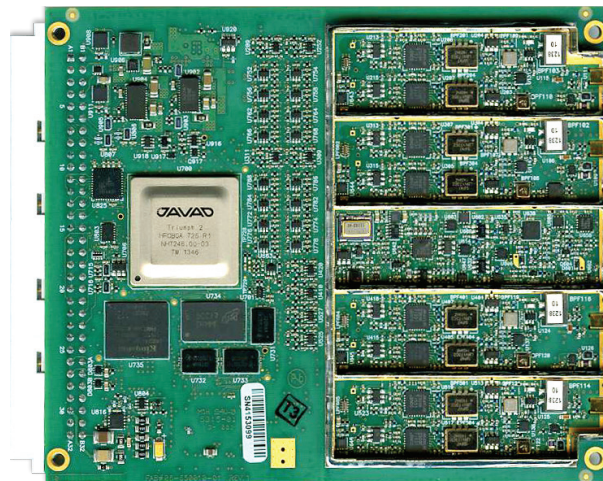




# TRE-QUATTRO

GPS L1/L2, GLONASS L1/L2, GALILEO E1  
BeiDou B1, SBAS L1, QZSS L1/L2



TRE-QUATTRO OEM board is based on the TRIUMPH2 technology implemented in our 864 channel chip. The board accepts inputs from up to four antennas. It is equivalent of four receivers which operate synchronously with a common oscillator and central processor to coordinate all communications and other activities. The main receiver can perform long baseline RTK in conjunction with a base. The other three receivers along with the main one can provide very fast and reliable orientation (attitude) solutions.

The on-board power supply on TRE-QUATTRO board accepts any voltage from +6 to +40 volts and delivers clean filtered voltage where needed. This eliminates the risk of power contamination (ripples) that can be created when clean power is generated elsewhere and delivered to the board via cables. TRE-QUATTRO board also includes drivers for four LEDs, ON/OFF and function button controllers. In addition, the board comes with large amount of flash for data storage.

The CAN interface in TRE-QUATTRO board is provided complete with all associated hardware and firmware, not just the CAN bus. The same is true with all the serial RS232/RS422 ports in our board. Simply stated, additional functions are not needed to incorporate any of our TRE-QUATTRO OEM board in most applications. In addition to timing strobes and event markers, the TRE-QUATTRO OEM board includes the option of complete IRIG timing system.

# TRE-QUATTRO OEM

Description	I/O	Signal name	Pin #	Pin #	Signal name	I/O	Description
Power Ground		PGND	<b>A1</b>	<b>B1</b>	PGND		Power Ground
+6 to +40 VDC Power Input	I	PWR_IN	<b>A2</b>	<b>B2</b>	PWR_IN	I	+6 to +40 VDC Power Input
Factory use only, must be left open		FUO	<b>A3</b>	<b>B3</b>	COMMSW#	I	Active Low Command Input (FN Button) *1
Reserved		-	<b>A4</b>	<b>B4</b>	KA_PWR	I	Keep-Alive Power input for Real-Time Clock (+4.5 to +40 VDC, 10µA typ)
External LED Control *2	0	LED2_RED	<b>A5</b>	<b>B5</b>	LED1_RED	0	External LED Control *2
External LED Control *2	0	LED2_GRN	<b>A6</b>	<b>B6</b>	LED1_GRN	0	External LED Control *2
Signal Ground		GND	<b>A7</b>	<b>B7</b>	USB_PWR	I	USB port Power Input line
USB port D- line	I/O	USB_D-	<b>A8</b>	<b>B8</b>	USB_D+	I/O	USB port D+ line
Serial port A TXD line	0	TXDA	<b>A9</b>	<b>B9</b>	CTSA	I	Serial port A CTS line
Serial port A RXD line	I	RXDA	<b>A10</b>	<b>B10</b>	RTSA	0	Serial port A RTS line
Serial port C TXD line	0	TXDC	<b>A11</b>	<b>B11</b>	CTSC	I	Serial port C CTS line
Serial port C RXD line	I	RXDC	<b>A12</b>	<b>B12</b>	RTSC	0	Serial port C RTS line
RS-422 port TXD+ line	0	TXDD+	<b>A13</b>	<b>B13</b>	TXDD-	0	RS-422 port TXD- line
RS-422 port RXD+ line	I	RXDD+	<b>A14</b>	<b>B14</b>	RXDD-	I	RS-422 port RXD- line
Signal Ground		GND	<b>A15</b>	<b>B15</b>	-		Reserved
Reserved		-	<b>A16</b>	<b>B16</b>	-		Reserved
Serial port B TXD line	0	TXDB	<b>A17</b>	<b>B17</b>	CTSB	I	Serial port B CTS line
Serial port B RXD line	I	RXDB	<b>A18</b>	<b>B18</b>	RTSB	0	Serial port B RTS line
CAN1 port CAN-H line	I/O	CAN1H	<b>A19</b>	<b>B19</b>	CAN1L	I/O	CAN1 port CAN-L line
CAN2 port CAN-H line	I/O	CAN2H	<b>A20</b>	<b>B20</b>	CAN2L	I/O	CAN2 port CAN-L line
Factory use only, must be left open		FUO	<b>A21</b>	<b>B21</b>	-		Reserved
Signal Ground		GND	<b>A22</b>	<b>B22</b>	1PPSA	0	1 Pulse Per Second output A *3
Signal Ground		GND	<b>A23</b>	<b>B23</b>	1PPSB	0	1 Pulse Per Second output B *3
Signal Ground		GND	<b>A24</b>	<b>B24</b>	EVENTA	I	Event input A *4
Signal Ground		GND	<b>A25</b>	<b>B25</b>	EVENTB	I	Event input B *4
Configurable Logic-Level I/O 0 line	I/O	GPIO0	<b>A26</b>	<b>B26</b>	GPIO1	I/O	Configurable Logic-Level I/O 1 line
Configurable Logic-Level I/O 2 line	I/O	GPIO2	<b>A27</b>	<b>B27</b>	GPIO3	I/O	Configurable Logic-Level I/O 3 line
Signal Ground		GND	<b>A28</b>	<b>B28</b>	RESET_IN#	I	Active Low Reset input *5
Ethernet port TX+ line	0	LAN_TX+	<b>A29</b>	<b>B29</b>	LAN_TX-	0	Ethernet port TX- line
Signal Ground		GND	<b>A30</b>	<b>B30</b>	LAN_LED	0	Ethernet port control for external LED
Ethernet port RX+ line	I	LAN_RX+	<b>A31</b>	<b>B31</b>	LAN_RX-	I	Ethernet port RX- line
Active Low input for ON/OFF switch *7	I	ONOFFSW#	<b>A32</b>	<b>B32</b>	IRIG_OUT	0	IRIG port output line *6

\*1. Active Low input from the FN button of the MinPad. Must be left open if not used.

\*2. LED1\_GRN and LED1\_RED are used to control the STAT LED of the MinPad. LED2\_GRN and LED2\_RED are equivalent to the REC LED of the MinPad. The output is a +3.3V driver in series with 100 Ohm resistor for each LED. LEDs should be with common cathode.

\*3. Voh>1,8V at 50 Ohm load.

\*4. Internal pull-up 5 kOhm to +3.3V

\*5. Connect to ground to activate. Internal pull-up 2 kOhm to +3.3V.

\*6. AM sine-wave signal; 2.1Vp-p (Mark), 0.7Vp-p (Space).

\*7. Active Low input which is equivalent to ON/OFF button of the MinPad. The pin must be connected to GND permanently if the board is required to turn on automatically any time external power is applied to pins A2 and B2.

# TRE-QUATTRO OEM

## Tracking Features

- Total 864 channels: all-in-view
- GPS C/A, P1, P2, L2C (L+M), L1C(I+Q)
- Galileo E1(B+C)
- GLONASS C/A, P1, P2, L2C
- QZSS C/A, L2C (L+M), L1C(I+Q), SAIF
- BeiDou B1, B1R, L1C(I+Q)
- SBAS L1
- Advanced Multipath Reduction
- Fast acquisition channels
- High accuracy velocity measurement
- Almost unlimited altitude and velocity (for authorized users)

## Data Features

- Up to 20 Hz update rate for real time position and 100 Hz raw data (code and carrier)
- 10 cm code phase and 1 mm carrier phase precision
- IEEE 1588 protocol support
- Hardware Viterbi decoder
- RTCM SC104 versions 2.x and 3.x Input/Output
- NMEA 0183 versions 2.x and 3.0 Output
- Code Differential Rover
- Code Differential Base
- Geoid and Magnetic Variation models
- RAIM
- Different DATUMs support
- Output of grid coordinates

## Data Storage

- Up to 16 GB of onboard non-removable memory for data storage

## Input/Output

- Two high speed RS232 serial ports (up to 460.8 Kbps)
- Two high speed RS232/422 serial port (up to 460.8 Kbps)
- High speed USB 2.0 device port (480 Mbps)
- Full-duplex 10BASE-T/100BASE-TX Ethernet port
- Two CAN 2.0 A/B ports
- IRIG timecode output
- Two 1 PPS outputs synchronized to GPS, GLONASS or UTC
- Two Event Marker inputs
- MinPad interface: Four external LED drivers, ON/OFF control and External Command inputs
- Four Configurable Logic-Level GPIO ports

## Electrical

- On-board power supply accepts any unregulated voltage between +6 to +40 Volts
- Keep-Alive Power input accepts any unregulated voltage between +4.5 to +40 Volts
- The central pin of each of the antenna connectors outputs +5VDC (the sourced current is 0.12 A max) to power an LNA
- Power consumption: 7.2 Watt

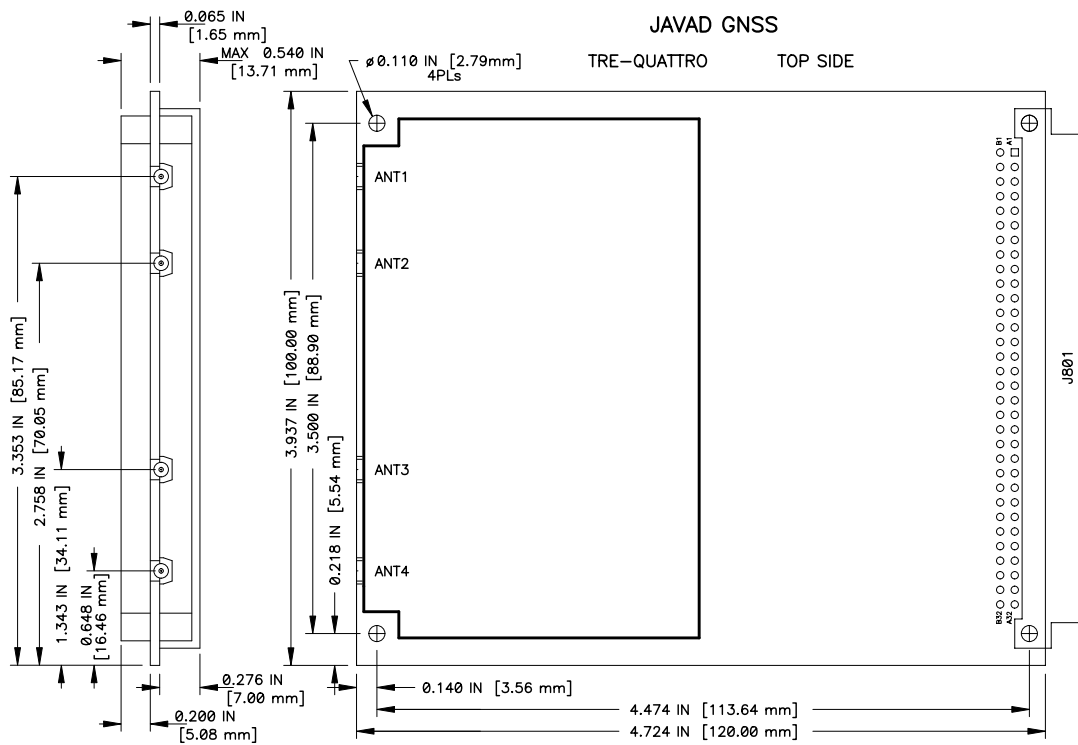
## Environmental

- Operating Temperature: -35°C to +75°C
- Storage Temperature: -40°C to +85°C
- High shock and vibration resistance

## Physical

- Dimensions: 100x120 mm
- Weight: 130 g
- Digital connector: 64-pin DIN41612 type B Right Angle, AMP p/n 536052-5.
- RF connectors: MMCX Jack, edge mount, AMPHENOL, P/N 908-22100
- J101, J102, J103, J104 are GNSS antenna input connectors.

# TRE-QUATTRO OEM



Specifications are subject to change without notice



**JAVAD GNSS**  
**www.javad.com**

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