TOTAL ACCESS® 1000 239 HRE

JOBAID
61179513L1-22A
0212

239 HRE

CLEI: VAR1FC0B_ _

LED STATUS

NETWORK

LP1 / LP2	○ OFF	No synchronization with the ICOT.
	● GREEN	Synchronized with good signal quality on NET Loop 1/Loop 2 (> 2 dB margin).
	● YELLOW	Synchronized with marginal signal quality on NET Loop 1/Loop 2 (1 to 2 dB margin).
	● RED	Synchronized with poor signal quality on NET Loop 1/Loop 2 (0 dB margin).

CUSTOMER

LP1 / LP2	○ OFF	No synchronization with the RT.
	● GREEN	Synchronized with good signal quality on CUST Loop 1/Loop 2 (> 2 dB margin).
	● YELLOW	Synchronized with marginal signal quality on CUST Loop 1/Loop 2 (1 to 2 dB margin).
	● RED	Synchronized with poor signal quality on CUST Loop 1/Loop 2 (0 dB margin).
LL / RL	○ OFF	No active arming or loopback is detected at the HRE.
	● YELLOW	Indicates LB from HRE toward the network is active.
	● GREEN	Indicates LB from HRE toward the customer is active.

HDSL LOOP SPECIFICATIONS FOR OPTIMUM OPERATION

- Cable pairs must be nonloaded
- No single Bridged Tap > 2 kft
- Maximum loop resistance is 800 Ω
- Pulse attenuation (LOSS on HDSL Current System Status screen) ≤ 30 dB
- Impulse noise ≤ 50 dBrn as measured using a 50 kb filter
- Total Bridged Tap < 2.5 kft
- 196 KHz insertion loss ≤ 35 dB
- Signal quality of 6 dB or higher, with no fluctuation and equal on both loops
- Wideband Noise ≤ 31 dBrn as measured using a 50 kb filter
- Internal Clock Accuracy ±25 ppm (exceeds Stratum 4)

LOOPBACK AND CONTROL CODES

FUNCTION	CODE	RESPONSE
ARM (in-band)	11000 (binary)	ICOT and HRE(s) will arm and the HLIU will loop up toward the network.
ARM (ESF Data Link)	FF48 (hex) or 1111 1111 0100 1000 (binary) sent in the Facility Data Link	ICOT and HRE(s) will arm and the HLIU will loop up toward the network.
Disarm (in-band)	11100 (binary)	All units are removed from the armed state and loopbacks will be released.
Disarm (ESF Data Link)	FF24 (hex) or 1111 1111 0010 0100 (binary) sent in the Facility Data Link	All units are removed from the armed state and loopbacks will be released.
Activation ICOT[1]	D3D3 (hex) or 1101 0011 1101 0011 (binary)	If received while in an armed state, the ICOT will loop toward the network.
Loop down w/out disarming[2]	9393 (hex) or 1001 0011 1001 0011 (binary)	Automatically releases without disarming any ICOT and HRE that may be in loopback toward the network.
HRE Network Loop up[1]	C741 (1100 0111 0100 0001)	If an HRE is present and units armed, the HRE will loop up toward network..
HLIU Loop up[1]	C742 (1100 0111 0100 0010)	If received while in an armed state, the HLIU will loop toward the network..

[1] Units must be armed with 11000b or FF48h before this code will work.
[2] In order to behave like an NIU, the HLIU will not loop down from the network side with 9393h.
NOTE: All codes listed above must be sent for a minimum of 5 seconds in order for them to be detected and acted upon.

Card Edge Pin Assignment

Pin	Designation	Description
1	GND	Ground
2	NC	No Connect
3	T1	Customer Loop 1 Tip
4	R1	Customer Loop 1 Ring
5	T1	Network Loop 1 Tip
6	R1	Network Loop 1 Ring
7	NC	No Connect
8	T	Network Loop 2 Tip
9	R	Network Loop 2 Ring
10	GND	Ground
11	T	Customer Loop 2 Tip
12	R	Customer Loop 2 Ring

CAUTION!
SUBJECT TO ELECTROSTATIC DAMAGE OR DECREASE IN RELIABILITY.
HANDLING PRECAUTIONS REQUIRED.

■ For a complete Installation and Maintenance Practice (P/N 61179513L1-5): (877) 457-5007, Faxback Document 900. Please have your fax number ready. ■

POWERING OPTIONS

The ICOT will power the entire Total Access 1000 System. When an HRE is used to extend the range of the POTS circuits, a second ICOT is used to provide auxiliary span power to the system through additional copper pairs. (See **Figure 1**). The Total Access 1000 system continues to receive span power through the HDSL loops. The second ICOT is only needed for its span powering capacity. No circuit information can be accessed from it. No DSX-1 connections are necessary. The loop will not train, and it will always show an alarm condition. Applications using only U-BR1Tes do not require an additional ICOT.

WARRANTY

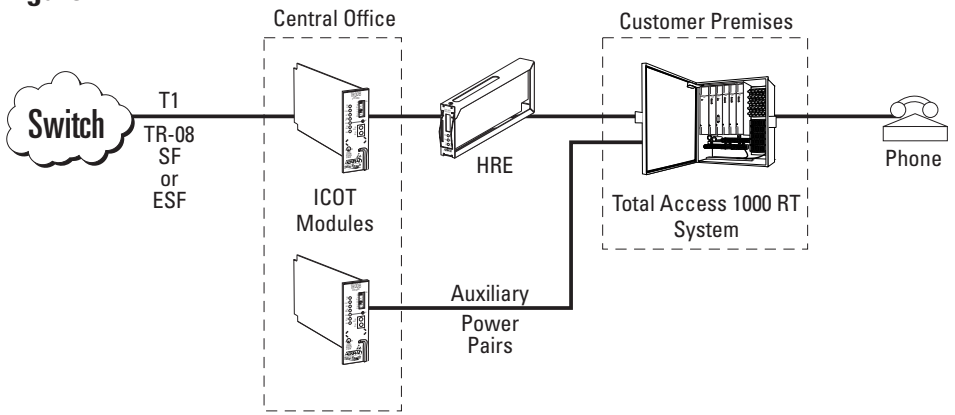
ADTRAN will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service. Warranty information can be found at www.adtran.com/warranty. USA and Canadian customer Faxback: (877) 457-5007, Document 414.

COMPLIANCE

The 239 HRE complies with the requirements covered under UL 60950 and is intended to be installed in an enclosure with an Installation Code (IC) of "B" or "E." Ensure chassis ground is properly connected.

Code	Input	Output
Power Code (PC)	C	C
Telecommunication Code (TC)	X	X
Installation Code (IC)	A	–

Figure 1



ADTRAN 239 REPEATER HOUSINGS

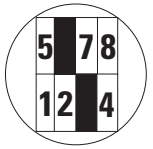
PART #	Description	HRE Capacity	CLEI Code*	Material
1150027L1	4-slot Air Stub	4	DDMOABA1MA	Stainless Steel
1150027L2	4-slot Gel Stub	4	DDMOBBA1MA	Stainless Steel
1152010L3	2-slot Gel Stub	2	DDMOBAE1RA	Valox Plastic
1152010L4	2-slot Air Stub	2	DDMOAAE1RA	Valox Plastic
1150057L1	4-slot Air Stub	4	DDMODA01RA	Stainless Steel
1150057L2	4-slot Gel Stub	4	DDMOCA01RA	Stainless Steel
1150058L1	8-slot Air Stub	6	DDMOEE01RA	Stainless Steel
1150058L2	8-slot Gel Stub	6	DDMOFE01RA	Stainless Steel
1190816L1	16-slot Air Stub	16	DDMOES01RA	Stainless Steel
1190816L2	16-slot Gel Stub	16	DDMOFS01RA	Stainless Steel

HRE 239 DEPLOYMENT IN OTHER HOUSINGS

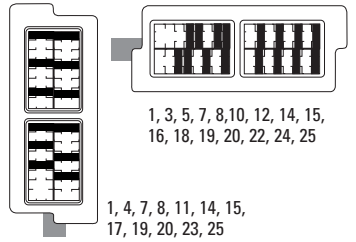
Company	Description	HRE Capacity Above Ground	HRE Capacity Below Ground	Material
AT&T, Keptel, ABACON	25-slot	12	16**	Polymer
SPC	6-slot Air Stub	5	6	Stainless Steel
SPC	6-slot Gel Stub	5	6	Stainless Steel
SPC†	8-slot Air Stub	7	8	Stainless Steel
SPC≠	8-slot Gel Stub	7	8	Stainless Steel
Keptel	8-slot Air Stub	8	8	Valox Plastic
AT&T, Keptel	12-slot Air Stub	6	N/A	Polymer
Lucent	100-slot	42	N/A	Steel

HOUSING DIAGRAMS

ADTRAN 8-slot Above Ground



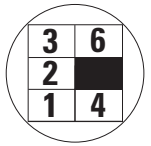
AT&T/Keptel/ABACON Above Ground / Below Ground



1, 3, 5, 7, 8,10, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25

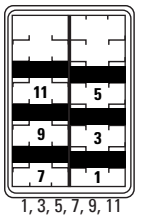
1, 4, 7, 8, 11, 14, 15, 17, 19, 20, 23, 25

SPC 6-slot Above Ground



SPC 8-slot Above Ground

AT&T/Keptel Above Ground



1, 3, 5, 7, 9, 11

** TIRKS function code for all cases is HTURENN*

*** 16 units can be loaded inside the 819 housing for all below ground mounting orientations. if the 819 housing is mounted specifically in the vertical, stub down direction, 18 units can be loaded in slots 1, 3, 5, 7, 8, 10, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 24, 25.*

† Vented *≠ Pressurized*

Lucent 100 Slot Above Ground

Filled:
Shelf 1: 1, 3, 5, 7, 9, 11
Shelf 2: 1, 3, 5, 7, 9, 11, 14, 16, 18, 20, 22, 24
Shelf 3: 1, 3, 5, 7, 9, 11, 14, 16, 18, 20, 22, 24
Shelf 4: 1, 3, 5, 7, 9, 11, 14, 16, 18, 20, 22, 24