# HDCC openGear Product Line

### 3G/HD/SD-SDI Captioning Solution

Installation Guide (All Standards for openGear Hardware)

HDCC Main Board Release: Revision E

Part Number 821150, Revision C





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#### Last Update

July 09, 2012

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# **CHAPTER 1** Hardware Installation

# Introduction

### **Overview**

Thank you for purchasing Wohler's HDCC card, a product that provides a variety of captioning functions. This document explains how to install your new card into the openGear chassis.

### Topics

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Safety Instructions	2
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# Safety Instructions

- 1. Read, keep, and follow all of these instructions; heed all warnings.
- 2. Do not use this equipment near water or expose the equipment to rain or moisture.
- 3. Use only the adaptors specified by the manufacturer.
- 4. Unplug the equipment during lightning storms or when unused for long periods of time.
- 5. Refer all servicing to qualified service personnel. Servicing will be required under all of the following conditions:
  - The equipment has been damaged in any way.
  - Liquid had been spilled or objects have fallen onto the equipment.
  - The equipment has been exposed to rain or moisture.
  - The equipment does not operate normally.
  - The equipment has been dropped.

### Unpacking

**CAUTION!** Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling the circuit boards in high static environments such as carpeted areas, and when synthetic or wool fiber clothing is worn. Always exercise proper grounding precautions when handling circuit boards.

Unpack each HDCC that you have received from its shipping container and check the contents against the packing list to ensure that all items are included. If any items are missing or damaged, please contact your Wohler sales representative immediately.

### Requirements

### Tools

To install and use the HDCC, you will need a small Phillips screwdriver for attaching the rear panel adaptor to the frame.

### Chassis

Your HDCC card is designed for a Ross DFR-8321 openGear frame or any other compatible frame.

### Hardware

- HDCC card
- Rear panel
- Screws
- Washers

### Installing the Card and Rear Panel

To install the adaptor into the frame:

- 1. Ensure that the Ross DFR-8321 frame is properly installed.
- 2. Power down the frame.

Important:Each dual-channel HDCC card occupies four slots of the Ross DFR-<br/>8321 chassis. Each single-channel HDCC card occupies two slots.

#### Chapter 1 Hardware Installation Installing the Card and Rear Panel

- 3. Insert the screws into the two corner holes of the rear panel. Refer to Figure 1–1 below.
- **Note:** The next few pages illustrate the installation of an OG-2 rear panel. (See Figure 1–1 below.) The OG-1 rear-panel installation is similar, but smaller.

# Figure 1–1 The OG1 (left) and OG2 (right) Rear Panels



4. After you have inserted the screws into the rear panel, place the rubber washers on the screws. Refer to Figure 1–2 on page 5.

#### Chapter 1 Hardware Installation Installing the Card and Rear Panel

### Figure 1–2 Adding the Washers



- 5. With the rear of the chassis facing you, sit the rear panel into the base slot and tighten the top screws.
  - **Note:** The HDCC card can be installed into any oddnumbered slot from 3 to 19. Refer to Figure 1–3 below.



### Figure 1–3 Installing the Rear Panel

6. Turn the DFR-8321 chassis so that the front panel is facing you. Press inward on both tabs to disengage the front panel from the chassis and pull the front panel towards you and then down.

#### Chapter 1 Hardware Installation Rear Panel DIP Switch

7. Insert the card so that the LEDs are at the top and facing you (Figure 1–4 below) and then close the front panel.



### Figure 1–4 Open DFR-8321 Frame

- **Note:** Ensure that SW3 is in the **off** position. Refer to Accessing the Terminal via the USB Port (Front of Card) on page 33 for more information.
- 8. Attach at least one 3G/HD/SD-SDI video signal to one of the input BNCs on the rear panel.

### Rear Panel DIP Switch

Both the OG1 and OG2 rear panels have a miniature DIP switch that controls the functioning of the ARM processor on each rear panel. The ARM handles TCP/IP communications (including virtual serial ports) with the card.

**Important**: These switches are set at the factory, so you shouldn't need to change their settings. Improper switch settings will render the card unusable.

SW3

6

Position	On	Off	Default
1	Use internal settings for IP address.	Use static IP address determined by position 2.	On
2	Static IP= 192.168.2.4	Static IP= 10.2.1.4	Off
3	Execute boot loader.	Normal boot.	Off
4	Not Used.		

# Table 1–1Rear Panel DIP Switch PositionFunctionality

SW1 (Switch 1) is set to **On** at the factory so that the card's IP address will be based on the ARM's internal configuration (by default, to use DHCP network settings). If SW1 is **Off**, the static IP address set by SW2 will apply.

SW3 controls whether the ARM boots normally (default) or it runs a boot loader. This options is only used for software upgrades.

### Next Steps

**Important**: This concludes the procedure for installing the HDCC card and its rear panel.

If you want to configure your Ethernet port to support serial communications, continue on to Chapter 2 on page 9.

After you have completed all the installation steps appropriate to your production environment (from this manual) continue on to the configuration manual for your HDCC card model.

# CHAPTER 2 Setting Up Virtual Serial Ports

### Introduction

### Overview

This chapter describes how to create a virtual serial connection over a TCP/IP network.

Topics

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Installing the Lantronix Redirector	21

### **Functional Overview**

### Virtual Serial Ports (VSPs) on the HDCC

Caption data is supplied to and received from the HDCC via serial ports. In addition to the RS-232 port (J14 on the HDCC rear panel) serial data is also accessible over the Ethernet port using virtual serial ports. The HDCC provides two virtual serial ports as shown in Figure 2–1 below.

### Figure 2–1 HDCC to PC Connectivity



Figure 2–1 above provides a function overview of the virtual serial port configuration. You can use third party software (link provided below) to create a virtual serial port which will transfer serial data to and from the HDCC over Ethernet. From the PC user's perspective, the virtual serial ports are indistinguishable from the hardware serial ports.

Once the virtual serial ports are operational, you can change the HDCC settings through DashBoard or a terminal emulator to control how these serial ports are routed to the captioning system.

### **Required Information**

To set up a virtual serial port (VSP) you must know the HDCC card's IP address and telnet port numbers. Once you have this information, the serial port redirector software can be configured.

# Finding the HDCC on the Network

The HDCC card is factory set for **DHCP/AutolP**. If you connect the HDCC card to a network with a DHCP server, the HDCC card's IP address will be assigned automatically. If you are using a Windows-based computer you will be able to see the card in **My Network Places** as shown in Figure 2–2 below.



### Figure 2–2 HDCC Shown in My Network Places

Double-clicking on the Wohler Serial-Ethernet Bridge (see Figure 2–2 above) will take you the card's configuration page where you can set a static IP address, if desired. Proceed to HDCC Configuration on page 16.

Alternatively, you can install the Luminary Micro S2E software to locate the card as described below. If you already know the card's address, proceed to *HDCC Configuration*.

### Installing the S2E Configuration Software

- 1. Place the Wohler CDROM into your CDROM drive.
- 2. Browse to the **/software/S2E** folder and double-click the **S2Esetup.exe** program.
- 3. When the **Welcome to the Luminary Micro**...dialog displays, click **Next**.

#### Chapter 2 Setting Up Virtual Serial Ports Finding the HDCC on the Network

### Figure 2–3 Welcome Dialog



4. When the **License Agreement** dialog appears, click **I Agree** and then click **Next**.

### Figure 2–4 License Agreement Dialog

🥵 Luminary Micro® Serial-t	o-Ethernet Configu	ration	
License Agreement			0
Please take a moment to read the Agree", then "Next". Otherwise cliv	license agreement now. If ck "Cancel".	you accept the terms t	below, click ''l
License Agreement <u>Important</u> - This is a legall read the following terms, y commit your company to a DISPLAYED FOR YOU TO RE "LICENSED MATERIALS". <u>DO NOT DOWNLOAD OR INS</u> behalf of yourself and your Agreement.	y binding agreement. rou will be asked whet abide by the following AD PRIOR TO DOWNLO <u>TALL</u> the software pro- r company to be boun	Read it carefully. A ther you are author terms. THIS AGREE DADING OR USING T ograms unless you d by the terms of th	After you ized to MENT IS HE agree on his License
OIDoNotAgree			
	Cancel	< <u>B</u> ack	<u>N</u> ext >

5. Verify that **Start all connections automatically** is checked, and then click **Next**.

### Figure 2–5Installation Options Dialog

🖟 Luminary Micro® Serial-to-Ethernet Configuration			
Installation Options			
The Serial-to-Ethernet configuration application can be set up to start configured connections automatically when the system starts. Would you like to do this or would you rather start the connections manually using the LM S2E Launcher application?			
Start all connections automatically			
Cancel < <u>B</u> ack <u>N</u> ext>			

6. When the **Select Installation Folder** dialog appears, either accept the default or browse to the location of your choice, and click **Next**.

### Figure 2–6 Select Installation Folder Dialog

🖟 Luminary Micro® Serial-to-Ethernet Configuration	
Select Installation Folder	0
The installer will install Luminary Micro® Serial-to-Ethernet Configuration to the following To install in this folder, click "Next". To install to a different folder, enter it below or click <u>Folder:</u> [C:\Program Files\Luminary Micro\Serial-to-Ethernet Configuration\ is	g folder. k "Browse". owse k Cost
Cancel Cancel	<u>N</u> ext >

#### Chapter 2 Setting Up Virtual Serial Ports Finding the HDCC on the Network

7. When the **Confirm Installation** dialog appears, click **Next**.

### Figure 2–7 Confirm Installation Folder Dialog



8. When the **Installation Complete** dialog appears, click **Close**.

### Figure 2–8 Installation Complete Dialog



### Running the Luminary Micro S2E Browser

- 1. From the Start menu select Luminary Micro ⇒ Serial to Ethernet Configuration ⇒ LM S2E Browser.
- 2. Browse to the /software/S2E folder on the Installation CD and double-click the S2Esetup.exe program

After the application searches the network, it will display all the HDCC cards it found by their current name and IP address as shown in Figure 2–9 on page 15.

### Figure 2–9 Serial-to-Ethernet Configuration

	10 Serial-to-Ethernet Configuration	
Double-click the name of the card you're configuring.	Browser         The list below shows all Serial-to-Ethernet modules that have been found on this network. Double click a module's name to launch your web browser and show the configuration pages for that module.         Serial-to-Ethernet Modules:         Wohler HDCC-OG2 (192.168.1.82)	
	Found 1 device.	
	Hep LUMINARY MICRO® Quit	

3. Double-click on the HDCC card name as shown in the **Serial-to-Ethernet Modules** pane in Figure 2–9 above. This will take you to HDCC Configuration below.

#### Chapter 2 Setting Up Virtual Serial Ports HDCC Configuration

### HDCC Configuration

You can reach the HDCC card configuration screen through a web browser by entering the IP address in the address bar. Refer to Figure 2–10 below.

### Figure 2–10 Typical HDCC Configuration Page

🖉 Wohler HDCC-OG1	- Windows Internet Explorer			
🔄 💽 🗢 🙋 http:/	//192.168.1.82/	~	🗟 🐓 🗙 📴 Bing	P -
Eile Edit View Favo	orites <u>T</u> ools <u>H</u> elp			
🚖 Favorites 🛛 🚔 🌄	Suggested Sites 🝷 🧧 Get More Add	d-ons •		
🖉 Wohler HDCC-OG1			🏠 🔹 🔝 👘 🖃 🖶 🛉 🔹 Page 👻 Safety 🕶 To	iols • 🔞 • 👋
WW	ohler <sup>.</sup>		Wohler HDCC-	-0G1
	Status & Config	uration		
Home	Name:	Wohler HDCC-OG2		
Settings	Firmware Revision:	8049		
Firmware	IP Address:	192.168.1.82		
Update	MAC Address:	b4-ed-54-cc-00-02		
	Current port settings:			
		Port 0	Port 1	
	Baud Rate:	115200 bits/second	115200 bits/second	
	Data Size:	8 bits/character	8 bits/character	
	Parity:	None	None	
	Stop Bits:	1 bit(s)	1 bit(s)	
	Telnet Port Number:	23	26	
Copyright © 2011 Wohler Technologies, Inc. All rights reserved. Copyright © 2009-2011 Texas Instruments Incorporated. All rights reserved. ♀ Internet ♀ ♥ 100% ▼				

#### **Decision Point:**

If you need to assign a static IP address (usually for a non-DHCPenabled network) skip down to Assigning a Static IP Address on page 17.

Otherwise, once you have written down the IP address and the telnet port number for this card, continue on to Step 4 immediately below.

4. Write down the **IP Address**. In our example (Figure 2–10 above) the **IP Address** is 192.168.1.82.

#### Chapter 2 Setting Up Virtual Serial Ports Assigning a Static IP Address

- 5. Write down the **Telnet Port Number** for **Port O** as shown at the bottom of Figure 2–10 above. In our example, the **Telnet Port Number** is 23.
- 6. Close the LM S2E Browser application.

**Important** Continue on to Installing the Lantronix Redirector on page 21.

### Assigning a Static IP Address

- 1. Click **Settings** on the left hand side of the screen (Figure 2–10 on page 16).
- 2. When the **Settings** screen appears (Figure 2–11 below) click the drop down in **Address Type** to change it to **Static IP**.
- 3. Enter the new **Static IP Address** for your network provided by your network administrator.
- 4. If needed, enter a different **Subnet Mask** (Figure 2–11 below).
- 5. If your network administrator provides you with a **Default Gateway**, enter that, too.

### Figure 2–11 Settings Menu

🖉 Wohler HDCC-OG1		🏠 🔹 🔝 🕤 🖃 🖶 🍷 Page 🗸 Safety 🗾 Tools 🖉 🖓 🎽
WW	<b>ohler</b>	Wohler HDCC-OG1
	Settings	
Home Settings Firmware Update	Name:Wohler HDCFirmware Revision:8049IP Address:192.168.1.82MAC Address:b4-ed-54-cc-4IP Address Selection	<b>C-OG2</b> 00-02
	Address Type:	
	Static IP Address. Subnet Mask:	132     , 100     , 1     , 102       255     , 255     , 0
	Default Gateway:	
		Update Settings

17

#### Chapter 2 Setting Up Virtual Serial Ports Assigning a Static IP Address

**WARNING!** Verify that all information is correct for your network. The HDCC card will become unreachable on your network if the wrong information is set.

If this occurs consult your IT department for assistance. You can set the card to a known static IP address using the DIP switch on the rear panel.. See Rear Panel DIP Switch on page 6 for details.

6. Once the information is accurate, click on the **Update Settings** button in the **IP Address Selection** section.



### Figure 2–12 IP Address Change

7. Close this window (Figure 2–12 above).

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8. Return to the LM S2E Browser application window (Figure 2–13 below) and click **Refresh** in the center right.

### Figure 2–13Serial-to-Ethernet Configuration

Serial-	to-Et	hernet Configuration	X
Browser	1		
The list to laund	below : h your	shows all Serial-to-Ethernet modules that have been found on this network. Double click a modu web browser and show the configuration pages for that module.	ıle's name
	Seria	I-to-Ethernet Modules:	
		Wohler HDCC-OG2 (192.168.1.162)	
		Found 1 device.	
Help		LUMINARY MICRO®	Quit

#### Chapter 2 Setting Up Virtual Serial Ports Assigning a Static IP Address

- 9. Write down the **IP Address** (in our example: 192.168.1.82). See Figure 2–14 below.
- 10. Write down the **Port O Telnet Port Number** (in our example: 23). See Figure 2–14 below.

### Figure 2–14 Serial-to-Ethernet Configuration

C Wohler HDCC-OG1	- Windows Internet Explorer				
🕞 👽 🔻 🙋 http:	//192.168.1.82/	▼	🗲 🗙 📴 Bing	<b>P</b> -	
<u>File E</u> dit <u>V</u> iew F <u>a</u> v	orites <u>T</u> ools <u>H</u> elp				
🚖 Favorites 🛛 🚖 🌄	Suggested Sites 🔹 🙋 Get More Ad	d-ons -			
Wohler HDCC-OG1			🟠 🔹 🔝 👘 🖃 🖶 👻 Page 🔹 Safety 🕶 Tools 👻	<b>?</b> - <b>°</b>	
WW	ohler <sup>.</sup>		Wohler HDCC-O	G1	
	Status & Config	uration			
Home	Name:	Wohler HDCC-OG2			
Settings	Firmware Revision:	8049			
Eirmwore	IP Address:	192.168.1.82			
Update	MAC Address:	b4-ed-54-cc-00-02			
	Current port settings				
		Port 0	Port 1		
	Baud Rate:	115200 bits/second	115200 bits/second		
	Data Size:	8 bits/character	8 bits/character		
	Parity:	None	None		
	Stop Bits:	1 bit(s)	1 bit(s)		
	Telnet Port Number:	23	26		
Copyright © 2011 Wohler Technologies, Inc. All rights reserved. Copyright © 2009-2011 Texas Instruments Incorporated. All rights reserved.					

11. Close the LM S2E Browser application.

Important: This concludes the instructions for modifying the IP address. Continue on to Installing the Lantronix Redirector on page 21.

### Installing the Lantronix Redirector

	<ol> <li>Launch your PC browser and navigate to http:// ltxfaq.custhelp.com/app/answers/detail/a_id/928.</li> </ol>
Important:	Download only the legacy version 3.1.0.4. Do not use a more recent version. None of them will connect to the card's Ethernet interface.
	2 Scroll to the bottom of the page and click on the <b>bttp</b> link for th

2. Scroll to the bottom of the page and click on the **http** link for the **Redirector**.

### Figure 2–15 Redirector Download Location

If you need to control hardware handshaking lines directly on an MSS, ETS or SCSx00 product, the original Redirector is still available at the links below. These products use a proprietary protocol to control HW handshaking signals instead of TruPort Technology (RFC2217). Click one of the links below to download the **v3.1.0.4** Redirector:

	Download via FTP	Download via HTTP	Comment
Redirector	<u>ftp</u>	http	
Release Notes	ftp	http	Right-click and choose "Save Target As"

Download the Redirector.

3. Once the file is downloaded, double-click **red32.bit.exe** to install.

### Figure 2–16 Open File - Security Warning



4. When the initial installation screen displays (Figure 2–16 above) click **Run**.

### Figure 2–17 Lantronix Welcome Screen



5. When the **Welcome** screen displays (Figure 2–17 above) click **Next**.

### Figure 2–18

#### InstallShield



6. The **InstallShield** screen will quickly display and then return you to the Welcome screen. Click **Next** again.

### Figure 2–19 Choose Destination Location

InstallShield Wizard	×
Choose Destination Location Select folder where Setup will install files.	
Setup will install Lantronix Redirector in the following folder.	
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.	
Destination Folder	
C:\Program Files\Lantronix\Redirector Browse.	
InstallShield	
< <u>B</u> ack <u>Next</u> > Ca	ncel

7. When the **Choose Destination Location** screen displays, accept the default and click **Next**.

The **Setup Status** screen (Figure 2–20 on page 23) will display and quickly complete the file installation.

### Figure 2–20 Setup Status

InstallShield Wizard	×
Setup Status	
Lantronix Redirector Setup is performing the requested operations.	
Installing:	
58%	
(nstallShield	
	Cancel

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8. Before the wizard completes, take a moment to close all other applications on your PC before the system restarts your computer.

InstallShield Wizard	
	InstallShield Wizard Complete Lantronix Redirector   Yes, I want to restart my computer now  No, I will restart my computer later.  After your computer reboots, start the Lantronix Redirector Config Help file from the Start menu, which will explain how to set up the redirector.
	< Back Finish Cancel

### Figure 2–21 Wizard Complete

- 9. When the **InstallShield Wizard Complete** screen displays, verify that **Yes**,... is selected, and click **Finish**. The system will restart.
- 10. After your computer reboots, click on the **Start** menu and click **Programs**.
- 11. Mouse over to Lantronix ⇒ Redirector ⇒ Configuration to launch the Lantronix Redirector shown in Figure 2–22 on page 25.

🐏 Lantronix Re	director Configura	tion				
	Port Configuration					
Advanced	Redirect	СОМЗ 💌 То:				Move Up
C <u>o</u> m Setup						Maua Daum
						Move Down
Silent Mode	1					Add I <u>P</u>
		Port Settings Web	Configuration			<u>R</u> emove
Status: Idle						
-				1		
Ø	<u>D</u> isconnect		Save	<u>C</u> lose		
Devices						
S <u>e</u> arch	Timeout: 1 - s	econds				
(*=unreachable)						
* Device Name	Seria	Port Name	IP Address	TCP Port	MAC Address	Device Type
			1	1		

### Figure 2–22 Lantronix Redirector Configuration

12. Click **Com Setup** on the left side of the screen.

### Figure 2–23 Com Setup

1	Com Setup			
	Redirected Por	ts		
	Com1	Com11	Com21	
	Com2	Com12	Com22	
	Com3	Com13	Com23	ок
	Com4	Com14	Com24	
	Com5	Com15	Com25	Cancel
	Com6	Com16	Com26	
	Com7	Com17	Com27	
	Com8	Com18	Com28	
	Com9	Com19	Com29	
	Com10	Com20	Com30	
	<		>	

13. Assign an available **Com** port (in our example Com9 is selected) and click **OK**.

14. Click Add IP on the right side of the screen.

### Figure 2–24 Wizard Complete

IP Service Setup
Host: TCPPort:
OK Cancel

- 15. In the **Host** field (Figure 2–24 above) enter the IP address of the HDCC card that you wrote down.
- 16. In the **TCPPort** field (Figure 2–24 above) enter the telnet port number that you wrote down and click **OK**.
- 17. Click **Port Settings**.

### Figure 2–25 Port Settings



- 18. Check **Raw Mode** (Figure 2–25 above) and click **OK**.
- 19. Click **Advanced** at the top left corner of the application window.

### Figure 2–26 Advanced Settings

Advanced Settings	
TCP KeepAlive (ms): 7200000 milliseconds ▼ Run as service	
Cancel	

20. When the Advanced Settings dialog appears (Figure 2–26 above) check the **Run as service** box and click **OK**.

### Figure 2–27 Service Installation

Service Installation
Com Port Redirector installed
ОК

21. When the **Service Installation** (Figure 2–27 above) dialog appears, click **OK**.

Figure 2–28 Config Info



- 22. When the **Config Info** dialog displays (Figure 2–28 above) click **OK**.
- 23. When the application window reappears, click **Close** near the center of the screen.

Figure 2–29	Com Redirector Setup		
	Com Redirector Setup	X	
	Save setup before exiting?		
	<u>Yes</u> <u>N</u> o Cano		

24. When the **Com Redirector Setup** dialog appears (Figure 2–29) click **Yes**.

Figure 2–30 Config Info

Config Info						
٩	Changes will take effect when port is reopened.					
	OK					

25. When the **Config Info** dialog displays (Figure 2–30 above) click **OK**.

# CHAPTER 3 Accessing the Engineering Menu

### Introduction

### Overview

This chapter describes how to access the Engineering Menu to change the HDCC card's registers directly.

### **Topics**

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#### Chapter 3 Accessing the Engineering Menu Background

### Background

The HDCC card's operation is governed by several registers. These registers are modified automatically if you use the DashBoard user interface.

However, more advanced users may prefer to configure these registers manually. You can do so by accessing the Engineering Menu (also called the Terminal) via a number of ports: RS-232, Ethernet Virtual Serial Ports, and the USB port.

The sections below describe each configuration.

# Configuring the HDCC Card for Engineering Menu Access

### Figure 3–1

#### **Engineering Menu**

🖾 Multi	-threaded TTY						
<u>File E</u> dit	ITY Transfer H	elp					
Port	Baud       I15200       Comm Events	Parity None Flow Control.	Data Bits 8	Stop Bits           1         •           Disconnect         •	✓ Local Echo     ✓ Display Errors     ✓ CR => CR/LF     ✓ Autowrap	No Reading No Writing No Events No Status	
Wohler Copyrig All Rig E-Mail: MFG/OEM PRODUCT SERIAL Softwar Firmwar Slot Po Slot vo MAIN ME E E II Cha I2 Vie I3 Bla I2 Vie I3 Bla I4 Pro I5 Res	4D Broadcast (ht (c) 2011 ( hts Reserved, support@woh. 1: Wohld ID: WII-7081 NUMBER: XXXX we: 848196 v0 e: 847160 v0 sition=9 ltage = 2.48 XNU == mge Register w All Registor ank All Registor to cess OpenGeau et	Platform Wohler Teck Ler.com er Technolo 4 49 2.45 Settings er Settings ers Messages	nologies, ngies, Inc	Inc.			
Choice	[1-5]:						>
Modem !	Status ☞ DSR	F RLSD (CD)	Comm Status	XOFF Hold T XOFF Sent TX EOF Sent RX	TX Char (Chars: 0 (Chars: 0	Status message go re:	

Access to the Engineering Menu is controlled by the BOOTOPT jumper on the card as shown in Figure 3–2 below. The sections below describe how it is used.

#### Chapter 3 Accessing the Engineering Menu Accessing the Terminal via the RS-232 Port

**Note:** While the card is configured for Engineering Menu access, it will not respond in DashBoard. To restore DashBoard operation, power down the card, remove the jumper, and re-power the card.

**WARNING!** Use caution when modifying the HDCC card's register values. Incorrect values may cause the card to behave unpredictably.

### Accessing the Terminal via the RS-232 Port

- 1. In DashBoard's **Setup Menu**, set the Terminal input to **RS-232** and the RS-232 output to **Terminal**.
- 2. Power down the card, install the BOOTOPT jumper (see Figure 3– 2 on page 32) and re-power the card.
- 3. Verify the SW3 is set to **OFF**.
- 4. Connect a serial cable from your PC to the RS-232 connector on the rear panel.
- 5. Open a terminal emulator (e.g., HyperTerminal, PuTTY, etc.) with the serial COM port set to 115.2k, 8 data bits, 1 stop bit, no parity, and no handshaking.
- 6. Press the Enter key to display the Engineering Menu as shown in Figure 3–1 on page 30.
- 7. Power off the card, remove the BOOTOPT jumper, and re-power the card to restore normal operation. (See Figure 3–2 on page 32 for details.)

#### **Chapter 3 Accessing the Engineering Menu** Accessing the Terminal via the Virtual Serial Ports

### Figure 3–2 BOOTOPT Jumper Location



BOOTOPT Jumper





BOOTOPT Jumper Installed = Access Engineering Menu

8. Go to the Engineering Menu functions below.

# Accessing the Terminal via the Virtual Serial Ports

There are two virtual serial ports, Eth1 and Eth2. The instructions below are for Eth1 but are easily applied to Eth2.

- 1. In DashBoard's **Setup Menu**, set the Terminal input to **Eth1** and the Eth1 output to **Terminal**.
- 2. Power down the card, install the BOOTOPT jumper (see Figure 3– 2 above) and re-power the card.

- 3. Verify the SW3 is set to **OFF**.
- 4. Verify that Eth1 is installed per Chapter 2 of this document.
- 5. Connect an Ethernet cable from your network to the Ethernet connector on the rear panel.
- 6. Open a terminal emulator (e.g., HyperTerminal, PuTTY, etc.) with Eth1's COM port set to 115.2k, 8 data bits, 1 stop bit, no parity, and no handshaking.
- 7. Press the Enter key to display the Engineering Menu. (See Figure 3–1 on page 30).
- 8. Power off the card, remove the BOOTOPT jumper, and re-power the card to restore normal operation. (See Figure 3–2 on page 32 for details.)

# Accessing the Terminal via the USB Port (Front of Card)

**Important**: Use caution when modifying the HDCC card's registers; doing so may cause unpredictable results.

There are two methods of accessing the terminal via USB: the first requires configuration via DashBoard; the second uses SW3 on the card's front edge to override any software settings.

The following instructions are configuration via DashBoard.

- 1. In DashBoard's **Setup Menu**, set the Terminal input to **USB** and the USB output to **Terminal**.
- 2. Power down the card, install the BOOTOPT jumper (see Figure 3– 2 on page 32) and re-power the card.
- 3. Verify the SW3 is set to **off**.
- 4. Connect a USB cable from your network to the USB connector on the front edge of the HDCC card.

#### Chapter 3 Accessing the Engineering Menu Engineering Menu

- 5. Install the USB-Serial interface software as prompted.
- 6. Open a terminal emulator (e.g., HyperTerminal, PuTTY, etc.) with USB serial port set to 115.2k, 8 data bits, 1 stop bit, no parity, and no handshaking.
- 7. Press the Enter key to display the Engineering Menu. (See Figure 3–1 on page 30).
- 8. Power off the card, remove the BOOTOPT jumper, and re-power the card to restore normal operation. (see Figure 3–2 on page 32)

The following instructions show how to access the terminal without DashBoard configuration.

- 1. Power down the card, set SW3 to **on**, install BOOTOPT jumper, and re-power the card. (See Figure 3–2 on page 32 for details.)
- 2. Connect a USB cable from your network to the USB connector on the front edge of the HDCC card.
- 3. Install the USB-Serial interface software as prompted.
- 4. Open a terminal emulator (e.g., HyperTerminal, PuTTY, etc.) with USB serial port set to 115.2k, 8 data bits, 1 stop bit, no parity, and no handshaking.
- 5. Press the Enter key to display the Engineering Menu. (See Figure 3–1 on page 30).
- 6. Power off the card, remove the BOOTOPT jumper, and re-power the card to restore normal operation. (See Figure 3–2 on page 32 for details.)

### **Engineering Menu**

The Engineering Menu provides several functions for quick and easy modifications. You can also find software and firmware version listed above the menu. Refer to Figure 3–3 below and the following descriptions of each menu option for details.

### Figure 3–3 Engineering Menu



# **Important**: Refer to the configuration guide for your product for a detailed list of registers.

- 1. **Change Register Settings**: Allows you to modify any available register value.
- 2. **View All Register Settings**: Shows you the register list and all of the current values for each.
- 3. Blank All Registers: Sets all registers to zero.
- **WARNING!** Without further register modifications, the card will be unusable after the registers are erased.
  - **Note:** Some registers are READ ONLY and will display a value even after you select option **[3]** Blank All Registers.
  - 4. **Process OpenGear Messages**: Disables the Engineering Menu and returns control of the HDCC card to DashBoard to start processing openGear messages.

#### Chapter 3 Accessing the Engineering Menu Engineering Menu

- 5. **Reset**: Reboots the hardware.
- **Note:** If the BOOTOPT jumper is not removed, the card will return to the Engineering Menu.