



Ka-BAND TEST TRANSLATORS

For Outdoor Applications



FEATURES

- Minimum amplitude and delay distortion
- High frequency stability
- Low intermodulation distortion
- Digitally controlled 30 dB level control in 0.2 dB steps
- Low phase noise contribution
- Control via RS232/RS485 remote
- Time-stamped alarm history
- Summary alarm

OPTIONS

- 60 dB total level control
- Input filtering
- 5/10 MHz external reference
- Higher frequency stability
- Pressurized enclosure
- Control via RS422 remote

This series of test translators provides Ka-band transmit/receive conversions. The rugged package allows mounting in an outdoor environment. This translator is designed for applications where frequency translation is needed with a minimum of amplitude and delay distortion.

In addition to an RS485 or RS422 remote monitor and control port, each unit has an RS232 local control port. A robust feature set is provided with the local control software that communicates with the translator via a COM port on an IBM compatible PC.

SPECIFICATIONS

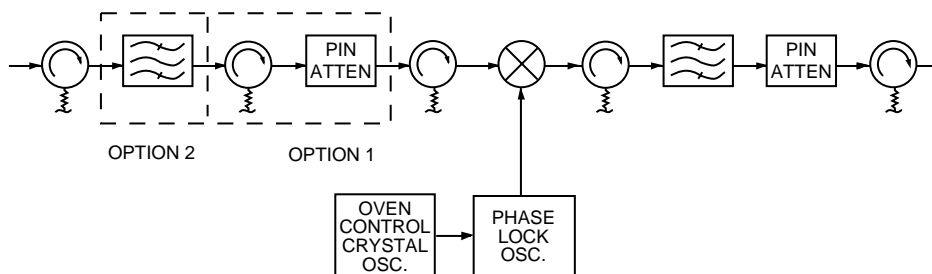
Model Number	Input Frequency (GHz)	Output Frequency (GHz)	LO Frequency (GHz)
DN-W2-28.25-17.95	28.0 – 28.5	17.7 – 18.2	10.3
DN-W2-28.75-18.45	28.5 – 29.0	18.2 – 18.7	10.3
DN-W2-29.25-18.95	29.0 – 29.5	18.7 – 19.2	10.3
DN-W2-29.75-19.45	29.5 – 30.0	19.2 – 20.2	10.3
DN-W2-28.5-18.2	28.0 – 29.0	17.7 – 18.7	10.3
DN-W2-29.5-19.2	29.0 – 30.0	18.7 – 19.7	10.3
DN-W2-28.25-18.45	28.0 – 28.5	18.2 – 18.7	9.8
DN-W2-28.75-18.95	28.5 – 29.0	18.7 – 19.2	9.8
DN-W2-30.25-20.45	30.0 – 30.5	20.2 – 20.7	9.8
DN-W2-30.75-20.95	30.5 – 31.0	20.7 – 21.2	9.8
DN-W2-28.5-18.7	28.0 – 29.0	18.2 – 19.2	9.8
DN-W2-29.5-19.7	29.0 – 30.0	19.2 – 20.2	9.8
DN-W2-30.5-20.7	30.0 – 31.0	20.2 – 21.2	9.8

Control accessories:
HCT-100 (Weather resistant hand-held controller)
RCT-100 (19" Rack-mount remote control panel)

FUNCTIONAL

Type	Single conversion	
Conversion loss	15 dB maximum, 18 dB maximum with Option 1 or 2	
Amplitude response	±0.25 dB over any 40 MHz band ±1 dB over output frequency band	
Frequency stability	±5 x 10 ⁻⁶ , -40 to +60°C (higher stability option available)	
Return loss	18 dB minimum/50 ohms	
Level control	30 dB in 0.2 dB steps	
Intermodulation distortion	With two inband input signals at -15 dBm, third order intermodulation products are less than 50 dBc.	
Input/output isolation	60 dB minimum	
Signal independent spurious outputs	All spurious signals harmonically related to LO shall be -25 dBm maximum.	
Phase noise (1.0 Hz bandwidth)	<u>Offset</u>	<u>Typical level</u>
	100 Hz	-67 dBc/Hz
	1 kHz	-93 dBc/Hz
	10 kHz	-100 dBc/Hz
	100 kHz	-104 dBc/Hz
	1 MHz	-120 dBc/Hz

FUNCTIONAL BLOCK DIAGRAM



GENERAL SPECIFICATIONS

PRIMARY POWER REQUIREMENTS

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

SUMMARY ALARM

Contact closure/open for DC voltage and/or LO alarm
 Status alarm readout on remote control bus

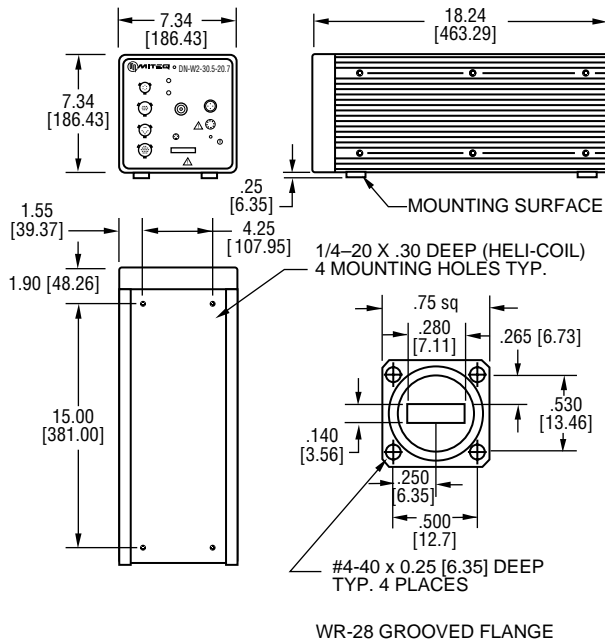
PHYSICAL

Weight 22 pounds typical
 Connectors
 RF connector below 26 GHz SMA female compatible
 RF connector above 26 GHz WR-28 waveguide (see outline for flange detail)
 External reference input (Option 6) BNC female
 Status interface mating connector MS3116F12-10S (mating connector supplied)
 Local control (RS232) interface connector..... MS3116F10-6P (mating connector supplied)
 AC input connector FCI Clipper series CL1M1102 (mating connector supplied)
 (Clipper series is interchangeable with MIL-C-5015 and AMP CPC product)

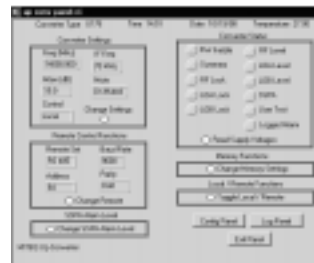
ENVIRONMENTAL

Operating
 Ambient temperature -40 to +60°C
 Atmospheric pressure Up to 10,000 feet
 Nonoperating
 Temperature -50 to +70°C
 Atmospheric pressure Up to 40,000 feet
 Shock and vibration..... Normal handling by commercial carriers

OUTLINE DRAWING



CONTROL ACCESSORIES



Robust software feature set (supplied as standard)



Weather resistant hand-held control unit MITEQ Model Number HCT-100 (sold separately)



19" Rack-mount control unit, 2RU MITEQ Model Number RCT-100 (sold separately)

NOTE: DIMENSIONS IN [] BRACKETS ARE IN MILLIMETERS.

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OPTIONS

- 1.** 30 dB additional level control.
60 dB level control in 0.2 dB steps. Independent control of input and output attenuators.
- 2.** Input filter.
- 5.** Higher frequency stability reference.
 $\pm 1 \times 10^{-6}$ /day, -40 to +60°C. Refer to factory for higher stability options.
- 6.** External reference configuration.
5 or 10 MHz, +4 \pm 3 dBm. Unit will automatically switch to the internal reference for external reference levels below +1 dBm nominal.
Internal reference stability is $\pm 5 \times 10^{-8}$, -40 to +60°C.
- 17.** Remote control (RS485 is the standard remote control interface).
A. RS422.
Note: Unit is supplied standard with an additional RS232 communication port.
- 26.** Pressurization.
Translator enclosure capable of 0.5 PSI.
Leak rate: 3.0 standard cubic feet per hour maximum.

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

For more detailed description, refer to MITEQ's Technical Note 25T052.



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