



## TRX18-001 TRANSCEIVERS

- **Extension of AML Downstream frequency range to 870 MHz**
- **2-Way Wireless DOCSIS Based Data Trunking**
- **Integrated two-way transceiver with coherent, Pilot-Tone based local \ oscillators**
- **Pilot-Tone driven ALC (Automatic Level Control)**
- **Indoor and Outdoor versions available**

### PRODUCT APPLICATION:

The TRX18-001 Transceivers are two-way, wireless, point-to-point integrated transmitter/receiver pairs designed to extend the traditional CARS band AML downstream capacity from 552 MHz to 870 MHz and to simultaneously provide 2-way wireless DOCSIS-based “upstream” data trunking in 18 GHz band.

The Transceivers are the perfect choice for upgrading existing CARS band AML links to provide additional downstream channels and 2-way data service. They simultaneously transport both the downstream (forward) channels from 552 MHz to 870 MHz, and the upstream (return) channels from 5 MHz to 42 MHz.

A Transceiver pair consists of a local unit and a remote unit. The local transceiver (designated with an “L” following the model number) transmits the downstream (forward) signals and receives the upstream (return) signals. The remote unit (designated with an “R” following the model number) receives the downstream (forward) signals and transmits the upstream (return) signals.

When connected to dual-feed antennas and feed-lines, the TRX18-001 transceiver provides a reliable, 2-way radio link for the upgraded cable system operation.

All local oscillators are phase locked to a single high-quality frequency reference, so that the output signal has exactly the same frequency as the input. There is no frequency offset for either the downstream or the upstream signals. ALC functions are provided in both directions to ensure a stable signal level at the receiver output irrespective of rain fade or multipath.

As an add-on to an existing CARS band AML link, the TRX18-005 Transceiver expands the downstream frequency coverage to a full 54 to 870 MHz range, but operates independently of existing systems, thus allowing for perfect integration with legacy equipment.

The TRX18-001 series comes in indoor and outdoor mounted versions.

# Product Specification<sup>1</sup>



<b>Transmitter Section</b>		<b>TRX18-000L (Local Unit)</b>																
Input Signal Frequency:	552 to 870 MHz																	
Input Level:	+20 dBmV (-29 dBm) per channel																	
Output Signal Frequency:	17,982 to 18,300 MHz																	
Output Level (for 64 QAM:@ C/IM of 35 dB)	<table border="1"> <thead> <tr> <th>Channels</th> <th>Power/Channel</th> <th>C/N (6 MHz/Ch)</th> </tr> </thead> <tbody> <tr> <td>12</td> <td>8.8 dBm/Ch</td> <td>66.4</td> </tr> <tr> <td>24</td> <td>5.8 dBm/Chl</td> <td>63.4</td> </tr> <tr> <td>36</td> <td>4.1 dBm/Ch</td> <td>61.7</td> </tr> <tr> <td>53</td> <td>2.4 dBm/Ch</td> <td>60</td> </tr> </tbody> </table>			Channels	Power/Channel	C/N (6 MHz/Ch)	12	8.8 dBm/Ch	66.4	24	5.8 dBm/Chl	63.4	36	4.1 dBm/Ch	61.7	53	2.4 dBm/Ch	60
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	24	5.8 dBm/Chl	63.4															
	36	4.1 dBm/Ch	61.7															
53	2.4 dBm/Ch	60																
Nominal Gain <sup>2</sup> :	31 dB																	
Frequency Response:	±1.5 dB																	
<b>Receiver Section</b>																		
Input Signal Frequency:	17,703 to 17,766 MHz																	
Noise Figure:	7 dB (Include Diplexer Loss)																	
Output Signal Frequency:	5 to 42																	
Maximum Gain <sup>3</sup> :	45 dB																	
Pilot-tone ALC Dynamic Range:	15 dB																	
Frequency Response:	±1.5 dB																	
Nominal Output Level:	26 dBmV																	
Frequency Stability:	0.0005%																	
IF Connector:	Type "F"																	
RF Connectors:	WR-42 Waveguide Cover Flange																	
Temperature Range:	60° to 100° F (16° to 38° C)																	
Humidity:	99% max																	
Primary Power: Power Consumption: Weight: Dimensions:	Indoor Version ITRX18-000L		Outdoor Version OTRX18-000L															
	120/240 VAC, 50/60 Hz (per customer specification)		60/120/240 VAC, 50/60 Hz or 12/24 VDC (per customer specification)															
	175 VA RMS		100 VA RMS															
	30 lbs (13.6 kg)		50 lbs (22.7 kg)															
	19" W x 7" H x 20" D (48.3 W x 17.8 H x 50.8 D cm)		16" W x 13" H x 7" D (40.6 W x 33 H x 17.8 D cm)															

<sup>1</sup> Specifications subject to change without prior notice.

<sup>2</sup> Transmitter gain may be varied with 10 dB attenuator.

<sup>3</sup> Receiver actual gain is adjustable and can be automatically controlled by pilot-tone ALC.

# Product Specification<sup>1</sup>



<b>Transmitter Section</b>		<b>TRX18-000R (Remote Unit)</b>	
Input Signal Frequency:	5 to 42 MHz		
Pilot Frequency:	67.038461 MHz		
Input Level:	+20 dBmV (-29 dBm) per channel		
Output Signal Frequency:	17,703 to 17,766 MHz		
Total Output Power:	Modulation/Total Power		C/N (12 Ch Loading with 3.2 MHz/Ch)
	QPSK/16 dBm		60 dB
	16 QAM/14 dBm		58 dB
Nominal Gain <sup>2</sup> :	36 dB		
Frequency Response:	±2.0 dB		
<b>Receiver Section</b>			
Input Signal Frequency:	17,982 to 18,300 MHz		
Noise Figure:	7 dB (Includes Diplexer Loss)		
Output Signal Frequency:	552 to 870 MHz		
Maximum Gain <sup>3</sup> :	45 dB		
Composite ALC Dynamic Range:	15 dB		
Frequency Response:	±1 dB		
Nominal Output Level:	26 dBmV		
Frequency Stability:	0.0005%		
IF Connector:	Type "F"		
RF Connectors:	WR-42 Waveguide Cover Flange		
Temperature Range:	60° to 100° F (16° to 38° C)		
Humidity:	99% max		
Primary Power: Power Consumption: Weight: Dimensions:	Indoor Version ITRX18-000R		Outdoor Version OTRX18-000R
	120/240 VAC, 50/60 Hz (per customer specification)		60/120/240 VAC, 50/60 Hz or 12/24 VDC (per customer specification)
	150 VA RMS		100 VA RMS
	30 lbs (13.6 kg)		50 lbs (22.7 kg)
	19" W x 7" H x 20" D (48.3 W x 17.8 H x 50.8 D cm)		16" W x 13" H x 7" D (40.6 W x 33 H x 17.8 D cm)