

TRX13-XXX TRANSCEIVERS



- **Integrated 2-Way Transceiver**
- **Downstream Frequency Range from 54 to 498 MHz**
- **2-Way Wireless DOCSIS Based Data Trunking**
- **Pilot-Tone driven AGC**
- **Indoor and Outdoor Version Available**

PRODUCT APPLICATION:

The TRX13 series transceivers are 2-way, point-to-point integrated transceiver pairs designed to transmit analog or digital signals downstream and 2-way DOCSIS carriers in both directions.

The transceivers are the perfect choice for upgrading existing microwave links to provide DOCSIS service. They transport simultaneously both the downstream (forward) channels from 54 MHz up to 498 MHz, and the upstream (return) channels from 9 MHz to 42 MHz.

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

All local oscillators in the transceivers are phase locked to high quality crystal oscillators, so that the received signals are at the exact same frequency as the transmitted signals for both downstream and upstream signals.

The transceiver features AGC circuits to ensure a stable signal level at the receiver outputs irrespective of multi-path and rain fade.

The TRX13 series comes in indoor and outdoor mounted versions and can interface with a variety of parabolic antennas. Output signal monitoring and diagnostic measurements are available locally or remotely via Internet.

TRX13-Series L (Local Unit) Transceivers				
Input Signal Frequency ² :	54 to 498 MHz			
Input Level:	+24 dBmV per channel			
Output Signal Frequency ² :	12,700.5 to 13,144.5 MHz			
Output Level for 65 dB C/CTB:	Channels	TRX13-005L Power/Ch	TRX13-011L Power/Ch	TRX13-050L Power/Ch
	12	2.0	10	14.0
	21	-0.5	7.5	11.5
	35	-3.0	5.0	9.0
	60	-5.5	2.5	6.5
	74	-7.0	1.0	5.0
Normal Gain:		44dB	52dB	56dB
Frequency Response:	±1 dB			
Receiver Section				
Input Signal Frequency:	13,217 to 13,250 MHz			
Noise Figure:	4.5 dB			
Output Signal Frequency:	9 to 42 MHz			
Maximum Gain ³ :	45 dB			
Pilot-tone AGC Dynamic Range:	15 dB			
Frequency Response:	±1 dB			
Nominal Output Level:	28 dBmV			
General				
Frequency Stability:	0.0005%			
IF Connector:	Type "F"			
RF Connectors:	WR-75 Waveguide Cover Flange			
Primary Power:	Indoor Version ITRX13-005L		Outdoor Version OTRX13-005L	
	120/240 VAC, 50/60 Hz (per customer specification)		60/120/240 VAC, 50/60 Hz or 12/24 VDC (per customer specification)	

¹ Specifications subject to change without prior notice.

² Transmitter gain may be varied with 10 dB attenuator.

³ Receiver actual gain is adjustable and can be automatically controlled by Pilot Tone AGC.

TRX13-Series R (Remote Unit) Transceivers			
Input Signal Frequency:	9 to 42 MHz		
Input Level:	+20 dBmV per channel		
Output Signal Frequency:	13,217 to 13,250 MHz		
Total Output Power	TRX13-005R Modulation/ Total Power	TRX13-011R Modulation/ Total Power	TRX13-050R Modulation/ Total Power
	QPSK/22 dBm	QPSK/28.5 dBm	QPSK/31 dBm
	16 QAM/20 dBm	16 QAM/26.5 dBm	16 QAM/29 dBm
Normal Gain ² :	40dB	46dB	49dB
Frequency Response:	±1 db		
Receiver Section			
Input Signal Frequency:	12,700.5 to 13,144.5 MHz		
Noise Figure:	4.5 dB		
Output Signal Frequency:	54 to 498 MHz		
Maximum Gain ³ :	45 dB		
Pilot-tone AGC Dynamic Range:	15 dB		
Frequency Response:	±1 dB		
Nominal Output Level:	28 dBmV		
General			
Frequency Stability:	0.0005%		
IF Connector:	Type "F"		
RF Connectors:	WR-75 Waveguide Cover Flange		
Primary Power:	Indoor Version ITRX13-005L	Outdoor Version OTRX13-005L	
	120/240 VAC, 50/60 Hz (per customer specification)	60/120/240 VAC, 50/60 Hz or 12/24 VDC (per customer specification)	

¹ Specifications subject to change without prior notice.

² Transmitter gain may be varied with 10 dB attenuator.

³ Receiver actual gain is adjustable and can be automatically controlled by Pilot Tone ALC.