



C-, X- AND Ku-BAND RACK-MOUNTED BLOCK DOWNCONVERTERS

For Satellite Communications



This equipment is designed for applications where frequency translation is needed from receive frequencies to L-band.

FEATURES

- High frequency stability
- Low intermodulation distortion
- Low phase noise contribution
- Summary alarm
- Automatic 5/10 MHz and internal/external reference selection

OPTIONS

- Higher frequency stability

SPECIFICATIONS

MODEL NUMBER	RF INPUT (GHz)	LO FREQUENCY (GHz)	RF OUTPUT (GHz)	FREQUENCY INVERSION
DNB-3.8S	3.4–4.2	5.15	0.95–1.75	YES
DNB-4.65S	4.5–4.8	3.55	0.95–1.25	NO
DNB-7.5S	7.25–7.75	6.3	0.95–1.45	NO
DNB-11.2S	10.7–11.7	9.75	0.95–1.95	NO
DNB-11.325S	10.95–11.7	10.0	0.95–1.70	NO
DNB-11.85S	11.45–12.25	10.5	0.95–1.75	NO
DNB-12.1S	11.7–12.5	10.75	0.95–1.75	NO
DNB-12.5S	12.2–12.75	11.25	0.95–1.50	NO

FUNCTIONAL

Gain	35 dB minimum
Amplitude response	±0.5 dB over any 40 MHz ±1 dB over output frequency band
Input return loss	20 dB minimum/50 ohms
Output return loss	14 dB minimum/50 ohms
Frequency stability	±2 x 10 ⁻⁸ (0 to 50°C) ±5 x 10 ⁻⁹ /day
Intermodulation distortion	With two inband output signals at -5 dBm, third order intermodulation products are less than 60 dBc
Input/output isolation	60 dB minimum
Noise figure.....	20 dB maximum
Power output.....	+15 dBm minimum at 1 dB compression point
Image rejection	60 dB minimum
Spurious outputs (inband)	
Signal related	60 dBc up to -35 dBm input*
Signal independent	-60 dBm maximum
Level stability	±0.25/day at constant temperature
Phase noise	See curves
External reference input	5 MHz or 10 MHz, +4 ±3 dBm. Unit will automatically switch to the internal reference for external reference input levels below +1 dBm nominal
Alarms and indicators	
LO out-of-lock.....	Red LED (front panel)
Internal reference	Amber LED (front panel)
Summary alarm	Contact closure status for DC power, local oscillator, and internal/external reference
Redundant switch.....	Contact closure/open for DC power and local oscillator status

* Second harmonic for DNB-11.2 is 35 dBc up to -35 dBm input

PRIMARY POWER REQUIREMENTS

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

PHYSICAL

Weight	20 pounds nominal
Overall dimensions.....	19" x 1.75" panel height x 20" maximum
Rear panel connectors	
RF input.....	SMA female
L-band output	N female
External reference input	BNC female
Summary alarm	DE-9P
Redundancy alarm	DE-9P
Test points	
DC voltage	Jack (internal)
LO frequency/power monitor	SMA female (front panel)

SPECIFICATIONS (CONT.)

ENVIRONMENTAL

Operating

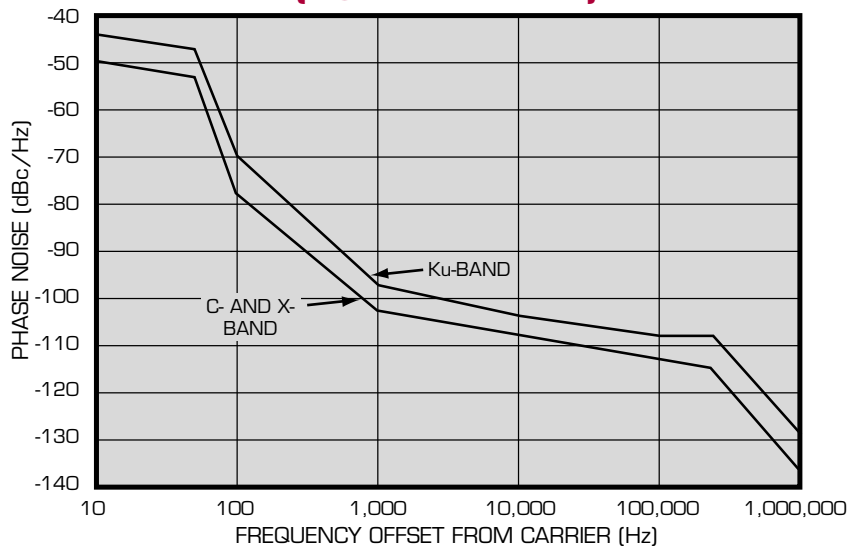
Ambient temperature	0 to 50°C
Relative humidity	Up to 95% at 30°C
Atmospheric pressure	Up to 10,000 feet

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

PHASE NOISE

**TYPICAL
PHASE NOISE CHARACTERISTICS
(1.0 Hz BANDWIDTH)**



OPTIONS

10. Higher frequency stability reference.

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

Note: Missing option numbers are not applicable for these systems.



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