



Manual

LNB

General Guidelines

Table of Content

1. Description	3
2. Safety warnings.....	3
3. Installation instructions	3
4. Alarm and Monitoring & Control	5
5. Troubleshooting.....	6
6. Maintenance and Repair information.....	6
7. Technical specifications	7
8. Warranty and Legal information	7
9. Contact details	7



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Thank you for choosing products from SMW

1. Description

LNB (Low Noise Block Downconverter) for Professional satellite communication to meet the highest Satcom demands. Our LNB products are all of PLL design and with low phase noise and noise figure. Tolerant design with high P1dB and IP3. Our RF over Fiber links help you get the best from your satellite dish antenna system. With excellent dynamic range and very low phase noise and noise figure our products meet the demands of HTS symbol/data rate. Most of our products meet the DVB-S2X standard. On select products - Alarm and Monitoring & Control functionality, using the Modbus protocol and RTU RS485 standard. All In-House design, engineering and manufacturing in Sweden since 1986.

2. Safety warnings



WARNING! Make sure that the antenna system is grounded to earth to avoid potential voltage that can be discharged through the LNB.

3. Installation instructions

Unpacking

Please compare the contents of your shipment with the packing list supplied.

Mounting

Remove the adhesive waveguide protector before installation. It's very important to always use the supplied screws and conductive O-ring gasket when mounting the LNB to the antenna feed system. The conductive O-ring gasket may have custom dimensions to fit flange groove, additional gaskets can be ordered free of charge from SMW. Any other means of mounting may void the warranty.



CAUTION! Use the recommended DC voltage to the LNB. Too high voltage can damage the LNB. Connect everything properly before switching on DC voltage. Please consider the voltage drop in a long coaxial cable as too low voltage can affect the functionality.



CAUTION! Protect against water penetration. The components are designed for operation in temperatures between -40 to +80°C. However waveguide input is not waterproof and **MUST BE** protected from moisture and water. In extreme environments such as close to corrosive salt sea water or elevated installation in antenna towers where IP67 class protection can be deemed insufficient, it is recommended that appropriate action is taken to ensure reliable operation and longevity.

Waveguide input.
Type and size of waveguide and flange will be specific to LNB input frequency range. Never mount waveguide flanges with O-ring groove facing each other. One flange must be flat and without O-ring groove.

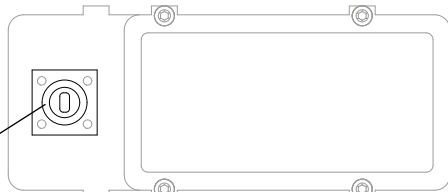


Illustration of LNB - product may differ from image

Unused connector(s) should remain protected with cover.

Protect the coaxial cable connector with rubber seal tape.

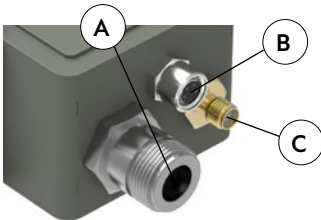


Illustration of connectors - product may differ from image

Connectors

A – IF output, DC input and/or External 10 MHz reference multiplexed.
Available connector types:
N (female) 50 Ω, SMA (f) 50 Ω, F (f) 75 Ω.

Optional

B – Monitoring & Control input / Alarm switch. Connector is M8 (f), A-key coded.

C – Optional DC input and/or 10 MHz input. SMA (f) 50 Ω connector only.

Connector (B) for Monitoring & Control



Type: RS485, M8 (f), 4 pin, A-coded
Functions: Alarm and Monitoring & Control
1 = Alarm open collector (max. 200 mA)
2 = A pos+ RS485
3 = B neg- RS485
4 = Common (GND)
5 = Shield



<https://modbus.org/>

4. Alarm and Monitoring & Control

For further details about the Monitoring & Control Technical Interface please see Technical specifications in Product sheet. Monitoring & Control requires a Host, RS485 connecting hardware (see SMW M&C Startkit), Product specific Register Map (download available on website) and applicable software.



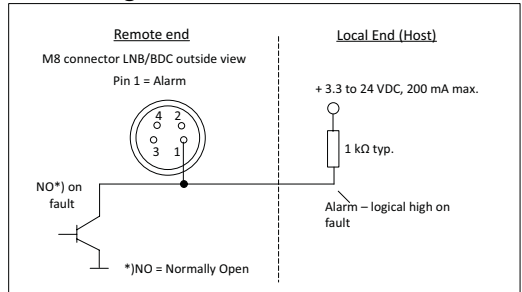
Applicable software is not provided. However for purposes of testing and troubleshooting the SMW M&C Evaluation Tool is available on request. Monitoring & Control option is available on select SMW products.

Alarm output:

The Alarm output connector J3 pin 1 is an Open collector, Open on fault. 3.3V to 24V max. 200mA. Factory setting is NC (Normally Closed). The alarm output is a sum alarm that trigger:

- LO; Locked, External LO reference detected, External LO reference lock
- Total current consumption (>600 mA)
- LNA (built in) failure
- RF power (IF) detector outside limit (outside -57 dBm to -5 dBm)

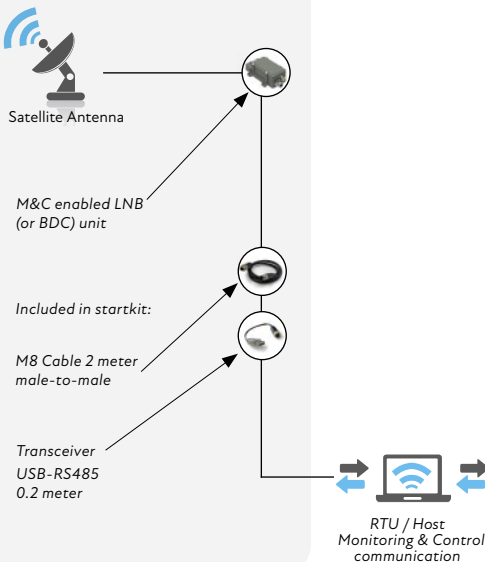
Alarm wiring



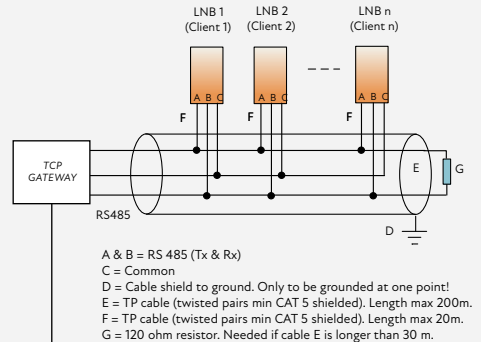
Direct and Chain Connection Schematic

Schematic illustrations only, may differ from actual products

Example for Direct connection with USB transceiver



Example for Chain connection with RTU Gateway to Ethernet



Accessories to startkit:

- Adapter Cable 0.3 meter male-to-female
- M8 splitter / Y-adapter 2x female 1x male
- Cable M8 20 meter, 5 meter male-to-male or 10 m male-to-pigtail

5. Troubleshooting

First of all, make sure that the LNB input has correct DC voltage, see the Technical Specifications. If there is a very long cable feeding the LNB with power, this may cause DC to drop below critical value, this could cause the LNB to be unstable or not work at all.

If the DC Voltage is OK but still there is a problem with the received signal, then check if there is any line amplifiers or other products installed between the receiver and the LNB and make a pass by of the signal to isolate that equipment to see if issue solved.

Also if the LNB is installed in a large antenna, the LNB can be saturated and will then not give the calculated output level or a distorted signal out. It is important to consider the gain of the LNB as big antennas may need a LNB with lower gain.

For troubleshooting of the Alarm and Monitoring & Control functionality we refer to our QnA, please visit the Knowledge base at www.smw.se or contact us on support@smw.se for further assistance.

6. Maintenance and Repair information

There are no user serviceable parts inside. For service, request RMA at www.smw.se or contact SMW for an RMA number before returning any units, send an email to support@smw.se.



NOTICE! Units returned without an RMA number will be refused.

7. Technical specifications

Technical specifications are typical, specific part number specifications are available. Specifications are subject to change without prior notice.



For further details about the **Monitoring & Control** Technical Interface please scan QR-code link to product website complete with **Documentation, Technical Specifications, Manual and Modbus Register Maps**. Find your product at <https://smw.se/findproduct>



8. Warranty and Legal information

General Terms & Conditions: ORGALIME S 2012 and Appendices.

<https://smw.se/terms/>

Standard Warranty of 36 Months.

Products from Swedish Microwave AB are made for commercial use.

All SMW products are CE compliant with the following EU Directives as applicable, depending on when placed on the market:

Low Voltage Directive (LVD) 2014/35/EU

Electromagnetic Compatibility (EMC) Directive 2014/30/EU

Radio Equipment Directive (RED) Directive 2014/53/EC

Reduction of Hazardous Substances (RoHS 2) Directive 2011/65/EC

Regulation (EC) No 1907/2006 (REACH Regulation)

Declaration of Conformity is available on request.

SMW is Assessed and Certified for:

SS-EN ISO 9001:2015 Quality management systems

SS-EN ISO 14001:2015 Environmental management systems

SS-EN ISO 45001:2018 Occupational health and safety management systems



9. Contact details

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Feedback

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