FCC RF Test Report

APPLICANT	:	Motorola Solutions, Inc.
EQUIPMENT	:	Enterprise Digital Assistant (EDA)
BRAND NAME	:	Motorola
MODEL NAME	:	MC67NA
FCC ID	:	UZ7MC67NA
STANDARD	:	FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Feb. 08, 2012 and completely tested on Jun. 25, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown 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:

Jones Tsai

Jones Tsai / Manager

Testing Laboratory 1190

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG221518-01	Rev. 01	Initial issue of report	Jul. 13, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	N/A	Conducted Output Power	N/A	PASS	-
3.2	§24.232(d)	N/A	Peak-to-Average Ratio	< 13 dB	PASS	-
3.3	§22.913(a)(2)	RSS-132(4.4) SRSP-503(5.1.3)	Effective Radiated Power	< 7 Watts	PASS	-
3.3	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.4	§2.1049 §22.917(a) §24.238(a)	N/A	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Band Edge Measurement	< $43+10\log_{10}$(P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Conducted Spurious Emission	< $43+10\log_{10}$(P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Field Strength of Spurious Radiation	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 23.25 dB at 1672.000 MHz
3.8	§2.1055 §22.355 §24.235	RSS-132(4.3) RSS-133(6.3)	Frequency Stability for Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

Motorola Solutions, Inc.
One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.2 Manufacturer

Motorola Solutions, Inc.
One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Enterprise Digital Assistant (EDA)
Brand Name	Motorola
Model Name	MC67NA
FCC ID	UZ7MC67NA
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA WLAN 11abgn(BW 20MHz)/Bluetooth 2.1 EDR
HW Version	DV2
SW Version	01.21.0010 (RF Fusion Version : X_2.00.0.0.041E)
FW Version	2.28
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 33.27 dBm GSM1900 : 29.61 dBm WCDMA Band V : 23.86 dBm WCDMA Band II : 24.46 dBm
Antenna Type	Fixed Internal Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)

1.4 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

<EUT with Qwerty Keypad and Camrea>

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)	Frequency Tolerance (%, Hz, ppm)	Emission Designator
Part 22	Cellular Band GPRS 8	GMSK	0.9977	0.06 ppm	244KGXW
Part 22	Cellular Band EDGE 8	GMSK / 8PSK	0.3062	0.07 ppm	242KG7W
Part 22	Cellular Band RMC 12.2Kbps	QPSK	0.1084	0.02 ppm	4M16F9W
Part 24	PCS Band GPRS 8	GMSK	0.9311	0.03 ppm	248KGXW
Part 24	PCS Band EDGE 8	GMSK / 8PSK	0.4645	0.03 ppm	246KG7W
Part 24	PCS Band RMC 12.2Kbps	QPSK	0.2312	0.03 ppm	4M18F9W

<EUT with Numeric Keypad and Camrea>

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP
Part 22	Cellular Band GPRS 8	GMSK	0.8166 W
Part 24	PCS Band GPRS 8	GMSK	0.8974 W

<EUT with PIM Keypad and Camrea>

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP
Part 22	Cellular Band GPRS 8	GMSK	0.8551 W
Part 24	PCS Band GPRS 8	GMSK	0.7962 W

<EUT with Qwerty Keypad and without Camrea>

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP
Part 22	Cellular Band GPRS 8	GMSK	0.7925 W
Part 24	PCS Band GPRS 8	GMSK	0.8260 W

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	**Sporton Site No.**		**FCC/IC Registration No.**
	TH02-HY	03CH05-HY	722060/4086B-1

1.6 Applied Standards

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

- Preliminary Guidance for Receiving Applications for Certification of 3G Device. May 9, 2006.
- FCC 47 CFR Part 2, 22(H), 24(E)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v01
- IC RSS-132 Issue 2
- IC RSS-133 Issue 5

Remark:

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

2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.7 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

Frequency range investigated for radiated emission is as follows:

1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V.
2. 30 MHz to 19000 MHz for GSM1900 and WCDMA Band II.

The conducted power tables of Sample A are as follows:

Conducted Power (*Unit: dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM	**32.93**	32.85	32.89	28.83	28.65	**29.56**
GPRS 8	32.85	32.87	32.83	28.56	27.41	29.38
GPRS 10	32.77	32.79	32.75	28.43	28.25	29.20
GPRS 12	32.33	32.35	32.30	28.03	27.82	28.76
EGPRS 8	26.83	26.87	26.78	24.80	24.70	25.24
EGPRS 10	26.70	26.75	26.66	24.69	24.57	25.10
EGPRS 12	26.40	26.44	26.36	24.35	24.21	24.80

Conducted Power (*Unit: dBm)						
Band	**WCDMA Band V**			**WCDMA Band II**		
Channel	**4132**	**4182**	**4233**	**9262**	**9400**	**9538**
Frequency	**826.4**	**836.4**	**846.6**	**1852.4**	**1880.0**	**1907.6**
RMC 12.2K	23.51	**23.76**	23.56	**24.12**	23.63	23.81
HSDPA Subtest-1	23.50	23.75	23.55	24.11	23.63	23.85
HSDPA Subtest-2	23.40	23.62	23.50	24.11	23.53	23.12
HSDPA Subtest-3	23.01	23.11	22.98	23.60	22.99	23.30
HSDPA Subtest-4	23.07	23.19	23.05	23.67	23.02	23.35
HSUPA Subtest-1	22.96	23.08	23.29	23.47	23.14	22.95
HSUPA Subtest-2	21.83	22.09	22.21	22.65	22.56	22.53
HSUPA Subtest-3	22.19	22.54	22.50	22.89	22.67	22.64
HSUPA Subtest-4	21.94	22.19	22.28	22.63	22.52	22.53
HSUPA Subtest-5	22.91	23.08	23.03	23.50	23.23	23.07

The conducted power tables of Sample B are as follows:

Conducted Power (*Unit: dBm)						
Band	**Cellular Band**			**PCS Band**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM	33.18	33.15	33.23	29.60	29.57	29.60
GPRS 8	33.20	33.18	**33.27**	29.60	29.58	**29.61**
GPRS 10	33.06	33.03	33.15	29.46	29.42	29.46
GPRS 12	32.74	32.71	32.82	29.11	29.03	29.05
EGPRS 8	27.00	26.99	26.96	25.19	25.11	25.33
EGPRS 10	26.90	26.87	26.84	25.08	24.96	25.20
EGPRS 12	26.63	26.61	26.56	24.76	24.62	24.83

Conducted Power (*Unit: dBm)						
Band	**Cellular Band**			**PCS Band**		
Channel	**4132**	**4182**	**4233**	**9262**	**9400**	**9538**
Frequency	**826.4**	**836.4**	**846.6**	**1852.4**	**1880.0**	**1907.6**
RMC 12.2K	23.81	**23.86**	23.58	24.43	**24.46**	24.44
HSDPA Subtest-1	23.68	23.74	23.48	24.41	24.44	24.43
HSDPA Subtest-2	23.56	26.67	23.52	24.42	24.42	24.43
HSDPA Subtest-3	23.17	23.18	23.00	23.92	24.01	24.09
HSDPA Subtest-4	23.05	23.17	23.02	.24.01	23.98	24.11
HSUPA Subtest-1	22.69	23.30	23.08	23.52	24.19	24.16
HSUPA Subtest-2	21.63	22.06	21.80	22.77	22.69	22.67
HSUPA Subtest-3	22.28	22.39	22.10	22.90	22.87	23.23
HSUPA Subtest-4	21.98	22.21	21.91	22.90	22.87	22.85
HSUPA Subtest-5	23.35	22.92	22.61	23.45	24.41	24.27

Note: The Sample A and Sample B are electric identical,. The maximum output power levels for two samples are close and met the production target. Thus, Sample A was used for conducted measurement at the antenna terminal, and Sample B was used for radiated measurement.

Definition of each configuration about keypad and Camera for EUT

Keypads	Cameras
(1) Qwerty (2) Numeric (3) PIM	(1) With camera (2) Without camera

Preliminary test for Radiated Spurious Emissions and EIRP/ERP:

The preliminary test purpose is to find out the worst configuration among all components, and the worst configuration found is Sample B with Keypad 1 and Camera 1, and then is performed accordingly for final test demonstrated in compliance with FCC standard. The pre-scanning data are also shown in this report.

Preliminary test for Radiated Spurious Emissions:

Test Modes				
Preliminary test for Radiated TCs				
No.	**Band**	**Mode**	**Keypad**	**Camera**
1	Cellular Band	GPRS 8 Link	1	1
2	Cellular Band	GPRS 8 Link	2	1
3	Cellular Band	GPRS 8 Link	3	1
4	Cellular Band	GPRS 8 Link	1	2
1	PCS Band	GPRS 8 Link	1	1
2	PCS Band	GPRS 8 Link	2	1
3	PCS Band	GPRS 8 Link	3	1
4	PCS Band	GPRS 8 Link	1	2

Preliminary test for EIPR/EPR:

Test Modes				
Preliminary test for ERP/EIRP				
No.	**Band**	**Mode**	**Keypad**	**Camera**
1	Cellular Band	GPRS 8 Link	1	1
2	Cellular Band	GPRS 8 Link	2	1
3	Cellular Band	GPRS 8 Link	3	1
4	Cellular Band	GPRS 8 Link	1	2
1	PCS Band	GPRS 8 Link	1	1
2	PCS Band	GPRS 8 Link	2	1
3	PCS Band	GPRS 8 Link	3	1
4	PCS Band	GPRS 8 Link	1	2

Radiated Spurious Emissions for final test configuration under Cellular and PCS band:

Test Modes				
Radiated TCs				
No.	Band	Mode	Keypad	Camera
1	Cellular Band	GPRS 8 Link	1	1
2	Cellular Band	EDGE 8 Link	1	1
3	Cellular Band	RMC 12.2Kbps Link	1	1
1	PCS Band	GPRS 8 Link	1	1
2	PCS Band	EDGE 8 Link	1	1
3	PCS Band	RMC 12.2Kbps Link	1	1

ERP/EIRP for final test configuration under Cellular and PCS band:

Test Modes				
ERP/EIRP				
No.	Band	Mode	Keypad	Camera
1	Cellular Band	GPRS 8 Link	1	1
2	Cellular Band	EDGE 8 Link	1	1
3	Cellular Band	RMC 12.2Kbps Link	1	1
1	PCS Band	GPRS 8 Link	1	1
2	PCS Band	EDGE 8 Link	1	1
3	PCS Band	RMC 12.2Kbps Link	1	1

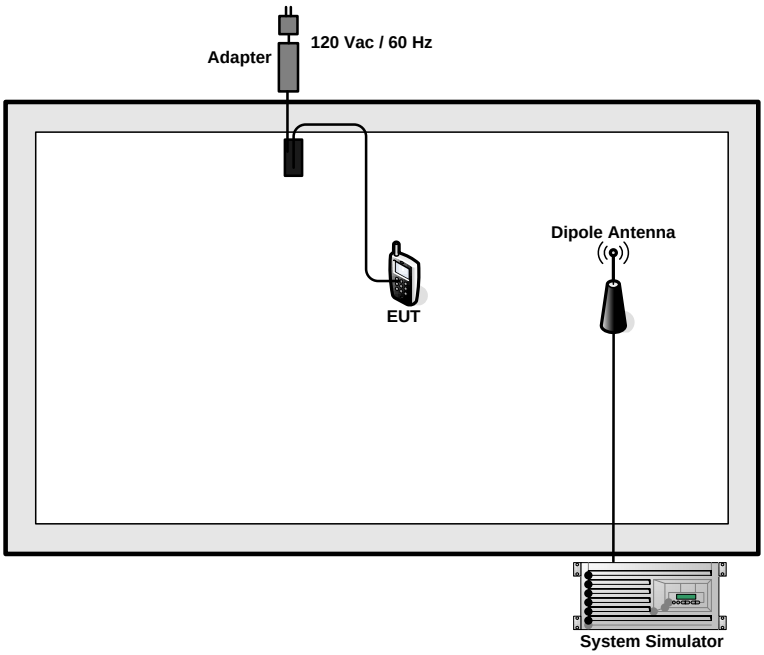
Test Modes		
Conducted TCs		
No.	Band	Mode
1	Cellular Band	GPRS 8 Link
2	Cellular Band	EDGE 8 Link
3	Cellular Band	RMC 12.2Kbps Link
1	PCS Band	GPRS 8 Link
2	PCS Band	EDGE 8 Link
3	PCS Band	RMC 12.2Kbps Link

Note:

1. The maximum power levels are GPRS multi-slot class 8 mode for GMSK link, EDGE multi-slot class 8 mode for 8PSK link, RMC 12.2Kbps mode for WCDMA band V, and RMC 12.2Kbps mode for WCDMA band II, only these modes were used for all tests.
2. For radiation test was performed together with USB charging cable with AC power.

3. Because there are individual antennas for each WWAN, WLAN, and Bluetooth, the co-location test modes are not required.
4. The DSD keypad PCB is the same as Numeric keypad PCB, only difference is printed.

2.2 Connection Diagram of Test System



3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

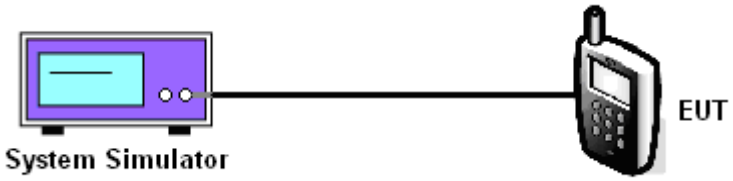
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band									
Modes	GPRS 8			EDGE 8			RMC 12.2Kbps		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	33.20	33.18	33.27	27.00	26.99	26.96	23.81	23.86	23.58
Conducted Power (Watts)	2.09	2.08	2.12	0.50	0.50	0.50	0.24	0.24	0.23

PCS Band									
Modes	GPRS 8			EDGE 8			RMC 12.2Kbps		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	29.60	29.58	29.61	25.19	25.11	25.33	24.43	24.46	24.44
Conducted Power (Watts)	0.91	0.91	0.91	0.33	0.32	0.34	0.28	0.28	0.28

Note: maximum burst average power for GPRS, and maximum average power for WCDMA.

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level.

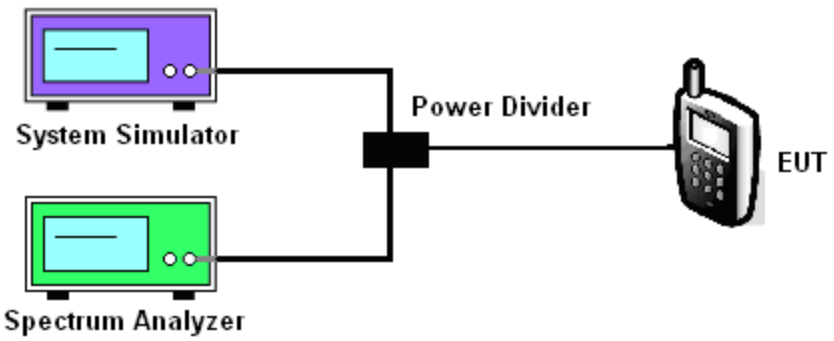
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The CCDF (Complementary Cumulative Distribution Function) of the middle channel for the highest RF powers were measured.

3.2.4 Test Setup



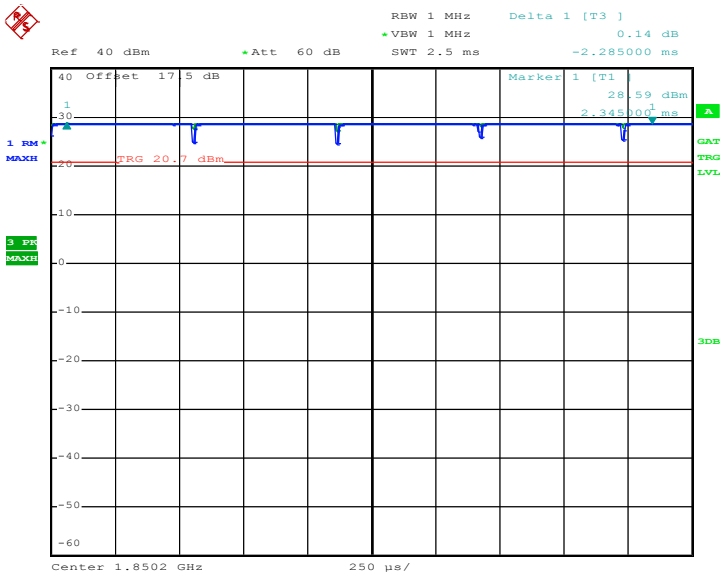
3.2.5 Test Result of Peak-to-Average Ratio

PCS Band									
Modes	GPRS 8			EDGE 8			RMC 12.2Kbps		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	0.14	0.13	0.13	0.19	0.19	0.18	3.36	3.32	3.24

3.2.6 Test Result (Plots) of Peak-to-Average Ratio

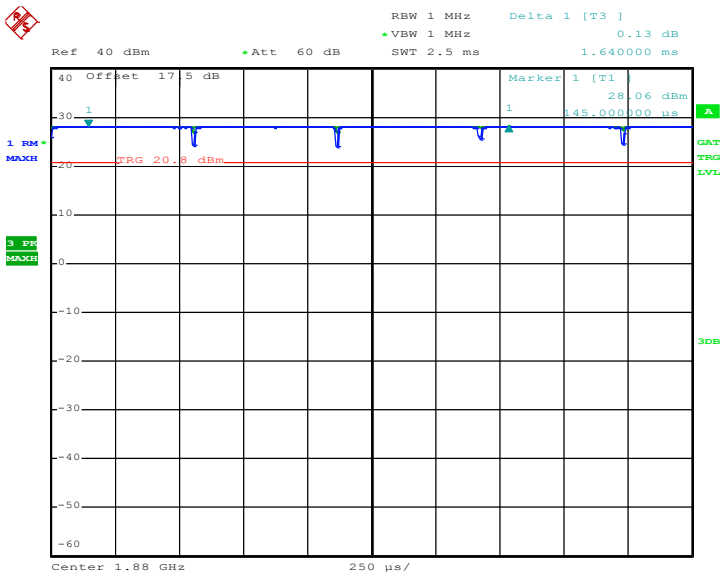
Band :	PCS Band	Test Mode :	GPRS 8 Link

Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



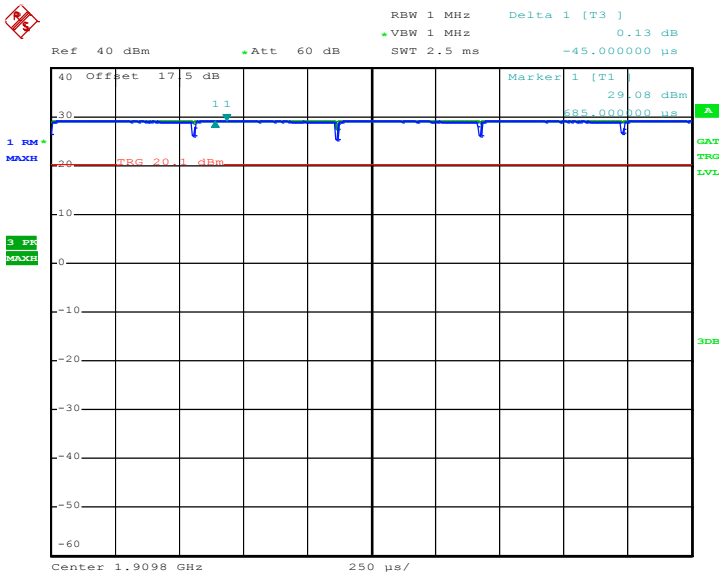
Date: 9.FEB.2012 11:05:29

Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 9.FEB.2012 11:03:56

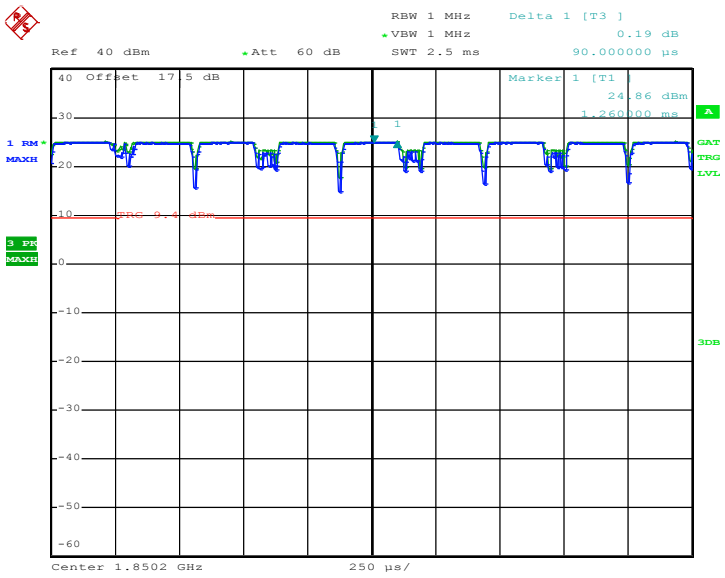
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



Date: 9.FEB.2012 11:07:03

Band :	PCS Band	Test Mode :	EDGE 8 Link

Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



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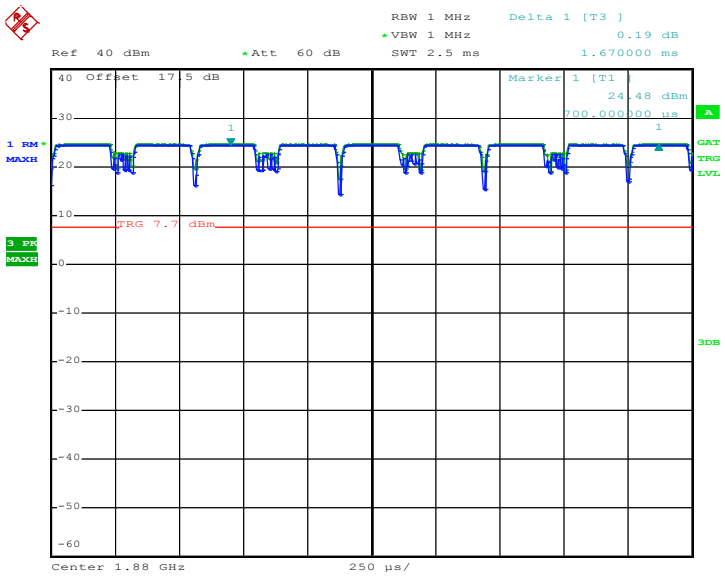
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



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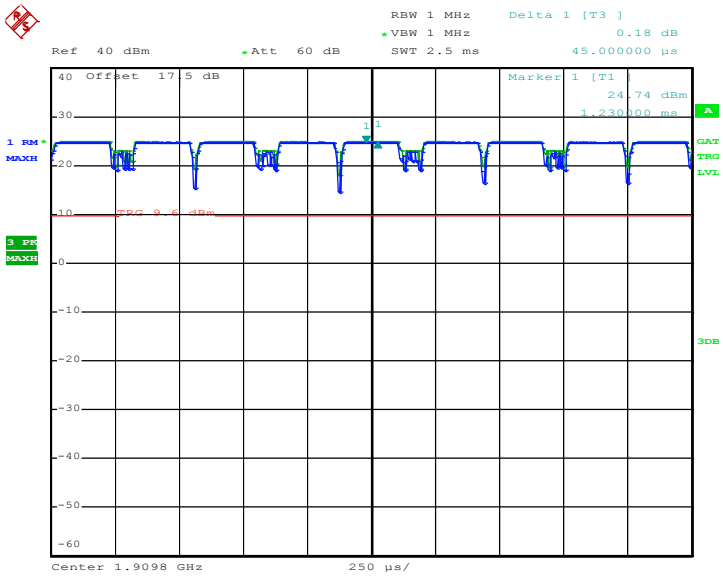
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



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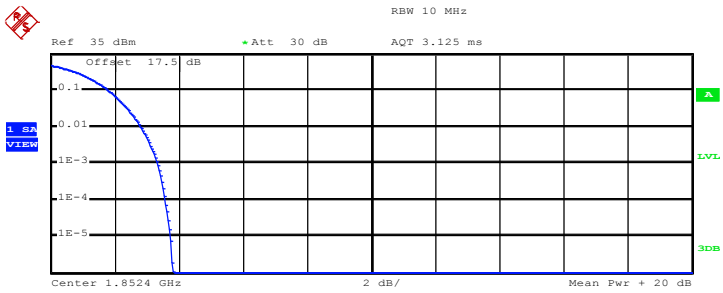
Band :	PCS Band	Test Mode :	RMC 12.2Kbps Link

Peak-to-Average Ratio on Channel 9262 (1852.4 MHz)

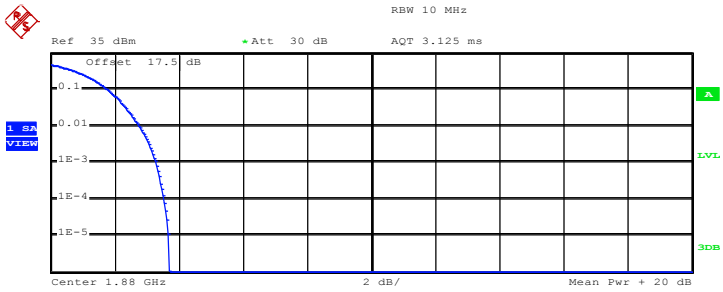


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	19.66 dBm
Peak	23.47 dBm
Crest	3.81 dB
10 %	1.84 dB
1 %	2.84 dB
.1 %	3.36 dB
.01 %	3.60 dB

Date: 9.FEB.2012 11:48:44

Peak-to-Average Ratio on Channel 9400 (1880.0 MHz)

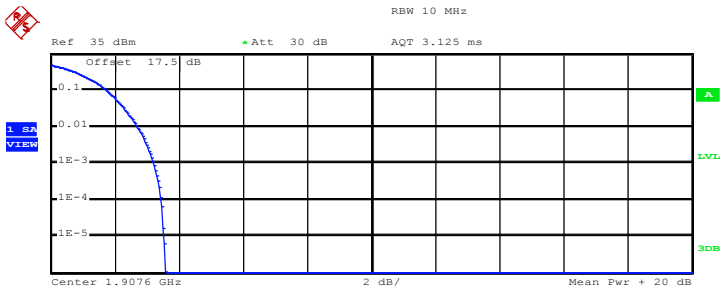


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	20.05 dBm
Peak	23.75 dBm
Crest	3.70 dB
10 %	1.80 dB
1 %	2.76 dB
.1 %	3.32 dB
.01 %	3.56 dB

Date: 9.FEB.2012 11:44:55

Peak-to-Average Ratio on Channel 9538 (1907.6 MHz)



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	20.25 dBm
Peak	23.82 dBm
Crest	3.58 dB
10 %	1.76 dB
1 %	2.72 dB
.1 %	3.24 dB
.01 %	3.44 dB

Date: 9.FEB.2012 11:48:05

3.3 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

The substitution method, in ANSI / TIA / EIA-603-C-2004, was used for ERP/EIRP measurement, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

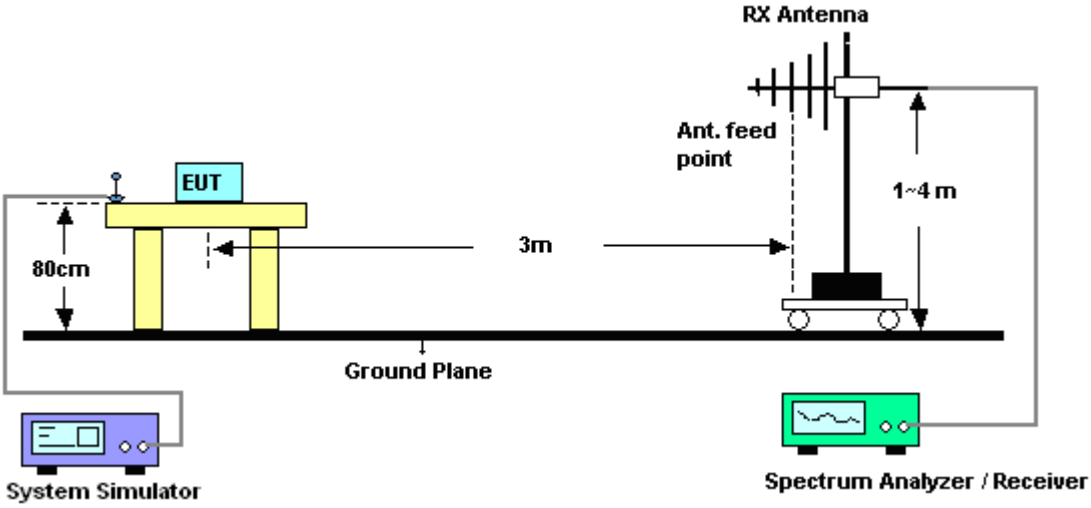
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW= 1MHz, VBW= 3MHz for GSM, RBW= 300KHz, VBW= 1MHz for WCDMA, and RMS detector settings per section 4.0 of KDB 971168 D01.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, EIRP= LVL + Correction factor and ERP = EIRP – 2.15 .

3.3.4 Test Setup



3.3.5 Test Result of ERP

Cellular Band (GPRS 8) Radiated Power ERP Qwerty Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	1.15	30.99	29.99	0.9977
836.4	0.73	30.89	29.47	0.8851
848.8	0.48	31.22	29.55	0.9016
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	-5.43	34.67	27.09	0.5117
836.4	-4.62	34.88	28.11	0.6471
848.8	-4.23	34.74	28.36	0.6855

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

Cellular Band (EDGE 8) Radiated Power ERP Qwerty Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	-6.42	30.99	24.57	0.2864
836.4	-6.46	30.89	24.43	0.2773
848.8	-6.36	31.22	24.86	0.3062
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	-12.91	34.67	21.76	0.1500
836.4	-11.86	34.88	23.02	0.2004
848.8	-12.31	34.74	22.43	0.1750

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

Cellular Band (RMC 12.2Kbps) Radiated Power ERP Qwerty Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
826.40	-8.24	30.74	20.35	0.1084
836.40	-8.39	30.89	20.35	0.1084
846.60	-9.96	31.29	19.18	0.0828
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
826.40	-14.77	34.94	18.02	0.0634
836.40	-14.40	34.88	18.33	0.0681
846.60	-14.86	34.67	17.66	0.0583

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

Cellular Band (GPRS 8) Radiated Power ERP Numeric Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	0.28	30.99	29.12	0.8166
836.40	-0.32	30.89	28.42	0.6950
848.80	-0.40	31.22	28.67	0.7362
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	-6.46	34.67	26.06	0.4036
836.40	-5.85	34.88	26.88	0.4875
848.80	-5.10	34.74	27.49	0.5610

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

Cellular Band (GPRS 8) Radiated Power ERP PIM Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	0.26	30.99	29.10	0.8128
836.40	0.58	30.89	29.32	0.8551
848.80	-0.40	31.22	28.67	0.7362
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	-7.30	34.67	25.22	0.3327
836.40	-6.55	34.88	26.18	0.4150
848.80	-6.44	34.74	26.15	0.4121

Cellular Band (GPRS 8) Radiated Power ERP Qwerty Keypad without Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	0.07	30.99	28.91	0.7780
836.40	0.25	30.89	28.99	0.7925
848.80	-0.21	31.22	28.86	0.7691
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	-6.65	34.67	25.87	0.3864
836.40	-5.56	34.88	27.17	0.5212
848.80	-5.54	34.74	27.05	0.5070

3.3.6 Test Result of EIRP

PCS Band (GPRS 8) Radiated Power EIRP Qwerty Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-11.35	40.70	29.35	0.8610
1880.0	-12.22	41.91	29.69	0.9311
1909.8	-13.19	41.73	28.54	0.7145
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-17.15	42.78	25.63	0.3656
1880.0	-18.00	43.75	25.75	0.3758
1909.8	-18.72	43.06	24.34	0.2716

* EIRP = LVL (dBm) + Correction Factor (dB)

PCS Band (EDGE 8) Radiated Power EIRP Qwerty Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-14.51	40.70	26.19	0.4159
1880.0	-15.24	41.91	26.67	0.4645
1909.8	-15.70	41.73	26.03	0.4009
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-20.90	42.78	21.88	0.1542
1880.0	-18.88	43.75	24.87	0.3069
1909.8	-19.76	43.06	23.30	0.2138

* EIRP = LVL (dBm) + Correction Factor (dB)

PCS Band (RMC 12.2Kbps) Radiated Power EIRP Qwerty Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.40	-17.15	40.40	23.25	0.2113
1880.00	-18.27	41.91	23.64	0.2312
1907.60	-18.22	41.59	23.37	0.2173
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.40	-23.18	42.69	19.51	0.0893
1880.00	-24.31	43.75	19.44	0.0879
1907.60	-24.61	43.02	18.41	0.0693

* EIRP = LVL (dBm) + Correction Factor (dB)

PCS Band (GPRS 8) Radiated Power EIRP Numeric Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-11.17	40.70	29.53	0.8974
1880.0	-12.87	41.91	29.04	0.8017
1909.8	-12.82	41.73	28.91	0.7780
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-16.21	42.78	26.57	0.4539
1880.0	-16.44	43.75	27.31	0.5383
1909.8	-16.70	43.06	26.36	0.4325

* EIRP = LVL (dBm) + Correction Factor (dB)

PCS Band (GPRS 8) Radiated Power EIRP PIM Keypad with Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-13.25	40.70	27.45	0.5559
1880.0	-12.90	41.91	29.01	0.7962
1909.8	-13.18	41.73	28.55	0.7161
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-17.82	42.78	24.96	0.3133
1880.0	-16.92	43.75	26.83	0.4819
1909.8	-17.21	43.06	25.85	0.3846

* EIRP = LVL (dBm) + Correction Factor (dB)

PCS Band (GPRS 8) Radiated Power EIRP Qwerty Keypad without Camera				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-11.79	40.70	28.91	0.7780
1880.0	-12.74	41.91	29.17	0.8260
1909.8	-13.51	41.73	28.22	0.6637
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-17.48	42.78	25.30	0.3388
1880.0	-18.12	43.75	25.63	0.3656
1909.8	-18.96	43.06	24.10	0.2570

* EIRP = LVL (dBm) + Correction Factor (dB)

3.4 Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 Description of 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 emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

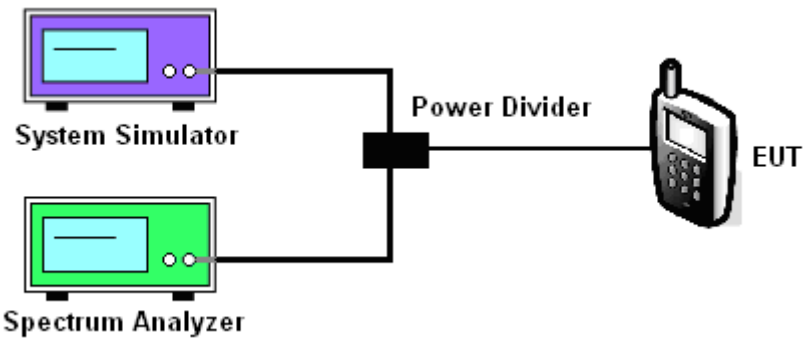
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The 99% occupied bandwidth and 26 dB bandwidth of the middle channel for the highest RF powers were measured.

3.4.4 Test Setup



3.4.5 Test Result of Occupied Bandwidth and 26dB Bandwidth

Cellular Band						
Modes	GPRS 8			EDGE 8		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8
99% OBW (KHz)	244.00	242.00	244.00	242.00	242.00	242.00
26dB BW (KHz)	302.00	300.00	302.00	308.00	306.00	314.00

Cellular Band			
Modes	RMC 12.2Kbps		
Channel	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	826.4	836.4	846.6
99% OBW (MHz)	4.14	4.14	4.16
26dB BW (MHz)	4.68	4.68	4.66

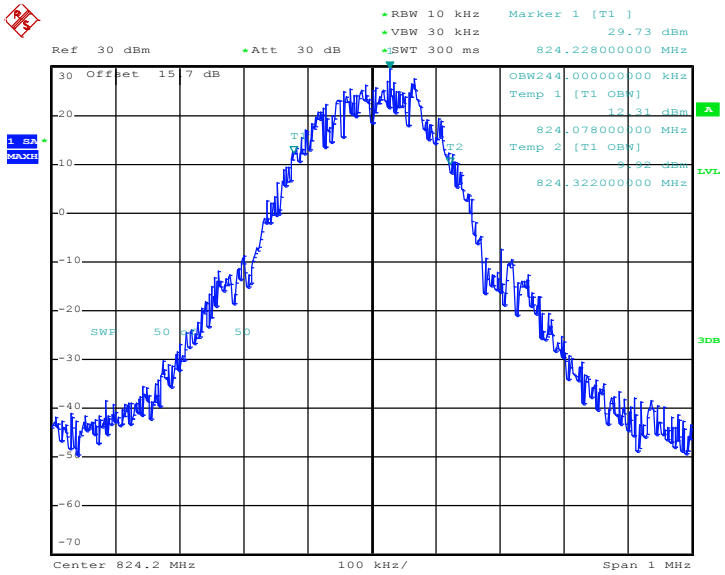
PCS Band						
Modes	GPRS 8			EDGE 8		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8
99% OBW (KHz)	242.00	248.00	244.00	242.00	246.00	242.00
26dB BW (KHz)	302.00	302.00	302.00	302.00	310.00	304.00

PCS Band			
Modes	RMC 12.2Kbps		
Channel	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1852.4	1880	1907.6
99% OBW (MHz)	4.14	4.18	4.14
26dB BW (MHz)	4.68	4.68	4.68

3.4.6 Test Result (Plots) of Occupied Bandwidth and 26dB Bandwidth

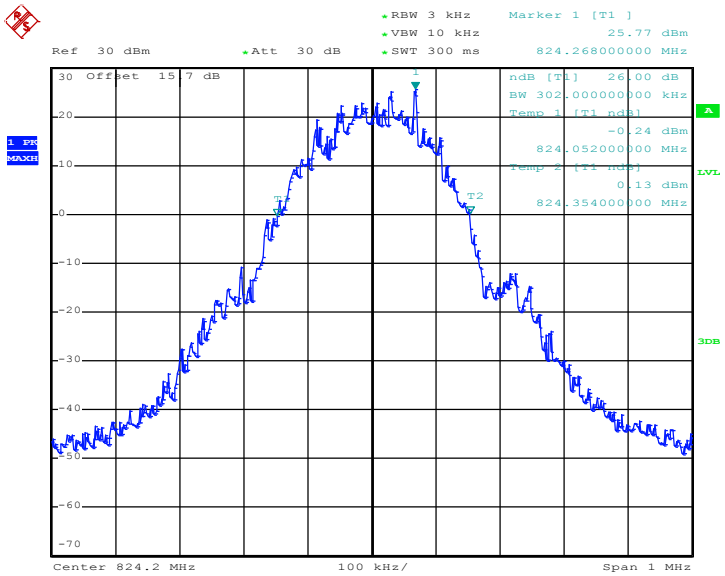
Band :	Cellular Band	Test Mode :	GPRS 8 Link

99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



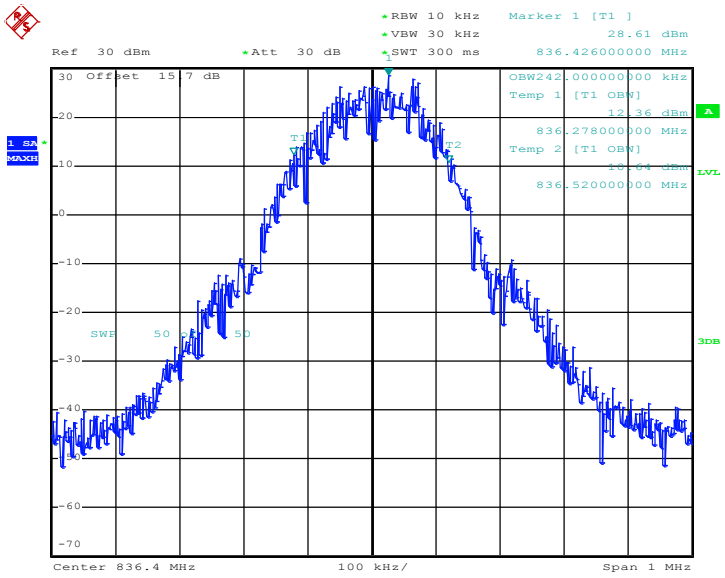
Date: 9.FEB.2012 10:15:10

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



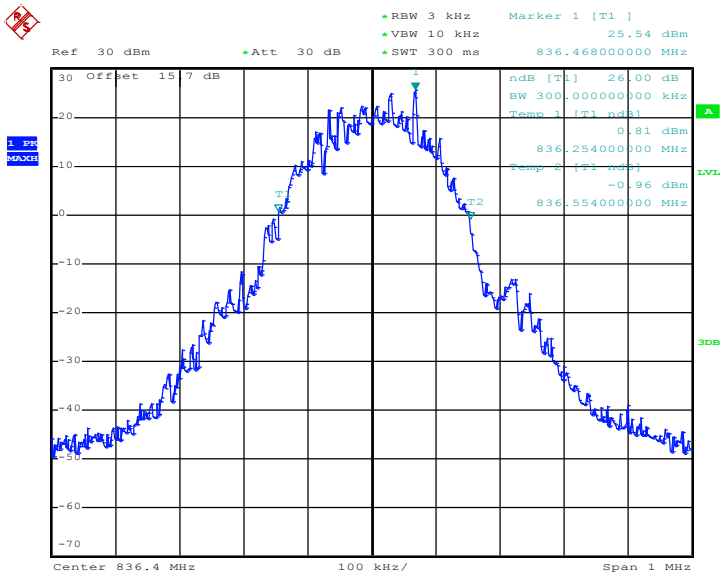
Date: 9.FEB.2012 10:12:37

99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



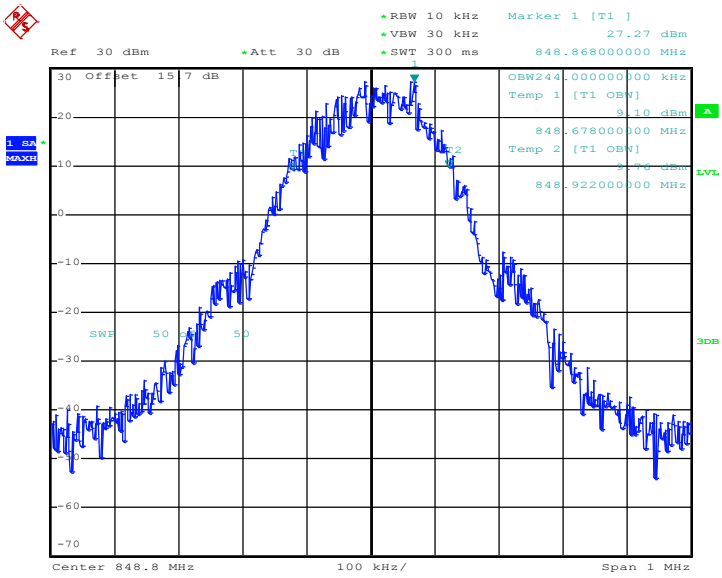
Date: 9.FEB.2012 10:15:30

26dB Bandwidth Plot on Channel 189 (836.4 MHz)



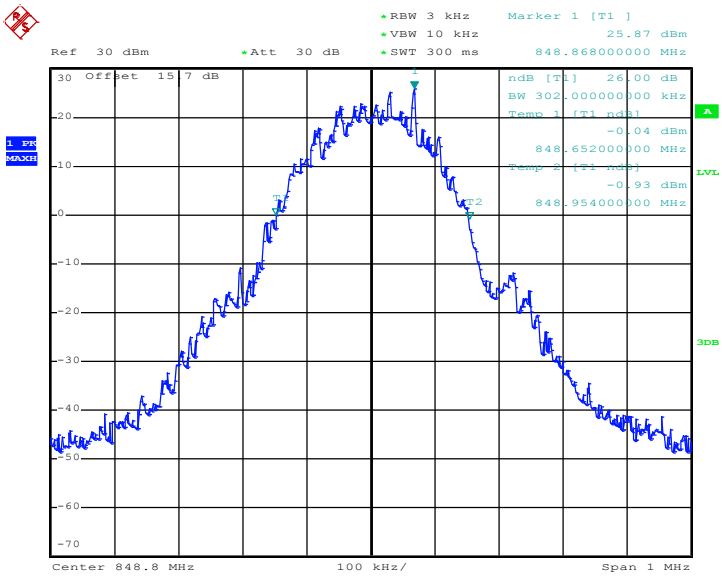
Date: 9.FEB.2012 10:13:04

99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 9.FEB.2012 10:15:50

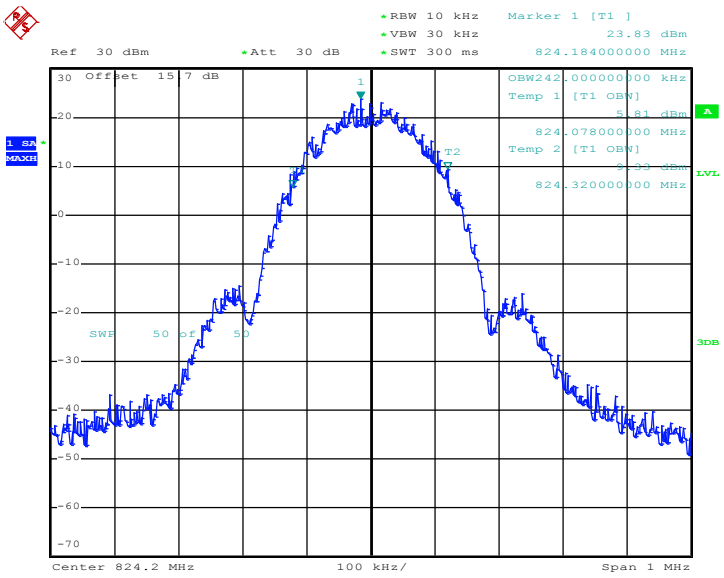
26dB Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 9.FEB.2012 10:13:31

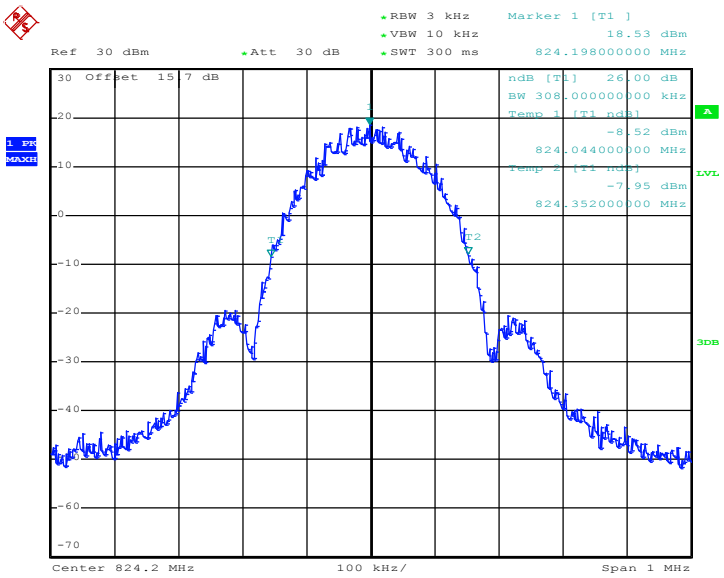
Band :	Cellular Band	Test Mode :	EDGE 8 Link

99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



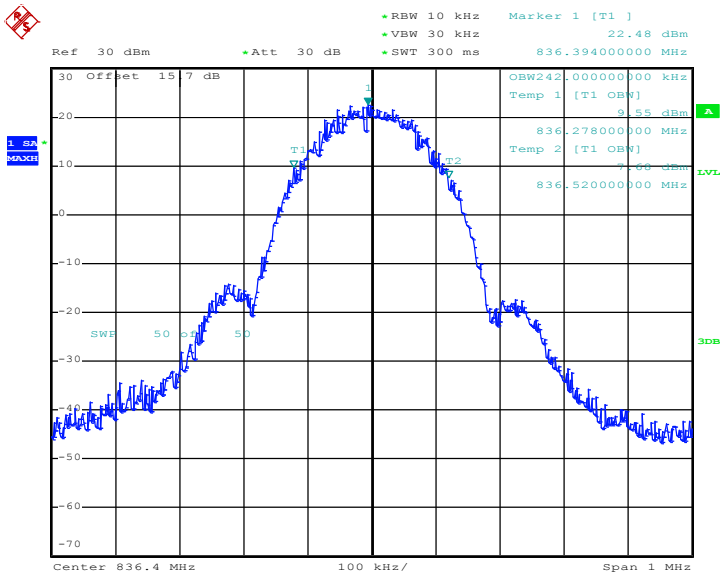
Date: 9.FEB.2012 10:47:49

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



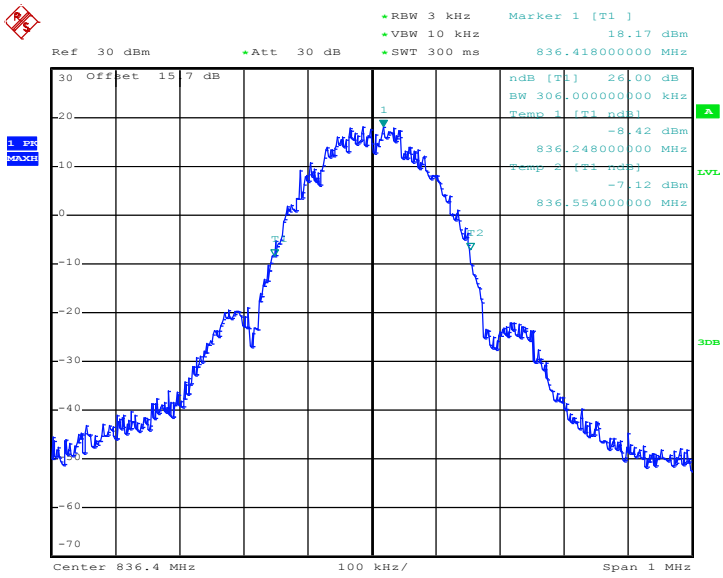
Date: 9.FEB.2012 10:31:53

99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



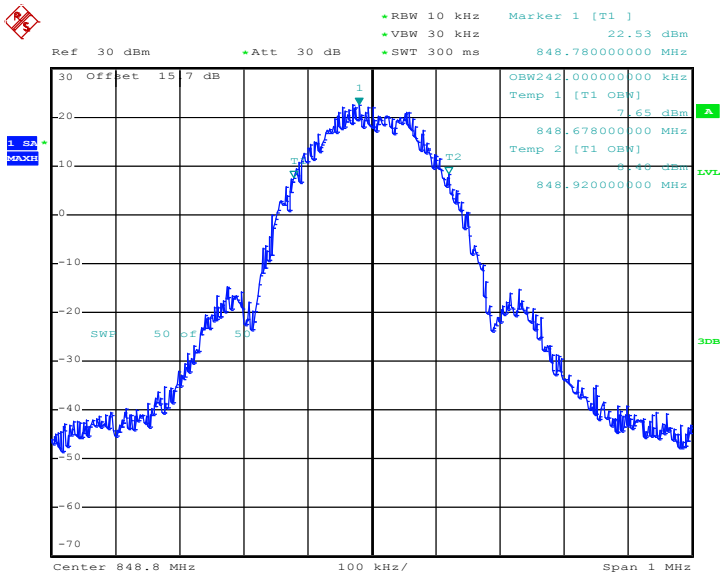
Date: 9.FEB.2012 10:46:38

26dB Bandwidth Plot on Channel 189 (836.4 MHz)



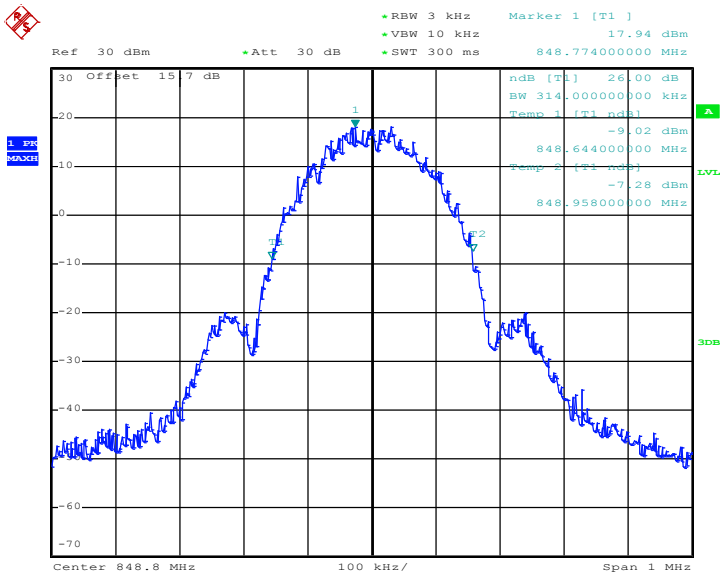
Date: 9.FEB.2012 10:32:20

99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 9.FEB.2012 10:45:06

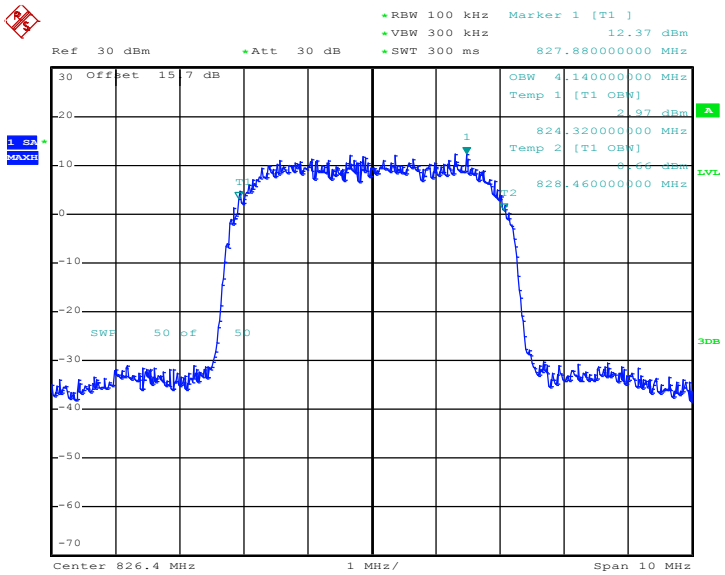
26dB Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 9.FEB.2012 10:32:46

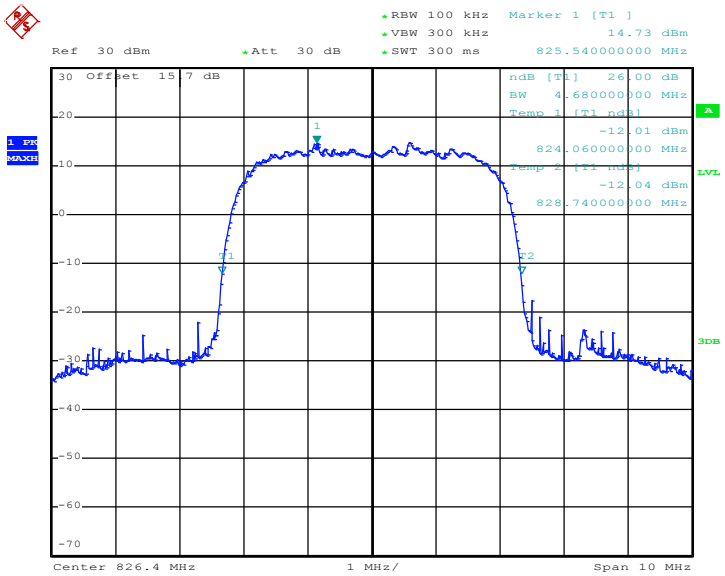
Band :	Cellular Band	Test Mode :	RMC 12.2Kbps Link

99% Occupied Bandwidth Plot on Channel 4132 (826.4 MHz)



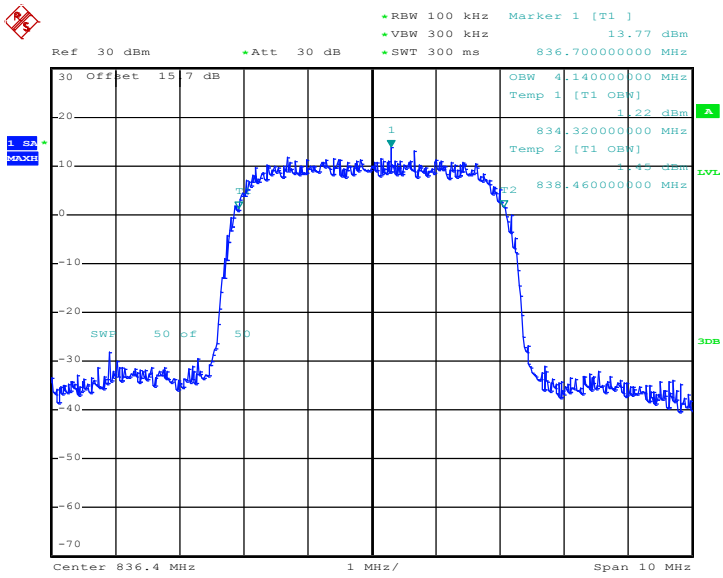
Date: 9.FEB.2012 12:05:58

26dB Bandwidth Plot on Channel 4132 (826.4 MHz)



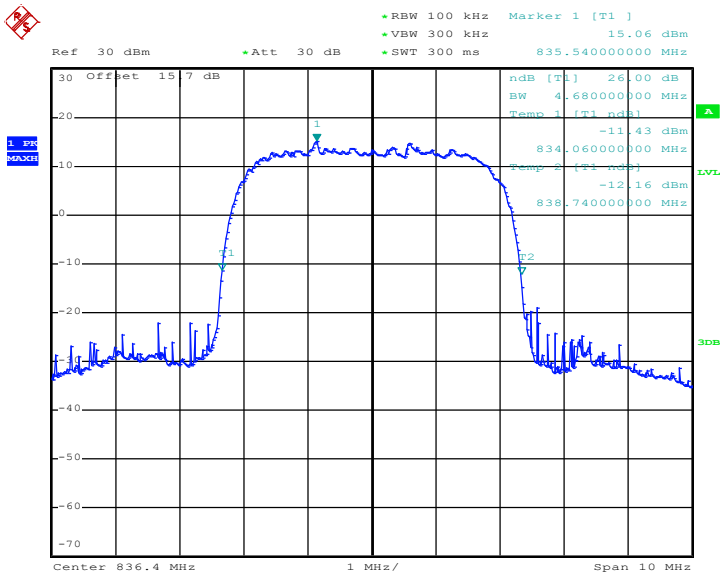
Date: 9.FEB.2012 12:03:24

99% Occupied Bandwidth Plot on Channel 4182 (836.4 MHz)



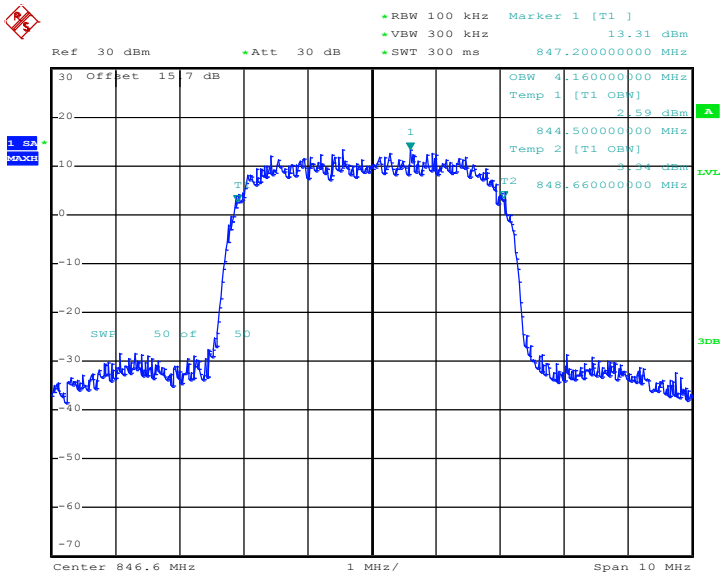
Date: 9.FEB.2012 12:06:19

26dB Bandwidth Plot on Channel 4182 (836.4 MHz)



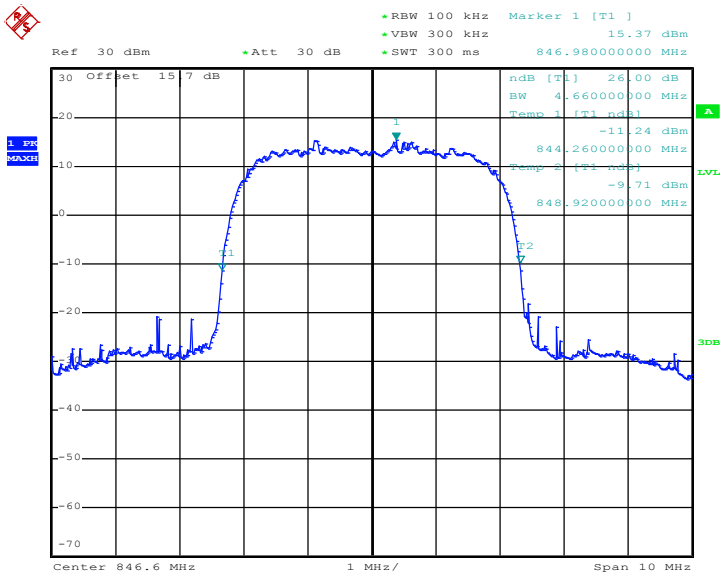
Date: 9.FEB.2012 12:03:51

99% Occupied Bandwidth Plot on Channel 4233 (846.6 MHz)



Date: 9.FEB.2012 12:06:39

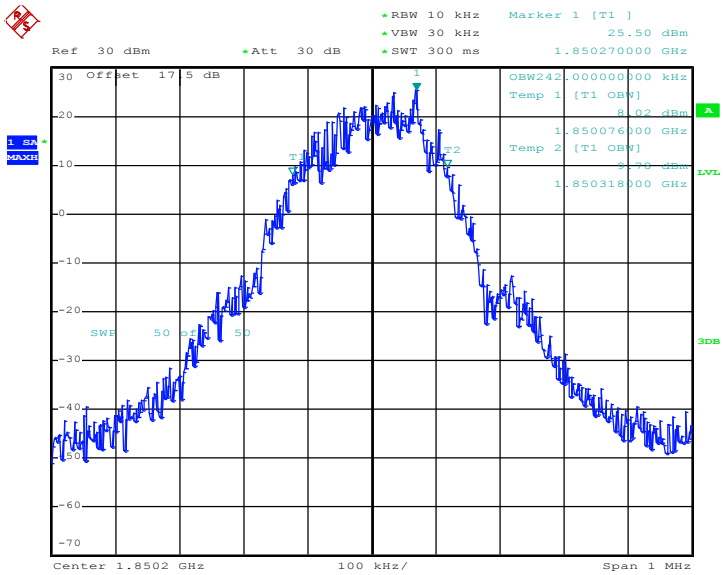
26dB Bandwidth Plot on Channel 4233 (846.6 MHz)



Date: 9.FEB.2012 12:04:17

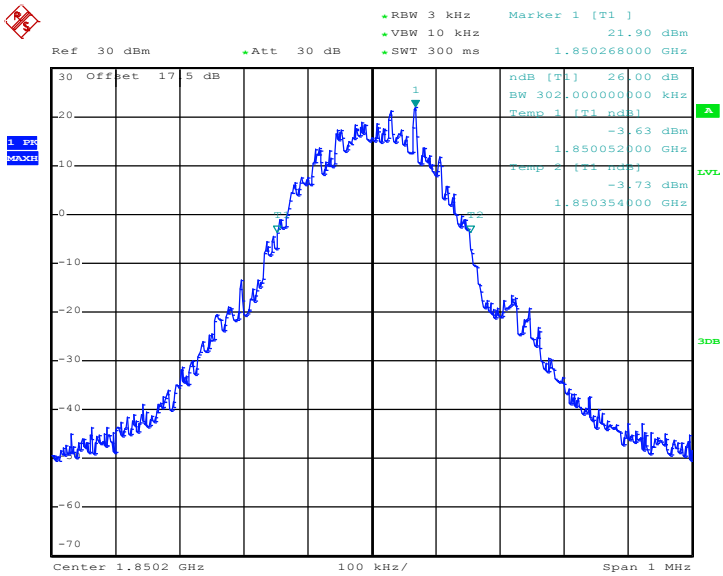
Band :	PCS Band	Test Mode :	GPRS 8 Link

99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



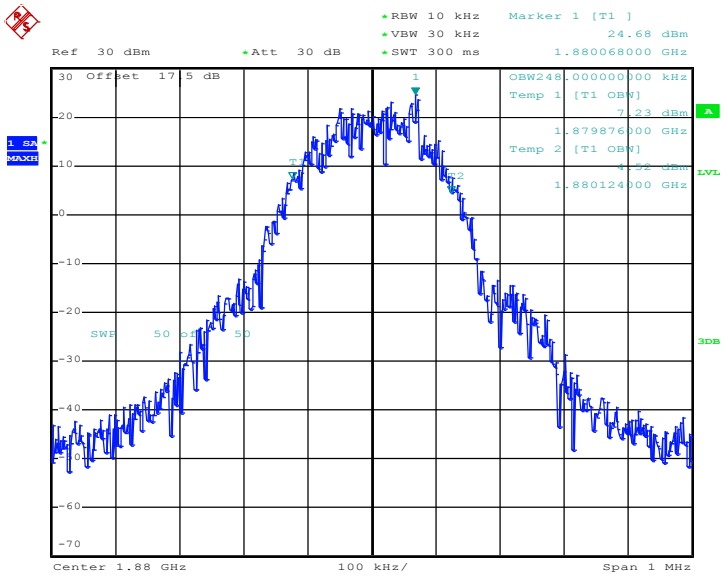
Date: 9.FEB.2012 11:14:28

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



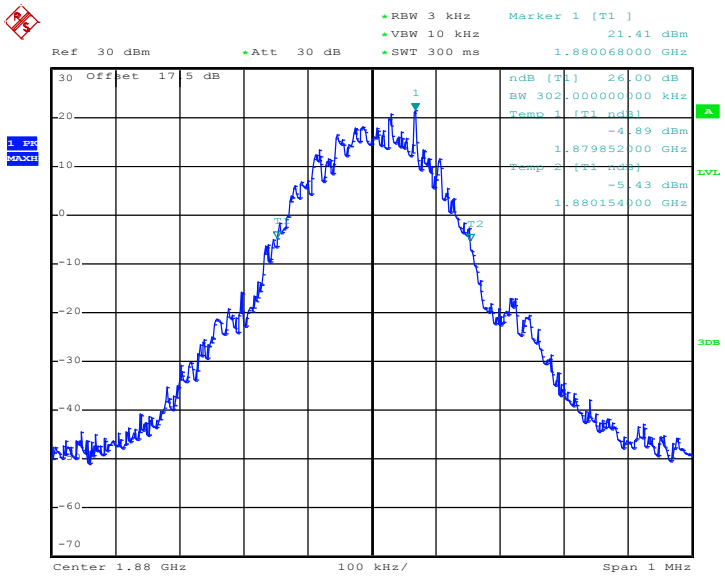
Date: 9.FEB.2012 11:11:55

99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



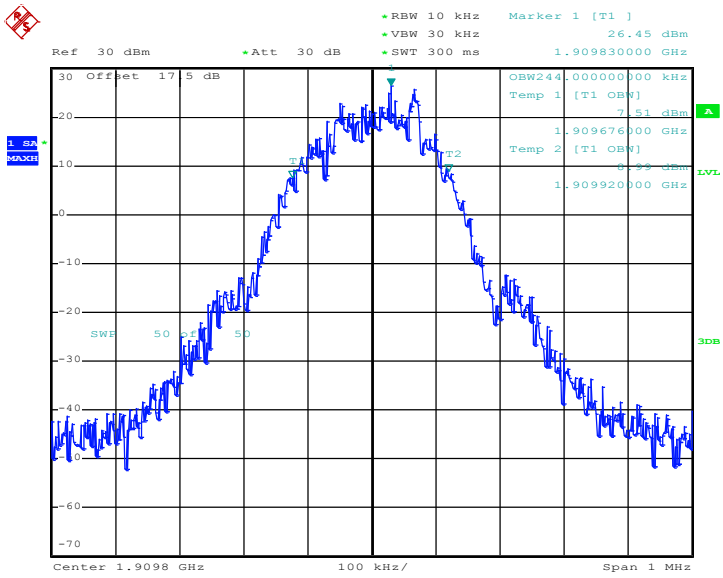
Date: 9.FEB.2012 11:14:48

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



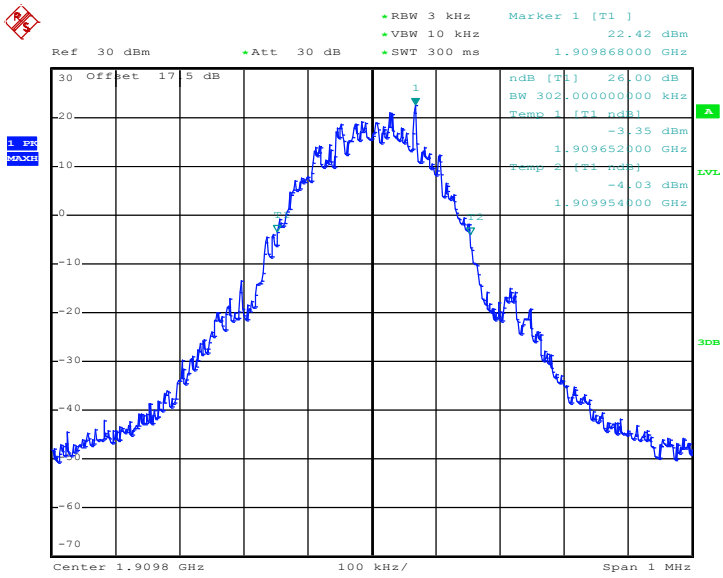
Date: 9.FEB.2012 11:12:22

99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 9.FEB.2012 11:15:08

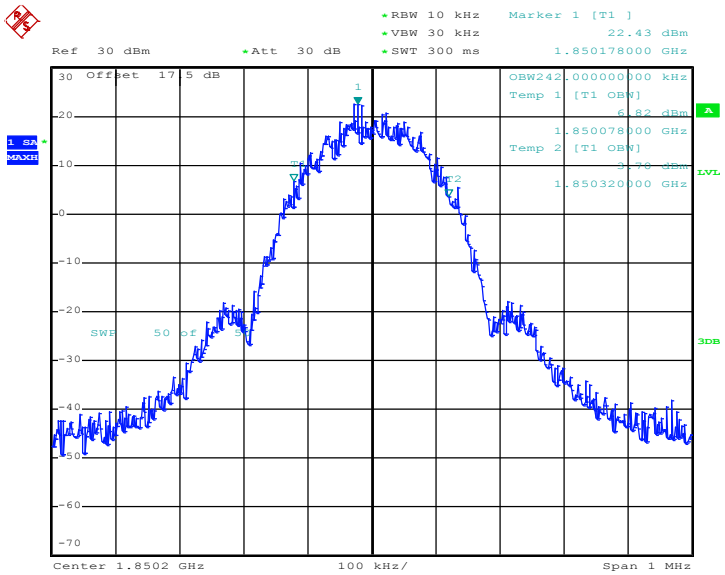
26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 9.FEB.2012 11:12:48

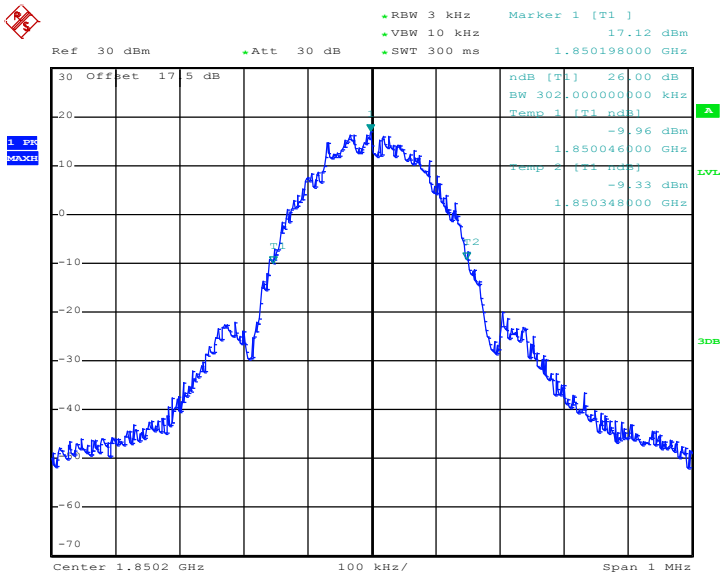
Band :	PCS Band	Test Mode :	EDGE 8 Link

99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



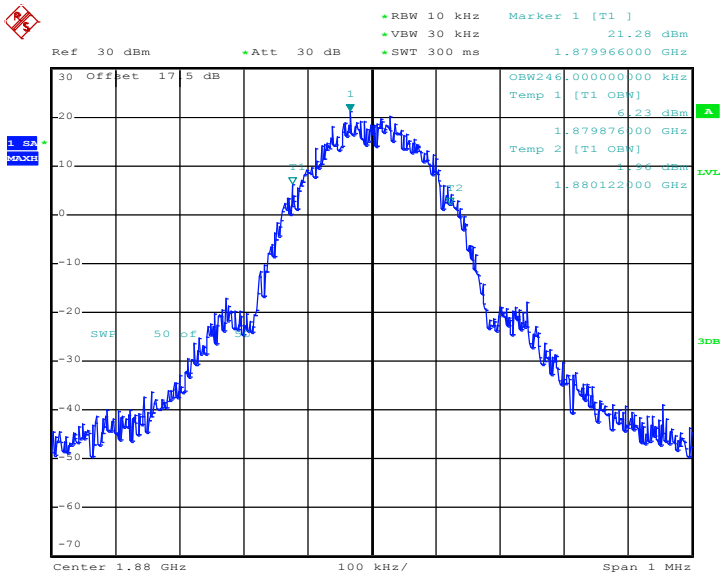
Date: 9.FEB.2012 11:41:36

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



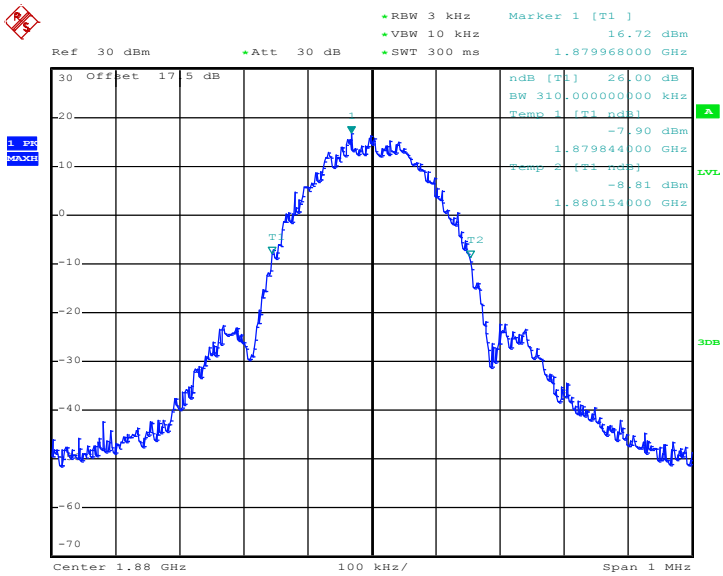
Date: 9.FEB.2012 11:31:53

99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



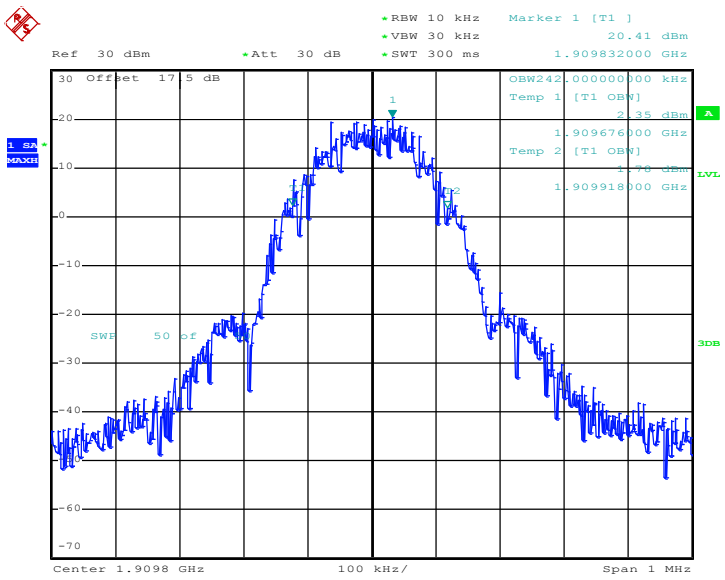
Date: 9.FEB.2012 11:40:56

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



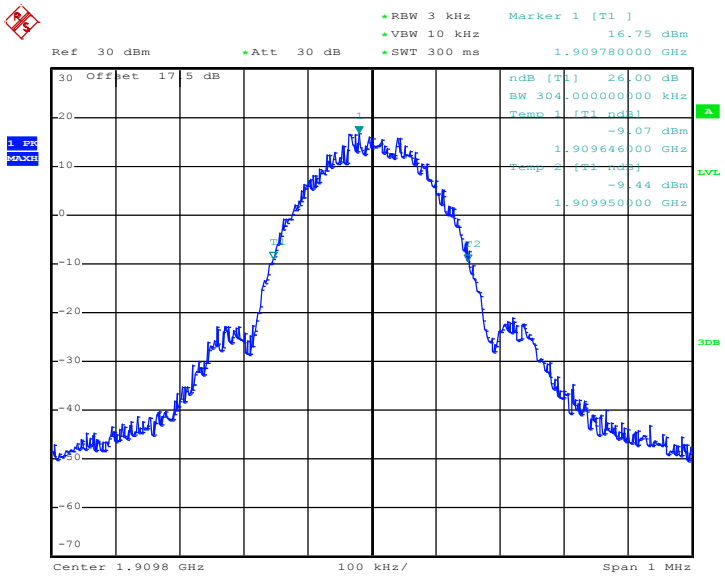
Date: 9.FEB.2012 11:32:19

99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 9.FEB.2012 11:40:01

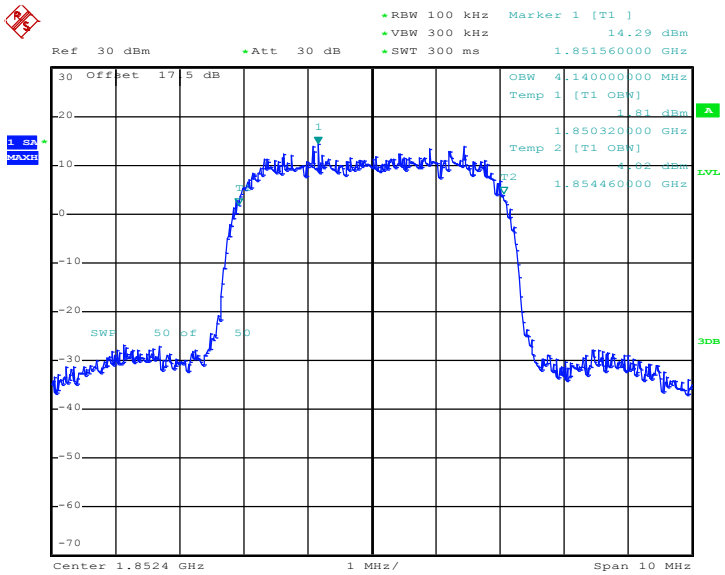
26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 9.FEB.2012 11:32:46

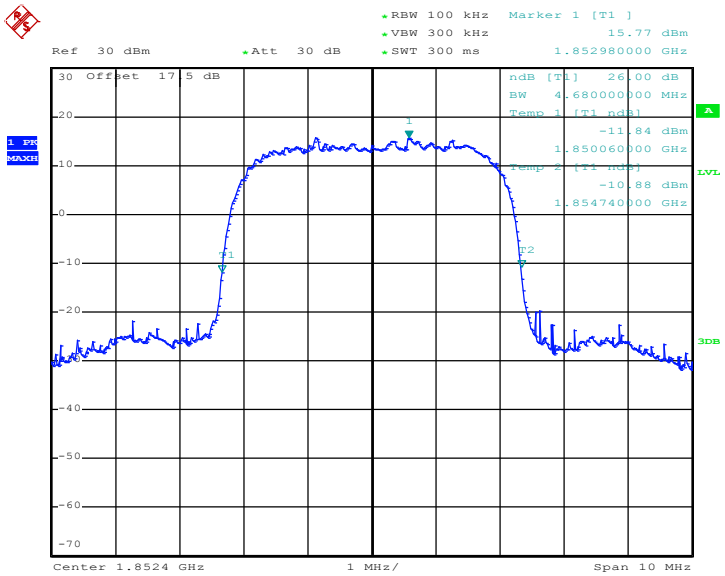
Band :	PCS Band	Test Mode :	RMC 12.2Kbps Link

99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)



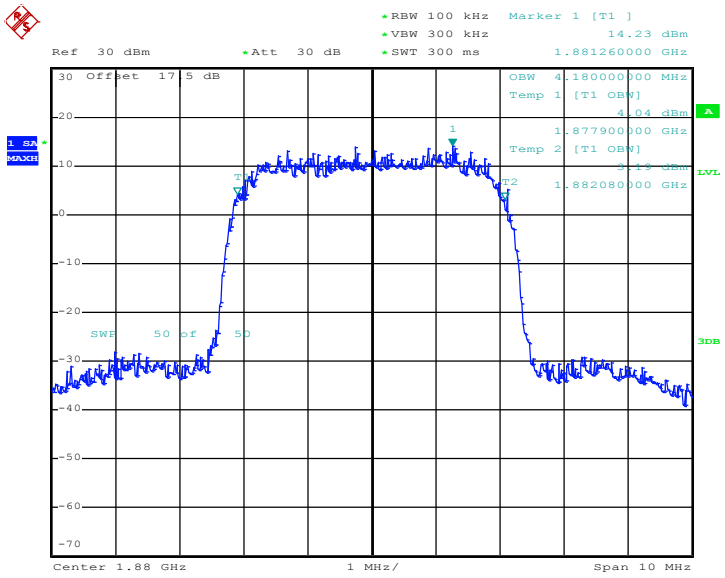
Date: 9.FEB.2012 11:53:47

26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



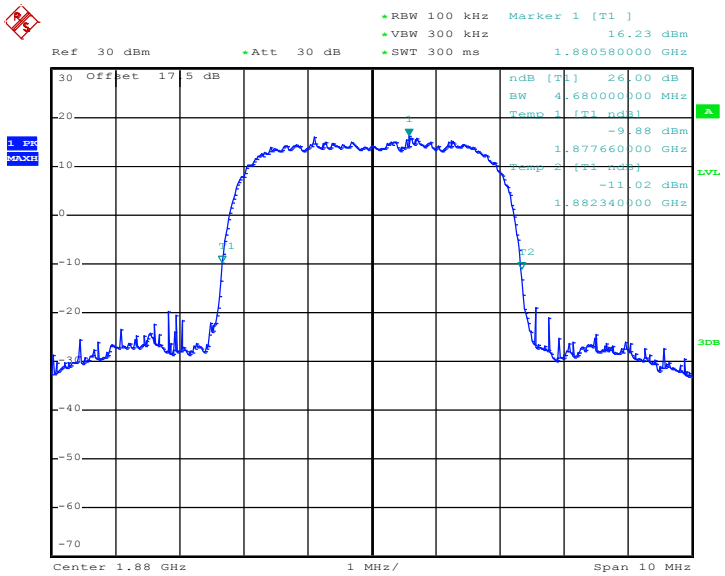
Date: 9.FEB.2012 11:51:14

99% Occupied Bandwidth Plot on Channel 9400 (1880.0 MHz)



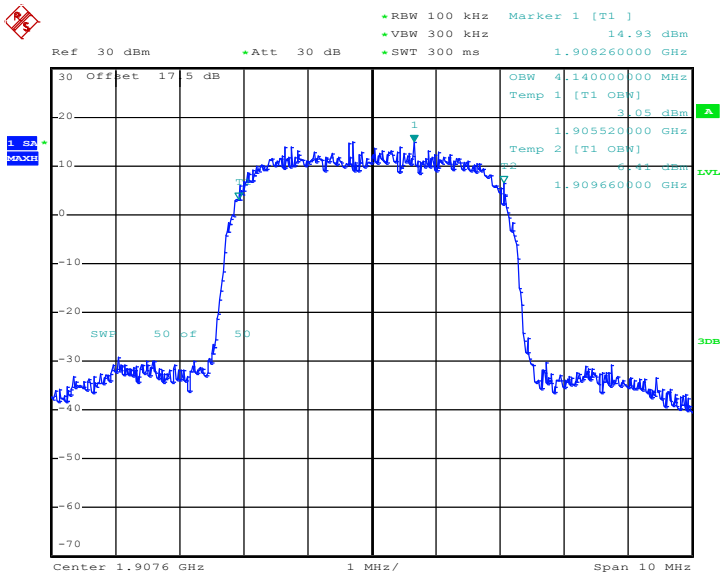
Date: 9.FEB.2012 11:54:08

26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



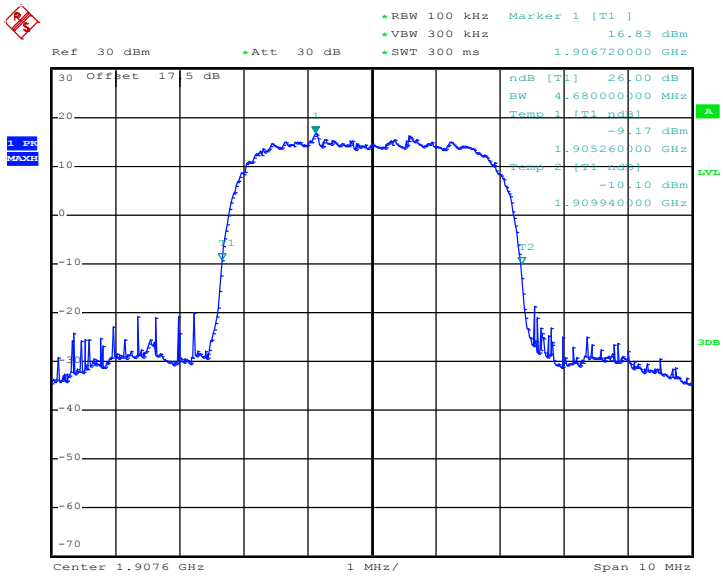
Date: 9.FEB.2012 11:51:41

99% Occupied Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 9.FEB.2012 11:54:29

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 9.FEB.2012 11:52:07

3.5 Band Edge Measurement

3.5.1 Description of 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.

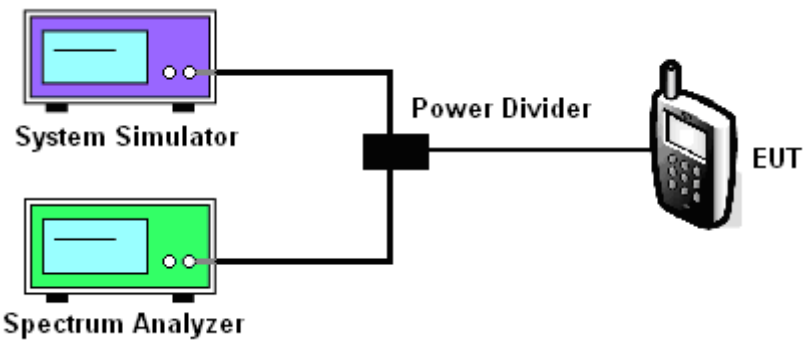
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100.

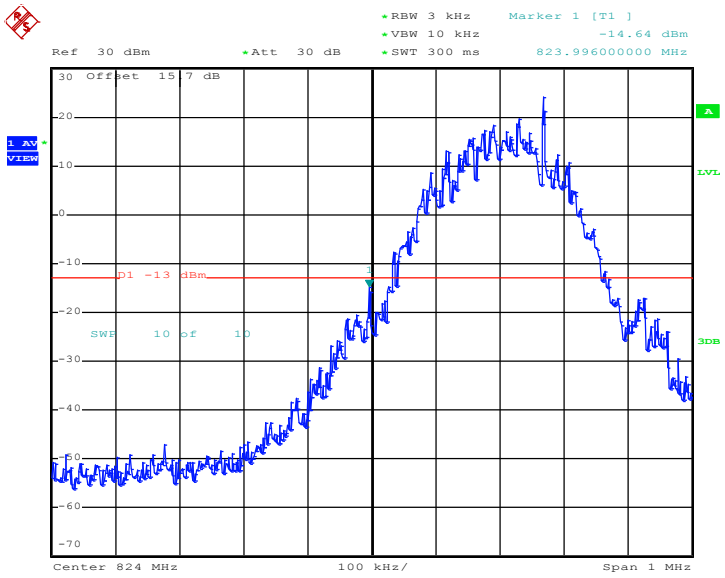
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	Cellular Band	Test Mode :	GPRS 8 Link
Correction Factor :	0.03dB	Maximum 26dB Bandwidth :	0.302MHz
Band Edge :	-14.61dBm	Measurement Value :	-14.64dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)



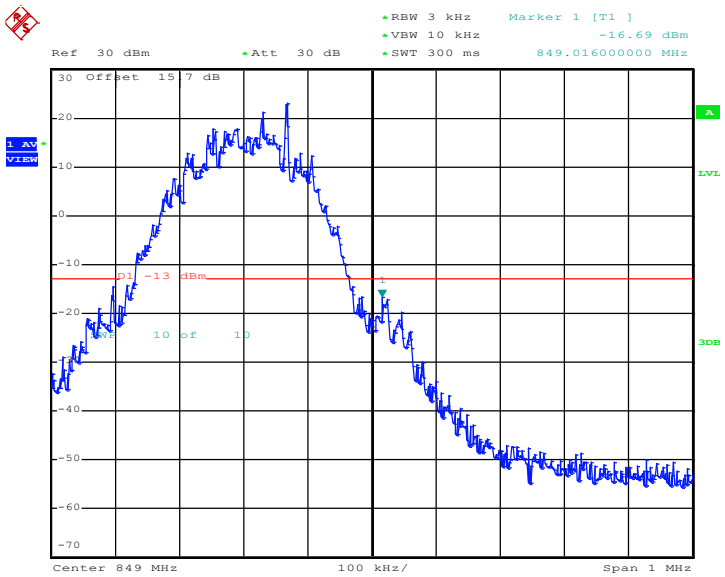
1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

For example, -14.64dBm + 0.03dB = -14.61dBm

Band :	Cellular Band	Test Mode :	GPRS 8 Link
Correction Factor :	0.03dB	Maximum 26dB Bandwidth :	0.302MHz
Band Edge :	-16.66dBm	Measurement Value :	-16.69dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



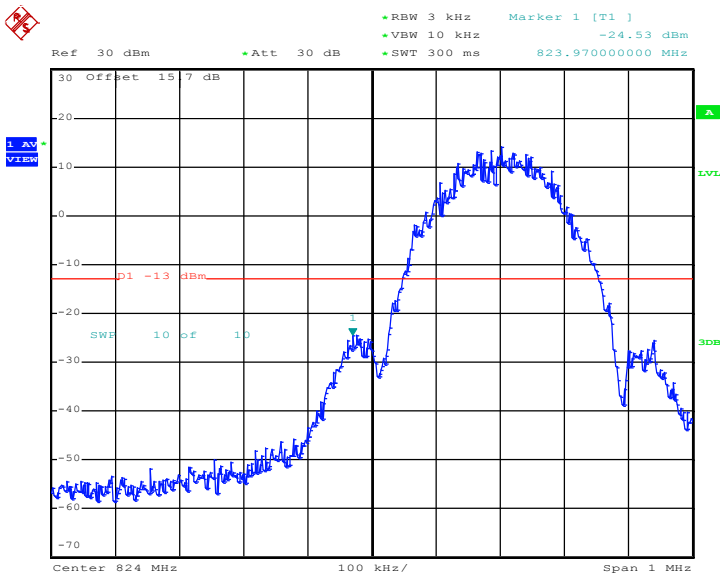
Date: 9.FEB.2012 10:17:44

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	Cellular Band	Test Mode :	EDGE 8 Link
Correction Factor :	0.20dB	Maximum 26dB Bandwidth :	0.314MHz
Band Edge :	-24.33dBm	Measurement Value :	-24.53dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)



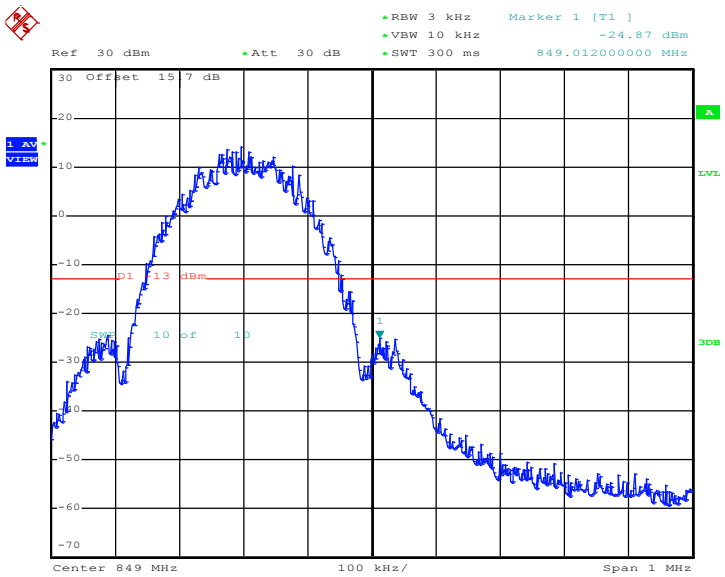
Date: 9.FEB.2012 10:36:30

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	Cellular Band	Test Mode :	EDGE 8 Link
Correction Factor :	0.20dB	Maximum 26dB Bandwidth :	0.314MHz
Band Edge :	-24.67dBm	Measurement Value :	-24.87dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



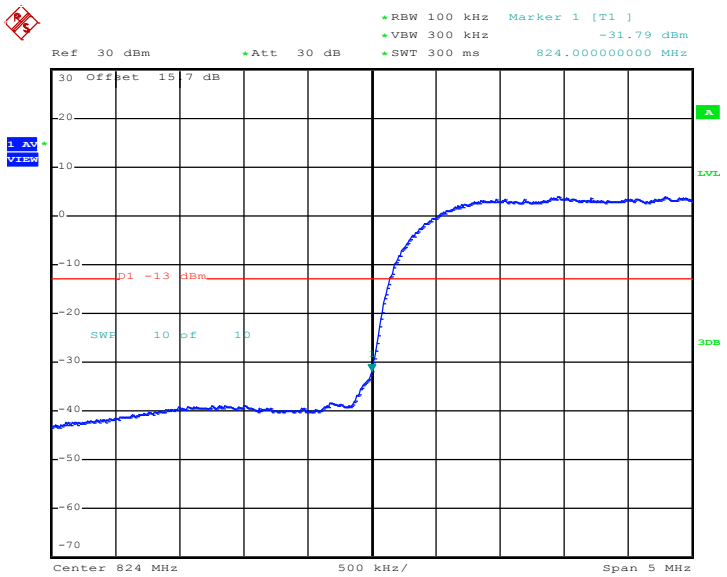
Date: 9.FEB.2012 10:37:00

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	Cellular Band	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.30dB	Maximum 26dB Bandwidth :	4.680MHz
Band Edge :	-35.09dBm	Measurement Value :	-31.79dBm

Lower Band Edge Plot on Channel 4132 (826.4 MHz)



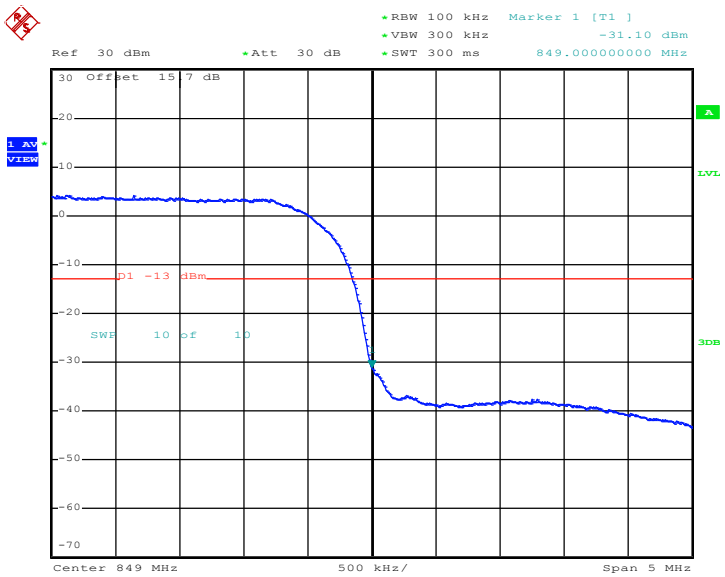
Date: 9.FEB.2012 12:27:55

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	Cellular Band	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.30dB	Maximum 26dB Bandwidth :	4.680MHz
Band Edge :	-34.4dBm	Measurement Value :	-31.10dBm

Higher Band Edge Plot on Channel 4233 (846.6 MHz)



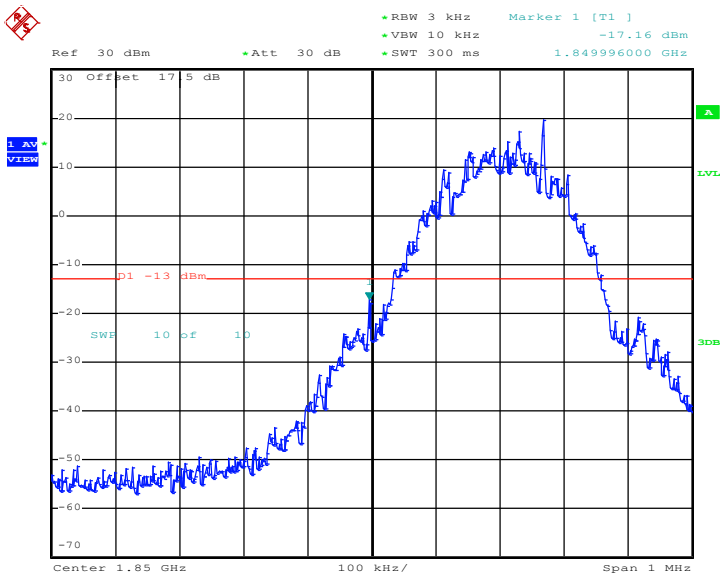
Date: 9.FEB.2012 12:26:51

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	PCS Band	Test Mode :	GPRS 8 Link
Correction Factor :	0.03dB	Maximum 26dB Bandwidth :	0.302MHz
Band Edge :	-17.13dBm	Measurement Value :	-17.16dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



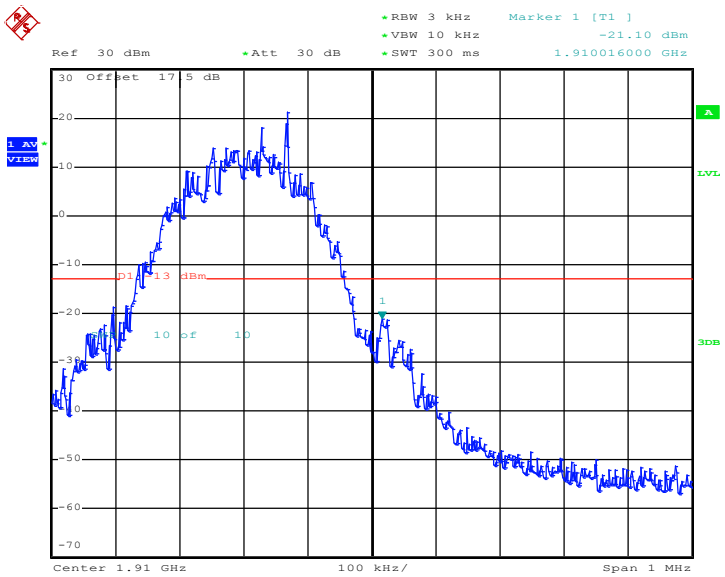
Date: 9.FEB.2012 11:16:31

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	PCS Band	Test Mode :	GPRS 8 Link
Correction Factor :	0.03dB	Maximum 26dB Bandwidth :	0.302MHz
Band Edge :	-21.07dBm	Measurement Value :	-21.10dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



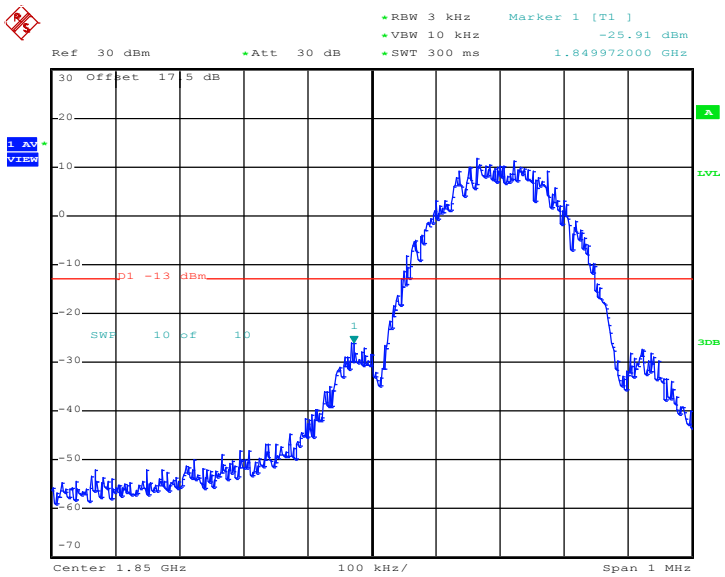
Date: 9.FEB.2012 11:17:01

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	PCS Band	Test Mode :	EDGE 8 Link
Correction Factor :	0.14dB	Maximum 26dB Bandwidth :	0.310MHz
Band Edge :	-25.77dBm	Measurement Value :	-25.91dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



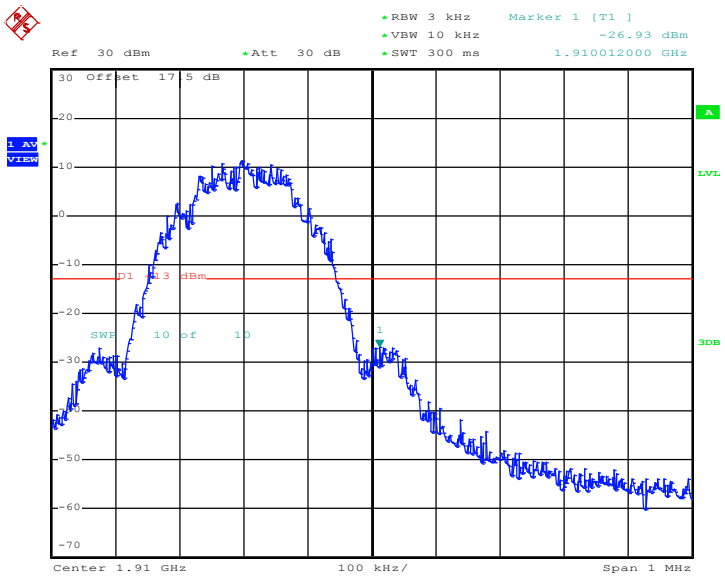
Date: 9.FEB.2012 11:36:29

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	PCS Band	Test Mode :	EDGE 8 Link
Correction Factor :	0.14dB	Maximum 26dB Bandwidth :	0.310MHz
Band Edge :	-26.79dBm	Measurement Value :	-26.93dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



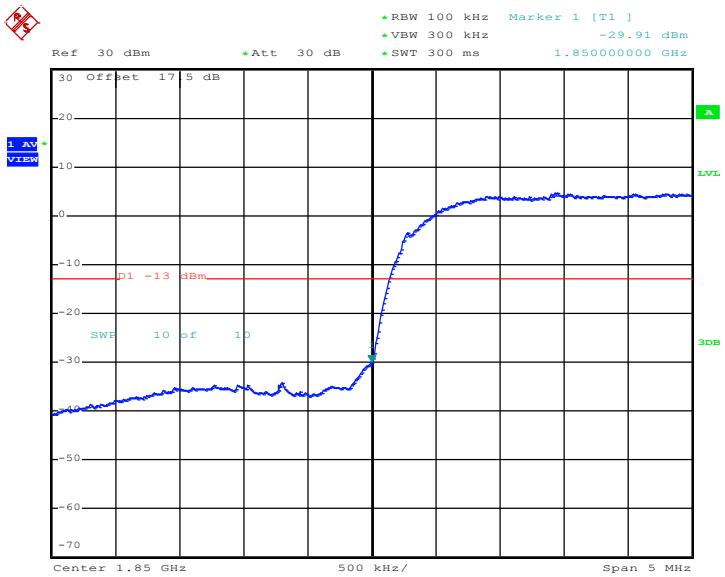
Date: 9.FEB.2012 11:36:59

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	PCS Band	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.30dB	Maximum 26dB Bandwidth :	4.68MHz
Band Edge :	-33.21dBm	Measurement Value :	-29.91dBm

Lower Band Edge Plot on Channel 9262 (1852.4 MHz)



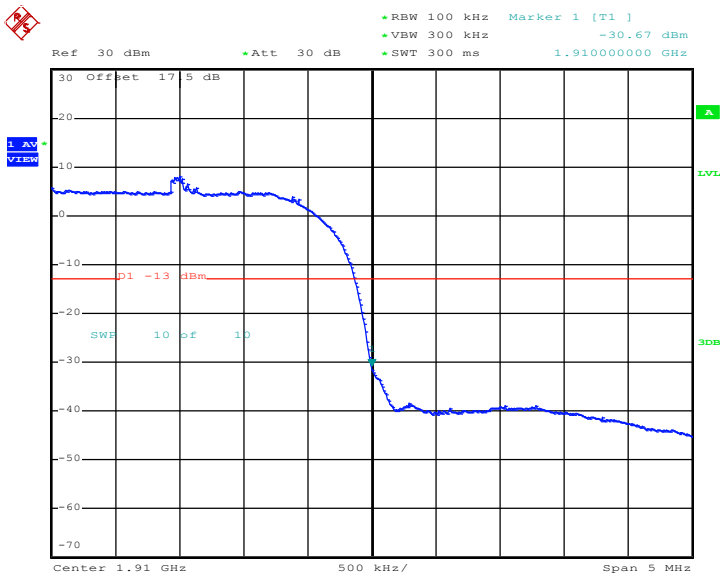
Date: 9.FEB.2012 11:55:54

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	PCS Band	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.30dB	Maximum 26dB Bandwidth :	4.68MHz
Band Edge :	-33.97dBm	Measurement Value :	-30.67dBm

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)



Date: 9.FEB.2012 11:56:23

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

3.6 Conducted Spurious Emission Measurement

3.6.1 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 10th harmonic.

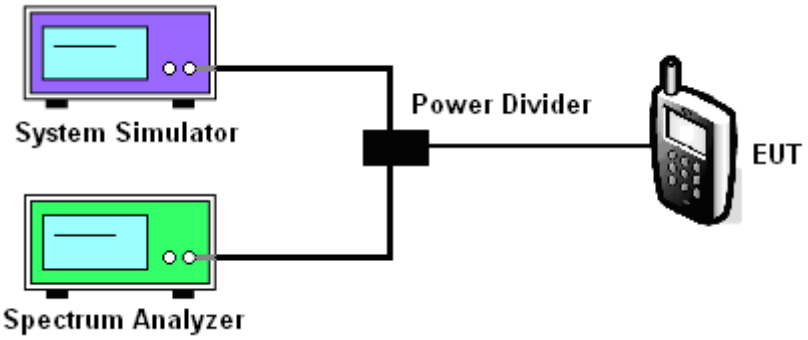
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The middle channel for the highest RF power within the transmitting frequency was measured.
3. The conducted spurious emission for the whole frequency range was taken.

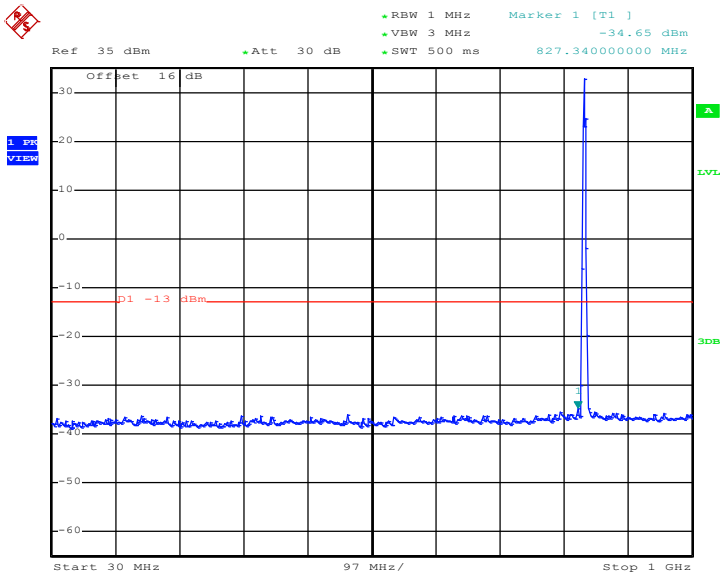
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

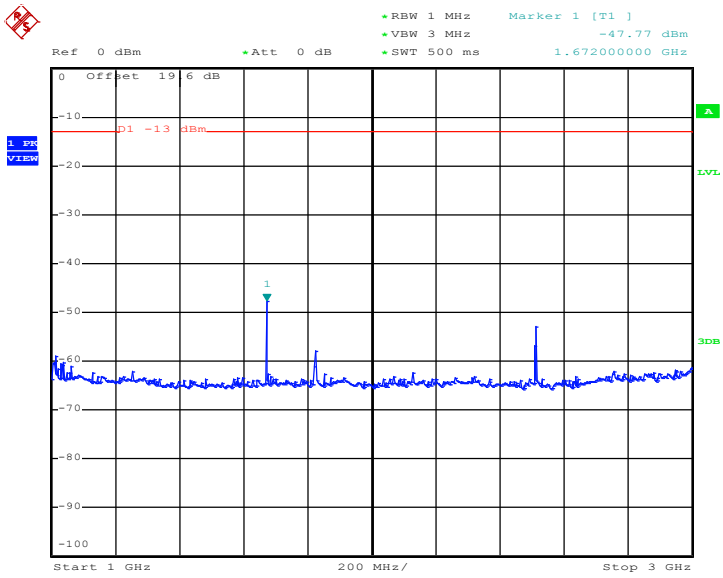
Band :	Cellular Band	Channel :	CH189
Test Mode :	GPRS 8 Link	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



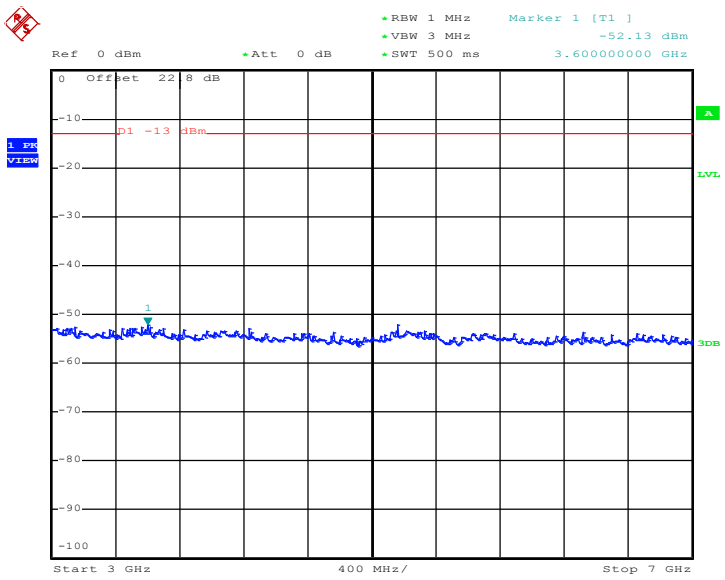
Date: 9.FEB.2012 10:11:17

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



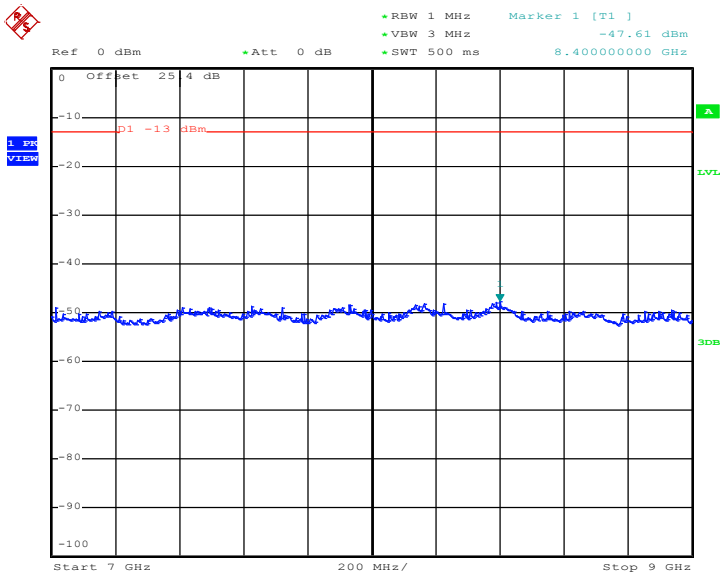
Date: 9.FEB.2012 10:11:33

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 9.FEB.2012 10:11:46

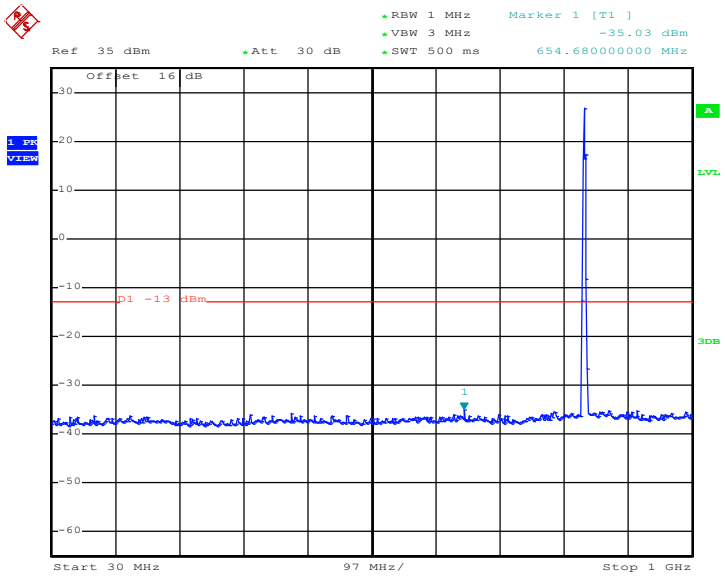
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 9.FEB.2012 10:11:59

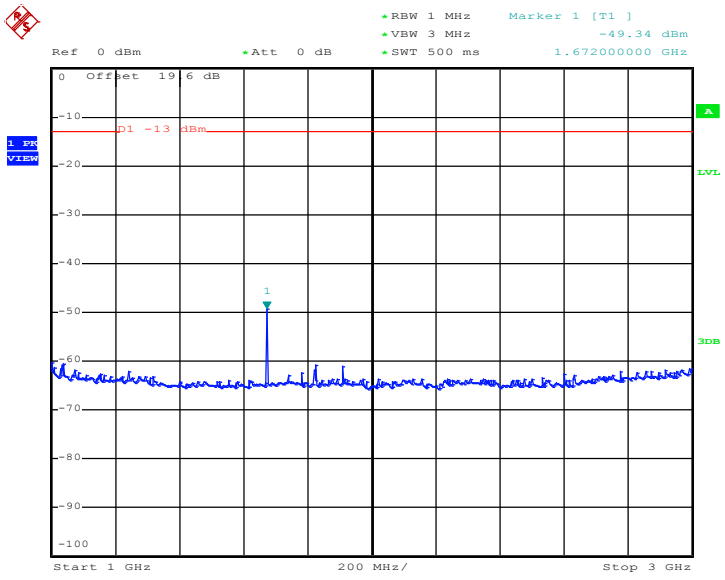
Band :	Cellular Band	Channel :	CH189
Test Mode :	EDGE 8 Link	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



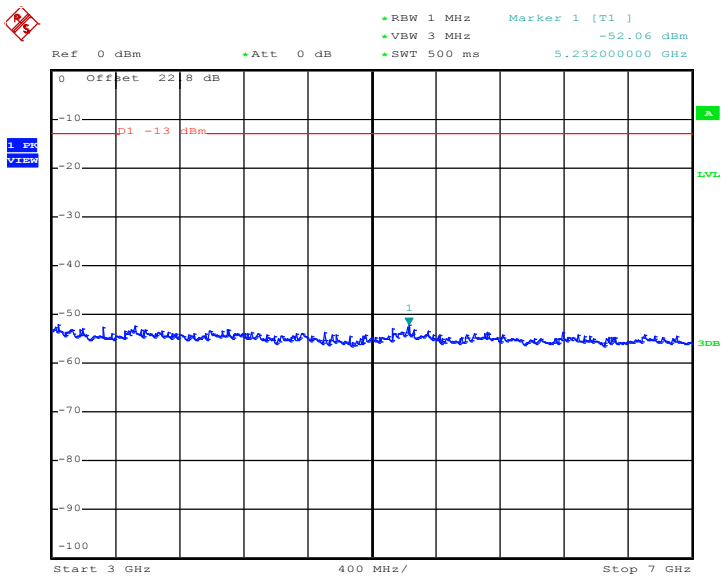
Date: 9.FEB.2012 10:29:52

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



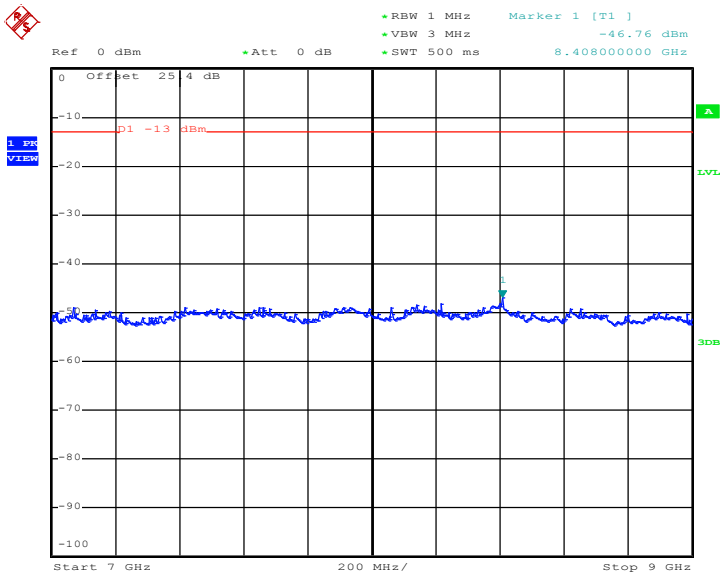
Date: 9.FEB.2012 10:30:43

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 9.FEB.2012 10:30:56

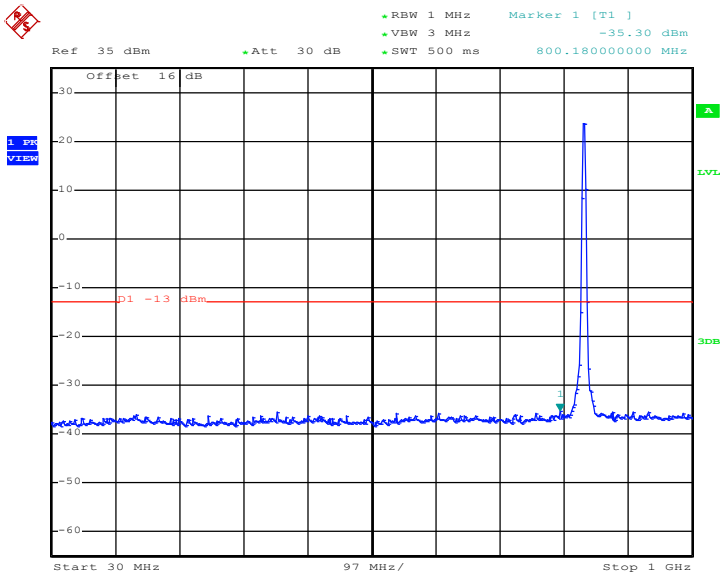
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 9.FEB.2012 10:31:09

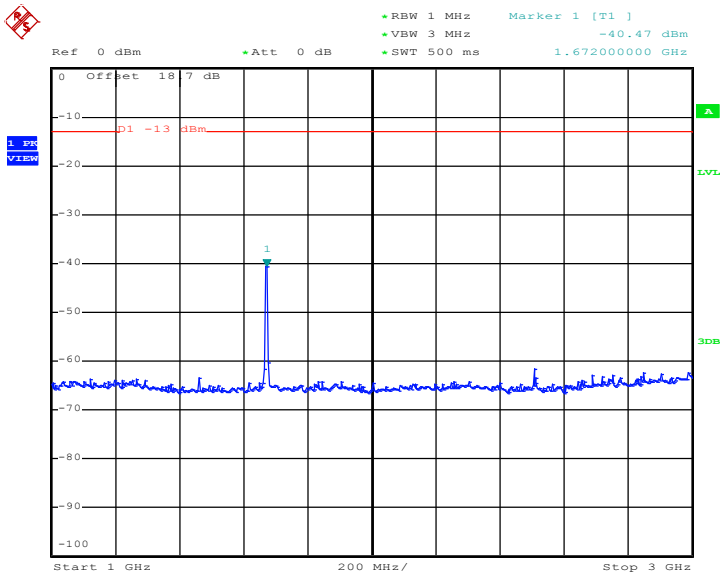
Band :	Cellular Band	Channel :	CH4182
Test Mode :	RMC 12.2Kbps Link	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



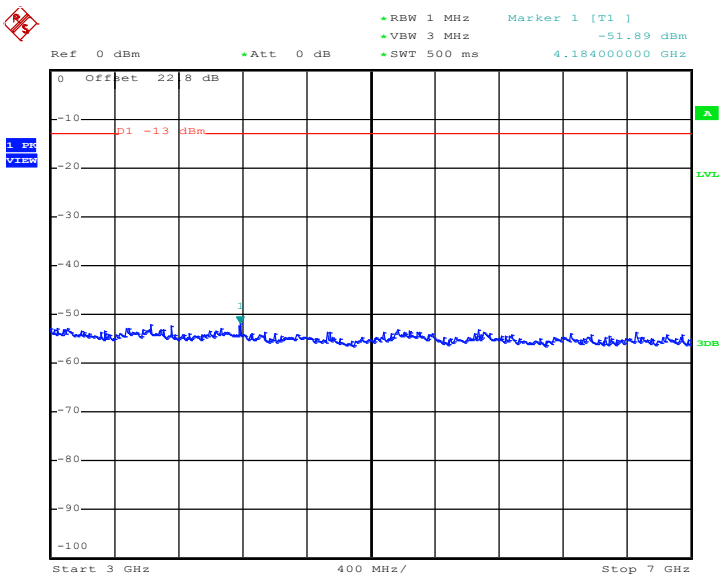
Date: 9.FEB.2012 12:01:52

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



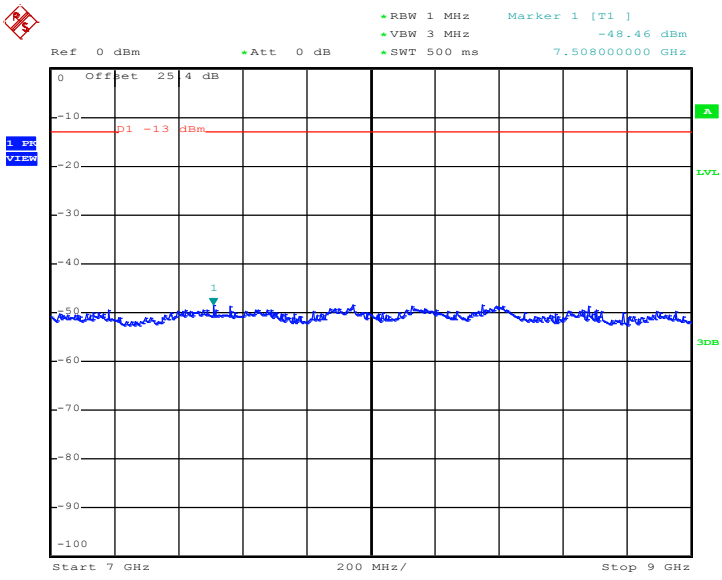
Date: 9.FEB.2012 12:02:09

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 9.FEB.2012 12:02:22

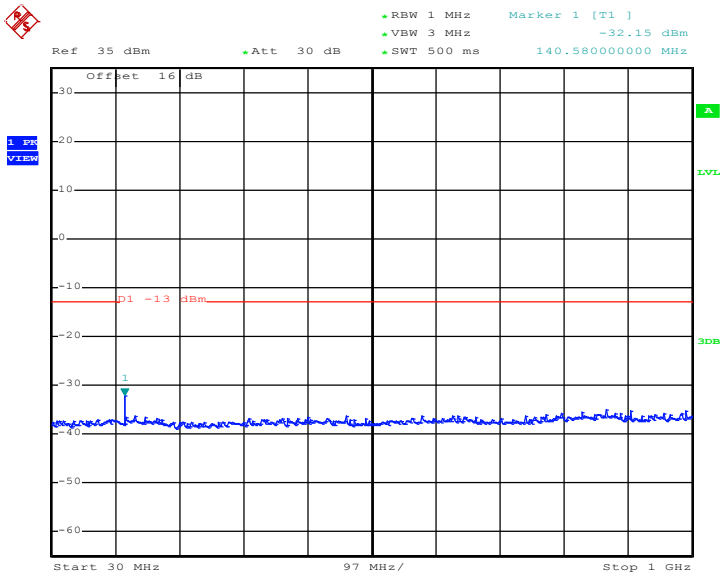
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 9.FEB.2012 12:02:35

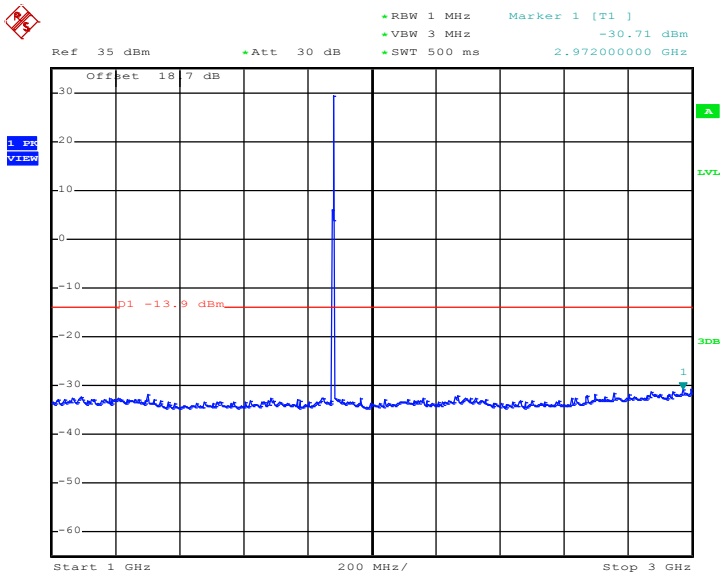
Band :	PCS Band	Channel :	CH661
Test Mode :	GPRS 8 Link	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



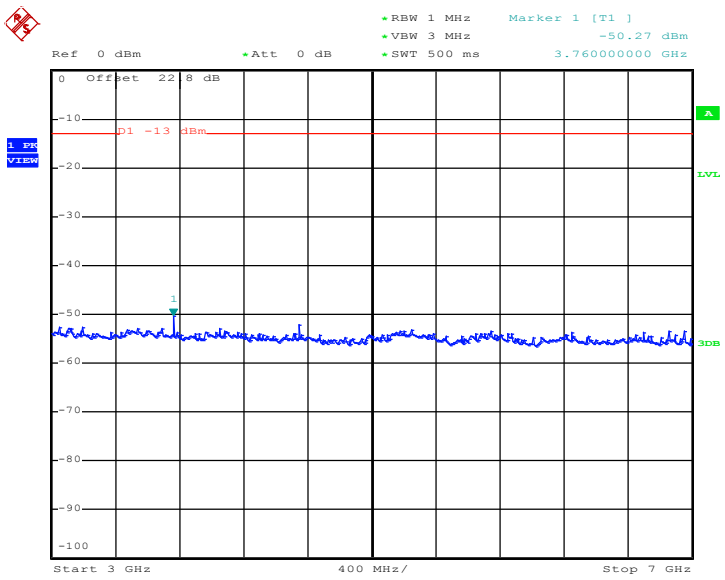
Date: 9.FEB.2012 11:07:36

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



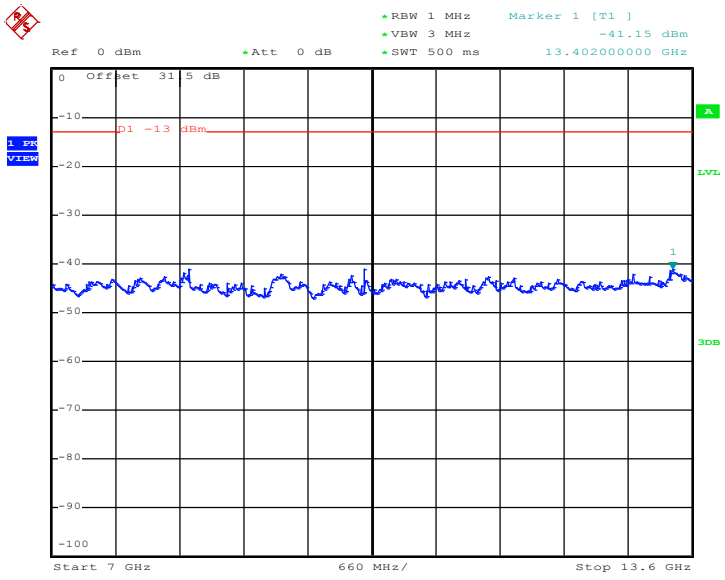
Date: 9.FEB.2012 11:10:07

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



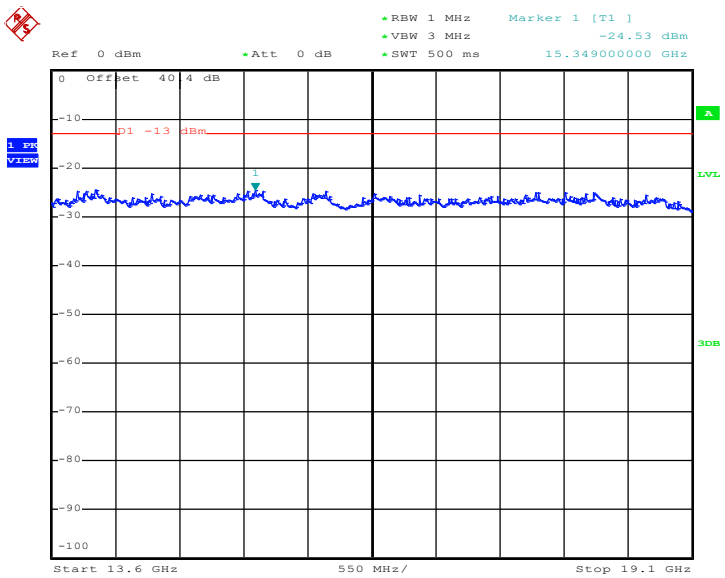
Date: 9.FEB.2012 11:10:27

Conducted Emission Plot between 7GHz ~ 13.6GHz



Date: 9.FEB.2012 11:10:40

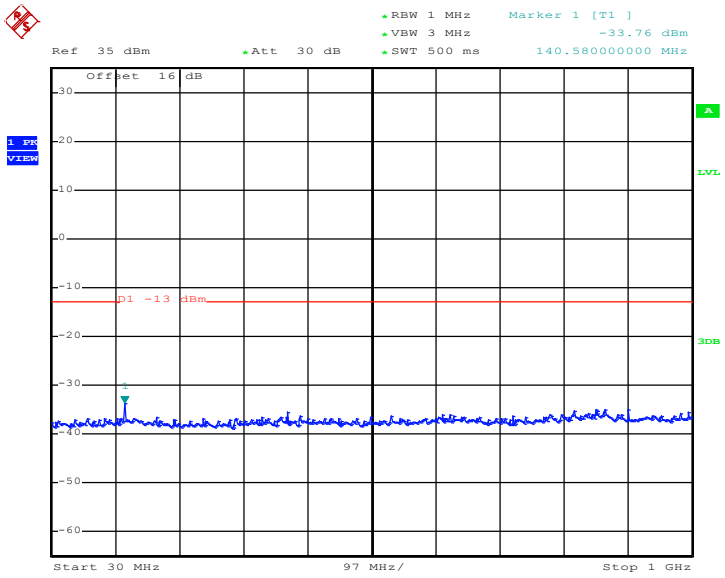
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 9.FEB.2012 11:10:53

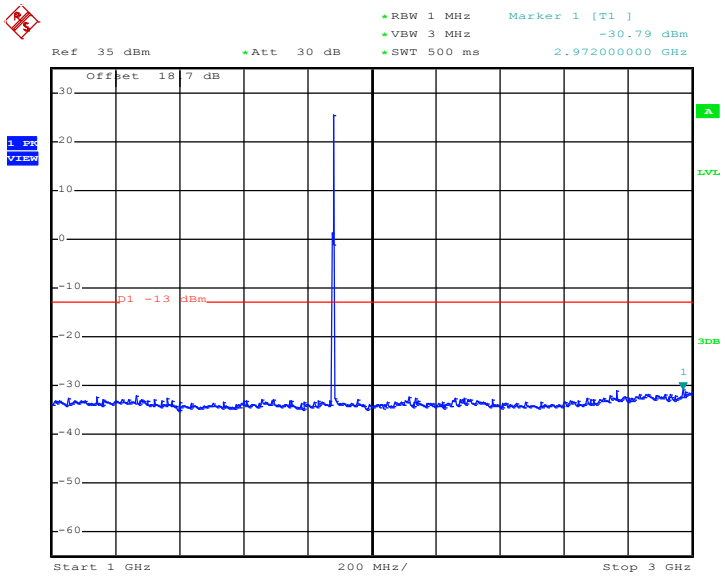
Band :	PCS Band	Channel :	CH661
Test Mode :	EDGE 8 Link	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



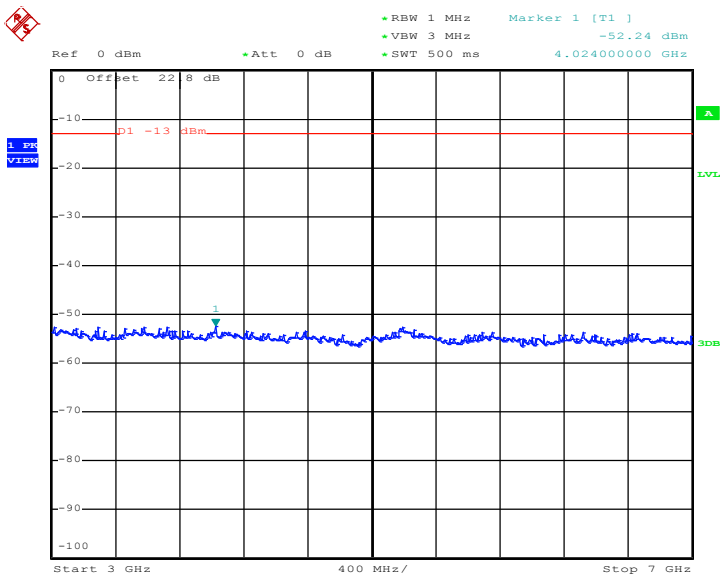
Date: 9.FEB.2012 11:28:38

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



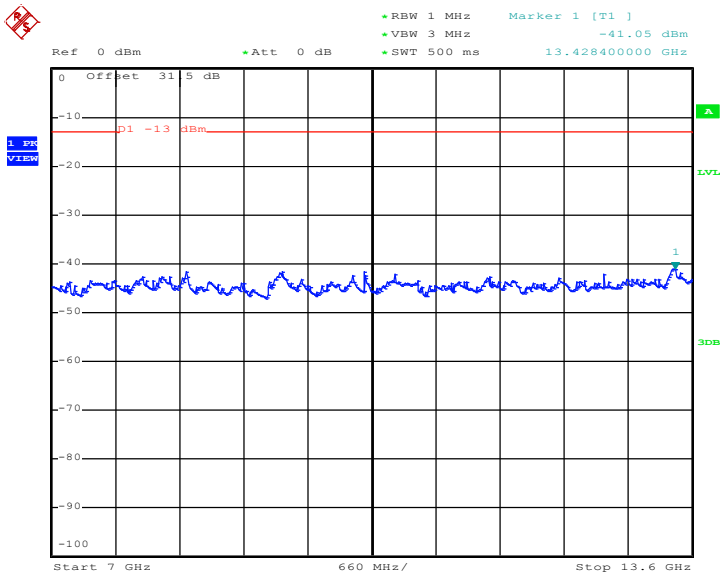
Date: 9.FEB.2012 11:29:58

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



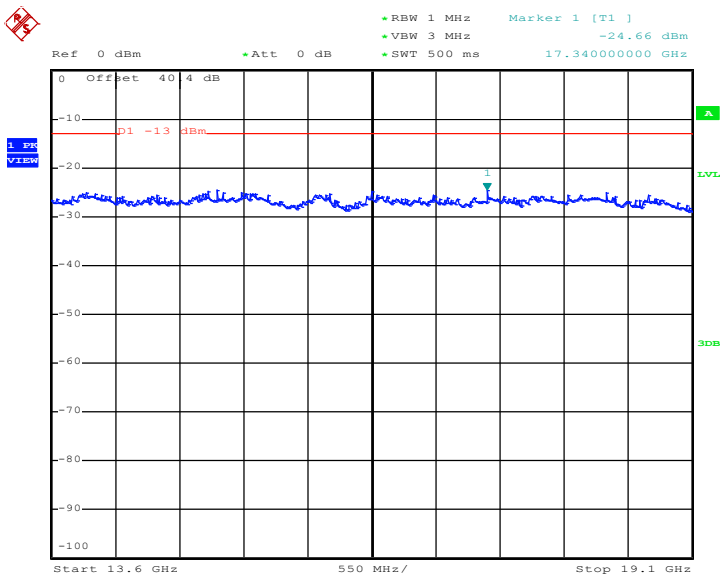
Date: 9.FEB.2012 11:30:49

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 9.FEB.2012 11:31:02

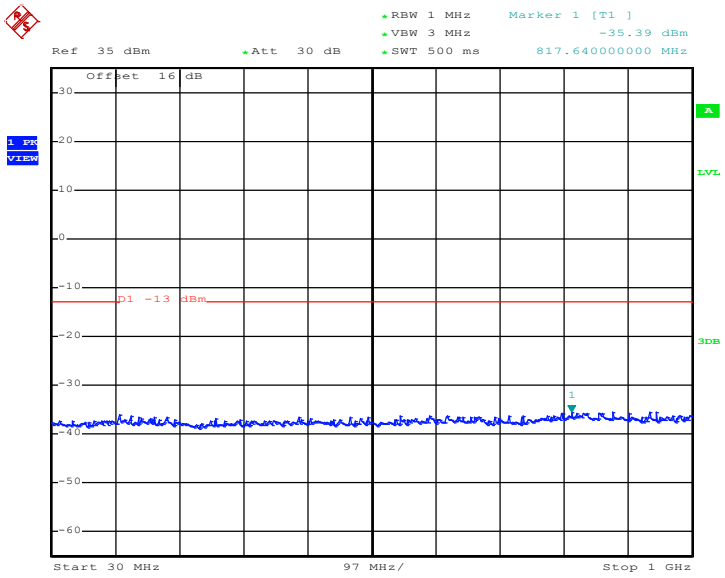
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 9.FEB.2012 11:31:14

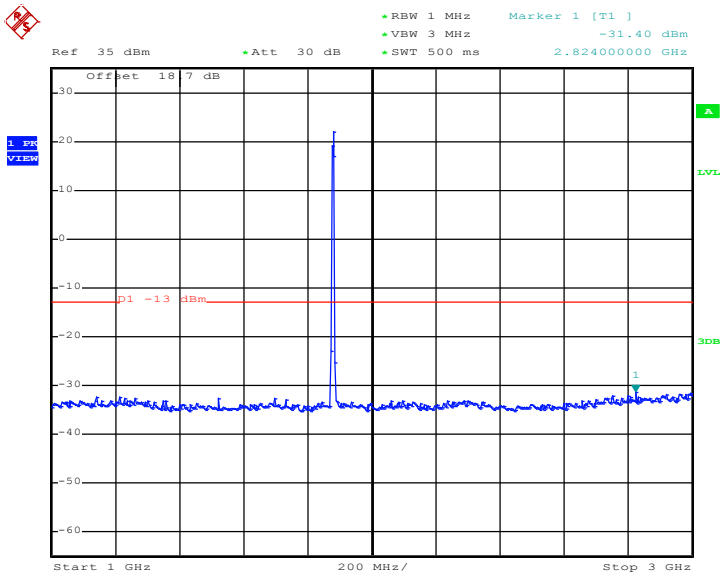
Band :	PCS Band	Channel :	CH9400
Test Mode :	RMC 12.2Kbps Link	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



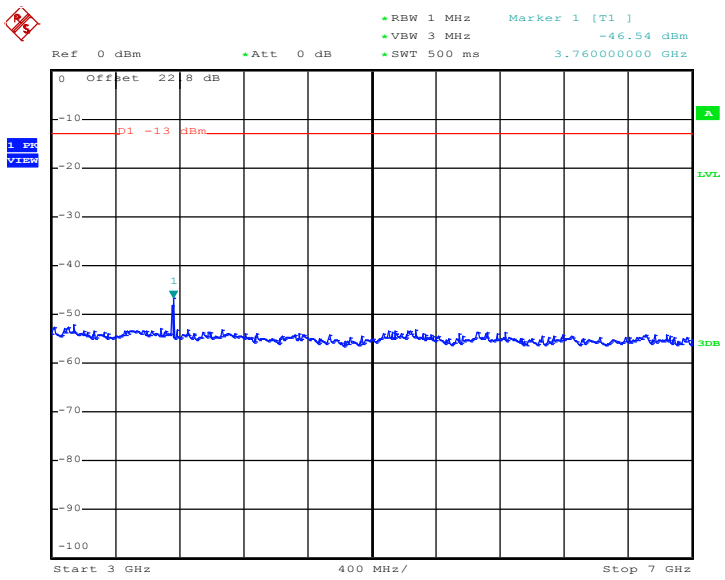
Date: 9.FEB.2012 11:49:22

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



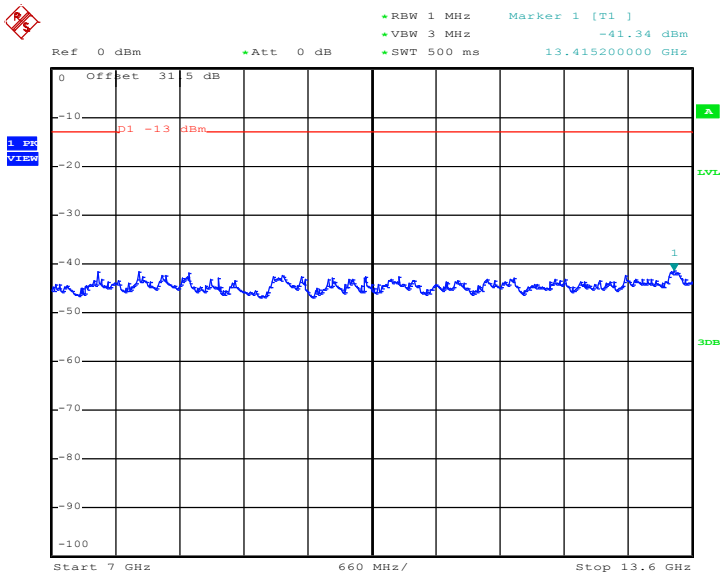
Date: 9.FEB.2012 11:49:34

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



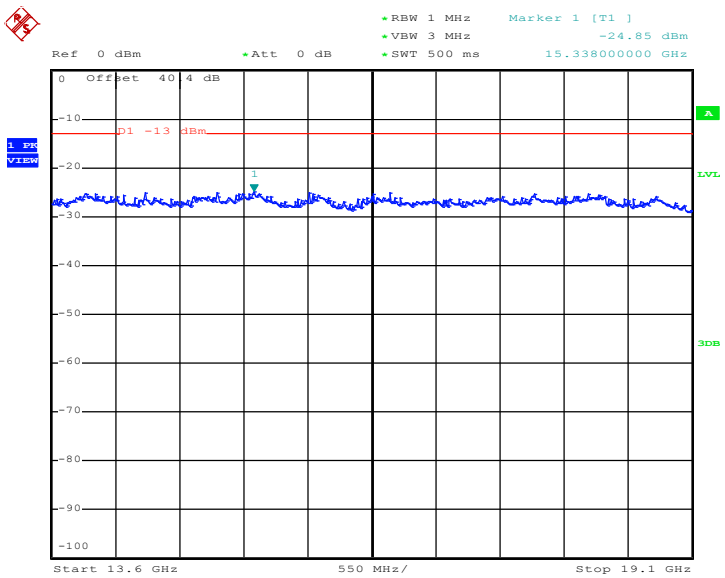
Date: 9.FEB.2012 11:50:10

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 9.FEB.2012 11:50:23

Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 9.FEB.2012 11:50:36

3.7 Field Strength of Spurious Radiation Measurement

3.7.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. 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.

3.7.2 Measuring Instruments

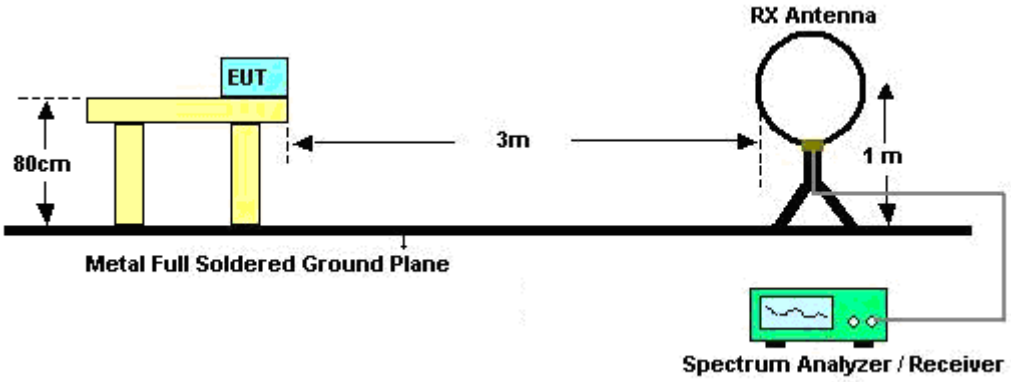
See list of measuring instruments of this test report.

3.7.3 Test Procedures

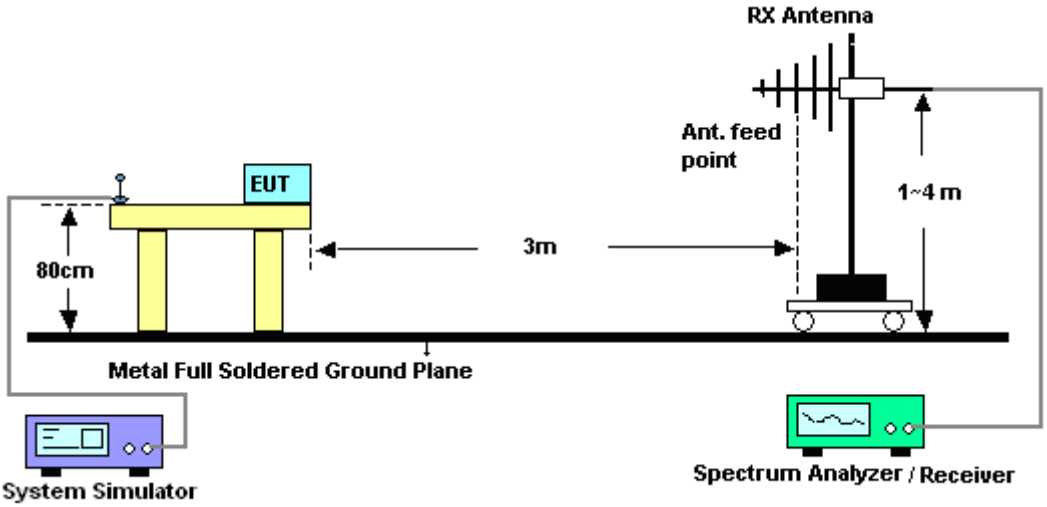
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15

3.7.4 Test Setup

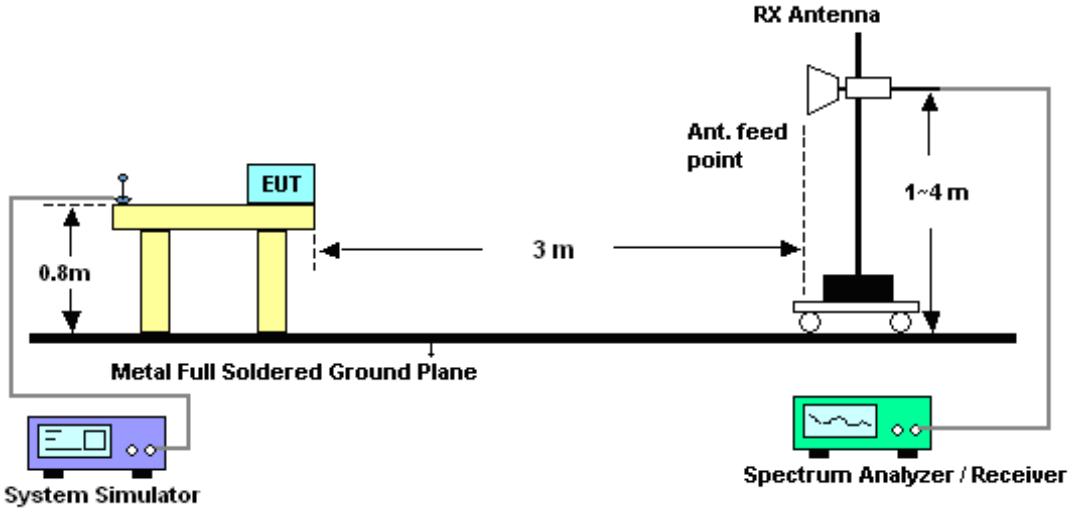
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

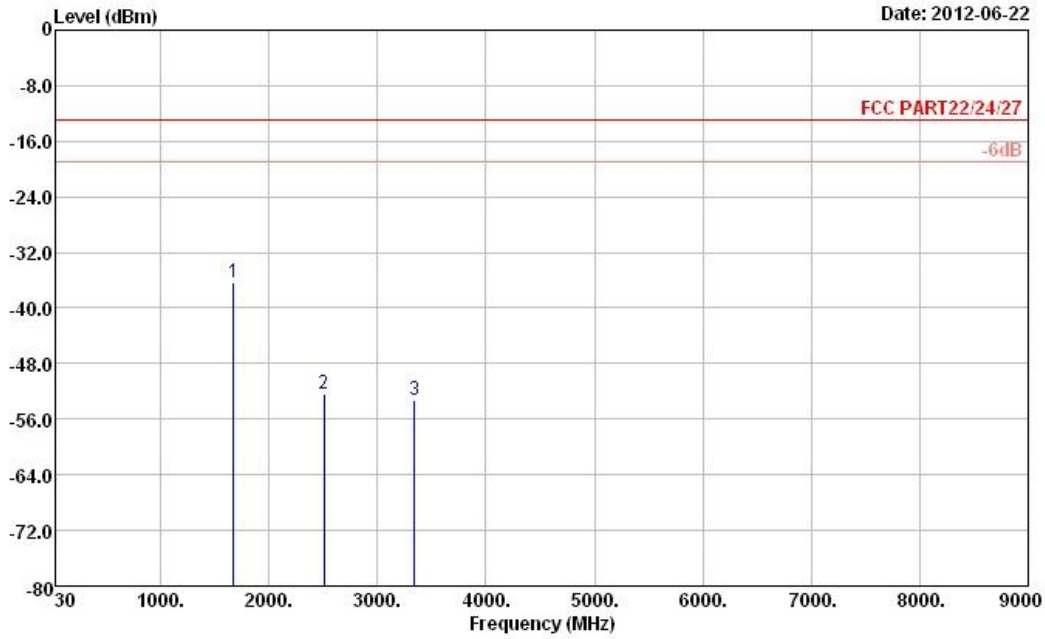


3.7.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.7.6 Test Result of Field Strength of Spurious Radiated

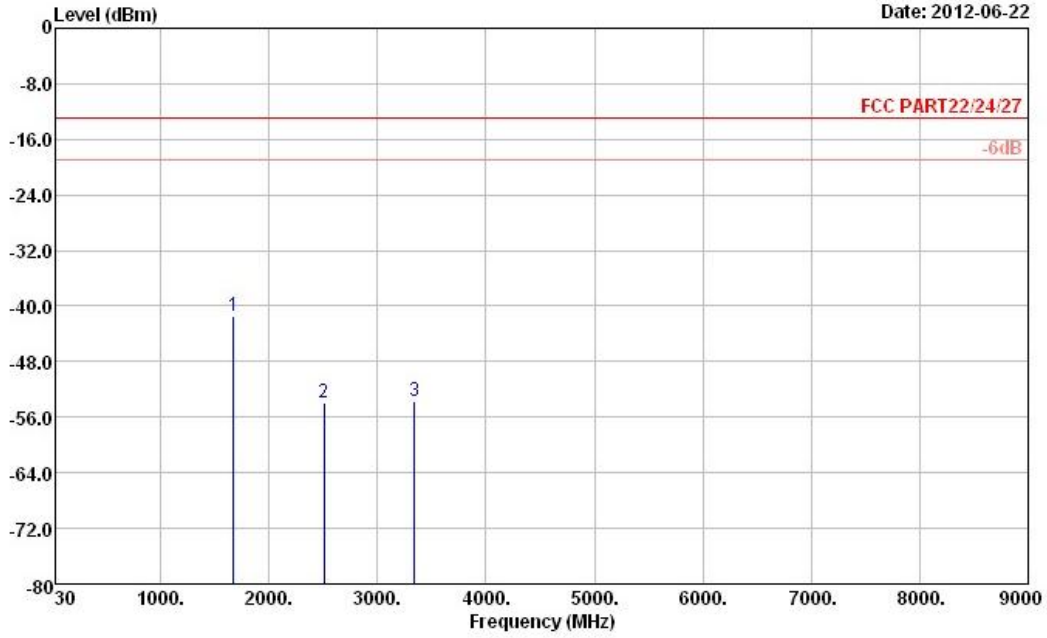
Band :	Cellular Band	**Temperature :**	20~22°C
Test Mode :	GPRS 8 Link for Qwerty Keypad with Camera	**Relative Humidity :**	40~42%
Test Engineer :	David Ke	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
Project : FG 221518-01

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)	Result
1672	-36.25	-13	-23.25	-41.71	-37.44	2.15	5.49	H	Pass
2509	-52.28	-13	-39.28	-61.93	-54.17	2.38	6.41	H	Pass
3345	-53.29	-13	-40.29	-65.15	-56.62	2.86	8.34	H	Pass

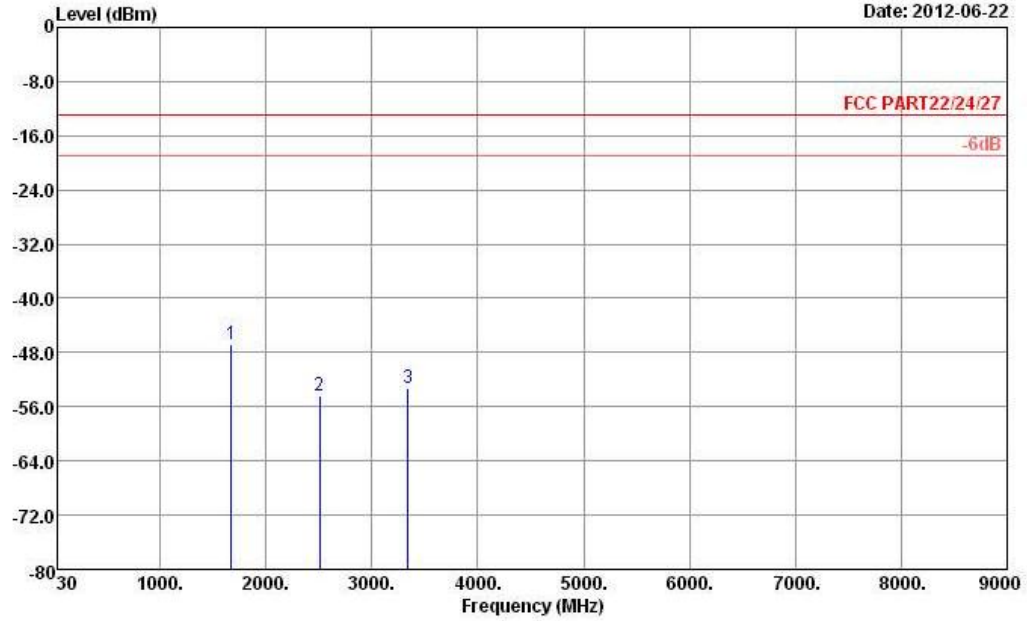
Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 221518-01

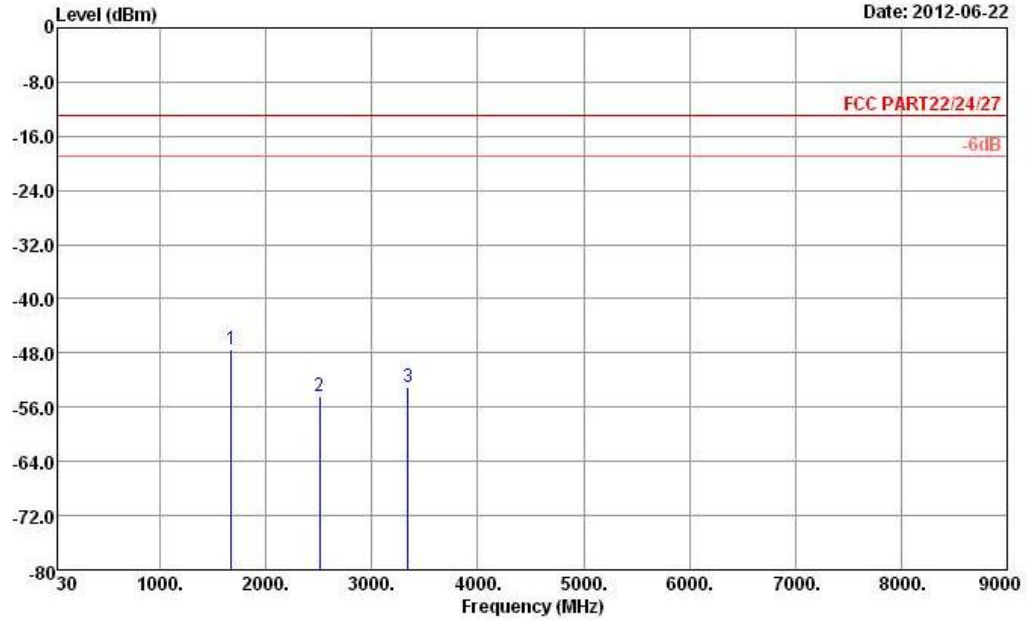
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-41.42	-13	-28.42	-47.72	-42.61	2.15	5.49	V	Pass
2509	-53.83	-13	-40.83	-63.69	-55.72	2.38	6.41	V	Pass
3345	-53.60	-13	-40.60	-64.66	-56.93	2.86	8.34	V	Pass

Band :	Cellular Band	**Temperature :**	20~22°C
Test Mode :	EDGE 8 Link for Qwerty Keypad with Camera	**Relative Humidity :**	40~42%
Test Engineer :	David Ke	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



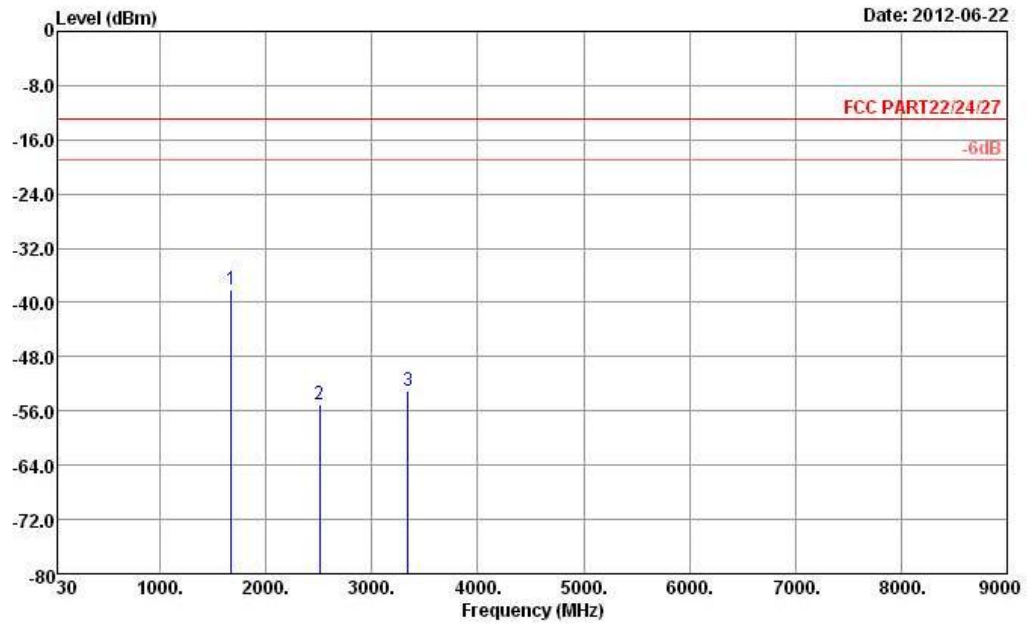
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-46.81	-13	-33.81	-52.83	-48	2.15	5.49	H	Pass
2509	-54.41	-13	-41.41	-63.69	-56.3	2.38	6.41	H	Pass
3345	-53.37	-13	-40.37	-64.85	-56.7	2.86	8.34	H	Pass

Band :	Cellular Band	**Temperature :**	20~22°C
Test Mode :	EDGE 8 Link for Qwerty Keypad with Camera	**Relative Humidity :**	40~42%
Test Engineer :	David Ke	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



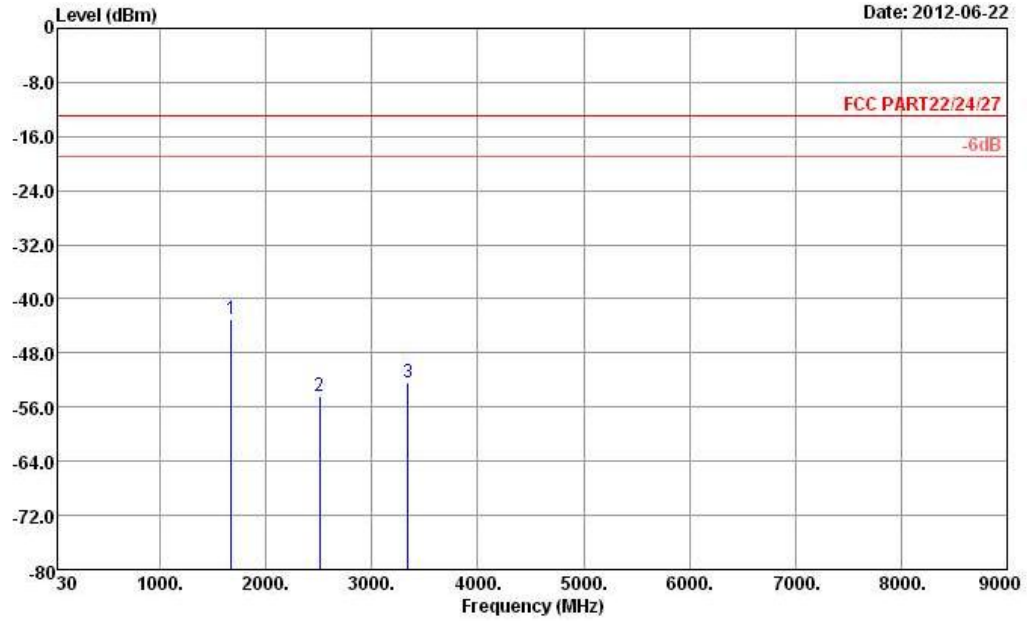
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-47.41	-13	-34.41	-53.54	-48.6	2.15	5.49	V	Pass
2509	-54.41	-13	-41.41	-63.65	-56.3	2.38	6.41	V	Pass
3345	-53.07	-13	-40.07	-64.58	-56.4	2.86	8.34	V	Pass

Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	RMC 12.2Kbps Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



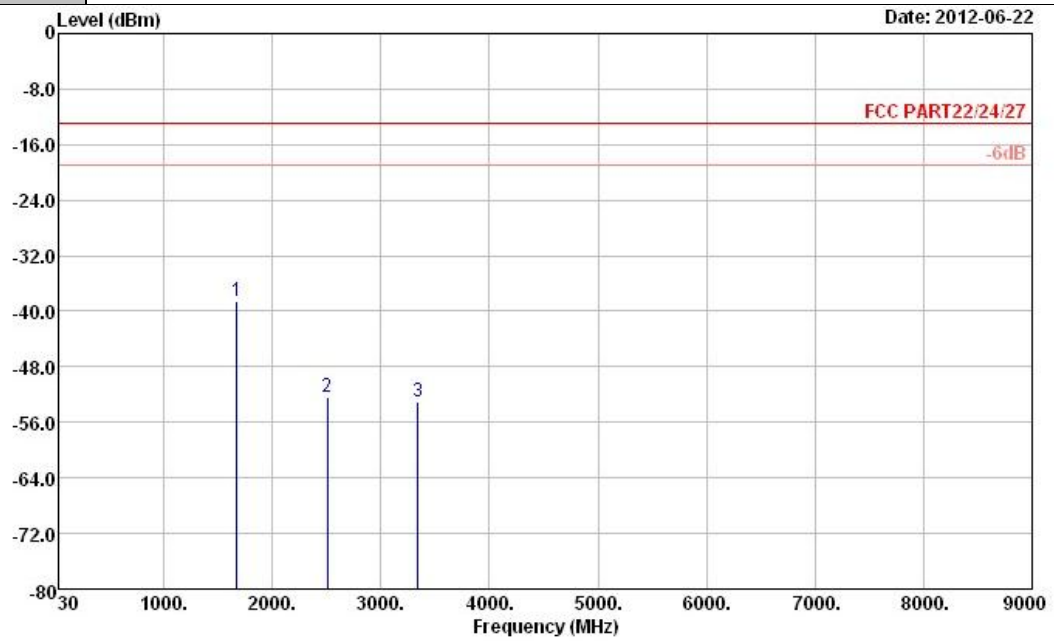
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-38.01	-13	-25.01	-44.03	-39.2	2.15	5.49	H	Pass
2509	-55.01	-13	-42.01	-64.3	-56.9	2.38	6.41	H	Pass
3345	-53.00	-13	-40.00	-64.49	-56.33	2.86	8.34	H	Pass

Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	RMC 12.2Kbps Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



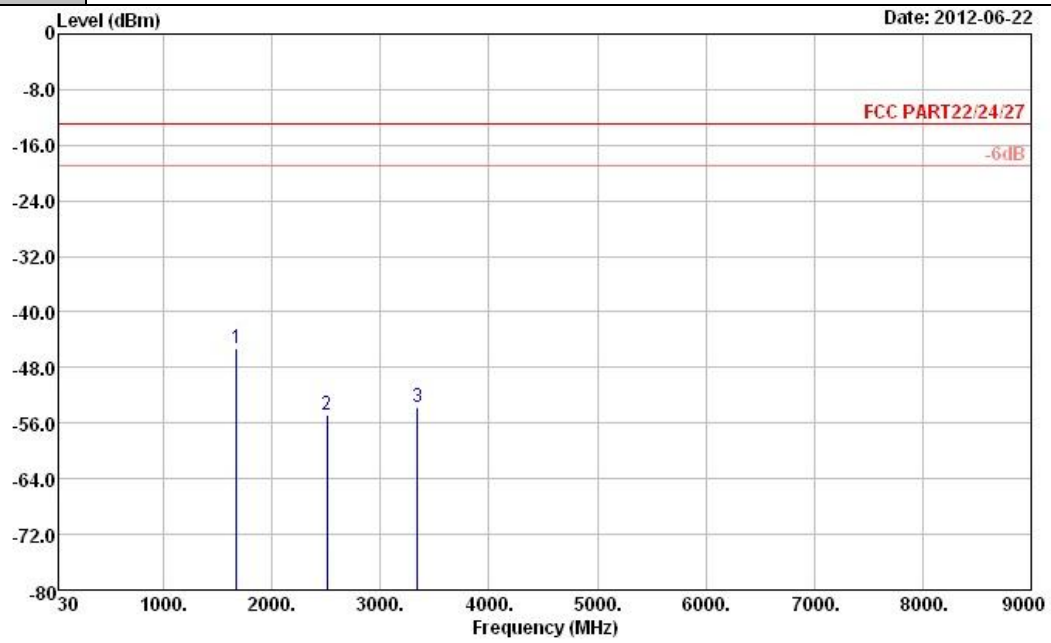
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-43.11	-13	-30.11	-49.06	-44.3	2.15	5.49	V	Pass
2509	-54.41	-13	-41.41	-63.64	-56.3	2.38	6.41	V	Pass
3345	-52.37	-13	-39.37	-63.91	-55.7	2.86	8.34	V	Pass

Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Numeric Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



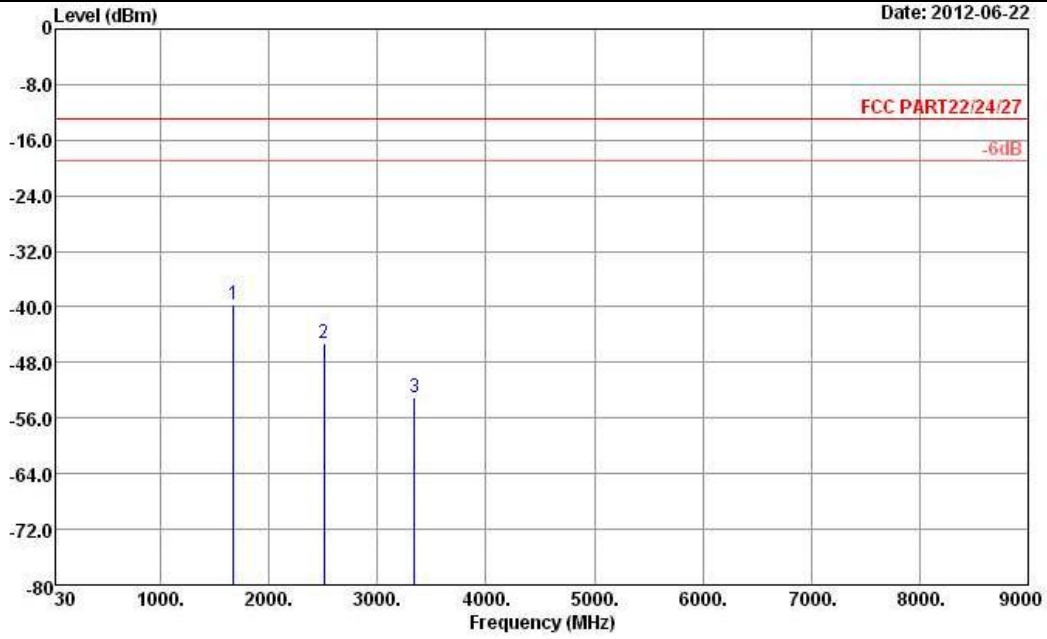
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-38.59	-13	-25.59	-44.62	-39.78	2.15	5.49	H	Pass
2509	-52.47	-13	-39.47	-61.9	-54.36	2.38	6.41	H	Pass
3345	-52.99	-13	-39.99	-64.5	-56.32	2.86	8.34	H	Pass

Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Numeric Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



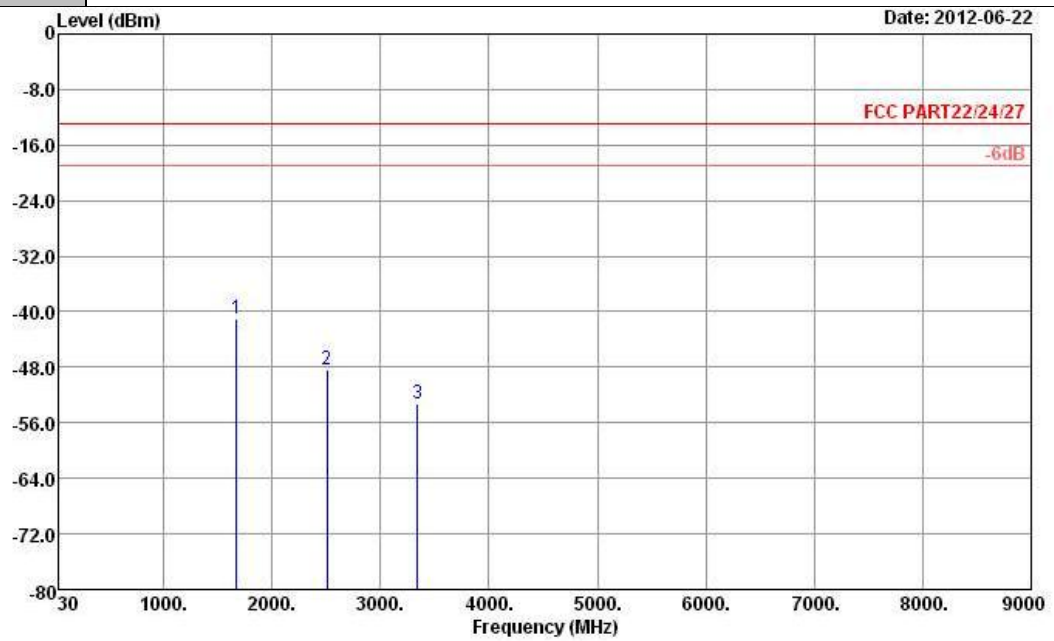
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-45.19	-13	-32.19	-51.45	-46.38	2.15	5.49	V	Pass
2509	-54.88	-13	-41.88	-63.24	-56.77	2.38	6.41	V	Pass
3345	-53.60	-13	-40.60	-64.33	-56.93	2.86	8.34	V	Pass

Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for PIM Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



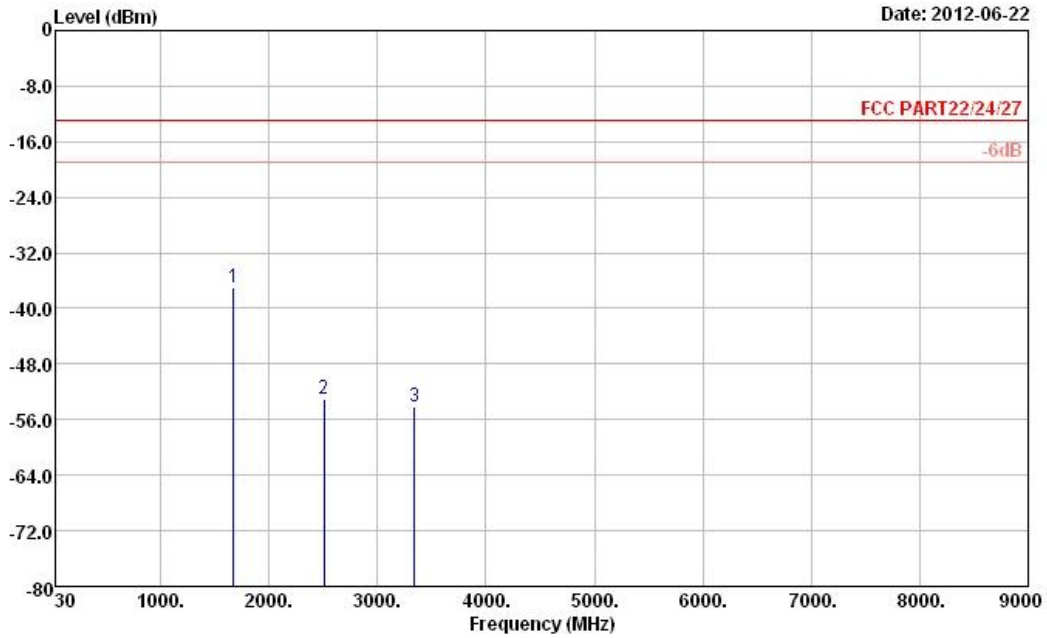
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-39.61	-13	-26.61	-45.64	-40.8	2.15	5.49	H	Pass
2509	-45.31	-13	-32.31	-54.61	-47.2	2.38	6.41	H	Pass
3345	-53.00	-13	-40.00	-64.49	-56.33	2.86	8.34	H	Pass

Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for PIM Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



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)	Result
1672	-41.11	-13	-28.11	-47.06	-42.3	2.15	5.49	V	Pass
2509	-48.41	-13	-35.41	-57.67	-50.3	2.38	6.41	V	Pass
3345	-53.17	-13	-40.17	-64.72	-56.5	2.86	8.34	V	Pass

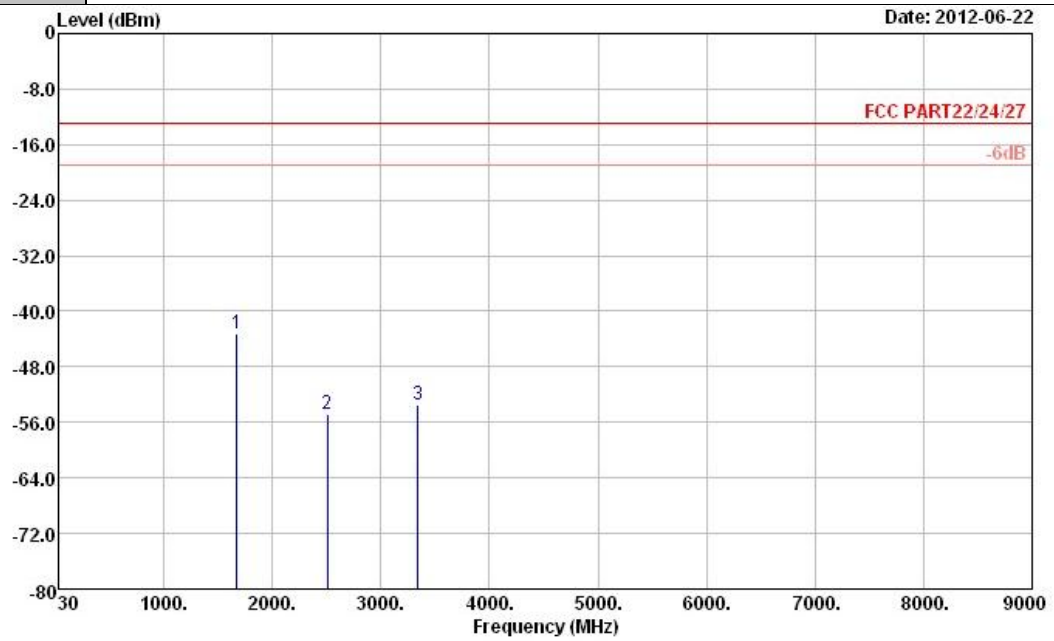
Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Qwerty Keypad without Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
Project : FG 221518-01

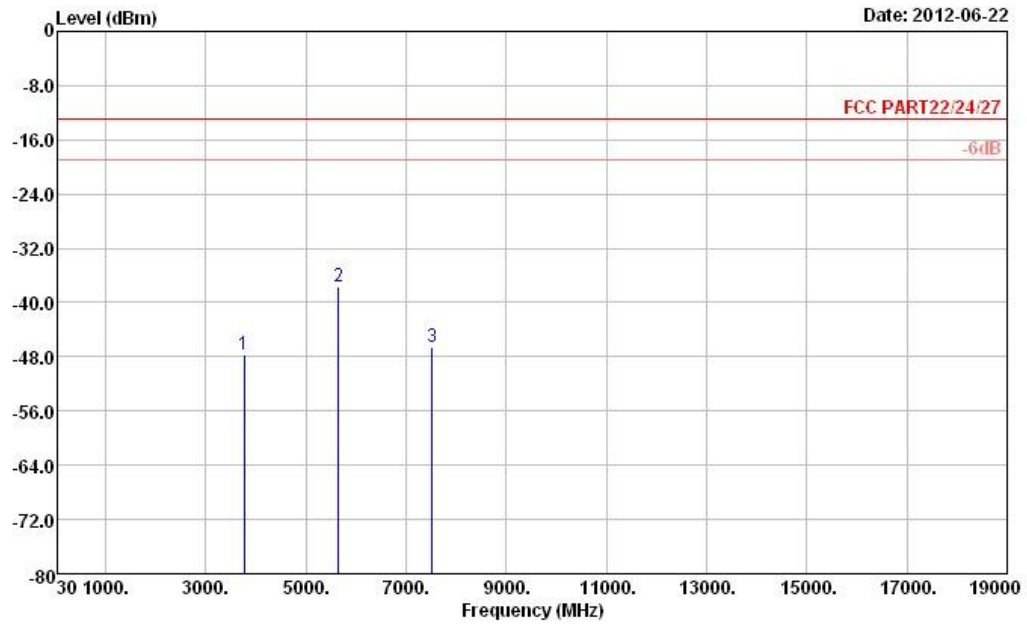
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-36.93	-13	-23.93	-41.91	-38.12	2.15	5.49	H	Pass
2509	-53.04	-13	-40.04	-61.76	-54.93	2.38	6.41	H	Pass
3345	-54.11	-13	-41.11	-65.44	-57.44	2.86	8.34	H	Pass

Band :	Cellular Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Qwerty Keypad without Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



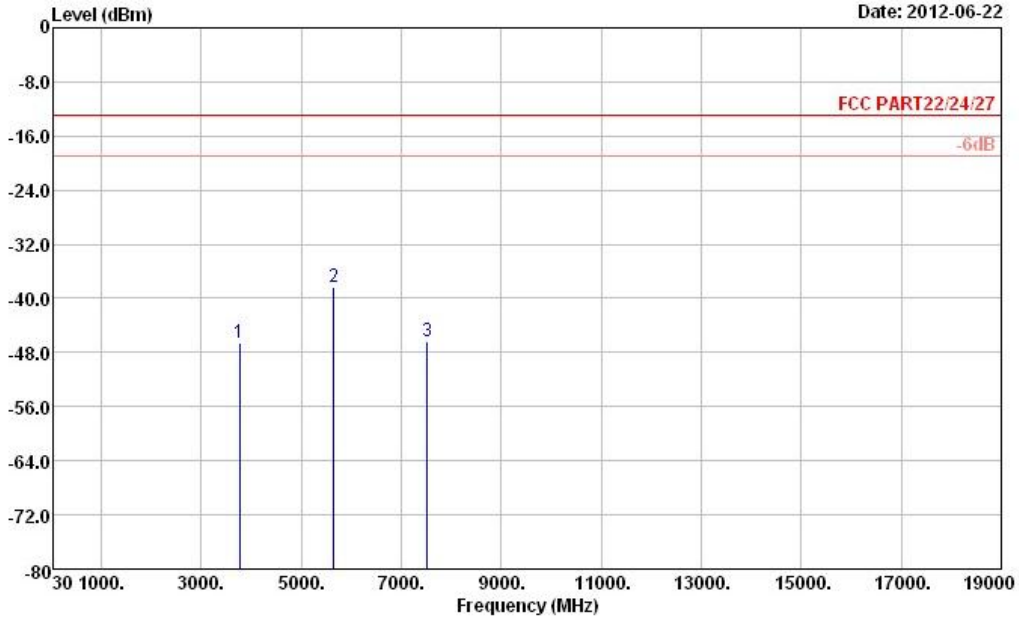
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-43.17	-13	-30.17	-48.21	-44.36	2.15	5.49	V	Pass
2509	-54.83	-13	-41.83	-64.04	-56.72	2.38	6.41	V	Pass
3345	-53.55	-13	-40.55	-64.4	-56.88	2.86	8.34	V	Pass

Band :	PCS Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



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)	Result
3760	-47.59	-13	-34.59	-60.9	-53.72	2.93	9.06	H	Pass
5640	-37.71	-13	-24.71	-56.76	-44.63	3.91	10.83	H	Pass
7520	-46.60	-13	-33.60	-67.7	-54.62	4.60	12.62	H	Pass

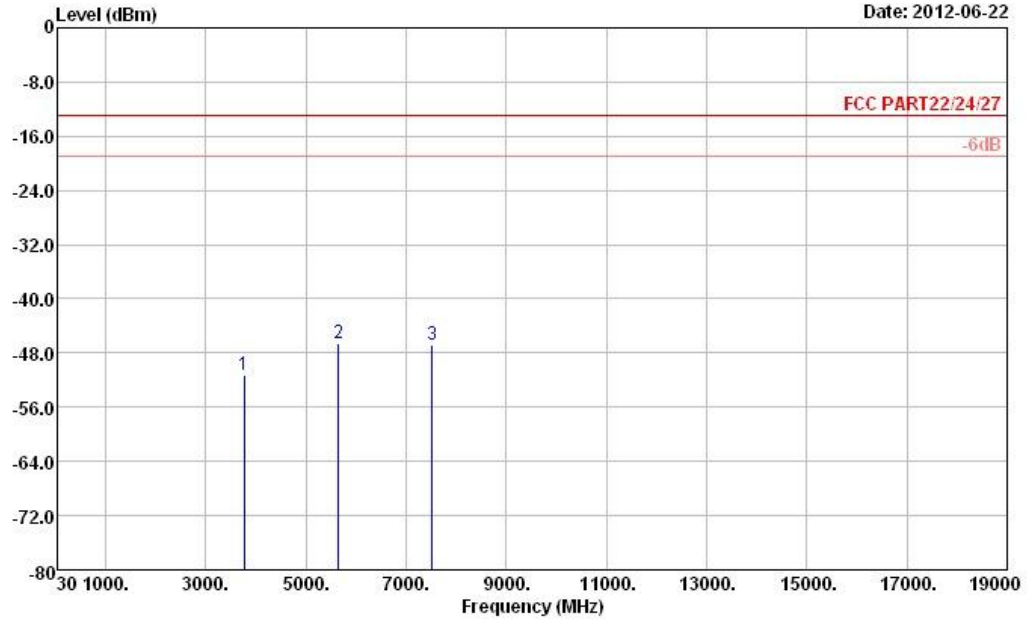
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 221518-01

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)	Result
3760	-46.61	-13	-33.61	-59.76	-52.74	2.93	9.06	V	Pass
5640	-38.30	-13	-25.30	-57.21	-45.22	3.91	10.83	V	Pass
7520	-46.36	-13	-33.36	-67.62	-54.38	4.60	12.62	V	Pass

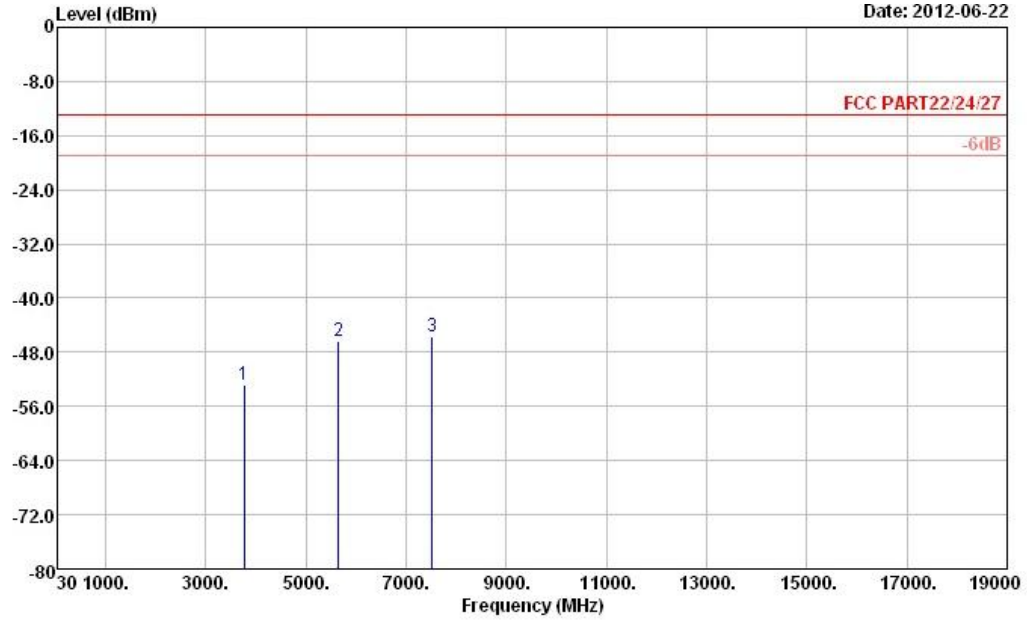
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	EDGE 8 Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
Project : FG 221518-01

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)	Result
3760	-51.32	-13	-38.32	-64.84	-57.45	2.93	9.06	H	Pass
5640	-46.65	-13	-33.65	-65.15	-53.57	3.91	10.83	H	Pass
7520	-46.89	-13	-33.89	-68.09	-54.91	4.60	12.62	H	Pass

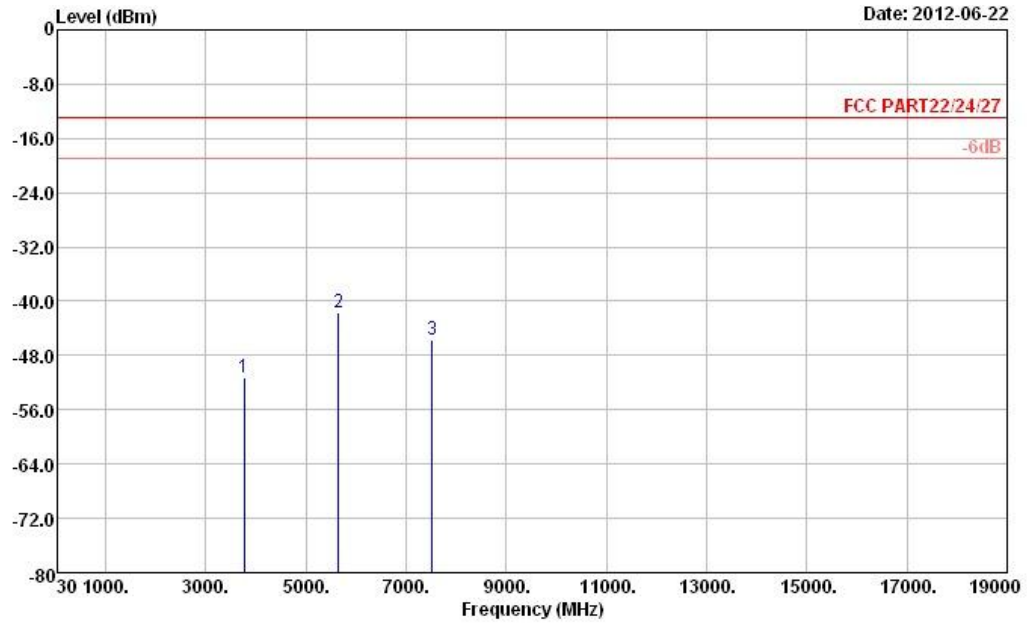
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	EDGE 8 Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 221518-01

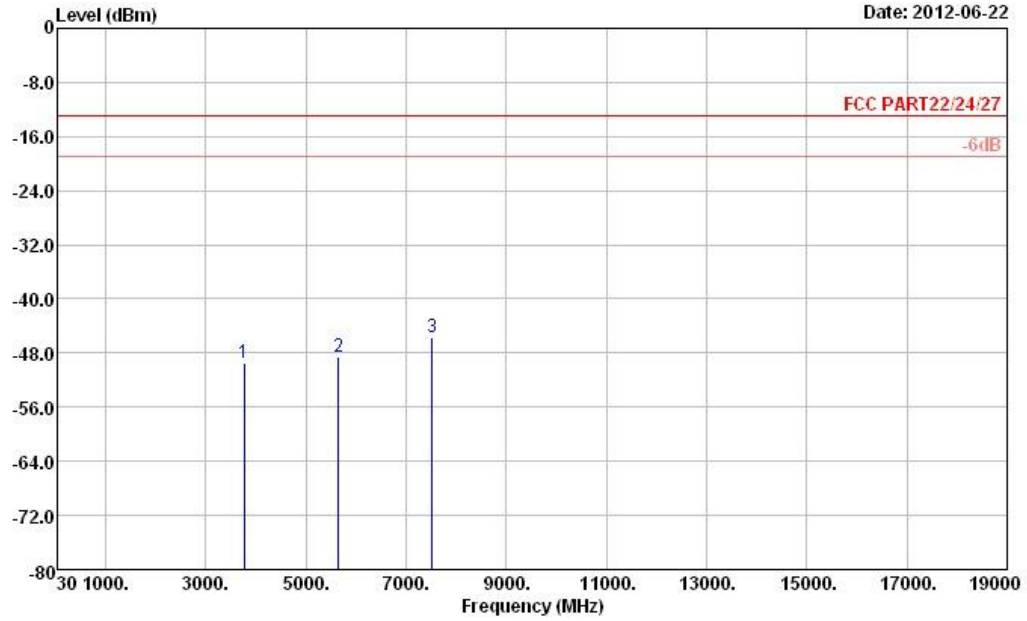
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-52.78	-13	-39.78	-65.56	-58.91	2.93	9.06	V	Pass
5640	-46.46	-13	-33.46	-65.09	-53.38	3.91	10.83	V	Pass
7520	-45.68	-13	-32.68	-66.66	-53.7	4.60	12.62	V	Pass

Band :	PCS Band	Temperature :	20~22°C
Test Mode :	RMC 12.2Kbps Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



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)	Result
3760	-51.32	-13	-38.32	-64.28	-57.45	2.93	9.06	H	Pass
5640	-41.71	-13	-28.71	-60.58	-48.63	3.91	10.83	H	Pass
7520	-45.63	-13	-32.63	-67.3	-53.65	4.60	12.62	H	Pass

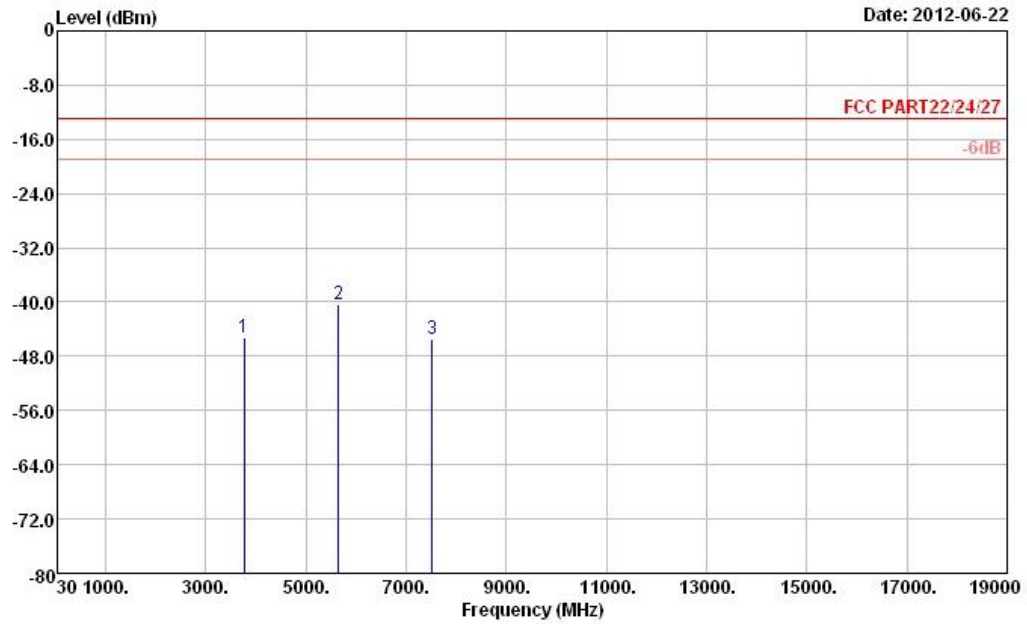
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	RMC 12.2Kbps Link for Qwerty Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 221518-01

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)	Result
3760	-49.52	-13	-36.52	-62.53	-55.65	2.93	9.06	V	Pass
5640	-48.51	-13	-35.51	-67.26	-55.43	3.91	10.83	V	Pass
7520	-45.66	-13	-32.66	-67.4	-53.68	4.60	12.62	V	Pass

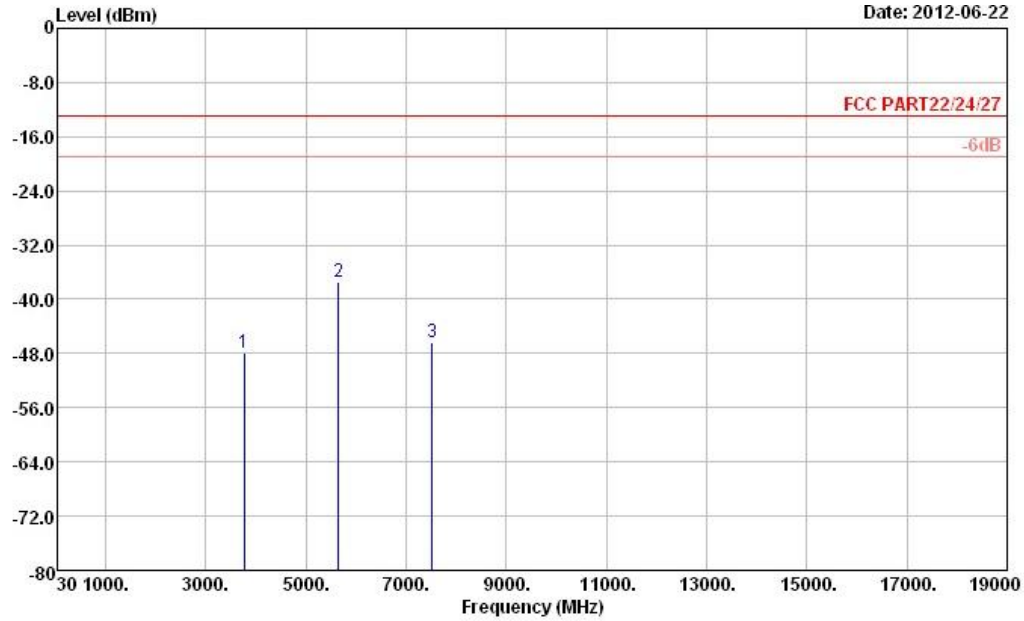
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Numeric Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
Project : FG 221518-01

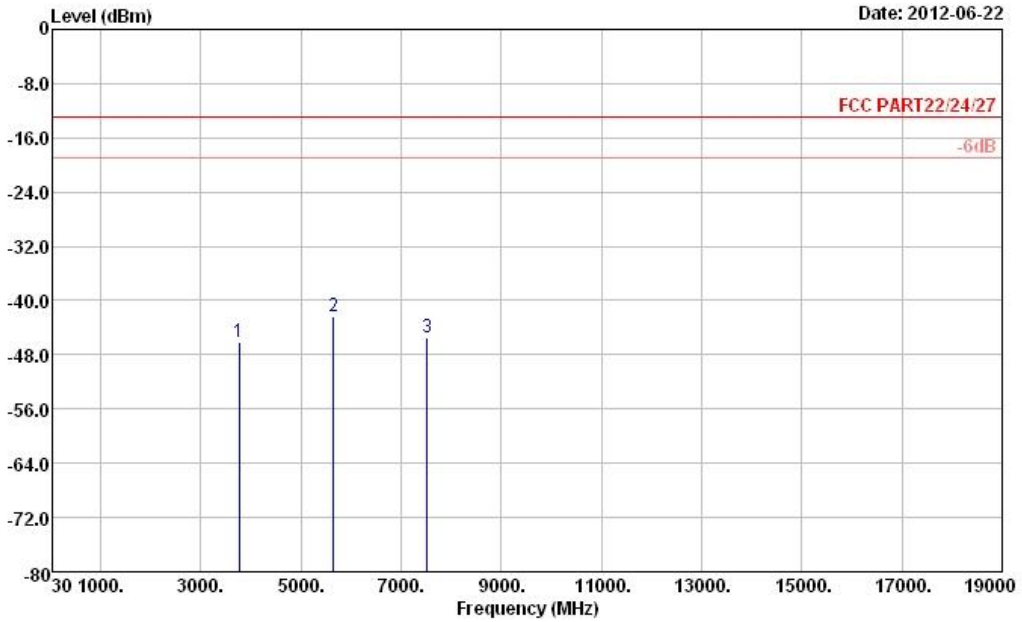
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-45.29	-13	-32.29	-58.53	-51.42	2.93	9.06	H	Pass
5640	-40.43	-13	-27.43	-58.85	-47.35	3.91	10.83	H	Pass
7520	-45.47	-13	-32.47	-67.4	-53.49	4.60	12.62	H	Pass

Band :	PCS Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Numeric Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



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)	Result
3760	-47.98	-13	-34.98	-60.59	-54.11	2.93	9.06	V	Pass
5640	-37.34	-13	-24.34	-56.78	-44.26	3.91	10.83	V	Pass
7520	-46.34	-13	-33.34	-67.5	-54.36	4.60	12.62	V	Pass

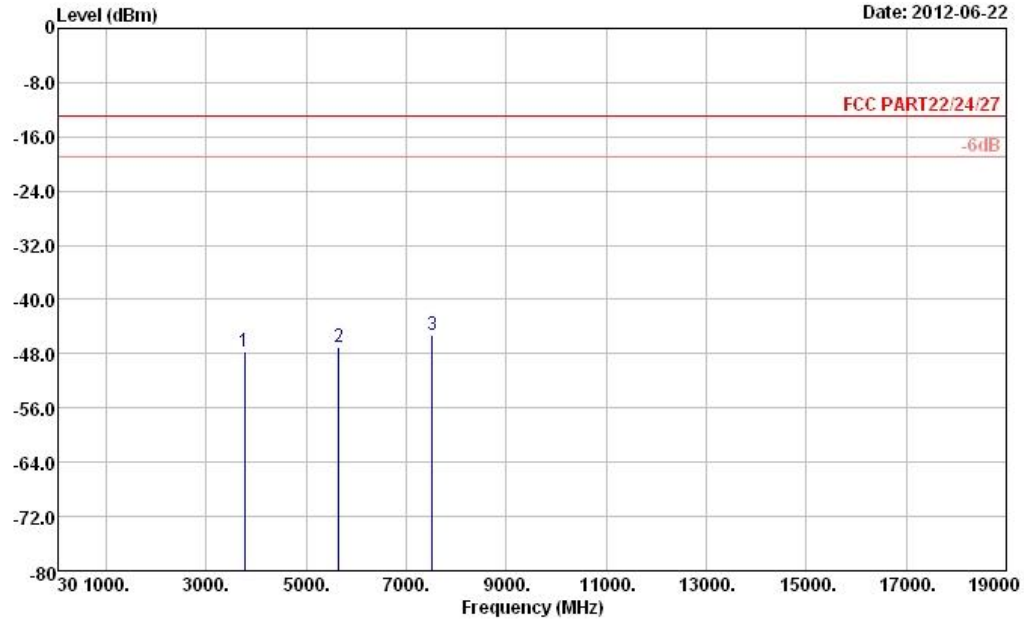
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for PIM Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
Project : FG 221518-01

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)	Result
3760	-46.07	-13	-33.07	-59.5	-52.2	2.93	9.06	H	Pass
5640	-42.28	-13	-29.28	-61.11	-49.2	3.91	10.83	H	Pass
7520	-45.38	-13	-32.38	-67.33	-53.4	4.60	12.62	H	Pass

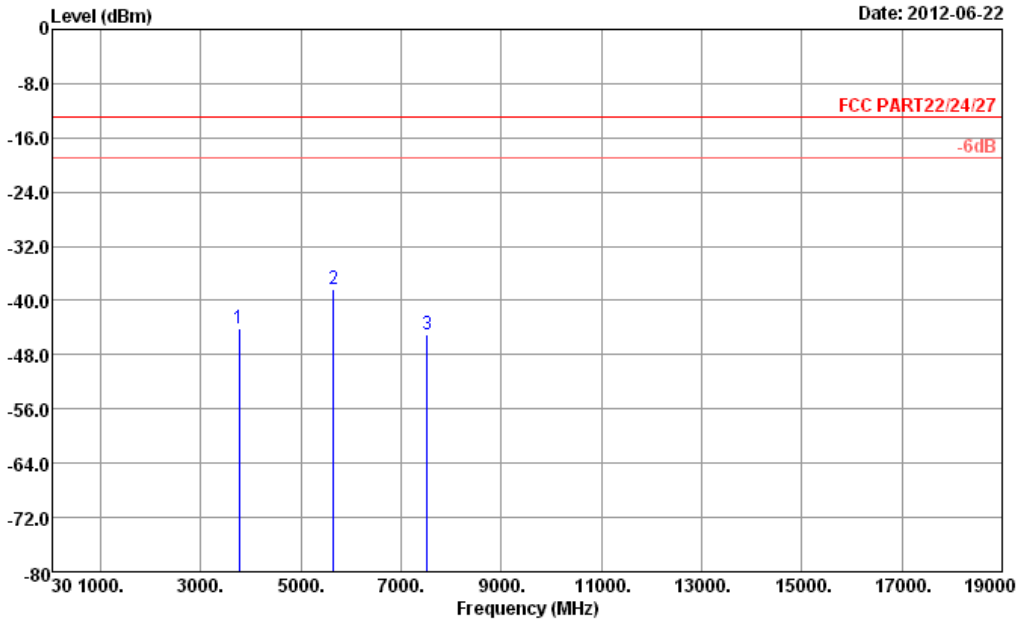
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for PIM Keypad with Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 221518-01

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)	Result
3760	-47.67	-13	-34.67	-61.25	-53.8	2.93	9.06	V	Pass
5640	-47.08	-13	-34.08	-66.22	-54	3.91	10.83	V	Pass
7520	-45.18	-13	-32.18	-67.3	-53.2	4.60	12.62	V	Pass

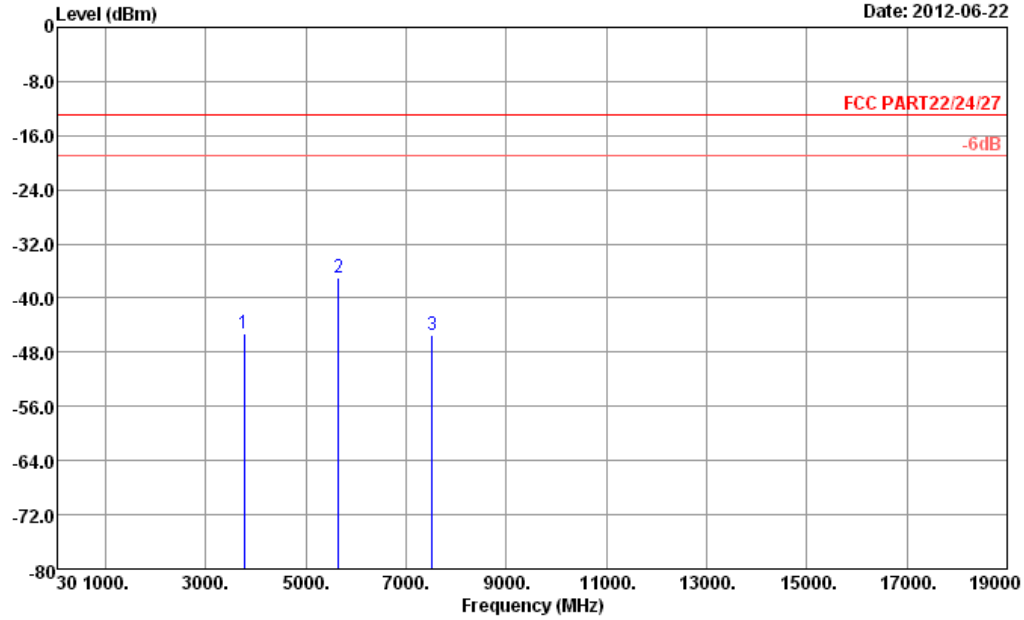
Band :	PCS Band	Temperature :	20~22°C
Test Mode :	GPRS 8 Link for Numeric Keypad without Camera	Relative Humidity :	40~42%
Test Engineer :	David Ke	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
Project : FG 221518-01

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)	Result
3760	-44.07	-13	-31.07	-57.67	-50.2	2.93	9.06	H	Pass
5640	-38.38	-13	-25.38	-57.23	-45.3	3.91	10.83	H	Pass
7520	-45.08	-13	-32.08	-67.04	-53.1	4.60	12.62	H	Pass

Band :	PCS Band	**Temperature :**	20~22°C
Test Mode :	GPRS 8 Link for Numeric Keypad without Camera	**Relative Humidity :**	40~42%
Test Engineer :	David Ke	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 221518-01

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)	Result
3760	-45.17	-13	-32.17	-58.64	-51.3	2.93	9.06	V	Pass
5640	-37.08	-13	-24.08	-55.93	-44	3.91	10.83	V	Pass
7520	-45.38	-13	-32.38	-67.26	-53.4	4.60	12.62	V	Pass

3.8 Frequency Stability Measurement

3.8.1 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.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

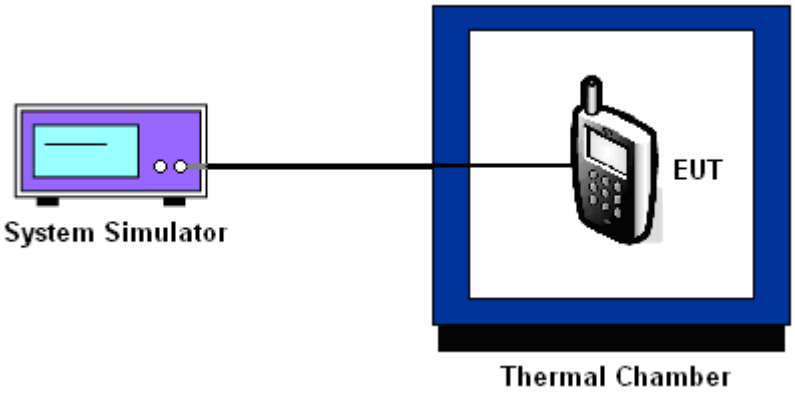
3.8.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. 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.
3. With power OFF, the temperature was raised in 10°C step 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.
4. If the EUT cannot be turned on at -30°C, the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

3.8.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the base station.
2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation

Band :	Cellular Band	Channel :	189
Limit (ppm) :	2.5	Frequency :	836.4 MHz

Temperature (°C)	GPRS 8		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	N/A	N/A	PASS
-20	13	0.02	-51	-0.06	
-10	-16	-0.02	-33	-0.04	
0	-21	-0.02	-54	-0.06	
10	-30	-0.04	-42	-0.05	
20	-44	-0.05	-54	-0.06	
30	-48	-0.06	-58	-0.07	
40	-47	-0.06	-52	-0.06	
50	-34	-0.04	-59	-0.07	

Note: The manufacturer declared that the EUT could work properly between temperatures -20°C~55°C.

Band :	Cellular Band	Channel :	4182
Limit (ppm) :	2.5	Frequency :	836.4 MHz

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	PASS
-20	20	0.02	
-10	-15	-0.02	
0	-13	-0.02	
10	11	0.01	
20	-15	-0.02	
30	-19	-0.02	
40	21	0.02	
50	-17	-0.02	

Note: The manufacturer declared that the EUT could work properly between temperatures -20°C~55°C.

Band :	PCS Band	Channel :	661
Limit (ppm) :	2.5	Frequency :	1880.0 MHz

Temperature (°C)	GPRS 8		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	N/A	N/A	PASS
-20	61	0.03	61	0.03	
-10	48	0.03	42	0.02	
0	33	0.02	35	0.02	
10	21	0.01	-12	-0.01	
20	-15	-0.01	-30	-0.02	
30	-30	-0.02	-35	-0.02	
40	-31	-0.02	-38	-0.02	
50	-37	-0.02	-39	-0.02	

Note: The manufacturer declared that the EUT could work properly between temperatures -20°C~55°C.

Band :	PCS Band	Channel :	9400
Limit (ppm) :	2.5	Frequency :	1880.0 MHz

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	PASS
-20	44	0.02	
-10	36	0.02	
0	43	0.02	
10	34	0.02	
20	41	0.02	
30	37	0.02	
40	36	0.02	
50	34	0.02	

Note: The manufacturer declared that the EUT could work properly between temperatures -20°C~55°C.

3.8.7 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
Cellular Band CH189	GPRS 8	3.7	-17	-0.02	2.5	PASS
		BEP	-16	-0.02		
		4.2	-18	-0.02		
	EDGE 8	3.7	-54	-0.06		
		BEP	-52	-0.06		
		4.2	-51	-0.06		
Cellular Band CH4182	RMC 12.2Kbps	3.7	17	0.02		
		BEP	-15	-0.02		
		4.2	11	0.01		
PCS Band CH661	GPRS 8	3.7	-31	-0.02		
		BEP	-21	-0.01		
		4.2	55	0.03		
	EDGE 8	3.7	-33	-0.02		
		BEP	-29	-0.02		
		4.2	-35	-0.02		
PCS Band CH9400	RMC 12.2Kbps	3.7	41	0.02		
		BEP	35	0.02		
		4.2	49	0.03		

Note:

1. Normal Voltage = 3.7V.
2. Battery End Point (BEP) = 3.3 V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Feb. 09, 2012~ Jun. 25, 2012	Jul. 27, 2012	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 13, 2011	Feb. 09, 2012~ Jun. 06, 2012	Jun. 12, 2012	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Jun. 06, 2012 ~ Jun. 25, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 27, 2011	Feb. 09, 2012~ Jun. 25, 2012	Jul. 26, 2012	Conducted (TH02-HY)
Spectrum Analyzer	R&S	ESU26	100390	20Hz ~ 26.5GHz	Dec. 22, 2011	Jun. 21, 2012~ Jun.25, 2012	Dec. 21, 2012	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz ~ 2GHz	Oct. 22, 2011	Jun. 21, 2012~ Jun.25, 2012	Oct. 21, 2012	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 ~ 360 degree	N/A	Jun. 21, 2012~ Jun.25, 2012	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m ~ 4 m	N/A	Jun. 21, 2012~ Jun.25, 2012	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	66584	1GHz ~ 18GHz	Aug. 04, 2011	Jun. 21, 2012~ Jun.25, 2012	Aug. 03, 2012	Radiation (03CH05-HY)
Pre Amplifier	COM-POWER	PA-103A	161075	10Hz ~ 1000MHz Gain:32dB	Feb. 27, 2012	Jun. 21, 2012~ Jun.25, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Pre Amplifier	MITEQ	AMF-7D-00 101800-30-1	159087	1GHz~18GHz	Feb. 27, 2012	Jun. 21, 2012~ Jun.25, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Aug. 30, 2011	Jun. 21, 2012~ Jun.25, 2012	Aug. 29, 2012	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jun. 21, 2012~ Jun.25, 2012	Jul. 28, 2012	Radiation (03CH05-HY)
System Simulator	R&S	CMU200	117997	N/A	Aug. 22, 2011	Jun. 21, 2012~ Jun.25, 2012	Aug. 21, 2013	Radiation (03CH05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**

Appendix A. Photographs of EUT

Please refer to Sporton report number EP221518-01 as below.