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# Wenzel Associates, Inc.

"Quietly the Best"

# LNFDN

## Blue Tops RF Modules > Low Noise Frequency Divide-by-N

### Features:

- Division Factor: 2 to 256
- Output Waveform: Sine or Square
- Intrinsic Phase Noise to -165 dBc/Hz
- Optional Output Bandpass Filter
- Low Power Consumption

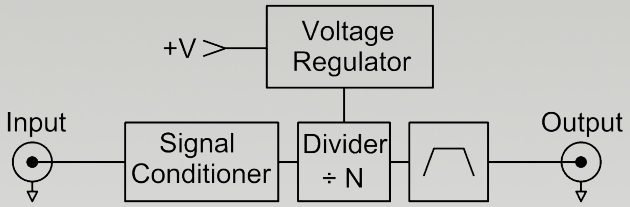
### Applications:

- Synthesizer Building Block
- Communication Systems
- Radar Systems
- Electronic Warfare Systems




### Description:

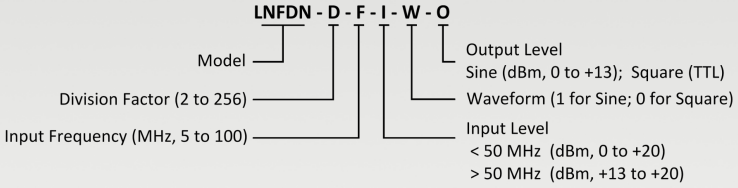
The LNFDN is a frequency divider module with a customer specified division factor from 2 to 256 for input frequencies up to 100 MHz. This module features a divider, an input signal conditioner, an output bandpass filter for excellent harmonic suppression and a low noise voltage regulator for power supply spurious rejection, all integrated into a single housing. The output bandpass filter can be included as required or bypassed for a broadband response (TTL compatible square wave output).




| Electrical Specifications | | |
|---|---|---|
| Division Factor | | 2 to 256 |
| Input Frequency | | 5 MHz to 100 MHz, fixed |
| Input Level | < 50 MHz: | 0 dBm to +20 dBm, fixed (±1 dB) |
| | > 50 MHz: | +13 dBm to +20 dBm, fixed (±1 dB) |
| Output Frequency | | down to 2.5 MHz (sine); to 10 kHz (square) |
| Output Waveform | | Sine or Square |
| Output Level | Sine | to +13 dBm (±2 dB) |
| | Square (TTL Compatible) | ≤ 0.8 VDC (LO); +4.8 to +5.2 VDC (HI) |
| Phase Noise, Residual (Intrinsic, Output Referred, 100 MHz Model) | | -165 dBc/Hz (100 kHz offset) |
| Harmonics | | ≤ -30 dBc (sine) |
| Sub-Harmonics | | ≤ -50 dBc (sine) |
| Spurious (Excluding Supply Line Related Spurs) | | ≤ -80 dBc |
| Supply Voltage | | +15 VDC ±5% |
| Current Draw | | ≤ 60 mA |
| Operating Temperature | | 0 to +50°C |
| Storage Temperature | | -40 to +85°C |
| **Mechanical** | | |
| Dimensions | | 3" x 1.25" x 0.8" |
| DC Supply | | Feed Thru Capacitor Solder Pin |
| Ground | | Turret Terminal Solder Pin |
| RF Input / Output | | SMA female * |

* SMA female connectors are used unless otherwise specifed. Other options include SMA male, right angle SMAs, BNC female and others. Contact factory for custom configurations.

### Ordering Information:

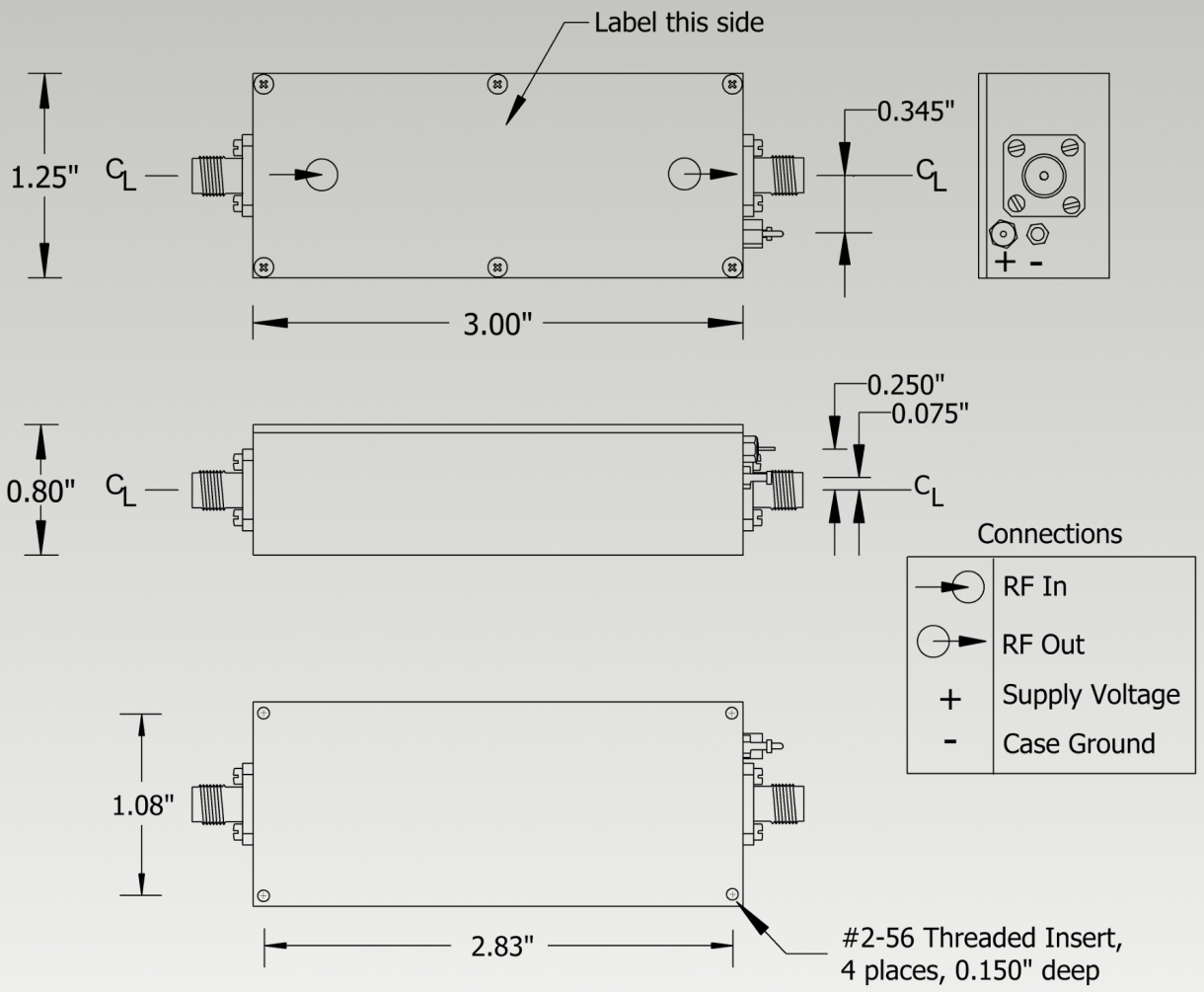



| Standard P/N | Input Frequency | Division Factor | Input Level | Output Level | Output Frequency | Output Referred Residual Phase Noise (100 kHz offset) | Supply Voltage |
|---|---|---|---|---|---|---|---|
| LNFDN-2-10-0-1-13 | 10 MHz | ÷2 | 0 dBm | +13 dBm | 5 MHz | ≤ -165 dBc/Hz | +15 VDC |
| LNFDN-2-10-5-0-TTL | 10 MHz | ÷4 | +5 dBm | 0 to +5V TTL | 2.5 MHz | ≤ -165 dBc/Hz | +15 VDC |
| LNFDN-8-80-13-1-13 | 80 MHz | ÷8 | +13 dBm | +13 dBm | 10 MHz | ≤ -165 dBc/Hz | +15 VDC |
| LNFDN-8-80-13-0-TTL | 80 MHz | ÷8 | +13 dBm | 0 to +5V TTL | 10 MHz | ≤ -165 dBc/Hz | +15 VDC |
| LNFDN-10-100-13-1-13 | 100 MHz | ÷10 | +13 dBm | +13 dBm | 10 MHz | ≤ -165 dBc/Hz | +15 VDC |
| LNFDN-16-40-13-1-13 | 40 MHz | ÷16 | +13 dBm | +13 dBm | 2.5 MHz | ≤ -165 dBc/Hz | +15 VDC |
| LNFDN-64-100-15-0-TTL | 100 MHz | ÷64 | +15 dBm | 0 to +5V TTL | 1.5625 MHz | ≤ -165 dBc/Hz | +15 VDC |
| LNFDN-256-100-13-1-10 | 100 MHz | ÷256 | +13 dBm | +10 dBm | 390.625 kHz | ≤ -165 dBc/Hz | +15 VDC |




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