

BTR 24-01 GHz MMIC

Quick Reference Guide

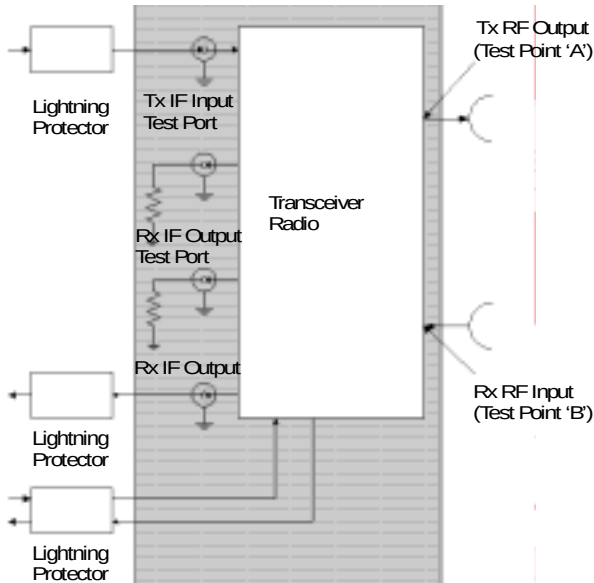
Product Overview

The BTR 24-01 GHz MMIC (DSVG11BA) 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 24-01M Transceiver

Figure 1: BTR 31-01M Block Diagram



BTR 24-01 MMIC Specification

Table 1: BTR 24-01M Technical Specifications

TX	IF Input	RF Output
Frequency Range 24-01M	450-650 MHz	24.25 - 24.45 GHz
Output Level (P1 dB)		≥ 27.4 dBm, -40° to $+30^{\circ}$ C ≥ 27.2 dBm, $+30^{\circ}$ to $+50^{\circ}$ C ≥ 27.2 dBm, $+50^{\circ}$ to $+60^{\circ}$ C
Input Impedance	50 Ohms	
Input/Output Connector	N-Type Female	WR-42 (hole pattern not standard)
Input/Output VSWR	1.925:1 (or 10 dB), maximum	2.3:1, max (or 8 dB)
Gain (mid-band at room temperature not including antenna)		32 $\pm$ 1.0 dB, minimum
Gain Variation		± 5.5 dB over all conditions
Gain Flatness		± 2 dB over 200 MHz BW
LO leakage		< -43 dBm (outband)
Frequency Stability		< ± 4 ppm over all conditions
Tx Noise Power		-115 dBm/Hz, maximum
Tx IF Test Port Coupling		-16 $\pm$ 1 dB

Antenna	BTR
Frequency	24.25 - 24.45 GHz
Frequency Band	2426
Bore-sight Gain (Azimuth)	15.75 $\pm$ 1.25 dBi, 90° Horn 18.9 $\pm$ 1.25 dBi, 45° 23.8 $\pm$ 1.3 dBi, 15°
Wave-guide Interface	WR-42 (non-standard hole pattern)
Size (Length x Height x Width)	10" x 9" x 2" (90°)
Polarity	Cross-polarized (co-polarized available)
Sectorized Angle Available	15° , 45° , and 90°

RX	RF Input	IF Output
Frequency Range 31-01M	25.05 - 25.25 GHz	150 - 350 MHz
Input/Output Connector	WR-42 (hole pattern not standard)	N-Type female
Input P1 dB	-18 dBm	
Output Impedance	N/A	50 Ohms
Input/Output VSWR	2.3:1, max (or 8 dB)	2.1:1, max (or 9 dB)
Gain (mid-band at room temperature not including antenna)		28 ±1.0 dB
Gain Flatness		±2.0 dB over bandwidth
Gain Variation		±5.5 dB over all conditions
Frequency Stability		<±4 ppm over all conditions
Tx IF Test Port Coupling		-14± 1 dB
Noise Figure	< 6.0 dB, -40° to +30° C < 6.5 dB, +30° to +50° C < 6.5 dB, +50° to +55° C	

Power Requirements	BTR
Input Voltage	-48 VDC
Input Inrush Current	<4.5A max
Input Power	66 Watts, maximum
Environmental	BTR
Humidity	100% condensing
Altitude	3000 meters
Operating Wind Resistance	50m/second on all surfaces
Operating Temperature	-40° to +60°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)	19.2" x 10.3" x 6.7" (49 x 26 x 17 cm)
Weight without brackets	35 lbs. (16KG)

Converted Frequency Formula

Use the following formula to calculate the converted frequency:

$$\text{TX: } f_{\text{RF OUT}} (\text{GHz}) = 24.9 - f_{\text{IF IN}} (\text{GHz})$$

$$\text{RX: } f_{\text{IF OUT}} (\text{GHz}) = f_{\text{RF IN}} (\text{GHz}) - 24.9$$

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.