SGS-CSTC Standards Technical Services Co., Ltd.

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1 Cover page

FCC REPORT

Application No:	SZEM1105000766RF (SGS SH NO.:SHES1105000845IT)
Applicant:	SHANDONG KAER ELECTRIC CO., LTD.
Product Name:	The GSM fixed wireless phone (business type)
Operation Frequency:	GSM850/1900
FCC ID:	ZMXKAERKT1000
Standards:	FCC Part 2, FCC Part 22, FCC Part 24
Date of Receipt:	2011-05-26
Date of Test:	2011-05-27 to 2011-06-10
Date of Issue:	2011-08-02
Test Result :	**PASS ***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

2 Contents

3 Test Summary

Test Item	Section in CFR 47	Result
RF Power Output	FCC Part 2.1046(a) FCC Part 22.913(a) FCC Part 24.232(c)	**Pass**
99% Occupied Bandwidth	FCC Part 2.1049(h)	**Pass**
Effective Isotropic Radiated Power	FCC Part 2.1046(a) FCC Part 22.913(a) FCC Part 22.232(c)	**Pass**
Out of Band Emissions at antenna Terminals	FCC Part 2.1051 FCC Part 22.917(a) FCC Part 24.238(a)	**Pass**
Band Edge	FCC Part 2.1051 FCC Part 22.917(a) FCC Part 24.238(a)	**Pass**
Field Strength of Spurious Emissions	FCC Part 2.1053 FCC Part 22.917(a) FCC Part 24.238(a)	**Pass**
Frequency Stability vs. Temperature and Voltage	FCC Part 2.1055(a)&(d)	**Pass**

Remark: Pass: The EUT complies with the essential requirements in the standard.

Fail: The EUT does not comply with the essential requirements in the standard.

4 General Information

4.1 Client Information

Applicant:	SHANDONG KAER ELECTRIC CO., LTD.
Address of Applicant:	58 Dalian Road, Weihai, Shandong.
Manufacturer/Factory:	SHANDONG KAER ELECTRIC CO., LTD.
Address of Manufactory/ Factory:	58 Dalian Road, Weihai, Shandong.

4.2 General Description of E.U.T.

Product Name:	The GSM fixed wireless phone (business type)
Model No.:	KT1000
Trade mark:	KAER
Support Frequency Band:	GSM850/1900
Type of modulation:	GMSK
Test power grade:	GSM 850 PCL 5-19 PCS 1900 PCL 0-15
Antenna gain:	2.0dBi
AC/DC Adapter:	AC/DC adapter Model: NLA100046W1A INPUT: AC100-240V 50/60Hz 0.2A Max OUTPUT: DC4.6V 1A
EUT power supply:	3.7V LITHIUM-ION 800mAh（2.96Wh）

GSM

	Operating frequency		Rated Power
Cellular phone standards Frequency Range and Power:	GSM 850	824.2MHz-848.8MHz	33dBm
	PCS 1900	1850.2MHz-1909.8MHz	30dBm
IMEI:	359644030071320		

Note: GSM 850

Channel	Channel number	Frequency（MHz）
lowest channel	128	824.2
middle channel	189	836.4
highest channel	251	848.8

Note: PCS1900

Channel	Channel number	Frequency（MHz）
lowest channel	512	1850.2
middle channel	661	1880.0
highest channel	810	1909.8

4.3 Test environment and mode

Test Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1006 mbar
Test mode:	
Traffic mode(850 MHz)	A Communication link was established in the mentioned band 1.ABT and RXQ were observed during test according to the standard 2.Continuing working in correct operating mode after test
Traffic mode(1900 MHz)	A Communication link was established in the mentioned band 1.ABT and RXQ were observed during test according to the standard 2.Continuing working in correct operating mode after test
Idle mode(850 MHz)	The EUT was registered in the mentioned band.
Idle mode(1900 MHz)	The EUT was registered in the mentioned band.
Traffic mode(850 MHz) + charger mode	A Communication link was established in the mentioned band 1.ABT and RXQ were observed during test according to the standard 2.Continuing working in correct operating mode after test
Traffic mode(1900 MHz) + charger mode	A Communication link was established in the mentioned band 1.ABT and RXQ were observed during test according to the standard 2.Continuing working in correct operating mode after test
Idle mode(850 MHz) + charger mode	The EUT was registered in the mentioned band.
Idle mode(1900 MHz) + charger mode	The EUT was registered in the mentioned band.
Charge mode	Keep the AC/DC adapter charge to EUT.

4.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**
  CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.
- **VCCI**
  The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.
  Date of Registration: September 29, 2008. Valid until September 28, 2011.
- **FCC – Registration No.: 556682**
  SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 556682, March 16, 2011
- **Industry Canada (IC)**
  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

4.5 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab
No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057
Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594
No tests were sub-contracted.

4.6 Other Information Requested by the Customer

None.

4.7 Description of Support Units

The EUT was tested with associated equipment as below:

Description	Manufacturer	Model No.
DC power	Zhao Xin	RXN-305D

4.8 Test Instruments list

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2010-06-10	2011-06-10
2	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2011-06-10	2012-06-10
3	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2011-05-26	2012-05-26
4	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
5	Coaxial cable	SGS	N/A	SEL0028	2010-05-29	2011-05-29
6	Coaxial cable	SGS	N/A	SEL0028	2011-05-29	2012-05-29
7	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2010-11-09	2011-11-09
8	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2010-11-09	2011-11-09
9	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2010-11-09	2011-11-09
10	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2011-05-26	2012-05-26
11	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2010-10-27	2011-10-27
12	Pre-amplifier (18-26GHz)	Compliance Directions Systems Inc.	AFS33-18002 650-30-8P-44	SEL0080	2010-06-04	2011-06-04
13	Pre-amplifier (18-26GHz)	Compliance Directions Systems Inc.	AFS33-18002 650-30-8P-44	SEL0080	2011-06-04	2012-06-04
14	Band filter	Amindeon	82346	SEL0094	2011-05-26	2012-05-26
15	Bilogical Antenna	A.H. Systems, inc	SAS-521-2	SEL0122	2010-11-01	2011-11-01
16	Power sensors	Rohde & Schwarz	URV 5Z2	SEL0072	2011-03-19	2012-03-19
17	Power Meter	Rohde & Schwarz	NRVD	SEL0069	2011-01-25	2012-01-25
18	Power Meter	R & S	NRVS	SEL0144	2011-01-25	2012-01-25
19	Coaxial Cable	SGS	N/A	N/A	2011-01-25	2012-01-25
20	Power Divider(splitter)	Agilent Technologies	11636B	SEL0130	2010-07-09	2011-07-09
21	Universal radio communication tester	Rohde & Schwarz	CMU200	SEL0091	2010-10-27	2011-10-27
22	Spectrum Analyzer	Rohde & Schwarz	FSP 30	SEL0154	2010-07-27	2011-07-27
23	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0014	2010-07-09	2011-07-09
24	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0005	2010-07-09	2011-07-09
25	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0075	2010-07-09	2011-07-09
26	SignalGenerator (9kHz-3.3GHz)	Rohde & Schwarz	SML03	SEL0068	2011-05-26	2012-05-26
27	SignalGenerator (10M-27GHz)	Rohde & Schwarz	SMR27	SEL0067	2010-06-23	2011-06-23

General used equipment						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102 to SEL0103	2010-11-04	2011-11-04
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2011-03-10	2012-03-10
3	Barometer	ChangChun	DYM3	SEL0088	2011-05-18	2012-05-18

5 Test results and Measurement Data

5.1 RF Power Output:

Standard requirement:	FCC Part 2.1046, ANSI/TIA-603-C FCC Part 22.913(a) Mobile station are limited to 7W. FCC Part 24.232(c) Peak Power measurement limited to 2W.

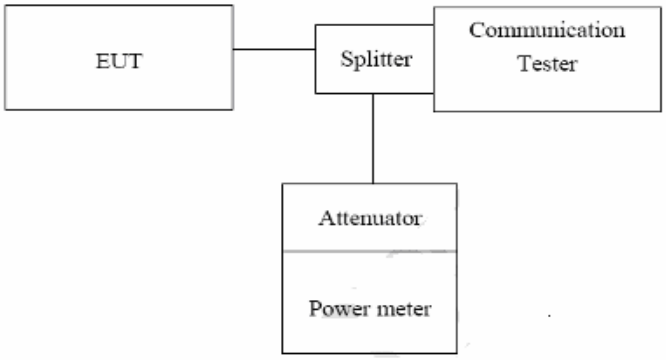
Maximum Output Powers With GSM 850 for test：

Normal Peak output power:	Limit:
30dBm	7W(38.45dBm)

Maximum Output Powers With PCS 1900 for test：

Normal Peak output power:	Limit:
30dBm	2W(33.0dBm)

Test Setup:



Measurement Setup for testing on Antenna connector.

The transmitter output was connected to calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power in dBm. The power output at the transmitter antenna port was determined by adding the value of attenuator to the power meter reading.

Test Instruments:	Refer to section 4.8 for details
Test mode:	Traffic mode
Test results:	Pass

Measurement Result:

RF Conducted output power

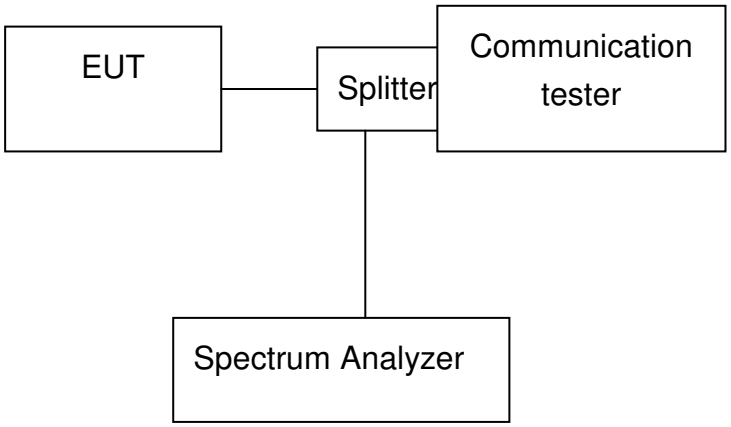
GSM 850 Result：

Frequency(MHz)	Channel:	Peak power (dBm)	AV power (dBm)
824.2	128	33.00	32.95
836.4	189	32.93	32.87
848.8	251	32.81	32.75

PCS 1900 Result：

Frequency(MHz)	Channel:	Peak power (dBm)	AV power (dBm)
1850.2	512	29.02	28.93
1880.0	661	29.65	29.63
1909.8	810	29.08	29.05

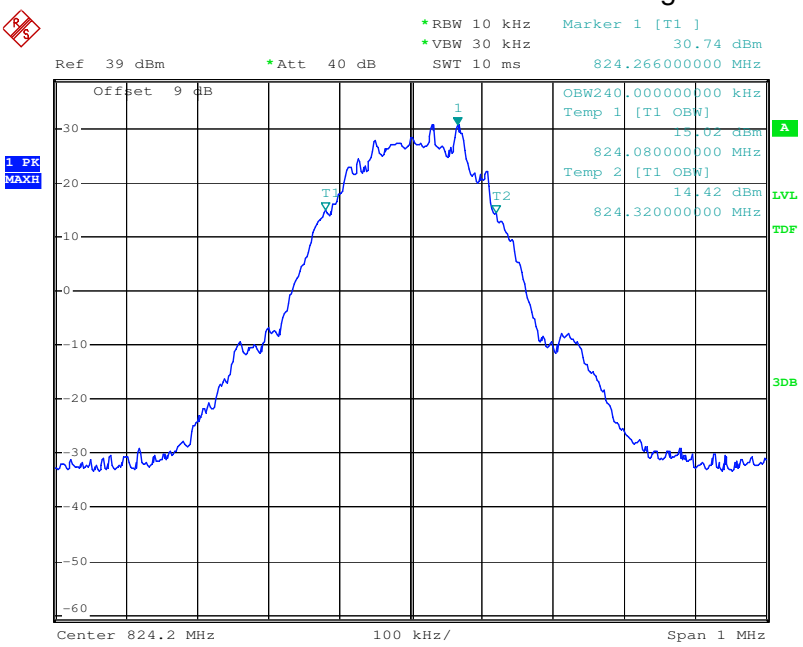
5.2 Occupied Bandwidth

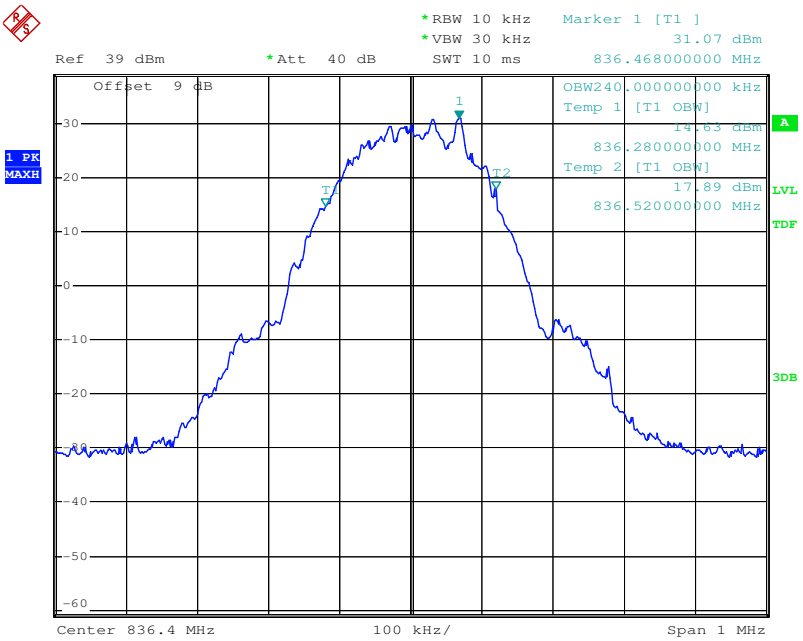
Test Requirement:	FCC Part 2.1049, ANSI/TIA-603-C
Test procedure:	The EUT output RF connector was connected with a short a cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW>=3 times RBW, 99% bandwidth were measured, the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.
Test setup:	
Test Instruments:	Refer to section 4.8 for details
Test mode:	Traffic mode
Test results:	Pass

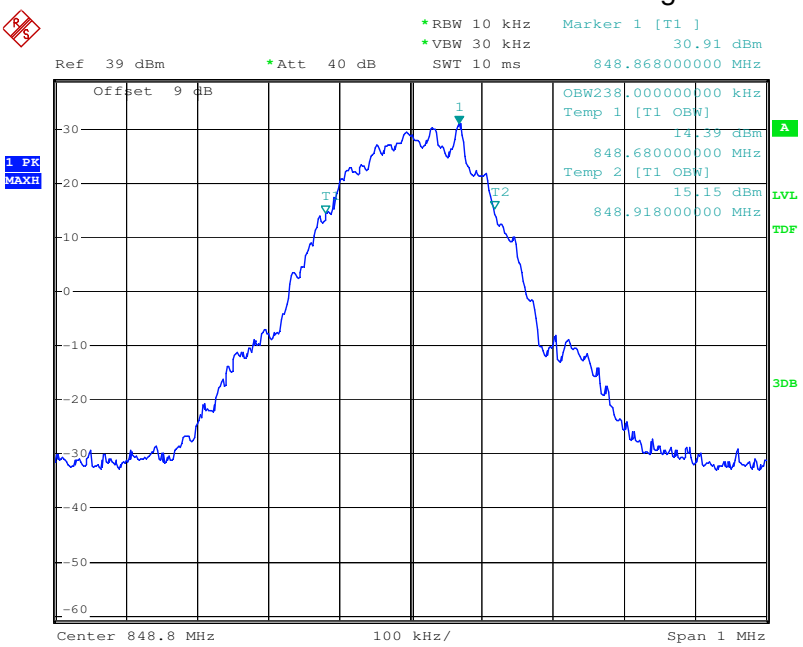
Test result:

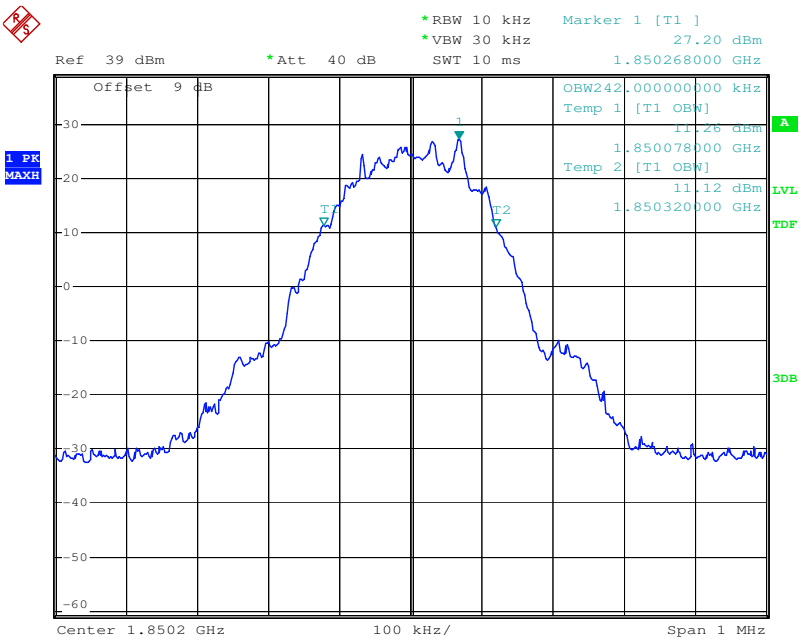
EUT Mode	Frequency(MHz)	Channel number	99% Bandwidth (kHz)
GSM 850	824.2	128	240.0
	836.6	189	240.0
	848.8	251	238.0

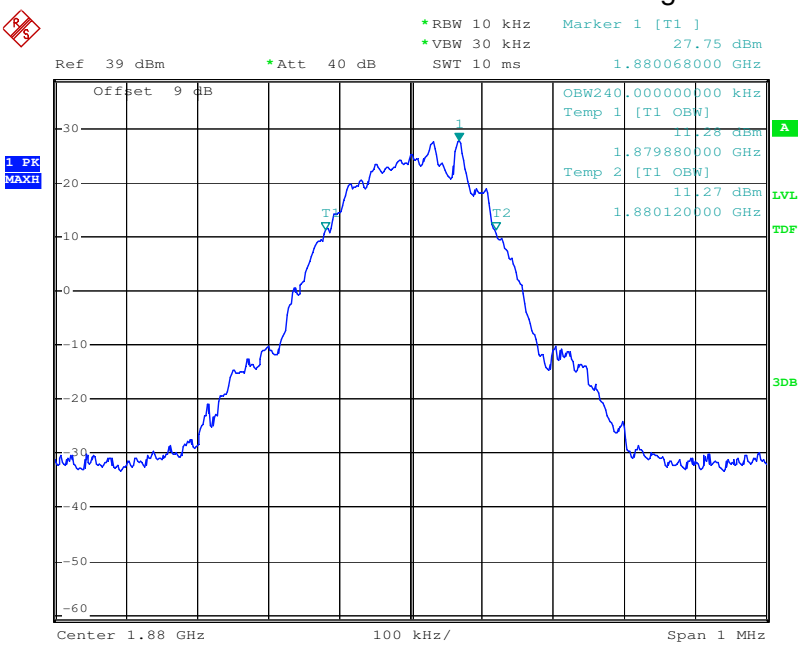
EUT Mode	Frequency(MHz)	Channel number	99% Bandwidth (kHz)
PCS1900	1850.2	512	242.0
	1880.0	661	240.0
	1909.8	810	238.0

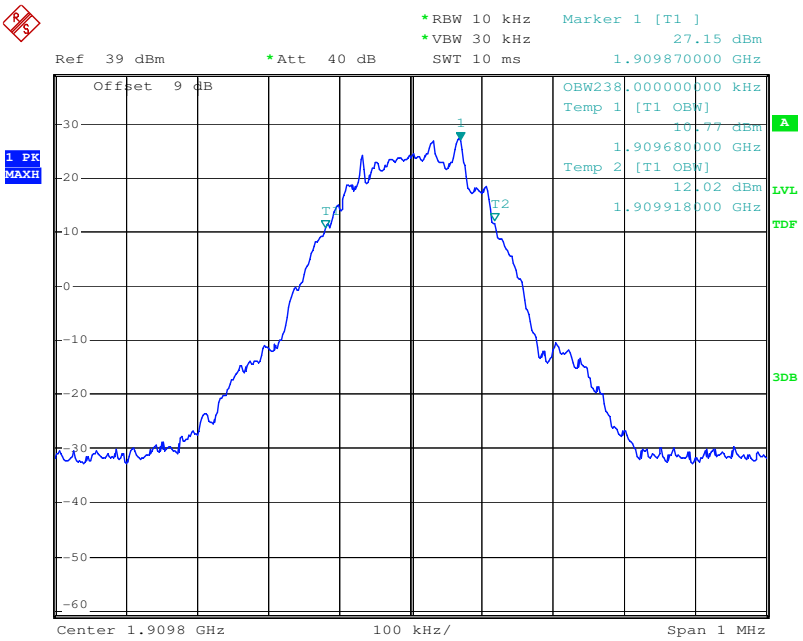












5.3 Effective Isotropic Radiated Power

Test Requirement:	FCC Part 2.1046, ANSI/TIA-603-C FCC Part 24.232 Mobile station are Limited to 2W ERP. FCC Part 22.913 Mobile station are limited to 7W EIRP.
Receiver setup:	

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	300KHz	1MHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value

Test Procedure:

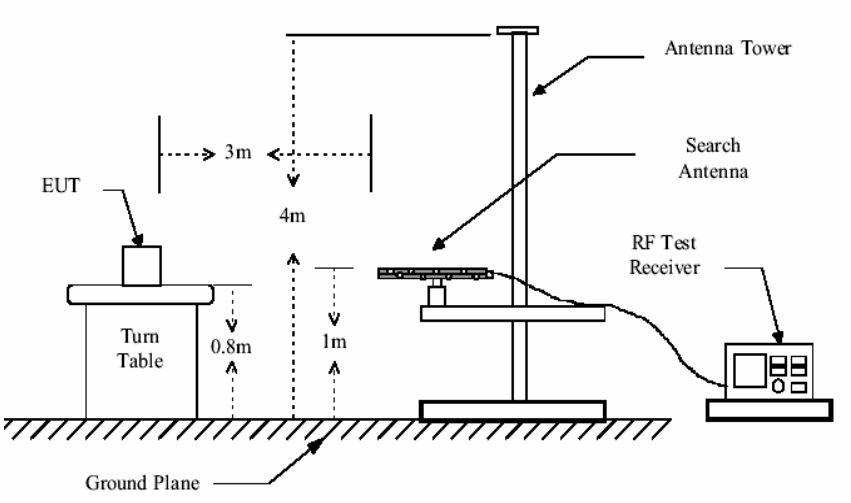
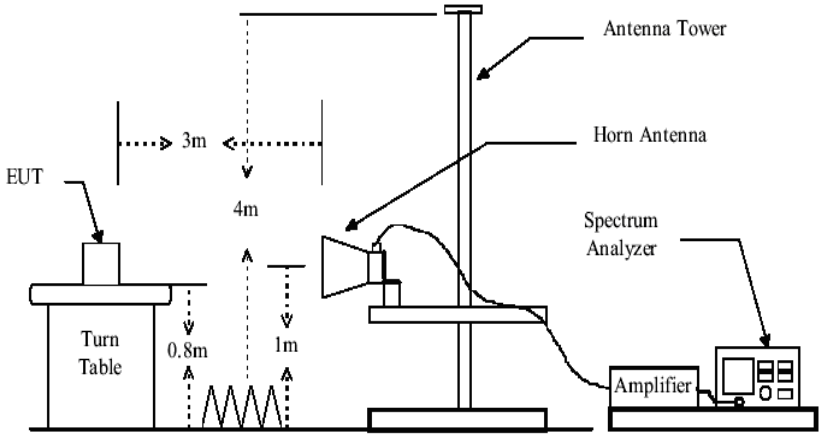
The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength(E in dBuV/m) was calculated.

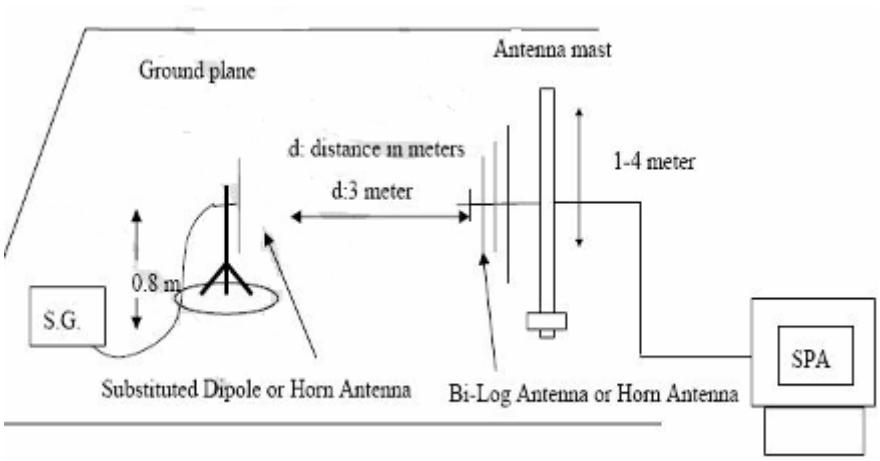
ERP in frequency band 824.2-848.8MHz were measured using substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follow:

EIRP in frequency band 1710-1755MHz and 1850.5-1909.8MHz were measured using a substitution method. The EUT was replaced by a 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)-2.15

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

Test setup:	(a)Below 1GHz  (b)Above 1GHz  (c)Substituted Method Test setup:

	
Test Instruments:	Refer to section 4.8 for details
Test mode:	Traffic mode
Test results:	Pass

Measurement result:

The RBW, VBW of SPA for frequency

Below 1GHz was RBW=300KHz, VBW=1MHz;

Above 1GHz was RBW=1MHz, VBW=3MHz.

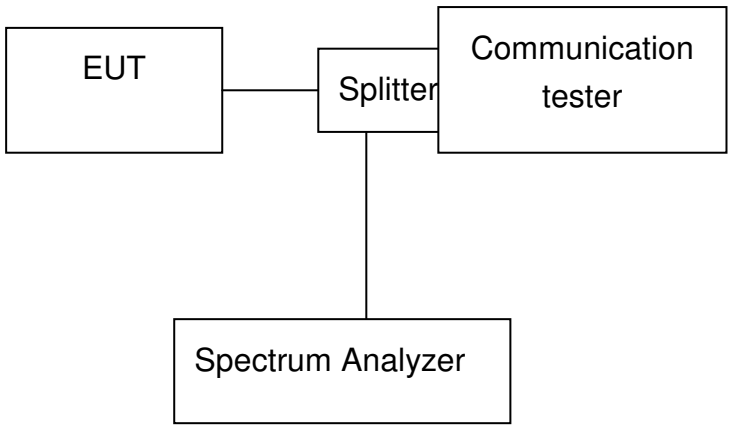
EUT mode	Frequency (MHz)	CH.	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. output (dBm)	Antenna Gain (dBi)	Cable loss (dB)	ERP (dBm)	Limit (dBm)
GSM 850	824.2	128	H	V	114.72	29.41	5.40	3.31	29.35	38.45
				H	116.80	30.31	5.40	3.31	30.25	38.45
	836.4	189	H	V	115.47	30.24	4.60	3.35	29.34	38.45
				H	116.90	31.85	4.60	3.35	30.95	38.45
	848.8	251	H	V	113.70	30.03	4.80	3.41	29.27	38.45
				H	116.21	31.78	4.80	3.41	31.02	38.45

EUT mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. output (dBm)	Antenna Gain (dBi)	Cable loss (dB)	EIRP (dBm)	Limit (dBm)
PCS 1900	1850.2	512	H	V	108.31	23.43	8.40	5.42	26.41	33.00
				H	109.41	24.35	8.40	5.42	27.33	33.00
	1880.0	661	H	V	107.25	23.01	8.80	5.56	26.25	33.00
				H	108.64	34.58	8.80	5.56	27.82	33.00
	1809.8	810	H	V	105.25	22.45	9.20	5.50	26.15	33.00
				H	106.50	23.94	9.20	5.50	27.64	33.00

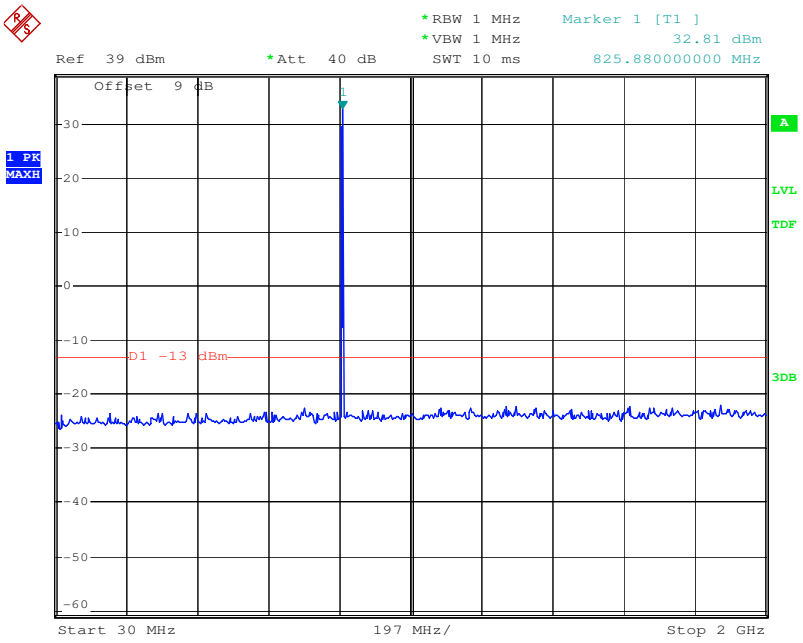
ERP=S.G. output (dBm) + Antenna Gain (dBi) - Cable Loss(dB)-2.15

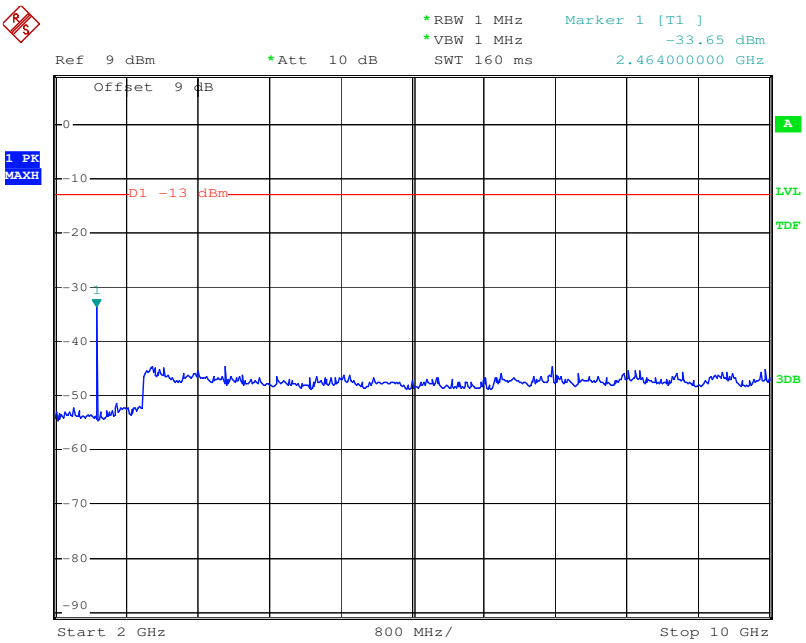
EIRP=S.G.output(dBm)+AntennaGain(dBi)-CableLoss(dB)

5.4 Out of band emissions at antenna Terminals

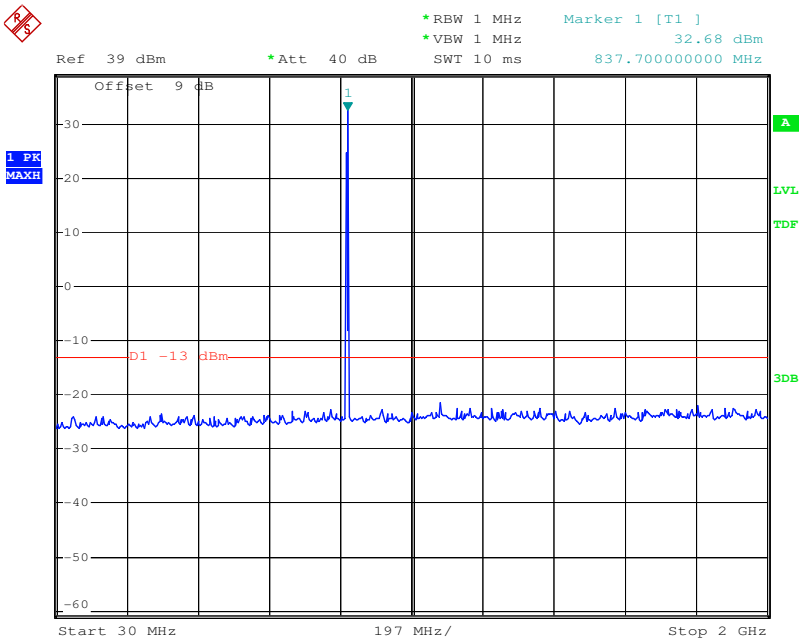
Test Requirement:	FCC Part 2.1051, ANSI/TIA-603-C
	FCC part 22.917(a), 24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specification in the instruction manual and/or alignment procedure, shall not be less than 43+10log(Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).
Test Procedure:	The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10th harmonic. For the out of band: set RBW, VBW=1MHz, stat=30MHz, stop= 10 th harmonic. Limit= -13dBm Band Edge requirements: In 1Mhz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 % of bandwidth of fundamental emission of the transmitter any be employed to measure the out of band emission. Limit=-13dBm.
Test setup:	 *Remark:* *Offset the High-Frequency cable loss 9.0dB in the spectrum analyzer.*
Test Instruments:	Refer to section 4.8 for details
Test results:	Pass

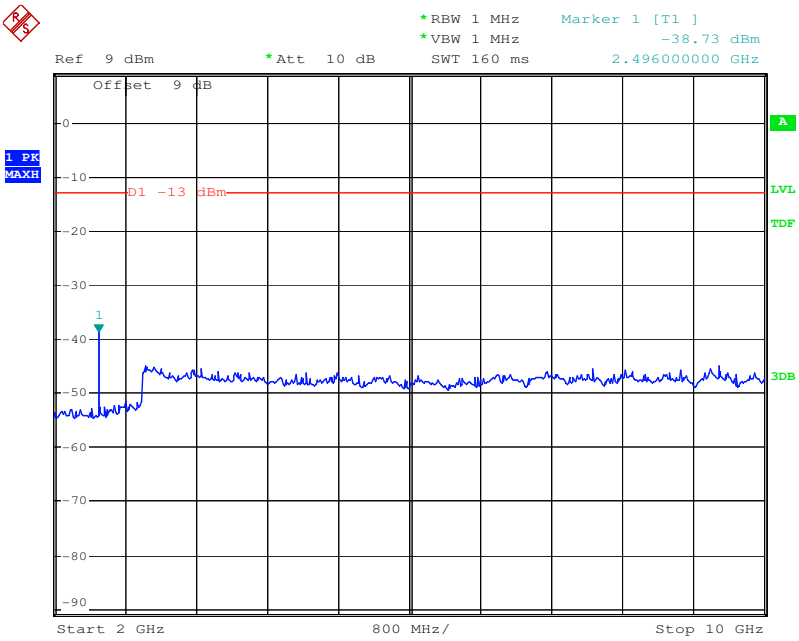
GSM 850 Channel Low



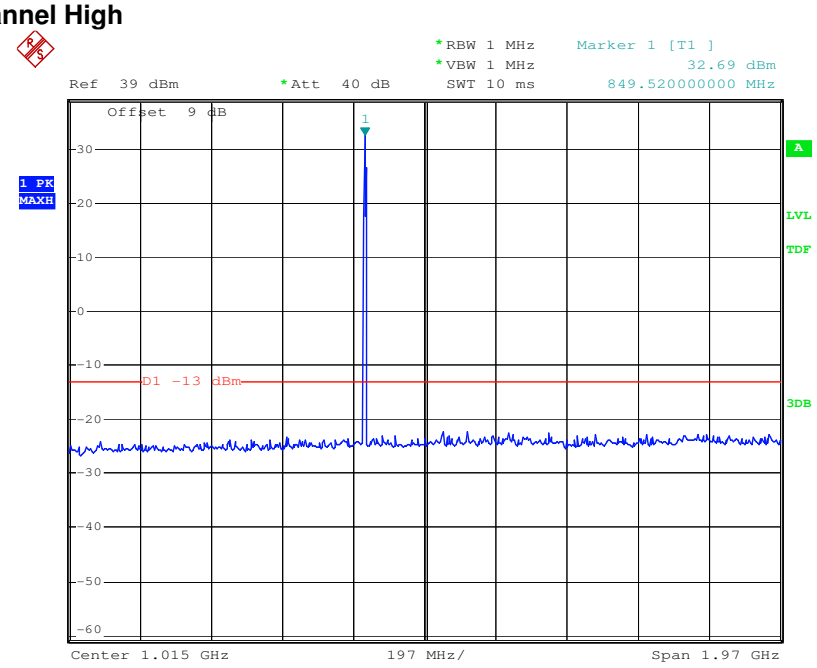


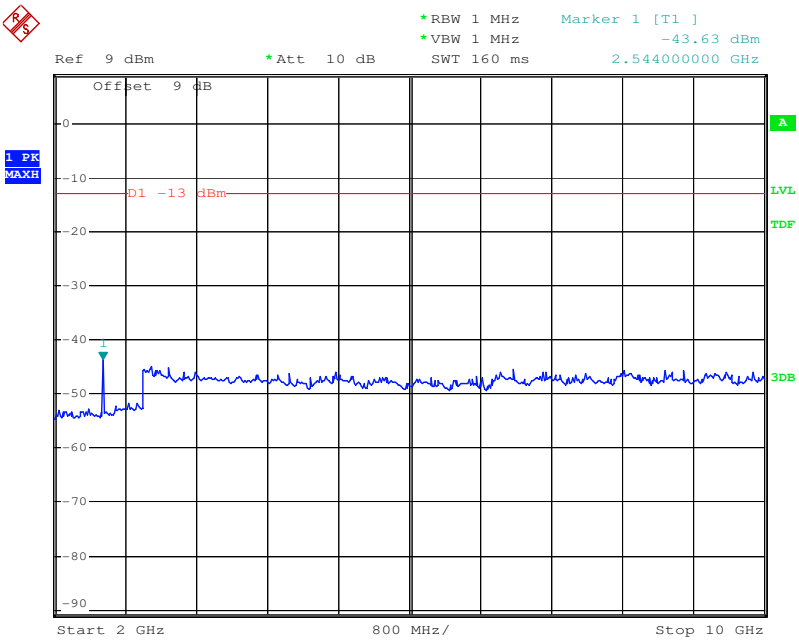
GSM 850 Channel Mid



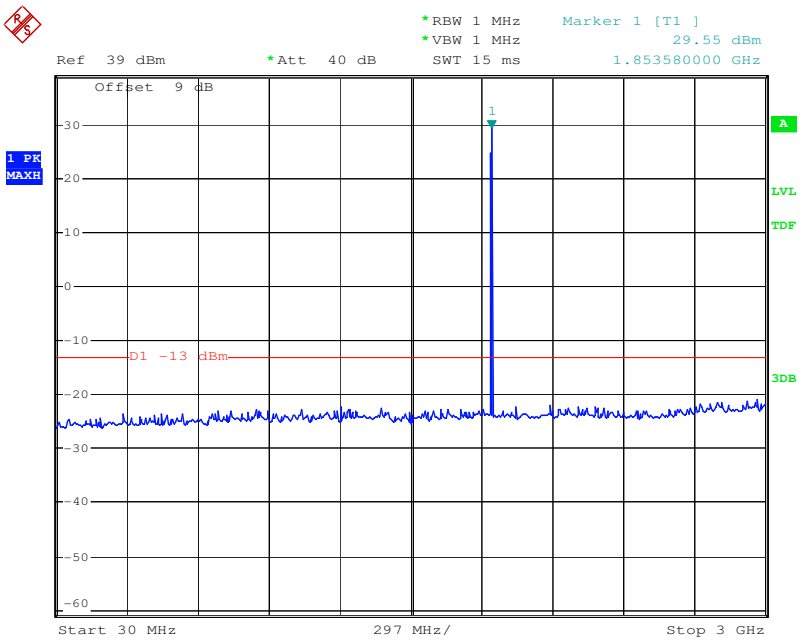


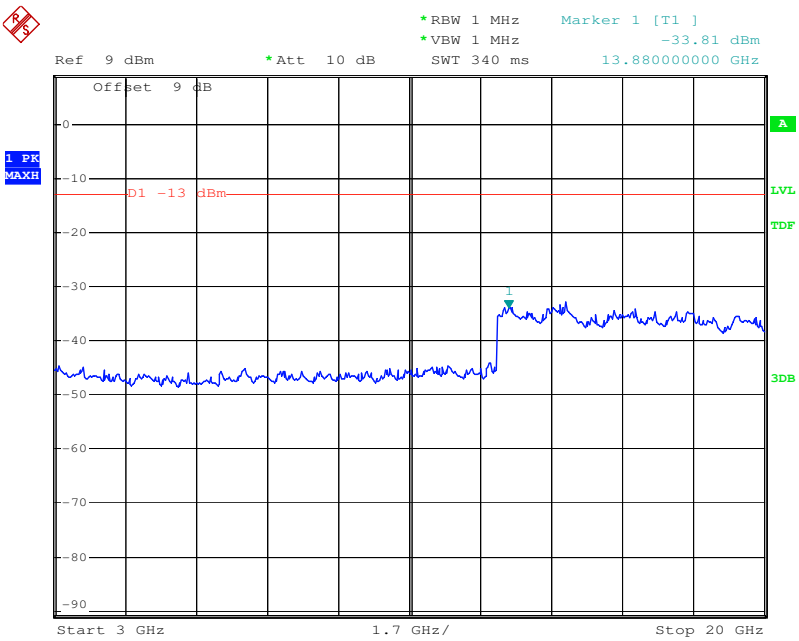
GSM 850 Channel High



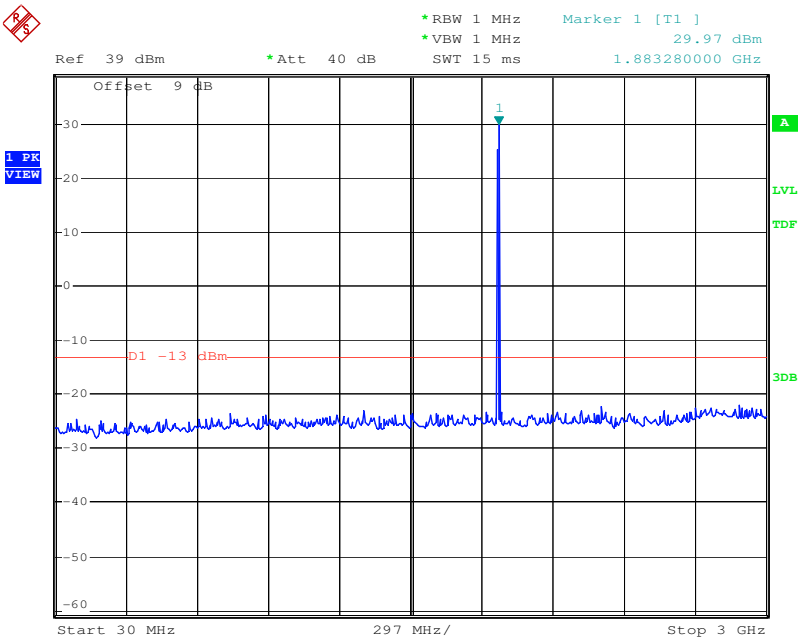


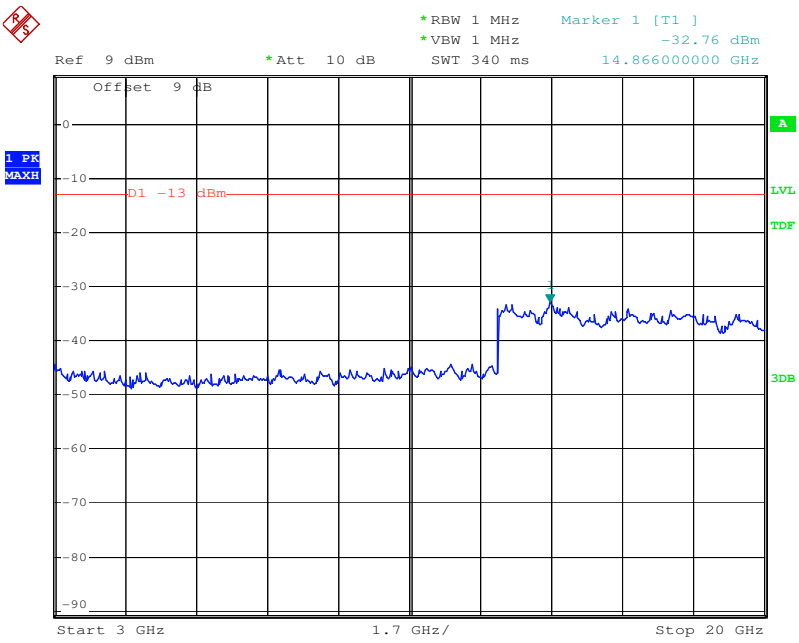
PCS 1900 Channel Low



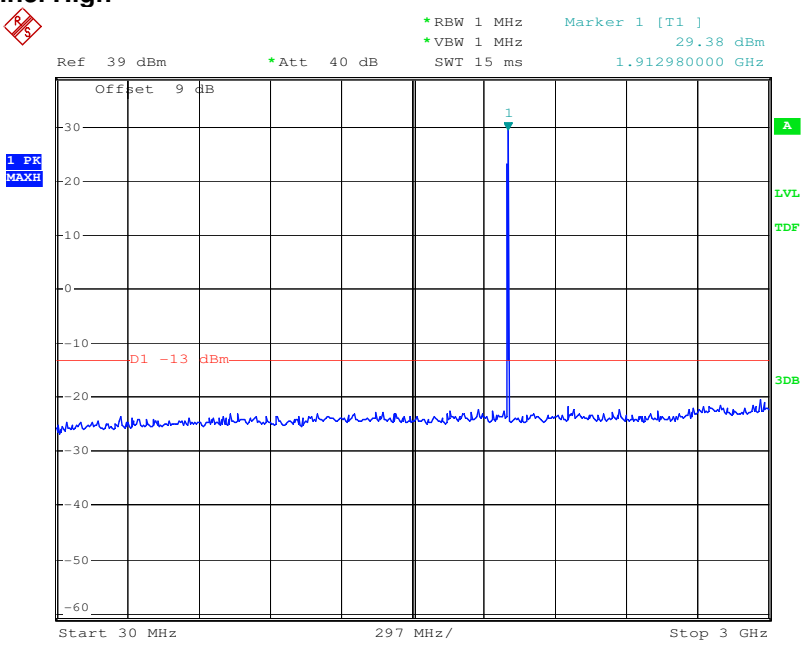


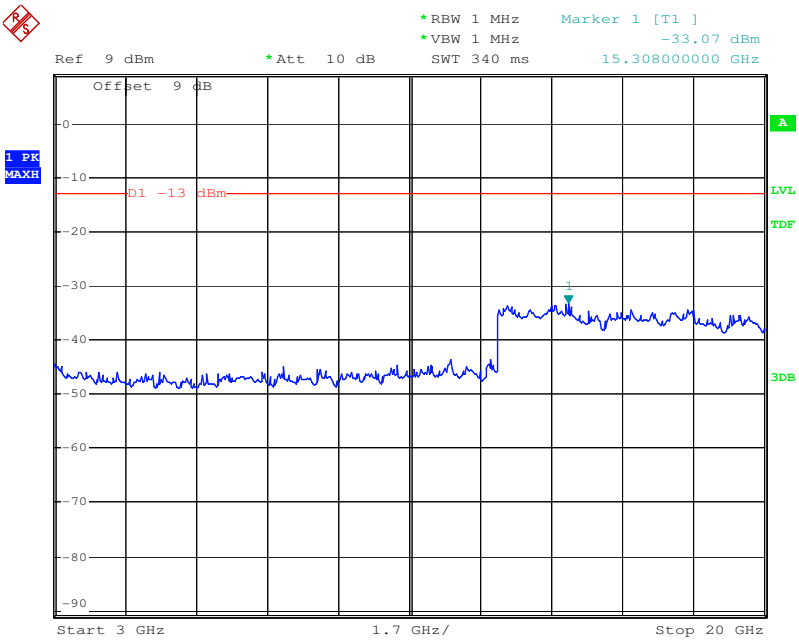
PCS 1900 Channel Mid



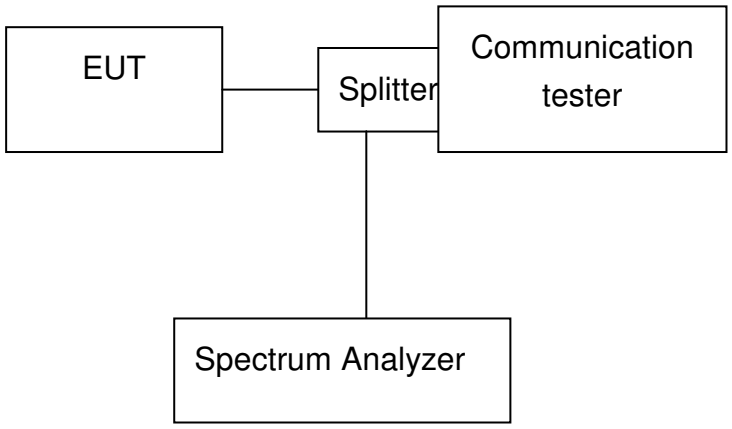


PCS 1900 Channel High

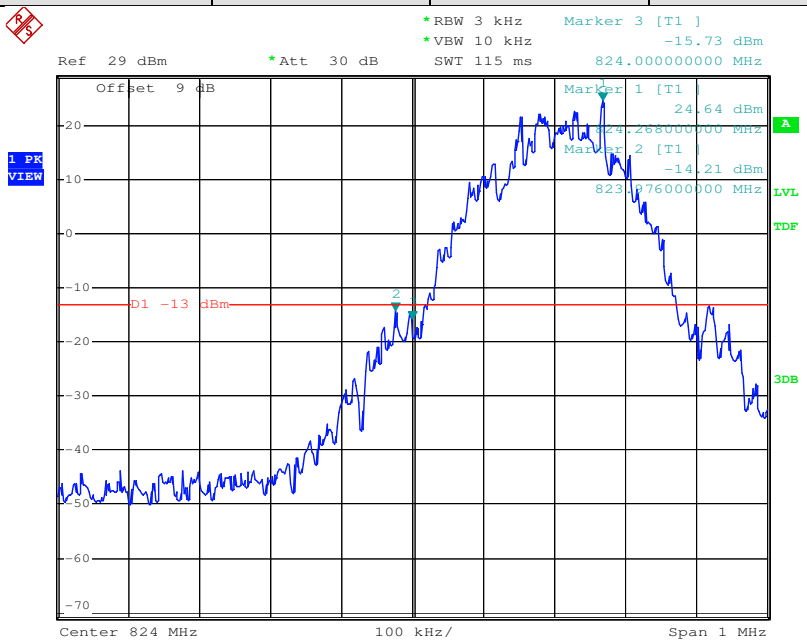




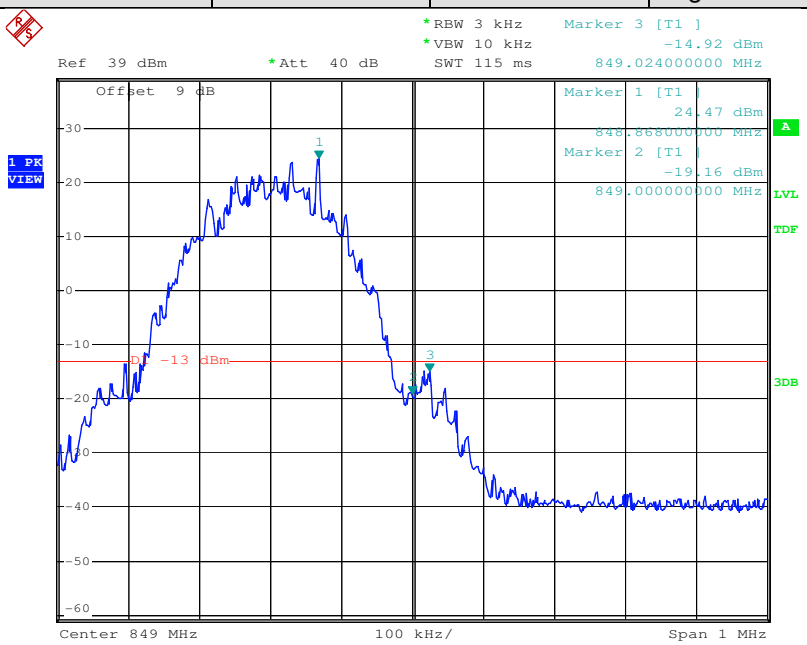
5.5 Band Edge

Test Requirement:	FCC Part 2.1051, ANSI/TIA-603-C
	FCC part 22.917(a), 24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specification in the instruction manual and/or alignment procedure, shall not be less than 43+10log(Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).
Test Procedure:	The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10th harmonic. For the out of band: set RBW/VBW=3kHz/10kHz,. Limit= -13dBm Band Edge requirements: In 1Mhz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 % of bandwidth of fundamental emission of the transmitter any be employed to measure the out of band emission. Limit=-13dBm.
Test setup:	 *Remark:* *Offset the High-Frequency cable loss 9.0dB in the spectrum analyzer.*
Test Instruments:	Refer to section 4.8 for details
Test results:	Pass

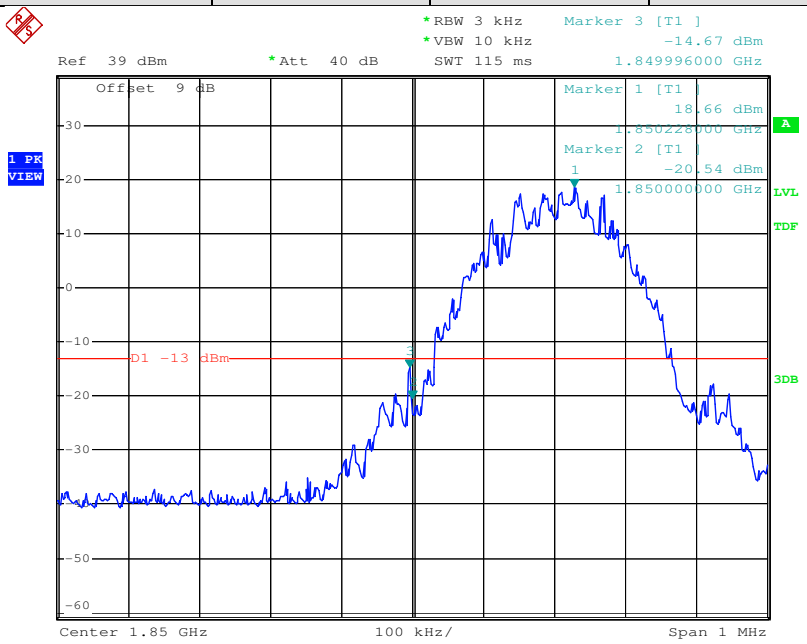
GSM850	Test mode:	Traffic mode	Test channel:	Lowest



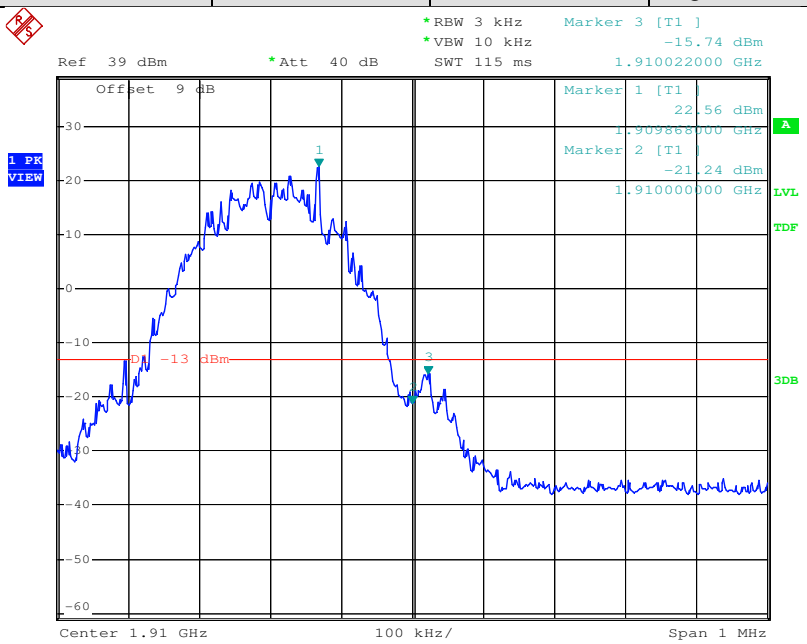
GSM850	Test mode:	Traffic mode	Test channel:	Highest



PCS1900	Test mode:	Traffic mode	Test channel:	Lowest

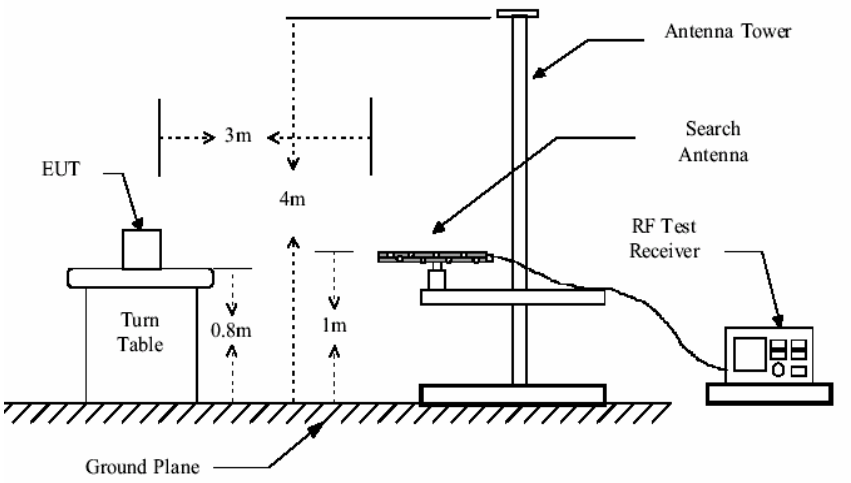
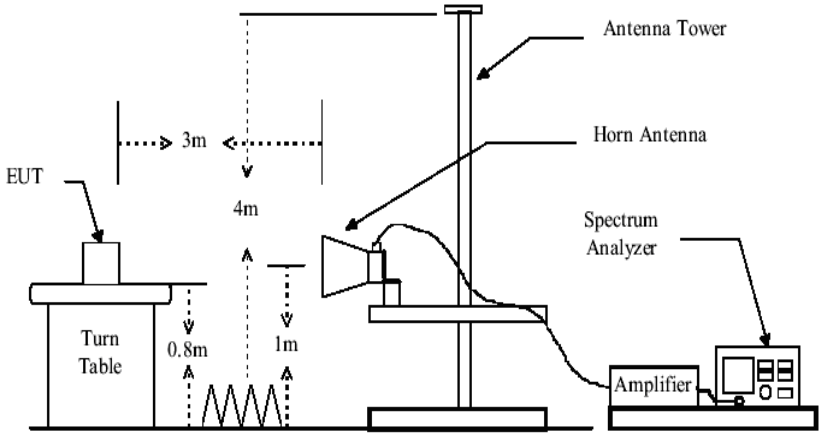


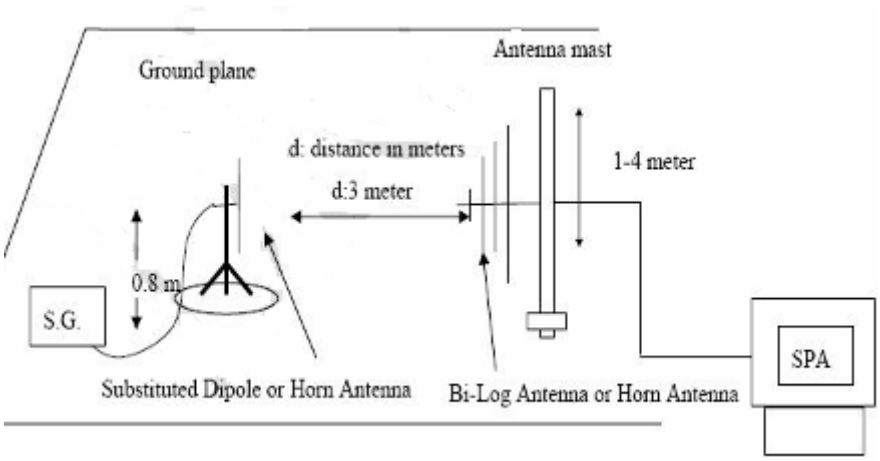
PCS1900	Test mode:	Traffic mode	Test channel:	Highest



5.6 Field Strength of Radiated Spurious Emissions

Test Requirement:	FCC Part 2.1053,ANSI/TIA-603-C
	FCC part 22.917(a), 24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specification in the instruction manual and/or alignment procedure, shall not be less than 43+10log(Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).
Test Procedure:	The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10th harmonic. For the out of band: set below 1G:RBW=100kHz,VBW=300kHz, above1G: RBW=1MHz,VBW=3MHz stat=30MHz, stop= 10 th harmonic. Limit= -13dBm Band Edge requirements: In 1Mhz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 % of bandwidth of fundamental emission of the transmitter any be employed to measure the out of band emission. Limit=-13dBm. 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. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and 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 824.2-848.8MHz were measured using substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follow: ERP in frequency band 1710-1755MHz and 1850.5-1909.8MHz were measured using a substitution method. The EUT was replaced by a 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)-2.15 EIRP=S.G. output (dBm) + Antenna Gain (dBi)-Cable Loss (dB)

Test setup:	(a)Below 1GHz  (b)Above 1GHz  (c)Substituted Method Test setup:

	
Test Instruments:	Refer to section 4.8 for details
Test mode:	Traffic mode
Test results:	Pass

Below 1GHz

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 824.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
115.726	45.37	H	-52.53	4.60	1.24	-51.32	-13.00	-38.32
151.067	46.71	H	-51.14	5.40	1.32	-49.21	-13.00	-36.21
219.845	45.27	H	-50.47	8.60	1.51	-45.53	-13.00	-32.53
253.837	46.87	H	-41.82	7.20	1.69	-38.46	-13.00	-25.46
292.058	45.73	H	-43.13	6.50	1.86	-40.64	-13.00	-27.64
329.039	46.98	H	-52.86	9.00	1.99	-48.00	-13.00	-35.00
48.163	47.46	V	-51.65	-4.60	0.77	-45.43	-13.00	-32.43
103.442	45.95	V	-49.82	2.70	1.21	-52.31	-13.00	-39.31
126.329	48.94	V	-48.69	5.20	1.27	-48.04	-13.00	-35.04
156.458	47.03	V	-48.03	5.20	1.33	-46.97	-13.00	-33.97
226.894	44.96	V	-43.70	8.60	1.55	-43.13	-13.00	-30.13
285.978	45.37	V	-52.53	6.50	1.83	-41.18	-13.00	-28.18

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

ERP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss-2.15

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Mid mode

Fundamental Frequency: 836.4MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
67.675	47.13	H	-54.29	2.20	0.80	-55.04	-13.00	-42.04
152.13	46.19	H	-50.14	5.40	1.32	-48.21	-13.00	-35.21
165.487	48.35	H	-54.80	5.60	1.35	-52.70	-13.00	-39.70
219.845	46.76	H	-55.12	8.60	1.51	-50.18	-13.00	-37.18
252.063	47.55	H	-42.28	7.10	1.68	-39.01	-13.00	-26.01
286.982	47.89	H	-48.30	6.50	1.84	-45.79	-13.00	-32.79
47.994	45.55	V	-46.09	-4.60	0.76	-46.20	-13.00	-33.20
129.468	47.93	V	-54.84	5.30	1.28	-44.22	-13.00	-31.22
228.49	47.52	V	-44.68	7.50	1.56	-51.05	-13.00	-38.05
254.728	48.44	V	-49.89	7.20	1.69	-41.32	-13.00	-28.32
287.99	48.28	V	-51.26	6.50	1.84	-47.38	-13.00	-34.38
413.271	47.13	V	-54.29	5.10	2.26	-50.57	-13.00	-37.57

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

ERP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss-2.15

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH High mode

Fundamental Frequency: 848.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
129.468	46.70	H	-44.43	5.30	1.28	-42.56	-13.00	-29.56
172.599	47.13	H	-51.00	5.80	1.36	-48.71	-13.00	-35.71
236.645	46.19	H	-52.40	7.20	1.60	-48.95	-13.00	-35.95
269.428	48.35	H	-43.61	6.40	1.76	-41.12	-13.00	-28.12
289.002	46.76	H	-41.47	6.50	1.85	-38.97	-13.00	-25.97
387.992	47.55	H	-51.73	6.00	2.17	-50.05	-13.00	-37.05
47.659	46.76	V	-38.76	-4.60	0.76	-46.27	-13.00	-33.27
129.468	46.71	V	-44.43	5.30	1.28	-42.56	-13.00	-29.56
181.283	45.55	V	-50.24	7.40	1.37	-46.36	-13.00	-33.36
234.168	47.93	V	-43.84	7.20	1.59	-40.38	-13.00	-27.38
260.144	47.52	V	-47.28	7.00	1.73	-44.16	-13.00	-31.16
289.002	48.44	V	-51.40	6.50	1.85	-48.90	-13.00	-35.90

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

ERP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss-2.15

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 1850.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
58.407	43.55	H	-50.22	-0.30	0.80	-51.32	-13.00	-38.32
112.131	44.68	H	-54.01	3.50	1.23	-51.74	-13.00	-38.74
167.237	45.49	H	-55.77	5.60	1.35	-51.52	-13.00	-38.52
195.822	46.41	H	-57.73	8.10	1.39	-51.02	-13.00	-38.02
226.099	44.6	H	-47.66	8.60	1.55	-40.61	-13.00	-27.61
355.427	44.49	H	-56.00	9.10	2.08	-48.98	-13.00	-35.98
47.659	44.33	V	-40.88	-4.60	0.76	-46.24	-13.00	-33.24
129.015	44.4	V	-48.72	5.30	1.28	-44.70	-13.00	-31.70
168.414	43.62	V	-50.38	5.80	1.35	-45.93	-13.00	-32.93
239.987	46.46	V	-49.92	7.00	1.62	-44.54	-13.00	-31.54
282.985	45.63	V	-53.16	6.30	1.82	-48.68	-13.00	-35.68
333.687	45.49	V	-57.05	9.00	2.01	-50.06	-13.00	-37.06

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH mid mode

Fundamental Frequency: 1880.0MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
47.994	44.12	H	-39.44	-4.60	0.76	-44.80	-13.00	-31.80
61.995	44.33	H	-51.08	0.30	0.80	-51.58	-13.00	-38.58
175.037	44.84	H	-51.12	6.70	1.36	-45.78	-13.00	-32.78
275.157	44.72	H	-54.97	6.10	1.79	-50.66	-13.00	-37.66
322.189	45.1	H	-55.53	6.20	1.97	-51.30	-13.00	-38.30
524.554	45.26	H	-56.23	7.60	2.63	-51.26	-13.00	-38.26
103.806	44.15	V	-52.08	2.70	1.21	-50.59	-13.00	-37.59
129.923	43.54	V	-44.89	5.30	1.28	-40.87	-13.00	-27.87
154.821	43.49	V	-49.43	5.20	1.33	-45.56	-13.00	-32.56
202.81	45.58	V	-56.09	8.20	1.41	-49.30	-13.00	-36.30
252.063	45.12	V	-47.01	7.10	1.68	-41.59	-13.00	-28.59
315.276	46.23	V	-52.29	4.50	1.95	-49.74	-13.00	-36.74

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH High mode

Fundamental Frequency: 1909.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
47.994	46.69	H	-41.30	-4.60	0.76	-46.66	-13.00	-33.66
129.015	46.7	H	-49.06	5.30	1.28	-45.04	-13.00	-32.04
168.414	48.011	H	-51.45	5.80	1.35	-47.00	-13.00	-34.00
221.392	47.32	H	-46.07	8.60	1.52	-38.99	-13.00	-25.99
285.978	48.26	H	-43.81	6.50	1.83	-39.14	-13.00	-26.14
381.249	47.98	H	-53.21	6.90	2.15	-48.46	-13.00	-35.46
45.217	46.3	V	-42.97	-6.90	0.73	-50.60	-13.00	-37.60
98.142	46.67	V	-52.59	2.40	1.18	-51.37	-13.00	-38.37
170.195	44.45	V	-51.33	5.80	1.35	-46.88	-13.00	-33.88
267.546	46.68	V	-49.93	6.90	1.75	-44.78	-13.00	-31.78
362.985	47.1	V	-55.97	8.30	2.10	-49.77	-13.00	-36.77
638.369	47.99	V	-57.19	9.40	2.78	-50.57	-13.00	-37.57

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss

Above 1GHz

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 824.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
1378.273	45.37	H	-49.39	8.40	4.48	-47.62	-13.00	-34.62
2573203	46.71	H	-45.43	6.80	5.99	-46.77	-13.00	-33.77
4218.186	45.27	H	-38.80	6.60	8.61	-42.96	-13.00	-29.96
5315.542	46.87	H	-38.89	6.60	11.85	-46.29	-13.00	-33.29
6795.879	45.73	H	-39.10	9.20	13.47	-45.52	-13.00	-32.52
9809.916	46.98	H	-42.08	13.30	14.21	-45.14	-13.00	-32.14
1390.276	44.65	V	-46.21	8.40	4.46	-44.42	-13.00	-31.42
1813.766	47.46	V	-46.01	9.20	5.65	-44.61	-13.00	-31.61
2428.671	45.95	V	-44.53	6.80	6.34	-46.22	-13.00	-33.22
4521.185	48.94	V	-39.42	6.60	8.86	-43.83	-13.00	-30.83
7432.914	47.03	V	-39.85	10.80	12.68	-43.88	-13.00	-30.88
8663.404	44.96	V	-40.47	13.30	13.10	-42.42	-13.00	-29.42

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

ERP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss-2.15

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Mid mode

Fundamental Frequency: 836.4MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
1390.276	47.13	H	-50.03	8.40	4.54	-48.32	-13.00	-35.32
1944.073	46.19	H	-43.79	9.20	5.50	-42.24	-13.00	-29.24
3007.868	48.35	H	-45.94	7.10	6.68	-47.67	-13.00	-34.67
4988.058	46.76	H	-40.17	5.50	9.80	-46.62	-13.00	-33.62
6698.372	47.55	H	-39.62	9.20	13.32	-45.89	-13.00	-32.89
8638.399	47.89	H	-45.19	13.30	13.11	-47.15	-13.00	-34.15
1583.392	46.71	V	-45.54	8.40	5.13	-44.42	-13.00	-31.42
1927.289	45.55	V	-47.68	9.20	5.50	-46.13	-13.00	-33.13
3123.039	47.93	V	-40.94	7.10	7.55	-43.54	-13.00	-30.54
4482.15	47.52	V	-41.97	6.86	8.68	-45.94	-13.00	-32.94
7541.114	48.44	V	-40.33	10.80	12.79	-44.47	-13.00	-31.47
9838.312	48.28	V	-44.83	13.30	14.09	-47.77	-13.00	-34.77

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

ERP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss-2.15

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH High mode

Fundamental Frequency: 848.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
1378.273	46.70	H	-50.78	8.40	4.45	-48.98	-13.00	-35.98
1792.937	47.13	H	-50.13	8.40	5.65	-49.53	-13.00	-36.53
2947.623	46.19	H	-46.95	7.10	6.27	-48.27	-13.00	-35.27
4341.886	48.35	H	-42.99	6.60	8.76	-47.30	-13.00	-34.30
68583.21	46.76	H	-41.11	9.20	13.17	-47.23	-13.00	-34.23
9448.149	47.55	H	-46.23	14.10	13.92	-48.20	-13.00	-35.20
1394.3	46.76	V	-51.73	8.40	4.45	-49.93	-13.00	-36.93
1808.551	46.71	V	-49.83	9.20	5.65	-48.43	-13.00	-35.43
2345.878	45.55	V	-47.16	6.80	5.91	-48.42	-13.00	-35.42
3318.771	47.93	V	-46.08	7.80	6.89	-47.32	-13.00	-34.32
4653.771	47.52	V	-41.67	6.60	10.10	-47.32	-13.00	-34.32
7650.888	48.44	V	-42.51	10.80	12.86	-46.72	-13.00	-33.72

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

ERP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss-2.15

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 1850.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
1142.201	43.55	H	-50.68	5.50	3.90	-49.08	-13.00	-36.08
1932.666	44.68	H	-53.78	9.20	5.50	-50.08	-13.00	-37.08
2847.139	45.49	H	-49.71	7.10	6.42	-49.03	-13.00	-36.03
4613.592	46.41	H	-44.23	6.60	9.64	-47.27	-13.00	-34.27
7476.006	44.6	H	-45.24	10.80	12.77	-47.21	-13.00	-34.21
14788.15	44.49	H	-38.72	15.10	16.88	-40.50	-13.00	-27.50
1189.368	44.33	V	-51.37	5.50	4.33	-50.20	-13.00	-37.20
2089.751	44.4	V	-53.25	9.20	5.34	-49.39	-13.00	-36.39
3150.337	43.62	V	-47.49	7.10	7.55	-47.94	-13.00	-34.94
5179.049	46.46	V	-40.45	5.50	11.71	-46.66	-13.00	-33.66
8319.836	45.63	V	-48.94	13.30	12.70	-48.34	-13.00	-35.34
15713.56	45.49	V	-40.92	16.40	18.08	-42.60	-13.00	-29.60

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH mid mode

Fundamental Frequency: 1880.0MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
1402.384	44.12	H	-52.78	8.40	4.45	-48.83	-13.00	-35.83
2126.308	44.33	H	-53.84	9.20	5.39	-50.03	-13.00	-37.03
42.06.011	44.84	H	-45.88	6.60	8.59	-47.87	-13.00	-34.87
6583.209	44.72	H	-43.07	9.20	13.17	-47.04	-13.00	-34.04
9809.916	45.1	H	-50.23	14.00	14.09	-50.32	-13.00	-37.32
15090.4	45.26	H	-41.09	16.40	16.88	-41.57	-13.00	-28.57
1252.885	44.15	V	-51.43	5.50	4.54	-50.47	-13.00	-37.47
1711.909	43.54	V	-53.14	8.40	5.05	-49.79	-13.00	-36.79
2687.22	43.49	V	-48.53	6.80	6.19	-47.92	-13.00	-34.92
4547.396	45.58	V	-45.10	6.60	8.86	-47.36	-13.00	-34.36
6659.762	45.12	V	-42.80	9.20	13.32	-46.92	-13.00	-33.92
12505.71	46.23	V	-43.45	12.10	16.69	-48.04	-13.00	-35.04

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH High mode

Fundamental Frequency: 1909.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
1112.872	46.69	H	-51.39	5.50	3.90	-49.79	-13.00	-36.79
1362.43	46.7	H	-51.20	8.40	4.45	-47.25	-13.00	-34.25
2252.846	48.011	H	-52.53	9.20	5.91	-49.24	-13.00	-36.24
4354.454	47.32	H	-45.03	6.60	8.99	-47.42	-13.00	-34.42
7717.518	48.26	H	-44.23	10.80	13.52	-46.95	-13.00	-33.95
11533.48	47.98	H	-42.87	11.00	16.45	-48.32	-13.00	-35.32
1323.614	46.3	V	-53.71	8.40	4.54	-49.85	-13.00	-36.85
1927.289	46.67	V	-53.44	9.20	5.50	-49.74	-13.00	-36.74
3386.297	44.45	V	-48.62	7.80	7.22	-48.04	-13.00	-35.04
6142.019	46.68	V	-43.00	10.20	13.87	-46.67	-13.00	-33.67
8638.399	47.1	V	-48.96	13.30	13.11	-48.77	-13.00	-35.77
14873.89	47.99	V	-39.04	15.10	16.88	-40.82	-13.00	-27.82

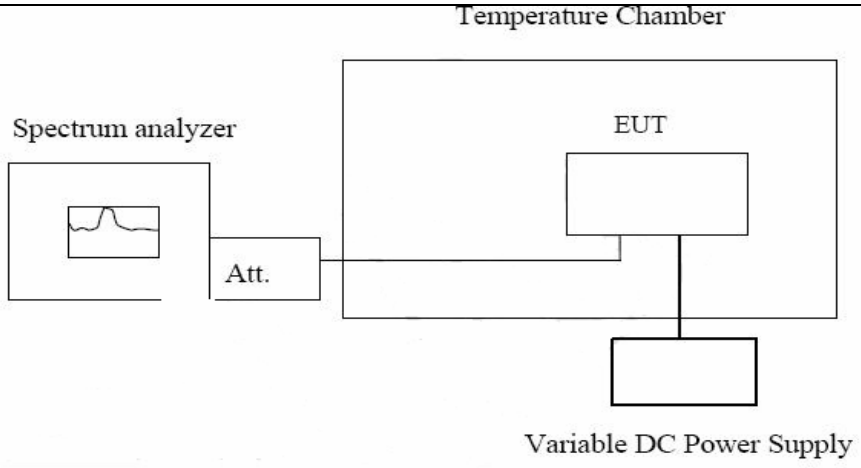
Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBi)-Cable Loss

5.7 Frequency Stability V.S. TEMPERATURE MEASUREMENT

Test Requirement:	FCC Part 2.1055(a)&(d), ANSI/TIA-603-C
Test Status:	Test lowest channel, middle, highest channel.
Test setup:	 *Remark:* *Note: Measurement setup for testing On antenna connector.*
Test procedure:	The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the Spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25 degree operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30 degree. After the temperature stabilized for approximately 30 minutes record the frequency. Repeat step measure with 10 degree per stage until the highest temperature of 50 degree reached. Frequency Tolerance: +/-2.5ppm for GSM 850MHz band +/-2.5ppm for PCS 1900MHz band
Test Instruments:	Refer to section 4.8 for details
Test results:	Pass

Reference Frequency: GSM Low channel 824.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4	-20	824.199835	165	2091
4	-10	824.199805	195	2091
4	10	824.199823	177	2091
4	20	824.199830	170	2091
4	30	824.199871	129	2091
4	40	824.199854	146	2091
4	50	824.199858	142	2091

Reference Frequency: GSM Mid channel 836.4MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4	-20	836.399853	147	2091
4	-10	836.399820	180	2091
4	10	836.399841	159	2091
4	20	836.399836	164	2091
4	30	836.399844	156	2091
4	40	836.399802	198	2091
4	50	836.399813	187	2091

Reference Frequency: GSM High channel 848.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4	-20	848.799832	168	2091
4	-10	848.799842	158	2091
4	10	848.799858	142	2091
4	20	848.799861	139	2091
4	30	848.799840	160	2091
4	40	848.799833	167	2091
4	50	848.799872	128	2091

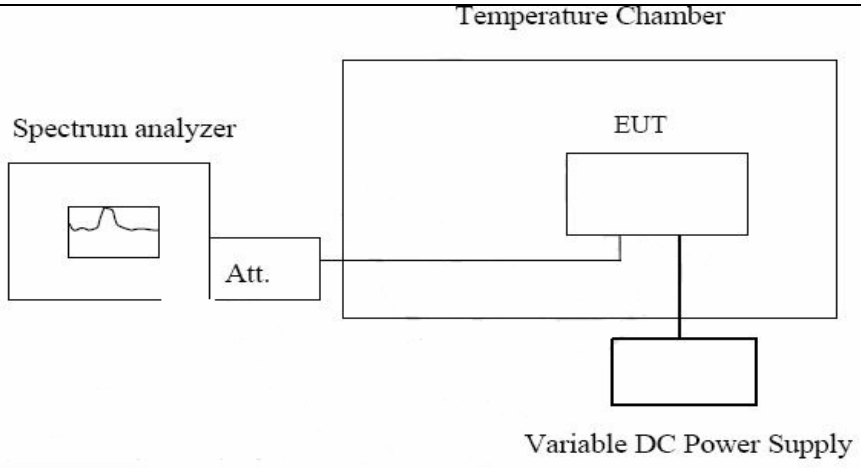
Reference Frequency: PCS Low channel 1850.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4	-20	1850.199832	168	4700
4	-10	1850.199846	154	4700
4	10	1850.199804	196	4700
4	20	1850.199827	173	4700
4	30	1850.199852	148	4700
4	40	1850.199805	195	4700
4	50	1850.199847	153	4700

Reference Frequency: PCS Mid channel 1880MHz@ 25 degree
Limit: +/- 2.5ppm = 4700Hz

Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4	-20	1879.999882	118	4700
4	-10	1879.999852	148	4700
4	10	1879.999839	161	4700
4	20	1879.999870	130	4700
4	30	1879.999834	166	4700
4	40	1879.999860	140	4700
4	50	1879.999819	181	4700

Reference Frequency: PCS High channel 1909.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	**Environment**	**Frequency**	**Delta**	**Limit**
Vdc	**Temperature(degree)**	**(MHz)**	**(Hz)**	**(Hz)**
4	-20	1909.799855	145	4700
4	-10	1909.799822	178	4700
4	10	1909.799839	161	4700
4	20	1909.799847	153	4700
4	30	1909.799818	182	4700
4	40	1909.799828	172	4700
4	50	1909.799832	168	4700

5.8 Frequency Stability V.S. VOLTAGE MEASUREMENT

Test Requirement:	FCC Part 2.1055(a)&(d), ANSI/TIA-603-C
Test Status:	Test lowest channel, middle, highest channel.
Test setup:	 *Remark:* *Note: Measurement setup for testing On antenna connector.*
Test procedure:	Set chamber temperature to 25 degree. Use a variable DC power supply to power the EUT and set the Voltage to rated voltage. Set the spectrum analyzer RBW enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specified extreme voltage variation(+/-15%) and endpoint, record the maximum frequency chang. Frequency Tolerance: +/-2.5ppm for GSM850MHz band +/-2.5ppm for PCS1900MHz band
Test Instruments:	Refer to section 4.8 for details
Test results:	Pass

Reference Frequency: GSM Low channel 824.2MHz				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.5	25	824.200152	152	2091
4.0	25	824.200128	128	2091
3.5 (Endpoint)	25	824.200138	138	2091

Reference Frequency: GSM Mid channel 836.4MHz				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.5	25	836.400191	191	2091
4.0	25	836.400162	162	2091
3.5 (Endpoint)	25	836.400160	160	2091

Reference Frequency: GSM High channel 848.8MHz				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.5	25	848.800176	176	2091
4.0	25	848.800108	108	2091
3.5 (Endpoint)	25	848.800163	163	2091

Reference Frequency: PCS Low channel 1850.2MHz				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.5	25	1850.200159	159	4700
4.0	25	1850.200171	171	4700
3.5 (Endpoint)	25	1850.200183	183	4700

Reference Frequency: PCS Mid channel 1880MHz				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.5	25	1880.000196	196	4700
4.0	25	1880.000150	150	4700
3.5 (Endpoint)	25	1880.000166	166	4700

Reference Frequency: PCS High channel 1909.8MHz				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.5	25	1909.800157	157	4700
4.0	25	1909.800126	126	4700
3.5 (Endpoint)	25	1909.800129	129	4700

Reference Frequency: GSM Low channel 824.2MHz				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
132	25	824.200183	183	2091
120	25	824.200157	157	2091
108	25	824.200144	144	2091

Reference Frequency: GSM Mid channel 836.4MHz				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
132	25	836.400163	163	2091
120	25	836.400182	182	2091
108	25	836.400202	202	2091

Reference Frequency: GSM High channel 848.8MHz				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
132	25	848.800162	162	2091
120	25	848.800135	135	2091
108	25	848.800189	189	2091

Reference Frequency: PCS Low channel 1850.2MHz				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
132	25	1850.200235	235	4700
120	25	1850.200241	241	4700
108	25	1850.200157	157	4700

Reference Frequency: PCS Mid channel 1880MHz				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
132	25	1880.000205	205	4700
120	25	1880.000214	214	4700
108	25	1880.000189	189	4700

Reference Frequency: PCS High channel 1909.8MHz				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
132	25	1909.800174	174	4700
120	25	1909.800215	215	4700
108	25	1909.800174	174	4700