



DIGITAL Gigabit 1000BaseSX/LX Modular Interface

DELHG-UA/DELHL-UA
User's Guide

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DELHG-UA/DELHL-UA User's Guide

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This manual describes how to use the DIGITAL DELHG-UA/DELHL-UA interface modules.

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SAFETY INFORMATION

CLASS 1 LASER TRANSCEIVERS

THE DELHG-UA/DELHL-UA GIGABIT ETHERNET MODULES USE CLASS 1 LASER TRANSCEIVERS. READ THE FOLLOWING SAFETY INFORMATION BEFORE INSTALLING OR OPERATING THESE ADAPTERS.

The Class 1 laser transceivers use an optical feedback loop to maintain Class 1 operation limits. This control loop eliminates the need for maintenance checks or adjustments. The output is factory set, and does not allow any user adjustment. Class 1 laser transceivers comply with the following safety standards:

- 21 CFR 1040.10 and 1040.11 U.S. Department of Health and Human Services (FDA).
- IEC Publication 825 (International Electrotechnical Commission).
- CENELEC EN 60825 (European Committee for Electrotechnical Standardization).

When operating within their performance limitations, laser transceiver output meets the Class 1 accessible emission limit of all three standards. Class 1 levels of laser radiation are not considered hazardous.

SAFETY INFORMATION

CLASS 1 LASER TRANSCEIVERS

LASER RADIATION AND CONNECTORS

When the connector is in place, all laser radiation remains within the fiber. The maximum amount of radiant power exiting the fiber (under normal conditions) is -12.6 dBm or 55×10^{-6} watts.

Removing the optical connector from the transceiver allows laser radiation to emit directly from the optical port. The maximum radiance from the optical port (under worst case conditions) is 0.8 W cm^{-2} or $8 \times 10^3 \text{ W m}^2 \text{ sr}^{-1}$.

Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

DECLARATION OF CONFORMITY

Application of Council Directive(s): **89/336/EEC**
73/23/EEC

Manufacturer's Name: **Cabletron Systems, Inc.**

Manufacturer's Address: **35 Industrial Way**
PO Box 5005
Rochester, NH 03867

European Representative Name: **Mr. J. Solari**

European Representative Address: **Cabletron Systems Limited**
Nexus House, Newbury Business Park
London Road, Newbury
Berkshire RG13 2PZ, England

Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC**
EC Directive 73/23/EEC
EN 55022
EN 50082-1
EN 60950

Equipment Type/Environment: **Networking Equipment, for use in a**
Commercial or Light Industrial
Environment.

We the undersigned, hereby declare, under our sole responsibility, that the equipment packaged with this notice conforms to the above directives.

Manufacturer

Mr. Ronald Fotino

Full Name

Principal Compliance Engineer

Title

Rochester, NH, USA

Location

Legal Representative in Europe

Mr. J. Solari

Full Name

Managing Director - E.M.E.A.

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CONTENTS

PREFACE

Using This Guide	ix
Intended Audience.....	ix
Structure of This Guide.....	ix
Document Conventions	x
Related Documentation	x
Correspondence	xi
Documentation Comments.....	xi
World Wide Web	xi
Getting Help.....	xi

SAFETY

Overview.....	xiii
Safety Requirements	xiv

CHAPTER 1 INTRODUCTION

1.1 Features	1-2
--------------------	-----

CHAPTER 2 INSTALLATION

2.1 Unpacking the DELHG-UA or DELHL-UA	2-1
2.2 Installing a DELHG-UA or DELHL-UA	2-2
2.2.1 Installing a DELHG-UA or DELHL-UA in an Interface Module	2-2
2.3 Connecting to the Network	2-5
2.3.1 DELHG-UA and DELHL-UA Network Connection	2-6
2.3.2 DELHL-UA Connection Using Multimode Cable.....	2-8

CHAPTER 3 LANVIEW LEDS

CHAPTER 4 LOCAL MANAGEMENT

4.1 Navigating Local Management Screens.....	4-1
4.2 Gigabit Ethernet Configuration Screen.....	4-2
4.2.1 Configuring the DELHG-UA or DELHL-UA Port	4-4
4.2.1.1 Setting the Operational Mode.....	4-5
4.2.1.2 Setting the Advertised Ability.....	4-5

APPENDIX A SPECIFICATIONS

A.1 Gigabit Ethernet Specifications A-1
A.1 Physical Properties A-2
A.2 Environmental Requirements..... A-2
A.3 Regulatory Compliance..... A-2

PREFACE

Welcome to the DIGITAL Gigabit 1000BaseSX/LX Modular Interface *DELHG-UA/DELHL-UA User's Guide*. This guide describes the DELHG-UA and DELHL-UA and provides information concerning features, installation, troubleshooting, the use of Local Management, and specifications.

USING THIS GUIDE

Read through this guide completely to understand the interface module features, capabilities, and Local Management functions. A general working knowledge of Gigabit Ethernet and IEEE 802.3 type data communications networks and their physical layer components is helpful when using these devices.



Unless noted differently, the information in this guide applies to the DIGITAL Gigabit 1000BaseSX/LX interface modules, which are referred to as either the DELHG-UA or the DELHL-UA module(s). These modules are also referred to as HSIMs, or high-speed interface modules.

INTENDED AUDIENCE

This guide is intended for use by personnel who will install and initially set up the DIGITAL MultiSwitch 700 HSIM Modular Interface modules.

STRUCTURE OF THIS GUIDE

This guide is organized as follows:

Chapter 1, Introduction, outlines the contents of this guide, describes the DELHG-UA and DELHL-UA features.

Chapter 2, Installation, describes how to install a DELHG-UA or DELHL-UA into an interface module or a standalone device.

Chapter 3, LANVIEW LEDs, describes how to use the DELHG-UA and DELHL-UA LEDs to monitor the HSIM performance and status.

Chapter 4, **Local Management**, describes the DELHG-UA and DELHL-UA Local Management statistics screens.

Chapter A, **Specifications**, lists the operating specifications and regulatory requirements of the DELHG-UA and DELHL-UA.

DOCUMENT CONVENTIONS

Throughout this guide, the following symbols are used to call attention to important information.



Note symbol. Calls the reader's attention to any item of information that may be of special importance.



Caution symbol. Contains information essential to avoid damage to the equipment.



Electrical Hazard Warning symbol. Warns against an action that could result in personal injury or death due to an electrical hazard.

RELATED DOCUMENTATION

The following manuals may help the user to set up and manage the DELHG-UA and DELHL-UA:

- *DIGITAL Open DECconnect Structured Wiring System Application Guide*
- *Cabletron Cabling Guide*

CORRESPONDENCE

Documentation Comments

If you have comments or suggestions about this guide, send them to DIGITAL Network Products:

Attn.:	Documentation Project Manager
E-MAIL:	doc_quality@lkg.mts.dec.com

World Wide Web

To locate product-specific information, refer to the DIGITAL Network products Home Page on the World Wide Web at the following locations:

North America:	http://www.networks.digital.com
Europe:	http://www.networks.europe.digital.com
Asia Pacific:	http://www.networks.digital.com.au

GETTING HELP



Contact your DIGITAL representative for technical support. Before calling, have the following information ready:

- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)

SAFETY


OVERVIEW

Any warning or caution that appears in this guide is defined as follows:

	WARNING	Warns against an action that could result in equipment damage, personal injury, or death.
	VORSICHT	Warnt den Benutzer vor Aktionen, die das Gerät beschädigen, Personen verletzen oder sogar zum Tod führen könnten.
	DANGER	Déconseille à l'utilisateur d'exécuter une action pouvant entraîner des dommages matériels, corporels voire même la mort.
	AVISO	Previene contra una acción que podría dañar el equipo, provocar daños personales o la muerte.
	CAUTION	Contains information essential to avoid damage to the equipment.
	ACHTUNG	Liefert wichtige Informationen, um einen Geräteschaden zu vermeiden.
	ATTENTION	Informations indispensables permettant d'éviter les dommages matériels.
	PRECAUCIÓN	Contiene información esencial para evitar daños al equipo.


SAFETY REQUIREMENTS

The warnings or cautions that must be observed for the hardware described in this manual are listed below in English, German, French, and Spanish.

	WARNING	Only qualified personnel should install or service this unit.
	VORSICHT	Diese Einheit darf nur von qualifizierten Fachleuten installiert oder gewartet werden.
	DANGER	L'installation et la maintenance de cet appareil sont réservées à un personnel qualifié.
	AVISO	Sólo el personal cualificado debe instalar o dar mantenimiento a esta unidad.
	WARNING	To install the DELHG-UA or DELHL-UA in a standalone hub the device MUST be powered down. Ensure that you remove the power cord and ONLY the screws required to remove the chassis cover. Failure to comply could result in an electric shock hazard.
VORSICHT	Um den DELHG-UA/DELHL-UA in einem selbständigen Hub zu installieren, muß das Gerät ausgeschaltet werden. Stellen Sie sicher, daß das Netzkabel gezogen wird und nur diejenigen Schrauben entfernt werden, die zum Abnehmen des Gehäuses notwendig sind. Andernfalls besteht Elektroschockgefahr.	
DANGER	Pour installer l'appareil DELHG-UA/DELHL-UA sur un concentrateur autonome, mettez cet appareil hors tension. Pour retirer le couvercle du châssis, vérifiez que vous avez débranché le cordon d'alimentation et que vous avez uniquement retiré les vis nécessaires. Respectez ces consignes de sécurité pour éviter les risques d'électrocution.	

AVISO	<p>Para instalar DELHG-UA/DELHL-UA en un hub autónomo, el dispositivo SE DEBE apagar.</p> <p>Asegúrese de retirar el cable de alimentación y SÓLO los tornillos que se requieren para retirar la cubierta del chasis. Si no se cumple con estos requisitos, se podrían provocar electrochoques.</p>
WARNING	<p>Ensure that the chassis cover is in place before reconnecting the power cord.</p>
VORSICHT	<p>Das Gehäuse sollte ordnungsgemäß angebracht sein, bevor das Netzkabel wieder angeschlossen wird.</p>
DANGER	<p>Avant de rebrancher le cordon d'alimentation, vérifiez que le couvercle du châssis est bien en place.</p>
AVISO	<p>Asegúrese de que la cubierta del chasis esté en su sitio antes de volver a conectar el cable de alimentación.</p>
WARNING	<p>DELHG-UA and DELHL-UA use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.</p>
VORSICHT	<p>DELHG-UA und DELHL-UA verwenden Laser der Klasse 1. Verwenden Sie keine optischen Geräte, um den Laserausgang zu betrachten, da dies die Gefahr für die Augen erhöhen würde. Wenn Sie den optischen Laserausgang betrachten wollen, muß zuvor die Stromversorgung des Netzwerkadapters ausgeschaltet werden.</p>

<p>DANGER</p>	<p>DELHG-UA et DELHL-UA utilisent des lasers de classe 1. N'utilisez pas d'instruments optiques pour visualiser la sortie laser, car ces instruments augmentent les risques oculaires. Pour visualiser le port optique, débrancher l'adaptateur secteur.</p>
<p>AVISO</p>	<p>DELHG-UA y DELHL-UA utilizan láser de clase 1. No utilice instrumentos ópticos para ver la salida de láser. El uso de instrumentos ópticos para ver la salida de láser aumenta el riesgo para la vista. Siempre que mire a un puerto óptico de salida, la alimentación eléctrica debe estar desconectada del adaptador de red.</p>

	<p>CAUTION</p>	<p>The HSIM and the host module or hub are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damage to this equipment.</p>
	<p>ACHTUNG</p>	<p>Der HSIM und das Host-Modul bzw. der Hub sind für statische Entladungen empfindlich. Benutzen Sie deshalb ein Antistatikarmband, und beachten Sie während dieses Verfahrens alle diesbezüglichen Vorsichtsmaßnahmen. Bei Nichtbeachtung könnte das Gerät beschädigt werden.</p>
	<p>ATTENTION</p>	<p>L'appareil HSIM et le concentrateur ou le module hôte sont sensibles à l'électricité statique. Au cours de cette procédure, utilisez des bracelets antistatiques et respectez toutes les précautions relatives à l'électricité statique. Si vous ne tenez pas compte de ces conseils, vous risquez d'endommager cet équipement.</p>
	<p>PRECAUCIÓN</p>	<p>HSIM y el hub o módulo de host es sensible a la descarga estática. Utilice una banda antiestática para la muñeca y observe todas las precauciones sobre estática durante este procedimiento. Si no se cumple con estos requisitos, se puede dañar el equipo.</p>

CAUTION	When installing the DELHG-UA or DELHL-UA, ensure that the HSIM pins on the module or device align with the DELHG-UA or DELHL-UA connector to prevent bending the pins. This can damage the DELHG-UA and DELHL-UA and the modules.
ACHTUNG	Stellen Sie sicher, daß die HSIM-Kontaktstifte am Modul oder Gerät bei der Installation des DELHG-UA oder DELHL-UA gerade am DELHG-UA- oder DELHL-UA-Stecker ausgerichtet sind und nicht gebogen werden. Werden die Stecker schräg eingesetzt, könnte das DELHG-UA- oder DELHL-UA-Modul beschädigt werden.
ATTENTION	Lorsque vous installez le DELHG-UA ou le DELHL-UA , assurez-vous que les broches du/de la HSIM, situées sur le module ou le périphérique s'adaptent correctement au connecteur DELHG-UA ou DELHL-UA afin d'éviter qu'elles ne se plient. Dans le cas contraire, vous risquez d'endommager le DELHG-UA et le DELHL-UA, ainsi que les modules.
PRECAUCIÓN	Al instalar DELHG-UA o DELHL-UA, asegúrese de que las patillas de HSIM del módulo o el dispositivo estén alineadas con el conector de DELHG-UA o DELHL-UA para evitar que se doblen las patillas. Esto puede dañar DELHG-UA y DELHL-UA y los módulos.

CHAPTER 1

INTRODUCTION

This chapter provides an introduction to the DELHG-UA and DELHL-UA interface modules and explains the features of them. The DELHG-UA and DELHL-UA extend the functionality of certain DIGITAL Interface modules or standalone devices by providing high-speed uplink capability through Gigabit Ethernet technology.

The DELHG-UA and DELHL-UA function identically with one exception: the DELHG-UA uses a short wavelength laser device that connects to 50 or 62.5 micrometer multimode fiber optics, and the DELHL-UA uses a long wavelength laser device that connects to 50 or 62.5 micrometer multimode fiber optics, or 10 micrometer single mode fiber optics.

A general working knowledge of Gigabit Ethernet and Draft IEEE P802.3z type data communications networks and their physical layer components is helpful when installing this device.

Both devices have one Gigabit Ethernet port to provide a fiber optic connection. [Figure 1-1](#) shows the DELHG-UA.

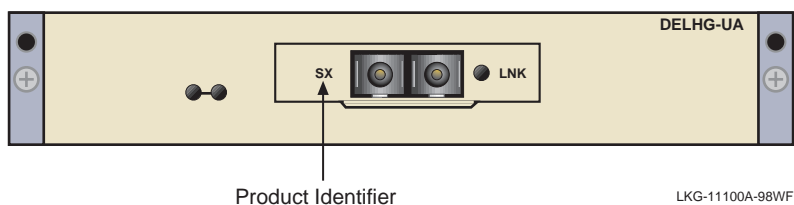


Figure 1-1 DELHG-UA



The DELHG-UA SC connector is either black or beige, to indicate the short wavelength transceiver, using multimode fiber. The DELHL-UA SC connector is typically blue, to indicate the long wavelength transceiver. The product identifier is LX for the DELHL-UA.

1.1 FEATURES

Connectivity

The DELHG-UA module supports 1000BASE-SX, providing one SC fiber optic connector for 50 or 62.5 micrometer multimode fiber optics. The DELHL-UA module supports 1000BASE-LX, offering one SC fiber optic connector for 50 or 62.5 micrometer multimode fiber optics, or 10 micrometer single mode fiber optics.

The DELHG-UA and DELHL-UA operate in full duplex mode only.

LANVIEW Diagnostic LEDs

DIGITAL provides a visual diagnostic and monitoring system called LANVIEW. The DELHG-UA and DELHL-UA LANVIEW LEDs help you quickly identify transmit and receive status. [Chapter 3](#) provides information on all the DELHG-UA and DELHG-UA LEDs.

CHAPTER 2

INSTALLATION



Only qualified personnel should install or service this unit.

To install the DELHG-UA or DELHL-UA you need the following items:

- Antistatic wrist strap
- Phillips screwdriver



Before attempting to use the DELHG-UA or DELHL-UA you should be familiar with the *IEEE P802.3z* specification. The network installation must meet the guidelines contained in the draft specification to ensure satisfactory performance of the equipment.

2.1 UNPACKING THE DELHG-UA OR DELHL-UA



The DELHG-UA or DELHL-UA and the host module or device (host platform) are sensitive to static discharges. Use a grounding strap and observe all static precautions during this procedure. Failure to do so could result in damage to the DELHG-UA or DELHL-UA or host platform.

Unpack the DELHG-UA or DELHL-UA as follows:

1. Remove the shipping box material covering the DELHG-UA or DELHL-UA.
2. Carefully remove the module from the shipping box. Leave the module in its non-conductive bag until you are ready to install it.
3. Attach the antistatic wrist strap. If the DELHG-UA or DELHL-UA is to be installed in a standalone device, refer to the instructions on the antistatic wrist strap package. If the DELHG-UA or DELHL-UA is to be installed in an interface module, refer to the applicable interface module User's Guide.

4. After removing the module from its non-conductive bag, visually inspect the device. If you notice any signs of damage, contact your DIGITAL representative.

2.2 INSTALLING A DELHG-UA OR DELHL-UA

You can install a DELHG-UA or DELHL-UA in any DIGITAL device that supports HSIM technology (e.g., DLM42-MA, DLE32-MA).



Refer to the release notes for the version of firmware running on the host platform to ensure that the DELHG-UA or DELHL-UA is supported. “Host platform” is used to designate the interface module or standalone device into which the DELHG-UA or DELHL-UA is installed.

The following sections provide instructions for installing a DELHG-UA or DELHL-UA in an interface module or in a standalone device. Refer to your specific interface module or standalone device documentation for exact HSIM slot and connector locations. Refer to [Section 2.2.1](#) to install the DELHG-UA or DELHL-UA in an interface module.

2.2.1 Installing a DELHG-UA or DELHL-UA in an Interface Module

To install a DELHG-UA or DELHL-UA in an interface module that supports HSIM technology, perform the following steps.

1. Disconnect any network cables connected to the ports of the interface module.



Note the ports of the interface module that have cables attached to them. Write down the port numbers and label the cables to make it easier to reattach the network properly after the installation.

2. Attach the antistatic wrist strap (refer to the instructions outlined on the interface module User’s Guide).
3. If the module is in a chassis, unlock the top and bottom plastic locking tabs of the module faceplate, and remove the module from the chassis.
4. Lay the module down with the internal components facing up.

5. Refer to **Figure 2-1** and remove the two faceplate mounting screws and the HSIM coverplate. Save the screws.
6. Refer to **Figure 2-1** and remove the four standoff screws. Save the screws.

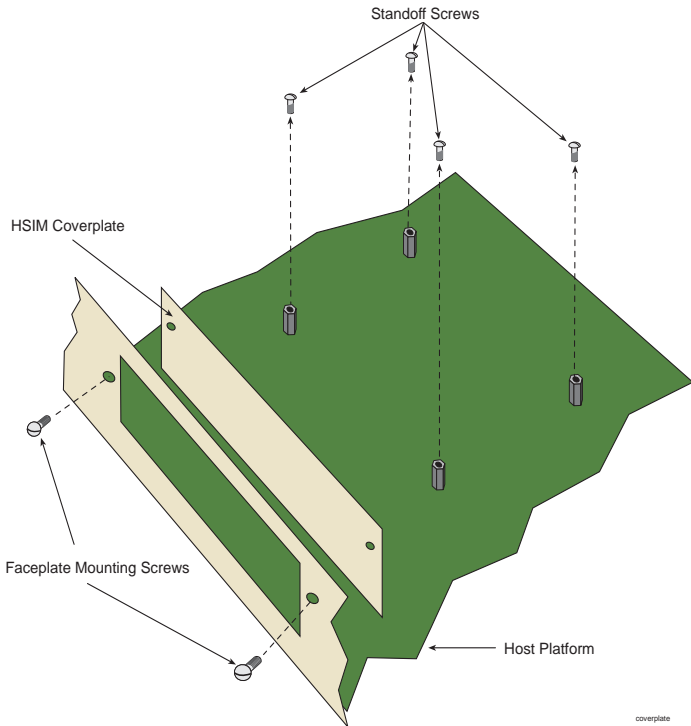


Figure 2-1 Removing the HSIM Coverplate

7. Refer to **Figure 2-2** and place the DELHG-UA or DELHL-UA behind the module faceplate.
8. Align the HSIM connector of the DELHG-UA or DELHL-UA with the HSIM pins on the module.



When installing the DELHG-UA or DELHL-UA, ensure that the HSIM pins on the module or device align with the DELHG-UA or DELHL-UA connector to prevent bending the pins. This can damage the DELHG-UA and DELHL-UA and the modules.

9. Press down firmly on the back of the DELHG-UA or DELHL-UA until the connector slides all the way onto the pins.



Ensure that the standoffs on the interface module align with the standoff screw holes on the DELHG-UA or DELHL-UA.

10. Secure the DELHG-UA or DELHL-UA to the module faceplate using the mounting screws saved in step 5.
11. Secure the DELHG-UA or DELHL-UA to the module standoffs using the standoff screws saved in step 6.
12. Re-install the interface module in the chassis.
13. Re-attach the network cabling to the module.

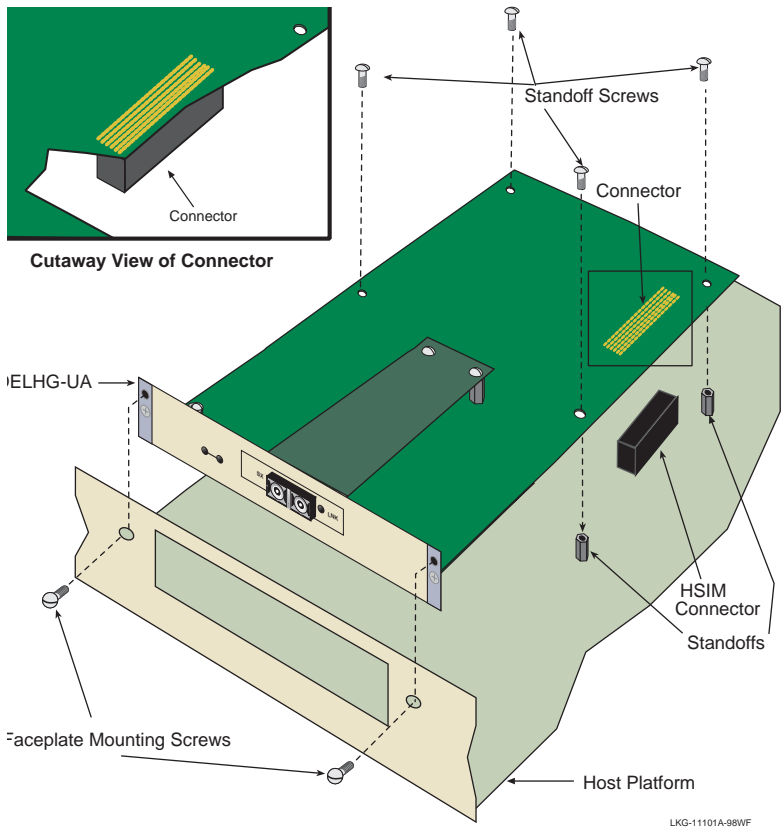


Figure 2-2 Installing the DELHG-UA or DELHL-UA

2.3 CONNECTING TO THE NETWORK

The DELHG-UA and DELHL-UA have an SC style connector for the network port. DIGITAL offers fiber optic cables that use SC style connectors which are keyed to ensure proper crossover of the transmit and receive fibers. Check the fiber specifications in [Appendix A](#) for DELHG-UA or DELHL-UA carefully before connecting either of these devices to the network.

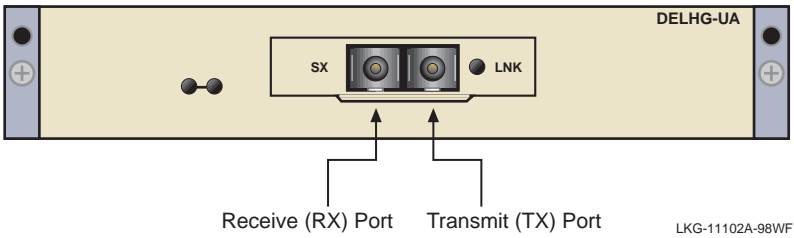


Figure 2-3 DELHG-UA and DELHL-UA Port Designations



An odd number of crossovers (preferably one) must be maintained between like devices so that the transmit port of one device is connected to the receive port of the other device and vice versa.

If the fiber optic cable being used has SC style connectors that do not resemble MIC style connectors, or has SC connectors on one end and a different type on the other, such as ST connectors, ensure that the proper cross over occurs.

2.3.1 DELHG-UA and DELHL-UA Network Connection



If connecting the DELHL-UA to the network using multimode fiber cable as the premises cabling, refer to [Section 2.3.2](#) before following this procedure.

To connect the DELHG-UA using multimode and single mode fiber, and the DELHL-UA using single mode fiber to the network, perform the following steps:



The DELHG-UA and DELHL-UA use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

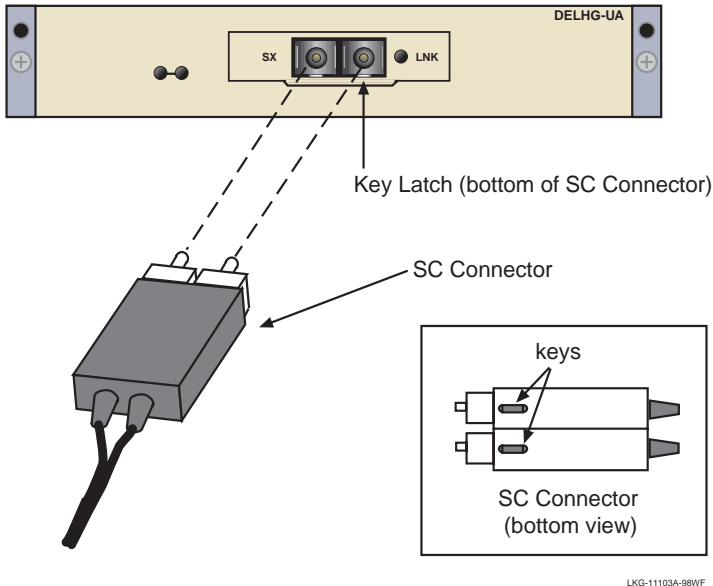
1. Remove the protective fiber port covers from the fiber optic ports and from the ends of the connectors.



Leave the protective fiber port covers in place when the connectors are not in use to prevent contamination.

Do not touch the ends of the fiber optic strands, and do not let the ends come in contact with dust, dirt, or other contaminants. Contamination of the ends causes problems in data transmissions. If the ends become contaminated, blow the surfaces clean with a canned duster. A fiber port cleaning swab saturated with optical-grade isopropyl alcohol may also be used to clean the ends.

2. Insert one end of the SC connector, key side down, into the DELHG-UA or DELHL-UA. See [Figure 2-4](#). Refer to [Appendix A](#) for the proper fiber cable for the installation.



LKG-11103A-98W/F

Figure 2-4 Fiber Connections

3. At the other end of the fiber optic cable, attach the SC connector to the other device.
4. Verify that a link exists by checking that the link (**LNK**) LED is ON (solid green), the port receive (**RX**) LED is ON (flashing amber,

blinking green, or solid green). Refer to [Chapter 3](#) for the layout of the LEDs. If the **RX** LED is OFF and the transmit (**TX**) LED is not blinking amber, perform the following steps until it is ON:

- a. Check that the power is turned on for the device at the other end of the link.
- b. Verify proper crossover of fiber strands between the port on the DELHG-UA or DELHL-UA and the fiber optic device at the other end of the fiber optic link segment.

To remove the SC connector, from the DELHG-UA or DELHL-UA, carefully pull the connector out of the port. It may need to be wiggled gently to release the latching keys.

If a link has not been established, refer to [Chapter 3](#) before contacting your DIGITAL representative.

2.3.2 DELHL-UA Connection Using Multimode Cable



When using premises multimode fiber cable for the DELHL-UA (long wave length transceiver), connect Launch Mode Conditioning cable as detailed in the following procedure. This procedure is not needed when connecting single mode fiber cable to the DELHL-UA. Do not attach Launch Mode Conditioning cable if the installation is not using a DELHL-UA with multimode fiber cable.

Launch Mode Conditioning cable is available through Cabletron Systems.

To connect the DELHL-UA to the network using multimode fiber, perform the following steps:

1. Connect Launch Mode Conditioning cable to the multimode fiber on both ends of the premises cable before connecting the DELHL-UA to the premises cabling. See [Figure 2-5](#).

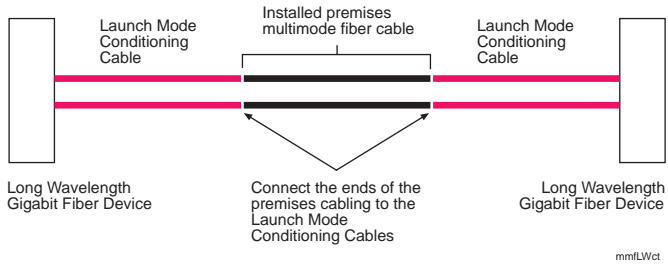


Figure 2-5 Launch Mode Conditioning Cable Connection for the DELHL-UA

2. Once the Launch Mode Conditioning cable is connected to the ends of the premises multimode fiber cable, return to [Section 2.3.1](#) to complete the installation to the DELHL-UA device.

CHAPTER 3

LANVIEW LEDs

This chapter describes how to use the LANVIEW LEDs to monitor the HSIM status and diagnose HSIM problems. [Figure 3-1](#) shows the location of the HSIM LEDs.

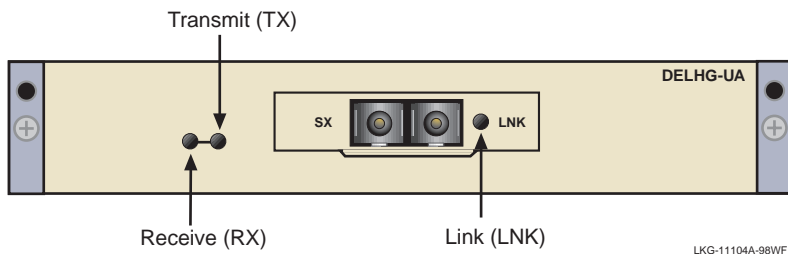


Figure 3-1 HSIM LANVIEW LEDs



The terms **flashing**, **blinking**, and **solid** used in the following table indicate the following:

Flashing indicates an irregular LED pulse.

Blinking indicates a steady LED pulse. (50% on, 50% off)

Solid indicates a steady LED light. No pulsing.

Table 3-1 HSIM- LEDs

LED	Color	Definition
Transmit	Green (Flashing)	Activity, port enabled.
	Amber (Blinking)	Port in standby.
	Off	No activity, port enabled.
	Red (Flashing)	Collision.
	Red	Diagnostic failure.
Receive	Green (Solid)	Indicates port has successfully negotiated with link partner. If Auto-Negotiate is disabled, this indicates optical link.
	Green (Blinking)	Link, port disabled.
	Amber (Flashing)	Link, activity. Port enabled.
	Off	No link, no activity. Port enabled or disabled.
	Red	Diagnostic failure.
LNK	Green	Indicates optical link.
	Off	No link.

CHAPTER 4

LOCAL MANAGEMENT

This chapter provides information on the DELHG-UA and DELHL-UA screens accessible via the Local Management of the host device.



These statistics are accessed by entering Local Management of the host interface module or standalone device. Refer to the host platform user's guide to establish a Local Management connection.

Make sure that the following requirements have been met before accessing the DELHG-UA or DELHL-UA through Local Management:

- The DELHG-UA and DELHL-UA are installed in the host platform.
- The host platform is powered up and operational.
- A Local Management terminal is properly configured and connected to the host interface module or standalone device in which the DELHG-UA or DELHL-UA resides.

4.1 NAVIGATING LOCAL MANAGEMENT SCREENS

In order to view the DELHG-UA or DELHL-UA configuration and statistics screens, you must navigate through a series of Local Management screens via the host device. [Figure 4-1](#) shows a typical hierarchy of screens that you would navigate through in order to reach the DELHG-UA or DELHL-UA statistics screens. The screen names shown in **boldface** indicate a typical path you would take to access the DELHG-UA or DELHL-UA statistics screens.



[Figure 4-1](#) is only an example of how DELHG-UA or DELHL-UA screens may be accessed. Refer to the host platform documentation for a detailed definition of the statistics screens. Refer to [Preface](#) for details on accessing manuals.

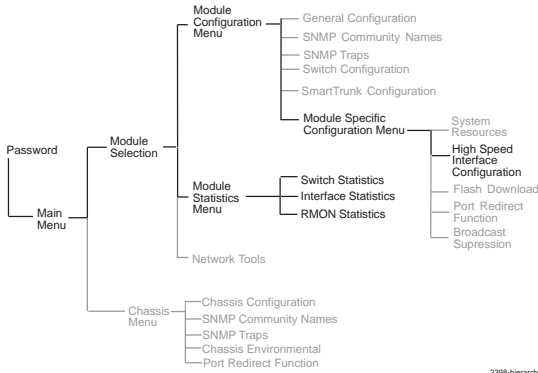


Figure 4-1 Typical Hierarchy of Local Management Screens

4.2 GIGABIT ETHERNET CONFIGURATION SCREEN

The Gigabit Ethernet Configuration screen allows the user to support the DELHG-UA and DELHL-UA.

The screen (Figure 4-2) displays the type of interface used (DELHG-UA or DELHL-UA), the device or module in which the DELHG-UA or DELHL-UA is installed, and the port number of the module in which it is installed. The link status, current operating mode, and advertised ability are also displayed. The screen allows the user to enable or disable Auto-Negotiation and Advertised Ability.

To access the Gigabit Ethernet Configuration screen, navigate through the Local Management screens until the **Module** or **Device Specific Configuration Menu** screen displays. Use the arrow keys to highlight the **High Speed Interface Configuration** menu item and press ENTER. The Gigabit Ethernet Configuration screen, Figure 4-2, displays.

Event Message Line	
MS700 LOCAL MANAGEMENT	
Gigabit Ethernet HSIM 1 Configuration	
Module Type: DLE33-MA	Firmware Revision: XX.XX.XX
Slot Number: X	BOOTPROM Revision: XX.XX.XX
Port X	
Port Type	DELHG-UA
Link Status	Link
Current Oper. Mode	1000Base-XFD
Desired Oper. Mode	[Auto-Negotiation]
Advertised Ability	[1000Base-XFD] [Enabled]
SAVE	EXIT
	RETURN

LKG-11107-98WF

Figure 4-2 Gigabit Ethernet Configuration Screen

The following defines each field of the Gigabit Ethernet Configuration screen.

Port X (Read-Only)

The port or interface number for the DELHG-UA or DELHL-UA of the host platform into which DELHG-UA or DELHL-UA is installed.

Port Type (Read-Only)

Displays the type of interface (DELHG-UA or DELHL-UA) installed in the DELHG-UA and DELHL-UA. **Figure 4-2** shows a DELHG-UA installed.

Link Status (Read-Only)

Indicates whether or not there is a physical connection from this port to another gigabit Ethernet port. One of the following values displays:

- **Link** - There is a link signal present and a valid physical connection to another device.

- **N/A** - There is no link signal present and no valid physical connection to another device.

Current Oper. Mode (Read-Only)

Displays the current operating mode of the port. Regardless of whether a DELHG-UA or DELHL-UA is installed, this field displays 1000Base-XFD.

Desired Oper. Mode (Toggle)

Allows the user to select the desired operational mode for a DELHG-UA or DELHL-UA interface. The field toggles between Auto-Negotiation and 1000Base-XFD. [Section 4.2.1](#) describes how to configure a port with a DELHG-UA or DELHL-UA interface.



In normal operation, the installed port automatically establishes a link with the device at the other end of the segment without requiring user setup. However, Local Management provides the user with the option of manually configuring the port.

With either the DELHG-UA or DELHL-UA installed, the field toggles between Auto-Negotiation and 1000Base-XFD. In normal operation with an 802.3z compliant device at the other end of the link, the port installed is capable of auto-negotiating the operational mode and no further user setup is required. For devices that do not support Auto-negotiation, 1000Base-XFD should be selected. The link partners must match on both sides of the link. [Section 4.2.1](#) describes how to manually configure the DELHG-UA or DELHL-UA.

Advertised Ability (Read-Only)

Displays the current advertised ability, which is 1000Base-XFD.

4.2.1 Configuring the DELHG-UA or DELHL-UA Port

In normal operation, a DELHG-UA or DELHL-UA port automatically establishes a link when set to Auto-Negotiation (with an 802.3z compliant device at the other end of the segment) and no further user setup is required. To set the operation of the DELHG-UA or DELHL-UA to auto-negotiate, refer to [Section 4.2.1.1](#).

Section 4.2.1.1 and Section 4.2.1.2 provide instructions for manually configuring the port, normally done when there is a non-compliant device at the other end of the segment.

4.2.1.1 Setting the Operational Mode

Use the Desired Oper. Mode field to set the active technology. This field steps between **Auto-Negotiation** and **1000Base-XFD**. If Auto-Negotiation is selected, the DELHG-UA or DELHL-UA automatically sets the active technology to auto-negotiate with another 802.3z compliant device. 1000Base-XFD must be chosen if the device on the other side of the link does not support Auto-Negotiation.

To manually set the active technology through Local Management, proceed as follows:

1. Use the arrow keys to highlight the **Desired Oper. Mode** field.
2. Use the SPACE bar to select the desired mode. Press ENTER. You may select **Auto-Negotiation** or **1000Base-XFD**. If 1000Base-XFD is selected, the port only operates in 1000Base-XFD and Auto-Negotiation is disabled.
3. Use the arrow keys to highlight the **SAVE** command. Press ENTER. The message "SAVED OK" displays and Local Management saves the changes to memory. The selected mode is displayed in both the Desired Operational Mode field and the Current Operational Mode field.

4.2.1.2 Setting the Advertised Ability

The DELHG-UA and DELHL-UA auto-negotiate using 1000Base-XFD with an 802.3z compliant device on the other end of the link. Under certain circumstances (refer to [Desired Oper. Mode \(Toggle\)](#)), the Network Administrator may not want the port to advertise the available mode. To set the advertised ability, proceed as follows:

1. Use the arrow keys to highlight the **Enabled/Disabled** field to the right of the selection.
2. Use the SPACE bar to select **Enabled** or **Disabled**. Press ENTER.

3. Use the arrow keys to highlight the SAVE command. Press ENTER. The message “SAVED OK” displays and Local Management saves the changes to memory.

APPENDIX A

SPECIFICATIONS

This appendix lists the specifications and regulatory requirements for the DELHG-UA and DELHL-UA. Cabletron Systems reserves the right to change these specifications at any time without notice.

The DELHG-UA and DELHL-UA are both fiber devices with an SC connector. The DELHG-UA uses multimode (MMF) fiber cable, and the DELHL-UA uses both multimode and single mode (SMF) fiber cable, as indicated in [Table A-1](#) below. To use multimode fiber with the DELHL-UA, Launch Mode Conditioning cable must be used. Refer to [Section 2.3](#) for details.

A.1 GIGABIT ETHERNET SPECIFICATIONS

[Table A-1](#) lists the specifications for Gigabit Ethernet, developed from Draft 5.0 of the IEEE Working Group 802.3z.

Table A-1 Minimum Gigabit Ethernet (802.3z) Distance Specifications

Cable type	62.5 micron MMF			50 micron MMF		10 micron SMF
	160	200	500	400	500	N/A
Modal Bandwidth Rating Measured @ 850 nm (SX) or 1300 nm (LX) in MHz/km	160	200	500	400	500	N/A
1000 Base-SX (DELHG-UA) in meters	220	275	275	500	550	N/A
1000 Base-LX (DELHL-UA) in meters	N/A	N/A	550 ^A	550	550	5000

A Launch Mode Conditioning cable must be used when connecting the DELHL-UA to the network using multimode fiber. Refer to [Section 2.3](#) for details.

A.1 PHYSICAL PROPERTIES

Dimensions	3.18H x 16.51W x 29.21D (cm) 1.25H x 6.5W x 11.5D (in)
Weight	2.27 kg (5 lb)
MTBF (Predicted)	200,000 hours

A.2 ENVIRONMENTAL REQUIREMENTS

Operating Temperature	5°C to 40°C (41°F to 104°F)
Storage Temperature	-30°C to 73°C (-22°F to 164°F)
Operating Relative Humidity	5% to 90% (non-condensing)

A.3 REGULATORY COMPLIANCE

This equipment meets the following safety and electromagnetic compatibility (EMC) requirements:

Safety	UL 1950, CSA C22.2 No.950, EN60950, IEC 950, and 73/23/EEC
Electromagnetic Compatibility (EMC)	FCC Part 15, EN 55022, CSA C108.8, EN 50082-1, VCCI V-3, 89/336/EEC, and AS/NZS 3548

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