

## TRX02-250C TRANSCEIVER



- **Base Station Transceiver for Multi-Channel TV and Two-Way Data Transmission**
- **Downstream: Digital (64 or 256 QAM) or Analog TV, and Data Traffic**
- **Upstream Data Traffic over MDS / MMDS Band**
- **Single Antenna Operation with Built-In Duplexer**
- **Broadband Design for Multi-Channel System Operation**

### PRODUCT APPLICATION:

The TRX02-250C is an integrated broadband Transceiver operating in the MMDS band downstream (2.5 to 2.7 GHz) and the MDS / MMDS band upstream MDS(2.15-2.16GHz); MMDS(2.644-2.686GHz).

The transceiver is the key Base Station RF element designed to simultaneously transmit multi-channel broadband TV and provide two-way data connectivity to any subscribers within the coverage area.

The TRX02-250C can transmit up to 31 downstream carriers, each 6 MHz wide. Each carrier can be either an analog TV signal (VSBAM), a digital MPEG-2 TV signal (64-QAM modulated) or a 64-QAM data carrier.

When connected to an omni-directional antenna, it can cover an area of approximately 24-Km radius under full channel load. The coverage range increases if less than 31 carriers are transmitted.

The receiver module of the TRX02-250C is designed to receive upstream data (QPSK or 16-QAM modulated) from any subscriber within the coverage area.

An integrated diplexer makes it possible to connect the transceiver to a single base station antenna for both transmit and receive functions. Connection to the antenna is through a Type "N" RF connector.

The transceiver input/output data streams are conveniently set at IF frequencies compatible with DOCSIS-compliant Base Station WMTS (Wireless Modem Termination Systems) modules.

The transceiver is very simple to install and operate. It features a modular design for ease of maintenance and service. Its compact design requires only 12.25 inches (31.2 cm) height in a standard 19 inch (48.3 cm) wide rack or cabinet.

# Product Specification<sup>1</sup>

# CABLE AML

<b>Transmitter Section</b>				
Input Signal Frequency:	222 to 408 MHz			
Input Level:	+20 dBmV (-29 dBm) per channel			
Output Frequency <sup>2</sup> :	2.5 to 2.686 GHz			
Output Level for 50 dB C/CTB: (measured with CW carriers) <sup>3</sup>	Channels	Average Power dBm/Channel	Peak Power dBm/Channel	C/N (dB)
	9	30.5	34.0	64.5
	12	29.0	32.5	63.0
	18	27.0	30.5	61.0
	24	25.0	28.5	59.0
	30	24.0	27.5	58.0
Local Oscillator Frequency <sup>2</sup> :	2278 MHz			
Frequency Response:	±1 dB			
Frequency Stability:	±10 KHz (+10°C to +50°C)			
Input Return Loss:	15 dB			
Input Connector:	Type "F" female			
Output Return Loss:	18 dB			
<b>Receiver Section</b>				
Input Frequency:	2150 to 2162 MHz 2644 to 2686 MHz			
Output Frequency:	14.375 to 26.375 MHz			
Gain:	42 dB			
Gain Flatness:	±1 dB			
Noise Figure:	4.5 dB			
LO #1 Frequency:	2278 MHz			
LO #2 Frequency:	142.375 MHz			
LO Frequency Stability:	±10 KHz (+10°C to +50°C)			
Output Return Loss:	15 dB			
Output Connector:	Type "F" female			
<b>Mechanical</b>				
RF Input/Output Connector:	Type "N" female			
Operating Temperature Range:	60° to 100°F (16° to 38°C)			
Humidity:	95% max.			
Primary Power:	120/240 VAC, 50/60Hz (per customer specification)			
Power Consumption:	840 VA RMS			
Mounting:	EIA Standard Relay Rack			
Weight:	58lb. (26.3 kg)			
Dimensions:	(48.3cm W x 31.8cm H x 61cm D)			

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

<sup>2</sup> Other frequencies available.

<sup>3</sup> The C/CTB with modulated carriers are approximately 6 dB better than with CW carriers.