

# **FCC PART 15 TEST REPORT**

*For*

**GSM and GPRS Digital Mobile Phone**

**Brand Name: GOWELL**

**Model Name: GM602**

**Brand Name: RIVIERA**

**Model Name: RMP-602GMW**

**FCC ID: YOQ-RMP602GMW**

**Report No.: AGC11421007SZ04-1F1**

**Date of Issue: Aug.05, 2010**

*Prepared For*

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## 1. VERIFICATION OF COMPLIANCE

Equipment Under Test:	GSM and GPRS Digital Mobile Phone	
Model Number:	GM602	Brand Name: GOWELL
Model Number:	RMP-602GMW	Brand Name: RIVIERA
Model Different:	Only the model name and brand name are different, the motherboard and function are the same.	
Applicant:	AUDIOVISION ELECTRONICA AUDIOELEC S.A.	
	Km. 11 ½ Via a Daule, Lotizacion Inmaconsa, Calle B y Gama, 2do. Callejon 24 GUAYAQUIL, ECUADOR	
Manufacturer:	Gowell Electronic (Huizhou) Co., Ltd	
	Xiangshuihe Industrial Park, Dayawan District, Huizhou City, Guangdong Province, China	
Type of Test:	FCC Class B	
Measurement Procedure:	ANSI C63.4: 2009	
File Number:	AGC11421007SZ04-1F1	
Date of test:	Jul. 28, 2010 to Aug.05, 2010	
Deviation:	None	
Condition of Test Sample:	Normal	

The above equipment was tested by Attestation Of Global Compliance Co., Ltd. For compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2009 This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Checked By : Catherine Chen  
Catherine Chen Aug.05, 2010

Authorized By : King Zhang  
King Zhang Aug.05, 2010

2. PRODUCT INFORMATION

Housing Type:

Plastic

Rating Voltage:

DC3.7V by battery

I/O Port Information (☒Applicable    ☐Not Applicable)

I/O Port of EUT			
I/O Port Type	Q'TY	Cable	Tested with
USB PORT	1	1	1

### 3. TEST FACILITY

<b>Location:</b>	2F., No.2 Building, Huafeng No.1 Technical Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen
<b>Description:</b>	There is one 3m semi-anechoic chamber for final test, the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.
<b>Site Filing:</b>	Accredited by FCC, June 28, 2010 The Certificate Registration Number is 259865
<b>Instrument Tolerance:</b>	All measuring equipment is in accord with ANSI C63.4 requirements that meet industry regulatory agency and accreditation agency requirement.
<b>Ground Plane:</b>	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For radiated emission test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

#### 4. SUPPORT EQUIPMENT LIST

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
PC	HASEE	Q550S	N/A	--	--
ADAPTER	LS	0335C2065	N/A	--	--
MOUSE	TCL	HE72114A	N/A	--	--

**\*\*Note:** All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

**Grounding:** Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

#### 5. SYSTEM DESCRIPTION

##### **PC MODE:**

1. Connect EUT to PC and to peripheral devices.
2. Set the EUT to USB mode, the EUT begins to work.
3. Make sure the EUT operates normally during the test.

##### **CHARGER MODE:**

1. Set the EUT to charger mode, the EUT begins to work.
2. Make sure the EUT operates normally during the test.

## 6. FCC LINE CONDUCTED EMISSION TEST

### 6.1. TEST EQUIPMENT OF LINE CONDUCTED EMISSION TEST

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	06/29/2010	06/28/2011
EMI Test Receiver	Rohde & Schwarz	ESCI	N/A	05/08/2010	05/07/2011
LISN 1	Rohde & Schwarz	ESH3-Z5	N/A	05/08/2010	05/07/2010
LISN 2	Rohde & Schwarz	ESH3-Z5	N/A	05/08/2010	05/07/2010

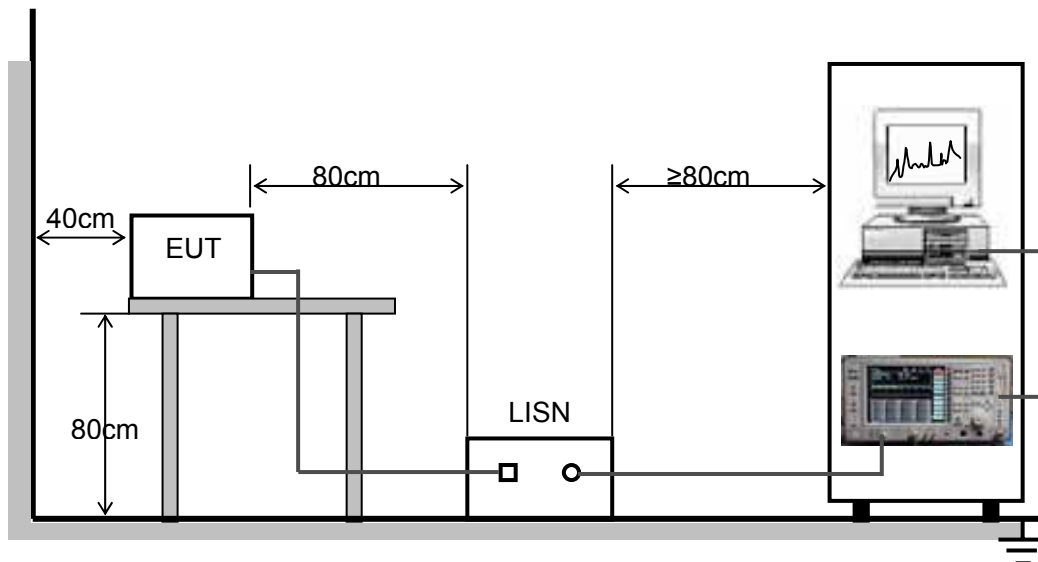
### 6.2 .LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.( dBuV)	Average( dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

\*\*Note: 1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

### 6.3. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



#### 6.4. PROCEDURE OF LINE CONDUCTED EMISSION TEST

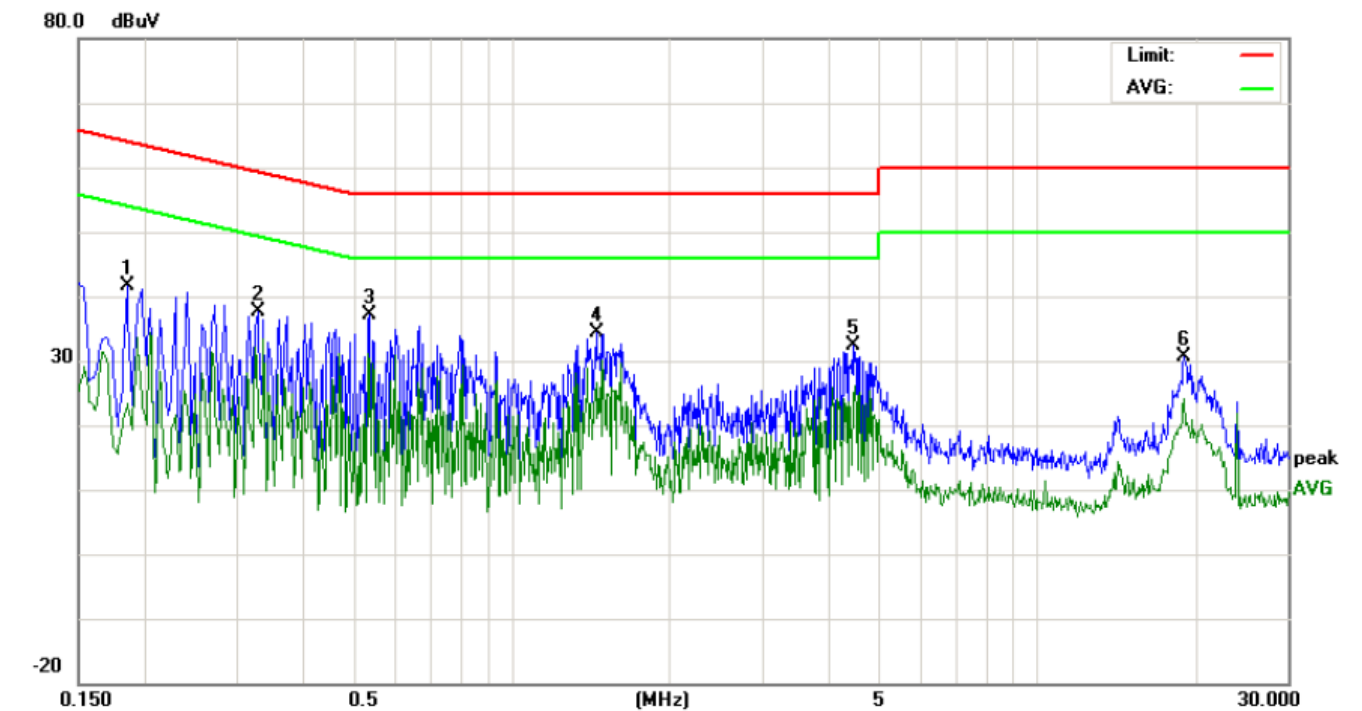
- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) The EUT received power through a Line Impedance Stabilization Network (LISN) that was grounded to the protect earth.
- 5) All support equipments received AC120V power from a second LISN, if any.
- 6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
- 10) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 11) The test data of the worst case condition(s) was reported on the Summary Data page.



6.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST

CHARGER MODE:

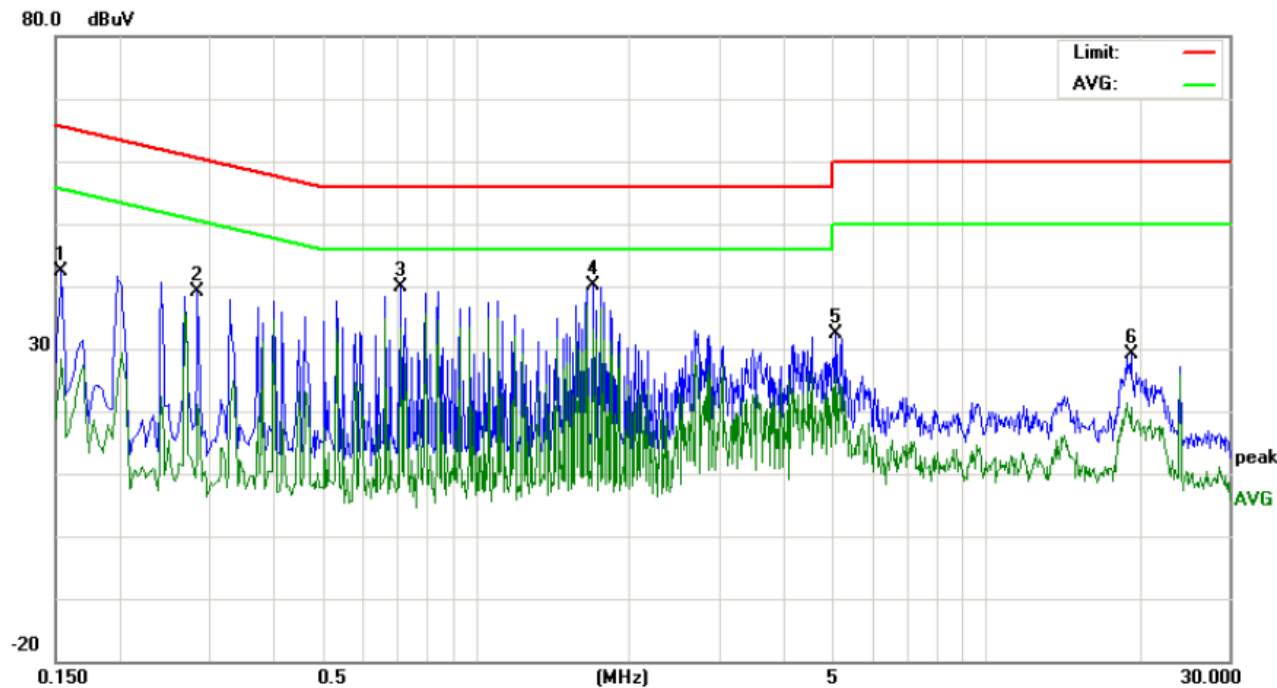
LINE CONDUCTED EMISSION TEST LINE 1-L



Site: Conduction	Phase: L1	Temperature: 26
Limit: FCC Class B Conduction	Power: AC 110V/60Hz	Humidity: 60 %
EUT: MOBILE PHONE		
M/N:		
Mode: GM602		
Note:		

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1860	31.42		13.27	10.20	41.62		23.47	64.21	54.21	-22.59	-30.74	P	
2	0.3300	27.52		11.45	10.20	37.72		21.65	59.45	49.45	-21.73	-27.80	P	
3	0.5380	27.02		17.25	10.20	37.22		27.45	56.00	46.00	-18.78	-18.55	P	
4	1.4540	24.21		16.51	10.20	34.41		26.71	56.00	46.00	-21.59	-19.29	P	
5	4.4618	22.19		15.03	10.20	32.39		25.23	56.00	46.00	-23.61	-20.77	P	
6	19.0779	20.47		14.06	10.12	30.59		24.18	60.00	50.00	-29.41	-25.82	P	

LINE CONCUTED EMISSION TEST LINE 1-N



Site: Conduction  
Limit: FCC Class B Conduction  
EUT: MOBILE PHONE  
M/N:  
Mode: GM602  
Note:

Phase: **N**  
Power: AC 110V/60Hz

Temperature: 26  
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1539	32.28		18.06	10.20	42.48		28.26	65.78	55.78	-23.30	-27.52	P	
2	0.2860	28.81		10.83	10.20	39.01		21.03	60.64	50.64	-21.63	-29.61	P	
3	0.7140	29.59		23.28	10.20	39.79		33.48	56.00	46.00	-16.21	-12.52	P	
4	1.7060	29.96		22.91	10.20	40.16		33.11	56.00	46.00	-15.84	-12.89	P	
5	5.0939	22.08		15.32	10.20	32.28		25.52	60.00	50.00	-27.72	-24.48	P	
6	19.2698	19.01		10.40	10.12	29.13		20.52	60.00	50.00	-30.87	-29.48	P	

TEST RESULT: PASS

## 7. FCC RADIATED EMISSION TEST

### 7.1. TEST EQUIPMENT OF RADIATED EMISSION

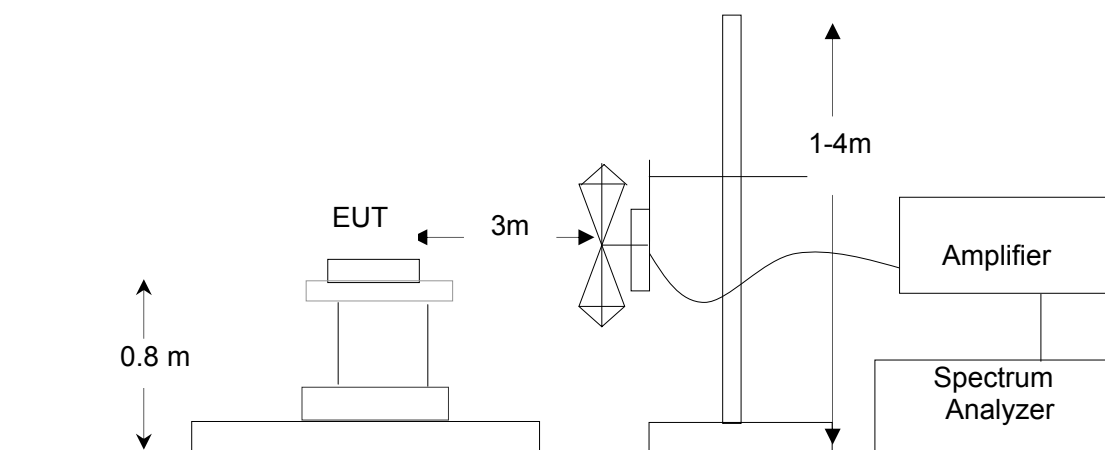
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI test receiver	Rohde & Schwarz	ESCI	N/A	05/08/2010	05/07/2011
Amplifier	H.P.	8447D	N/A	06/29/2010	06/28/2011
Biological Antenna	A.H. Systems Inc.	SAS-521-4	N/A	05/06/2010	05/05/2011
CABLE	TIME MICROWAVE	LMR-400	N/A	06/29/2010	06/28/2011

### 7.2. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m/ Q.P.)
30~88	3	40.0
88~216	3	43.5
216~960	3	46.0
Above 960	3	54.0

\*\*Note: The lower limit shall apply at the transition frequency.

### 7.3 BLOCK DIAGRAM OF RADIATED EMISSION TEST



#### 7.4 PROCEDURE OF RADIATED EMISSION TEST

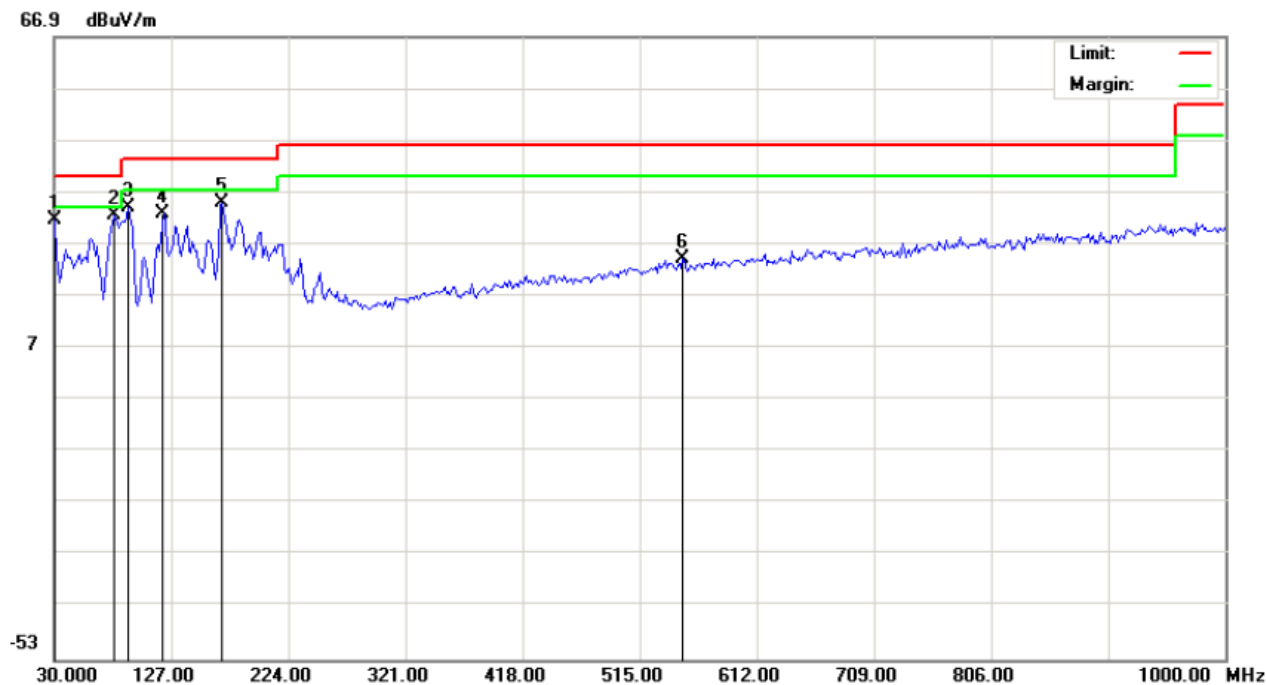
- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) The EUT received DC 3.7V from USB or battery. All support equipments received AC 120V/60Hz power from socket under the turntable, if any.
- 5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- 6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7) The test mode(s) were scanned during the test:
- 8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

The test data of the worst case condition(s) was reported on the Summary Data page.

7.5 TEST RESULT OF RADIATED EMISSION TEST

PC MODE :

TEST RESULT OF RADIATED EMISSION TEST - HORIZONTAL



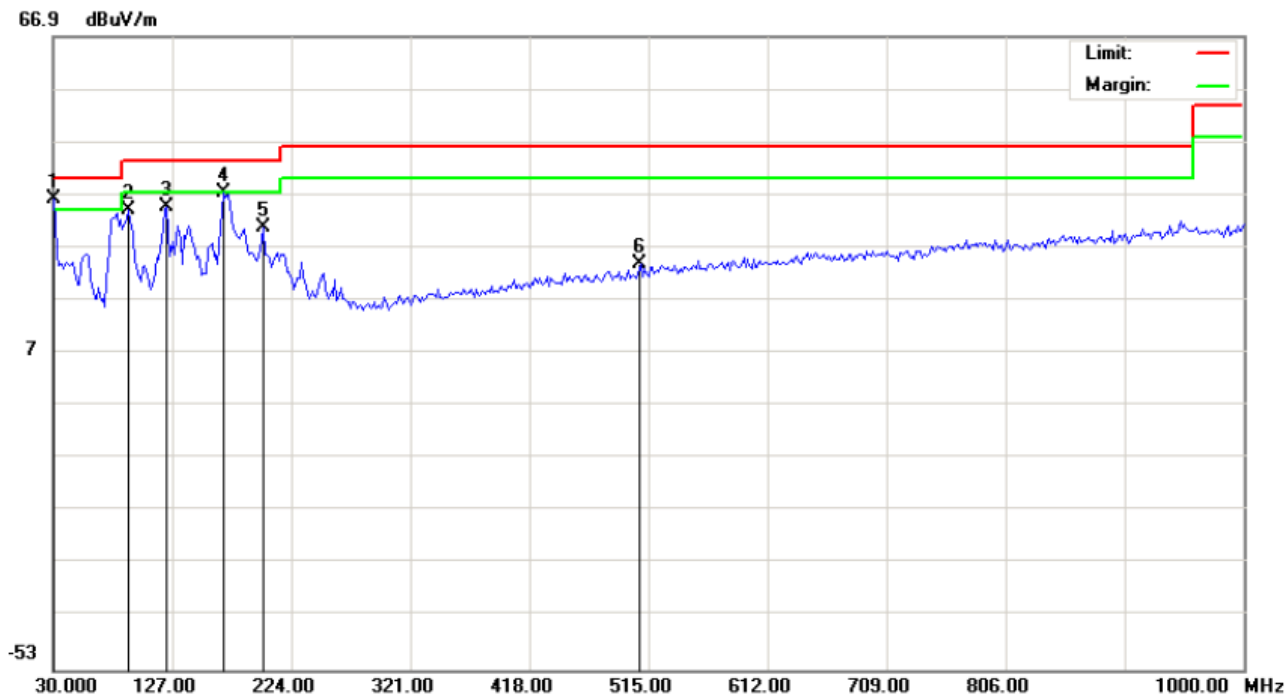
Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: MOBILE PHONE  
M/N:  
Mode: GM602  
Note:

Polarization: **Horizontal**  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		30.0000	11.76	19.75	31.51	40.00	-8.49	peak			
2	*	80.1166	22.38	10.26	32.64	40.00	-7.36	peak			
3		91.4333	21.28	12.81	34.09	43.50	-9.41	peak			
4		120.5332	14.50	18.35	32.85	43.50	-10.65	peak			
5		169.0331	14.97	19.88	34.85	43.50	-8.65	peak			
6		550.5666	0.27	23.94	24.21	46.00	-21.79	peak			

TEST RESULT OF RADIATED EMISSION TEST -VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: MOBILE PHONE  
M/N:  
Mode: GM602  
Note:

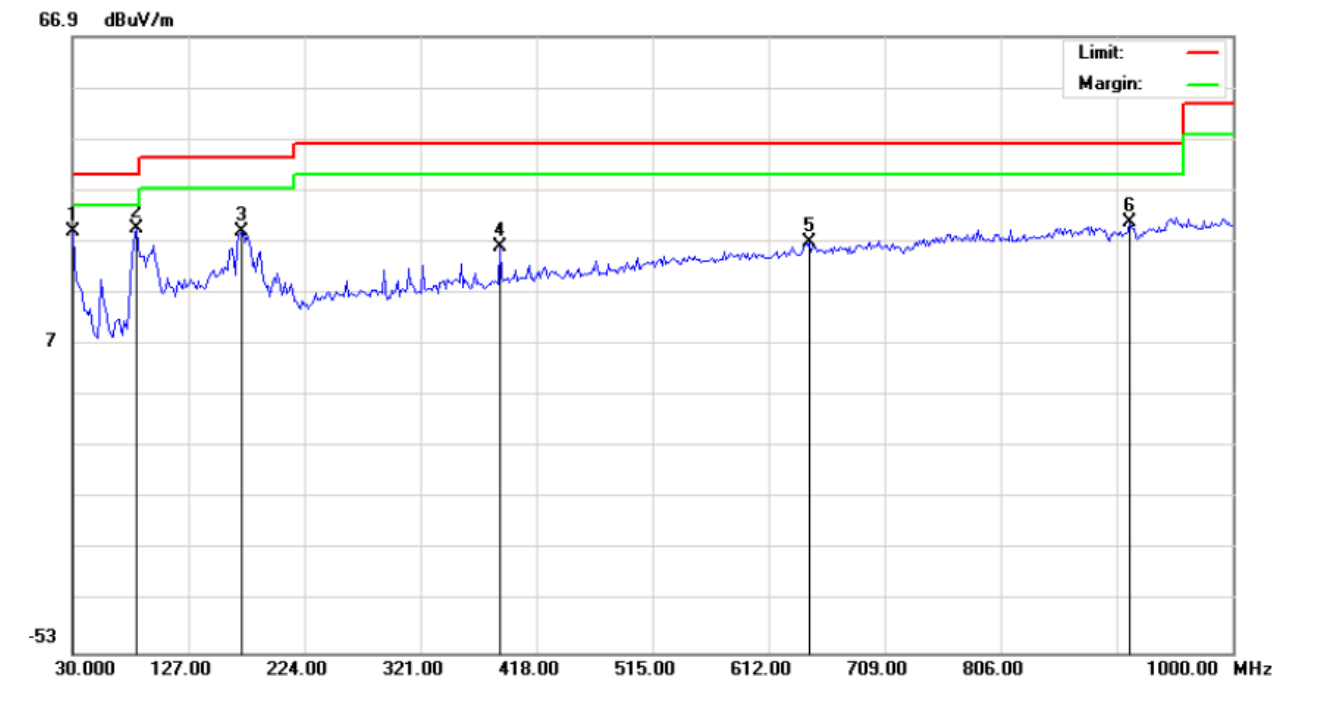
Polarization: Vertical  
Power:  
Distance: 3m

Temperature: 26  
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	30.0000	16.43	19.75	36.18	40.00	-3.82	peak			
2		91.4333	21.11	12.81	33.92	43.50	-9.58	peak			
3		122.1500	16.09	18.56	34.65	43.50	-8.85	peak			
4		169.0331	17.55	19.88	37.43	43.50	-6.07	peak			
5		201.3667	15.65	15.15	30.80	43.50	-12.70	peak			
6		508.5332	0.68	23.29	23.97	46.00	-22.03	peak			

CHARGER MODE

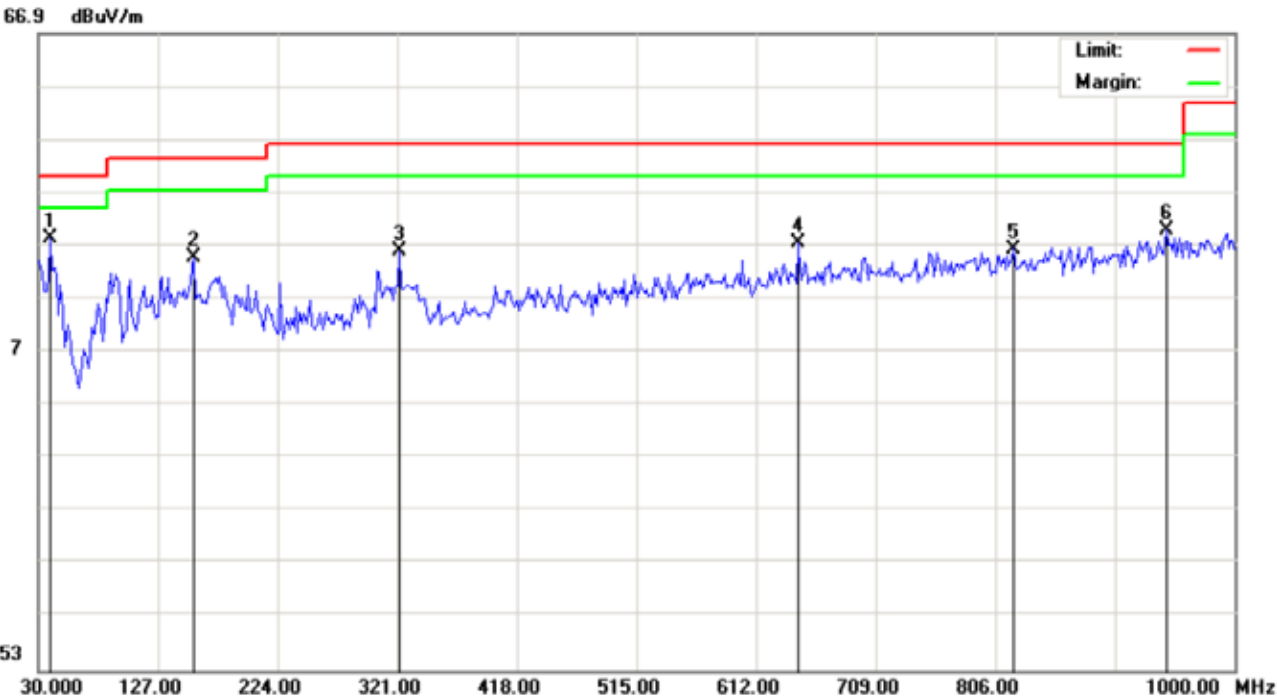
TEST RESULT OF RADIATED EMISSION TEST - HORIZONTAL



Site: site #1	Polarization: <b>Horizontal</b>	Temperature: 26
Limit: FCC Class B 3M Radiation	Power: AC 110V/60Hz	Humidity: 60 %
EUT: MOBILE PHONE	Distance: 3m	
M/N:		
Mode: GM602		
Note:		

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		30.0000	9.19	19.75	28.94	40.00	-11.06	peak			
2	*	83.3500	18.61	10.94	29.55	40.00	-10.45	peak			
3		172.2666	9.18	19.80	28.98	43.50	-14.52	peak			
4		387.2833	6.01	20.02	26.03	46.00	-19.97	peak			
5		645.9500	1.21	25.70	26.91	46.00	-19.09	peak			
6		914.3167	1.24	29.45	30.69	46.00	-15.31	peak			

TEST RESULT OF RADIATED EMISSION TEST --VERTICAL



Site: site #1	Polarization: <b>Vertical</b>	Temperature: 26
Limit: FCC Class B 3M Radiation	Power: AC 110V/60Hz	Humidity: 60 %
EUT: MOBILE PHONE	Distance: 3m	
M/N:		
Mode: GM602		
Note:		

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	39.7000	13.75	14.75	28.50	40.00	-11.50	peak			
2		156.1000	4.46	20.19	24.65	43.50	-18.85	peak			
3		322.6167	7.75	18.18	25.93	46.00	-20.07	peak			
4		645.9500	1.72	25.70	27.42	46.00	-18.58	peak			
5		820.5500	-1.66	28.06	26.40	46.00	-19.60	peak			
6		945.0333	-0.69	30.40	29.71	46.00	-16.29	peak			

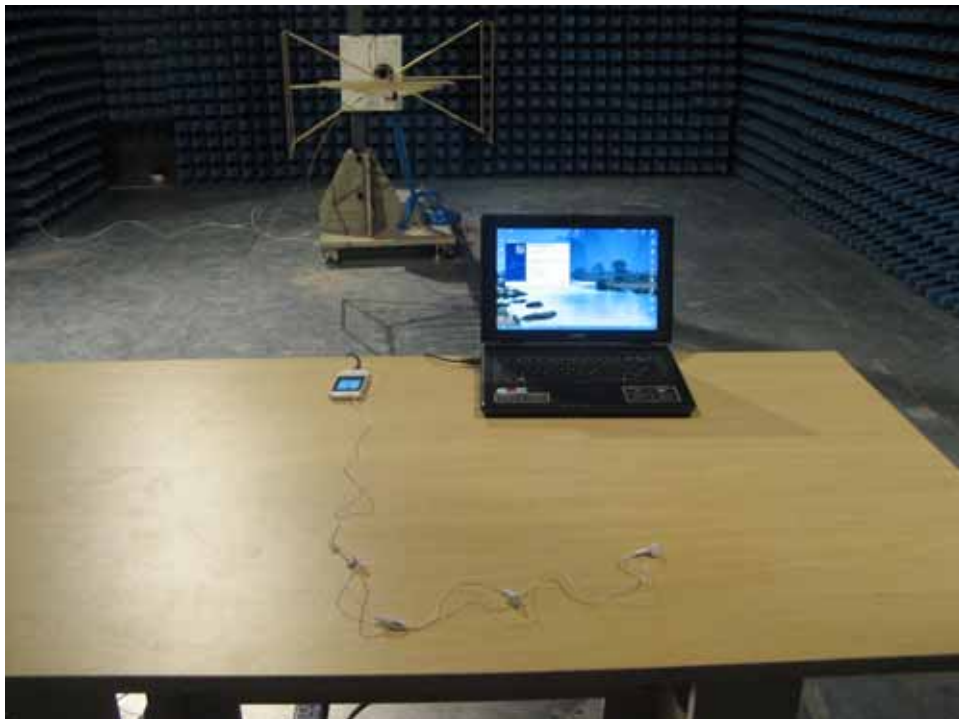


## APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

### FCC CONDUCTED EMISSION TEST



### FCC RADIATED EMISSION TEST SETUP FOR PC MODE



# FCC RADIATED EMISSION TEST SETUP FOR CHARGER MODE



## APPENDIX 2 PHOTOGRAPHS OF EUT

TOP VIEW OF SAMPLE



BOTTOM VIEW OF SAMPLE



LEFT VIEW OF SAMPLE



RIGHT VIEW OF SAMPLE



FRONT VIEW OF SAMPLE



BACK VIEW OF SAMPLE



INTERNAL PHOTO OF SAMPLE – 1



INTERNAL PHOTO OF SAMPLE – 2



---END OF REPORT---