

BTR 28-08 GHz MMIC

Quick Reference Guide

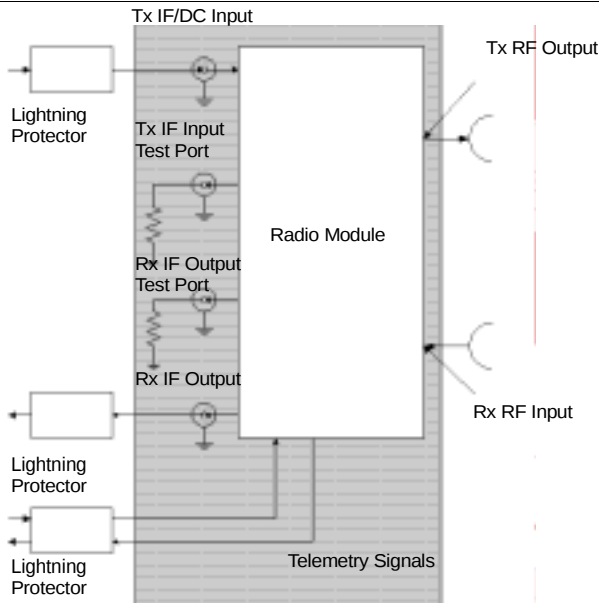
Product Overview

The BTR 28-08 GHz MMIC (NTVG14BH) outdoor transceiver is a state-of-the-art broadband microwave transceiver designed to operate at various frequency bands downstream. It is a combined broadband transmitter and receiver deployed in Nortel Networks Reunion point-to-multipoint system. It is compatible with Reunion's Release 1.2, 1.3 and 1.4 equipment.



BTR 28M Transceiver

Figure 1: BTR 28M Block Diagram



BTR 28-08 MMIC Specification

Table 1: BTR 28-08M Technical Specifications

TX	IF Input	RF Output
Frequency Range 28-08M	500-650 MHz	27.50 - 27.65 GHz
Output Level (P1 dB)		26.25 dBm, -40° to +55° C
Output Level (IP3)		> +34.5 dBm
Input Impedance	50 Ohms	
Input/Output Connector	N-Type Female	WR-28 (non-standard hole pattern)
Input/Output VSWR	2.1:1, maximum	2.6:1, max (or 7 dB)
Gain (not including antenna) @ 25° C		30 ±1 dB, minimum
Gain vs. Temperature		±2.0 dB, (-40° to +55° C)
Gain Flatness		±2.0 dB over bandwidth
LO leakage		<-43 dBm (outband)
Frequency Stability		<±4 ppm, Over all Conditions

Antenna	BTR
Frequency	27.5 - 31.3 GHz
Port-to-Port Isolation	55 dB (V/V); 55 dB (H/H)
Bore-sight Gain (Azimuth)	15.75±1.25 dBi, 90° Horn 18.9±1.25 dBi, 45° 23.8±1.3 dBi, 15°
Wave-guide Interface	WR-28 (non-standard hole pattern)
Mounted on transceiver housing	WR-28 flange
Size (Length x Height x Width)	10" x 9" x 2" (90°)
Polarity	single polarity H/H and V/V
Sectorized Angle Available	15°, 45°, and 90°

RX	RF Input	IF Output
Frequency Range 28-08M	27.85 - 28.00 GHz	150-300 MHz
Input/Output Connector	WR-28 (non-standard hole pattern)	Type N jack (F)
Input P1 dB	-13 dBm min	
Output Impedance		50 Ohms
Input/Output VSWR	2.3:1, max (or 8 dB)	2.1:1 (or 9 dB), maximum
Gain (not including antenna)		29 dB
Gain Flatness		±2.0 dB over bandwidth
Gain Stability		<+2.0 dB over temperature
Frequency Stability		<±4 ppm, Over all Conditions
Noise Figure		7.5 dB, -40° to +55° C

Power Requirements	BTR
Input Voltage	-48 VDC nominal
Input Inrush Current	4.5A max
Input Power	66 Watts, maximum
Environmental	BTR
Humidity	100% condensing
Altitude	10,000 feet
Operating Wind Resistance	50m/second on all surfaces
Operating Temperature	-40° to +55°C
Storage Temperature Range	-45° to +70°C (packaged)
Solar Loading	ETS 300 019 class 4.1 1120W/m ² , 50°C max.
Mechanical	BTR
Size (Length x Height x Width)	19.1" x 10.3" x 5.8" (47.75 x 26 x 14.5 cm)
Weight without brackets	40 lbs. (17.8 KG)

Converted Frequency Formula

Use the following formula to calculate the converted frequency:

$$\text{TX: } f_{\text{RF OUT}} (\text{GHz}) = 28.15 - f_{\text{IF IN}} (\text{GHz})$$

$$\text{RX: } f_{\text{IF OUT}} (\text{GHz}) = 28.15 - f_{\text{RF IN}} (\text{GHz})$$

Note: Electrostatic deposition powder coat, scratch free.

Note: Vent holes are covered with a Goretex™ patch.

Note: The transceiver mounts to a vertical pole of 2.5" to 4.5" outside diameter. It has a range of motion of 90° over and -60° under horizon. The bases of the antenna mount can rotate ±180°.

Technical Assistance Contact Information

In case additional technical assistance is required, or the transceiver unit is damaged upon receipt, contact Nortel Networks.

Nortel Networks Broadband Wireless Access (BWA) provides 24-hour customer service and technical support to ensure your service operation is trouble-free.

If you have questions or need technical support, contact Nortel Networks Broadband Wireless Access at the following telephone numbers:

- In the USA and Canada, call 972-BWA-ETAS/972-292-3827



Information is subject to change without notice.
Nortel reserves the right to make changes in design or components as progress in engineering and manufacturing may warrant.
© 2000 Northern Telecom Ltd.