

Ka BDC 17.30-22.30 GHz 1-8 Band AESA

Key features



- LO / Sub-band switchable
- Customizable design
- DVB-S2X compliant VSAT profile
- High P1dB and IP3
- Compact & Lightweight 25.4 mm (1 inch) height
- Alarm and Monitoring & Control via Modbus

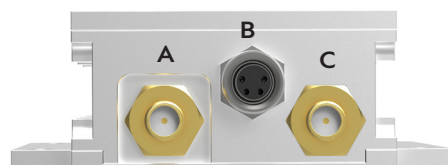
Description

AESA Modular – one of our most advanced products to date. Active Electronically Scanned Array (AESA) Frequency Converter Modules, designed for integration in AESA antennas.

In the era of New Space – LEO, MEO and GEO HTS satellite constellations and addressing the New Ground segment – AESA antennas are believed to be key.

As a well known manufacturer of high quality, high performance, cost effective Professional Satcom Block Downconverter products and related equipment, we wanted to apply our knowledge and experience in Block Frequency converters to the AESA market. We started development with a modular approach for both Uplink and Downlink Block Frequency converter products.

The result is a range of State-of-the-Art Frequency Blockdown converters (BDC) for both Ku- and Ka-Bands, featuring unique functionality.



Connector A

Type: SMA 50 Ω female
Functions: L-Band out, DC in, ext 10 MHz in

Connector B

Type: M8 female, 4 pin, A coded
Functions: Alarm and M&C, optionally DC in.

Connector C (option)

Type: SMA 50 Ω female
Functions: Separate DC in or/and ext 10 MHz in



Explore our full product range in this category



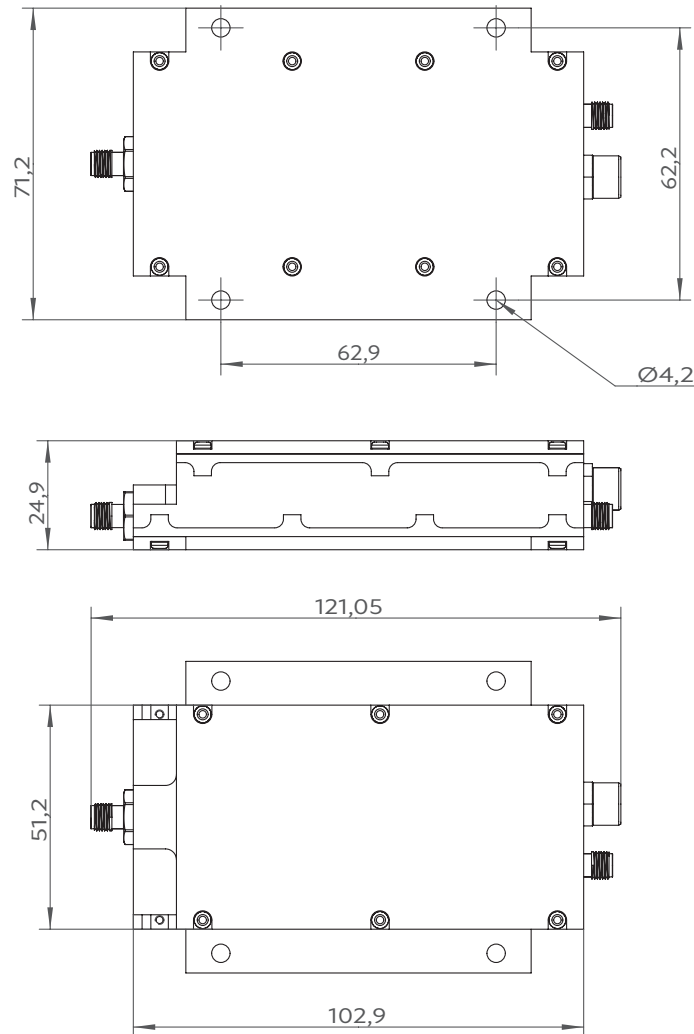
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Technical specifications

GENERAL	Input Frequency	Within 17.30 to 22.30 GHz, 1 to 8 bands
	LO Frequency	Custom between 16.35 to 20.75 GHz, step size 50 MHz
	Output Frequency	950-2450 MHz
	DC Input	+12 to +26 V through output connector or separate connector (SMA), see switching voltage above
	Power consumption	6 W max.
	Dimensions	121 x 71 x 24.9 mm exclusive connectors and mounting flanges
	Weight	203 g
	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
INTERFACES	Temperature Range	Storage and operating: -40 to +80°C, -40 to +176° F
	Switching	Via Modbus M&C or legacy +11 to 26 V nom. & 22 kHz (example 13/15/18/24 V & 22 kHz tone for 8 Bands)
	22 kHz tone	Switching No tone/22 kHz ±4 kHz, Amplitude voltage 0.6 ±0.2 V, Duty cycle 40-60%
	Input connector	SMA female 50Ω
	Output Connector	SMA female 50Ω
	Ext. 10 MHz Ref.	Sine wave, Level -10 to +10 dBm. Supplied through output connector.
	Alarm	Interface: Separate SMA-f connector (C), Open collector, Open on fault, 3.3 to 24 V, max. 200 mA Available Alarms: LO not locked, Total current consumption, Power detector outside limits, RF level outside limits
	M&C	Via MODBUS RTU RS485 electrical interface, see sep. document for details. NOTE! Mates with M8 male connector. Cable: shielded min. CAT 5
INTERNAL	Gain	20 dB nominal (15 dB to 30 dB by request)
	Gain variation over 24h	±0.1 dB @ 23°C
	Flatness each band	±1.5 dB max.
	Noise figure	15 dB / 8881 K max.
	Phase Noise	-32 dBc @ 10 Hz -62 dBc @ 100 Hz -80 dBc @ 1 kHz -83 dBc @ 10 kHz -93 dBc @ 100 kHz -112 dBc @ 1 MHz -120 dBc @ >10 MHz max.
	Integrated Phase Noise Model 19.20/19.25	Single sideband phase noise integrated over the bandwidth from 10 Hz to 16 kHz relative to carrier center frequency: < 3.4° RMS (two-sided value <4.8° RMS).
	Group Delay	0.25 ns @ 50 MHz, 2 ns @ each band max.
	Image Rejection	30 dB @ LO < 19.25, 20 dB @ LO 20.25
	Input VSWR	1.7:1 max.
	Output P1dB	+5 dBm typ. @ 20 dB gain, +15 dBm typ. @ 30 dB gain
	Output IP3	+15 dBm typ. @ 20 dB gain, +15 dBm typ. @ 30 dB gain
	Output VSWR	1.7:1 max.
	LO reference	Auto LO ref. External ref / Internal ±2.5 ppm -40 to +80°C
	Internal LO ref.	±2.5 ppm -40 to +80°C
	LO Leakage	-60 dBm max. @ RF input, -40 dBm max. @ IF output
OPTIONS	- Customized LO frequencies (up to 8 LOs) - Separate DC (SMA) - Separate 10 MHz ref. input (SMA)	

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Technical Drawing



Professional Satcom Frequency Converters & Components. All products are fully CE and RoHS compliant and every unit includes full documentation of performance tests and quality control. Please contact sales@smw.se to configure or customize the unit to your needs. Visit smw.se or scan QR code to see our full product range and request a quote.

