

# C-Band Transceiver For Digital Satellite Communications



## Product Overview

The 3100 series of C-Band transceivers offers a cost effective solution for digital satellite communications. The use of a standard block converter for low data rate application such as rural telephony and the optional add on booster amplifiers provides higher output powers for medium to high data rates.

## Front Panel Indicators

- AC Power
- ODU Indicator
- Up Converter Lock Indicator
- Tx Enabled Indicator
- Down Converter Lock Indicator
- Summary Fault Indicator

## Monitor and Control

*(via external terminal \*)*

- Tx/Rx Frequency Status
- Tx On/Off
- Tx/Rx Synthesizer Lock Status
- ODU Power On/Off
- ODU Status
- Tx Power Level Co
- LNB Status
- Rx Gain Adjust: 0.1dB Steps
- Interface Level Training

\*User-supplied

## Features

- Cost effective architecture
- Simplified installations
- Environmental stress screening (ESS) to assure highly reliable service
- Meets all international standards
- L-Band IFL
- Ku-Band versions available
- Remotely Programmable

## Options

- Handheld Keypad Control
- PC Control Software
- Redundant Configurations

### **Transmit Specifications**

Output Frequency	5.850 to 6.425 GHz 6.425 - 6.725 GHz 6.725 - 7.025 GHz
Step Size	1 MHz
Frequency Stability (vs.temp)	$\pm 1 \times 10^{-7}$ ppm
IF Frequency	70 MHz $\pm$ 18 MHz
Input Level Adjustment Range	20 dB
Gain Flatness (over 36 MHz)	$\pm 1.0$ dB
Power Level Stability	$\pm 0.5$ dB (vs. time & temperature)
Spurious Outputs	-50 dBc/4 KHz
Phase Noise (SSB)	Meets or Exceeds IESS 308/309
Intermodulation Products	-27 dBc (2 carriers @ 6 dB backoff)
Noise Figure	<20 dB
Output Power @ P1dB	5, 10*, 20*, 60* Watts (*requires booster amp)
Output Flange	WR-137G

### **Receive Specifications**

Receive Frequency Range	3.625 to 4.20 GHz(independently synthesized)
Step Size	1 MHz
Output Frequency Range	70 MHz $\pm$ 18 MHz
Receive Gain	60 - 65 dB Max
Noise Temperature	35 K
Gain Adjust	20 dB for Cable Compensation 30 dB for Output Level Adjustment
Spurious Outputs	-50 dBc
Frequency Stability (vs. temp)	$\pm 1 \times 10^{-7}$ ppm (excluding LNB stability)
Gain Stability (time & temp)	$\pm 2.0$ dB
Gain Flatness (over 36 MHz)	$\pm 1.0$ dB
Phase Noise (SSB) Typical	Meets or Exceeds IESS 308/309
Input Flange	WR-229G

### **Mechanical Interfaces**

#### **Environmental Characteristics**

ODU Operating Temperature	-40° to +50° C
IDU Operating Temperature	+10° to +40° C
Outdoor Humidity	To 100%
Indoor Humidity	5 to 95% Non-Condensing
Outdoor Environment	Must operate in rain, snow, dust and salt air environment
Shock & Vibration	As normally encountered in shipping for IDU and as encountered when mounted on antenna withstanding 125 MPH wind for ODU

Local Interface (front panel)	RJ-45
RS-232 (rear panel)	9 Pin Sub D
RS-485 (rear panel)	9 Pin Sub D
Serial Expansion Port (rear panel)	9 Pin Sub D
Tx Output Port (IDU)	Type 'N' Female
Rx Input Port (IDU)	Type 'N' Female
70 MHz from Modem (IDU)	BNC Female
70 MHz to Modem (IDU)	BNC Female
L-Band Rx Monitor Port (IDU)	BNC Female
Tx Output Port (ODU)	
C-Band	WR-137G / Type 'N' Option
Ku-Band	WR-75 with O-ring
ODU IFL Port	Type 'N' Female
LNB Input Port	
C-Band	WR-229G
Ku-Band	WR-75 with O-ring
LNB Output Port	Type 'F' Female (optional type 'N')