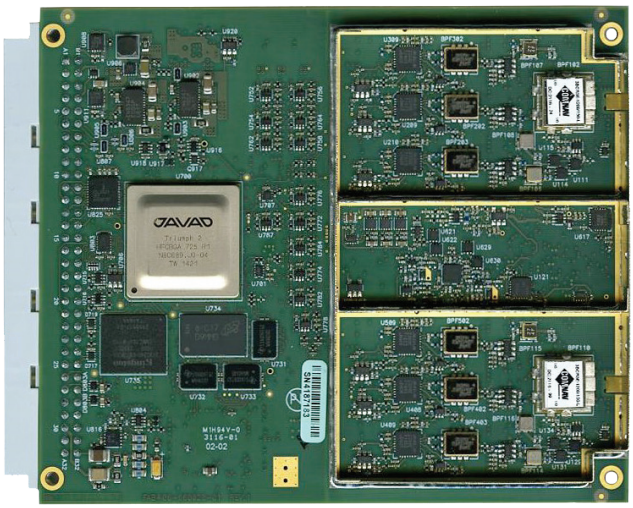
TRE-DUO

GPS L1/L2/L5, GLONASS L1/L2/L3
Galileo E1/E5A/E5B/AltBoc , BeiDou B1/B2



864 GNSS channels of this board allow tracking all current and future satellite signals. TRE-DUO is a board that accepts inputs from up to two antennas. It is equivalent of two receivers which operate synchronously with a common oscillator and central processor to coordinate all communications and other activities.

The board allows determining 2D attitude including pitch and heading. Heading option includes RTK. The board is capable of calculating both RTK of the antenna A relative to the external base and B - A base line resulting in the heading and pitch.

TRE-DUO can be used in positioning applications where a single antenna is not sufficient to observe satellites in all orientations and positions: in machine navigation and control in road construction, precise agriculture, other land, aerial, and marine applications.

TRE-DUO is ideal for heading applications. Dual frequency GPS, GLONASS, Galileo, QZSS, and BeiDou can provide very fast and reliable solutions due to very short baseline between antennas and the fact that typical applications are in open fields.

Simply stated, additional functions are not needed to incorporate any of our TRE-DUO OEM board in most applications. In addition to timing strobes and event markers, the TRE-DUO OEM board includes the option of complete IRIG timing system.

TRE-DUO

Description	i/O	Signal name	Pin #	Pin #	Signal name	I/O	Description
Power Ground		PGND	**A1**	**B1**	PGND		Power Ground
+6.0 to +40 VDC Power Input	I	PWR_IN	**A2**	**B2**	PWR_IN	I	+6.0 to +40 VDC Power Input
Factory use only, must be left open		FUO	**A3**	**B3**	COMMSW#	I	Active Low Command Input (FN Button) *1
Reserved		-	**A4**	**B4**	KA_PWR	I	Keep-Alive Power input for Real-Time Clock (+4.5 to +40 VDC, 10µA typ)
External LED Control *2	O	LED2_RED	**A5**	**B5**	LED1_RED	O	External LED Control *2
External LED Control *2	O	LED2_GRN	**A6**	**B6**	LED1_GRN	O	External LED Control *2
Signal Ground		GND	**A7**	**B7**	USB_PWR	I	USB port Power Input line
USB port D- line	I/O	USB_D-	**A8**	**B8**	USB_D+	I/O	USB port D+ line
Serial port A TXD line	O	TXDA	**A9**	**B9**	CTSA	I	Serial port A CTS line
Serial port A RXD line	I	RXDA	**A10**	**B10**	RTSA	O	Serial port A RTS line
Serial port C: RS232 TXD line or RS422 TX- line	O	TXDC/TXC-	**A11**	**B11**	CTSC/RXC+	I	Serial port C: RS232 CTS line or RS422 RX+ line
Serial port C: RS232 RXD line or RS422 RX- line	I	RXDC/RXC-	**A12**	**B12**	RTSC/TXC+	O	Serial port C: RS232 RTS line or RS422 TX+ line
Serial Port D: RS232 RTS line or RS422 TX+ line	O	RTSD/TXD+	**A13**	**B13**	TXDD/TXD-	O	Serial Port D: RS232 TXD line or RS422 TX- line
Serial Port D: RS232 CTS line or RS422 RX+ line	I	CTSD/RXD+	**A14**	**B14**	RXDD/RXD-	I	Serial Port D: RS232 RXD line or RS422 RX- line
Signal Ground		GND	**A15**	**B15**	-		Reserved
Reserved		-	**A16**	**B16**	-		Reserved
Serial port B TXD line	O	TXDB	**A17**	**B17**	CTSB	I	Serial port B CTS line
Serial port B RXD line	I	RXDB	**A18**	**B18**	RTSB	O	Serial port B RTS line
CAN1 port CAN-H line	I/O	CAN1H	**A19**	**B19**	CAN1L	I/O	CAN1 port CAN-L line
CAN2 port CAN-H line	I/O	CAN2H	**A20**	**B20**	CAN2L	I/O	CAN2 port CAN-L line
Factory use only, must be left open		FUO	**A21**	**B21**	-		Reserved
Signal Ground		GND	**A22**	**B22**	1PPSA	O	1 Pulse Per Second output A *3
Signal Ground		GND	**A23**	**B23**	1PPSB	O	1 Pulse Per Second output B *3
Signal Ground		GND	**A24**	**B24**	EVENTA	I	Event input A *4
Signal Ground		GND	**A25**	**B25**	EVENTB	I	Event input B *4
Configurable Logic-Level I/O 0 line	I/O	GPIO0	**A26**	**B26**	GPIO1	I/O	Configurable Logic-Level I/O 1 line
Configurable Logic-Level I/O 2 line	I/O	GPIO2	**A27**	**B27**	GPIO3	I/O	Configurable Logic-Level I/O 3 line
Signal Ground		GND	**A28**	**B28**	RESET_IN#	I	Active Low Reset input *5
Ethernet port TX+ line	O	LAN_TX+	**A29**	**B29**	LAN_TX-	O	Ethernet port TX- line
Signal Ground		GND	**A30**	**B30**	LAN_LED	O	Ethernet port control for external LED
Ethernet port RX+ line	I	LAN_RX+	**A31**	**B31**	LAN_RX-	I	Ethernet port RX- line
Active Low input for ON/OFF switch *7	I	ONOFFSW#	**A32**	**B32**	IRIG_OUT	O	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.