

World Leader of In-Rack, Audio, Video, Data Monitoring, and Closed Captioning Solutions

HDCC-200A (OP-47/WST) Multi-Function Card

Multi-Purpose Closed Caption Card: Inserter, Decoder, Bridger, Monitor, and Transcoder

Installation Guide Software Version: V2.34 PIC Code Version: V1.09

Part Number 821046, Revision A

© 2011 Wohler Technologies, Inc. and PANORAMA. All rights reserved.

This publication is protected by federal copyright law. No part of this publication may be copied or distributed, stored in a retrieval system, or translated into any human or computer language in any form or by any means electronic, mechanical, manual, magnetic, or otherwise, or disclosed to third parties without the express written permission of Wohler Technologies.

Reproduction

Licensed users and authorized distributors of Wohler Technologies, Inc. products may copy this document for use with Wohler Technologies., Inc. products provided that the copyright notice above is included in all reproductions.

Customer Support

Wohler Technologies, Inc. 31055 Huntwood Avenue Hayward, CA 94544 www.wohler.com

Phone: 510-870-0810 FAX: 510-870-0811 US Toll Free: 1-888-596-4537 (1-888-5-WOHLER) Web: www.wohler.com Sales: sales@wohler.com Support: support@wohler.com

Disclaimers

Even though Wohler Technologies, Inc. has tested its equipment and software, and reviewed the documentation, Wohler Technologies, Inc. makes no warranty or representation, either express or implied, with respect to software, documentation, their quality, performance, merchantability, or fitness for a particular purpose.

Wohler Technologies, Inc. reserves the right to change or improve our products at any time and without notice.

In no event will Wohler Technologies, Inc. be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect in the hardware, software, or its documentation, even if advised of the possibility of such damages.

Some states do not allow the exclusion or limitation for incidental or consequential damages, so the above exclusion or limitation may not apply to you.

Printing

This document is intended to be printed on a duplex printer, such that the copy appears on both sides of each page. This ensures that all new chapters start on a right-facing page.

This document looks best when printed on a color printer since some images may be indistinct when printed on a black and white printer.

Other Technologies and Products

Microsoft Windows and Internet Explorer are registered trademarks of Microsoft Corportion.

Evertz is a trademark or registered trademark of Evertz Microsystems, Ltd.

Codan is a trademark or registered trademark of Codan Broadcast Products Pty Ltd.

IRT is a trademark or registered trademark of IRT Electronics Pty Ltd.

Last Update

January 11, 2011

Table of Contents

Chapter 1. Installing the Hardware1
Introduction1
Overview1
Topics1
Safety Instructions2
Unpacking2
Installing the Adaptors and the Card
Requirements
Frame Types
Installing the Hardware
Installing into a Codan Frame
Installing into an Evertz Frame
Installing into an IRT Frame
Next Steps15
Appendix A. Creating a Virtual Serial Connection 17
Introduction17
Overview17
Topics
Downloading the Software
Requirements18
Logging In18
Downloading the .zip File
Installing the Software
Configuring a Virtual Serial Port22
Finding an Available Port22
Using the Connection Wizard23

CHAPTER 1 Installing the Hardware

Introduction

Overview

Thank you for purchasing Wohler's HDCC-200A card, a product that provides a variety of closed-captioning functions. This chapter explains how to install your new card and its corresponding rear panel adaptor.

Topics

Topics	Page
Introduction	1
Safety Instructions	2
Unpacking	2
Installing the Adaptors and the Card	3
Next Steps	15

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-200A 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.

Installing the Adaptors and the Card

Requirements

To install and use the HDCC-200A, you will need the following:

- A PC with either an Ethernet and/or serial cable connected to the HDCC-200A
- A small Phillips screwdriver for attaching the rear panel adaptor to the frame
- A small slot screwdriver to rotate Switches 1 and 2
- A monitor (or two) on which to view the output data
- At least one HD or SD SDI input video stream

Frame Types

Your HDCC-200A card is intended to be used within a frame. Wohler supports three types of commercial frames:

- Codan,
- Evertz, and
- IRT.

Installing the Hardware

To install the adaptor into the frame:

- 1. Ensure that the frame is properly installed.
- 2. Power down the frame.
 - **Note:** You can install the HDCC-200A (and its adaptors) into a live frame, but we do not recommend it.

3

Decision Point:

If you have a **Codan** frame, continue on to **Installing into a Codan** Frame immediately below.

If you have a **Evertz** frame, continue on to Installing into an Evertz Frame on page 7.

If you have an **IRT** frame, continue on to Installing into an IRT Frame on page 12.

Installing into a Codan Frame





Note: You can insert up to 10 cards into a Codan 3RU-FPSN-10-DUAL frame and up to two cards into a Codan 1RU-FPSN frame.

4

Chapter 1 Installing the Hardware Installing the Adaptors and the Card

1. Place the rear panel adaptor against the back, outside slot of the frame (with the connectors facing you) being careful to line up the pins and their connectors. Insert and tighten the screws on the top and bottom of the adaptor with a small screwdriver. See Figure 1–2 below.

Figure 1–2Attaching the External Adaptor Piece



Installing the Hardware Installing the Adaptors and the Card

2. Pull the red latching lever (shown in Figure 1–3 below) on the front of the HDCC-200A away from the card.

Figure 1–3 HDCC-200A Card (Without Adaptor)



- 3. From the front of the frame, carefully align the card with the slot containing the adaptor in the back, and fully insert the card into the frame so that it attaches securely to the adaptor.
- 4. Press the red latching lever back down again on the front face of the card latching it securely into the frame.
- 5. Turn the frame power on. Once the power is restored to the frame, you should see the power LED on the front of the card light up (Figure 1–3 above).

Decision Point:

If you intend to connect to the HDCC-200A from your PC using the serial port, then this concludes the Codan adaptor/card installation procedure. Continue on to Next Steps on page 15.

Otherwise, if you intend to connect to the HDCC-200A from your PC using the Ethernet port, then you must establish a virtual serial connection. Because the Codan adaptor is equipped with an Ethernet transceiver module, you will need to install the Ethernet connectivity application on the PC to connect to the HDCC-200A. Refer to Appendix A: Creating a Virtual Serial Connection on page 17 for detailed instructions.

Once you have completed the procedure for creating a virtual serial connection, continue on to Next Steps on page 15.

Installing into an Evertz Frame



Figure 1–4

Evertz Adaptor (External) Component and Interface Layout

821046: HDCC-200A (OP-47/WST) Multi-Function Card Installation Guide © 2011 Wohler Technologies, Inc. All rights reserved.

Installing the Hardware Installing the Adaptors and the Card

- Important: The line drawing in Figure 1–4 on page 7 illustrates the corrected connector labeling. Some older versions of the Evertz adaptor were incorrectly labeled.
 - 1. Separate the two components of the adaptor, as shown in Figure 1–5 below.

Figure 1–5 Separating the Two Components of the Evertz Adaptor



Connector for Internal and External Components

2. Carefully attach the internal piece of the adaptor to the HDCC-200A card making sure the holes in the adaptor line up with the pins in the card. Press the two pieces together firmly.

Chapter 1 Installing the Hardware Installing the Adaptors and the Card

3. Attach the metal connecting bracket to the exterior of the plastic connectors in the card and the adaptor as shown in Figure 1–6 and Figure 1–7 below.

Note: Do not over-tighten the screws.

Figure 1–6 Attaching the Connecting Bracket to the Evertz Adapter and the HDCC-200A



Figure 1–7

Completed Bracket Attachment



821046: HDCC-200A (OP-47/WST) Multi-Function Card Installation Guide © 2011 Wohler Technologies, Inc. All rights reserved.

Installing the Hardware Installing the Adaptors and the Card

- **Note:** Should you ever need to remove the HDCC-200A (and the internal adaptor) from the Evertz frame, the bracket will keep the card and the adaptor connected, so you can remove both components simultaneously (i.e., without leaving the internal adaptor inside the frame and therefore difficult to retrieve).
- 4. Attach the back piece (the one with the connectors) onto the frame from the back and screw it securely into the frame, as shown in Figure 1–8 below.

Figure 1–8Attaching the External Piece of an
Evertz Adaptor to the Frame



Chapter 1 Installing the Hardware Installing the Adaptors and the Card

5. Slide the card (with the LEDs facing you) into the frame from the front and connect it securely to the back piece, as shown in Figure 1–9 below.

Figure 1–9 Inserting the HDCC-200A Card and the Internal Piece of the Evertz Adaptor into the Frame



Decision Point:

If you intend to connect to the HDCC-200A from your PC using the serial port, then this concludes the Evertz adaptor/card installation procedure. Continue on to Next Steps on page 15.

Otherwise, if you intend to connect to the HDCC-200A from your PC using the Ethernet port, then you must establish a virtual serial connection. Because the Evertz adaptor is equipped with an Ethernet transceiver module, you will need to install the Ethernet connectivity application on the PC that you will use to connect to the HDCC-200A. Refer to Appendix A: Creating a Virtual Serial Connection on page 17 for detailed instructions.

11

Once you have completed the procedure for creating a virtual serial connection, continue on to Next Steps on page 15.

Installing into an IRT Frame

Figure 1–10 IRT Adaptor and Interface Layout



- **Note:** You can insert only one adaptor/card into a 1 RU IRT frame because of the power supply constraints.
- **Note:** Older IRT frames may require the auxiliary power input connection to this adaptor.
- 1. Slide the HDCC-200A card into the front of the frame with the LEDs facing you.

Chapter 1 Installing the Hardware Installing the Adaptors and the Card

2. Attach the rear panel adaptor to the card (not to the frame) from the back of the frame, being careful to line up the connector pins on the card with the holes in the adaptor.





- 3. Very carefully line up the 10-pin header pins on the left side of the adaptor with the holes in the frame. See Figure 1–12 on page 14 for an example.
- **WARNING!** Be careful not to bend or brake the pins. Doing so will ruin the adaptor.

Installing the Hardware Installing the Adaptors and the Card

Figure 1–12

2 Connecting the Rear Panel Adapter's 10-Pin Header to the Frame



Connect the 10-pin header...



4. Finally, insert and tighten the screws on the left and right ends of the adaptor with a small screwdriver. See Figure 1–13 below.



Figure 1–13 Attaching an IRT Adaptor to the Frame

- **Note:** The card's latching lever cannot engage the IRT frame as it does the Codan frame. However, it is useful for removing the card from the frame when needed.
- 5. This concludes the IRT adaptor installation.

Next Steps

Important: This concludes the procedure for installing the HDCC-200A card and its rear panel adapter.

If you want to configure your Ethernet port as a virtual serial port, continue on to Appendix A on page 17. As soon as you have completed the Ethernet configuration, continue on to the *HDCC-200A Multi-Function Card: Configuration and Setup Guide* (PN: 821047).

If you do not want to use the Ethernet port on your card, then continue on to the *HDCC-200A Multi-Function Card: Configuration and Setup Guide* (PN: 821047).

APPENDIX A Creating a Virtual Serial Connection

Introduction

Overview

This appendix describes how to download the Ethernet connectivity application for the HDCC-200A. This application allows you to create a virtual serial connection over an Ethernet connection.

Topics

Topics	Page
Introduction	17
Downloading the Software	18
Installing the Software	19
Configuring a Virtual Serial Port	22

Downloading the Software

Requirements

To perform this procedure you will need a PC with an Internet connection.

Logging In

Before you can download the Ethernet connectivity application, you must register on the site.

6. Launch a web browser and navigate to <u>www.tibbo.com</u>.

Decision Point:

If you already have an account, then skip to Step 10 to log in.

Otherwise, if you do *not* already have an account, continue on with Step 2 immediately following this decision point.

7. To create a user ID and password, click **register** (as shown in Figure A–14 below).

Figure A–14 Registration Link

Don't Have an Account?

Worry not! You can register right now, for free.

Login:	
Password:	
	Login

- 8. Fill out the registration information and then submit.
- 9. When the confirmation email appears in your email, click the confirmation link.

10. Log in.

Downloading the .zip File

- 1. Click the **Downloads** link at the top of the page.
- 2. In the Serial-over-IP section, click Tibbo Device Server Toolkit.

Figure A–15 Download Selection

x32 build (more info) 5.07.	11 03/02/2010 tdst-5-07-11-x86.exe
-----------------------------	------------------------------------

3. Save it to the desktop.

Installing the Software

1. Double-click the **tdst-5-07-11-x86.exe** to launch the installer from the desktop.

Figure A–16 Tibbo Software Installation Launcher



2. Click **Run**.

Figure A–17 License Agreement Dialog

🔮 Tibbo Device Ser	ver Toolkit Setup
	License Agreement Please review the license terms before installing Tibbo Device Server Toolkit.
Press Page Down to s	ee the rest of the agreement.
In order to use the T following license agre	ibbo Virtual Serial Port Driver, you must read and agree to the rement. Please indicate your agreement by pressing the YES button.
TIBBO TECHNOLOGY END USER LICENSE A Tibbo Virtual Serial Po	, INC. AGREEMENT Art Driver
This License Agreeme legal agreement betw Inc. ("Tibbo") for Tibb as many copies of the	ent for the Tibbo Virtual Serial Port Driver ("License Agreement") is a ween you (either an individual or an entity) and Tibbo Technology, po Virtual Serial Port Driver software ("Software"). You may install e Software as necessary provided that these copies are used
If you accept the tern agreement to install T	ns of the agreement, click I Agree to continue. You must accept the ibbo Device Server Toolkit.
Nullsoft Install System v2	2,44
	I <u>A</u> gree Cancel

3. Click I Agree.

Figure A–18 Choose Components Dialog

🧿 Tibbo Device Server Toolkit Setup	
	noose Components hoose which features of Tibbo Device Server Toolkit you want p install.
Check the components you war install. Click Next to continue.	nt to install and uncheck the components you don't want to
Select the type of install:	Full 💙
Or, select the optional components you wish to install:	 Core files (required) Tibbo Monitor (recommended) Samples Documentation Create Start Menu Shortcuts
	Description
Space required: 10.2MB	Position your mouse over a component to see its description.
Nullsoft Install System v2.44	
	< <u>B</u> ack <u>N</u> ext > Cancel

4. Click Next.



Figure A–19 Choose Install Location

5. Click Install.

Figure A–20 Installation Completion Dialog



6. Click Finish.

Configuring a Virtual Serial Port

Finding an Available Port

- 1. Launch the Microsoft Windows[®] Control Panel.
- 2. Double-click on **System**.
- 3. When the **System Properties** dialog appears, click the **Hardware** tab.

System Properties ? 🔀
System Restore Automatic Updates Remote General Computer Name Hardware Advanced
Device Manager The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device. Device Manager
Drivers Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers. Driver Signing Windows Update
Hardware Profiles Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK Cancel Apply

Figure A–21 Device Manager Dialog

4. On the Hardware tab, click **Device Manager**.

Figure A–22 Ports Dialog



5. When the **Ports** dialog appears, look at the serial (COM) ports (Figure A–22 above) to find a number that is available. In our example, we're using COM8 since it does *not* already exist in the hardware configuration.

Using the Connection Wizard

1. Double-click the **tdsman.exe** icon on the desktop to launch the **Tibbo Connection Wizard** (Figure A-23 below).



Figure A–23 The Auto-Discovery Tab

- 2. Click Next.
- 3. Click the **Auto-Discovery** tab if it is not already highlighted.

821046: HDCC-200A (OP-47/WST) Multi-Function Card Installation Guide © 2011 Wohler Technologies, Inc. All rights reserved.

- 4. New HDCC-200A cards (with Codan or Evertz backplanes) will have a default IP address of 10.0.0.200. Highlight the HDCC-200A with IP 10.0.0.200.
- Important: If your HDCC-200A card did not come with the 10.0.0.200 IP address already installed, and the **Auto-Discovery** tab displays more than one IP address, you may need to disconnect the HDCC-200A card you are trying to connect to so you can see which of the addresses disappears. Alternatively, your IT support person may have a list from which he/she assigned the IP address for this connection.

Figure A–24 DS Manager Configuration Screen

🔯 DS Manager - V5.7.10		
<u>Eile A</u> ccess mode <u>D</u> evice <u>H</u> elp		
Auto-Discovery Address Book Serial Access		
Status MAC IP Image: Constraint of the state of the sta	Owner/Device	Refresh Settings Upgrade Initialize Routing Status Buzz! Change IP Add Find
This is a single-port Device Server This device is operating normally This IP-address is unreachable. <u>More info</u> Connection is closed (the device is idle)		

Note that the color under the **Status** column shows IP 10.0.0.200 disabled (i.e., this card is currently not accessible to the network). The card with IP 192.168.1.170 is an existing HDCC-200A on the network.

5. Click the **Change IP** button.

Figure A–25 Default IP Address Screen

Changing the IP address of this device	
Enter new IP-address for this Device Server	
IP-address: 10 . 0 . 0 . 200	
OK Cancel	

6. In our example we're changing the IP to 192.168.1.167. Type in the address your network administrator gave you.

Figure A–26 New IP Address Screen

Changing the IP address of this device	
Enter new IP-address for this Device Server	
IP-address: 192 . 168 . 1 . 167	
OK Cancel	

7. Click **OK**.

Figure A–27 Enabled New IP Address



The new HDCC200A with IP 192.168.1.167 is now accessible through the network.

Figure A–28 Link Creation Dialog



8. Click the **Create a link between a Virtual Serial Port**... radio button and then click **Next**.

821046: HDCC-200A (OP-47/WST) Multi-Function Card Installation Guide
 © 2011 Wohler Technologies, Inc. All rights reserved.

Figure A–29 Specify the Virtual Serial Port Dialog

🛯 Tibbo Connection	1 Wizard - V5.5.0 🛛 🔀
	Specify the Virtual Serial Port
	O Select existing VSP
	Create new VSP Port name: COM1
	< Back Next > Help Cancel

9. Click the **Create a new VSP** radio button.

Click the drop-down button for the **Port name** and select the one you decided to use when you were looking through the COM ports in the **Control Panel**. In our example we're using COM8.

Figure A–30 Specify the Virtual Serial Port

🛐 Tibbo Connection Wizard - V5.7.10		
	Specify the Virtual Serial Port	
	O Select existing VSP	
	Create new VSP Port name: COMB	
	< Back Next > Help Cancel	

10. Click **Next**.

821046: HDCC-200A (OP-47/WST) Multi-Function Card Installation Guide © 2011 Wohler Technologies, Inc. All rights reserved.

Figure A–31 Specify the Device Server Dialog



11. Click the **Select from the list**... button at the bottom of the dialog.

Figure A–32 DS Manager Dialog



12. On the **Auto-Discovery** tab, double-click on the card you're setting up (192.168.1.167, in our example). Be careful not to select an already established card on the network.

Figure A–33				
🐚 Tibbo Connection Wizard - V5.7.10				
	Specify the Device Server			
	O Device Server is not accessible from this PC			
	 Device Server is accessible from this PC 			
	Enable MAC> IP mapping IP-address: 192 . 168 . 1 . 167			
	Access method for Wizard configuration process:			
	Access port: 65535			
	Select from the list			
	< Back Next > Help Cancel			

13. Click Next.

The DS Manager will automatically close and populate the IP address field of the previous dialog. Click **Next** to continue.

Figure A–34 First Device to Send Dialog



14. The Virtual Serial Port radio button should already be selected. Click Next to continue.

Figure A–35 Gateway and Netmask Settings Dialog



15. Click **Next** to continue.

Figure A–36 Specify Transport Protocol Dialog



16. Click **Next** to Continue.

Figure A–37 Enable On-the-Fly Commands Dialog



17. The option to enable on-the-fly commands (using the out-of-band access method) should already be selected. Click **Next** to continue.

Figure A–38 Serial Settings Dialog



18. Click **Next** to continue.

Figure A–39 Connection Settings Dialog

💁 Tibbo Connection Wizar	d - V5.7.10	X	
	Tibbo Connection Wizard is program	ready to set up the link. The following ming will be applied:	
	DEVICE SERVER Routing mode: Transport protocol: Local port: On-the-Fly commands: Flow control: Baud rate: Partiy: Data bits: "All other Settings as per th VIRTUAL SERIAL PORT (C Routing mode: Destination: Connect mode: Transport protocol:	Server TCP 1001 Enabled 1- Local 5- 38400 bps 0- None 1- 8 bits heir default values COM8) Client 192.168.1.167:1001 On-data TCP	
000	Press Configure to proceed		
< Back Configure Help Cancel			

19. Click Configure.

Figure A–40 Logo Test Warning Dialog



20. Click **Continue Anyway**. You may need to click this button on multiple dialogs very similar to this one.)



Figure A–41 Wizard Complete Dialog

21. Click **Finish** to close the wizard.

Important: This concludes the Tibbo Device Server Toolkit virtual serial port configuration. Continue on to the *HDCC-200A Multi-Function Card: Configuration and Setup Guide* (PN: 821047).