SWEDISH MICROWAVE

Manual

Fiber Systems
General Guidelines

Table of Content

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SMW.SE

SWEDISH MICROWAVE
PART OF BEIJERTECH

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Thank you for choosing products from Swedish Microwave

1. Description

Swedish Microwave products are a vital component in land, maritime and earth stations in the ground infrastructure for satellite systems.
Our professional LNB, BDC, LNA and RF over Fiber products are designed for outdoor use to enable reliable communications even under the toughest conditions worldwide.

2. Safety warnings

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

3. Installation instructions

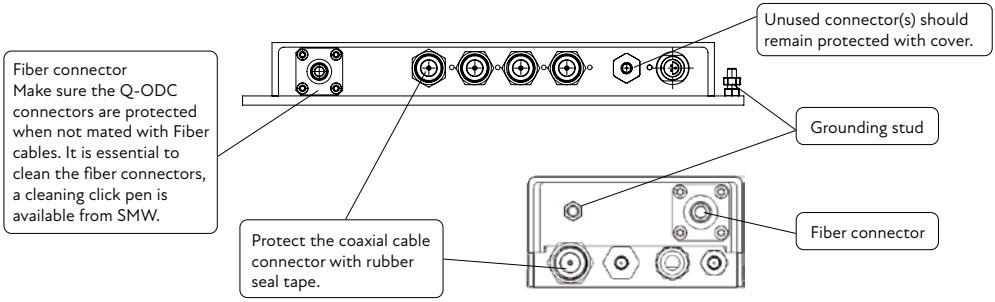
Unpacking
Please compare the contents of your shipment with the packing list supplied.

Mounting
Use the pre-drilled holes on the bottom plate or the DIN rail adapter plate (Versa-Link).
Any other means of mounting may void the warranty.

CAUTION!
Power the device with the recommended DC voltage. Too high voltage can damage the device. 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.

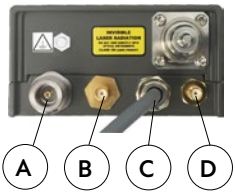
The lasers are classified as CLASS 1M LASER PRODUCTS: Do not look directly into the laser beam, do not view the laser beam with optical instruments.

CAUTION! Protect against water penetration. The components are designed for operation in temperatures between -40 to +80°C. Q-ODC fiber connectors are only waterproof when mated. The components are designed for operation in temperatures between -40 to +80°C.. In extreme environments such as close to corrosive sea water or 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.



Actual product may differ from illustration

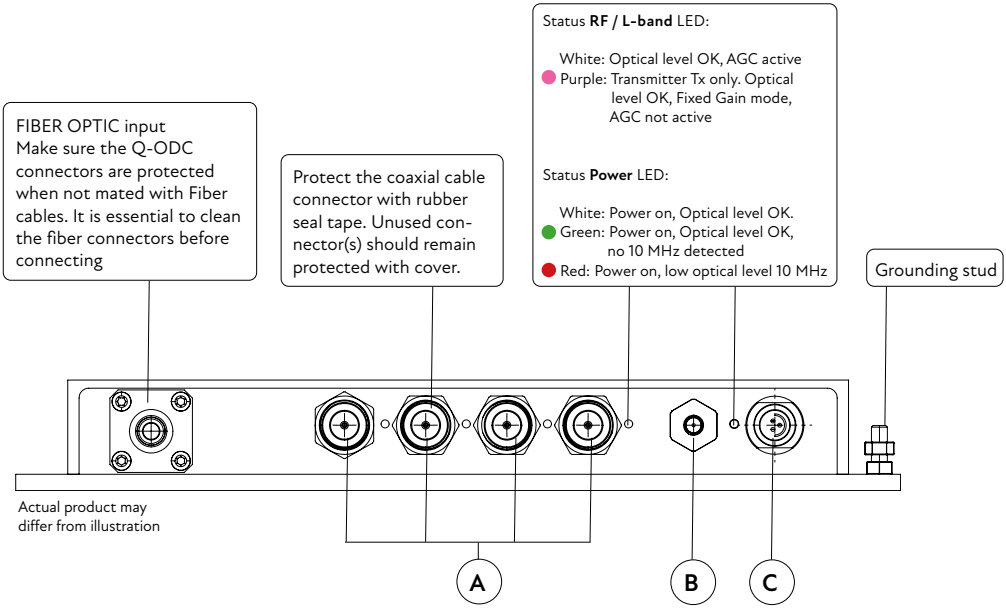
Versa-Link front panel



Connector A	Transmitter: IF Input (LNB or modulator) Receiver: IF output (Receiver or BUC)
Connector B	IF monitor output -20 dB attenuated compared to IF input level (A)
Connector C	Power input (15-26 V DC)
Connector D	SMA (f) for separate external reference

If the Versa-Link is used for BUC the DC current via IF output is max 4A and ONLY with N connector. With F connector max DC current is 1A.

Quad-Link front panel



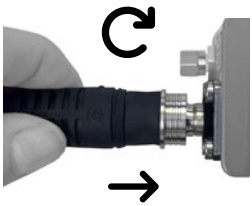
Connector A Transmitter: IF Input #1-4
Receiver: IF output #1-4
Connector B SMA (female)
Transmitter: external reference output
Receiver: external reference input
Connector C Power input (15-26 V DC)

Pin 1 - Positive DC supply primary
Pin 2 - Positive DC upply secondary
Pin 3 - Negative DC supply and GND

Fiber cable connecting

Cleaning with an appropriate cleaning tool, such as a “Click Pen”, is strongly recommended every time before connecting a fiberoptic cable. For duplex fiber cables, polarity A - B is crucial. Each fiber connects a transmitter (Tx) on one end to a receiver (Rx) on the other end. Ensure correct fiber polarity when connecting.

UNMATE
Do not remove the fiber connector cover until ready for installation of fiber cable. Pull coupling ring to unmate.



MATE
Push cable plug gently into connector, rotate to find keying position, push connector until ”click” to mate.

DC Power Supply
15-26 V DC, nom. 18V, 3A recommended if connected Fiber LNBs is also fed through from same power supply. Power Supply must be Galvanically Isolated from PE Ground. Input is reverse polarity and over voltage protected. SMW offer indoor power supplies 15 VDC and 24 VDC.

The Quad-Link device is included with a 15 m long DC cable, terminated one end with a circular IP68 rated Fischer® 103 series plug, which fits the corresponding connector on the Fiber receiver device front panel.

The Versa-Link device is included with a 15 m long DC cable, integrated with the device.

Power input connecting
When connecting DC cable to the device, make sure the markings with red dots are aligned. Press gently into place until a click is heard.

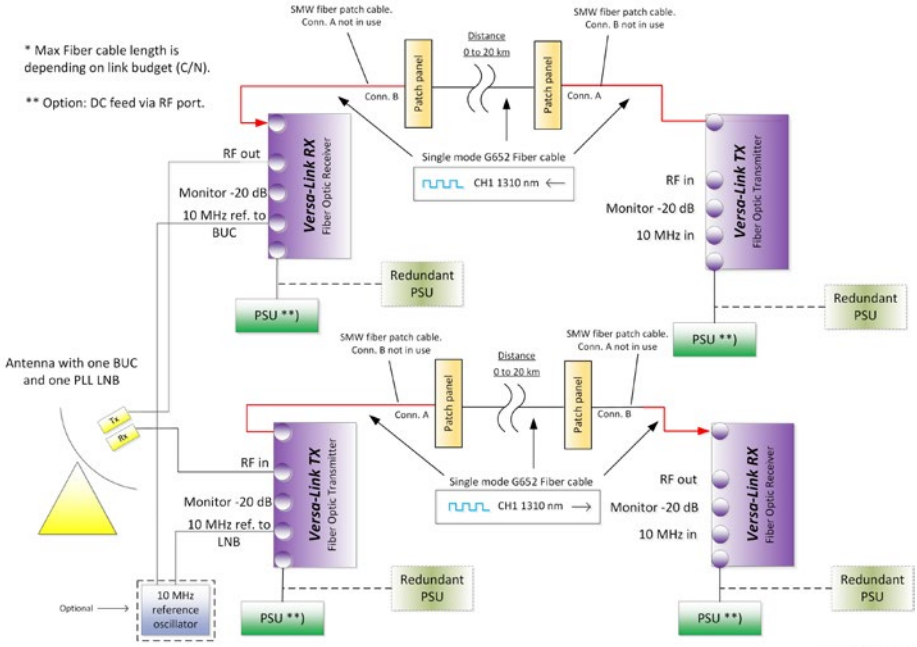
For connecting leads to a power supply, inspect the label on the DC cable. Connect the two black leads marked “1” and “2” to “DC+” and connect green/yellow lead to “DC-” (GND).

Application assistance
Please feel free to contact us at an early stage for free advise on your application.

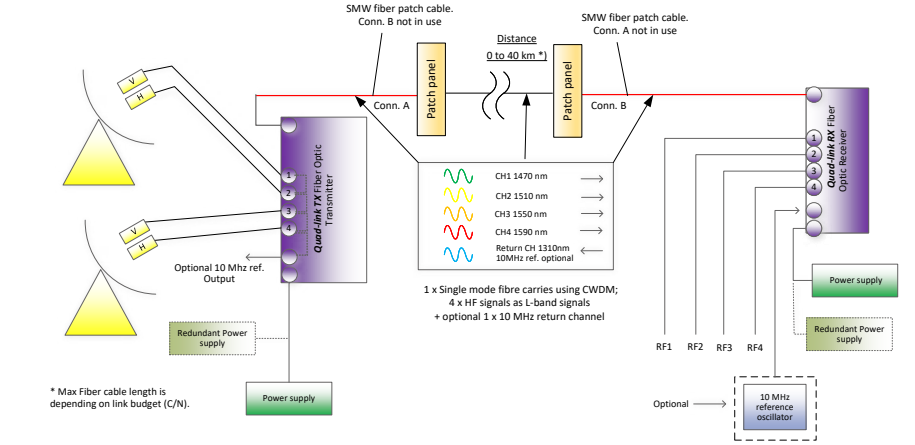
• Fiber Optic Link Budget
A detailed Fiber Optic Link Budget for your particular application can be provided. Please contact us for information.
• DC-power sizing
A detailed calculation to help you with your choice of power supply rating and voltage drop over distance.

4. Installation examples

Versa-Link system, 1 antenna, one LNB and one BUC



Quad-Link system, 2 antennas and 4 LNB



5. Troubleshooting

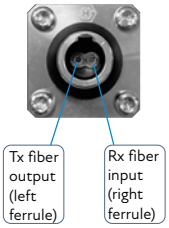
Ensure that the DC voltage of the power input aligns with the specifications. A very long cable feeding the device with power, may cause DC to drop below critical value, and cause the device to be unstable or not work at all.

There is no microprocessor or software inside the devices. There are no user serviceable parts or fuses inside.

Impurities on the fiber ends may cause problems. Chech the RF / L-band status LEDs on the Receiver. If the Power status LED is indicated error (RED) or no indication at all, first check the DC power supply for correct voltage and polarity at the corresponding device DC input.

Status RF / L-band LED:

- Red: Optical Power Error.
  - Too high attenuation in the optic light path, such as cable too long or impurities on the fiber end.
  - Too low laser power out internally, self-diagnostic. Return to factory for repair.
- Yellow/Orange: Optical Power Error. Optical is locked but low level.



Check polarity of the Fiber cable connectors. **NOTE!** Q-ODC ”A” is connected to xx-APC ”B” (other patch cable end) and vice verse.

On the Transmitter only the left ferrule (B in cable) seen from the front is used normally. On the Receiver only the right ferrule (A in cable) seen from the front is used normally.

Quad-Link:
The RF level from the QuadLink Receiver depends on two things; Optical attenuation and Input level on the QuadLink Transmitter

The formulas are:
Rx channel power = -6dBm - (2*opt._att) - (log10(number_ of_channels)*10)
If RF input level on Quadlink Transmitter is less than -15dBm (sum of all carriers):
Rx channel power = Tx_input_level + 9 - (2*opt._att.) - (log10(number_ of_channels)*10)

Versa-Link:
The RF Level from the VersaLink receiver as default*) is: Rx_output_level = RF_input_level - (2*optical_attenuation)

Remove the cover screw and use a 2mm flat screwdriver to adjust the gain

*) Formula for default RF level. RF Level can be adjusted ± 10 dB in the Versa-Link transmitter.

6. Maintenance and Repair

The device does not contain any parts that can be serviced by the user. For any inquiries related to maintenance, warranty, or service, please request a Return Material Authorization (RMA) at www.smw.se or by sending an email to support@smw.se.

When submitting your request, please include your name, email address, and company details. Also specify the product, part number, or serial number in question and attach a photo of the device. Provide a detailed explanation of the issue and any other information that could be helpful. **Any device 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 each products technical specifications, please scan QR-code link to access website for complete **Documentation**, **Technical Specifications**, **Manuals** and **Register Maps**. Find your product at https://smw.se/findproduct

8. Warranty and Legal

General Terms & Conditions: ORGALIME S 2012 and Appendices.
Standard Warranty 36 Months. Read more at https://smw.se/terms/
Products from Swedish Microwave AB are made for commercial satcom use only.
Country of Origin: SWEDEN

All products from Swedish Microwave are CE compliant with the following EU directives as applicable, depending on when placed on the market. Declaration of Conformity is available on request.

- 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)

Swedish Microwave is Assessed and Certified for:

- SS-EN ISO 9001:2015 Quality management
- SS-EN ISO 14001:2015 Environmental management
- SS-EN ISO 45001:2018 Occupational health and safety management

9. Contact details

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Contact the Sales Team: sales@smw.se.
Contact information is available on the company website at www.smw.se.

Feedback
Your opinion is important to us! Use the contact link at www.smw.se.

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