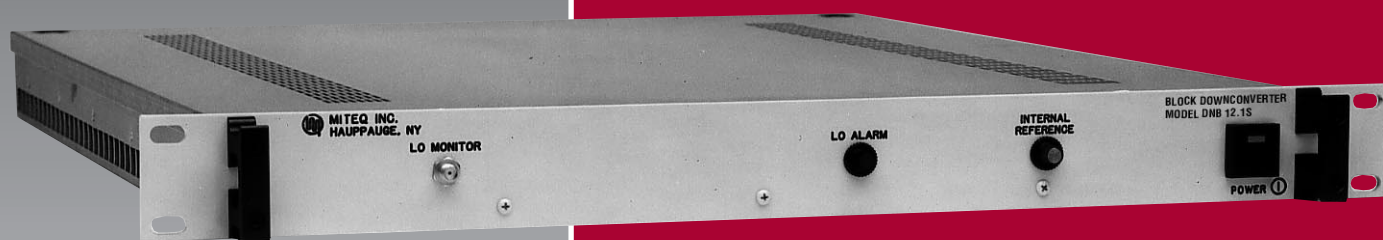




# C-, X- AND Ku-BAND RACK-MOUNTED BLOCK DOWNCONVERTERS

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<br>±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 <sup>-8</sup> (0 to 50°C)<br>±5 x 10 <sup>-9</sup> /day   |
| Intermodulation distortion ..... | With two inband output signals at -5 dBm, third order<br>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<br>the internal reference for external reference input levels below<br>+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<br>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

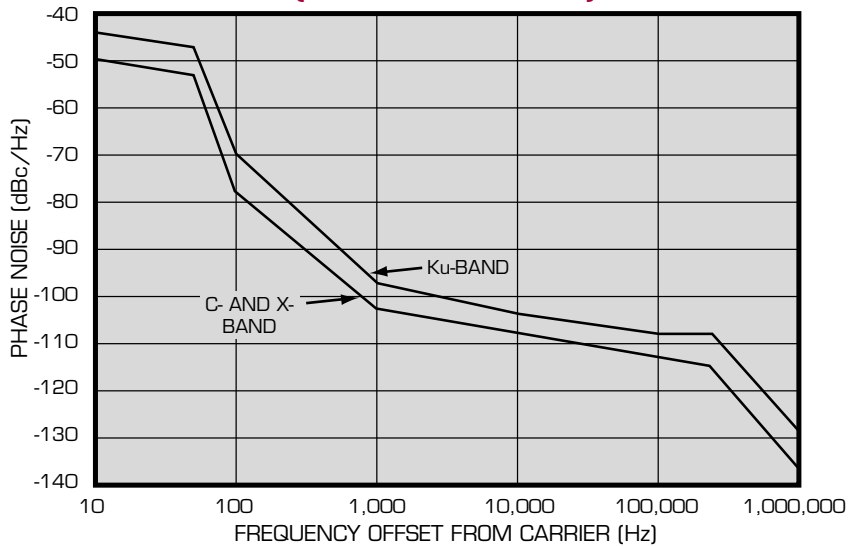
|                            |                   |
|----------------------------|-------------------|
| Ambient temperature .....  | 0 to 50°C         |
| Relative humidity .....    | Up to 95% at 30°C |
| Atmospheric pressure ..... | Up to 10,000 feet |

#### 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<sup>-9</sup>/day typical (fixed temperature after 24 hour on time).
  - B.**  $\pm 5 \times 10^{-9}$ , 0 to 50°C,  
1 x 10<sup>-9</sup>/day typical (fixed temperature after 24 hour on time).
  - C.**  $\pm 2 \times 10^{-9}$ , 0 to 50°C,  
1 x 10<sup>-9</sup>/day typical (fixed temperature after 24 hour on time).

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



**100 Davids Drive, Hauppauge, NY 11788**  
**TEL.: (631) 436-7400 • FAX: (631) 436-7431/436-7430**  
**[www.miteq.com](http://www.miteq.com)**