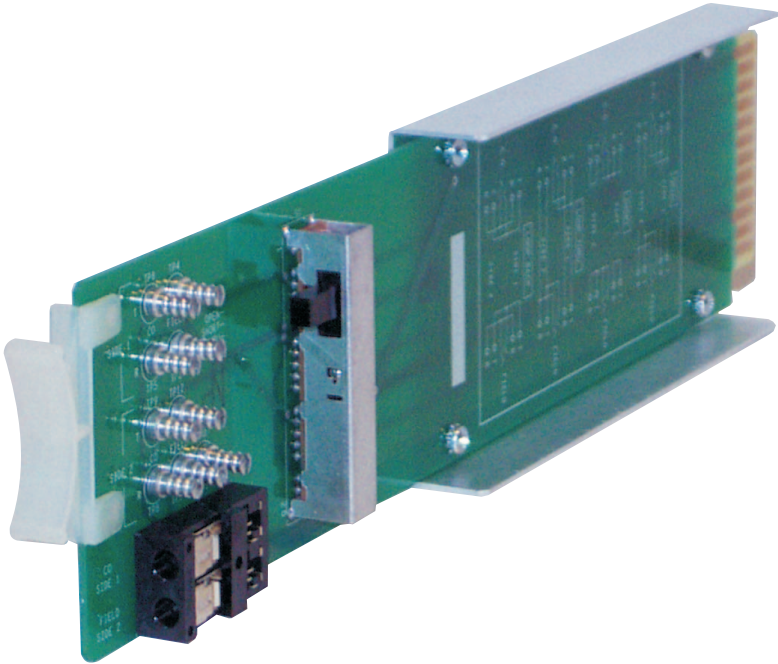


# USER MANUAL



## **HTC-239 List 1 HiGain Test Card**

Product Catalog: HTC-239 L1

CLEI: VATUL50HAA

## Revision History of This User Manual

To order copies of this document, use document catalog number LTPH-UM-1194-01.

Issue	Release Date	Revisions Made
1	December 2, 2002	Initial Release

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*December 2, 2002*

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## USING THIS MANUAL

Three types of messages, identified by icons, appear in text.



**Notes contain information about special circumstances.**



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



**The Electrostatic Discharge (ESD) symbol indicates that a device or assembly is susceptible to damage from electrostatic discharge.**

## UNPACK AND INSPECT YOUR SHIPMENT

Upon receipt of the equipment:

- Unpack each container and inspect the contents for signs of damage. If the equipment has been damaged in transit, immediately report the extent of damage to the transportation company and to ADC DSL Systems, Inc. Order replacement equipment, if necessary.
- Check the packing list to ensure complete and accurate shipment of each listed item. If the shipment is short or irregular, contact ADC DSL Systems, Inc. as described in “Appendix B - Product Support” on page 9. If you must store the equipment for a prolonged period, store the equipment in its original container.

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# OVERVIEW

The ADC<sup>®</sup> HiGain<sup>®</sup> Test Card HTC-239 List 1 installs into any slot of a standard T1-239 repeater or four-slot HRE-504 doubler enclosure and provides a method of testing both the Central Office (CO) and field-side circuits (transmit and receive pairs). The width of the HTC-239 List 1 allows it to fit into the four-slot HRE-504 enclosure without interfering with plugs above or below it.

## FEATURES

The following are features of the HTC-239 L1:

- A four-position switch (S1) allows you to select any one of the following tests that can be performed on the transmit (XMT) and receive (RCV) Tip and Ring pairs for the CO-side and field-side circuits:
  - Open
  - Short
  - Loop Thru
  - Loop Back (metallic)
- The test points provide access to the transmit and receive Tip and Ring pairs for the CO-side and field-side circuits and also to Frame Ground.
- The miniature 210 jacks also provide access to the transmit and receive Tip and Ring pairs for the CO-side and field-side circuits.
- This card provides easy access to its test points by extending beyond the front plane of the enclosure in which it is installed.
- This card is compatible with all ADC enclosures that support T1-239 mechanics.

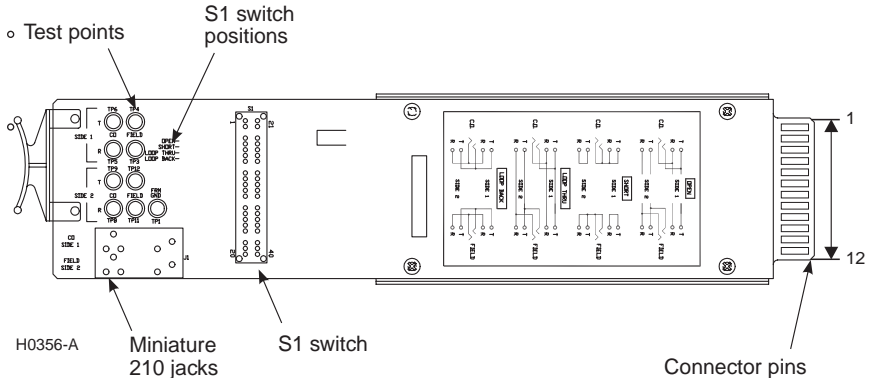
# TEST CARD

The HTC-239 L1 (Figure 1) comprises the following major functional areas.

- A four-position S1 switch allows you to select which test (Open, Short, Loop Thru, or Loop Back) will be performed on CO-side and field-side circuits. All tests are run on both Side 1 and Side 2.

The Open switch position provides a splitting-type access to one Tip and Ring pair of both the CO-side (pins 5 and 6) and the field-side (pins 11 and 12) circuits and to the miniature 210 jacks.

- Test points provide access to each active card-edge connector pin, including Frame Ground. Each test point is identified by the pin number to which it connects. Refer to “Testing a Circuit” on page 3 for more detailed information.
- The miniature 210 jacks, located within the J1 block, provide another test access to the CO-side and field-side circuits. The Loop Back or Loop Thru switch positions allow you to test using these two miniature 210 jacks.



**Figure 1.** HTC-239 List 1 Test Card

# INSTALLING THE HTC-239 L1

Refer to the appropriate enclosure user documentation to gain access to the card slots.

- 1 Insert the HTC-239 L1 into the enclosure slot that provides connection to the circuits you want to test.
- 2 Push the card into the slot until it is firmly seated.



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

## TESTING A CIRCUIT

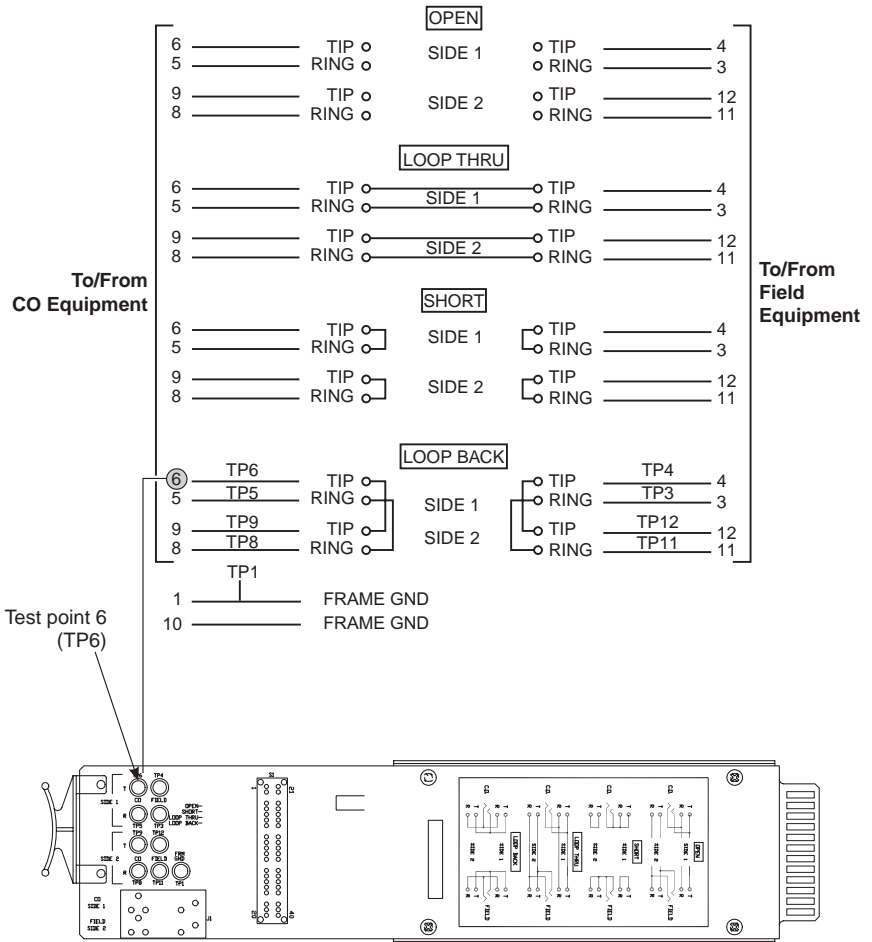
Use the HTC-239 L1 to test circuits as follows:

- 1 Set the S1 switch to the test you want to perform (Open, Short, Loop Thru, or Loop Back).
- 2 Connect to test points as applicable. The connections of Tip and Ring pairs of CO and field circuits for each setting of the switch are listed in Table 1 on page 4 and illustrated in Figure 2 on page 5. (Test point numbers correspond to the edge connector pins for each circuit.)
- 3 Perform the selected test.
- 4 Monitor the circuits at the corresponding test points on the card.
- 5 Repeat steps 1 through 4 as required.

**Table 1. Test Point Connections**

<b>Connect</b>	<b>Pin Number</b>	<b>To</b>	<b>Pin Number</b>
<b>Loopback - This switch position connects the following circuits</b>			
CO Tip	6	CO Tip	9
CO Ring	5	CO Ring	8
Field Tip	4	Field Tip	12
Field Ring	3	Field Ring	11
<b>Loopthru - This switch position connects the following circuits</b>			
CO Tip	6	Field Tip	4
CO Ring	5	Field Ring	3
CO Tip	9	Field Tip	12
CO Ring	8	Field Ring	11
<b>Short - This switch position connects the following circuits</b>			
CO Tip	6	CO Ring	5
CO Tip	9	CO Ring	8
Field Tip	4	Field Ring	3
Field Tip	12	Field Ring	11
<b>Open - This switch position removes all connections between the circuits</b>			





H0357-A

Figure 2. HTC-239 List 1 Test Connections



# APPENDIX A - SPECIFICATIONS

## Mounting

Any slot in a T1-239 repeater mechanics or four-slot HRE-504 doubler enclosure

## Environmental

Operating Temperature: 40 °F to + 149 °F (-40 °C to + 65 °C)

Operating Humidity: 5% to 95% (non condensing)

## Dimensions and Weight

Height: 2.5 in (6.33 cm)

Width: 0.6 in (1.52 cm)

Depth: 10.39 in (26.39 cm)

Weight: 0.35 lb (0.16 kg)



# APPENDIX B - PRODUCT SUPPORT

ADC Customer Service Group provides expert pre-sales and post-sales support and training for all its products.

Technical support is available 24 hours a day, 7 days a week by contacting the ADC Technical Assistance Center.

## Sales Assistance

800.366.3891 extension 73000  
(USA and Canada)  
952.917.3000  
Fax: 952.917.3237

- Quotation Proposals
- Ordering and Delivery
- General Product Information

## Systems Integration

800.366.3891, extension 73000  
(USA and Canada)  
952.917.3000

- Complete Solutions (from concept to installation)
- Network Design and Integration Testing
- System Turn-Up and Testing
- Network Monitoring (upstream or downstream)
- Power Monitoring and Remote Surveillance
- Service/Maintenance Agreements
- Systems Operation

## ADC Technical Assistance Center

800.366.3891, extension 73223 or  
952.917.3223  
Fax: 952.917.3244  
Email: [wsd\\_support@adc.com](mailto:wsd_support@adc.com)

- Technical Information
- System/Network Configuration
- Product Specification and Application
- Training (product-specific)
- Installation and Operation Assistance
- Troubleshooting and Repair/Field Assistance

## Online Technical Support

- [www.adc.com/technicalsupport](http://www.adc.com/technicalsupport)

## Online Technical Publications

- [www.adc.com/documentationlibrary/technicalpublications](http://www.adc.com/documentationlibrary/technicalpublications)

**Product Return Department**

800.366.3891 extension 73748 or  
952.917.3748

Fax: 952.917.3237

Email: [repair&return@adc.com](mailto:repair&return@adc.com)

- ADC Return Material Authorization (RMA) number and instructions must be obtained before returning products.

*All telephone numbers with an 800 prefix are toll-free in the USA and Canada.*

# APPENDIX C - GLOSSARY

<b>CLEI</b>	Common Language Equipment Identifier
<b>CO</b>	Central Office
<b>GND</b>	Ground
<b>HRE</b>	HiGain Remote Enclosure
<b>HTC</b>	HiGain Test Card
<b>RCV</b>	Receive
<b>RMA</b>	Return Material Authorization
<b>XMT</b>	Transmit





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# CERTIFICATION AND WARRANTY

## FCC COMPLIANCE

The HTC-239 List 1 does not have any clocking source, and deems to be a passive device per FCC guidelines. When used in conjunction with any clocking devices, this combined system may radiate radio frequency energy that can cause harmful interference to radio communications. Operation of such a system in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

## WARRANTY

ADC DSL Systems, Incorporated (“ADC”) warrants that, for a period of sixty (60) months from the date of shipment, the hardware portion of its products will be free of material defects and faulty workmanship under normal use. ADC’s obligation, under this warranty, is limited to replacing or repairing, at ADC’s option, any such hardware product which is returned during the 60-month warranty period per ADC’s instructions and which product is confirmed by ADC not to comply with the foregoing warranty.

ADC warrants that, for a period of 90 days from the date of purchase, the software furnished with its products will operate substantially in accordance with the ADC published specifications and documentation for such software. ADC’s entire liability for software that does not comply with the foregoing warranty and is reported to ADC during the 90-day warranty period is, at ADC’s option, either (a) return of the price paid or (b) repair or replace of the software. ADC also warrants that, for a period of thirty (30) days from the date of purchase, the media on which software is stored will be free from material defects under normal use. ADC will replace defective media at no charge if it is returned to ADC during the 30-day warranty period along with proof of the date of shipment.

The transportation charges for shipment of returned products to ADC will be prepaid by the Buyer. ADC will pay transportation charges for shipment of replacement products to Buyer, unless no trouble is found (NTF), in which case the Buyer will pay transportation charges.

ADC 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 ADC or in ADC’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.

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## MODIFICATIONS

Any changes or modifications made to this device that are not expressly approved by ADC voids the user’s warranty.

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

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