



NVLAP LAB CODE 200707-0



FCC PART 22 H/24E MEASUREMENT AND TEST REPORT

For

Beyond E-Tech Inc

3005 West Loop South, STE.100,

Houston, TX 77027, USA

FCC ID: WTID620

Report Type: Original Report	Product Type: GSM&GPRS Dual Standby Mobile Phone
Test Engineer:	Vicent Kang <i>Vicent Kang</i>
Report No.:	RSZ08101602-2224
Report Date:	2008-11-17
Reviewed By:	Merry Zhao <i>Merry Zhao</i> EMC Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, NIST, or any agency of the Federal Government.

* This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "*" (Rev.2)

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
EUT PHOTO	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	5
TEST METHODOLOGY	5
TEST FACILITY	5
SYSTEM TEST CONFIGURATION.....	6
JUSTIFICATION	6
EQUIPMENT MODIFICATIONS	6
CONFIGURATION OF TEST SETUP	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
§1.1037, §2.1093 - RF EXPOSURE	8
APPLICABLE STANDARD	8
TEST RESULT	8
§2.1047 - MODULATION CHARACTERISTIC	9
APPLICABLE STANDARD	9
§ 2.1046, § 22.913 (A), & § 24.232 (C) - RF OUTPUT POWER.....	10
APPLICABLE STANDARD	10
TEST PROCEDURE	10
TEST EQUIPMENT LIST AND DETAILS.....	10
TEST DATA	11
§2.1049, §22.917, §22.905, & §24.238 - OCCUPIED BANDWIDTH	20
APPLICABLE STANDARDS.....	20
TEST PROCEDURE	20
TEST EQUIPMENT LIST AND DETAILS.....	20
TEST DATA	20
§2.1051, §22.917(A), & §24.238(A) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS	25
APPLICABLE STANDARDS.....	25
TEST PROCEDURE	25
TEST EQUIPMENT LIST AND DETAILS.....	25
TEST DATA	25
§2.1053 - SPURIOUS RADIATED EMISSIONS.....	40
APPLICABLE STANDARDS.....	40
TEST PROCEDURE	40
TEST EQUIPMENT LIST AND DETAILS.....	40
TEST DATA	41
§22.917(A) & §24.238(A) - BAND EDGES.....	43
APPLICABLE STANDARDS.....	43
TEST PROCEDURE	43
TEST EQUIPMENT LIST AND DETAILS.....	43

TEST DATA	43
§2.1055, §22.355, & §24.235 - FREQUENCY STABILITY	52
APPLICABLE STANDARD	52
TEST PROCEDURE	52
TEST EQUIPMENT LIST AND DETAILS.....	53
TEST DATA	53

GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *Beyond E-Tech Inc's* product, model number: *D620* or the "EUT" as referred to in this report is a *GSM&GPRS Dual Standby Mobile Phone*, which measures approximately: 11.4 cm L x 5.2 cm W x 2.1 cm H, input voltage: 3.7V battery.

Frequency band: GSM850: 824-849 MHz (Tx); 869-894 MHz (Rx)
PCS1900: 1850-1910 MHz (Tx); 1930-1990 MHz (Rx)
Bluetooth: 2402-2480 MHz (Tx/Rx)

** All measurement and test data in this report was gathered from production sample serial number: 0810043 (Assigned by BACL, Shenzhen). The EUT was received on 2008-10-16.*

EUT Photo



Please see additional photos in Exhibit B&C

Objective

This type approval report is prepared on behalf of *Beyond E-Tech Inc* in accordance with Part 2, Subpart J, Part 22 Subpart H, and Part 24 Subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability, band edge and radiated margin.

This measurement and test report only pertains to the GSM 850/1900 portion of the EUT; for measurement and test results to the Bluetooth function please see report RSZ08101602-247 issued by BACL Shenzhen.

Related Submittal(s)/Grant(s)

FCC Part15.247 submission with FCC ID: WTID620.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - PCS

Applicable Standards: TIA EIA 98-C, TIA/EIA 603-C, ANSI 63.4-2003.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



NVLAP LAB CODE 200707-0

The current scope of accreditations can be found at
<http://ts.nist.gov/Standards/scopes/2007070.htm>

SYSTEM TEST CONFIGURATION

Justification

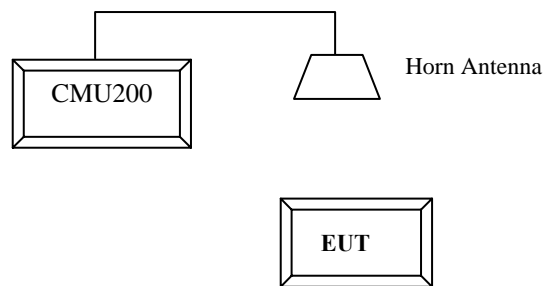
The EUT was configured for testing according to TIA/EIA-603-C.

The final qualification test was performed with the EUT operating at normal mode.

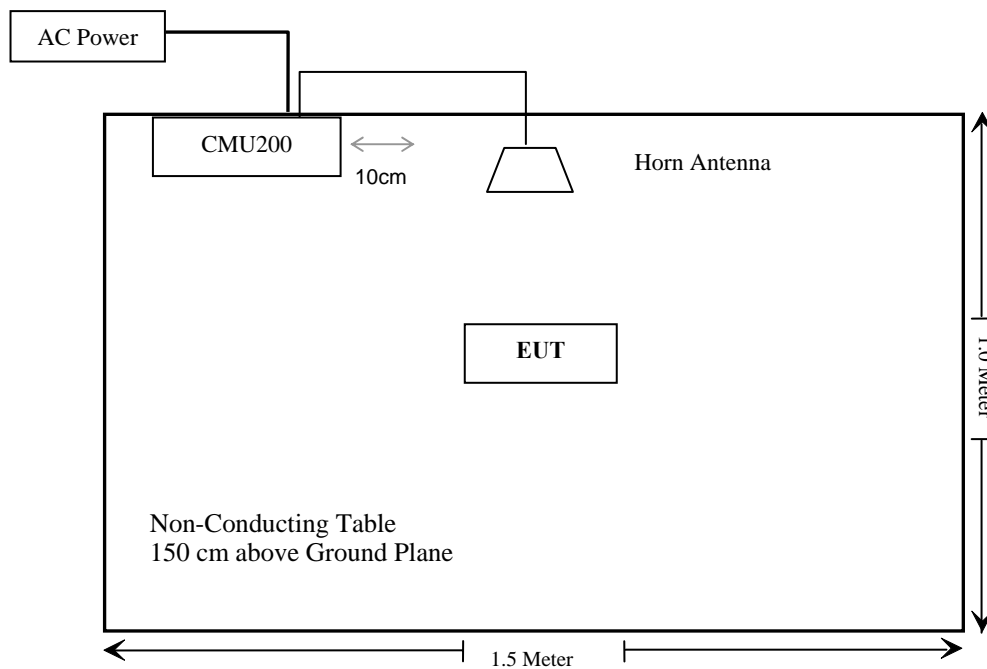
Equipment Modifications

No modifications were made to the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1037, §2.1093	RF Exposure	Compliant * Please refer to SAR Report
§2.1046; § 22.913 (a) § 24.232 (c)	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	N/A
§ 2.1049 § 22.905 § 22.917 § 24.238	99% & -26 dB Occupied Bandwidth	Compliant
§ 2.1051, § 22.917 (a) § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053 § 22.917 (a) § 24.238 (a)	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a) § 24.238 (a)	Out of band emission, Band Edge	Compliant
§ 2.1055 § 22.355 § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliant

* SAR report released by BACL, report number: R0810215-SAR

§1.1037, §2.1093 - RF EXPOSURE

Applicable Standard

§1.1310 and §2.1093

Test Result

Compliant: The EUT is a hand portable device and thus requires SAR evaluation, please see BACL SAR Report R0810215-SAR for measurement and testing in details.

§2.1047 - MODULATION CHARACTERISTIC

Applicable Standard

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

§ 2.1046, § 22.913 (a), & § 24.232 (c) - RF OUTPUT POWER

Applicable Standard

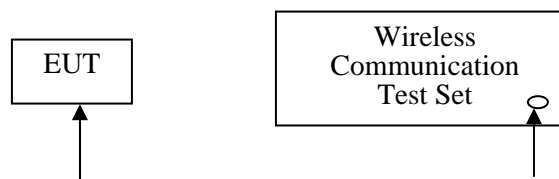
According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), in no case may the peak output power of a base station transmitter exceed 2 watt EIRP.

Test Procedure

Conducted:

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.



Radiated (ERP and EIRP):

TIA-603-C §2.2.17

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052604	2008-09-25	2009-09-25
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2008-03-11	2009-03-11
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2008-05-09	2009-05-09
HP	Preamplifier	8449B	3008A00277	2008-09-29	2009-09-29
HP	Signal Generator	HP8657A	2849U00982	2008-10-16	2009-10-16
HP	Amplifier	HP8447D	2944A09795	2008-11-15	2009-11-15
Giga-tronics	Signal Generator	1026	270801	2008-09-29	2009-09-29
COM POWER	Dipole Antenna	AD-100	041000	2008-09-25	2009-09-25
A.H. System	Horn Antenna	SAS-200/571	135	2008-05-17	2009-05-17
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2008-06-21	2009-06-21

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data**Environmental Conditions**

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

* The testing was performed by Vicent Kang on 2008-10-30.

Conducted Power**Cellular Band Part 22H****GSM**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (dBm)
Low	824.2	33.10	2.042	38.45
Middle	836.6	32.88	1.941	38.45
High	848.8	32.59	1.816	38.45

GPRS

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (dBm)
Low	824.2	33.19	2.084	38.45
Middle	836.6	32.96	1.977	38.45
High	848.8	32.66	1.845	38.45

PCS Band Part 24E**GSM**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (dBm)
Low	1850.2	28.80	0.759	33
Middle	1880.0	28.47	0.703	33
High	1909.8	28.44	0.698	33

GPRS

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (dBm)
Low	1850.2	28.87	0.771	33
Middle	1880.0	28.53	0.713	33
High	1909.8	28.49	0.706	33

Radiated Power (ERP and EIRP)**Cellular Band Part 22H**

GSM:

Indicated		Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Freq. (MHz)	Amp. (dBuV)		Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
824.2	117.39	120	1.0	H	824.2	28.11	0	0.90	27.21	38.45	11.24
824.2	111.26	80	1.5	V	824.2	22.22	0	0.90	21.32	38.45	17.13
836.6	117.88	120	125	H	836.6	28.91	0	0.90	28.01	38.45	10.44
836.6	111.54	88	155	V	836.6	22.62	0	0.90	21.72	38.45	16.73
848.8	118.11	120	1.0	H	848.8	29.21	0	0.90	28.31	38.45	10.14
848.8	111.77	82	1.54	V	848.8	23.02	0	0.90	22.12	38.45	16.33

GPRS:

Indicated		Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Freq. (MHz)	Amp. (dBuV)		Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
824.2	117.48	120	1.0	H	824.2	28.2	0	0.90	27.3	38.45	11.15
824.2	111.36	80	1.5	V	824.2	22.32	0	0.90	21.42	38.45	17.03
836.6	117.98	120	125	H	836.6	29.01	0	0.90	28.11	38.45	10.34
836.6	111.64	88	155	V	836.6	22.72	0	0.90	21.82	38.45	16.63
848.8	118.20	120	1.0	H	848.8	29.3	0	0.90	28.4	38.45	10.05
848.8	111.85	82	1.54	V	848.8	23.1	0	0.90	22.2	38.45	16.25

PCS Band Part 24E

GSM:

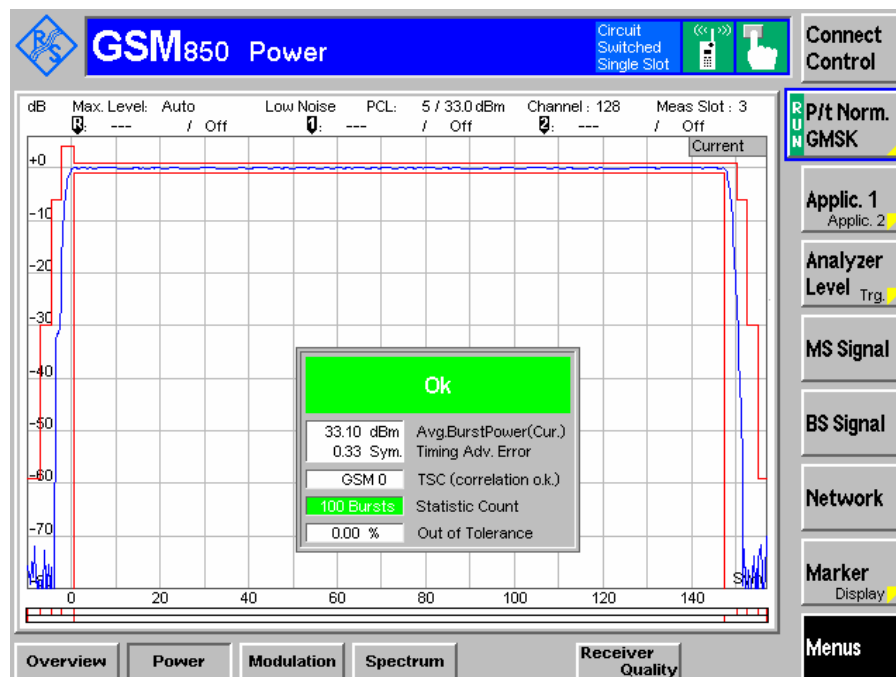
Indicated		Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Freq. (MHz)	Amp. (dBuV)		Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
1850.2	116.23	240	1.8	H	1850.2	15.05	6.2	1.02	20.23	33	12.67
1850.2	122.86	80	1.0	V	1850.2	23.02	6.2	1.02	27.20	33	5.80
1880	116.57	230	1.85	H	1880	15.35	6.2	1.03	20.52	33	12.48
1880	123.12	82	1.0	V	1880	22.12	6.2	1.03	27.29	33	5.71
1909.8	116.19	240	1.9	H	1909.8	16.45	6.2	1.03	21.62	33	11.38
1909.8	121.82	82	1.04	V	1909.8	21.62	6.2	1.03	26.79	33	6.21

GPRS:

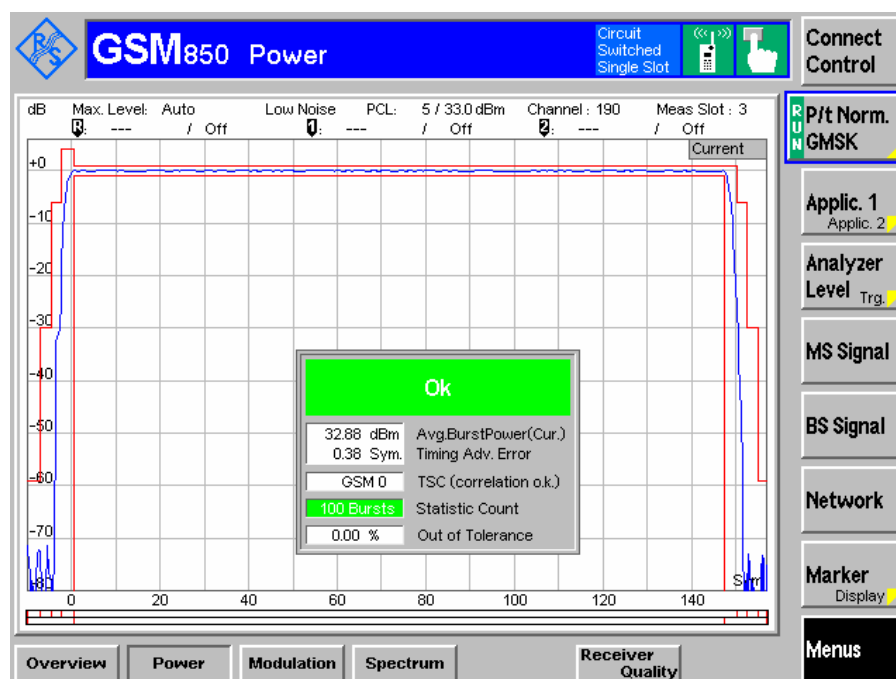
Indicated		Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Freq. (MHz)	Amp. (dBuV)		Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
1850.2	116.33	240	1.8	H	1850.2	15.15	6.2	1.02	20.33	33	12.67
1850.2	122.93	80	1.0	V	1850.2	23.09	6.2	1.02	28.27	33	4.73
1880	116.66	230	1.85	H	1880	15.44	6.2	1.03	20.61	33	12.39
1880	123.18	82	1.0	V	1880	22.18	6.2	1.03	27.35	33	5.65
1909.8	116.27	240	1.9	H	1909.8	16.53	6.2	1.03	21.70	33	11.30
1909.8	121.88	82	1.04	V	1909.8	21.68	6.2	1.03	26.85	33	6.15

Plots of Conducted Output Power for Cellular Band (GSM):

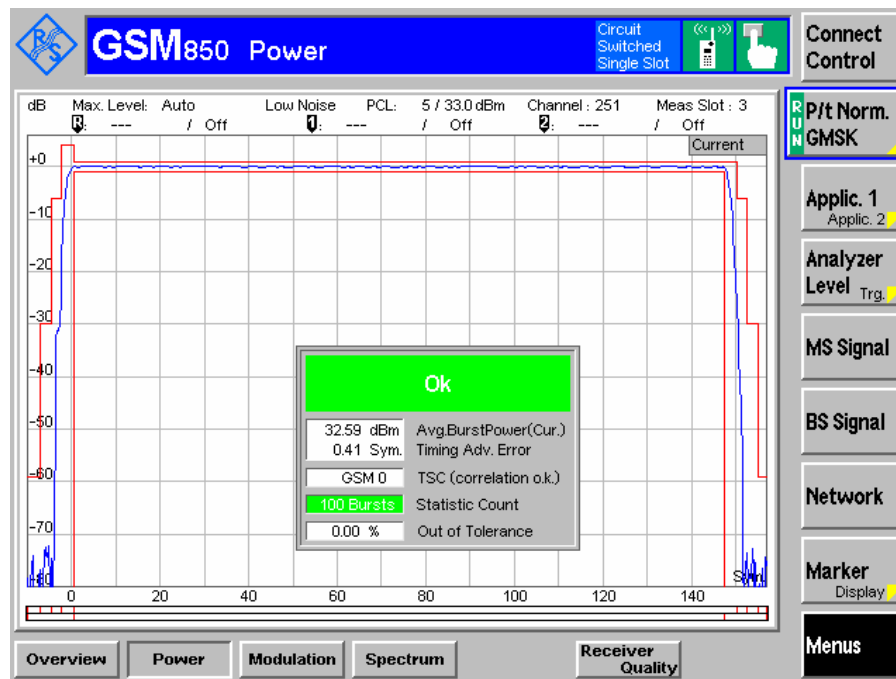
Low Channel



Middle Channel

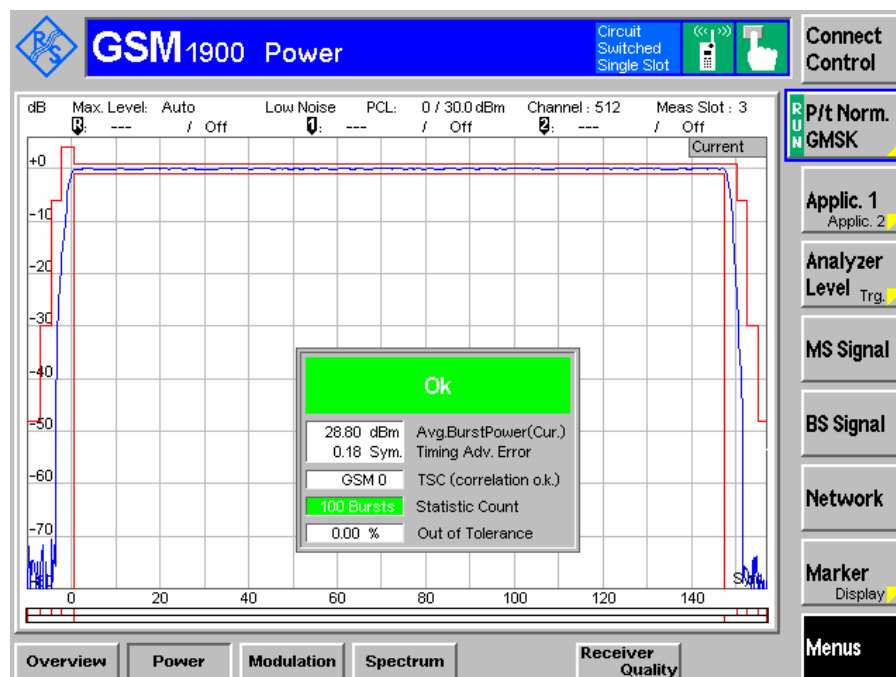


High Channel

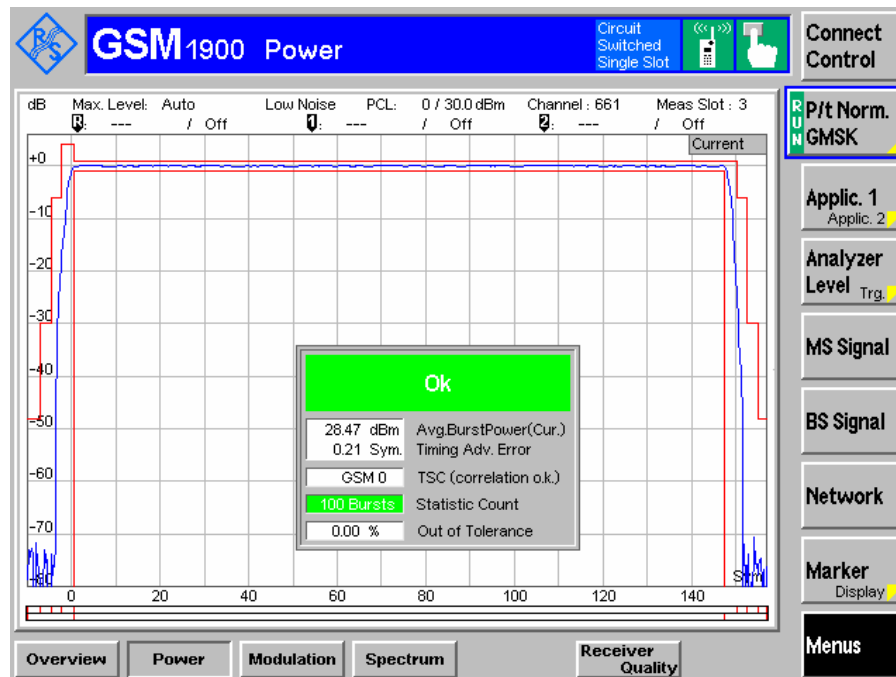


Plots of Conducted Output Power for PCS Band (GSM):

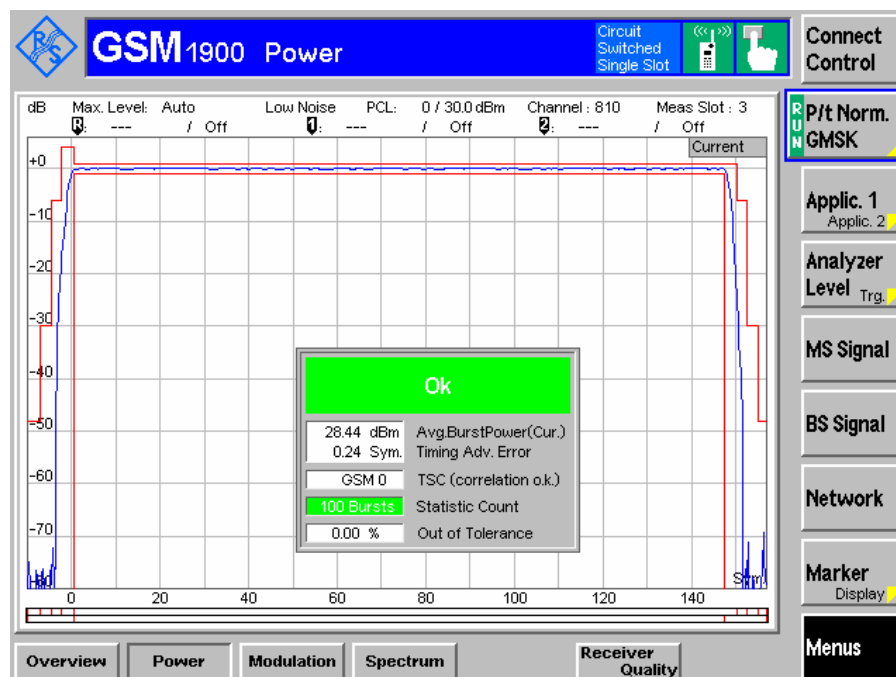
Low Channel

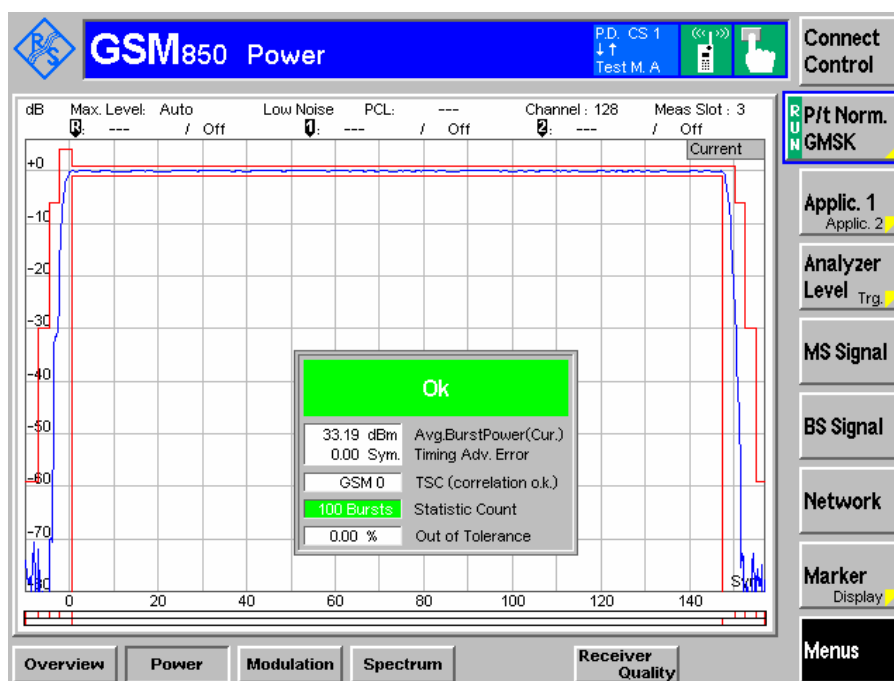
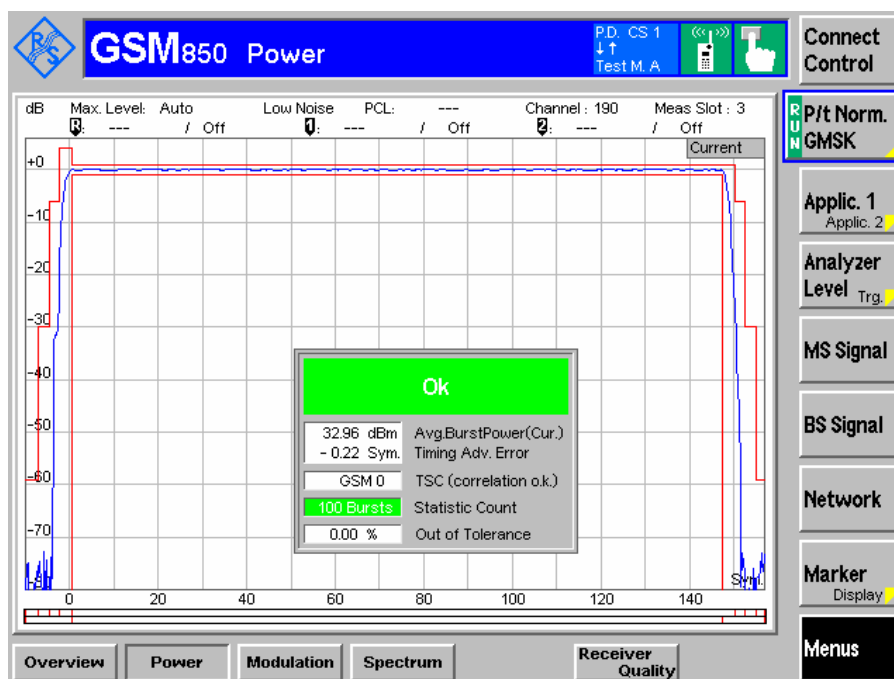


Middle Channel

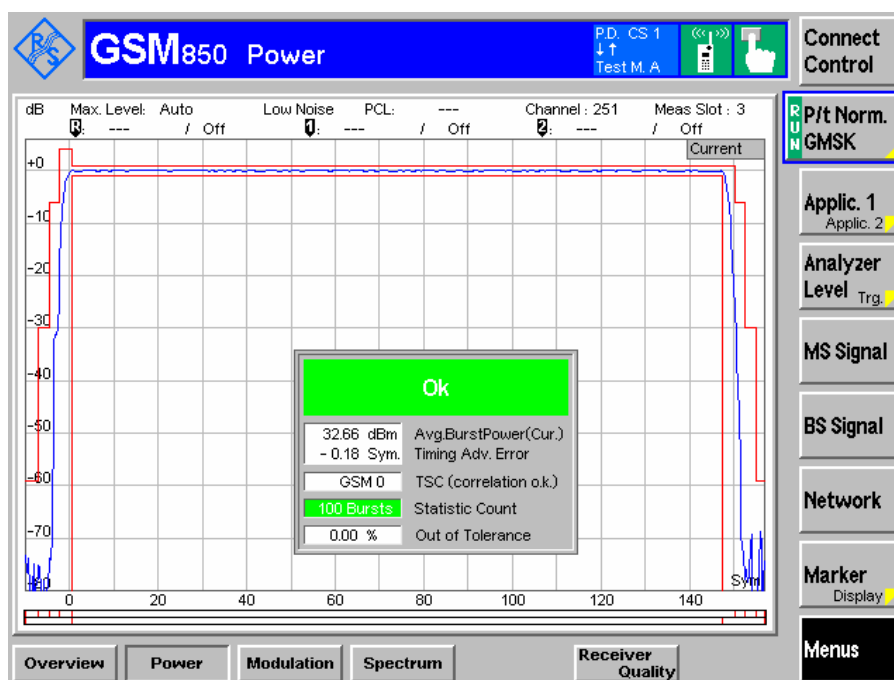


High Channel



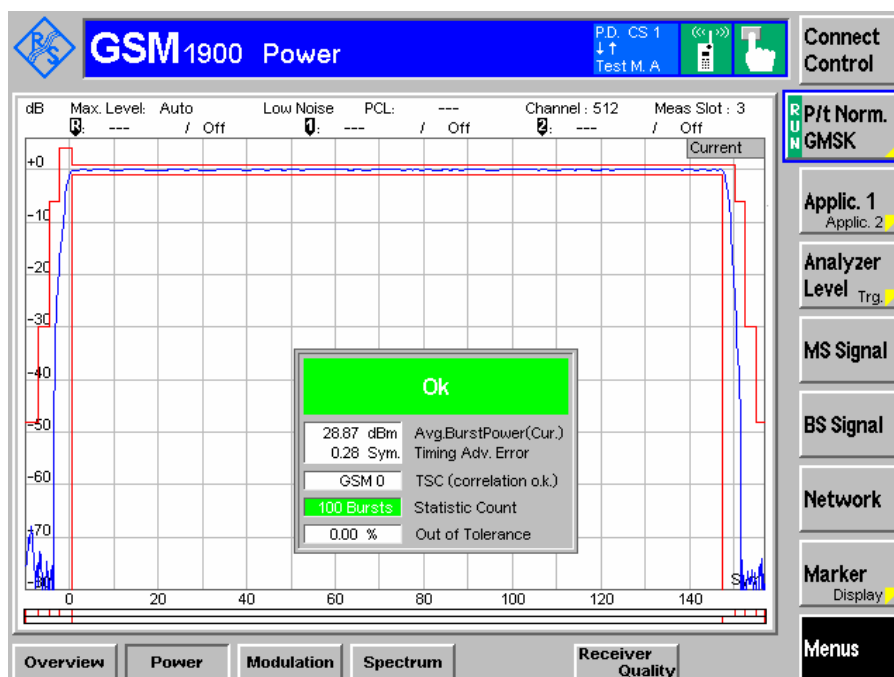
Plots of Conducted Output Power for Cellular Band (GPRS):**Low Channel****Middle Channel**

High Channel

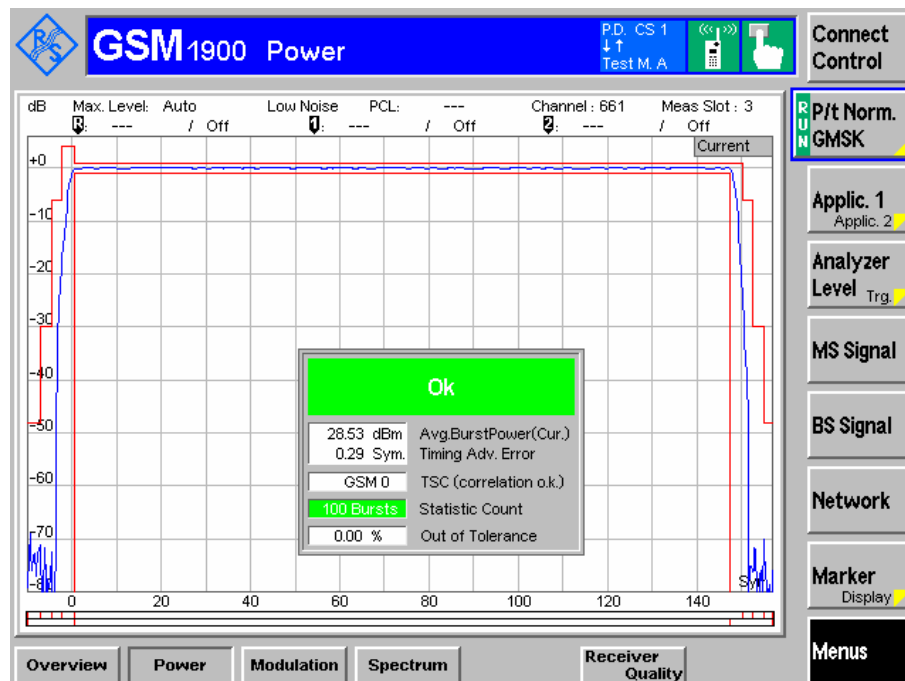


Plots of Conducted Output Power for PCS Band (GPRS):

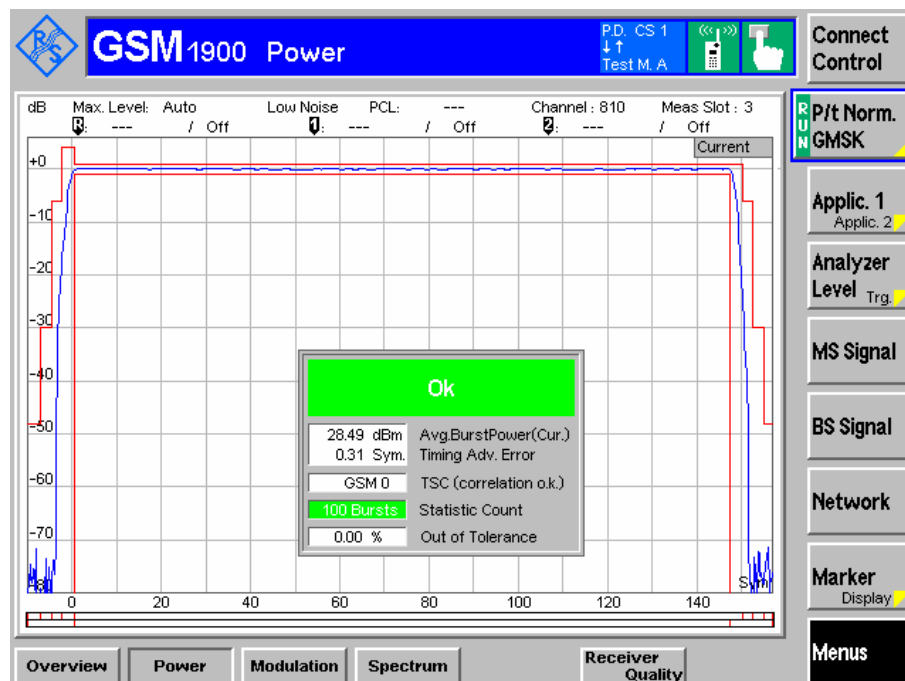
Low Channel



Middle Channel



High Channel



§2.1049, §22.917, §22.905, & §24.238 - OCCUPIED BANDWIDTH

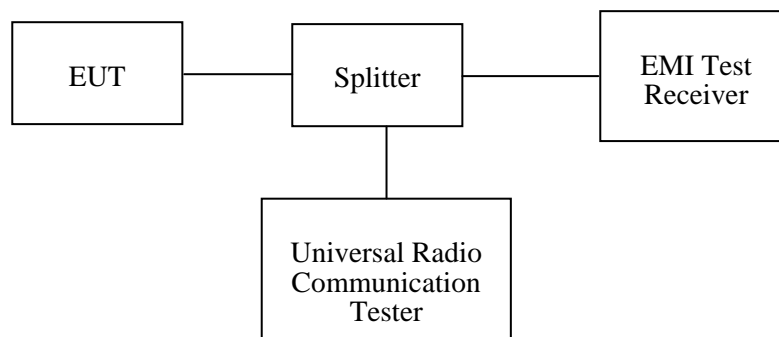
Applicable Standards

CFR 47 §2.1049, §22.917, §22.905 and §24.238.

Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 30 kHz (Cellular /PCS) and the 26 dB & 99% bandwidth was recorded.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2008-10-16	2009-10-16
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2008-06-21	2009-06-21

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

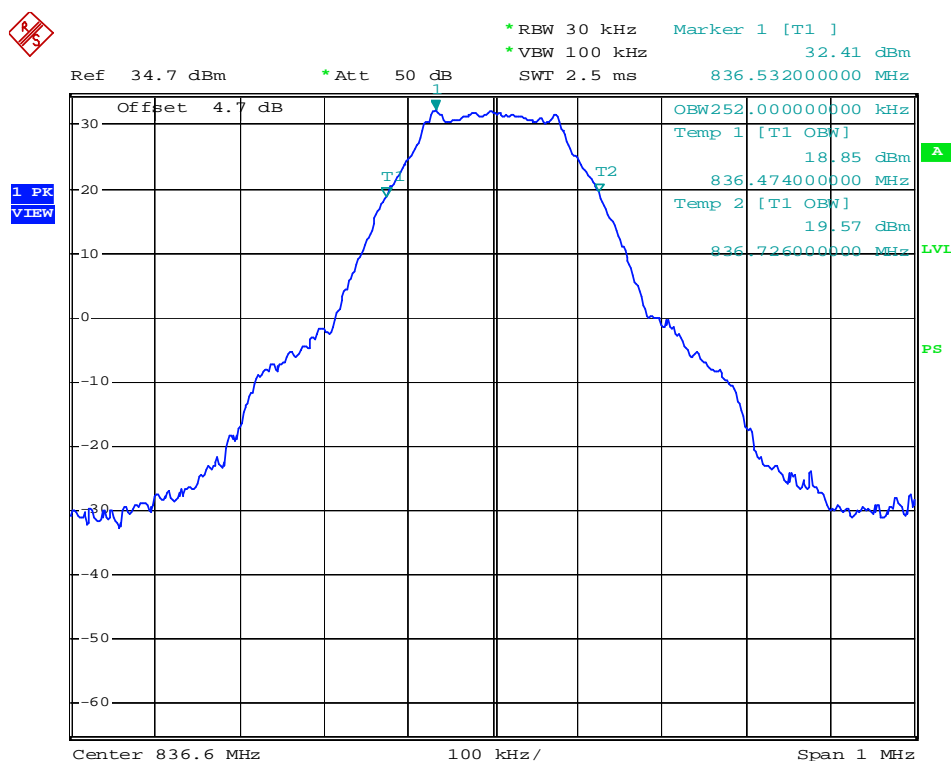
* The testing was performed by Vicent Kang on 2008-11-01.

For GSM 850

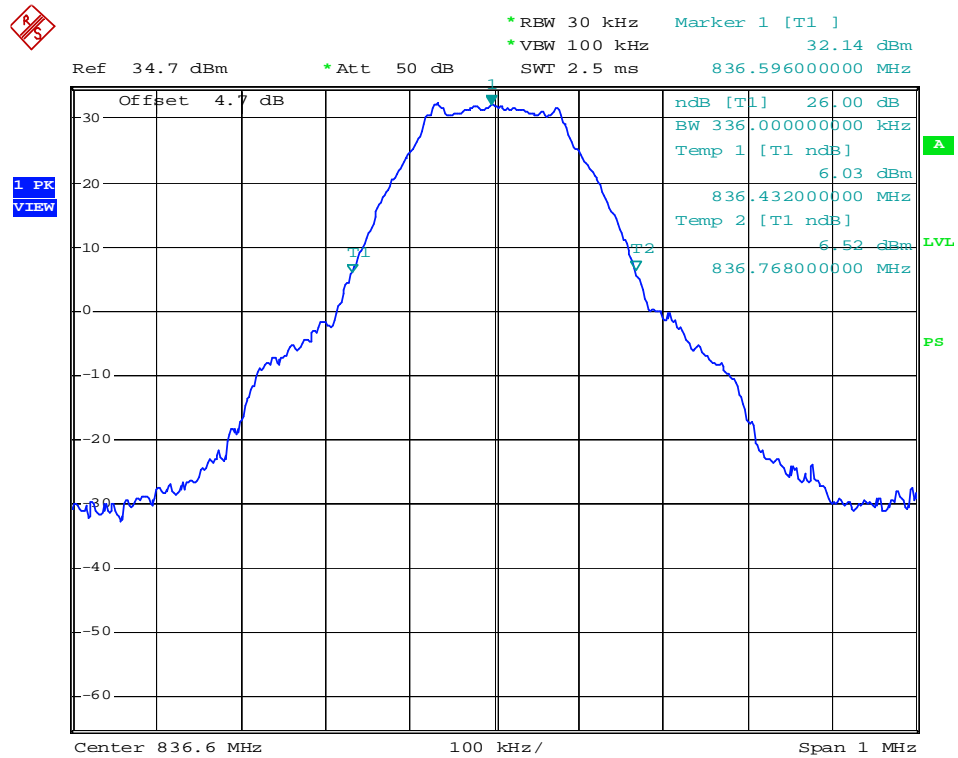
GMSK modulation:

Channel	Frequency (MHz)	99% OBW (kHz)	26 dB OBW (kHz)
190	836.6	252.0	336.0

Please refer to the following plots.



Date: 1.NOV.2008 10:38:48



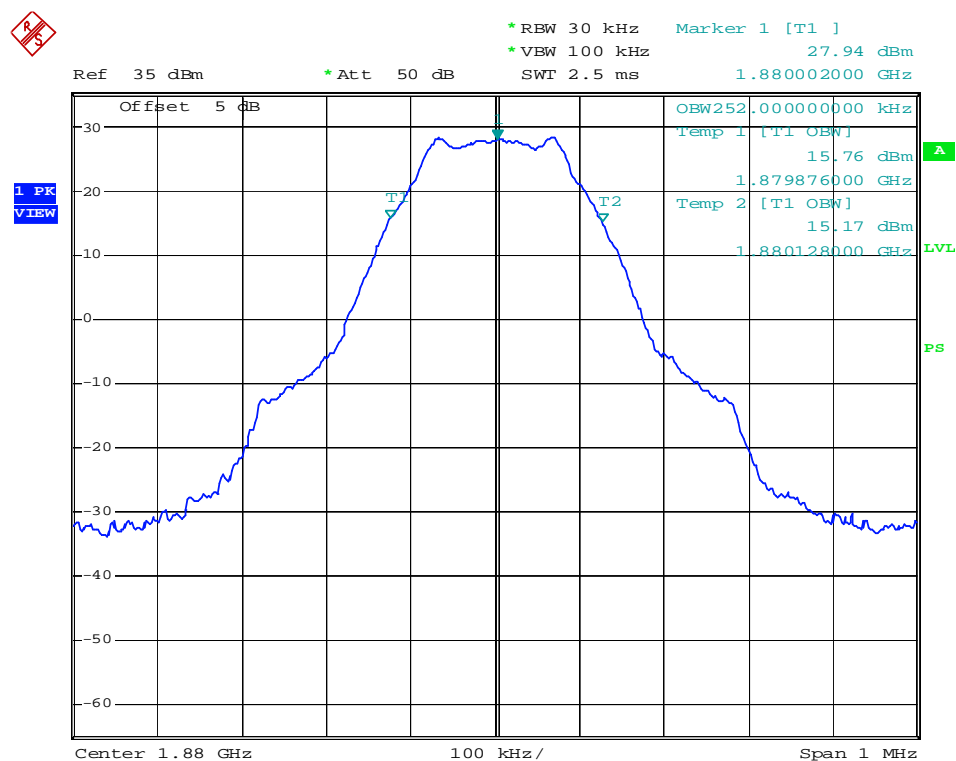
Date: 1.NOV.2008 10:38:25

For PCS1900

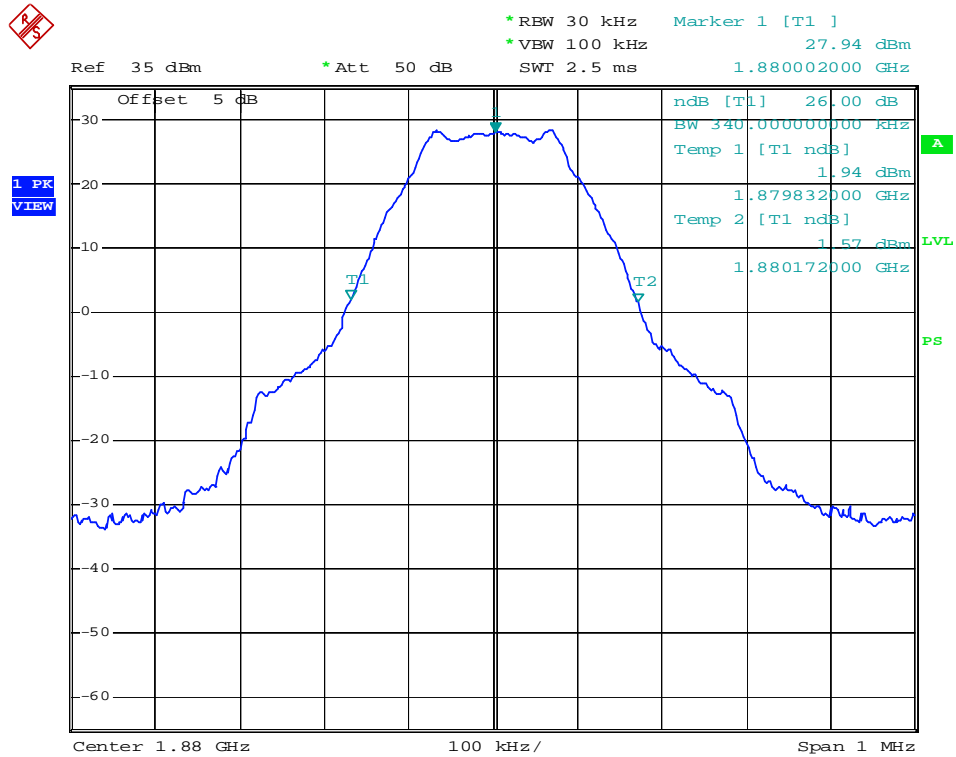
GMSK modulation:

Channel	Frequency (MHz)	99% OBW (kHz)	26 dB OBW (kHz)
661	1880.0	252.0	340.0

Please refer to the following plots.



Date: 1.NOV.2008 10:32:35



Date: 1.NOV.2008 10:31:59

§2.1051, §22.917(a), & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

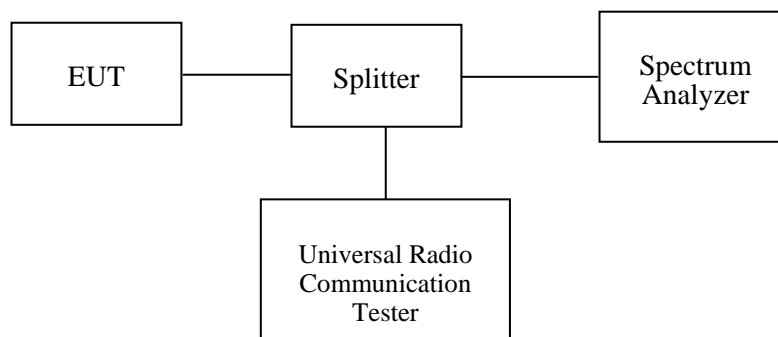
Applicable Standards

CFR 47 §2.1051, §22.917(a) and §4.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Spectrum Analyzer	8593A	2919A00242	2008-10-24	2009-10-24
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2008-06-21	2009-06-21

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

* The testing was performed by Vicent Kang on 2008-11-01.

Please refer to the hereinafter plots.

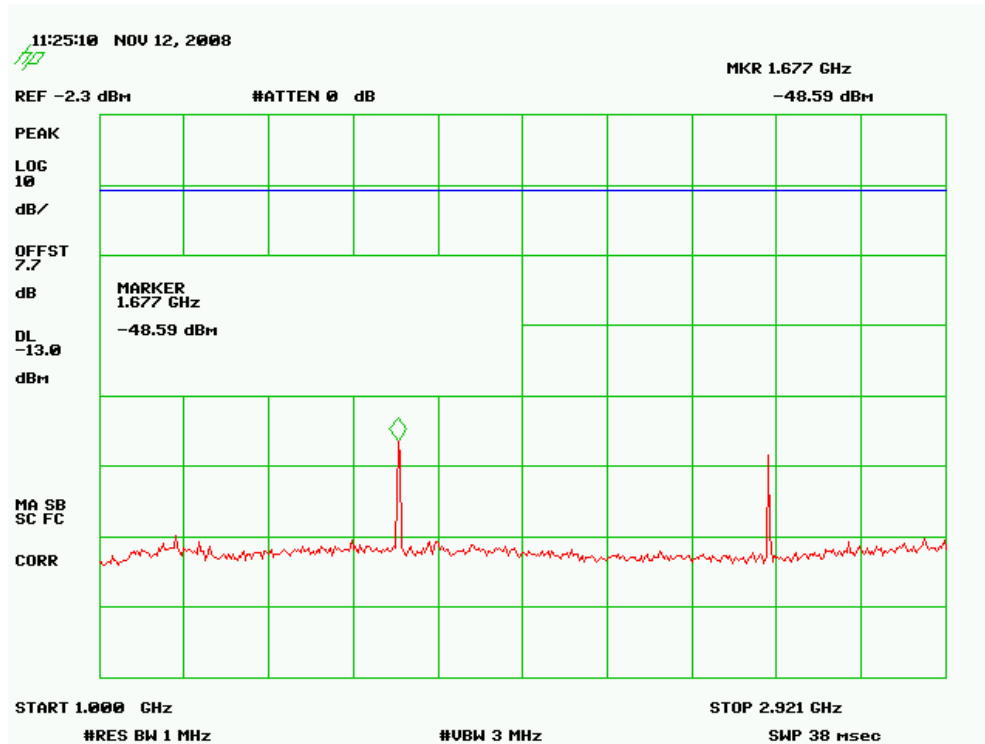
GSM

Cellular Band, Middle Channel

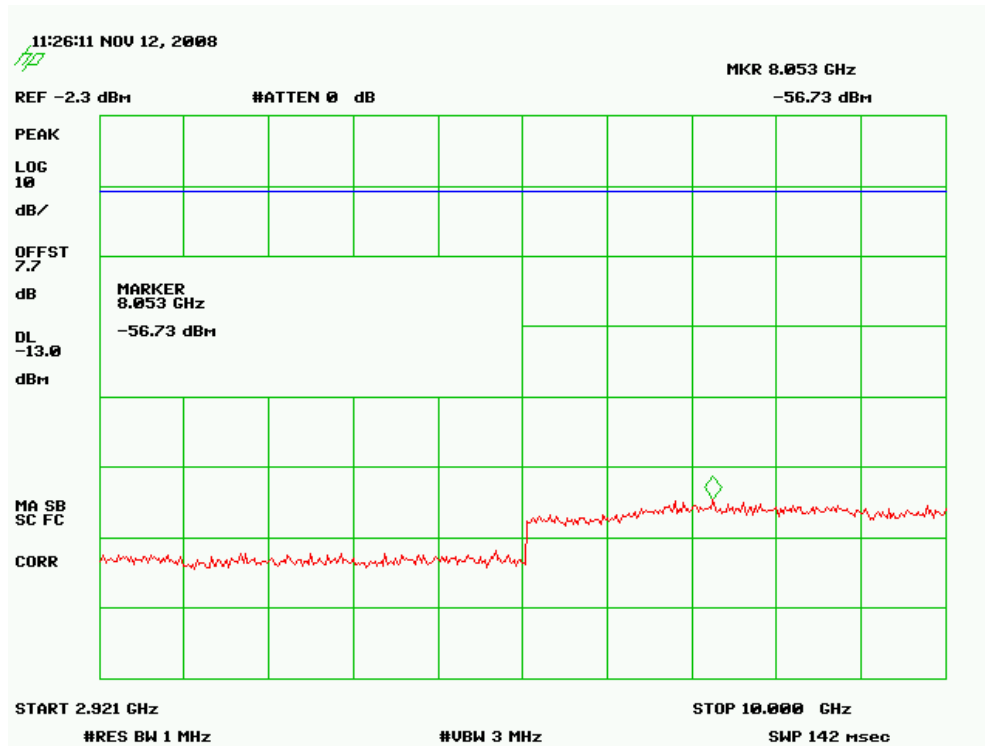
30 -1000 MHz



1.0 - 2.921 GHz

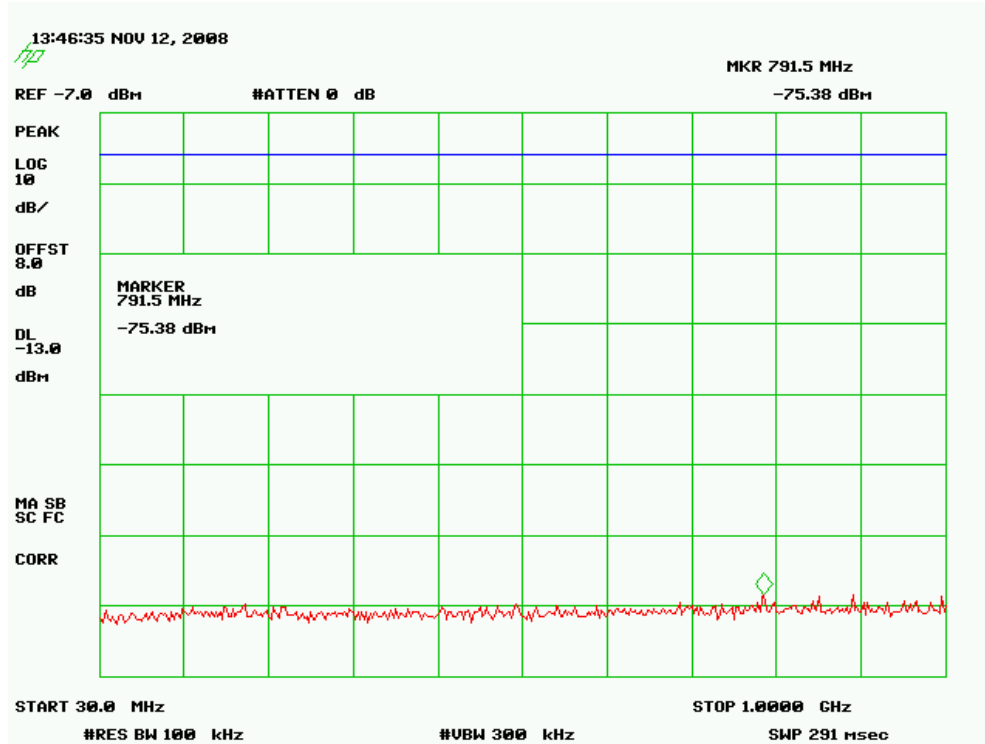


2.921- 10 GHz

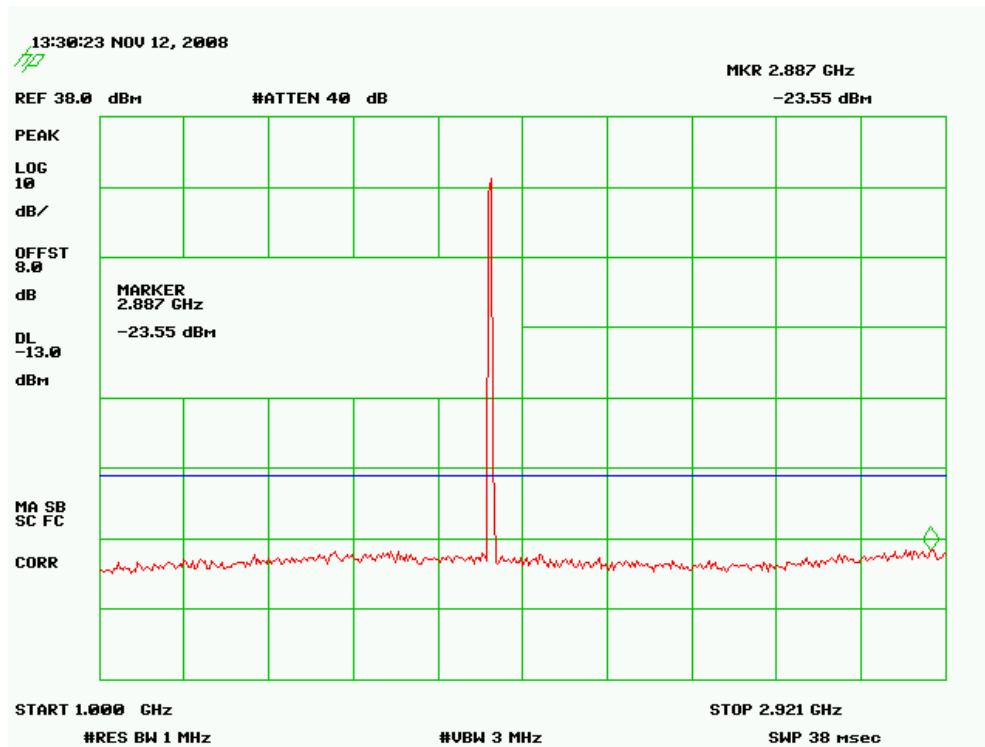


PCS Band, Middle Channel

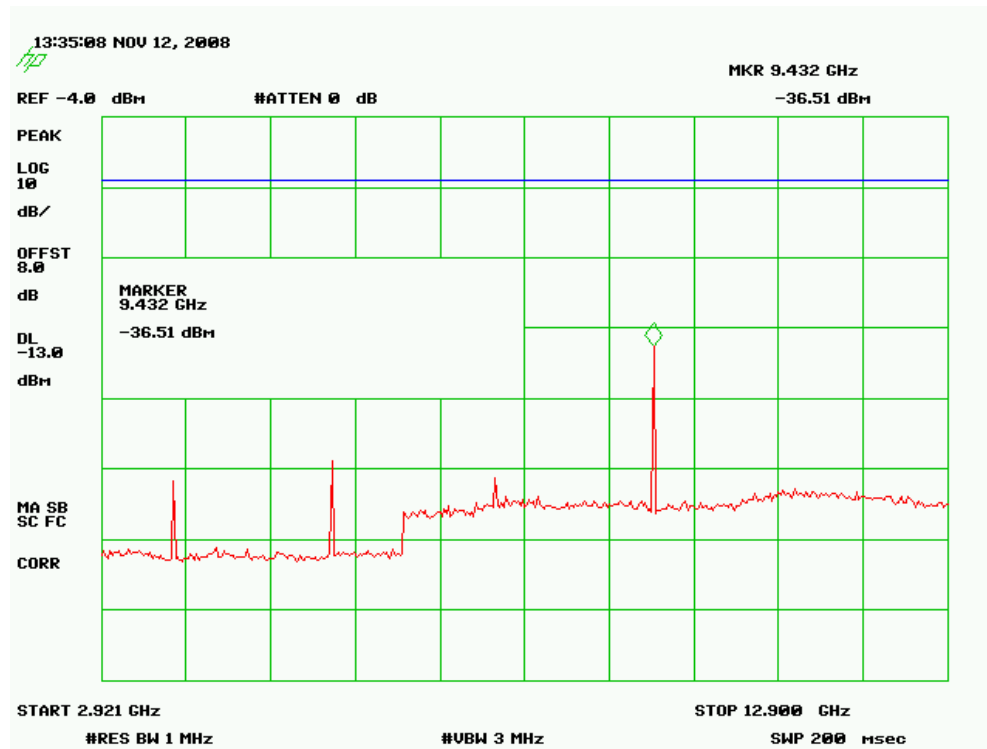
30 – 1000 MHz



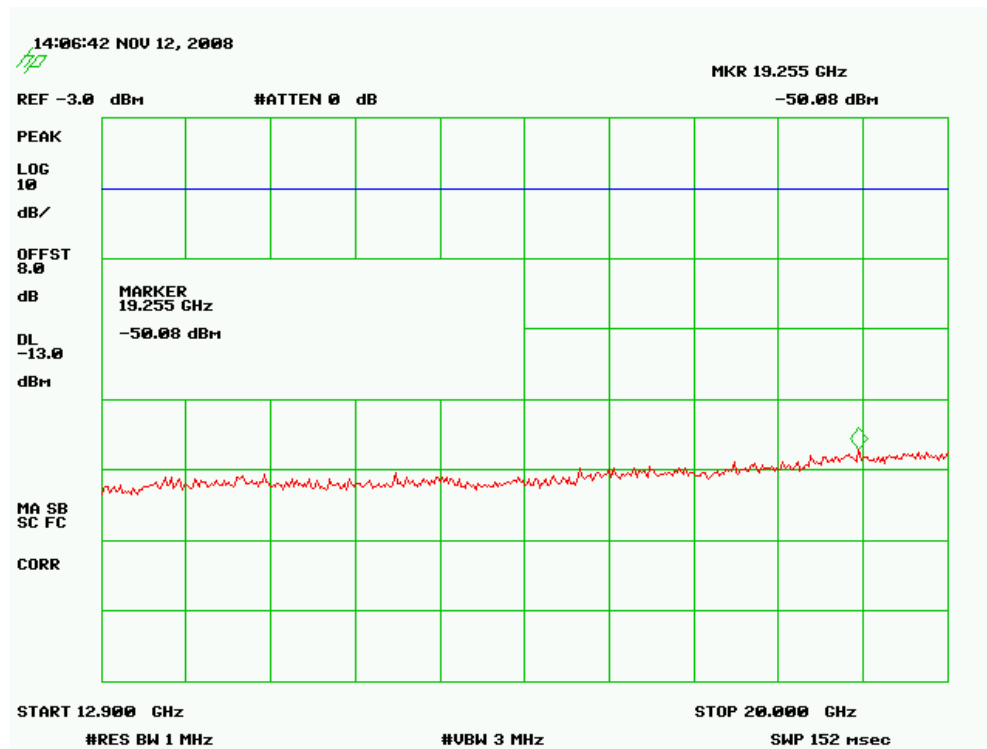
1.0 - 2.921 GHz



2.921 - 12.9 GHz



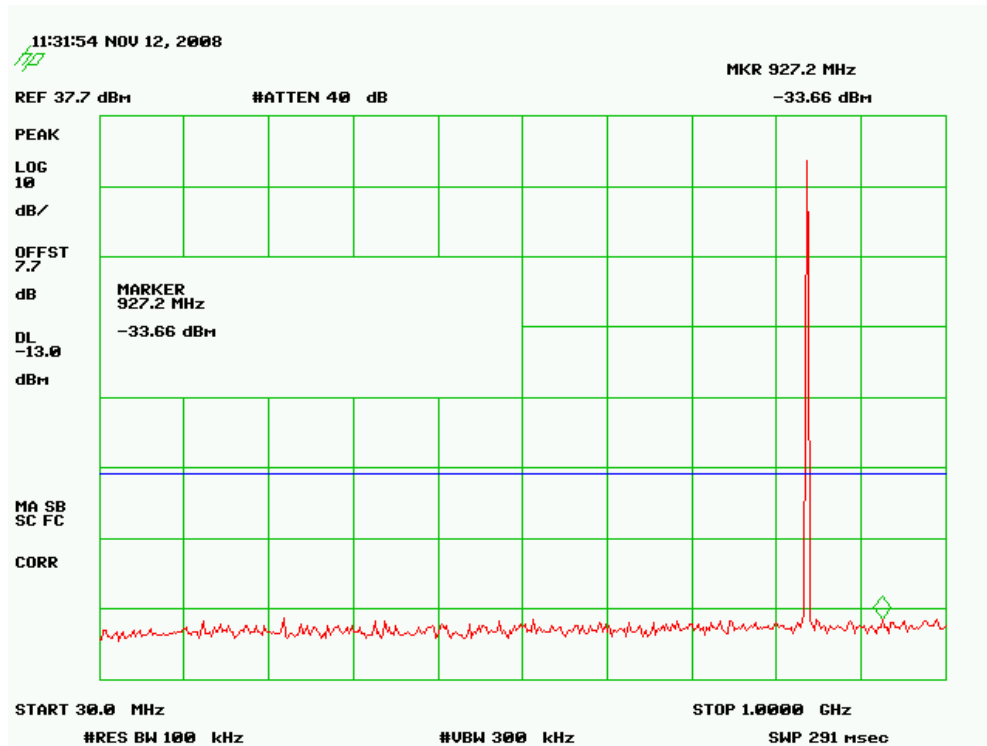
12.9 – 20 GHz



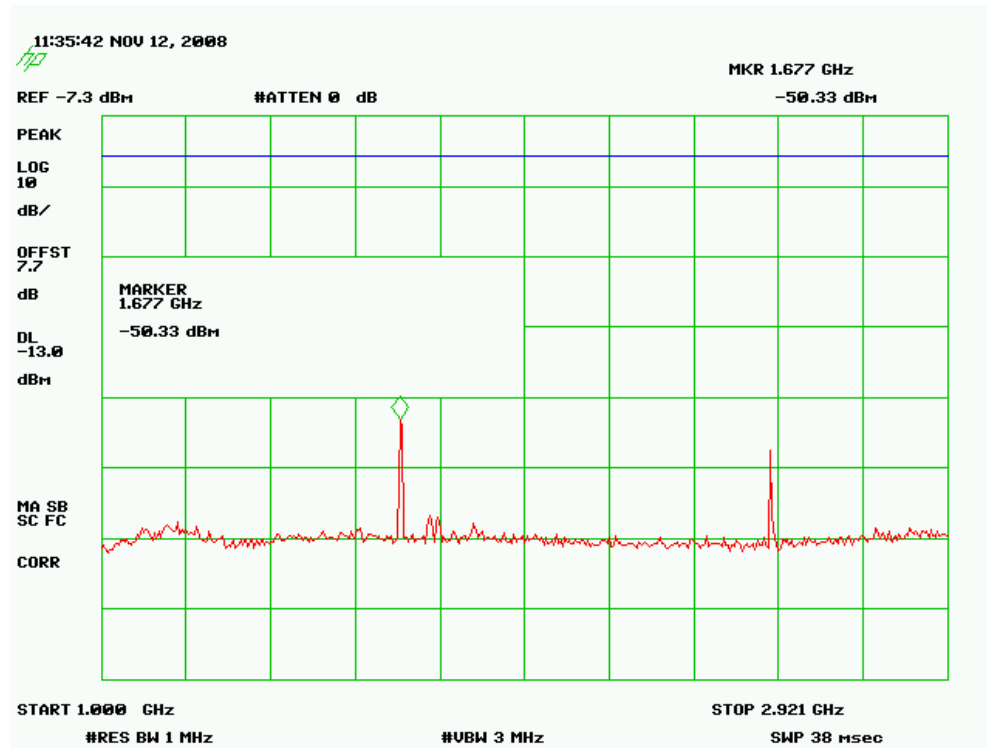
GPRS

Cellular Band, Middle Channel

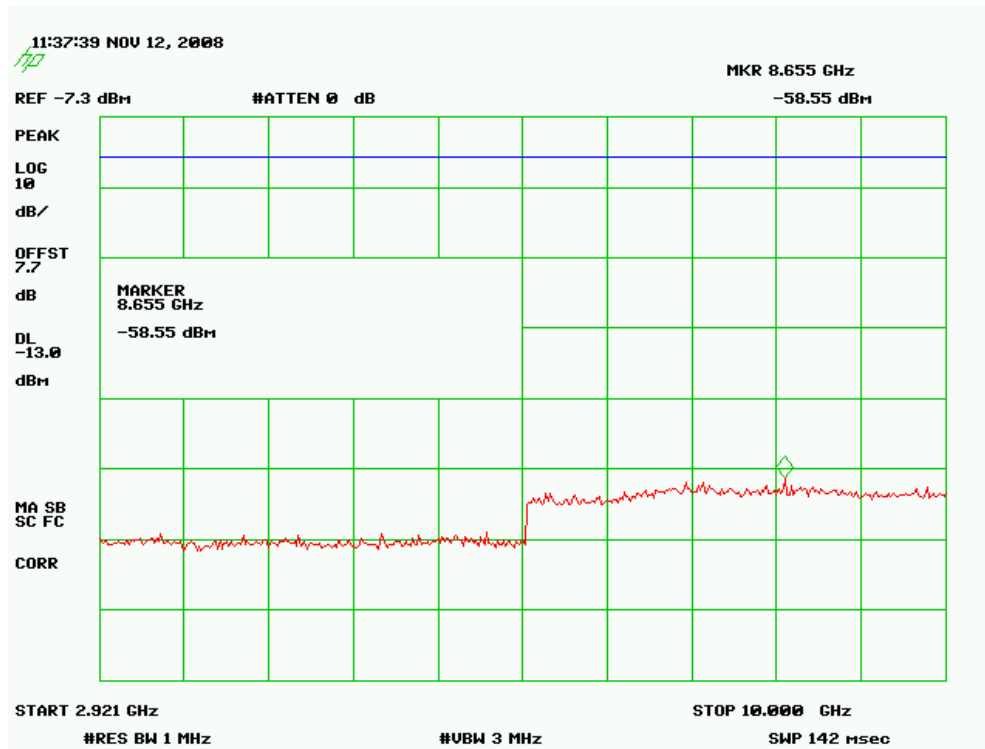
30 – 1000 MHz



1.0 - 2.921 GHz

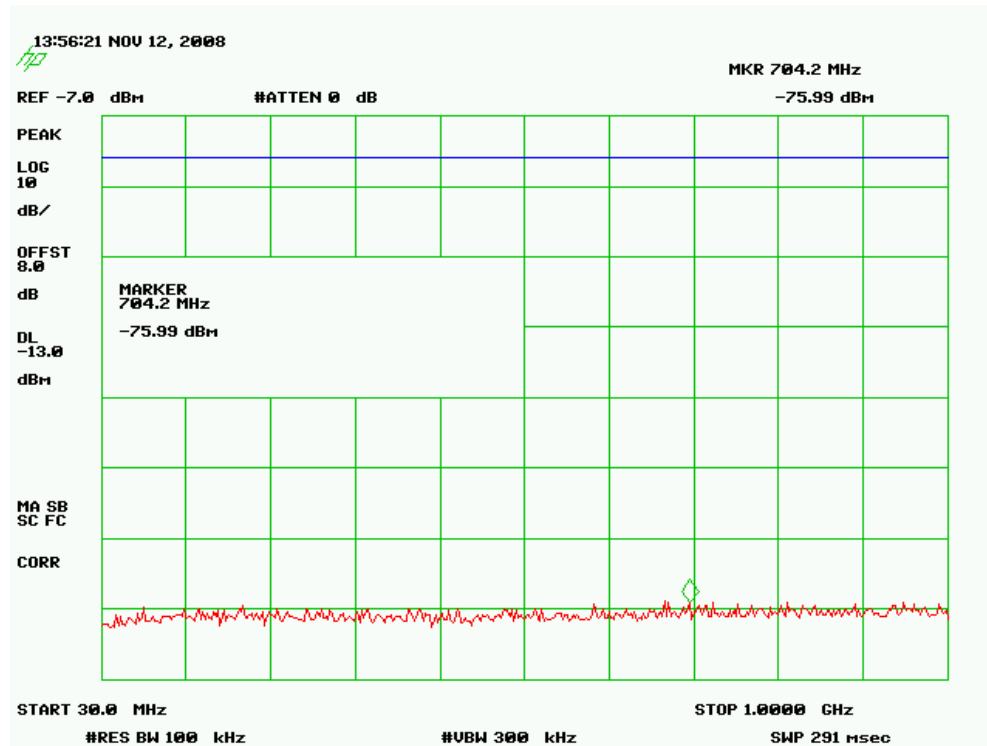


2.921 – 10 GHz

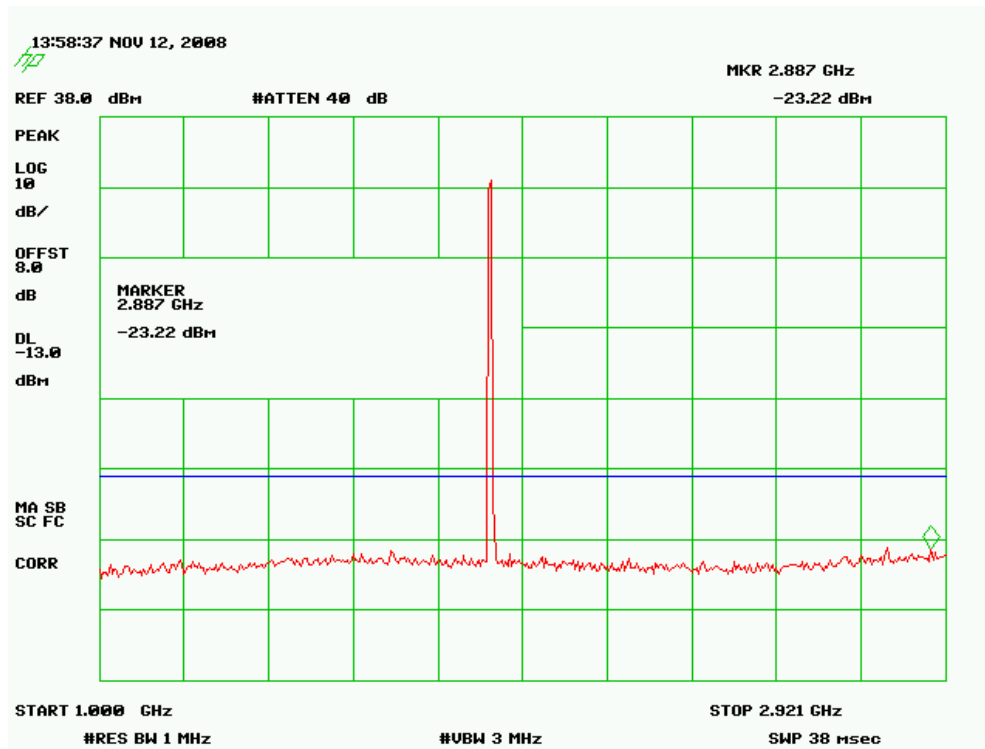


PCS Band, Middle Channel

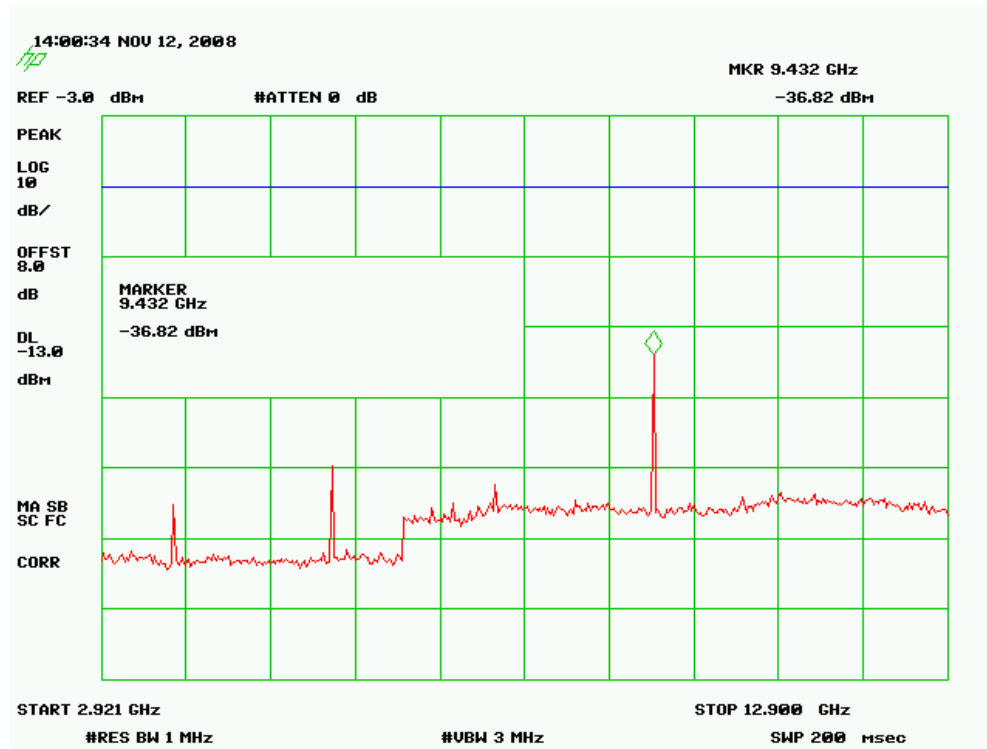
30 – 1000 MHz



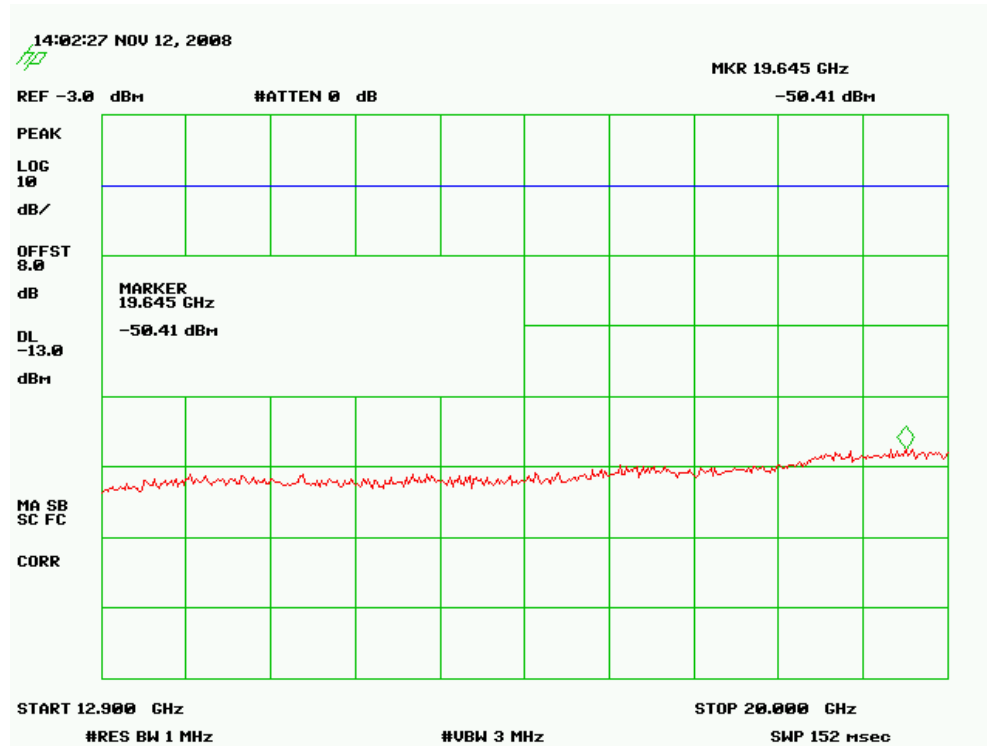
1.0 - 2.921 GHz



2.921 - 12.9 GHz



12.9 – 20 GHz



§2.1053 - SPURIOUS RADIATED EMISSIONS

Applicable Standards

CFR 47 § 2.1053, 22.917 and § 24.238.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = $10 \lg (\text{TXpwr in Watts}/0.001)$ – the absolute level

Spurious attenuation limit in dB = $43 + 10 \text{Log}_{10} (\text{power out in Watts})$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052604	2008-09-25	2009-09-25
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2008-03-11	2009-03-11
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2008-05-09	2009-05-09
HP	Preamplifier	8449B	3008A00277	2008-09-29	2009-09-29
HP	Signal Generator	HP8657A	2849U00982	2008-10-16	2009-10-16
HP	Amplifier	HP8447D	2944A09795	2008-11-15	2009-11-15
Giga-tronics	Signal Generator	1026	270801	2008-09-29	2009-09-29
COM POWER	Dipole Antenna	AD-100	041000	2008-09-25	2009-09-25
A.H. System	Horn Antenna	SAS-200/571	135	2008-05-17	2009-05-17
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2008-06-21	2009-06-21

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data**Environmental Conditions**

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

* The testing was performed by Vicent Kang on 2008-11-01.

Test mode: Transmitting

Below 1GHz:

Cellular Band

Indicated		Table	Test Antenna		Substituted			Ant. Gain (dBi)	Cable Loss (dB)	Absolute Level (dBm)	PART 22H	
Freq. (MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Polar (H/V)				Limit (dBm)	Margin (dB)
Middle Channel												
881.60	47.33	242	1.2	V	881.60	-52.6	V	0	0.44	-53.04	-13	40.04
500.29	39.53	70	1.5	V	500.29	-58.9	V	0	0.47	-59.37	-13	46.37
912.00	51.66	150	1.5	H	912.00	-43.7	H	0	0.32	-44.02	-13	31.02
730.98	36.16	210	1.0	H	730.98	-60.8	H	0	0.59	-61.39	-13	48.39

PCS Band

Indicated		Table	Test Antenna		Substituted			Ant. Gain (dBi)	Cable Loss (dB)	Absolute Level (dBm)	PART 22H	
Freq. (MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Polar (H/V)				Limit (dBm)	Margin (dB)
Middle Channel												
625.08	38.57	137.0	1.2	V	625.08	-61.6	V	0	0.60	-62.2	-13	49.2
704.26	38.53	199.0	1.3	V	704.26	-60.5	V	0	0.45	-60.95	-13	47.95
351.71	37.21	130	1.5	H	351.71	-64.8	H	0	0.44	-65.24	-13	52.24
255.39	37.08	240	1.2	H	255.39	-65.7	H	0	0.49	-66.19	-13	53.19

Above 1GHz:

Cellular Band

Indicated		Table	Test Antenna		Substituted			Ant. Gain (dBi)	Cable Loss (dB)	Absolute Level (dBm)	PART 22H	
Freq. (MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Polar (H/V)				Limit (dBm)	Margin (dB)
Middle Channel												
1673.2	54.45	100	1.9	H	1673.2	-45.7	H	6.2	0.94	-40.44	-13	27.44
1673.2	57.55	220	1.0	V	1673.2	-42.7	V	6.2	0.94	-37.44	-13	24.44
2509.8	45.14	210	1.8	H	2509.8	-57.1	H	7.3	1.19	-50.99	-13	37.99
2509.8	45.52	130	1.5	V	2509.8	-56.3	V	7.3	1.19	-50.19	-13	37.19
3346.6	44.67	130	1.6	H	3346.6	-59.2	H	6.7	1.38	-53.88	-13	40.88
3346.6	44.64	150	1.4	V	3346.6	-59.0	V	6.7	1.38	-53.68	-13	40.68

PCS Band

Indicated		Table	Test Antenna		Substituted			Ant. Gain (dBi)	Cable Loss (dB)	Absolute Level (dBm)	PART 22H	
Freq. (MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Polar (H/V)				Limit (dBm)	Margin (dB)
Middle Channel												
3760	54.28	190	1.9	H	3760	-49.1	H	6.9	1.47	-43.67	-13	30.67
3760	53.22	200	1.6	V	3760	-50.3	V	6.9	1.47	-44.87	-13	31.87
5640	46.42	170	1.6	H	5640	-55.8	H	8.3	1.76	-49.26	-13	36.26
5640	45.12	80	1.5	V	5640	-56.9	V	8.3	1.76	-50.36	-13	37.36
7520	43.48	180	1.5	H	7520	-56.5	H	7.6	2.09	-50.99	-13	37.99
7520	44.74	110	1.5	V	7520	-55.3	V	7.6	2.09	-49.79	-13	36.79

§22.917(a) & §24.238(a) - BAND EDGES

Applicable Standards

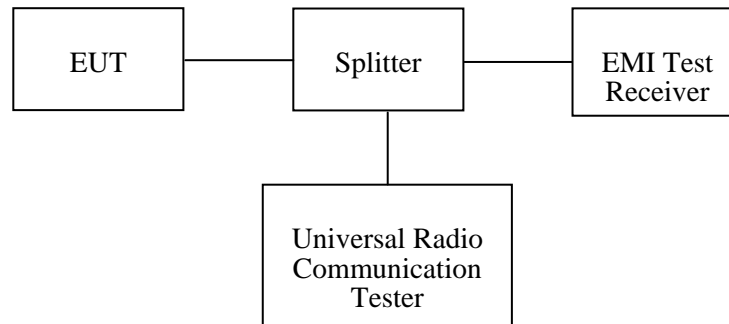
According to § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency, RBW set to 10 kHz.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2008-10-16	2009-10-16
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2008-06-21	2009-06-21

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

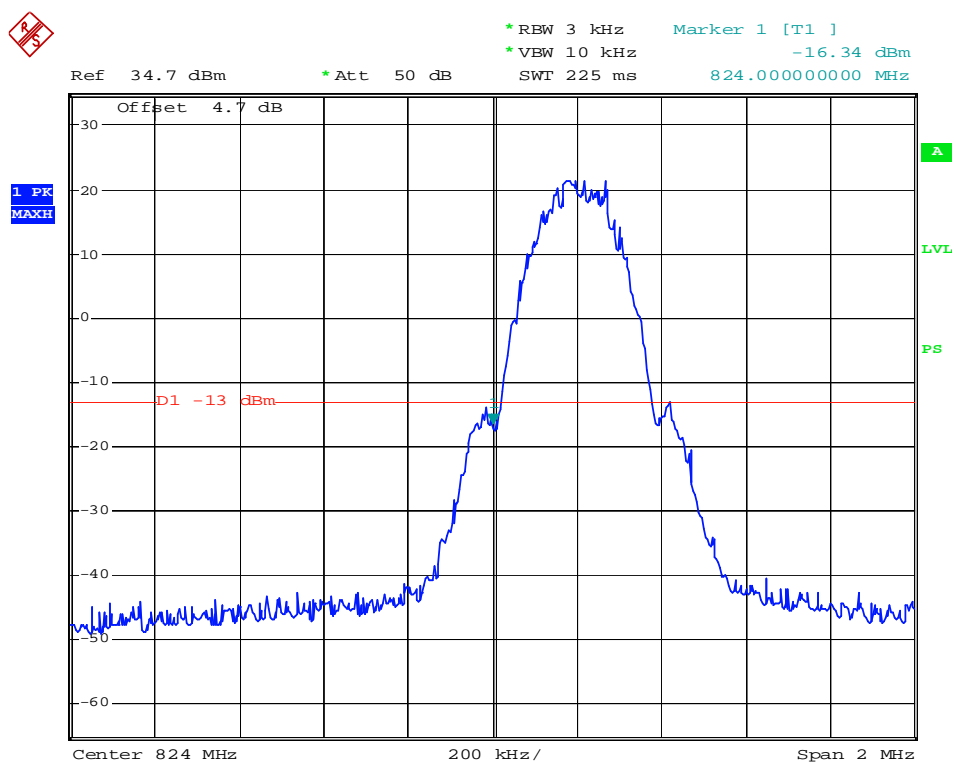
* The testing was performed by Vicent Kang on 2008-11-13.

Please refer to the following tables and plots.

Cellular Band (GSM):

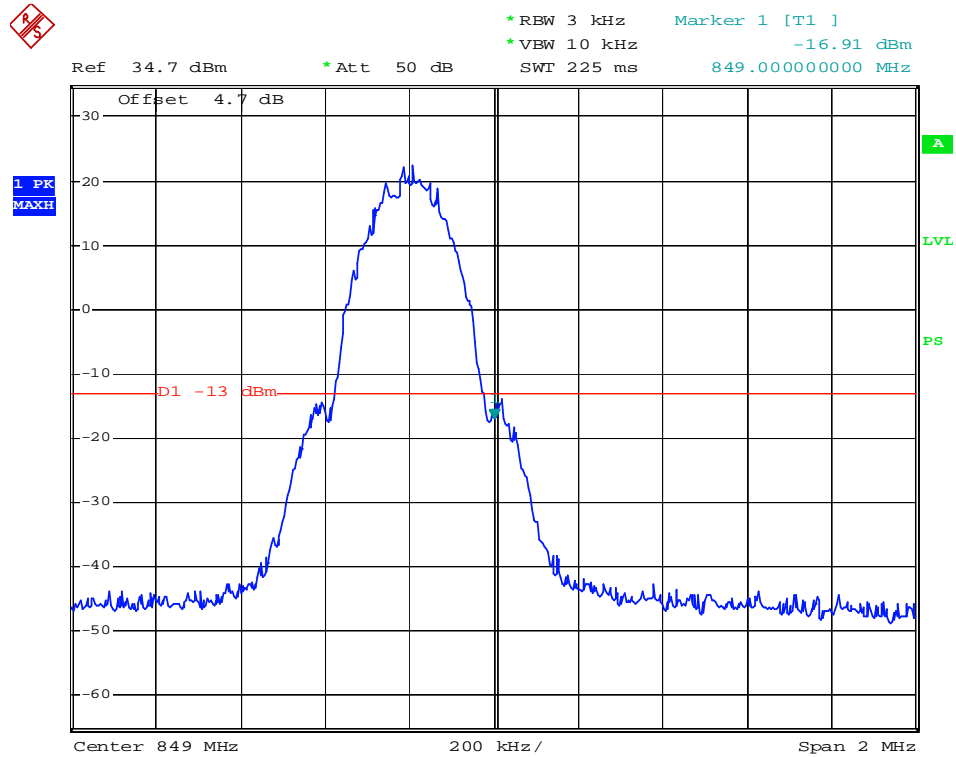
Frequency (MHz)	Emission (dBm)	Limit (dBm)
824	-14.48	-13
849	-14.36	-13

Cellular Band, Lowest Channel



Date: 13.NOV.2008 11:29:36

Cellular Band, Highest Channel

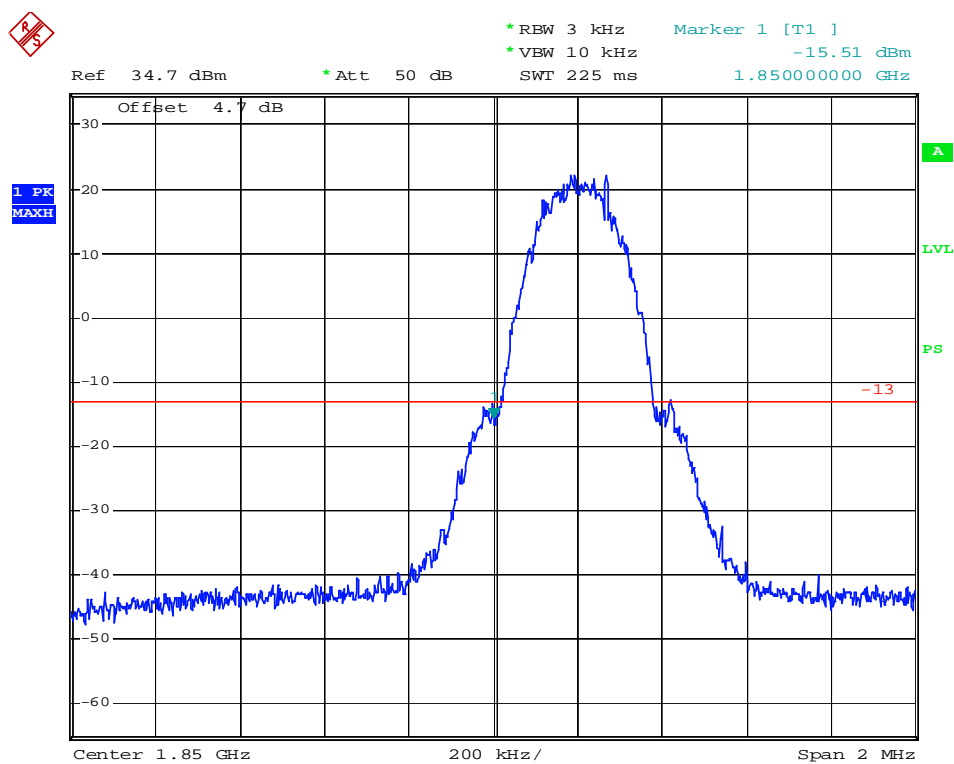


Date: 13.NOV.2008 11:35:07

PCS Band (GSM):

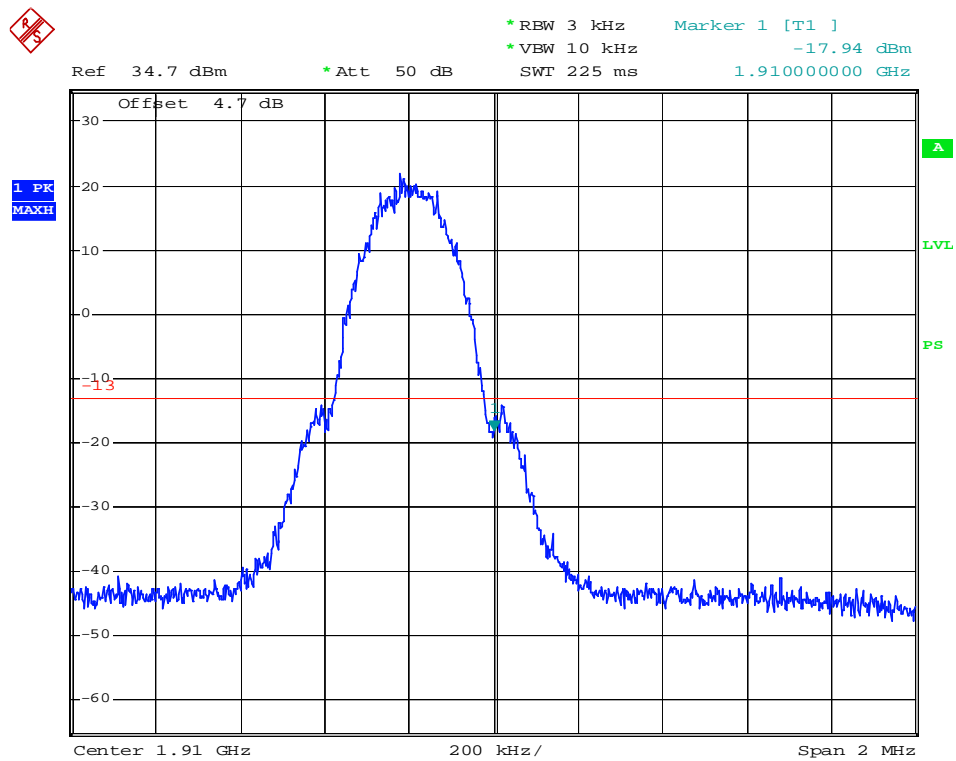
Frequency (MHz)	Emission (dBm)	Limit (dBm)
1850	-15.51	-13
1910	-17.94	-13

PCS Band, Lowest Channel



Date: 1.NOV.2008 11:36:27

PCS Band, Highest Channel

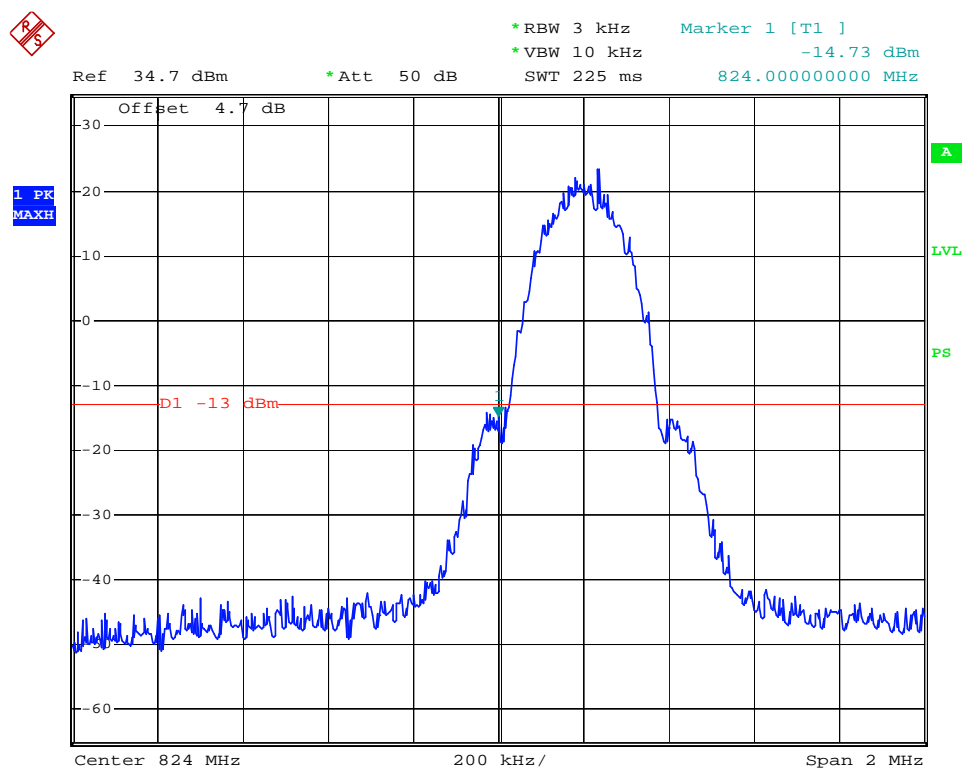


Date: 1.NOV.2008 11:39:39

Cellular Band (GPRS):

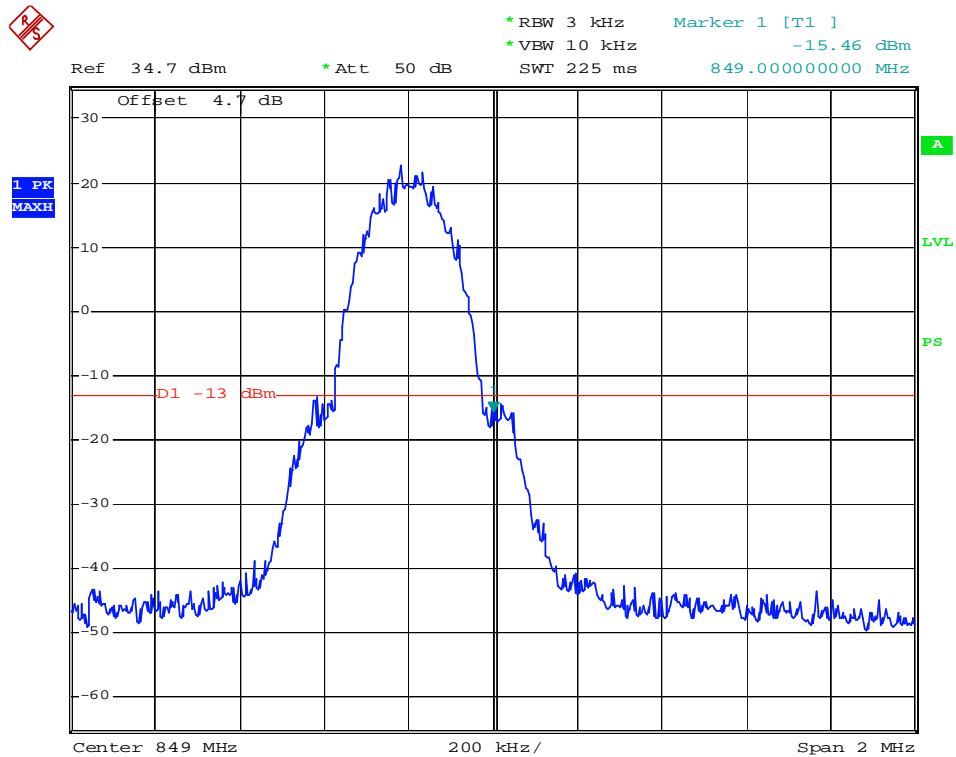
Frequency (MHz)	Emission (dBm)	Limit (dBm)
824	-14.73	-13
849	-13.40	-13

Cellular Band, Lowest Channel



Date: 13.NOV.2008 11:55:45

Cellular Band, Highest Channel

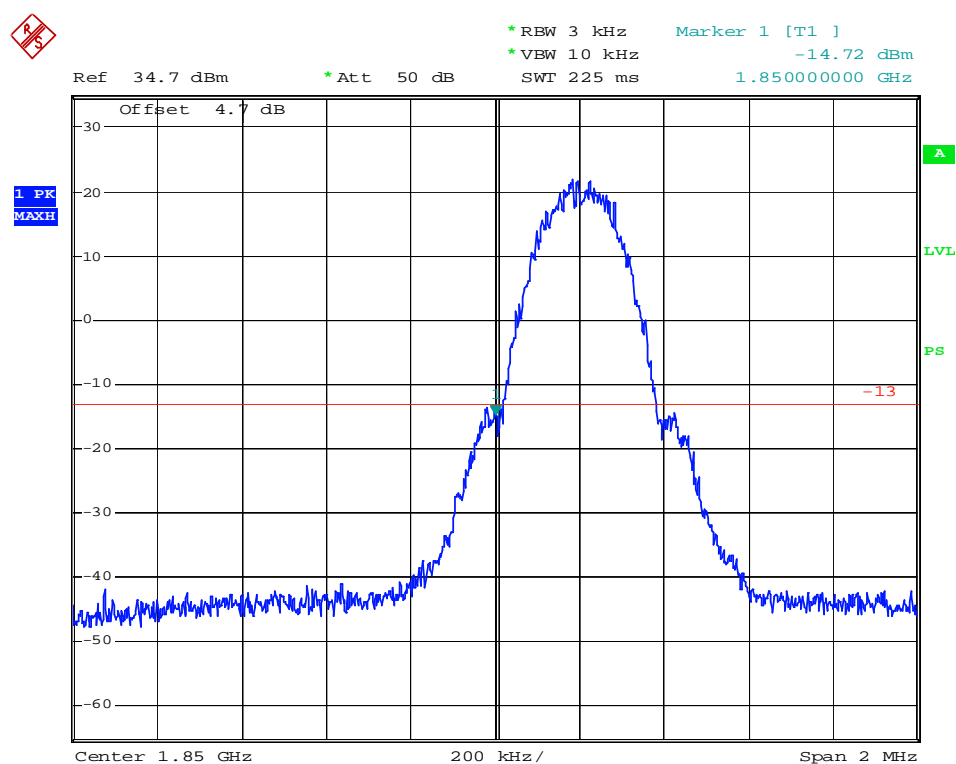


Date: 13.NOV.2008 11:52:07

PCS Band (GPRS):

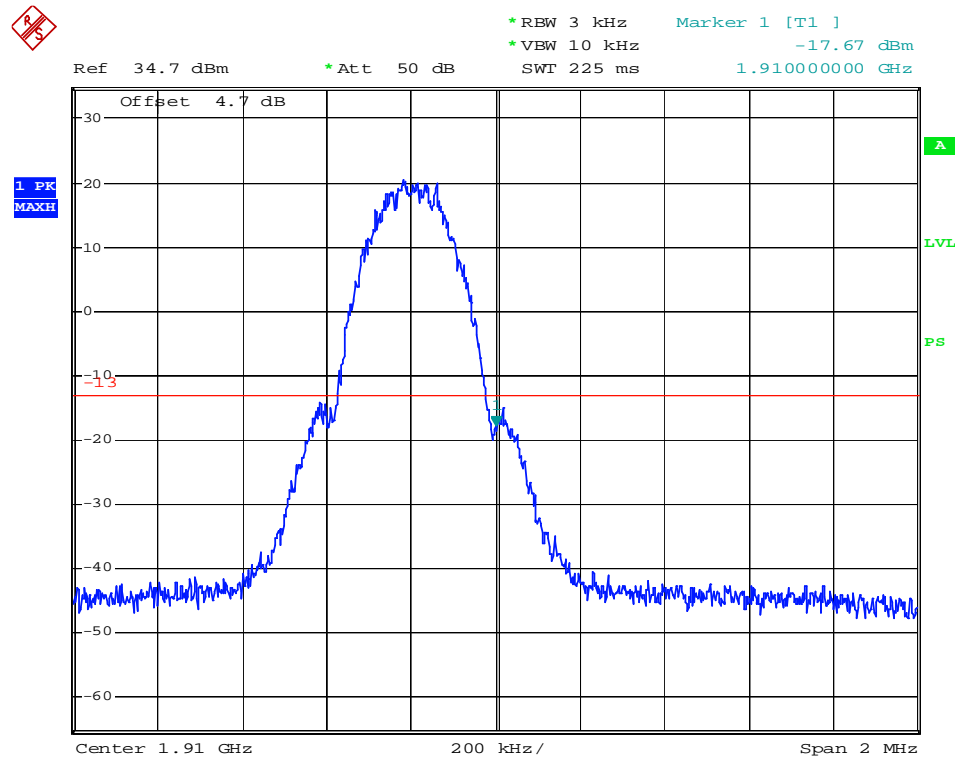
Frequency (MHz)	Emission (dBm)	Limit (dBm)
1850	-14.72	-13
1910	-17.67	-13

PCS Band, Lowest Channel



Date: 1.NOV.2008 11:43:22

PCS Band, Highest Channel



Date: 1.NOV.2008 11:45:38

§2.1055, §22.355, & §24.235 - FREQUENCY STABILITY

Applicable Standard

CFR47 § 2.1055 (a), § 2.1055 (d), §22.355, §24.235

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
WUHUAN	Temperature & Humidity Chamber	HTP205	20021115	2008-12-28	2009-12-28
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2008-06-21	2009-06-21

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data**Environmental Conditions**

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

* *The testing was performed by Vicent Kang on 2008-11-13.*

Cellular Band:

Cellular Band, Middle Channel fo = 836.6 MHz				
Temperature (°C)	Power Supplied (Vdc)	Frequency Error (Hz)	Error (ppm)	Limit (ppm)
-15	3.70	-14	-0.0167	2.5
	3.40	-18	-0.0215	2.5
-5	3.70	-15	-0.0179	2.5
	3.40	-8	-0.0096	2.5
5	3.70	-13	-0.0155	2.5
	3.40	-7	-0.0084	2.5
15	3.70	-12	-0.0143	2.5
	3.40	-7	-0.0084	2.5
25	3.70	-15	-0.0179	2.5
	3.40	-14	-0.0167	2.5
35	3.70	-16	-0.0191	2.5
	3.40	-10	-0.0120	2.5
45	3.70	-17	-0.0203	2.5
	3.40	-13	-0.0155	2.5
55	3.70	-14	-0.0167	2.5
	3.40	-19	-0.0227	2.5

PCS Band:

Cellular Band, Middle Channel fo = 1880.0 MHz				
Temperature (°C)	Power Supplied (Vdc)	Frequency Error (Hz)	Error (ppm)	Limit (ppm)
-15	3.70	-41	-0.0218	2.5
	3.40	-29	-0.0154	2.5
-5	3.70	-39	-0.0207	2.5
	3.40	-28	-0.0149	2.5
5	3.70	-23	-0.0122	2.5
	3.40	-28	-0.0149	2.5
15	3.70	-23	-0.0122	2.5
	3.40	-25	-0.0133	2.5
25	3.70	-41	-0.0218	2.5
	3.40	-31	-0.0165	2.5
35	3.70	-29	-0.0154	2.5
	3.40	-16	-0.0085	2.5
45	3.70	-25	-0.0133	2.5
	3.40	-31	-0.0165	2.5
55	3.70	-23	-0.0122	2.5
	3.40	-15	-0.0080	2.5

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