

Terminus CDMA864D Breakout Board User Manual

Issue: A00

ADVANCED



JANUS REMOTE
COMMUNICATIONS

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2 INTRODUCTION

The following document describes the functions of the breakout board for the CDMA864D Terminus module. This guide, along with the module's user guide, allows all features of the terminal to be evaluated and tested before reaching the field.

3 GENERAL PURPOSE I/O:

The breakout board for the CDMA864D exposes the following I/O via terminal block wire connection:

CMOS GPIO 1 through 7
ADC 1
UART SELECT
PWRMON
ON_OFF
RESET
VAUX I/O Reference Voltage
ENABLE
TRACE_RX
TRACE_TX
RS-232 TX
RS-232 RX
RS-232 RTS
RS-232 DTR
RS-232 DCD
RS-232 RING
RS-232 CTS
RS-232 DSR

Please refer to CDMA864D User Manual before making connection to any of these I/Os.

4 INTERFACES

4.1 Power Supply

The Terminus module requires 12VDC for proper operation, and can be supplied from the breakout board's wire terminals or directly to the 2.1mm barrel jack on the module while plugged into the breakout board. Note that power should only be applied in one of the mentioned places. Do not attempt to supply power to both points simultaneously.

Power supply requirement	
Voltage	12Vdc \pm 5%
Power	10W peak

4.2 UART Select Jumper

In order to use the RS-232 lines on the wire terminals or to use the serial to USB adapter for the AT Command Port, the user must place a shunt on across J1, labeled UART SELECT. The user may also ground the UART SELECT terminal position. This will switch the RS-232 lines to the external interfaces instead of the module's DB9 connector.

4.3 Serial Headers

The breakout board has two right angle headers designed for FTDI serial to mini USB adapters. To utilize these it is required to have the drivers for the FTDI chipset.

4.3.1 AT COMMAND PORT:

This port, labeled P6, is available to send AT commands to the Terminus module.

4.3.2 Typical Port Settings:

Baud: 115200

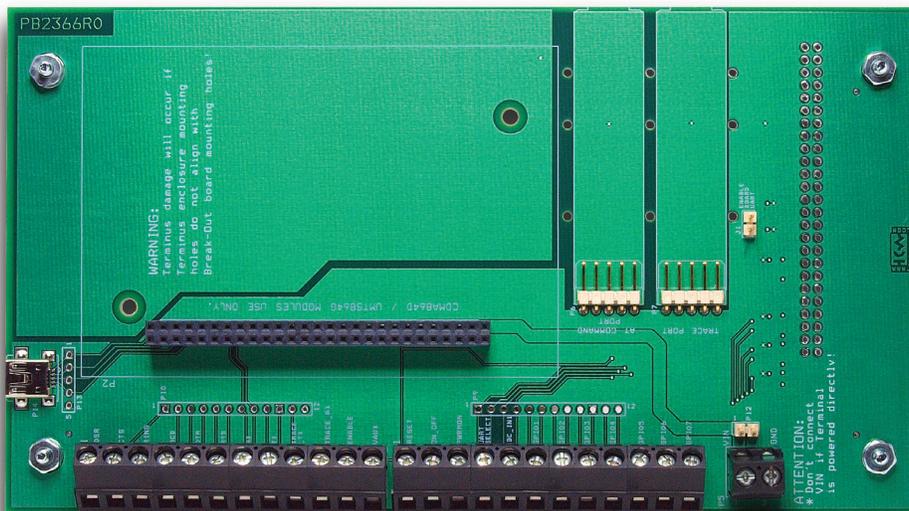
Data bits: 8

Parity: None

Stop Bits: 1

Hardware Handshaking: None

Note that since the serial to USB adapters only utilize TX/RX, handshaking is unused. However, the module's use of RS-232 requires that the RTS line externally must be grounded.



4 INTERFACES continued

4.3.3 Trace Port

This port, labeled P5, is used for capturing debug data from the module. It can also be used for local firmware upgrades of the cellular modules radio firmware.

Port Settings:

Baud: 115200

Data bits: 8

Parity: None

Stop Bits: 1

Hardware Handshaking: N/A

5 USB SERIAL PORTS:

The breakout board for the Terminus module has three serial ports available via the mini USB port, labeled P14. To use this interface during development you will need to download the USB drivers from the Janus website. It's recommended to use this connection for development as it allows you multiple interfaces with a single connection.

5.1 AUXILLARY PORT:

This port is available to send AT commands to module. Please refer to the CDMA864D Terminus User Manual and Telit AT Command Guide for all available commands.

5.1.1 Typical Port Settings:

Baud: 115200

Data bits: 8

Parity: None

Stop Bits: 1

Hardware Handshaking: CTS/RTS

5.1.2 Diagnostics Interface

This port is used for debug and local firmware upgrades of the module's radio firmware. Hardware handshaking is not available on this port.

5.1.3 Port Settings:

Baud: 115200

Data bits: 8

Parity: None

Stop Bits: 1

Hardware Handshaking: N/A

5.2 TELIT GPS NMEA PORT:

This port is used to communicate with Telit's integrated GPS hardware. Please refer to Telit AT command guide for available settings and features to implement this port in your hardware design. Hardware handshaking is not available on this port.

5.2.1 Port Settings:

Baud: 115200

Data bits: 8

Parity: None

Stop Bits: 1

Hardware Handshaking: N/A

6 GETTING STARTED

Step 1

Please confirm that you have these items, and that your evaluation board is correctly set:

- 1 x Power supply with 2.1mm barrel connector termination
- 1 x 3' Mini USB cable

Make sure that a shunt is placed on J1, or ENABLE BOARD UART.

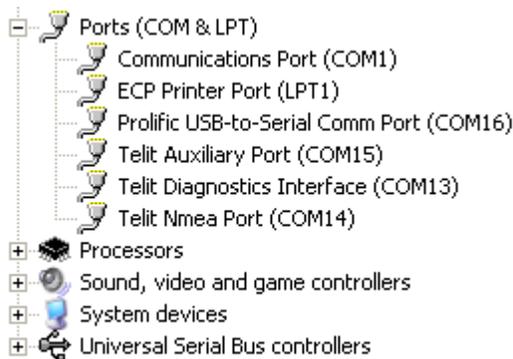
Step 2

If not done already, plug the CDMA864D module into the 2x27 connector. To help with alignment, take note of the silk screen outline and the holes that align with the Terminus' mounting holes. Make sure the module is properly aligned before continuing.

Step 3

Plug in your power supply to the 2.1mm barrel connector on the module. After roughly 2 seconds you should see the STATUS LED on the module start blinking, this lets you know that the Terminus is powered and functioning.

Connect the mini USB cable to the mini USB port on the breakout board. Connect the other end to an available USB port on your PC. In the computer's device manager, you should see three (3) new ports become available.



You should see:

- Telit Auxiliary Port
- Telit Diagnostics Interface
- Telit Nmea Port

If these do not become available, or you see an error message, this means you need to install the USB drivers for the CDMA864D. Please refer to <http://www.janus-rc.com/terminuscdma864d.html> for the proper drivers before continuing.

6 GETTING STARTED continued

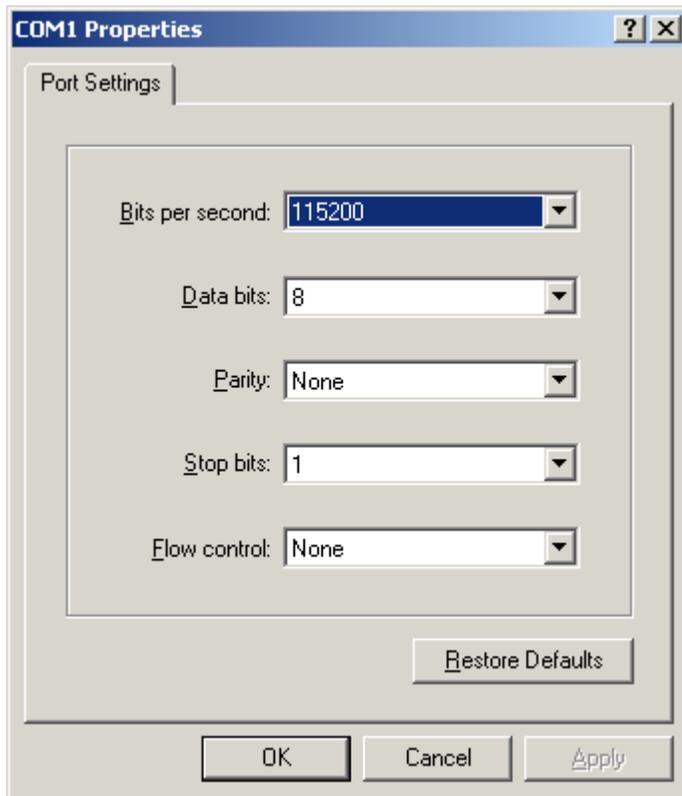
Step 4

Open HyperTerminal and start a new session. Use the drop down box to select the COM port that corresponds to the Telit Auxiliary Port.



6 GETTING STARTED continued

Then select “Configure.”, and select the following settings:



Bits per second: 115200

Data bits: 8

Parity: None

Stop bits: 1

Flow control: None

Then press “OK.”

Step 5

Click on the “Call” button in HyperTerminal to make the connection. In the window you should be able to send AT commands. To make sure you have a proper connection, type “AT” into the window, and press Enter. You should receive a response of “OK”.

If you do not receive that response, go back and check to make sure you’ve selected the correct COM port and settings.

If you receive an OK, your connection is successful and you are now able to communicate with the module. The CDMA864D User Manual gives step by step instructions on setting up voice and data calls, SMS messages, and socket connections.

Please refer to <http://www.janus-rc.com/terminuscdma864d.html> for a link to additional Telit documentation, including the AT Reference Guide; a full list of supported AT commands and their functions.

7 APPENDICES

7.1 Approvals

7.1.1 Carrier Approval

7.1.1.1 Sprint

7.1.1.2 Verizon - Pending

7.1.2 Module Approval

7.1.2.1 FCC

7.1.2.2 CDG 1 and 2

7.2 Safety Recommendations (for Information only)

7.2.1 General

The Terminus CDMA864D terminal is based on the CDMA standard for cellular technology. This standard is universal and covers Europe, Asia, United States and Africa which is the most used telecommunication standard.

7.2.2 Antenna Care and Replacement

Do not use the Terminus with a damaged antenna.

Buy the antenna from an approved suppliers list. Using unauthorized antennas, modifications, or attachments could damage the Terminus and may violate local RF emission regulations or invalidate type approval.

Caution: DO NOT OVER-TIGHTEN ANTENNAS. Refer to Section 4.6.2.4 for torque specifications.

7.3 Abbreviations

ATerm	Definition	MT	Micro Telephone or Handset (MT or HS)
ADC	Analog-to-Digital Converter	PCM	Pulse Coded Modulation
CDMA	Code Division Multiple Access	PDM	Pulse Density Modulation (in a DAC)
DAC	Digital-to-Analog Converter	RTC	Real Time Clock
EVRC	Enhanced Variable Rate CODEC	R-UIM	Removable User Identity Module
GPIO	General Purpose Input/Output	S-GPS	Simultaneous GPS
GPS	Global Positioning System	TGPIO	Telit General Purpose Input/Output
HF	Hands-Free	UART	Universal Asynchronous Receiver Transmitter
I2C	Inter-Integrated Circuit	USB	Universal Serial Bus
JDR	Jammer Detector	VAUX	Voltage Auxiliary
JTAG	Joint Test Action Group (ANSI/ICEEE Std. 1149.1-1990)	ZIF	Zero Intermediate Frequency

7.4 Ordering Information

Ordering Information	Terminus Description
CDMA864D	V2.0 Sprint Certified
CDMA864D	V3.0 Verizon Certified (pending)

Terminus CDMA864D Braekout Board User Manual



8.5 Revision History

Revision	Revision Date	Note
A00	12/17/10	Released Manual

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