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检测
TESTING
CNAS L2264

RF TEST REPORT

Applicant	Shanghai SmartPeak Technology Co.,Ltd.
FCC ID	2AJMSC6000
Product	WCDMA Smart Handheld Terminal
Brand	SMARTPEAK
Model	C6000
Report No.	RXA1606-0101RF04
Issue Date	September 13, 2016

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2015)**/ **FCC CFR 47 Part 24H (2015)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Xianqing Li

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Summary of measurement results

No.	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	24.232	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	24.238	PASS
5	Peak-to-Average Power Ratio	24.232/KDB 971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 24.235	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 / 24.238	PASS
8	Radiates Spurious Emission	2.1053 / 24.238	PASS
Date of Testing: August 22, 2016 ~ September 5, 2016			

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1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.**The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

1.2. Test facility

CNAS (accreditation number:L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (recognition number is 428261)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

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1.3. Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
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2. General Description of Equipment under Test

Client Information

Applicant	Shanghai SmartPeak Technology Co.,Ltd.
Applicant address	Room 1,No.3 Builiding, NO.295, Qianqiao Road, Fengxian District, Shanghai, P. R. China
Manufacturer	Shanghai SmartPeak Technology Co.,Ltd.
Manufacturer address	Room 1,No.3 Builiding, NO.295, Qianqiao Road, Fengxian District, Shanghai, P. R. China

General information

Model:	C6000		
Product IMEI:	868692020019589		
Hardware Version:	P1		
Software Version:	V1.41.4649		
Power Supply:	Battery/AC adapter		
Antenna Type:	Internal Antenna		
Test Mode(s):	GSM1900;		
Test Modulation:	(GSM)GMSK,8PSK		
GPRS/EGPRS Multislot Class:	12		
Maximum E.I.R.P.	GSM 1900: 32.43dBm		
Rated Power Supply Voltage:	3.8V		
Extreme Voltage:	Minimum: 3.5V Maximum: 4.35V		
Extreme Temperature:	Lowest: -10°C Highest: +50°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM1900	1850 ~ 1910	1930 ~ 1990
EUT Accessory			
Battery	Manufacturer: Shenzhen MBELL ELECTRONICS CO., LTD. Model: BL-C60 Power Rating: DC 3.8V, Li-ion		
Adapter 1	Manufacturer: SHENZHEN RICHLY TECHNOLOGIES CO., LTD. Model: RCL-X055300C		
Adapter 2	Manufacturer: DONGGUAN YINLI ELECTRONICS CO., LTD. Model: YLJXC-055100		
Charger pedestal holder	Manufacturer: Shanghai SmartPeak Technology Co., Ltd. Model: CRD-C60		
Note: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.			

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3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR47 Part 2 (2015)

FCC CFR 47 Part 24H (2015)

ANSI/TIA-603-D (2010)

KDB 971168 D01 Power Meas License Digital Systems v02r02

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4. Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, vertical polarization) and the worst case was recorded.
All mode and data rates and positions and modulations were investigated.
Subsequently, only the worst case emissions are reported.
The following testing in GSM is set based on the maximum RF Output Power.

Test modes are chosen to be reported as the worst case configuration below for GSM 1900:

	Test items	**Modes/Modulation**
		GSM 1900
Conducted Test cases	RF power output	GSM/ GPRS/ EGPRS
	Occupied Bandwidth	GSM/ GPRS/ EGPRS
	Band Edge Compliance	GSM/ GPRS/ EGPRS
	Peak-to-Average Power Ratio	GSM/ GPRS/ EGPRS
	Frequency Stability	GSM/ GPRS/ EGPRS
	Spurious Emissions at Antenna Terminals	GSM
Radiated Test cases	Effective Isotropic Radiated power	GSM/ GPRS/ EGPRS
	Radiates Spurious Emission	GSM

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5. Test Case Results

5.1. RF Power Output

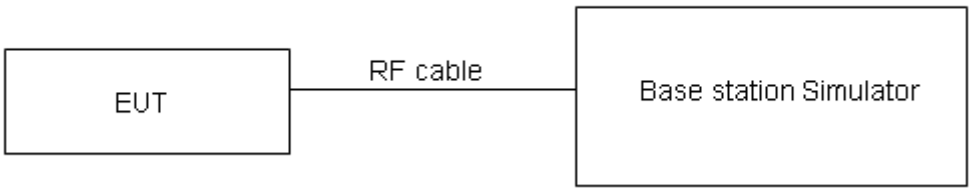
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.4 dB.

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Test Results

GSM 1900		Conducted Power(dBm)		
		Channel 512	Channel 661	Channel 810
		1850.2(MHz)	1880(MHz)	1909.8(MHz)
GSM	Results	**29.94**	**29.68**	**29.49**
GPRS (GMSK)	1TXslot	**29.91**	**29.60**	**29.45**
	2TXslots	27.13	27.15	27.05
	3TXslots	25.25	25.32	25.23
	4TXslots	24.98	25.02	24.99
EGPRS (GMSK)	1TXslot	**29.75**	**29.42**	**29.29**
	2TXslots	27.00	26.92	26.85
	3TXslots	25.01	25.18	25.14
	4TXslots	24.74	24.82	24.88
EGPRS (8PSK)	1TXslot	**26.12**	**25.92**	**25.79**
	2TXslots	24.21	24.12	23.92
	3TXslots	23.24	23.04	22.90
	4TXslots	22.84	22.65	22.51

Note: 1) The maximum RF Output Power numbers are marks in bold.
2) The following testing in GPRS/EGPRS is set to 1TXslot based on the maximum RF Output Power.

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5.2. Effective Isotropic Radiated Power

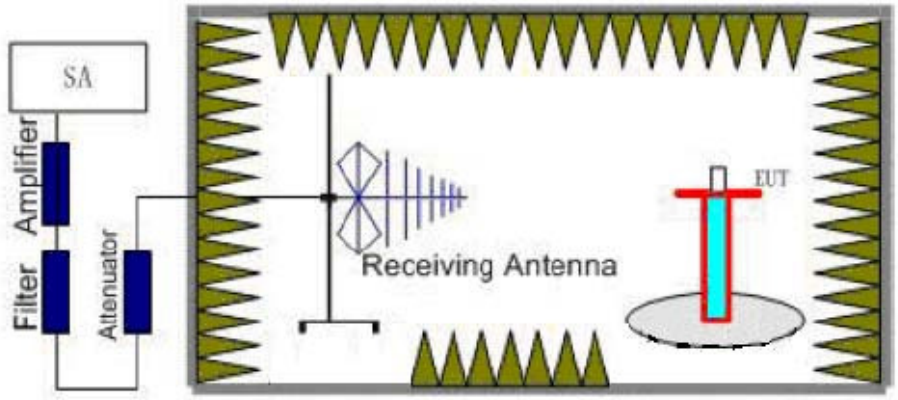
Ambient condition

Temperature	Relative humidity
21°C ~25°C	40%~60%

Methods of Measurement

The measurement procedures in TIA- 603-D are used.
1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;
UMTS operating modes: Set RBW= 100 KHz, VBW= 300 KHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per section 4.0 of KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. ERP/EIRP = Ps + Et – Es + Gs = Ps + Rt – Rs + Gs
Ps (dBm)：Input power to substitution antenna.
Gs (dBi or dBd)：Substitution antenna Gain.
Et = Rt + AF
Es = Rs + AF
AF (dB/m)：Receive antenna factor
Rt：The highest received signal in spectrum analyzer for EUT.
Rs：The highest received signal in spectrum analyzer for substitution antenna.

Test Setup



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Limits

Rule Part 24.232(b) specifies that "Mobile/portable stations are limited to 2 watts EIRP. Peak power" and Rule Part 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage".

Limit (EIRP)	⩽ 2 W (33 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 1.19 dB

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Test Results:

Mode	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
GSM 1900	H	1850.2	-27.84	-55.14	0.00	1.92	29.22	33	Pass
	H	1880	-28.25	-55.42	0.00	1.94	29.11	33	Pass
	H	1909.8	-28.35	-55.67	0.00	1.90	29.22	33	Pass
	V	1850.2	-26.28	-55.70	0.00	1.92	31.34	33	Pass
	V	1880	-26.88	-55.91	0.00	1.94	30.97	33	Pass
	V	1909.8	-27.06	-55.85	0.00	1.90	30.69	33	Pass
GPRS 1900	H	1850.2	-26.74	-55.14	0.00	1.92	30.32	33	Pass
	H	1880	-27.10	-55.42	0.00	1.94	30.26	33	Pass
	H	1909.8	-27.07	-55.67	0.00	1.90	30.50	33	Pass
	V	1850.2	-25.19	-55.70	0.00	1.92	32.43	33	Pass
	V	1880	-25.77	-55.91	0.00	1.94	32.08	33	Pass
	V	1909.8	-25.62	-55.85	0.00	1.90	32.13	33	Pass
EGPRS 1900	H	1850.2	-28.41	-55.14	0.00	1.92	28.65	33	Pass
	H	1880	-29.02	-55.42	0.00	1.94	28.34	33	Pass
	H	1909.8	-29.70	-55.67	0.00	1.90	27.87	33	Pass
	V	1850.2	-27.32	-55.70	0.00	1.92	30.30	33	Pass
	V	1880	-27.66	-55.91	0.00	1.94	30.19	33	Pass
	V	1909.8	-28.27	-55.85	0.00	1.90	29.48	33	Pass

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5.3. Occupied Bandwidth

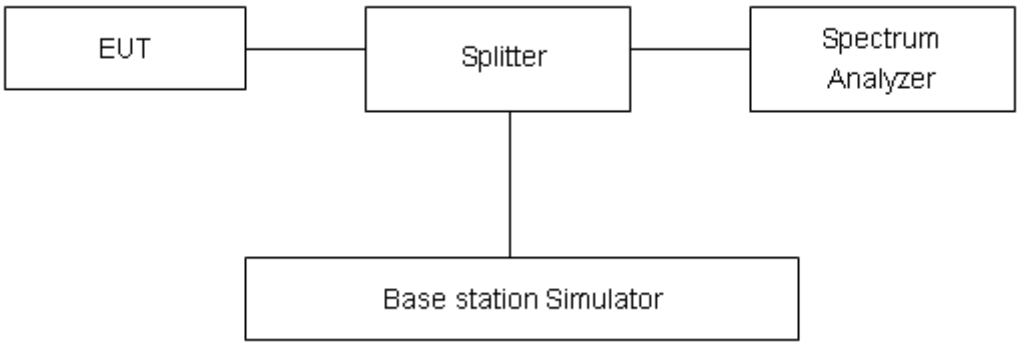
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.
RBW is set to 3kHz, VBW is set to 10kHz for GSM 1900,
99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 624$Hz.

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Test Result

Mode	Channel	Frequency (MHz)	99% Power Bandwidth (kHz)	-26dBc Bandwidth(kHz)
GSM 1900 (GSM)	512	1850.2	245.47	307.1
	661	1880.0	247.36	315.8
	810	1909.8	248.53	308.7
GPRS 1900 (GMSK)	512	1850.2	243.44	313.6
	661	1880.0	245.30	311.8
	810	1909.8	243.51	310.1
EGPRS 1900 (8-PSK)	512	1850.2	247.32	315.1
	661	1880.0	245.38	314.8
	810	1909.8	247.66	313.6

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GSM1900 GSM CH-Low

GSM1900 GPRS CH-Low

GSM 1900 GSM CH-Middle

GSM 1900 GPRS CH-Middle

GSM 1900 GSM CH-High

GSM 1900 GPRS CH-High

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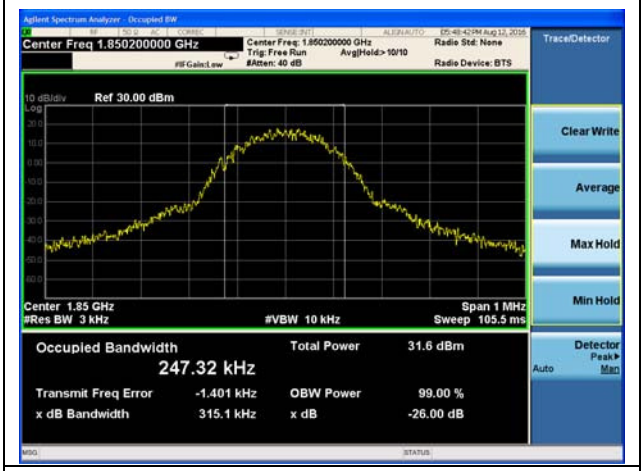
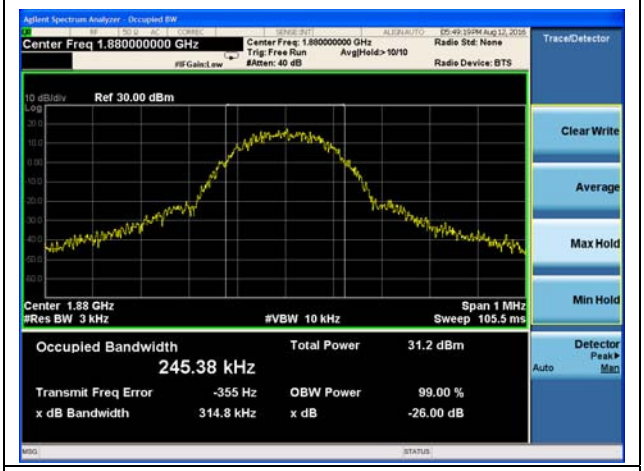
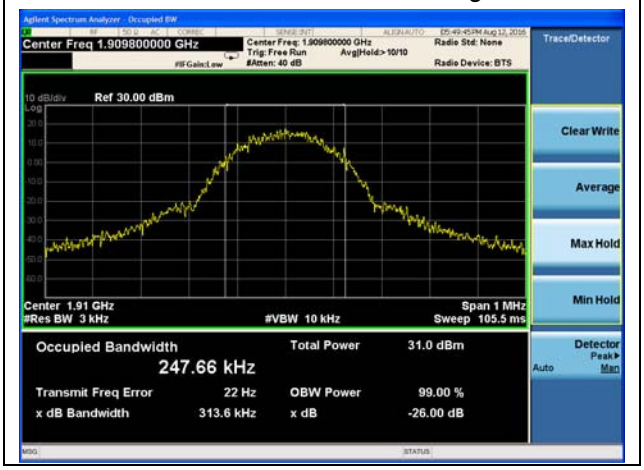
GSM1900 EGPRS CH-Low



GSM 1900 EGPRS CH-Middle



GSM 1900 EGPRS CH-High



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5.4. Band Edge Compliance

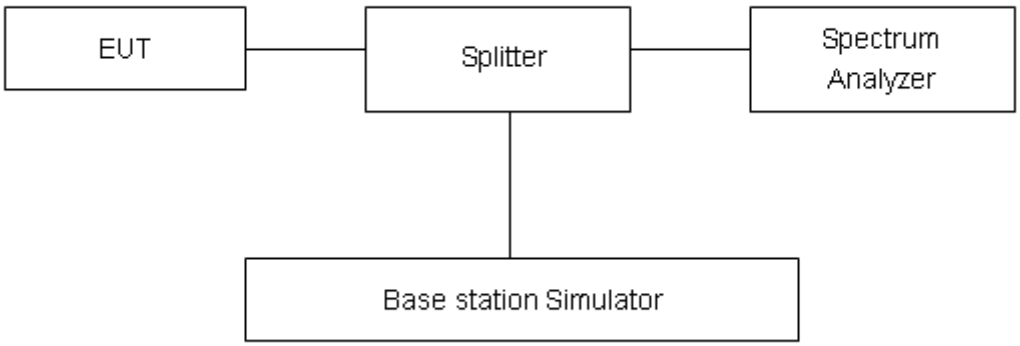
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The Average detector is used and RBW is set to 3kHz, VBW is set to 10kHz for GSM 1900
Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U=0.684dB.

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Test Result:

Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit (dBm)	Conclusion
GSM 1900 (GSM)	1850.0	-35.657	-13	PASS
	1910.0	-34.213	-13	PASS
GPRS 1900 (GMSK)	1850.0	-36.237	-13	PASS
	1910.0	-34.941	-13	PASS
EGPRS 1900 (8-PSK)	1850.0	-41.606	-13	PASS
	1910.0	-42.554	-13	PASS

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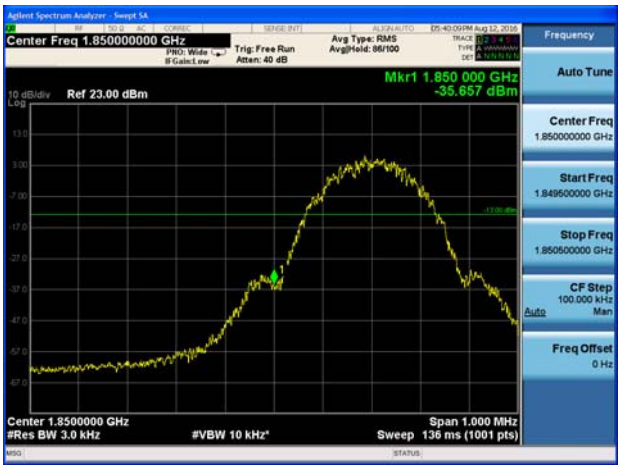
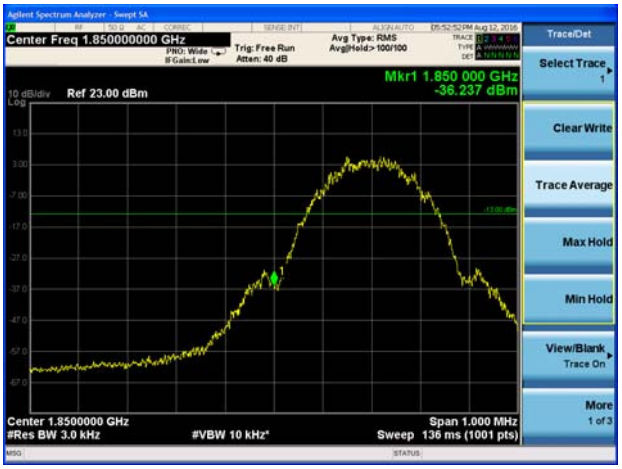
GSM1900 GSM CH-Low

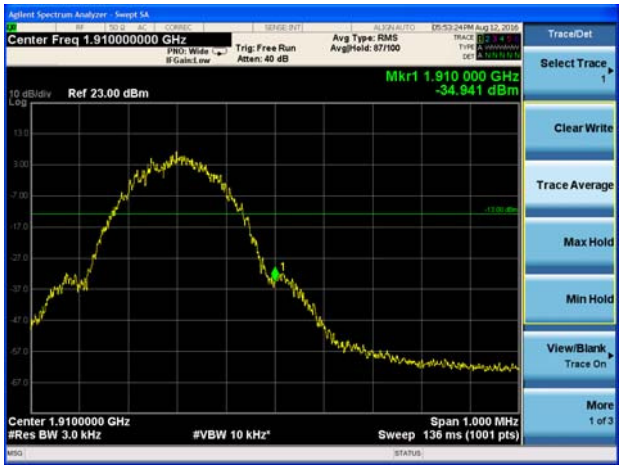


GSM 1900 GSM CH-High

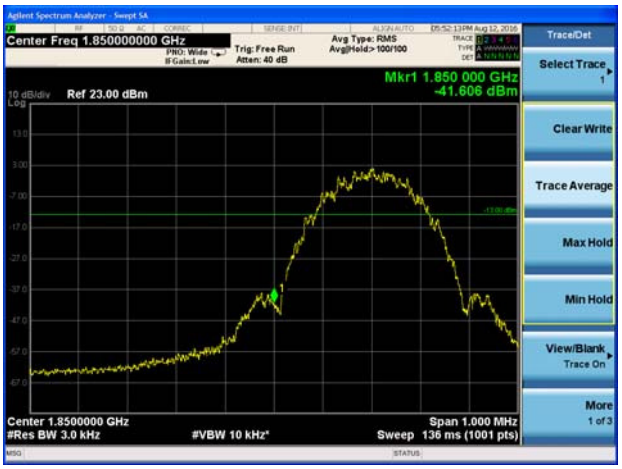
GSM1900 GPRS CH-Low



GSM 1900 GPRS CH-High



GSM1900 EGPRS CH-Low



GSM 1900 EGPRS CH-High

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5.5. Peak-to-Average Power Ratio (PAPR)

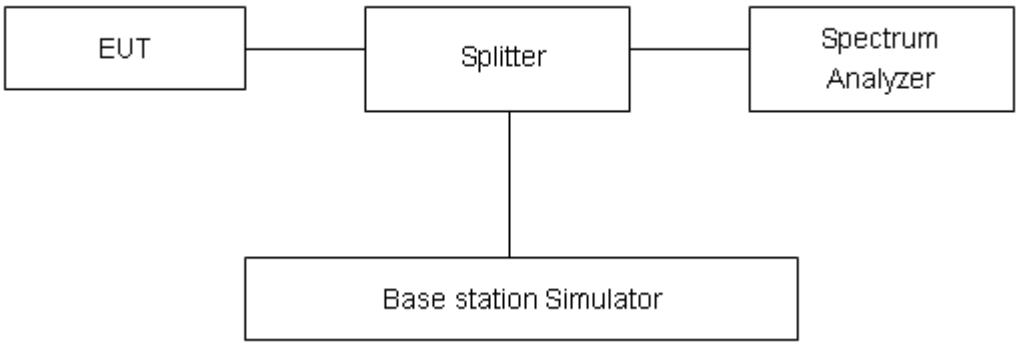
Ambient condition

Temperature	Relative humidity
21°C ~25°C	40%~60%

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

In measuring transmissions in this band using an average power technique, the peakto-average ratio (PAR) of the transmission may not exceed 13 dB in 24.232(d).

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.4 dB.

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Test Results

Mode	Channel	Frequency (MHz)	Peak(dBm)	Avg(dBm)	PAPR(dB)	Limit(dB)	Conclusion
GSM 1900 (GSM)	512	1850.2	29.96	29.94	0.02	13	PASS
	661	1880	29.71	29.68	0.03	13	PASS
	810	1909.8	29.51	29.49	0.02	13	PASS
GPRS 1900 (GMSK)	512	1850.2	25.02	24.98	0.04	13	PASS
	661	1880	25.05	25.02	0.03	13	PASS
	810	1909.8	25.02	24.99	0.03	13	PASS
EGPRS 1900 (8-PSK)	512	1850.2	22.89	22.84	0.05	13	PASS
	661	1880	22.68	22.65	0.03	13	PASS
	810	1909.8	22.54	22.51	0.03	13	PASS

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5.6. Frequency Stability

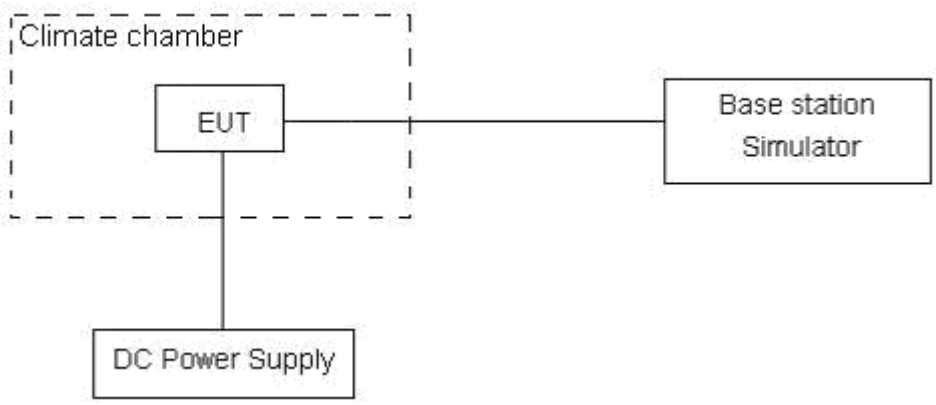
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency Stability (Temperature Variation)
   The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size,
   (1) With all power removed, the temperature was decreased to 0°C and permitted to stabilize for three hours.
   (2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.
   (3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.
2. Frequency Stability (Voltage Variation)
   The frequency stability shall be measured with variation of primary supply voltage as follows:
   (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
   (2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.
   This transceiver is specified to operate with an input voltage of between 3.5 V and 3.8 V, with a nominal voltage of 4.35 V.

Test setup



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Limits

No specific frequency stability requirements in part 24.235

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor k = 3, U= 0.01ppm.

Test Result

Mode	Test status	Test Results (ppm)			Conclusion
		GSM(GMSK)	GPRS(GMSK)	EGPRS(8PSK)	
GSM 1900 Channel 661	-30°C/3.8 V	0.0051	0.0036	0.0086	PASS
	-20°C/3.8 V	-0.0092	0.0048	0.0071	PASS
	-10°C/3.8 V	-0.0033	0.0079	-0.0068	PASS
	0°C/3.8 V	-0.0058	0.0107	0.0083	PASS
	10°C/3.8 V	-0.0059	0.0091	-0.0068	PASS
	20°C/3.8 V	-0.0051	0.0073	0.0064	PASS
	30°C/3.8 V	-0.0072	0.0118	0.0083	PASS
	40°C/3.8 V	-0.0088	0.0047	-0.0068	PASS
	50°C/3.8 V	-0.0095	0.0080	0.0064	PASS
	20°C/3.5 V	0.0070	0.0062	-0.0067	PASS
	20°C/4.35 V	-0.0079	0.0079	-0.0066	PASS

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5.7. Spurious Emissions at Antenna Terminals

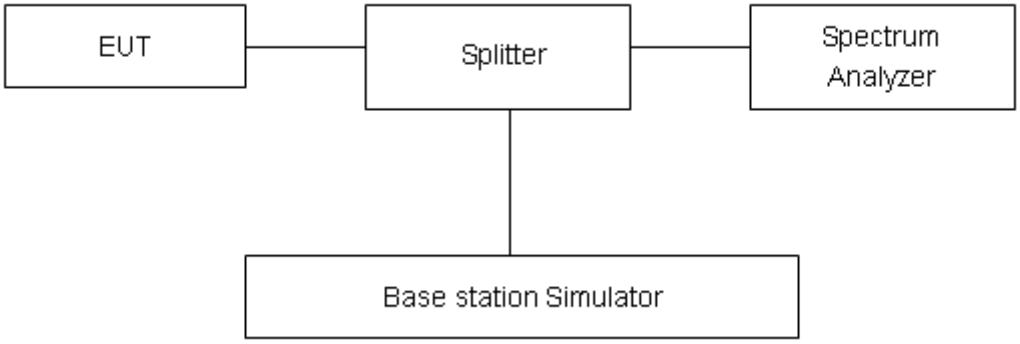
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used.RBW and VBW are set to 100 kHz for the carrier frequency, or RBW and VBW are set to 1MHz (other frequency), Sweep is set to ATUO.

Test setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor k = 1.96.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-18GHz	1.407 dB

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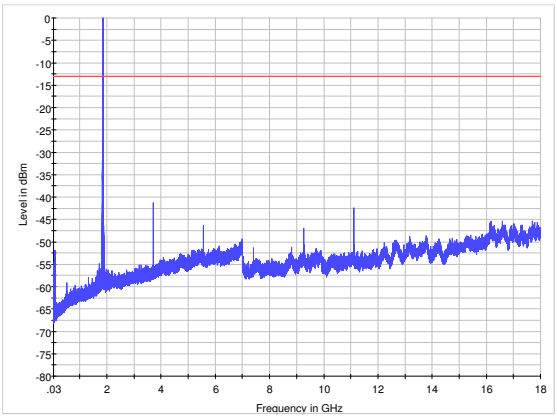
Test Result

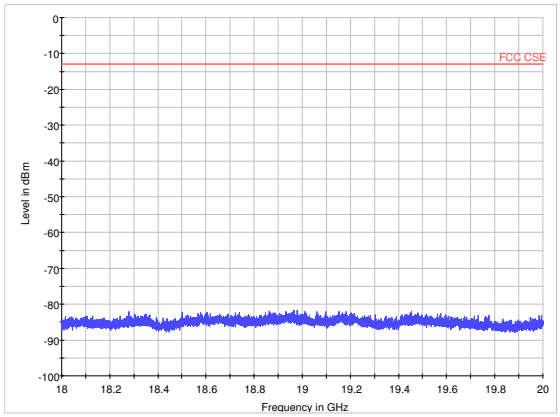
Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.

If disturbances were found more than 20dB below limit line, the mark is not required for the EUT. The signal beyond the limit is carrier.

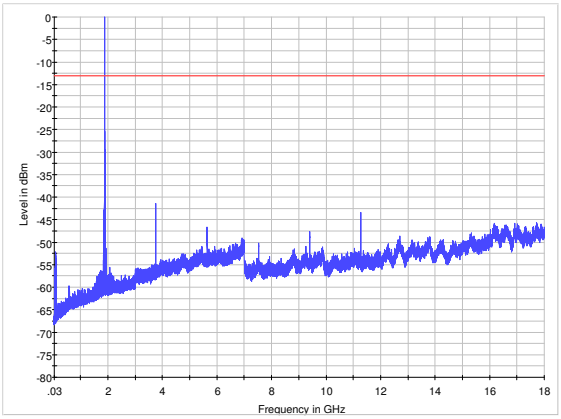
GSM 1900 CH-Low 30MHz~18GHz



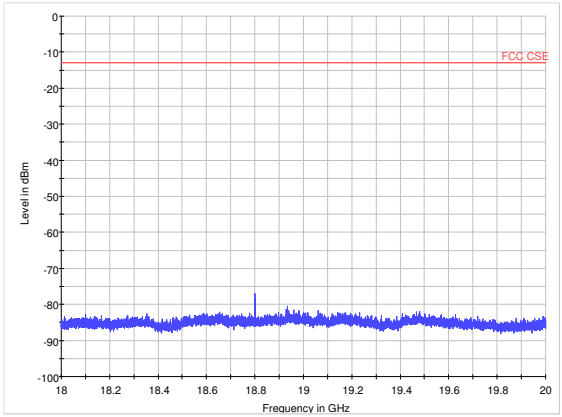
GSM 1900 CH-Low 18GHz~20GHz



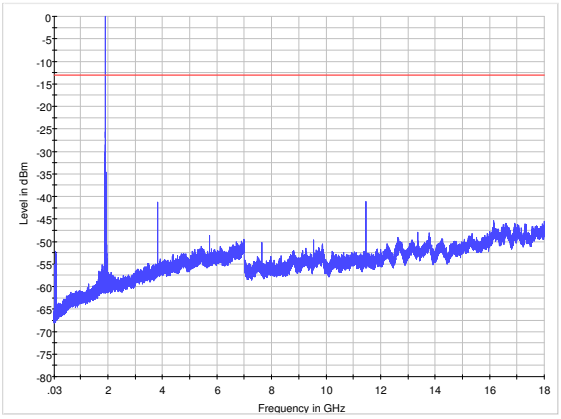
GSM 1900 CH-Middle 30MHz~18GHz



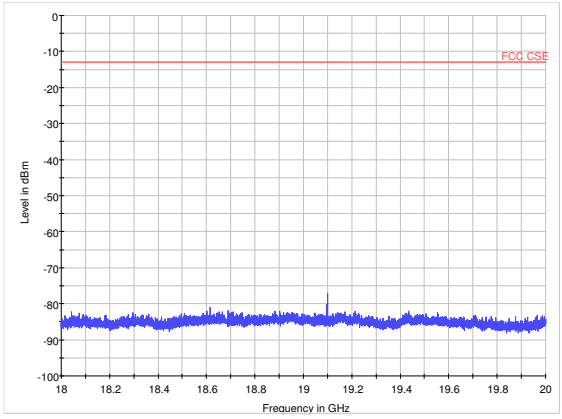
GSM 1900 CH-Middle 18GHz~20GHz



GSM 1900 CH-High 30MHz~18GHz



GSM 1900 CH-High 18GHz~20GHz



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5.8. Radiates Spurious Emission

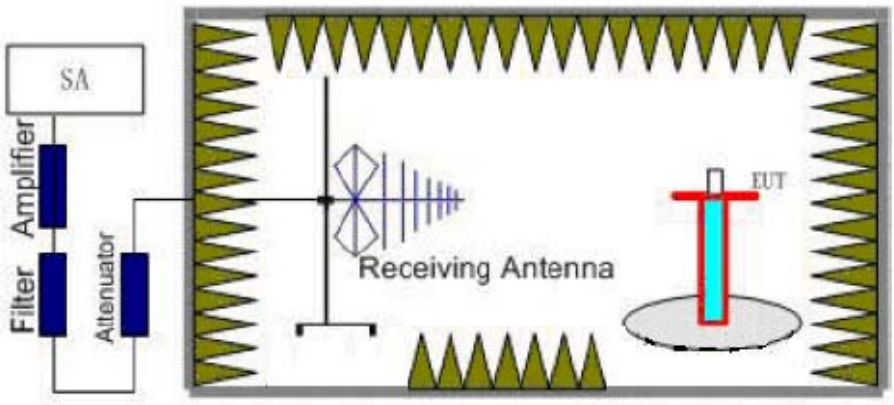
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The measurements procedures in TIA -603-D are used.
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment.
The emissions less than 20 dB below the permissible value are reported.

The procedure of Radiates Spurious Emission is as follows:
Step 1:
The measurement is carried out in the semi-anechoic chamber. EUT was placed on a 1.5 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used while RBW and VBW are both set to 3MHz. During the measurement, the highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna moved up and down over a range from 1 to 4 meters in both horizontally and vertically polarized orientations. The test setup refers to figure below.



Step 2:
A dipole antenna shall be substituted in place of the EUT. The antenna will be driven by a signal generator with a adjustable S.G. applied through a Tx cable. Adjust the level of the signal generator output until the value of the receiver reach the previously recorded analyzer power level (LVL).Then The E.R.P. /E.I.R.P. of the EUT can be calculated through the level of the signal generator, Tx cable loss and the gain of the substitution antenna. The test setup refers to figure below.

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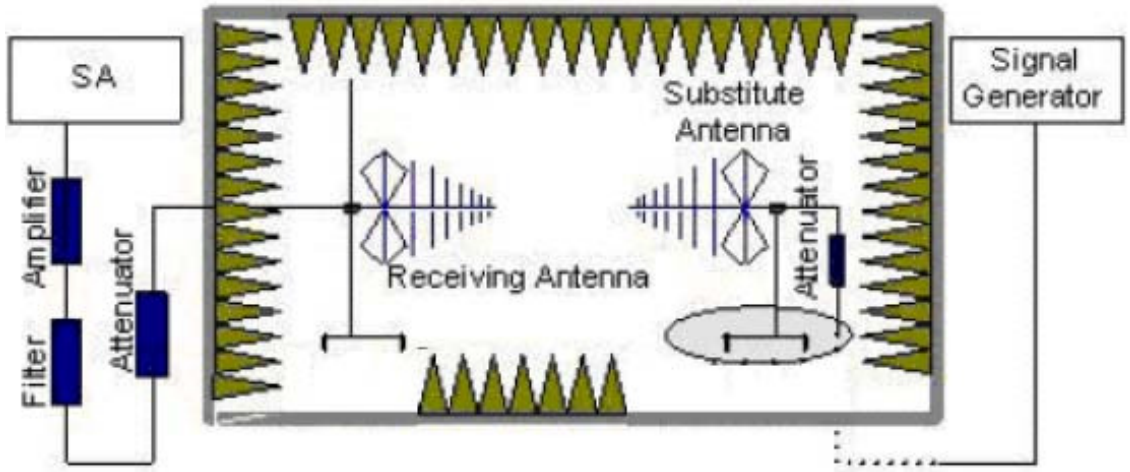

E.R.P（peak power）=S.G. - Tx Cable loss + Substitution antenna gain – 2.15.
EIRP= E.R.P+2.15

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization(horizontal and vertical), The worst emission was found in position (Z axis, vertical polarization) and the worst case was recorded.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95％ confidence level for the normal distribution is with the coverage factor k = 1.96, U= 3.55 dB.

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Test Result

GSM 1900 CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3700	-62.72	5.1	11.05	vertical	-56.77	-13.00	43.77	135
3	5551	-55.25	5.42	12.65	vertical	-48.02	-13.00	35.02	90
4	7401	-58.56	6.7	13.85	vertical	-51.41	-13.00	38.41	270
5	9251	-49.55	7.01	14.75	vertical	-41.81	-13.00	28.81	90
6	11101	-58.01	7.48	15.95	vertical	-49.54	-13.00	36.54	180
7	12951	-58.62	7.51	16.55	vertical	-49.58	-13.00	36.58	90
8	14802	-56.98	8.24	15.35	vertical	-49.87	-13.00	36.87	45
9	16652	-49.29	8.41	14.95	vertical	-42.75	-13.00	29.75	0
10	18502	-82.80	8.54	15.45	vertical	-75.89	-13.00	62.89	180

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

GSM 1900 CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760	-57.04	5.1	11.05	vertical	-51.09	-13.00	38.09	90
3	5640	-55.39	5.42	12.65	vertical	-48.16	-13.00	35.16	135
4	7520	-59.71	6.7	13.85	vertical	-52.56	-13.00	39.56	180
5	9400	-47.30	7.01	14.75	vertical	-39.56	-13.00	26.56	90
6	11280	-56.56	7.48	15.95	vertical	-48.09	-13.00	35.09	45
7	13160	-55.85	7.51	16.55	vertical	-46.81	-13.00	33.81	0
8	15040	-52.94	8.24	15.35	vertical	-45.83	-13.00	32.83	90
9	16920	-49.41	8.41	14.95	vertical	-42.87	-13.00	29.87	180
10	18800	-86.38	8.54	15.45	vertical	-79.47	-13.00	66.47	180

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

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GSM 1900 CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3819	-55.37	5.1	11.05	vertical	-49.42	-13.00	36.42	135
3	5730	-56.32	5.42	12.65	vertical	-49.09	-13.00	36.09	90
4	7639	-59.56	6.7	13.85	vertical	-52.41	-13.00	39.41	315
5	9549	-47.95	7.01	14.75	vertical	-40.21	-13.00	27.21	180
6	11459	-56.28	7.48	15.95	vertical	-47.81	-13.00	34.81	135
7	13369	-57.12	7.51	16.55	vertical	-48.08	-13.00	35.08	90
8	15278	-52.63	8.24	15.35	vertical	-45.52	-13.00	32.52	180
9	17188	-49.02	8.41	14.95	vertical	-42.48	-13.00	29.48	45
10	19098	-84.16	8.54	15.45	vertical	-77.25	-13.00	64.25	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

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6. Main Test Instruments

Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time
Base Station Simulator	CMU200	R&S	118133	2016-05-21	2017-05-20
Power Splitter	SHX-GF2 -2-13	Hua Xiang	10120101	NA	NA
Spectrum Analyzer	N9010A	Agilent	MY47191109	2016-05-21	2017-05-20
Universal Radio Communication Tester	E5515C	Agilent	MY48367192	2016-05-21	2017-05-20
Signal Analyzer	FSV30	R&S	100815	2015-12-17	2016-12-16
Signal generator	SMB 100A	R&S	102594	2016-05-22	2017-05-21
Signal generator	SMR27	R&S	100365	2016-05-22	2017-05-21
EMI Test Receiver	ESCI	R&S	100948	2016-06-01	2017-05-31
Trilog Antenna	VUBL 9163	SCHWARZBECK	9163-201	2014-12-06	2017-12-05
Trilog Antenna	VUBL 9163	SCHWARZBECK	9163-391	2014-12-06	2017-12-05
Horn Antenna	HF907	R&S	100126	2014-12-06	2017-12-05
Horn Antenna	HF907	R&S	100125	2014-12-06	2017-12-05
Climatic Chamber	PT-30B	Re Ce	20101891	2016-07-17	2017-07-16
Horn Antenna	3160-09	ETS-Lindgren	00102644	2015-01-30	2018-01-29
RF Cable	SMA 15cm	Agilent	0001	2016-08-05	2016-11-04

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

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