Portable Satellite Test Translators

Band	Input Frequency (GHz)	Output Frequency (GHz)
Available Satellite Bands		
C	5.845–6.425	3.62–4.2
X	7.9–8.4	7.25–7.75
	7.9–8.4	7.25–7.675
Ku	14–14.5	12.25–12.75
		11.7–12.2
		11.45–11.95
		10.95–11.45
Ka	30–31	20.2–21.2

This series of test translators is designed to translate the C-, X-, Ku- and Ka-band satellite communications frequency transmit bands to their respective receive frequency bands. This series of test translators is available in single-, dual-, tri- and quad-band configurations. All translators are built in a convenient “suitcase” style package. The 3BU series features the translations for C-, X- and Ku-bands while the 4BU series also includes Ka-band.

Features

- **High frequency stability**
- **Minimum amplitude and delay distortion**
- **Low intermodulation distortion**
- **Low phase noise contribution**
- **30 dB level control**
- **Portable suitcase style**
- **Single-, dual-, tri- and quad-band units**
- **Silver aluminum finish**

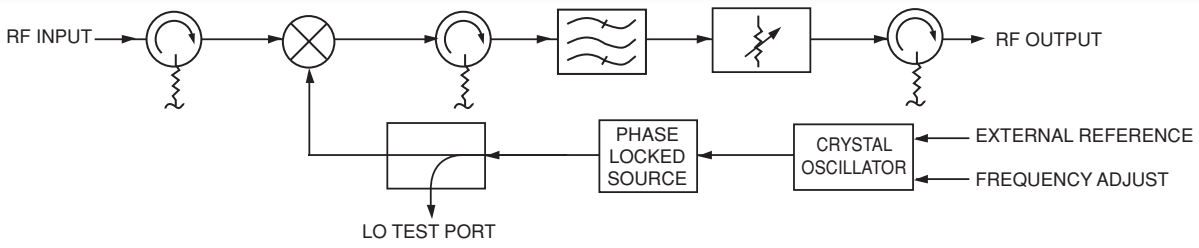
Specifications

Band	RF Input Frequency (GHz)	LO Frequency (GHz)	RF Output Frequency (GHz)	Model Number
Single-Band				
C	5.845–6.425	2.225	3.62–4.2	DNT-1BU-1
X	7.9–8.4	0.650	7.25–7.75	DNT-1BU-2
X	7.9–8.4	0.725	7.25–7.675	DNT-1BU-3
Ku	14–14.5	1.750	12.25–12.75	DNT-1BU-4
Ku	14–14.5	2.300	11.7–12.2	DNT-1BU-5
Ku	14–14.5	2.550	11.45–11.95	DNT-1BU-6
Ku	14–14.5	3.050	10.95–11.45	DNT-1BU-7
Ka	30–31	9.800	20.2–21.2	DNT-1BU-8
Dual-Band				
1	5.845–6.425	2.225	3.62–4.2	DNT-2BU-1
2	7.9–8.4	0.650	7.25–7.75	
1	5.845–6.425	2.225	3.62–4.2	DNT-2BU-2
2	7.9–8.4	0.725	7.25–7.675	
1	5.845–6.425	2.225	3.62–4.2	DNT-2BU-3
2	14–14.5	1.750	12.25–12.75	
1	5.845–6.425	2.225	3.62–4.2	DNT-2BU-4
2	14–14.5	2.300	11.7–12.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-2BU-5
2	14–14.5	2.550	11.45–11.95	
1	5.845–6.425	2.225	3.62–4.2	DNT-2BU-6
2	14–14.5	3.050	10.95–11.45	
1	5.845–6.425	2.225	3.62–4.2	DNT-2BU-7
2	30–31	9.800	20.2–21.2	
Tri-Band				
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-1
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	1.750	12.25–12.75	
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-2
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	2.300	11.7–12.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-3
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	2.550	11.45–11.95	
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-4
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	3.050	10.95–11.45	
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-5
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	1.750	12.25–12.75	
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-6
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	2.300	11.7–12.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-7
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	2.550	11.45–11.95	
1	5.845–6.425	2.225	3.62–4.2	DNT-3BU-8
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	3.050	10.95–11.45	

Specifications (Cont.)

Band	RF Input Frequency (GHz)	LO Frequency (GHz)	RF Output Frequency (GHz)	Model Number
		Quad-Band		
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-1
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	1.750	12.25–12.75	
4	30–31	9.800	20.2–21.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-2
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	2.300	11.7–12.2	
4	30–31	9.800	20.2–21.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-3
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	2.550	11.45–11.95	
4	30–31	9.800	20.2–21.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-4
2	7.9–8.4	0.650	7.25–7.75	
3	14–14.5	3.050	10.95–11.45	
4	30–31	9.800	20.2–21.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-5
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	1.750	12.25–12.75	
4	30–31	9.800	20.2–21.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-6
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	2.300	11.7–12.2	
4	30–31	9.800	20.2–21.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-7
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	2.550	11.45–11.95	
4	30–31	9.800	20.2–21.2	
1	5.845–6.425	2.225	3.62–4.2	DNT-4BU-8
2	7.9–8.4	0.725	7.25–7.675	
3	14–14.5	3.050	10.95–11.45	
4	30–31	9.800	20.2–21.2	

Functional Block Diagram



Phase Noise (Maximum)

Offset (Hz)	Below 3.1 GHz (dBc/Hz)	9.8 GHz (dBc/Hz)
10	-63	-48
100	-78	-73
1K	-94	-103
10K	-110	-112
100K	-130	-118
1M	-145	-138

General Specifications

Functional

Conversion loss	18 dB maximum, 15 dB typical
Amplitude response	±0.25 dB over any 40 MHz, ±1.0 dB over any band
Input/output return loss	18 dB minimum (50 ohms)
Level control	30 dB minimum
Input/output isolation	60 dB minimum
Intermodulation distortion	With two inband input signals at -13 dBm, third order intermodulation products are less than 50 dBc.
Frequency stability	±2 x 10^{-6}/day (0 to 50°C)

Primary Power Requirements

Voltage	90–250 VAC
Frequency	47–63 Hz
Power consumption	25 W typical, 30 W typical for 4BU Series

Physical

Weight	20 pounds (9.07 kg) typical
Overall dimension	6" [152.4mm] x 13" [330.2mm] x 18" [457.2mm]
Connectors	
C-, X- and Ku-band	SMA female
Ka-band input	K female
Ka-band output	SMA female
LO monitors	SMA female
AC input	IEC-320

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 40°C
Atmospheric pressure	Up to 40,000 feet
Shock and vibration	Normal handling by commercial carriers

Options

Available paint colors:

Monarch Black	FED-STD-595B color 27038
Green 383	FED-STD-595B color 34094
Desert Tan	FED-STD-595B color 33303

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