

Test Translators



Input Frequency (GHz)	Output Frequency (GHz)	LO Frequency (GHz)	Model Number
RF Transmit-Band to RF Receive-Band			
2.025–2.125	2.2–2.3	0.175	DNS-2.07/2.25
5.85–6.425	3.625–4.2	2.225	DNS-6.1/3.9
5.85–6.65	3.4–4.2	2.45	DNS-6.25/3.8
6.725–7.025	4.5–4.8	2.225	DNS-6.8/4.6
7.9–8.4	7.25–7.75	0.65	DNS-8.15/7.5
7.9–8.4	7.175–7.675	0.725	DNS-8.15/7.4
12.75–13.25	10.7–11.2	2.05	DNS-13/11.2
13.75–14.5	10.7–11.45	3.05	DNS-14/11
13.75–14.5	11.45–12.2	2.3	DNS-14/11.8
13.75–14.5	12–12.75	1.75	DNS-14/12.3
13.75–14.5	10.95–11.7	2.8	DNS-14/11.3
13.75–14.5	11.7–12.45	2.05	DNS-14/12
17.3–18.1	11.7–12.5	5.6	DNS-17.7/12.1
Synthesized RF Transmit-Band to RF Receive Band			
2.025–2.125	2.2–2.3	0.179(±5 MHz)	DNS-2.07/2.25-1K
2.025–2.125	2.2–2.3	0.179(±5 MHz)	DNS-2.07/2.25DC-1K*
Ka-Band			
29.5–30	19.2–19.7	10.3	DNS-29.75/19.45
29.5–30	19.7–20.2	9.8	DNS-29.75/19.95
29–30	19.2–20.2	9.8	DNS-29.5/19.7
30–31	20.2–21.2	9.8	DNS-30.5/20.7
Synthesized Ka-Band			
29.5–30	19.2–19.7	10.3(±1 MHz)	DNS-29.75/19.45-1K
29.5–30	19.7–20.2	9.8(±1 MHz)	DNS-29.75/19.95-1K
29–30	19.2–20.2	9.8(±1 MHz)	DNS-29.5/19.7-1K
30–31	20.2–21.2	9.8(±1 MHz)	DNS-30.5/20.7-1K
RF Transmit-Band to L-Band			
5.85–6.65	0.95–1.75	4.9	DN1-6.25
5.925–6.425	0.95–1.45	7.375	DN1-6.175-INV
7.9–8.4	0.95–1.45	6.95	DN1-8.15
12.75–13.25	0.95–1.45	11.8	DN1-13
14–14.5	0.95–1.45	13.05	DN1-14.25
13.75–14.5	0.95–1.7	12.80	DN1-14.125
14.5–14.8	0.95–1.25	13.55	DN1-14.65
17.3–18.1	0.95–1.75	16.35	DN1-17.7
Ka-Band to L-Band			
28.35–28.6	0.95–1.2	27.4	DN1-28.475
29.25–29.5	0.95–1.2	28.3	DN1-29.375
29.25–30	0.95–1.7	28.3	DN1-29.75
30–31	0.95–1.95	29.05	DN1-30.5
30–31	1–2	29	DN1-30.5-1

* Dual Conversion.

This series of test translators is designed to translate the C-, X-, Ku- and Ka-band satellite communication frequency transmit bands to their respective receive frequency bands.

Features

- High frequency stability
- Low intermodulation distortion
- Low phase noise contribution
- 10/100Base-T Ethernet and RS485/422
- 64 programmable memory locations
- 30 dB level control in 0.2 dB steps
- Automatic 5/10 MHz internal/external reference selection
- Summary Alarm
- CE Mark
- Mute

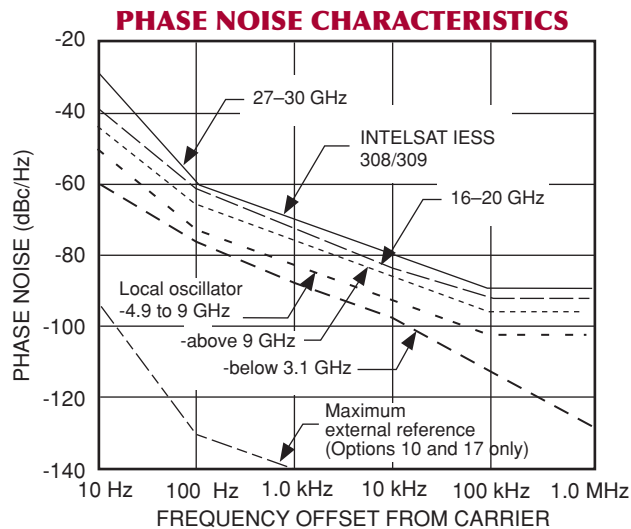
Options

- Higher frequency stability
- RS232 remote control
- Gain on transmit to L-Band
- 30 dB additional level control
- LO level alarm
- Input filter
- Type “N” RF connectors

Specifications	RF to RF	RF to 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/0.2 dB step (attenuator in output band)	
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	
Spurious (inband)		
Dependent	-30 dBc up to 0 dBm input	-60 dBc up to 0 dBm input
Independent (including LO harmonics)	-25 dBm maximum	-60 dBm maximum
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)	
Input/Output isolation	60 dB minimum	
Mute function	60 dB minimum	
Automatic reference configuration	External 5 or 10 MHz at +4 ±3 dBm. If external reference is below +1 dBm nominal, the translator will automatically lock to the internal reference.	
Remote control	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	

Note: All specifications guaranteed at maximum gain unless otherwise noted.

Phase Noise Specifications



General Specifications

PRIMARY POWER REQUIREMENTS

Voltage.....	100–240 VAC (-10%, +6%)
Frequency.....	47–63 Hz
Consumption	25 W typical

PHYSICAL

Weight.....	15 pounds (6.8 kg) nominal
Connectors	
RF	SMA female (below 18.1 GHz), 3.5mm (18–22 GHz), 2.9mm (above 27 GHz)
L-Band.....	N female
LO monitors (front panel)	SMA female
Alarm	DE-9P
External reference input	BNC female
Remote interface	DE-9S for RS485, RS422 and RS232, RJ-45 female for Ethernet
Primary power input.....	IEC-320

ENVIRONMENTAL

Operating	
Ambient temperature.....	0 to 60°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 40°C
Atmospheric pressure	Up to 40,000 feet
Shock and vibration.....	Normal handling by commercial carriers

Options

1. Gain on transmit to L-band units.
 - Gain 20 \pm 3 dB
 - Power output (1 dB compression) +18 dBm minimum
 - Gain slope 0.03 dB/MHz maximum
 - Gain stability \pm 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.
 - B.** \pm 5 x 10⁻⁹, 0 to 50°C, 1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - C.** \pm 2 x 10⁻⁹, 0 to 50°C, 1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - E.** \pm 5 x 10⁻⁹, 0 to 50°C, 1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time). See Note 1 below.
 - F.** \pm 2 x 10⁻⁹, 0 to 50°C, 1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time). See Note 1 below.

NOTE 1: Analog reference Phase Lock: External 5 or 10 MHz at +4 \pm 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.

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

NRF. Type N female input/output connectors (not available above 13 GHz).

Note: For literature describing local control (front panel) and remote control (bus control), refer to MITEQ's Technical Note 25T063. Missing option numbers are not applicable for this product.