FCC CFR47 PART 22H & 24E

CERTIFICATION TEST REPORT

FOR

DUAL BAND PHONE WITH BT & WLAN

MODEL NUMBER: LG-P769

FCC ID: ZNFP769

REPORT NUMBER: 12U14516-1B

ISSUE DATE: September 12, 2012

Prepared for

LG ELECTRONICS MOBILECOMM U.S.A
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS, NJ 07632

Prepared by

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Revision History

NVLAP Lab code: 100414-0

Rev.	Issue Date	Revisions	Revised By
---	08/23/12	Initial Issue	M.Ferrer
A	09/07/12	Revised Conducted Output power	M.Ferrer
B	09/12/12	WCDMA data removed	M.Ferrer

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS, NJ 07632

EUT DESCRIPTION: Dual Band Phone with BT & Wlan

MODEL: LG-P769

SERIAL NUMBER: Prototype

DATE TESTED: July 31, 2012 – September 7, 2012

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H & 24E (2.1046, 2.1049, 2.1051, 2.1055)	Pass
IC RSS132 AND IC RSS133	Pass

UL tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL By:

BART MUCHA
Staff Engineer
UL

Tested By:

MICHAEL FERRER
SENIOR PROJECT ENGINEER
UL

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24,

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60193, USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Sample Calculations
Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:

Field Strength (dBuV/m) = Meter Reading (dBuV) + AF (dB/m) - Gain (dB) + Cable Loss (dB)
Conducted Voltage (dBuV) = Meter Reading (dBuV) + Cable Loss (dB) + LISN IL (dB)
Conducted Current (dBuA) = Meter Reading (dBuV) + Cable Loss (dB) - Transducer Factor (dBohms)

ERP EUT level = Delta EUT and Substitution + ERP level
ERIP EUT level = Delta EUT and Substitution + ERIP level
Delta EUT and Substitution = Substitution Peak field –EUT Measured peak level
ERP Substitution = ERIP level +2.15
ERIP level = Voltage at Antenna + TX ant gain

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	+/- 0.3 dB (k=2)
Radiated Disturbance, 30 to 1000 MHz	+/- 3.17 dB (k=2)

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Dual Band Phone with BT & Wlan

Modes include GSM, GPRS(Slot 1-4), EGPRS (Slot 1-4)

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak Conducted output powers as follows as measure with Anritsu Call Box

Part 22 Cellular Band

Frequency range (MHz)	Modulation	Conducted Output	
		dBm	mW
824.2 – 848.8	GSM	32.95	1970.2
	GPRS	32.96	1974.7
	EGPRS	29.79	953.5

Part 24 PCS Band

Frequency range (MHz)	Modulation	Conducted Output	
		dBm	mW
1850.2-1909.8	GSM	30.68	1169.5
	GPRS	30.73	1181.7
	EGPRS	28.28	673.3

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integral antenna for the 850MHz and 1900MHz bands with a maximum peak gain as follow:

BANDS	Peak Gain (dBi)
GSM, CELL, 850MHz	-9.04
GSM,PCS, 1900MHz	-6.12

5.4. SOFTWARE AND FIRMWARE

The EUT is linked with Anritsu MT8820C Communication Test Set.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case channel for RF radiated emissions below 1GHz and AC conducted emissions are determined as the channel with the AC Power Adapter Source

Based on the investigation results, the highest peak power and enhanced data rate is the worst-case scenario for all measurements.

Worst-case modes below:

- For Cellular and PCS band: GPRS and EGPRS

For the fundamental investigation, since the EUT is a portable device that has three orientations; therefore X, Y and Z orientations have been investigated. The worst case was found to be at Z-position for all modes for GSM, GPRS, EGPRS modes.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT (RF RADIATED TEST)

Description	Manufacturer	Model	Serial Number	FCC ID
USB	LG	MCS02WR	-	DoC

I/O CABLES (RF RADIATED TEST)

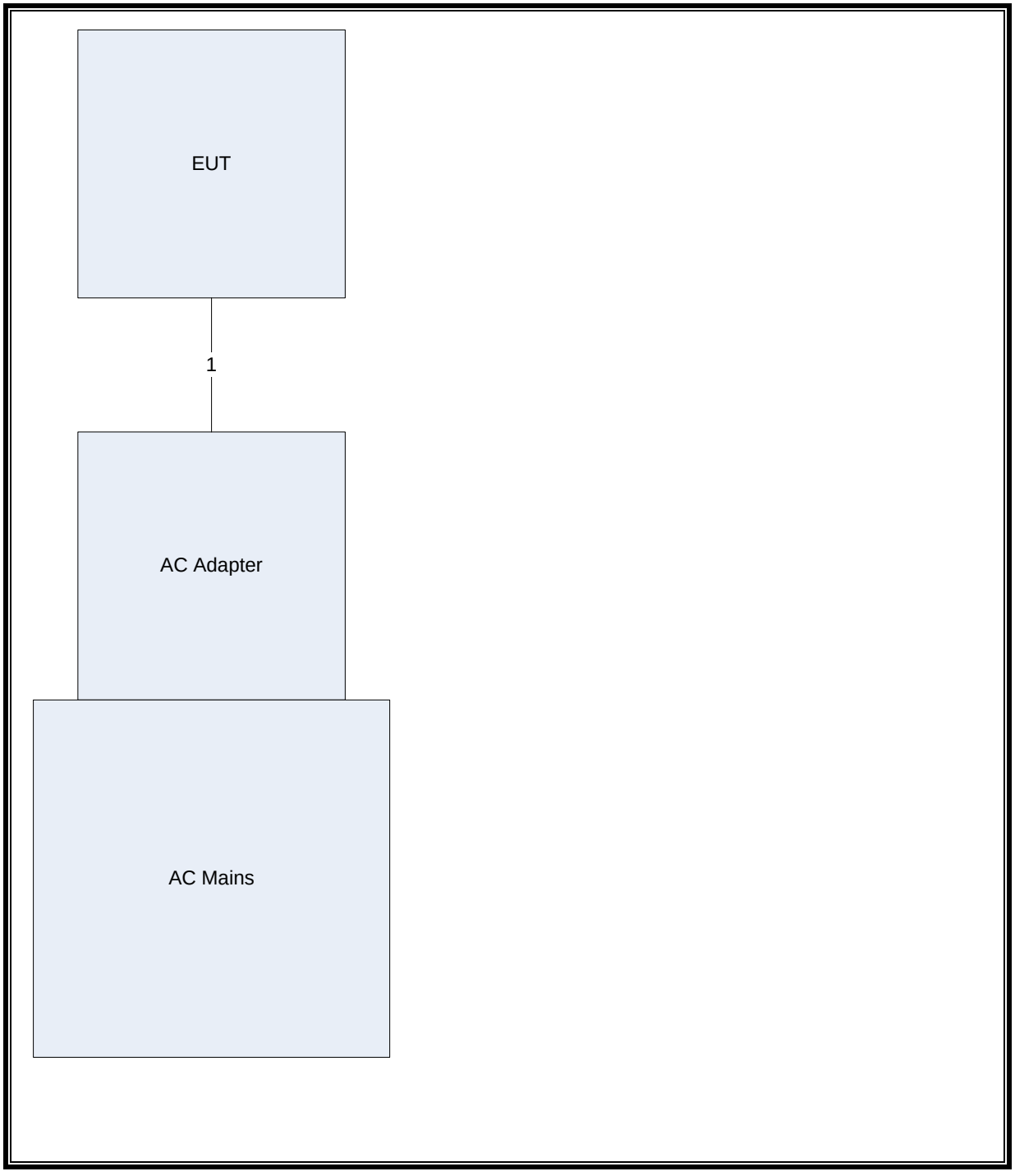
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	USB	1	USB	USB	1.24m	Does not affect emissions

TEST SETUP

The EUT is a stand-alone device. A link is established between the EUT and the communication test set

Call Box was set for phone to transmit at highest level possible.

SETUP DIAGRAM FOR RF RADIATED TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC4328	20121231
Bicon Antenna	Chase	VBA6106A	EMC4078	20130131
Log-P Antenna	Chase	UPA6109	EMC4258	20120928
Log-P Antenna (TX)	Chase	UPA6109	EMC4313	20120731
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	20121231
Antenna Array	UL	BOMS	EMC4276	20121231
Signal Generator	Rohde & Schwarz	SML 03	EMC 4331	20121231
Signal Generator	Agilent	E8251A	EMC4243	20121231
Horn Antenna (TX)	ETS	3117	EMC4294	20121031
EMI Test Receiver	Agilent	N9030A	EMC4360	20130515
Themal chamber	Thermotron	7800	EMC4232	20130417
Voltmeter	Fluke	87V	EMC4308	20121231

7. RF POWER OUTPUT VERIFICATION

7.1. RF POWER OUTPUT

The transmitter has a maximum peak Conducted output powers as follows as measure with Agilent Spectrum Analyzer N9030A using directional coupler and Anritsu Call Box.

Mode	CH	Freq(MHz)	Peak dBm
GSM	128	824.2	32.945
GSM	190	836.6	32.92
GSM	251	848.8	32.826
GSM	512	1850.2	30.659
GSM	661	1880	30.68
GSM	810	1909.8	30.676

Mode	CH	Freq(MHz)	Peak dBm
GPRS Slot1	128	824.2	32.955
GPRS Slot1	190	836.6	32.934
GPRS Slot1	251	848.8	32.873
GPRS Slot1	512	1850.2	30.625
GPRS Slot1	661	1880	30.696
GPRS Slot1	810	1909.8	30.725
GPRS Slot2	128	824.2	30.955
GPRS Slot2	190	836.6	30.961
GPRS Slot2	251	848.8	30.881
GPRS Slot2	512	1850.2	28.699
GPRS Slot2	661	1880	28.752
GPRS Slot2	810	1909.8	28.754
GPRS Slot3	128	824.2	28.996
GPRS Slot3	190	836.6	28.995
GPRS Slot3	251	848.8	28.942
GPRS Slot3	512	1850.2	26.749
GPRS Slot3	661	1880	26.818
GPRS Slot3	810	1909.8	26.814
GPRS Slot4	128	824.2	27.43
GPRS Slot4	190	836.6	27.459
GPRS Slot4	251	848.8	27.387
GPRS Slot4	512	1850.2	25.248
GPRS Slot4	661	1880	25.356
GPRS Slot4	810	1909.8	25.335

Mode	CH	Freq(MHz)	Peak dBm
EGPRS Slot1	128	824.2	29.767
EGPRS Slot1	190	836.6	29.793
EGPRS Slot1	251	848.8	29.735
EGPRS Slot1	512	1850.2	28.18
EGPRS Slot1	661	1880	28.282
EGPRS Slot1	810	1909.8	28.195
EGPRS Slot2	128	824.2	27.885
EGPRS Slot2	190	836.6	27.938
EGPRS Slot2	251	848.8	27.907
EGPRS Slot2	512	1850.2	26.464
EGPRS Slot2	661	1880	26.474
EGPRS Slot2	810	1909.8	26.467
EGPRS Slot3	128	824.2	26.062
EGPRS Slot3	190	836.6	26.03
EGPRS Slot3	251	848.8	26.102
EGPRS Slot3	512	1850.2	24.341
EGPRS Slot3	661	1880	24.355
EGPRS Slot3	810	1909.8	24.354
EGPRS Slot4	128	824.2	25.11
EGPRS Slot4	190	836.6	25.074
EGPRS Slot4	251	848.8	25.105
EGPRS Slot4	512	1850.2	23.209
EGPRS Slot4	661	1880	23.27
EGPRS Slot4	810	1909.8	23.252

8. CONDUCTED LIMITS AND RESULTS

8.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

MODES TESTED

- GSM and GPRS , EGPRS

- **RESULTS**

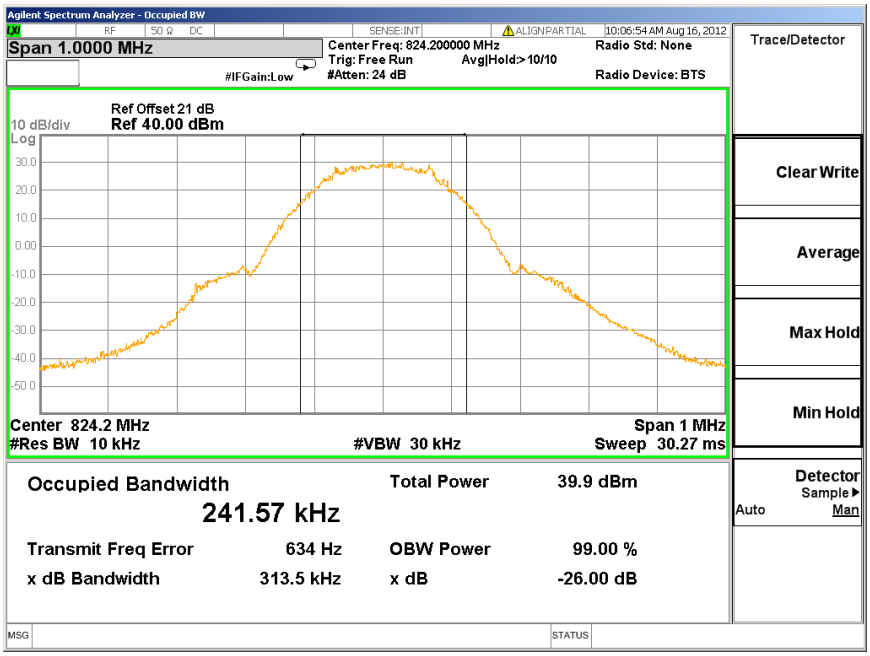
Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
Cellular	GSM	128	824.2	241.57	313.5
		190	836.6	240.14	313.2
		251	848.8	242.14	305.7
	GPRS	128	824.2	241.85	311.9
		190	836.6	241.74	314.3
		251	848.8	241.95	313.2
	EGPRS	128	824.2	249.69	323.8
		190	836.6	253.73	329.6
		251	848.8	252.43	317.8

Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
PCS	GSM	512	1850.2	244.50	315.7
		661	1880.0	243.79	320.2
		810	1909.8	243.23	313.7
	GPRS	512	1850.2	243.04	317.4
		661	1880.0	243.64	316.9
		810	1909.8	246.61	317.6
	EGPRS	512	1850.2	254.37	315.9
		661	1880.0	249.74	324.6
		810	1909.8	248.81	319.6

99% and 26dB BANDWIDTH

GSM850 BAND

LOW CH



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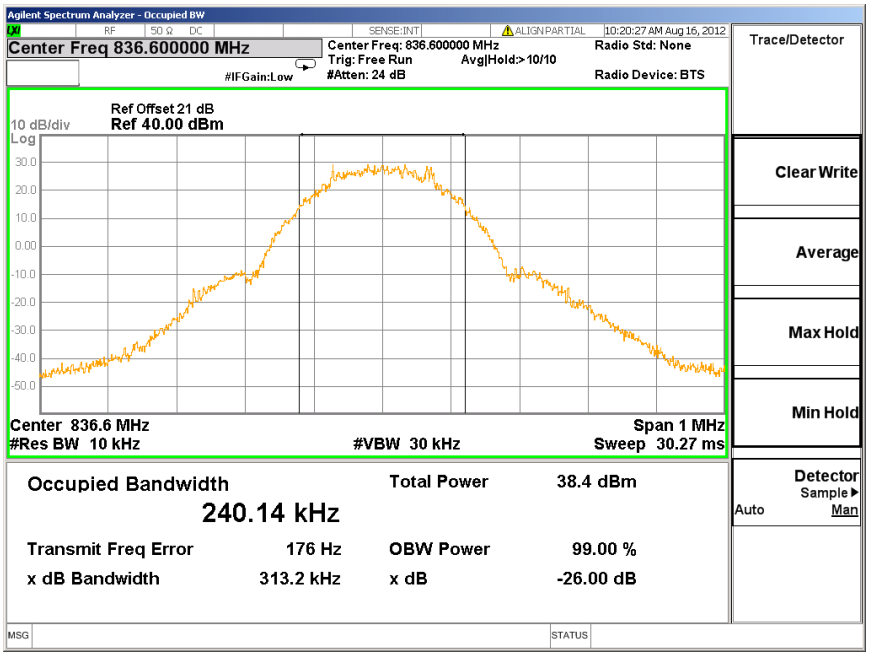

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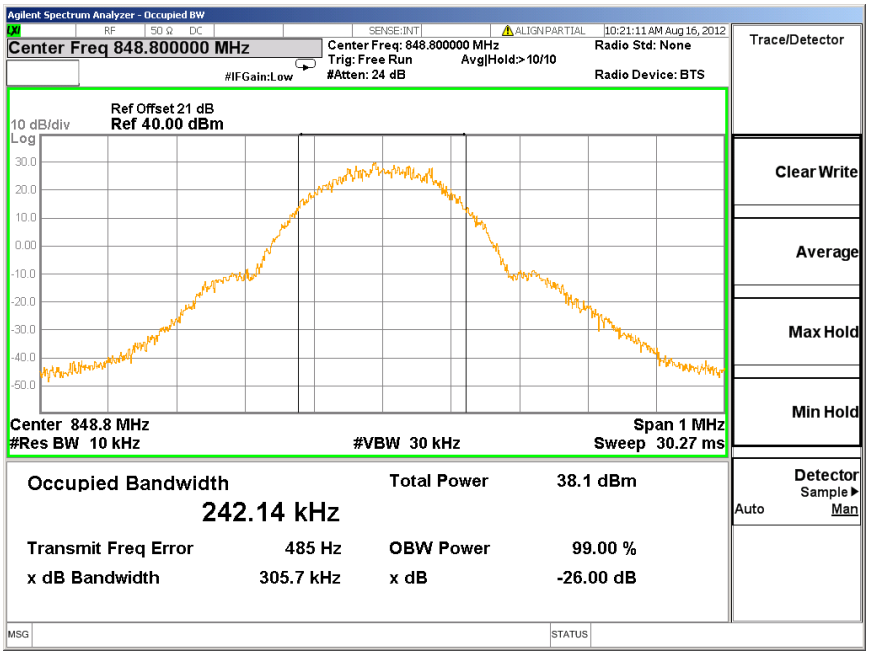
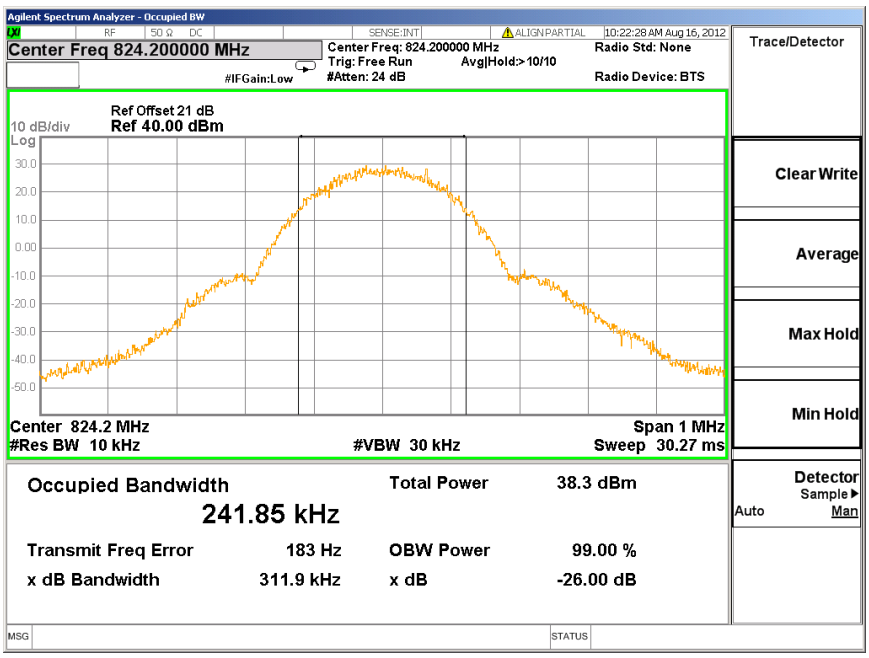


GPRS850 BAND

LOW CH



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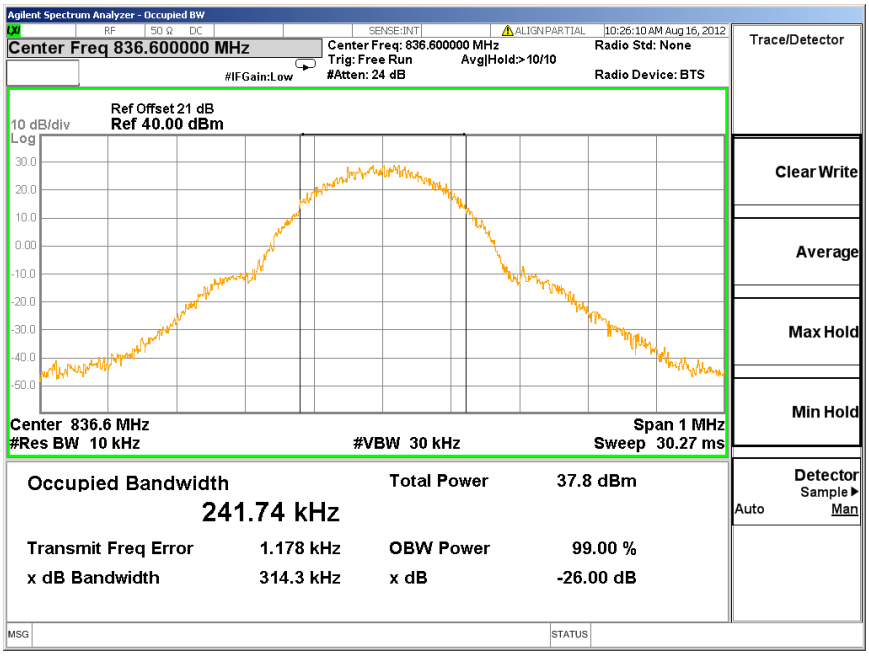

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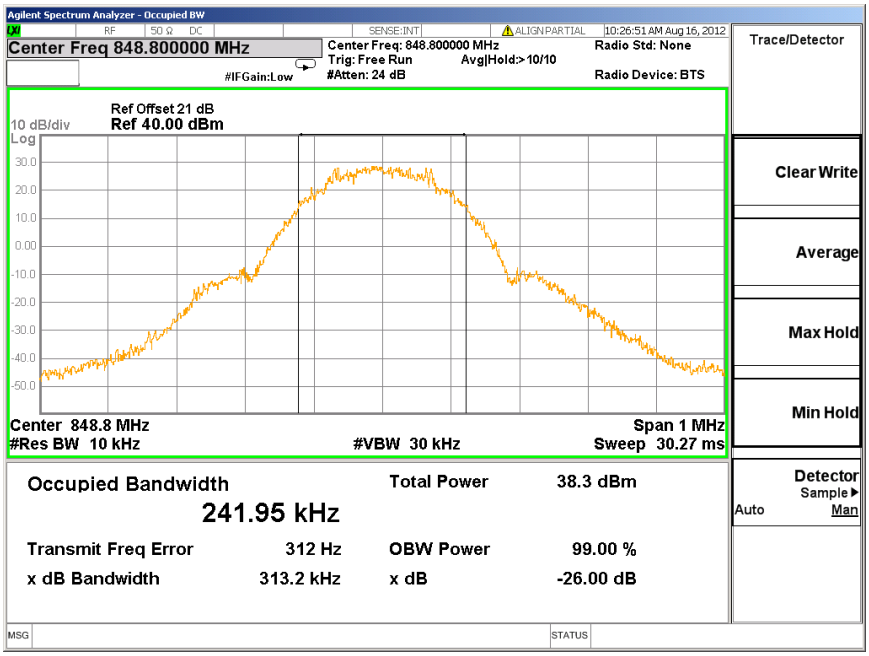

EGPRS850 BAND

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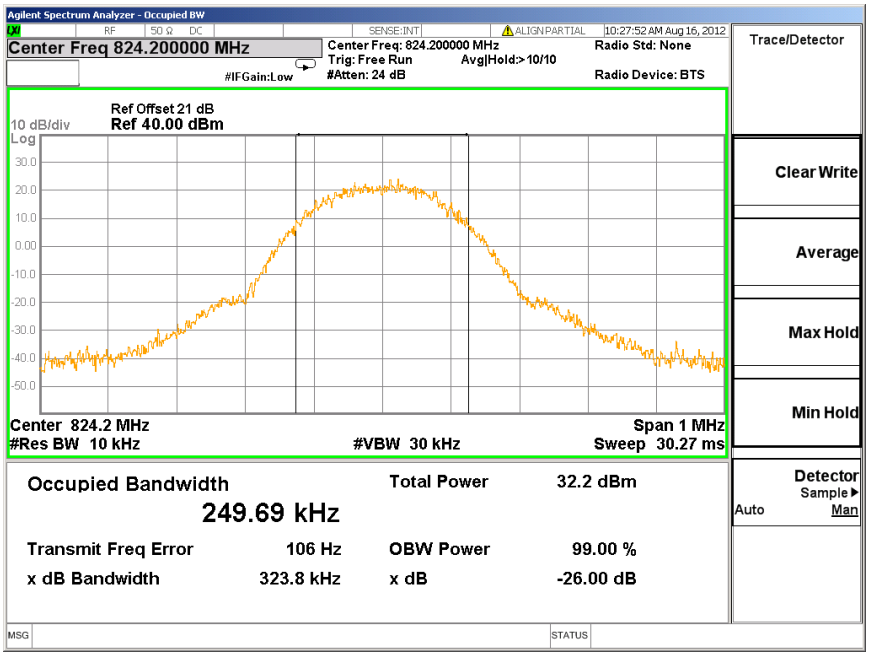

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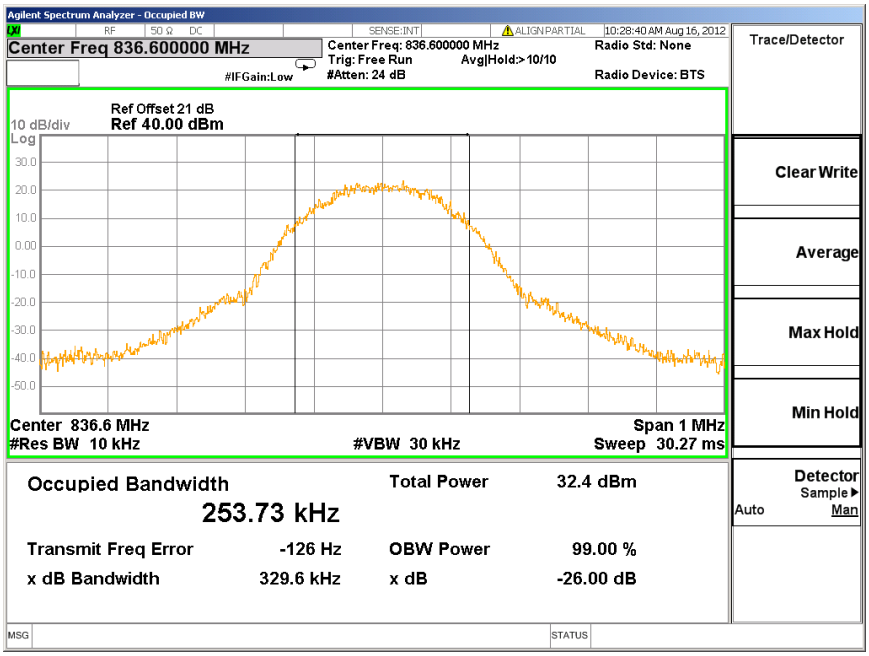

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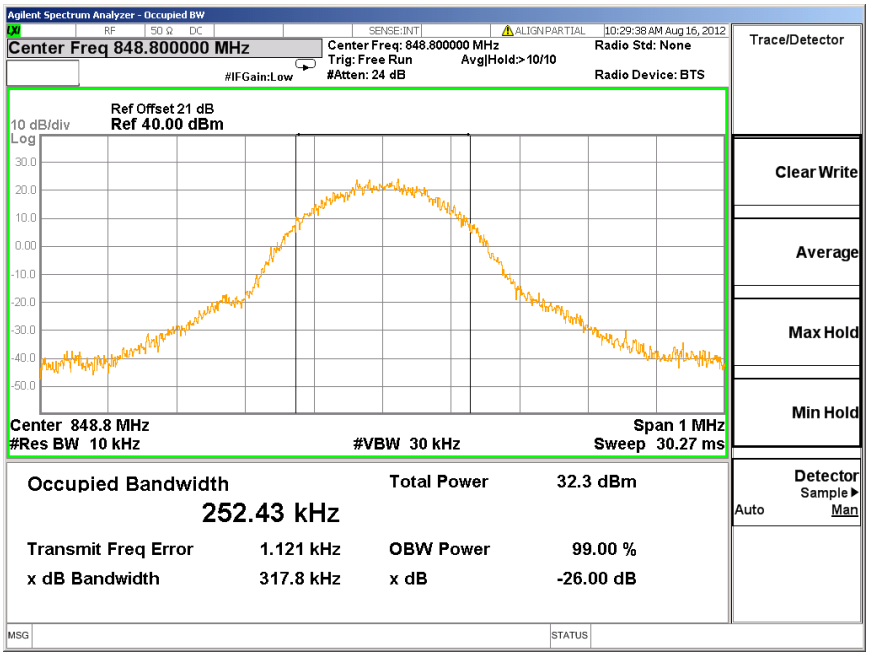

GSM1900 BAND

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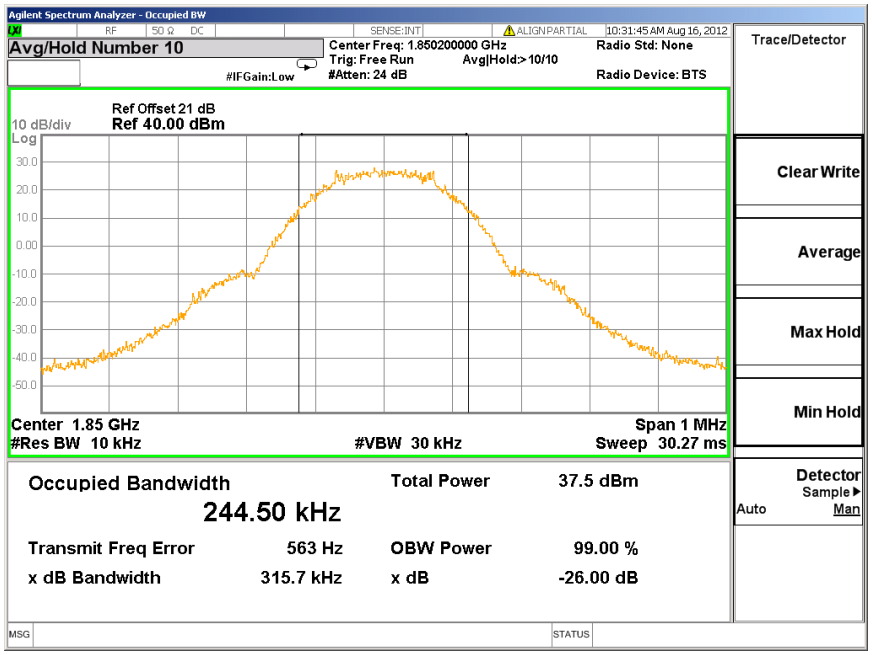

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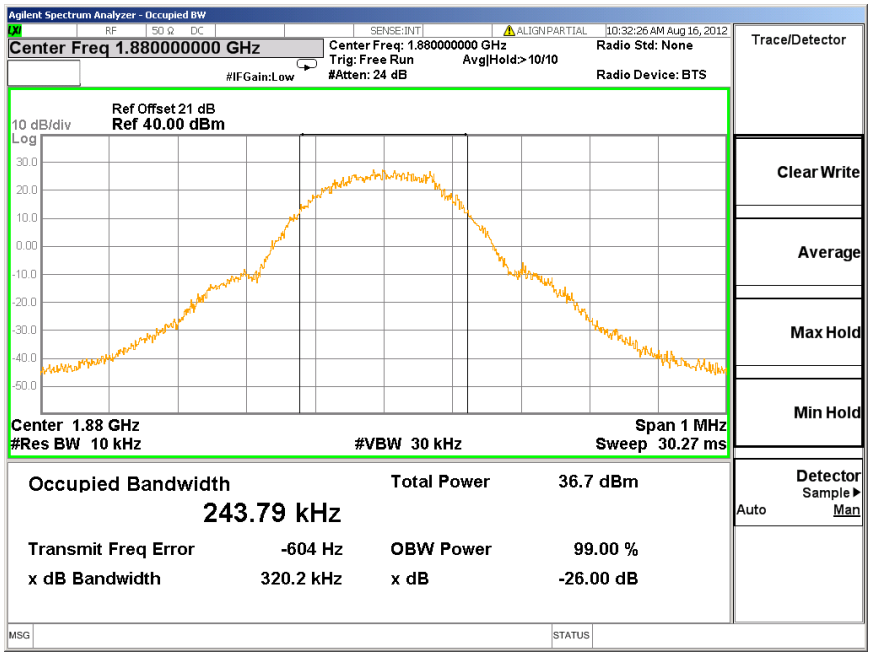

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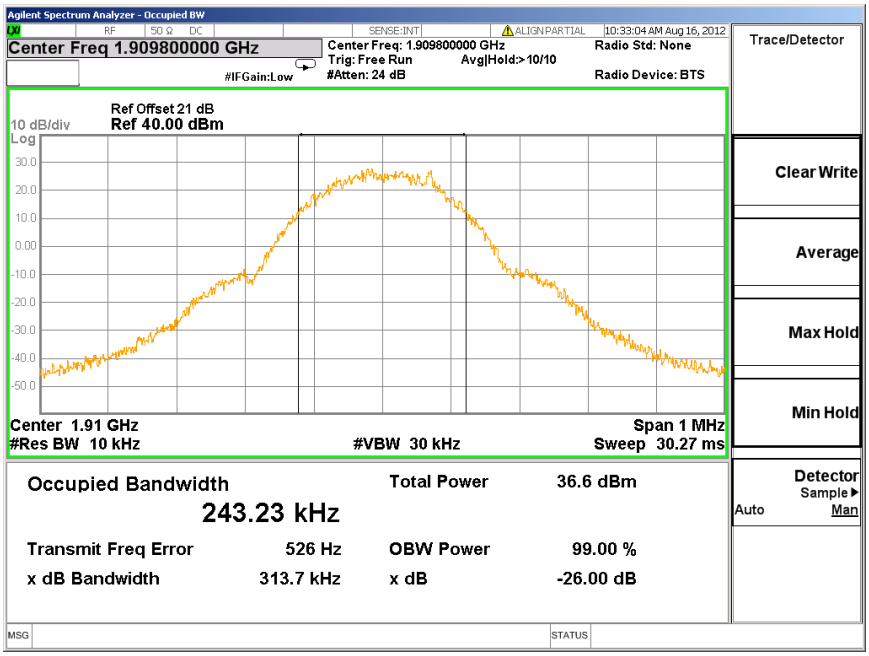

GPRS1900 BAND

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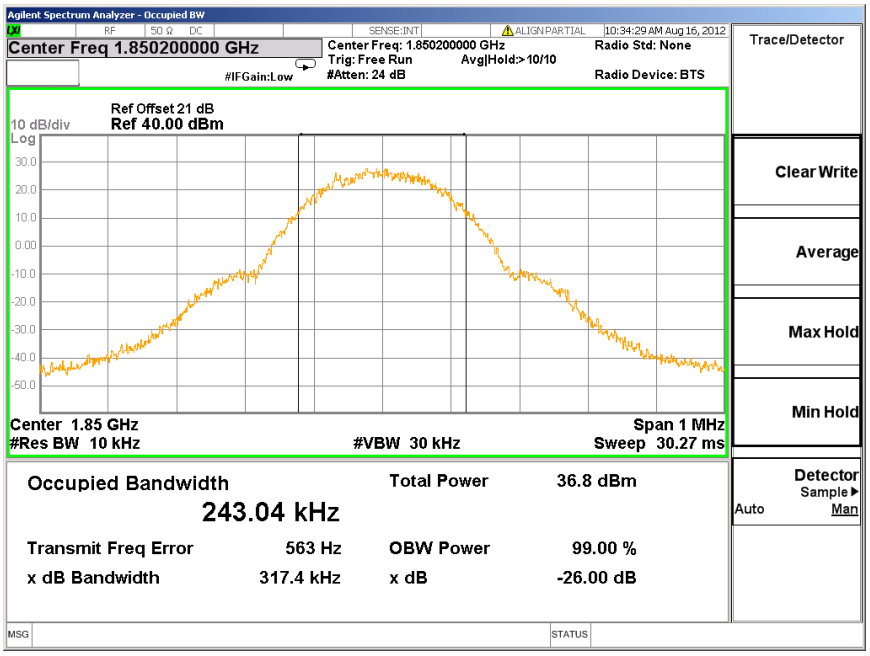

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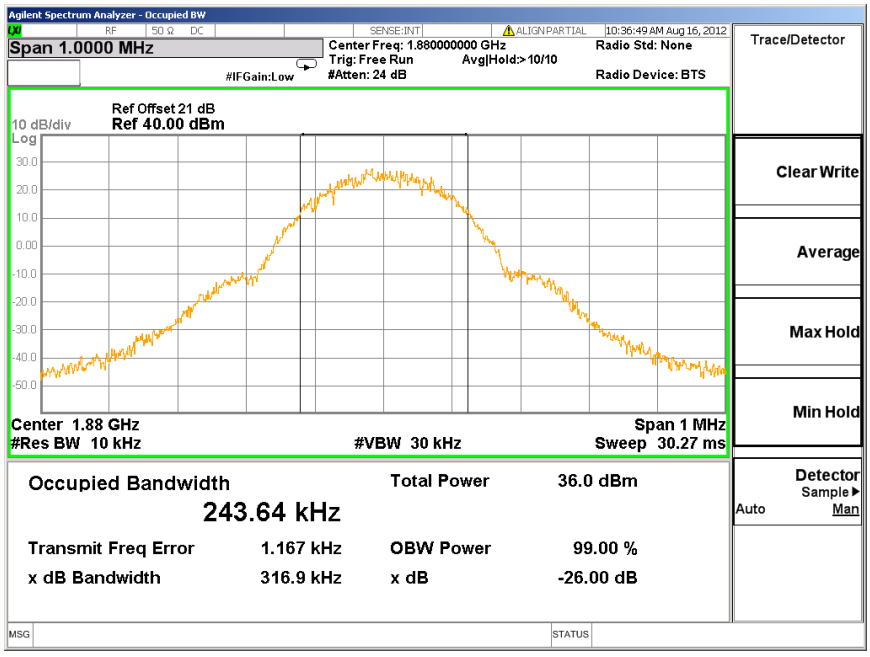

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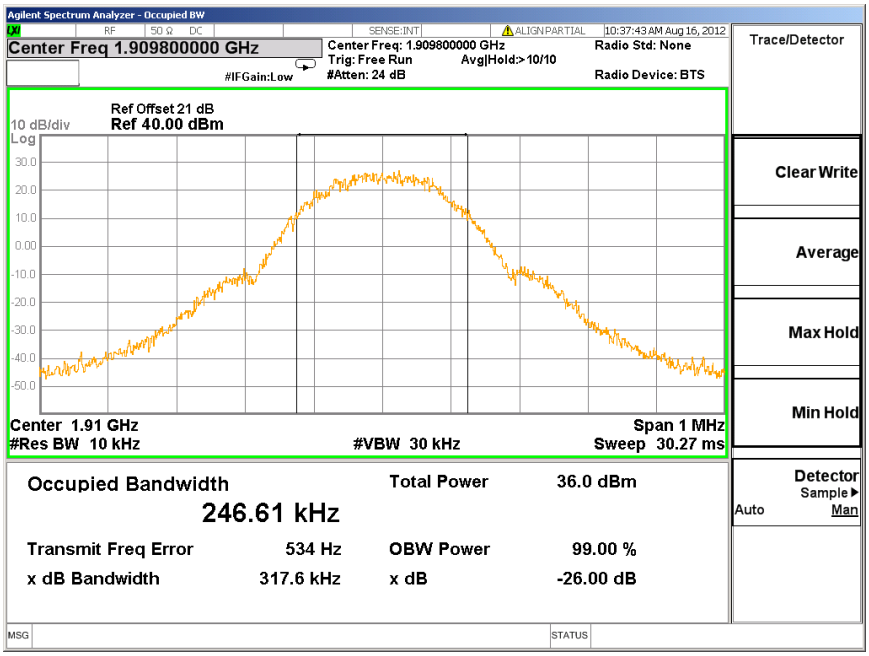

EGPRS1900 BAND

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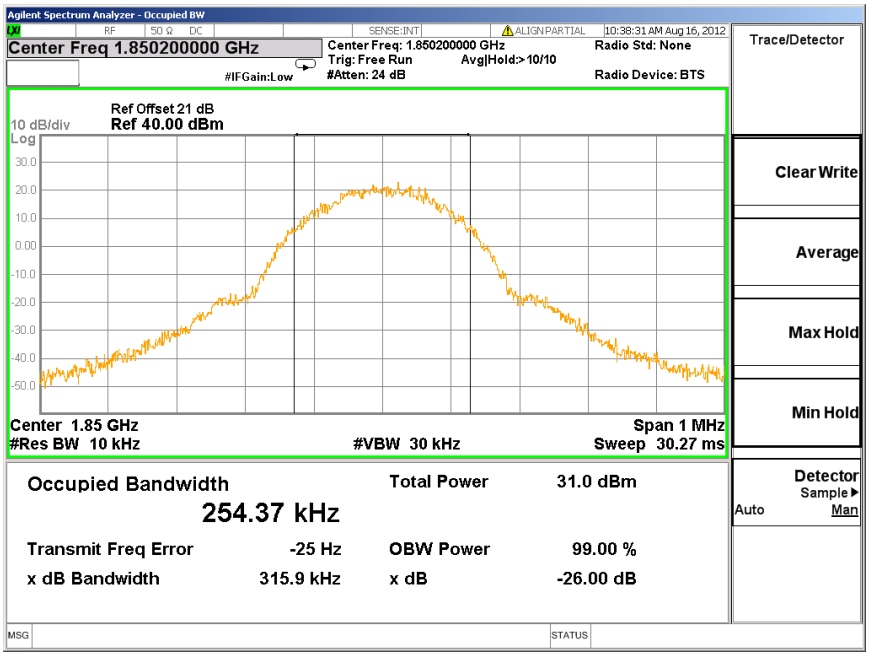

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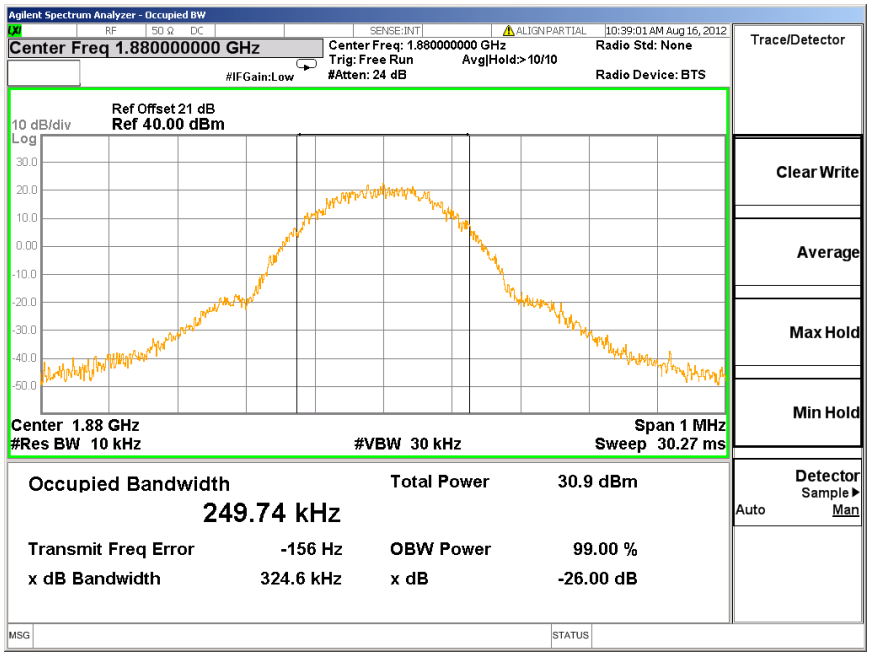

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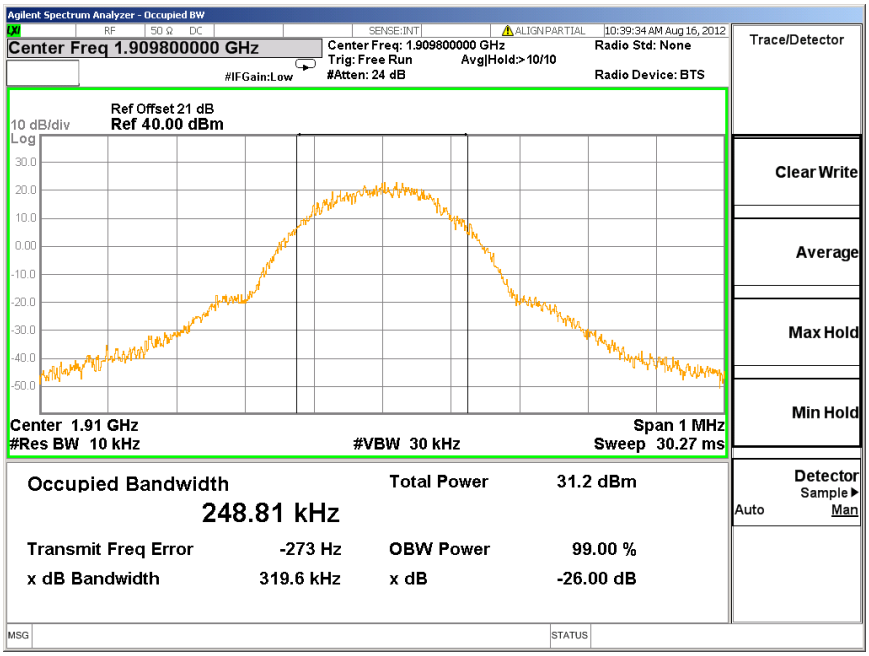


8.2. BAND EDGE

RULE PART(S)

FCC: §22.359, 24.238

LIMITS

The power of any emission 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 transmitter output was connected to an Agilent 8960 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.
For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency (824, 848, 1850, 1910MHz)
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

MODES TESTED

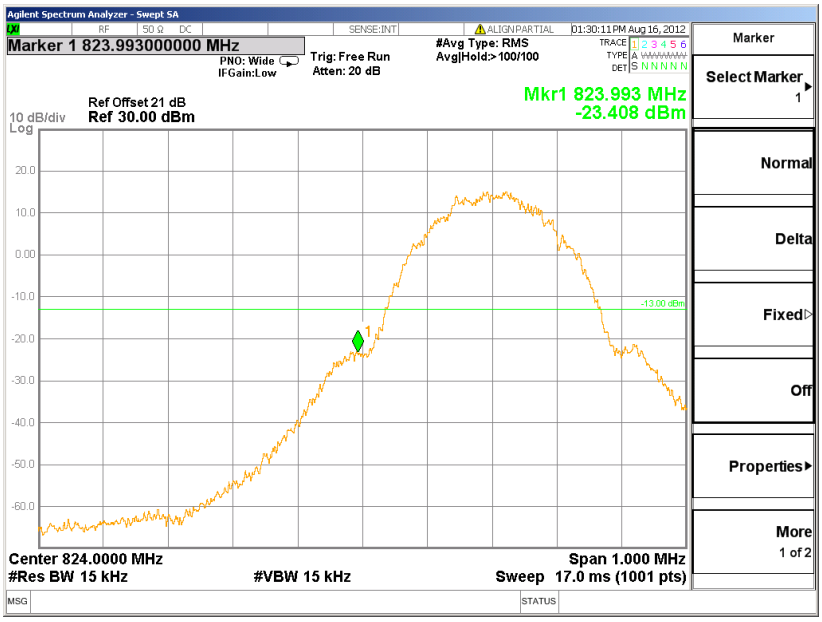
- GSM and GPRS

RESULTS

BANDEDGE

GSM850 BAND

LOW CH



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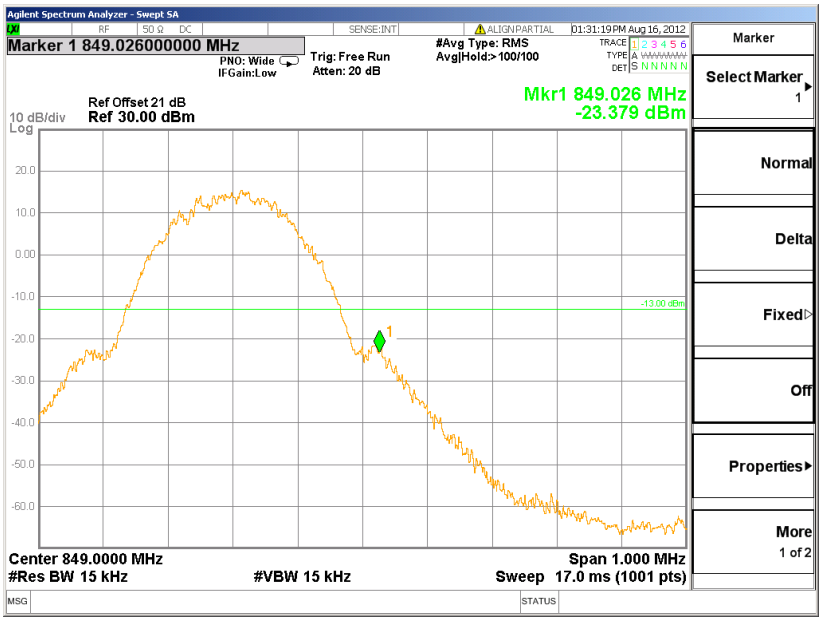
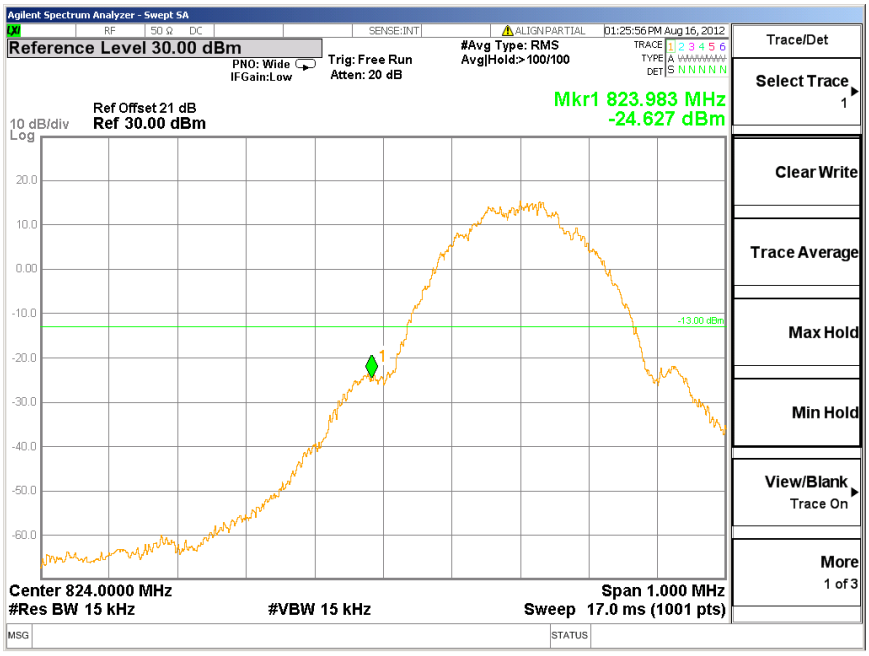


GPRS850 BAND

LOW CH



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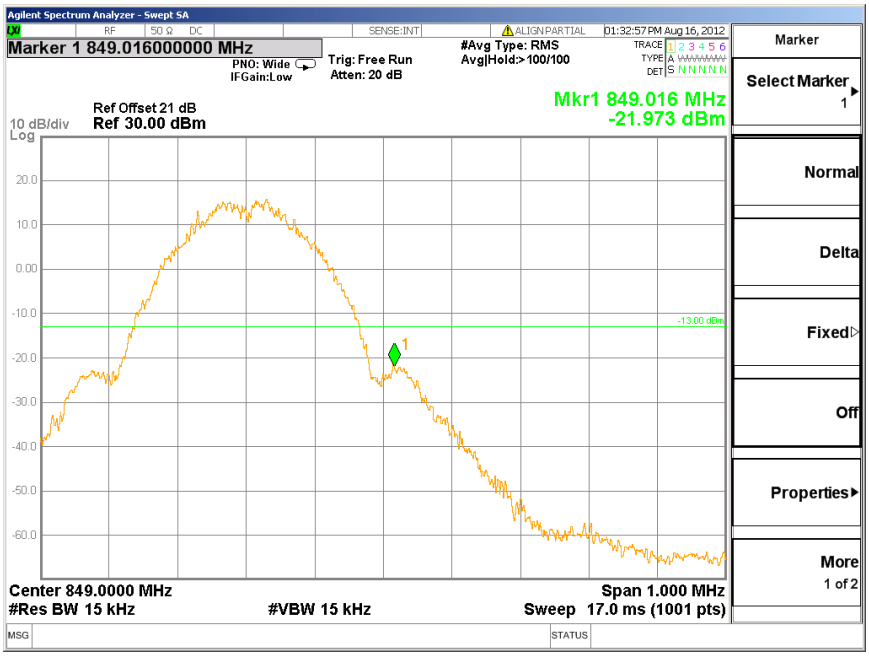
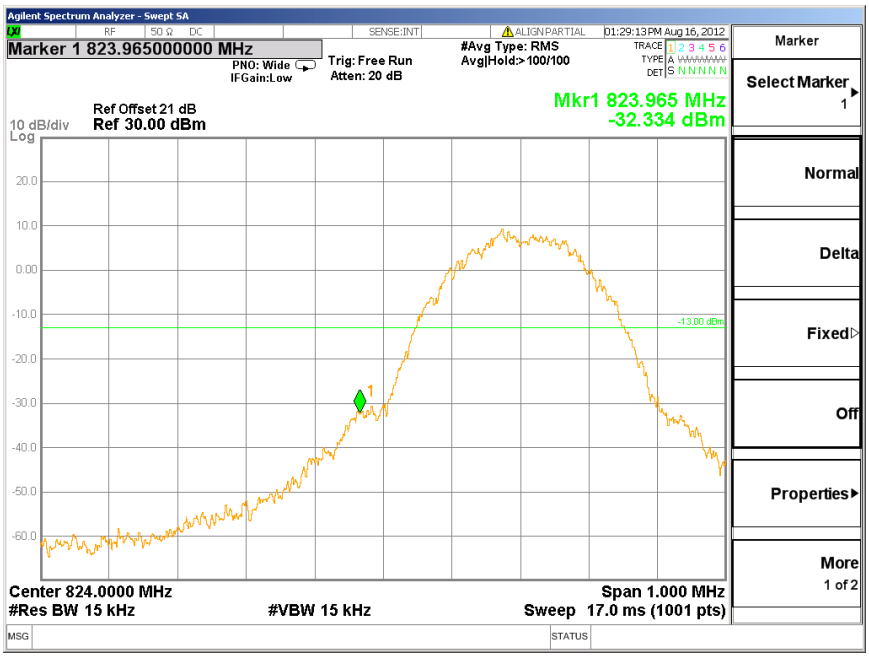


EGPRS850 BAND

LOW CH



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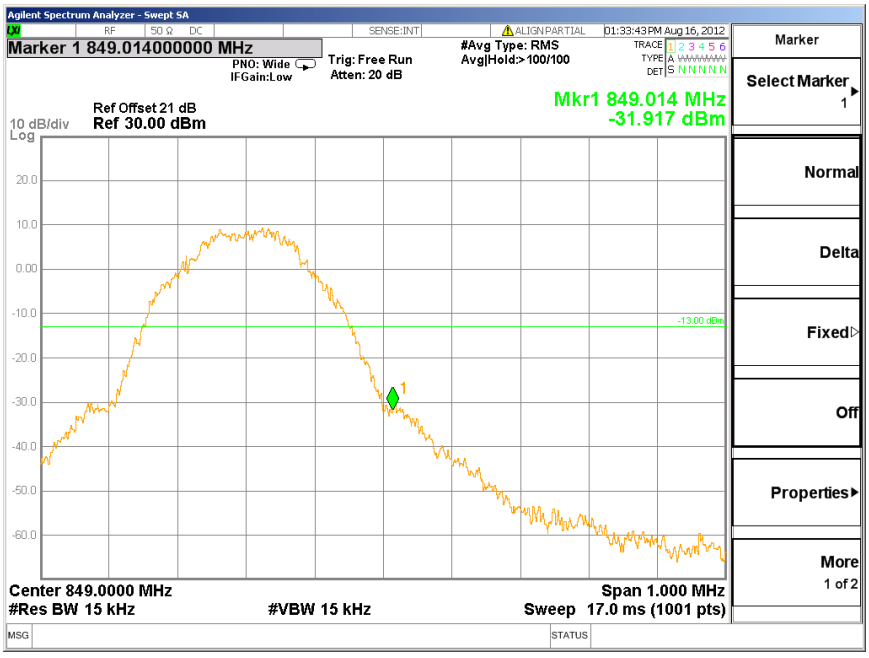

GSM1900 BAND

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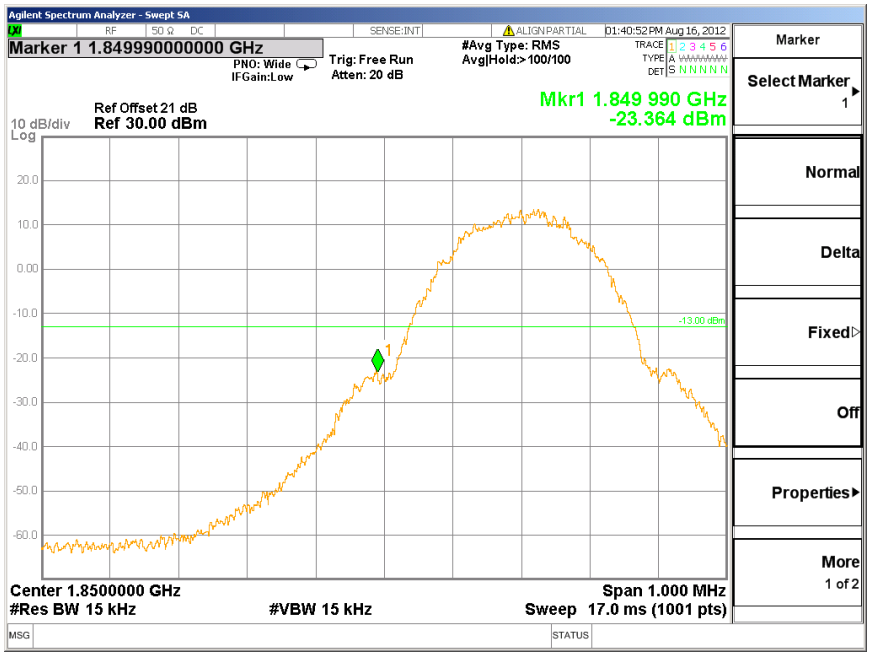

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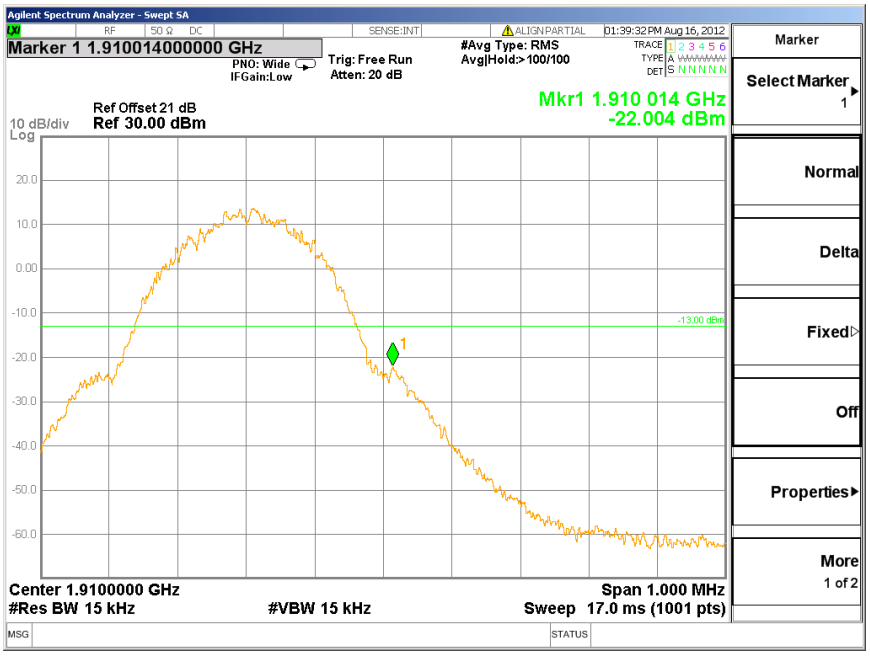

GPRS1900 BAND

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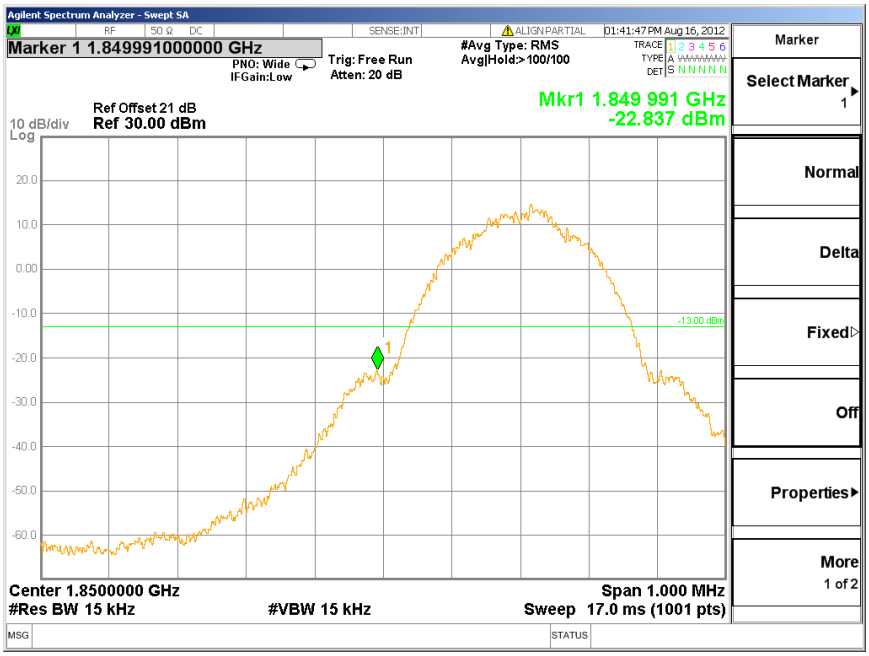

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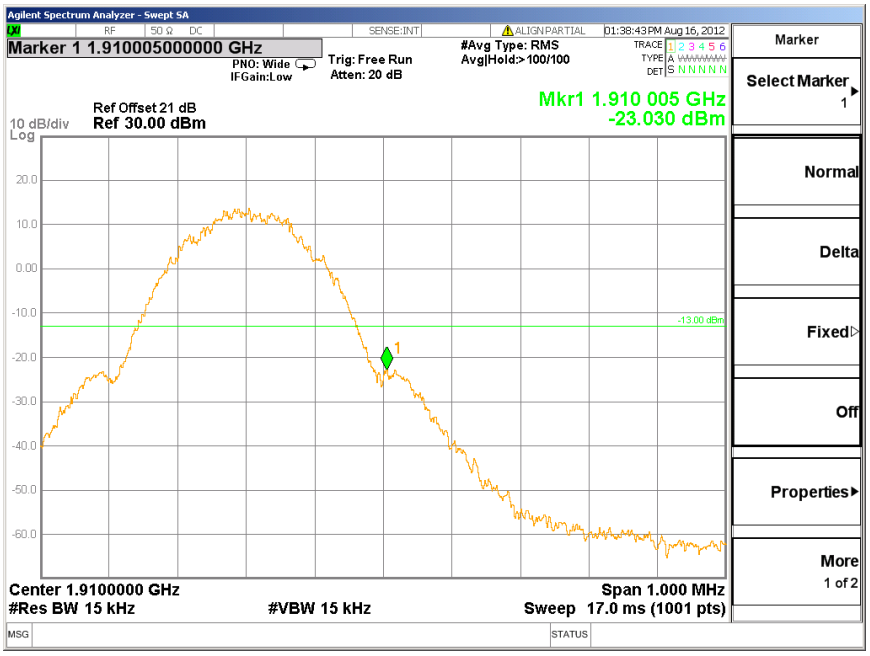
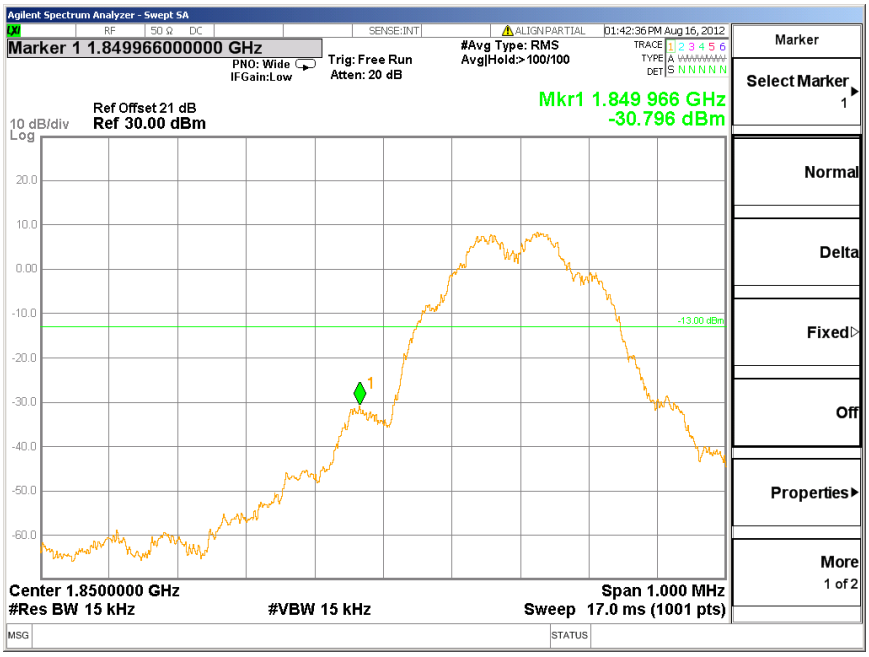
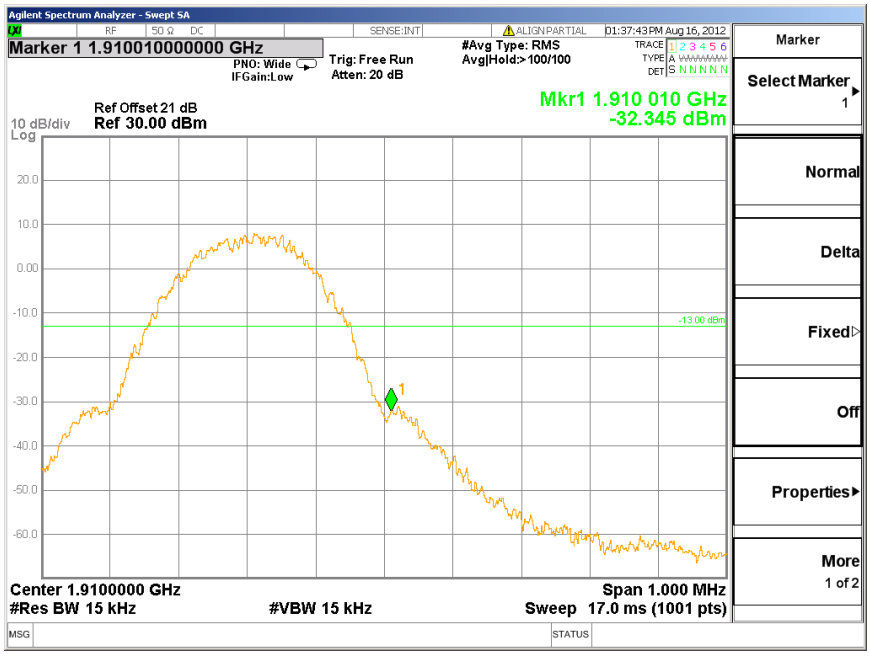


EGPRS1900 BAND

LOW CH



HIGH CH



8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238

LIMITS

The power of any emission 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 a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

MODES TESTED

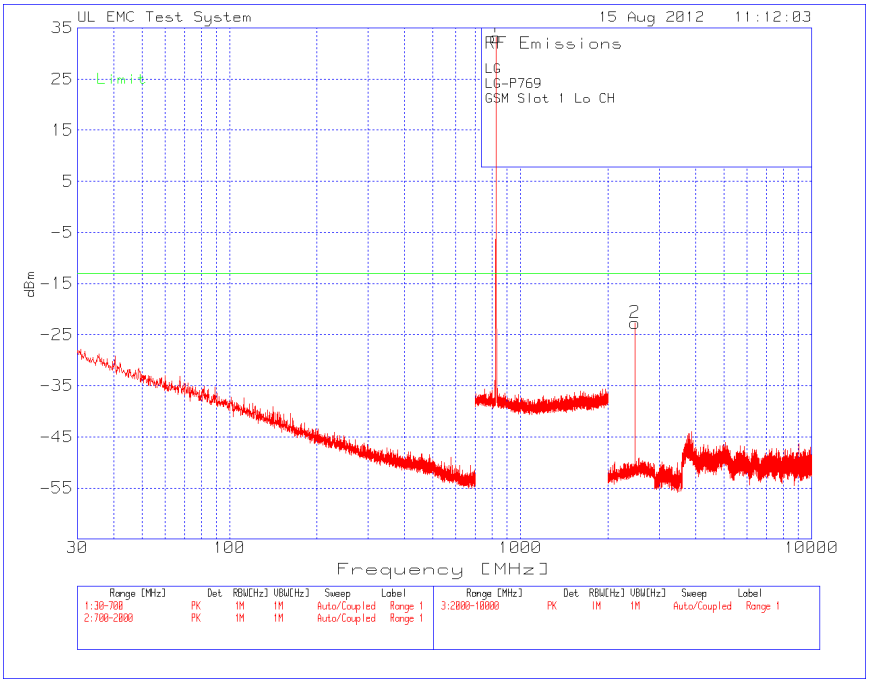
- GSM and GPRS

RESULTS

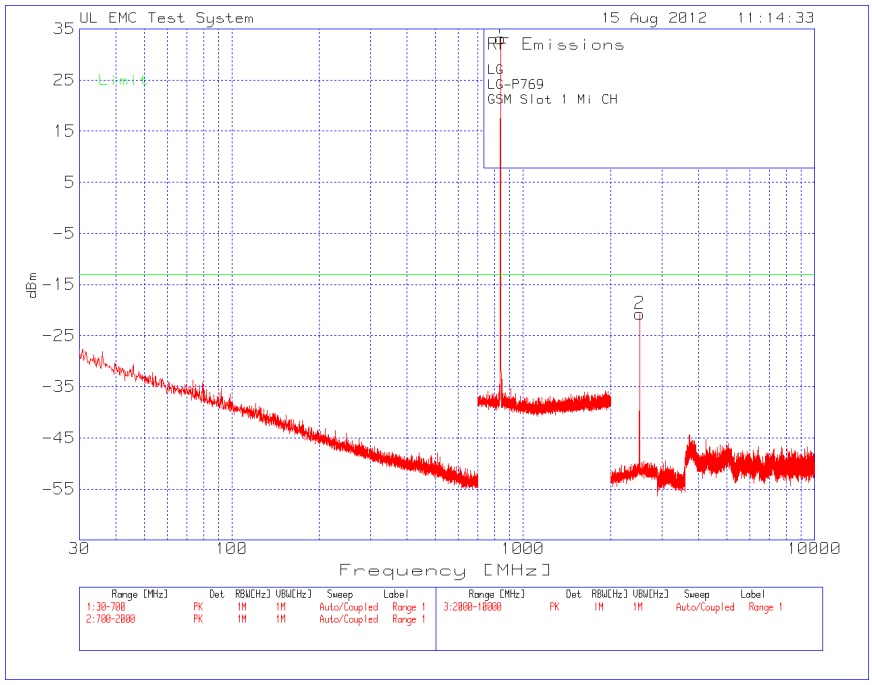
All emissions other than the fundamental were found under the limit

GSM850 BAND

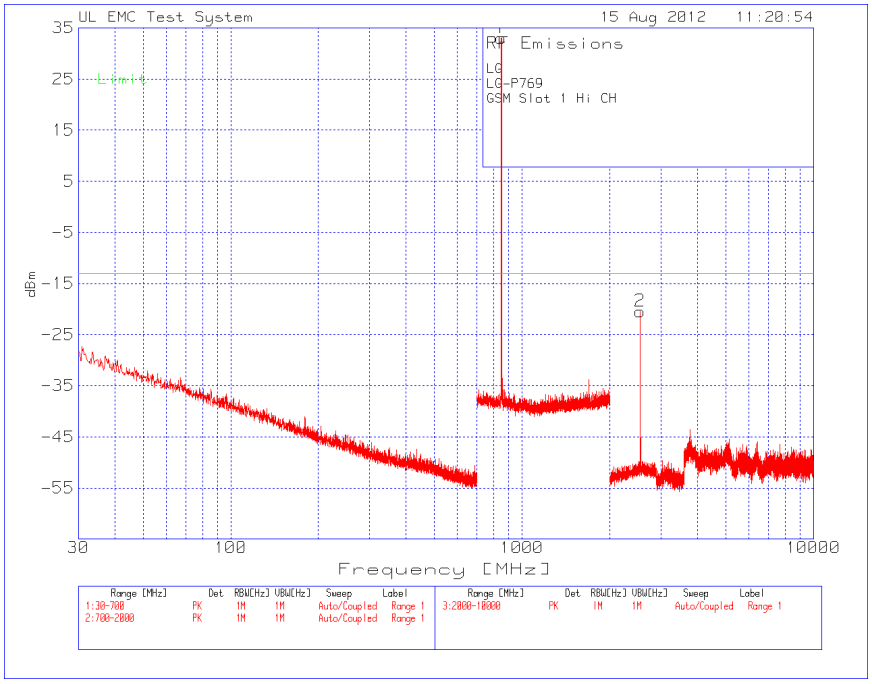
LOW CH



MID CH

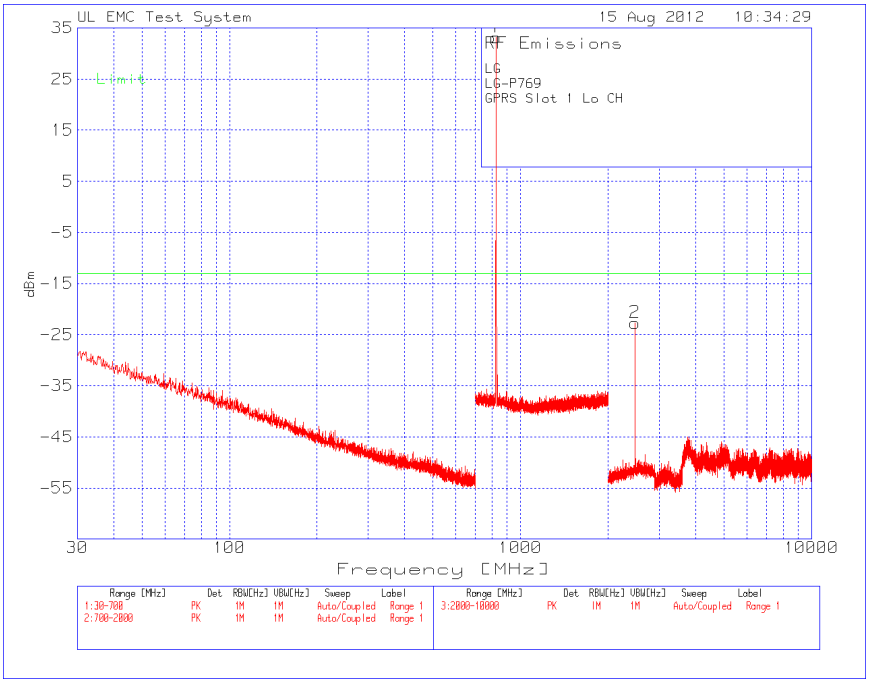


HIGH CH

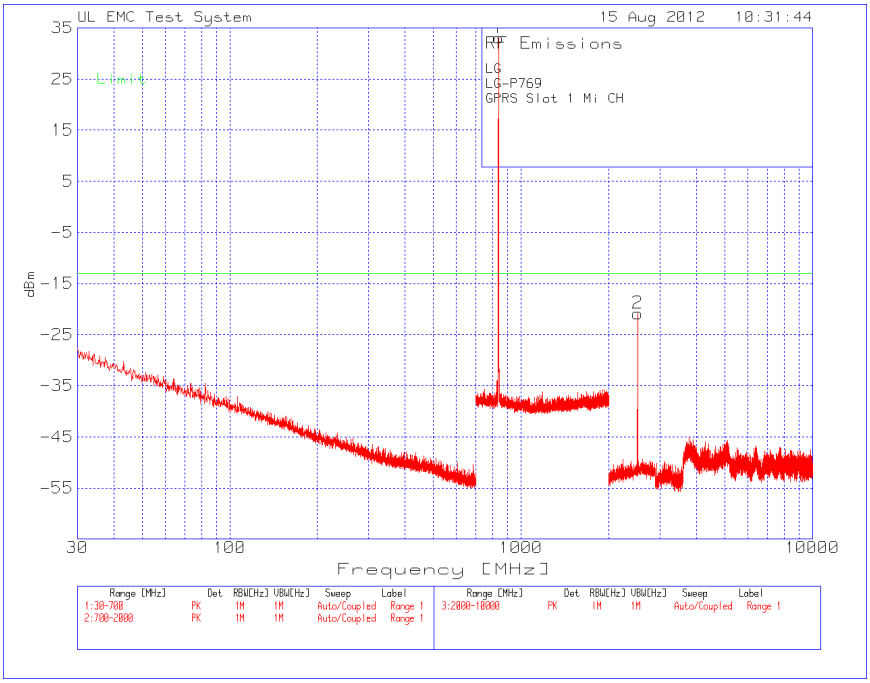


GPRS850 BAND

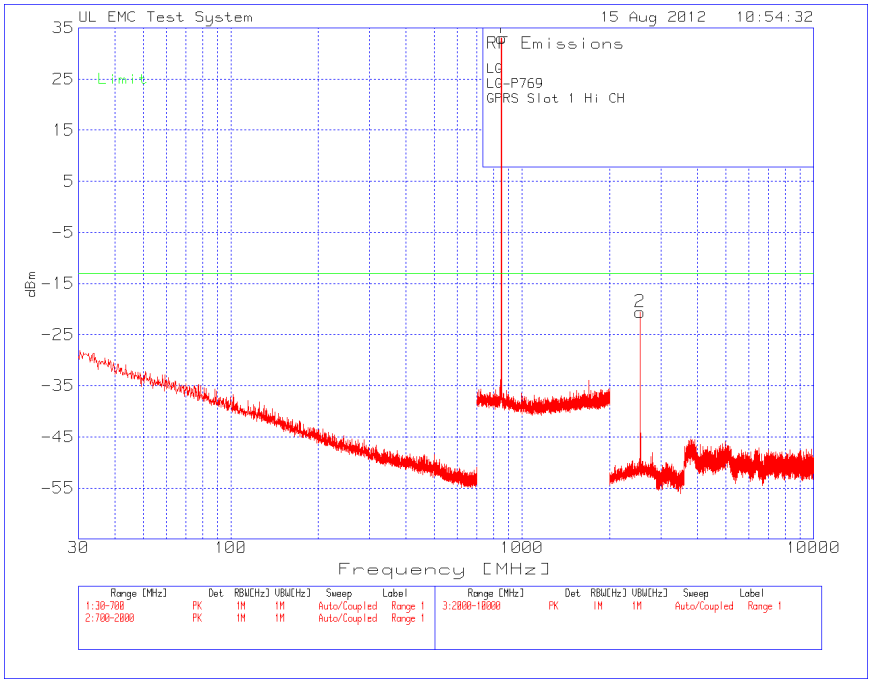
LOW CH



MID CH

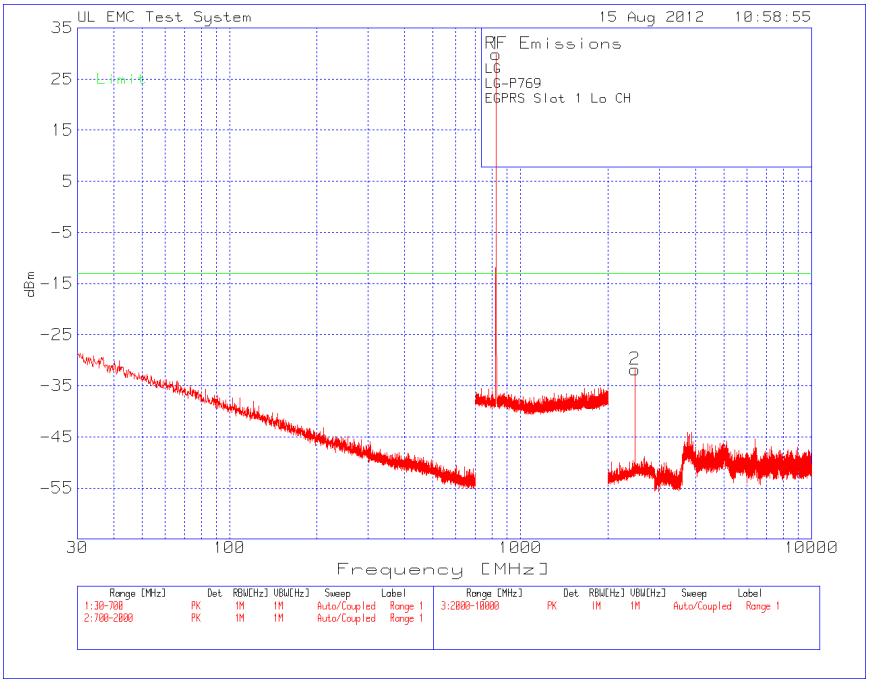


HIGH CH

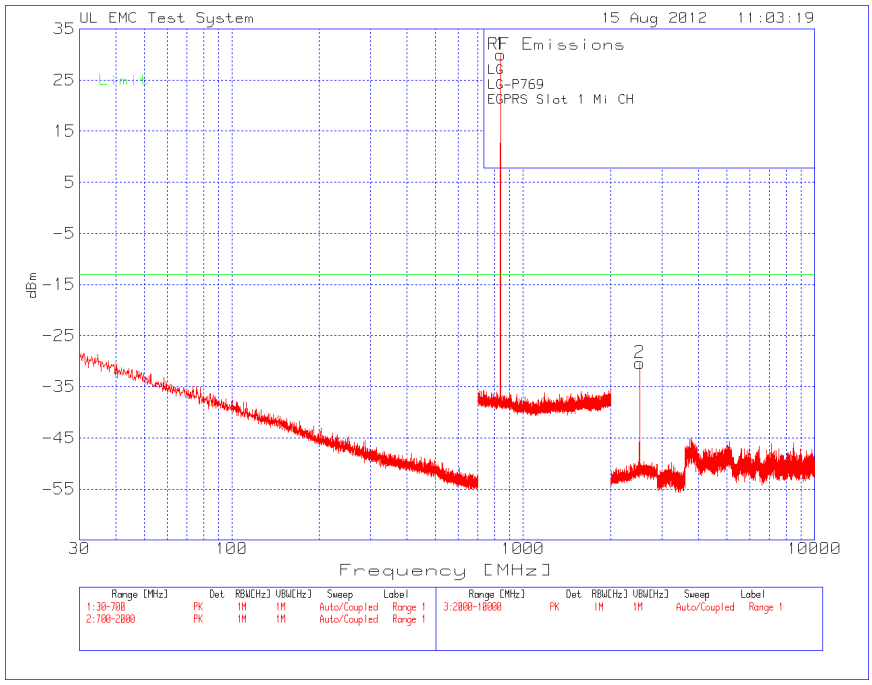


EGPRS850 BAND

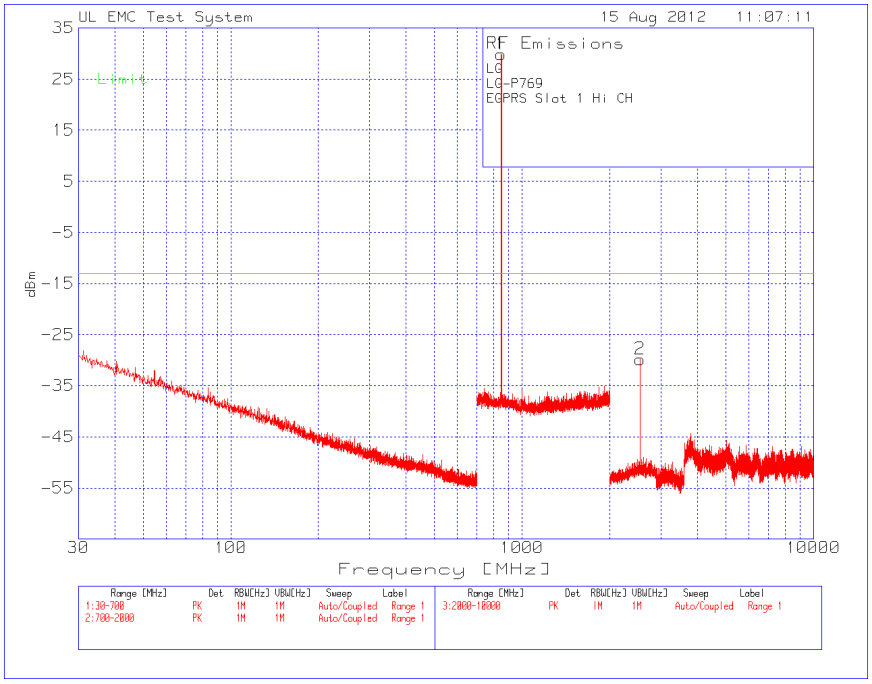
LOW CH



MID CH

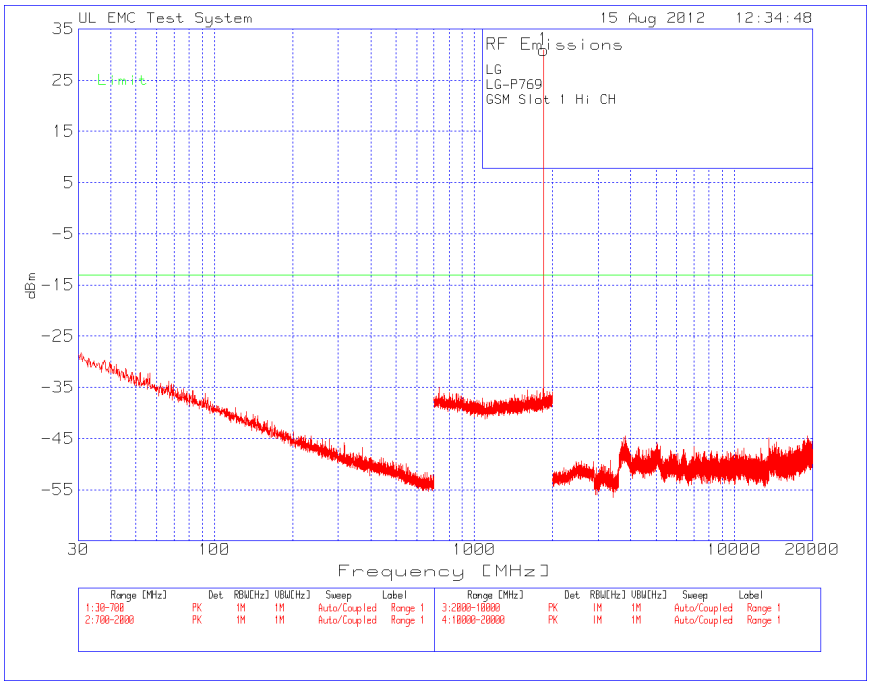


HIGH CH

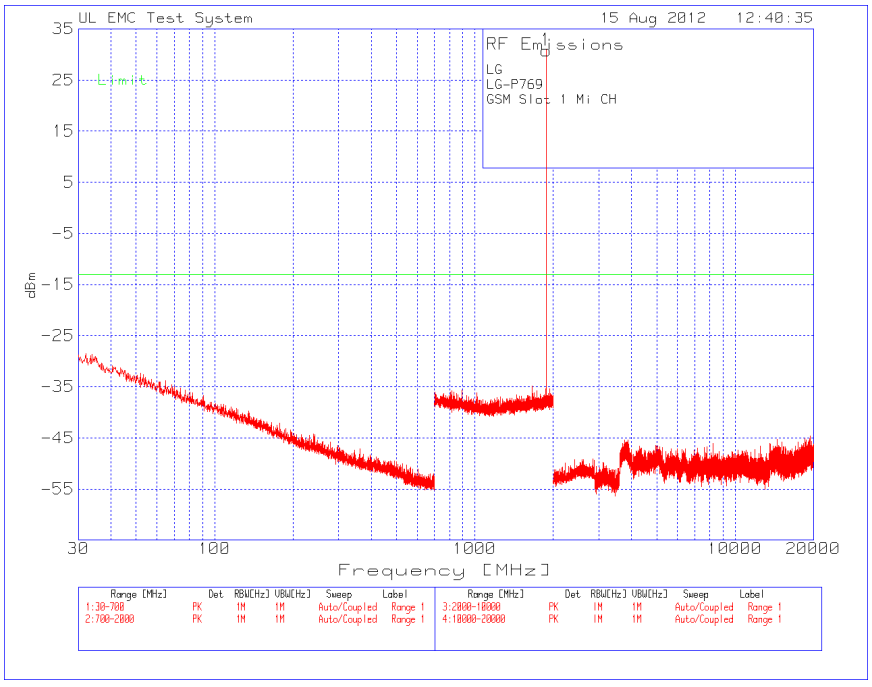


GSM1900 BAND

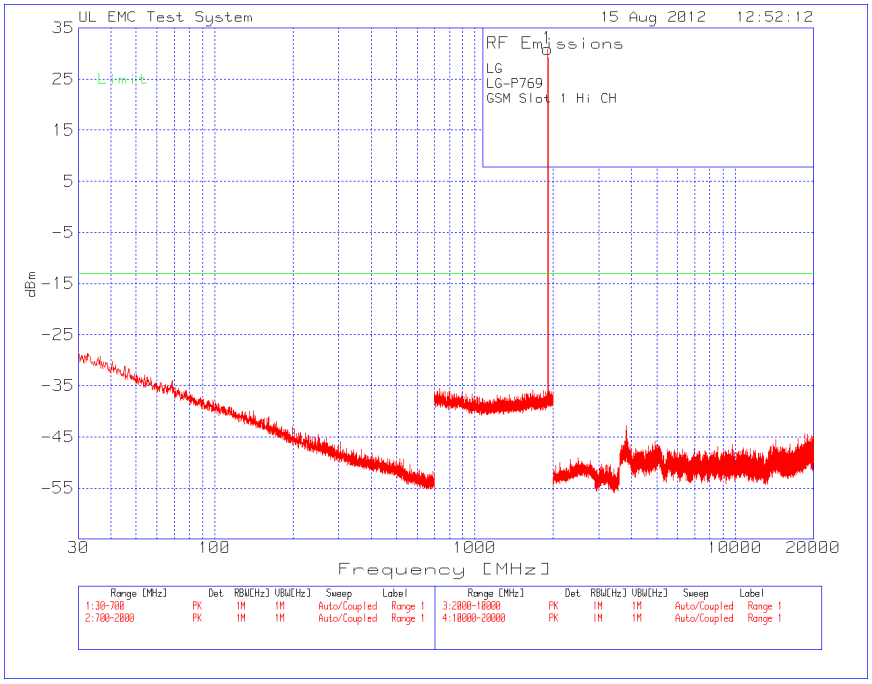
LOW CH



MID CH

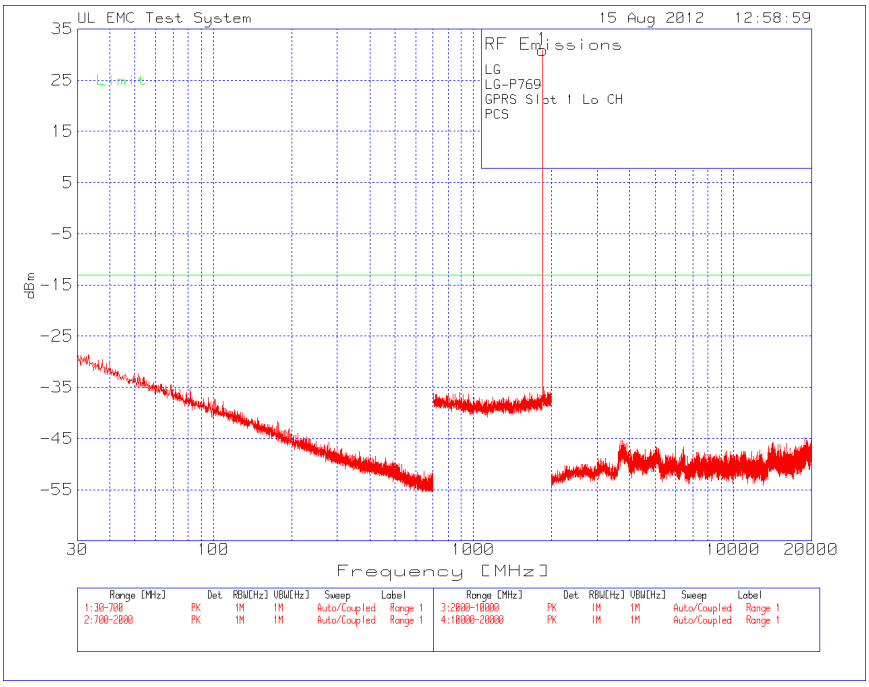


HIGH CH

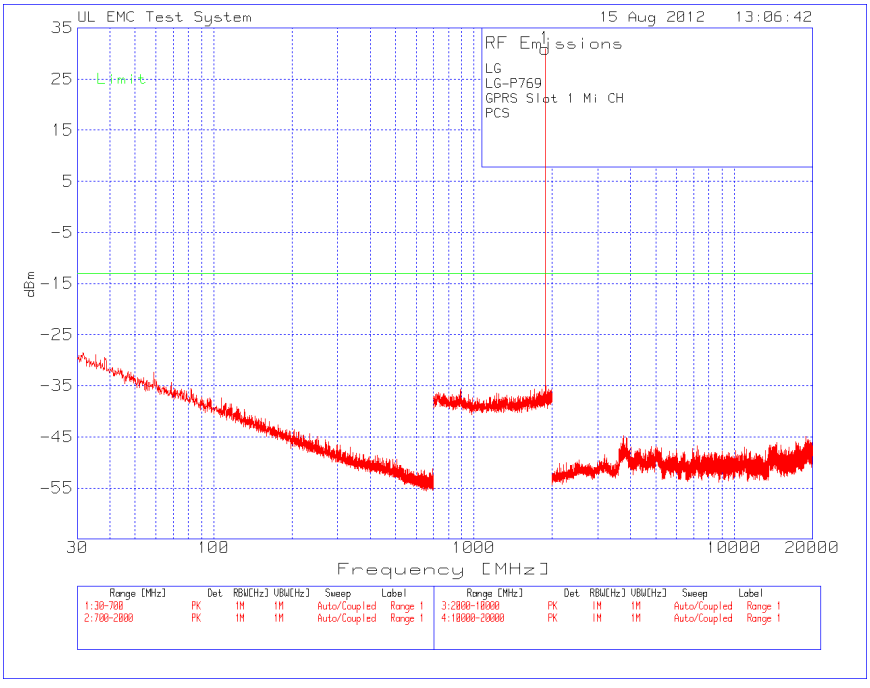


GPRS1900 BAND

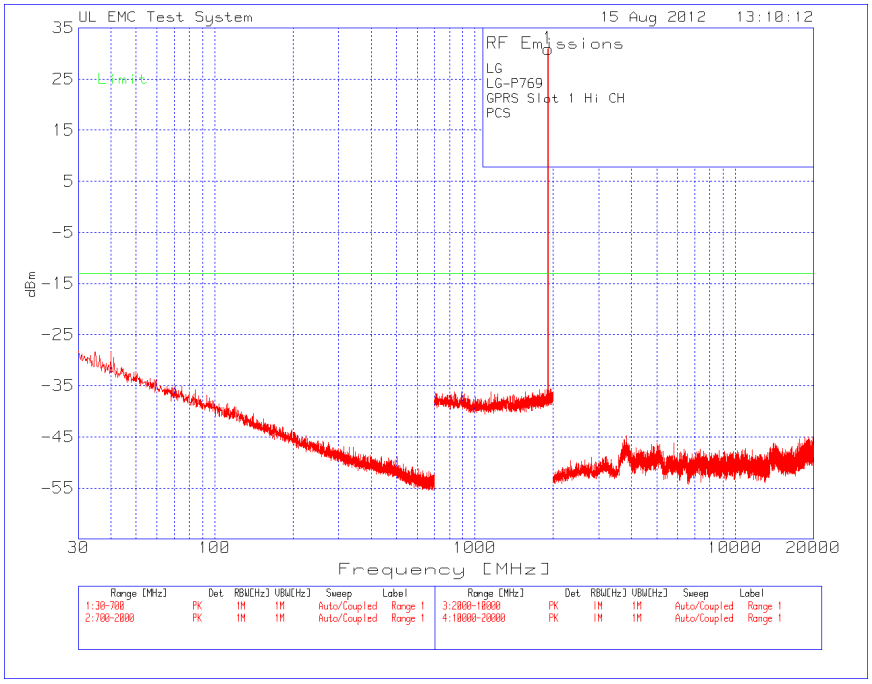
LOW CH



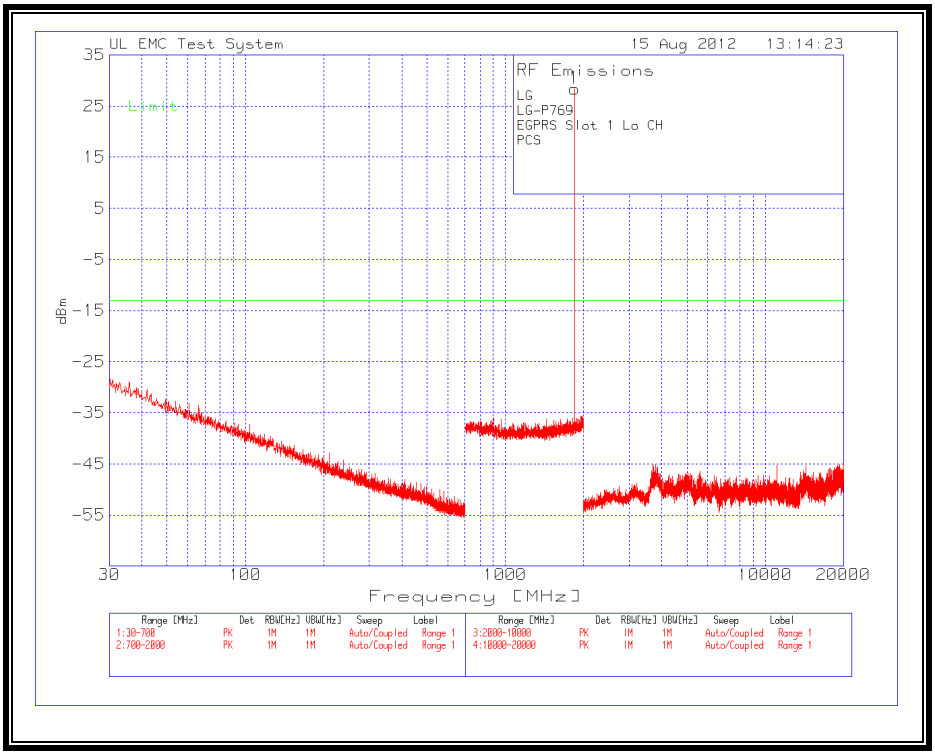
MID CH



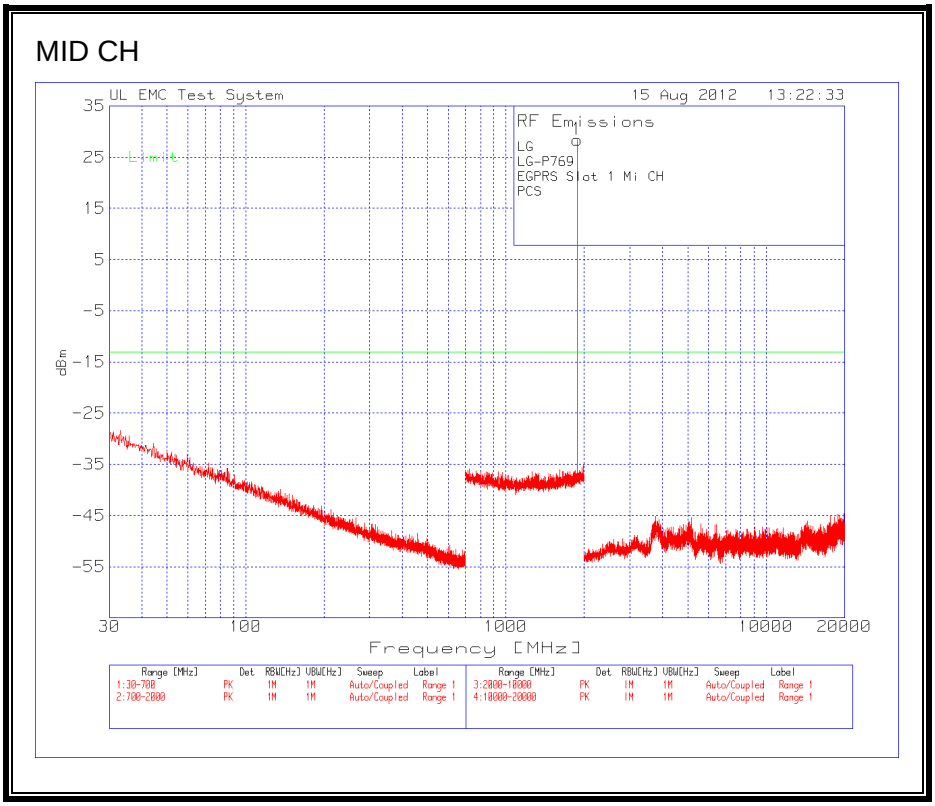
HIGH CH



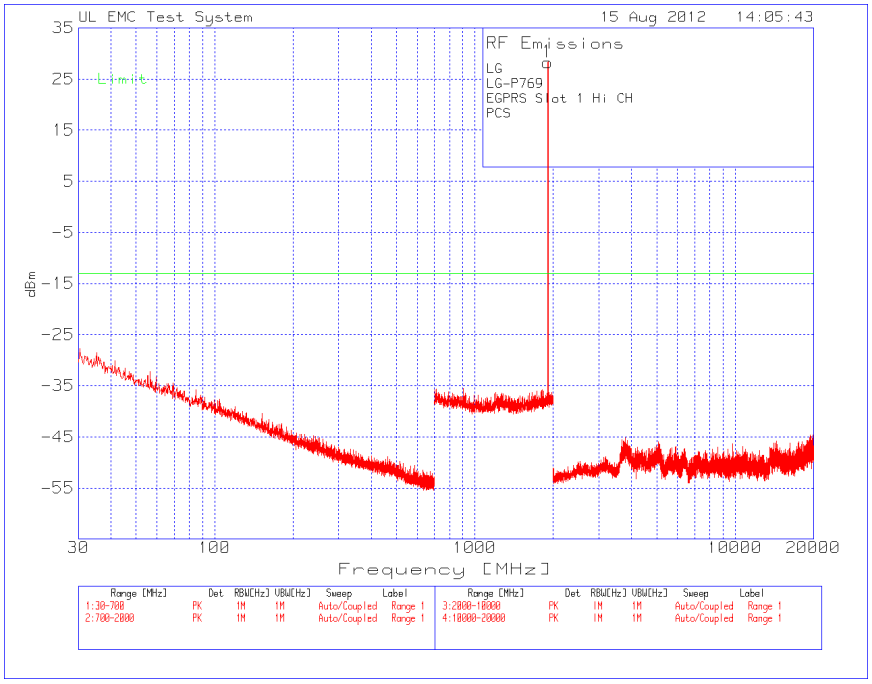
EGPRS1900 BAND



MID CH



HIGH CH



8.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Frequency Stability vs Temperature:
The EUT is place inside a temperature chamber. The temperature is set to 25ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached. Reference power supply voltage for these tests is 3.8 Vdc.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case).

MODES TESTED

- GPRS

RESULTS

See the following pages.
The EUT will not function below -20 dec C. The EUT will not function below 3.55VDC

CELL, GPRS – MID CHANNEL

Reference Frequency: Cellular Mid Channel 836.600005Hz @ 25ºC Limit: to stay +- 2.5 ppm = 2091.500 Hz				
DC Power Supply (Vdc)	Environment Temperature (ºC)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.600005	0.000	2.5
3.80	40	836.600004	0.001	2.5
3.80	30	836.600005	0.000	2.5
3.80	***25***	836.600005	***0***	2.5
3.80	20	836.600004	0.001	2.5
3.80	10	836.600013	-0.010	2.5
3.80	0	836.60001	-0.006	2.5
3.80	-10	836.600007	-0.002	2.5
3.80	-20	836.600007	-0.002	2.5

Reference Frequency: Cellular Mid Channel 836.600005Hz @ 25ºC Limit: to stay +- 2.5 ppm = 2091.500 Hz				
DC Power Supply (Vdc)	Environment Temperature (ºC)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	25	836.600005	***0.000***	2.5
4.37	25	836.600005	0.000	2.5
3.55	25	836.600005	0.000	2.5

PCS, GPRS– MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999993MHz @ 25ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (ºC)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999994	-0.001	2.5
3.80	40	1879.999994	-0.001	2.5
3.80	30	1879.999993	0.000	2.5
3.80	***25***	1879.999993	***0***	***2.5***
3.80	20	1879.999995	-0.001	2.5
3.80	10	1879.999996	-0.002	2.5
3.80	0	1879.999996	-0.002	2.5
3.80	-10	1879.999995	-0.001	2.5
3.80	-20	1879.999997	-0.002	2.5

Reference Frequency: PCS Mid Channel 1880.999993MHz @ 25ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (ºC)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***25***	1879.999993	***0***	***2.5***
4.37	25	1879.999995	-0.001	2.5
3.55	25	1879.999993	0.000	2.5

9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

MODES TESTED

- GSM, GPRS, EGPRS

RESULTS

In the table of results the Voltage at the antenna includes signal generator level and cable loss

EUT level will be EUT measured level – Substitution measured +ERP Level (or EIRP level)

ERP CELL BANDS

Mode	Channel	f (MHz)	ERP	
			dBm	mW
GSM	128	824.20	26.27	424.03
	190	836.60	26.40	436.52
	251	848.80	26.87	486.18
GPRS	128	824.20	26.37	433.91
	190	836.60	26.72	469.89
	251	848.80	27.06	507.93
EGPRS	128	824.20	22.96	197.88
	190	836.60	23.69	233.88
	251	848.80	23.78	238.67

EIRP PCS BANDS

EUT	Channel	f (MHz)	EIRP	
			dBm	mW
GSM	512	1850.20	27.54	567.71
	661	1880.00	26.89	489.10
	810	1909.80	26.72	469.46
GPRS	512	1850.20	27.39	548.44
	661	1880.00	27.74	594.89
	810	1909.80	26.86	484.84
EGPRS	512	1850.20	25.06	320.72
	661	1880.00	24.54	284.71
	810	1909.80	24.52	282.88

GSM (Cellular Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	ERP Level dBm	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	ERP EUT Level dBm	Limit dBm/MHz	Margin dB
GSM												
Low	824.2	Horizontal	-51.38	54.83	5.584	-45.796	-43.646	124.75	69.92	26.274	38.45	-12.176
		Vertical	-51.38	53.07	5.284	-46.096	-43.946	121.02	67.95	24.004	38.45	-14.446
Mid	836.6	Horizontal	-51.42	54.28	5.5	-45.92	-43.77	124.45	70.17	26.4	38.45	-12.05
		Vertical	-51.42	53.78	5.334	-46.086	-43.936	121.66	67.88	23.944	38.45	-14.506
Hi	848.8	Horizontal	-51.43	54.55	5.588	-45.842	-43.692	125.11	70.56	26.868	38.45	-11.582
		Vertical	-51.43	53.02	5.476	-45.954	-43.804	121.68	68.66	24.856	38.45	-13.594

GPRS (Cellular Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	ERP Level dBm	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	ERP EUT Level dBm	Limit dBm/MHz	Margin dB
GPRS Slot 1												
Low	824.2	Horizontal	-51.38	54.83	5.584	-45.796	-43.646	124.85	70.02	26.374	38.45	-12.076
		Vertical	-51.38	53.07	5.284	-46.096	-43.946	120.97	67.9	23.954	38.45	-14.496
Mid	836.6	Horizontal	-51.42	54.28	5.5	-45.92	-43.77	124.77	70.49	26.72	38.45	-11.73
		Vertical	-51.42	53.78	5.334	-46.086	-43.936	121.01	67.23	23.294	38.45	-15.156
Hi	848.8	Horizontal	-51.43	54.55	5.588	-45.842	-43.692	125.3	70.75	27.058	38.45	-11.392
		Vertical	-51.43	53.02	5.476	-45.954	-43.804	121.96	68.94	25.136	38.45	-13.314
GPRS Slot 2												
Low	824.2	Horizontal	-51.38	54.83	5.7004	-45.68	-43.53	122.83	68	24.4704	38.45	-13.9796
		Vertical	-51.38	53.07	5.7148	-45.665	-43.515	118.93	65.86	22.3448	38.45	-16.1052
Mid	836.6	Horizontal	-51.42	54.28	5.713	-45.707	-43.557	122.58	68.3	24.743	38.45	-13.707
		Vertical	-51.42	53.78	5.6785	-45.742	-43.592	119.5	65.72	22.1285	38.45	-16.3215
Hi	848.8	Horizontal	-51.43	54.55	5.7256	-45.704	-43.554	123.33	68.78	25.2256	38.45	-13.2244
		Vertical	-51.43	53.02	5.6427	-45.787	-43.637	119.97	66.95	23.3127	38.45	-15.1373
GPRS Slot 3												
Low	824.2	Horizontal	-51.38	54.83	5.584	-45.796	-43.646	120.81	65.98	22.334	38.45	-16.116
		Vertical	-51.38	53.07	5.284	-46.096	-43.946	116.98	63.91	19.964	38.45	-18.486
Mid	836.6	Horizontal	-51.42	54.28	5.5	-45.92	-43.77	120.59	66.31	22.54	38.45	-15.91
		Vertical	-51.42	53.78	5.334	-46.086	-43.936	117.59	63.81	19.874	38.45	-18.576
Hi	848.8	Horizontal	-51.43	54.55	5.588	-45.842	-43.692	121.37	66.82	23.128	38.45	-15.322
		Vertical	-51.43	53.02	5.476	-45.954	-43.804	118.56	65.54	21.736	38.45	-16.714
GPRS Slot 4												
Low	824.2	Horizontal	-51.38	54.83	5.7004	-45.68	-43.53	120.79	65.96	22.4304	38.45	-16.0196
		Vertical	-51.38	53.07	5.7148	-45.665	-43.515	116.98	63.91	20.3948	38.45	-18.0552
Mid	836.6	Horizontal	-51.42	54.28	5.713	-45.707	-43.557	119.06	64.78	21.223	38.45	-17.227
		Vertical	-51.42	53.78	5.6785	-45.742	-43.592	117.57	63.79	20.1985	38.45	-18.2515
Hi	848.8	Horizontal	-51.43	54.55	5.7256	-45.704	-43.554	121.35	66.8	23.2456	38.45	-15.2044
		Vertical	-51.43	53.02	5.6427	-45.787	-43.637	118.56	65.54	21.9027	38.45	-16.5473

EGPRS (Cellular Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	ERP Level dBm	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	ERP EUT Level dBm	Limit dBm/MHz	Margin dB
EGPRS Slot 1												
Low	824.2	Horizontal	-51.38	54.83	5.584	-45.796	-43.646	121.44	66.61	22.964	38.45	-15.486
		Vertical	-51.38	53.07	5.284	-46.096	-43.946	118.52	65.45	21.504	38.45	-16.946
Mid	836.6	Horizontal	-51.42	54.28	5.5	-45.92	-43.77	121.74	67.46	23.69	38.45	-14.76
		Vertical	-51.42	53.78	5.334	-46.086	-43.936	118.7	64.92	20.984	38.45	-17.466
Hi	848.8	Horizontal	-51.43	54.55	5.588	-45.842	-43.692	122.02	67.47	23.778	38.45	-14.672
		Vertical	-51.43	53.02	5.476	-45.954	-43.804	119	65.98	22.176	38.45	-16.274
EGPRS Slot 2												
Low	824.2	Horizontal	-51.38	54.83	5.7004	-45.68	-43.53	119.69	64.86	21.3304	38.45	-17.1196
		Vertical	-51.38	53.07	5.7148	-45.665	-43.515	116.77	63.7	20.1848	38.45	-18.2652
Mid	836.6	Horizontal	-51.42	54.28	5.713	-45.707	-43.557	119.99	65.71	22.153	38.45	-16.297
		Vertical	-51.42	53.78	5.6785	-45.742	-43.592	116.95	63.17	19.5785	38.45	-18.8715
Hi	848.8	Horizontal	-51.43	54.55	5.7256	-45.704	-43.554	120.33	65.78	22.2256	38.45	-16.2244
		Vertical	-51.43	53.02	5.6427	-45.787	-43.637	117.32	64.3	20.6627	38.45	-17.7873
EGPRS Slot 3												
Low	824.2	Horizontal	-51.38	54.83	5.584	-45.796	-43.646	117.96	63.13	19.484	38.45	-18.966
		Vertical	-51.38	53.07	5.284	-46.096	-43.946	115.03	61.96	18.014	38.45	-20.436
Mid	836.6	Horizontal	-51.42	54.28	5.5	-45.92	-43.77	118.27	63.99	20.22	38.45	-18.23
		Vertical	-51.42	53.78	5.334	-46.086	-43.936	115.21	61.43	17.494	38.45	-20.956
Hi	848.8	Horizontal	-51.43	54.55	5.588	-45.842	-43.692	118.57	64.02	20.328	38.45	-18.122
		Vertical	-51.43	53.02	5.476	-45.954	-43.804	115.61	62.59	18.786	38.45	-19.664
EGPRS Slot 4												
Low	824.2	Horizontal	-51.38	54.83	5.7004	-45.68	-43.53	117.93	63.1	19.5704	38.45	-18.8796
		Vertical	-51.38	53.07	5.7148	-45.665	-43.515	114.3	61.23	17.7148	38.45	-20.7352
Mid	836.6	Horizontal	-51.42	54.28	5.713	-45.707	-43.557	118.23	63.95	20.393	38.45	-18.057
		Vertical	-51.42	53.78	5.6785	-45.742	-43.592	115.07	61.29	17.6985	38.45	-20.7515
Hi	848.8	Horizontal	-51.43	54.55	5.7256	-45.704	-43.554	118.54	63.99	20.4356	38.45	-18.0144
		Vertical	-51.43	53.02	5.6427	-45.787	-43.637	115.53	62.51	18.8727	38.45	-19.5773

GSM (PCS Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	EIRP EUT Level dBm	Limit dBm/MHz	Margin dB
GSM											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	126.95	48.69	27.5413	33	-5.4587
		Vertical	-50.96	51.52	4.628	-46.332	114.76	63.24	16.908	33	-16.092
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	126.19	48.25	26.894	33	-6.106
		Vertical	-51.08	50.56	4.4192	-46.661	115.63	65.07	18.4092	33	-14.5908
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	125.94	73.14	26.716	33	-6.284
		Vertical	-51.1	51.02	4.332	-46.768	114.95	63.93	17.162	33	-15.838

GPRS (PCS Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	EIRP EUT Level dBm	Limit dBm/MHz	Margin dB
GPRS Slot 1											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	126.8	48.54	27.3913	33	-5.6087
		Vertical	-50.96	51.52	4.628	-46.332	116.46	64.94	18.608	33	-14.392
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	127.04	49.1	27.744	33	-5.256
		Vertical	-51.08	50.56	4.4192	-46.661	114.42	63.86	17.1992	33	-15.8008
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	126.08	73.28	26.856	33	-6.144
		Vertical	-51.1	51.02	4.332	-46.768	114.56	63.54	16.772	33	-16.228
GPRS Slot 2											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	124.64	46.38	25.2313	33	-7.7687
		Vertical	-50.96	51.52	4.628	-46.332	114.25	62.73	16.398	33	-16.602
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	123.88	45.94	24.584	33	-8.416
		Vertical	-51.08	50.56	4.4192	-46.661	112.29	61.73	15.0692	33	-17.9308
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	123.97	71.17	24.746	33	-8.254
		Vertical	-51.1	51.02	4.332	-46.768	112.56	61.54	14.772	33	-18.228
GPRS Slot 3											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	122.58	44.32	23.1713	33	-9.8287
		Vertical	-50.96	51.52	4.628	-46.332	112.07	60.55	14.218	33	-18.782
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	121.91	43.97	22.614	33	-10.386
		Vertical	-51.08	50.56	4.4192	-46.661	110.42	59.86	13.1992	33	-19.8008
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	122.03	69.23	22.806	33	-10.194
		Vertical	-51.1	51.02	4.332	-46.768	110.48	59.46	12.692	33	-20.308
GPRS Slot 4											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	121.1	42.84	21.6913	33	-11.3087
		Vertical	-50.96	51.52	4.628	-46.332	110.53	59.01	12.678	33	-20.322
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	120.43	42.49	21.134	33	-11.866
		Vertical	-51.08	50.56	4.4192	-46.661	108.93	58.37	11.7092	33	-21.2908
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	120.58	67.78	21.356	33	-11.644
		Vertical	-51.1	51.02	4.332	-46.768	109.07	58.05	11.282	33	-21.718

EGPRS (PCS Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	EIRP EUT Level dBm	Limit dBm/MHz	Margin dB
EGPRS Slot 1											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	124.47	46.21	25.0613	33	-7.9387
		Vertical	-50.96	51.52	4.628	-46.332	113.31	61.79	15.458	33	-17.542
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	123.84	45.9	24.544	33	-8.456
		Vertical	-51.08	50.56	4.4192	-46.661	111.61	61.05	14.3892	33	-18.6108
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	123.74	70.94	24.516	33	-8.484
		Vertical	-51.1	51.02	4.332	-46.768	113.11	62.09	15.322	33	-17.678
EGPRS Slot 2											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	122.5	44.24	23.0913	33	-9.9087
		Vertical	-50.96	51.52	4.628	-46.332	111.61	60.09	13.758	33	-19.242
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	121.71	43.77	22.414	33	-10.586
		Vertical	-51.08	50.56	4.4192	-46.661	109.87	59.31	12.6492	33	-20.3508
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	121.75	68.95	22.526	33	-10.474
		Vertical	-51.1	51.02	4.332	-46.768	111.09	60.07	13.302	33	-19.698
EGPRS Slot 3											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	120.13	41.87	20.7213	33	-12.2787
		Vertical	-50.96	51.52	4.628	-46.332	109.59	58.07	11.738	33	-21.262
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	119.58	41.64	20.284	33	-12.716
		Vertical	-51.08	50.56	4.4192	-46.661	107.85	57.29	10.6292	33	-22.3708
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	119.66	66.86	20.436	33	-12.564
		Vertical	-51.1	51.02	4.332	-46.768	108.9	57.88	11.112	33	-21.888
EGPRS Slot 4											
Low	1850.2	Horizontal	-25.88	78.26	4.7313	-21.149	119.13	40.87	19.7213	33	-13.2787
		Vertical	-50.96	51.52	4.628	-46.332	108.47	56.95	10.618	33	-22.382
Mid	1880	Horizontal	-26.05	77.94	4.694	-21.356	118.48	40.54	19.184	33	-13.816
		Vertical	-51.08	50.56	4.4192	-46.661	106.62	56.06	9.3992	33	-23.6008
Hi	1909.8	Horizontal	-51.1	52.8	4.676	-46.424	118.55	65.75	19.326	33	-13.674
		Vertical	-51.1	51.02	4.332	-46.768	107.86	56.84	10.072	33	-22.928

9.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission 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

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED:

- GSM, GPRS, EGPRS

RESULTS

The worst Channel per mode was used to determine any harmonics above noise floor. All harmonics found have a minimum margin of 12 dB or more to the -13dBm limit. Measurements at more than one mode were considered not necessary.

GSM (Cellular Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	ERP Level dBm	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	ERP EUT Level dBm	Limit dBm/MHz	Margin dB
GSM Hi	848.8											
2nd Harmonic	1697.6	Horizontal	-53.73	52.24	5.881	-47.849	-45.699	65.55	13.31	-32.388656	-13	-19.3887
		Vertical	-53.73	50.79	5.999	-47.731	-45.581	63.75	12.96	-32.620856	-13	-19.6209
4th Harmonic	3395.2	Horizontal	-55.35	46.82	7.915	-47.435	-45.285	56.92	10.1	-35.1848	-13	-22.1848
		Vertical	-55.35	49.97	7.894	-47.456	-45.306	58.98	9.01	-36.29596	-13	-23.296
5th Harmonic	4244	Horizontal	-56.2	49.73	9.207	-46.993	-44.843	58.37	8.64	-36.2028	-13	-23.2028
		Vertical	-56.2	50.07	9.181	-47.019	-44.869	57.1	7.03	-37.8392	-13	-24.8392
6th Harmonic	5092.8	Horizontal	-57.11	49.63	9.891	-47.219	-45.069	63.65	14.02	-31.048624	-13	-18.0486
		Vertical	-57.11	49.92	9.869	-47.241	-45.091	66.11	16.19	-28.90124	-13	-15.9012
7th Harmonic	5941.6	Horizontal	-57.81	49.43	10.36	-47.452	-45.302	51.21	1.78	-43.522272	-13	-30.5223
		Vertical	-57.81	50.83	10.43	-47.381	-45.231	60.36	9.53	-35.70056	-13	-22.7006
8th Harmonic	6790.4	Horizontal	-58.55	48.63	10.94	-47.612	-45.462	58.94	10.31	-35.152288	-13	-22.1523
		Vertical	-58.55	49.44	10.93	-47.618	-45.468	63.28	13.84	-31.627888	-13	-18.6279
9th Harmonic	7639.2	Horizontal	-59.65	46.3	11.99	-47.657	-45.507	37.87	-8.43	-53.93656	-13	-40.9366
		Vertical	-59.65	47.98	12.01	-47.637	-45.487	40.72	-7.26	-52.746616	-13	-39.7466
10th Harmonic	8488	Horizontal	-60.33	56.81	12.78	-47.547	-45.397	49.59	-7.22	-52.61684	-13	-39.6168
		Vertical	-60.33	56.24	12.79	-47.543	-45.393	52.55	-3.69	-49.08288	-13	-36.0829

GPRS (Cellular Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	ERP Level dBm	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	ERP EUT Level dBm	Limit dBm/MHz	Margin dB
GPRS Slot 1 Hi	848.8											
2nd Harmonic	1697.6	Horizontal	-53.73	52.24	5.881	-47.849	-45.699	65.83	13.59	-32.108656	-13	-19.1087
		Vertical	-53.73	50.79	5.999	-47.731	-45.581	64.05	13.26	-32.320856	-13	-19.3209
4th Harmonic	3395.2	Horizontal	-55.35	46.82	7.915	-47.435	-45.285	56.35	9.53	-35.7548	-13	-22.7548
		Vertical	-55.35	49.97	7.894	-47.456	-45.306	59.21	9.24	-36.06596	-13	-23.066
5th Harmonic	4244	Horizontal	-56.2	49.73	9.207	-46.993	-44.843	57.87	8.14	-36.7028	-13	-23.7028
		Vertical	-56.2	50.07	9.181	-47.019	-44.869	57.44	7.37	-37.4992	-13	-24.4992
6th Harmonic	5092.8	Horizontal	-57.11	49.63	9.891	-47.219	-45.069	63.23	13.6	-31.468624	-13	-18.4686
		Vertical	-57.11	49.92	9.869	-47.241	-45.091	63.88	13.96	-31.13124	-13	-18.1312
7th Harmonic	5941.6	Horizontal	-57.81	49.43	10.36	-47.452	-45.302	49.34	-0.09	-45.392272	-13	-32.3923
		Vertical	-57.81	50.83	10.43	-47.381	-45.231	60.55	9.72	-35.51056	-13	-22.5106
8th Harmonic	6790.4	Horizontal	-58.55	48.63	10.94	-47.612	-45.462	58.14	9.51	-35.952288	-13	-22.9523
		Vertical	-58.55	49.44	10.93	-47.618	-45.468	60.91	11.47	-33.997888	-13	-20.9979
10th Harmonic	8488	Horizontal	-60.33	56.81	12.78	-47.547	-45.397	49.6	-7.21	-52.60684	-13	-39.6068
		Vertical	-60.33	56.24	12.79	-47.543	-45.393	51.24	-5	-50.39288	-13	-37.3929

EGPRS (Cellular Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	ERP Level dBm	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	ERP EUT Level dBm	Limit dBm/MHz	Margin dB
GPRS Slot 1 Hi	848.8											
6th Harmonic	5092.8	Horizontal	-57.11	49.63	9.891	-47.219	-45.069	47.07	-2.56	-47.628624	-13	-34.6286
		Vertical	-57.11	49.92	9.869	-47.241	-45.091	50.57	0.65	-44.44124	-13	-31.4412
7th Harmonic	5941.6	Horizontal	-57.81	49.43	10.36	-47.452	-45.302	46.04	-3.39	-48.692272	-13	-35.6923
		Vertical	-57.81	50.83	10.43	-47.381	-45.231	52.65	1.82	-43.41056	-13	-30.4106
8th Harmonic	6790.4	Vertical	-58.55	49.44	10.93	-47.618	-45.468	45.68	-3.76	-49.227888	-13	-36.2279

GSM (PCS Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	EIRP EUT Level dBm	Limit dBm/MHz	Margin dB
GSM Lo	1850.2										
3rd Harmonic	5550.6	Horizontal	-44.3	59.62	10.19	-34.111	52.47	-7.15	-41.260566	-13	-28.2606
		Vertical	-44.3	61.01	10.15	-34.149	54.26	-6.75	-40.899026	-13	-27.899
4th Harmonic	7400.8	Horizontal	-45.18	60.35	11.86	-33.322	48.24	-12.11	-45.431688	-13	-32.4317
		Vertical	-45.18	62.51	11.81	-33.371	54.09	-8.42	-41.791072	-13	-28.7911
5th Harmonic	9251	Horizontal	-45.24	66.66	13.03	-32.211	52.04	-14.62	-46.83133	-13	-33.8313
		Vertical	-45.24	66.86	13.06	-32.183	55.71	-11.15	-43.33331	-13	-30.3333
6th Harmonic	11101.2	Horizontal	-45.8	65.81	13.09	-32.709	64.36	-1.45	-34.159496	-13	-21.1595
		Vertical	-45.8	66.23	13.07	-32.73	69.4	3.17	-29.5604	-13	-16.5604
7th Harmonic	12951.4	Horizontal	-46	65.63	13.44	-32.56	59.56	-6.07	-38.629516	-13	-25.6295
		Vertical	-46	66.55	13.49	-32.508	61.65	-4.9	-37.407928	-13	-24.4079
8th Harmonic	14801.6	Horizontal	-46.96	67.48	14.02	-32.936	58.92	-8.56	-41.496392	-13	-28.4964
		Vertical	-46.96	68.34	14.06	-32.904	60.21	-8.13	-41.034144	-13	-28.0341
9th Harmonic		Vertical	-46.6	68.12	13.92	-32.681	61.98	-6.14	-38.8214	-13	-25.8214

GPRS (PCS Band)

Description	Freq. MHz	Polarization	Voltage at anntena dBm	Substitution Peak Filed Strenght Measured dBuV/m	TX ant dBi	EIRP Level	EUT Measured Peak Level dBuV/m	Delta EUT and Substitution dB	EIRP EUT Level dBm	Limit dBm/MHz	Margin dB
GPRS Slot 1 Mid	1880										
3rd Harmonic	5640	Horizontal	-51.69	54.01	10.14	-41.546	54.36	0.35	-41.1964	-13	-28.1964
		Vertical	-51.69	54.69	10.2	-41.489	58.31	3.62	-37.8688	-13	-24.8688
5th Harmonic	9400	Horizontal	-52.42	61.11	12.95	-39.473	55.15	-5.96	-45.433	-13	-32.433
		Vertical	-52.42	60.91	12.9	-39.524	57.94	-2.97	-42.494	-13	-29.494
6th Harmonic	11280	Horizontal	-52.19	61.63	13.15	-39.037	67.32	5.69	-33.3472	-13	-20.3472
		Vertical	-52.19	61.81	13.13	-39.061	73.81	12	-27.0614	-13	-14.0614
7th Harmonic	13160	Horizontal	-52.55	63.59	13.6	-38.949	58.87	-4.72	-43.6688	-13	-30.6688
		Vertical	-52.55	63.73	13.62	-38.931	63.65	-0.08	-39.0108	-13	-26.0108
8th Harmonic	15040	Horizontal	-52.79	62.75	14.1	-38.694	55.52	-7.23	-45.924	-13	-32.924
		Vertical	-52.79	63	14.1	-38.692	61.85	-1.15	-39.8416	-13	-26.8416
9th Harmonic	16920	Horizontal	-53.65	62.27	14.32	-39.33	53.61	-8.66	-47.9902	-13	-34.9902
		Vertical	-53.65	63.67	14.3	-39.354	57.63	-6.04	-45.394	-13	-32.394

EGPRS (PCS Band)

All Harmonics below noise floor

10. SETUP PHOTOS

See Photos exhibit.

END OF REPORT