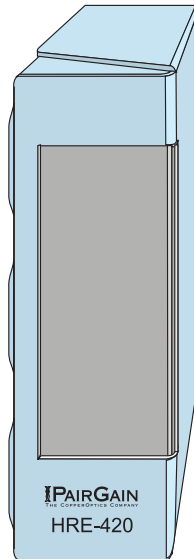

HIGAIN REMOTE INDOOR ENCLOSURE

Model	List Number	Part Number
HRE-420	1B	150-1115-12



PAIRGAIN TECHNOLOGIES, INC.
ENGINEERING SERVICES TECHNICAL PRACTICE
SECTION 150-420-112-01

Revision History of This Practice

Revision 01—December 22, 1997

A) Initial Release

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USING THIS MANUAL

Two types of messages, identified by icons, appear in the text.



Notes contain information about special circumstances.



Cautions indicate the possibility of equipment damage or the possibility of personal injury.

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OVERVIEW

The PairGain® HiGain® Remote Indoor Enclosure model HRE-420 List 1B (Figure 1) includes the following features :

- A wall mount section and cover
- The RJ-48C DS1 interface connectors
- A 1-slot wall mounted enclosure that accepts one HiGain 400-mechanics Remote Unit (model HRU-412 List 8B)

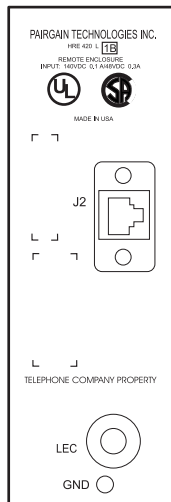


Figure 1. HRE-420 Enclosure (Rear View)

Wall Mount

The wall mount has a printed circuit board that connects the card-edge connector to terminal block TB1 and to an RJ-48 connector:

- TB1 is a 10-position terminal block that provides access to all interface signal (HDSL and DS1) connections plus battery and ground. A rear panel punch-out labeled LEC (Local Exchange Carrier) provides cable access to TB1.
- The RJ-48 connector is configured as a non-shorting RJ-48C.

Cover

The cover slides over the wall mounted section and is secured to it with a screw.

INSTALLATION OPTIONS AND WIRING

This section describes the installation procedure for the HRE-420 List 1B.

List of Material

The following material is included with each HRE-420 List 1B.

DESCRIPTION	QTY
10 x 3/8 pan head sheet metal screws	3
10 - 32 x 3/8 button tamper-proof screw	1
Circuit Assignment Label	1
Drilling Template	1

Tamper-Proof Screw

The tamper-proof screw can replace the factory provided blade “securing screw” shown in [Figure 2](#). This screw requires an Allen key wrench, available on request, to install. It is intended to provide additional security if desired.

Circuit Assignment Label

The gummed Circuit Assignment Label is for circuit I.D.#. It can be attached to any convenient location on the enclosure.

RJ-48 Jack

The RJ-48 jack comes with a small metal cover. This is provided to prevent access to the DS1 interface when the Customer Interface (CI) is external to the HRE-420 List 1B. This makes the HRE-420 List 1B MPOE (Minimum Point Of Entry) compliant.

Mounting

The HRE-420 cover is equipped with a securing screw for added security. Three holes are located on the mounting plate for securing the unit to a vertical surface.

To wall mount the HRE-420 List 1B:

- 1 Select a location that will allow sufficient access on the right side for wiring connections, and on the left for indicators, test jacks, and other components. See Figures 2 and 6.
- 2 Lift the enclosure cover off the wall mounting plate (Figure 2).

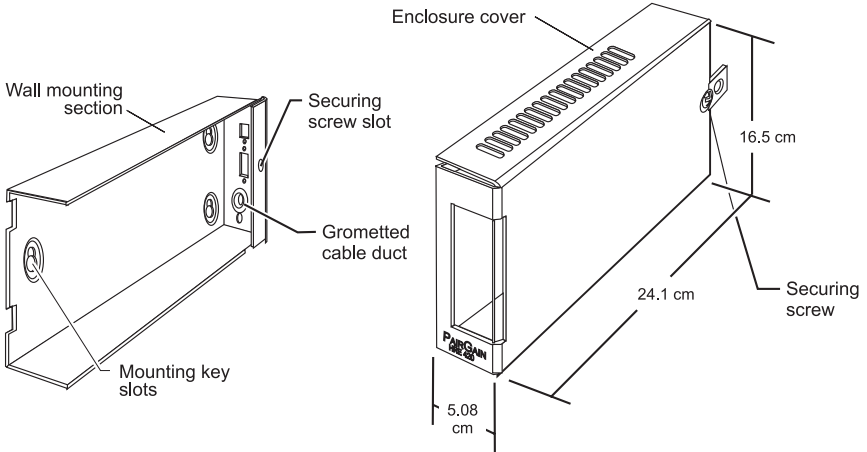


Figure 2. HRE-420 Enclosure Cover and Wall Mounting Plate

- 3 Use the mounting plate or the provided drilling template as a template for drilling or locating mounting holes.

- 4 Attach the plate securely to the wall.

Wiring

Figure 3 shows the HRE-420 List 1B printed circuit board and TB1 pin assignments. Figure 3 shows the HRE-420 List 1B pinout connections.

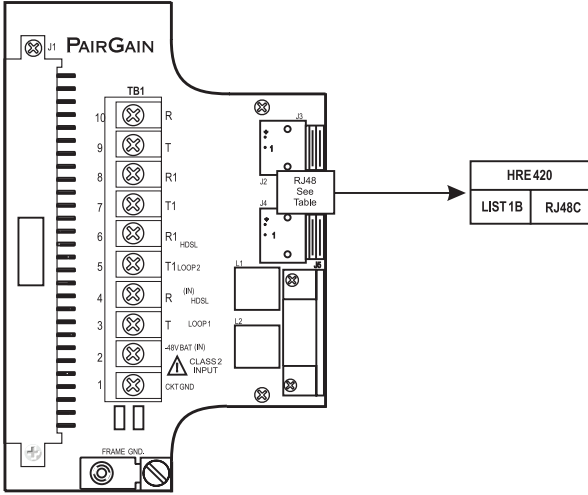


Figure 3. HRE-420 List 1B Printed Circuit Board and TB1 Pin Assignments

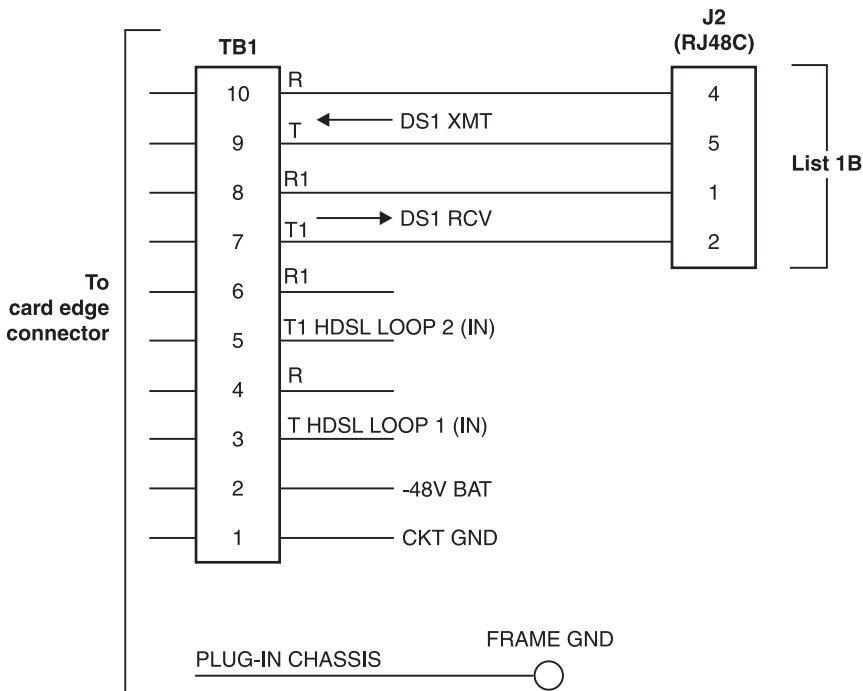


Figure 4. HRE-420 List 1B Pin-out Connections

Power and Ground Wiring

Attach earth ground to the FRAME GND lug if local practice dictates. If local power is required, connect -48 V to TB1-2 and power return (CKT GND) to TB1-1 (Figure 4).

The wall mount plate has a printed circuit board which connects the card edge connector to terminal block TB1. The lug holes for this List 1B mounting base are typical for all HRE-420 enclosures.

HDSL Interface Wiring for HRU-412 Applications

HDSL LOOP 1 and 2 are the two HDSL pairs coming to the HRE-420 from the field cable pairs as shown in Figures 3 and 4.

Since the HDSL signals are bi-directional, they do not carry a "transmit" or "receive" designation. With reference to T1 terminology, however, Loop 1 is called the "receive pair" and Loop 2 the "transmit pair."



If the leads are reversed, a CHREV message displays in the ALARMS display field when viewing the Span Status screen (accessed through a dumb terminal connected to a HiGain Craft port). This condition does not affect system operation but should be corrected to avoid any confusion regarding the identities of the 2 HDSL loops.

To connect the HDSL wires:

- 1 Connect HDSL LOOP 1 (IN) to TB1-3 (T) and TB1-4 (R).
- 2 Connect HDSL LOOP 2 (IN) to TB1-5 (T1) and TB1-6 (R1).

DS1 HRU Connections to CI

The HRU DS1 CPE interface ports can be connected to either the RJ-48C (see [Figure 5](#)), located on the rear panel of the HRE-420, or directly to TB1. If TB1 is used, connect the DS1 output from the CPE (XMT) to TB1-9 (T) and TB1-10 (R). Connect the DS1 input to the CPE (RCV) to TB1-7 (T1) and TB1-8 (R1).

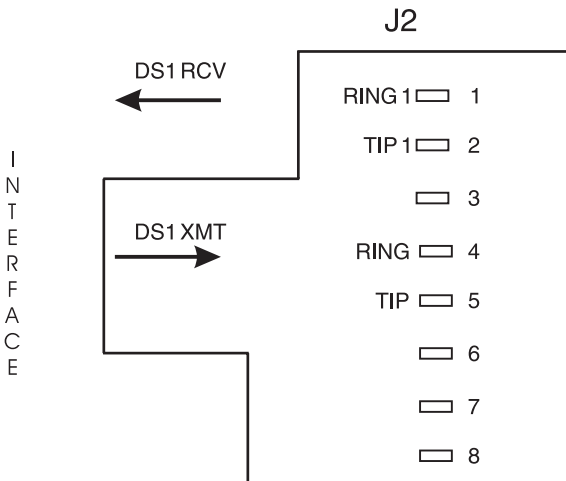


Figure 5. HRE-420 List 1B, RJ-48C Pin Assignments

Installing the HRU

Slide the HRU card along the two card guides and into the edge connector as shown in [Figure 6](#). It should be seated firmly in the connector. Refer to the appropriate PairGain HRU Technical Practice for further information on using the HRU.

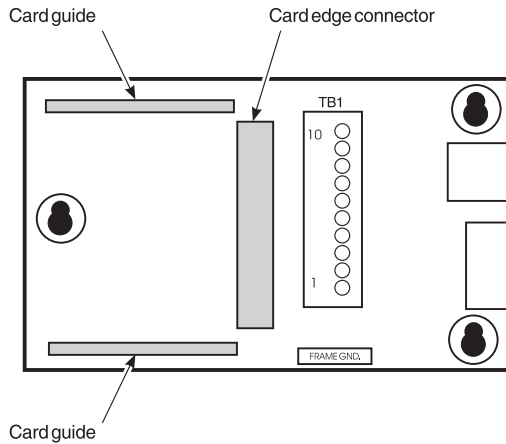


Figure 6. Wall Mounting Base

Specifications

Operating Temperature and Humidity

-40° to +65° Celsius, 5% to 95% (non-condensing)

Dimensions

Height: 16.5 cm

Width: 5.1 cm

Depth: 24.1 cm

Weight: 624 gm

CERTIFICATION AND WARRANTY

The HRE-420 List 1B is VCCI certified and UL listed. Information on certification and warranty is shown below.

VCCI Certification

This equipment has been tested and found to comply with the limits for VCCI Class A Requirements. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communication.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

UL Listing

The HRE-420 List 1B is listed with the Underwriter Laboratory.

Use caution when installing or modifying telephone lines. Dangerous voltages may be present. Do not install telephone wiring during a lightning storm. Always disconnect telephone lines and power connections from wall outlets before servicing or disassembling this equipment.

All wiring external to the product should follow the provisions of the current edition of the National Electrical Code.

Warranty

PairGain Technologies, Incorporated warrants its products to be free of defective and faulty workmanship for a period of 60 months, under normal use, from the date of shipment. PairGain's obligation, under this warranty, is limited to replacing or repairing, at PairGain's option, any such product which is returned during the warranty period per PairGain's instructions and which product, in PairGain's sole opinion, is determined to be defective upon examination at our plant.

The transportation charges from the Buyer to PairGain will be prepaid by the Buyer. When the equipment is shipped back to the Buyer, PairGain will pay the charges, unless no trouble is found (NTF), in which case the buyer will pay for the shipment.

PairGain may use reconditioned parts for such repair or replacement. This warranty *does not* apply to any product which has been repaired, worked upon, or altered by persons not authorized by PairGain or in PairGain's sole judgment has subjected to misuse, accident, fire or other casualty, or operation beyond its design range.

Repaired products have a 90-day warranty, or until the end of the original warranty period--whichever period is greater.

Modules sent to PairGain for repair will be repaired or replaced and returned to you as soon as possible. Normally, current products are repaired within 14 calendar days, and out-of-production products are repaired within 30 calendar days.

TECHNICAL SUPPORT

PairGain provides technical support by phone, fax, and the World Wide Web.

Phone or Fax

PairGain Technical Assistance is available 24 hours a day, 7 days a week by contacting PairGain's Customer Service Engineering group at one of the following numbers:

- Telephone: (800) 638-0031
 (714) 832-9922
- Fax: (714) 832-9924

A Customer Service Engineer answers technical assistance calls Monday through Friday between 8:00 AM and 5:00 PM, Pacific Time, excluding holidays. At all other times, an on-duty Customer Service Engineer returns technical assistance calls within 30 minutes.

Returns

To return equipment to PairGain:

- 1 Locate the number of the purchase order under which the equipment was purchased. You will need to provide this number to PairGain Customer Service to obtain a return authorization.
- 2 Call or write PairGain Customer Service to ask for a Return Material Authorization (RMA) number and any additional instructions. Use the telephone or fax number listed below:
 - Telephone: (800) 370-9670
 - Fax: (714) 730-2961
- 3 Include the following information, in writing, along with the equipment you are returning:
 - Company name, address, and the name of a person PairGain can contact regarding this equipment.
 - The purchase order number provided to Customer Service when the RMA number was requested.

- A description of the equipment, as well as the number of units that you are returning. Be sure to include the model and part number of each unit.
- The shipping address to which PairGain should return the repaired equipment.
- The reason for the return:
 - a) The equipment needs an ECO/ECN upgrade.
 - b) The equipment is defective.



If the equipment is defective, please tell us what you observed just before the equipment malfunctioned. Be as detailed in your description as possible.

- c) If there is another reason for returning the equipment, please let us know so we can determine how best to help you.
- 4 Pack the equipment in a shipping carton.
 - 5 Write PairGain's address and the Return Material Authorization Number you received from Customer Service clearly on the outside of the carton:

PairGain Technologies, Inc.
14352 Franklin Ave.
Tustin, CA 92780-7013

Attention: **CRF RMA (Number)**

World Wide Web

PairGain product, company, and application information can be found at <http://www.pairgain.com> using any Web browser.

Corporate Office

14402 Franklin Avenue
Tustin, CA 92780

Tel: (714) 832-9922

Fax: (714) 832-9924

For Technical Assistance:

(800) 638-0031

