# X BDC 7.25 - 7.75 GHz 1 Band SATCOM

## Key features

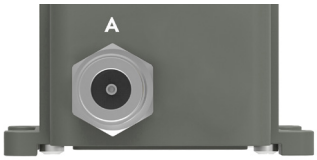
- **Built-in filtering**
- **Low Phase noise**
- **Compact size and light weight**
- **For outdoor use**
- **Wide operating temperature range**
- **Low profile to fit 1U for build-in applications**

### Description

The professional X-Band PLL Block Down Converter covers X-band within the frequency range of 7.25 to 7.75 GHz. The BDC has some built-in filtering for improved Tx and IF margin, high IP3 and Low power consumtion. RF input is SMA female. IF output is standard L-Band, non inverted spectrum via N-, F-, or SMA-connector. Options include customized LO, customized gain, separate DC input and separate input for external 10 MHz reference.

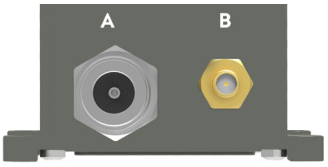
Available with Internal LO ref. or with External 10 MHz ref. input.

**BDC connector standard**




**Connector A (standard)**
Type: N-female, (option F-female or SMA-female)
Functions: L-Band out, DC in, External 10 MHz in

**BDC connector optional**




**Connector B (optional)**
Type: SMA-female
Functions: External DC or Ext. 10 MHz ref. input.

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Rev. 12-23-4H

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## Technical specifications

| | MODEL | X-Band BDC |
|---|---|---|
| INPUT | Input freq. GHz | 7.25 - 7.75 GHz |
| | LO | 6.30 GHz or by request (Factory programmable) |
| | Input | SMA female 50 Ω |
| | DC Input | +12 to +18 V supplied through output connector |
| | Current drain | 300-400 mA typ. |
| | Input VSWR | 1.7:1 max. |
| INTERNAL | LO ref. | Internal or External 10 MHz ref. Note! Different models |
| | MODELS with External LO ref. | Sine Wave, Level -10 to +10 dBm. Supplied through output connector. With no ext 10 MHz ref. signal present LO shifts -20 ppm. |
| | MODELS with Internal LO ref. | ±0.5 ppm -20 to +70°C (±1 ppm -40 to +80°C), ±1 ppm -20 to +70°C (±1.5 ppm -40 to +80°C) |
| | LO Leakage | -60 dBm max. @ RF input |
| | Gain | By request 0 to 55dB in 5 dB steps (Factory programmable) |
| | Flatness | ±0.4 dB within 30 MHz, ±2 dB max. over band |
| | Noise figure | 1.0 dB / 75 K @ 50dB gain configuration max., increasing to appr. 20 dB / 28710 K @ 0 dB gain configuration |
| | Phase Noise | -40 dBc @ 10 Hz -62 dBc @ 100 Hz -80 dBc @ 1 kHz -88 dBc @ 10 kHz -95 dBc @ 100 kHz -120 dBc @ ≥1 MHz typ. |
| | Filter attenuation | 15 dB @ 7.90 GHZ, 30 dB @ 8.00 GHz, 40 dB @ 8.10 GHz, 50 dB @ 8.20 GHz, >60 dB @ 8.30-8.40 GHz |
| | Group Delay | ±1 ns max. |
| | Image Rejection | 60 dB min. |
| OUTPUT | IF output | Within 950-1450 MHz |
| | Output P1dB | +15 dBm typ., +5 dBm < 10dB gain |
| | Output IP3 | +25 dBm typ. |
| | Output VSWR | 2.1:1 max. |
| | Output Connector | N-type 50Ω , SMA-type 50Ω or F-type 75Ω |
| GENERAL | Dimensions | 127 x 80 x 30 mm (F- & SMA-connector), 133 x 80 x 30 mm (N-connector) |
| | Weight | 330 g (F- & SMA-connector) 344 g (N-connector) |
| | MTBF | MTBF as per MIL-HDBK-217F Notice 2: Environmental Condition GF (Ground Fixed): >489000 hours,<br>Environmental Condition AIC (Airborne, Inhabited, Cargo): >245000 hours,<br>Quality level: Commercial, Temp used for MTBF calculation: +35 C Ambient |
| | Temperature range | Storage and operating: -40 to +80°C, -40 to +176° F |
| OPTIONS | Options | Separate SMA connector for DC input or Ext. 10 MHz reference<br>Customized gain & variation<br>Extended IF |


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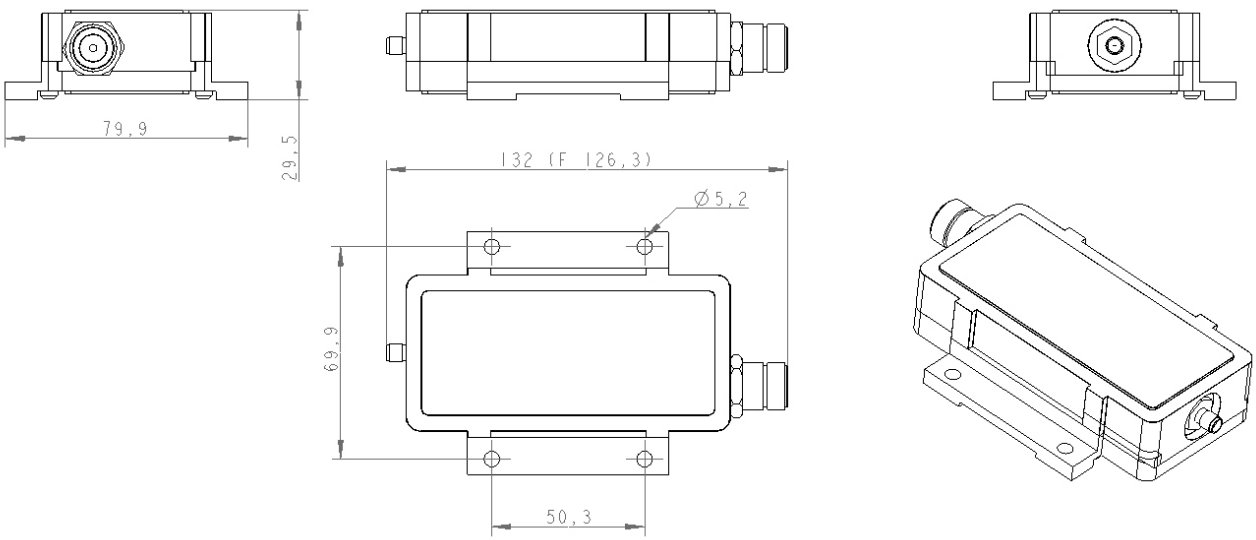
## Technical Drawing




Designed and Manufactured
IN SWEDEN

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