www.instrumentation.it
Via Acquanera 29, 22100 COMO (Italy) tel. +39.031.525391 - fax +39.031.507984 - info@instrumentation.it

INSTRUMENTATION DEVICES SRL

JAVAD

TR-G3

TR-G3 OEM board is based on our TRIUMPH Technology implemented in our TRIUMPH Chip. For the first time in the GNSS history we offer up to 100 Hz RTK. The TR-G3 board includes the true Galileo option.

The on-board power supply on TR-G3 OEM board accepts any voltage from +4.5 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. TR-G3 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 TR-G3 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 TR-G3 OEM board in most applications.

In addition to timing strobe and event marker, the TR-G3 OEM board includes the option of complete IRIG timing system.
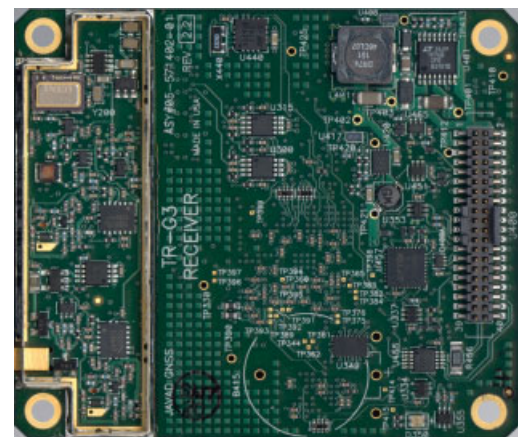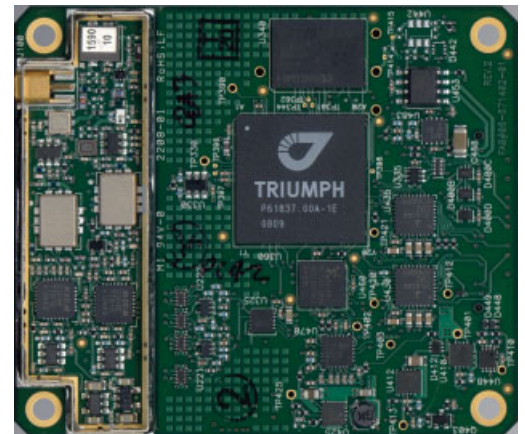
TR-G3 OEM Board

Description	I/O	Signal Name	Pin #	Pin #	Signal Name	I/O	Description
Power Ground		PGND	1	2	PGND		Power Ground
+4.5 to +40 VDC Power Input	I	PWR_IN	3	4	PWR_IN	I	+4.5 to +40 VDC Power Input
Keep-Alive Power Input for Real-Time Clock (+4.5 to +40 VDC, 10μA typ)	I	KA_PWR	5	6	COMMSW*	I	Active Low Command Input (FN Button) *1
Active Low input for ON/OFF switch *2	I	ONOFFSW*	7	8	FUO		Factory use only, must be left open
Active Low Reset input *3	I	RESET_IN*	9	10	GND		Signal Ground
Serial port A CTS line	I	CTSA	11	12	TXDA	O	Serial port A TXD line
Serial port A RTS line	O	RTSA	13	14	RXDA	I	Serial port A RXD line
Signal Ground		GND	15	16	CTSB	I	Serial port B CTS line
Serial port B TXD line	O	TXDB	17	18	RTSB	O	Serial port B RTS line
Serial port B RXD line	I	RXDB	19	20	LED1_GRN	O	External LED Control *4
External LED Control *4	O	LED1_RED	21	22	LED2_GRN	O	External LED Control *4
External LED Control *4	O	LED2_RED	23	24	IRIG_OUT	O	IRIG port output line *5
USB port Power Input line	I	USB_PWR	25	26	GND		Signal Ground
USB port D+ line	I/O	USB_D+	27	28	USB_D-	I/O	USB port D- line
1 Puls Per Second output *6	O	1PPS	29	30	GND		Signal Ground
Event input *7	I	EVENT	31	32	-		Reserved
Reserved		-	33	34	GND		Signal Ground
CAN port CAN-H line	I/O	CANH	35	36	CANL	I/O	CAN port CAN-L line
RS-422 port TXD+ line	O	TXDD+	37	38	TXDD-	O	RS-422 port TXD- line
RS-422 port RXD+ line	I	RXDD+	39	40	RXDD-	I	RS-422 port RXD- line

*1. Active Low input from the FN button of the MinPad. Internal pull-up 10 kOhm +3.3V. Must be left open if not used.
*2. Active Low input which is equivalent to ON/OFF button of the MinPad. Internal pull-up 10 kOhm +3.3V. 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 3 and/or 4.
*3. Connect to ground to activate. Internal pull-up 2 kOhm to +3.3V.
*4. 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.
*5. AM sine-wave signal; 2.1Vp-p (Mark), 0.7Vp-p (Space).
*6. Voh > 2.0V at 50 Ohm load.
*7. Internal pull-up 5 kOhm to +3.3V
Digital connector: Micro Header, 2x20 pos, 0.050" pitch. Samtec p/n FTSH-120-01-L-DV-K-A.
RF connector: MMCX Jack, edge mount. Amphenol p/n 908-22100. The central pin of the connector is power supply for LNA, +5 VDC with sourced current up to 0.1A.

Tracking Features
- Total 216 channels: all-in-view
- GPS L1
- GLONASS L1
- Galileo E1
- SBAS
- Advanced Multipath Reduction
- Fast acquisition channels
- High accuracy velocity measurement
- Almost unlimited altitude and velocity (for authorized users)

Data Features
- Up to 100 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
- 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 256MB of onboard non-removable memory for data storage

Input/Output
- Two high speed RS232 serial ports (up to 460.8 Kbps)
- High speed RS422 serial port (up to 460.8 Kbps)
- Full speed USB device port (12 Mbps)
- CAN interface
- IRIG timecode output
- One Event Marker input
- One 1 PPS output synchronized to GPS, GLONASS or UTC
- MinPad interface: Four external LED drivers, ON/OFF control and External command inputs

Electrical
- On-board power supply accepts any unregulated voltage between +4.5 to +40 Volts
- Keep-Alive Power input accepts any unregulated voltage between +4.5 to +40 Volts for Real Time Clock
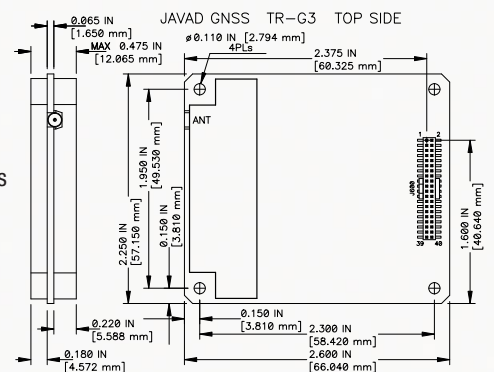
- Power consumption: 1.5 Watt

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

Physical
- Dimensions: 57x66 mm
- Weight: 34 g
- Connectors: 40 pins for digital, MMCX for antenna

Specifications are subject to change without notice.

JAVAD GNSS
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