FCC RF Test Report

CUSTOMER	**:**	**Sierra Wireless Inc.**
EQUIPMENT	**:**	**Radio Module**
MODEL NAME	**:**	**WP7702**
FCC ID	**:**	**N7NWP77B**
STANDARD	**:**	**FCC 47 CFR Part 2, 22(H), 24(E)**
CLASSIFICATION	**:**	**PCS Licensed Transmitter (PCB)**

This is a partial report. The product was received on Dec. 05, 2017 and testing was completed on Dec. 19, 2017. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG7D0540A	Rev. 01	Initial issue of report	Apr. 24, 2018

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	< 13 dB	PASS	-
3.6	§2.1049 §22.917(b) §24.238(b)	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a)	Band Edge Measurement	< $43+10\log_{10}$(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a)	Conducted Emission	< $43+10\log_{10}$(P[Watts])	PASS	-
3.9	§2.1055 §22.355	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§2.1055 §24.235		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 27.52 dB at 7404.000 MHz

1 General Description

1.1 Customer

Sierra Wireless Inc.
13811 Wireless Way Richmond, BC Canada V6V 3A4

1.2 Manufacturer

Sierra Wireless Inc.
13811 Wireless Way Richmond, BC Canada V6V 3A4

1.3 Product Feature of Equipment Under Test

WP7702 is an IOT module supporting multiband LTE CATM1/NB1 and 2G operation.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	**GSM/GPRS/EDGE:** 850: 824.2 MHz ~ 848.8 MHz 1900: 1850.2 MHz ~ 1909.8MHz
Rx Frequency	**GSM/GPRS/EDGE:** 850: 869.2 MHz ~ 893.8 MHz 1900: 1930.2 MHz ~ 1989.8 MHz
Maximum Output Power to Antenna	**GSM/GPRS/EDGE:** 850: 32.86 dBm 1900: 29.78 dBm
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	**Sporton Site No.**	
	TH03-HY	03CH07-HY

1.7 Applicable Standards

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

- 47 CFR Part 2, 22(H), 24(E)
- ANSI / TIA-603-E
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

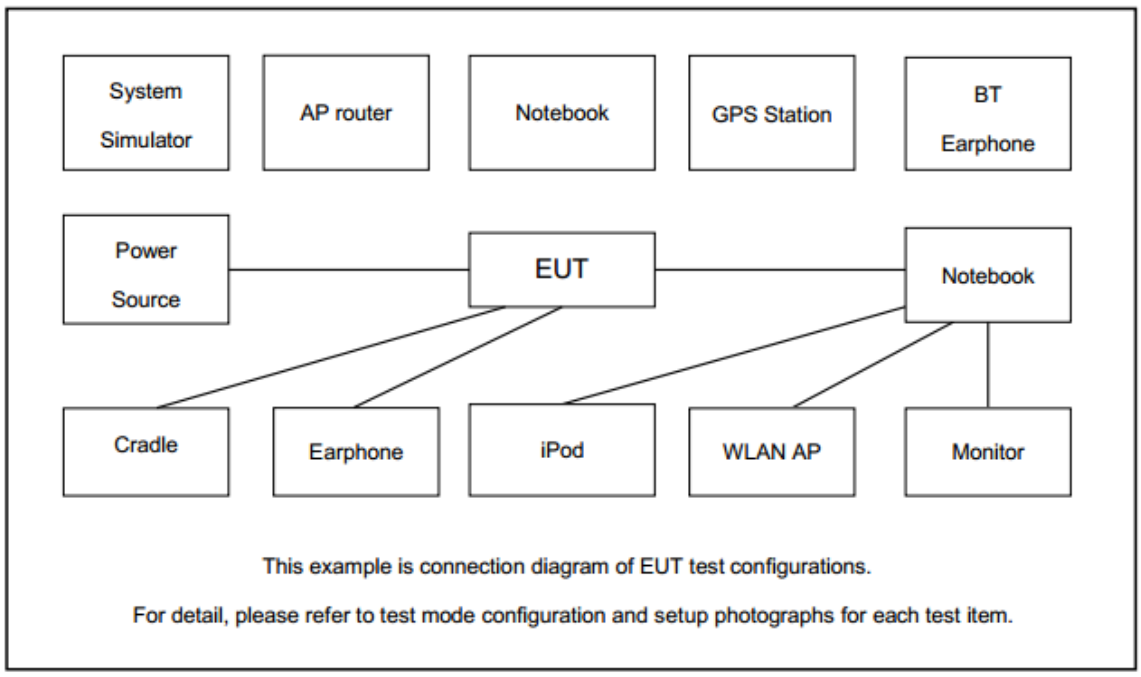
1. 30 MHz to 9000 MHz for GSM850.
2. 30 MHz to 19100 MHz for GSM1900.

All modes and data rates and positions were investigated.

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

Test Modes		
Band	**Radiated TCs**	**Conducted TCs**
GSM 850	■ GPRS class 8 Link ■ EDGE class 8 Link	■ GPRS class 8 Link ■ EDGE class 8 Link
GSM 1900	■ GPRS class 8 Link ■ EDGE class 8 Link	■ GPRS class 8 Link ■ EDGE class 8 Link

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

2.5 Frequency List of Low/Middle/High Channels

Frequency List				
Band	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
GSM850	Channel	128	189	251
	Frequency	824.2	836.4	848.8
GSM1900	Channel	512	661	810
	Frequency	1850.2	1880.0	1909.8

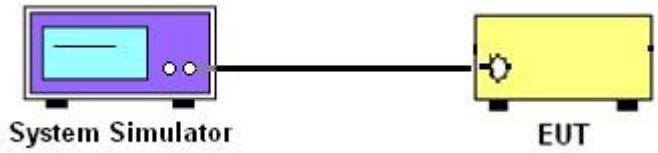
3 Conducted Test Result

3.1 Measuring Instruments

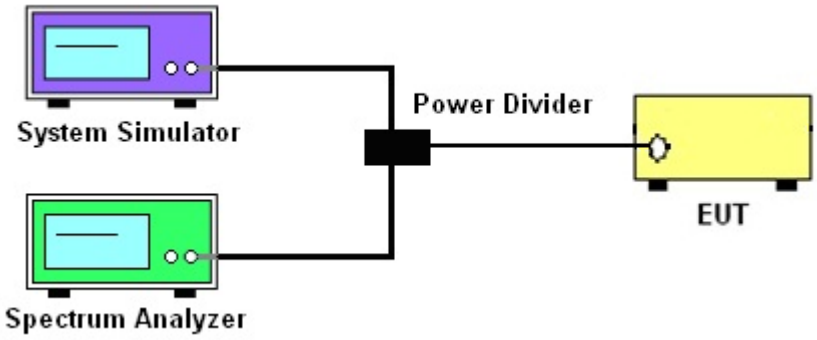
See list of measuring instruments of this test report.

3.2 Test Setup

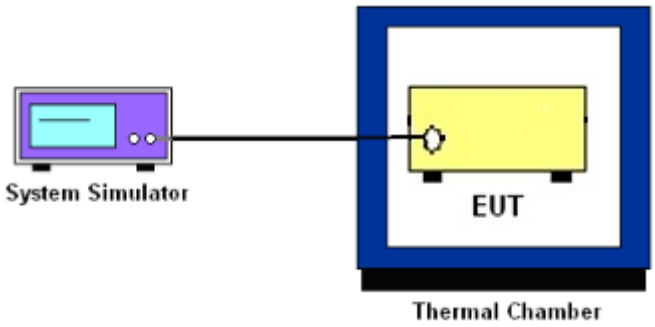
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power

3.4.1 Description of the Conducted Output Power

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

3.4.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.7.1.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. Set EUT to transmit at maximum output power.
4. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
5. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer.

Record the maximum PAPR level associated with a probability of 0.1%.

3.6 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.6.1 Description of 99% Occupied Bandwidth and 26dB Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v03r01 Section 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v03r01 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The band edges of low and high channels for the highest RF powers were measured.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v03r01 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C steps up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.
2. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

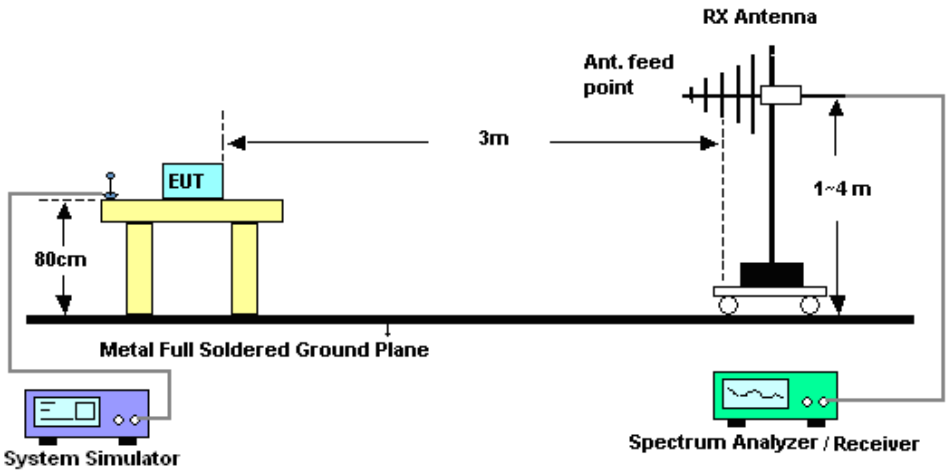
4 Radiated Test Items

4.1 Measuring Instruments

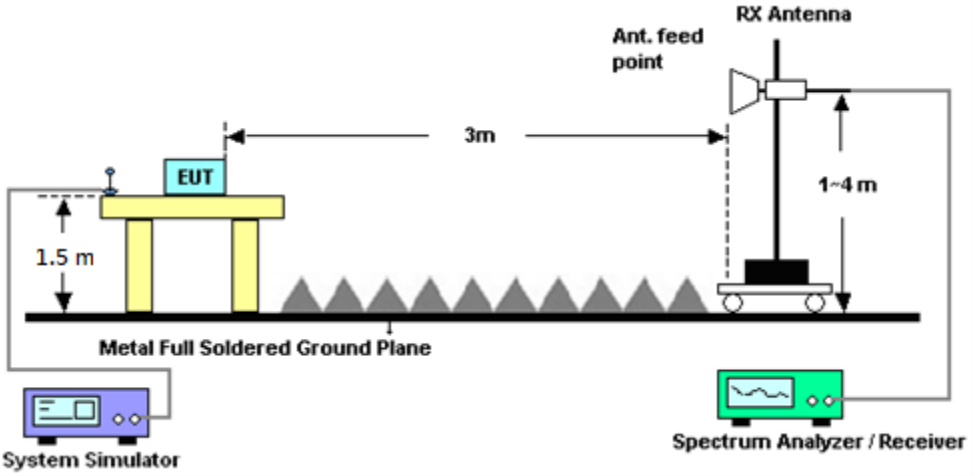
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Field Strength of Spurious Radiation Measurement

4.4.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI / TIA-603-E Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP30	101329	9kHz~30GHz	Jun. 26, 2017	Dec. 13, 2017~ Dec. 18, 2017	Jun. 25, 2018	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SU-641	92013721	-30℃ ~70℃	Nov. 16, 2016	Dec. 13, 2017~ Dec. 18, 2017	Nov. 15, 2018	Conducted (TH03-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL883644	Voltage:0~20V; Current:0~5A	Nov. 22, 2016	Dec. 13, 2017~ Dec. 18, 2017	Nov. 21, 2018	Conducted (TH03-HY)
Base Station (Measure)	Rohde & Schwarz	CMU200	117995	GSM / GPRS / WCDMA / CDMA	Aug. 09, 2017	Dec. 13, 2017 ~ Dec. 18, 2017	Aug. 08, 2018	Conducted (TH03-HY)
Bilog Antenna	TESEQ	CBL 6111D&008	35419&03	30MHz to 1GHz	Jan. 07, 2017	Dec. 12, 2017~ Dec. 19, 2017	Jan. 06, 2018	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 23, 2017	Dec. 12, 2017~ Dec. 19, 2017	Aug. 22, 2018	Radiation (03CH07-HY)
Horn Antenna	ESCO	3117	00066584	1GHz~18GHz	Sep. 06, 2017	Dec. 12, 2017~ Dec. 19, 2017	Sep. 05, 2018	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz- 40GHz	Nov. 10, 2017	Dec. 12, 2017~ Dec. 19, 2017	Nov. 09, 2018	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 27, 2017	Dec. 12, 2017~ Dec. 19, 2017	Nov. 26, 2018	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	Mar. 14, 2017	Dec. 12, 2017~ Dec. 19, 2017	Mar. 13, 2018	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 30, 2017	Dec. 12, 2017~ Dec. 19, 2017	Oct. 29, 2018	Radiation (03CH07-HY)
Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz,VSWR : 2.5:1 max	Jul. 18, 2017	Dec. 12, 2017~ Dec. 19, 2017	Jul. 17, 2018	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Apr. 17, 2017	Dec. 12, 2017~ Dec. 19, 2017	Apr. 16, 2018	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Dec. 12, 2017~ Dec. 19, 2017	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Dec. 12, 2017~ Dec. 19, 2017	N/A	Radiation (03CH07-HY)

6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.05**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.44**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.95**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

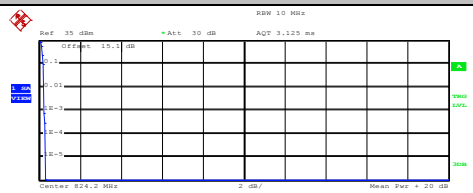
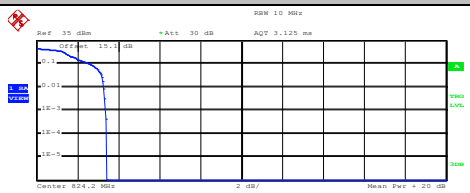
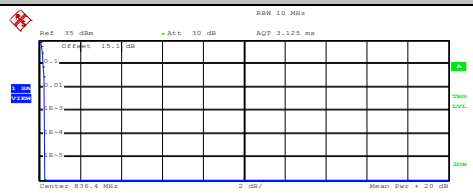
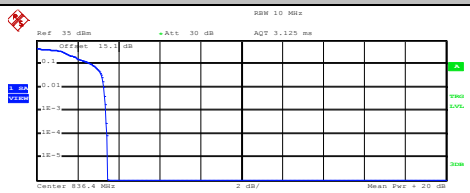
Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880	1909.8
GSM	-	-	-	-	-	-
GPRS	32.46	32.76	**32.86**	**29.78**	29.68	29.31
EGPRS	26.66	**26.76**	26.66	**25.38**	25.28	25.11

A2. GSM

Peak-to-Average Ratio

Mode	GSM850		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.24	3.36	PASS
Middle CH	0.28	3.40	
Highest CH	0.28	3.40	

Mode	GSM1900		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.24	3.36	PASS
Middle CH	0.24	3.28	
Highest CH	0.24	3.44	

GSM850 (GPRS class 8)	GSM850 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 30.76 dBm Peak 31.06 dBm Crest 0.30 dB 10 % 0.20 dB 1 % 0.24 dB .1 % 0.24 dB .01 % 0.32 dB	Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 24.74 dBm Peak 28.17 dBm Crest 3.43 dB 10 % 2.64 dB 1 % 3.28 dB .1 % 3.36 dB .01 % 3.44 dB
Date: 13.DEC.2017 13:28:07	Date: 13.DEC.2017 11:50:39
Middle Channel	**Middle Channel**
	
Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 30.80 dBm Peak 31.06 dBm Crest 0.26 dB 10 % 0.20 dB 1 % 0.28 dB .1 % 0.28 dB .01 % 0.28 dB	Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 24.79 dBm Peak 28.24 dBm Crest 3.45 dB 10 % 2.68 dB 1 % 3.28 dB .1 % 3.40 dB .01 % 3.44 dB
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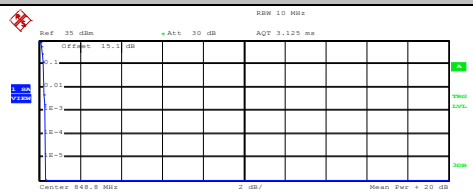
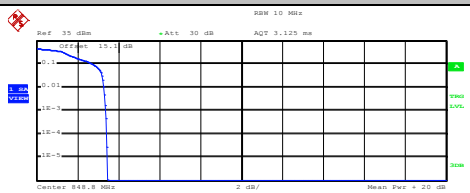
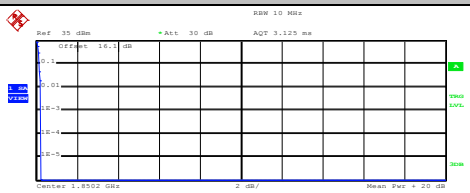
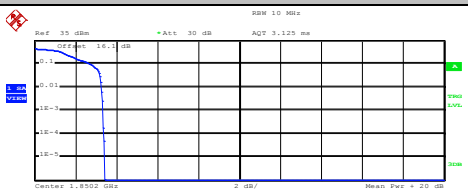
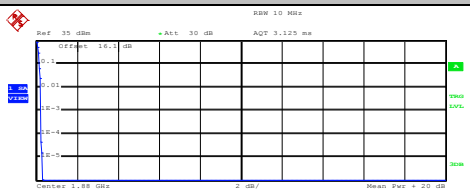
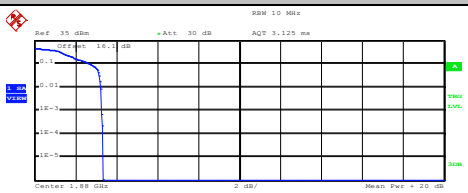
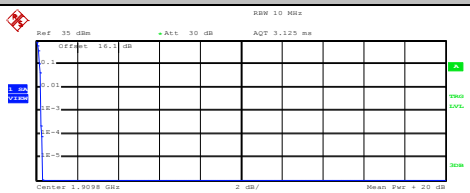
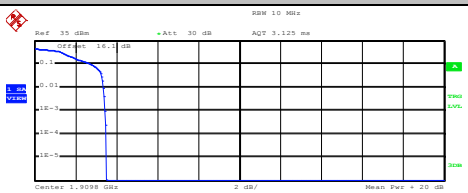
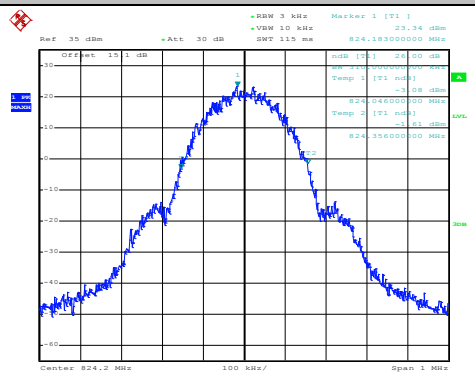
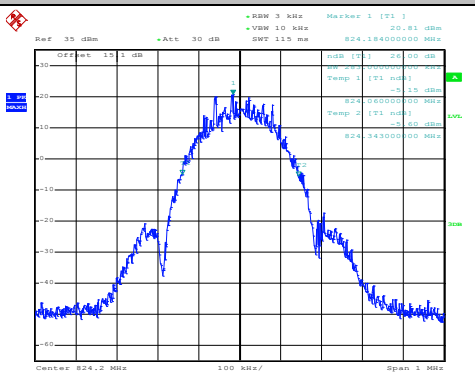
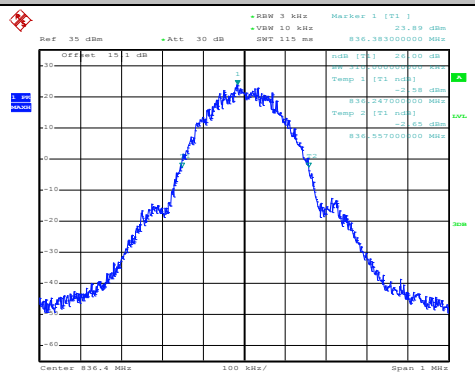
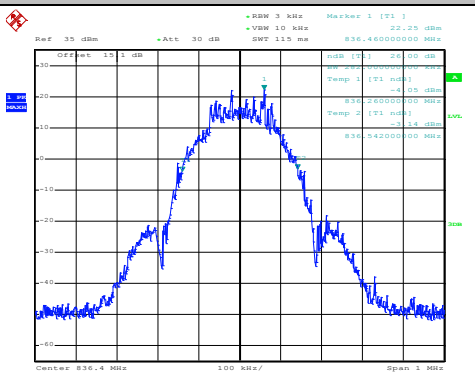
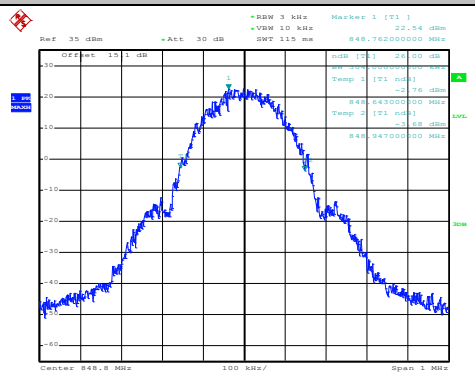
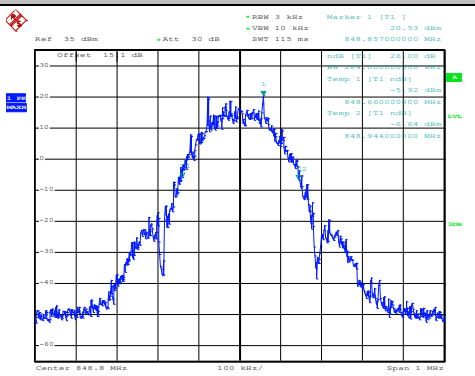
Highest Channel	**Highest Channel**
	
Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 30.83 dBm Peak 31.13 dBm Crest 0.31 dB 10 % 0.20 dB 1 % 0.24 dB .1 % 0.28 dB .01 % 0.32 dB	Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 24.73 dBm Peak 28.17 dBm Crest 3.44 dB 10 % 2.76 dB 1 % 3.28 dB .1 % 3.40 dB .01 % 3.44 dB
Date: 13.DEC.2017 13:29:03	Date: 13.DEC.2017 11:51:19

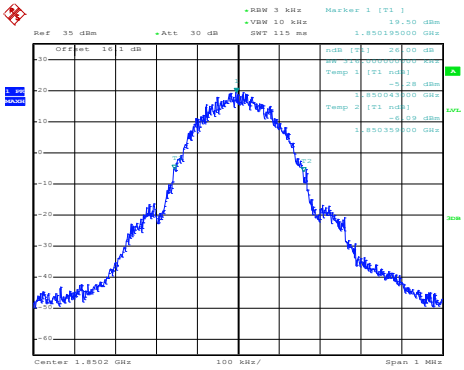
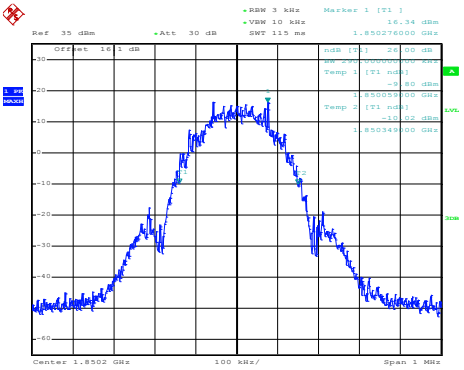
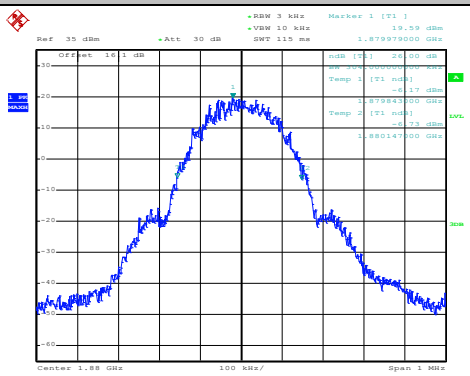
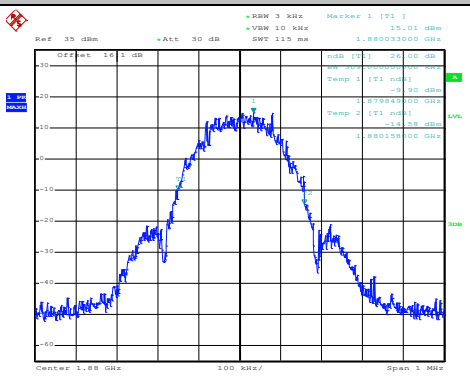
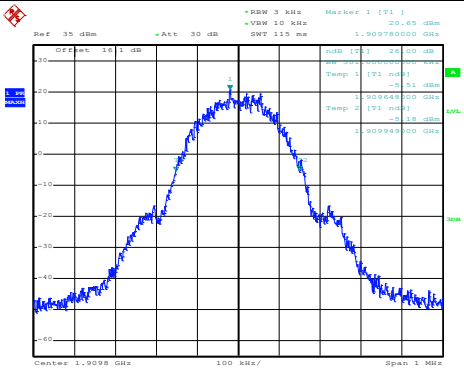
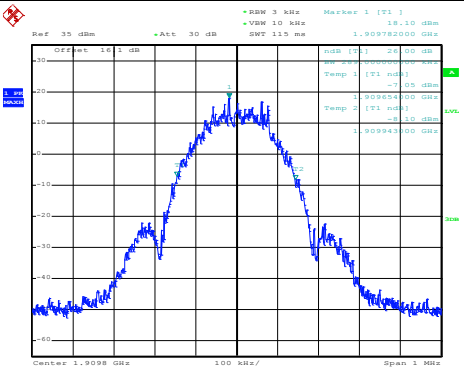
GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 27.59 dBm Peak 27.82 dBm Crest 0.23 dB 10 % 0.16 dB 1 % 0.24 dB .1 % 0.24 dB .01 % 0.24 dB	Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 22.93 dBm Peak 26.34 dBm Crest 3.41 dB 10 % 2.72 dB 1 % 3.28 dB .1 % 3.36 dB .01 % 3.40 dB
Date: 13.DEC.2017 13:44:26	Date: 13.DEC.2017 11:35:11
Middle Channel	**Middle Channel**
	
Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 27.66 dBm Peak 27.96 dBm Crest 0.30 dB 10 % 0.16 dB 1 % 0.24 dB .1 % 0.24 dB .01 % 0.24 dB	Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.06 dBm Peak 26.41 dBm Crest 3.34 dB 10 % 2.72 dB 1 % 3.24 dB .1 % 3.28 dB .01 % 3.36 dB
Date: 13.DEC.2017 13:44:42	Date: 13.DEC.2017 11:35:39
Highest Channel	**Highest Channel**
	
Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 27.31 dBm Peak 27.61 dBm Crest 0.30 dB 10 % 0.16 dB 1 % 0.24 dB .1 % 0.24 dB .01 % 0.28 dB	Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 22.54 dBm Peak 26.05 dBm Crest 3.51 dB 10 % 2.76 dB 1 % 3.36 dB .1 % 3.44 dB .01 % 3.52 dB
Date: 13.DEC.2017 13:44:59	Date: 13.DEC.2017 11:37:18

26dB Bandwidth

Mode	GSM850	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.310	0.283
Middle CH	0.310	0.282
Highest CH	0.304	0.284

Mode	GSM1900	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.316	0.290
Middle CH	0.304	0.309
Highest CH	0.301	0.289

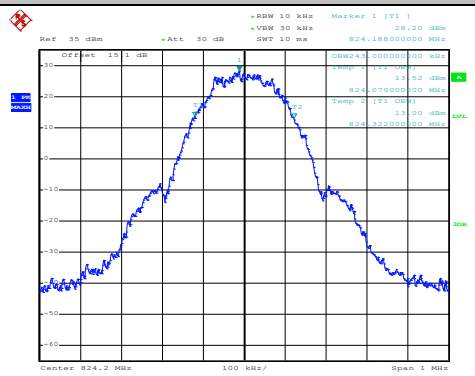
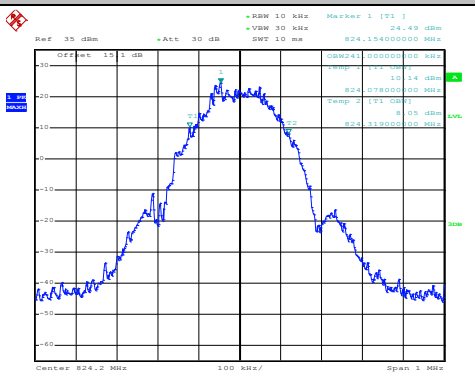
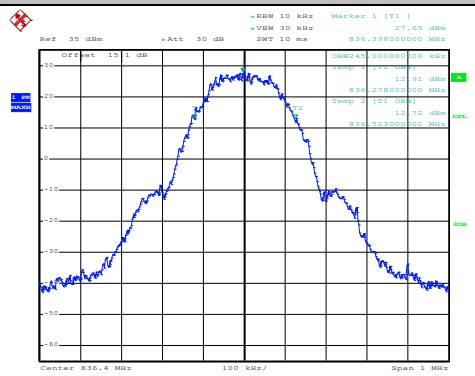
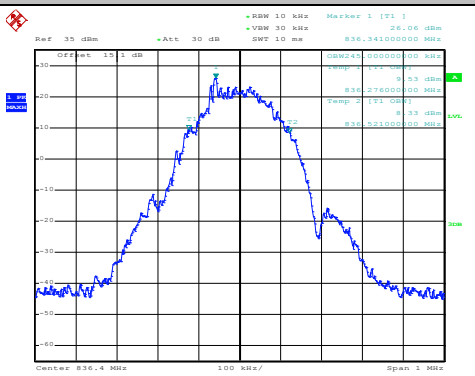
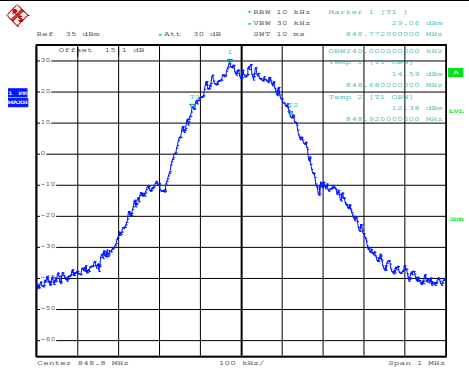
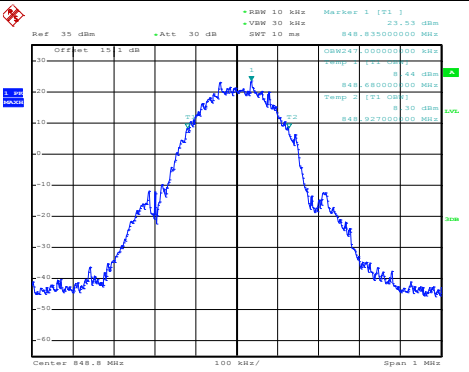
GSM850 (GPRS class 8)	GSM850 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Date: 13.DEC.2017 11:55:04	Date: 13.DEC.2017 11:40:59
Middle Channel	**Middle Channel**
	
Date: 13.DEC.2017 11:55:54	Date: 13.DEC.2017 11:41:33
Highest Channel	**Highest Channel**
	
Date: 13.DEC.2017 11:56:35	Date: 13.DEC.2017 11:42:20

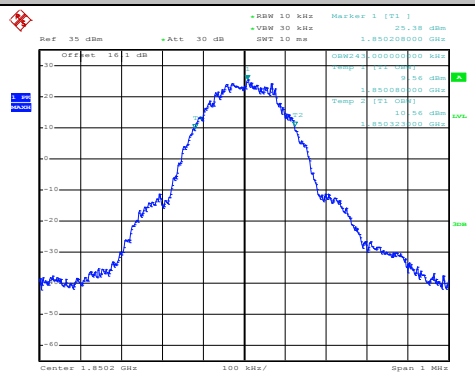
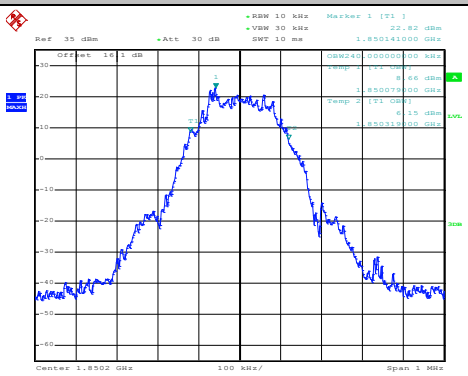
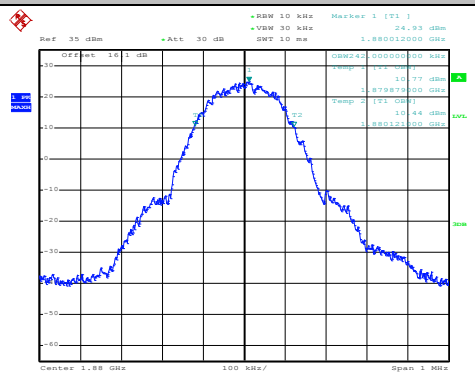
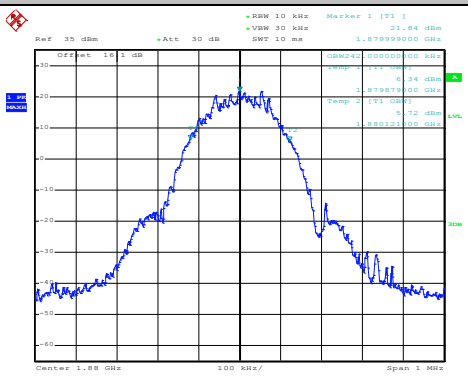
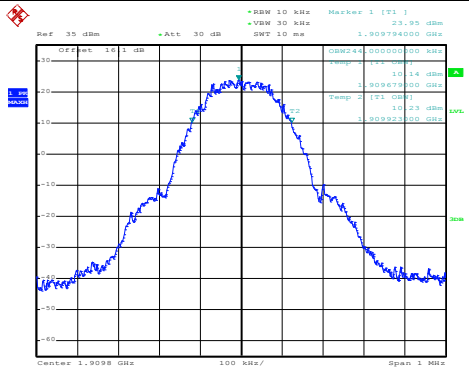
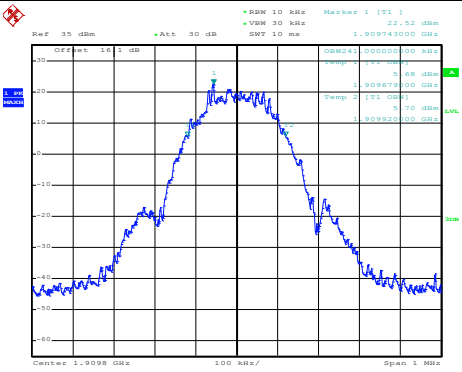
GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Date: 13.DEC.2017 13:33:02	Date: 13.DEC.2017 11:21:34
Middle Channel	**Middle Channel**
	
Date: 13.DEC.2017 13:33:43	Date: 13.DEC.2017 11:22:08
Highest Channel	**Highest Channel**
	
Date: 13.DEC.2017 13:34:18	Date: 13.DEC.2017 11:22:46

Occupied Bandwidth

Mode	GSM850	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.243	0.241
Middle CH	0.245	0.245
Highest CH	0.240	0.247

Mode	GSM1900	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.243	0.240
Middle CH	0.242	0.242
Highest CH	0.244	0.241

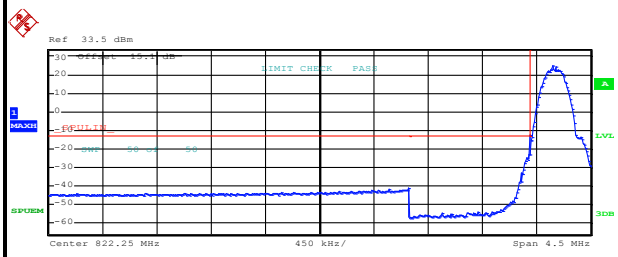
GSM850 (GPRS class 8)	GSM850 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Date: 13.DEC.2017 11:57:12	Date: 13.DEC.2017 11:43:02
Middle Channel	**Middle Channel**
	
Date: 13.DEC.2017 11:57:47	Date: 13.DEC.2017 11:43:35
Highest Channel	**Highest Channel**
	
Date: 13.DEC.2017 11:58:22	Date: 13.DEC.2017 11:44:08

GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Date: 13.DEC.2017 13:34:56	Date: 13.DEC.2017 11:24:25
Middle Channel	**Middle Channel**
	
Date: 13.DEC.2017 13:35:28	Date: 13.DEC.2017 11:25:14
Highest Channel	**Highest Channel**
	
Date: 13.DEC.2017 13:36:03	Date: 13.DEC.2017 11:26:37

Conducted Band Edge

GSM850 (GPRS class 8)

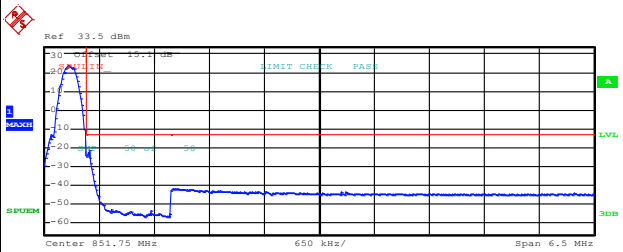
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.991000 M	-41.23	-28.23
823.000 M	824.000 M	3.00 k	823.988000 M	-22.65	-9.65
824.000 M	824.500 M	10.00 k	824.183000 M	24.76	-10.24

Date: 13.DEC.2017 13:22:50

Highest Band Edge

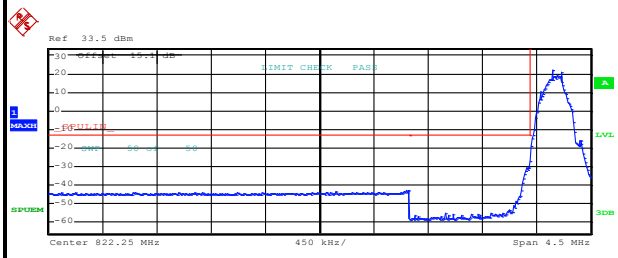


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
848.500 M	849.000 M	10.00 k	848.780000 M	23.90	-11.10
849.000 M	850.000 M	3.00 k	849.028000 M	-20.92	-7.92
850.000 M	855.000 M	100.00 k	850.015000 M	-41.68	-28.68

Date: 13.DEC.2017 13:24:28

GSM850 (EDGE class 8)

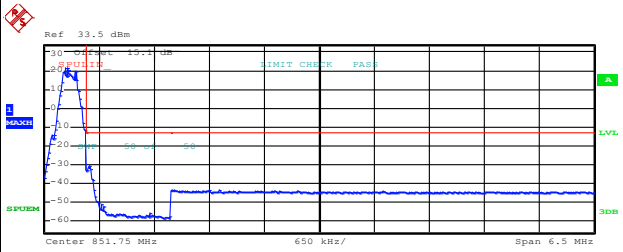
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.985000 M	-42.64	-29.64
823.000 M	824.000 M	3.00 k	823.992000 M	-30.35	-17.35
824.000 M	824.500 M	10.00 k	824.181000 M	22.19	-12.81

Date: 13.DEC.2017 11:45:42

Highest Band Edge

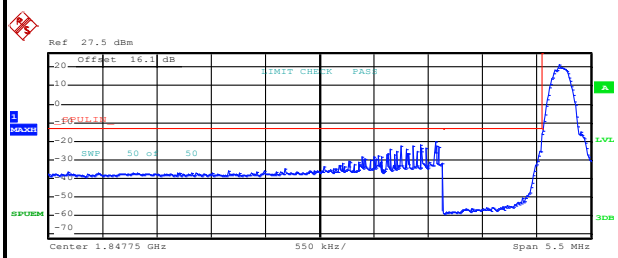


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
848.500 M	849.000 M	10.00 k	848.743500 M	21.64	-13.36
849.000 M	850.000 M	3.00 k	849.028000 M	-30.70	-17.70
850.000 M	855.000 M	100.00 k	850.560000 M	-43.52	-30.52

Date: 13.DEC.2017 11:47:14

GSM1900 (GPRS class 8)

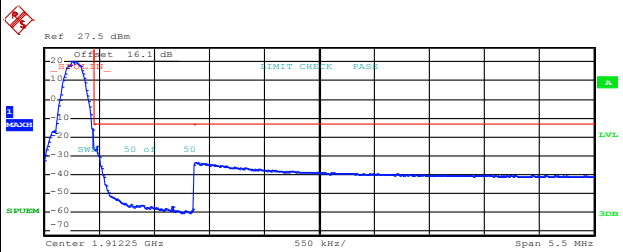
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.845 G	1.849 G	1.00 M	1.848924 G	-20.05	-7.05
1.849 G	1.850 G	3.00 k	1.849988 G	-25.34	-12.34
1.850 G	1.851 G	10.00 k	1.850177 G	21.09	-13.91

Date: 13.DEC.2017 13:37:38

Highest Band Edge

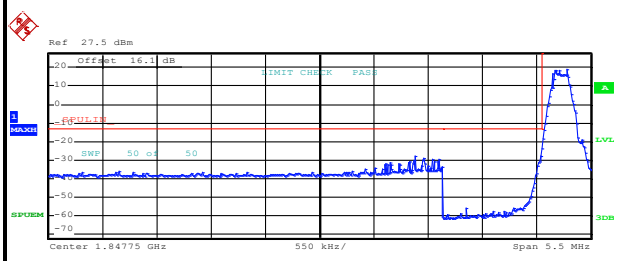


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.910 G	1.910 G	10.00 k	1.909779 G	20.13	-14.87
1.910 G	1.911 G	3.00 k	1.910020 G	-24.91	-11.91
1.911 G	1.915 G	1.00 M	1.911008 G	-33.59	-20.59

Date: 13.DEC.2017 13:39:10

GSM1900 (EDGE class 8)

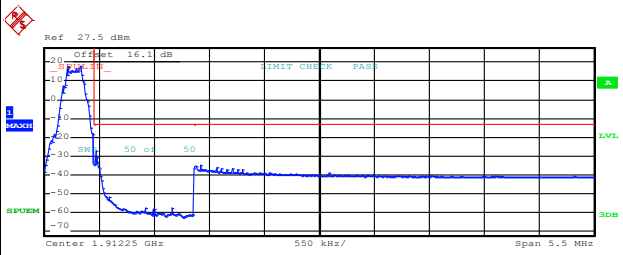
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.845 G	1.849 G	1.00 M	1.848712 G	-27.60	-14.60
1.849 G	1.850 G	3.00 k	1.849988 G	-27.75	-14.75
1.850 G	1.851 G	10.00 k	1.850257 G	19.07	-15.93

Date: 13.DEC.2017 11:28:16

Highest Band Edge



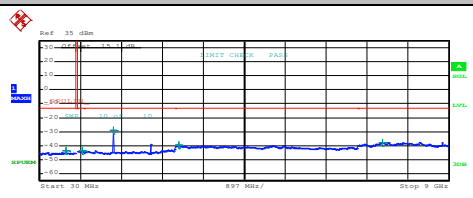
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.910 G	1.910 G	10.00 k	1.909860 G	18.12	-16.88
1.910 G	1.911 G	3.00 k	1.910012 G	-27.16	-14.16
1.911 G	1.915 G	1.00 M	1.911060 G	-34.49	-21.49

Date: 13.DEC.2017 11:29:51

Conducted Spurious Emission

GSM850 (GPRS class 8)

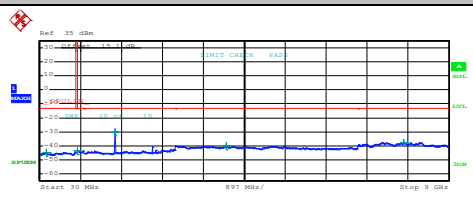
Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	604.330000 M	-43.81	-30.81
855.000 M	1.000 G	1.00 M	958.058757 M	-43.86	-30.86
1.000 G	3.000 G	1.00 M	1.648500 G	-29.11	-16.11
3.000 G	7.000 G	1.00 M	3.074000 G	-39.51	-26.51
7.000 G	9.000 G	1.00 M	7.550000 G	-37.79	-24.79

Date: 13.DEC.2017 13:25:25

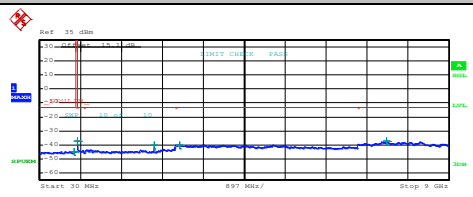
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	178.520000 M	-44.76	-31.76
855.000 M	1.000 G	1.00 M	863.808751 M	-43.57	-30.57
1.000 G	3.000 G	1.00 M	1.673000 G	-29.93	-16.93
3.000 G	7.000 G	1.00 M	4.115000 G	-40.34	-27.34
7.000 G	9.000 G	1.00 M	8.005500 G	-37.54	-24.54

Date: 13.DEC.2017 13:26:15

Highest Channel

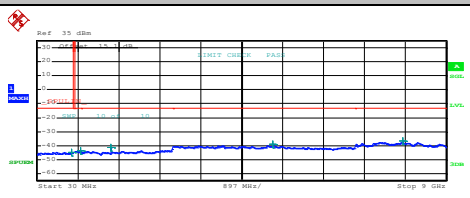


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	782.870000 M	-44.57	-31.57
855.000 M	1.000 G	1.00 M	855.036250 M	-37.30	-24.30
1.000 G	3.000 G	1.00 M	2.547000 G	-40.41	-27.41
3.000 G	7.000 G	1.00 M	3.099000 G	-39.93	-26.93
7.000 G	9.000 G	1.00 M	7.635000 G	-37.28	-24.28

Date: 13.DEC.2017 13:27:07

GSM850 (EDGE class 8)

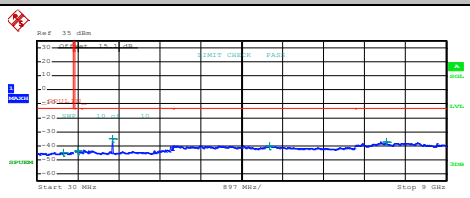
Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	782.475000 M	-44.70	-31.70
855.000 M	1.000 G	1.00 M	985.790009 M	-43.83	-30.83
1.000 G	3.000 G	1.00 M	1.649000 G	-41.19	-28.19
3.000 G	7.000 G	1.00 M	5.205000 G	-39.13	-26.13
7.000 G	9.000 G	1.00 M	8.053500 G	-36.67	-23.67

Date: 13.DEC.2017 11:48:32

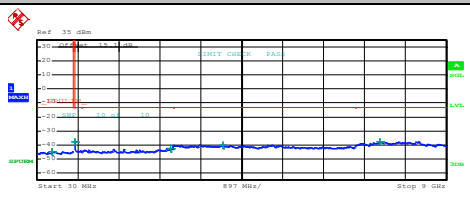
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	607.885000 M	-44.74	-31.74
855.000 M	1.000 G	1.00 M	932.212505 M	-43.64	-30.64
1.000 G	3.000 G	1.00 M	1.672500 G	-35.02	-22.02
3.000 G	7.000 G	1.00 M	5.117000 G	-39.89	-26.89
7.000 G	9.000 G	1.00 M	7.689000 G	-37.36	-24.36

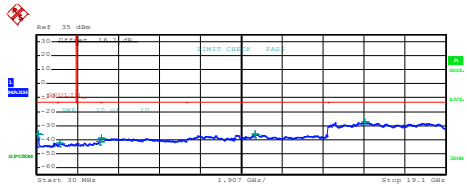
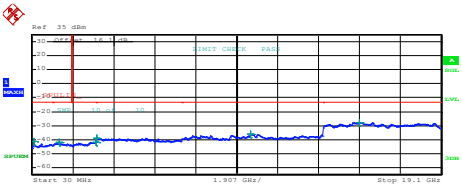
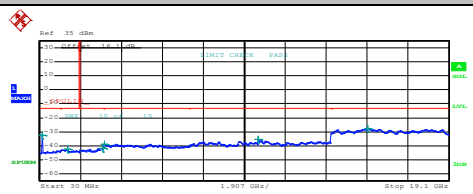
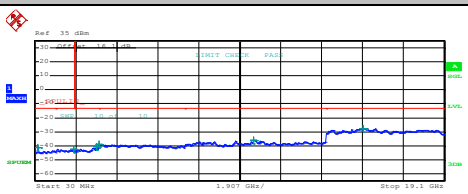
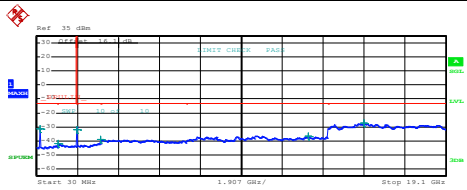
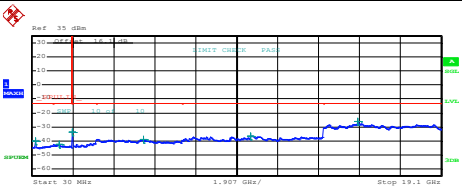
Date: 13.DEC.2017 11:49:22

Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	355.677500 M	-44.84	-31.84
855.000 M	1.000 G	1.00 M	855.072500 M	-37.84	-24.84
1.000 G	3.000 G	1.00 M	2.946000 G	-42.40	-29.40
3.000 G	7.000 G	1.00 M	4.098000 G	-39.94	-26.94
7.000 G	9.000 G	1.00 M	7.543500 G	-37.58	-24.58

Date: 13.DEC.2017 11:50:12

GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Start 30 MHz / 1.907 GHz / Stop 19.1 GHz Start [Hz] / Stop [Hz] / RBW [Hz] / Freq [Hz] / PwrAbs [dBm] / ΔLimit [dB] 30.000 M / 1.000 G / 1.00 M / 111.965000 M / -35.92 / -22.92 1.000 G / 1.845 G / 1.00 M / 1.091049 G / -42.38 / -29.38 1.915 G / 3.000 G / 1.00 M / 2.975859 G / -41.09 / -28.09 3.000 G / 7.000 G / 1.00 M / 3.027000 G / -39.00 / -26.00 7.000 G / 13.600 G / 1.00 M / 10.229875 G / -36.24 / -23.24 13.600 G / 19.100 G / 1.00 M / 15.316688 G / -27.51 / -14.51	Start 30 MHz / 1.907 GHz / Stop 19.1 GHz Start [Hz] / Stop [Hz] / RBW [Hz] / Freq [Hz] / PwrAbs [dBm] / ΔLimit [dB] 30.000 M / 1.000 G / 1.00 M / 112.207500 M / -41.41 / -28.41 1.000 G / 1.845 G / 1.00 M / 1.297440 G / -42.16 / -29.16 1.915 G / 3.000 G / 1.00 M / 2.997559 G / -41.63 / -28.63 3.000 G / 7.000 G / 1.00 M / 3.053000 G / -38.80 / -25.80 7.000 G / 13.600 G / 1.00 M / 10.213375 G / -35.94 / -22.94 13.600 G / 19.100 G / 1.00 M / 15.294000 G / -27.86 / -14.86
Date: 13.DEC.2017 13:40:07	Date: 13.DEC.2017 11:32:30
Middle Channel	**Middle Channel**
	
Start 30 MHz / 1.907 GHz / Stop 19.1 GHz Start [Hz] / Stop [Hz] / RBW [Hz] / Freq [Hz] / PwrAbs [dBm] / ΔLimit [dB] 30.000 M / 1.000 G / 1.00 M / 141.792500 M / -32.66 / -19.66 1.000 G / 1.845 G / 1.00 M / 1.312439 G / -42.51 / -29.51 1.915 G / 3.000 G / 1.00 M / 2.948734 G / -41.81 / -28.81 3.000 G / 7.000 G / 1.00 M / 3.028000 G / -39.02 / -26.02 7.000 G / 13.600 G / 1.00 M / 10.219150 G / -35.27 / -22.27 13.600 G / 19.100 G / 1.00 M / 15.316688 G / -27.66 / -14.66	Start 30 MHz / 1.907 GHz / Stop 19.1 GHz Start [Hz] / Stop [Hz] / RBW [Hz] / Freq [Hz] / PwrAbs [dBm] / ΔLimit [dB] 30.000 M / 1.000 G / 1.00 M / 142.035000 M / -41.16 / -28.16 1.000 G / 1.845 G / 1.00 M / 1.831058 G / -42.71 / -29.71 1.915 G / 3.000 G / 1.00 M / 2.874140 G / -40.87 / -27.87 3.000 G / 7.000 G / 1.00 M / 3.001000 G / -38.75 / -25.75 7.000 G / 13.600 G / 1.00 M / 10.220800 G / -36.17 / -23.17 13.600 G / 19.100 G / 1.00 M / 15.333875 G / -27.83 / -14.83
Date: 13.DEC.2017 13:42:06	Date: 13.DEC.2017 11:33:44
Highest Channel	**Highest Channel**
	
Start 30 MHz / 1.907 GHz / Stop 19.1 GHz Start [Hz] / Stop [Hz] / RBW [Hz] / Freq [Hz] / PwrAbs [dBm] / ΔLimit [dB] 30.000 M / 1.000 G / 1.00 M / 171.620000 M / -31.55 / -18.55 1.000 G / 1.845 G / 1.00 M / 1.032955 G / -42.12 / -29.12 1.915 G / 3.000 G / 1.00 M / 1.915271 G / -32.08 / -19.08 3.000 G / 7.000 G / 1.00 M / 3.006000 G / -38.86 / -25.86 7.000 G / 13.600 G / 1.00 M / 12.677650 G / -36.39 / -23.39 13.600 G / 19.100 G / 1.00 M / 15.298125 G / -27.02 / -14.02	Start 30 MHz / 1.907 GHz / Stop 19.1 GHz Start [Hz] / Stop [Hz] / RBW [Hz] / Freq [Hz] / PwrAbs [dBm] / ΔLimit [dB] 30.000 M / 1.000 G / 1.00 M / 171.620000 M / -40.18 / -27.18 1.000 G / 1.845 G / 1.00 M / 1.277583 G / -42.63 / -29.63 1.915 G / 3.000 G / 1.00 M / 1.915271 G / -33.83 / -20.83 3.000 G / 7.000 G / 1.00 M / 5.207000 G / -38.74 / -25.74 7.000 G / 13.600 G / 1.00 M / 10.216675 G / -36.35 / -23.35 13.600 G / 19.100 G / 1.00 M / 15.225250 G / -26.20 / -13.20
Date: 13.DEC.2017 13:42:58	Date: 13.DEC.2017 11:34:36

Frequency Stability

Test Conditions	Middle Channel	GSM850 (GPRS class 8)	GSM850 (EDGE class 8)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0036	0.0012	PASS
40	Normal Voltage	0.0024	0.0036	
30	Normal Voltage	0.0012	0.0024	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0024	0.0048	
0	Normal Voltage	0.0060	0.0036	
-10	Normal Voltage	0.0526	0.0335	
-20	Normal Voltage	0.0574	0.0538	
-30	Normal Voltage	0.0586	0.0514	
20	Maximum Voltage	0.0024	0.0012	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0036	0.0024	

Test Conditions	Middle Channel	GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0005	0.0016	PASS
40	Normal Voltage	0.0021	0.0000	
30	Normal Voltage	0.0027	0.0011	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0021	0.0021	
0	Normal Voltage	0.0021	0.0043	
-10	Normal Voltage	0.0043	0.0021	
-20	Normal Voltage	0.0101	0.0074	
-30	Normal Voltage	0.0016	0.0059	
20	Maximum Voltage	0.0043	0.0011	
20	Normal Voltage	0.0027	0.0000	
20	Battery End Point	0.0005	0.0011	

Note:

1. Normal Voltage = 3.7V. ；Battery End Point (BEP) = 3.4 V.；Maximum Voltage =4.3 V

2. The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

GPRS 850

GSM 850									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-56.68	-13	-43.68	-68.46	-58.44	0.98	4.89	H
	2472	-57.24	-13	-44.24	-74.31	-59.12	1.28	5.32	H
	3296	-58.54	-13	-45.54	-77.72	-61.95	1.54	7.10	H
	4120	-57.62	-13	-44.62	-77.94	-62.26	1.83	8.62	H
	4944	-53.56	-13	-40.56	-76.62	-58.69	2.30	9.59	H
									H
									H
	1648	-42.82	-13	-29.82	-55.1	-44.58	0.98	4.89	V
	2472	-52.83	-13	-39.83	-70.35	-54.71	1.28	5.32	V
	3296	-51.14	-13	-38.14	-70.59	-54.55	1.54	7.10	V
	4120	-57.27	-13	-44.27	-77.77	-61.91	1.83	8.62	V
	4944	-49.52	-13	-36.52	-72.41	-54.65	2.30	9.59	V
									V
									V

Middle	1672	-52.26	-13	-39.26	-64.32	-53.94	0.99	4.82	H
	2512	-56.66	-13	-43.66	-73.79	-58.63	1.29	5.41	H
	3344	-56.94	-13	-43.94	-76.38	-60.55	1.56	7.31	H
	4182	-57.39	-13	-44.39	-77.88	-62.01	1.87	8.64	H
	5016	-53.67	-13	-40.67	-76.95	-58.87	2.35	9.70	H
	5856	-52.98	-13	-39.98	-78.36	-57.84	2.83	9.84	H
									H
	1672	-41.84	-13	-28.84	-54.39	-43.52	0.99	4.82	V
	2512	-53.46	-13	-40.46	-71.06	-55.43	1.29	5.41	V
	3344	-47.57	-13	-34.57	-67.21	-51.18	1.56	7.31	V
	4182	-57.22	-13	-44.22	-77.81	-61.84	1.87	8.64	V
	5016	-46.56	-13	-33.56	-69.63	-51.76	2.35	9.70	V
	5856	-51.57	-13	-38.57	-76.91	-56.43	2.83	9.84	V
									V
Highest	1696	-53.27	-13	-40.27	-65.42	-54.87	1.00	4.75	H
	2544	-56.88	-13	-43.88	-74.05	-58.86	1.30	5.44	H
	3393	-50.84	-13	-37.84	-70.5	-54.65	1.57	7.53	H
	4241	-57.16	-13	-44.16	-77.85	-61.76	1.90	8.65	H
	5096	-52.48	-13	-39.48	-75.92	-57.64	2.39	9.70	H
									H
									H
	1696	-42.48	-13	-29.48	-55.12	-44.08	1.00	4.75	V
	2544	-52.36	-13	-39.36	-70.06	-54.34	1.30	5.44	V
	3393	-41.37	-13	-28.37	-61.1	-45.18	1.57	7.53	V
	4241	-57.29	-13	-44.29	-78.06	-61.89	1.90	8.65	V
	5096	-45.72	-13	-32.72	-68.99	-50.88	2.39	9.70	V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EDGE 850

EDGE 850									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-62.92	-13	-49.92	-74.67	-64.68	0.98	4.89	H
	2472	-60.83	-13	-47.83	-77.87	-62.71	1.28	5.32	H
	3296	-59.54	-13	-46.54	-78.73	-62.95	1.54	7.10	H
									H
									H
									H
									H
	1648	-50.31	-13	-37.31	-62.47	-52.07	0.98	4.89	V
	2472	-60.19	-13	-47.19	-77.65	-62.07	1.28	5.32	V
	3296	-51.63	-13	-38.63	-71.09	-55.04	1.54	7.10	V
									V
									V
									V
									V
Middle	1672	-61.14	-13	-48.14	-73.21	-62.82	0.99	4.82	H
	2512	-60.71	-13	-47.71	-77.85	-62.68	1.29	5.41	H
	3344	-59.57	-13	-46.57	-78.95	-63.18	1.56	7.31	H
									H
									H
									H
									H
	1672	-49.76	-13	-36.76	-62.23	-51.44	0.99	4.82	V
	2512	-60.34	-13	-47.34	-77.94	-62.31	1.29	5.41	V
	3344	-47.96	-13	-34.96	-67.6	-51.57	1.56	7.31	V
									V
									V
									V
									V

Highest	1696	-54.44	-13	-41.44	-66.6	-56.04	1.00	4.75	H
	2544	-56.77	-13	-43.77	-73.98	-58.75	1.30	5.44	H
	3392	-59.22	-13	-46.22	-78.86	-63.02	1.57	7.52	H
									H
									H
									H
									H
	1696	-49.08	-13	-36.08	-61.75	-50.68	1.00	4.75	V
	2544	-58.54	-13	-45.54	-76.24	-60.52	1.30	5.44	V
	3392	-52.74	-13	-39.74	-72.52	-56.54	1.57	7.52	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GPRS 1900

GPRS 1900									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-52.12	-13	-39.12	-72.4	-58.69	1.67	8.24	H
	5550	-50.16	-13	-37.16	-75.05	-57.23	2.65	9.72	H
	7404	-49.16	-13	-36.16	-75.75	-58.31	2.46	11.61	H
	9252	-48.97	-13	-35.97	-78.91	-59.03	2.54	12.60	H
									H
									H
									H
	3702	-48.57	-13	-35.57	-68.84	-55.14	1.67	8.24	V
	5550	-46.62	-13	-33.62	-71.56	-53.69	2.65	9.72	V
	7404	-40.52	-13	-27.52	-67.42	-49.67	2.46	11.61	V
	9252	-45.42	-13	-32.42	-75.8	-55.48	2.54	12.60	V
									V
									V
									V
Middle	3762	-56.74	-13	-43.74	-76.95	-63.37	1.69	8.31	H
	5640	-54.24	-13	-41.24	-79.33	-61.29	2.71	9.76	H
	7518	-49.62	-13	-36.62	-76.32	-59.01	2.42	11.81	H
	9399	-49.95	-13	-36.95	-80.35	-59.92	2.57	12.54	H
									H
									H
									H
	3762	-48.65	-13	-35.65	-68.99	-55.28	1.69	8.31	V
	5640	-49.56	-13	-36.56	-74.68	-56.61	2.71	9.76	V
	7518	-41.64	-13	-28.64	-68.63	-51.03	2.42	11.81	V
	9399	-45.10	-13	-32.10	-75.92	-55.07	2.57	12.54	V
									V
									V
									V

Highest	3822	-56.93	-13	-43.93	-77.21	-63.61	1.71	8.39	H
	5730	-51.25	-13	-38.25	-76.53	-58.28	2.76	9.79	H
	7638	-52.58	-13	-39.58	-79.69	-62.08	2.38	11.88	H
	9546	-49.79	-13	-36.79	-80.57	-59.66	2.60	12.47	H
									H
									H
									H
	3822	-51.35	-13	-38.35	-71.61	-58.03	1.71	8.39	V
	5730	-44.79	-13	-31.79	-70.1	-51.82	2.76	9.79	V
	7638	-48.81	-13	-35.81	-76.18	-58.31	2.38	11.88	V
	9546	-45.27	-13	-32.27	-76.37	-55.14	2.60	12.47	V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EDGE1900

EDGE 1900									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-58.26	-13	-45.26	-78.56	-64.83	1.67	8.24	H
	5550	-55.65	-13	-42.65	-80.62	-62.72	2.65	9.72	H
	7404	-54.13	-13	-41.13	-80.74	-63.28	2.46	11.61	H
									H
									H
									H
									H
	3702	-54.86	-13	-41.86	-75.3	-61.43	1.67	8.24	V
	5550	-54.67	-13	-41.67	-79.48	-61.74	2.65	9.72	V
	7404	-48.99	-13	-35.99	-75.84	-58.14	2.46	11.61	V
									V
									V
									V
									V
Middle	3762	-58.06	-13	-45.06	-78.3	-64.69	1.69	8.31	H
	5640	-55.76	-13	-42.76	-80.77	-62.81	2.71	9.76	H
	7518	-53.87	-13	-40.87	-80.78	-63.26	2.42	11.81	H
									H
									H
									H
									H
	3762	-56.88	-13	-43.88	-77.21	-63.51	1.69	8.31	V
	5640	-52.90	-13	-39.90	-77.89	-59.95	2.71	9.76	V
	7518	-53.66	-13	-40.66	-80.69	-63.05	2.42	11.81	V
									V
									V
									V
									V

Highest	3822	-58.46	-13	-45.46	-78.71	-65.14	1.71	8.39	H
	5730	-55.30	-13	-42.30	-80.62	-62.33	2.76	9.79	H
	7638	-53.52	-13	-40.52	-80.57	-63.02	2.38	11.88	H
									H
									H
									H
									H
	3822	-57.83	-13	-44.83	-78.11	-64.51	1.71	8.39	V
	5730	-53.94	-13	-40.94	-79.09	-60.97	2.76	9.79	V
	7638	-53.23	-13	-40.23	-80.6	-62.73	2.38	11.88	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.