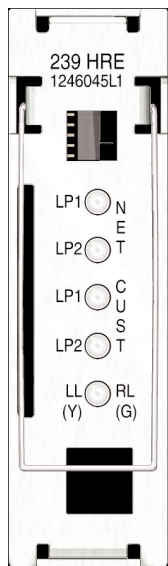


HRE / 239

CLEI: T1R6LJPD_



STATUS LEDs

NETWORK

- LP1 / LP2**
- OFF No sync with the HTU-C on network loop 1 / loop 2
 - GREEN Sync with good signal quality
 - YELLOW Sync with marginal signal quality
 - RED Sync with poor signal quality

CUSTOMER

- LP1 / LP2**
- OFF No sync with the HTU-R on customer loop 1 / loop 2
 - GREEN Sync with good signal quality
 - YELLOW Sync with marginal signal quality
 - RED Sync with poor signal quality

- LL / RL**
- YELLOW Unit is looped toward the HTU-C
 - GREEN Unit is looped toward the HTU-R

GENERAL NOTES

- HRE / 239 fits in all standard 239 and 819 repeater housings
- There are no option settings on the HRE
- One or two HREs may be powered from the HTU-C. The 5th generation HTU-Cs (P/N 124500XLX) require the High Voltage setting to span power two HREs and the HTU-R. The 6th generation HTU-Cs (P/N 124600XLX) are auto span powering, therefore they do not require a voltage setting.

WARRANTY

Warranty for Carrier Networks products manufactured by ADTRAN and supplied under Buyer's order for use in the U.S. is ten (10) years. For a complete copy of ADTRAN's *U.S. and Canada Carrier Networks Equipment Warranty*: (877) 457-5007, Document 414.

TELECOMMUNICATIONS CODES

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

This product is intended for installation in restricted access locations only and in an enclosure with an Installation Code (IC) of 'B' or 'E'.

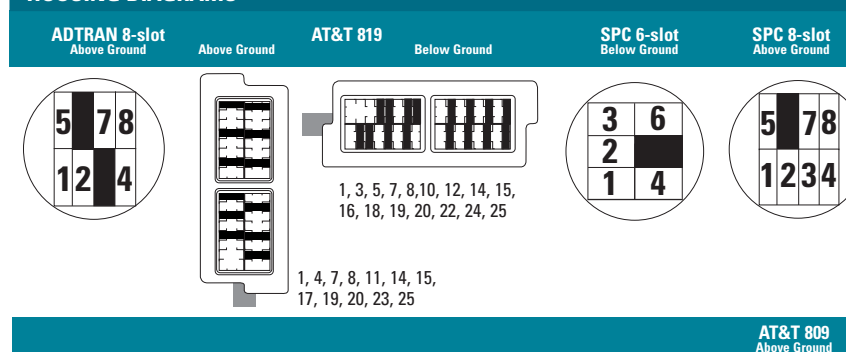
ADTRAN 239 REPEATER HOUSINGS

PART #	Description	HRE Capacity	CLEI CODE*	Material
1150027L1	4-slot Air Stub	4	DDM0ABA1MA	Stainless Steel
1150027L2	4-slot Gel Stub	4	DDM0BBA1MA	Stainless Steel
1152010L3	2-slot Gel Stub	2	DDM0BAE1RA	Valox Plastic
1152010L4	2-slot Air Stub	2	DDM0AAE1RA	Valox Plastic
1150057L1	4-slot Air Stub	4	DDM0DA01RA	Stainless Steel
1150057L2	4-slot Gel Stub	4	DDM0CA01RA	Stainless Steel
1150058L1	8-slot Air Stub	8	DDM0EE01RA	Stainless Steel
1150058L2	8-slot Gel Stub	8	DDM0FE01RA	Stainless Steel
1190816L1	16-slot Air Stub	16	DDM0ES01RA	Stainless Steel
1190816L2	16-slot Gel Stub	16	DDM0FS01RA	Stainless Steel

HRE 239 DEPLOYMENT IN OTHER HOUSINGS

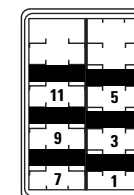
Company	Description	HRE Capacity		Material
		Above Ground	Below Ground	
AT&T 819	25-slot	12	16**	Polymer
SPC	6-slot Stub	5	6	Stainless Steel
SPC	8-slot Stub	5	6	Stainless Steel
AT&T 820	8-slot Air Stub	7	8	Stainless Steel
AT&T 809	12-slot Air Stub	6	N/A	Polymer
AT&T 841C	100-slot	TBD	N/A	Stainless Steel

HOUSING DIAGRAMS



* 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.



1, 3, 5, 7, 9, 11



INSERTION LOSS MEASUREMENTS

Frequency (kHz)	Maximum Loss Data (dB)
10000	15.00
50000	25.50
100000	30.00
150000	32.75
196000	35.00
200000	35.25
250000	37.50
325000	42.00

NOTE: If your TIMs is unable to transmit 200 kHz tone, set the TIMs to one of the frequencies shown above and compare the received signal to the maximum loss at that frequency.

	A	B	C	D	E	F
	t-t Voltage	t-t Voltage	t-t Voltage	t-t Voltage	t-t Voltage	t-t Voltage
Open at Frame with 2 HREs	185 - 190	N/A	N/A	N/A	N/A	N/A
Open at Frame with none or 1 HRE	145 - 150	N/A	N/A	N/A	N/A	N/A
HTU-C w/0 or 1 HRE / HTU-R	145 - 150	145 - 150	130 - 145	N/A	N/A	125 - 130
HTU-C w/0 or 1 HRE / HRE1 / HTU-R	130 - 135	110 - 135	110 - 135	N/A	N/A	100 - 135
HTU-C w/2 HREs / HRE 2 / HTU-R	185 - 190	160 - 185	160 - 185	140 - 185	140 - 185	130 - 185

HDSL LOOP SPECIFICATIONS FOR OPTIMUM OPERATION

- Cable pairs must be non-loaded
- 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 dBm 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 dBm as measured using a 50 kb filter
- Internal Clock Accuracy ±25 ppm (exceeds Stratum 4)

UNIT RESISTANCE

Measurements are with no power applied

HTU-C (3192, 220, or DDM+) = 5.2 to 5.8 Ω

HTU-R (T200) = 5.2 to 5.8 Ω

HRE (239, T200) = 8.6 Ω toward NET or CUST