

Tri-Band Frequency Test Translators



"BU" Series

"B" Series

Band	RF Input (GHz)	LO Frequency (GHz)	RF Output (GHz)	Model Number
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-1, DN-3BU-1
2	7.9 – 8.4	0.65	7.25 – 7.75	
3	14 – 14.5	1.75	12.25 – 12.75	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-2, DN-3BU-2
2	7.9 – 8.4	0.65	7.25 – 7.75	
3	14 – 14.5	2.3	11.7 – 12.2	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-3, DN-3BU-3
2	7.9 – 8.4	0.65	7.25 – 7.75	
3	14 – 14.5	2.55	11.45 – 11.95	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-4, DN-3BU-4
2	7.9 – 8.4	0.65	7.25 – 7.75	
3	14 – 14.5	3.05	10.95 – 11.45	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-5, DN-3BU-5
2	7.975 – 8.4	0.725	7.25 – 7.675	
3	14 – 14.5	1.75	12.25 – 12.75	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-6, DN-3BU-6
2	7.975 – 8.4	0.725	7.25 – 7.675	
3	14 – 14.5	2.3	11.7 – 12.2	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-7, DN-3BU-7
2	7.975 – 8.4	0.725	7.25 – 7.675	
3	14 – 14.5	2.55	11.45 – 11.95	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-3B-8, DN-3BU-8
2	7.975 – 8.4	0.725	7.25 – 7.675	
3	14 – 14.5	3.05	10.95 – 11.45	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-6B-1
2	7.9 – 8.4	0.65	7.25 – 7.75	
3a	13.75 – 14.5	3.05	10.7 – 11.45	
3b	13.75 – 14.5	2.55	11.2 – 11.95	
3c	13.75 – 14.5	2.3	11.45 – 12.2	
3d	13.75 – 14.5	1.75	12 – 12.75	
1	5.845 – 6.425	2.225	3.62 – 4.2	DN-7B-1
2a	7.975 – 8.4	0.725	7.25 – 7.675	
2b	7.9 – 7.95	0.2	7.7 – 7.75	
3a	13.75 – 14.5	3.05	10.7 – 11.45	
3b	13.75 – 14.5	2.55	11.2 – 11.95	
3c	13.75 – 14.5	2.3	11.45 – 12.2	DN-8B-1
3d	13.75 – 14.5	1.75	12 – 12.75	
1a	5.845 – 6.425	2.225	3.62 – 4.2	
1b	6.425 – 6.725	3.025	3.4 – 3.7	
2a	7.975 – 8.4	0.725	7.25 – 7.675	
2b	7.9 – 7.95	0.2	7.7 – 7.75	
3a	13.75 – 14.5	3.05	10.7 – 11.45	
3b	13.75 – 14.5	2.55	11.2 – 11.95	
3c	13.75 – 14.5	2.3	11.45 – 12.2	
3d	13.75 – 14.5	1.75	12 – 12.75	

This series of test translators is designed to translate the C-, X-, and Ku-band satellite communication frequency transmit bands to their respective receive frequency bands. The "BU" series provides front panel control of band selection and attenuation. The high performance "B" series provides three or more frequency band translations with local and remote control.

Features

- Minimum amplitude and delay distortion
- High frequency stability
- Low intermodulation distortion
- Low phase noise contribution
- CE mark

"BU" Series Features

- 30 dB continuous level control

"B" Series Features

- RS485/RS422 remote control
- 64 programmable memory locations
- 30 dB level control in 0.2 dB steps
- Automatic 5/10 MHz internal/external reference selection
- Summary alarm

"B" Series Options

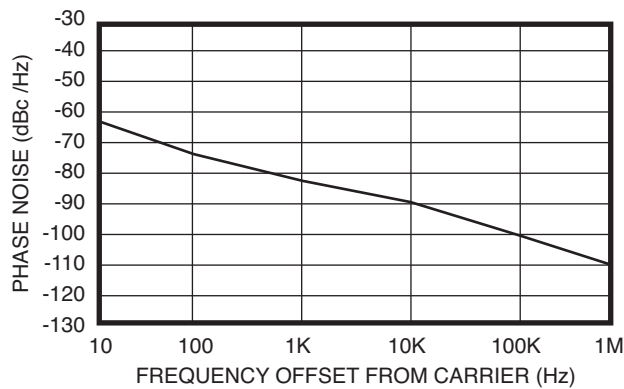
- Higher stability reference
- RS232 or 10/100Base-T Ethernet

Specifications

Conversion loss	22 dB maximum, 18 dB typical (DN-6B-1, -7B-1 and -8B-1), 18 dB maximum, 15 dB typical (DN-3B and DN-3BU)
Amplitude response	± 0.4 dB over any 40 MHz, ± 1 dB over each output frequency band
Input/output return loss	18 dB minimum
Frequency stability	
"BU" series	$\pm 1 \times 10^{-6}$ /day, 0 to 50°C
"B" series	$\pm 2 \times 10^{-8}$ /day, 0 to 50°C (higher stability options available), $\pm 5 \times 10^{-9}$ /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 translator will automatically lock to the internal reference ("B" series)
Level control	30 dB continuously adjustable ("BU" series), 30 dB in 0.2 dB steps ("B" series)
Intermodulation distortion	With two inband signals at -13 dBm input, third order intermodulation products are less than 50 dBc
Input/output isolation	60 dB minimum

Phase Noise Specifications

MAXIMUM PHASE NOISE CHARACTERISTICS (1.0 Hz BANDWIDTH)



Options

- 1.** 30 dB additional level control.
 - A.** 60 dB level control. Simultaneous control of input and output attenuators (“BU” series).
 - B.** 60 dB level control. Independent control of input and output attenuators (“B” series).

- 4.** External local oscillator input (“B” series).

Addition of SPDT switch for internal/external local oscillator selection.
Rear panel SMA connector and selection switch. Local oscillator input at 13 ± 1 dBm.

- 10.** Higher frequency stability reference (“B” series).
 - 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. Refer to MITEQ’s Technical Note 25T055 for details (“B” series).
 - C.** RS232 remote interface.
 - H.** 10/100Base-T Ethernet interface providing:
 - Web-browser based configuration
 - SNMP 1.0 configuration
 - Alarm reporting via SNMP Trap
 - Telnet access
 - Password protection

Note: Missing option numbers are not applicable for this product.

General Specifications

Primary Power Requirements

Voltage.....	100-240 VAC (-10%, +6%)
Frequency.....	47-63 Hz
Power consumption.....	25 W typical for DN-3B and DN-3BU, 50 W for DN-6B-1, -7B-1 and -8B-1

Physical

Weight.....	20 pounds nominal (9.07 kg)
Chassis dimensions.....	19" [482.6mm] x 1.75" [44.45mm] panel height x 20" [508mm] maximum
Connectors	
RF.....	SMA female
LO monitors.....	SMA female
Alarm ("B" series).....	DE-9P
External reference ("B" series).....	BNC female
Remote interface ("B" series).....	DE-9S for RS485, RS422 and RS232, RJ-45 female for Ethernet
Test points ("BU" series)	
LO phase voltage (front panel).....	Jack
LO frequency/power monitor (rear panel).....	SMA female
Test points ("B" series)	
LO frequency/power monitor (front panel).....	SMA female
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

