



**FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
CERTIFICATION TEST REPORT**

**FOR
GSM & W-CDMA PHONE + BT
MODEL NUMBER: LG440G
FCC ID: ZNFLG440G**

**REPORT NUMBER: 12U14353-1, Revision C
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Prepared for

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Date	Revisions	Revised By
---	04/06/12	Initial Issue	T. Chan
A	05/14/12	Updated Client address and removed WLAN from report	A. Zaffar
A1	05/15/12	Updated client address	A. Zaffar
B	05/16/12	Updated EUT description	A. Zaffar
C	09/12/12	Updated GSM / GPRS PCS Band on Power Table	T. Chan

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: GSM & W-CDMA PHONE + BT

MODEL: LG440G

SERIAL NUMBER: 203KPAE163104

DATE TESTED: MARCH 29-APRIL 06, 2012

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H AND 24E	PASS

Compliance Certification Services (UL CCS) 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 CCS 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS 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 CCS By:

Tested By:



THU CHAN
ENGINEERING MANAGER
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CHIN PANG
EMC ENGINEER
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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, and FCC CFR Part 24.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

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

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

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	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM & W-CDMA Phone + BT

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak ERP / EIRP output powers as follows:

Part 22 Cellular Band

Frequency range (MHz)	Modulation	Conducted		ERP	
		dBm	mW	dBm	mW
824.2 – 848.8	GSM	33.40	2187.8	32.98	1986.1
	GPRS	33.30	2138.0	32.34	1714.0
826.4 – 846.6	UMTS, REL 99	26.65	462.4	26.80	478.6
	UMTS, HSDPA	26.70	467.7	26.86	485.3

Part 24 PCS Band

Frequency range (MHz)	Modulation	Conducted		EIRP	
		dBm	mW	dBm	mW
1850.2 – 1909.8	GSM	30.30	1071.5	31.67	1468.9
	GPRS	30.20	1047.1	30.48	1116.9
1852.4 – 1907.6	UMTS, REL 99	26.32	428.5	31.95	1566.8
	UMTS, HSDPA	26.25	421.7	31.55	1428.9

5.3. SOFTWARE AND FIRMWARE

The EUT is linked with CMU200 Communication Test Set.

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power.

The worst-case modes: GSM, GPRS, UMTS REL 99 and HSDPA Sub Set 2.

Since the EUT is a portable device, in addition to the peak power measurements verification data shown below, the EUT also investigated on X, Y, Z, opened and closed orientations with and without AC Adapter and the worst-orientation was determined to be EUT closed at Y position for Cell band with AC Adapter and Z position for PCS bands without AC Adapter.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	STA-U34WRI	RC220038224	DoC
Headset	LG	NA	NA	NA

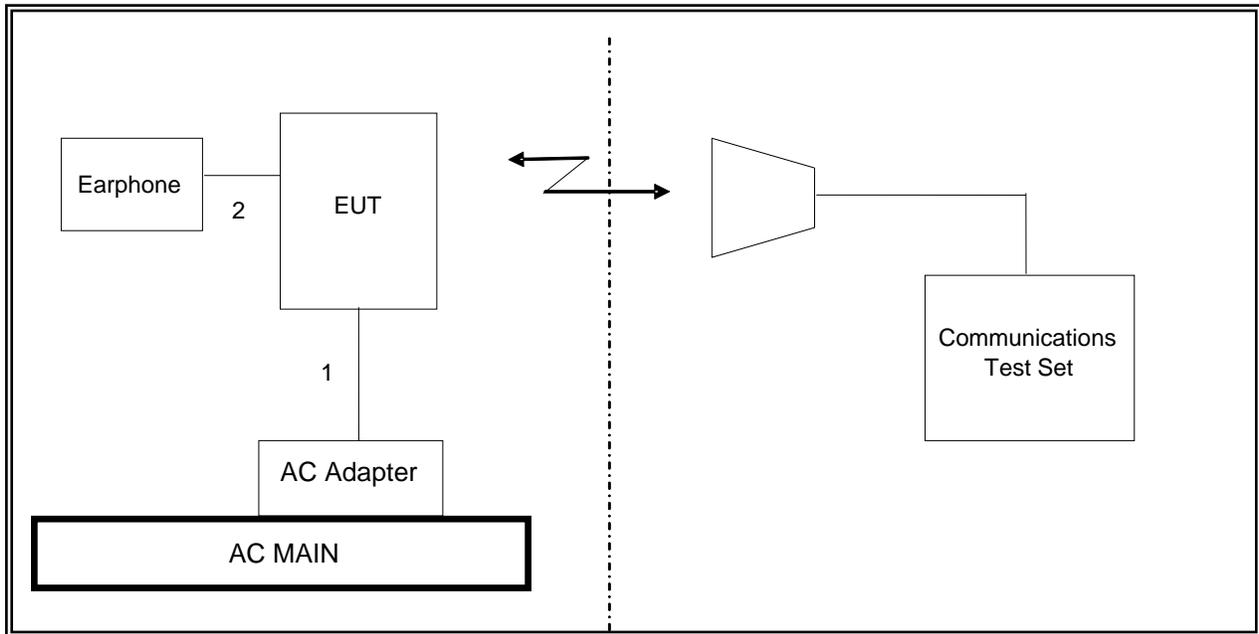
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	DC	Un-shielded	1m	NA
2	Jack	1	Earphone	Un-shielded	1.5m	NA

TEST SETUP

The EUT is a stand-alone device. A link is established between the EUT and the CMU200 communication test set.

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
Antenna, Horn, 18 GHz	EMCO	3115	C00945	10/06/12
Antenna, Horn, 18 GHz	EMCO	2238	C00872	09/20/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	11/11/12
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01159	05/11/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/12/12
Communication Test Set	R & S	CMU200	C01131	06/24/12
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Directional Coupler	Lambda	CSM06G15	NA	CNR
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/16/12
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/14/12
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	C00993	07/16/12

7. RF POWER OUTPUT VERIFICATION

7.1. RF POWER OUTPUT FOR GSM MODE

TEST PROCEDURE

GSM / GPRS

Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900
Press Connection control to choose the different menus
Press RESET > choose all to reset all settings
Connection Press Signal Off to turn off the signal and change settings
Network Support > GSM+GPRS or GSM+EGPRS
Main Service > Packet Data
Service selection > Test Mode A – Auto Slot Config. off
MS Signal Press Slot Config bottom on the right twice to select and change the number of time slots and power setting
 > Slot configuration > Uplink/Gamma
 > 33 dBm for GPRS 850/900
 > 30 dBm for GPRS1800/1900
BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset > + 0 Hz
Mode > BCCH and TCH
BCCH Level > -85 dBm (May need to adjust if link is not stable)
BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
Channel Type > Off
P0> 4 dB
Slot Config > Unchanged (if already set under MS Signal)
TCH > choose desired test channel
Hopping > Off
Main Timeslot > 3 (Default)
Network Coding Scheme > CS4 (GPRS) and MCS9 (EGPRS)
Bit Stream > 2E9-1PSR Bit Pattern
AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection Press Signal On to turn on the signal and change settings

RESULTS

GSM (Voice)

Mode	Ch.	f (MHz)	1 time slot	2 time slots
			Peak	Peak
GSM	128	824.2	33.10	33.1
	190	836.6	33.30	33.3
	251	848.8	33.40	33.4
GSM	512	1850.2	30.30	30.2
	661	1880.0	29.80	29.8
	810	1909.8	29.80	29.8

GPRS for Cell and PCS Band

Mode	Ch.	f (MHz)	1 time slot	2 time slots
			Peak	Peak
GPRS	128	824.2	33.10	30.7
	190	836.6	33.30	30.8
	251	848.8	33.30	30.9
GPRS	512	1850.2	30.20	28.4
	661	1880	29.80	28.0
	810	1909.8	29.80	27.9

7.2. RF POWER OUTPUT FOR UMTS REL99

TEST PROCEDURE

The following summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	β_c	Not Applicable
	β_d	Not Applicable
	β_{ec}	Not Applicable
	β_c/β_d	8/15
	β_{hs}	Not Applicable
	β_{ed}	Not Applicable

RESULTS

Cell Band 850MHz REL 99

Band	UL Ch	DL Ch	Frequency	Conducted power (dBm)
				Peak
UMTS 850	4132	4357	826.4	26.34
	4182	4407	836.4	26.36
	4233	4458	846.6	26.65

Band	UL Ch	DL Ch	Frequency	Conducted power(dBm)
				Peak
UMTS 1900	9262	9662	1852.4	26.32
	9400	9800	1880.0	26.25
	9538	9938	1907.6	25.90

7.3. RF POWER OUTPUT FOR HSDPA REL 5

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	Rel5 HSDPA			
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
MPR (dB)	0	0	0.5	0.5	
HSDPA Specific Settings	D _{ACK}	8			
	D _{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
A _{hs} = β_{hs}/β_c	30/15				

Results

RESULTS:

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted power(dBm)
					Peak
UMTS850 (Band V)	1	4132	4357	826.4	26.66
		4180	4405	836.0	26.32
		4230	4455	846.0	26.34
	2*	4132	4357	826.4	26.60
		4180	4405	836.0	26.20
		4230	4455	846.0	26.70
	3	4132	4357	826.4	26.54
		4180	4405	836.0	26.16
		4230	4455	846.0	26.68
	4	4132	4357	826.4	26.68
		4180	4405	836.0	26.13
		4230	4455	846.0	26.68
UMTS1900 (Band II)	1	9262	9662	1852.4	26.17
		9400	9800	1880.0	25.96
		9538	9938	1907.6	25.80
	2*	9262	9662	1852.4	26.20
		9400	9800	1880.0	26.25
		9538	9938	1907.6	25.82
	3	9262	9662	1852.4	26.18
		9400	9800	1880.0	25.96
		9538	9938	1907.6	25.84
	4	9262	9662	1852.4	26.17
		9400	9800	1880.0	25.72
		9538	9938	1907.6	25.88

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
- UMTS REL. 99
- HSDPA REL. 5

RESULTS

Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
Cellular	GSM	128	824.2	268.4904	296.758
		190	836.6	235.1990	267.382
		251	848.8	255.0175	288.663
	GPRS	128	824.2	256.5861	313.004
		190	836.6	245.5160	304.612
		251	848.8	237.6100	305.426

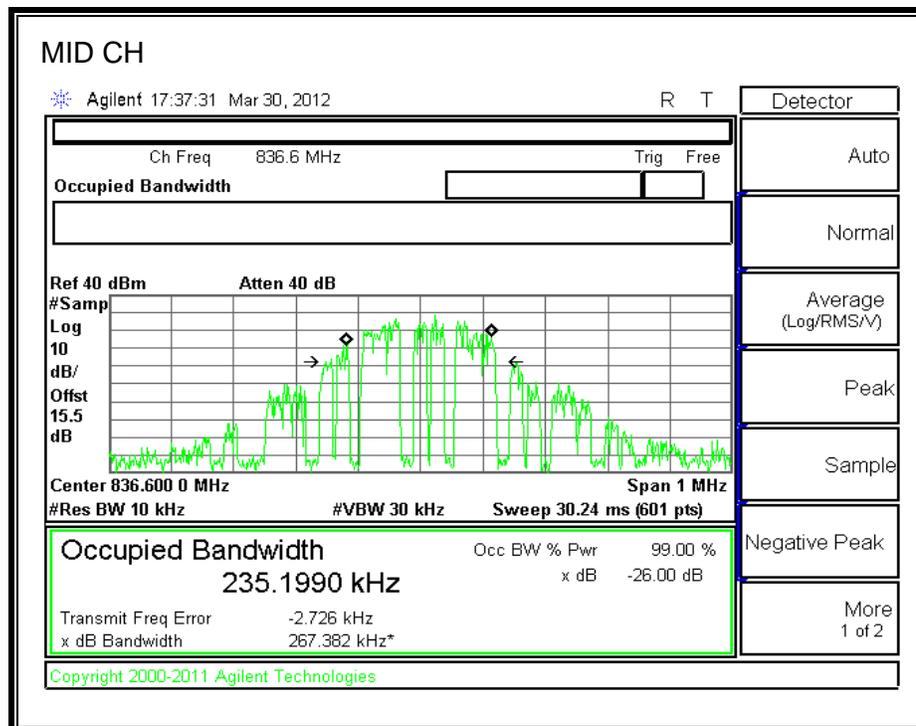
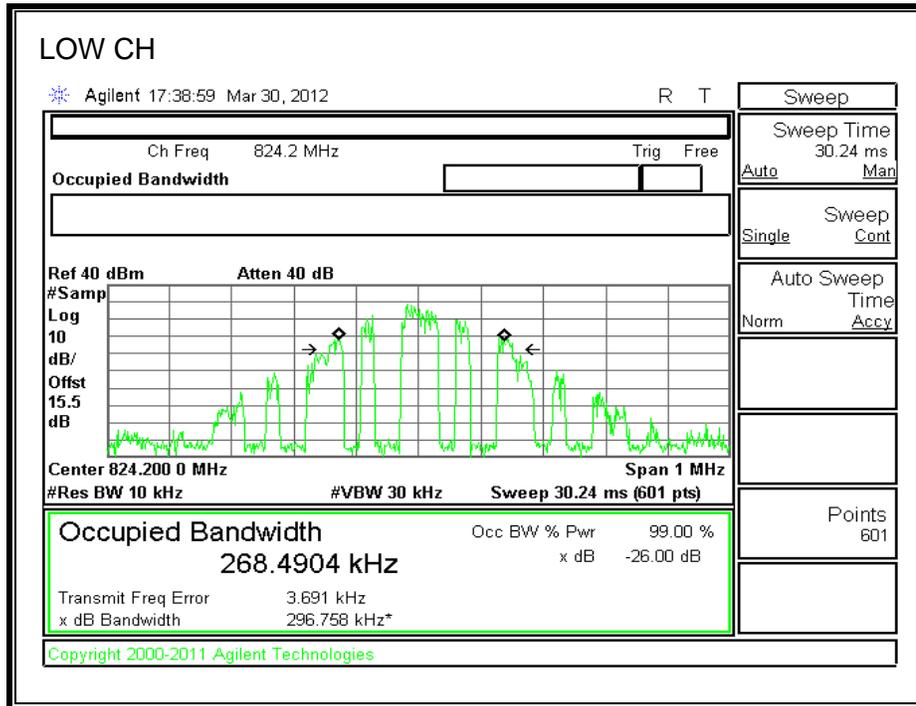
Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
Cellular	UMTS, REL 99	4357	826.4	4.1364	4.548
		4405	836.0	4.1899	4.648
		4455	846.0	4.1333	4.603
	UMTS, HSDPA	4357	826.4	4.1703	4.559
		4405	836.0	4.1478	4.542
		4455	846.0	4.1342	4.569

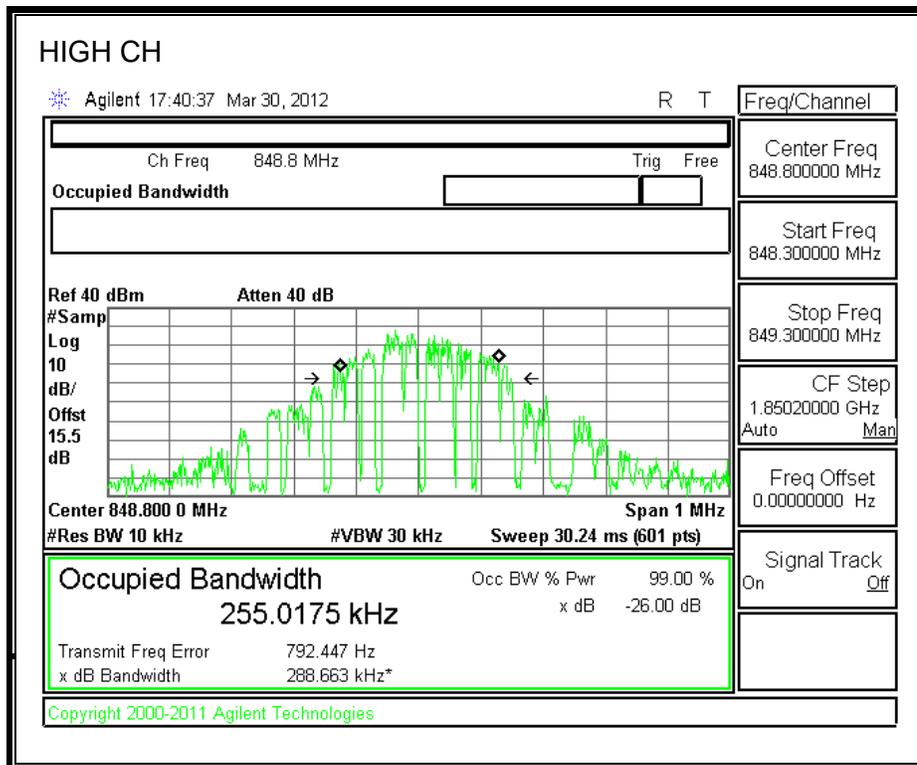
Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
PCS	GSM	512	1850.2	243.9579	269.922
		661	1880.0	241.2080	312.673
		810	1909.8	247.9790	309.767
	GPRS	512	1850.2	244.8533	302.994
		661	1880.0	242.6855	283.336
		810	1909.8	258.6952	318.223

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
PCS	UMTS, REL 99	9662	1852.40	4.1374	4.557
		9800	1880.00	4.1207	4.586
		9938	1907.60	4.1438	4.539
	UMTS, HSDPA	9662	1852.40	4.2095	4.523
		9800	1880.00	4.1323	4.547
		9938	1907.60	4.1397	4.632

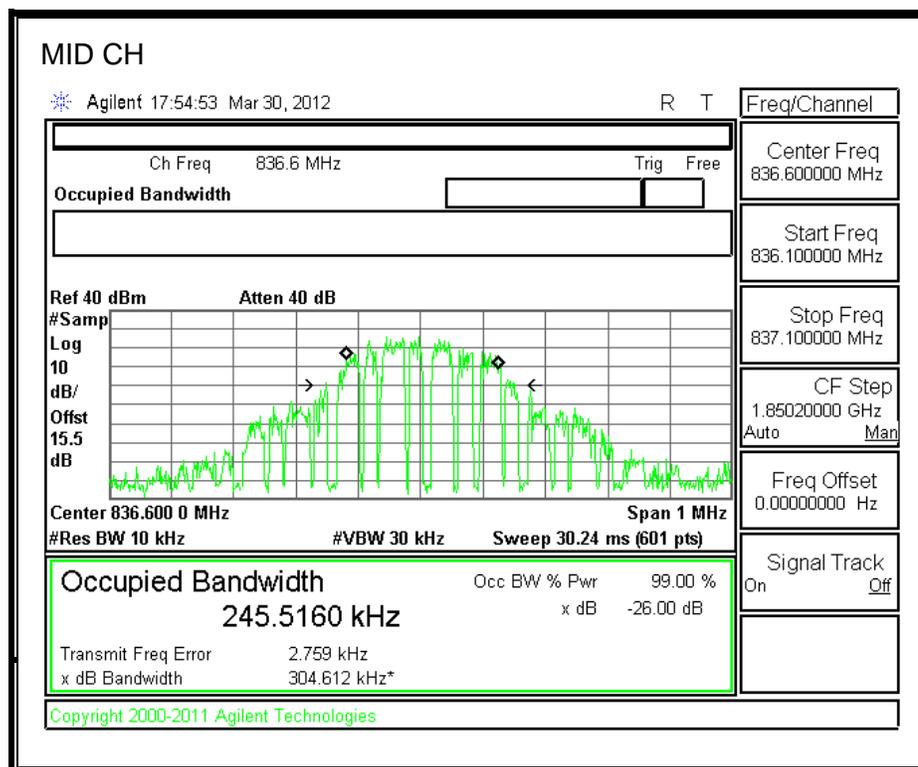
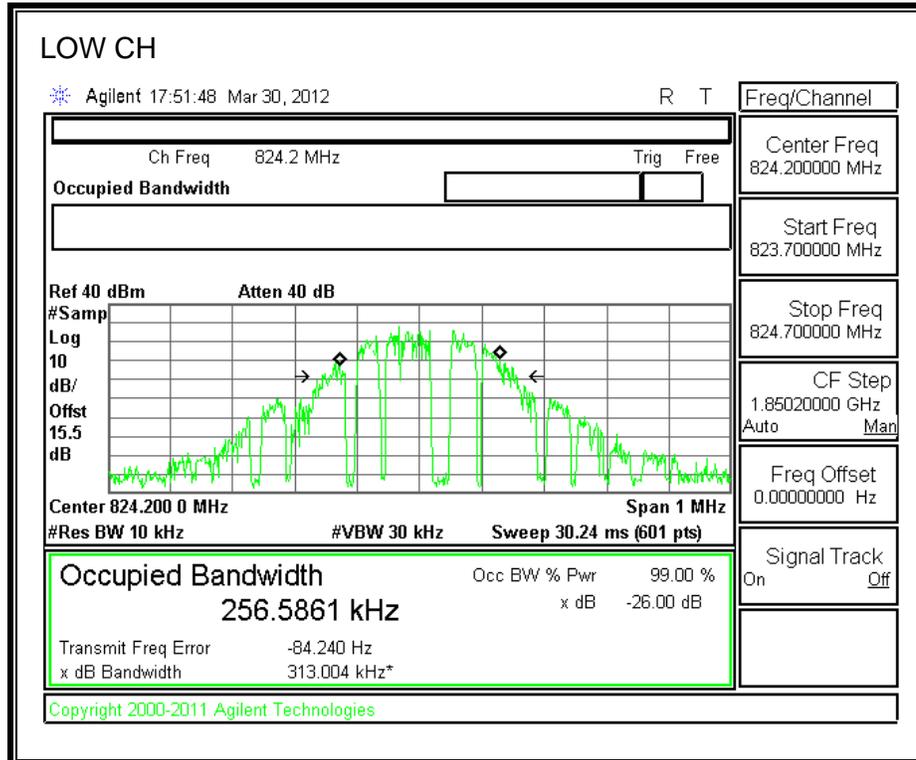
99% and 26dB BANDWIDTH

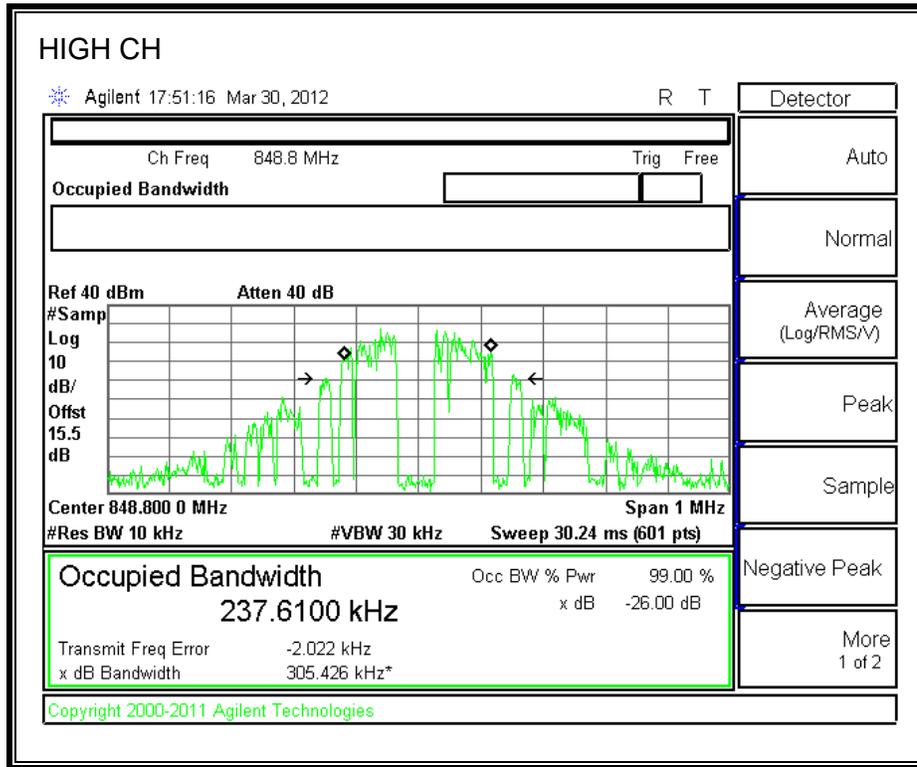
GSM850 BAND





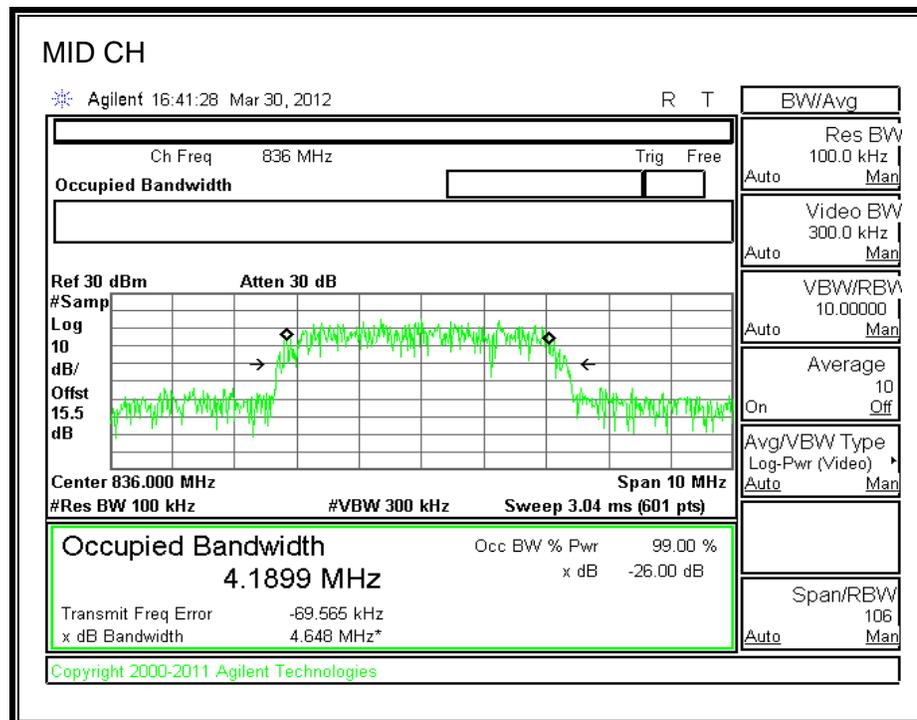
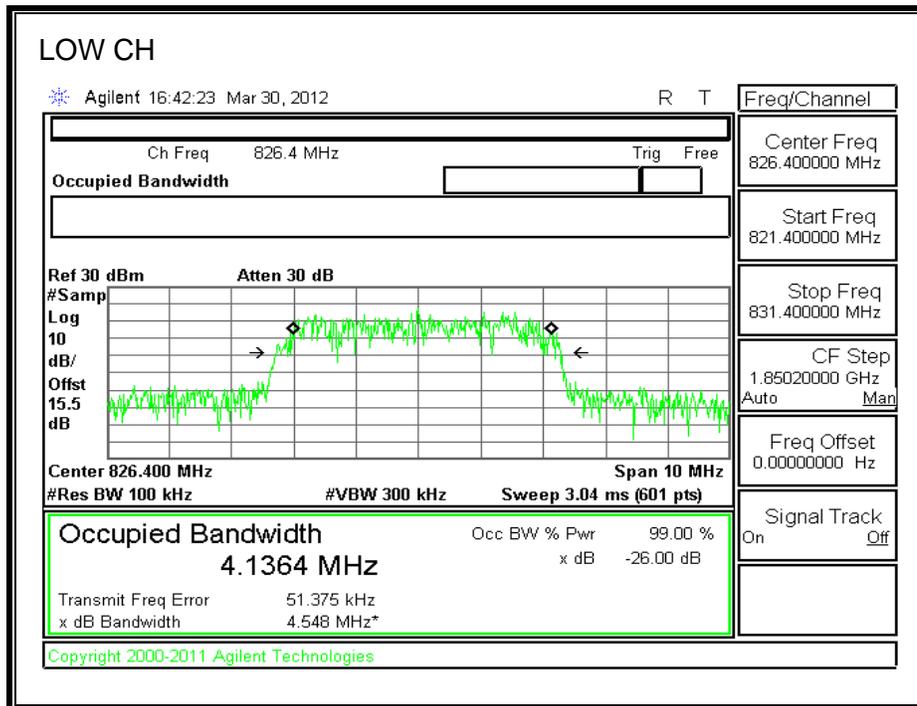
GPRS850 BAND

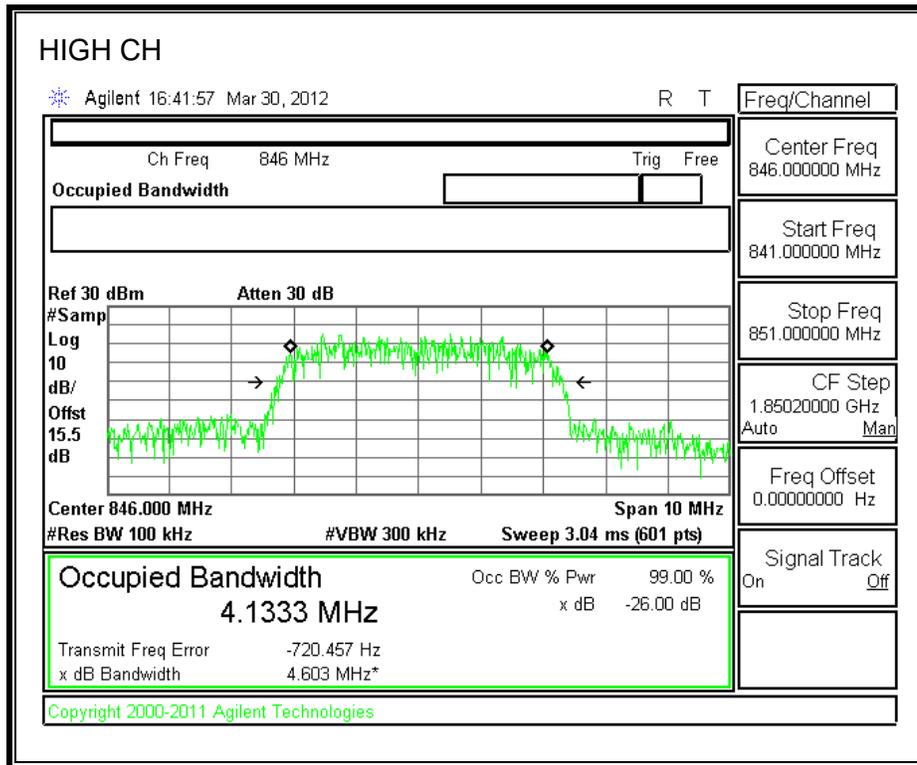




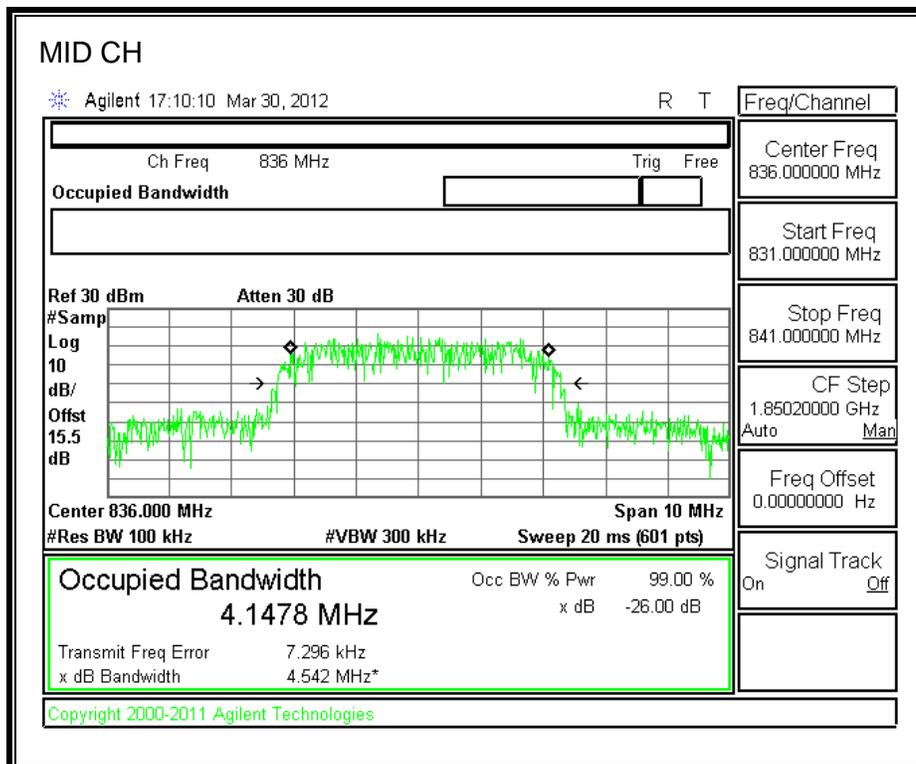
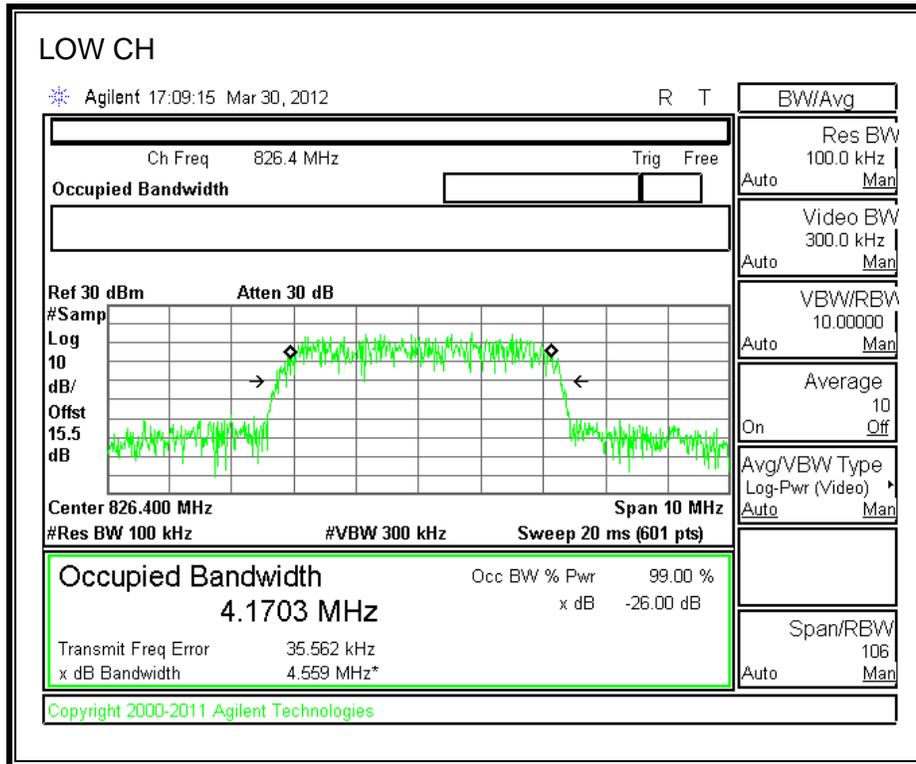
UMTS REL 99, CELL BAND

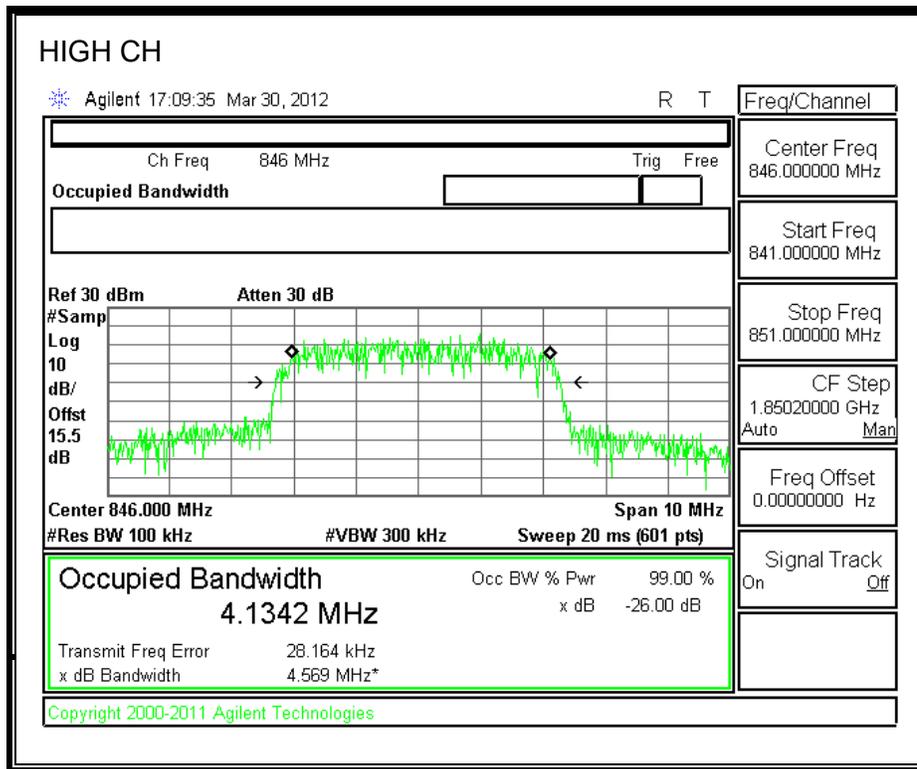
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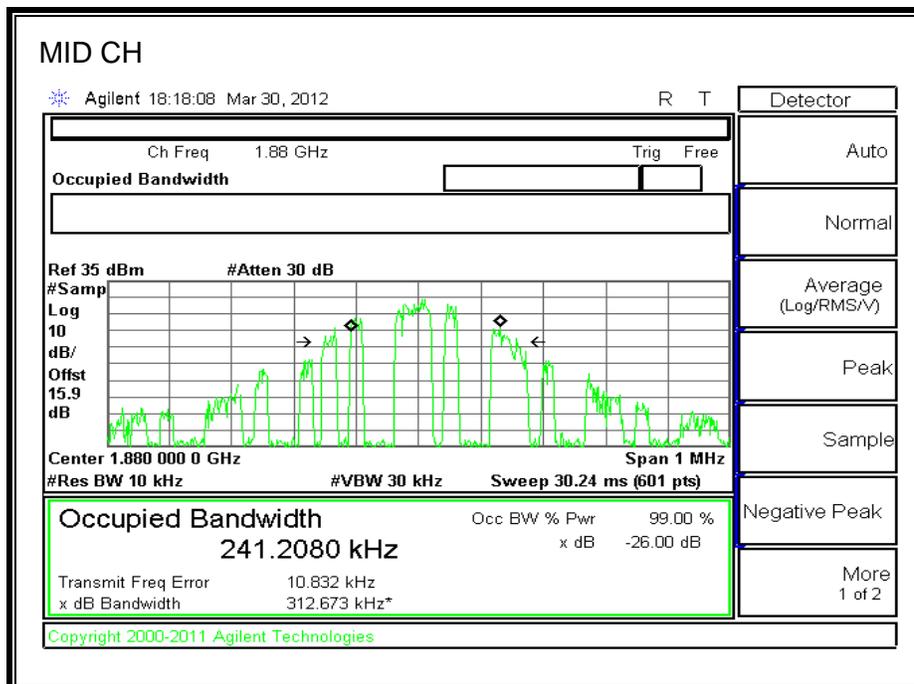
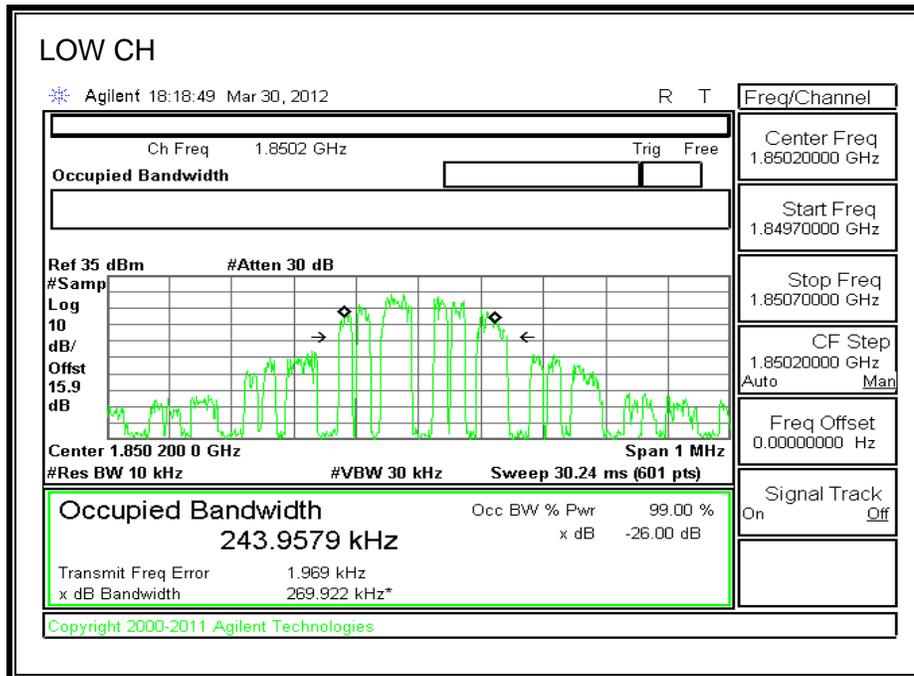


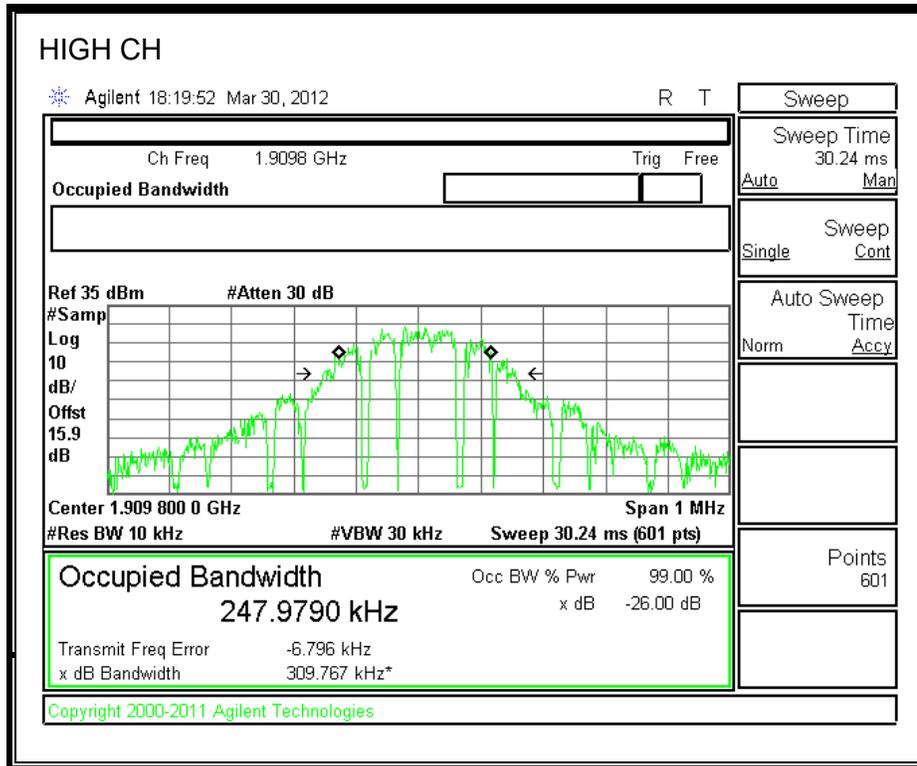
HSDPA, CELL BAND



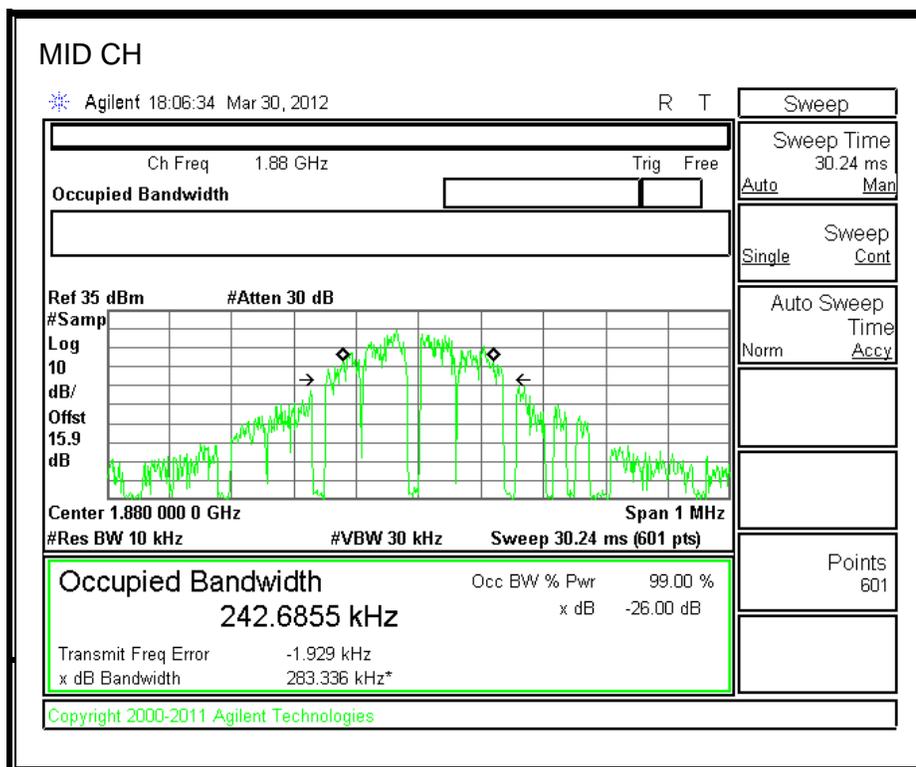
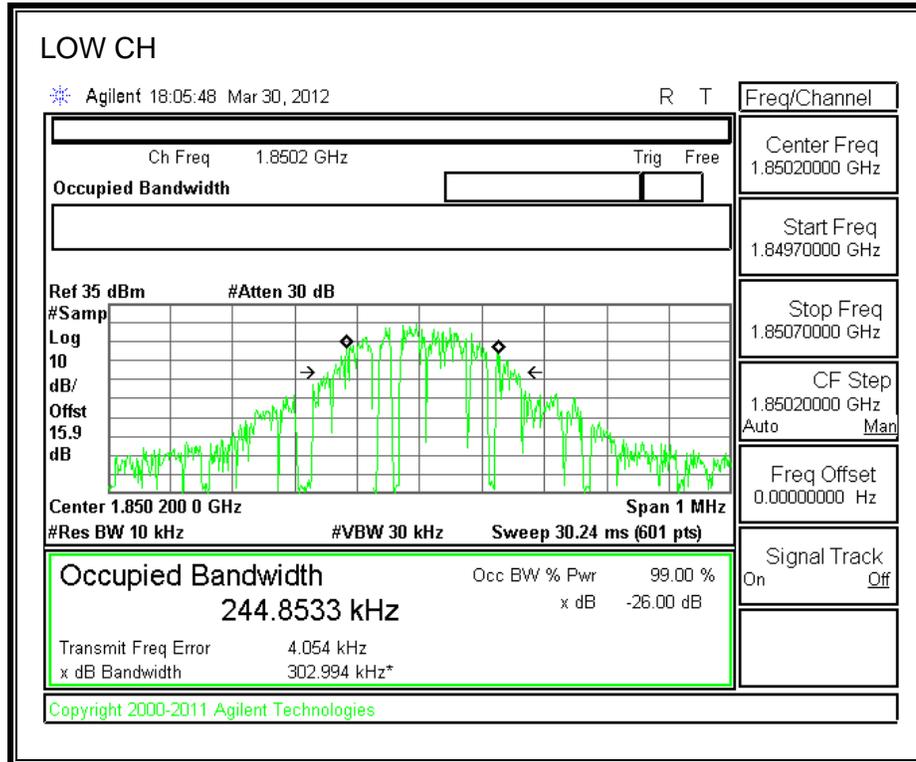


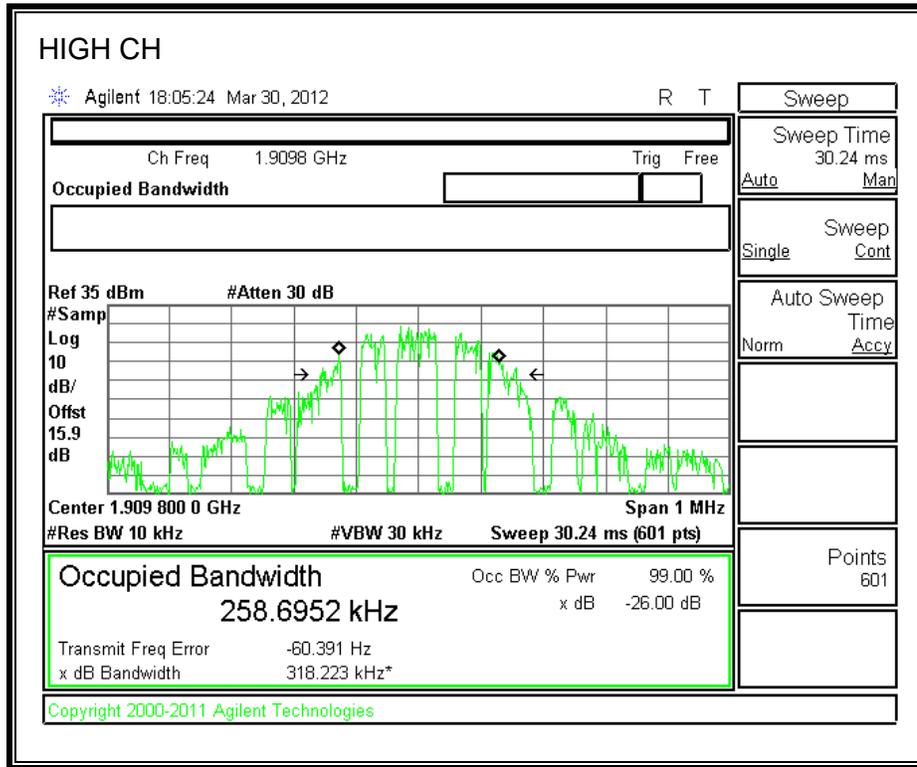
GSM1900 BAND





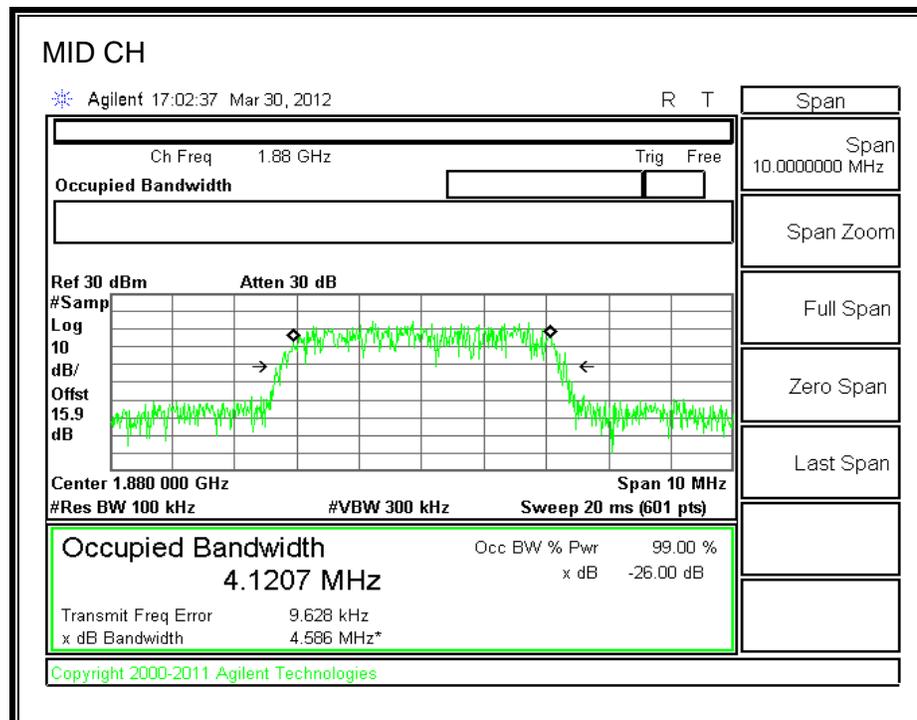
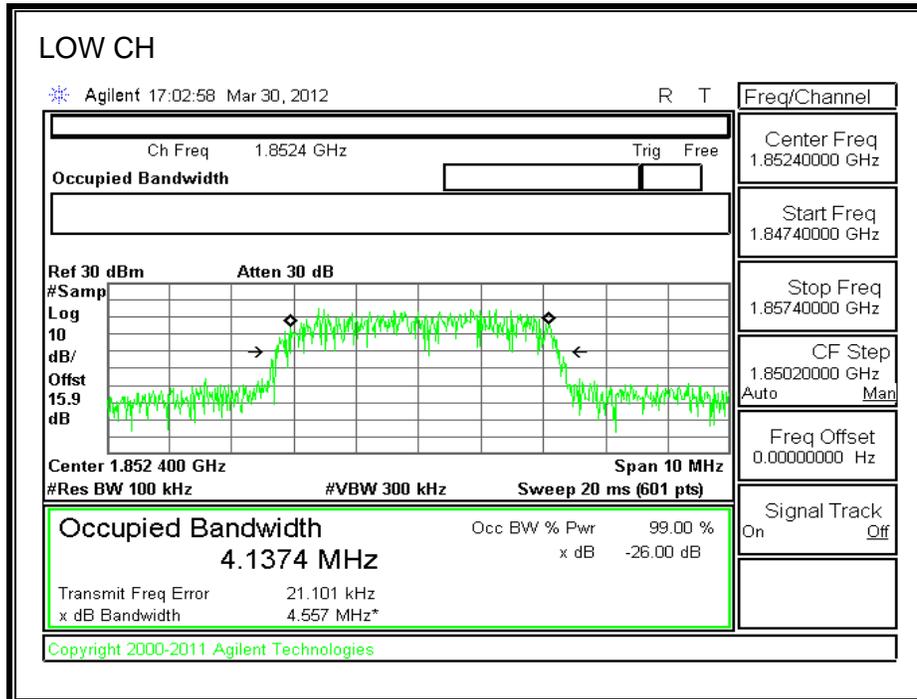
GPRS1900 BAND

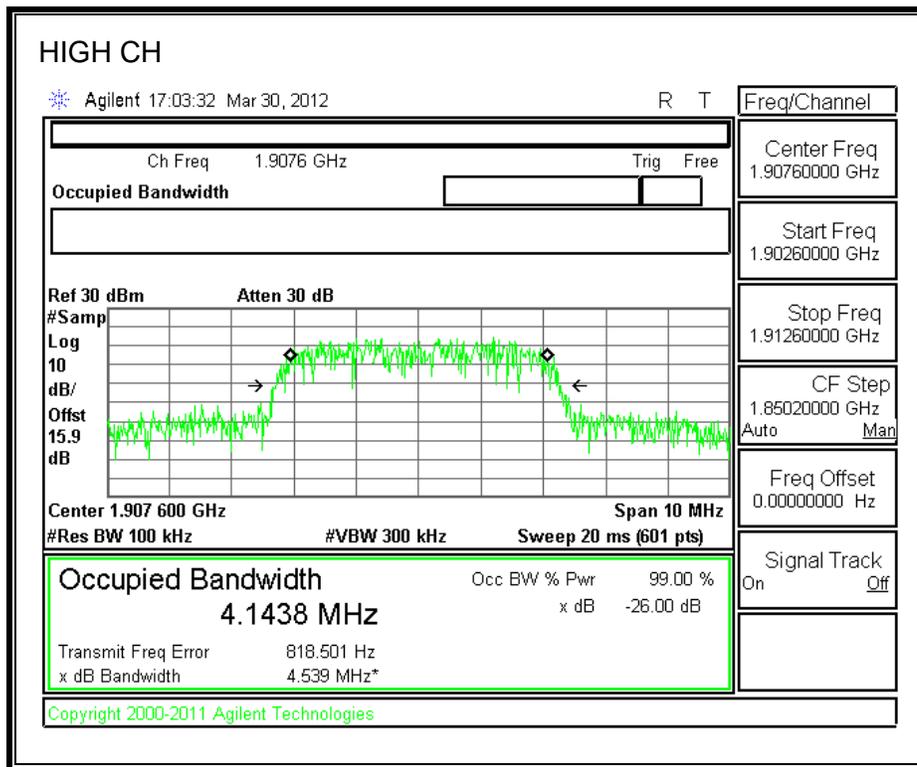




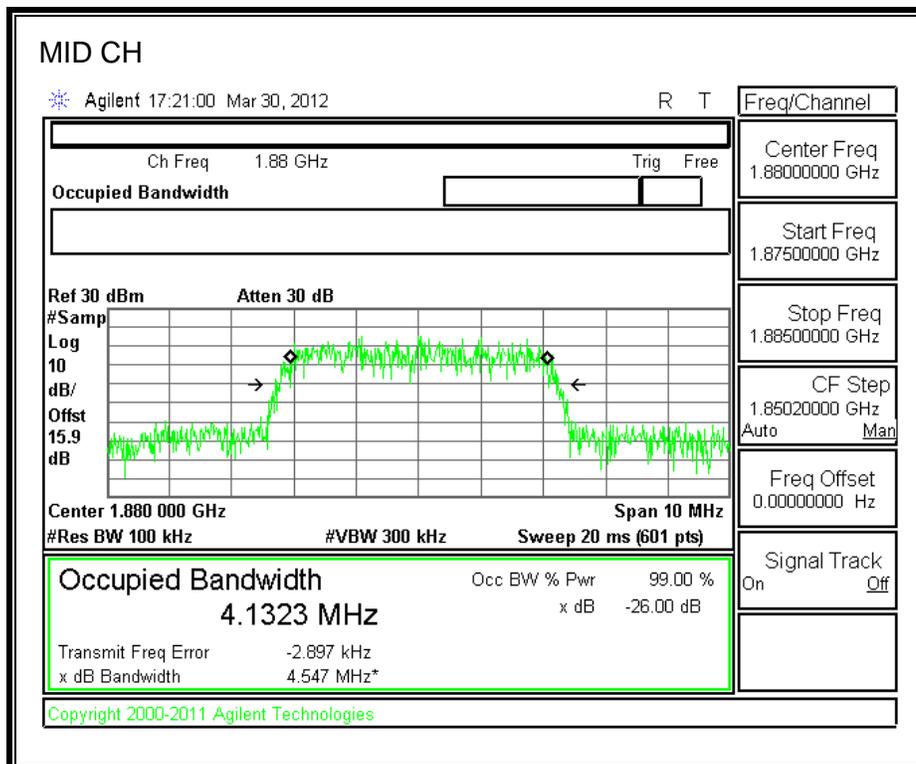
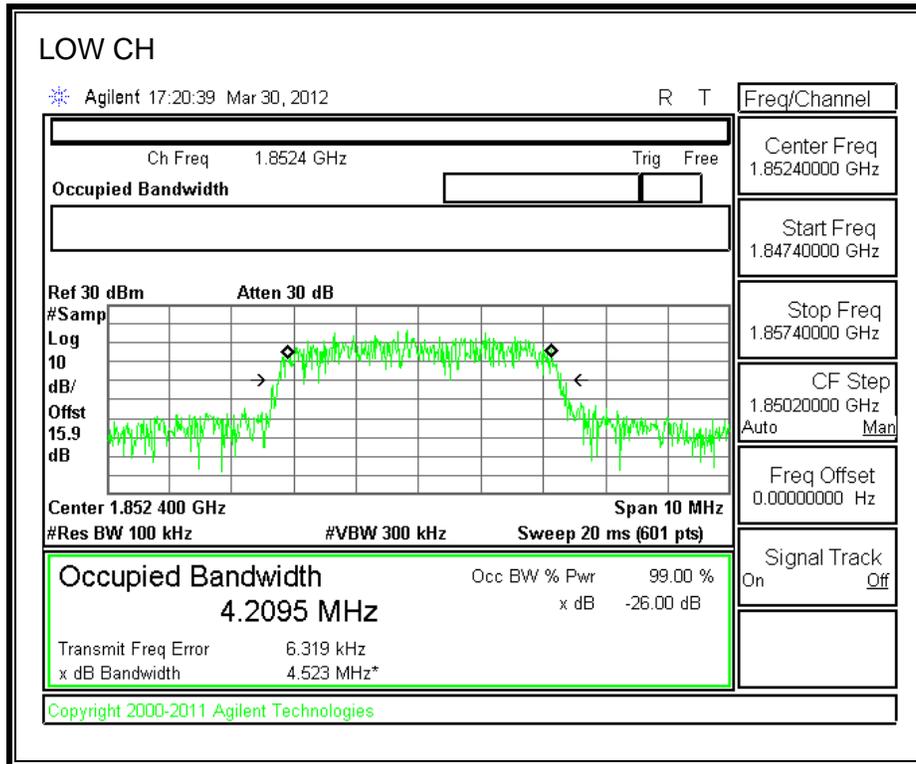
UMTS REL 99, PCS BAND

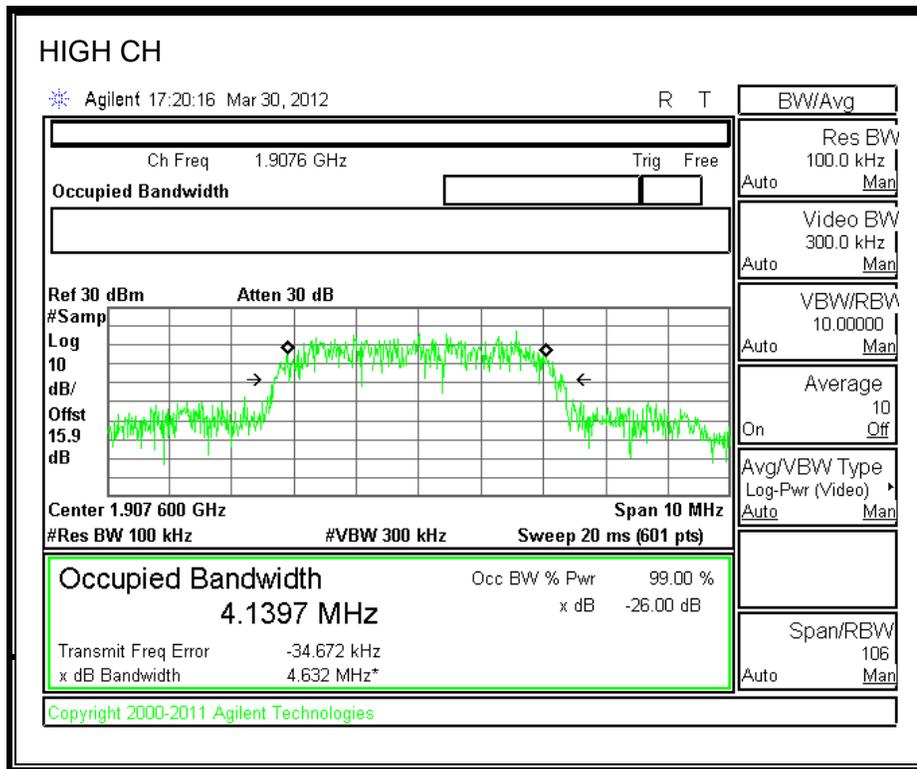
LOW CH





HSDPA, PCS BAND





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.

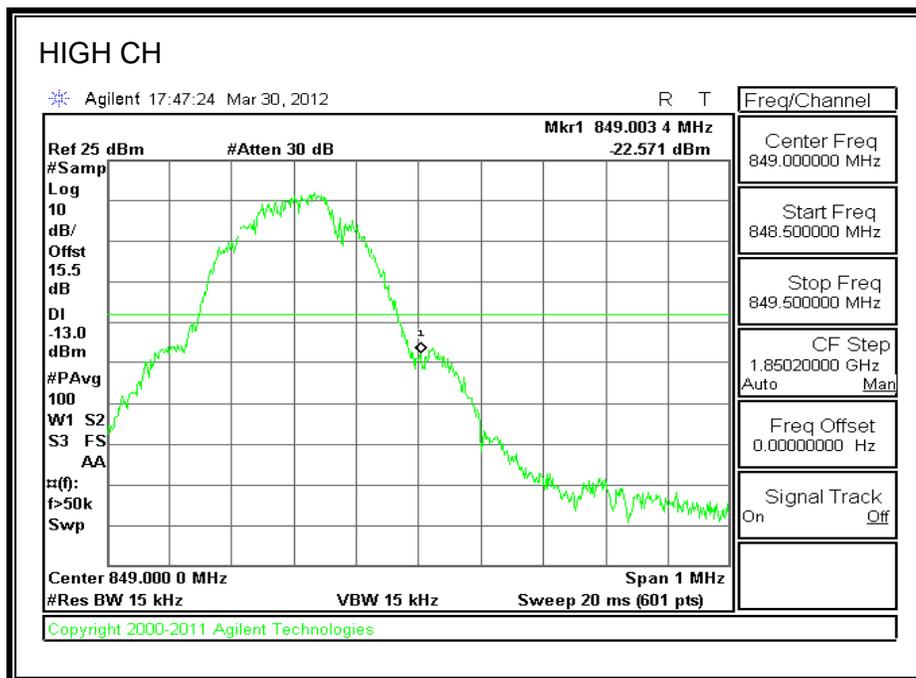
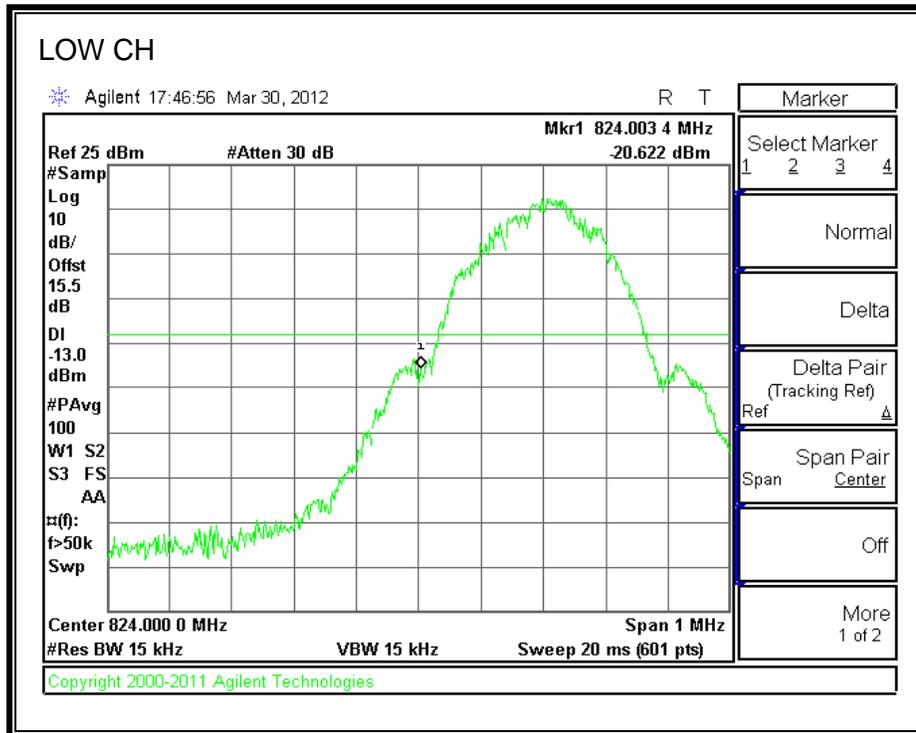
MODES TESTED

- GSM and GPRS
- UMTS REL. 99
- HSDPA REL.5

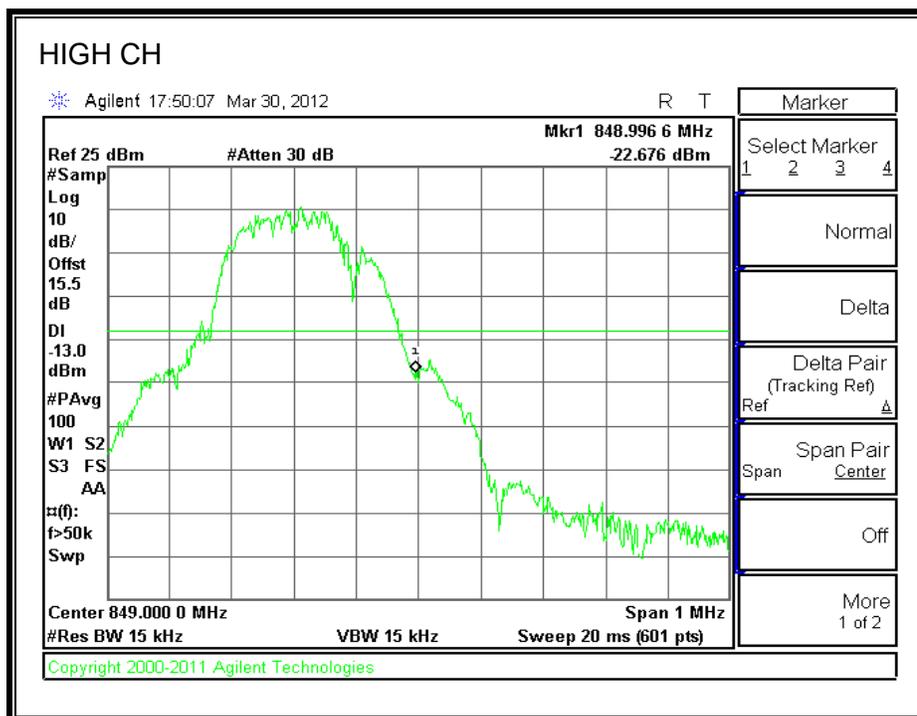
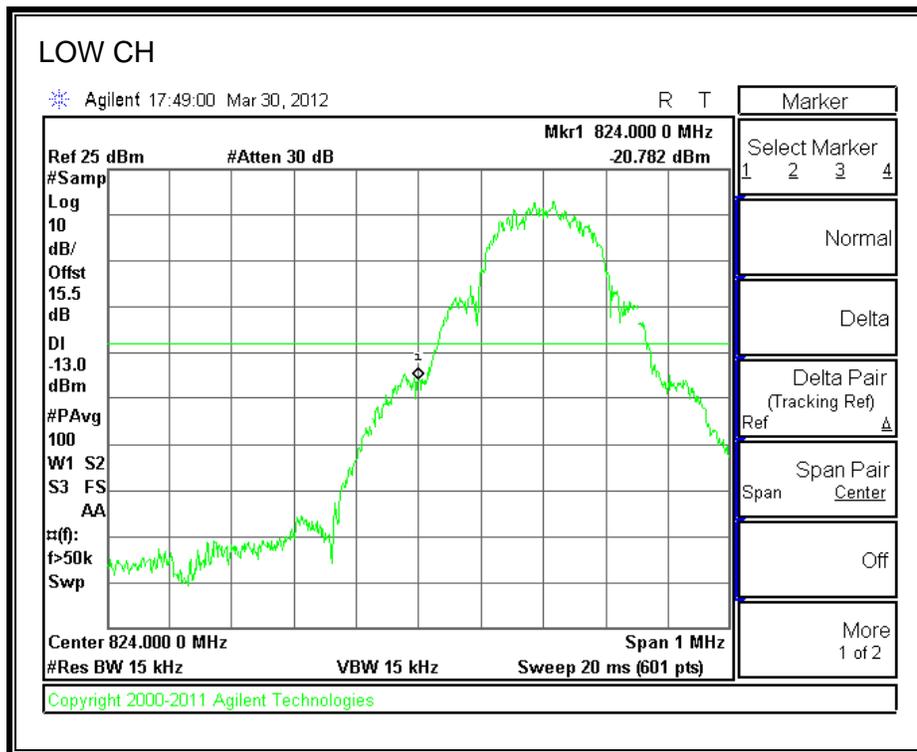
RESULTS

BANDEDGE

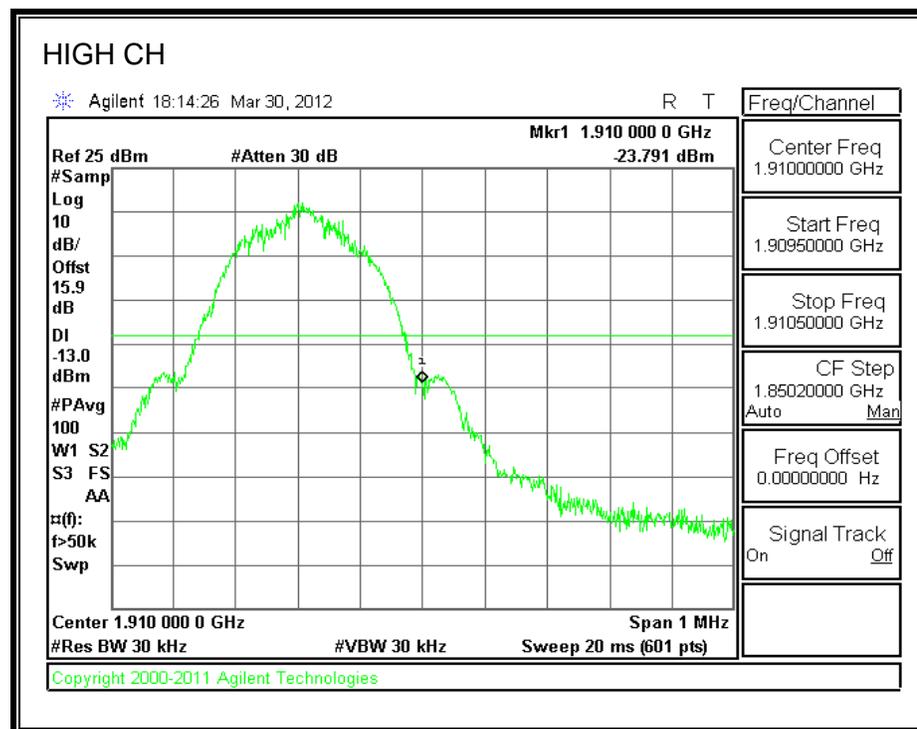
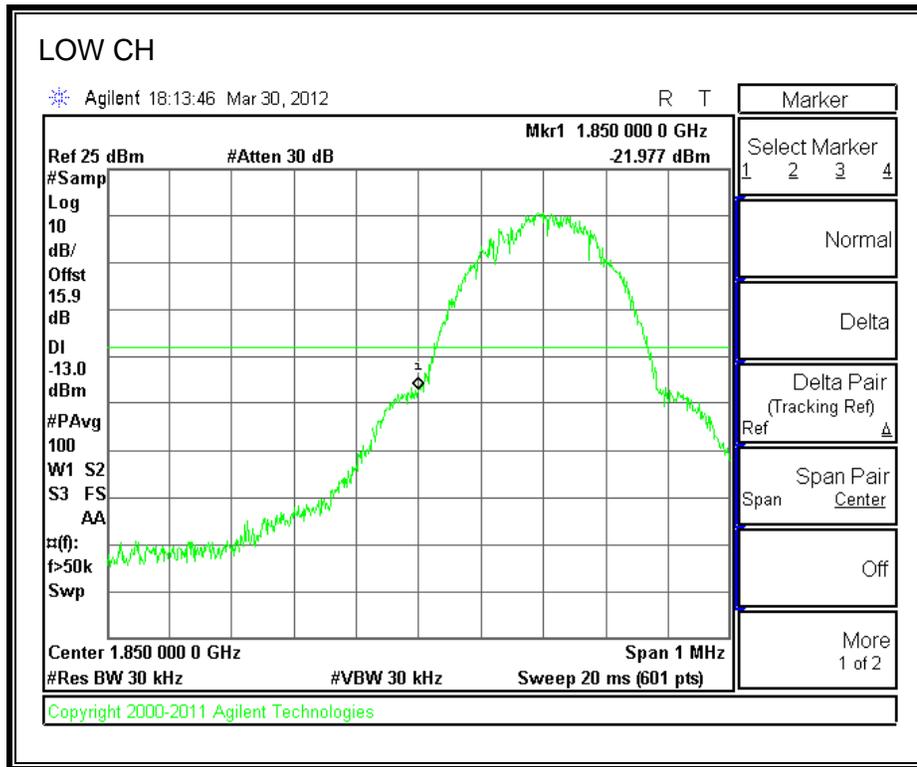
GSM850 BAND



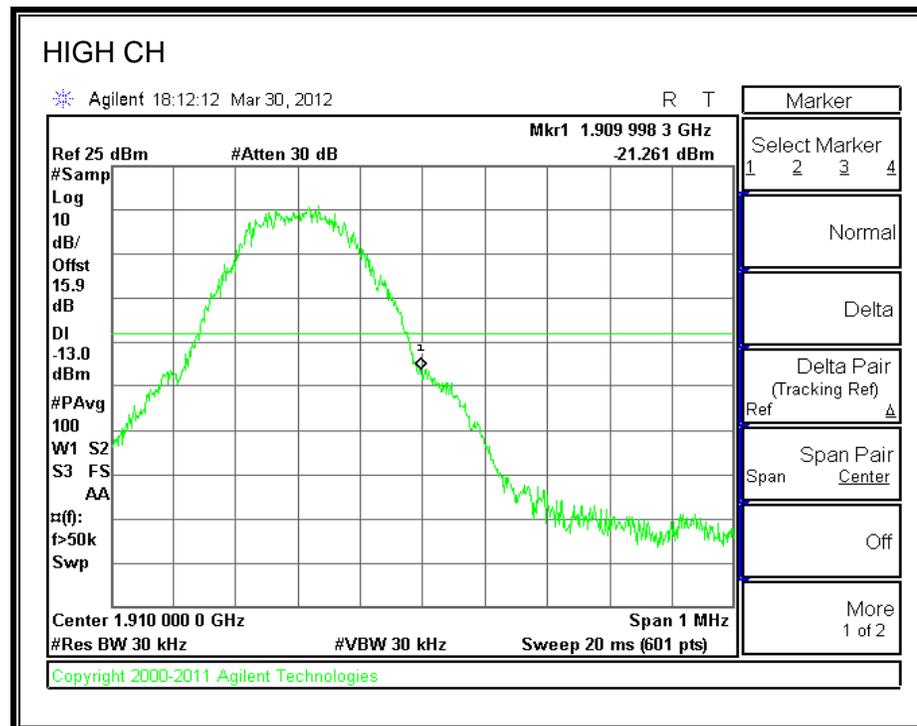
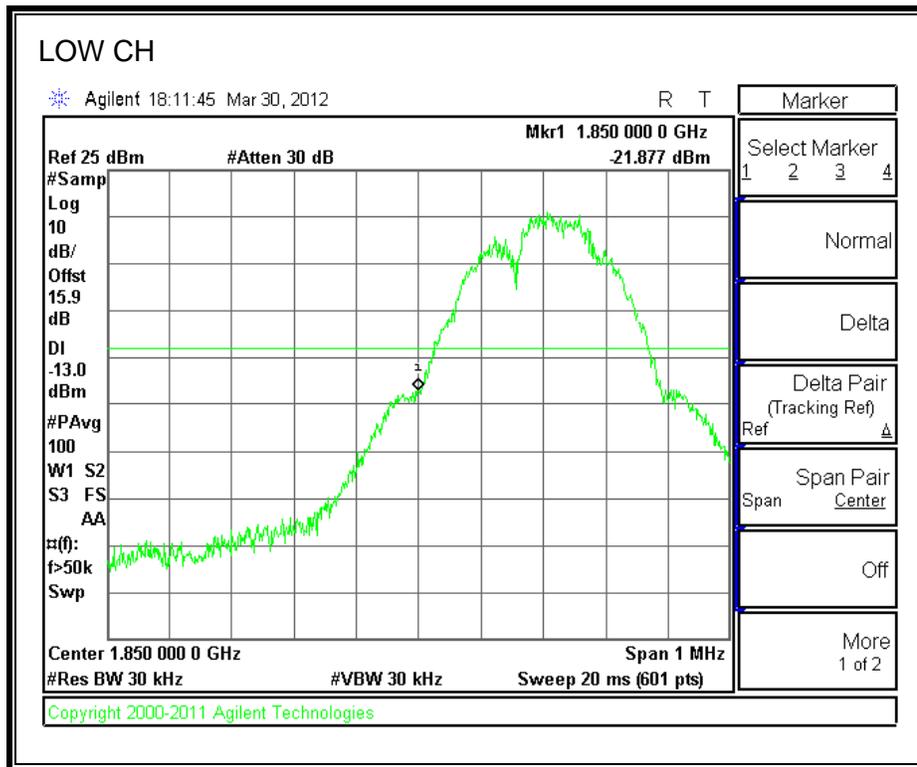
GPRS850 BAND



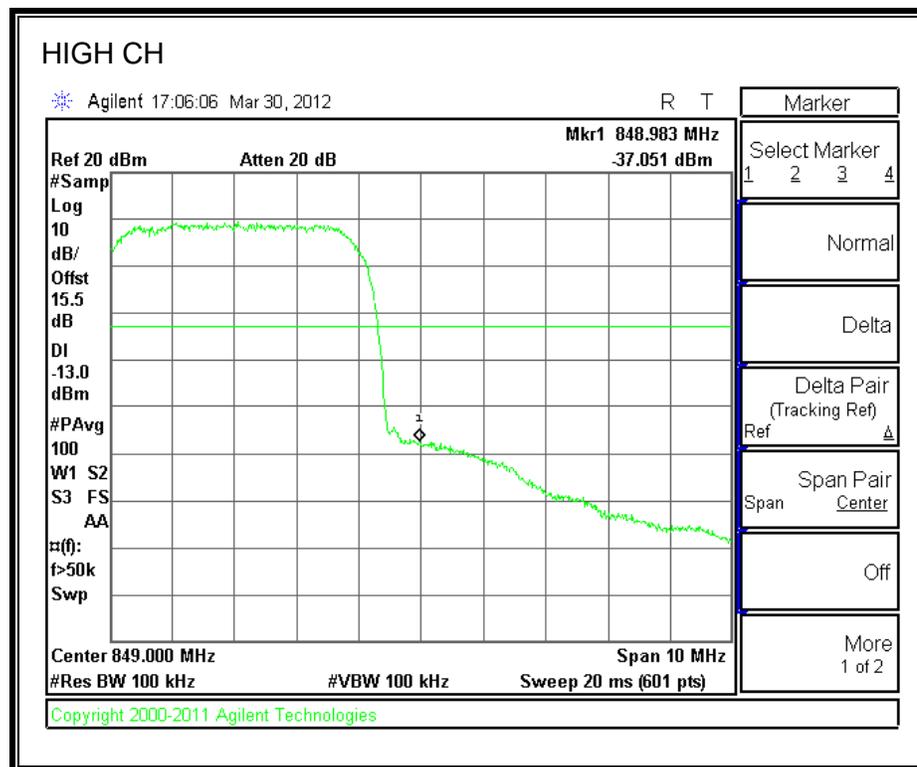
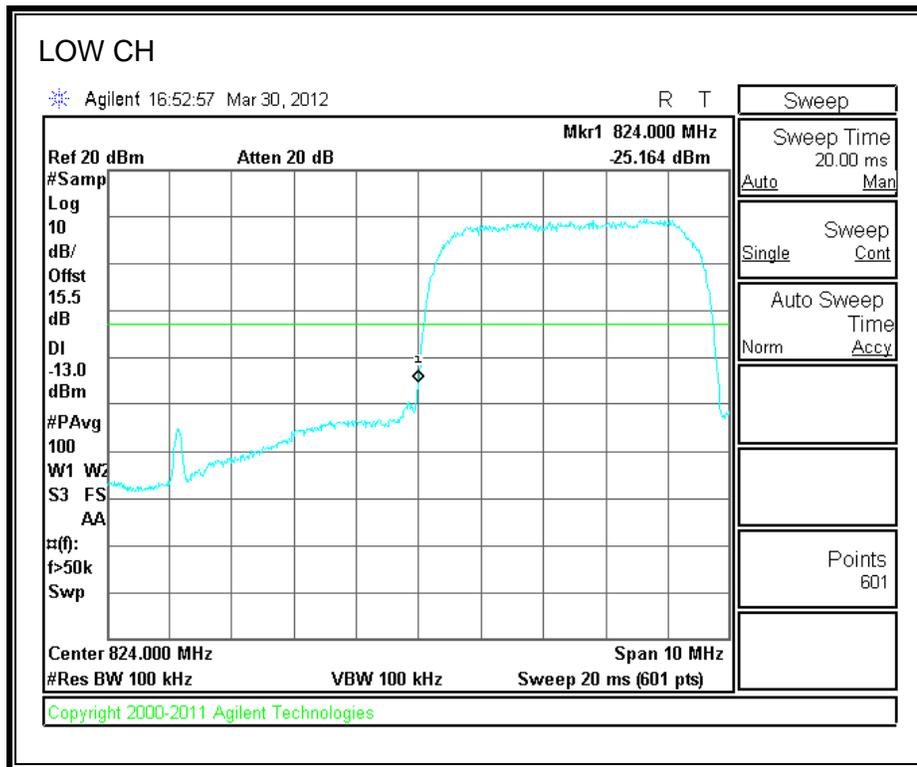
GSM1900 BAND



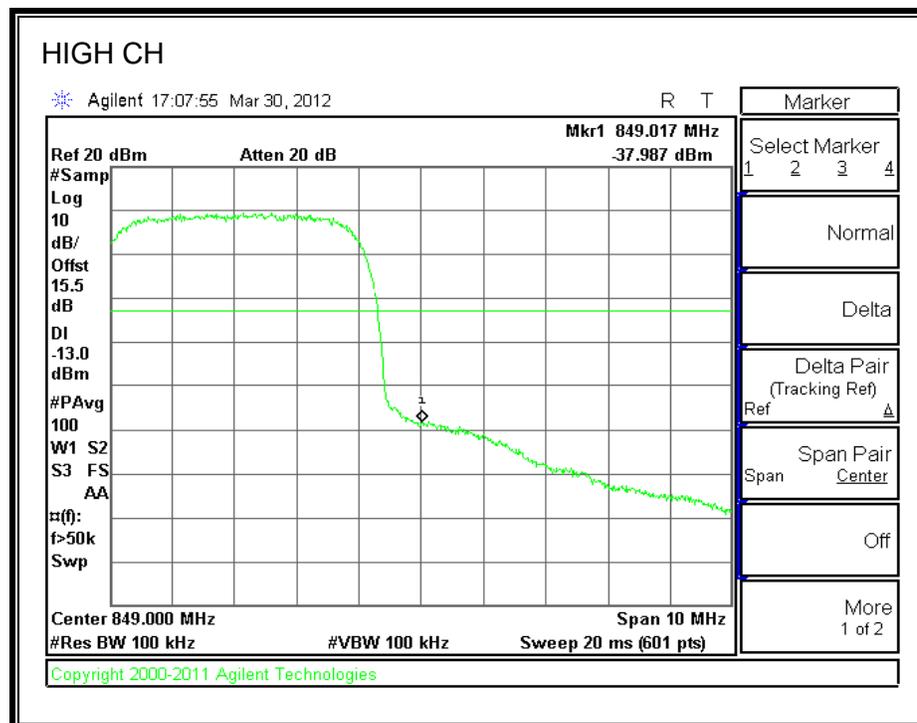
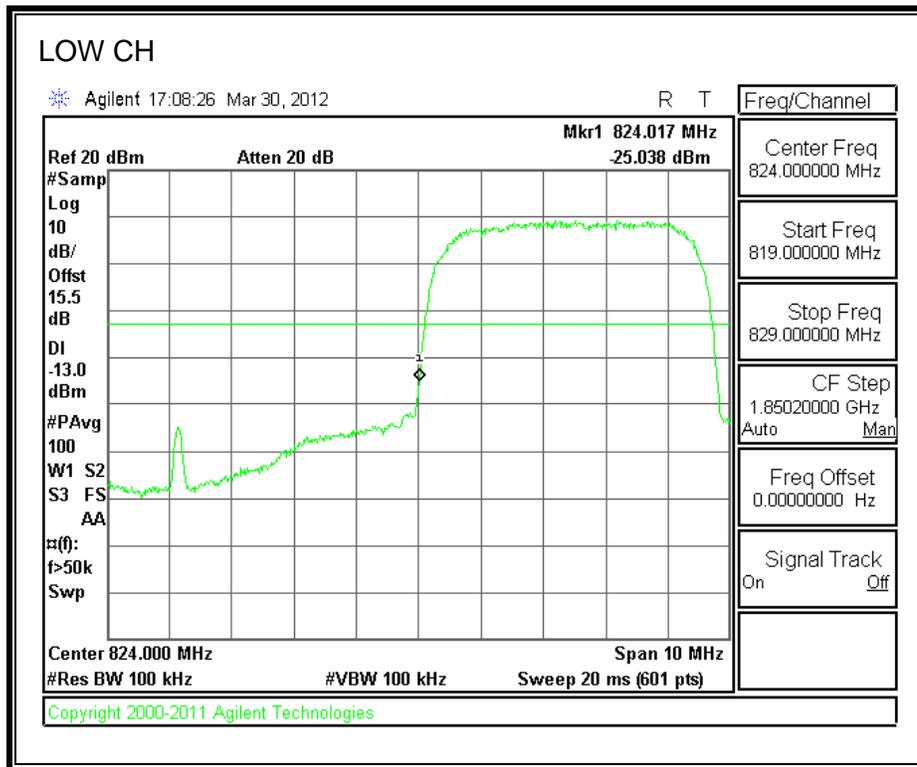
GPRS1900 BAND



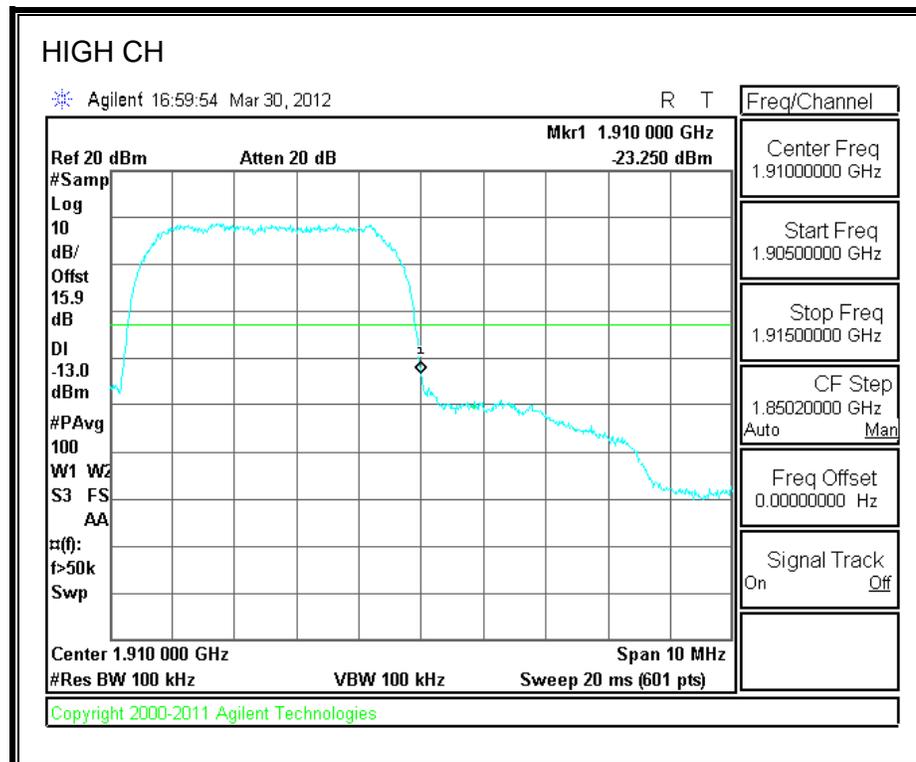
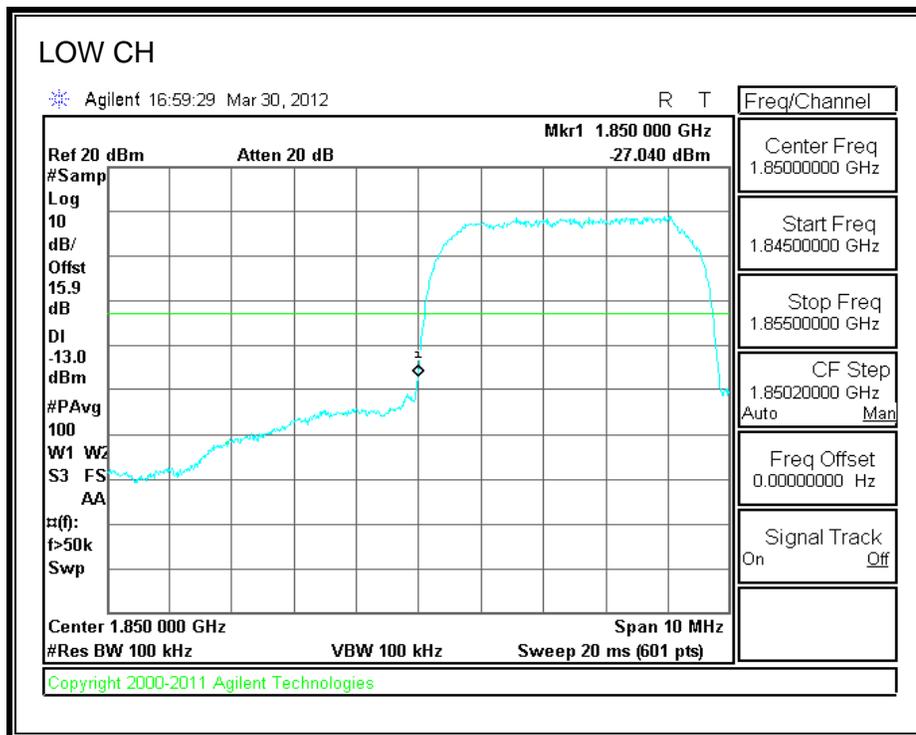
UMTS REL 99 CELL BAND



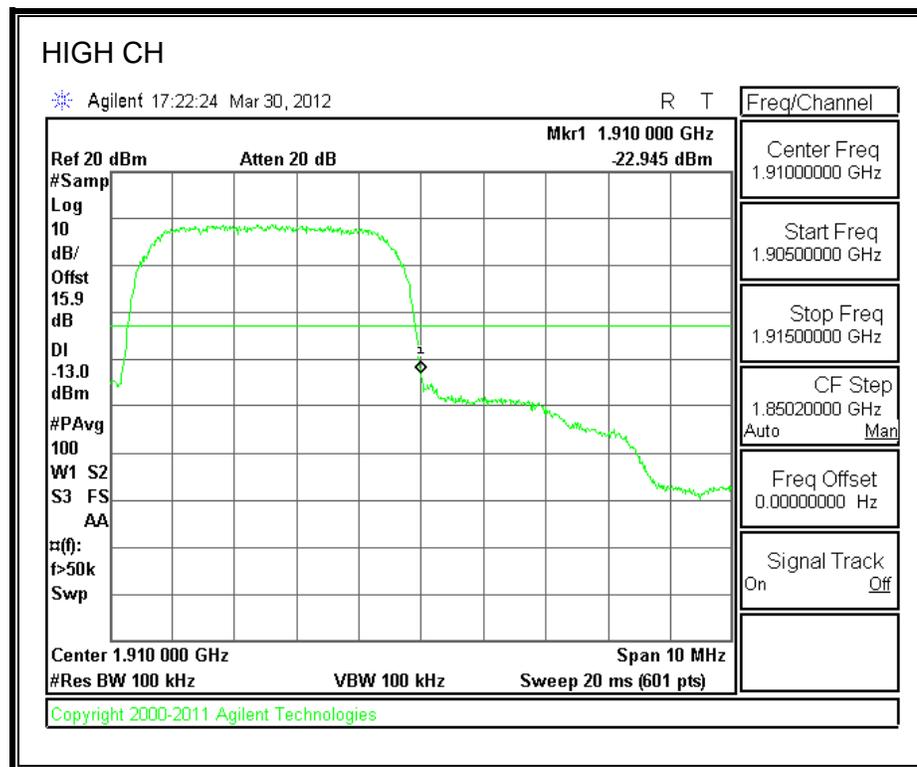
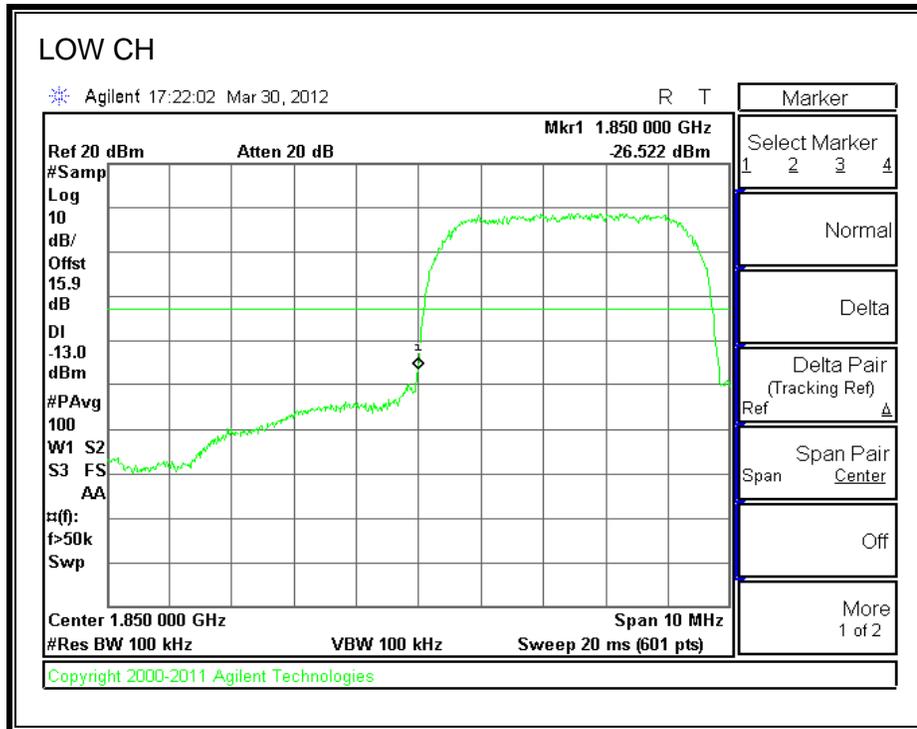
UMTS HSDPA, CELL BAND



UMTS REL 99 PCS BAND



UMTS HSDPA, PCS BAND



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:

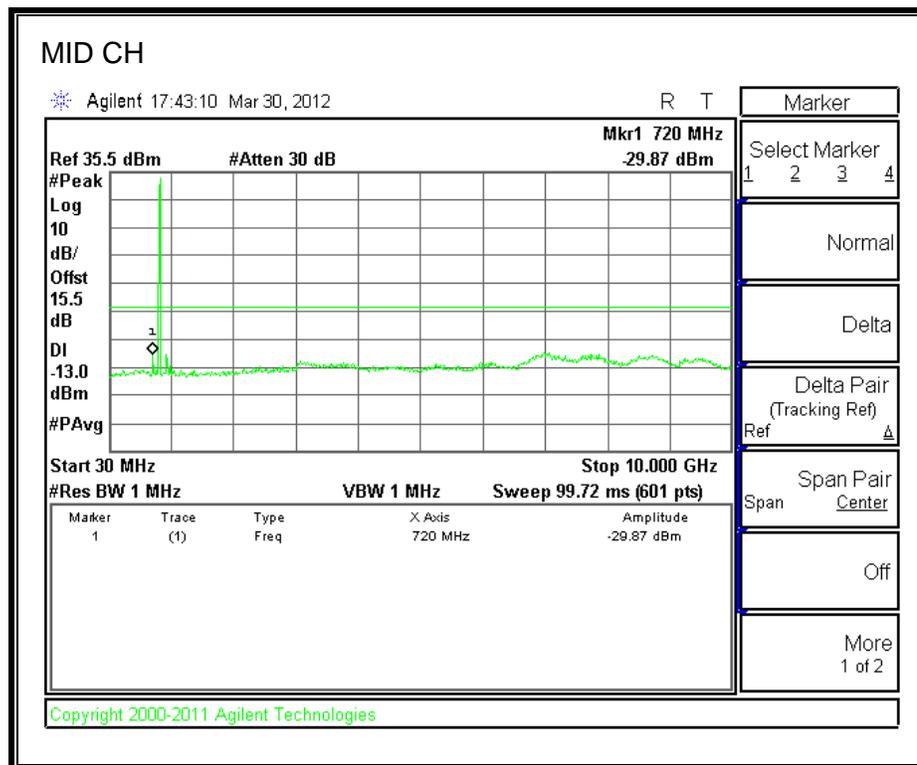
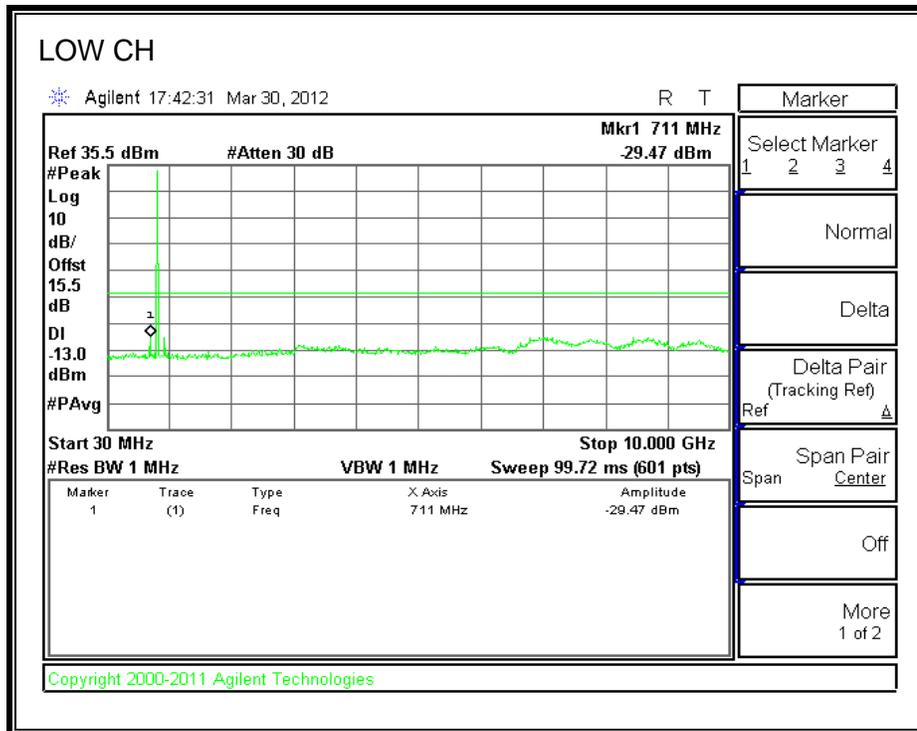
- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

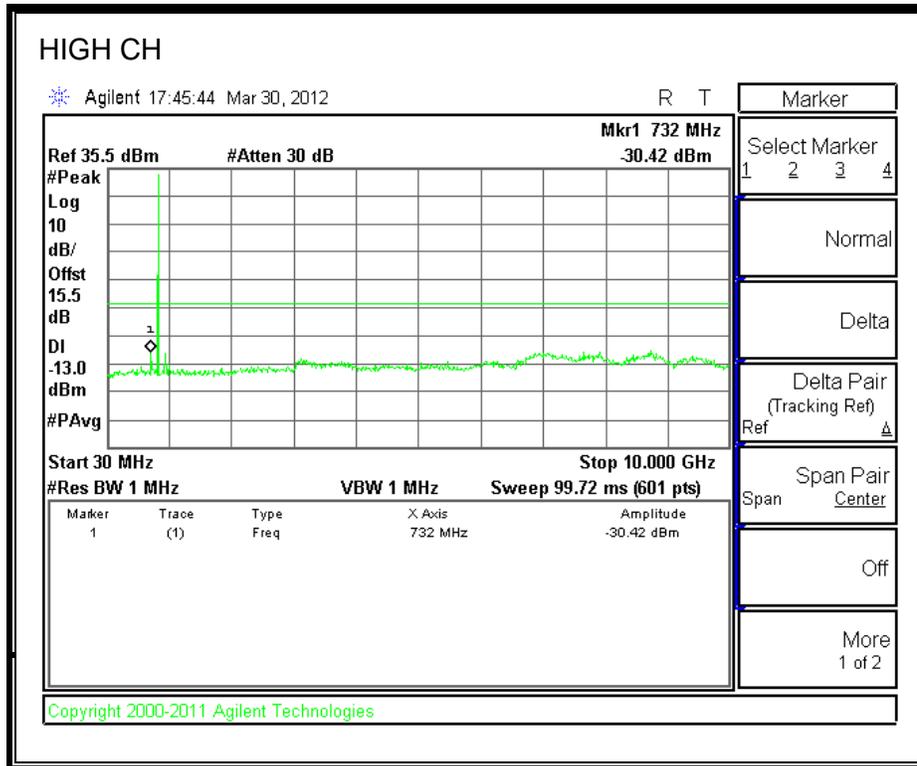
MODES TESTED

- GSM and GPRS
- UMTS REL. 99
- HSDPA REL. 5

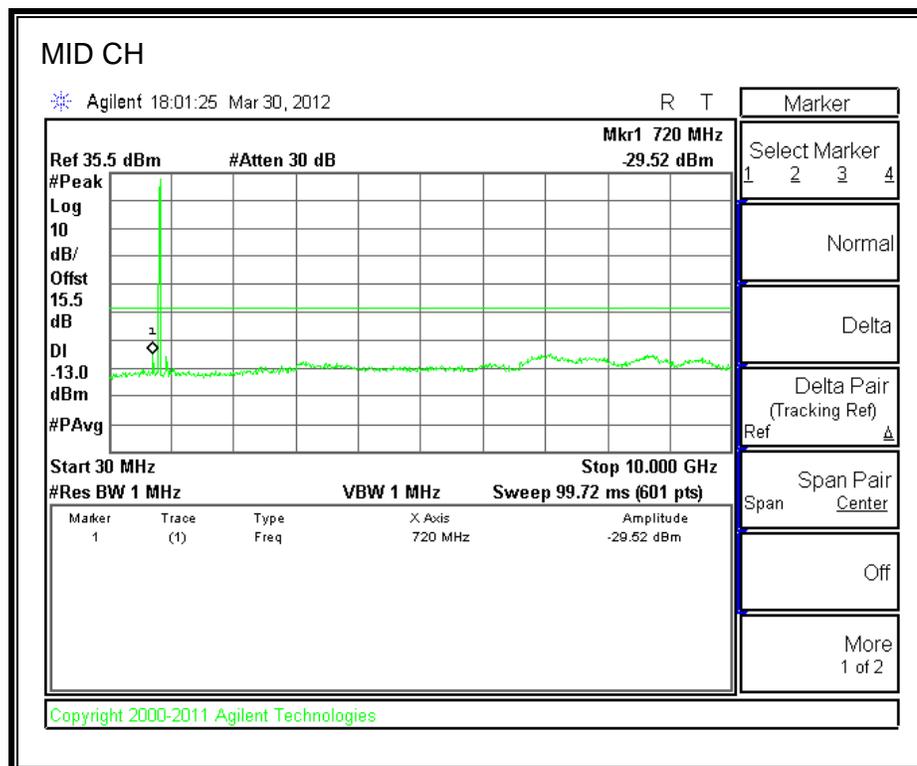
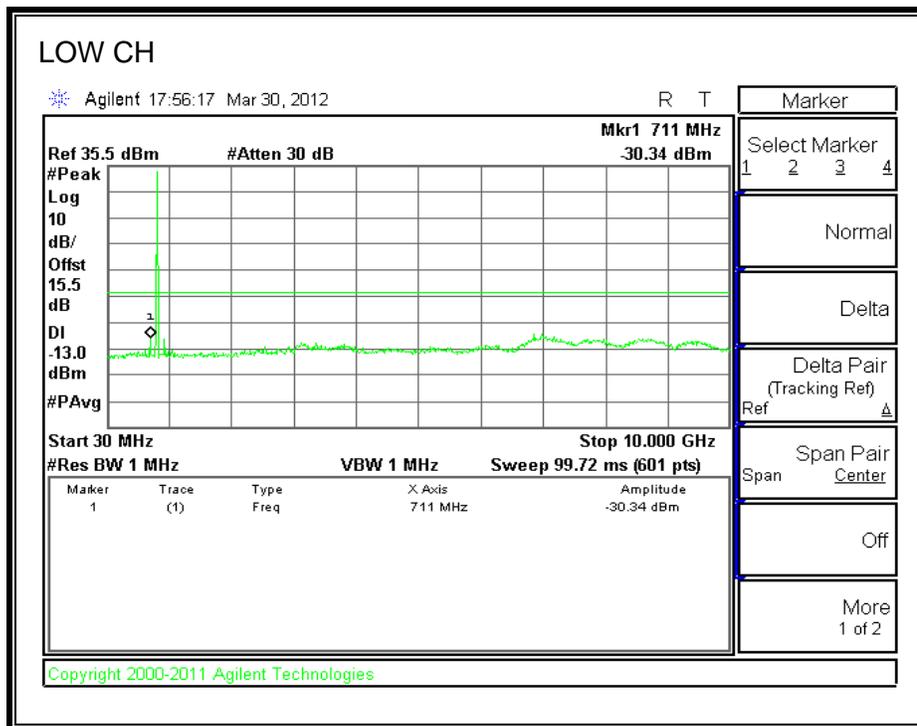
RESULTS

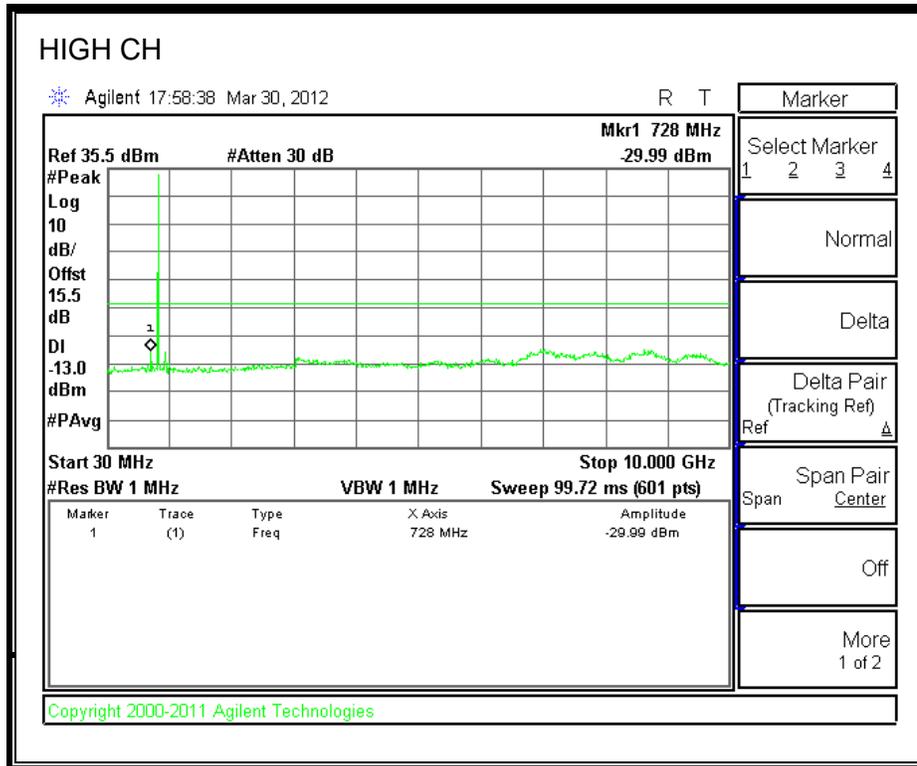
GSM850 BAND



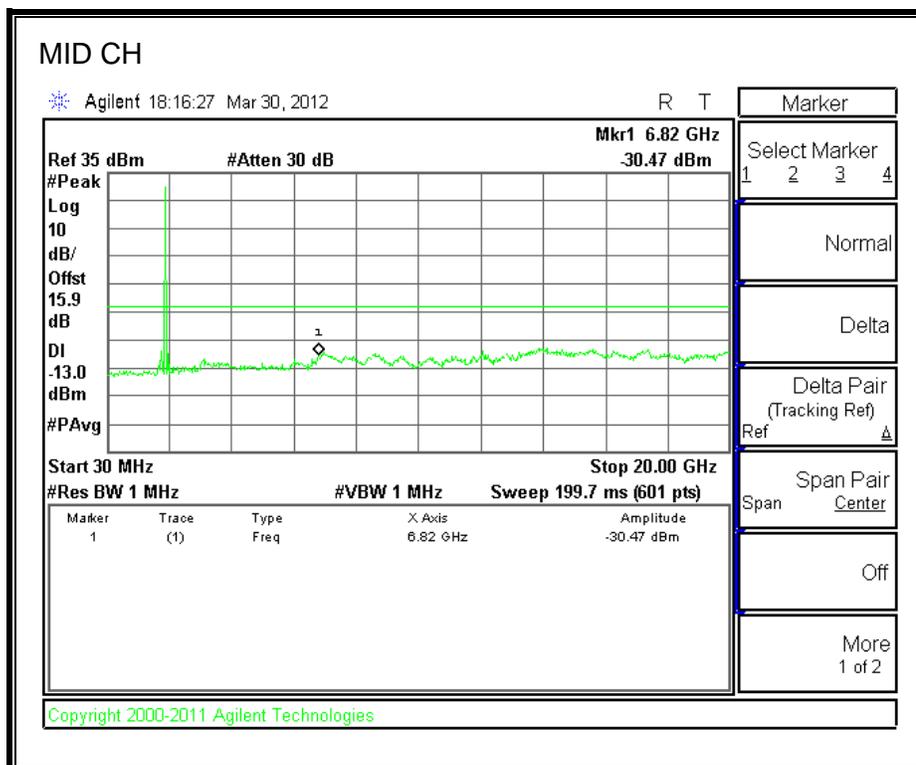
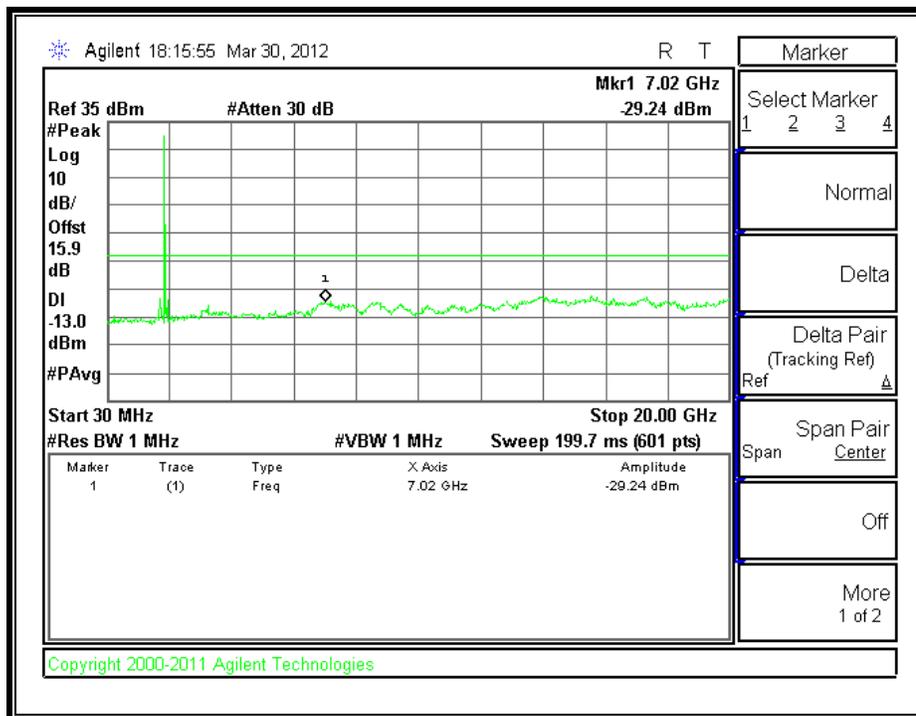


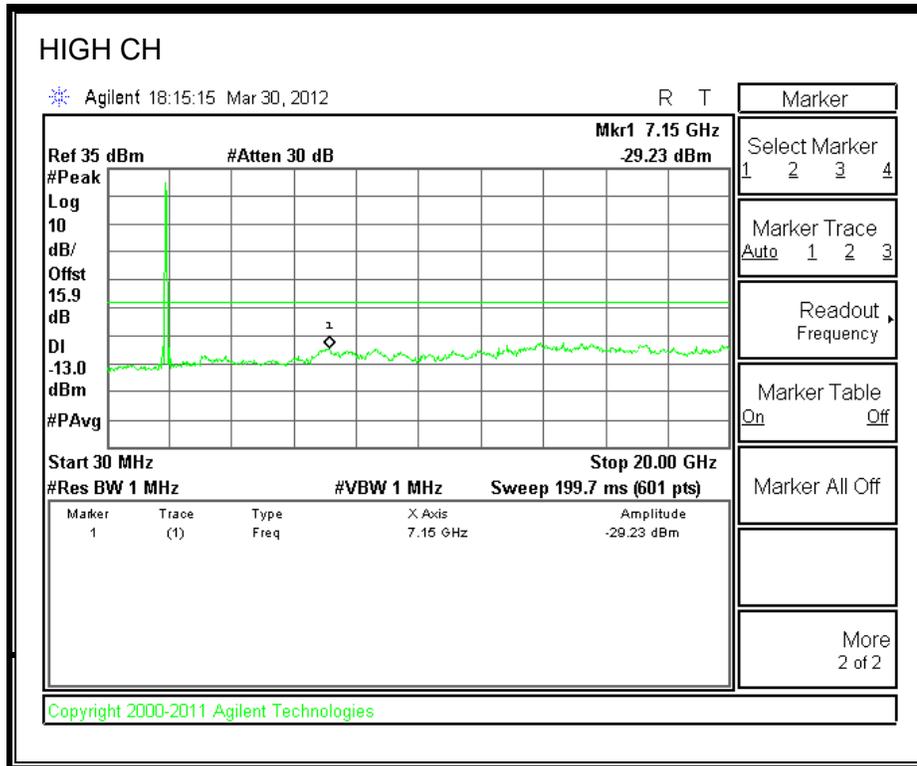
GPRS850 BAND



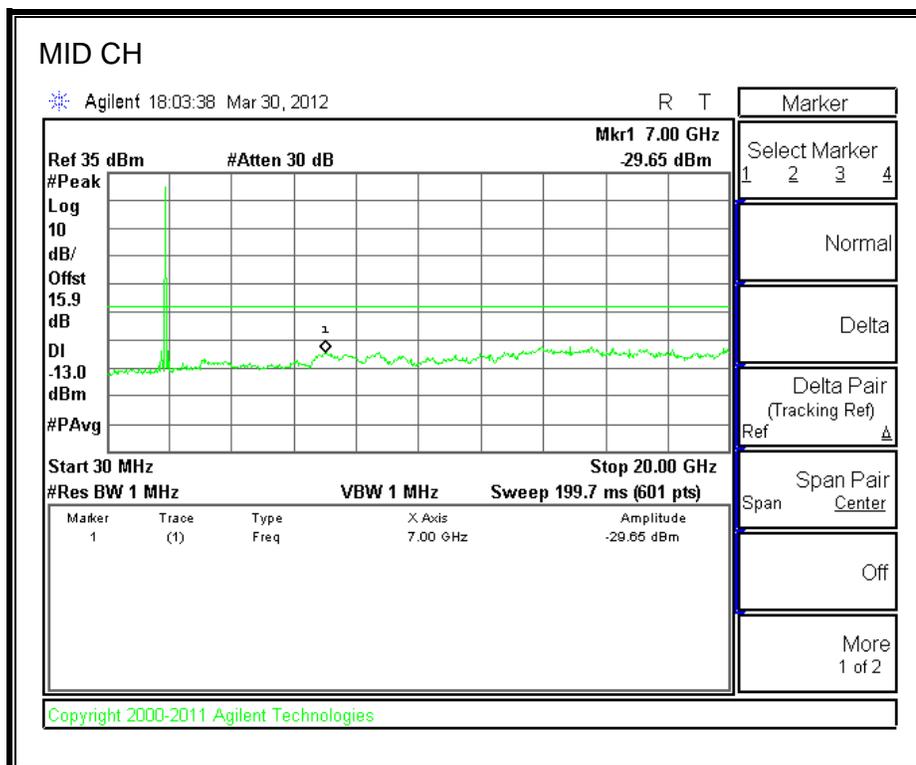
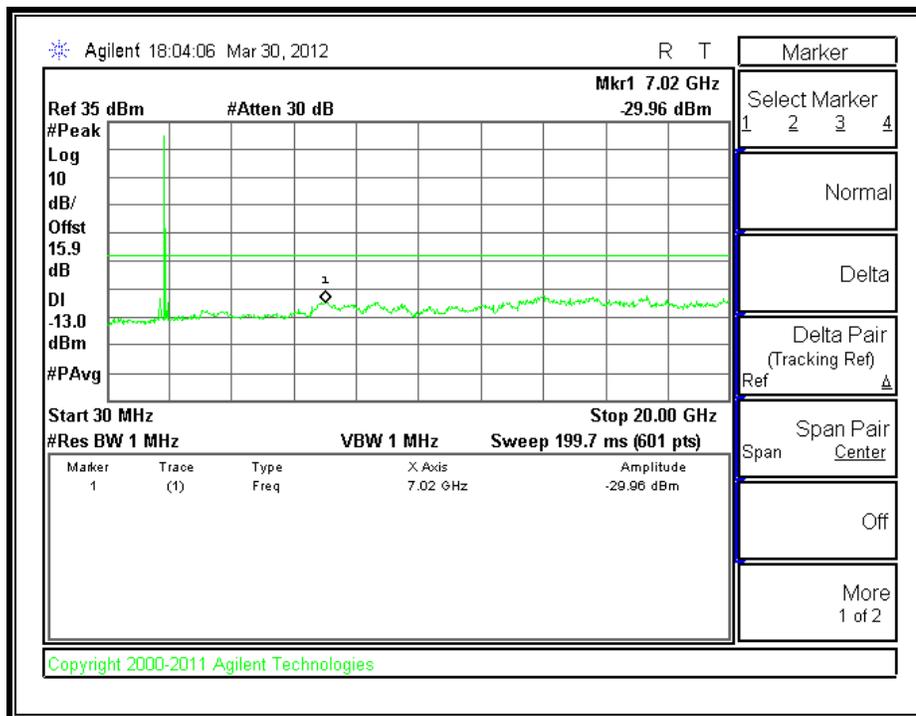


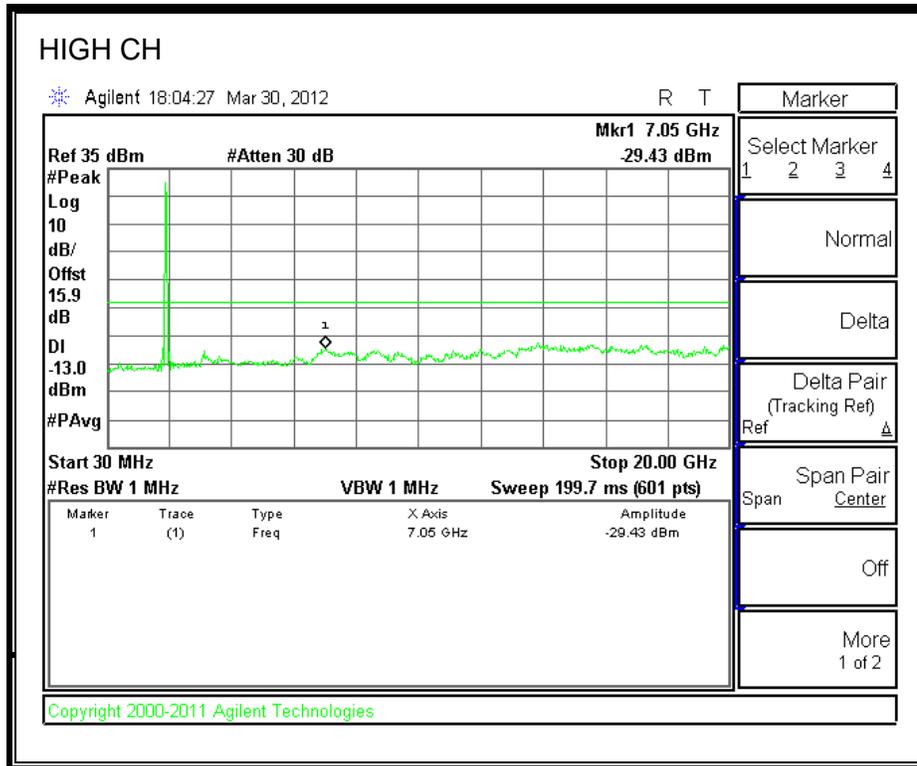
GSM1900 BAND



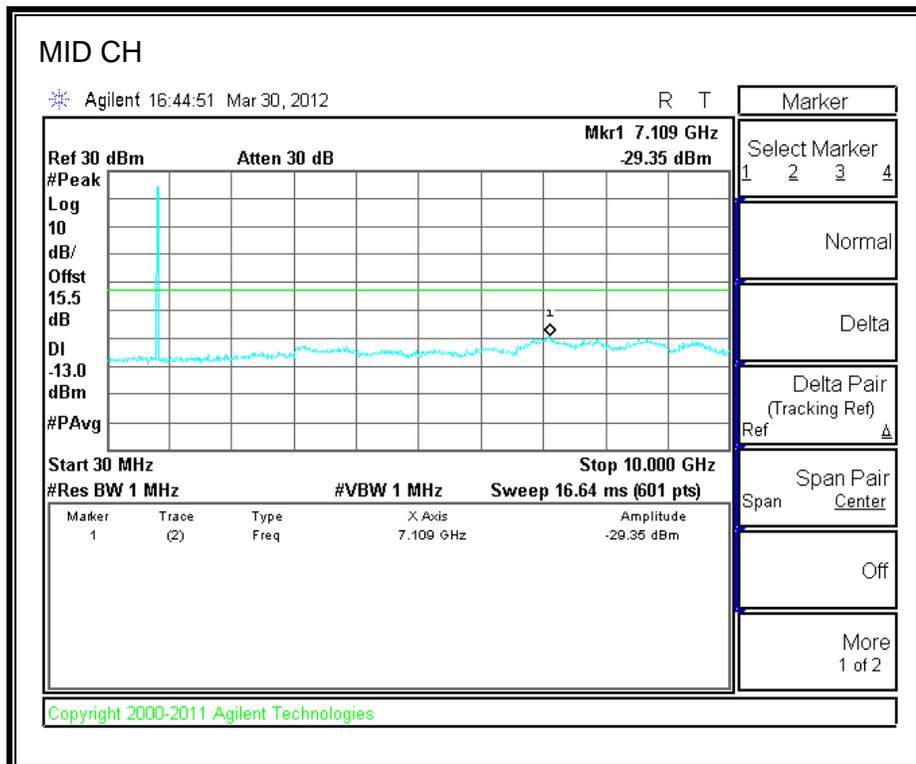
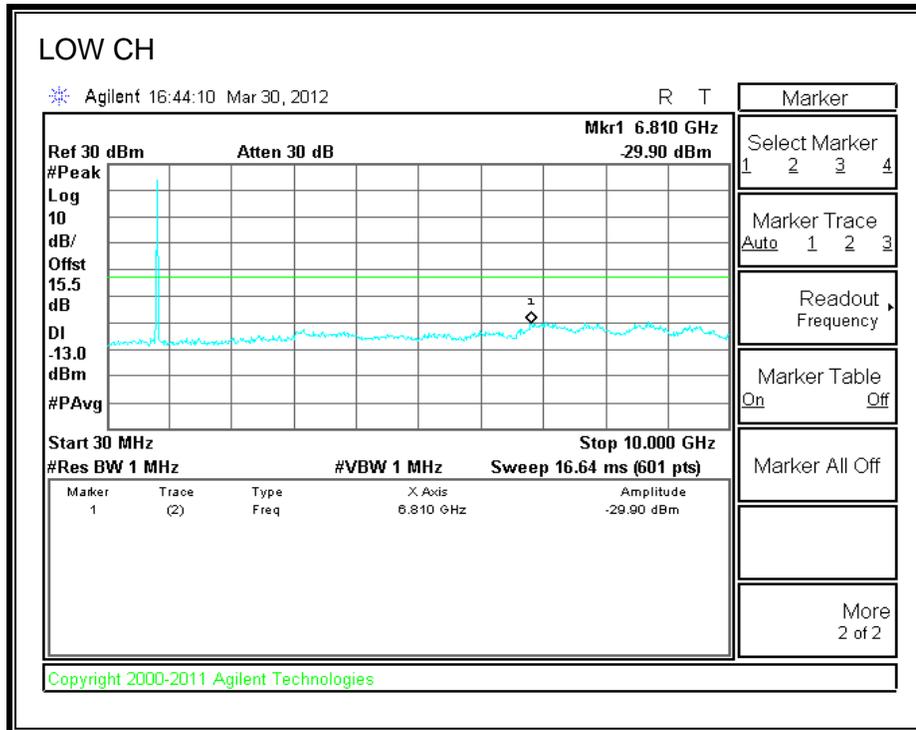


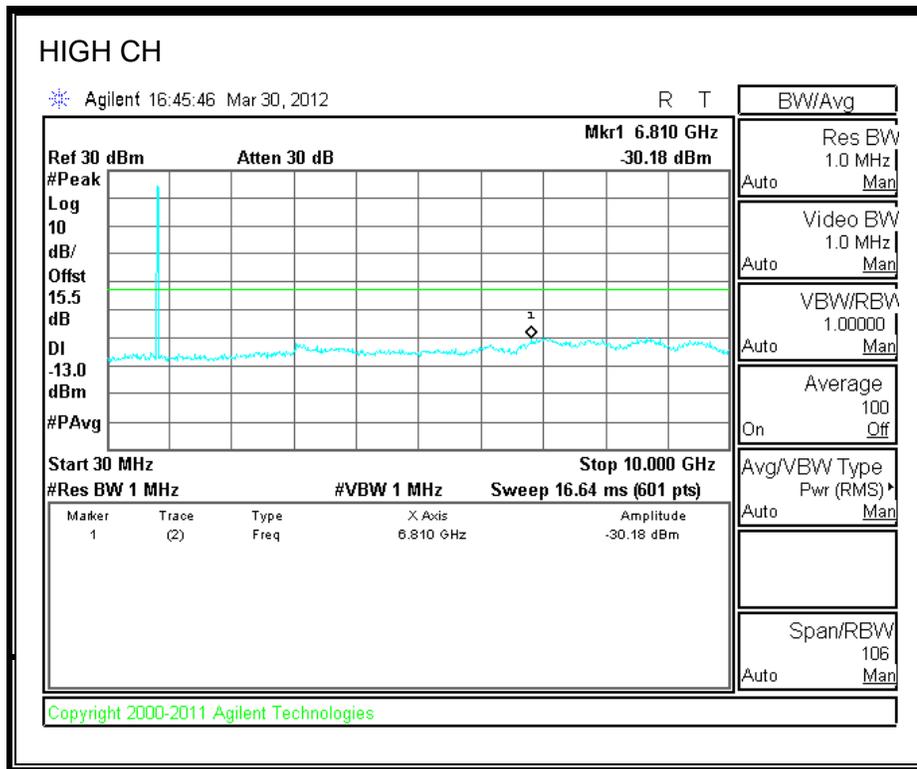
GPRS1900 BAND



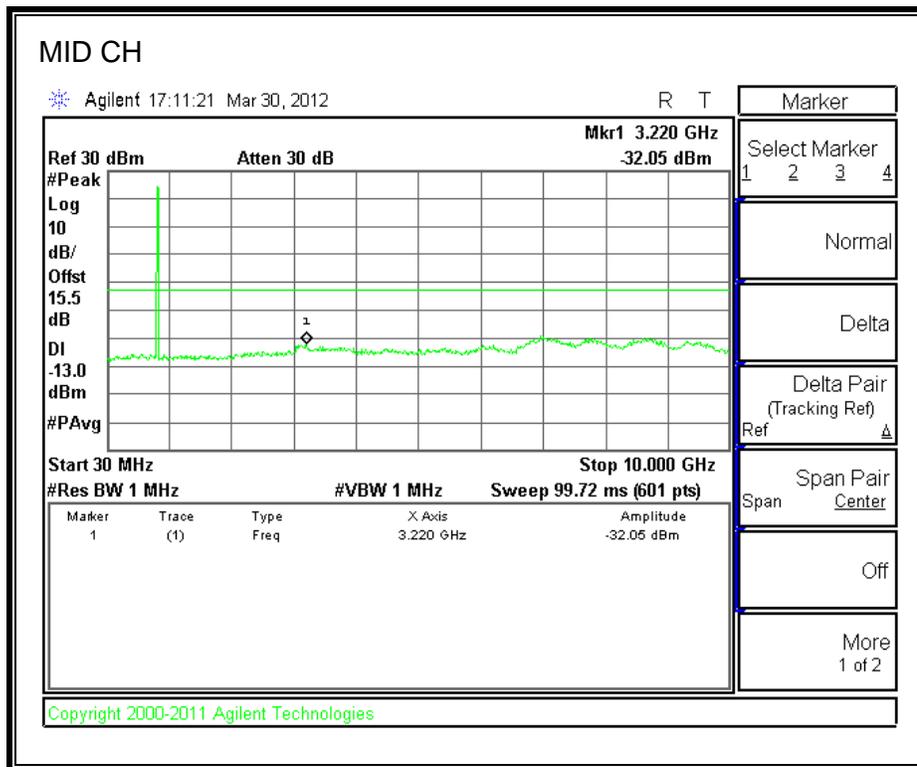
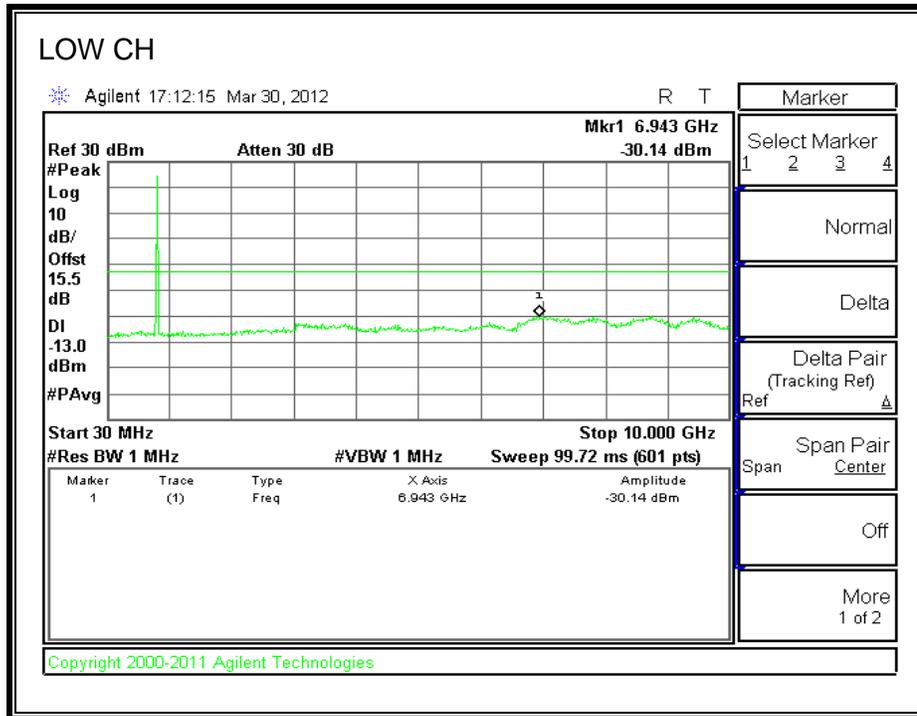


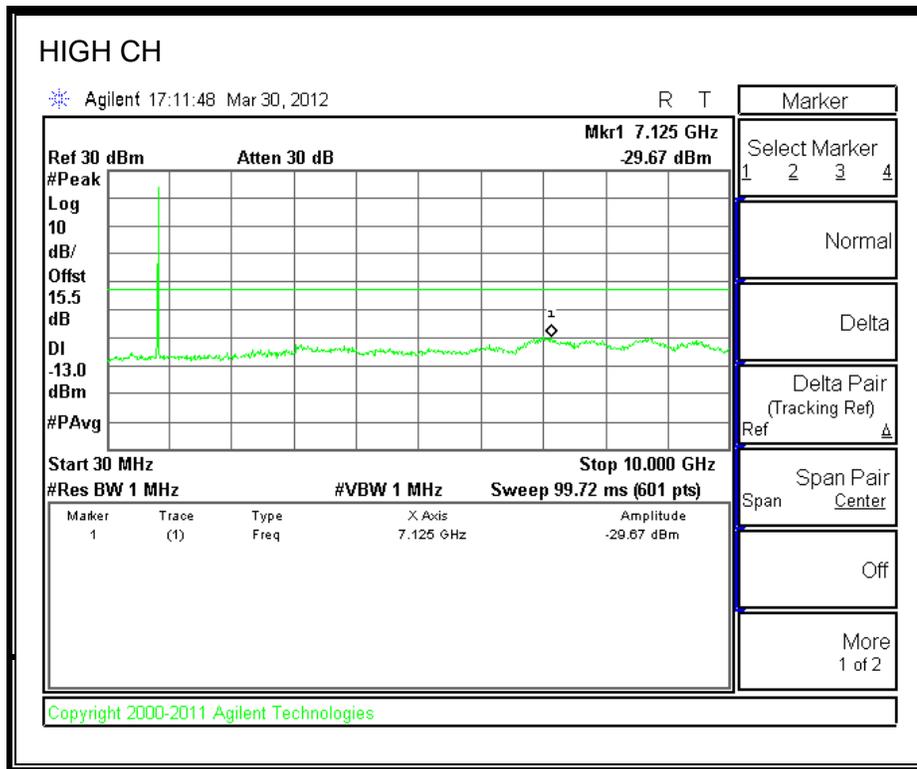
UMTS REL 99. Cell Band



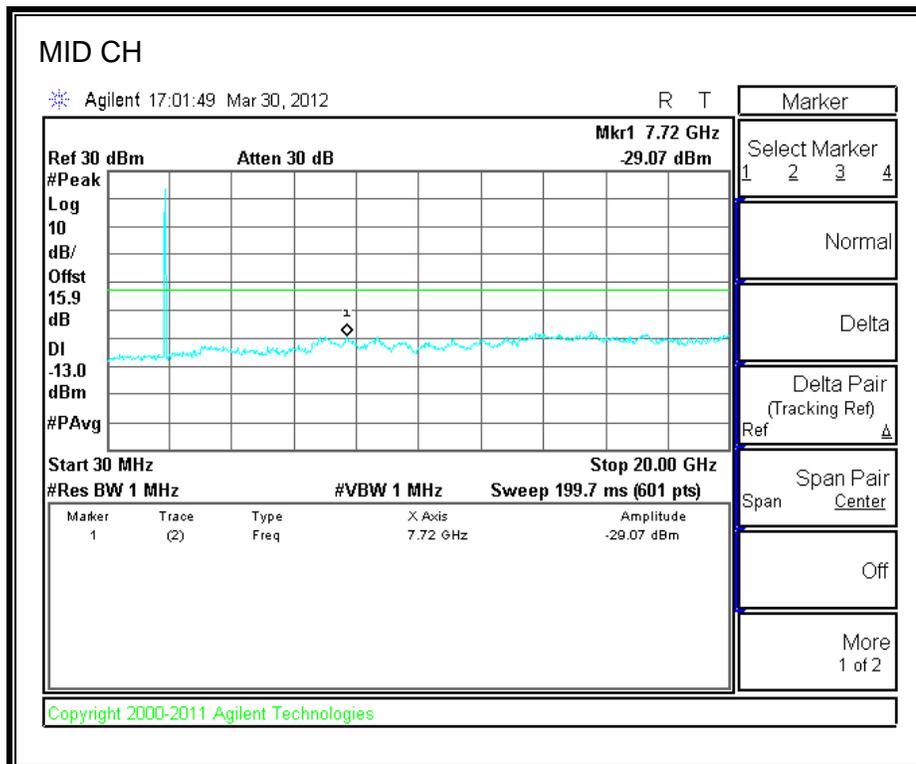
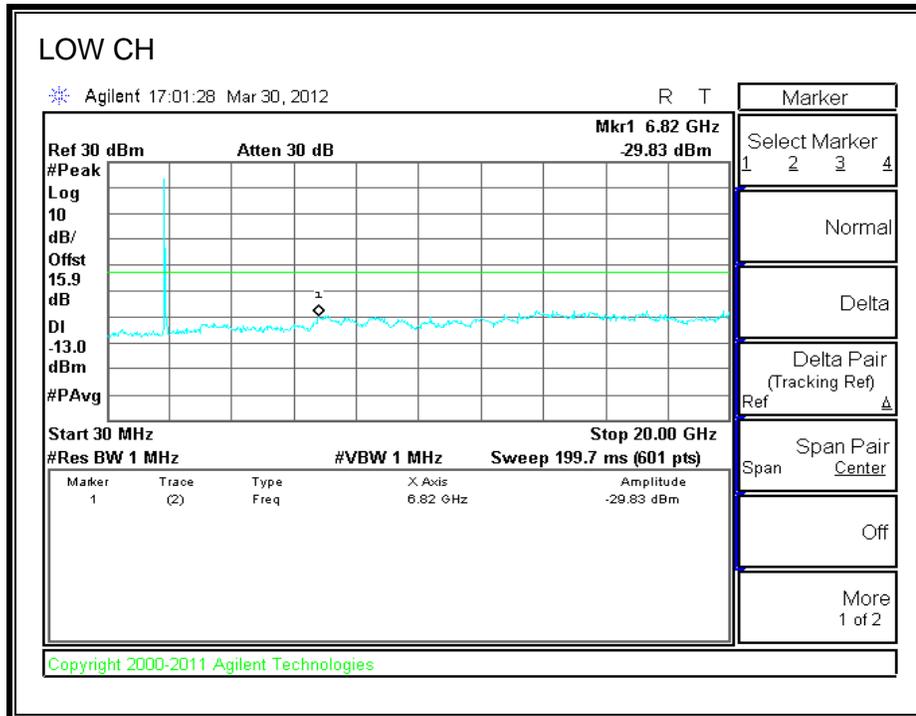


HSDPA, Cell Band

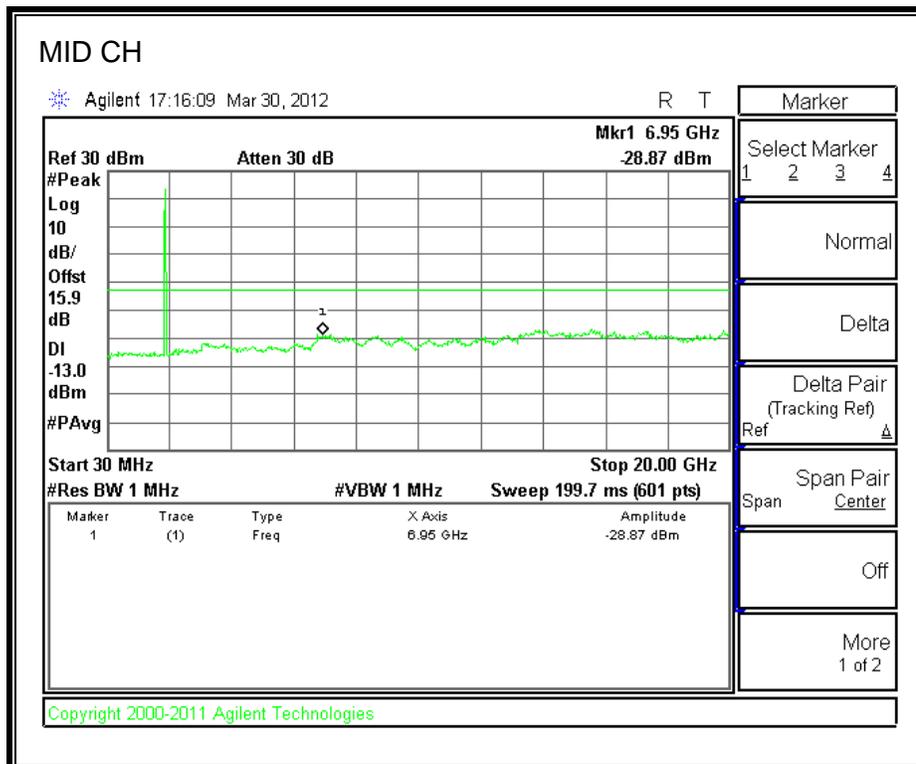
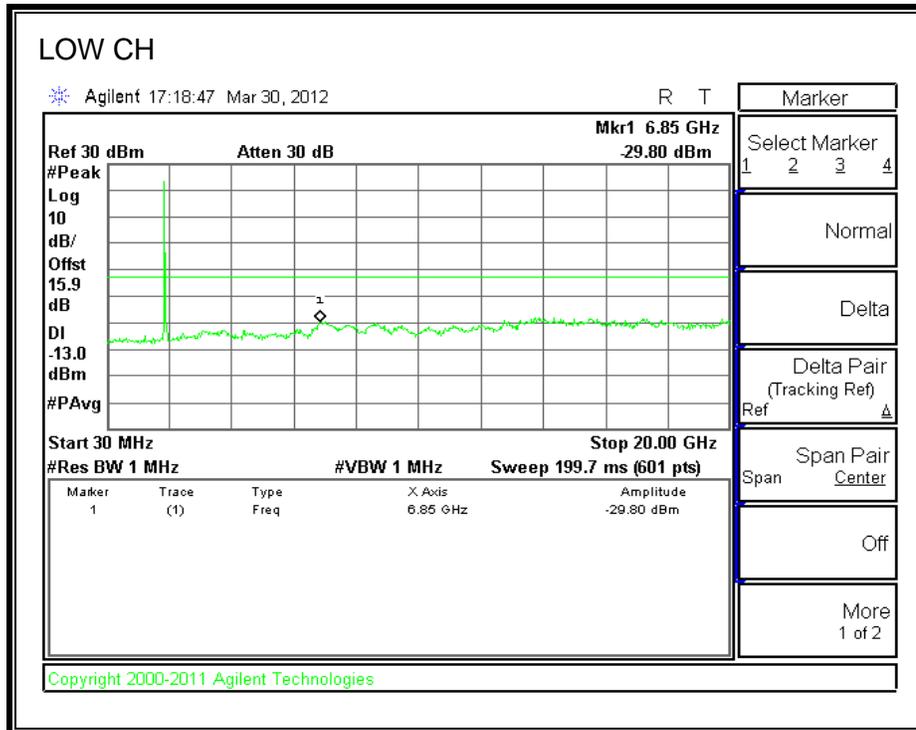




UMTS REL 99. PCS Band



UMTS HSDPA. PCS Band



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 placed inside a temperature chamber. The temperature is set to 20°C 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 +50°C is reached. Reference power supply voltage for these tests is 3.7 Vdc.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

MODES TESTED

- GPRS
- HSDPA REL 5

RESULTS

See the following pages.

CELL, GSM – MID CHANNEL

Reference Frequency: Cellular Mid Channel 836.599946Hz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2091.500 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	836.599955	-0.011	2.5
3.70	40	836.599944	0.002	2.5
3.70	30	836.599953	-0.008	2.5
3.70	20	836.599946	0	2.5
3.70	10	836.599966	-0.024	2.5
3.70	0	836.599960	-0.017	2.5
3.70	-10	836.599947	-0.001	2.5
3.70	-20	836.599994	-0.058	2.5
3.70	-30	836.599924	0.026	2.5

Reference Frequency: Cellular Mid Channel 836.599946MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2091.500 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	836.599946	0.000	2.5
4.30	20	836.599965	-0.023	2.5
3.40	20	836.599923	0.027	2.5
3.2 (End Point)	20	836.599936	0.012	2.5

PCS, GSM– MID CHANNEL

Reference Frequency: PCS Mid Channel 1880.000028MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1880.000034	-0.003	2.5
3.70	40	1880.000032	-0.002	2.5
3.70	30	1880.000036	-0.004	2.5
3.70	20	1880.000028	0	2.5
3.70	10	1879.999975	0.028	2.5
3.70	0	1879.999995	0.018	2.5
3.70	-10	1879.999944	0.045	2.5
3.70	-20	1879.999955	0.039	2.5
3.70	-30	1879.999948	0.043	2.5

Reference Frequency: PCS Mid Channel 1880.000028MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1880.000028	0	2.5
3.40	20	1879.999967	0.032	2.5
4.30	20	1879.999959	0.037	2.5
3.2 (End Point)	20	1879.999953	0.040	2.5

CELL UMTS-MID CHANNEL

Reference Frequency: Cellular Mid Channel 835.999959MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2090.000 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	835.999955	0.005	2.5
3.70	40	835.999950	0.011	2.5
3.70	30	835.999916	0.051	2.5
3.70	20	835.999959	0	2.5
3.70	10	835.999952	0.008	2.5
3.70	0	835.999967	-0.010	2.5
3.70	-10	835.999975	-0.019	2.5
3.70	-20	835.999970	-0.013	2.5
3.70	-30	835.999967	-0.010	2.5

Reference Frequency: Cellular Mid Channel 835.999959MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2090.000 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.7	20	835.999959	0.000	2.5
4.3	20	836.000050	-0.109	2.5
3.4	20	835.999984	-0.030	2.5
3.2 (End Point)	20	835.999940	0.023	2.5

PCS, UMTS-MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999953MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1879.999948	0.003	2.5
3.70	40	1879.999937	0.009	2.5
3.70	30	1879.999967	-0.007	2.5
3.70	20	1879.999953	0	2.5
3.70	10	1879.999928	0.013	2.5
3.70	0	1879.999965	-0.006	2.5
3.70	-10	1879.999932	0.011	2.5
3.70	-20	1879.999942	0.006	2.5
3.70	-30	1879.999956	-0.002	2.5

Reference Frequency: PCS Mid Channel 1879.999953MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1879.999953	0	2.5
3.40	20	1880.000002	-0.026	2.5
4.30	20	1879.999995	-0.022	2.5
3.2 (End Point)	20	1879.999972	-0.010	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

MODES TESTED

- GSM and GPRS
- UMTS, REL 99 and HSDPA

RESULTS

Mode	Channel	f (MHz)	ERP	
			dBm	mW
GSM	128	824.20	30.37	1088.93
	190	836.60	32.98	1986.09
	251	848.80	32.11	1625.55
GPRS	128	824.20	30.57	1140.25
	190	836.60	32.34	1713.96
	251	848.80	32.15	1640.59

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
GSM	512	1850.20	30.23	1054.39
	661	1880.00	30.74	1185.77
	810	1909.80	31.67	1468.93
GPRS	512	1850.20	28.80	758.58
	661	1880.00	29.11	814.70
	810	1909.80	30.48	1116.86

Mode	Channel	f (MHz)	ERP	
			dBm	mW
UMTS, REL 99	4357	826.40	26.80	478.63
	4405	836.00	25.90	389.05
	4455	846.00	26.60	457.09
UMTS, HSDPA	4357	826.40	26.86	485.29
	4405	836.00	25.73	374.11
	4455	846.00	26.79	477.53

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
UMTS, REL 99	9662	1852.40	31.17	1309.18
	9800	1880.00	30.89	1227.44
	9938	1907.60	31.95	1566.75
UMTS, HSDPA	9662	1852.40	30.67	1166.81
	9800	1880.00	30.81	1205.04
	9938	1907.60	31.55	1428.89

GSM (Cellular Band)

High Frequency Substitution Measurement Compliance Certification Services Chamber A								
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter						
Mode:		TX, CELL BAND GSM						
Test Equipment:								
Receiving: Sunol T243, and 3m Chamber N-type Cable (Setup this one for testing EUT)								
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	30.87	V	0.5	0.0	30.37	38.5	-8.1	
824.20	24.61	H	0.5	0.0	24.11	38.5	-14.3	
Mid Ch								
836.60	33.48	V	0.5	0.0	32.98	38.5	-5.5	
836.60	26.35	H	0.5	0.0	25.85	38.5	-12.6	
High Ch								
848.80	32.61	V	0.5	0.0	32.11	38.5	-6.3	
848.80	23.42	H	0.5	0.0	22.92	38.5	-15.5	
Rev. 3.17.11								

GPRS (Cellular Band)

High Frequency Substitution Measurement Compliance Certification Services Chamber A								
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter						
Mode:		TX, CELL BAND GPRS						
Test Equipment:								
Receiving: Sunol T243, and 3m Chamber N-type Cable (Setup this one for testing EUT)								
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	31.07	V	0.5	0.0	30.57	38.5	-7.9	
824.20	28.23	H	0.5	0.0	27.73	38.5	-10.7	
Mid Ch								
836.60	32.84	V	0.5	0.0	32.34	38.5	-6.1	
836.60	27.96	H	0.5	0.0	27.46	38.5	-11.0	
High Ch								
848.80	32.65	V	0.5	0.0	32.15	38.5	-6.3	
848.80	28.78	H	0.5	0.0	28.28	38.5	-10.2	
Rev. 3.17.11								

GSM (PCS Band)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A									
Company:		LG							
Project #:		12U14353							
Date:		03/29/12							
Test Engineer:		Chin Pang							
Configuration:		EUT and AC Adapter							
Mode:		TX, GSM1900, GSM							
Test Equipment:									
Receiving: Horn T73, and Camber A SMA Cables									
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse									
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch									
1.850	22.5	V	0.85	8.62	30.23	33.0	-2.8		
1.850	16.0	H	0.85	8.47	23.62	33.0	-9.4		
Mid Ch									
1.880	23.1	V	0.85	8.46	30.74	33.0	-2.3		
1.880	16.3	H	0.85	8.36	23.81	33.0	-9.2		
High Ch									
1.910	24.2	V	0.85	8.30	31.67	33.0	-1.3		
1.910	16.3	H	0.85	8.25	23.70	33.0	-9.3		
Rev. 3.17.11									

GPRS (PCS Band)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter						
Mode:		TX, GSM1900, GPRS						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.850	21.0	V	0.85	8.62	28.80	33.0	-4.2	
1.850	12.2	H	0.85	8.47	19.82	33.0	-13.2	
Mid Ch								
1.880	21.5	V	0.85	8.46	29.11	33.0	-3.9	
1.880	12.8	H	0.85	8.36	20.31	33.0	-12.7	
High Ch								
1.910	23.0	V	0.85	8.30	30.48	33.0	-2.5	
1.910	12.5	H	0.85	8.25	19.90	33.0	-13.1	
Rev. 3.17.11								

UMTS850 REL 99 (Cellular Band)

High Frequency Substitution Measurement Compliance Certification Services Chamber A								
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter						
Mode:		TX, WCDMA, 850MHz Rel 99 Worst Case EUT with AC Adapter at Y position						
Test Equipment:								
Receiving: Sunol T243, and 3m Chamber N-type Cable (Setup this one for testing EUT)								
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	27.30	V	0.5	0.0	26.80	38.5	-11.6	
826.40	17.80	H	0.5	0.0	17.30	38.5	-21.1	
Mid Ch								
836.00	26.40	V	0.5	0.0	25.90	38.5	-12.5	
836.00	18.90	H	0.5	0.0	18.40	38.5	-20.0	
High Ch								
846.00	27.10	V	0.5	0.0	26.60	38.5	-11.8	
846.00	18.80	H	0.5	0.0	18.30	38.5	-20.1	
Rev. 3.17.11								

UMTS850 HSDPA (Cellular Band)

High Frequency Substitution Measurement Compliance Certification Services Chamber A								
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter						
Mode:		TX, WCDMA, 850MHz HSDPA						
		Worst Case EUT with AC Adapter at Y position						
Test Equipment:								
Receiving: Sunol T243, and 3m Chamber N-type Cable (Setup this one for testing EUT)								
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	27.36	V	0.5	0.0	26.86	38.5	-11.6	
826.40	20.50	H	0.5	0.0	20.00	38.5	-18.4	
Mid Ch								
836.00	26.23	V	0.5	0.0	25.73	38.5	-12.7	
836.00	21.30	H	0.5	0.0	20.80	38.5	-17.6	
High Ch								
846.00	27.29	V	0.5	0.0	26.79	38.5	-11.7	
846.00	21.00	H	0.5	0.0	20.50	38.5	-17.9	
Rev. 3.17.11								

UMTS1900 REL 99 (PCS Band)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter						
Mode:		TX, WCDMA1900, Rel 99						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	23.4	V	0.85	8.62	31.17	33.0	-1.8	
1.852	13.1	H	0.85	8.47	20.72	33.0	-12.3	
Mid Ch								
1.880	23.3	V	0.85	8.46	30.89	33.0	-2.1	
1.880	13.8	H	0.85	8.36	21.31	33.0	-11.7	
High Ch								
1.908	24.5	V	0.85	8.30	31.95	33.0	-1.1	
1.908	12.5	H	0.85	8.25	19.90	33.0	-13.1	
Rev. 3.17.11								

UMTS1900 HSDPA (PCS Band)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engineer:		Chin Pang						
Configuration:		EUT and AC Adapter						
Mode:		TX, WCDMA1900, HSDPA Worst case at Z pos without AC Adapter						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.852	22.9	V	0.85	8.62	30.67	33.0	-2.3	
1.852	12.5	H	0.85	8.47	20.12	33.0	-12.9	
Mid Ch								
1.880	23.2	V	0.85	8.46	30.81	33.0	-2.2	
1.880	12.2	H	0.85	8.36	19.71	33.0	-13.3	
High Ch								
1.908	24.1	V	0.85	8.30	31.55	33.0	-1.5	
1.908	14.0	H	0.85	8.25	21.40	33.0	-11.6	
Rev. 3.17.11								

9.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238

LIMIT

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.

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

- GPRS and EGPRS
- UMTS, REL 99 and HSDPA

RESULTS

GSM (Cellular Band)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 12U14353
Date: 03/30/12
Test Engineer: Chin Pang
Configuration: EUT and AC Adapter
Mode: TX, CELL BAND GSM MODE

Chamber

5m Chamber A

Pre-amplifer

T144 8449B

Filter

Filter 1

Limit

Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (824.2MHz)									
1.648	4.8	V	3.0	38.2	1.0	-32.3	-13.0	-19.3	
2.473	-15.3	V	3.0	37.5	1.0	-51.8	-13.0	-38.8	
5.769	-8.4	V	3.0	36.3	1.0	-43.7	-13.0	-30.7	
1.648	-3.5	H	3.0	38.2	1.0	-40.6	-13.0	-27.6	
3.297	-16.1	H	3.0	37.1	1.0	-52.3	-13.0	-39.3	
5.769	-8.7	H	3.0	36.3	1.0	-44.0	-13.0	-31.0	
Mid Ch, (836.6MHz)									
1.673	5.7	V	3.0	38.1	1.0	-31.4	-13.0	-18.4	
2.510	-13.1	V	3.0	37.5	1.0	-49.6	-13.0	-36.6	
3.346	-12.9	V	3.0	37.1	1.0	-49.0	-13.0	-36.0	
5.856	-5.3	V	3.0	36.3	1.0	-40.6	-13.0	-27.6	
1.673	-3.2	H	3.0	38.1	1.0	-40.3	-13.0	-27.3	
3.346	-15.0	H	3.0	37.1	1.0	-51.1	-13.0	-38.1	
5.856	-6.5	H	3.0	36.3	1.0	-41.9	-13.0	-28.9	
High Ch, (848.8MHz)									
1.698	8.9	V	3.0	38.1	1.0	-28.2	-13.0	-15.2	
2.546	-12.0	V	3.0	37.5	1.0	-48.5	-13.0	-35.5	
3.395	-5.8	V	3.0	37.1	1.0	-41.8	-13.0	-28.8	
5.942	-5.2	V	3.0	36.3	1.0	-40.5	-13.0	-27.5	
1.698	-6.0	H	3.0	38.1	1.0	-43.1	-13.0	-30.1	
3.395	-12.9	H	3.0	37.1	1.0	-48.9	-13.0	-35.9	
5.942	-6.4	H	3.0	36.3	1.0	-41.7	-13.0	-28.7	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

GPRS (Cellular Band)

**Compliance Certification Services
 Above 1GHz High Frequency Substitution Measurement**

Company: LG
 Project #: 12U14353
 Date: 03/30/12
 Test Engineer: Chin Pang
 Configuration: EUT and AC Adapter
 Mode: TX, CELL BAND GPRS MODE

Chamber	Pre-amplifier	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (824.2MHz)									
1.648	4.8	V	3.0	38.2	1.0	-32.3	-13.0	-19.3	
2.473	-14.3	V	3.0	37.5	1.0	-50.8	-13.0	-37.8	
5.769	-6.4	V	3.0	36.3	1.0	-41.7	-13.0	-28.7	
1.648	-7.0	H	3.0	38.2	1.0	-44.1	-13.0	-31.1	
3.297	-12.1	H	3.0	37.1	1.0	-48.3	-13.0	-35.3	
5.769	-8.7	H	3.0	36.3	1.0	-44.0	-13.0	-31.0	
Mid Ch, (836.6MHz)									
1.673	7.1	V	3.0	38.1	1.0	-30.0	-13.0	-17.0	
2.510	-15.1	V	3.0	37.5	1.0	-51.6	-13.0	-38.6	
3.346	-5.9	V	3.0	37.1	1.0	-42.0	-13.0	-29.0	
5.856	-3.3	V	3.0	36.3	1.0	-38.6	-13.0	-25.6	
1.673	-7.2	H	3.0	38.1	1.0	-44.3	-13.0	-31.3	
3.346	-14.0	H	3.0	37.1	1.0	-50.1	-13.0	-37.1	
5.856	-7.5	H	3.0	36.3	1.0	-42.9	-13.0	-29.9	
High Ch, (848.8MHz)									
1.698	7.4	V	3.0	38.1	1.0	-29.7	-13.0	-16.7	
2.546	-8.0	V	3.0	37.5	1.0	-44.5	-13.0	-31.5	
3.395	-5.8	V	3.0	37.1	1.0	-41.8	-13.0	-28.8	
5.942	-5.2	V	3.0	36.3	1.0	-40.5	-13.0	-27.5	
1.698	-1.0	H	3.0	38.1	1.0	-38.1	-13.0	-25.1	
3.395	-11.9	H	3.0	37.1	1.0	-47.9	-13.0	-34.9	
5.942	-7.4	H	3.0	36.3	1.0	-42.7	-13.0	-29.7	

Rev. 03.03.09

Note: No other emissions were detected above the system noise floor.

GSM (PCS Band)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 12U14353
Date: 03/30/12
Test Engineer: Chin Pang
Configuration: EUT and AC Adapter
Mode: TX, PCS BAND, GSM

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1850.2MHz)									
3.700	5.9	V	3.0	36.8	1.0	-29.9	-13.0	-16.9	
5.551	7.3	V	3.0	36.3	1.0	-28.0	-13.0	-15.0	
3.700	3.0	H	3.0	36.8	1.0	-32.8	-13.0	-19.8	
5.551	4.9	H	3.0	36.3	1.0	-30.4	-13.0	-17.4	
Mid Ch, (1880.0MHz)									
3.760	7.1	V	3.0	36.8	1.0	-28.7	-13.0	-15.7	
5.640	5.4	V	3.0	36.3	1.0	-29.9	-13.0	-16.9	
7.520	2.0	V	3.0	36.6	1.0	-33.6	-13.0	-20.6	
3.760	2.2	H	3.0	36.8	1.0	-33.6	-13.0	-20.6	
5.640	4.1	H	3.0	36.3	1.0	-31.2	-13.0	-18.2	
7.520	1.1	H	3.0	36.6	1.0	-34.5	-13.0	-21.5	
High Ch, (1909.8MHz)									
3.820	7.2	V	3.0	36.7	1.0	-28.5	-13.0	-15.5	
5.729	4.5	V	3.0	36.3	1.0	-39.8	-13.0	-26.8	
7.639	-2.9	V	3.0	36.6	1.0	-38.5	-13.0	-25.5	
3.820	0.3	H	3.0	36.7	1.0	-35.4	-13.0	-22.4	
5.729	-3.8	H	3.0	36.3	1.0	-39.1	-13.0	-26.1	
7.639	-3.8	H	3.0	36.6	1.0	-39.4	-13.0	-26.4	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

GPRS (PCS Band)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		LG							
Project #:		12U14353							
Date:		03/30/12							
Test Engineer:		Chin Pang							
Configuration:		EUT and AC Adapter							
Mode:		TX, PCS BAND, GPRS							
Chamber		Pre-amplifier			Filter		Limit		
5m Chamber A		T144 8449B			Filter 1		Part 24		
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1850.2MHz)									
3.700	5.9	V	3.0	36.8	1.0	-29.9	-13.0	-16.9	
5.551	7.3	V	3.0	36.3	1.0	-28.0	-13.0	-15.0	
3.700	0.0	H	3.0	36.8	1.0	-35.8	-13.0	-22.8	
5.551	3.9	H	3.0	36.3	1.0	-31.4	-13.0	-18.4	
Mid Ch, (1880.0MHz)									
3.760	7.1	V	3.0	36.8	1.0	-28.7	-13.0	-15.7	
5.640	7.4	V	3.0	36.3	1.0	-27.9	-13.0	-14.9	
7.520	-6.0	V	3.0	36.6	1.0	-41.6	-13.0	-28.6	
3.760	5.2	H	3.0	36.8	1.0	-30.6	-13.0	-17.6	
5.640	6.1	H	3.0	36.3	1.0	-29.2	-13.0	-16.2	
7.520	-3.9	H	3.0	36.6	1.0	-39.5	-13.0	-26.5	
High Ch, (1909.8MHz)									
3.820	5.2	V	3.0	36.7	1.0	-30.5	-13.0	-17.5	
5.729	-2.5	V	3.0	36.3	1.0	-37.8	-13.0	-24.8	
7.639	-2.9	V	3.0	36.6	1.0	-38.5	-13.0	-25.5	
3.820	1.3	H	3.0	36.7	1.0	-34.4	-13.0	-21.4	
5.729	-3.8	H	3.0	36.3	1.0	-39.1	-13.0	-26.1	
7.639	-2.8	H	3.0	36.6	1.0	-38.4	-13.0	-25.4	
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									

UMTS REL 99 (Cellular Band)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 12U14353
Date: 03/30/12
Test Engineer: Chin Pang
Configuration: EUT and AC Adapter
Mode: TX, WCDMA 850MHz, Rel 99

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (826.4MHz)									
1.653	-15.1	V	3.0	38.1	1.0	-52.3	-13.0	-39.3	
4.132	-8.1	V	3.0	36.5	1.0	-43.6	-13.0	-30.6	
1.653	-21.4	H	3.0	38.1	1.0	-58.6	-13.0	-45.6	
3.306	-13.1	H	3.0	37.1	1.0	-49.2	-13.0	-36.2	
Mid Channel (836MHz)									
1.673	-12.9	V	3.0	38.1	1.0	-50.0	-13.0	-37.0	
4.180	-7.9	V	3.0	36.5	1.0	-43.5	-13.0	-30.5	
1.673	-22.2	H	3.0	38.1	1.0	-59.3	-13.0	-46.3	
4.180	-8.6	H	3.0	36.5	1.0	-44.2	-13.0	-31.2	
High Channel (846MHz)									
1.692	-10.7	V	3.0	38.1	1.0	-47.8	-13.0	-34.8	
3.384	-12.8	V	3.0	37.1	1.0	-48.9	-13.0	-35.9	
4.230	-5.3	V	3.0	36.5	1.0	-40.8	-13.0	-27.8	
1.692	-21.0	H	3.0	38.1	1.0	-58.1	-13.0	-45.1	
4.230	-10.5	H	3.0	36.5	1.0	-46.0	-13.0	-33.0	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

UMTS HSDPA (Cellular Band)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 12U14353
Date: 03/30/12
Test Engineer: Chin Pang
Configuration: EUT and AC Adapter
Mode: TX, WCDMA 850MHz, HSDPA

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

FCC Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (826.4MHz)									
1.653	-13.1	V	3.0	38.1	1.0	-50.3	-13.0	-37.3	
3.306	-14.0	V	3.0	37.1	1.0	-50.1	-13.0	-37.1	
4.132	-5.1	V	3.0	36.5	1.0	-40.6	-13.0	-27.6	
1.653	-21.7	H	3.0	38.1	1.0	-58.9	-13.0	-45.9	
3.306	-13.1	H	3.0	37.1	1.0	-49.2	-13.0	-36.2	
4.132	-6.8	H	3.0	36.5	1.0	-42.3	-13.0	-29.3	
Mid Channel (836MHz)									
1.673	-14.4	V	3.0	38.1	1.0	-51.5	-13.0	-38.5	
2.508	-7.2	V	3.0	37.5	1.0	-43.6	-13.0	-30.6	
4.180	-3.9	V	3.0	36.5	1.0	-39.5	-13.0	-26.5	
1.673	-22.2	H	3.0	38.1	1.0	-59.3	-13.0	-46.3	
2.508	-16.9	H	3.0	37.5	1.0	-53.3	-13.0	-40.3	
4.180	-8.6	H	3.0	36.5	1.0	-44.2	-13.0	-31.2	
High Channel (846MHz)									
1.692	-10.7	V	3.0	38.1	1.0	-47.8	-13.0	-34.8	
3.384	-13.8	V	3.0	37.1	1.0	-49.9	-13.0	-36.9	
4.230	-5.8	V	3.0	36.5	1.0	-41.3	-13.0	-28.3	
1.692	-21.0	H	3.0	38.1	1.0	-58.1	-13.0	-45.1	
3.384	-10.9	H	3.0	37.1	1.0	-47.0	-13.0	-34.0	
4.230	-7.5	H	3.0	36.5	1.0	-43.0	-13.0	-30.0	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

UMTS REL 99 (PCS Band)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 12U14353
Date: 04/01/12
Test Engineer: Chin Pang
Configuration: EUT and AC Adapter
Mode: TX, PCS BAND WCDMA, Rel 99

Chamber

5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.704	-8.1	V	3.0	36.8	1.0	-43.9	-13.0	-30.9	
5.557	-9.4	V	3.0	36.3	1.0	-44.7	-13.0	-31.7	
3.704	-8.1	H	3.0	36.8	1.0	-43.9	-13.0	-30.9	
5.557	-10.0	H	3.0	36.3	1.0	-45.3	-13.0	-32.3	
Mid Ch, 1880.0MHz									
3.760	-9.6	V	3.0	36.8	1.0	-45.4	-13.0	-32.4	
5.640	-10.6	V	3.0	36.3	1.0	-45.9	-13.0	-32.9	
3.760	-8.8	H	3.0	36.8	1.0	-44.6	-13.0	-31.6	
5.640	-9.9	H	3.0	36.3	1.0	-45.2	-13.0	-32.2	
High Ch, 1907.6MHz									
3.815	-8.3	V	3.0	36.7	1.0	-44.1	-13.0	-31.1	
5.723	-6.5	V	3.0	36.3	1.0	-41.8	-13.0	-28.8	
3.815	-9.7	H	3.0	36.7	1.0	-45.4	-13.0	-32.4	
5.723	-7.8	H	3.0	36.3	1.0	-43.1	-13.0	-30.1	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

UMTS HSDPA (PCS Band)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

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5m Chamber A

Pre-amplifier

T144 8449B

Filter

Filter 1

Limit

Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.704	-7.1	V	3.0	36.8	1.0	-42.9	-13.0	-29.9	
5.557	-8.7	V	3.0	36.3	1.0	-44.0	-13.0	-31.0	
3.704	-9.0	H	3.0	36.8	1.0	-44.8	-13.0	-31.8	
5.557	-10.0	H	3.0	36.3	1.0	-45.3	-13.0	-32.3	
Mid Ch, 1880.0MHz									
3.760	-9.9	V	3.0	36.8	1.0	-45.7	-13.0	-32.7	
5.640	-10.6	V	3.0	36.3	1.0	-45.9	-13.0	-32.9	
3.760	-9.8	H	3.0	36.8	1.0	-45.6	-13.0	-32.6	
5.640	-9.9	H	3.0	36.3	1.0	-45.2	-13.0	-32.2	
7.520	-6.9	H	3.0	36.6	1.0	-42.5	-13.0	-29.5	
High Ch, 1907.6MHz									
3.815	-7.8	V	3.0	36.7	1.0	-43.6	-13.0	-30.6	
5.723	-8.5	V	3.0	36.3	1.0	-43.8	-13.0	-30.8	
3.815	-8.7	H	3.0	36.7	1.0	-44.4	-13.0	-31.4	
5.723	-6.8	H	3.0	36.3	1.0	-42.1	-13.0	-29.1	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.