



Gobi3000™ Module FCC 22, 24 & 27 Radiated Test Report

80-N2162-204 Rev. A

August 10, 2010

**Submit technical questions at:
<mailto:regulatory.support@qualcomm.com>**

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RADIATED SPURIOUS EMISSIONS PORTIONS OF

**FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART L
INDUSTRY CANADA RSS-132 ISSUE 2
INDUSTRY CANADA RSS-133 ISSUE 5
INDUSTRY CANADA RSS-139 ISSUE 2**

**CERTIFICATION TEST REPORT
FOR
GOBI3000 PCI EXPRESSMINI CARD**

MODEL NUMBER: GOBI3000

**FCC ID: J9CGOBI3000
ICID: 2723A-GOBI3000**

REPORT NUMBER: 10U13266-1

ISSUE DATE: JULY 16, 2010

Prepared for

**QULACOMM INCORPORATED
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121, U.S.A.**

Prepared by

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NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	07/16/2010	Initial Issue	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: QULACOMM INCORPORATED
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121, U.S.A.

EUT DESCRIPTION: GOBI3000 PCI EXPRESSMINI CARD

MODEL: GOBI3000

SERIAL NUMBER: N10F6XWTM (CDMA) AND N10F6XTL2 (GPRS/UMTS)

DATE TESTED: JULY JUNE 30 – JULY 16, 2010

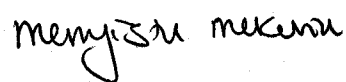
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E, AND 27L	PASS (Radiated Portion)
IC RSS-132 ISSUE 2, RSS-133 ISSUE 5, AND RSS-139 ISSUE 2	PASS (Radiated Portion)

Compliance Certification Services, Inc. (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 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 Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



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EMC MANAGER
COMPLIANCE CERTIFICATION SERVICES

MENGISTU MEKURIA
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, FCC Part 27, RSS-132 Issue 2, RSS-133 Issue 5 and RSS-139 Issue 2.

3. FACILITIES AND ACCREDITATION

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

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 CDMA, GPRS, EGPRS, and WCDMA featured multi-band PCI express mini card that manufactured by Qualcomm Incorporated. This test is, however, applied only for the three bands under consideration.

5.2. MAXIMUM OUTPUT POWER

The transmitter has maximum, peak ERP for all modes, peak EIRP for GPRS and EGPRS modes, and average EIRP for CDMA and WCDMA modes, output powers as follows

1xRTT CDMA MODE

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Output Power (dBm)	ERP Output Power (mW)
Low CH - 824.70	1xRTT CDMA2000	27.1	512.9
Mid CH - 836.52		27.9	616.6
High CH - 848.31		27.0	501.2

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1851.25	1xRTT CDMA2000	26.9	489.8
Mid CH - 1880.00		27.1	512.9
High CH - 1908.75		26.4	436.5

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Average ERP Power (For Reference) (dBm)	Average ERP Power (For Reference) (mW)
Low CH - 824.70	1xRTT CDMA2000	22.5	177.8
Mid CH - 836.52		23.6	229.1
High CH - 848.31		22.9	195.0

GPRS MODE

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Output Power (dBm)	ERP Output Power (mW)
Low CH - 824.2	GPRS	31.2	1318.3
Mid CH - 836.60		32.0	1584.9
High CH - 848.80		31.8	1513.6

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1850.20	GPRS	32.1	1621.8
Mid CH - 1880.00		31.5	1412.5
High CH - 1909.80		31.4	1380.4

EGPRS MODE

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Output Power (dBm)	ERP Output Power (mW)
Low CH - 824.20	EGPRS	28.7	741.3
Mid CH - 836.60		29.0	794.3
High CH - 848.80		29.3	851.1

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1850.20	EGPRS	31.1	1288.2
Mid CH - 1880.00		30.6	1148.2
High CH - 1909.80		30.7	1174.9

WCDMA MODE

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Output Power (dBm)	ERP Output Power (mW)
Low CH - 826.40	WCDMA	24.8	302.0
Mid CH - 836.00		25.8	380.2
High CH - 848.00		24.6	288.4

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1852.40	WCDMA	29.1	812.8
Mid CH - 1880.00		29.6	912.0
High CH - 1907.60		28.2	660.7

1710 to 1755 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1712.4	WCDMA	26.5	446.7
MID-Ch- 1732.40		26.5	446.7
High CH - 1752.60		26.4	436.5

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Average ERP Power (For Reference) (dBm)	Average ERP Power (For Reference) (mW)
Low CH - 826.40	WCDMA	21.0	125.9
Mid CH - 836.00		22.2	166.0
High CH - 848.00		20.9	123.0

5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set. Other software and firmware used by the EUT are STSUGN15 and D3200-STSUGN-1528 respectively.

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case was EUT with highest emissions. To determine the worst-case, the EUT was investigated for Low, Mid, and High channel on different modulation type. After the Investigation all tests have done with GPRS modulation except AWS band, which is tested on WCDMA modulation.

PROCEDURE USED TO ESTABLISH TEST SIGNAL

3G-CDMA2000 1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

<u>Application</u>	<u>Rev, License</u>
CDMA2000 Mobil Test	B.10.11, L

1xRTT

- Call Setup > Shift & Preset
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > RC3 (Fwd3, Rvs3)
- FCH Service Option (SO) Setup > 55
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
> R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Cell Info > Cell Parameters > System ID (SID) > 4729
> Network ID (NID) > 0

Once "Active Cell" show "Connected " then change "Rvs Power Ctrl" from "Active bits" to "**All Up bits**" to get the maximum power.

Worst-case Measurement Result @ Low, Middle and High Channel

Worst-case Measurement Result for Low, Middle and High Channel under Radio Configuration RC3 and Service Option 55.

<u>Application</u>	<u>Rev. License</u>
GSM/GPRS	A.06.31

GSM Mode

- . To reset the Agilent 8960 to default all values > Shift & Preset
- . To adjust Input/Output offset, press SYSTEM CONFIG button above the control knob
- > RF IN/OUT Amptd Offset
- > RF IN/OUT Amptd Offset Setup
- > Enter frequencies to be tested and corresponding offsets (enter negative values for offset, i.e.-35 is greater than -30).

Control:

- . Operating Mode > Active Cell (GSM)
- . Connection Type > Auto (For Voice Mode)

Call Parm:

- . BCH Parameters> Cell Power > adjust to (~ -50dBm) to maintain strong link OTA
- > Cell Band > PCS or GSM850 (US band)
- . TCH Parameters > Timeslot >1
- > Traffic Channel > PCS Channel 512 / 661 / 810
- > GSM850 Channel 128 / 190 / 251
- > MS TX Level > 1 (for both PCS or GSM850)
- > Timeslot > 1
- > Speech Setup > Speech Source > Echo (Default)
- . Press "Originate Call"

GPRS Mode

- . To reset the Agilent 8960 to default all values > Shift & Preset
- . To adjust Input/Output offset, press SYSTEM CONFIG button above the control knob
- > RF IN/OUT Amptd Offset
- > RF IN/OUT Amptd Offset Setup
- > Enter frequencies to be tested and corresponding offsets (enter negative values for offset, i.e.-35 is greater than -30).

Control

- . Operating Mode > Active Cell (GPRS)
- . Connection Type > ETSI Type A (For Data Mode)

Call Parm

- • BCH Parameters > Cell Power > adjust to (~ -50dBm) to maintain strong link OTA
- > Cell Band > PCS or GSM850 (US band)
- • TCH Parameters > Traffic Channel > PCS Channel 512 / 661 / 810
- > GSM850 Channel 128 / 190 / 251
 - > MS TX Level > 0 (Cell band); 0 (PCS band)
- • PDTCH > Multislot Config > 1 Down, 1 Up
 - > MS TX Level > 0 (Cell band); 1 (PCS band)
 - > Coding Scheme > CS-4
- • After the 8960 attaches to the EUT, then press "Start Data Connection"

EGPRS Mode

- • To reset the Agilent 8960 to default all values > Shift & Preset
- • To adjust Input/Output offset, press SYSTEM CONFIG button above the control knob
- > RF IN/OUT Amptd Offset
- > RF IN/OUT Amptd Offset Setup
- > Enter frequencies to be tested and corresponding offsets (enter negative values for offset, i.e.-35 is greater than -30).

Control

- • Operating Mode > Active Cell (EGPRS)
- • Connection Type > ETSI Type A (For Data Mode)

Call Parm

- • BCH Parameters > Cell Power > adjust to (~ -50dBm) to maintain strong link OTA
- > Cell Band > PCS or GSM850 (US band)
- • TCH Parameters> Traffic Band > PCS Channel 512 / 661 / 810
- > GSM850 Channel 128 / 190 / 251
- > MS TX Level > 0 (Cell band); 0(0 PCS band)
- • PDTCH > Multislot Config > 1 Down, 1Up
 - > MS TX Level > 0 (Cell band); 3 (PCS band)
 - > Modulation Coding Scheme
- > Uplink Modulation Coding Scheme > MCS 9
- • After the 8960 attaches to the EUT, then press "Start Data Connection"

UMTS RELEASE 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC Adapter	Cincon Electronics Co.	TR25033	25033-0001582	DoC

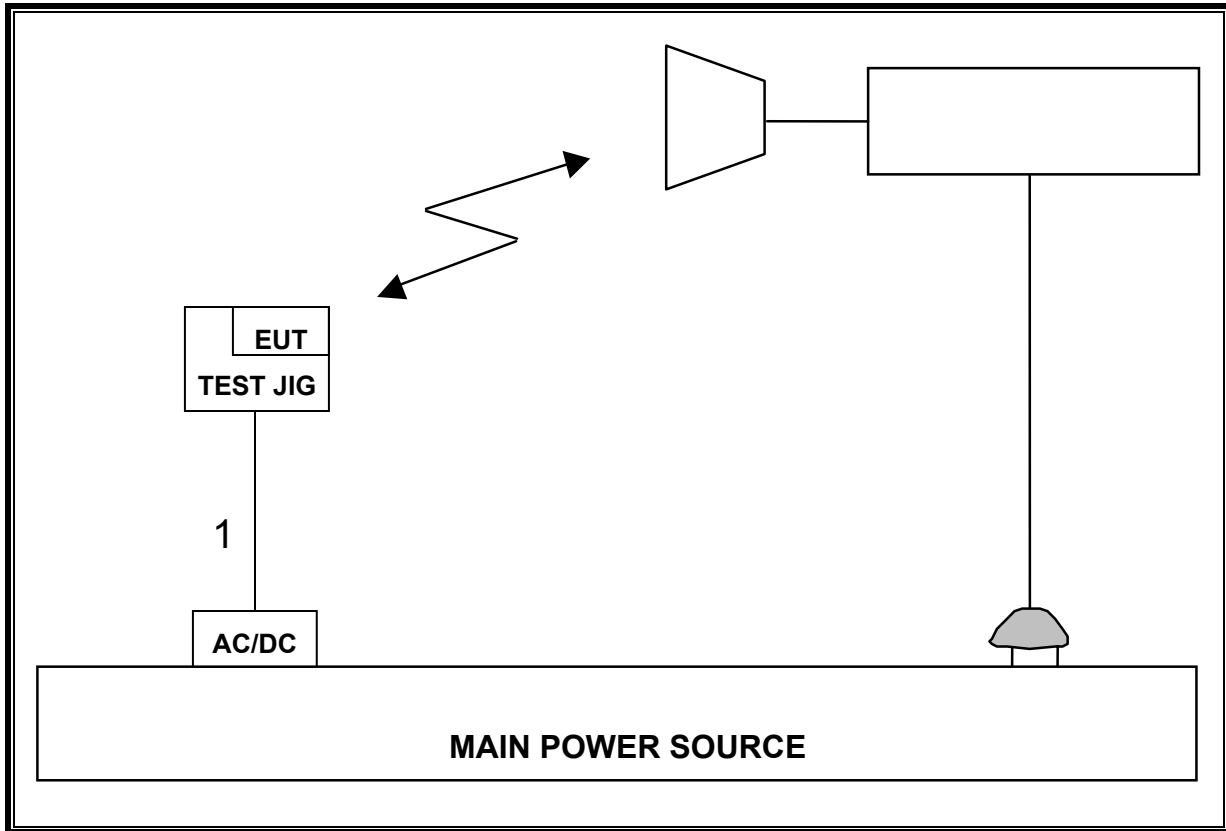
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC Input	1	DC	Un-Shielded	0.8 m	N/A

TEST SETUP

The EUT is a PCI express mini card that attached to test Jig which powered from AC Adapter. Communications Test Set is used to link the device under test.

SETUP DIAGRAM FOR 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
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	08/24/10
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/31/10
Communications Test Set	Agilent / HP	E5515C	C01086	06/17/11
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	08/04/10
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	08/04/10
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	08/04/10
Dipole	Speag	D900V2	N/A	11/16/11
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689`	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Signal Generator	R & S	SMP04	C00953	02/16/11
Antenna, Horn, 18 GHz	EMCO	3115	C00945	07/29/10
Antenna, Horn, 18 GHz	EMCO	3115	C00783	07/29/10
Antenna, Horn, 18 GHz	EMCO	3115	C00943	07/29/10
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/14/10
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	05/06/11
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/06/10

7. LIMITS AND RESULTS

7.1. RADIATED OUTPUT POWER

LIMITS

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

24.232(b) & RSS133 § 6.4 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.

27.50 (d) (2) & RSS-139 § 6.4 Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band are limited to a peak EIRP of 1 watt.

RSS-132 § 4.4 The maximum ERP shall be 6.3 Watts for mobile stations.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17, RSS-132, RSS-133, & RSS-139

This section reports the maximum instantaneous peak ERP of the intentional transmitter using a peak detector per Part 22 measurement detector settings, and the maximum average EIRP of the intentional transmitter using an average detector per Part 24/27 measurement detector settings. The maximum instantaneous peak ERP can be expected to be different from the maximum average conducted power plus the antenna gain in dBd.

The maximum average ERP of the intentional transmitter using an average detector is also provided for reference.

RESULTS

1xRTT CDMA

CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:		QUALCOMM INCORPORATED					
Project #:		10U13266					
Date:		7/6/2010					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT WITH SUPPORT JIG AND AC ADAPTER					
Mode:		TX, 1xRTT CDMA CELL BAND					
Test Equipment:							
Receiving: Sunol T130, 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	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.70	-11.6	V	32.6	21.0	38.5	-17.4	
824.70	-3.3	H	30.4	27.1	38.5	-11.4	
836.52	-10.6	V	32.7	22.0	38.5	-16.4	
836.52	-2.8	H	30.7	27.9	38.5	-10.5	
848.31	-11.1	V	32.0	20.9	38.5	-17.6	
848.31	-3.8	H	30.8	27.0	38.5	-11.5	
Rev. 1.24.7							

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:	QUALCOMM INCORPORATED						
Project #:	10U13266						
Date:	7/6/2010						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT WITH SUPPORT JIG AN D AC ADAPTER						
Mode:	TX, 1xRTT CDMA PCS BAND						
Test Equipment:							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.851	-13.2	V	40.2	26.9	33.0	-6.1	
1.851	-14.0	H	39.5	25.4	33.0	-7.6	
1.880	-13.2	V	40.3	27.1	33.0	-5.9	
1.880	-14.0	H	40.1	26.1	33.0	-6.9	
1.909	-13.8	V	40.2	26.4	33.0	-6.6	
1.909	-14.2	H	40.1	26.0	33.0	-7.1	
Rev. 1.24.7							

CELL AVERAGE OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:	QUALCOMM INCORPORATED						
Project #:	10U13266						
Date:	7/16/2010						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT WITH SUPPORT JIG AND AC ADAPTER						
Mode:	TX, CDMA CELL BAND						
Test Equipment:							
Receiving: Sunol T130, 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	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.70	-16.1	V	32.6	16.5	38.5	-21.9	
824.70	-7.9	H	30.4	22.5	38.5	-16.0	
836.52	-15.0	V	32.7	17.6	38.5	-20.8	
836.52	-7.1	H	30.7	23.6	38.5	-14.8	
848.31	-15.1	V	32.0	16.8	38.5	-21.6	
848.31	-7.8	H	30.8	22.9	38.5	-15.5	
Rev. 1.24.7							

GPRS

CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:		QUALCOMM INCORPORATED					
Project #:		10U13266					
Date:		7/6/2010					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER					
Mode:		TX, GPRS CELL BAND					
Test Equipment:							
Receiving: Sunol T130, 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	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	-7.2	V	32.6	25.4	38.5	-13.1	
824.20	0.9	H	30.4	31.2	38.5	-7.2	
836.60	-6.9	V	32.7	25.7	38.5	-12.7	
836.60	1.2	H	30.7	32.0	38.5	-6.5	
848.80	-6.2	V	32.0	25.7	38.5	-12.7	
848.80	1.1	H	30.8	31.8	38.5	-6.6	
Rev. 1.24.7							

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:		QUALCOMM INCORPORATED					
Project #:		10U13266					
Date:		7/7/2010					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT WITH SUPPORT JIG AND AC ADAPTER					
Mode:		TX, GPRS PCS BAND					
Test Equipment:							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.850	-8.1	V	40.2	32.1	33.0	-0.9	
1.850	-8.3	H	39.5	31.2	33.0	-1.8	
1.880	-8.8	V	40.3	31.5	33.0	-1.6	
1.880	-9.9	H	40.1	30.2	33.0	-2.8	
1.910	-8.8	V	40.2	31.4	33.0	-1.6	
1.910	-9.4	H	40.1	30.7	33.0	-2.3	
Rev. 1.24.7							

EGPRS

CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:		QUALCOMM INCORPORATED					
Project #:		10U13266					
Date:		7/7/2010					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT WITH SUPPORT JIG AND AC ADAPTER					
Mode:		TX, EGPRS CELL BAND					
Test Equipment:							
Receiving: Sunol T130, 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	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	-10.9	V	32.6	21.7	38.5	-16.8	
824.20	-1.6	H	30.4	28.7	38.5	-9.7	
836.60	-11.6	V	32.7	21.0	38.5	-17.4	
836.60	-1.8	H	30.7	29.0	38.5	-9.5	
848.80	-11.2	V	32.0	20.8	38.5	-17.7	
848.80	-1.5	H	30.8	29.3	38.5	-9.2	
Rev. 1.24.7							

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:		QUALCOMM INCORPORATED					
Project #:		10U13266					
Date:		7/7/2010					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT WITH SUPPORT JIG AND AC ADAPTER					
Mode:		TX, EGPRS PCS BAND					
Test Equipment:							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.850	-9.1	V	40.2	31.1	33.0	-1.9	
1.850	-9.4	H	39.5	30.1	33.0	-2.9	
1.880	-9.7	V	40.3	30.6	33.0	-2.4	
1.880	-10.9	H	40.1	29.2	33.0	-3.8	
1.910	-9.5	V	40.2	30.7	33.0	-2.3	
1.910	-10.3	H	40.1	29.8	33.0	-3.2	
Rev. 1.24.7							

WCDMA

CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:		QUALCOMM INCORPORATED					
Project #:		10U13266					
Date:		7/8/2010					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER					
Mode:		TX, WCDMA CELL BAND					
Test Equipment:							
Receiving: Sunol T130, 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	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
826.40	-12.8	V	32.6	19.8	38.5	-18.7	
826.40	-5.5	H	30.4	24.8	38.5	-13.6	
836.00	-13.4	V	32.7	19.2	38.5	-19.2	
836.00	-4.9	H	30.7	25.8	38.5	-12.6	
846.00	-14.2	V	32.0	17.8	38.5	-20.6	
846.00	-6.2	H	30.8	24.6	38.5	-13.9	
Rev. 1.24.7							

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:	QUALCOMM INCORPORATED						
Project #:	10U13266						
Date:	7/8/2010						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT WITH SUPPORT JIG AND AC ADAPTER						
Mode:	TX, WCDMA PCS BAND						
Test Equipment:							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.852	-11.1	V	40.2	29.1	33.0	-3.9	
1.852	-11.5	H	39.5	28.0	33.0	-5.0	
1.880	-10.7	V	40.3	29.6	33.0	-3.4	
1.880	-11.3	H	40.1	28.9	33.0	-4.1	
1.908	-12.9	V	40.2	27.3	33.0	-5.7	
1.908	-11.9	H	40.1	28.2	33.0	-4.8	
Rev. 1.24.7							

AWS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A							
Company:	QUALCOMM INCORPORATED						
Project #:	10U13266						
Date:	7/8/2010						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT WITH SUPPORT JIG AN D AC ADAPTER						
Mode:	TX, WCDMA AWS BAND						
<u>Test Equipment:</u>							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.712	-13.4	V	39.9	26.5	30.0	-3.5	
1.712	-14.7	H	38.6	23.9	30.0	-6.1	
1.732	-14.0	V	40.4	26.5	30.0	-3.5	
1.732	-14.7	H	39.2	24.4	30.0	-5.6	
1.753	-13.8	V	40.2	26.4	30.0	-3.6	
1.753	-15.1	H	39.6	24.5	30.0	-5.5	
Rev. 1.24.7							

CELL AVERAGE OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:	QUALCOMM INCORPORATED						
Project #:	10U13266						
Date:	7/16/2010						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT WITH SUPPORT JIG AND AC ADAPTER						
Mode:	TX, WCDMA CELL BAND						
Test Equipment:							
Receiving: Sunol T130, 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	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
826.40	-16.6	V	32.6	16.0	38.5	-22.4	
826.40	-9.4	H	30.4	21.0	38.5	-17.4	
836.00	-17.2	V	32.7	15.5	38.5	-22.9	
836.00	-8.6	H	30.7	22.2	38.5	-16.3	
846.00	-17.8	V	32.0	14.2	38.5	-24.3	
846.00	-9.9	H	30.8	20.9	38.5	-17.6	
Rev. 1.24.7							

7.2. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (e) and §24.238 (a), RSS-132 § 4.5.1, & RSS-133 § 6.5.1 (a) (i) & (b): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

§27.53 (g) and RSS-139 § 6.5 For operations in the 1710–1755MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b), FCC 24.238 (b), & FCC 27.53 (g)(1)(2)(3), RSS-132, RSS-133, & RSS-139

RESULTS

1xRTT CDMA

CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		QUALCOMM INCORPORATED								
Project #:		10U13266								
Date:		7/6/2010								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER								
Mode:		TX, 1xRTT CDMA CELL BAND								
Chamber		Pre-amplifier			Filter			Limit		
5m Chamber B		T145 8449B			Filter 1			FCC PART 22		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LOW CHANNEL (824.7 MHz)										
1.649	-52.5	H	3.0	37.2	35.5	1.0	-49.8	-13.0	-36.8	
2.474	-60.1	H	3.0	39.8	35.4	1.0	-54.7	-13.0	-41.7	
3.299	-54.7	H	3.0	44.0	35.5	1.0	-45.2	-13.0	-32.2	
4.124	-55.6	H	3.0	46.7	35.2	1.0	-43.2	-13.0	-30.2	
4.948	-63.2	H	3.0	48.8	35.3	1.0	-48.7	-13.0	-35.7	
1.649	-52.6	V	3.0	36.8	35.5	1.0	-50.4	-13.0	-37.4	
2.474	-59.9	V	3.0	41.7	35.4	1.0	-52.6	-13.0	-39.6	
3.299	-52.6	V	3.0	44.1	35.5	1.0	-43.0	-13.0	-30.0	
4.124	-58.6	V	3.0	46.2	35.2	1.0	-46.7	-13.0	-33.7	
4.948	-63.0	V	3.0	48.2	35.3	1.0	-49.1	-13.0	-36.1	
MID CHANNEL (836.52 MHz)										
1.673	-49.2	H	3.0	37.5	35.5	1.0	-46.2	-13.0	-33.2	
2.510	-59.6	H	3.0	39.9	35.4	1.0	-54.1	-13.0	-41.1	
3.346	-58.4	H	3.0	44.1	35.5	1.0	-48.8	-13.0	-35.8	
4.183	-58.1	H	3.0	46.8	35.2	1.0	-45.5	-13.0	-32.5	
5.019	-64.2	H	3.0	48.9	35.3	1.0	-49.6	-13.0	-36.6	
1.673	-51.5	V	3.0	37.1	35.5	1.0	-48.9	-13.0	-35.9	
2.510	-61.5	V	3.0	41.8	35.4	1.0	-54.0	-13.0	-41.0	
3.346	-56.0	V	3.0	44.3	35.5	1.0	-46.3	-13.0	-33.3	
4.183	-59.4	V	3.0	46.3	35.2	1.0	-47.4	-13.0	-34.4	
5.019	-62.1	V	3.0	48.3	35.3	1.0	-48.0	-13.0	-35.0	
HI CHANNEL (846.31 MHz)										
1.697	-52.7	H	3.0	37.7	35.5	1.0	-49.5	-13.0	-36.5	
2.545	-60.6	H	3.0	40.1	35.4	1.0	-54.9	-13.0	-41.9	
3.393	-58.7	H	3.0	44.3	35.5	1.0	-48.9	-13.0	-35.9	
4.242	-58.3	H	3.0	47.0	35.2	1.0	-45.6	-13.0	-32.6	
5.090	-64.1	H	3.0	49.1	35.3	1.0	-49.3	-13.0	-36.3	
1.697	-54.6	V	3.0	37.4	35.5	1.0	-51.7	-13.0	-38.7	
2.545	-61.7	V	3.0	42.0	35.4	1.0	-54.2	-13.0	-41.2	
3.393	-55.8	V	3.0	44.4	35.5	1.0	-45.9	-13.0	-32.9	
4.242	-58.3	V	3.0	46.4	35.2	1.0	-46.1	-13.0	-33.1	
5.090	-62.6	V	3.0	48.5	35.3	1.0	-48.4	-13.0	-35.4	

Rev. 03.03.09

PCS Spurious & Harmonic (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		QUALCOMM INCORPORATED								
Project #:		10U13266								
Date:		7/6/2010								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER								
Mode:		TX, 1xRTT CDMA PCS BAND								
Chamber		Pre-amplifier			Filter			Limit		
5m Chamber B		T145 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LOW CHANNEL (1851.25 MHz)										
3.703	-48.7	H	3.0	45.3	35.4	1.0	-37.7	-13.0	-24.7	
5.554	-57.4	H	3.0	50.0	35.4	1.0	-41.8	-13.0	-28.8	
7.405	-65.6	H	3.0	53.0	35.7	1.0	-47.3	-13.0	-34.3	
9.256	-59.4	H	3.0	55.1	35.6	1.0	-38.9	-13.0	-25.9	
3.703	-44.0	V	3.0	45.1	35.4	1.0	-33.2	-13.0	-20.2	
5.554	-58.5	V	3.0	49.2	35.4	1.0	-43.7	-13.0	-30.7	
7.405	-61.5	V	3.0	51.3	35.7	1.0	-44.9	-13.0	-31.9	
9.256	-52.5	V	3.0	53.6	35.6	1.0	-33.5	-13.0	-20.5	
MID CHANNEL (1880.00 MHz)										
3.760	-50.3	H	3.0	45.5	35.3	1.0	-39.1	-13.0	-26.1	
5.640	-57.7	H	3.0	50.2	35.4	1.0	-41.9	-13.0	-28.9	
7.520	-63.3	H	3.0	53.1	35.7	1.0	-44.9	-13.0	-31.9	
9.400	-64.4	H	3.0	55.2	35.6	1.0	-43.7	-13.0	-30.7	
3.760	-51.0	V	3.0	45.3	35.3	1.0	-40.0	-13.0	-27.0	
5.640	-56.2	V	3.0	49.3	35.4	1.0	-41.3	-13.0	-28.3	
7.520	-62.8	V	3.0	51.4	35.7	1.0	-46.1	-13.0	-33.1	
9.400	-55.3	V	3.0	53.7	35.6	1.0	-36.2	-13.0	-23.2	
HI CHANNEL (1908.75 MHz)										
3.818	-50.0	H	3.0	45.7	35.3	1.0	-38.6	-13.0	-25.6	
5.726	-54.1	H	3.0	50.3	35.4	1.0	-38.3	-13.0	-25.3	
7.635	-64.5	H	3.0	53.2	35.7	1.0	-46.0	-13.0	-33.0	
9.544	-65.6	H	3.0	55.4	35.6	1.0	-44.8	-13.0	-31.8	
3.818	-51.3	V	3.0	45.4	35.3	1.0	-40.1	-13.0	-27.1	
5.726	-54.4	V	3.0	49.4	35.4	1.0	-39.5	-13.0	-26.5	
7.635	-60.9	V	3.0	51.6	35.7	1.0	-44.0	-13.0	-31.0	
9.544	-64.0	V	3.0	53.9	35.6	1.0	-44.6	-13.0	-31.6	
Rev. 03.03.09										

GPRS

CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement											
Company:		QUALCOMM INCORPORATED									
Project #:		10U13266									
Date:		7/7/2010									
Test Engineer:		MENGISTU MEKURIA									
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER									
Mode:		TX, GPRS CELL BAND									
Chamber		Pre-amplifier			Filter			Limit			
5m Chamber B		T145 8449B			Filter 1			FCC PART 22			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
LOW CHANNEL (824.20 MHz)											
1.648	-50.1	H	3.0	37.2	35.5	1.0	-47.4	-13.0	-34.4		
2.473	-39.8	H	3.0	39.8	35.4	1.0	-34.3	-13.0	-21.3		
3.297	-60.3	H	3.0	43.9	35.5	1.0	-50.9	-13.0	-37.9		
4.121	-62.4	H	3.0	46.7	35.2	1.0	-50.0	-13.0	-37.0		
1.648	-52.3	V	3.0	36.8	35.5	1.0	-50.1	-13.0	-37.1		
2.473	-40.4	V	3.0	41.7	35.4	1.0	-33.2	-13.0	-20.2		
3.297	-59.1	V	3.0	44.1	35.5	1.0	-49.5	-13.0	-36.5		
4.121	-62.8	V	3.0	46.1	35.2	1.0	-50.9	-13.0	-37.9		
MID CHANNEL (836.60 MHz)											
1.673	-51.4	H	3.0	37.5	35.5	1.0	-48.4	-13.0	-35.4		
2.510	-42.1	H	3.0	39.9	35.4	1.0	-36.6	-13.0	-23.6		
3.346	-63.2	H	3.0	44.1	35.5	1.0	-53.6	-13.0	-40.6		
4.183	-60.6	H	3.0	46.8	35.2	1.0	-48.1	-13.0	-35.1		
1.673	-51.9	V	3.0	37.1	35.5	1.0	-49.3	-13.0	-36.3		
2.510	-43.0	V	3.0	41.8	35.4	1.0	-35.5	-13.0	-22.5		
3.346	-61.0	V	3.0	44.3	35.5	1.0	-51.3	-13.0	-38.3		
4.183	-61.4	V	3.0	46.3	35.2	1.0	-49.3	-13.0	-36.3		
HI CHANNEL (848.80 MHz)											
1.698	-48.3	H	3.0	37.7	35.5	1.0	-45.1	-13.0	-32.1		
2.546	-43.3	H	3.0	40.1	35.4	1.0	-37.6	-13.0	-24.6		
3.395	-63.8	H	3.0	44.3	35.5	1.0	-54.0	-13.0	-41.0		
4.244	-57.9	H	3.0	47.0	35.2	1.0	-45.2	-13.0	-32.2		
1.698	-48.6	V	3.0	37.4	35.5	1.0	-45.7	-13.0	-32.7		
2.546	-47.3	V	3.0	42.0	35.4	1.0	-39.8	-13.0	-26.8		
3.395	-62.6	V	3.0	44.4	35.5	1.0	-52.7	-13.0	-39.7		
4.244	-58.2	V	3.0	46.5	35.2	1.0	-46.0	-13.0	-33.0		
Rev. 03.03.09											

PCS Spurious & Harmonic (EIRP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: QUALCOMM INCORPORATED
Project #: 10U13266
Date: 7/7/2010
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH SUPPORT JIG AN D AC ADAPTER
Mode: TX, GPRS PCS BAND

Chamber
 5m Chamber B

Pre-amplifier
 T145 8449B

Filter
 Filter 1

Limit
 FCC PART 24

f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LOW CHANNEL (1850.20 MHz)										
3.700	-53.7	H	3.0	45.3	35.4	1.0	-42.7	-13.0	-29.7	
5.551	-62.6	H	3.0	50.0	35.4	1.0	-47.0	-13.0	-34.0	
3.700	-52.9	V	3.0	45.1	35.4	1.0	-42.1	-13.0	-29.1	
5.551	-60.1	V	3.0	49.2	35.4	1.0	-45.3	-13.0	-32.3	
MID CHANNEL (1880.00 MHz)										
3.760	-54.4	H	3.0	45.5	35.3	1.0	-43.2	-13.0	-30.2	
5.640	-63.3	H	3.0	50.2	35.4	1.0	-47.6	-13.0	-34.6	
3.760	-55.3	V	3.0	45.3	35.3	1.0	-44.3	-13.0	-31.3	
5.640	-62.6	V	3.0	49.3	35.4	1.0	-47.8	-13.0	-34.8	
HI CHANNEL (1909.80 MHz)										
3.820	-54.9	H	3.0	45.7	35.3	1.0	-43.5	-13.0	-30.5	
5.729	-63.4	H	3.0	50.3	35.4	1.0	-47.5	-13.0	-34.5	
3.820	-55.8	V	3.0	45.4	35.3	1.0	-44.7	-13.0	-31.7	
5.729	-63.1	V	3.0	49.4	35.4	1.0	-48.2	-13.0	-35.2	

Rev. 03.03.09

EGPRS

CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement											
Company:		QUALCOMM INCORPORATED									
Project #:		10U13266									
Date:		7/7/2010									
Test Engineer:		MENGISTU MEKURIA									
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER									
Mode:		TX, EGPRS CELL BAND									
Chamber		Pre-amplifier			Filter			Limit			
5m Chamber B		T145 8449B			Filter 1			FCC PART 22			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
LOW CHANNEL (824.20 MHz)											
1.648	-52.0	H	3.0	37.2	35.5	1.0	-49.3	-13.0	-36.3		
2.473	-43.3	H	3.0	39.8	35.4	1.0	-37.8	-13.0	-24.8		
3.297	-60.2	H	3.0	43.9	35.5	1.0	-50.8	-13.0	-37.8		
1.648	-50.5	V	3.0	36.8	35.5	1.0	-48.2	-13.0	-35.2		
2.473	-43.7	V	3.0	41.7	35.4	1.0	-36.5	-13.0	-23.5		
3.297	-59.0	V	3.0	44.1	35.5	1.0	-49.4	-13.0	-36.4		
MID CHANNEL (836.60 MHz)											
1.673	-52.2	H	3.0	37.5	35.5	1.0	-49.2	-13.0	-36.2		
2.510	-48.6	H	3.0	39.9	35.4	1.0	-43.1	-13.0	-30.1		
3.346	-60.4	H	3.0	44.1	35.5	1.0	-50.7	-13.0	-37.7		
1.673	-50.3	V	3.0	37.1	35.5	1.0	-47.7	-13.0	-34.7		
2.510	-47.7	V	3.0	41.8	35.4	1.0	-40.3	-13.0	-27.3		
3.346	-59.0	V	3.0	44.3	35.5	1.0	-49.2	-13.0	-36.2		
HI CHANNEL (848.80 MHz)											
1.698	-53.0	H	3.0	37.7	35.5	1.0	-49.8	-13.0	-36.8		
2.546	-48.0	H	3.0	40.1	35.4	1.0	-42.3	-13.0	-29.3		
3.395	-59.6	H	3.0	44.3	35.5	1.0	-49.9	-13.0	-36.9		
1.698	-49.3	V	3.0	37.4	35.5	1.0	-46.4	-13.0	-33.4		
2.546	-50.3	V	3.0	42.0	35.4	1.0	-42.8	-13.0	-29.8		
3.395	-60.2	V	3.0	44.4	35.5	1.0	-50.3	-13.0	-37.3		
Rev. 03.03.09											

PCS Spurious & Harmonic (EIRP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: QUALCOMM INCORPORATED
Project #: 10U13266
Date: 7/7/2010
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH SUPPORT JIG AN D AC ADAPTER
Mode: TX, EGPRS PCS BAND

Chamber

5m Chamber B

Pre-amplifier

T145 8449B

Filter

Filter 1

Limit

FCC PART 24

f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LOW CHANNEL (1850.20 MHz)										
3.700	-57.3	H	3.0	45.3	35.4	1.0	-46.3	-13.0	-33.3	
5.551	-66.3	H	3.0	50.0	35.4	1.0	-50.7	-13.0	-37.7	
3.700	-56.2	V	3.0	45.1	35.4	1.0	-45.5	-13.0	-32.5	
5.551	-65.9	V	3.0	49.2	35.4	1.0	-51.1	-13.0	-38.1	
MID CHANNEL (1880.00 MHz)										
3.760	-58.6	H	3.0	45.5	35.3	1.0	-47.4	-13.0	-34.4	
5.640	-66.3	H	3.0	50.2	35.4	1.0	-50.6	-13.0	-37.6	
3.760	-61.2	V	3.0	45.3	35.3	1.0	-50.3	-13.0	-37.3	
5.640	-65.5	V	3.0	49.3	35.4	1.0	-50.6	-13.0	-37.6	
HI CHANNEL (1909.80 MHz)										
3.820	-59.7	H	3.0	45.7	35.3	1.0	-48.2	-13.0	-35.2	
5.729	-64.1	H	3.0	50.3	35.4	1.0	-48.3	-13.0	-35.3	
3.820	-61.8	V	3.0	45.4	35.3	1.0	-50.7	-13.0	-37.7	
5.729	-63.7	V	3.0	49.4	35.4	1.0	-48.7	-13.0	-35.7	

Rev. 03.03.09

WCDMA

CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement											
Company:		QUALCOMM INCORPORATED									
Project #:		10U13266									
Date:		7/8/2010									
Test Engineer:		MENGISTU MEKURIA									
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER									
Mode:		TX, WCDMA CELL BAND									
Chamber		Pre-amplifier			Filter			Limit			
5m Chamber B		T145 8449B			Filter 1			FCC PART 22			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
LOW CHANNEL (826.40 MHz)											
1.653	-55.3	H	3.0	37.3	35.5	1.0	-52.6	-13.0	-39.6		
2.479	-61.3	H	3.0	39.8	35.4	1.0	-55.9	-13.0	-42.9		
3.306	-60.1	H	3.0	44.0	35.5	1.0	-50.6	-13.0	-37.6		
4.132	-60.6	H	3.0	46.7	35.2	1.0	-48.2	-13.0	-35.2		
1.653	-52.4	V	3.0	36.8	35.5	1.0	-50.1	-13.0	-37.1		
2.479	-62.3	V	3.0	41.7	35.4	1.0	-55.0	-13.0	-42.0		
3.306	-56.8	V	3.0	44.2	35.5	1.0	-47.1	-13.0	-34.1		
4.132	-60.4	V	3.0	46.2	35.2	1.0	-48.4	-13.0	-35.4		
MID CHANNEL (836.00 MHz)											
1.672	-51.5	H	3.0	37.5	35.5	1.0	-48.5	-13.0	-35.5		
2.508	-63.4	H	3.0	39.9	35.4	1.0	-57.9	-13.0	-44.9		
3.344	-62.9	H	3.0	44.1	35.5	1.0	-53.3	-13.0	-40.3		
4.180	-61.6	H	3.0	46.8	35.2	1.0	-49.0	-13.0	-36.0		
1.672	-51.8	V	3.0	37.1	35.5	1.0	-49.3	-13.0	-36.3		
2.508	-62.1	V	3.0	41.8	35.4	1.0	-54.7	-13.0	-41.7		
3.344	-59.5	V	3.0	44.3	35.5	1.0	-49.7	-13.0	-36.7		
4.180	-61.3	V	3.0	46.3	35.2	1.0	-49.2	-13.0	-36.2		
HI CHANNEL (846.00 MHz)											
1.692	-51.0	H	3.0	37.6	35.5	1.0	-47.9	-13.0	-34.9		
2.538	-62.1	H	3.0	40.1	35.4	1.0	-56.4	-13.0	-43.4		
3.384	-62.2	H	3.0	44.2	35.5	1.0	-52.4	-13.0	-39.4		
4.230	-60.7	H	3.0	46.9	35.2	1.0	-48.0	-13.0	-35.0		
1.692	-52.3	V	3.0	37.4	35.5	1.0	-49.4	-13.0	-36.4		
2.538	-63.2	V	3.0	41.9	35.4	1.0	-55.7	-13.0	-42.7		
3.384	-59.2	V	3.0	44.4	35.5	1.0	-49.4	-13.0	-36.4		
4.230	-59.3	V	3.0	46.4	35.2	1.0	-47.1	-13.0	-34.1		
5.076	-63.8	V	3.0	48.5	35.3	1.0	-49.7	-13.0	-36.7		

Rev. 03.03.09

PCS Spurious & Harmonic (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		QUALCOMM INCORPORATED								
Project #:		10U13266								
Date:		7/8/2010								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER								
Mode:		TX, WCDMA PCS BAND								
Chamber		Pre-amplifier			Filter			Limit		
5m Chamber B		T145 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LOW CHANNEL (1852.40 MHz)										
3.705	-50.3	H	3.0	45.3	35.4	1.0	-39.3	-13.0	-26.3	
5.557	-58.7	H	3.0	50.0	35.4	1.0	-43.1	-13.0	-30.1	
7.410	-67.0	H	3.0	53.0	35.7	1.0	-48.7	-13.0	-35.7	
9.262	-59.0	H	3.0	55.1	35.6	1.0	-38.5	-13.0	-25.5	
3.705	-48.3	V	3.0	45.1	35.4	1.0	-37.5	-13.0	-24.5	
5.557	-53.8	V	3.0	49.2	35.4	1.0	-39.1	-13.0	-26.1	
7.410	-67.0	V	3.0	51.3	35.7	1.0	-50.4	-13.0	-37.4	
9.262	-53.2	V	3.0	53.6	35.6	1.0	-34.2	-13.0	-21.2	
MID CHANNEL (1880.00 MHz)										
3.760	-51.7	H	3.0	45.5	35.3	1.0	-40.5	-13.0	-27.5	
5.640	-58.3	H	3.0	50.2	35.4	1.0	-42.5	-13.0	-29.5	
7.520	-67.1	H	3.0	53.1	35.7	1.0	-48.7	-13.0	-35.7	
9.400	-62.4	H	3.0	55.2	35.6	1.0	-41.8	-13.0	-28.8	
3.760	-48.6	V	3.0	45.3	35.3	1.0	-37.6	-13.0	-24.6	
5.640	-56.8	V	3.0	49.3	35.4	1.0	-41.9	-13.0	-28.9	
7.520	-66.0	V	3.0	51.4	35.7	1.0	-49.2	-13.0	-36.2	
9.400	-56.9	V	3.0	53.7	35.6	1.0	-37.7	-13.0	-24.7	
HI CHANNEL (1907.60 MHz)										
3.815	-51.0	H	3.0	45.7	35.3	1.0	-39.6	-13.0	-26.6	
5.723	-53.6	H	3.0	50.3	35.4	1.0	-37.7	-13.0	-24.7	
7.630	-66.6	H	3.0	53.2	35.7	1.0	-48.0	-13.0	-35.0	
9.538	-63.9	H	3.0	55.4	35.6	1.0	-43.0	-13.0	-30.0	
3.815	-54.1	V	3.0	45.4	35.3	1.0	-43.0	-13.0	-30.0	
5.723	-53.3	V	3.0	49.4	35.4	1.0	-38.4	-13.0	-25.4	
7.630	-63.9	V	3.0	51.6	35.7	1.0	-47.1	-13.0	-34.1	
9.538	-63.0	V	3.0	53.9	35.6	1.0	-43.6	-13.0	-30.6	

Rev. 03.03.09

AWS Spurious & Harmonic (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		QUALCOMM INCORPORATED								
Project #:		10U13266								
Date:		7/9/2010								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT WITH SUPPORT JIG AN D AC ADAPTER								
Mode:		TX, WCDMA AWS BAND								
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber A		T144 8449B			Filter 1		FCC PART 27			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LOW CHANNEL (1712.40 MHz)										
3.425	-58.7	H	3.0	44.2	37.0	1.0	-50.5	-13.0	-37.5	
5.137	-59.4	H	3.0	49.2	36.3	1.0	-45.5	-13.0	-32.5	
6.850	-66.1	H	3.0	52.1	36.5	1.0	-49.4	-13.0	-36.4	
8.562	-66.5	H	3.0	54.4	36.8	1.0	-48.0	-13.0	-35.0	
3.425	-57.8	V	3.0	44.3	37.0	1.0	-49.6	-13.0	-36.6	
5.137	-55.9	V	3.0	48.6	36.3	1.0	-42.5	-13.0	-29.5	
6.850	-63.7	V	3.0	51.1	36.5	1.0	-48.0	-13.0	-35.0	
8.562	-65.3	V	3.0	53.3	36.8	1.0	-47.8	-13.0	-34.8	
MID CHANNEL (1732.40 MHz)										
3.465	-59.4	H	3.0	44.3	37.0	1.0	-51.0	-13.0	-38.0	
5.197	-61.2	H	3.0	49.3	36.2	1.0	-47.1	-13.0	-34.1	
6.930	-66.4	H	3.0	52.3	36.5	1.0	-49.6	-13.0	-36.6	
8.662	-66.9	H	3.0	54.5	36.9	1.0	-48.2	-13.0	-35.2	
3.465	-59.5	V	3.0	44.4	37.0	1.0	-51.1	-13.0	-38.1	
5.197	-57.8	V	3.0	48.8	36.2	1.0	-44.2	-13.0	-31.2	
6.930	-65.7	V	3.0	51.2	36.5	1.0	-50.0	-13.0	-37.0	
8.662	-67.7	V	3.0	53.5	36.9	1.0	-50.1	-13.0	-37.1	
HI CHANNEL (1752.60 MHz)										
3.505	-56.1	H	3.0	44.4	37.0	1.0	-47.6	-13.0	-34.6	
5.258	-58.3	H	3.0	49.4	36.3	1.0	-44.1	-13.0	-31.1	
7.010	-65.6	H	3.0	52.4	36.5	1.0	-48.7	-13.0	-35.7	
8.763	-65.8	H	3.0	54.6	36.9	1.0	-47.1	-13.0	-34.1	
3.505	-55.2	V	3.0	44.5	37.0	1.0	-46.7	-13.0	-33.7	
5.258	-54.7	V	3.0	48.9	36.3	1.0	-41.1	-13.0	-28.1	
7.010	-65.3	V	3.0	51.3	36.5	1.0	-49.5	-13.0	-36.5	
8.763	-65.9	V	3.0	53.6	36.9	1.0	-48.2	-13.0	-35.2	

Rev. 03.03.09

7.3. RECEIVER SPURIOUS EMISSIONS

LIMIT

RSS-Gen 7.2.2

Spurious Emission Limits for Receivers:

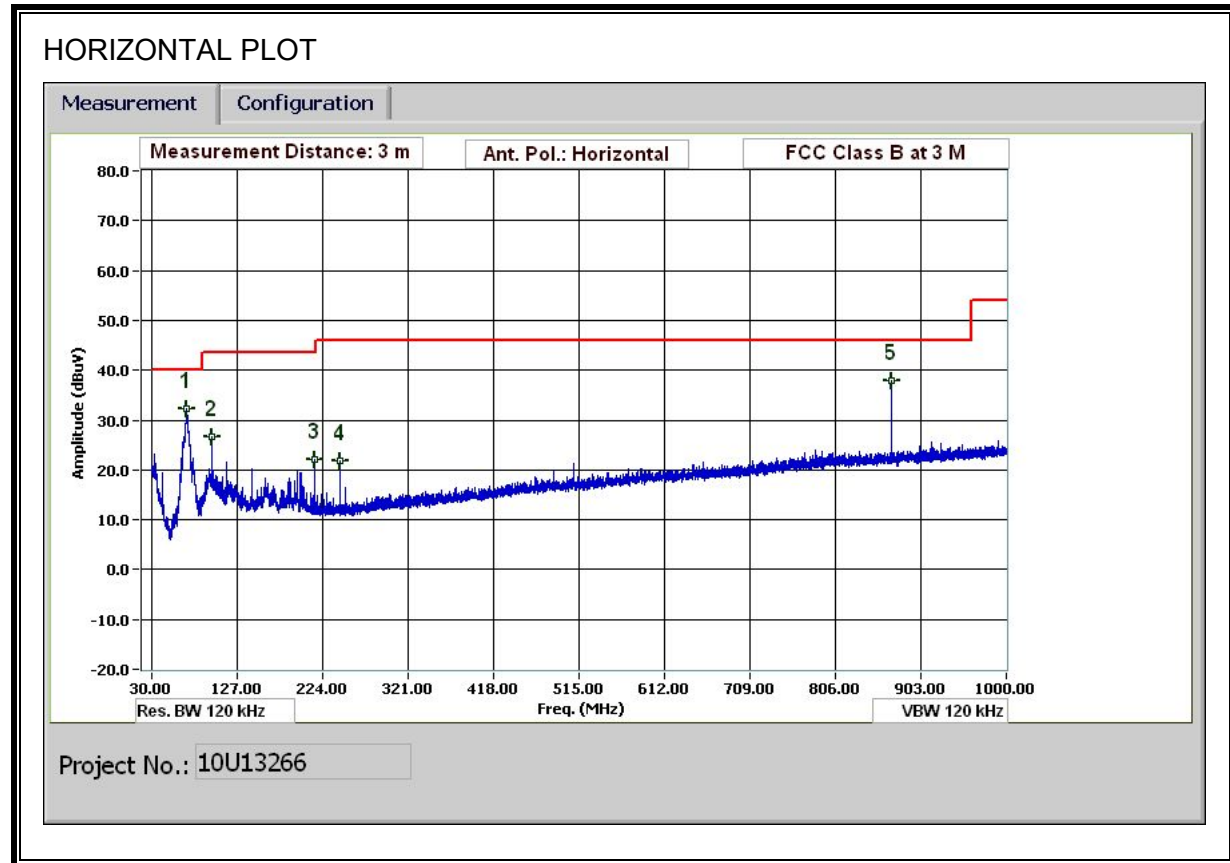
Spurious Frequency (MHz)	Field Strength (microvolts/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

TEST PROCEDURE

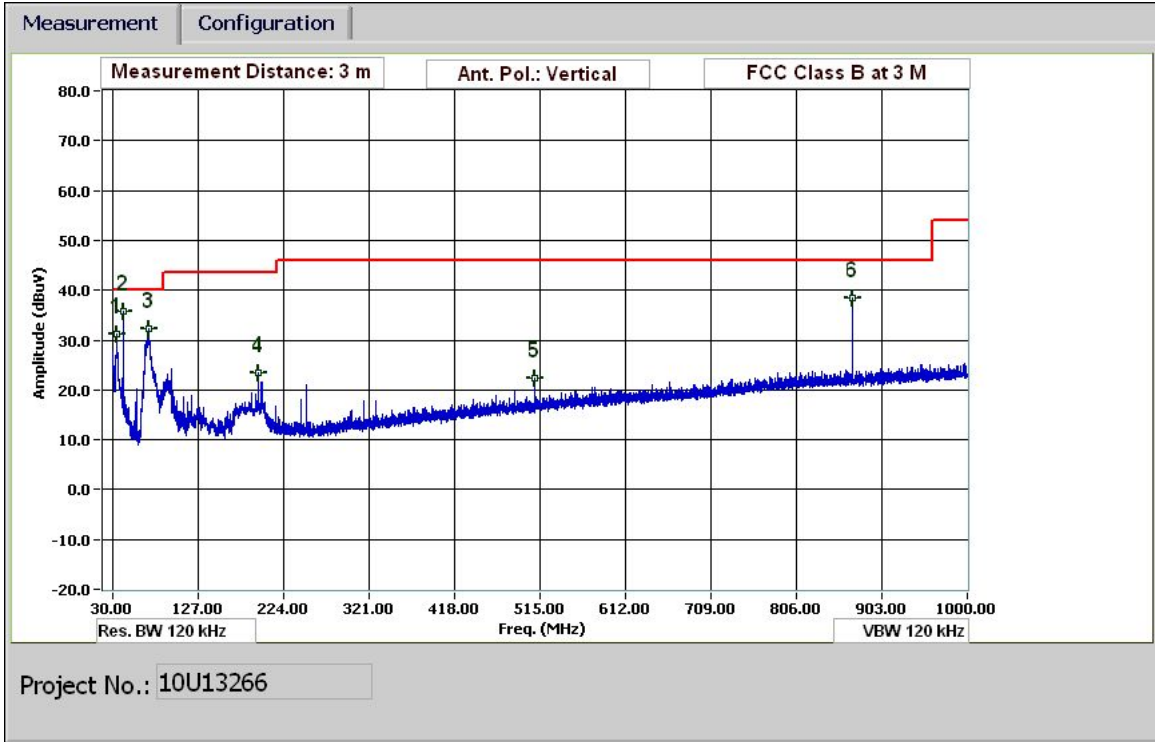
The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (local oscillator frequency, intermediate frequency or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable and local oscillator frequencies.

RESULTS

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

30-1000MHz Frequency Measurement
 Compliance Certification Services, Fremont 5m Chamber

Test Engr: Mengistu Mekuria
Date: 07/07/10
Project #: 10U13266
Company: Qualcomm Incorporated
EUT Description: Gobi3000 PCI express Mini Card
EUT M/N: Gobi3000
Test Target: FCC Class B
Mode Oper: Normal Mode

f Measurement Frequency Amp Preamp Gain Margin Margin vs. Limit
 Dist Distance to Antenna D Corr Distance Correct to 3 meters
 Read Analyzer Reading Filter Filter Insert Loss
 AF Antenna Factor Corr. Calculated Field Strength
 CL Cable Loss Limit Field Strength Limit

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
34.560	3.0	42.1	18.3	0.5	29.7	0.0	0.0	31.2	40.0	-8.8	V	P	
41.640	3.0	51.9	13.1	0.6	29.6	0.0	0.0	35.9	40.0	-4.1	V	P	
70.922	3.0	52.8	8.2	0.7	29.6	0.0	0.0	32.2	40.0	-7.8	V	P	
195.367	3.0	39.6	11.6	1.3	28.9	0.0	0.0	23.5	43.5	-20.0	V	P	
508.700	3.0	33.0	16.9	2.2	29.7	0.0	0.0	22.4	46.0	-23.6	V	P	
869.195	3.0	42.9	21.4	2.9	28.7	0.0	0.0	38.4	46.0	-7.6	V	P	
69.962	3.0	52.8	8.3	0.7	29.6	0.0	0.0	32.2	40.0	-7.8	H	P	
97.923	3.0	45.7	9.5	0.9	29.5	0.0	0.0	26.6	43.5	-16.9	H	P	
214.808	3.0	37.6	11.9	1.3	28.9	0.0	0.0	22.0	43.5	-21.5	H	P	
243.369	3.0	37.4	11.8	1.4	28.8	0.0	0.0	21.8	46.0	-24.2	H	P	
869.315	3.0	42.3	21.4	2.9	28.7	0.0	0.0	37.9	46.0	-8.2	H	P	

Rev. 1.27.09

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

SPURIOUS EMISSIONS ABOVE 1000 MHz (WORST-CASE CONFIGURATION)

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

7.4. POWER LINE CONDUCTED EMISSION

LIMIT

RSS-Gen 7.2.2

Except when the requirements applicable to a given device state otherwise, for any licence-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

Table 2 – AC Power Lines Conducted Emission Limits

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

RESULTS

6 WORST EMISSIONS

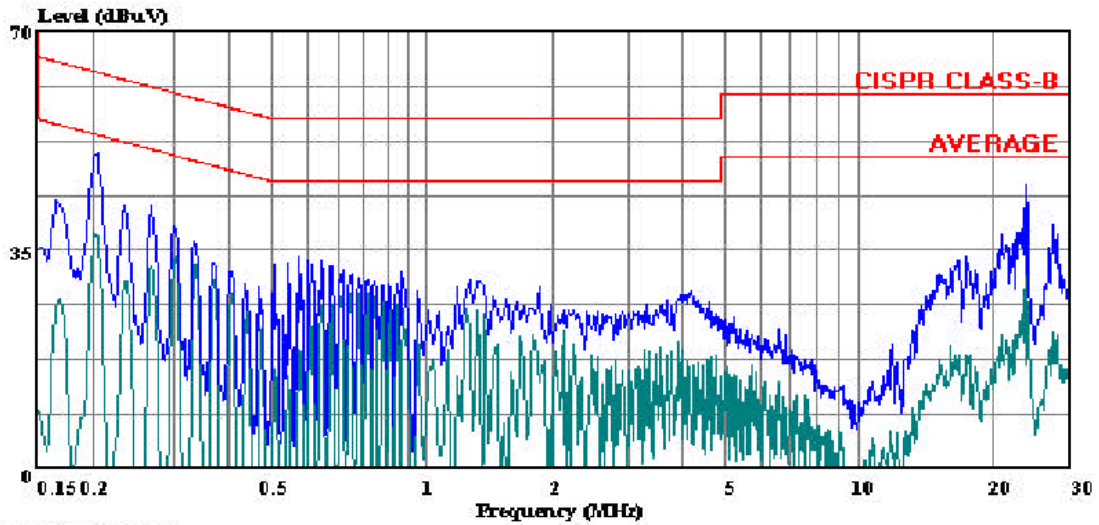
CONDUCTED EMISSIONS DATA (115VAC 60Hz)										
Freq. (MHz)	Reading			Class (dB)	Limit QP	EN B		Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)			AV	QP (dB)	AV (dB)		
0.20	50.56	--	37.92	0.00	63.45	53.45	-12.89	-15.53	L1	
0.27	42.20	--	32.56	0.00	61.15	51.15	-18.95	-18.59	L1	
23.89	45.50	--	33.26	0.00	60.00	50.00	-14.50	-16.74	L1	
0.17	48.05	--	27.11	0.00	65.06	55.06	-17.01	-27.95	L2	
0.20	50.73	--	36.66	0.00	63.57	53.57	-12.84	-16.91	L2	
23.89	44.52	--	32.96	0.00	60.00	50.00	-15.48	-17.04	L2	
6 Worst Data										

LINE 1 RESULTS



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 35 File#: 10U13266 LC.EMI Date: 07-08-2010 Time: 16:49:38



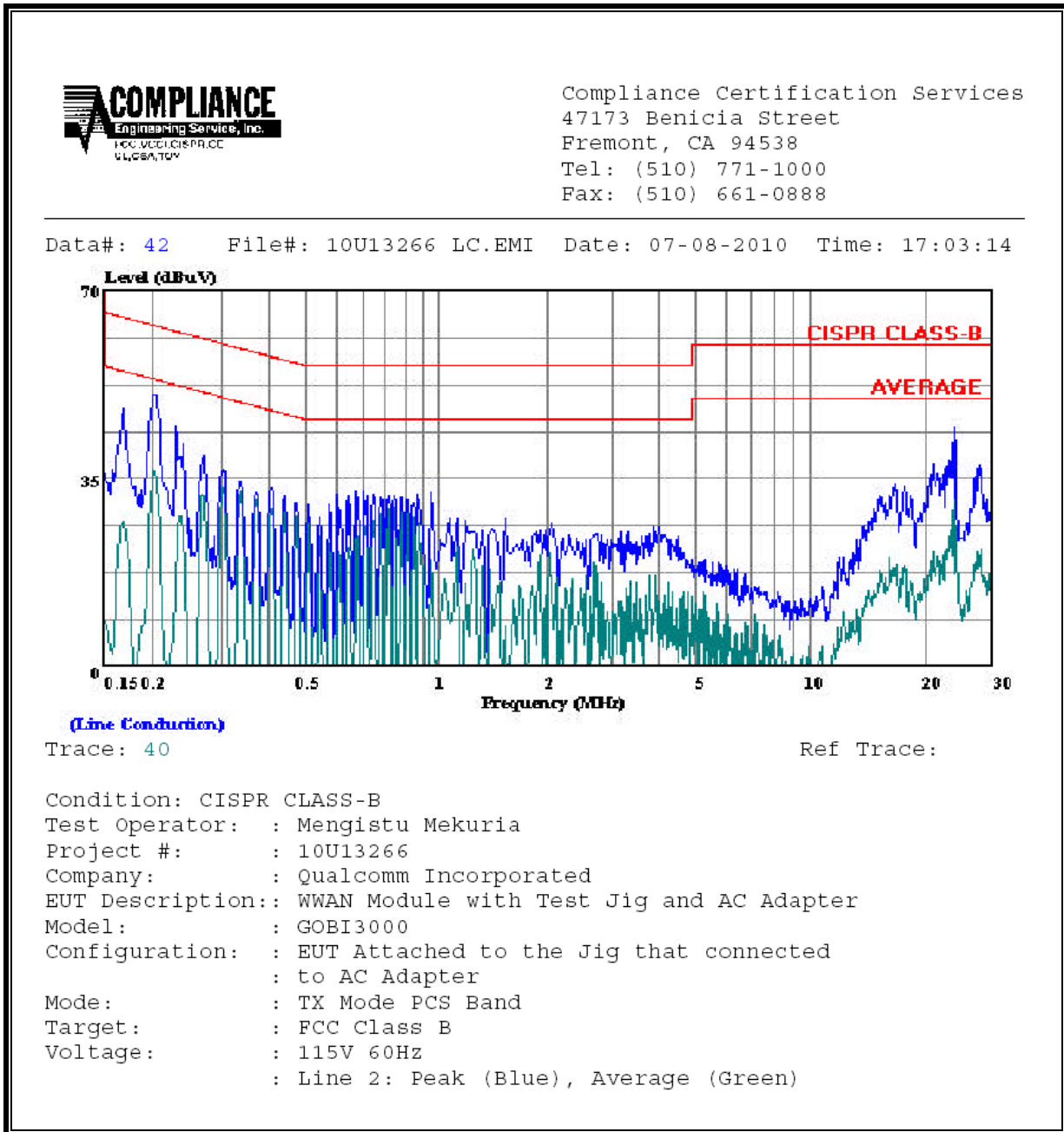
(Line Conduction)

Trace: 33

Ref Trace:

Condition: CISPR CLASS-B
Test Operator: : Mengistu Mekuria
Project #: : 10U13266
Company: : Qualcomm Incorporated
EUT Description: : WWAN Module with Test Jig and AC Adapter
Model: : GOBI3000
Configuration: : EUT Attached to the Jig that connected
: to AC Adapter
Mode: : TX Mode PCS Band
Target: : FCC Class B
Voltage: : 115V 60Hz
: Line 1: Peak (Blue), Average (Green)

LINE 2 RESULTS



8. SETUP PHOTOS

RADIATED RF MEASUREMENT SETUP





AC MAINS LINE CONDUCTED EMISSION





END OF REPORT