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

FOR

CELLULAR/PCS GSM&WCDMA WITH BLUETOOTH&WLAN

MODEL NUMBER: LG840G

FCC ID: ZNFLG840G

REPORT NUMBER: 12U14442-1, Revision A

ISSUE DATE: JUNE 20, 2012

Prepared for

LG ELECTRONICS INC.
1000 SYLVAN AVE.
ENGLEWOOD CLIFFS, NJ
UNITED STATES 07632

Prepared by

COMPLIANCE CERTIFICATION SERVICES (UL CCS)
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
---	06/12/12	Initial Issue	T. Chan
A	06/20/12	Updated Maximum Output Power table	M. Menkuria

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS INC. 1000 SYLVAN AVE. ENGLEWOOD CLIFFS, NJ UNITED STATES 07632
EUT DESCRIPTION:	CELLULAR/PCS GSM & WCDMA WITH BLUETOOTH & WLAN
MODEL:	LG840G
SERIAL NUMBER:	204KPKN156317
DATE TESTED:	MAY 23 TO JUNE 2, 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:

THU CHAN
ENGINEERING MANAGER
UL CCS

Tested By:

MENGISTU MEKURIA
EMC ENGINEER
UL CCS

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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 Cellular/PCS GSM & WCDMA with Bluetooth and WLAN.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted and radiated 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	33.54	2259.4	29.51	893.3
	GPRS	33.51	2243.9	29.36	863.0
826.4 – 846.6	UMTS, Rel 99	26.72	469.9	25.82	381.9
	UMTS, HSDPA	27.76	597.0	24.42	276.7

Part 24 PCS Band

Frequency range (MHz)	Modulation	Conducted		EIRP	
		dBm	mW	dBm	mW
1850.2 – 1909.8	GSM	30.67	1166.8	32.95	1972.4
	GPRS	30.68	1169.5	32.75	1883.6
1852.4 – 1907.6	UMTS, REL 99	26.71	468.8	28.05	638.3
	UMTS, HSDPA	28.24	666.8	28.92	779.8

5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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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 and Z, orientations with and without AC Adapter and the worst-orientation was determined to be at Z position for Cell band without AC Adapter and x position for PCS bands with AC Adapter.

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	STA-U13WR	TA150000001	DoC
Headset	LG	NA	NA	NA

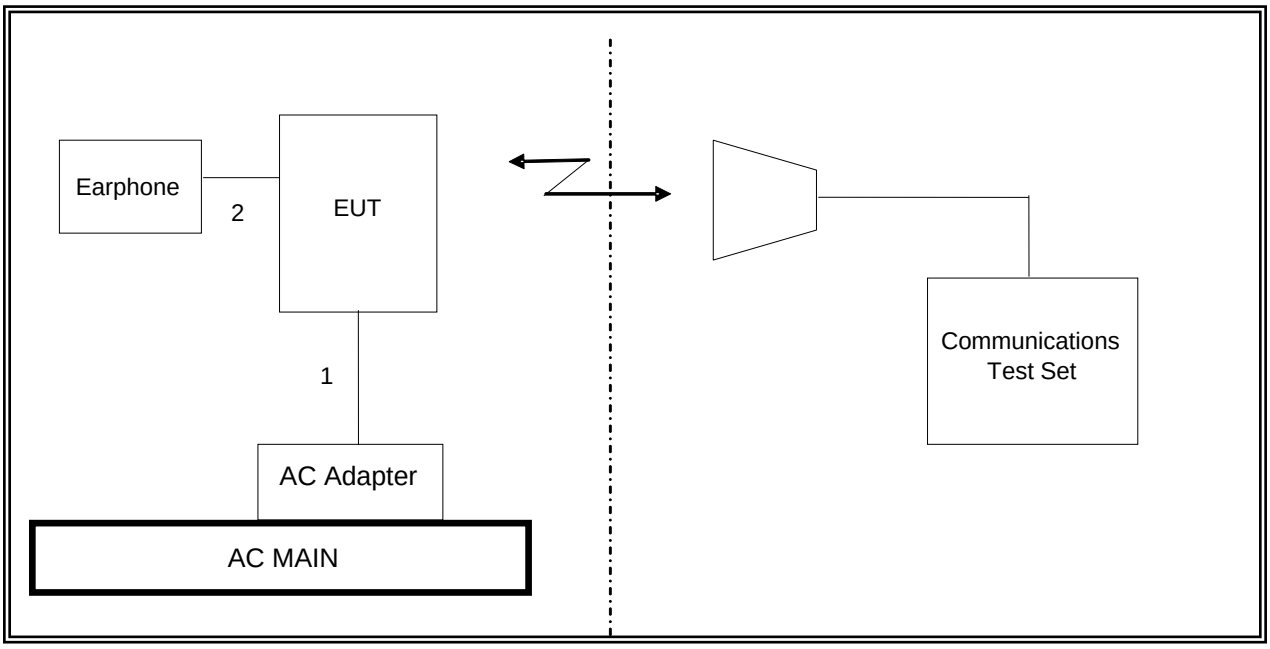
I/O CABLES

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 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, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	03/23/13
Antenna, Horn, 18 GHz	EMCO	3115	C00945	10/6/2012
Antenna, Horn, 18 GHz	EMCO	3115	C00943	CNR
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	07/12/12
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	02/16/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	03/22/13
Communication Test Set	Agilent / HP	E5515C	1000732	09/27/12
Radio Communication Analizer	Anritsu	MT8820C	1100482	06/17/12
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689`	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Directional Coupler	Lambda	RFDC5M06G15	NA	CNR
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/14/12
Tempreture Chamber	AES	SW3102	5999	CNR
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00993	7/16/2012

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 Peak
GSM	128	824.2	**33.54**
	190	836.6	33.26
	251	848.8	33.24
GSM	512	1850.2	30.57
	661	1880	**30.67**
	810	1909.8	30.65

GPRS for Cell and PCS Band

Mode	Ch.	f (MHz)	1 time slot Peak	2 time slots Peak
GPRS	128	824.2	**33.51**	30.91
	190	836.6	33.26	30.65
	251	848.8	33.23	30.60
GPRS	512	1850.2	30.60	27.59
	661	1880.0	**30.68**	27.65
	810	1909.8	30.65	27.61

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
	βc	Not Applicable
	βd	Not Applicable
	βec	Not Applicable
	βc/βd	8/15
	βhs	Not Applicable
	βed	Not Applicable

RESULTS

Cell Band 850MHz REL 99

Band	UL Ch	DL Ch	Frequency	Conducted power (dBm)
				Peak
UMTS 850	4132	4357	826.4	26.40
	4183	4408	836.6	**26.72**
	4233	4458	846.6	26.21

Band	UL Ch	DL Ch	Frequency	Conducted power(dBm)
				Peak
UMTS 1900	9262	9662	1852.4	**26.71**
	9400	9800	1880.0	26.42
	9538	9938	1907.6	26.50

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			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	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			
	Ahs =βhs/βc	30/15			

Results

RESULTS:

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted power(dBm)
					Peak
UMTS850 (Band V)	1	4132	4357	826.4	26.47
		4183	4408	836.6	26.55
		4233	4458	846.6	26.43
	2*	4132	4357	826.4	27.34
		4183	4408	836.6	27.23
		4233	4458	846.6	27.45
	3	4132	4357	826.4	27.69
		4183	4408	836.6	27.75
		4233	4458	846.6	27.62
	4	4132	4357	826.4	27.76
		4183	4408	836.6	**27.76**
		4233	4458	846.6	27.63
UMTS1900 (Band II)	1	9262	9662	1852.4	27.70
		9400	9800	1880.0	26.50
		9538	9938	1907.6	26.59
	2*	9262	9662	1852.4	27.89
		9400	9800	1880.0	27.03
		9538	9938	1907.6	27.51
	3	9262	9662	1852.4	28.01
		9400	9800	1880.0	27.74
		9538	9938	1907.6	27.57
	4	9262	9662	1852.4	**28.24**
		9400	9800	1880.0	27.94
		9538	9938	1907.6	27.64

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	242.1185	305.779
		190	836.6	247.4652	325.432
		251	848.8	247.2393	311.824
	GPRS	128	824.2	246.7044	315.837
		190	836.6	248.8414	313.419
		251	848.8	247.9944	320.215

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
Cellular	UMTS, REL 99	4357	826.4	4.1707	4.616
		4405	836.6	4.1818	4.573
		4455	846.6	4.1235	4.609
	UMTS, HSDPA	4357	826.4	4.1914	4.595
		4405	836.6	4.1639	4.619
		4455	846.6	4.2043	4.577

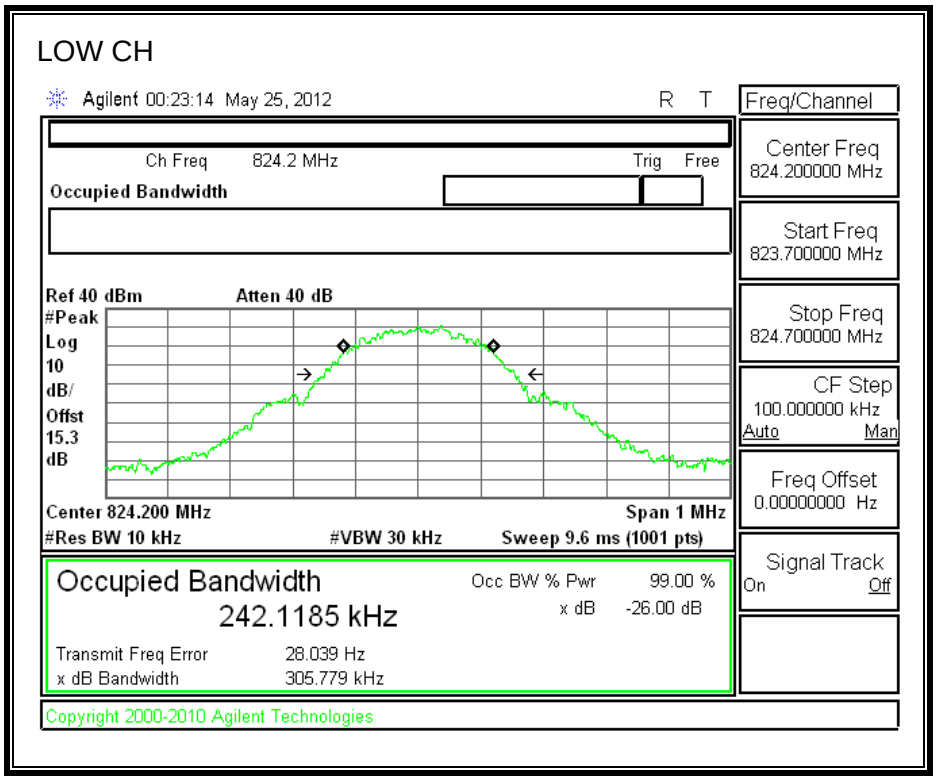
Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
PCS	GSM	512	1850.2	246.8123	314.401
		661	1880.0	247.6583	306.702
		810	1909.8	244.9881	304.065
	GPRS	512	1850.2	245.7087	317.666
		661	1880.0	244.2232	315.626
		810	1909.8	255.0161	323.451

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
PCS	UMTS, REL 99	9662	1852.40	4.1457	4.628
		9800	1880.00	4.1534	4.610
		9938	1907.60	4.1926	4.620
	UMTS, HSDPA	9662	1852.40	4.2047	4.596
		9800	1880.00	4.2139	4.599
		9938	1907.60	4.1211	4.643

99% and 26dB BANDWIDTH

GSM850 BAND

LOW CH



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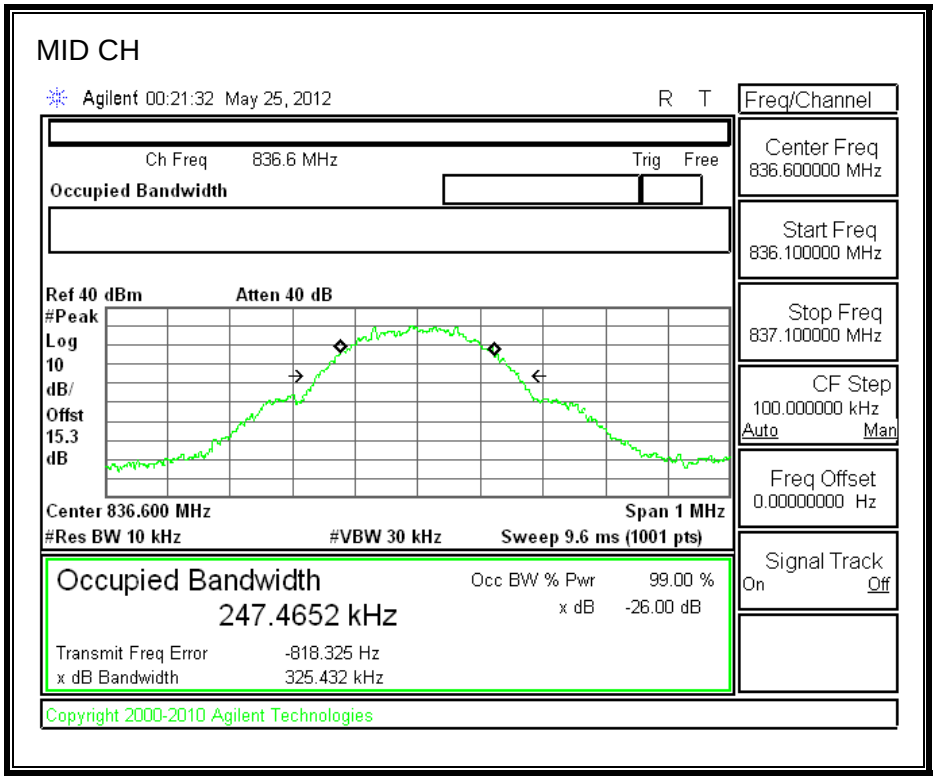

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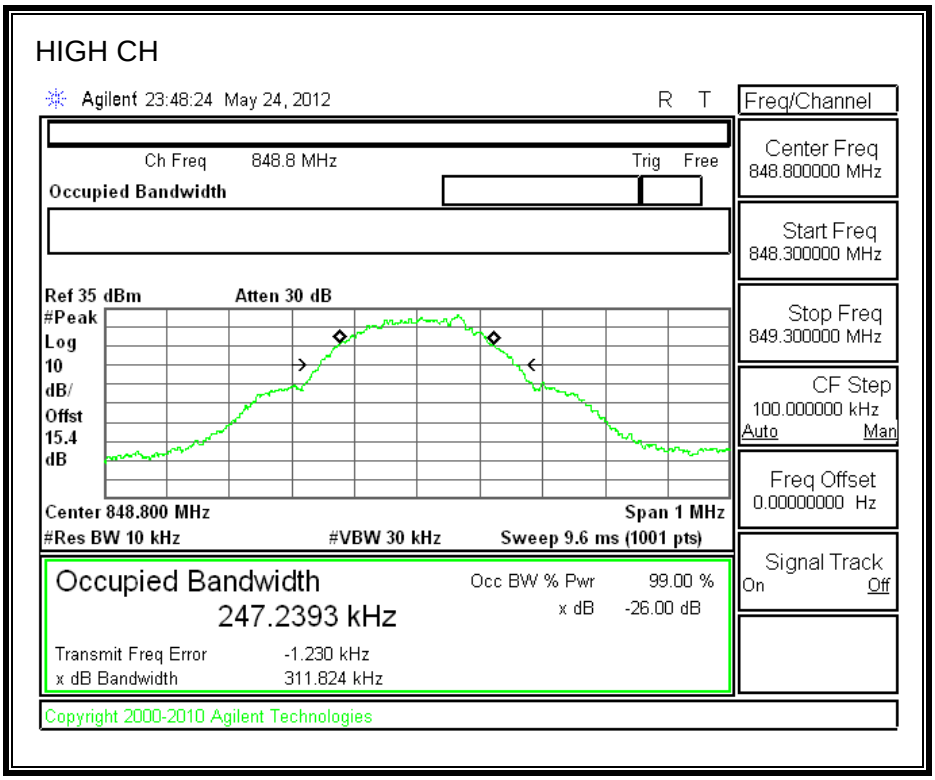
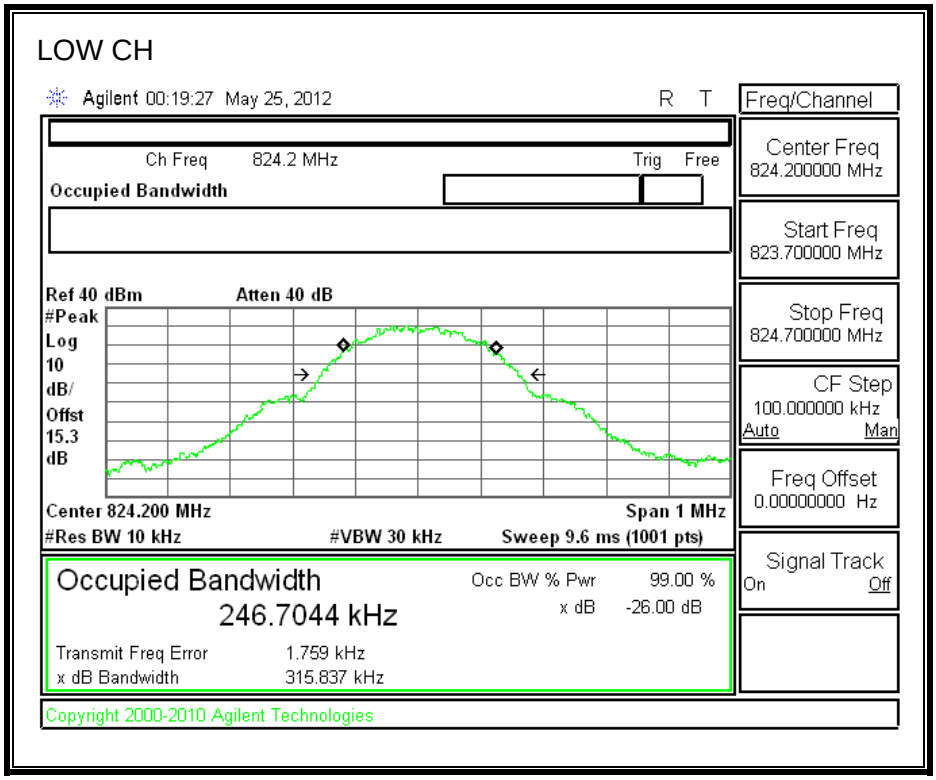


GPRS850 BAND

LOW CH



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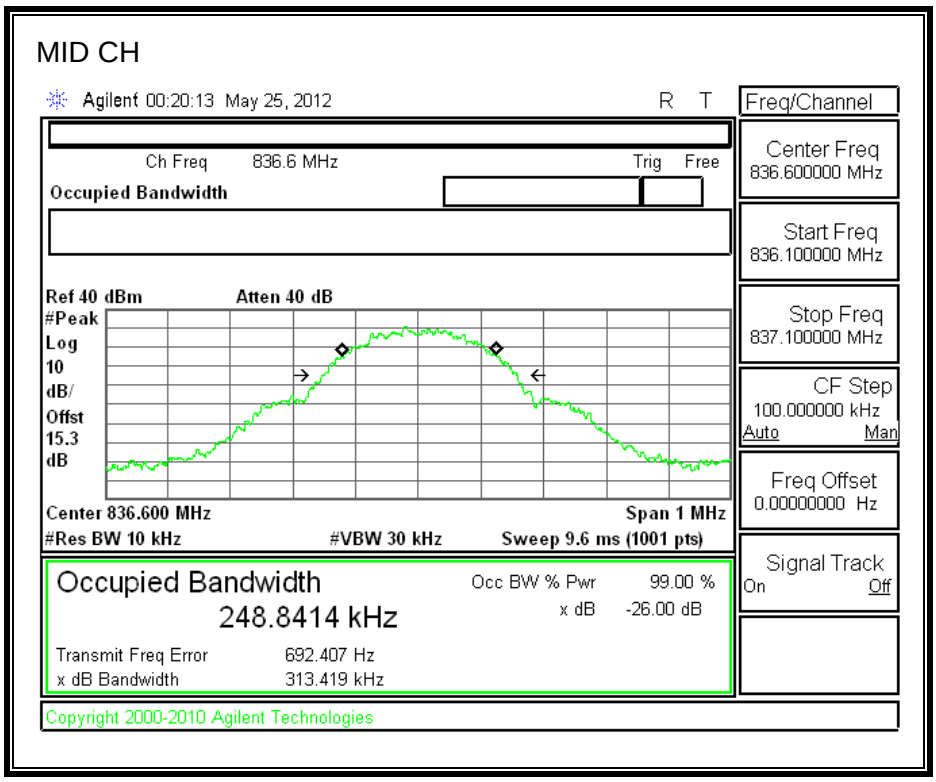

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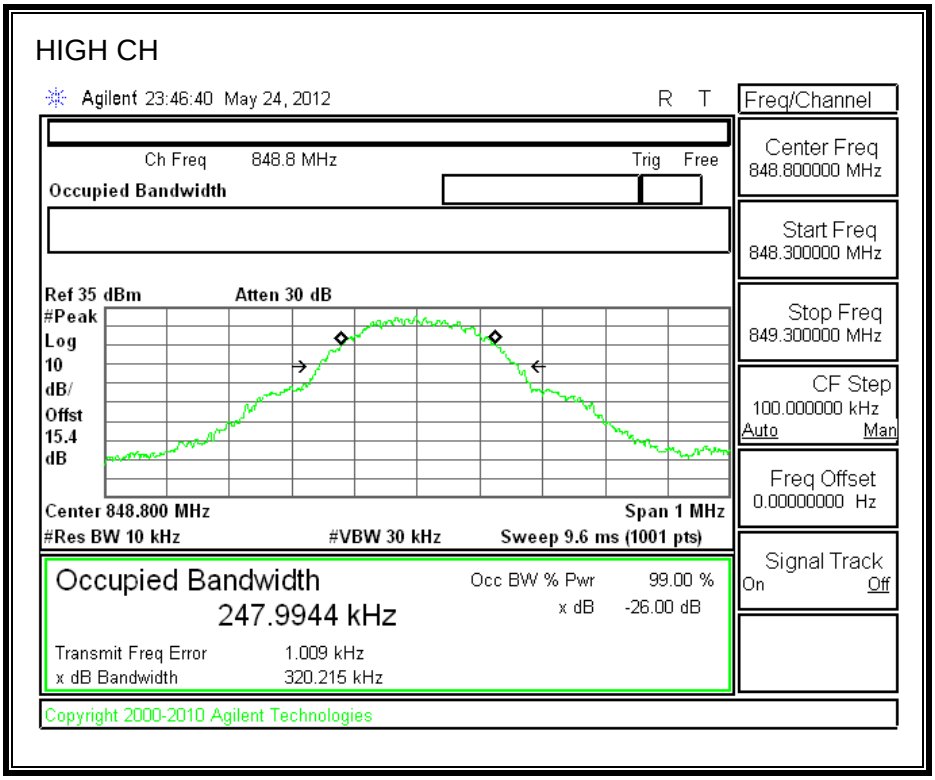

UMTS REL 99, CELL BAND

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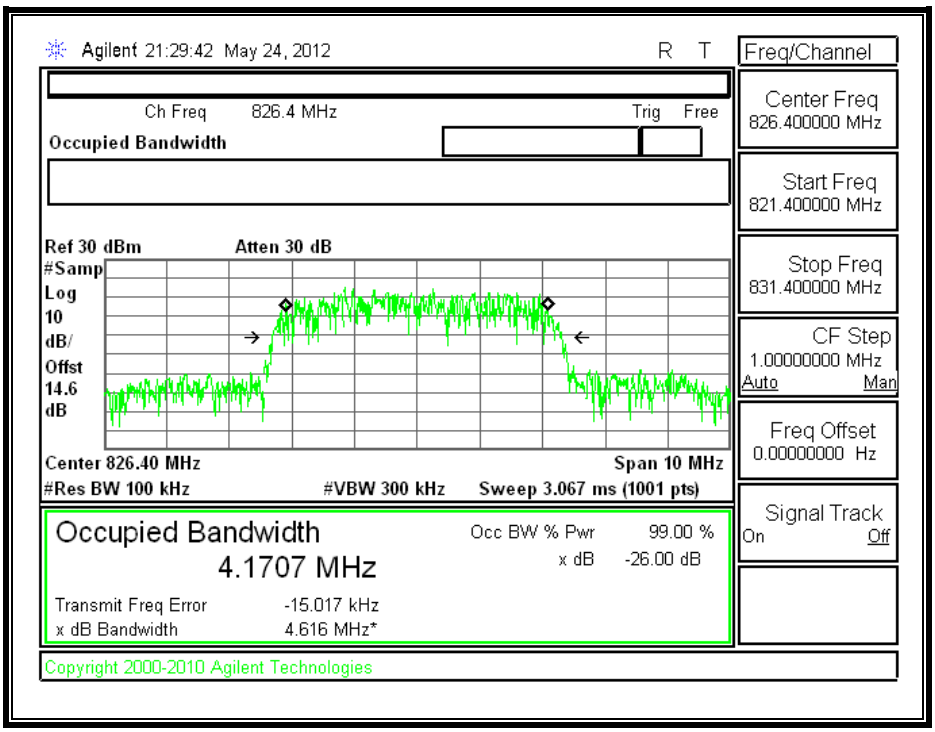

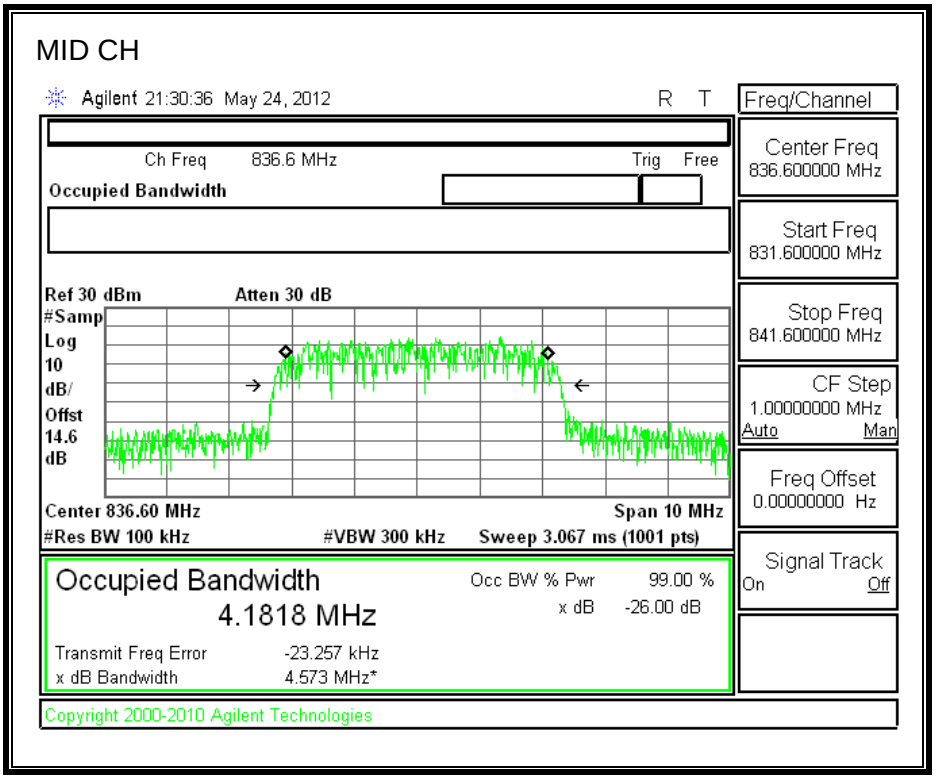

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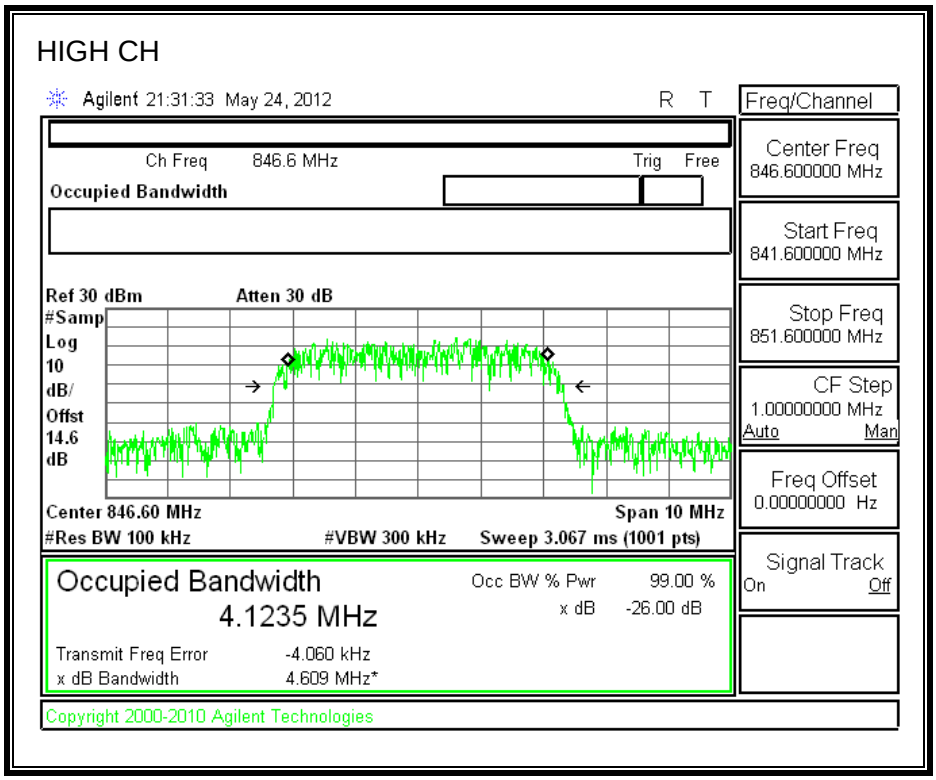
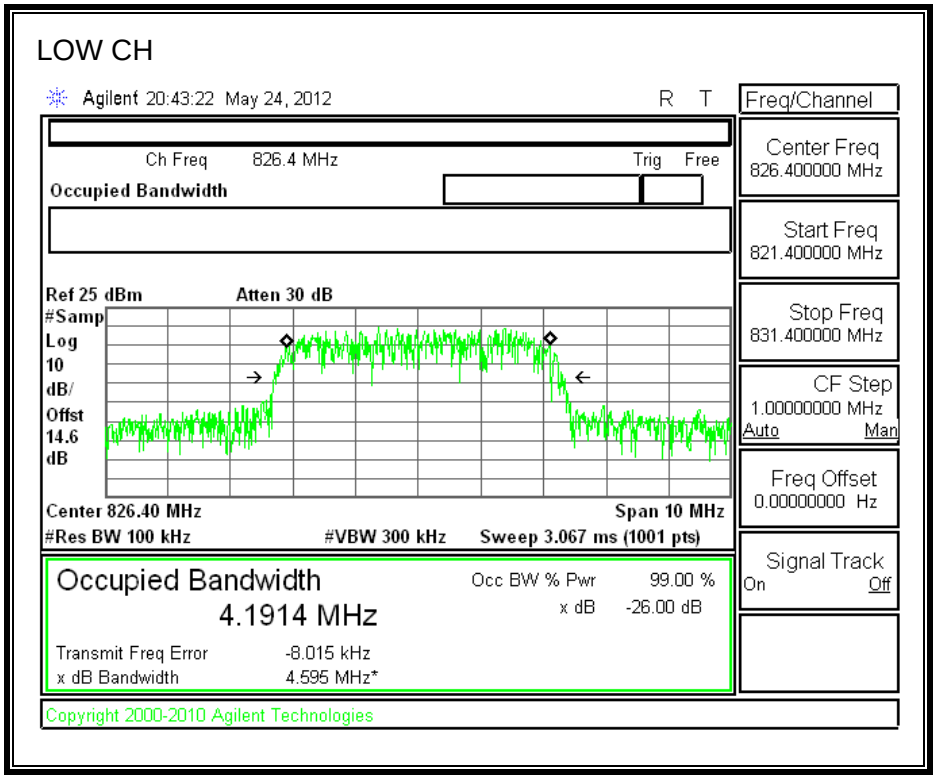


HSDPA, CELL BAND

LOW CH



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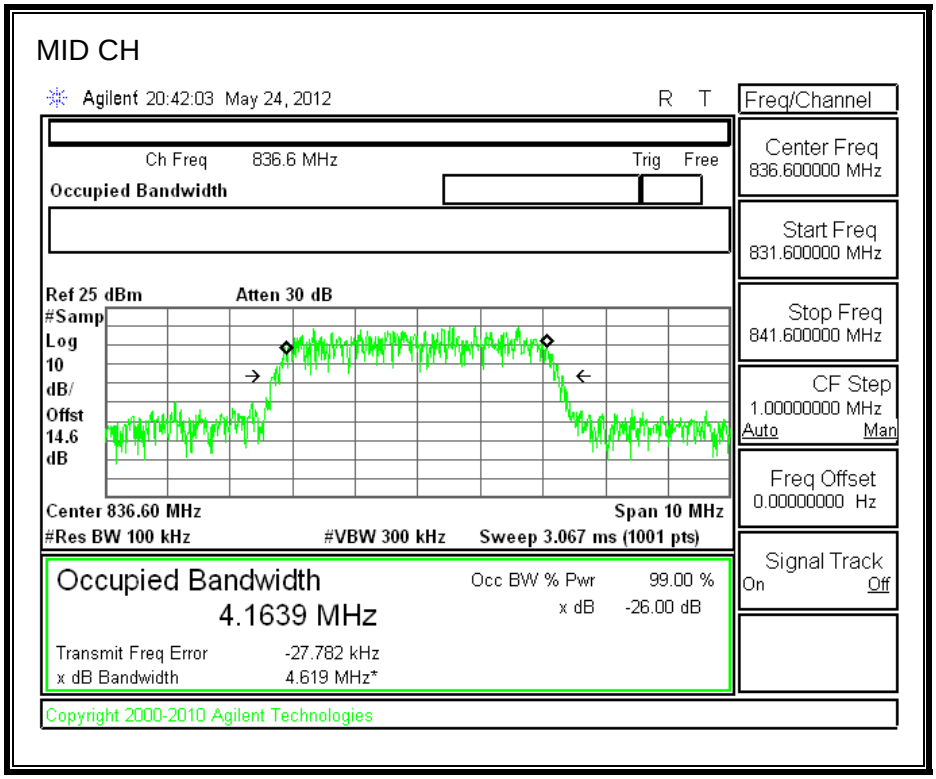

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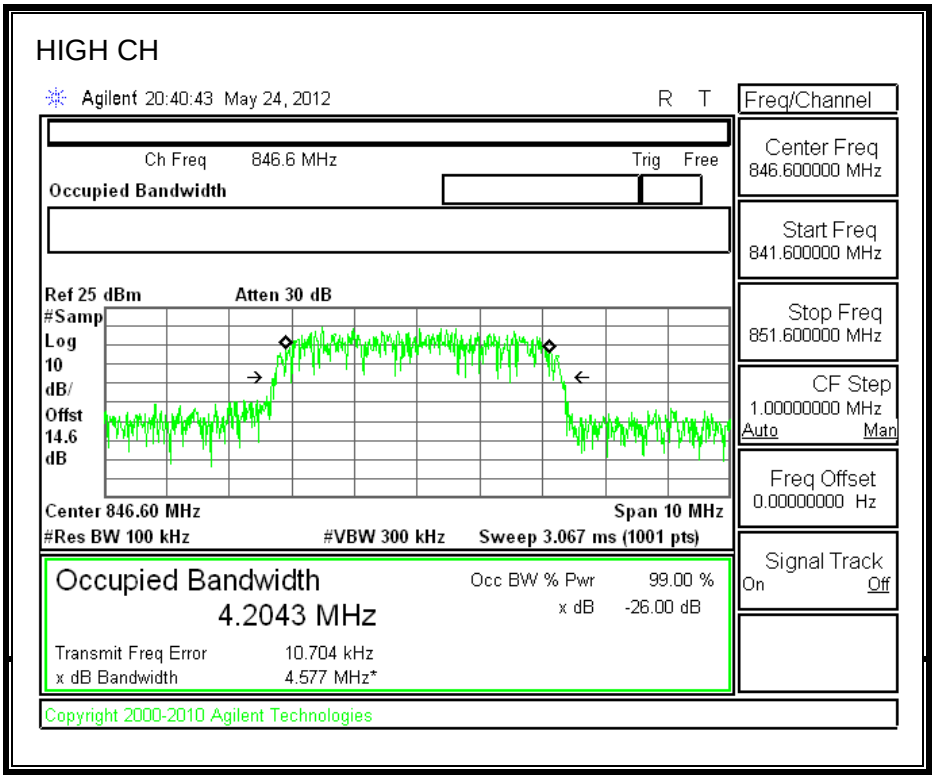
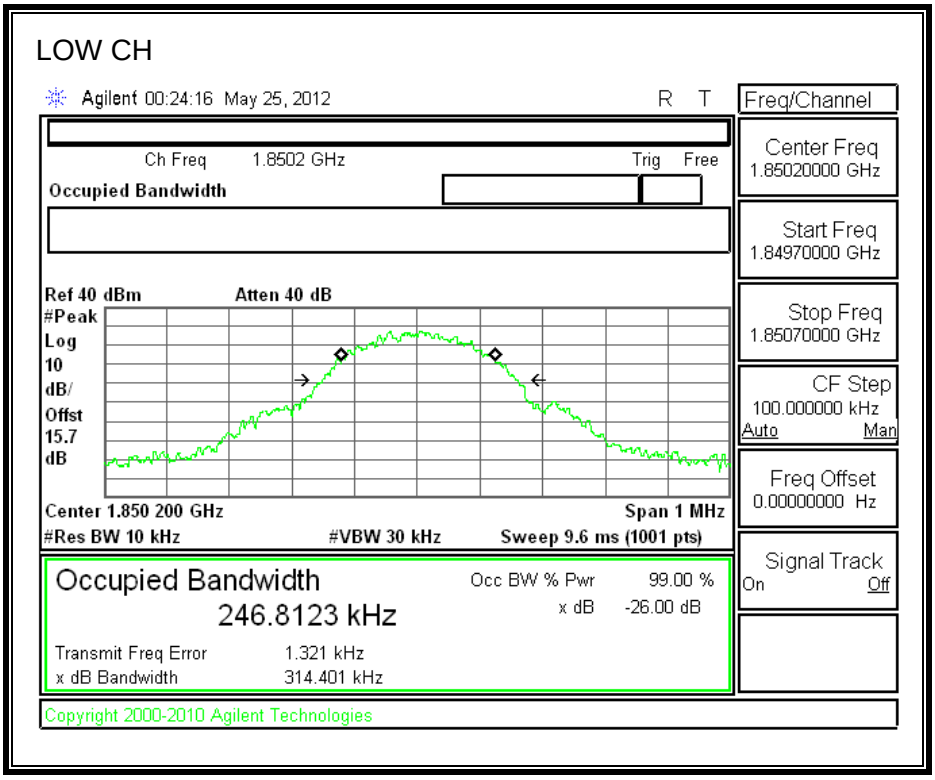
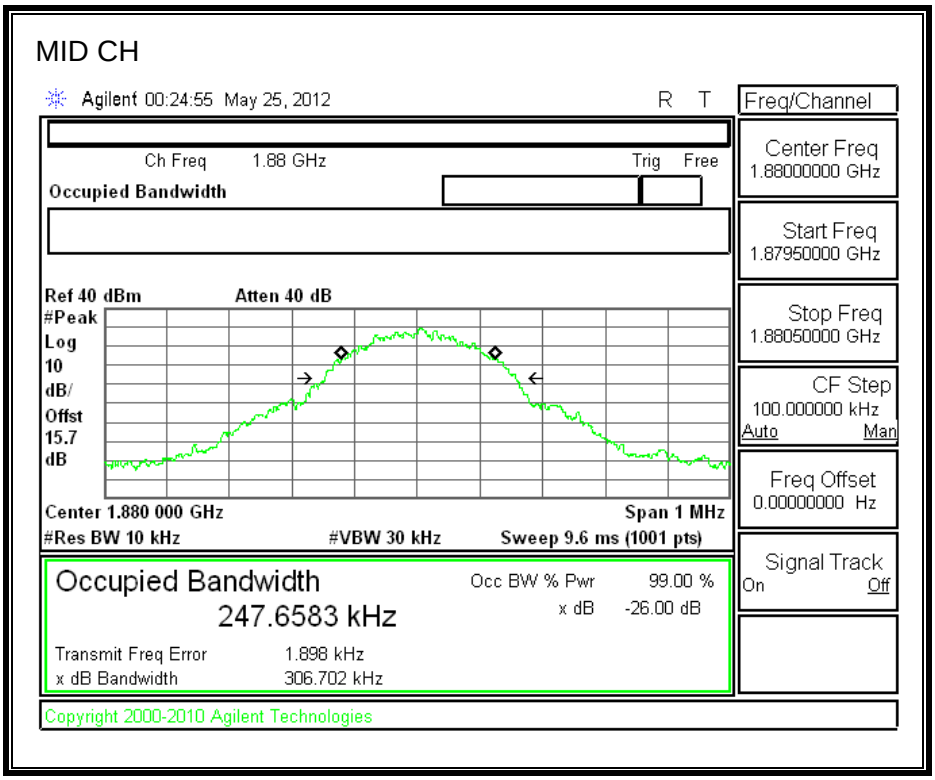


GSM1900 BAND





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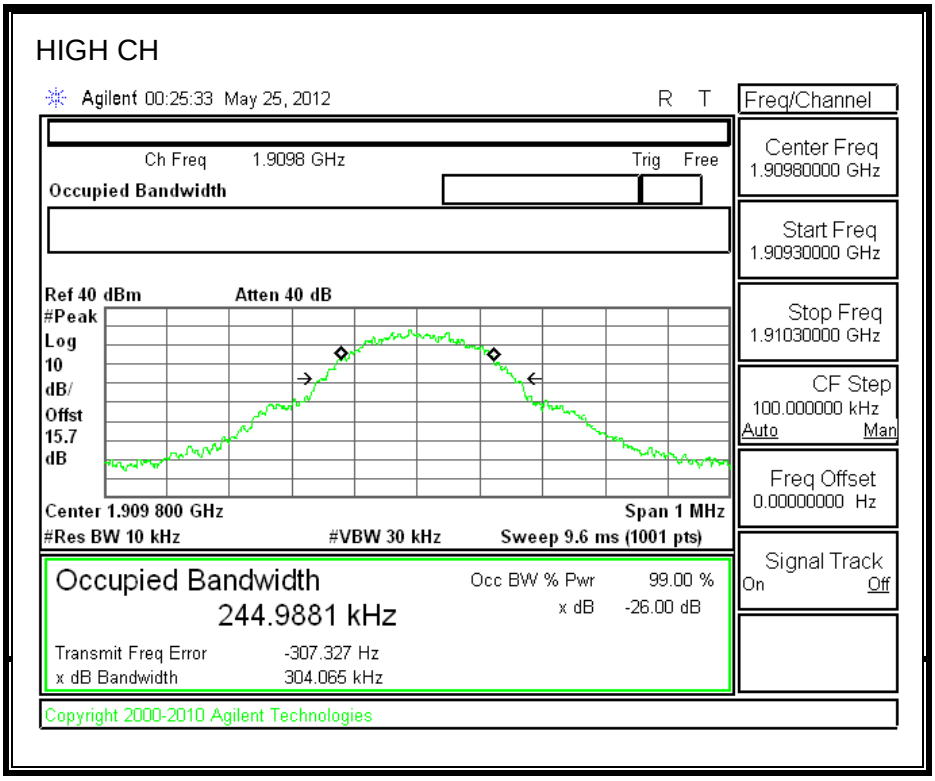

GPRS1900 BAND

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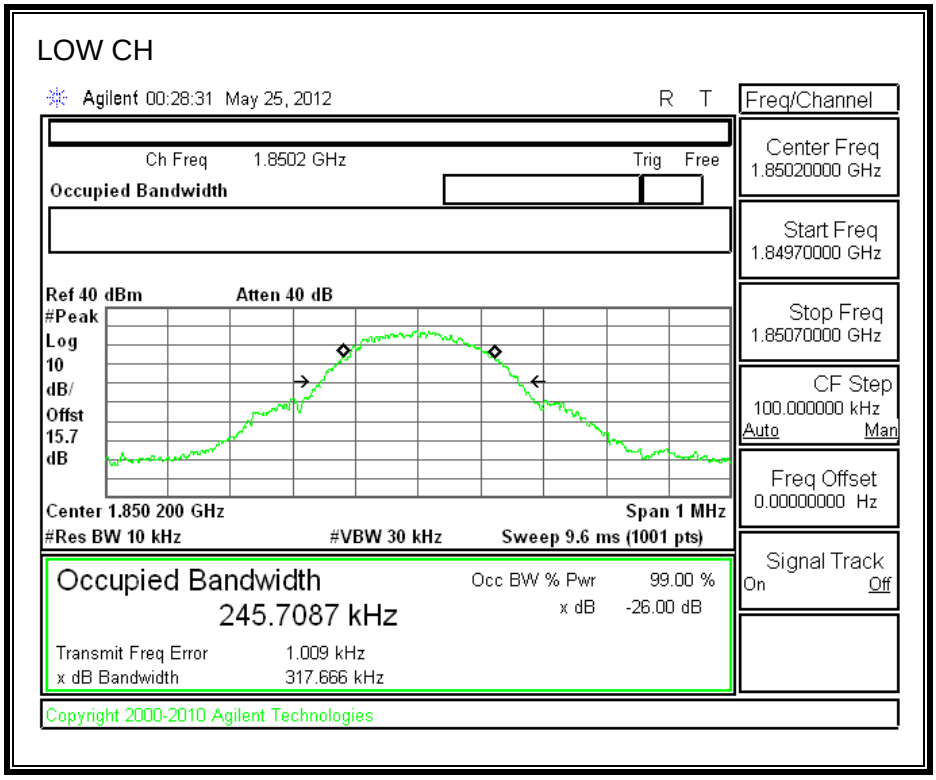

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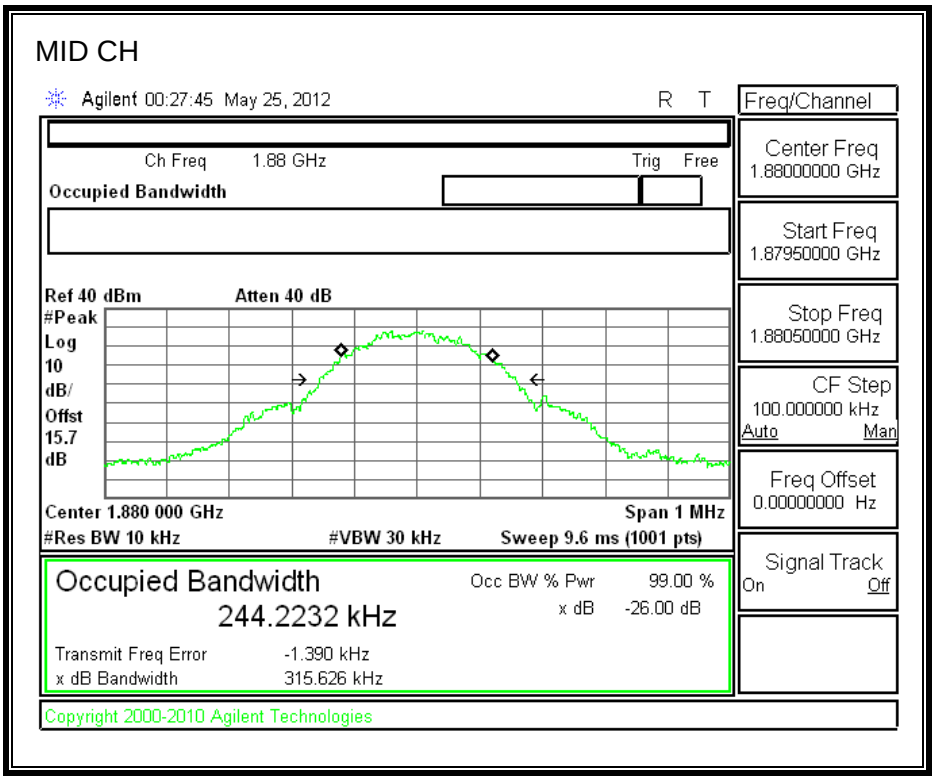

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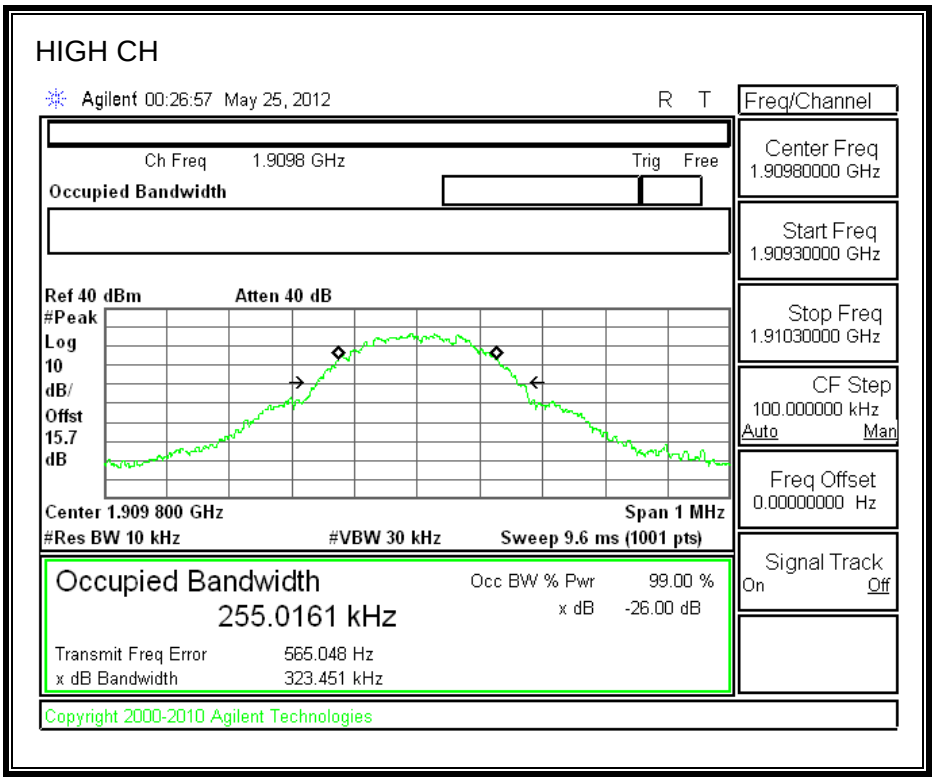
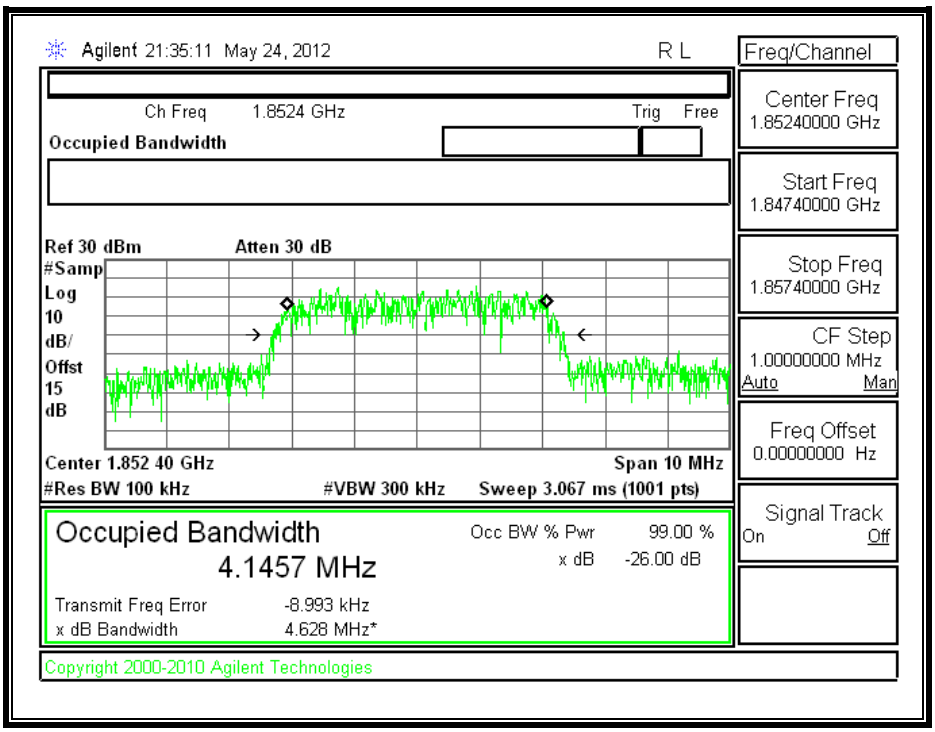
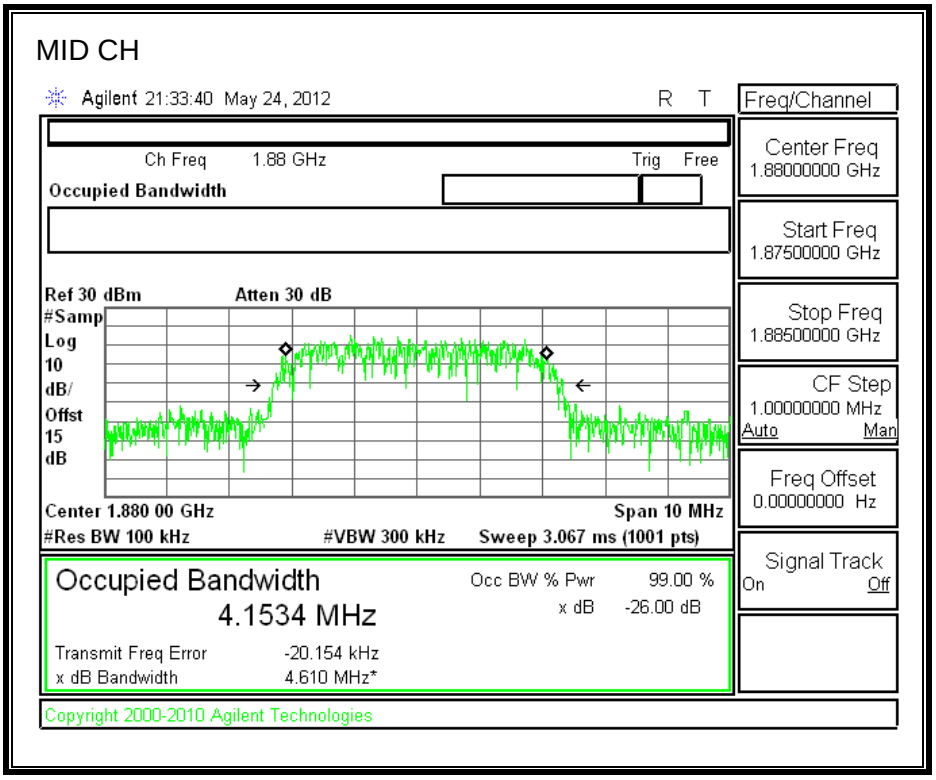


UMTS REL 99, PCS BAND

LOW CH





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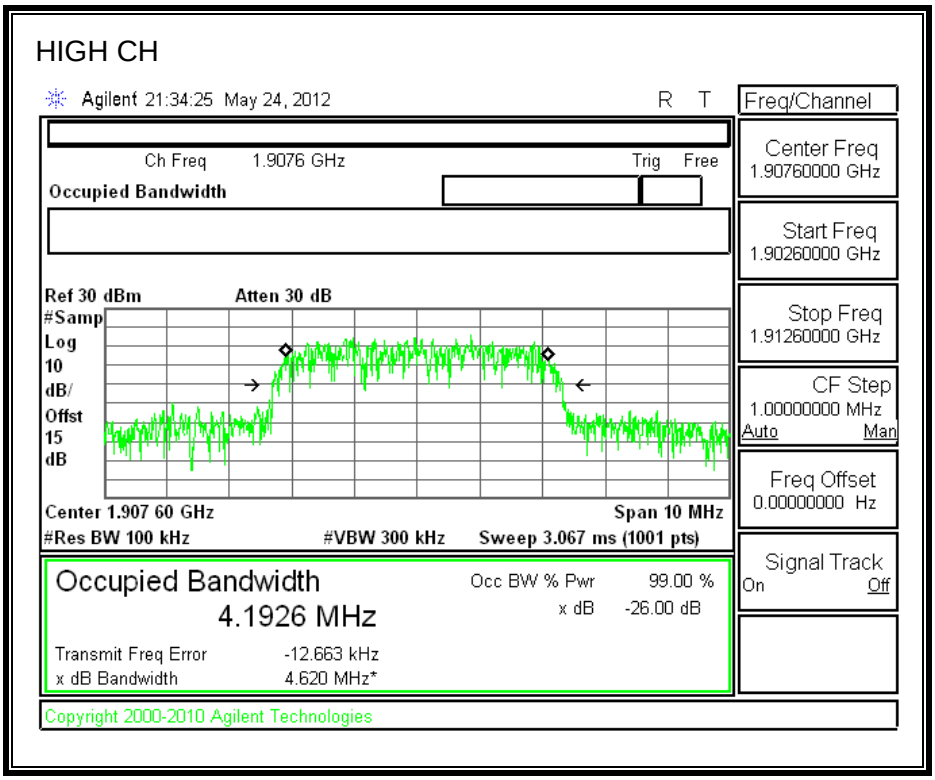

HSDPA, PCS BAND

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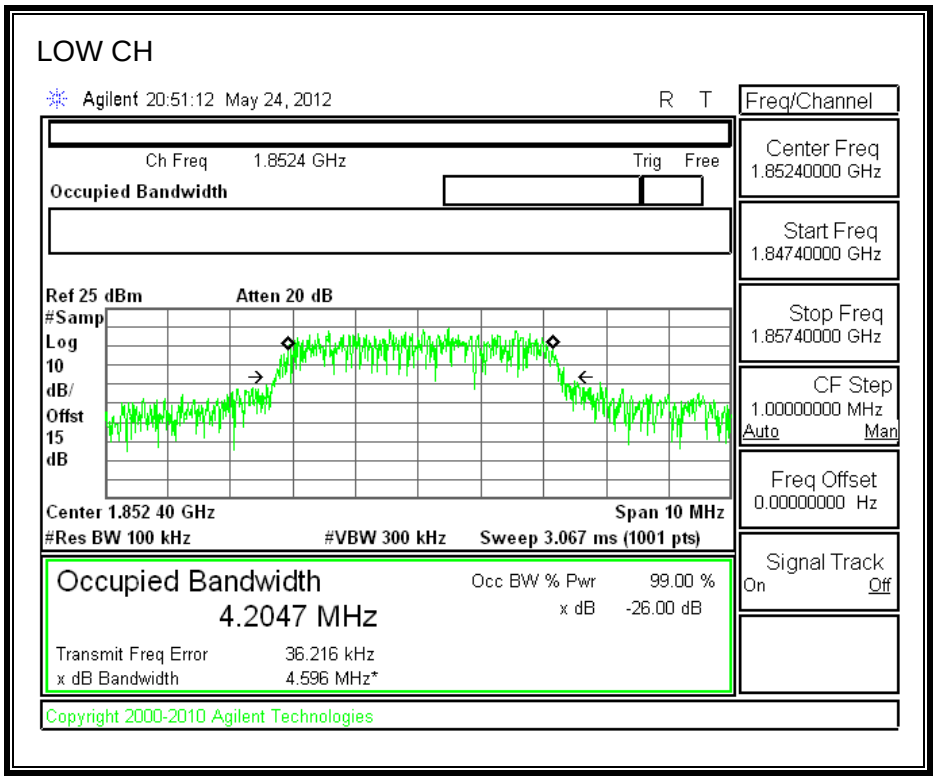
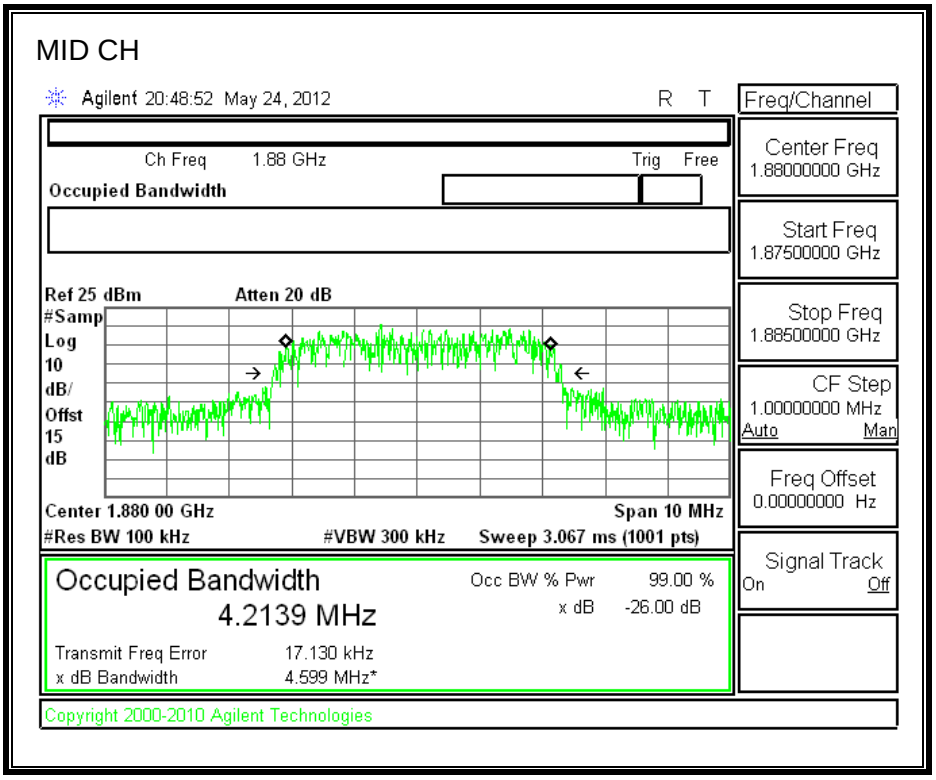
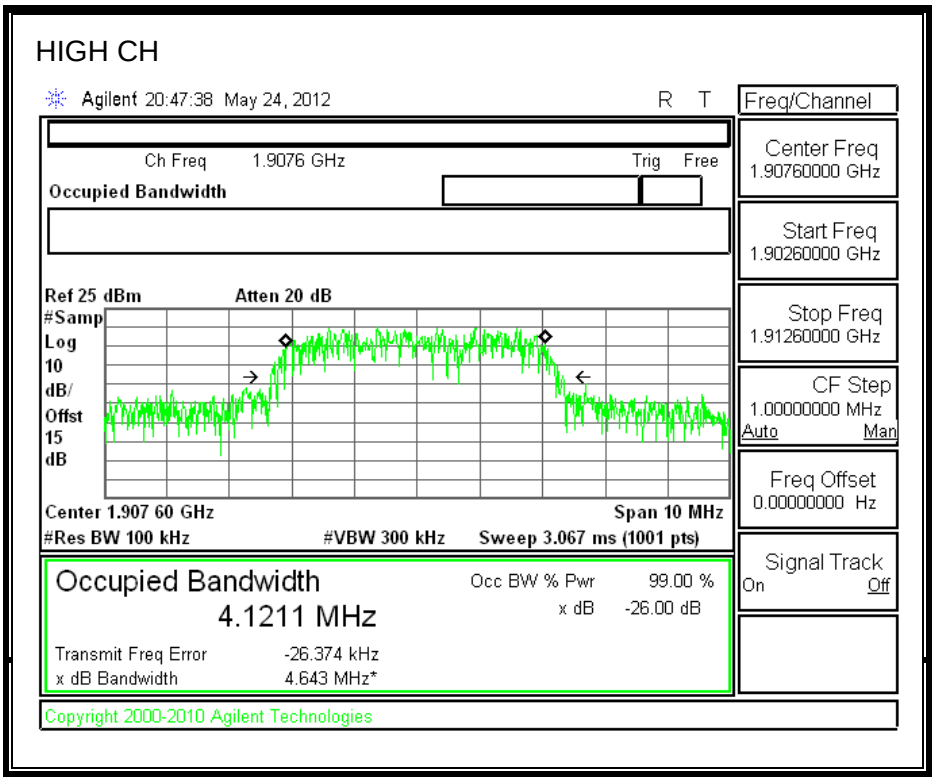


MID CH



HIGH CH



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

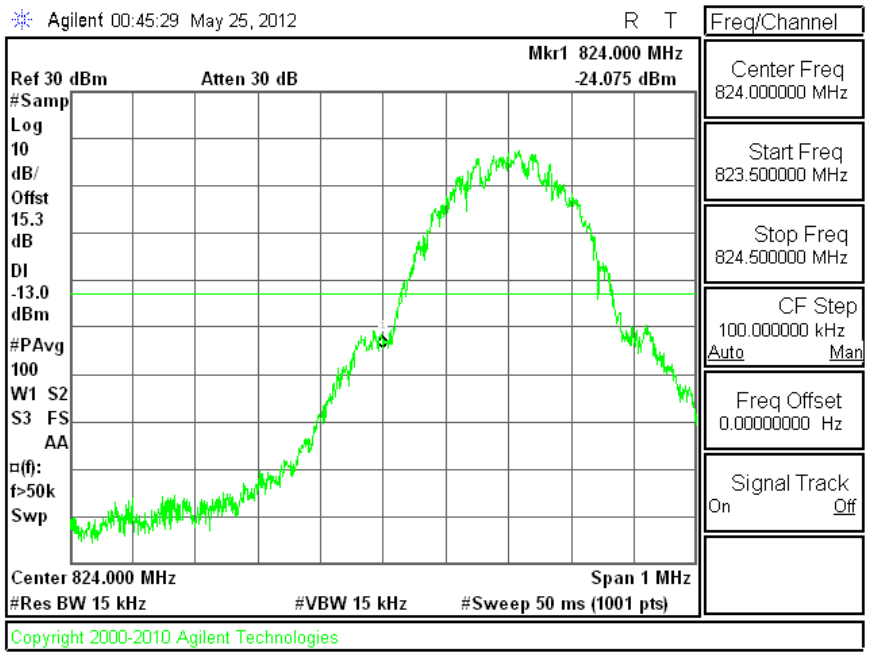
- GSM and GPRS
- UMTS REL. 99
- HSDPA REL.5

RESULTS

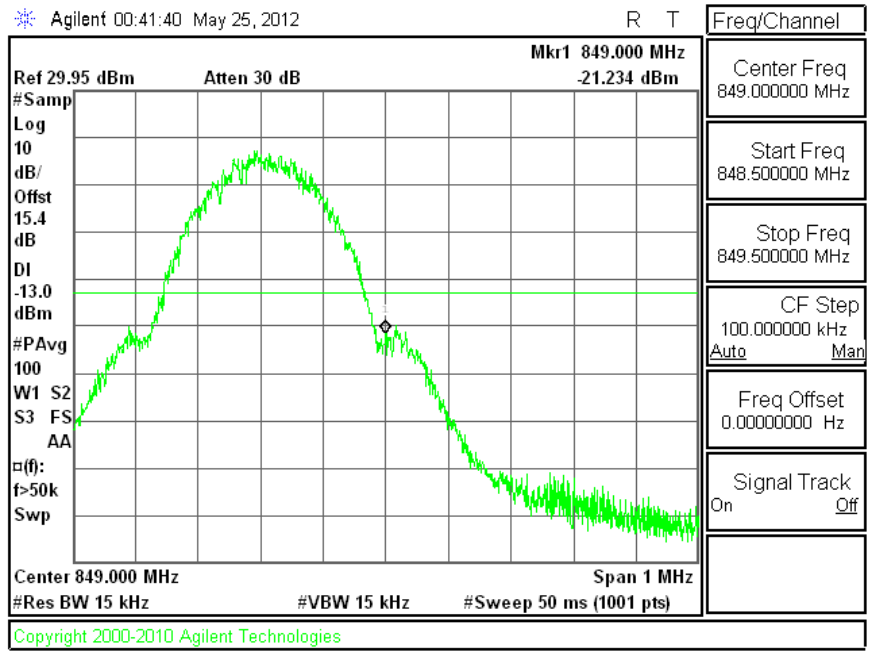
BANDEDGE

GSM850 BAND

LOW CH

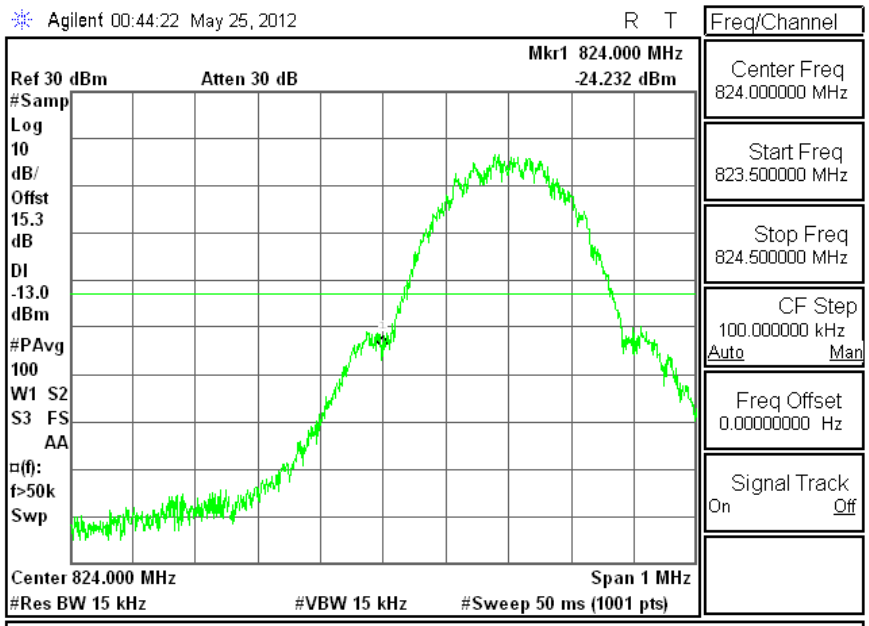


HIGH CH

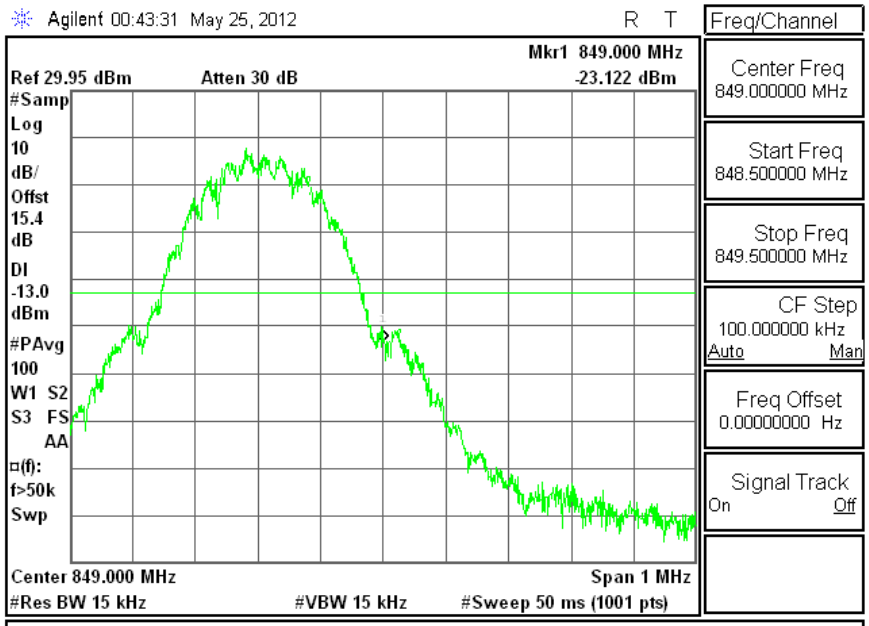


GPRS850 BAND

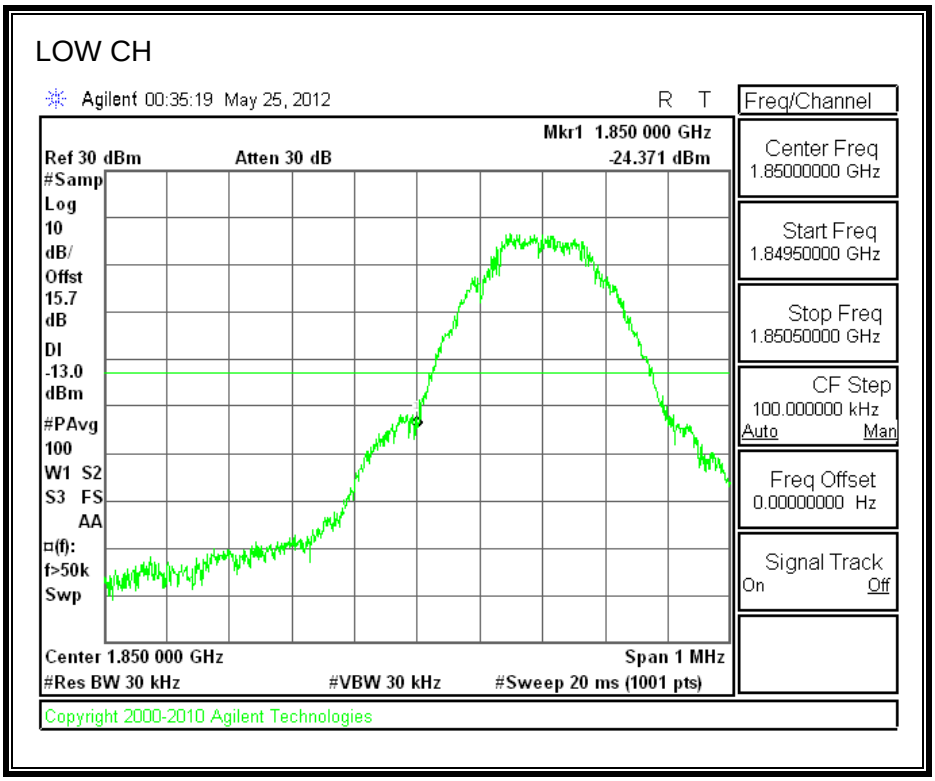
LOW CH

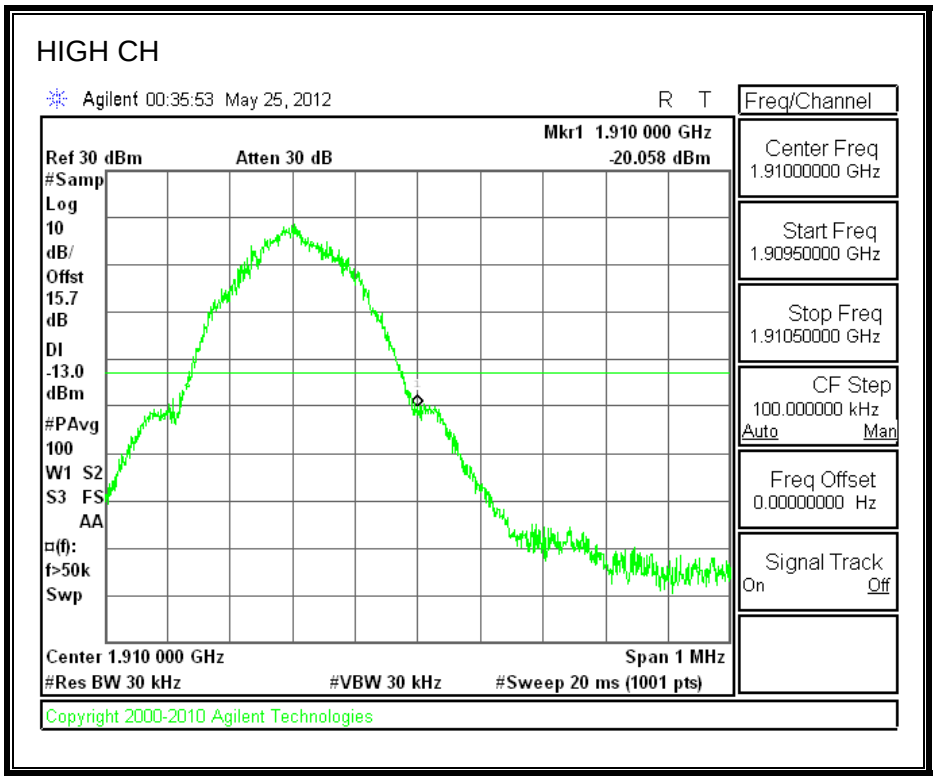


HIGH CH



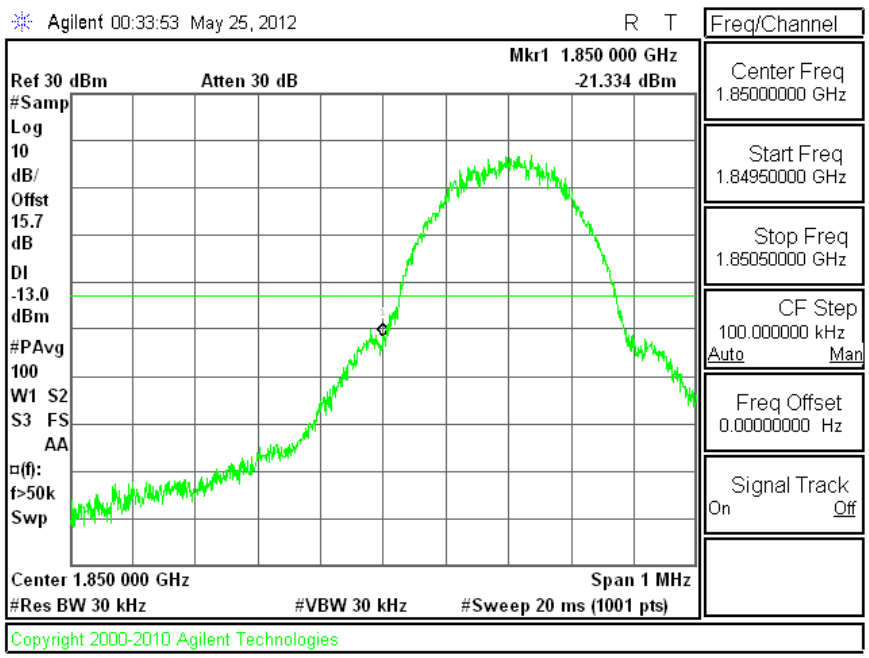
GSM1900 BAND



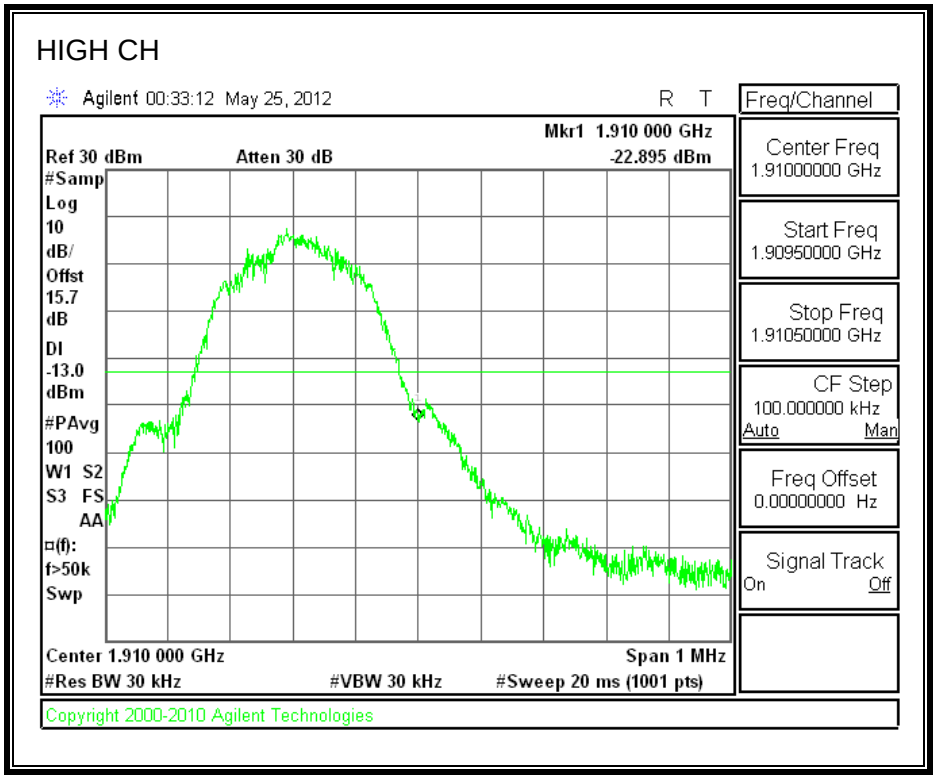


GPRS1900 BAND

LOW CH

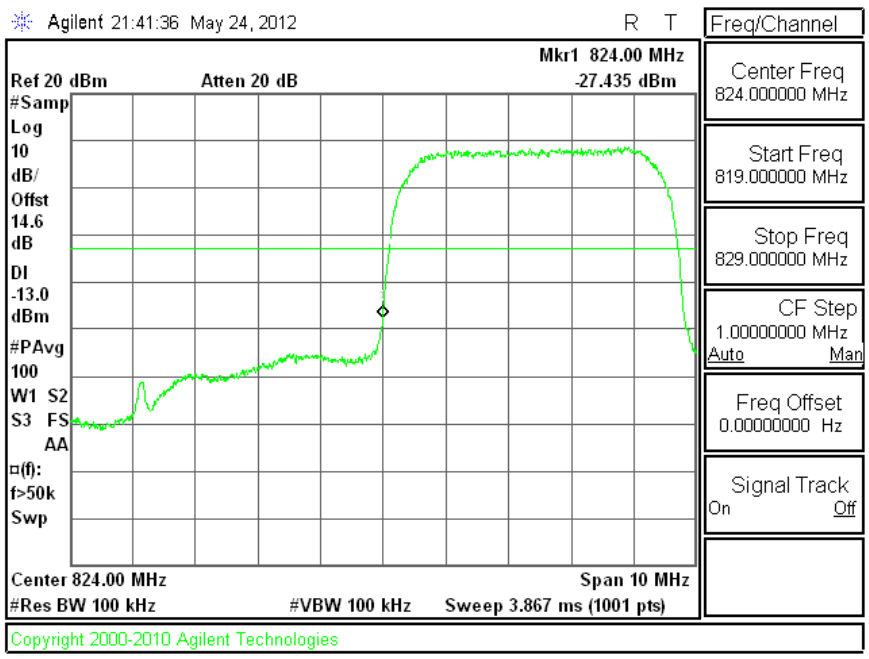


HIGH CH

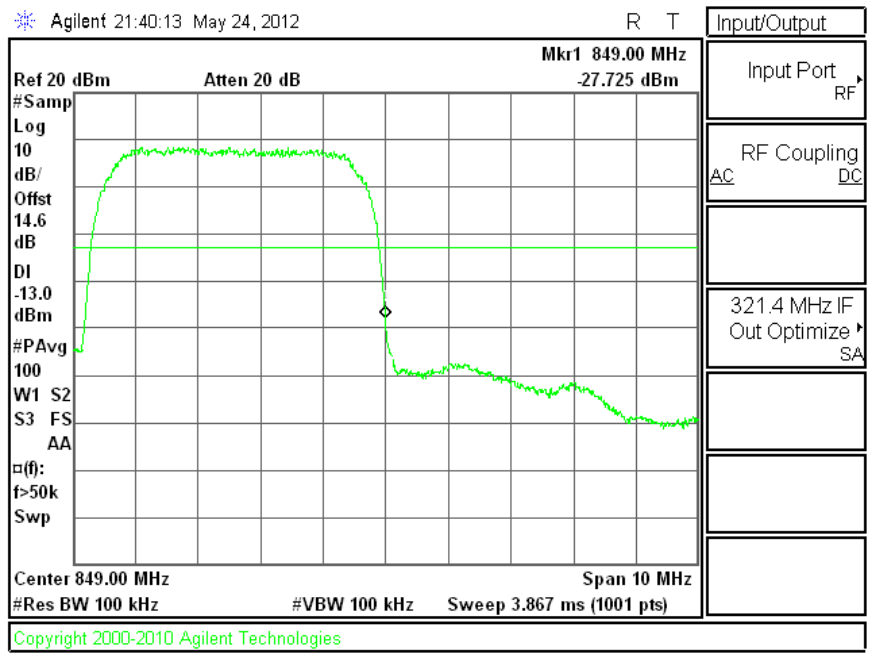


UMTS REL 99 CELL BAND

LOW CH

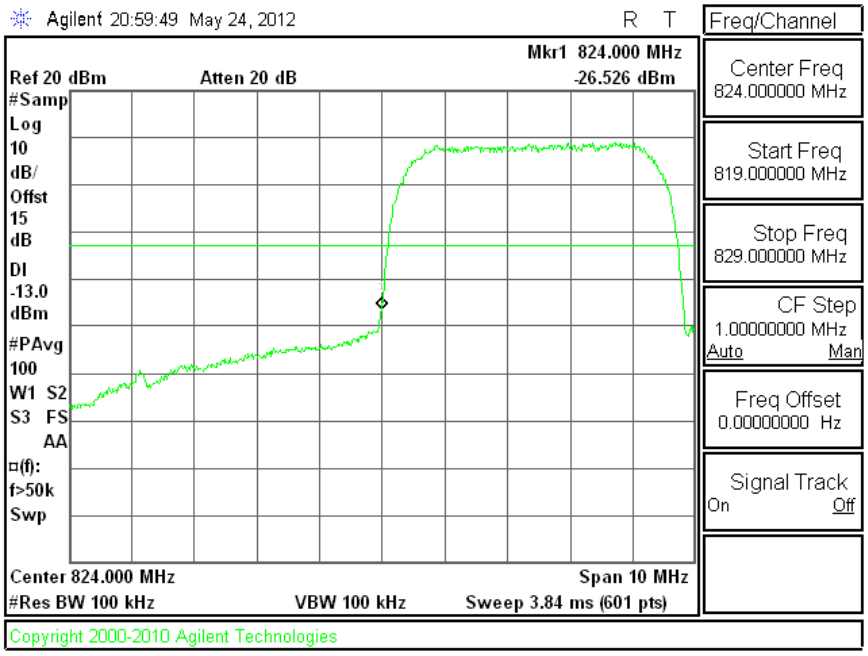


HIGH CH

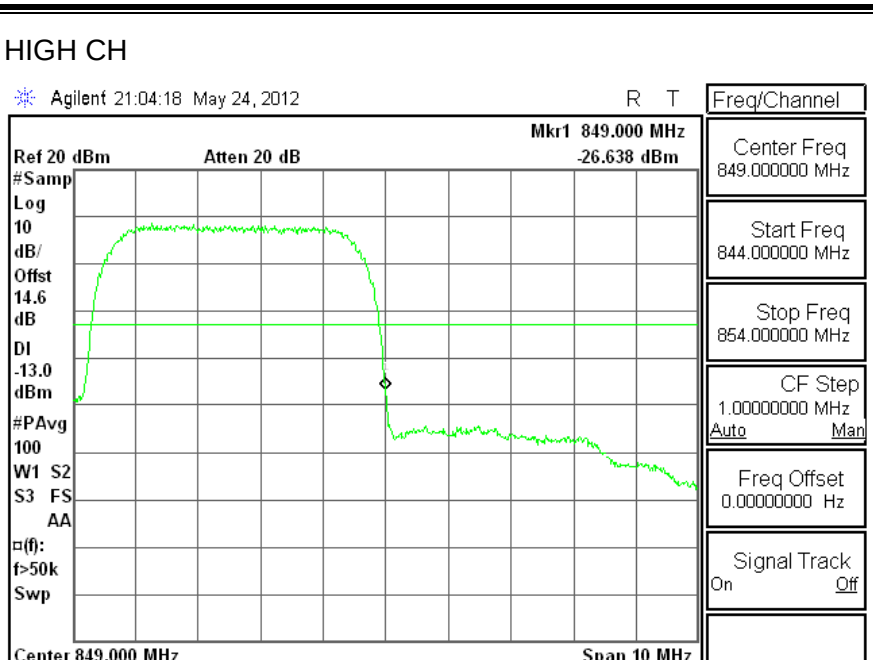


UMTS HSDPA, CELL BAND

LOW CH

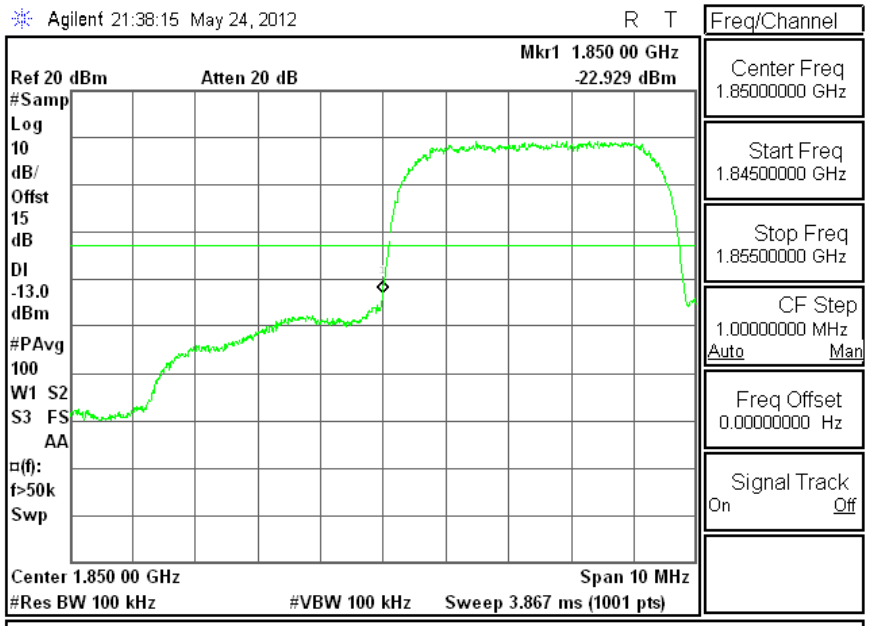


HIGH CH

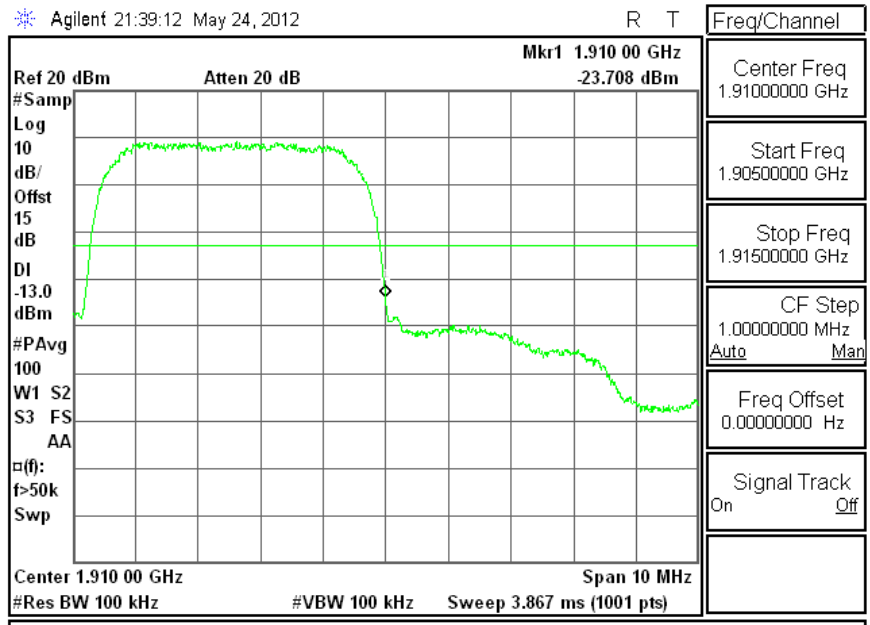


UMTS REL 99 PCS BAND

LOW CH

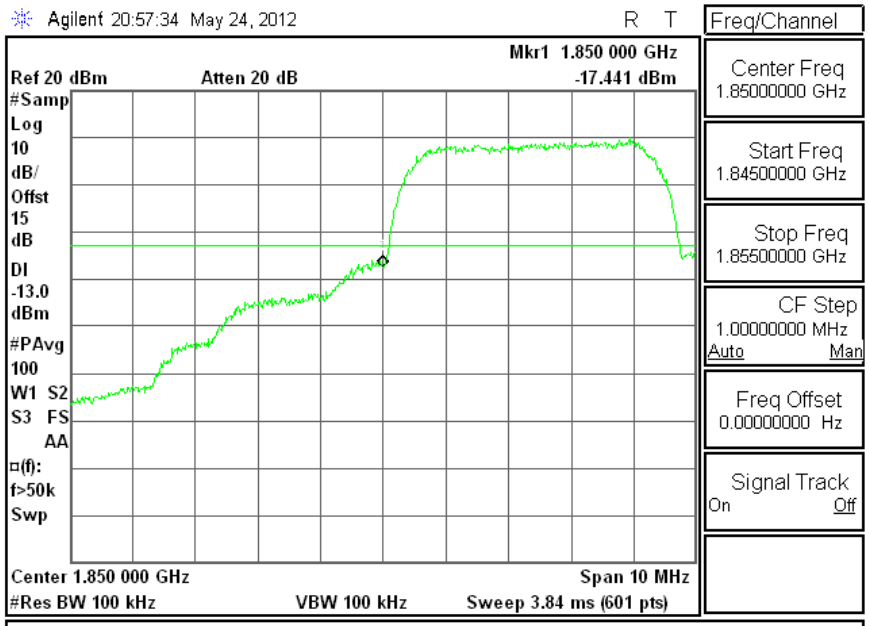


HIGH CH

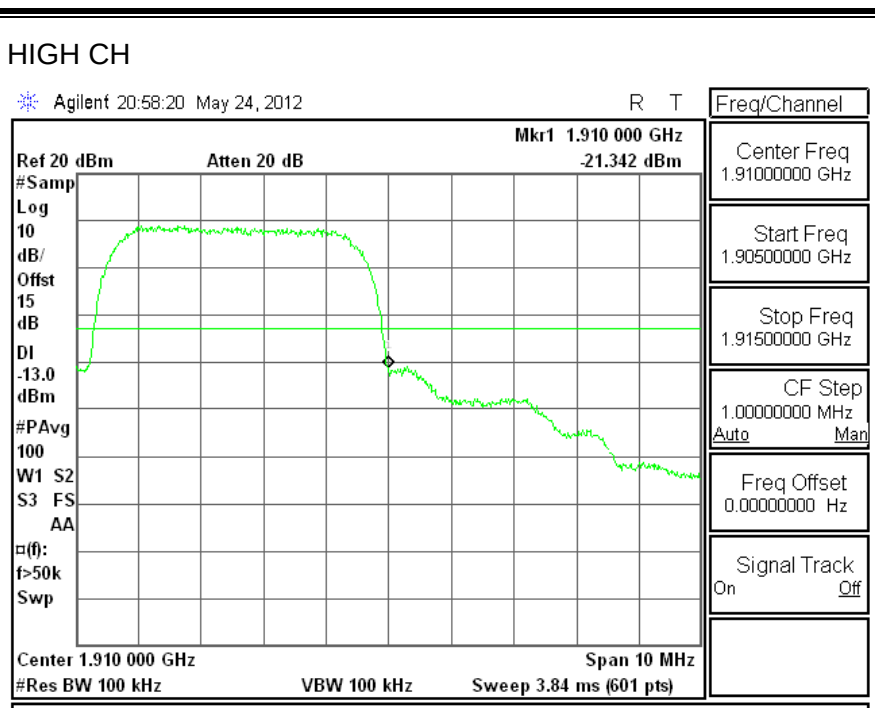


UMTS HSDPA, PCS BAND

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.

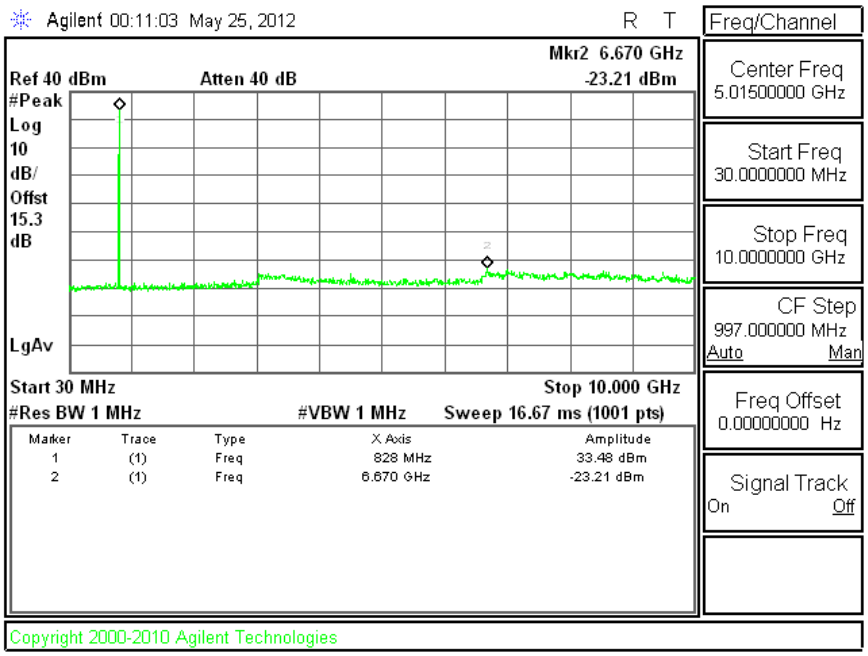
MODES TESTED

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

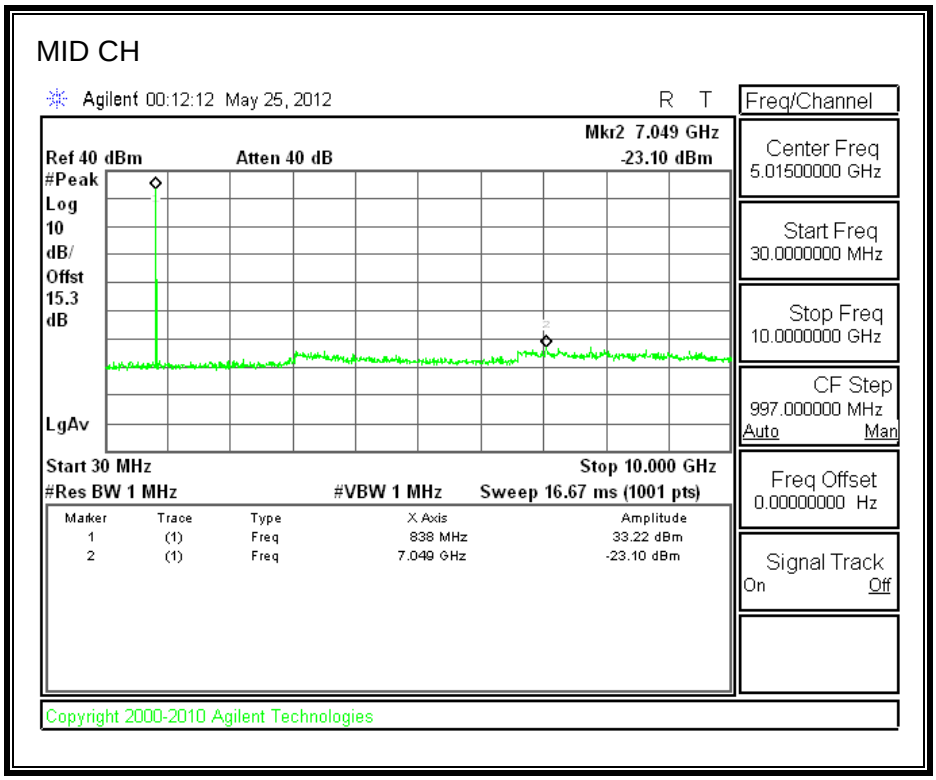
RESULTS

GSM850 BAND

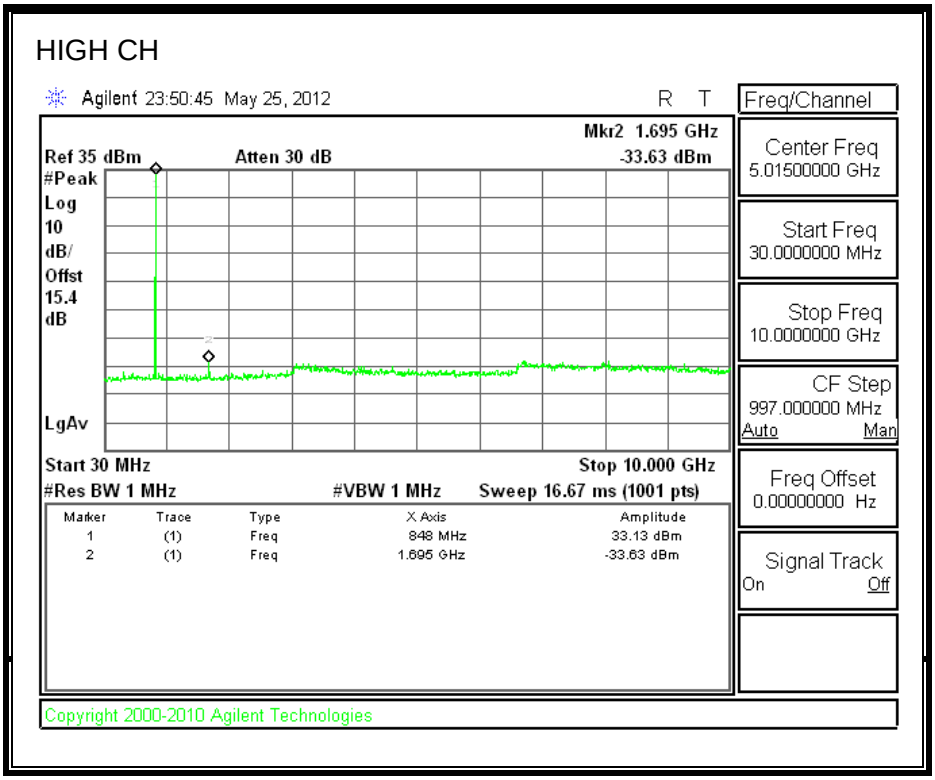
LOW CH



MID CH

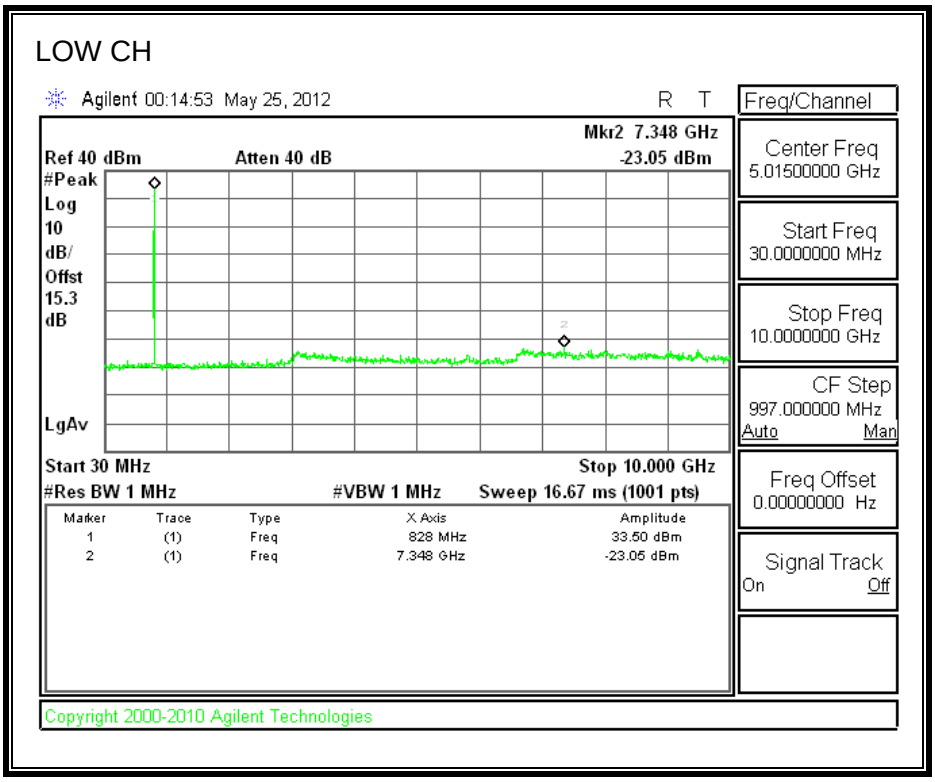


HIGH CH

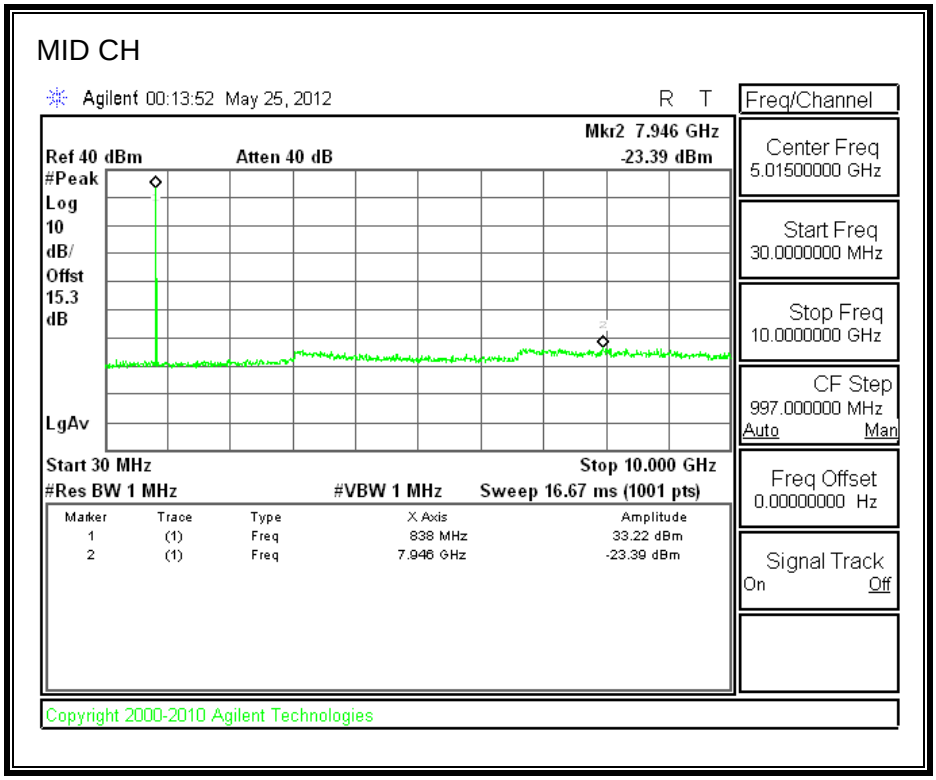


GPRS850 BAND

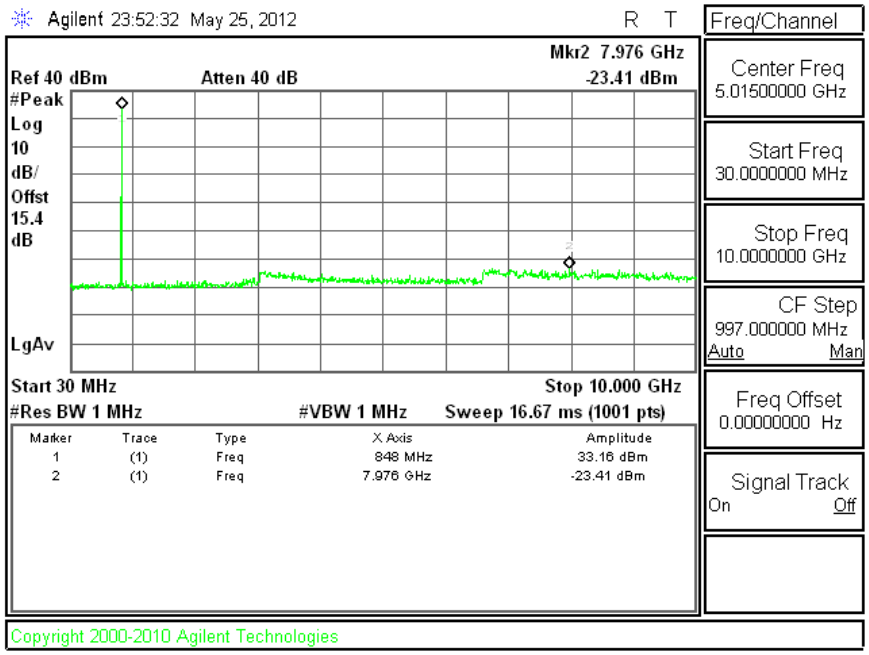
LOW CH



MID CH

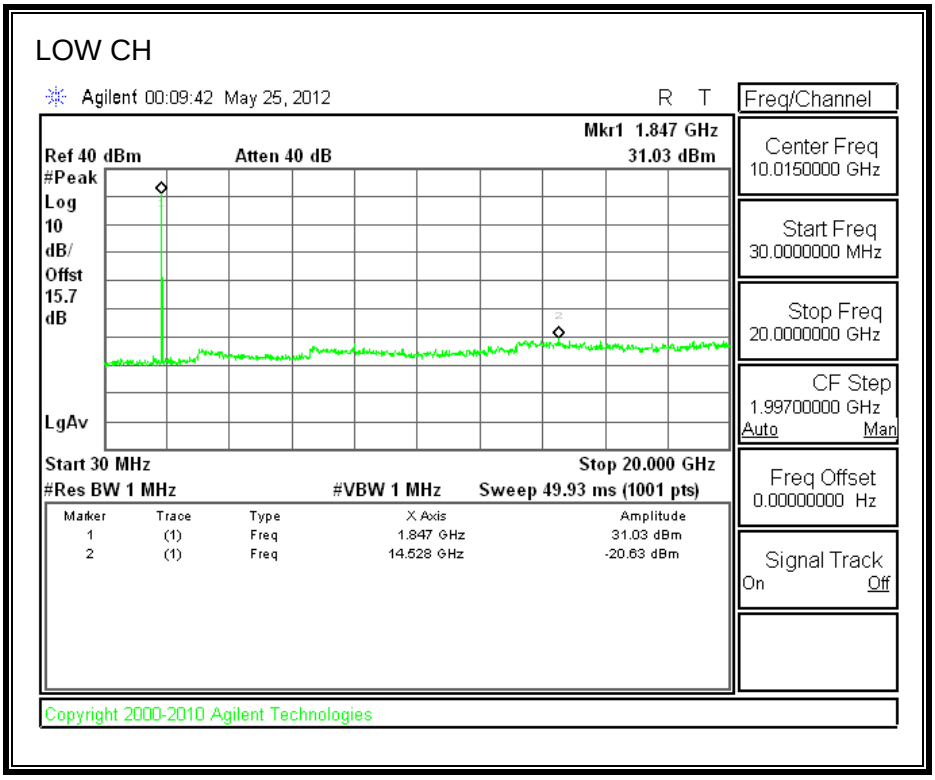


HIGH CH

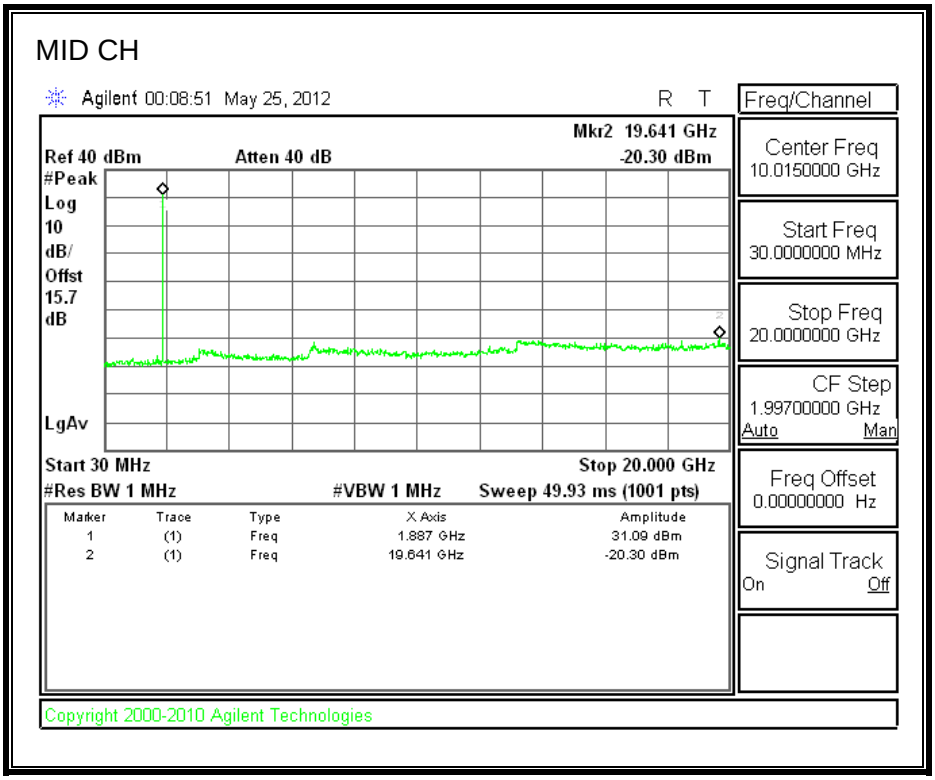


GSM1900 BAND

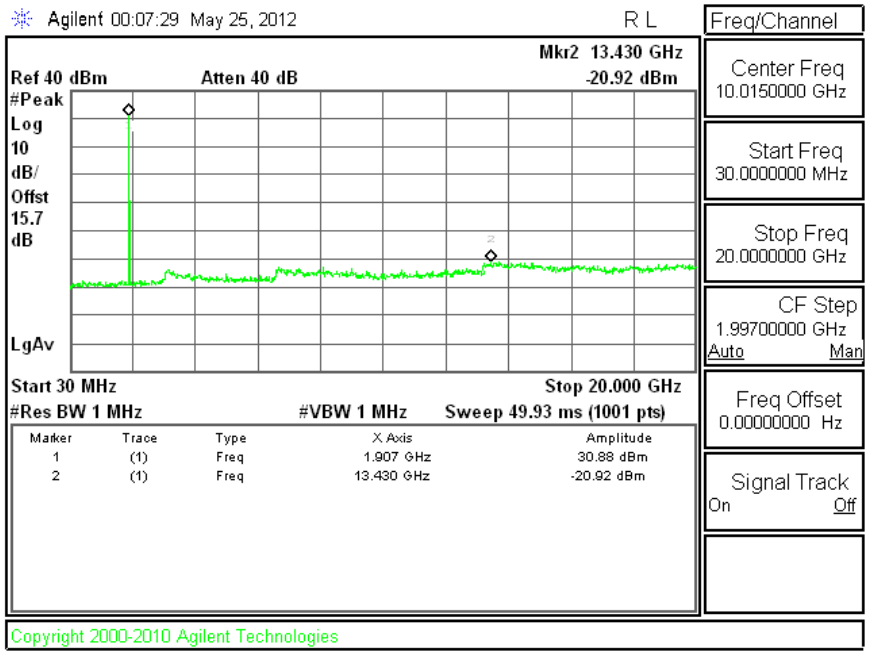
LOW CH



MID CH

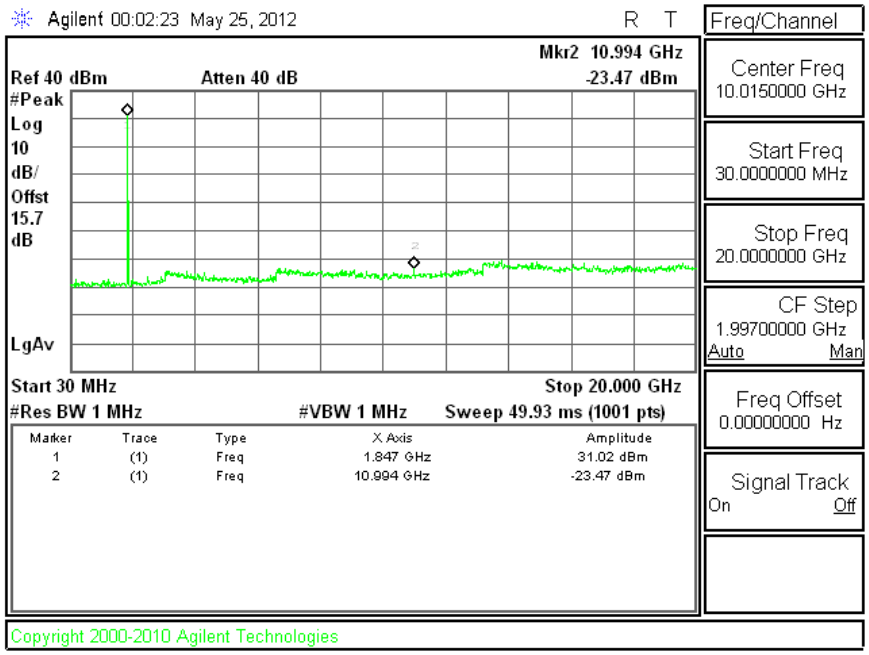


HIGH CH

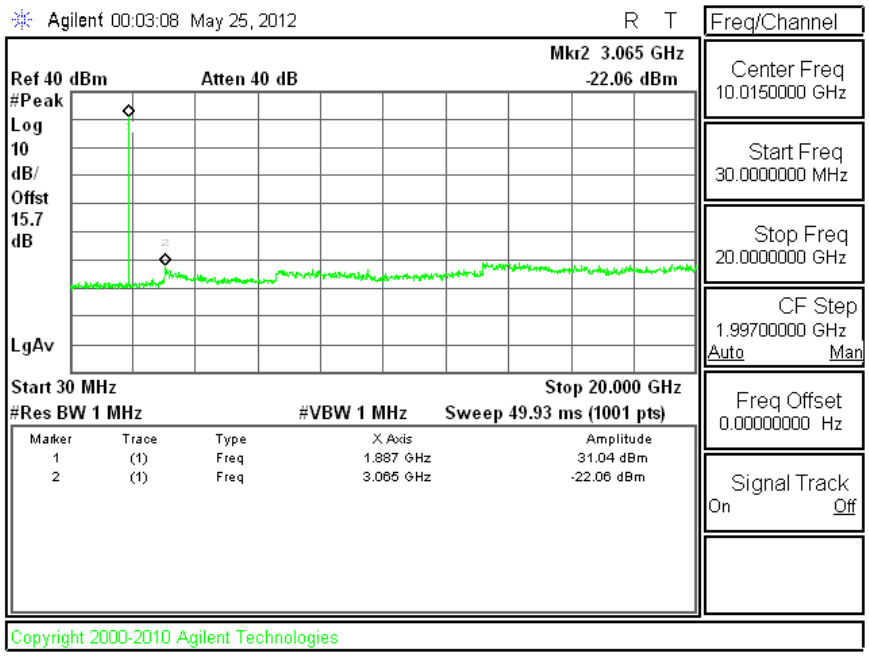


GPRS1900 BAND

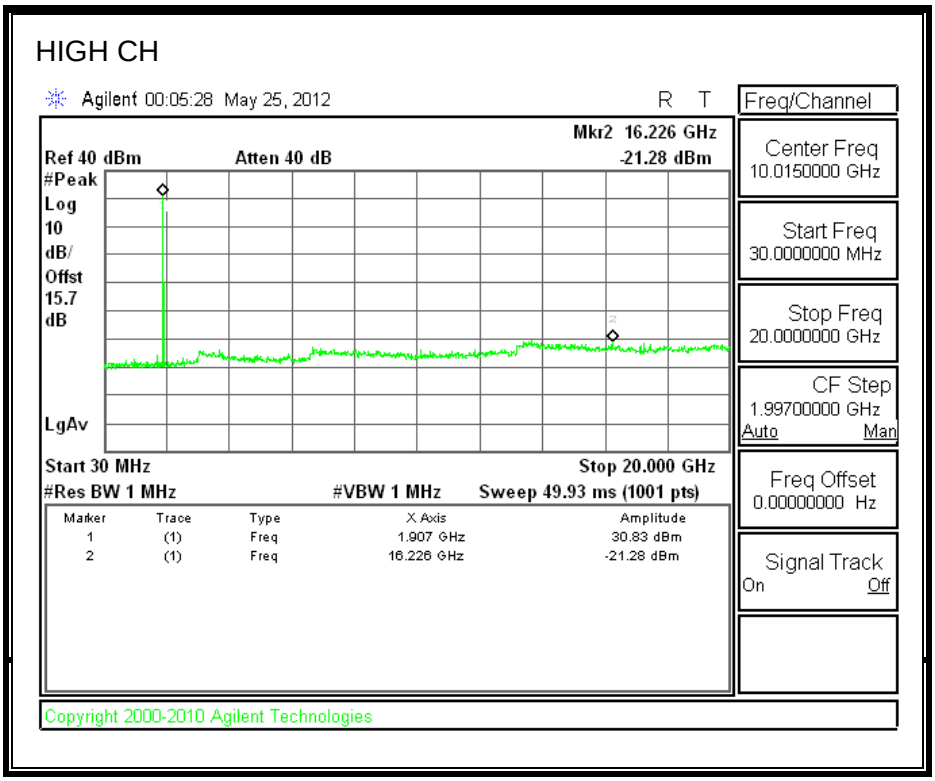
LOW CH



MID CH

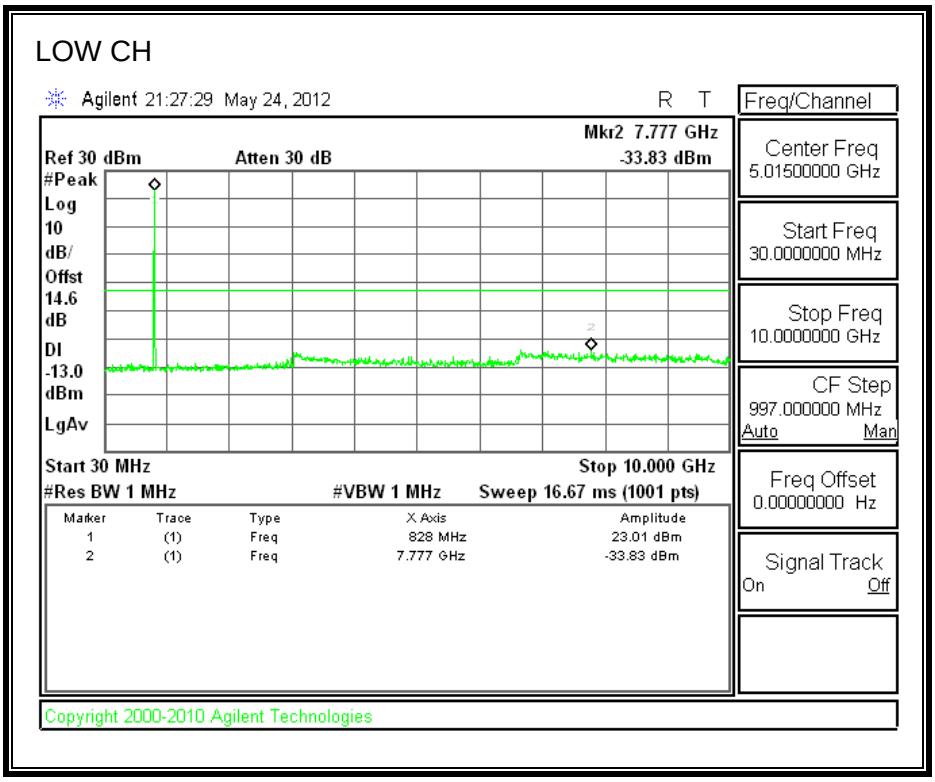


HIGH CH

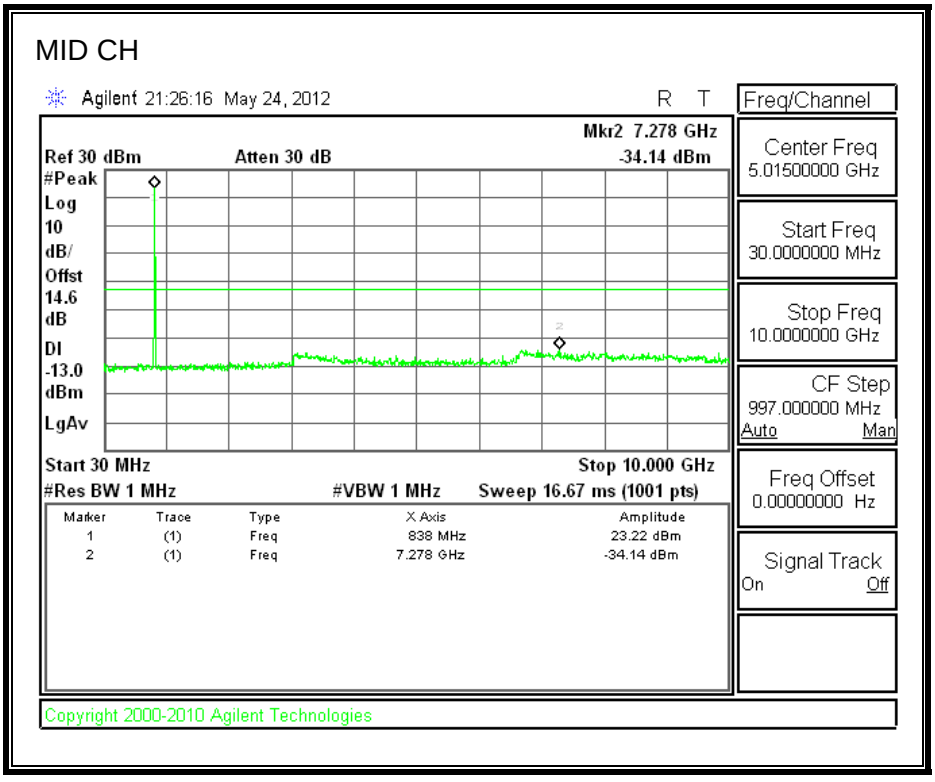


UMTS REL 99. Cell Band

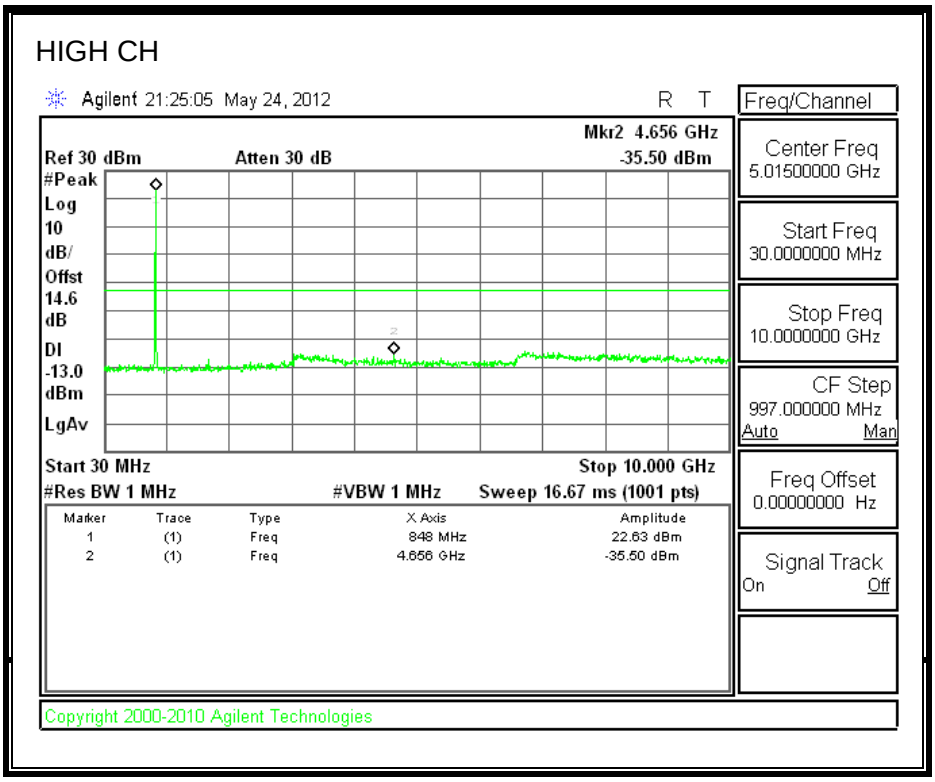
LOW CH



MID CH

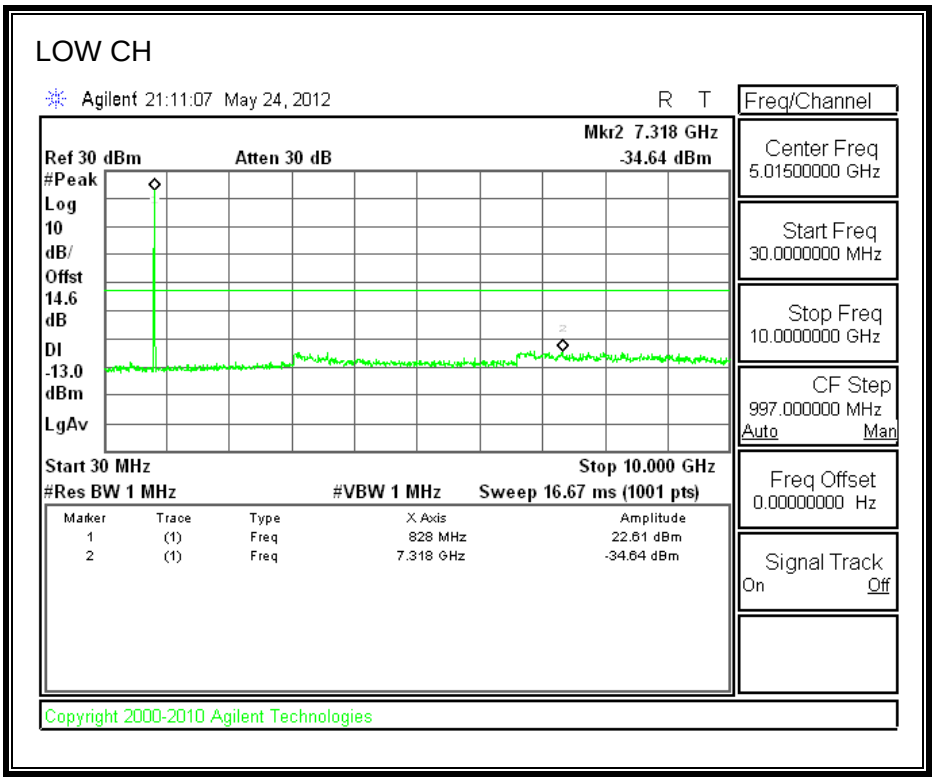


HIGH CH

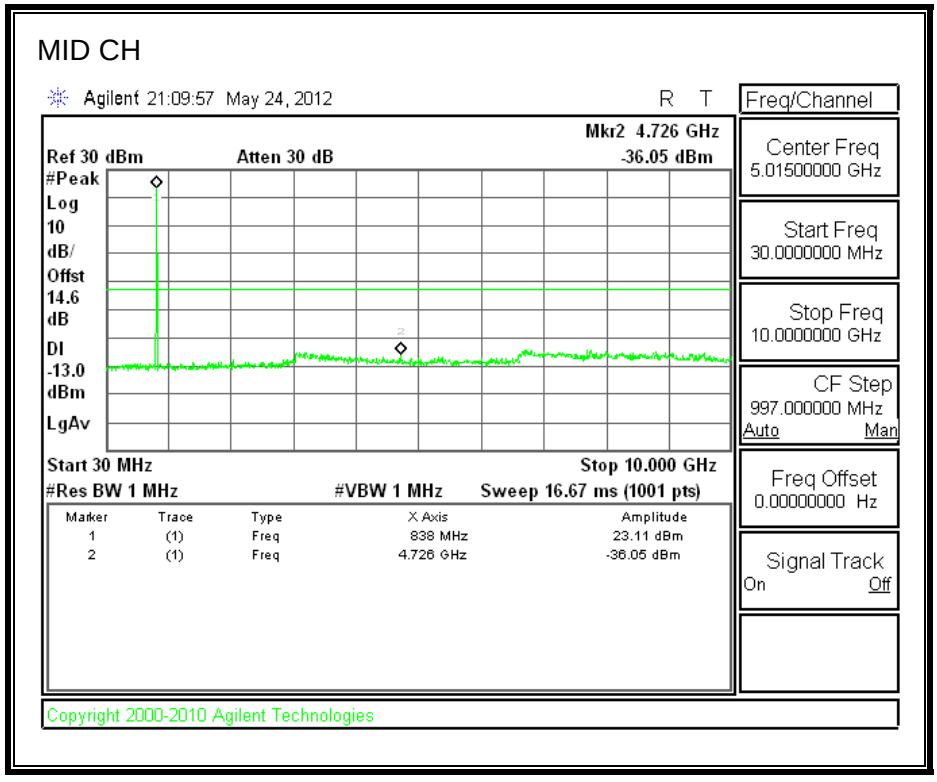


HSDPA, Cell Band

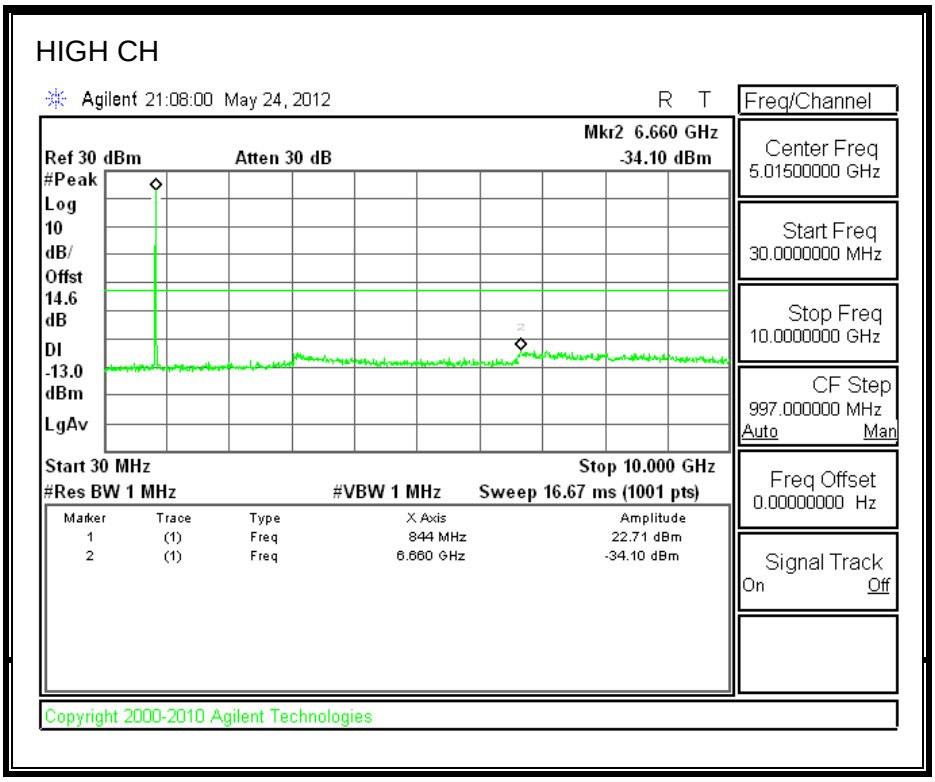
LOW CH



MID CH

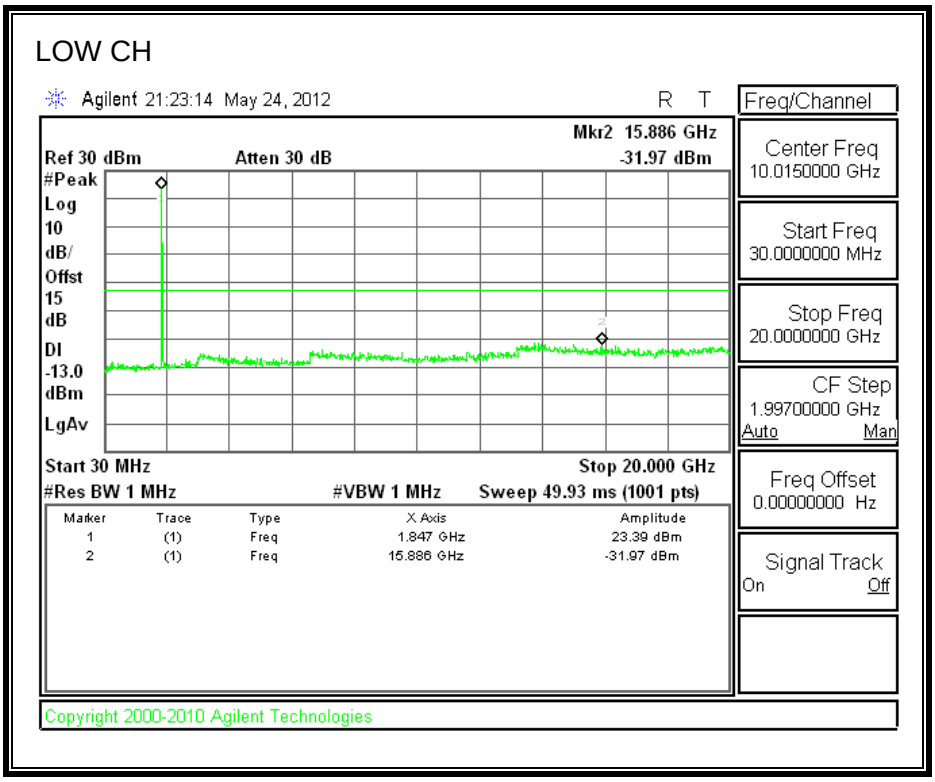


HIGH CH

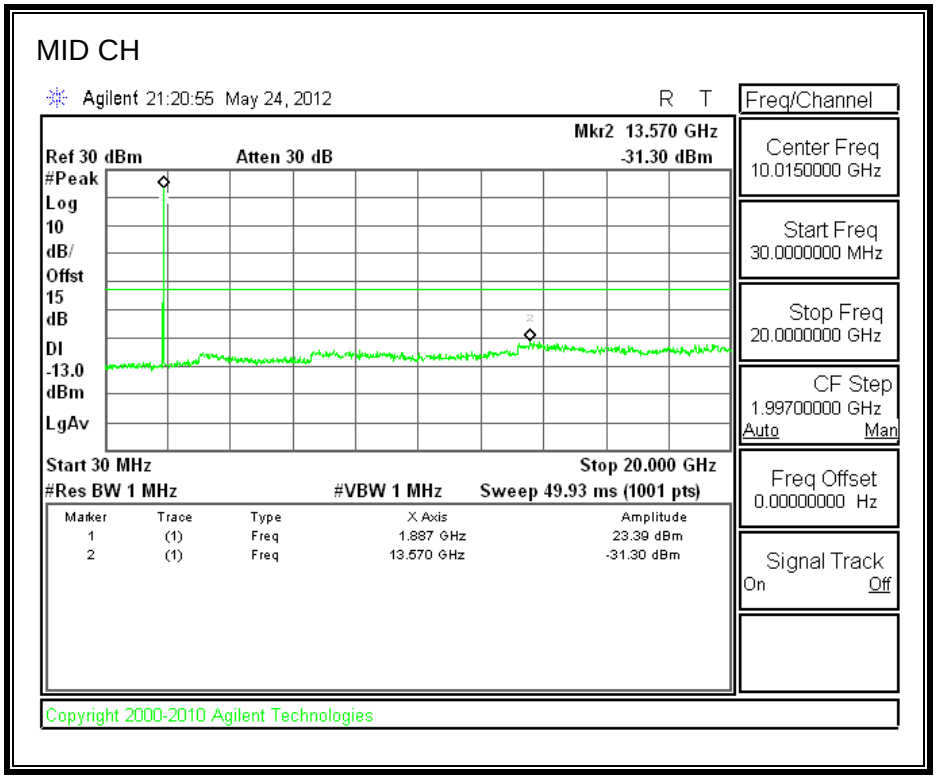


UMTS REL 99. PCS Band

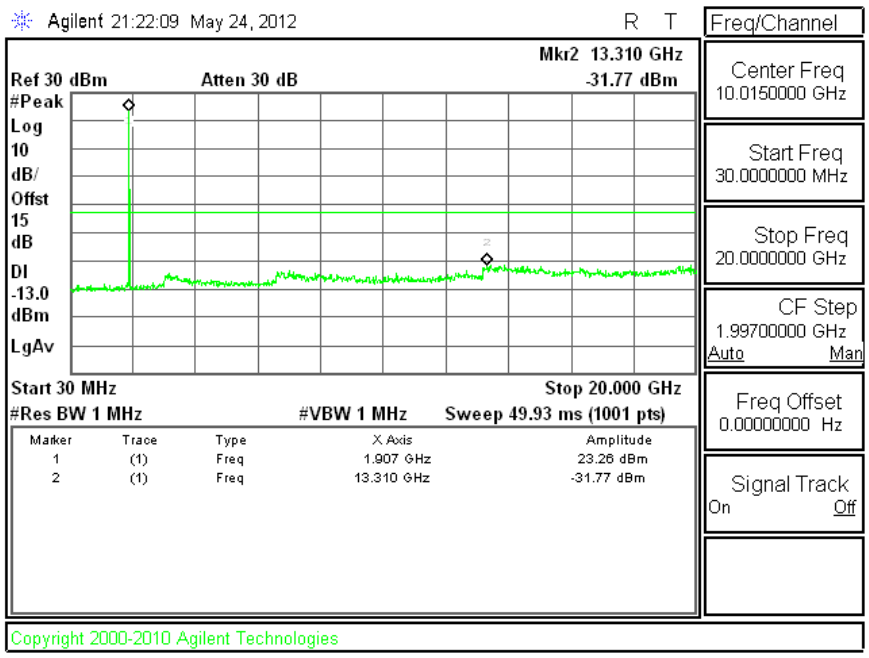
LOW CH



MID CH

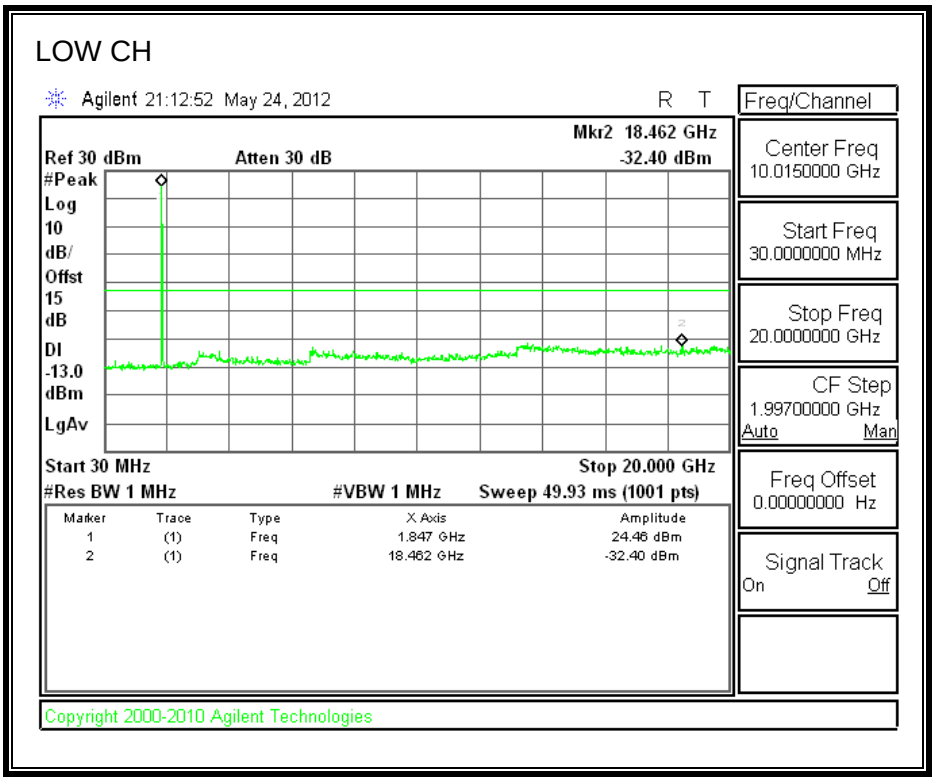


HIGH CH

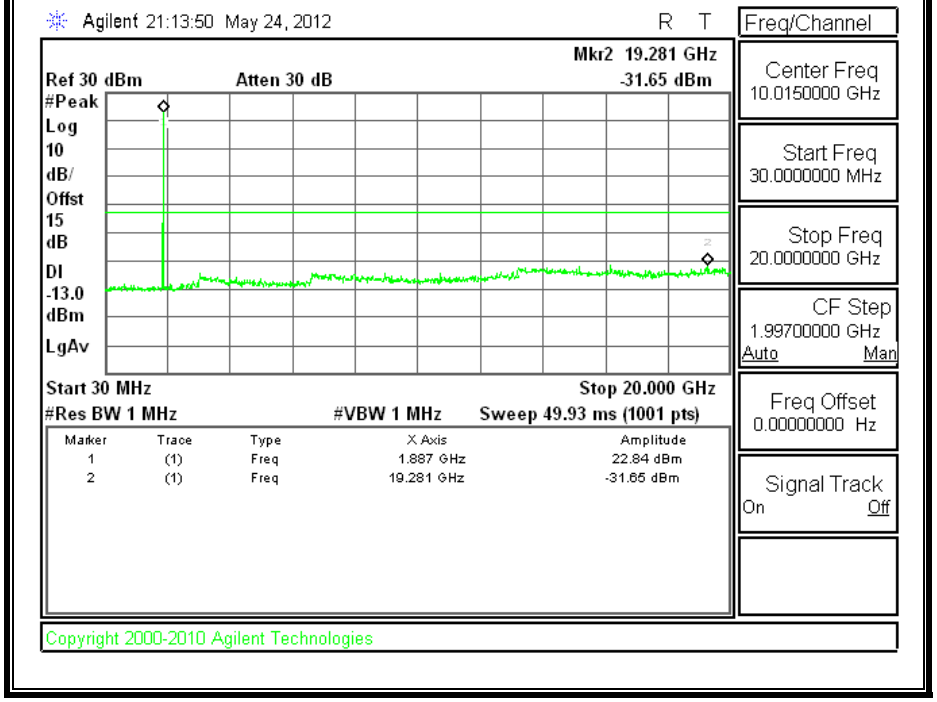


UMTS HSDPA. PCS Band

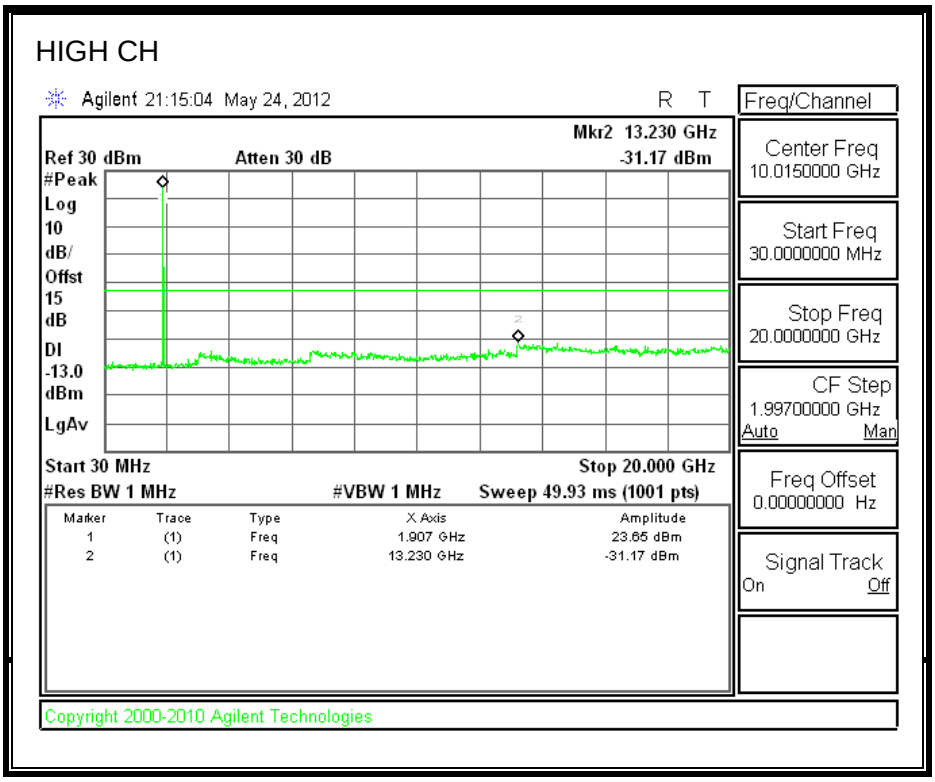
LOW CH



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 20ºC 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 3.7 Vdc.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case). The test voltage ranges from 3.40 to 4.30 VDC.

MODES TESTED

- GPRS
- HSDPA REL 5

RESULTS

See the following pages.

CELL, GSM MODULATION – MID CHANNEL

Reference Frequency: Cellular Mid Channel 836.599996MHz @ 20ºC 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)
3.70	50	836.599994	0.002	2.5
3.70	40	836.599994	0.002	2.5
3.70	30	836.599996	0.000	2.5
3.70	***20***	***836.599996***	***0***	2.5
3.70	10	836.599996	0.000	2.5
3.70	0	836.600004	-0.010	2.5
3.70	-10	836.600008	-0.014	2.5
3.70	-20	836.600001	-0.006	2.5
3.70	-30	836.599992	0.005	2.5

Reference Frequency: Cellular Mid Channel 836.599996MHz @ 20ºC 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)
3.70	20	836.599996	***0.000***	2.5
3.40	20	836.599997	-0.001	2.5
4.30	20	836.599995	0.001	2.5

PCS, GSM MODULATION – MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC 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)
3.70	50	1880.000006	-0.009	2.5
3.70	40	1880.000002	-0.006	2.5
3.70	30	1880.000000	-0.005	2.5
3.70	***20***	***1879.999990***	***0***	***2.5***
3.70	10	1879.999910	0.043	2.5
3.70	0	1879.999991	-0.001	2.5
3.70	-10	1879.999986	0.002	2.5
3.70	-20	1879.999979	0.006	2.5
3.70	-30	1879.999979	0.006	2.5

Reference Frequency: PCS Mid Channel 1879.999901MHz @ 20ºC 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)
3.70	***20***	***1879.999990***	***0***	***2.5***
4.30	20	1880.000002	-0.006	2.5
3.40	20	1879.999982	0.004	2.5

CELL UMTS – MID CHANNEL

Reference Frequency: Cellular Mid Channel 836.599994MHz @ 20ºC 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)
3.70	50	836.599992	0.002	2.5
3.70	40	836.599992	0.002	2.5
3.70	30	836.599993	0.001	2.5
3.70	***20***	***836.599994***	***0***	2.5
3.70	10	836.599985	0.011	2.5
3.70	0	836.599983	0.013	2.5
3.70	-10	836.599980	0.017	2.5
3.70	-20	836.599990	0.005	2.5
3.70	-30	836.599993	0.001	2.5

Reference Frequency: Cellular Mid Channel 836.599994MHz @ 20ºC 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)
3.70	20	***836.599994***	***0.000***	2.5
3.40	20	836.599991	0.004	2.5
4.30	20	836.599991	0.004	2.5

PCS, UMTS– MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999992MHz @ 20ºC 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)
3.70	50	1879.999993	-0.001	2.5
3.70	40	1879.999993	-0.001	2.5
3.70	30	1879.999992	0.000	2.5
3.70	***20***	***1879.999992***	***0***	***2.5***
3.70	10	1879.999990	0.001	2.5
3.70	0	1879.999990	0.001	2.5
3.70	-10	1879.999988	0.002	2.5
3.70	-20	1879.999988	0.002	2.5
3.70	-30	1879.999986	0.003	2.5

Reference Frequency: PCS Mid Channel 1879.999992MHz @ 20ºC 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)
3.70	***20***	***1879.999992***	***0***	***2.5***
4.30	20	1879.999993	-0.001	2.5
3.40	20	1880.000005	-0.007	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	**29.51**	893.31
	190	836.60	28.85	767.36
	251	848.80	27.13	516.42
GPRS	128	824.20	**29.36**	862.98
	190	836.60	28.41	693.43
	251	848.80	27.11	514.04

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
GSM	512	1850.20	**32.95**	1972.42
	661	1880.00	32.53	1790.61
	810	1909.80	32.32	1706.08
GPRS	512	1850.20	**32.75**	1883.65
	661	1880.00	31.93	1559.55
	810	1909.80	31.93	1559.55

Mode	Channel	f (MHz)	ERP	
			dBm	mW
UMTS,REL 99	4357	826.40	**25.82**	381.94
	4408	836.60	24.22	264.24
	4458	846.60	23.26	211.84
UMTS, HSDPA	4357	826.40	**24.42**	276.69
	4408	836.60	24.40	275.42
	4458	846.60	21.50	141.25

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
UMTS,REL 99	9662	1852.40	**28.05**	638.26
	9800	1880.00	26.75	473.15
	9938	1907.60	26.75	473.15
UMTS, HSDPA	9662	1852.40	**28.92**	779.83
	9800	1880.00	28.40	691.83
	9938	1907.60	28.30	676.08

GSM (Cellular Band)

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 850 MHz CELL BAND, GSM

Test Equipment:
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245182002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	30.01	V	0.5	0.0	29.51	38.5	-8.9	
824.20	25.15	H	0.5	0.0	24.65	38.5	-13.8	
836.60	29.35	V	0.5	0.0	28.85	38.5	-9.6	
836.60	24.90	H	0.5	0.0	24.40	38.5	-14.0	
848.80	27.63	V	0.5	0.0	27.13	38.5	-11.3	
848.80	23.79	H	0.5	0.0	23.29	38.5	-15.2	

Rev. 3.17.11

GPRS (Cellular Band)

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 850 MHz CELL BAND, GPRS

Test Equipment:
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245182002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	29.86	V	0.5	0.0	29.36	38.5	-9.1	
824.20	25.09	H	0.5	0.0	24.59	38.5	-13.9	
836.60	28.91	V	0.5	0.0	28.41	38.5	-10.0	
836.60	24.84	H	0.5	0.0	24.34	38.5	-14.1	
848.80	27.61	V	0.5	0.0	27.11	38.5	-11.3	
848.80	23.77	H	0.5	0.0	23.27	38.5	-15.2	

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GSM (PCS Band)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 1900 MHz PCS BAND, 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
1.850	19.2	V	0.85	8.01	26.39	33.0	-6.6	
1.850	25.8	H	0.85	8.01	32.95	33.0	-0.1	
1.880	17.8	V	0.85	8.13	25.12	33.0	-7.9	
1.880	25.3	H	0.85	8.13	32.53	33.0	-0.5	
1.910	17.4	V	0.85	8.13	24.68	33.0	-8.3	
1.910	25.0	H	0.85	8.13	32.32	33.0	-0.7	

Rev. 3.17.11

GPRS (PCS Band)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 1900 MHz PCS BAND, 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
1.850	24.8	V	0.85	8.01	31.95	33.0	-1.1	
1.850	25.6	H	0.85	8.01	32.75	33.0	-0.3	
1.880	22.8	V	0.85	8.13	30.12	33.0	-2.9	
1.880	24.7	H	0.85	8.13	31.93	33.0	-1.1	
1.910	23.5	V	0.85	8.13	30.81	33.0	-2.2	
1.910	24.7	H	0.85	8.13	31.93	33.0	-1.1	

Rev. 3.17.11

UMTS850 REL 99 (Cellular Band)

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 850 MHz CELL BAND, UMTS WCDMA

Test Equipment:
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245182002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
826.40	26.32	V	0.5	0.0	25.82	38.5	-12.6	
826.40	13.99	H	0.5	0.0	13.49	38.5	-25.0	
836.60	24.72	V	0.5	0.0	24.22	38.5	-14.2	
836.60	13.99	H	0.5	0.0	13.49	38.5	-25.0	
846.60	23.76	V	0.5	0.0	23.26	38.5	-15.2	
846.60	12.31	H	0.5	0.0	11.81	38.5	-26.6	

Rev. 3.17.11

UMTS850 HSDPA (Cellular Band)

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 850 MHz CELL BAND, UMTS HSDPA

Test Equipment:
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245182002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
826.40	24.92	V	0.5	0.0	24.42	38.5	-14.0	
826.40	17.18	H	0.5	0.0	16.68	38.5	-21.8	
836.60	24.90	V	0.5	0.0	24.40	38.5	-14.0	
836.60	16.47	H	0.5	0.0	15.97	38.5	-22.5	
846.60	22.00	V	0.5	0.0	21.50	38.5	-16.9	
846.60	14.27	H	0.5	0.0	13.77	38.5	-24.7	

Rev. 3.17.11

UMTS1900 REL 99 (PCS Band)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 1900 MHz PCS BAND, UMTS WCDMA

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
1.852	16.9	V	0.85	8.01	24.06	33.0	-8.9	
1.852	20.9	H	0.85	8.01	28.05	33.0	-5.0	
1.880	16.7	V	0.85	8.13	24.00	33.0	-9.0	
1.880	19.5	H	0.85	8.13	26.75	33.0	-6.3	
1.908	17.3	V	0.85	8.13	24.55	33.0	-8.5	
1.908	19.5	H	0.85	8.13	26.75	33.0	-6.3	

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UMTS1900 HSDPA (PCS Band)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber A

Company: LG ELECTRONICS
Project #: 12U14442
Date: 05/25/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND CHARGER
Mode: TX, 1900 MHz PCS BAND, UMTS HSDPA

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
1.852	18.2	V	0.85	8.01	25.38	33.0	-7.6	
1.852	21.8	H	0.85	8.01	28.92	33.0	-4.1	
1.880	17.9	V	0.85	8.13	25.20	33.0	-7.8	
1.880	21.1	H	0.85	8.13	28.40	33.0	-4.6	
1.908	18.4	V	0.85	8.13	25.71	33.0	-7.3	
1.908	21.0	H	0.85	8.13	28.30	33.0	-4.7	

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 ELECTRONICS
Project #:	12U14442
Date:	05/27/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT WITH AC ADPTER AND HEADSET
Mode:	TX, 850 MHz CELL BAND, GSM MODE

Chamber	Pre-amplifer	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	7.3	V	3.0	38.2	1.0	-29.8	-13.0	-16.8	
2.473	-12.6	V	3.0	37.5	1.0	-49.1	-13.0	-36.1	
3.297	-13.6	V	3.0	37.1	1.0	-49.7	-13.0	-36.7	
4.121	-10.1	V	3.0	36.5	1.0	-45.6	-13.0	-32.6	
1.648	5.0	H	3.0	38.2	1.0	-32.1	-13.0	-19.1	
2.473	-14.3	H	3.0	37.5	1.0	-50.8	-13.0	-37.8	
3.297	-13.8	H	3.0	37.1	1.0	-49.9	-13.0	-36.9	
4.121	-12.8	H	3.0	36.5	1.0	-48.4	-13.0	-35.4	
Mid Ch, (836.6MHz)									
1.673	1.1	V	3.0	38.1	1.0	-36.0	-13.0	-23.0	
2.510	-9.5	V	3.0	37.5	1.0	-46.0	-13.0	-33.0	
3.346	-15.9	V	3.0	37.1	1.0	-52.0	-13.0	-39.0	
4.183	-8.7	V	3.0	36.5	1.0	-44.2	-13.0	-31.2	
1.673	0.4	H	3.0	38.1	1.0	-36.7	-13.0	-23.7	
2.510	-19.3	H	3.0	37.5	1.0	-55.7	-13.0	-42.7	
3.346	-15.4	H	3.0	37.1	1.0	-51.5	-13.0	-38.5	
4.183	-8.4	H	3.0	36.5	1.0	-44.0	-13.0	-31.0	
High Ch, (848.8MHz)									
1.698	0.4	V	3.0	38.1	1.0	-36.7	-13.0	-23.7	
2.546	-9.9	V	3.0	37.5	1.0	-46.4	-13.0	-33.4	
3.395	-15.2	V	3.0	37.1	1.0	-51.2	-13.0	-38.2	
4.244	-10.4	H	3.0	36.5	1.0	-46.0	-13.0	-33.0	
1.698	2.0	V	3.0	38.1	1.0	-35.1	-13.0	-22.1	
2.546	-8.9	V	3.0	37.5	1.0	-45.4	-13.0	-32.4	
3.395	-15.1	V	3.0	37.1	1.0	-51.1	-13.0	-38.1	
4.244	-8.8	H	3.0	36.5	1.0	-44.4	-13.0	-31.4	

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 ELECTRONICS
Project #:	12U14442
Date:	05/27/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT WITH AC ADPTER AND HEADSET
Mode:	TX, 850 MHz CELL BAND, GPRS MODE

Chamber	Pre-amplifer	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	-4.7	V	3.0	38.2	1.0	-41.8	-13.0	-28.8	
2.473	-10.6	V	3.0	37.5	1.0	-47.1	-13.0	-34.1	
3.297	-13.6	V	3.0	37.1	1.0	-49.7	-13.0	-36.7	
4.121	-11.1	V	3.0	36.5	1.0	-46.6	-13.0	-33.6	
1.648	-5.0	H	3.0	38.2	1.0	-42.1	-13.0	-29.1	
2.473	-12.3	H	3.0	37.5	1.0	-48.8	-13.0	-35.8	
3.297	-13.8	H	3.0	37.1	1.0	-49.9	-13.0	-36.9	
4.121	-10.8	H	3.0	36.5	1.0	-46.4	-13.0	-33.4	
Mid Ch, (836.6MHz)									
1.673	-5.9	V	3.0	38.1	1.0	-43.0	-13.0	-30.0	
2.510	-10.5	V	3.0	37.5	1.0	-47.0	-13.0	-34.0	
3.346	-15.9	V	3.0	37.1	1.0	-52.0	-13.0	-39.0	
4.183	-11.7	V	3.0	36.5	1.0	-47.2	-13.0	-34.2	
1.673	-6.2	H	3.0	38.1	1.0	-43.3	-13.0	-30.3	
2.510	-12.3	H	3.0	37.5	1.0	-48.7	-13.0	-35.7	
3.346	-15.4	H	3.0	37.1	1.0	-51.5	-13.0	-38.5	
4.183	-11.4	H	3.0	36.5	1.0	-47.0	-13.0	-34.0	
High Ch, (848.8MHz)									
1.698	-7.6	V	3.0	38.1	1.0	-44.7	-13.0	-31.7	
2.546	-10.4	V	3.0	37.5	1.0	-46.9	-13.0	-33.9	
3.395	-15.2	V	3.0	37.1	1.0	-51.2	-13.0	-38.2	
4.244	-11.4	H	3.0	36.5	1.0	-47.0	-13.0	-34.0	
1.698	-7.0	V	3.0	38.1	1.0	-44.1	-13.0	-31.1	
2.546	-10.9	V	3.0	37.5	1.0	-47.4	-13.0	-34.4	
3.395	-15.1	V	3.0	37.1	1.0	-51.1	-13.0	-38.1	
4.244	-10.8	H	3.0	36.5	1.0	-46.4	-13.0	-33.4	

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 ELECTRONICS
Project #:	12U14442
Date:	05/27/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT WITH AC ADPTER AND HEADSET
Mode:	TX, 1900 MHz PCS BAND, GSM

Chamber	Pre-amplifer	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	-5.6	V	3.0	36.8	1.0	-41.4	-13.0	-28.4	
5.551	-5.0	V	3.0	36.3	1.0	-40.3	-13.0	-27.3	
7.400	0.6	V	3.0	36.6	1.0	-34.9	-13.0	-21.9	
11.101	-0.7	V	3.0	36.9	1.0	-36.6	-13.0	-23.6	
3.700	-9.4	H	3.0	36.8	1.0	-45.2	-13.0	-32.2	
5.551	-3.0	H	3.0	36.3	1.0	-38.3	-13.0	-25.3	
7.400	-0.9	H	3.0	36.6	1.0	-36.5	-13.0	-23.5	
11.101	4.3	H	3.0	36.9	1.0	-31.6	-13.0	-18.6	
Mid Ch, (1880.0MHz)									
3.760	-4.9	V	3.0	36.8	1.0	-40.7	-13.0	-27.7	
5.640	-1.0	V	3.0	36.3	1.0	-36.3	-13.0	-23.3	
7.520	0.1	V	3.0	36.6	1.0	-35.5	-13.0	-22.5	
11.280	0.7	V	3.0	36.8	1.0	-35.2	-13.0	-22.2	
3.760	-12.1	H	3.0	36.8	1.0	-47.9	-13.0	-34.9	
5.640	-1.1	H	3.0	36.3	1.0	-36.4	-13.0	-23.4	
7.520	1.1	H	3.0	36.6	1.0	-34.5	-13.0	-21.5	
11.280	3.4	H	3.0	36.8	1.0	-32.4	-13.0	-19.4	
High Ch, (1909.8MHz)									
3.820	-10.1	V	3.0	36.7	1.0	-45.8	-13.0	-32.8	
5.729	3.3	V	3.0	36.3	1.0	-32.0	-13.0	-19.0	
7.639	3.3	V	3.0	36.6	1.0	-32.3	-13.0	-19.3	
11.459	0.3	V	3.0	36.8	1.0	-35.5	-13.0	-22.5	
3.820	-12.7	H	3.0	36.7	1.0	-48.4	-13.0	-35.4	
5.729	4.8	H	3.0	36.3	1.0	-30.5	-13.0	-17.5	
7.639	5.3	H	3.0	36.6	1.0	-30.3	-13.0	-17.3	
11.459	1.9	H	3.0	36.8	1.0	-33.8	-13.0	-20.8	

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 ELECTRONICS
Project #:	12U14442
Date:	05/27/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT WITH AC ADPTER AND HEADSET
Mode:	TX, 1900 MHz PCS BAND, GPRS MODE

Chamber	Pre-amplifer	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	-8.6	V	3.0	36.8	1.0	-44.4	-13.0	-31.4	
5.551	-5.0	V	3.0	36.3	1.0	-40.3	-13.0	-27.3	
7.400	-0.4	V	3.0	36.6	1.0	-35.9	-13.0	-22.9	
11.101	3.3	V	3.0	36.9	1.0	-32.6	-13.0	-19.6	
3.700	-8.4	H	3.0	36.8	1.0	-44.2	-13.0	-31.2	
5.551	-6.0	H	3.0	36.3	1.0	-41.3	-13.0	-28.3	
7.400	0.1	H	3.0	36.6	1.0	-35.5	-13.0	-22.5	
11.101	3.8	H	3.0	36.9	1.0	-32.1	-13.0	-19.1	
Mid Ch, (1880.0MHz)									
3.760	-6.9	V	3.0	36.8	1.0	-42.7	-13.0	-29.7	
5.640	-4.0	V	3.0	36.3	1.0	-39.3	-13.0	-26.3	
7.520	-0.4	V	3.0	36.6	1.0	-36.0	-13.0	-23.0	
11.280	4.7	V	3.0	36.8	1.0	-31.2	-13.0	-18.2	
3.760	-6.1	H	3.0	36.8	1.0	-41.9	-13.0	-28.9	
5.640	-2.1	H	3.0	36.3	1.0	-37.4	-13.0	-24.4	
7.520	-1.9	H	3.0	36.6	1.0	-37.5	-13.0	-24.5	
11.280	4.4	H	3.0	36.8	1.0	-31.4	-13.0	-18.4	
High Ch, (1909.8MHz)									
3.820	-9.1	V	3.0	36.7	1.0	-44.8	-13.0	-31.8	
5.729	-0.7	V	3.0	36.3	1.0	-36.0	-13.0	-23.0	
7.639	2.1	V	3.0	36.6	1.0	-33.5	-13.0	-20.5	
11.459	3.3	V	3.0	36.8	1.0	-32.5	-13.0	-19.5	
3.820	-9.7	H	3.0	36.7	1.0	-45.4	-13.0	-32.4	
5.729	2.8	H	3.0	36.3	1.0	-32.5	-13.0	-19.5	
7.639	7.3	H	3.0	36.6	1.0	-28.3	-13.0	-15.3	
11.459	3.9	H	3.0	36.8	1.0	-31.8	-13.0	-18.8	

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 ELECTRONICS
Project #:	12U14442
Date:	05/27/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT WITH AC ADPTER AND HEADSET
Mode:	TX, 850MHz CELL BAND , UMTS WCDMA

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	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	-20.6	V	3.0	38.1	1.0	-57.8	-13.0	-44.8	
2.479	-21.1	V	3.0	37.5	1.0	-57.5	-13.0	-44.5	
3.306	-14.6	V	3.0	37.1	1.0	-50.7	-13.0	-37.7	
4.132	-9.9	V	3.0	36.5	1.0	-45.4	-13.0	-32.4	
1.653	-7.3	H	3.0	38.1	1.0	-44.5	-13.0	-31.5	
2.479	-22.7	H	3.0	37.5	1.0	-59.2	-13.0	-46.2	
3.306	-16.9	H	3.0	37.1	1.0	-53.0	-13.0	-40.0	
4.132	-9.8	H	3.0	36.5	1.0	-45.3	-13.0	-32.3	
Mid Channel (836.6MHz)									
1.673	-17.2	V	3.0	38.1	1.0	-54.3	-13.0	-41.3	
2.510	-21.0	V	3.0	37.5	1.0	-57.5	-13.0	-44.5	
3.346	-13.8	V	3.0	37.1	1.0	-49.9	-13.0	-36.9	
4.183	-8.5	V	3.0	36.5	1.0	-44.0	-13.0	-31.0	
1.673	-4.2	H	3.0	38.1	1.0	-41.4	-13.0	-28.4	
2.510	-22.4	H	3.0	37.5	1.0	-58.8	-13.0	-45.8	
3.346	-17.2	H	3.0	37.1	1.0	-53.2	-13.0	-40.2	
4.183	-10.1	H	3.0	36.5	1.0	-45.6	-13.0	-32.6	
High Channel (846.6MHz)									
1.693	-9.9	V	3.0	38.1	1.0	-47.0	-13.0	-34.0	
2.540	-20.4	V	3.0	37.5	1.0	-56.8	-13.0	-43.8	
3.386	-16.1	V	3.0	37.1	1.0	-52.1	-13.0	-39.1	
4.233	-7.5	V	3.0	36.5	1.0	-43.0	-13.0	-30.0	
1.693	-3.4	H	3.0	38.1	1.0	-40.5	-13.0	-27.5	
2.540	-21.8	H	3.0	37.5	1.0	-58.2	-13.0	-45.2	
3.386	-17.3	H	3.0	37.1	1.0	-53.3	-13.0	-40.3	
4.233	-9.7	H	3.0	36.5	1.0	-45.2	-13.0	-32.2	

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 ELECTRONICS
Project #: 12U14442
Date: 05/27/12
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH AC ADPTER AND HEADSET
Mode: TX, 850MHz CELL BAND , UMTS HSDPA

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	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	-19.4	V	3.0	38.1	1.0	-56.6	-13.0	-43.6	
2.479	-20.3	V	3.0	37.5	1.0	-56.7	-13.0	-43.7	
3.306	-14.0	V	3.0	37.1	1.0	-50.1	-13.0	-37.1	
4.132	-8.9	V	3.0	36.5	1.0	-44.4	-13.0	-31.4	
1.653	-6.0	H	3.0	38.1	1.0	-43.2	-13.0	-30.2	
2.479	-22.0	H	3.0	37.5	1.0	-58.5	-13.0	-45.5	
3.306	-16.5	H	3.0	37.1	1.0	-52.6	-13.0	-39.6	
4.132	-8.9	H	3.0	36.5	1.0	-44.4	-13.0	-31.4	
Mid Channel (836.6MHz)									
1.673	-16.2	V	3.0	38.1	1.0	-53.3	-13.0	-40.3	
2.510	-20.1	V	3.0	37.5	1.0	-56.6	-13.0	-43.6	
3.346	-13.3	V	3.0	37.1	1.0	-49.4	-13.0	-36.4	
4.183	-7.4	V	3.0	36.5	1.0	-42.9	-13.0	-29.9	
1.673	-2.8	H	3.0	38.1	1.0	-40.0	-13.0	-27.0	
2.510	-21.9	H	3.0	37.5	1.0	-58.3	-13.0	-45.3	
3.346	-16.5	H	3.0	37.1	1.0	-52.5	-13.0	-39.5	
4.183	-9.3	H	3.0	36.5	1.0	-44.8	-13.0	-31.8	
High Channel (846.6MHz)									
1.693	-8.5	V	3.0	38.1	1.0	-45.6	-13.0	-32.6	
2.540	-19.9	V	3.0	37.5	1.0	-56.3	-13.0	-43.3	
3.386	-15.4	V	3.0	37.1	1.0	-51.4	-13.0	-38.4	
4.233	-6.7	V	3.0	36.5	1.0	-42.2	-13.0	-29.2	
1.693	-2.2	H	3.0	38.1	1.0	-39.3	-13.0	-26.3	
2.540	-21.0	H	3.0	37.5	1.0	-57.4	-13.0	-44.4	
3.386	-16.7	H	3.0	37.1	1.0	-52.7	-13.0	-39.7	
4.233	-8.7	H	3.0	36.5	1.0	-44.2	-13.0	-31.2	

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 ELECTRONICS
Project #:	12U14442
Date:	05/27/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT WITH AC ADPTER AND HEADSET
Mode:	TX, 1900 MHz PCS BAND, UMTS WCDMA

Chamber	Pre-amplifer	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, 1852.4MHz									
3.704	-13.9	V	3.0	36.8	1.0	-49.7	-13.0	-36.7	
5.557	-15.7	V	3.0	36.3	1.0	-51.0	-13.0	-38.0	
3.704	-17.9	H	3.0	36.8	1.0	-53.7	-13.0	-40.7	
5.557	-14.0	H	3.0	36.3	1.0	-49.3	-13.0	-36.3	
Mid_Ch, 1880.0MHz									
3.760	-15.2	V	3.0	36.8	1.0	-51.0	-13.0	-38.0	
5.640	-15.6	V	3.0	36.3	1.0	-50.9	-13.0	-37.9	
3.760	-15.7	H	3.0	36.8	1.0	-51.5	-13.0	-38.5	
5.640	-16.4	H	3.0	36.3	1.0	-51.7	-13.0	-38.7	
High Ch, 1907.6MHz									
3.815	-13.6	V	3.0	36.7	1.0	-49.3	-13.0	-36.3	
5.723	-16.0	V	3.0	36.3	1.0	-51.3	-13.0	-38.3	
3.815	-15.6	H	3.0	36.7	1.0	-51.3	-13.0	-38.3	
5.723	-15.7	H	3.0	36.3	1.0	-51.1	-13.0	-38.1	

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

Company:	LG ELECTRONICS
Project #:	12U14442
Date:	05/27/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT WITH AC ADPTER AND HEADSET
Mode:	TX, 1900 MHz PCS BAND, UMTS HSDPA

Chamber	Pre-amplifer	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, 1852.4MHz									
3.704	-14.9	V	3.0	36.8	1.0	-50.7	-13.0	-37.7	
5.557	-15.2	V	3.0	36.3	1.0	-50.5	-13.0	-37.5	
3.704	-17.9	H	3.0	36.8	1.0	-53.7	-13.0	-40.7	
5.557	-15.5	H	3.0	36.3	1.0	-50.8	-13.0	-37.8	
Mid Ch, 1880.0MHz									
3.760	-15.7	V	3.0	36.8	1.0	-51.5	-13.0	-38.5	
5.640	-15.6	V	3.0	36.3	1.0	-50.9	-13.0	-37.9	
3.760	-18.2	H	3.0	36.8	1.0	-54.0	-13.0	-41.0	
5.640	-15.9	H	3.0	36.3	1.0	-51.2	-13.0	-38.2	
High Ch, 1907.6MHz									
3.815	-15.6	V	3.0	36.7	1.0	-51.3	-13.0	-38.3	
5.723	-16.5	V	3.0	36.3	1.0	-51.8	-13.0	-38.8	
3.815	-17.6	H	3.0	36.7	1.0	-53.3	-13.0	-40.3	
5.723	-15.7	H	3.0	36.3	1.0	-51.1	-13.0	-38.1	

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