



Gobi2000

Device Specification

80-VK890-1 Rev. B

May 6, 2009

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Revision history

Revision	Date	Description
A	October 2008	Initial release
B	May 2009	<ul style="list-style-type: none">■ Update “Application description” on page 6 and listed modem features in “Modem capabilities” on page 7■ Added ESD and humidity entries to “Absolute maximum conditions” on page 19■ Updated “Recommended operating conditions” on page 19■ Update mechanical drawing dimensions and tolerances■ Added UIM, USB, current consumption, and RF limits to electrical characteristics■ Added Chapter 4 “Applications Information” on page 25

1 Overview

1.1 Scope and intended audience

Gobi2000™ is a WWAN datacard implemented in a PCI Express® full size (Type F1) mini card form factor to enable notebook computer wireless data connectivity. This document provides the Gobi2000 mini card specifications and capabilities.

Table 1-1 lists the reference documents referred to in the sections below.

Table 1-1 Reference documents

Ref.	Qualcomm DCN	Description
Q1	80-H2929-1	<i>Antenna Design Guidelines for Laptop and Notebook Computers</i>
Q2	CL93-V3077-1	<i>Application Note: Software Glossary for Customers</i>
Q3	N/A	<i>PCI Express Mini Card Electromechanical Specification Revision 1.2</i>
Q4	80-VR185-1	<i>Application Note: Gobi2000 Target Software Custom Feature Description</i>
Q5	N/A	<i>ETSI TS 102 230 V 4.8.0</i>
Q6	N/A	<i>Universal Serial Bus Specification, Revision 2.0</i>

For additional technical information on QCT Gobi solutions, please visit the Qualcomm Technical Support website at <https://support.cdmatech.com>.

1.2 Application description

The Gobi2000 datacard and host PC software combination deliver multiband CDMA2000 1xEV-DO, UMTS, and GSM wireless wide area network (WWAN) connectivity in a single hardware configuration. Gobi also has an internal GPS receiver that can operate standalone or in simultaneous operation with its WWAN radios. The Gobi2000 module mounts in a notebook PC's internal PCI-E full size mini card slot and connects to the notebook's antenna system via RF cables embedded within the notebook. The Gobi2000 host PC software enables communication between the connection manager software and the Gobi2000 module via a HS-USB interface. The host PC hard drive stores multiple network carrier specific modem firmware images. After the connection manager selects a specific network carrier to use, the host PC software downloads the appropriate modem firmware image into the Gobi2000. The entire download completes in a few seconds over Gobi2000's HS-USB connection.

1.3 Modem capabilities

- HSUPA features
 - E-AGCH, E-RGCH and E-HICH channels for downlink as defined in the 3GPP specifications. E-RGCH and E-HICH supports serving and non-serving radio links, with up to four radio links in the E-DCH active set.
 - STTD on all HSUPA downlink channels
 - CLTD mode 1 on HS-PDSCH and DPCH along with HSUPA channels
 - All incremental redundancy versions for HARQ and maximum number of HARQ retransmissions as defined in 3GPP specifications
 - E-DCH channel on the uplink as defined in the 3GPP specifications with support for up to four E-DPDCH channels
 - E-DCH data rates of up to 5.76 Mbps for 2 ms TTI (UE category 6) uplink
 - HSUPA channels simultaneously with R99 and HSDPA channels as defined in the 3GPP specifications
 - Switch between HSUPA channels and DPCH channel resources as directed by the network
 - Handover using compressed mode with simultaneous E-DCH and HS-DSCH interactive/background and streaming QoS classes
- HSDPA features
 - HS-DSCH (HS-SCCH, HS-PDSCH, and HS-DPCCH) and the R99 transport channels as defined in 3GPP specifications
 - A maximum of four simultaneous HS-SCCH channels as defined in the 3GPP specifications
 - A maximum of 10 HS-PDSCH channels, QPSK and 16 QAM modulation, and UE category 8
 - CQI and ACK/NACK on HS-DPCCH channel as defined in the 3GPP specifications
 - All incremental redundancy versions for HARQ as defined in the 3GPP specifications
 - Can switch between HS-PDSCH and DPCH channel resources as directed by the network
 - Network activation of compressed mode by SF/2 or HLS on the DPCH for conducting interfrequency or inter-RAT measurements when the HS-DSCH is active
 - STTD on both associated DPCH and HS-DSCH simultaneously
 - CLTD mode 1 on the DPCH when the HS-PDSCH is active
 - STTD on HS-SCCH when either STTD or CLTD mode 1 are configured on the associated DPCH
 - TFC selection limitation on the UL factoring in transmissions on the HS-DPCCH as required in TS 25.133
 - HSDPA enables PS data speeds up to 7.2 Mbps on the downlink
 - Supports Receive Diversity in all bands

- Supports equalizer on all bands
- Type 3 Receiver
 - When compressed mode is active or with CLTD, equalizer is not supported. The device will function as a Type 1 Receiver (RxD only).
 - When STTD, RxD is not supported. The device will function as a Type 2 Receiver (equalizer only).
- WCDMA R99 features

All modes and data rates for W-CDMA frequency division duplex (FDD), with the following restrictions:

- The downlink supports the following specifications:
 - Up to four physical channels, including the broadcast channel (BCH), if present
 - Up to three dedicated physical channels (DPCHs)
 - Spreading factor (SF) range support from 4 to 256
 - Support for the following transmit diversity modes:
 - Space-time transmit diversity (STTD)
 - Time-switched transmit diversity (TSTD)
 - Closed-loop feedback transmit diversity (CLTD)
- Network activation of compressed mode by SF/2 or HLS on the DPCH for conducting interfrequency or inter-RAT measurements
- The uplink supports the following specifications:
 - The uplink provides the following UE support:
 - One physical channel, eight TrCH, and 16 TrBks starting at any frame boundary
 - A maximum data rate of 384 kbps
- UL Power Class 3
- Full SF range support from 4 to 256
- SMS (PS & CS)
- PS data rate — 384 kbps DL/384 kbps UL
- Supports Receive Diversity in all bands
- GPRS features
 - UL Power Class 4 for 850/900 bands
 - UL Power Class 1 for 1800/1900 bands
 - Packet-switched data (GPRS)
 - DTM (simple class A) operation
 - Multislot class 10 data services
 - CS schemes — CS1, CS2, CS3, and CS4

- GEA1, GEA2, and GEA3 ciphering
- Maximum of four Rx timeslots per frame
- EDGE features
 - EDGE E2 power class for 8 PSK
 - DTM (simple class A), multislot class 10
 - Downlink coding schemes — MCS 1-9
 - Uplink coding schemes — MCS 1-9
 - BEP reporting
 - SRB loopback and test mode B
 - 8-bit and 11-bit RACH
 - PBCCH support
 - One-phase/two-phase access procedures
 - Link adaptation and IR
 - NACC, extended UL TBF
- GSM features
 - Supports CS SMS
- CDMA1x (IS-2000)
 - Supports RC1, 2, 3, 4, and 5
 - Supports SO-2,9,32,35,55
 - Does not support Circuit Switched Data calls
 - CDMA2000 1X forward quick paging channel (F-QPCH)
 - Supports Receive Diversity in all bands
 - Supports up to 153.6 kbps data throughput on both Forward and Reverse Links
 - Supports RUIM in China Telecom firmware image
- CDMA 1xEV-DO Rev A (IS-856)
 - High-speed peak data rates of 3.1 Mbps on the downlink and 1.8 Mbps on the uplink
 - Handoffs between IS-2000 and IS-856 systems
 - Supports Receive Diversity in all bands
 - Supports RUIM in China Telecom firmware image
- GPS
 - Standalone
 - gpsOne XTRA Assistance for enhanced standalone GPS performance
 - MS-based assisted (support varies based on network carrier)

1.4 Device certifications

The Gobi2000 module and device software have successfully completed the following lab and network carrier certifications:

- UMTS/GSM
 - GCF 3.31.1
 - PTCRB 4.1
 - 3GPP TS 51.010-1
 - 3GPP TS 34.121-1
- CDMA2000
 - CDG-2
 - IS-98F
 - IS-866A
- Network Carriers
 - CDMA2000: Verizon Wireless, Alltel, (Sprint, China Telecom planned)
 - UMTS: AT&T, Orange, Vodafone, TIM, Telefonica, TMobile, (Docomo planned)
- Regulatory
 - FCC, RTT&E

1.5 Frequency range

Gobi2000 operating bands/frequencies vs. Radio Mode are defined in [Table 1-2](#)

Table 1-2 Supported frequency range

Radio Mode	Band	UL freq (MHz)	DL freq (MHz)
WCDMA Release 99 HSDPA Release 5 HSUPA Release 6	1	1920-1980	2110-2170
	2	1850-1910	1930-1990
	5	824-849	869-894
	6	830-840	875-885
	8	880-915	925-960
GPRS EGPRS	850	824-849	869-894
	900	880-915	925-960
	1800	1710-1785	1805-1875
	1900	1850-1910	1930-1990

Table 1-2 Supported frequency range

Radio Mode	Band	UL freq (MHz)	DL freq (MHz)
CDMA2000 1X	BC0	824-849	869-894
CDMA2000 1xEV-DO ■ Rev. 0 ■ Rev. A	BC1	1850-1910	1930-1990
GPS	L1		1575.42

1.6 Qualcomm chipsets

Gobi2000 uses the following Qualcomm chipset components.

- Baseband: MDM2000™
- RF: RFR6500™, RTR6285™
- Power: PM6653™

The MDM2000 device is Qualcomm’s second-generation data modem designed exclusively for 3G data card applications without the voice and multimedia features. It integrates the ARM1136-J™ and ARM926EJ-S™ processor cores, and a low-power, high-performance modem DSP. The Gobi2000 system hardware and software use the radioOne® direct conversion architecture.

1.7 RF connectors

The Gobi2000 module has a MAIN and an AUX RF connector. The RF connectors are Hirose U.FL-R-SMT or equivalent. Please refer to [Q1] for antenna design guidelines.

1.8 UICC

Gobi2000 connects to an offboard RUIM/USIM/UICC card via the PCI Express connector and is compliant with Chapter 5 “Electrical Characteristic Test” in [Q5], GSM 11.12, and ISO/IEC 7816-3 standards. Gobi2000 supports Class B and C USIM devices and does not support Class A (5V) devices.

1.9 USB

Gobi2000 complies to the high-speed electrical interface specifications in [Q6], except for detection or use of the USB VBUS signal, which is not used in PCI Express Mini-card applications. Gobi2000 supports both high-speed and full-speed connections.

1.10 W_DISABLE#, WAKE# and LED_WWAN# support

The LED_WWAN#, WAKE# and W_DISABLE# signals implement the logic described in [Q3]. Gobi2000 modules can be configured to support a few different behaviors for these signals. The full range of options are described in [Q4].

1.11 Hardware block diagram

Figure 1-1 contains a block diagram of the hardware implementation.

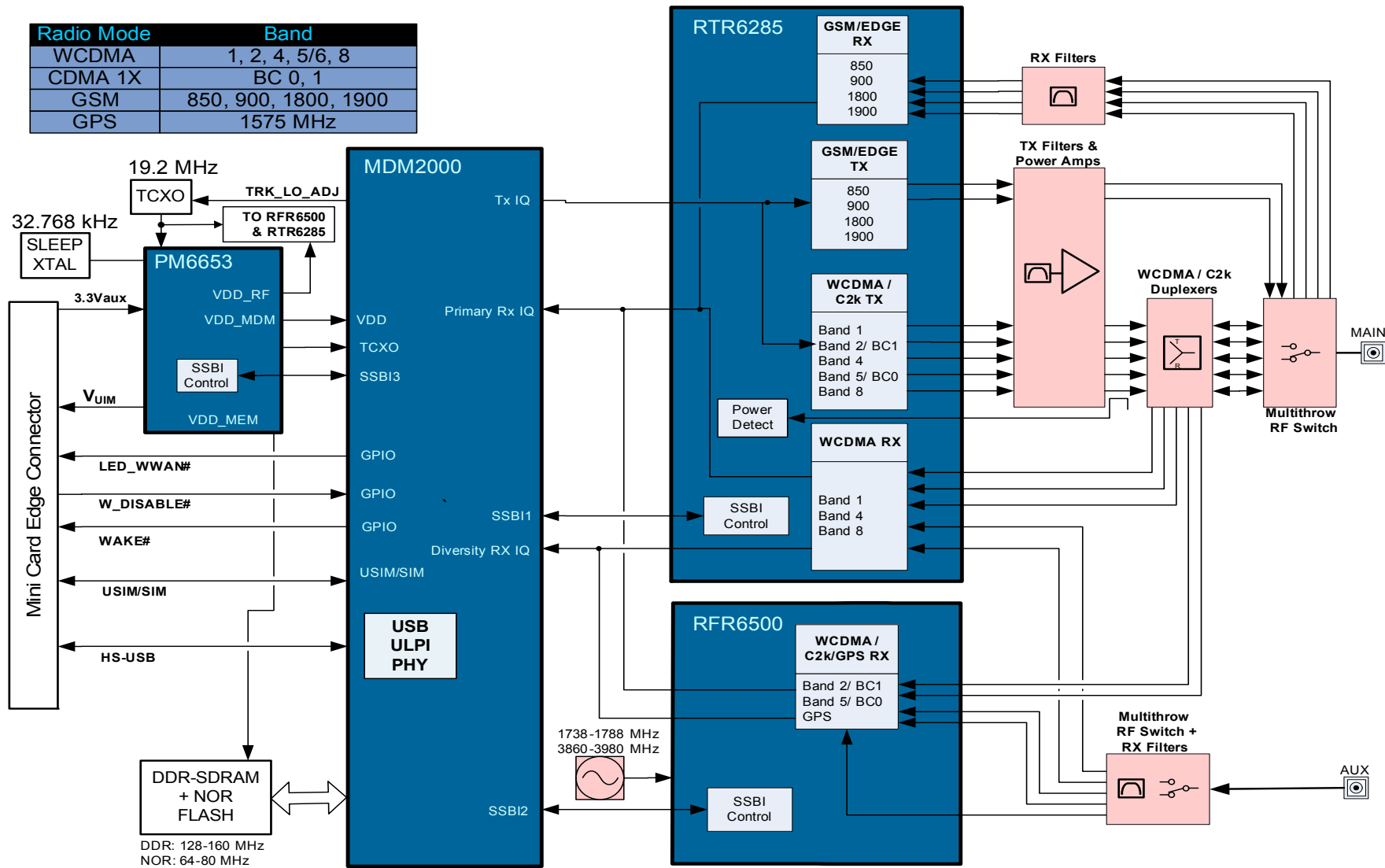


Figure 1-1 Gobi2000 block diagram

1.12 Terms and acronyms

Table 1-3 defines the terms and acronyms used throughout this document.

Table 1-3 Terms and acronyms

Term	Definition
3GPP2	CDMA2000 standard body
AMSS	Advanced Mobile Subscriber Software
API	Application programming interface
BC0	Band class 0 (Cellular band)
BC1	Band Class 1 (PCS)
CAPI	Computer application programmable interface
CDMA	Code Division Multiple Access
DSP	Digital Signal Processor
DDR SDRAM	Dual data rate synchronous dynamic random access memory
EDGE	Enhanced Data Rate for GSM Evolution
ESD	Electrostatic discharge
GPRS	General packet radio service
GPS	Global positioning system
GSM	Global System for Mobile communications
HSDPA	High speed downlink packet access
HSPA	High speed packet access
HSUPA	High speed uplink packet access
ISO	International Organization for Standardization
LED	Light emitting diode
MDM™	Mobile Data Modem
PCI	Peripheral component interconnect
PHY	Physical layer (USB transceiver)
PM, PMIC	Power management, power management integrated circuit
QDL	Qualcomm Down Loader
RFR	Radio frequency receiver
RTR	Radio frequency transceiver
RUIM	Removable user identity module
SCI	Slot cycle index
SDK	Software developer kit
TCXO	Temperature-compensated crystal oscillator
UICC	Universal integrated circuit card (SIM)
ULPI	An interface system for high-speed USB 2.0 IP systems
UMTS	Universal Mobile Telecommunications System

Table 1-3 Terms and acronyms (cont.)

Term	Definition
USB	Universal serial bus
UIM,USIM	Universal subscriber identity module
WCDMA	Wideband Code Division Multiple Access
WHQL	Windows Hardware Quality Labs
WWAN	Wireless wide area network

2 Mechanical Specifications

2.1 Overview

Gobi2000 is compatible with the PCI Express mini card 52-pin card edge-type connector. Refer to [Q3] for more details.

2.2 Gobi2000 edge connector

Table 2-1 describes the PCI Express mini card connector using the naming convention in [Q3]. The *No Connect* Description column entry indicates the signal makes no electrical connection to circuitry within Gobi2000; the pins are present on the board but are left floating.

Table 2-1 PCI Express mini card connector

Pin #	Name	Description
1	WAKE#	Open collector active Low signal. This signal is used to request that the system return from a sleep/suspended state to service a function initiated wake event
2, 24, 39, 41, 52	+3.3V_aux	3.3V source. These pins are all internally shorted together inside the Gobi2000 module.
4, 9, 15, 18, 21, 26, 27, 29, 34, 35, 37, 40, 43, 50	GND	Return current path
6, 28, 48	1.5V	No Connect
3	COEX1	No Connect
5	COEX2	No Connect
7	CLKREQ#	No Connect
8	UIM_PWR	Power source for USIM
10	UIM_DATA	USIM data signal
11	REFCLK-	No Connect
12	UIM_CLK	USIM clock signal
13	REFCLK+	No Connect
14	UIM_RESET	USIM reset signal
16	UIM_VPP	No Connect
17	RESERVED (UIM_C8)	No Connect
19	RESERVED (UIM_C4)	No Connect

Table 2-1 PCI Express mini card connector (cont.)

Pin #	Name	Description
20	W_DISABLE#	Active low signal. Used by the system to disable radio operation
22	PERST#	No Connect
23	PERn0	No Connect
25	PERp0	No Connect
30	SMB_CLK	No Connect
31	PETn0	No Connect
32	SMB_DATA	No Connect
33	PETp0	No Connect
36	USB_D-	USB 2.0 serial data interface
38	USB_D+	
42	LED_WWAN#	Current sink, active low indicates whether any of the radios are capable of transmitting
44	LED_WLAN#	No Connect
45, 47, 49, 51	RESERVED	No Connect
46	LED_WPAN#	No Connect

2.3 Weight

Gobi2000 weighs approximately 11.5 grams.

2.4 Mechanical constraints

[Figure 2-1](#) shows the Gobi2000 mechanical constraints. The test points on Side B above the mini card connector pins are for use only during the module manufacturing process; no connections shall be made to these signal in the commercial application environment. The test points are OSP coated with no solder deposition.

2.5 Case temperature rise due to power dissipation

The Gobi2000 module case temperature rises above the ambient air temperature during operation due to thermal dissipation in its components. When attached in its typical mounting configuration (system connector engaged and mounting screws installed), and transmitting max power in CDMA or WCDMA radio modes, the case temperature rise above ambient is up to 20°C for side A and 25°C for side B (see [Figure 2-1](#)).

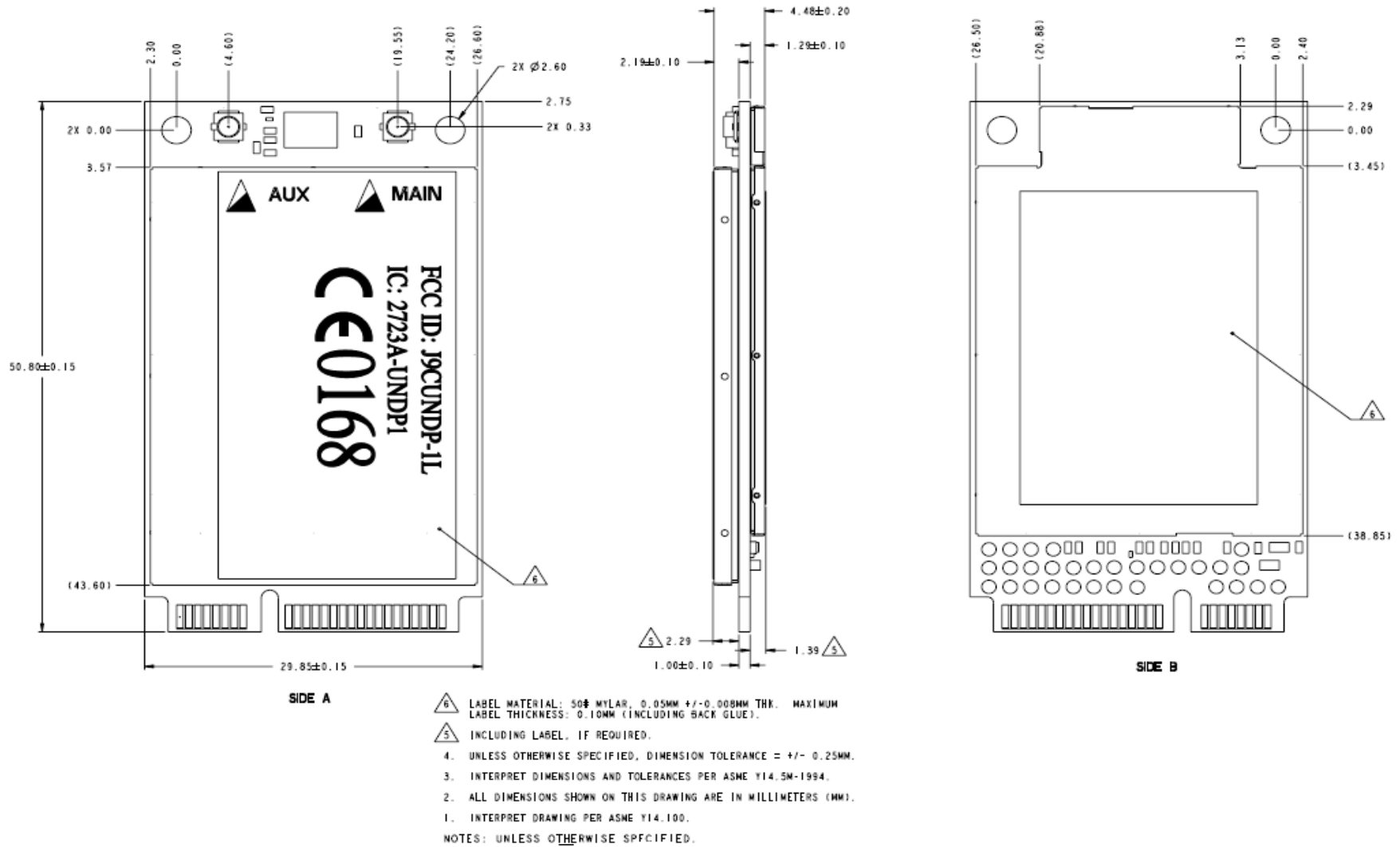


Figure 2-1 Gobi2000 mechanical drawing

3 Electrical Specifications

3.1 Absolute maximum ratings

The absolute maximum ratings in [Table 3-1](#) are the values beyond which device damage may occur or device reliability may degrade. Functional operation and specification compliance after exposure to any of these conditions is not guaranteed or implied.

Table 3-1 Absolute maximum conditions

Symbol	Parameter	Min	Max	Unit
T _S	Storage temperature	-55	+100	°C
+3.3_Vaux	DC power supply voltage	-0.5	+4.0	V
V _{ESD_HBM}	Electrostatic discharge voltage rating (human-body model)	250 ¹		V
V _{ESD_CDM}	Electrostatic discharge voltage rating (charge-device model)	1000 ¹		V
RH_NonOp	Nonoperating humidity (-40°C to +85°C, noncondensing)	5	95	%

1. JESD22-A114D standards, section 4 classifications apply.

3.2 Recommended operating conditions

Gobi2000 complies to the device certification tests listed in [Section 1.4](#), which exercise the module over the conditions listed in [Table 3-2](#). Typical performance is not guaranteed. Specific limits are addressed in the sections below.

Table 3-2 Recommended operating conditions

Symbol	Parameter	Min	Typ	Max	Unit
T _A	Ambient air temperature ¹	-30	+25	+70	°C
+3.3_Vaux	+3.3 V DC power supply voltages	3.0	3.3	3.6	V
V _{PP-RMS}	Power supply voltage noise (60Hz-2MHz)			20	mV
RH_Op	Operating humidity range (-30°C to +70°C, noncondensing)	10		90	%

1. Measured after the operating Gobi2000 module has achieved thermal equilibrium in the test environment.

3.3 DC characteristics

The specifications in this section apply over the conditions in [Table 3-2](#) unless otherwise noted.

Table 3-3 UIM_DATA, UIM_CLK, and UIM_RST

Symbol	Parameter	Min	Typ	Max	Units	Notes
VUIM	USIM Power Supply		1.8/2.85		V	can source up to 50 mA
VOH	High Level Output Voltage	0.7*VUIM		VUIM	V	
VIH	High Level Input Voltage	0.7*VUIM		VUIM+0.3	V	
VOL	Low Level Output Voltage	0		0.2*VUIM	V	
VIL	Low Level Input Voltage	0		0.2*VUIM	V	
CEXT	Host Device External Capacitance			200	pF	includes bulk + trace capacitance

Table 3-4 W_DISABLE#

Symbol	Parameter	Min	Typ	Max	Units	Notes
VIH	High Level Input Voltage	1.7		+3.3V_aux	V	Gobi2000 contains an internal 20k pull-up to +3.3V_aux
VIL	Low Level Input Voltage	0		0.5	V	

Table 3-5 WAKE#

Symbol	Parameter	Min	Typ	Max	Units	Notes
VOH	High Level Output Voltage			+3.3V_aux	V	Connects to an open collector transistor inside Gobi2000
VOL	Low Level Output Voltage	0		0.5	V	

Table 3-6 LED_WWAN#

Symbol	Parameter	Min	Typ	Max	Units	Notes
I _{on}	Current Sink		10		mA	
V _{ON}	Compliance Voltage	0.5		3.3V_aux-1	V	Can sink current when host voltage is within this range
V _{max}	Safety Range	0		3.3V_aux+0.5	V	Safe with host voltages within this range

3.4 Current consumption

Gobi2000 maximum current consumption meets the requirements in Section 3.4.3 of [Q3] and is guaranteed over the conditions listed in [Table 3-2](#). The Max value in [Table 3-7](#) lists this requirement for convenience. The typical values are not guaranteed. The worst case Peak current

condition occurs in GSM850 PCL=5. The worst case Normal current condition occurs during CDMA2000 max power transmit in BC1.

Table 3-7 Maximum 3.3V_aux current consumption

Parameter	Typ(mA)	Max (mA)	Notes
Peak Current	2600	2750	The highest averaged current value over any 100-microsecond period
Normal Current	900	1100	The highest averaged current value over any 1-second period

The tables below list Gobi2000 typical current consumption in various operational modes at +25C and 3.3V. Actual typical values may vary over time and environment. This performance is not tested in production and is not guaranteed.

Table 3-8 WWAN IDLE mode

Radio Mode	Selective Suspend	Band	Paging Channel Configuration	Typ (mA)	Notes
CDMA	Enabled	BC0/BC1	QPCH, SCI=2	1.5	1x + 1xEVDO hybrid
	Disabled	BC0/BC1		77	
WCDMA	Enabled	1,2,5,8	DRX = 256	2.5	DRX = 10ms frames between wakeups
			DRX = 512	1.5	
	Disabled		DRX = 512	70	
EGPRS	Enabled	850, 900, 1800, 1900	MFM = 2	4.8	MFM= Paging Multiframe between wakeups
			MFM = 4	2.9	
	Disabled		MFM = 4	69	

The Packet Data Traffic measurements below were collected with the GPS radio in OFF state.

Table 3-9 WWAN packet data traffic mode

Radio mode	Band	Typ (mA)	Notes
CDMA	BC0	670	PS Data call, 1xEVDO Rev A, Bidirectional UDP, Ior = -95, Ioc = off, Rev Link Power = +23 dBm
	BC1	673	
WCDMA	1	640	PS Data call, HSDPA/HSUPA, Bidirectional UDP, Ior = -65 dBm, Ioc = off, UL Power = +19 dBm
	2	630	
	5	580	
	8	640	
EGPRS	850/900	360	2 down / 2 up, MCS-9, TX PCL = 8
	1800/1900	322	2 down / 2 up, MCS-9, TX PCL = 2

The GPS measurements below were collected with the WWAN Radios in IDLE state.

Table 3-10 GPS

Radio mode	WWAN	NMEA Polling Interval (sec)	Typ (mA)	Notes
CDMA	IDLE	1	102	
	IDLE	5	98	
	LPM	1	96	
	LPM	5	92	
WCDMA/ GSM	IDLE	1	120	
	IDLE	5	100	
	LPM	1	114	
	LPM	5	93	

The W_DISABLE#=LOW measurements below were collected with GPS radio in OFF state.

Table 3-11 W_DISABLE#=LOW

Radio Mode	Selective Suspend	Typ (mA)	Notes
CDMA	Enabled	1	
	Disabled	77	
WCDMA	Enabled	1	
	Disabled	70	
EGPRS	Enabled	3.5	
	Disabled	70	

3.5 Interface signal characteristics

The min/max values are guaranteed by design over the conditions in [Table 3-2](#). Typical values are measured at 25C, 3.3V and may vary over time and environment.

RF performance characteristics

Table 3-12 USB D+/D- pair

Symbol	Description	Min	Typical	Max	Units	Notes
F	Data Rate, HS mode		480		Mb/s	
	Data Rate, FS mode		12		Mb/s	
tr/tf	Rise/Fall time, HS mode	500			ps	Terminated into a 90 ohm differential load
	Rise/Fall time, FS mode	4		20	ns	

Table 3-13 UIM_DATA, UIM_RESET, and UIM_CLK

Symbol	Description	Min	Typical	Max	Units	Notes
fCLK	Clock Frequency		3.84		MHz	
tDUTY	Clock Duty Cycle	45		55	%	

Table 3-13 UIM_DATA, UIM_RESET, and UIM_CLK

Symbol	Description	Min	Typical	Max	Units	Notes
tr	Rise time		2		ns	VUIM=1.8V, CEXT = 0pF
			10		ns	VUIM=1.8V, CEXT = 68pF

The Transmit Power and Receiver Sensitivity Min and Max limits in [Table 3-14](#) and [Table 3-15](#) apply over the conditions in [Table 3-2](#). The typical results are the mean value measured across multiple channels within each band at +25°C and 3.3V. Typical performance may vary over time and environment and is not guaranteed.

Table 3-14 WWAN max transmit power (dBm)

Radio mode	Band	Min	Max	Conditions
1x	BC0	22.5	24.5	RC1, 9.6 kbps, All up bits
	BC1	22.0	24.5	
1xEVDO	BC0	22.5	24.5	Rev A, 4096 bit RETAP, All up bits
	BC1	22.2	24.5	
WCDMA R99	1	22.0	24.5	12.2kbps RMC Loopback, All up bits
	2	22.0	24.5	
	5/6	22.2	24.5	
	8	22.0	24.25	
EGPRS GMSK	850/900	31.0	33.0	PCL=5, Loopback
	1800/1900	28.0	30.0	PCL=0, Loopback
EGPRS 8PSK	850/900	25.0	27.0	PCL=8, MCS-5, 1 Slot
	1800/1900	25.0	27.0	PCL=2, MCS-5, 1 Slot

Table 3-15 WWAN primary receiver sensitivity (dBm)

Radio mode	Band	Typ	Max	Conditions
1x	BC0	-109.7	-107.5	RC1, 9600 bps
	BC1	-109.0	-106.5	
1xEVDO	BC0	-110.0	-108.0	DRC4, FETAP, Rev A
	BC1	-109.0	-107.0	
WCDMA R99	1	-110.5	-108.0	12.2kbps RMC Loopback
	2	-110.0	-107.5	
	5/6	-111.0	-108.2	
	8	-110.0	-107.3	
EGPRS GMSK	850/900	-110.0	-108.5	MCS-1
	1800/1900	-109.0	-106.8	
GPS		-156.5		Single Satellite

3.6 Data throughput

Packet Switched Data throughput performance measurements will be included in a separate document.

3.7 Gobi2000 vs. Gobi1000 signal behavior

[Table 3-16](#) lists the signals that have different behavior in Gobi2000 vs. Gobi1000.

Table 3-16 Gobi2000 electrical interface updates

Pin	Name	Description
20	W_DISABLE#	Setting this pin to logic low leaves the Gobi2000 module powered up, but with WWAN radios disabled. GPS radio operational state is not affected by this signal. The behavior differs from Gobi1000, where the module was powered down upon asserting this signal low.
1	WAKE#	This signal is driven low by Gobi2000 to resume a host platform that is in a power saving state. This signal was not available in Gobi1000.

4 Applications Information

4.1 USIM signal interface on host PC

Connect a 0.1 μ F capacitor between V_{UIM} and ground near the host USIM card connector's Vcc pin. While Gobi2000 has greater signal drive strength vs. Gobi1000, keeping the trace length to the USIM card connector < 10 inches is recommended to preserve the rise time and duty cycle performance required to meet PTCRB specifications.

4.2 Recommended USB cable length for bench testing

Use a USB cable 1 meter long (or shorter) to connect the host PC to a Gobi2000 mounted in a test fixture. The 2 meter long cables have been found to yield intermittent communication problems (high packet errors, loss of enumeration, etc.) with some PCs.