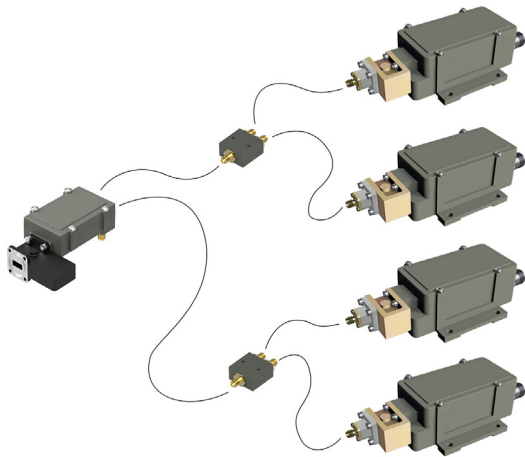


Ka System 17.20-22.30 GHz Quad

Key features



HF cables and DC cable included

- Auto LO ref Ext. 10 MHz, fallback to Internal ref
- Full Ka Receive band coverage
- High P1dB and IP3
- Excellent Phase noise meets all profiles of DVB-S2X.
- Customized LO as option
- Alarm and Monitoring & Control as option

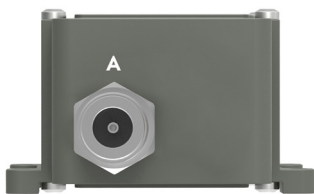


Description

The Ka-Band Quad System provides full coverage of the Ka receive band. The system consists of Ka LNA Wide-band with waveguide isolator, Ka BDC's with waveguide isolators and matched HF cables. Excellent Phase Noise to support all profiles of DVB-S2X services.

Options include customized LO, customized frequency ranges, customized gain, separate DC power input and separate input for the external 10 MHz reference. As an option the SMW M&C interface provides possibility to daisychain several units in one Modbus RTU RS485 network for the optional Alarm and Monitoring & Control functionality.

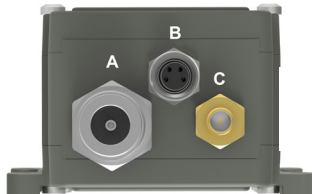
BDC connector (standard)



Connector A (standard)

Type: N-f, (option F-f or SMA-f)
Functions: L-Band out, DC in, External 10 MHz in

BDC connectors (optional)



Connector B (optional)

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

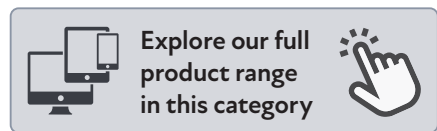
Connector B (optional)



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

Connector C (optional)

Type: SMA-f only
Functions: Ext. 10 MHz in and/or DC input



Ka System 17.20-22.30 GHz Quad

Technical specifications

| | | |
|----------|--------------------------|---|
| | Input frequency | Custom between 17.20-22.30 GHz |
| | LO frequency | Custom between 16.25-20.75 GHz |
| INPUT | Input LNA | Waveguide WR 42 / R 220. Flange PBR 220. |
| | Input BDC | SMA female 50Ω |
| | DC Input BDC | +12 to +24 V through output connector or separate SMA connector (optional), power consumption 5W typ. |
| | DC input LNA | +12 to +24 V / 110 mA typ. Supplied through separate SMA connector via included DC cable, mated from BDC # 1 |
| | Input VSWR LNA | 1.35:1 max. with Isolator (included) |
| INTERNAL | 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. @ RF input, -40 dBm max. @ IF output |
| | Gain | 60 dB typ. (55dB min.) |
| | Gain variation over 24h | ±0.1 dB @ 23°C |
| | Flatness | ±0.4 dB within 30 MHz, ±2 dB max. over each band |
| | Noise figure | 1.8 dB / 149 K typ. |
| | Group Delay | ±1 ns max. |
| | Phase Noise | -35 dBc @ 10 Hz -65 dBc @ 100 Hz -80 dBc @ 1 kHz -85 dBc @ 10 kHz -95 dBc @ 100 kHz -112 dBc @ >1 MHz typ. |
| | Image Rejection | 30 dB min. |
| | IF output | 950-1950 MHz, (950-2250 MHz optional) |
| OUTPUT | Output P1dB | + 15 dBm |
| | Output IP3 | + 25 dBm |
| | Output VSWR BDC | 1.7:1 typ. |
| | Output connector LNA | SMA-type 50Ω |
| | Output Connector BDC | N-type 50Ω , SMA-type 50Ω or F-type 75Ω |
| GENERAL | Alarm (option) | 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 (option) | Via MODBUS RTU RS485 electrical interface, see document Monitoring and Control technical interface for details. NOTE! Mates with M8 male connector/Cable, use only shielded CAT 5 cables |
| | System power consumption | 23 W max. |
| | MTBF | MTBF as per MIL-HDBK-217F Notice 2: Environmental Condition GF (Ground Fixed): >690000 hours, Environmental Condition AIC (Airborne, Inhabited, Cargo): >360000 hour, Quality level: Commercial, Temperature used for MTBF calculation: +35°C Ambient |
| | Dimensions LNA | 103 x 63 x 34 mm, including isolator |
| | Dimensions BDC | 171 x 80 x 46 mm (N-connector) (for drawing, see www.smw.se) |
| | Weight LNA | 160 including isolator |
| | Weight BDC | 418 g (N-connector) |
| | Temperature range | Storage and operating: -40 to +80°C, -40 to +176°F |
| OPTIONS | | <ul style="list-style-type: none"> - Separate SMA connector on BDC for DC input or Ext. 10 MHz reference - Alarm and Monitoring & Control - Customized gain - Customized LO - Extended IF |

Ka System 17.20-22.30 GHz Quad

Wiring diagram

Ka Quad Band System

