



# ***Gobi™2000 Module FCC 22 & 24 Radiated Test Report***

***MH80-VN379-204 Rev. B***

***January 23, 2009***

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**Test Report:** 2008 12118585 FCC

**Project number:** 23644-1

**Applicant:** Qualcomm  
5775 Morehouse Drive  
San Diego, CA 92121-1714

**Equipment Under Test (EUT):** Universal Data Modem Platform


**Model:** Gobi2000

**FCC ID:** J9CGOBI2000  
**IC:** 2723A-GOBI2000

**In Accordance With:** FCC Part 22, Subpart H  
RSS-Gen, Issue 2  
Industry Canada RSS-132, Issue 2

FCC Part 24, Subpart E  
Industry Canada RSS-133, Issue 3

**Tested By:** Nemko USA Inc.  
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San Diego, CA 92121

**Authorized By:**   
Alan Laudani, EMC/RF Test Engineer

**Date:** December 19, 2008

**Total Number of Pages:** 42

## Report Summary

All measurements are traceable to national standards. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 22, Subpart H and FCC Part 24, Subpart E.

The assessment summary is as follows:

<b>Apparatus Assessed:</b>	Universal Data Modem Platform Gobi2000
<b>Specification:</b>	Industry Canada RSS-Gen, Issue 2 FCC Part 22, Subpart H Industry Canada RSS-132, Issue 2 FCC Part 24, Subpart E Industry Canada RSS-133, Issue 3
<b>Compliance Status:</b>	Complies
<b>Exclusions:</b>	None
<b>Non-compliances:</b>	None

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**Report Release History**

REVISION	DATE	COMMENTS
-	Dec. 19. 2008	Prepared By: Rodel Rosolme
-	Dec. 19, 2008	Initial Release: Alan Laudani

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report. This test report has been completed in accordance with the requirements of ISO/IEC 17025. Nemko USA Inc. authorizes the applicant to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko USA Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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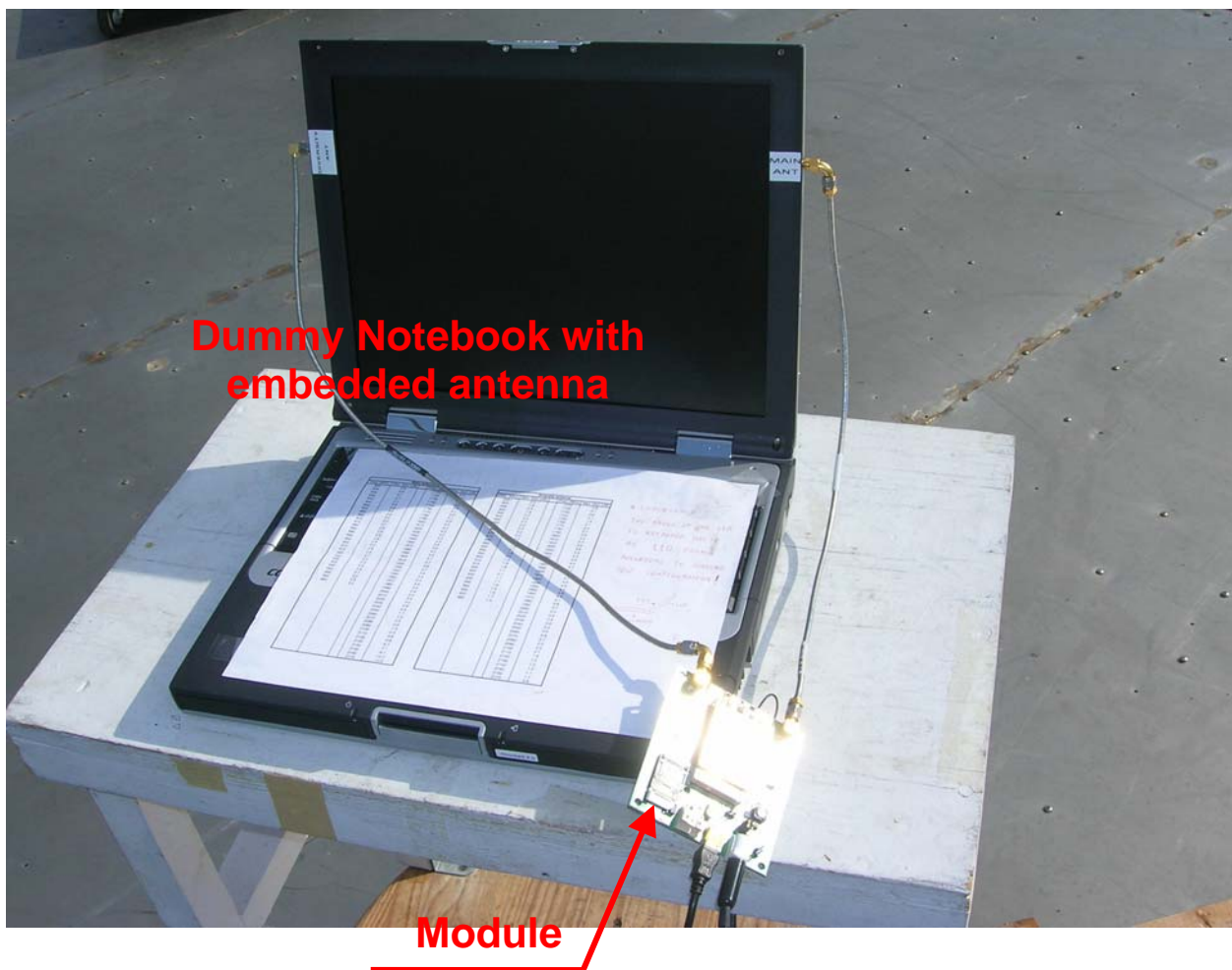
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## Section 1: Equipment Under Test

### 1.1 Product Identification

The Equipment Under Test was identified as follows:

**Qualcomm Gobi2000 with Serial Number: G2-P2B-11**



## 1.2 Theory of Operation

The Gobi2000™ is the second-generation PCI Express™ Mini Card that enables notebook computer wireless data connectivity. This datacard solution delivers WWAN connectivity for the CDMA2000® 1X, 1x EV-DO, UMTS (HSDPA and HSUPA), and GSM/GPRS/EDGE protocols, plus GPS position location, in a single package. The complete Gobi2000 solution includes all hardware and software necessary for embedded wireless connectivity in notebook PCs.

The module will have the following features:

- CDMA2000 1xEV-DO data at 850 MHz and 1900 MHz with receive diversity support for both bands
- UMTS HSDPA and HSUPA data at 850 MHz, 900 MHz, Japan800 MHz, 1900 MHz, and 2100 MHz with diversity support for all 5 bands
- GSM/GPRS/EDGE data at 850 MHz, 900 MHz, 1800 MHz, and 1900 MHz
- GPS (switched into diversity path) at 1575 MHz
- Service-provider skins (Windows® application)
- Microsoft® Windows XP and Vista drivers
- APIs and SDKs
- Security and authentication
- Connectivity for an offboard USIM integrated circuit card (UICC)
- Connectivity for two offboard antennas (WWAN primary and diversity)
- Network Manager support for English, Portuguese, Spanish, French, German, Italian, and others as required by the carriers
- USB 2.0 high-speed interface

### 1.3 Technical Specifications of the EUT

#### Operating Frequency:

Mode	Band Name	Available in U.S.	Transmitter Range (MHz)	Receiver Range (MHz)
GSM/GPRS/EDGE	850 MHz - US Cellular	Yes	824-849	869-894
	900 MHz - EGSM	No	880-915	925-960
	1800 MHz - DCS	No	1710-1785	1805-1880
	1900 MHz - US PCS	Yes	1850-1910	1930-1990
WCDMA/HSPA	Band 1 2.1 GHz	No	1920-1980	2110-2170
	Band 2 1900 MHz	Yes	1850-1910	1930-1990
	Band 5 850 MHz	Yes	824-849	869-894
	Band 6 800 MHz (Japan)	No	830-840	875-885
	Band 8 900 MHz	No	880-915	925-960
CDMA2000	BC0 850 MHz	Yes	824-849	869-894
	BC1 1900 MHz	Yes	1850-1910	1930-1990
GPS	GPS L1	Yes	N/A	1570-1590

#### Peak Output Power:

**1.2 W** ERP in cell; **1.2W** EIRP in PCS



**Emission Designator:**

Mode		Tx Frequency Range (MHz)	Emission Designator
GSM \GPRS \EDGE	GMSK	824.2 – 848.8	248KGXW
		1850.2 – 1909.8	250KG7W
	8PSK	824.2 – 848.8	248KGXW
		1850.2 – 1909.8	245KG7W
WCDMA		826.4 – 846.6	4M18F9W
		1852.4 – 1907.5	4M19F9W
CDMA		824.7 – 848.31	1M28F9W
		1851.25 – 1908.75	1M28F9W

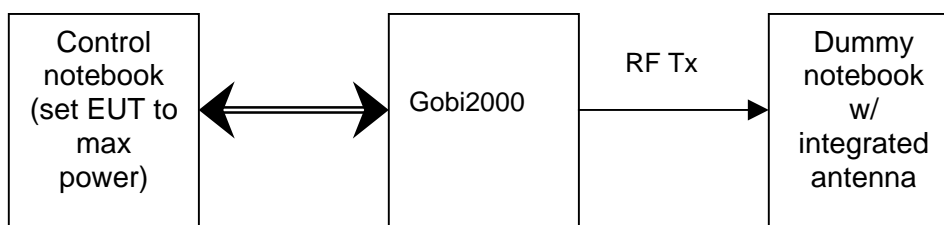
**Modulation:** GSM – GMSK, 8PSK  
 CDMA 1X-BPSK  
 WCDMA Release 99 – BPSK (UL)

**Antenna Data:** Prototype: Cellular band +2.7dBi  
 PCS band +4dBi

**Antenna Connector:** U.FL-R-SMT (Hirose)

**Power Source:** 3.3Vdc

**1.4 Block Diagram of the EUT Setup**



## 1.5 Summary of Test Results

Maximum Radiated Output Power

Mode	Max Power in Cell band (ERP)	Max Power in PCS band (EIRP)
EDGE (8PSK)	0.40 W / 26.0 dBm	0.73 W / 28.6 dBm
CDMA 1x	0.12 W / 20.7 dBm	1.18 W / 27.2 dBm
GSM (GMSK)	1.21 W / 30.8 dBm	0.35 W / 25.4 dBm
WCDMA Rel99	0.14 W / 21.3 dBm	0.27 W / 24.4 dBm

Field Strength of Spurious

Mode	Frequency (MHz)	Total Power (dBm)	Spec (dBm)	Margin (dBm)
GSM (GMSK)	1648.40	-34.03 (ERP)	-13	-21.0
	2472.60	-29.14 (ERP)	-13	-16.1
CDMA 1x	3817.50	-18.73 (EIRP)	-13	-5.7
WCDMA Rel99, Band II	3704.80	-19.03 (EIRP)	-13	-6.0
	3760.00	-21.03 (EIRP)	-13	-8.0
	3815.20	-18.73 (EIRP)	-13	-5.7

Note the table only lists the spurious emissions, which are within 20dB of the limits.

## **Section 2: Test Methodology**

### **2.1 Test Standards**

The tests documented in this report were performed in accordance with:

- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- FCC CFR 47 Part 22, Subpart H Cellular Radiotelephone Service
- FCC CFR 47 Part 24, Subpart E Broadband PCS
- Industry Canada, RSS-GEN (Issue 2)
- Industry Canada, RSS-132, Issue 2 (Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz)
- Industry Canada, RSS-133, Issue 3 (2 GHz Personal Communications Services)
- TIA/EIA 603C (2004)
- ANSI C63.4 (2003)

### **2.2 Antenna Substitution Method**

1) Methodology Used: TIA/EIA-603 Clause 2.2.17

2) The Substitution Method is used for fundamental power levels and spurious emissions when RF emission signals are measured within 20 dB of the limit.

3) Formula Used to calculate the values:

a) Measured value + antenna factor + cable loss - preamplifier = Max Level

b) Margin = Max level - Limit

c) Signal Generator power level - cable loss + antenna gain = ERP Part 22 or EIRP Part 24

d) Substituted Margin = ERP (or EIRP) - Limit

Note: gain for dipole = 0; antenna factor is not the same as antenna gain

Note: The signal generator power level is the power required when transmitting into the substituting antenna to duplicate the Measured Value. Substituted margin is reported in 731 forms pertaining to certification grants and Class II Permissive Changes when a direct conducted power reading cannot be performed.

## **Section 3: Test Conditions**

### **3.1 Specifications**

The apparatus was assessed against the following specifications:

- FCC Part 22, Subpart H Cellular Radiotelephone Service
- FCC Part 24, Subpart E Broadband PCS
- Industry Canada, RSS-GEN Issue 2
- Industry Canada, RSS-132, Issue 2 (Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz)
- Industry Canada, RSS-133, Issue 3 (2 GHz Personal Communications Services)

### **3.2 Deviations From Laboratory Test Procedures**

No deviations were made from laboratory test procedures.

### **3.3 Test Environment**

All tests were performed under the following environmental conditions:

Temperature range	:	13 – 18°C
Humidity range	:	45 - 91 %
Pressure range	:	86 - 106 kPa

### 3.4 Test Equipment

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
111	Antenna, LPA	Electrometrics	LPA-25		20-Oct-08	20-Oct-10
317	Preamplifier	HP	8449A	2749A00167	31-Mar-08	31-Mar-09
752	Antenna, DRWG	EMCO	3115	4943	12-Nov-08	12-Nov-10
765	Antenna Set, Dipole	EMCO	3121C	1214	25-Jul-08	25-Jul-10
835	Spectrum Analyzer	Rohde & Schwarz	RHDFSEK	829058/005	27-Jun-08	27-Jun-09
877	Antenna, DRG Horn, .7-18GHz	AH Systems	SAS-571	688	28-Jul-08	28-Jul-10
932	Synthesized Signal Generator (0.05 to 18.5GHz)	Hewlett-Packard	8673C	2822A00556	8-May-08	8-May-09

## **Section 4: Observations**

### **4.1 Modifications Performed During Assessment**

No modifications were performed during assessment.

### **4.2 Record Of Technical Judgements**

No technical judgements were made during the assessment.

### **4.3 EUT Parameters Affecting Compliance**

The user of the apparatus could not alter parameters that would affect compliance.

### **4.4 Test Deleted**

No Tests were deleted from this assessment.

### **4.5 Additional Observations**

There were no additional observations made during this assessment.

## Section 5: Results Summary

The results contained in this section are representative of the operation of the apparatus as originally submitted.

Name of Test	Para. No.	Result
RF Power Output	2.1046	COMPLIES
Audio Low Pass Filter Response	2.1047	NA <sup>1</sup>
Audio Frequency Response	2.1047	NA <sup>1</sup>
Modulation Limiting	2.1047	NA <sup>1</sup>
Occupied Bandwidth (WB Data)	2.1049	NA <sup>2</sup>
Spurious Emissions at antenna Terminals	2.1051	NA <sup>2</sup>
Field Strength of Spurious Emissions	2.1053	COMPLIES
Frequency Stability	2.1055	NA <sup>2</sup>

**Footnotes for N/A's:**

<sup>1</sup>Digital Modulation

<sup>2</sup>Test methodology and results will be provided by the client

## Appendix A: Test Results

### Para. No.: 2.1046 RF Power Output

#### **§ 22.913 Effective radiated power limits.**

The effective radiated power (ERP) of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

(a) *Maximum ERP.* In general, the effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. However, for those systems operating in areas more than 72 km (45 miles) from international borders that:

(1) Are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census; or,

(2) Extend coverage on a secondary basis into cellular unserved areas, as those areas are defined in §22.949, the ERP of base transmitters and cellular repeaters of such systems must not exceed 1000 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

#### **§ 24.232 Power and antenna height limits.**

(c) Mobile/portable stations are limited to 2 watts EIRP peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

(d) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

**Test Procedure:** ANSI C63.4 (2003) Clause 8

**Test Conditions:**

<b>Sample Number:</b>	G2-P2B-11	<b>Temperature:</b>	13-18°C
<b>Date:</b>	Dec. 4, 5, 2008	<b>Humidity:</b>	45-90 %
<b>Modification State:</b>	See Datasheets	<b>Tester:</b>	Rodel Rosolme
		<b>Laboratory:</b>	Nemko SOATS

#### **Test Results:**

Complies, see tables in the following pages

#### **Additional Observations:**

- Emissions measured were substituted by a signal generator and matching antenna and were shown to comply. Please see Field Strength of Spurious Emissions test for substitution data.



**Radiated Power Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Part # : \_\_\_\_\_  
 EUT Serial # : G2-P2B-118  
 EUT Config : EDGE 850 TX

Specification : FCC Part 22

Rod. Ant. #:	<u>NA</u>	Temp. (°C) :	<u>17</u>	Date :	<u>12/4/08</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>56</u>	Time :	<u>8:00AM</u>
Log Ant.#:	<u>111_3m</u>	EUT Voltage :	<u>4.2VDC</u>	Staff :	<u>RResolme</u>
DRG Ant. #	<u>529</u>	EUT Frequency :	<u>NA</u>	Photo ID:	_____
Dipole Ant.#:	<u>NA</u>	Phase:	<u>NA</u>	Peak Bandwidth:	<u>1 MHz</u>
Cable#:	<u>SOATS</u>	Location:	<u>RN#: 329550-01</u>	Video Bandwidth	<u>1 MHz</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>		
Spec An.#:	<u>897</u>	ERP conversion factor	<u>7</u>		
QP #:	<u>NA</u>				
PreSelect#:	<u>NA</u>				

Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT
824.20	100.9	H	25.38	29.0	38.5	-9.4	B/L	1.0	Pass	
836.60	101.1	H	25.62	29.5	38.5	-9.0	B/L	1.0	Pass	
848.80	101.3	H	25.81	29.8	38.5	-8.6	B/L	1.0	Pass	

**Radiated Power Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name :	<u>Qualcomm</u>		
EUT Name :	<u>Modem Platform</u>		
EUT Model # :	<u>GOBI2000</u>		
EUT Part # :	<u></u>		
EUT Serial # :	<u>G2-P2B-118</u>		
EUT Config. :	<u>GPRS 850 TX</u>		
Specification :	<u>FCC Part 22</u>		
Rod. Ant. #:	<u>NA</u>	Temp. (°C) :	<u>17</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>56</u>
Log Ant.#:	<u>111_3m</u>	EUT Voltage :	<u>4.2VDC</u>
DRG Ant. #:	<u>529</u>	EUT Frequency :	<u>NA</u>
Dipole Ant.#:	<u>NA</u>	Phase:	<u>NA</u>
Cable#:	<u>SOATS</u>	Location:	<u>RN#: 329550-01</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>
Spec An.#:	<u>897</u>	ERP conversion factor	<u>7</u>
QP #:	<u>NA</u>		
PreSelect#:	<u>NA</u>		
		Date :	<u>12/4/08</u>
		Time :	<u>8:00AM</u>
		Staff :	<u>RResolme</u>
		Photo ID:	<u></u>
		Peak Bandwidth:	<u>1 MHz</u>
		Video Bandwidth	<u>1 MHz</u>

Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT
824.20	104.7	H	25.4	32.8	38.5	-5.6	B/L	1.0	Pass	
836.60	105.6	H	25.6	34.0	38.5	-4.5	B/L	1.0	Pass	
848.80	106.1	H	25.8	34.6	38.5	-3.8	B/L	1.0	Pass	

**Radiated Power Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Part # : \_\_\_\_\_  
 EUT Serial # : G2-P2B-118  
 EUT Config. : CDMA 2000 1X RC3 SO55

Specification : FCC Part 22

Rod. Ant. # :	<u>NA</u>	Temp. (°C) :	<u>17</u>	Date :	<u>12/4/08</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>45</u>	Time :	<u>8:00AM</u>
Log Ant.#:	<u>111_3m</u>	EUT Voltage :	<u>4.2VDC</u>	Staff :	<u>R Resolme</u>
DRG Ant. #	<u>529</u>	EUT Frequency :	<u>NA</u>	Photo ID:	_____
Dipole Ant.#:	<u>NA</u>	Phase:	<u>NA</u>	Peak Bandwidth:	<u>30 kHz*</u>
Cable#:	<u>SOATS</u>	Location:	<u>RN#: 329550-01</u>	Video Bandwidth	<u>300 kHz*</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>	*Utilized RS FSEK 30 Channel Power	
Spec An.#:	<u>897</u>	ERP conversion factor	<u>7</u>	measurement capability (CDMA 2000DS	
QP #:	<u>NA</u>			standard) average detector for channel power	
PreSelect#:	<u>NA</u>				

Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT
824.70	96.5	H	25.4	24.6	38.5	-13.8	B	1.0	Pass	
836.52	96.0	H	25.6	24.4	38.5	-14.1	B	1.0	Pass	
848.31	95.6	H	25.8	24.1	38.5	-14.3	B	1.0	Pass	

**Radiated Power Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Part # : \_\_\_\_\_  
 EUT Serial # : G2-P2B-118  
 EUT Config. : WCDMA Release 99 TX, Band V

Specification : FCC Part 22

Rod. Ant. #:	<u>NA</u>	Temp. (°C) :	<u>13</u>	Date :	<u>12/5/08</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>90</u>	Time :	<u>8:00AM</u>
Log Ant.#:	<u>111_3m</u>	EUT Voltage :	<u>4.2VDC</u>	Staff :	<u>R Resolme</u>
DRG Ant. #:	<u>529</u>	EUT Frequency :	<u>NA</u>	Photo ID:	_____
Dipole Ant.#:	<u>NA</u>	Phase:	<u>NA</u>	Peak Bandwidth:	<u>3MHz</u>
Cable#:	<u>40ft</u>	Location:	<u>RN#: 329550-01</u>	Video Bandwidth:	<u>10MHz</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>	*Utilized RS FSEK 30 Channel Power measurement capability (WCDMA standard) average detector for channel power	
Spec An.#:	<u>897</u>	ERP conversion factor	<u>7</u>		
QP #:	<u>NA</u>				
PreSelect#:	<u>NA</u>				

Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT
826.40	96.2	H	25.4	24.4	38.5	-14.1	B	1.0	Pass	
836.40	96.3	H	25.6	24.6	38.5	-13.8	B	1.0	Pass	
846.60	96.6	H	25.8	25.1	38.5	-13.3	B	1.0	Pass	

**Radiated Power Data**

Job #: 23644      Test #: 1  
 Page 1      of 1

Client Name : Qual  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Part # : \_\_\_\_\_  
 EUT Serial # : G2-P2B-118  
 EUT Config. : EDGE PCS Tx  
 Specification : FCC Part 24  
 Rod. Ant. #: NA      Temp. (°C) : 18      Date : 12/4/08  
 Bicon Ant.#: NA      Humidity (%) : 67      Time : 8:00AM  
 Log Ant.#: 111\_3m      EUT Voltage : 4.2VDC      Staff : R Resolme  
 DRG Ant. # 529      EUT Frequency : NA      Photo ID: \_\_\_\_\_  
 Dipole Ant.#: NA      Phase: NA      Peak Bandwidth: 1 MHz  
 Cable#: 40ft      Location: RN#: 329550-01      Video Bandwidth 1 MHz  
 Preamp#: NA      Distance: 3m  
 Spec An.#: 897      EIRP conversion factor 5.5  
 QP #: NA  
 PreSelect#: NA

Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT
1850.20	93.4	H	30.7	28.9	33.0	-4.1	B	1.0	Pass	
1880.00	93.7	H	30.7	29.2	33.0	-3.8	B	1.0	Pass	
1909.80	93.7	H	30.8	29.3	33.0	-3.7	B	1.0	Pass	

Radiated Power Data												
						Job # : <u>23644</u>	Test # : <u>1</u>					
						Page <u>1</u>	of <u>1</u>					
Client Name :	<u>Qual</u>											
EUT Name :	<u>Modem Platform</u>											
EUT Model # :	<u>GOBI2000</u>											
EUT Part # :	<u></u>											
EUT Serial # :	<u>G2-P2B-118</u>											
EUT Config. :	<u>GPRS PCS Tx</u>											
Specification :	<u>FCC Part 24</u>											
Rod. Ant. #:	<u>NA</u>	Temp. (°C) :	<u>18</u>								Date :	<u>12/4/08</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>67</u>								Time :	<u>8:00AM</u>
Log Ant.#:	<u>111_3m</u>	EUT Voltage :	<u>4.2VDC</u>								Staff :	<u>R Resolme</u>
DRG Ant. #	<u>529</u>	EUT Frequency :	<u>NA</u>								Photo ID:	<u></u>
Dipole Ant.#:	<u>NA</u>	Phase:	<u>NA</u>								Peak Bandwidth:	<u>1 MHz</u>
Cable#:	<u>40ft</u>	Location:	<u>RN#: 329550-01</u>								Video Bandwidth	<u>1 MHz</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>									
Spec An.#:	<u>897</u>	EIRP conversion factor	<u>5.5</u>									
QP #:	<u>NA</u>											
PreSelect#:	<u>NA</u>											
Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT		
1850.20	95.5	H	30.7	31.0	33.0	-2.0	B	1.0	Pass			
1880.00	95.8	H	30.7	31.3	33.0	-1.7	B	1.0	Pass			
1909.80	95.8	H	30.8	31.4	33.0	-1.6	B	1.0	Pass			

**Radiated Power Data**

Job #: 23644      Test #: 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Part # : \_\_\_\_\_  
 EUT Serial # : G2-P2B-118  
 EUT Config : CDMA 2000 1X PCS RC3 SO55

Specification : FCC Part 24

Rod. Ant. #:	<u>NA</u>	Temp. (°C) :	<u>17</u>	Date :	<u>12/4/08</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>56</u>	Time :	<u>8:00AM</u>
Log Ant.#:	<u>111_3m</u>	EUT Voltage :	<u>4.2VDC</u>	Staff :	<u>R Resolme</u>
DRG Ant. #	<u>529</u>	EUT Frequency :	<u>NA</u>	Photo ID:	_____
Dipole Ant.#:	<u>NA</u>	Phase:	<u>NA</u>	Peak Bandwidth:	<u>30 kHz*</u>
Cable#:	<u>40ft</u>	Location:	<u>RN#: 329550-01</u>	Video Bandwidth:	<u>300 kHz*</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>	*Utilized RS FSEK 30 Channel Power measurement capability (CDMA 2000DS stadard) average detector for channel power	
Spec An.#:	<u>897</u>	EIRP conversion factor	<u>5.5</u>		
QP #:	<u>NA</u>				
PreSelect#:	<u>NA</u>				

Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT
1851.25	90.5	H	30.7	26.0	33.0	-7.0	B	1.0	Pass	
1880.00	91.0	H	30.7	26.5	33.0	-6.5	B	1.0	Pass	
1908.75	90.5	H	30.8	26.1	33.0	-6.9	B	1.0	Pass	

**Radiated Power Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : UNDP-1  
 EUT Part # : \_\_\_\_\_  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : WCDMA Release 99 TX, Band II

Specification : FCC Part 24  
 Rod. Ant. # : NA      Temp. (°C) : 13      Date : 12/5/08  
 Bicon Ant.#: NA      Humidity (%) : 90      Time : 8:00AM  
 Log Ant.#: 111\_3m      EUT Voltage : 4.2VDC      Staff : R Resolme  
 DRG Ant. # : 529      EUT Frequency : NA      Photo ID: \_\_\_\_\_  
 Dipole Ant.#: NA      Phase: NA      Peak Bandwidth: 30 kHz\*  
 Cable#: 40ft      Location: RN#: 329550-01      Video Bandwidth 300 kHz\*  
 Preamp#: NA      Distance: 3m      \*Utilized RS FSEK 30 Channel Power  
 Spec An.#: 897      EIRP conversion factor 5.5      measurement capability (WCDMA standard)  
 QP #: NA      average detector for channel power  
 PreSelect#: NA

Meas. Freq. (MHz)	Meas. (dBuV) pk	Ant Orientation	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	COMMENT
1852.40	90.1	H	30.7	25.6	33.0	-7.4	B	1.0	Pass	
1880.00	90.2	H	30.7	25.7	33.0	-7.3	B	1.0	Pass	
1907.60	88.9	H	30.8	24.5	33.0	-8.5	B	1.0	Pass	



**Para. No.: 2.1053 Field Strength of Spurious**

**§ 22.917 Emission limitations for cellular equipment.**

(a) *Out of band emissions.* The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

(b) *Measurement procedure.* 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.

**§ 24.238 Emission limitations for Broadband PCS equipment.**

The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.

(a) *Out of band emissions.* The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

(b) *Measurement procedure.* 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.

**Test Procedure:** ANSI C63.4 (2003) Clause 8

**Test Conditions:**

<b>Sample Number:</b>	G2-P2B-11	<b>Temperature:</b>	8-18°C
<b>Date:</b>	Dec. 16 & 18, 2008	<b>Humidity:</b>	53-88 %
<b>Modification State:</b>	See datasheets	<b>Tester:</b>	Rodel Rosolme
		<b>Laboratory:</b>	Nemko SOATS

**Test Results:** See attached Tables

**Additional Observations:**

- The Spectrum was searched up to the 10<sup>th</sup> Harmonic. Emissions within 20 dB of the limit were substituted by a signal generator and matching antenna and were shown to comply.

**Radiated Emissions Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : G2-P2B-118  
 EUT Config. : GPRS 850 TX

Specification : FCC Part 22  
 Rod. Ant. # : \_\_\_\_\_ Temp. (°C) : 18      Date : 12/16/08  
 Bicon Ant.# : \_\_\_\_\_ Humidity (%) : 53      Staff : Rodel Resolme  
 Log Ant.# : 110      EUT Voltage : NA      Peak Bandwidth: 1 MHz  
 DRG Ant. # : 877      EUT Frequency : NA      Video Bandwidth 1 MHz  
 Dipole Ant.# : \_\_\_\_\_ Phase: NA  
 Cable# : 40ft      Location: RN # 329550-01  
 Preamp# : 317      Distance: 3m  
 Spec An.# : 835      ERP conversion factor 7

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
1648.40	66.0	54.9	-0.3	-31.5	-13.0	-18.5	B	1.0	Pass	*
2472.60	68.1	61.3	-1.8	-31.0	-13.0	-18.0	B	1.0	Pass	*
3296.80	50.0	49.9	1.2	-46.0	-13.0	-33.0	B	1.0	Pass	*
4121.00	48.5	48.5	3.3	-45.4	-13.0	-32.4			Pass	NF
4945.20			5.2		-13.0					NF
5769.40			9.2		-13.0					NF
6593.60			12.8		-13.0					NF
7417.80			15.2		-13.0					NF
8242.00			17.5		-13.0					NF
9066.20			18.1		-13.0					NF
1673.20	55.1	53.6	-0.3	-42.5	-13.0	-29.5	B	1.0	Pass	*
2509.80	59.4	60.9	0.0	-36.3	-13.0	-23.3	B	1.0	Pass	*
3346.40	48.8	48.8	1.4	-47.1	-13.0	-34.1	B	1.0	Pass	NF
4183.00			3.3		-13.0					NF
5019.60			7.0		-13.0					NF
5856.20			9.2		-13.0					NF
6692.80			13.0		-13.0					NF
7529.40			15.6		-13.0					NF
8366.00			17.4		-13.0					NF
9202.60			18.9		-13.0					NF
1697.60	56.1	56.1	-0.3	-41.5	-13.0	-28.5	B	1.0	Pass	*
2546.40	60.8	62.2	0.0	-35.0	-13.0	-22.0	B	1.0	Pass	*
3395.20	50.1	50.1	1.4	-45.8	-13.0	-32.8	B	1.0	Pass	*
4244.00	46.6	46.6	3.3	-47.4	-13.0	-34.4			Pass	NF
5092.80			7.0		-13.0					NF
5941.60			9.2		-13.0					NF
6790.40			13.0		-13.0					NF
7639.20			15.5		-13.0					NF
8488.00			17.6		-13.0					NF
9336.80			18.4		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.

**Radiated Emissions Data**

Job #: 23644 Test #: 1  
 Page 1 of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : EDGE 850, 8PSK, TX

Specification : FCC Part 22  
 Rod. Ant. #: \_\_\_\_\_ Temp. (°C) : 18 Date : 12/16/08  
 Bicon Ant.#: \_\_\_\_\_ Humidity (%) : 53 Staff : Rodel Resolme  
 Log Ant.#: 110 EUT Voltage : NA Peak Bandwidth: 1 MHz  
 DRG Ant. # 877 EUT Frequency : NA Video Bandwidth 1 MHz  
 Dipole Ant.#: \_\_\_\_\_ Phase: NA  
 Cable#: 40ft Location: RN # 329550-01  
 Preamp#: 317 Distance: 3m  
 Spec An.#: 835 ERP conversion factor 7

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
1648.40	51.0	53.0	-0.3	-44.6	-13.0	-31.6	B	1.0	Pass	*
2472.60	58.2	58.6	-1.8	-40.5	-13.0	-27.5	B	1.0	Pass	*
3296.80	50.0	51.0	1.2	-45.0	-13.0	-32.0	B	1.0	Pass	*
4121.00	47.3	47.3	3.3	-46.6	-13.0	-33.6			Pass	NF
4945.20			5.2		-13.0					NF
5769.40			9.2		-13.0					NF
6593.60			12.8		-13.0					NF
7417.80			15.2		-13.0					NF
8242.00			17.5		-13.0					NF
9066.20			18.1		-13.0					NF
1673.20	52.0	53.5	-0.3	-44.1	-13.0	-31.1	B	1.0	Pass	*
2509.80	60.3	55.5	0.0	-36.9	-13.0	-23.9	B	1.0	Pass	*
3346.40	48.6	48.8	1.4	-47.1	-13.0	-34.1	B	1.0	Pass	*
4183.00	46.8	46.8	3.3	-47.1	-13.0	-34.1			Pass	NF
5019.60			7.0		-13.0					NF
5856.20			9.2		-13.0					NF
6692.80			13.0		-13.0					NF
7529.40			15.6		-13.0					NF
8366.00			17.4		-13.0					NF
9202.60			18.9		-13.0					NF
1697.60	57.4	51.8	-0.3	-40.2	-13.0	-27.2	B	1.0	Pass	*
2546.40	58.5	58.2	0.0	-38.7	-13.0	-25.7	B	1.0	Pass	*
3395.20	49.5	49.8	1.4	-46.0	-13.0	-33.0	B	1.0	Pass	*
4244.00	47.0	47.3	3.3	-46.7	-13.0	-33.7			Pass	NF
5092.80			7.0		-13.0					NF
5941.60			9.2		-13.0					NF
6790.40			13.0		-13.0					NF
7639.20			15.5		-13.0					NF
8488.00			17.6		-13.0					NF
9336.80			18.4		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.

**Radiated Emissions Data**

Job #: 23644      Test #: 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : CDMA 1X , BC0, TX

Specification : FCC Part 22

Rod. Ant. #: \_\_\_\_\_      Temp. (°C) : 18      Date : 12/16/08  
 Bicon Ant.#: \_\_\_\_\_      Humidity (%) : 53      Staff : Rodel Resolme  
 Log Ant.#: 110      EUT Voltage : NA      Peak Bandwidth: 1 MHz  
 DRG Ant. # 877      EUT Frequency : NA      Video Bandwidth 1 MHz  
 Dipole Ant.#: \_\_\_\_\_      Phase: NA  
 Cable#: 40ft      Location: RN # 329550-01  
 Preamp#: 317      Distance: 3m  
 Spec An.#: 835      ERP conversion factor 7

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
1649.40	52.4	53.2	-0.3	-44.4	-13.0	-31.4	B	1.0	Pass	*
2474.10	52.1	53.0	-1.8	-46.1	-13.0	-33.1	B	1.0	Pass	*
3298.80	48.5	49.0	1.2	-47.0	-13.0	-34.0			Pass	NF
4123.50			3.3		-13.0					NF
4948.20	48.0	48.5	5.2	-43.5	-13.0	-30.5	L	1.0	Pass	*
5772.90	49.4	51.5	9.2	-36.6	-13.0	-23.6	L	1.0	Pass	*
6597.60	44.1	44.1	12.8	-40.3	-13.0	-27.3			Pass	NF
7422.30			15.2		-13.0					NF
8247.00			17.5		-13.0					NF
9071.70			18.1		-13.0					NF
1673.04	48.1	49.5	-0.3	-48.1	-13.0	-35.1	B	1.0	Pass	*
2509.56	48.9	48.9	0.0	-48.3	-13.0	-35.3	B	1.0	Pass	NF
3346.08	48.9	48.9	1.4	-47.0	-13.0	-34.0			Pass	NF
4182.60			3.3		-13.0					NF
5019.12			7.0		-13.0					NF
5855.64			9.2		-13.0					NF
6692.16			13.0		-13.0					NF
7528.68			15.6		-13.0					NF
8365.20			17.4		-13.0					NF
9201.72			18.9		-13.0					NF
1696.62	51.5	53.2	-0.3	-44.4	-13.0	-31.4	F	1.0	Pass	*
2544.93	55.5	57.5	0.0	-39.7	-13.0	-26.7	F	1.0	Pass	*
3393.24	49.8	49.8	1.4	-46.1	-13.0	-33.1	L	1.0	Pass	NF
4241.55			3.3		-13.0					NF
5089.86			7.0		-13.0					NF
5938.17			9.2		-13.0					NF
6786.48			13.0		-13.0					NF
7634.79			15.5		-13.0					NF
8483.10			17.6		-13.0					NF
9331.41			18.4		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.

**Radiated Emissions Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : CDMA 1X , BC1, TX

Specification : FCC Part 24

Rod. Ant. # : \_\_\_\_\_      Temp. (°C) : 8      Date : 12/18/08  
 Bicon Ant.#: \_\_\_\_\_      Humidity (%) : 88      Staff : Rodel Resolme  
 Log Ant.#: 110      EUT Voltage : NA      Peak Bandwidth: 1 MHz  
 DRG Ant. # 877      EUT Frequency NA      Video Bandwidth 1 MHz  
 Dipole Ant.#: \_\_\_\_\_      Phase: NA  
 Cable#: 40ft      Location: RN # 329550-01  
 Preamp#: 317      Distance: 3m  
 Spec An.#: 835      EIRP conversior 5.5

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
3702.50	54.70	55.90	1.2	-38.1	-13.0	-25.1	B	1.0	Pass	*
5553.75	50.70	50.10	8.3	-36.2	-13.0	-23.2			Pass	*
7405.00	44.80	44.80	15.2	-35.3	-13.0	-22.3			Pass	NF
9256.25			18.9		-13.0					NF
11107.50			22.8		-13.0					NF
12958.75			24.4		-13.0					NF
14810.00			32.9		-13.0					NF
16661.25			40.9		-13.0					NF
18512.50			56.6		-13.0					NF
20363.75			68.1		-13.0					NF
3760.00	49.20	50.60	1.2	-43.4	-13.0	-30.4	B	1.0	Pass	*
5640.00	45.10	44.50	9.0	-41.1	-13.0	-28.1		1.0	Pass	NF
7520.00			15.6		-13.0					NF
9400.00			18.4		-13.0					NF
11280.00			22.5		-13.0					NF
13160.00			25.2		-13.0					NF
15040.00			34.3		-13.0					NF
16920.00			40.8		-13.0					NF
18800.00			57.1		-13.0					NF
20680			70.1		-13.0					NF
3817.50	68.80	71.10	1.2	-23.0	-13.0	-10.0	L	1.0	Pass	*
5726.25	50.80	49.70	9.2	-35.3	-13.0	-22.3	L	1.0	Pass	*
7635.00	42.70	44.50	15.5	-35.3	-13.0	-22.3		1.0	Pass	NF
9543.75			19.0		-13.0					NF
11452.50			22.5		-13.0					NF
13361.25			25.4		-13.0					NF
15270.00			34.7		-13.0					NF
17178.75			46.0		-13.0					NF
19087.50			60.3		-13.0					NF
20996.25			70.1		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.

**Radiated Emissions Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : GSM PCS, GMSK, TX

Specification : FCC Part 24

Rod. Ant. # : \_\_\_\_\_      Temp. (°C) : 18      Date : 12/16/08  
 Bicon Ant.# : \_\_\_\_\_      Humidity (%) : 53      Staff : Rodel Resolme  
 Log Ant.# : 110      EUT Voltage : NA      Peak Bandwidth: 1 MHz  
 DRG Ant. # : 877      EUT Frequency : NA      Video Bandwidth 1 MHz  
 Dipole Ant.# : \_\_\_\_\_      Phase: NA  
 Cable#: 40ft      Location: RN # 329550-01  
 Preamp#: 317      Distance: 3m  
 Spec An.#: 835      EIRP conversion factor 5.5

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
3700.40	48.80	48.80	1.2	-45.2	-13.0	-32.2	B	1.0	Pass	*
5550.60	49.80	52.00	8.3	-34.9	-13.0	-21.9	B	1.0	Pass	*
7400.80	44.30	44.30	15.2	-35.8	-13.0	-22.8		1.0	Pass	NF
9251.00			18.9		-13.0					NF
11101.20			22.8		-13.0					NF
12951.40			24.4		-13.0					NF
14801.60			32.9		-13.0					NF
16651.80			40.9		-13.0					NF
18502.00			56.6		-13.0					NF
20352.2			68.1		-13.0					NF
3760.00	48.40	48.40	1.2	-45.6	-13.0	-32.6	B	1.0	Pass	*
5640.00	53.60	49.20	9.0	-32.6	-13.0	-19.6	B	1.0	Pass	*
7520.00	49.20	49.20	15.6	-30.5	-13.0	-17.5		1.0	Pass	NF
9400.00			18.4		-13.0					NF
11280.00			22.5		-13.0					NF
13160.00			25.2		-13.0					NF
15040.00			34.3		-13.0					NF
16920.00			40.8		-13.0					NF
18800.00			57.1		-13.0					NF
20680			70.1		-13.0					NF
3819.60	49.20	49.30	1.2	-44.8	-13.0	-31.8		1.0	Pass	*
5729.40	48.30	48.50	9.2	-37.6	-13.0	-24.6		1.0	Pass	*
7639.20	43.90	43.90	15.5	-35.9	-13.0	-22.9		1.0	Pass	NF
9549.00			19.0		-13.0					NF
11458.80			22.5		-13.0					NF
13368.60			25.4		-13.0					NF
15278.40			34.7		-13.0					NF
17188.20			46.0		-13.0					NF
19098.00			60.3		-13.0					NF
21007.80			70.1		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.

**Radiated Emissions Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : EDGE PCS, 8PSK, TX

Specification : FCC Part 24

Rod. Ant. # : \_\_\_\_\_ Temp. (°C) : 18 Date : 12/16/08  
 Bicon Ant.# : \_\_\_\_\_ Humidity (%) : 53 Staff : Rodel Resolme  
 Log Ant.# : 110 EUT Voltage : NA Peak Bandwidth: 1 MHz  
 DRG Ant. # : 877 EUT Frequency : NA Video Bandwidth 1 MHz  
 Dipole Ant.# : \_\_\_\_\_ Phase: NA  
 Cable# : 40ft Location: RN # 329550-01  
 Preamp# : 317 Distance: 3m  
 Spec An.# : 835 EIRP conversion factor 5.5

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
3700.40	48.20	48.00	1.2	-45.8	-13.0	-32.8	B	1.0	Pass	*
5550.60	49.90	53.40	8.3	-33.5	-13.0	-20.5	B	1.0	Pass	*
7400.80	43.90	43.90	15.2	-36.2	-13.0	-23.2		1.0	Pass	NF
9251.00			18.9		-13.0					NF
11101.20			22.8		-13.0					NF
12951.40			24.4		-13.0					NF
14801.60			32.9		-13.0					NF
16651.80			40.9		-13.0					NF
18502.00			56.6		-13.0					NF
20352.2			68.1		-13.0					NF
3760.00	49.80	54.00	1.2	-40.0	-13.0	-27.0	B	1.0	Pass	*
5640.00	52.90	50.90	9.0	-33.3	-13.0	-20.3	B	1.0	Pass	*
7520.00	43.90	43.90	15.6	-35.8	-13.0	-22.8		1.0	Pass	NF
9400.00			18.4		-13.0					NF
11280.00			22.5		-13.0					NF
13160.00			25.2		-13.0					NF
15040.00			34.3		-13.0					NF
16920.00			40.8		-13.0					NF
18800.00			57.1		-13.0					NF
20680			70.1		-13.0					NF
3819.60	49.70	49.50	1.2	-44.4	-13.0	-31.4		1.0	Pass	*
5729.40	51.80	49.80	9.2	-34.3	-13.0	-21.3		1.0	Pass	*
7639.20	45.00	44.10	15.5	-34.8	-13.0	-21.8		1.0	Pass	NF
9549.00			19.0		-13.0					NF
11458.80			22.5		-13.0					NF
13368.60			25.4		-13.0					NF
15278.40			34.7		-13.0					NF
17188.20			46.0		-13.0					NF
19098.00			60.3		-13.0					NF
21007.80			70.1		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.

**Radiated Emissions Data**

Job #: 23644 Test #: 1  
 Page 1 of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : WCDMA Release 99, Band II, TX

Specification : FCC Part 24

Rod. Ant. #:	_____	Temp. (°C) :	<u>18</u>	Date :	<u>12/05/08</u>
Bicon Ant. #:	_____	Humidity (%) :	<u>53</u>	Staff :	<u>R Resolme</u>
Log Ant. #:	<u>110</u>	EUT Voltage :	<u>NA</u>	Peak Bandwidth:	<u>1 MHz</u>
DRG Ant. #	<u>529</u>	EUT Frequency :	<u>NA</u>	Video Bandwidth	<u>1 MHz</u>
Dipole Ant. #:	_____	Phase:	<u>NA</u>		
Cable#:	<u>40ft</u>	Location:	<u>RN # 329550-01</u>		
Preamp#:	<u>317</u>	Distance:	<u>3m</u>		
Spec An. #:	<u>835</u>	EIRP conversion factor	<u>5.5</u>		

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
3704.80	67.20	70.80	1.2	-23.2	-13.0	-10.2	B	1.0	Pass	*
5557.20	45.50	45.90	8.3	-41.0	-13.0	-28.0	B	1.0	Pass	*
7409.60	42.80	42.80	15.2	-37.3	-13.0	-24.3			Pass	NF
9262.00			18.9		-13.0					NF
11114.40			22.8		-13.0					NF
12966.80			24.4		-13.0					NF
14819.20			32.9		-13.0					NF
16671.60			40.9		-13.0					NF
18524.00			56.6		-13.0					NF
20376.40			68.1		-13.0					NF
3760.00	66.70	68.60	1.2	-25.4	-13.0	-12.4	B	1.0	Pass	*
5640.00	46.10	47.60	9.0	-38.6	-13.0	-25.6	B	1.0	Pass	*
7520.00	42.50	42.70	15.6	-37.0	-13.0	-24.0			Pass	NF
9400.00			18.4		-13.0					NF
11280.00			22.5		-13.0					NF
13160.00			25.2		-13.0					NF
15040.00			34.3		-13.0					NF
16920.00			40.8		-13.0					NF
18800.00			57.1		-13.0					NF
20680			70.1		-13.0					NF
3815.20	72.80	73.80	1.2	-20.3	-13.0	-7.3		1.0	Pass	*
5722.80	47.30	48.90	9.2	-37.2	-13.0	-24.2		1.0	Pass	*
7630.40	41.60	41.60	15.5	-38.2	-13.0	-25.2		1.0	Pass	NF
9538.00			19.0		-13.0					NF
11445.60			22.5		-13.0					NF
13353.20			25.4		-13.0					NF
15260.80			34.7		-13.0					NF
17168.40			46.0		-13.0					NF
19076.00			60.3		-13.0					NF
20983.60			70.1		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.



**Radiated Emissions Data**

Job # : 23644      Test # : 1  
 Page 1      of 1

Client Name : Qualcomm  
 EUT Name : Modem Platform  
 EUT Model # : GOBI2000  
 EUT Serial # : \_\_\_\_\_  
 EUT Config. : WCDMA Release 99 TX Band V, TX

Specification : FCC Part 22  
 Rod. Ant. # : \_\_\_\_\_      Temp. (°C) : 18      Date : 12/05/08  
 Bicon Ant.# : \_\_\_\_\_      Humidity (%) : 53      Staff : Rodel Resolme  
 Log Ant.# : 110      EUT Voltage : NA  
 DRG Ant. # : 877      EUT Frequency NA      Peak Bandwidth: 1 MHz  
 Dipole Ant.# : \_\_\_\_\_      Phase: NA      Video Bandwidth 1 MHz  
 Cable# : 40ft      Location: RN # 329550-01  
 Preamp# : 317      Distance: 3m  
 Spec An.# : 835      ERP conversion 7

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
1652.80	55.4	55.8	-0.3	-41.8	-13.0	-28.8	B	1.0	Pass	*
2479.20	53.0	53.2	-1.8	-45.9	-13.0	-32.9			Pass	*
3305.60	47.6	47.6	1.2	-48.4	-13.0	-35.4			Pass	NF
4132.00			3.3		-13.0					NF
4958.40			5.2		-13.0					NF
5784.80			9.2		-13.0					NF
6611.20			12.8		-13.0					NF
7437.60			15.2		-13.0					NF
8264.00			17.5		-13.0					NF
9090.40			18.1		-13.0					NF
1672.80	52.5	52.9	-0.3	-44.7	-13.0	-31.7	B	1.0	Pass	*
2509.20	50.0	50.9	0.0	-46.3	-13.0	-33.3			Pass	*
3345.60	47.2	47.2	1.4	-48.7	-13.0	-35.7			Pass	NF
4182.00			3.3		-13.0					NF
5018.40			7.0		-13.0					NF
5854.80			9.2		-13.0					NF
6691.20			13.0		-13.0					NF
7527.60			15.6		-13.0					NF
8364.00			17.4		-13.0					NF
9200.40			18.9		-13.0					NF
1693.20	52.7	51.5	-0.3	-44.9	-13.0	-31.9	F	1.0	Pass	*
2539.80	48.2	48.2	0.0	-49.0	-13.0	-36.0			Pass	NF
3386.40			1.4		-13.0					NF
4233.00			3.3		-13.0					NF
5079.60			7.0		-13.0					NF
5926.20			9.2		-13.0					NF
6772.80			13.0		-13.0					NF
7619.40			15.5		-13.0					NF
8466.00			17.6		-13.0					NF
9312.60			18.4		-13.0					NF

\* = Signal Measured      NF = Noise Floor, no signal observed, even at lower RBW.

**Test Procedure:** TIA/EIA 603 Clause 2.2.17

**Para. No.: 2.1053 Field Strength of Spurious (Substitution Method including Fundamental)**

**Substitution Method For Radiated Emissions**

Complete	<u>Yes</u>	Job # :	<u>23644-1</u>	Test # :	<u>1</u>
Preliminary	<u>          </u>		Page <u>1</u>	of	<u>1</u>
Client Name :	<u>Qualcomm</u>				
EUT Name :	<u>Modem Platform</u>				
EUT Model # :	<u>Gobi2000</u>				
EUT Part # :	<u>Gobi2000</u>		<b>Part 24</b>		
EUT Serial # :	<u>G2-P2B-11</u>				
EUT Config. :	<u>Transmit</u>				
Rod. Ant. #:	<u>NA</u>	Temp. (deg. F) :	<u>51</u>	Date :	<u>12/18/2008</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>91</u>	Time :	<u>0950am</u>
Log Ant.#:	<u>NA</u>	EUT Voltage :	<u>na</u>	Staff :	<u>A. Laudani</u>
DRG Ant. RX #	<u>877</u>	EUT Frequency :	<u>na</u>		
DRG Ant. TX #	<u>752</u>	Phase:	<u>na</u>	Peak Bandwidth:	<u>RBW-1MHz</u>
Cable RX #:	<u>60ft</u>	Location:	<u>SOATS</u>		<u>VBW-1MHz</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>		
Spec An.#:	<u>835</u>	Sig Gen	<u>932</u>		

Frequency mHz	target level dBuV/m	dipole	cable loss dB	Signal Generator dBm	Total (ERP) dBm	Spec dBm	Margin dBm
<b>EDGE 850 TX</b>							
824.2	100.9	0	3.60	28.74	25.14	38.5	-13.3
836.6	101.1	0	3.46	28.99	25.53	38.5	-12.9
848.8	101.3	0	3.56	29.60	26.04	38.5	-12.4
<b>CDMA 2000 1X RC3 SO55</b>							
824.70	96.5	0	3.60	24.34	20.74	38.5	-17.7
836.52	96.0	0	3.46	23.89	20.43	38.5	-18.0
848.31	95.6	0	3.56	23.90	20.34	38.5	-18.1
<b>GPRS 850 TX</b>							
824.2	104.7	0	3.60	32.54	28.94	38.5	-9.5
836.6	105.6	0	3.46	33.49	30.03	38.5	-8.4
848.8	106.1	0	3.56	34.40	<b>30.84</b>	38.5	-7.6
1648.40	66.0	8.46	4.62	-37.87	-34.03	-13	-21.0
2472.60	68.1	9.54	5.79	-32.89	-29.14	-13	-16.1
<b>WCDMA Release 99 TX, Band V</b>							
826.4	96.24	0	3.60	24.08	20.48	38.5	-18.0
836.4	96.28	0	3.46	24.17	20.71	38.5	-17.7
846.6	96.6	0	3.56	24.90	21.34	38.5	-17.1

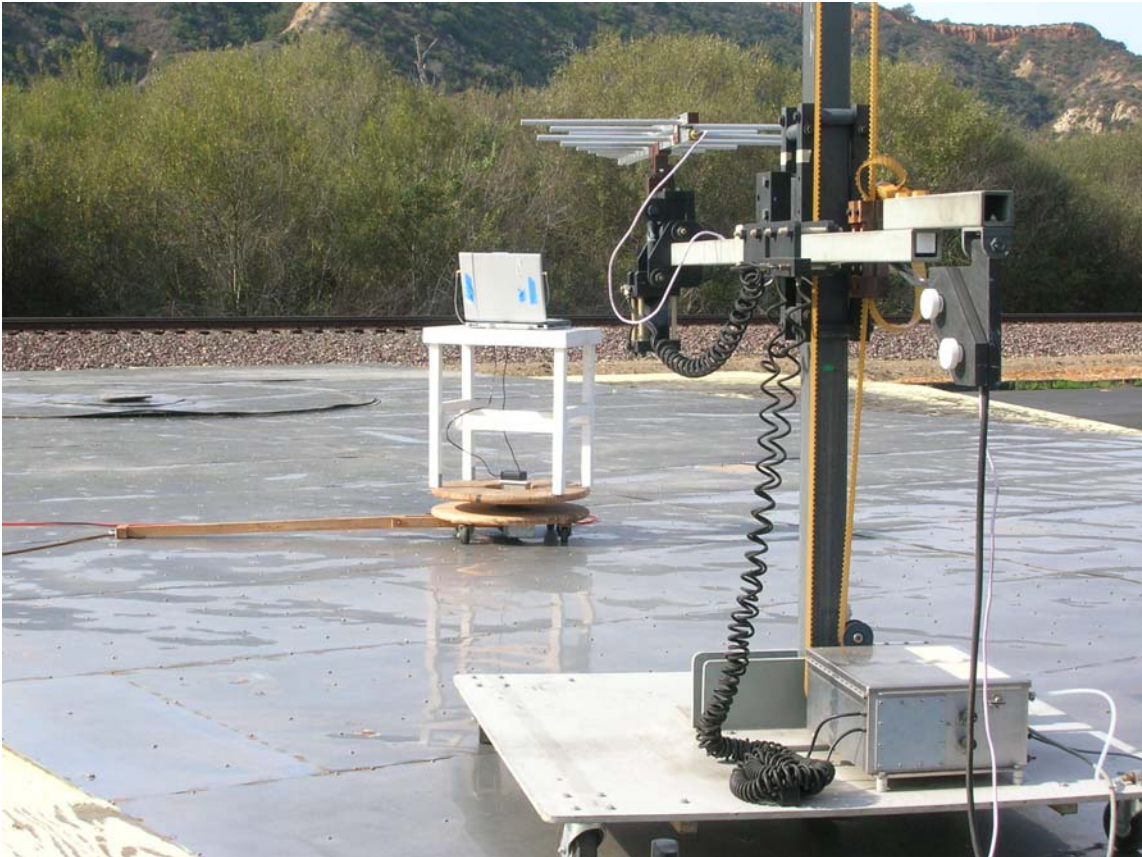
**Substitution Method For Radiated Emissions**

Complete	<u>Yes</u>	Job # :	<u>23644-1</u>	Test # :	<u>1</u>
Preliminary	<u>          </u>		Page <u>1</u>	of	<u>1</u>
Client Name :	<u>Qualcomm</u>				
EUT Name :	<u>Modem Platform</u>				
EUT Model # :	<u>Gobi2000</u>				
EUT Part # :	<u>Gobi2000</u>		<b>Part 24</b>		
EUT Serial # :	<u>G2-P2B-11</u>				
EUT Config. :	<u>Transmit</u>				
Rod. Ant. #:	<u>NA</u>	Temp. (deg. F) :	<u>51</u>	Date :	<u>12/18/2008</u>
Bicon Ant.#:	<u>NA</u>	Humidity (%) :	<u>91</u>	Time :	<u>0950am</u>
Log Ant.#:	<u>NA</u>	EUT Voltage :	<u>na</u>	Staff :	<u>A. Laudani</u>
DRG Ant. RX #	<u>877</u>	EUT Frequency :	<u>na</u>		
DRG Ant. TX #	<u>752</u>	Phase:	<u>na</u>	Peak Bandwidth:	<u>RBW-1MHz</u>
Cable RX #:	<u>60ft</u>	Location:	<u>SOATS</u>		<u>VBW-1MHz</u>
Preamp#:	<u>NA</u>	Distance:	<u>3m</u>		
Spec An.#:	<u>835</u>	Sig Gen	<u>932</u>		

target Frequency mHz	level dBuV/m	Horn Gain dBi	cable loss dB	Signal Generator dBm	Total (EIRP) dBm	Spec dBm	Margin dBm
<b>EDGE PCS Tx</b>							
1850.2	93.4	8.54	4.92	23.50	27.12	33	-5.9
1880.0	93.7	8.55	5.18	24.50	27.87	33	-5.1
1909.8	93.7	8.56	5.00	25.07	28.63	33	-4.4
<b>GPRS PCS Tx</b>							
1850.2	95.5	8.54	4.92	25.60	29.22	33	-3.8
1880.0	95.8	8.55	5.18	26.60	29.97	33	-3.0
1909.8	95.8	8.56	5.00	27.17	30.73	33	-2.3
<b>CDMA 2000 1X PCS RC3 SO55</b>							
1851.25	90.5	8.54	4.92	20.60	24.22	33	-8.8
1880.0	91.0	8.55	5.18	21.80	25.17	33	-7.8
1908.75	90.5	8.56	5.00	21.87	25.43	33	-7.6
3817.5	71.1	9.9	5.97	-22.66	-18.73	-13	-5.7
<b>WCDMA Release 99 TX, Band II</b>							
1852.4	90.1	8.54	4.92	20.20	23.82	33	-9.2
1880.0	90.2	8.55	5.18	20.99	24.36	33	-8.6
1907.6	88.9	8.56	5.00	20.27	23.83	33	-9.2
3704.8	70.8	9.9	5.97	-22.96	-19.03	-13	-6.0
3760	68.8	9.9	5.97	-24.96	-21.03	-13	-8.0
3815.2	71.1	9.9	5.97	-22.66	-18.73	-13	-5.7

## Appendix B : Setup Photographs

### 1. Spurious Emissions Setup:



**Dummy Notebook with  
embedded antenna**

**Module**



## Appendix C: Block Diagram of Test Setups

### Test Site For Radiated Emissions

