

# Q LNB 37.50 - 42.50 GHz 1 Band

## Key features



- Input frequency range 37.50 to 42.50 GHz
- External reference with fallback to Internal ref.
- Low phase noise and noise figure
- Standard IF frequency output
- Monitoring & Control interface as standard
- Automatic temperature Gain compensation

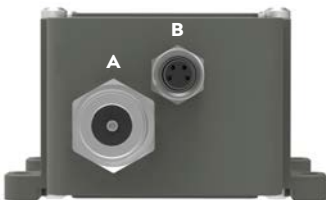


## Description

The Q-Band LNB of the future, today. Packed full of our latest technology, our device provides coverage within the full Q-Band satcom downlink frequency range in one unit.

Standard features include Monitoring and Control via Modbus allowing a multitude of unique field configurable features and functions making this device both versatile and future proof.

LNB connectors (standard)



### Connector A (standard)

Type: N-female, or SMA-female  
Functions: L-Band out, DC in, External ref. in

### Connector B (standard)

Type: M8 female, 4 pin, A-coded  
Functions: Alarm and M&C

LNB connectors (optional)



### Connector C (optional)

Type: SMA-female only  
Functions: Ext. ref. in and/or DC input

Connector B (standard)



- 1 = Alarm open collector (max. 200 mA) or optionally DC input.
- 2 = A pos+ RS485
- 3 = B neg- RS485
- 4 = Common (GND)
- 5 = Shield

# Q LNB 37.50 - 42.50 GHz 1 Band

## Technical specifications

|          | MODEL                   | 37.50-38.50                                                                                                                                                                                                                                          | 38.50-39.50     | 39.50-40.50     | 40.50-41.50     | 41.50-42.50    |
|----------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|----------------|
| INPUT    | Input frequency         | 37.50-38.50 GHz                                                                                                                                                                                                                                      | 38.50-39.50 GHz | 39.50-40.50 GHz | 40.50-41.50 GHz | 41.50-42.50GHz |
|          | LO frequency            | 36.55 GHz                                                                                                                                                                                                                                            | 37.55 GHz       | 38.55GHz        | 39.55 GHz       | 40.55 GHz      |
|          | Input WG                | Waveguide WR22. Various flanges available on request                                                                                                                                                                                                 |                 |                 |                 |                |
|          | Input VSWR              | 2.3:1 max. w/o isolator                                                                                                                                                                                                                              |                 |                 |                 |                |
|          | DC input                | +11 to +26 V through output connector or optional connector (SMA). Power consumption 5W max.                                                                                                                                                         |                 |                 |                 |                |
|          | LO reference            | Ext. 10 MHz ref, Sine wave, Level -10 to +10 dBm, (Internal ref; ±35 ppm -40 to +80°C, -40 to +176°F)                                                                                                                                                |                 |                 |                 |                |
|          | LO Leakage              | -60 dBm max. @ waveguide input, -40dBm max. @ IF output                                                                                                                                                                                              |                 |                 |                 |                |
|          | Gain                    | 50 dB as default, adjustable 40-55 dB via M&C                                                                                                                                                                                                        |                 |                 |                 |                |
|          | Gain variation over 24h | ±0.1 dB @ 23°C                                                                                                                                                                                                                                       |                 |                 |                 |                |
|          | Gain over temperature   | ±2 dB max., Automatic temperature Gain compensation                                                                                                                                                                                                  |                 |                 |                 |                |
| INTERNAL | Flatness each band      | ± 2.0 dB max.@ 950-1950 MHz                                                                                                                                                                                                                          |                 |                 |                 |                |
|          | Noise figure            | 2.6 dB typ., 3.4 dB max. @ 23°C                                                                                                                                                                                                                      |                 |                 |                 |                |
|          | Ultra Low Phase Noise   | 1 Hz -22dBc/Hz • 10 Hz -32dBc/Hz • 100 Hz -60dBc/Hz • 1 kHz -75dBc/Hz • 10 kHz -85dBc/Hz • 100kHz -93dBc/Hz • 1MHz -120Bc/Hz • 10MHz -128dBc/Hz max.                                                                                                 |                 |                 |                 |                |
|          | Image Rejection         | 23 dB min.                                                                                                                                                                                                                                           |                 |                 |                 |                |
|          | Max input level         | -20 dBm survival continuous power in range 25.0-55.0 GHz                                                                                                                                                                                             |                 |                 |                 |                |
|          | Desensitization         | Min. -25 dBm, the absolute level out of band that decreases NF by 0.1 dB in the band 47-52 GHz and 27-31 Ghz (uplink Ka)                                                                                                                             |                 |                 |                 |                |
|          | Spuriouses in band      | W/o signal -75 dBm max., with -10 dBm output signal -60 dBc max.                                                                                                                                                                                     |                 |                 |                 |                |
|          | Group delay             | Max. +/- 1ns @ 500 MHz bw, max. +/- 2ns @ 1500 MHz bw                                                                                                                                                                                                |                 |                 |                 |                |
| OUTPUT   | IF output               | 950-1950 MHz                                                                                                                                                                                                                                         |                 |                 |                 |                |
|          | Output P1dB             | +15 dBm min.                                                                                                                                                                                                                                         |                 |                 |                 |                |
|          | Output IP3              | +25 dBm min.                                                                                                                                                                                                                                         |                 |                 |                 |                |
|          | Output VSWR             | 1.7:1 max.                                                                                                                                                                                                                                           |                 |                 |                 |                |
|          | Output Connector        | N-type 50Ω standard, Option: SMA-type 50Ω                                                                                                                                                                                                            |                 |                 |                 |                |
| GENERAL  | Alarm functions         | Sum alarm, set via M&C to alarm in any combination of: LNA failure, Total current, LO lock (Ext/Int/n/a), signal power high/low, Supply voltage low. Open collector 3.3 to 28 V, max. 200 mA (pull-up 10 k Ohm at host side), pin 1 in M8 connector. |                 |                 |                 |                |
|          | Monitoring & Control    | Via MODBUS RTU RS485 electrical interface, see sep. document for details. NOTE! Mates with M8 male connector/Cable, use only shielded cables ≥CAT5                                                                                                   |                 |                 |                 |                |
|          | Dimensions              | 144 x 74 x 45 mm (N-connector)                                                                                                                                                                                                                       |                 |                 |                 |                |
|          | Weight                  | 375 g                                                                                                                                                                                                                                                |                 |                 |                 |                |
|          | Temperature range       | Storage and operating: -40 to +80°C, -40 to +176°F                                                                                                                                                                                                   |                 |                 |                 |                |
| OPTIONS  | Miscellaneous           | Enclosed conductive O-ring, mounting screws (M3 x 8) 4 pcs                                                                                                                                                                                           |                 |                 |                 |                |
|          | Options                 | - Separate SMA connector for External ref. and/or DC input<br>- Models with external LO ref. source 50, 100 or 144 MHz<br>- Pressurizable 0.1 bar max.                                                                                               |                 |                 |                 |                |

C-BAND

X-BAND

KU-BAND

KA-BAND

Q/V-BAND

RFoFIBER

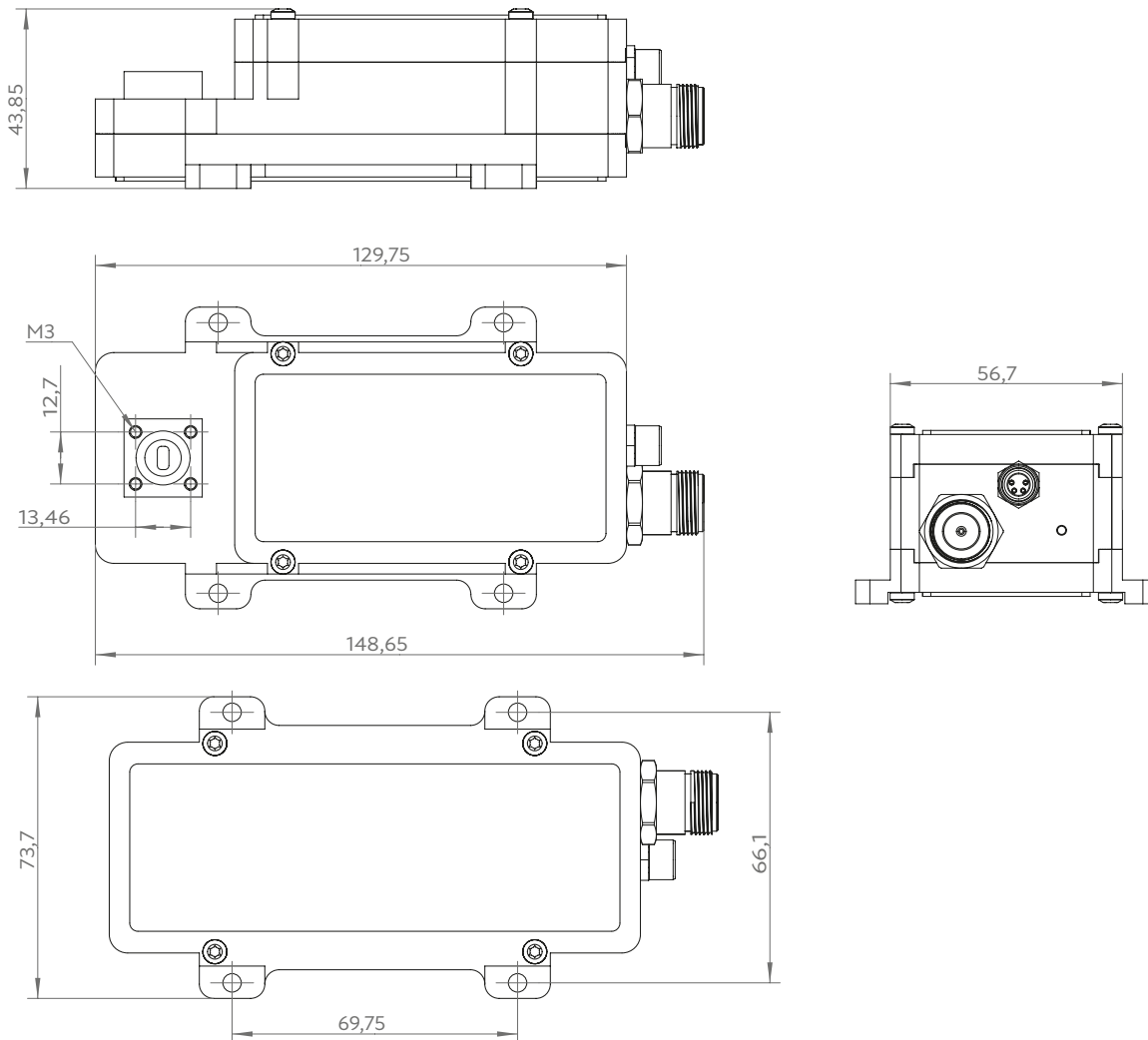
L-BAND

EXT REF

OTHER

# Q LNB 37.50 - 42.50 GHz 1 Band

## Technical Drawing



Designed and  
Manufactured



**SMW** 

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INC

SMW authorized distributor

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