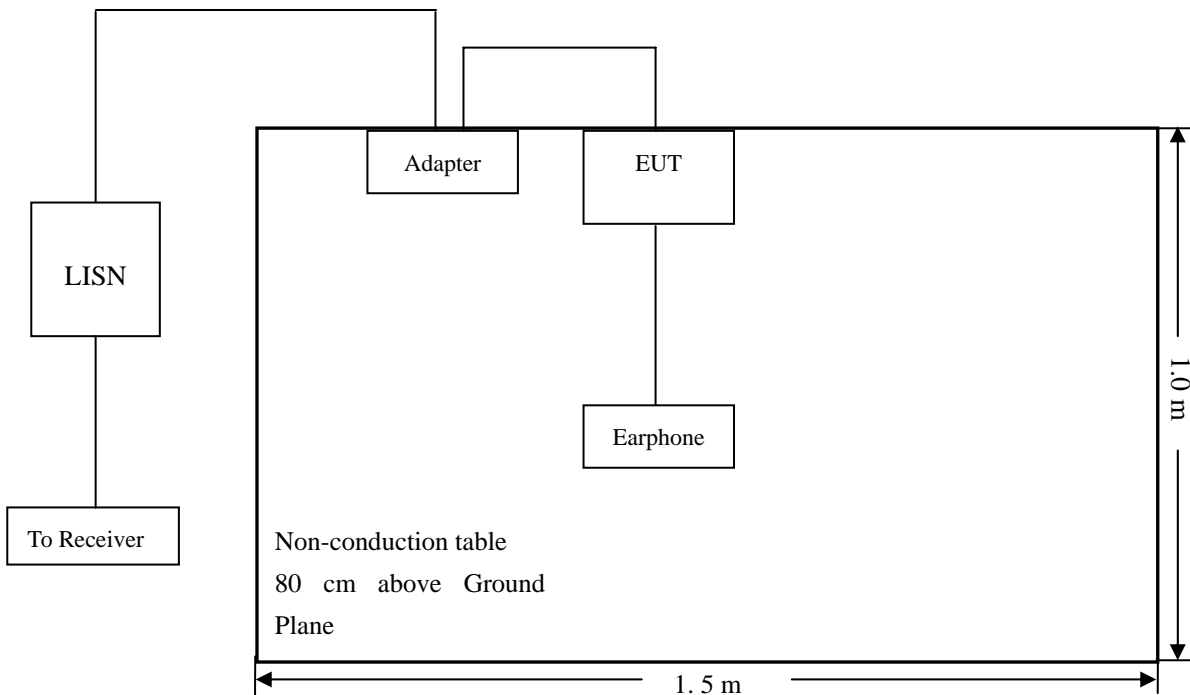
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-05-07	2014-05-06
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-05-07	2014-05-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-05-07	2014-05-06

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 Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

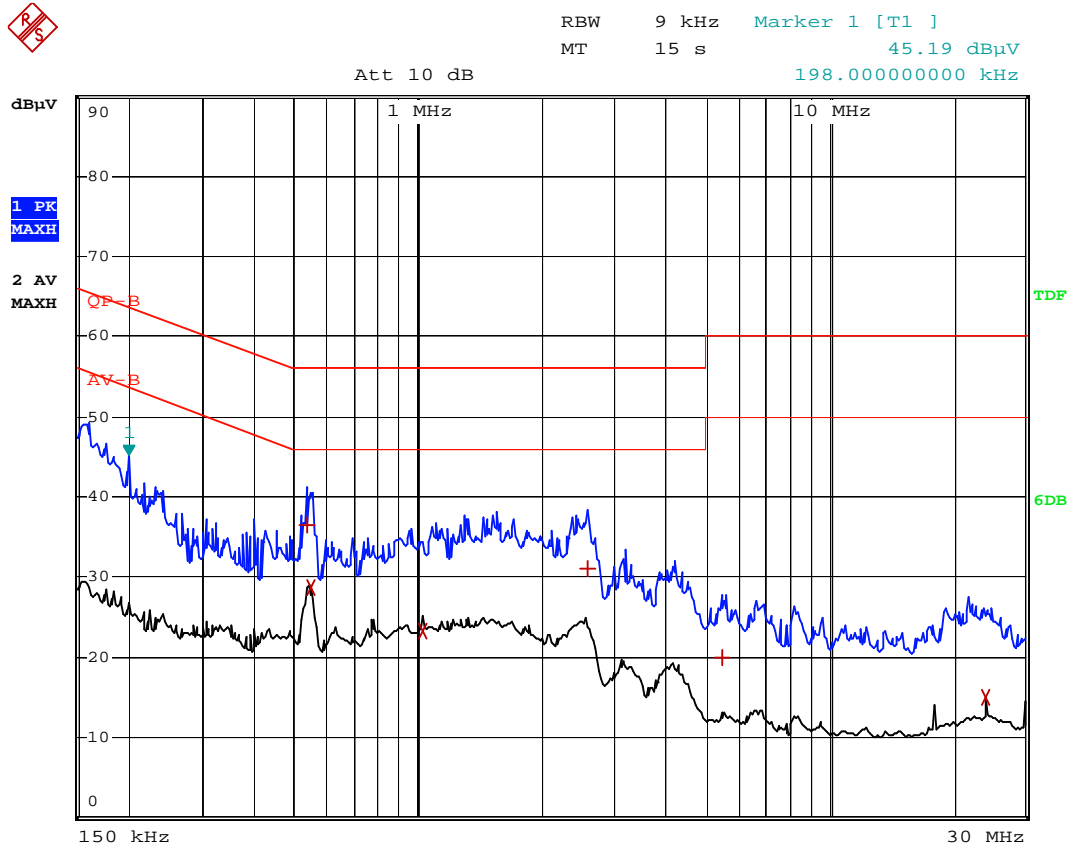
-17.24 dB at 0.546 MHz in the Line mode, Average detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

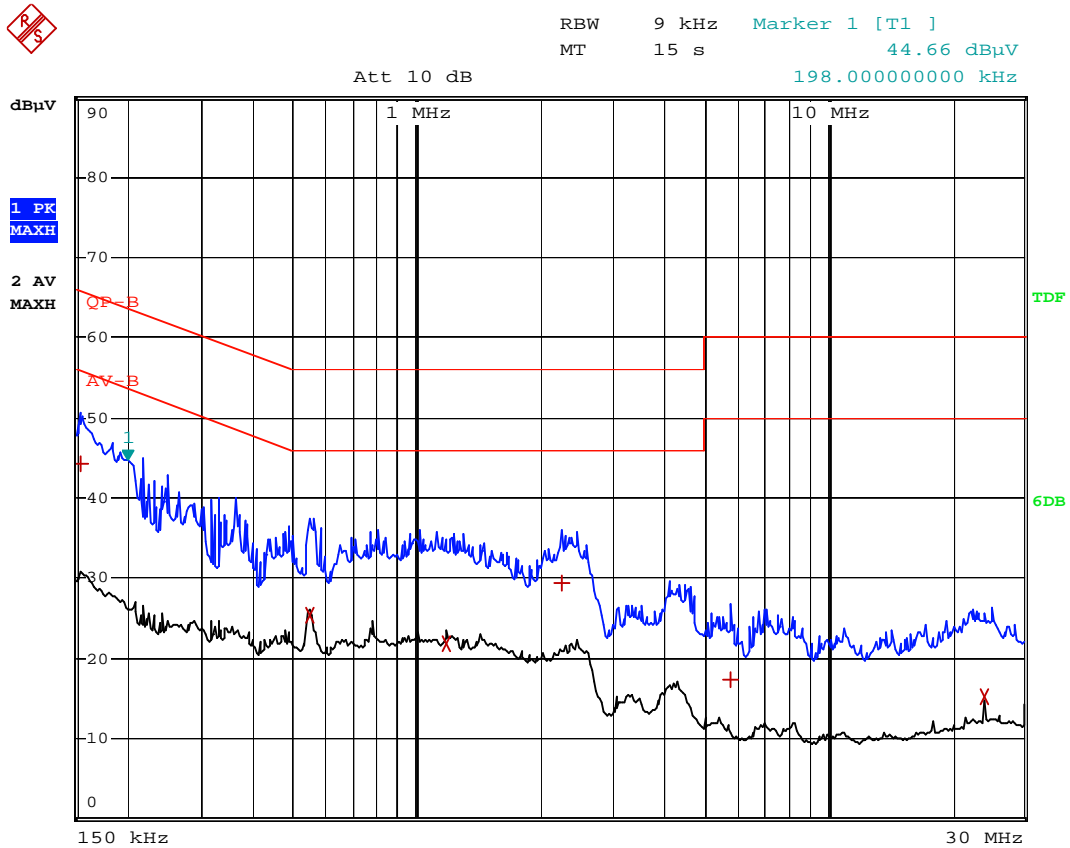
EUT: *Mobile phone*
 Tested Model: *Syreni 500*
 Operating Condition: *Charging and Playing*
 Comment: *AC 120V/60Hz, Adapter DC5V*

Test Specification: *Line*



EDIT PEAK LIST (Final Measurement Results)			
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Trace1:	QP-B		
Trace2:	AV-B		
Trace3:	---		
1 Quasi Peak	538 kHz	36.45	-19.55
2 Average	546 kHz	28.75	-17.24
2 Average	1.03 MHz	23.18	-22.82
1 Quasi Peak	2.598 MHz	31.02	-24.97
1 Quasi Peak	5.526 MHz	19.97	-40.02
2 Average	23.99 MHz	15.05	-34.94

Test Specification: Neutral



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	QP-B		
Trace2:	AV-B		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	154 kHz	44.38	-21.39
2 Average	546 kHz	25.44	-20.55
2 Average	1.186 MHz	21.89	-24.10
1 Quasi Peak	2.254 MHz	29.34	-26.66
1 Quasi Peak	5.79 MHz	17.36	-42.63
2 Average	23.99 MHz	15.32	-34.67

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.

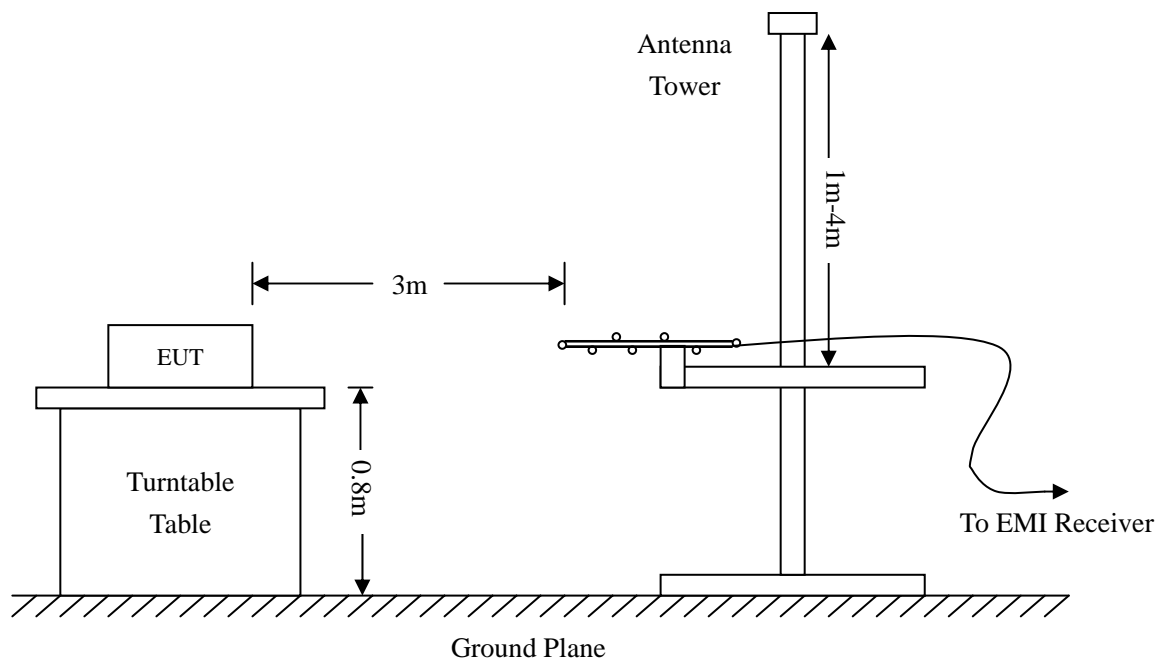
4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	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	2013-05-07	2014-05-06
Horn Antenna	ETS	3117	00086197	2013-05-07	2014-05-06

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:

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

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

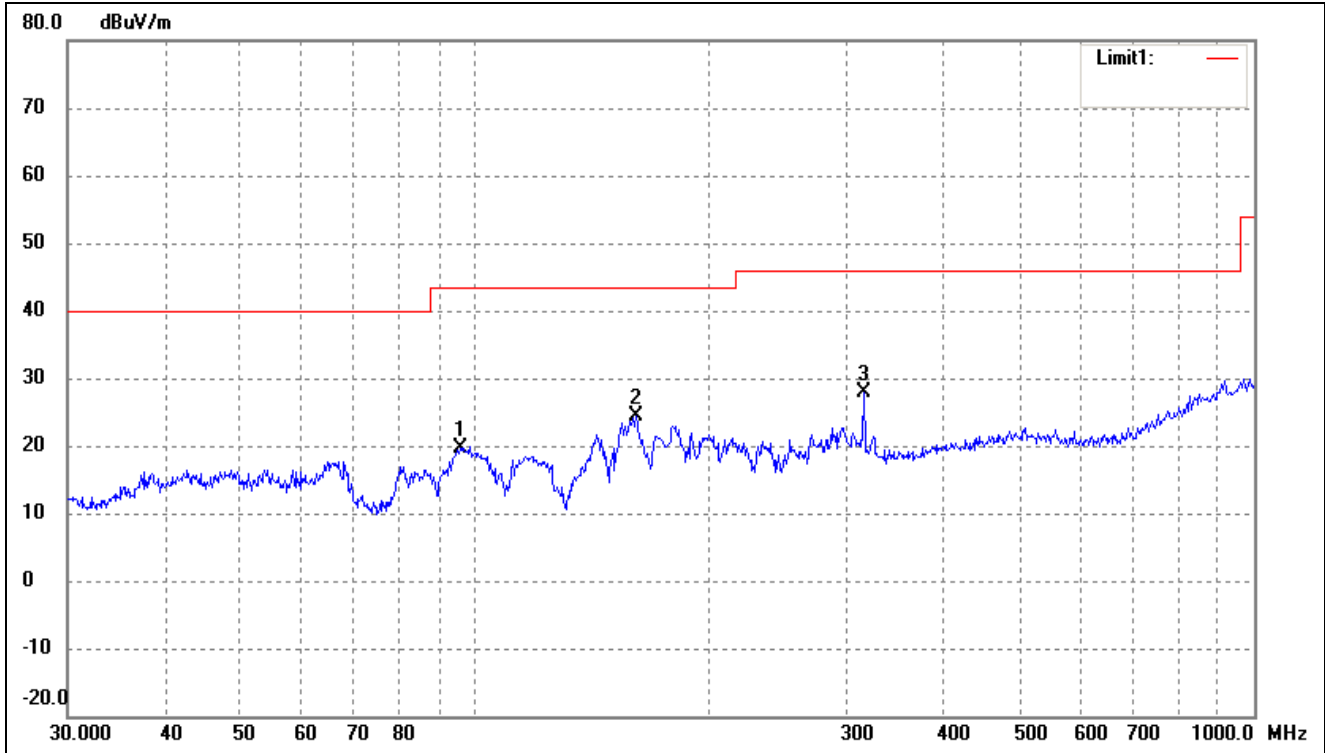
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-3.11 dB μ V at 267.5455 MHz in the Vertical polarization, Downloading Mode 9kHz to 1 GHz, 3Meters

Plot of Radiated Emissions Test Data

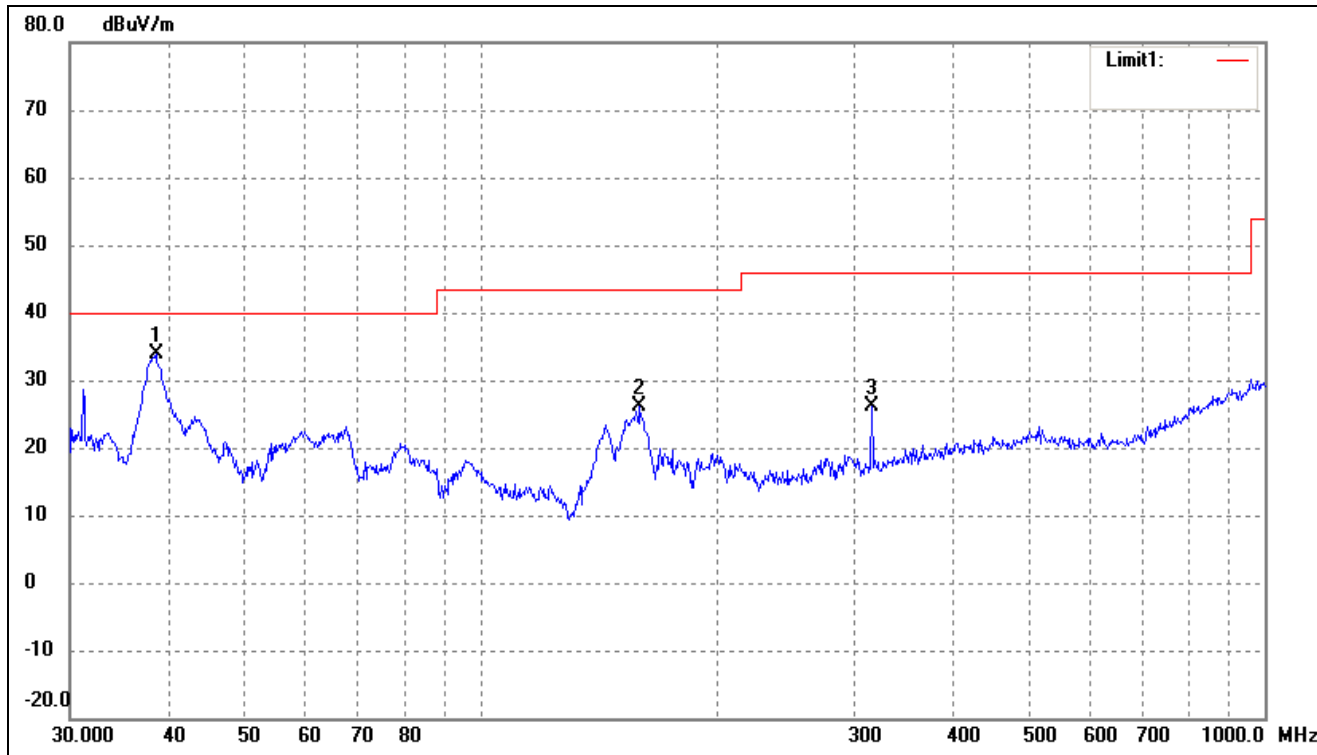
EUT: *Mobile phone*
 Tested Model: *Syreni 500*
 Operating Condition: *Charging &Playing*
 Comment: *Playing multimedia from TF card*

 Test Specification: *Horizontal*



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	95.7622	29.79	-10.08	19.71	43.50	-23.79	0	100	peak
2	160.9089	36.63	-12.29	24.34	43.50	-19.16	0	100	peak
3*	315.4808	33.56	-5.68	27.88	46.00	-18.12	0	100	peak

Test Specification: Vertical

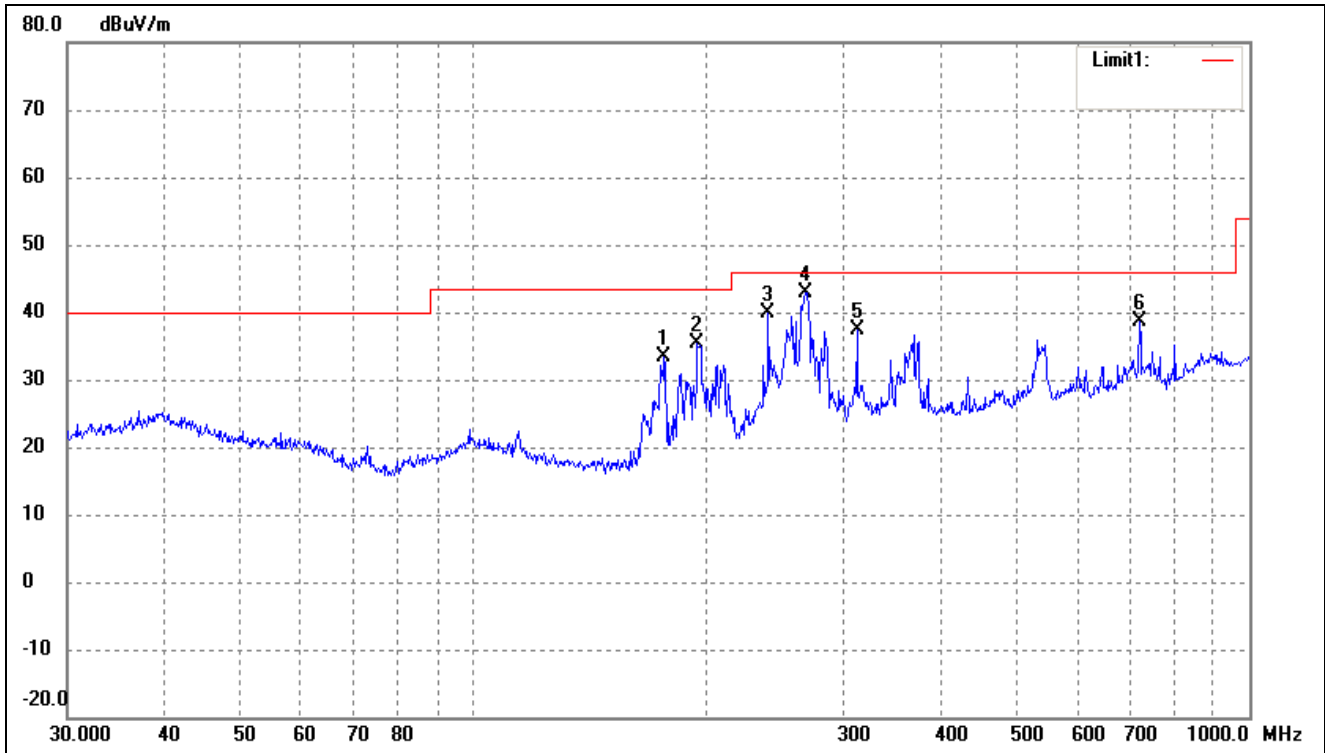


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1*	38.6161	42.49	-8.72	33.77	40.00	-6.23	0	100	peak
2	159.7844	38.56	-12.35	26.21	43.50	-17.29	0	100	peak
3	315.4808	31.93	-5.68	26.25	46.00	-19.75	0	100	peak

Plot of Radiated Emissions Test Data

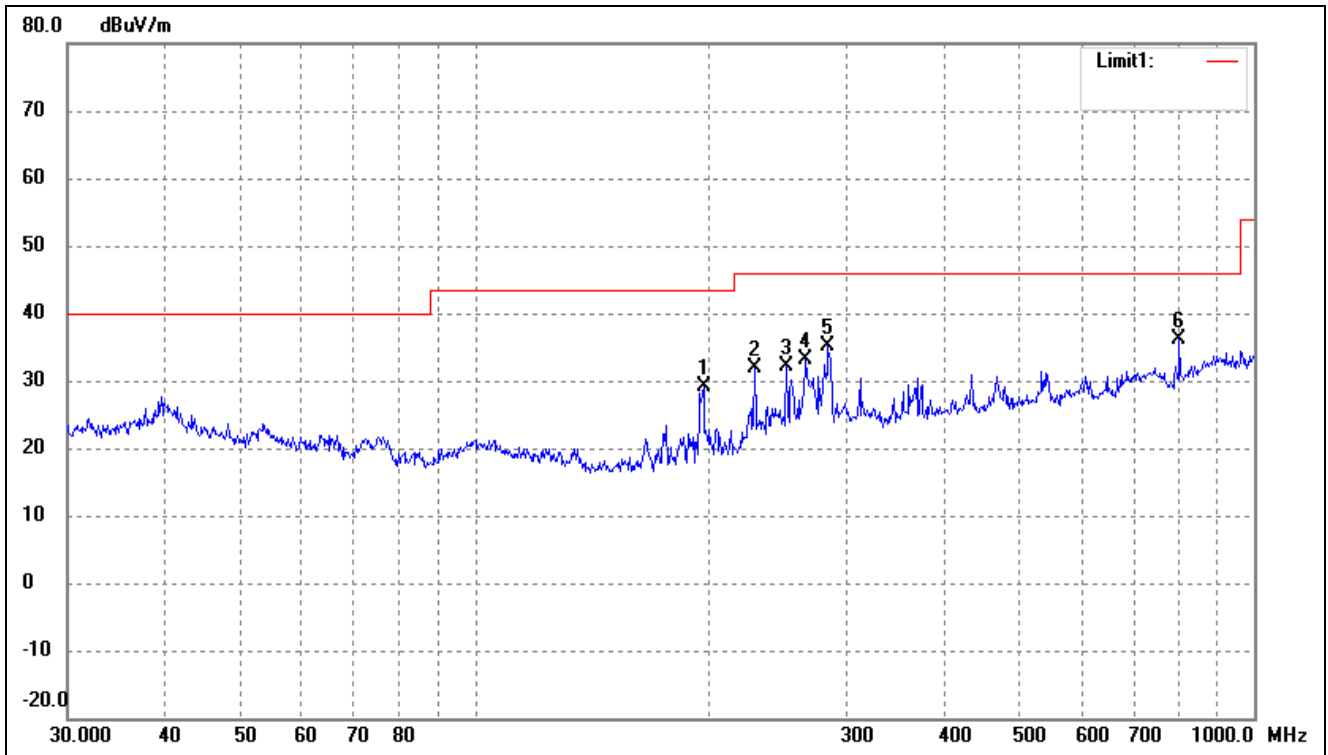
EUT: *Mobile phone*
 Tested Model: *Syreni 500*
 Operating Condition: *Downloading*
 Comment: *Connect to PC*

 Test Specification: *Horizontal*



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	176.2686	30.63	2.73	33.36	43.50	-10.14	0	100	Peak
2	194.4534	31.89	3.42	35.31	43.50	-8.19	0	100	Peak
3	239.9874	33.67	6.33	40.00	46.00	-6.00	0	100	Peak
4*	267.5455	35.34	7.55	42.89	46.00	-3.11	0	100	Peak
5	312.1794	28.26	9.24	37.50	46.00	-8.50	0	100	Peak
6	721.7259	26.28	12.47	38.75	46.00	-7.25	0	100	Peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	196.5098	25.58	3.52	29.10	43.50	-14.40	0	100	peak
2	228.4904	26.24	5.62	31.86	46.00	-14.14	0	100	peak
3	251.1804	25.49	6.74	32.23	46.00	-13.77	0	100	peak
4	265.6757	25.65	7.43	33.08	46.00	-12.92	0	100	peak
5	283.9792	26.60	8.55	35.15	46.00	-10.85	0	100	peak
6*	801.7863	21.79	14.35	36.14	46.00	-9.86	0	100	peak

Note: Testing is carried out with frequency rang 9kHz to 1GHz, which emissions below 30MHz are attenuated more than 20dB below the permissible limits or the field strength are not list above.