1/3 Rack-Mounted Test Translators

For Satellite Communications

Shown with Option 17, Display/Remote Control

Input (GHz)	Output (GHz)	LO (GHz)	Model Number
RF TRANSMIT-BAND TO RF RECEIVE-BAND			
5.85–6.425	3.625–4.2	2.225	DNS-6.1/3.9TR
5.85–6.65	3.4–4.2	2.45	DNS-6.25/3.8TR
6.725–7.025	4.5–4.8	2.225	DNS-6.8/4.6TR
7.9–8.4	7.25–7.75	0.65	DNS-8.15/7.5TR
7.9–8.4	7.175–7.675	0.725	DNS-8.15/7.4TR
12.75–13.25	10.7–11.2	2.05	DNS-13/11.2TR
13.75–14.5	10.7–11.45	3.05	DNS-14/11TR
13.75–14.5	11.45–12.2	2.3	DNS-14/11.8TR
13.75–14.5	12–12.75	1.75	DNS-14/12.3TR
13.75–14.5	10.95–11.7	2.8	DNS-14/11.3TR
13.75–14.5	11.7–12.45	2.05	DNS-14/12TR
17.3–18.1	11.7–12.5	5.6	DNS-17.7/12.1TR
Ka-BAND			
29.5–30	19.2–19.7	10.3	DNS-29.75/19.45TR
29.5–30	19.7–20.2	9.8	DNS-29.75/19.95TR
29–30	19.2–20.2	9.8	DNS-29.5/19.7TR
30–31	20.2–21.2	9.8	DNS-30.5/20.7TR

Input (GHz)	Output (GHz)	LO (GHz)	Model Number
RF TRANSMIT-BAND TO L-BAND			
5.85–6.65	0.95–1.75	4.9	DN1-6.25TR
5.925–6.425	0.95–1.45	7.375	DN1-6.175TR-INV
7.9–8.4	0.95–1.45	6.95	DN1-8.15TR
12.75–13.25	0.95–1.45	11.8	DN1-13TR
14–14.5	0.95–1.45	13.05	DN1-14.25TR
13.75–14.5	0.95–1.7	12.80	DN1-14.125TR
14.5–14.8	0.95–1.25	13.55	DN1-14.65TR
17.3–18.1	0.95–1.75	16.35	DN1-17.7TR
Ka-BAND			
28.35–28.6	0.95–1.2	27.4	DN1-28.475TR
29.25–29.5	0.95–1.2	28.3	DN1-29.375TR
29.25–30	0.95–1.7	28.3	DN1-29.75TR
30–31	0.95–1.95	29.05	DN1-30.5TR
30–31	1–2	29	DN1-30.5-1TR

This equipment is designed for applications where frequency translation is needed with a minimum of amplitude and group delay distortion.

Features

- **30 dB level control**
- **Local oscillator monitor port**
- **Output signal monitor port**
- **Low phase noise**
- **Low intermodulation distortion**
- **Summary alarm**
- **CE Mark**

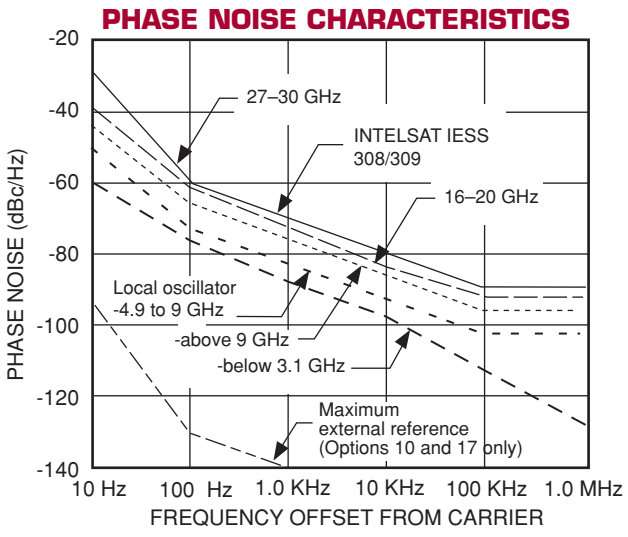
Options

- **Higher frequency stability**
- **RS422/RS485 and 10/100Base-T Ethernet**
- **Automatic 5/10MHz internal/external reference selection**
- **Gain transmit to L-band**
- **30 dB additional level control**
- **LO level alarm**

U.S. Patent #7,510,090

Specifications	IF-Band	L-Band
Input characteristics		
Frequency	Refer to model number table	
Impedance	50 ohms	
Return loss	18 dB minimum	
Non damage level	+10 dBm maximum	
Output characteristics		
Frequency	Refer to model number table	
Impedance	50 ohms	
Return loss	18 dB minimum	
Output signal monitor	N/A	-20 dBc nominal
Transfer characteristics		
Conversion loss	25 dB maximum	15 dB maximum (20 dB gain optional)
Level control	30 dB continuously adjustable, 30 dB/0.2 dB step (Option 17)	
Conversion loss stability	±0.25 dB/day at 23°C	
Amplitude response	±0.25 dB/40 MHz, ±1 dB/output frequency band	
Intermodulation	-50 dBc minimum at -5 dBm input	
Frequency stability	±3 x 10^{-6}/day (0 to 50°C)	
Input/Output isolation	60 dB minimum	
Mute function	60 dB minimum	

Maximum Phase Noise Characteristics



Options

1. Gain on transmit to L-band units.

Gain	20 ±3 dB
Power output (1 dB compression)	+18 dBm minimum
Gain slope	0.03 dB/MHz maximum
Gain stability	±0.25 dB/day maximum at constant temperature
Intermodulation distortion (third order)	With two inband signals at 0 dBm output, third order intermodulation products are less than 60 dBc minimum and 50 dBc minimum (Ka-band units).
Noise figure	15 dB maximum (18 dB for Ka-band)

7. 30 dB additional level control.

8. LO level alarm.

9. Input filter.

10. Higher frequency stability reference/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. Reference oscillator acts as an analog phase lock with a 0.1 Hz nominal loop bandwidth.
Typical loop suppression of the external reference is as follows -28 dB at 1 Hz offset; 65 dB at 10 Hz offset and 100 dB at 100 Hz offset. Internal oscillator is available with the following stabilities:

A. $\pm 5 \times 10^{-8}$, 0 to 50°C,
5×10^{-9}/day typical (fixed temperature after 24 hour on time).

B. $\pm 1 \times 10^{-8}$, 0 to 50°C,
1×10^{-9}/day typical (fixed temperature after 24 hour on time).

C. $\pm 5 \times 10^{-9}$, 0 to 50°C,
1×10^{-9}/day typical (fixed temperature after 24 hour on time).

Note: Translator may require 7-10 days to reach stability after long storage periods.

17. Remote control/display ..... 10/100Base-T Ethernet interface providing:
HTTP-based web server
SNMP 1.0 configuration
Alarm reporting via SNMP Trap
Telnet access
Password protection and selectable RS485/422
Gain control is 30 dB in 0.2 dB steps
Alarm, reference and mute status on front panel

Note: Display is only provided with remote control Option 17.
For literature describing local control (front panel) and remote control (bus control), refer to MITEQ's Technical Note 25T066. Missing option numbers are not applicable for this product.

Accessories

Rack mount frame

Model number	OL-TR3-20
Weight	1.5 lbs [0.68 kg] nominal
Dimensions	19" [482.6mm] x 1.75" [44.5mm] x 20" [508.0mm]

General Specifications

PRIMARY POWER REQUIREMENTS

Voltage ..... 90–250 VAC
Frequency ..... 47–63 Hz
Consumption ..... 12 W typical

PHYSICAL

Weight ..... 4.5 pounds (2.04 kg) nominal
Dimensions ..... 5.70" [144.8mm] x 1.48" [37.6mm] x 18" [457.2mm] (excluding connectors)
Connectors
- RF band ..... SMA female
- Output monitor ..... SMA female
- LO monitor ..... SMA female
- Status interface DE-9S
- Redundancy interface DE-9P
- Remote interface (Option 17) ..... RJ-45 female for Ethernet, RS422/485 available on status connector
- Primary power input IEC-320

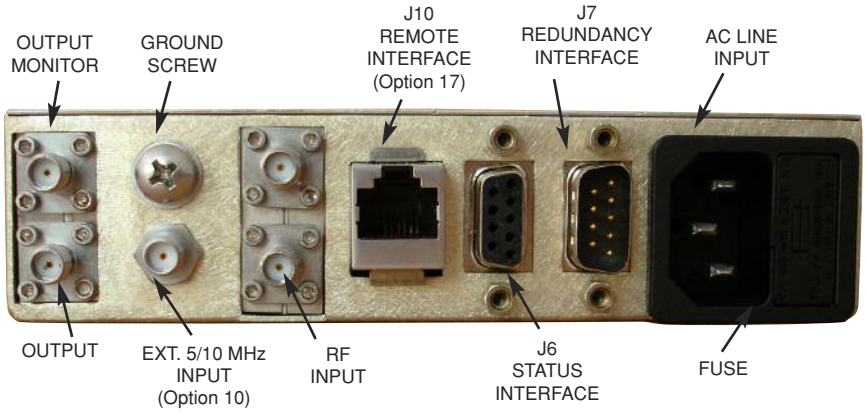
External reference ..... SMA female (Option 10 only)

ENVIRONMENTAL

Operating
- Temperature ..... 0 to 50°C
- Relative humidity ..... Up to 95% at 30°C
- Atmospheric pressure ..... Up to 10,000 feet

Nonoperating
- Temperature ..... -50 to +70°C
- Relative humidity ..... Up to 95% at 45°C
- Atmospheric pressure ..... Up to 40,000 feet
- Shock and vibration ..... Normal handling by commercial carriers

Rear View Panel



TYPICAL REAR PANEL VIEW (with Option 17)

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