PRODUCT BRIEF

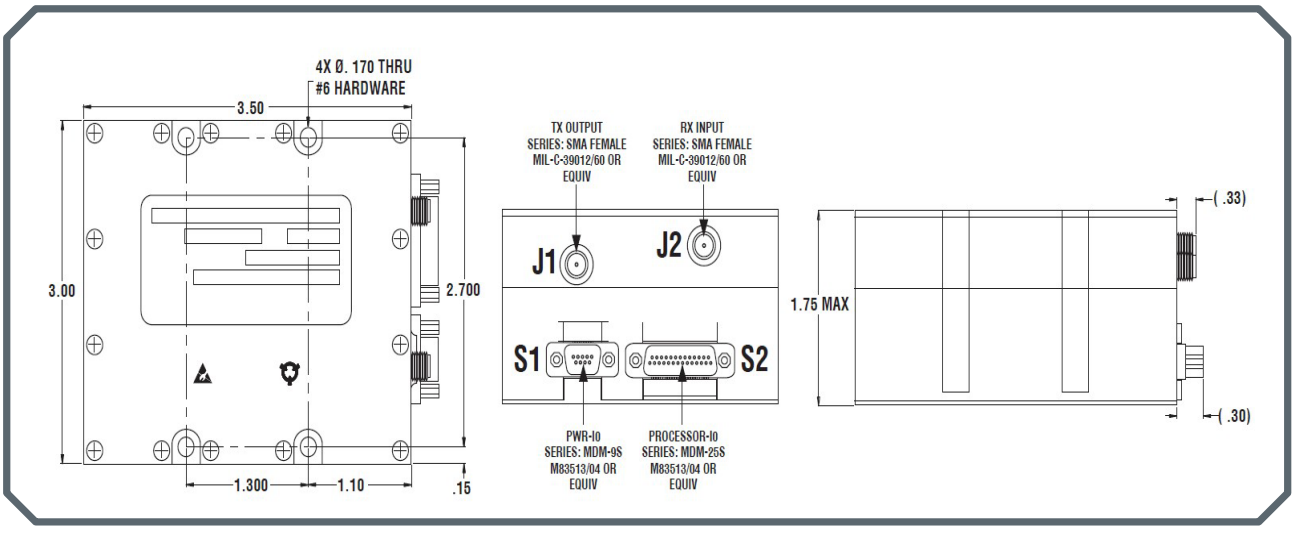
Radar Altimeter
Model 4503-100

Supplying high performance flight instrumentation, RF/microwave assemblies, power amplifiers, IFF and data acquisition Systems for severe environments.

The CAES 4503-100 is a linear FM (Chirped) Radar Altimeter (RALT), using modular construction, and advanced digital signal processing (DSP) techniques, to provide a small volume, low power consumption, low cost, high performance RALT.

The Transmitter employs Adaptive Power Control (APC) to minimize transmit power over the full altitude range. The DSP dynamically controls APC, transmitter sweep rate and deviation, to provide an accuracy of one foot or better at low altitudes. The RALT is programmable with features that are defined by the end-user.

The use of solid-state devices and an efficient thermal design enables the RALT to be operational between -40°C and +71°C temperature with conduction cooling.



RELEASE DATE 03/31/2021

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FEATURES:

- Low-Altitude, All-Weather Operation
- Linear FM (Chirped)
- Built in Self-Test
- Automatic Power Control (APC) Three Selectable Analog Output Formats; RS- 422 Digital Output,
- ARINC 429, RS232
- Out-of-Range Indicator
- Modular, Solid-State Design
- Designed to meet MIL-STD-461E

OPTIONS:

- Eight User Defined Trip Points on Digital Output
- Self-Test Altitude (default 1,000 ft)
- Analog outputs can be programmed to provide a user defined "0-20VDC" and "-5VDC to +20VDC" output levels, with selectable slopes and offsets

SPECIFICATIONS:

- Altitude Range: 1 ft. To 4000 ft. typical
- Accuracy: ± (1ft. + 1% Altitude) Digital Output Typical; ± (1ft. + 2% Altitude) Analog Output typical
- Track Rate: > 2000 ft./sec.
- Frequency: 4300 MHz nominal
- Deviation: 100 MHz minimum
- Transmitter Output Power: +26 dBm Typical
- Update Rate: 50 Hz Typical
- Data Latency: < 40 msecs, depending on configuration
- Required Antenna Isolation for Maximum Altitude: 80 dB min

PHYSICAL:

- Connectors: SMA (F) for Tx & Rx Ports; 9-Pin Micro-D for Power Port; 25-Pin Micro-D for RS-422, Analog, and Discrete Outputs
- Size (excluding connectors): 3.5" X 3.0" X 1.75" (88.9 mm X 76.2 mm X 44.5 mm)
- Weight: 1.2 lbs. (0.54 kgms)

ENVIRONMENTAL:

- Random Vibration: 7.57 Grms
- Temperature, Operating: - 40°C to +71°C
- Temperature Storage: - 55°C to +125°C
- Shock: 20 g's, 11 msecs, half-sine
- Acceleration: 10 g's sustained, 20 g's transient
- Altitude: Operating up to 50,000 ft
- EMI/RFI: Compliant with MIL-STD-461F tests; CE102, CS101, CS103, CS104, and MIL-STD-464C ESD

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OUTPUTS:

- Analog Output: 20 VDC max., programmable slope and offsets; -5 VDC to +20 VDC, with programmable slopes and offsets
- Digital Output: RS-422, RS232, ARINC 429
- Out-of-Range Indicator: 5 VDC TTL
- Trip Points: Up to eight (8) trip points at Digital Output, programmable

POWER:

- Power: 24 – 32 VDC, 15WDC max., Reverse Polarity Protection included
- Acquisition Time: < 3 seconds typical
- Temperature: -40°C to +71°C Operating (baseplate temperature); -55°C to +125°C Storage

PRODUCT NUMBER:

- P/N 4503-100-XXX: Standard Unit (see configuration sheet for ordering options.)

* Product in development, targeted specification

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