

# Ku LNB 12.70-15.50 GHz 1-4 Band Uplink Monitoring

## Key features



- Autoswitch external 10 MHz reference with fallback to Internal reference
- Single Band or Multiband
- Input frequency range 12.70–15.50 GHz
- Excellent Phase Noise
- Alarm and Monitoring & Control

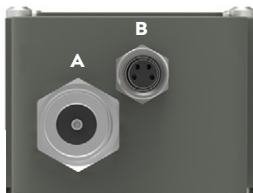


### Description

The new professional 12.70–15.50 GHz LNB/TLT from Swedish Microwave is band switchable and ideal for full freedom of sub-bands available. Designed for single sub-band or up to 8 multiple sub-bands. IF range 950-2450 MHz.

Options include customized LO, customized frequency ranges, customized gain, separate DC power input and/or separate input for the external 10 MHz reference. As standard the SMW Monitoring & Control allow you the possibility to cascade multiple devices in the same Modbus network for Alarm and Monitoring & Control functionality.

#### LNB connectors (standard)



##### Connector A (standard)

Type: N-f, (option F-f or SMA-f)

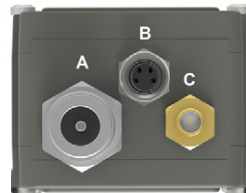
Functions: L-Band out, DC in, External 10 MHz in

##### Connector B (standard)

Type: M8 female, 4 pin, A-coded

Functions: Alarm and M&C

#### LNB connectors (optional)



##### Connector C (optional)

Type: SMA-f only

Functions: Ext. 10 MHz in and/or DC input

#### Connector B (standard)



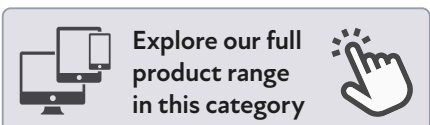
1 = Alarm open collector (max. 200 mA) or optionally DC input.

2 = A pos+ RS485

3 = B neg- RS485

4 = Common (GND)

5 = Shield



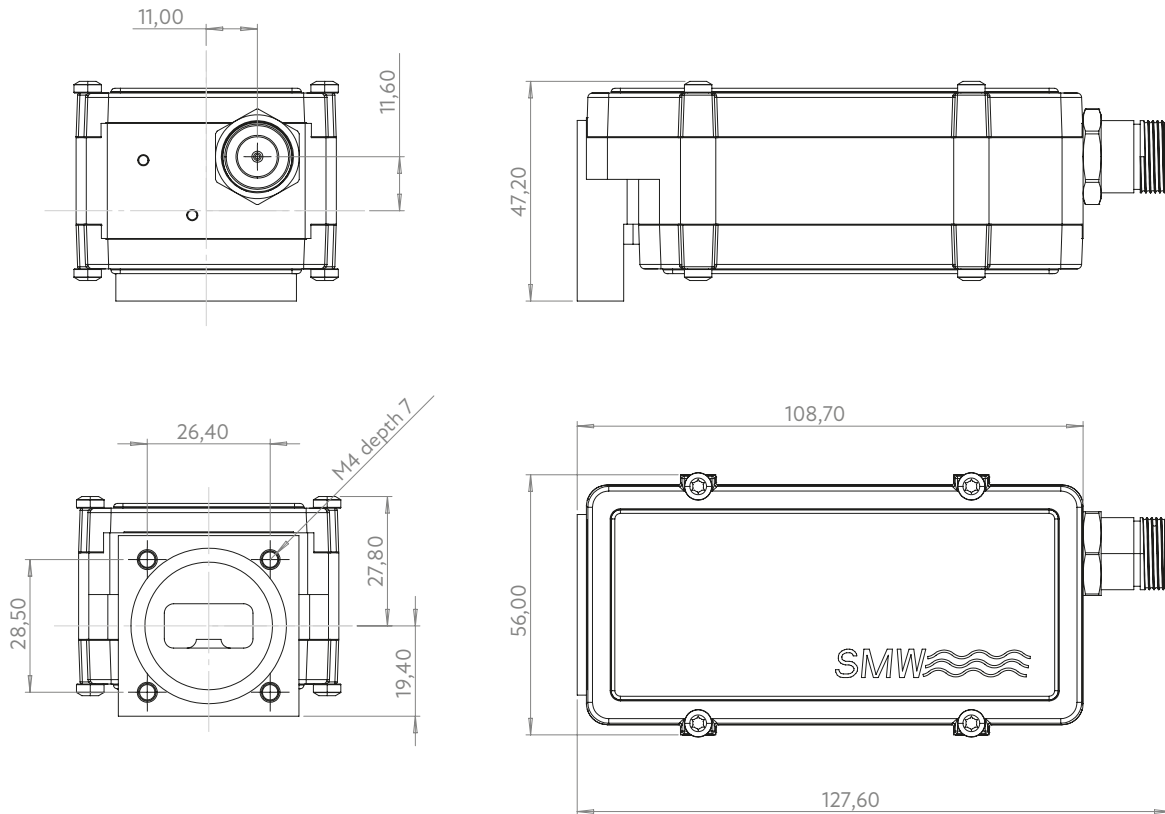
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## Technical specifications

| Parameter     |                       |                                                                                                                                                                                                                                                      |             |             |             |             |             |             |             |             |             |             |
|---------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MODELS        | Model                 | 11.75                                                                                                                                                                                                                                                | 11.80       | 12.00       | 12.50       | 12.55       | 12.80       | 13.00       | 13.05       | 13.10       | 13.20       | 13.50       |
|               | Input freq. GHz       | 12.70-14.20                                                                                                                                                                                                                                          | 12.75-14.25 | 13.00-14.50 | 13.45-14.95 | 13.50-15.00 | 13.75-15.25 | 13.95-15.45 | 14.00-15.50 | 14.05-15.50 | 14.90-15.50 | 14.50-15.50 |
|               | LO freq. GHz          | 11.75                                                                                                                                                                                                                                                | 11.80       | 12.00       | 12.50       | 12.55       | 12.80       | 13.00       | 13.05       | 13.10       | 13.20       | 13.50       |
|               | Multiband             | Any combination of above LOs or customized, max 8 Bands                                                                                                                                                                                              |             |             |             |             |             |             |             |             |             |             |
| INPUT         |                       | Legacy 13/15/18/24 V and 22 kHz tone, optionally via RS485 Modbus RTU                                                                                                                                                                                |             |             |             |             |             |             |             |             |             |             |
|               | Input WG              | WR75 / R120. PBR120 flange.                                                                                                                                                                                                                          |             |             |             |             |             |             |             |             |             |             |
|               | Pressurizable         | 0.1 bar max.                                                                                                                                                                                                                                         |             |             |             |             |             |             |             |             |             |             |
|               | Input VSWR            | 1.9:1 max. 12.75 - 15.00 GHz, 2.6:1 max 15.00 - 15.50 GHz                                                                                                                                                                                            |             |             |             |             |             |             |             |             |             |             |
| INTERNAL      | Input max power       | 0 dBm instantaneous (not continuous)                                                                                                                                                                                                                 |             |             |             |             |             |             |             |             |             |             |
|               | LO ref.               | Auto LO ref. External 10 MHz ref / Internal ±2.5 ppm -40 to +80°C                                                                                                                                                                                    |             |             |             |             |             |             |             |             |             |             |
|               | External LO ref.      | Sine wave, Level -10 to +10 dBm. Supplied through output connector.                                                                                                                                                                                  |             |             |             |             |             |             |             |             |             |             |
|               | LO Leakage            | -60 dBm max. @ waveguide input                                                                                                                                                                                                                       |             |             |             |             |             |             |             |             |             |             |
|               | Gain                  | Factory programmable 0-55 dB nom., in 5 dB steps                                                                                                                                                                                                     |             |             |             |             |             |             |             |             |             |             |
|               | Flatness each band    | ±1.5 dB typ., ± 2 dB max.                                                                                                                                                                                                                            |             |             |             |             |             |             |             |             |             |             |
|               | Noise figure          | 1.3 dB / 92 K max. @ gain 40 to 55 dB (higher NF at lower gain)                                                                                                                                                                                      |             |             |             |             |             |             |             |             |             |             |
|               | Phase Noise           | 10 Hz -35dBc/Hz • 100 Hz -63dBc/Hz • 1 kHz -83dBc/Hz • 10 kHz -85dBc/Hz • 100kHz -95dBc/Hz • 1MHz -118dBc/Hz<br>• >10MHz -120dBc/Hz (max).                                                                                                           |             |             |             |             |             |             |             |             |             |             |
|               | Image Rejection       | 40 dB min. @ LO ≤ 12.50 GHz, 30 dB min. @ LO ≤ 13.05 GHz, 25 dB min. @ LO > 13.05 GHz                                                                                                                                                                |             |             |             |             |             |             |             |             |             |             |
|               | Spurioues in band     | W/o signal -70 dBm max., with -10 dBm output signal -65 dBc max.                                                                                                                                                                                     |             |             |             |             |             |             |             |             |             |             |
|               | Out of band rejection | 20 dB min.                                                                                                                                                                                                                                           |             |             |             |             |             |             |             |             |             |             |
| DC and OUTPUT | Group delay           | +/- 0.25ns max. @ 50 MHz bw, +/- 2ns max @ each band                                                                                                                                                                                                 |             |             |             |             |             |             |             |             |             |             |
|               | DC Input              | +11 to +26 V through output connector or separate connector (SMA). 6W max.                                                                                                                                                                           |             |             |             |             |             |             |             |             |             |             |
|               | IF output             | 950-2450 MHz                                                                                                                                                                                                                                         |             |             |             |             |             |             |             |             |             |             |
|               | Output P1dB           | +15 dBm min.                                                                                                                                                                                                                                         |             |             |             |             |             |             |             |             |             |             |
|               | Output IP3            | +25 dBm min.                                                                                                                                                                                                                                         |             |             |             |             |             |             |             |             |             |             |
| GENERAL       | Output VSWR           | 1.7:1 max.                                                                                                                                                                                                                                           |             |             |             |             |             |             |             |             |             |             |
|               | Output Connector      | N-type 50Ω standard, Option: SMA-type 50Ω or F-type 75Ω                                                                                                                                                                                              |             |             |             |             |             |             |             |             |             |             |
|               | 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. |             |             |             |             |             |             |             |             |             |             |
|               | M & C functions       | Via MODBUS RTU RS485 electrical interface, see sep. document for details. NOTE! Mates with M8 male connector/Cable, use only shielded cables ≥CAT 5                                                                                                  |             |             |             |             |             |             |             |             |             |             |
|               | MTBF                  | MTBF as per MIL-HDBK-217F Notice 2: Environmental Condition GF (Ground Fixed): >690000 hours, Environmental Condition AIC (Airborne, Inhabited, Cargo): >360000 hours, Quality level: Commercial, Temp used for MTBF calculation: +35 C Ambient      |             |             |             |             |             |             |             |             |             |             |
|               | Dimensions            | 128 x 56 x 47 mm (with N-connector)                                                                                                                                                                                                                  |             |             |             |             |             |             |             |             |             |             |
|               | Weight                | 360 g                                                                                                                                                                                                                                                |             |             |             |             |             |             |             |             |             |             |
| OPTIONS       | Temperature range     | Storage and operating: -40 to +80°C, -40 to +176° F                                                                                                                                                                                                  |             |             |             |             |             |             |             |             |             |             |
|               | Miscellaneous         | Enclosed conductive O-ring, mounting screws (M4 x 10) 4 pcs (for LNB)                                                                                                                                                                                |             |             |             |             |             |             |             |             |             |             |
|               | Options               | Separate SMA connector for DC input<br>Custom number of bands (2 to 8 bands)<br>Custom LOs<br>Custom input frequencies                                                                                                                               |             |             |             |             |             |             |             |             |             |             |

# Ku LNB 12.70-15.50 GHz 1-4 Band Uplink Monitoring

## Technical Drawing



Professional Satcom Frequency Converters & Components. All products are fully CE and RoHS compliant and every device includes full documentation of performance tests and quality control. Please contact [sales@smw.se](mailto:sales@smw.se) to configure or customize to your needs. Visit [smw.se](http://smw.se) or scan QR code to see our full product range and request a quick quote.

