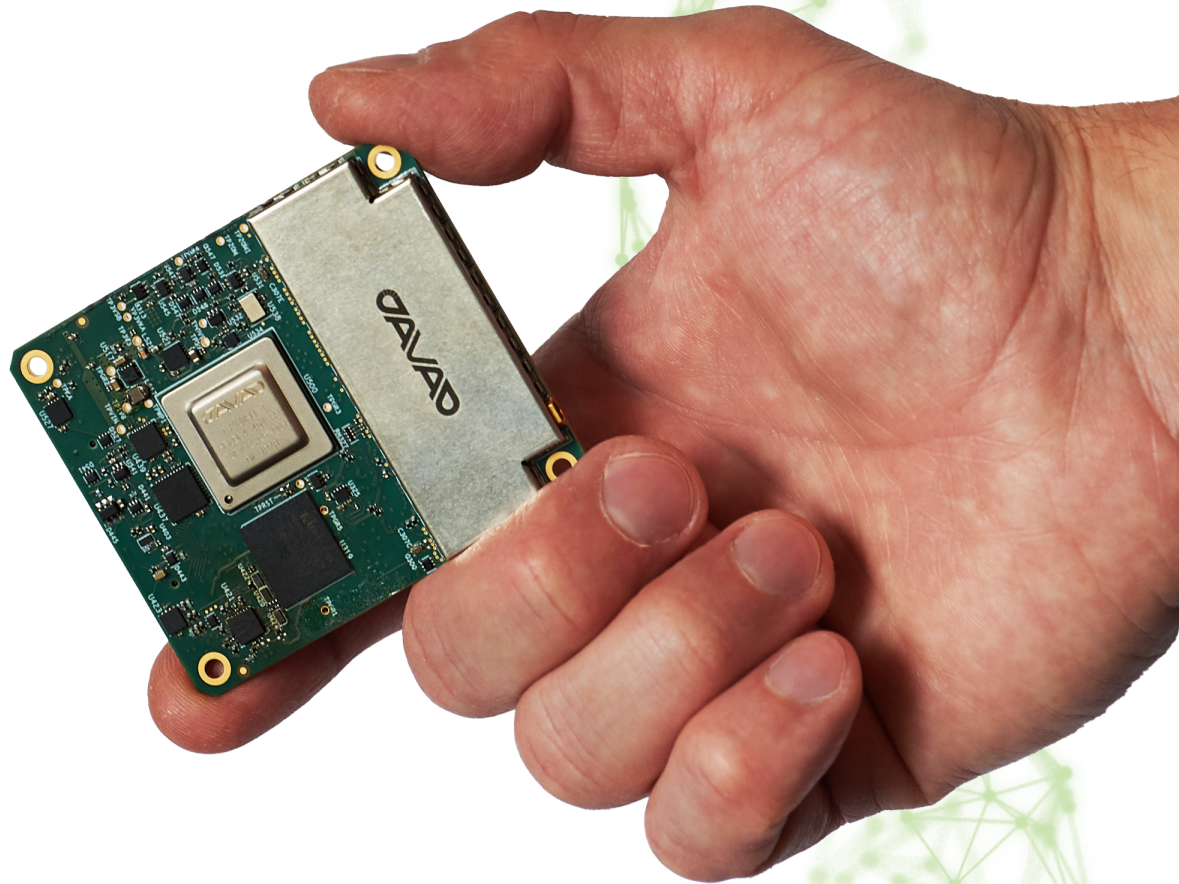




TR-3S

High Performance Compact OEM Board



Key Features

- 874 Channels
- GPS, GLONASS, Galileo, BeiDou, QZSS, IRNSS, SBAS, L-Band
- Advanced Multipath Reduction
- Serial, USB
- CAN, IRIG, Event Mark, 1PPS
- 16 GB Memory

The TR-3S is a small-sized OEM GNSS board with 874 channels for all-in-view tracking capability of multi-constellation, multi-frequency GNSS.

TECHNICAL SPECIFICATIONS

Number of Channels 874

GNSS Constellations	GPS	C/A, L1C (P+D) including TMBOC (6,1,4/33) , P1, P2, L2C (L+M), L5 (I+Q)
	GLONASS	C/A, P1, P2, L2C, L3 (I+Q)
	Galileo	E1 (B+C) including CBOC (6,1,1/11), E5A (I+Q), E5B (I+Q), AltBoc, E6 (B+C)
	BeiDou	B1, B1C(P+D) including TMBOC(6,1,4/33) , B2B(I+Q), B2, B2A(I+Q), AltBoc, B3
	QZSS	C/A, L1C (P+D) including TMBOC (6,1,4/33) , L2C (L+M), L5 (I+Q), L6 (L61/L62), L1S, L1Sb, L5SL1, L5 (P+D)
	BeiDou	B1, B1C (P+D) including TMBOC (6,1,4/33) , B2B (I+Q), B2, B2A (I+Q), AltBoc, B3
	SBAS	L1, L5 (P+D)
	IRNSS	L5, S
	L-band	1525-1560 MHz

Tracking Features	Spoofing detection Advanced Multipath Reduction Fast acquisition channels High accuracy velocity measurement
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Input/Output	RS232	One serial port (up to 460.8 Kbps)
	RS232/RS422	Two configurable serial ports (up to 460.8 Kbps)
	USB to RS232	Built-in FTDI converter (12Mbps USB 2.0 FullSpeed. Up to 1.5Mbps RS232 speed)
	IRIG	Timecode output
	Event Marker	One input
	1PPS	One output synchronized to GPS or UTC
	CAN	interface
	Logic-Level GPIO	Two configurable ports
	RTCM SC104	Versions 2.x and 3.x Input/Output
	NMEA 0183	Versions 2.x and 3.0 Output
	Spectrum	Data output
	BINEX	Data output

Data Features	Up to 200 Hz update rate for real time position and raw data (code and carrier) 10 cm code phase and 1 mm carrier phase precision Hardware Viterbi decoder Hardware Reed-Solomon and LDPC decoders Code Differential Rover/Base Geoid and Magnetic Variation models RAIM Different DATUMs support Output of grid coordinates
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Storage	Memory	Up to 16 GB of onboard non-removable for data storage (TBD)
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PERFORMANCE SPECIFICATIONS

Time for First Fix	Cold Start	< 35 s
	Warm Start	< 5 s
	Reacquisition	<1 second

POSITIONING SPECIFICATIONS

Position Accuracy	Autonomous	< 2 m
	DGPS	< 0.5 m
	RTK	Horizontal: 1 cm + 1 ppm Vertical: 1.5 cm + 1 ppm
	Static/Fast Static	Horizontal: 0.3 cm + 0.1 ppm Vertical: 0.35 cm + 0.4 ppm

PHYSICAL AND ELECTRICAL CHARACTERISTICS

Physical & Electrical	Connectors	40 pins for digital, MMCX for antenna
	Size	66 x 57 x 11 mm (2.59 x 2.24 x 0.43 in)
	Weight	30 g (0.066 lbs)

ENVIRONMENTAL CHARACTERISTICS

Environmental	Operating t°	-40° C to +80° C
	Storage t°	-40° C to +85° C
	Vibration	High shock and vibration resistance