

Multiple Band To C-Band Receive Frequency Translators



This series of frequency translators provide block conversion from multiple RF input bands to the C-band receive frequency. Local control is by a front panel keyboard and remote control is available through an Ethernet and RS485 interfaces. Up to 64 discrete band and attenuation settings may be programmed into a nonvolatile memory.

Input Frequency (GHz)	Output Frequency (GHz)	Translation Frequency (GHz)	Model Number
10.7 – 11.45	3.45 – 4.2	7.25	DNB3-11.72-3.8
11.45 – 12.2	3.45 – 4.2	8	
11.955 – 12.755	3.4 – 4.2	8.555	
10.9 – 11.7	3.4 – 4.2	7.5	DNB3-11.82-3.8
11.7 – 12.5	3.4 – 4.2	8.3	
12.25 – 12.75	3.7 – 4.2	8.55	
10.95 – 11.7	3.45 – 4.2	7.5	DNB3-11.85-3.8
11.7 – 12.5	3.4 – 4.2	8.3	
11.955 – 12.755	3.4 – 4.2	8.555	
10.7 – 11.5	3.4 – 4.2	7.3	DNB3-11.8-3.8
11.4 – 12.2	3.4 – 4.2	8	
12.2 – 13	3.4 – 4.2	8.8	
7.1 – 7.9	3.4 – 4.2	3.7	DNB2-7.75-3.8
7.6 – 8.4	3.4 – 4.2	4.2	
0.250–0.500	3.55 – 3.8	3.3	DNB1-0.375-3.8
0.9 – 1.7	3.4 – 4.2	2.5	DNB3-1.75-3.8
1.6 – 2.4	3.4 – 4.2	1.8	
2 – 2.8	3.4 – 4.2	1.4	
17.7 – 18.5	3.4 – 4.2	14.3	DNB5-19.85-3.8
18.4 – 19.2	3.4 – 4.2	15	
19.1 – 19.9	3.4 – 4.2	15.7	
19.8 – 20.6	3.4 – 4.2	16.4	
20.5 – 21.3	3.4 – 4.2	17.1	

Features

- Automatic 5/10 MHz internal/external reference selection
- Ethernet and RS485/RS422 remote control
- RF input/output signal monitor ports
- 30 dB gain control
- Low phase noise
- 64 memory locations
- High frequency stability
- Summary alarm
- AC power supply unit power factor correction
- CE Mark

Options

- Higher stability reference
- RF connectors - Type N
- RoHS-5 compliant

Specifications	Translator
Type	Dual conversion
Frequency sense	No inversion
Input characteristics	
Impedance	50 ohms
Return loss	20 dB minimum
LO leakage	-80 dBm maximum
Signal monitor	-20 dBc nominal
Output characteristics	
Impedance	50 ohms
Return loss	20 dB minimum
Power output (P1dB)	+15 dBm typical at minimum attenuation, +10 dBm minimum, up to 20 dB attenuation
Signal monitor	-20 dBc nominal
Transfer characteristics	
Gain at min. atten.	35 dB minimum, 41 dB maximum
Image rejection	80 dB minimum
Level stability	±0.25 dB/day at constant temperature
Noise figure at min. atten.	15 dB maximum
Amplitude response	±0.5 dB/±40 MHz, ±2.0 dB over output band
Group delay	1 ns peak-to-peak maximum
Intermodulation distortion (third order)	With two 0 dBm output signals, 40 dBc minimum up to 20 dB attenuation
Spurious outputs	
Signal related	65 dBc minimum
Signal independent	-70 dBm maximum
Gain adjustment	30 dB in 0.2 dB steps
Frequency stability	±2 x 10 ⁻⁸ , 0 to 50°C (higher stability options available), ±5 x 10 ⁻⁹ /day typical (fixed temperature after 24 hour on time)
Automatic reference configuration	External 5 or 10 MHz at +4 ±3 dBm If external reference is below +1 dBm nominal, the converter will automatically lock to the internal reference.
Remote interface	RS485/RS422: 2 ports user selectable each port (1 port with Option 17C) Ethernet interface: HTTP based web server, SNMP 1.0 configuration, Alarm reporting via SNMP trap, Telnet access, Password protection

Options

- 10.** Higher frequency stability reference.
 - B.** $\pm 5 \times 10^{-9}$, 0 to 50°C,
1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - C.** $\pm 2 \times 10^{-9}$, 0 to 50°C,
1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).

- 17.** Remote control.
 - C.** RS232.

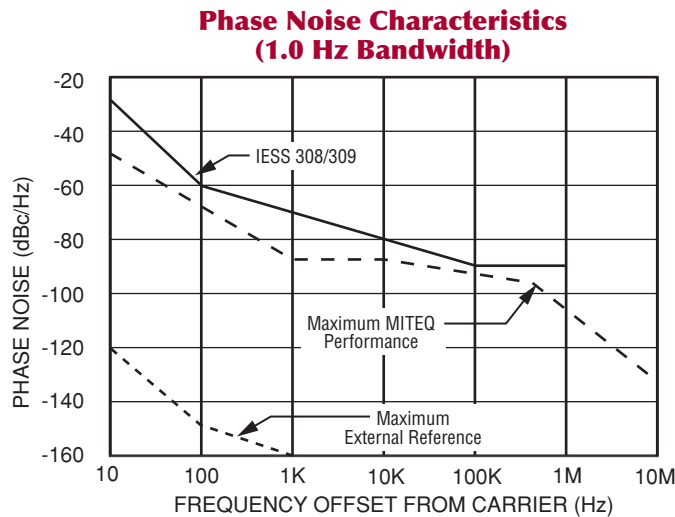
- 22.** Dedicated remote control panel provides mimic front panel at remote location, RCTR-T055.
 - A.** Provides remote control and status over a dedicated RS485 bus. Additional remote bus available for redundant status/control connection.
 - C.** Provides remote control and status over a Ethernet link. Remote panel will provide current status and control of remote panel over additional ports on the Ethernet connection. Ethernet port is still available for redundant status/control connection.

- NRF.** Type N RF connectors; input and output.

Notes: Missing option numbers are not applicable to this product.

For literature describing local control (front panel) and remote control (bus protocols), refer to MITEQ's Technical Note 25T055.

Phase Noise Specifications



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General Specifications

Primary Power Requirements

Voltage	90–250 VAC
Frequency	47–63 Hz
Power	50 W typical

Summary Alarm

Contact closure/open for DC voltage and/or LO alarm

Physical

Weight	16 pounds (7.26 kg) nominal
Overall dimensions	19" [482.6mm] x 1.75" [44.45mm] panel x 22" [558.8mm] maximum (chassis depth 20" [508mm])

Connectors

RF	SMA female
RF monitor	SMA female
External reference	BNC female
LO monitors (front panel)	SMA female
Remote interface	DEM-9S for RS485, RS422 and RS232, RJ-45 female for Ethernet
Summary alarm	DE-9P
Primary power input	IEC-320

Environmental

Operating

Ambient temperature	0 to 50°C
Relative humidity	Up to 95% at 30°C
Atmospheric pressure	Up to 10,000 feet

Nonoperating

Ambient temperature	-50 to +70°C
Relative humidity	Up to 95% at 40°C
Atmospheric pressure	Up to 40,000 feet
Shock and vibration	Normal handling by commercial carriers



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