FCC Test Report

FCC ID: 2AKI3GPRSDY001

Product Name:	**GPS Warning traffic lights**
Trademark:	**N/A**
Model Name:	**GPRSDY001**
Prepared For: Address:	**Guangzhou Gongming Lighting Products Co., Ltd.** 2F, 1 Building, Yongxingbashe Industrial zone, Baiyun District, Guangzhou, China.
Prepared By: Address:	**Shenzhen BCTC Technology Co., Ltd.** No.101,Yousong Road,Longhua New District, Shenzhen,China
Test Date:	**Nov. 15 - Nov. 22, 2016**
Date of Report:	**Nov. 22, 2016**
Report No.:	**BCTC-FY161105285E**

VERIFICATION OF COMPLIANCE

Applicant's name.....:	**Guangzhou Gongming Lighting Products Co., Ltd.**
Address.....:	2F, 1 Building, Yongxingbashe Industrial zone, Baiyun District, Guangzhou, China.
Manufacture's Name.....:	**Shenzhen Thriving Ocean Electronics Technology Co., Ltd.**
Address.....:	3F, No. 3 Door, B Building, Shangxing Western Industrial zone, NO. 1001-1, Xihuan Road, Shajing Street, Baoan District, Shenzhen, China.
Product description	
Product name.....:	**GPS Warning traffic lights**
Trademark:	**N/A**
Model Name:	**GPRSDY001**
Test procedure	FCC CFR Title 47 Part 2: 2015 FCC CFR Title 47 Part22 Subpart H: 2015 FCC CFR Title 47 Part24 Subpart E: 2015

This device described above has been tested by BCTC, and the test results show that the equipment under test (EUT) is in compliance with the requirements. And it is applicable only to the tested sample identified in the report.

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Test Result : **Pass**

Testing Engineer : Eric Yang

Reviewer (Supervisor) : Jade Yang

Approved & Authorized Signer(Manager) : Carson Zhang

TABLE OF CONTENTS

1.TEST SUMMARY

Test Items	Test Requirement	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed* (Please refer to SAR Report)
Conducted RF Output Power	2.1046	PASS
Peak to Average Radio	2.1055,22.355 24.235,27.54	PASS
99% & -26 dB Occupied Bandwidth	2.1049, 22.917 24.238,	PASS
Frequency Stability	2.1055, 22.355 24.235,	PASS
Conducted Out of Band Emissions	2.1051,2.1057 22.917, 24.238	PASS
Band Edge	2.1051,2.1057 22.917, 24.238	PASS
Transmitter Radiated Power (EIPR/ERP)	22.913, 24.232	PASS
Radiated Out of Band Emissions	2.1053,2.1057 22.917, 24.238	PASS

2.GENERAL PRODUCT INFORMATION

2.1. Product Function

Refer to Technical Construction Form and User Manual.

2.2. Description of Device (EUT)

Product Name:	GPS Warning traffic lights
Model No.:	GPRSDY001
Operation Frequency:	GPRS 850MHz: Tx: 824.20 - 848.80MHz (at intervals of 200kHz); Rx: 869.20 - 893.80MHz (at intervals of 200kHz) GPRS 1900MHz: Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz); Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz) GPS Rx:1575.42MHz
Modulation technology:	GMSK
Antenna Type:	Integral Antenna
Antenna gain:	1.0dBi
Power supply:	DC 3.7V
GPRS Class:	12

NOTE:The EUT is does not support the GSM, EGPRS.

2.3. Difference between Model Numbers

The product are different for model, outlook color and size.

2.4. Test Supporting System

None.

2.5. Independent Operation Modes

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Test modes		
Band	Radiated	Conducted
GPRS 850	■ GPRS link	■ GPRS link
GPRS 1900	■ GPRS link	■ GPRS link

Note: The maximum power levels are GPRS mode for GMSK link, RMC12.2Kbps mode

The conducted average power tables are as follows:

Conducted Average Power (dBm)						
Band	GPRS 850			GPRS 1900		
Channel	128	190	251	512	661	810
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
GPRS	31.11	31.31	31.67	30.15	30.55	30.58

3. TEST SITES

3.1. Test Facilities

Shenzhen BCTC Technology Co., Ltd.
Add.:No.101,Yousong Road,Longhua New District, Shenzhen,China
FCC Registration No.:187086

3.1.1. Measurement Uncertainty

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

3.2. List of Test and Measurement Instruments

3.2.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Test Receiver	R&S	ESCI	101160	2016.06.07	2017.06.06
LISN	SCHWARZBECK	ENV216	101313	2016.08.25	2017.08.24
LISN	EMCO	3816/2	00042990	2016.08.25	2017.08.24
50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2016.06.07	2017.06.06
Passive Voltage Probe	R&S	ESH2-Z3	100196	2016.06.07	2017.06.06
Absorbing clamp	R&S	MOS-21	100423	2016.06.08	2017.06.07
RF cables	R&S	R204	R20X	2016.07.06	2017.07.05

3.2.2. For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Test Receiver	R&S	ESPI	101318	2016.06.07	2017.06.06
System Simulator	Agilent	E5515C	GB43130252	2016.06.07	2017.06.06
Power Splitter	Weinschel	1506A	NW534	2016.06.07	2017.06.06
Bilog Antenna	TESEQ	CBL6111D	31216	2016.07.06	2017.07.05
Loop antenna	ARA	PLA-1030/B	1029	2016.06.07	2017.06.06
Spectrum Analyzer	Agilent	E4411B	MY4511235	2016.07.06	2017.07.05
Signal Amplifier	SONOMA	313	187022	2016.07.06	2017.07.05
Signal Amplifier	Agilent	8449B	3008A00213	2016.07.06	2017.07.05
RF Cable	R&S	R203	R20X	2016.07.06	2017.07.05
MULTI-DEVICE Controller	ETS-LINDGREEN	31250	126821	N/A	N/A
Horn Antenna	EM	EM-AH-10180	2011071402	2016.07.06	2017.07.05
Horn Antenna	Schwarzbeck	BBHA 9170	9170-181	2016.07.06	2017.07.05
Spectrum Analyzer	Agilent	8593E	3911A03928	2016.07.06	2017.07.05
Spectrum Analyzer	Agilent	E4407B	MY45108040	2016.07.06	2017.07.05
Signal Amplifier	DAZE	ZN3380B	11235	2016.08.25	2017.08.24
High Pass filter	KANGMAI	WHKX1.0/1.5G-10SS	40	2016.08.25	2017.08.24
Filter	COM-MW	ZBSF-C836.5-25-X	BCTC042	2016.08.25	2017.08.24
Filter	COM-MW	ZBSF-C1747.5-75-X2	BCTC045	2016.08.25	2017.08.24
Filter	COM-MW	ZBSF-C1880-60-X2	BCTC047	2016.08.25	2017.08.24
DC Power Supply	LongWei	PS-305D	010965682	2016.07.06	2017.07.05
Constant temperature and humidity box	GF	GTH-800-40-2P	MAA9906-012	2016.06.07	2017.06.06
Universal radio communication tester	R&S	CMU200	115295	2016.08.25	2017.08.24
Splitter	Agilent	11435B	1125162	2016.07.06	2017.07.05

4. TEST SET-UP AND OPERATION MODES

4.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

4.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators

EUT

(EUT: GPS Warning traffic lights)

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4.3. Test Operation Mode and Test Software

GPRS900, GPRS1800

4.4. Special Accessories and Auxiliary Equipment

None.

4.5. Countermeasures to Achieve EMC Compliance

None.

4.6. Test Environment:

Ambient conditions in the test laboratory:

Items	Actual
Temperature (℃)	21~23
Humidity (%RH)	50~65

5. EMISSION TEST RESULTS

5.1. Conducted RF Output Power

5.1.1. Limit

According to FCC section 2.1046(a), FCC part22.913(a) and FCC part24.232(b) ,for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

5.1.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.1.3. Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.

Measurement data

The conducted power tables are as follows:

Conducted Power (dBm)						
Band	GPRS 850			GPRS 1900		
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
GPRS (GMSK, 1 TX slot)	31.11	31.31	31.67	30.15	30.55	30.58
GPRS (GMSK, 2 TX slot)	30.32	30.57	30.88	28.99	29.47	29.34
GPRS (GMSK, 3 TX slot)	28.34	28.60	28.44	26.97	27.41	27.38
GPRS (GMSK, 4 TX slot)	27.34	27.45	27.76	24.90	25.37	25.33
Limit	N/A			N/A		
Result	Pass					

Note: Measurement Uncertainty: ±2.6 dB.

5.2. Peak to Average Radio

5.2.1. Limit

According to §24.232(d), Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

5.2.2. Test Setup

See section 5.1.2 of this report.

5.2.3. Test Result

Measurement data as follows:

Test Mode	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)	PAR (dB)	Limit (dB)
GPRS (850)	824.2	31.75	31.11	0.64	13
	836.4	31.89	31.31	0.58	13
	848.8	32.27	31.67	0.60	13

Test Mode	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)	PAR	Limit
GPRS (1900)	1850.2	30.80	30.15	0.65	13
	1880.0	31.21	30.55	0.66	13
	1909.8	31.24	30.58	0.66	13

Note: PAR= Peak Power- Average Power

Measurement Uncertainty: ±0.2 dB.

5.3. 99% Occupied Bandwidth

5.3.1. Limit

According to FCC section 2.1049 and FCC part22.913(a) and FCC part24.232(b), the occupied bandwidth
is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth,

5.3.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.3.3. Test Result

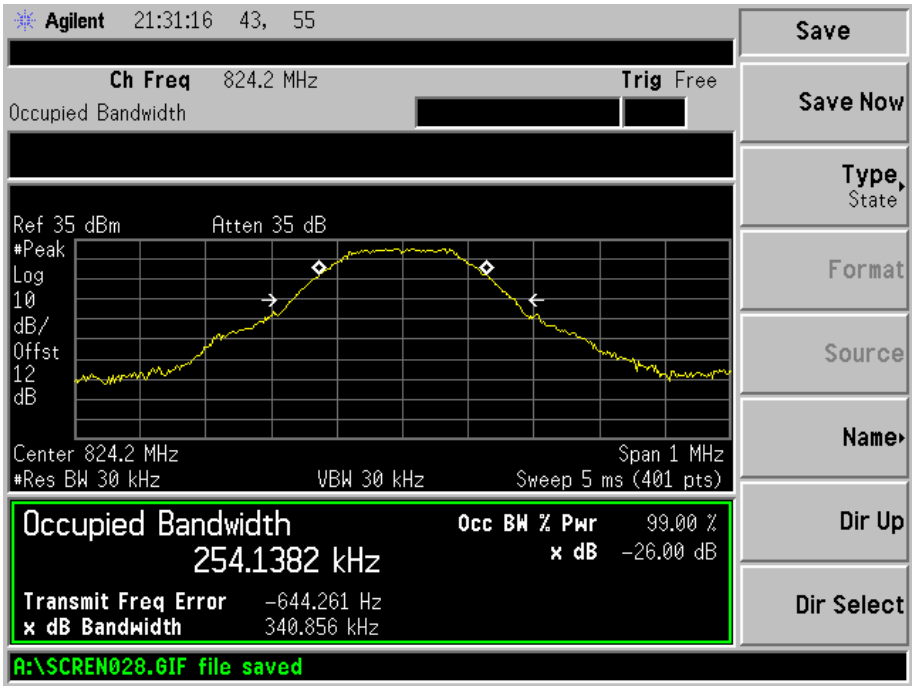
Measurement Data

EUT Mode	Frequency (MHz)	99% Occupy bandwidth (kHz)	26dB Occupy bandwidth (kHz)
GPRS 850 (GPRS link)	824.20	254.14	340.86
	836.60	250.32	336.69
	848.80	249.09	335.49
GPRS 1900 (GPRS link)	1850.20	264.59	332.39
	1880.00	262.93	330.29
	1909.80	265.64	339.57

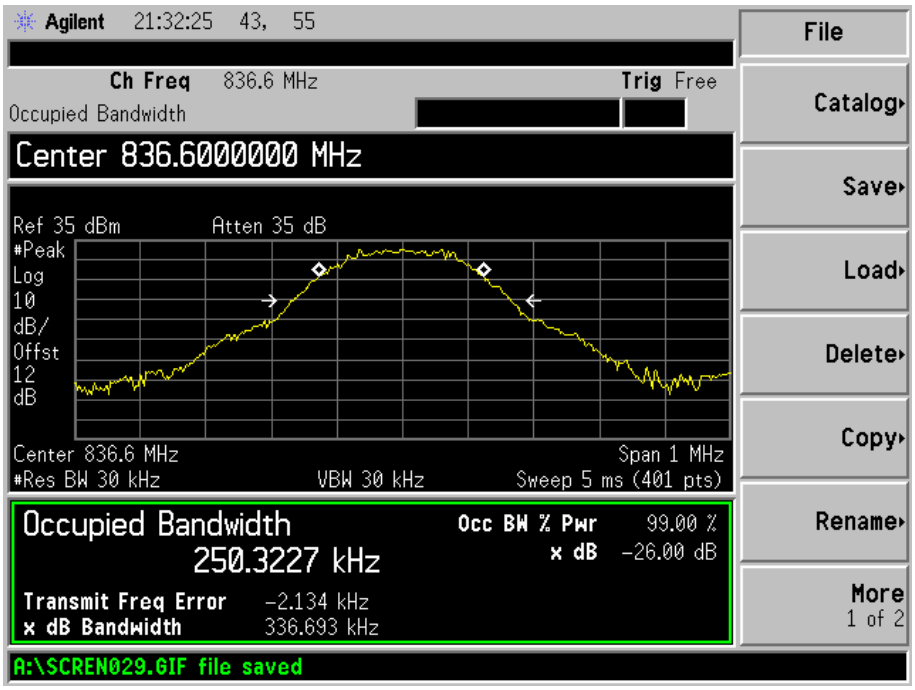
Note: Measurement Uncertainty: ±20Hz.

Test plot as follows:

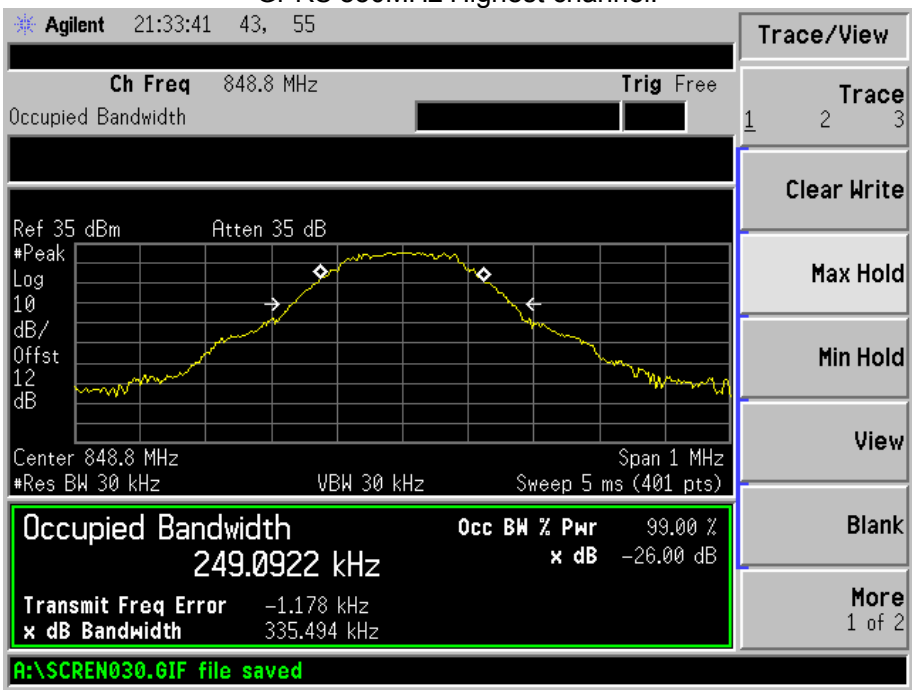
GPRS 850MHz Lowest channel



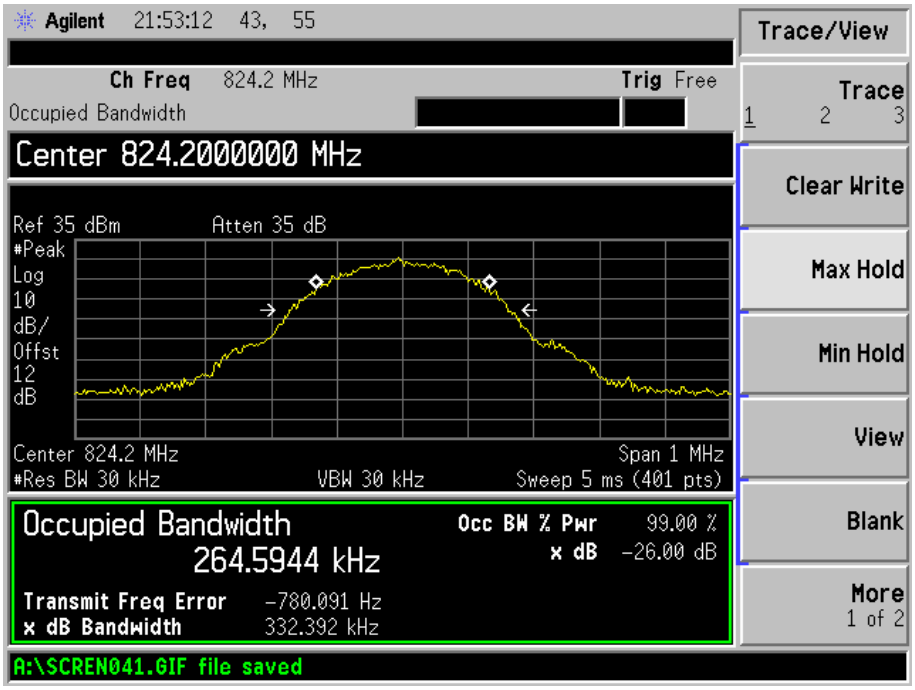
GPRS 850MHz Middle channel



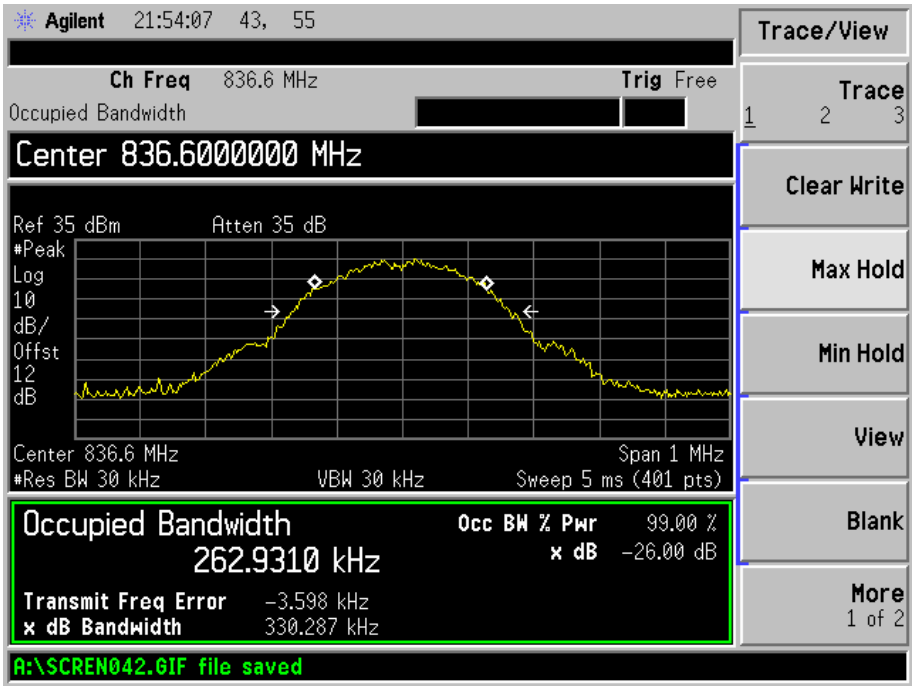
GPRS 850MHz Highest channel:



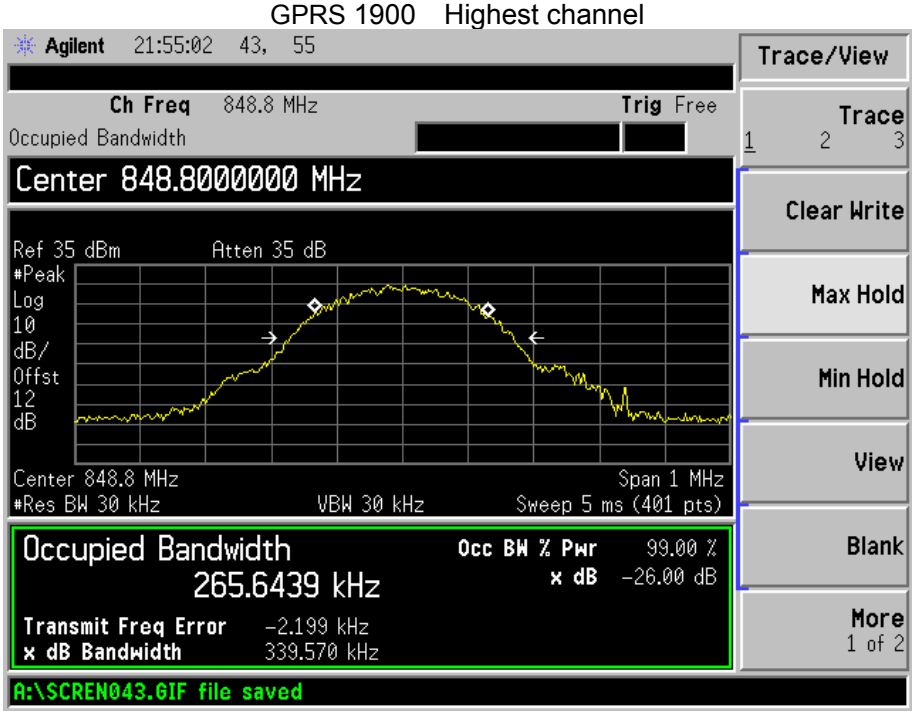
GPRS 1900 Lowest channel



GPRS 1900 Middle channel



GPRS 1900 Highest channel



5.4. Frequency Stability

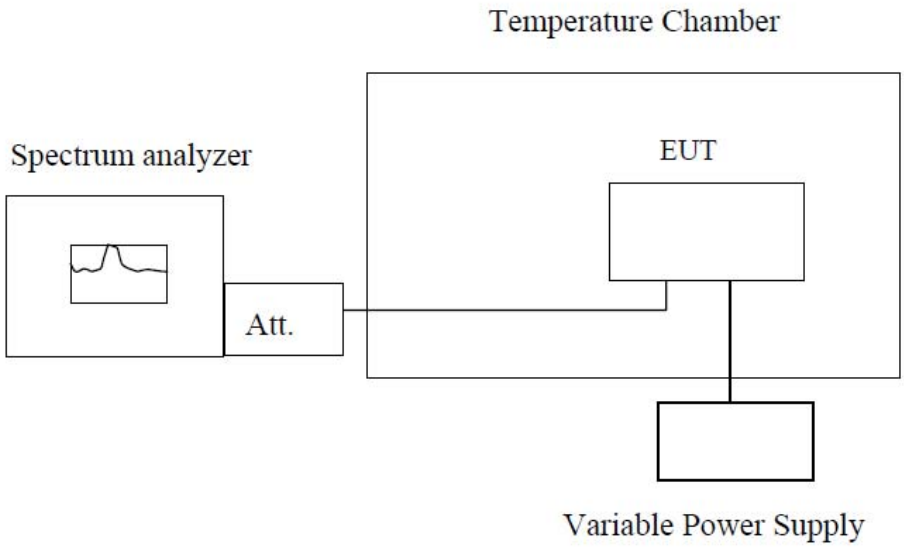
5.4.1. Limit

According to FCC section 22.355 and FCC section 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30℃ to +50℃ at intervals of not more than 10℃.

(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

5.4.2. Test Setup



Note : Measurement setup for testing on Antenna connector

The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber.

The EUT is commanded by the System Simulator (SS) to operate at the maximum output power

5.4.3. Test Result

The nominal, highest and lowest extreme voltages are separately 3.7VDC, 4.2VDC and 3.6VDC which are specified by the applicant; the normal temperature here used is 25℃. The frequency deviation limit of 850MHz band is ±2.5ppm, and 1900MHz is ±1ppm

Normal

Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(℃)	Frequency Error(Hz)	ppm	Limit	
GPRS 850 (GPRS link) Middle channel=190 channel=836.6MHz	3.70	-30	44	0.0526	±2.5	PASS
	3.70	-20	40	0.0478		
	3.70	-10	35	0.0418		
	3.70	0	33	0.0394		
	3.70	10	31	0.0371		
	3.70	20	27	0.0323		
	3.70	30	33	0.0394		
	3.70	40	37	0.0442		
	3.70	50	35	0.0418		
	4.25	25	29	0.0347		
	3.70	25	27	0.0323		
	3.40	25	31	0.0371		
GPRS 1900 (GPRS link) Middle channel=661 channel=1880MHz	3.70	-30	72	0.0383	±1	PASS
	3.70	-20	67	0.0356		
	3.70	-10	59	0.0314		
	3.70	0	57	0.0303		
	3.70	10	54	0.0287		
	3.70	20	49	0.0261		
	3.70	30	57	0.0303		
	3.70	40	62	0.0330		
	3.70	50	59	0.0314		
	4.25	25	52	0.0277		
	3.70	25	49	0.0261		
	3.40	25	51	0.0271		

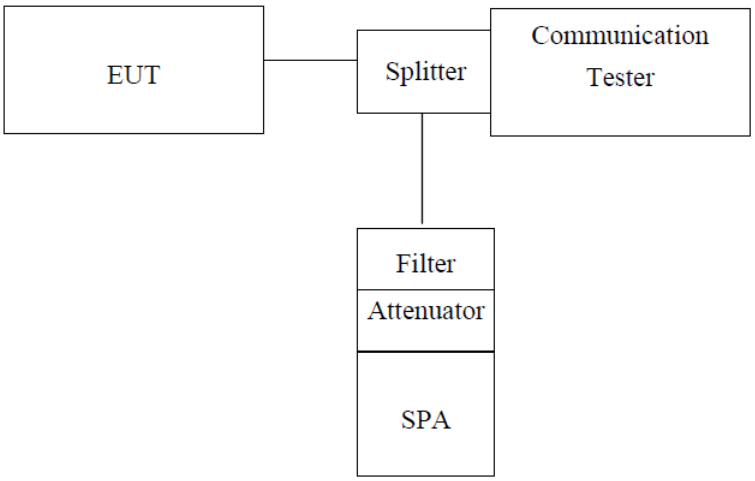
Note: Measurement Uncertainty: ±20Hz.

5.5. Conducted Out of Band Emissions

5.5.1. Limit

According to FCC section 22.917(a) and FCC section 24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

5.5.2. Test Setup



Note: *Measurement setup for testing on Antenna connector*

5.5.3. Measurement Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 100KHz, Start=30MHz, Stop= 10th harmonic.

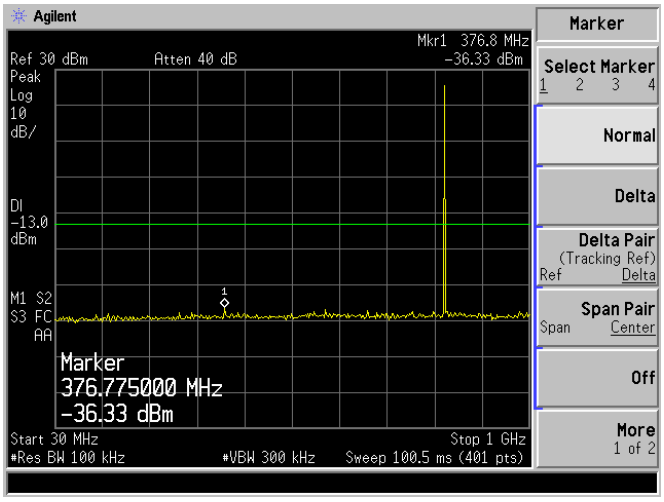
Limit = -13dBm

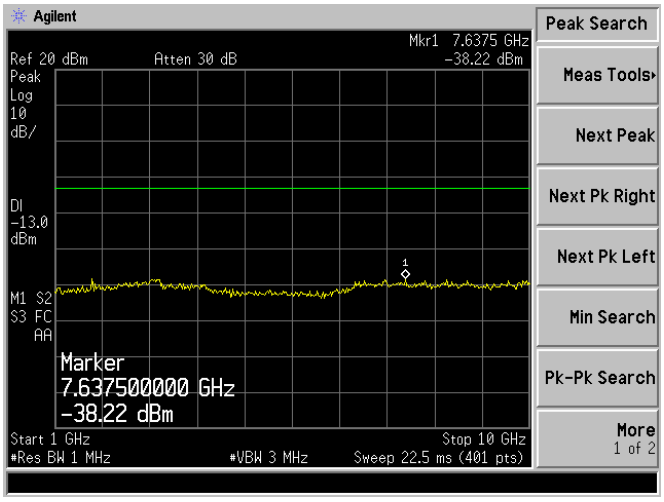
5.5.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

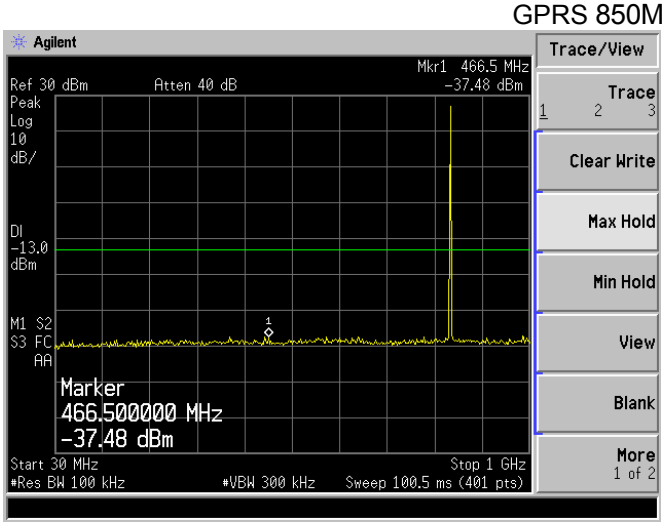
Test plot as follows:

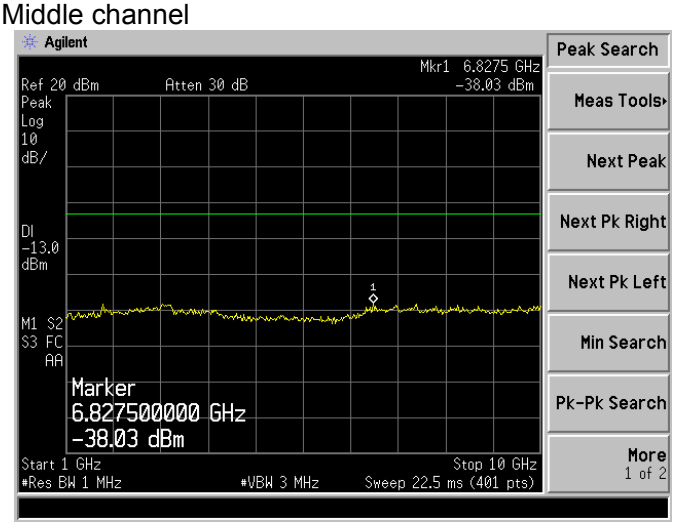
GPRS 850MHz Lowest channel



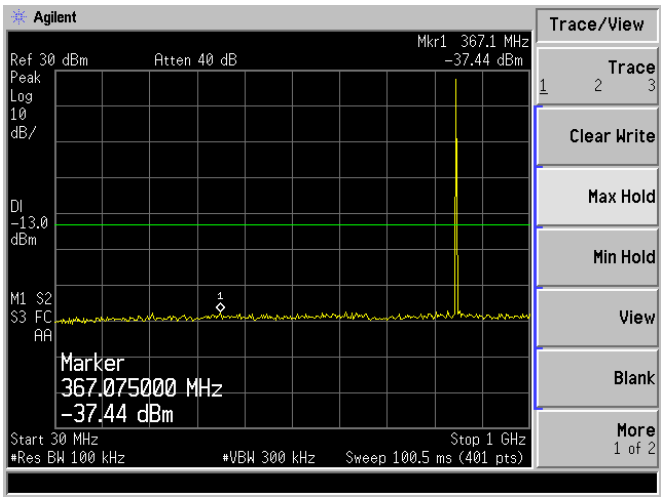


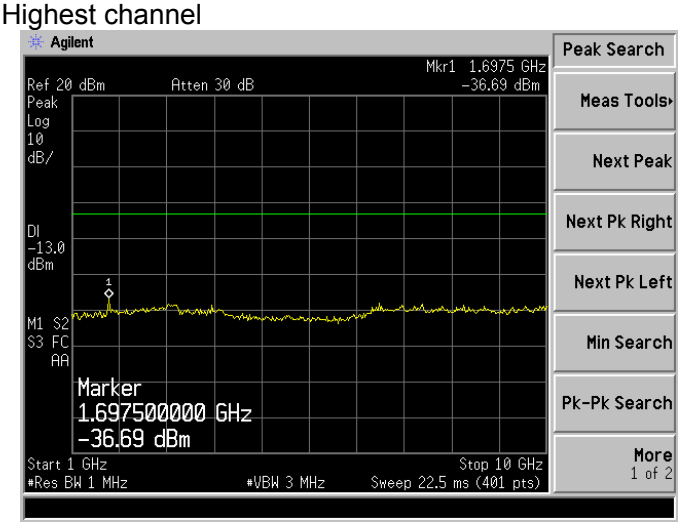
GPRS 850MHz Middle channel



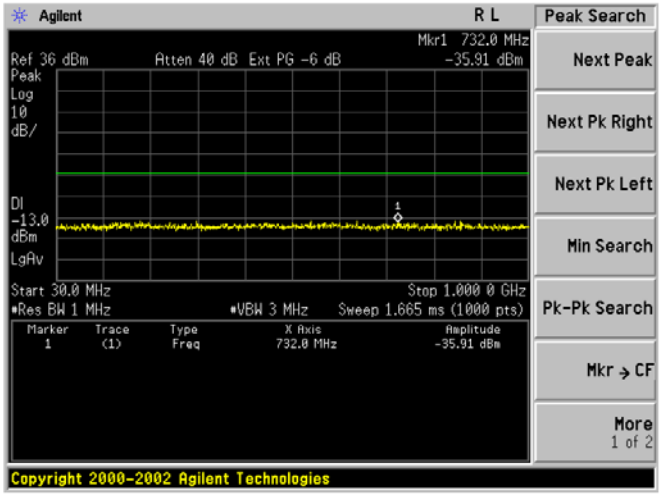


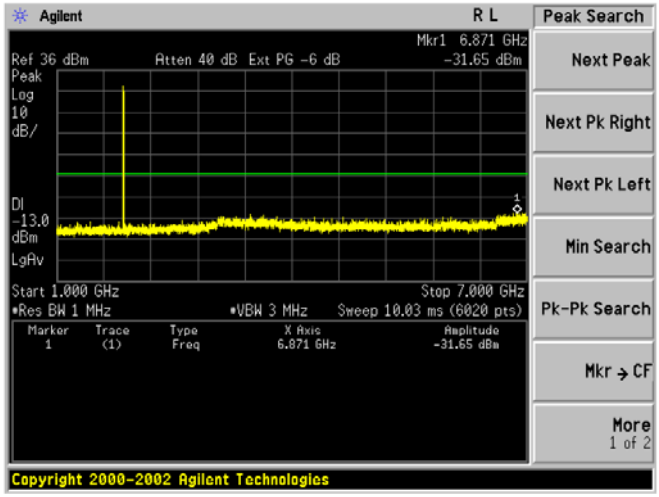
GPRS 850MHz Highest channel

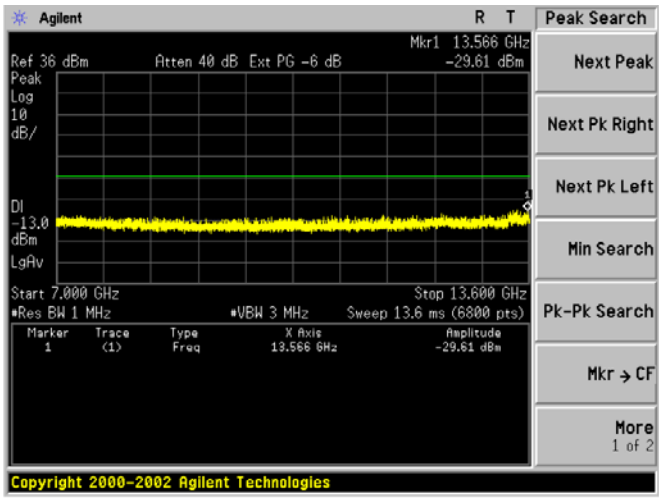


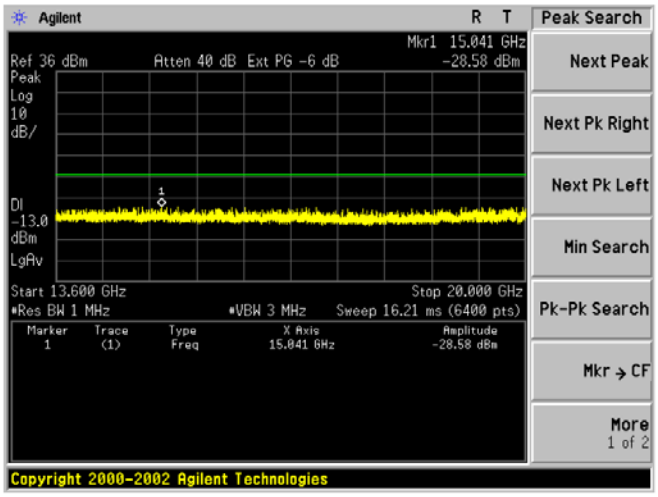


GPRS 1900MHz Lowest channel

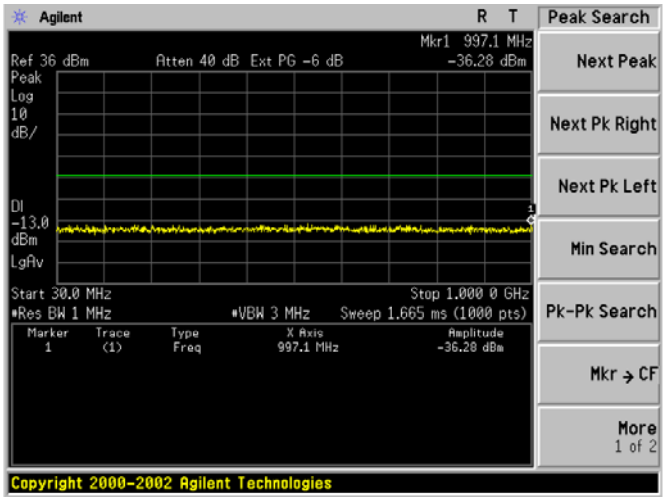


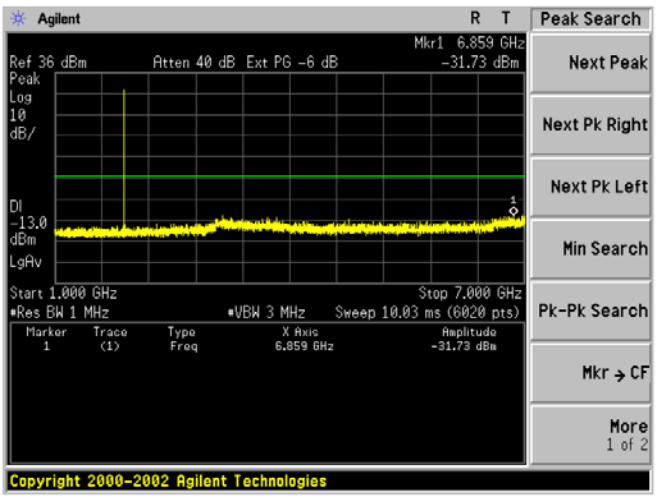


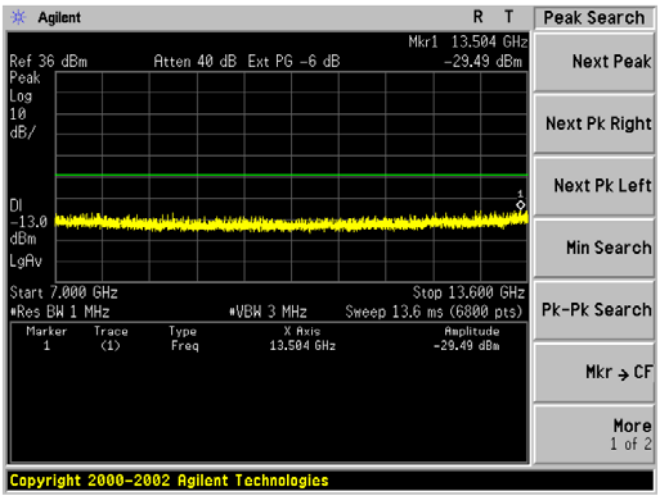


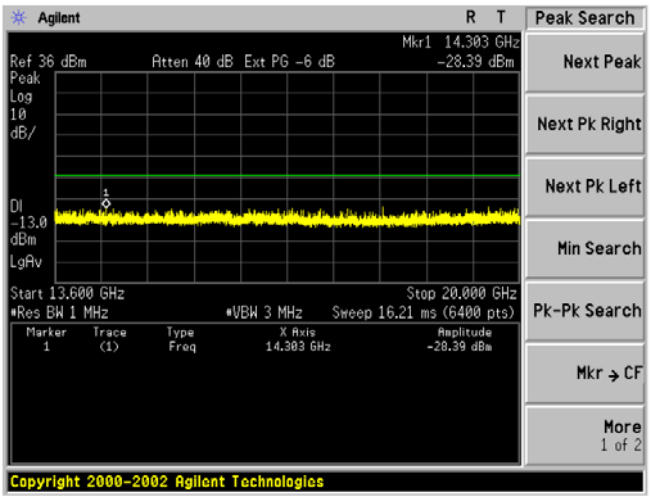


GPRS 1900MHz Middle channel

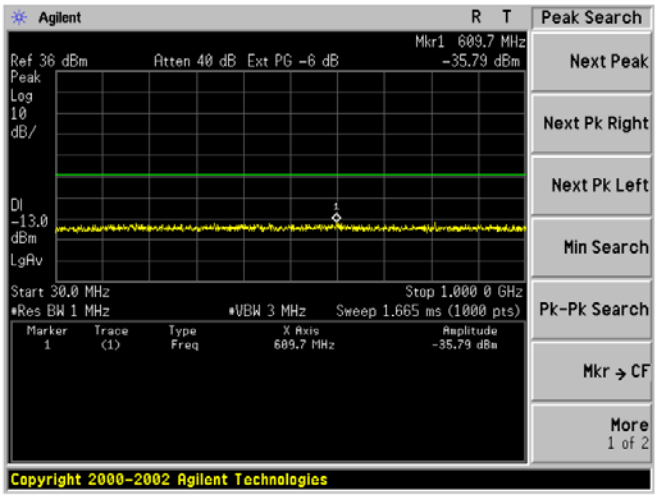


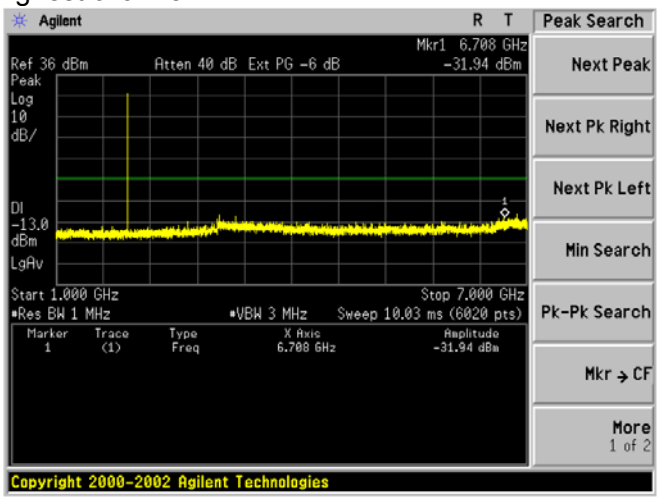


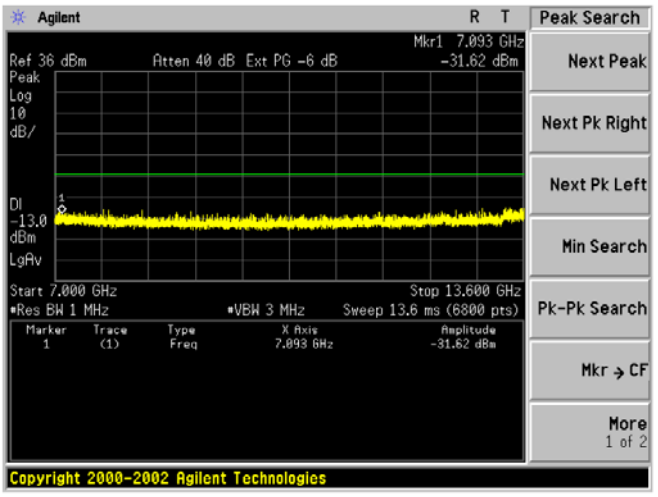


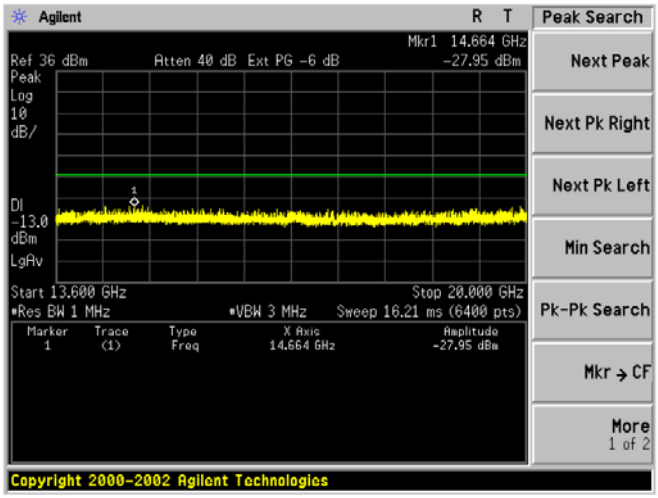


GPRS 1900MHz Highest channel







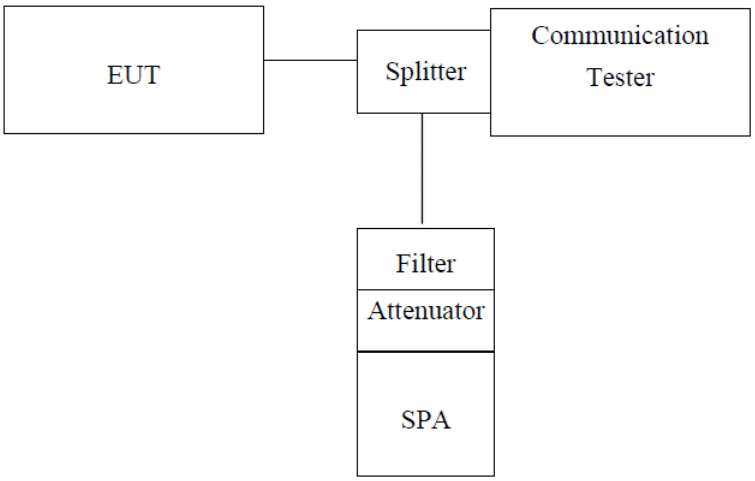


5.6. Conducted Out of Band Emissions

5.6.1. Limit

According to FCC section 22.917(b) and FCC section 24.238(b), 27.53(g)(h) in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

5.6.2. Test Setup



Note: *Measurement setup for testing on Antenna connector*

5.6.3. Measurement Procedure

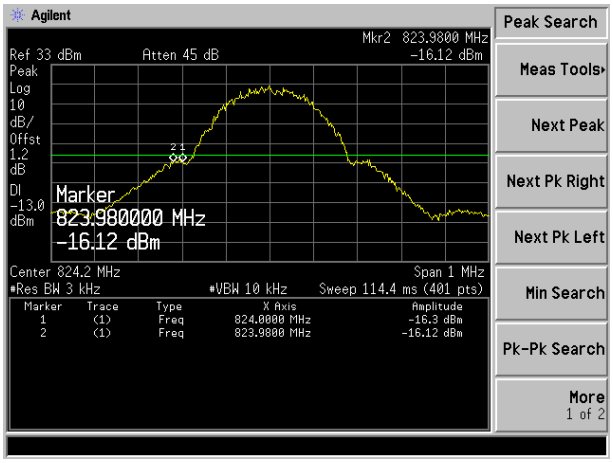
The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer and the System Simulator with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the System Simulator to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the System Simulator.

5.6.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

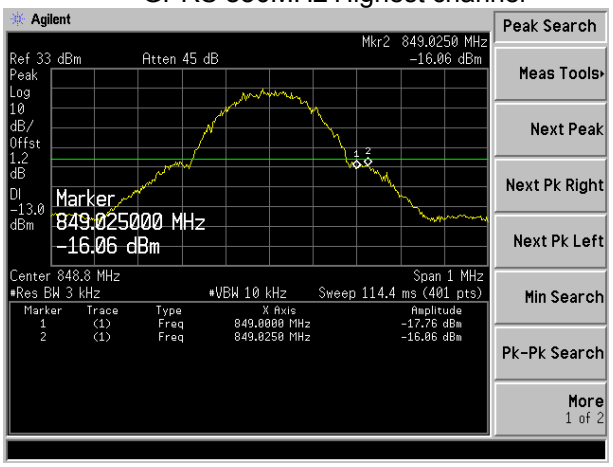
Test plot as follows:

GPRS 850MHz Lowest channel



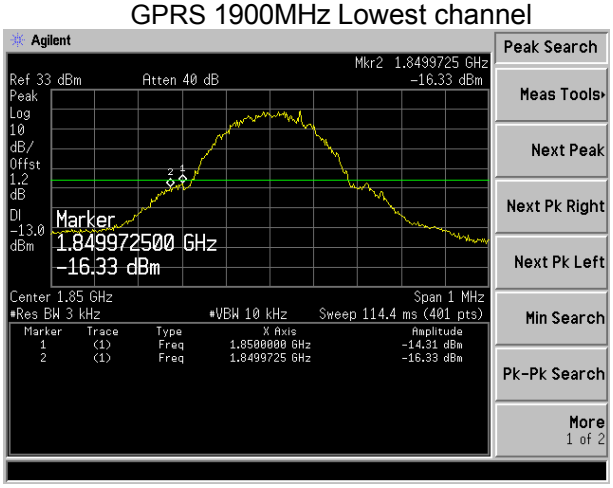
Note: Offset=Cable loss (1.0) + 10log(3.15/3)=1.0+0.2=1.2dB

GPRS 850MHz Highest channel



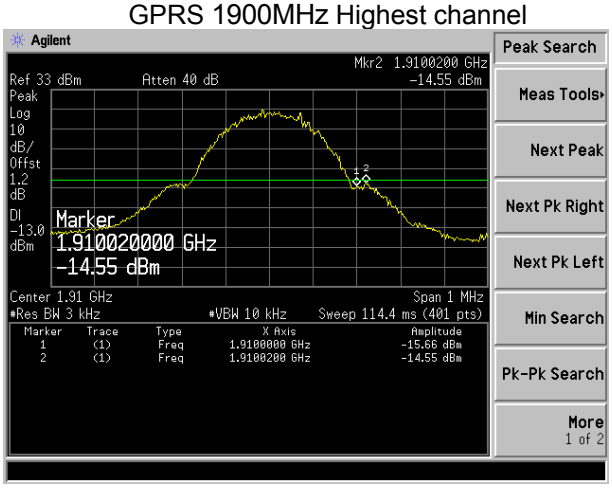
Note: Offset=Cable loss (1.0) + 10log(3.15/3)=1.0+0.2=1.2dB

GPRS 1900MHz Lowest channel



Note: Offset=Cable loss (1.0) + 10log(3.15/3)=1.0+0.2=1.2dB

GPRS 1900MHz Highest channel



Note: Offset=Cable loss (1.0) + 10log(3.15/3)=1.0+0.2=1.2dB

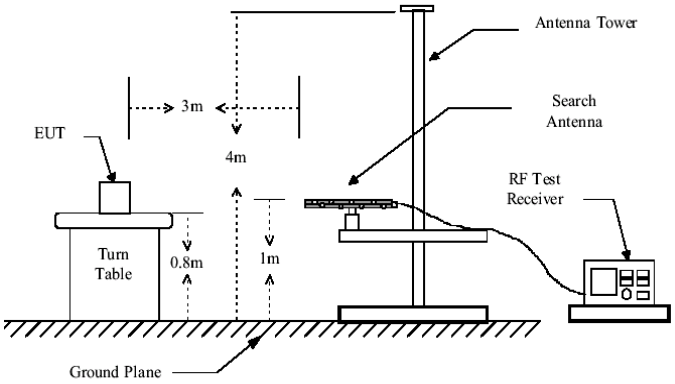
5.7. Transmitter Radiated Power (EIRP/ERP)

5.7.1. Limit

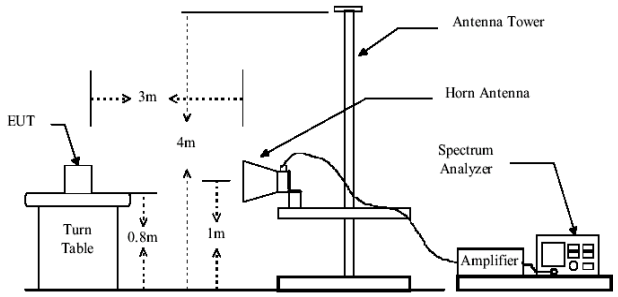
According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

5.7.2. Test Setup

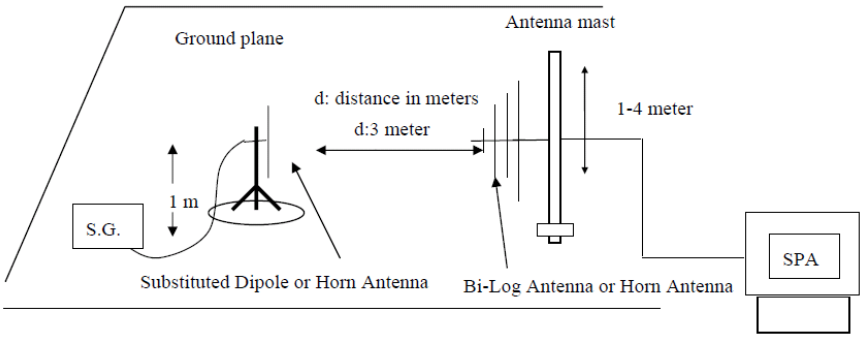
Below 1GHz



Above 1GHz



Substituted method:



5.7.3. Measurement Procedure

The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. all test in Full-Anechoic Chamber.

During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

ERP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)

5.7.4. Test Result

EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	ERP(dBm)	Limit (dBm)	Result
GPRS 850 (GPRS link)	Lowest	V	17.81	15.68	1.65	31.84	38.45	Pass
		H	15.05	15.68	1.65	29.08		
	Middle	V	17.70	15.70	1.67	31.73	38.45	Pass
		H	15.29	15.70	1.67	29.32		
	Highest	V	18.29	15.70	1.71	**32.28**	38.45	Pass
		H	15.05	15.70	1.71	29.04		

EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	ERP(dBm)	Limit (dBm)	Result
GPRS 1900 (GPRS link)	Lowest	V	12.92	19.35	2.54	29.73	38.45	Pass
		H	10.27	19.35	2.54	27.08		
	Middle	V	13.35	19.51	2.62	**30.24**	38.45	Pass
		H	11.71	19.51	2.62	28.60		
	Highest	V	12.78	19.96	2.69	30.05	38.45	Pass
		H	10.64	19.96	2.69	27.91		

5.8. Radiated Out of Band Emissions

5.8.1. Limit

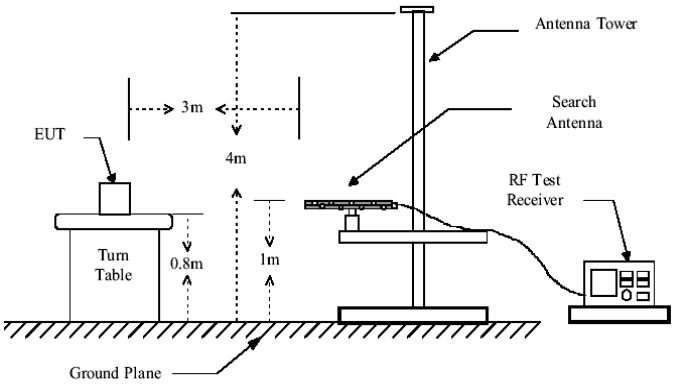
According to FCC section 22.917(a) and section 24.238(a), 27.53(g) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power

(P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

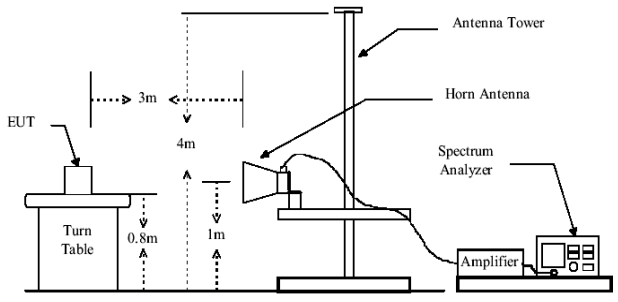
The spurious emission with frequency band 1900 according to FCC section 2.1057.

5.8.2. Test Setup

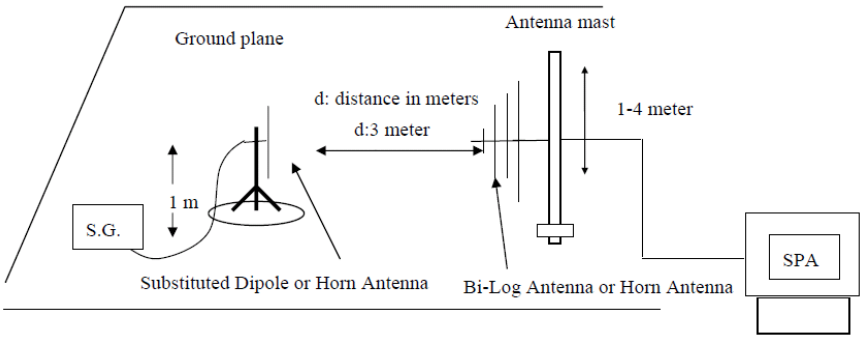
Below 1GHz



Above 1GHz



Substituted method:



5.8.3. Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. all test in Full-Anechoic Chamber.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency

(low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)

Note: Measurement Uncertainty: ±3.6 dB.

Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	Level(dBm)		
GPRS 850 Lowest	47.87	Vertical	-76.02	3.35	0.38	-73.05	-13	PASS
	1648.40	Vertical	-29.43	6.51	1.35	-24.27		
	2472.60	Vertical	-35.68	6.88	2.53	-31.33		
	3296.80	Vertical	-37.52	7.61	3.67	-33.58		
	4121.00	Vertical	-45.69	8.67	4.06	-41.08		
	4945.20	Vertical	-40.2	9.35	4.38	-35.23		
	127.58	Horizontal	-76.14	4.12	0.51	-72.53		
	2472.60	Horizontal	-34.2	6.88	1.35	-28.67		
	3296.80	Horizontal	-37.46	7.61	3.67	-33.52		
	4121.00	Horizontal	-46.14	8.67	4.06	-41.53		
	4945.20	Horizontal	-49.45	9.35	4.38	-44.48		
	5769.40	Horizontal	-43.65	9.94	4.87	-38.58		

Remark:

Testing is carried out with frequency rang 9kHz to 20GHz, other harmonics *are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.*

Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	Level(dBm)		
GPRS 850 Middle	45.58	Vertical	-74.12	3.35	0.38	-71.15	-13	PASS
	1673.20	Vertical	-32.4	6.51	1.35	-27.24		
	2509.80	Vertical	-32.94	6.88	2.53	-28.59		
	3346.40	Vertical	-40.48	7.61	3.66	-36.53		
	4183.00	Vertical	-48.07	8.67	4.06	-43.46		
	5019.60	Vertical	-43.12	9.35	4.82	-38.59		
	126.86	Horizontal	-76.04	4.12	0.51	-72.43		
	1673.20	Horizontal	-29.71	6.88	1.35	-24.18		
	2509.80	Horizontal	-33.59	7.61	2.46	-28.44		
	3346.40	Horizontal	-49.16	8.67	3.66	-44.15		
	4183.00	Horizontal	-50.5	9.35	4.06	-45.21		
	5019.60	Horizontal	-40.18	9.94	4.82	-35.06		

Remark:

Testing is carried out with frequency rang 9kHz to 20GHz, other harmonics *are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.*

Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	Level(dBm)		
GPRS 850 Highest	45.76	Vertical	-75.21	3.35	0.38	-72.24	-13	PASS
	1697.60	Vertical	-31.29	6.51	1.35	-26.13		
	2546.40	Vertical	-33.21	6.88	2.53	-28.86		
	3395.20	Vertical	-36.38	7.61	3.66	-32.43		
	4244.00	Vertical	-41.73	8.67	4.06	-37.12		
	5092.80	Vertical	-46.74	9.35	4.82	-42.21		
	121.65	Horizontal	-75.84	4.12	0.51	-72.23		
	1697.60	Horizontal	-30.1	6.88	1.35	-24.57		
	2546.40	Horizontal	-34.21	7.61	2.46	-29.06		
	3395.20	Horizontal	-39.16	8.67	3.66	-34.15		
	4244.00	Horizontal	-47.75	9.35	4.06	-42.46		
	5092.80	Horizontal	-53.76	9.94	4.82	-48.64		

Remark:

Testing is carried out with frequency rang 9kHz to 20GHz, other harmonics *are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.*

Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	Level(dBm)		
GPRS 1900 Lowest	39.89	Vertical	-77.12	3.35	0.38	-74.15	-13	PASS
	3700.40	Vertical	-46.94	7.76	3.35	-42.53		
	5550.60	Vertical	-47.77	9.84	4.83	-42.76		
	7400.80	Vertical	-40.01	10.21	5.36	-35.16		
	9251.00	Vertical	-43.45	11.36	6.02	-38.11		
	11101.20	Vertical	-44.8	14.52	6.88	-37.16		
	188.67	Horizontal	-76.73	4.12	0.51	-73.12		
	3700.40	Horizontal	-49.16	7.76	3.35	-44.75		
	5550.60	Horizontal	-48.14	9.84	4.83	-43.13		
	7400.80	Horizontal	-42.63	10.21	5.36	-37.78		
	9251.00	Horizontal	-47.93	11.36	6.02	-42.59		
	11101.20	Horizontal	-47.51	14.52	6.88	-39.87		

Remark:

Testing is carried out with frequency rang 9kHz to 20GHz, other harmonics *are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.*

Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	Level(dBm)		
GPRS 1900 Middle	39.47	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3760.00	Vertical	-48.27	7.76	3.35	-43.86		
	5640.00	Vertical	-47.59	9.84	4.83	-42.58		
	7520.00	Vertical	-43.02	10.21	5.36	-38.17		
	9400.00	Vertical	-42.45	11.36	6.02	-37.11		
	11280.00	Vertical	-46.25	14.52	6.88	-38.61		
	187.77	Horizontal	-77.23	4.12	0.51	-73.62		
	3760.00	Horizontal	-46.69	7.76	3.35	-42.28		
	5640.00	Horizontal	-47.14	9.84	4.83	-42.13		
	7520.00	Horizontal	-39.6	10.21	5.36	-34.75		
	9400.00	Horizontal	-43.55	11.36	6.02	-38.21		
	11280.00	Horizontal	-45.25	14.52	6.88	-37.61		

Remark:

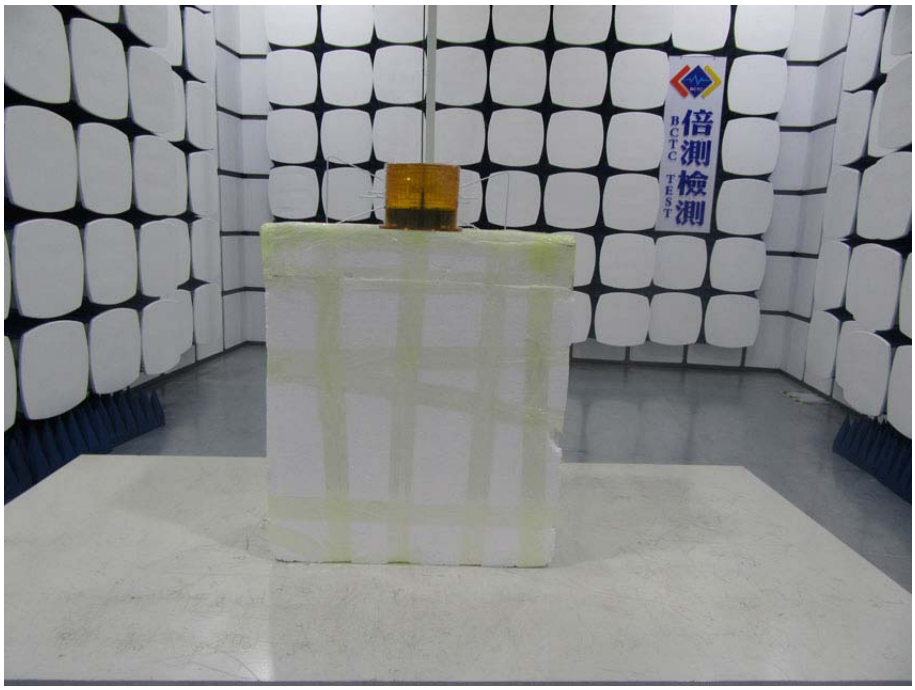
Testing is carried out with frequency rang 9kHz to 20GHz, other harmonics *are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.*

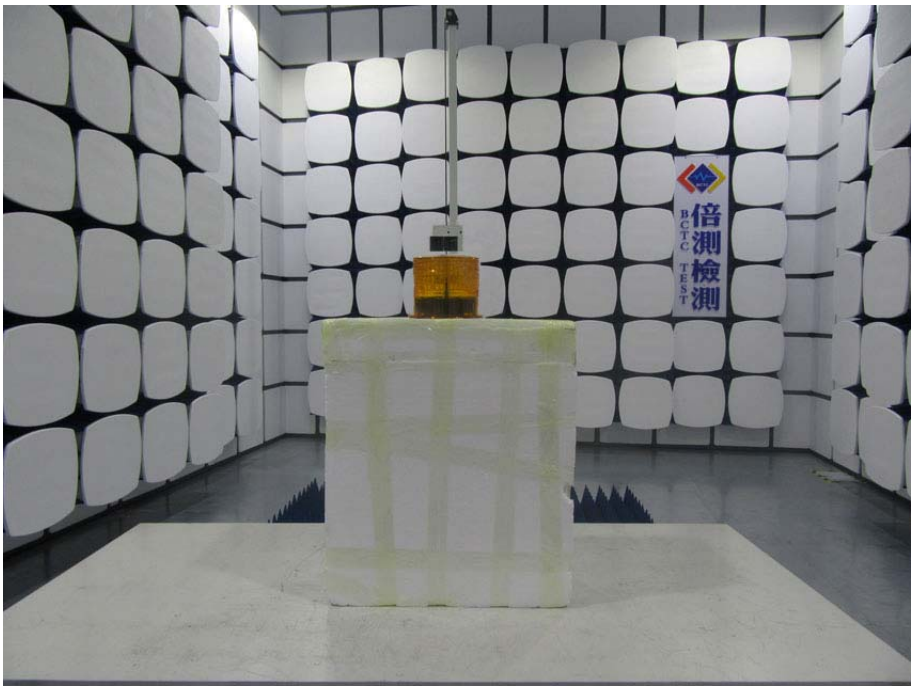
Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss(dB)	Level(dBm)		
GPRS 1900 Highest	42.96	Vertical	-75.31	3.35	0.38	-72.34	-13	PASS
	3819.60	Vertical	-47.64	7.76	3.35	-43.23		
	5729.40	Vertical	-42.06	9.84	4.83	-37.05		
	7639.20	Vertical	-38.21	10.21	5.36	-33.36		
	9549.00	Vertical	-45.1	11.36	6.02	-39.76		
	11458.80	Vertical	-47.25	14.52	6.88	-39.61		
	185.89	Horizontal	-76.36	4.12	0.51	-72.75		
	3819.60	Horizontal	-45.99	7.76	3.35	-41.58		
	5729.40	Horizontal	-41.96	9.84	4.83	-36.95		
	7639.20	Horizontal	-37.58	10.21	5.36	-32.73		
	9549.00	Horizontal	-43.19	11.36	6.02	-37.85		
	11458.80	Horizontal	-44.79	14.52	6.88	-37.15		

Remark:

Testing is carried out with frequency rang 9kHz to 20GHz, other harmonics *are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.*

6. EUT TEST PHOTO





7 EUT PHOTO