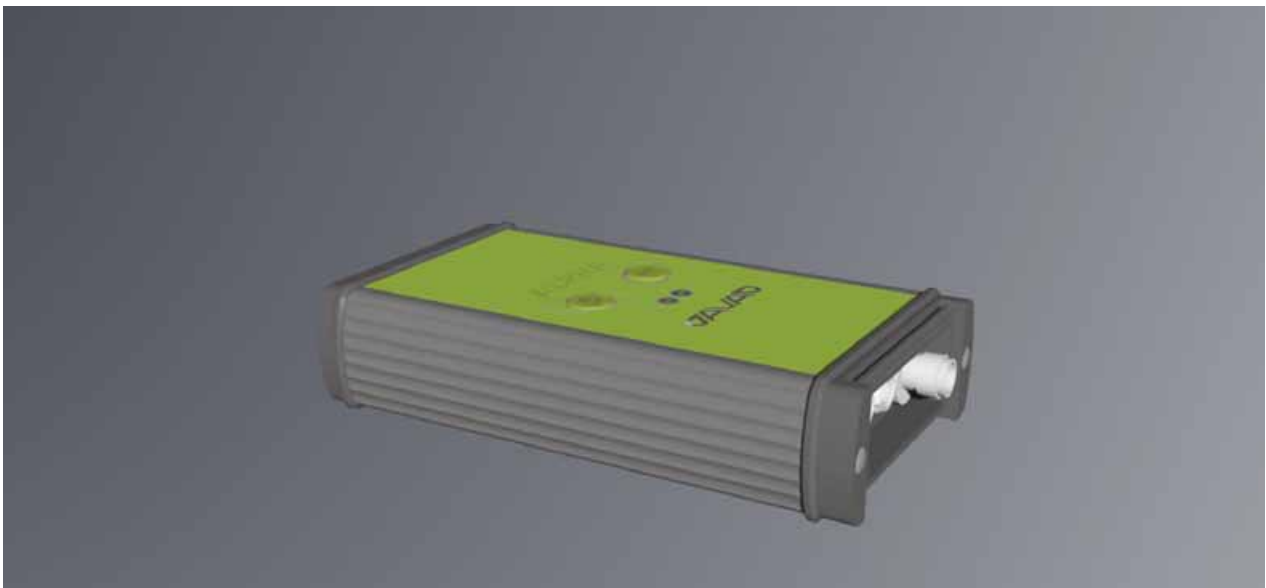# ALPHA

for TR-G3, TR-G2T, TR-G3T

ALPHA receiver 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.

216 channels of single or dual frequency GPS, Galileo and GLONASS in a small attractive, sturdy, and watertight box, which contains either TR-G3, TR-G2T or TR-G3T board.

The on-board power supply on ALPHA receiver accepts any voltage from +7 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. ALPHA receiver also includes TriPad (two LEDs, ON/OFF and function button), GSM module, Bluetooth® wireless technology and battery. In addition, the receiver comes with large amount of flash for data storage. Simply stated, additional functions are not needed to incorporate any of our ALPHA in most applications.

In addition to timing strobe and event marker, the ALPHA receiver includes the option of complete IRIG timing system.
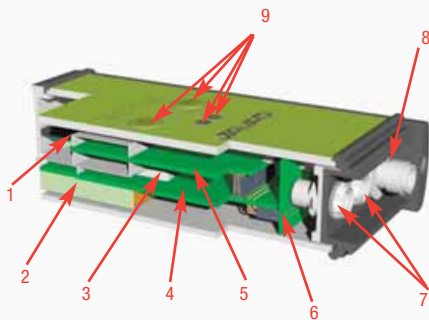
ALPHA

Standard Configuration

- ALPHA G3/G2T/G3T Receiver (0 MB)
- GPS L1/L2/L5
- GLONASS L1/L2 (G3 and G3T only)
- RAIM
- TriPad Interface
- RS232 Serial Port (460.8 kbps)
- External GNSS Antenna TNC Female connector
- Rechargeable Li-Ion Battery

Optional Feature

- Galileo E1/E5A
- Update Rate 1 Hz, 5Hz, 10Hz, 20Hz, 50Hz & 100Hz
- RTK Rate 1 Hz, 5Hz, 10Hz, 20Hz, 50Hz & 100Hz
- Data Recording up to 256MB
- Multi-Base Code Differential Rover
- Code Differential Base
- Advanced Multipath Reduction
- In-Band Interference Rejection
- Event Marker
- 1 PPS timing strobe
- 1 high Speed (460.8 kbps) RS232 Serial Port
- USB port (12Mbps)
- Internal GSM/GPRS Module
- Bluetooth® Interface
- KFK WAAS/EGNOS (SBAS)

1. SIM Card Holder
2. Rechargeable Li-Ion Battery Pack
3. GSM Modem
4. GNSS Power and Communication Board with on-board SIM-card
5. GNSS Receiver with on-board Memory
6. GNSS Interconnect Board
7. Communication and Power Ports
8. External GNSS Antenna Connector
9. On/Off and Functional Buttons and LEDs

Description

Total 216 channels: all-in-view (GPS L1/L2/L5, Galileo E1/E5A, GLONASS L1/L2, SBAS) integrated receiver, rugged aluminum housing complete with TriPad interface

Tracking Specification

Tracking Channels	
ALPHA -G3	GPS L1, GLONASSL1, Galileo E1, SBAS
ALPHA-G2T	GPS L1/L2/L5, Galileo E1/E5A, SBAS
ALPHA -G3T	GPS L1/L2/L5, Galileo E1/E5A, GLONASS L1/L2, SBAS
Signals Tracked	L1/L2 C/A and P Code & Carrier

Performance Specifications

Autonomous	<2 m
Static, Fast Static Accuracy	Horizontal: 0.3 cm + 0.5 ppm $*$ base_line_length Vertical: 0.5 cm + 0.5 ppm $*$ base_line_length
Kinematic Accuracy	Horizontal: 1 cm + 1 ppm $*$ base_line_length Vertical: 1.5 cm + 1.5 ppm $*$ base_line_length
RTK (OTF) Accuracy	Horizontal: 1 cm + 1 ppm $*$ base_line_length Vertical: 1.5 cm + 1.5 ppm $*$ base_line_length
DGPS Accuracy	< 0.25 m Post Processing, < 0.5 m Real Time
Cold Start	<35 seconds
Warm Start	<5 seconds
Reacquisition	<1 second

Power Specification

Battery	One internal Li-Ion battery (7.2 V, 1.37 Ah) with internal charger
Operation Time	Up to 10 hours
External power input	+7 to +40 volts

GNSS Antenna Specifications

GNSS Antenna	External

Radio Specifications

GSM/GPRS Module	Internal GSM/GPRS quad-band module, GPRS Class 10
GSM/GPRS Antenna	External

I/O

Communication Ports	1x serial (RS232) up to 460.8 kbps Full speed USB 2.0 device port (12 Mbps) Bluetooth V1.1 Class 2 supporting SPP Slave Profile
Other I/O Signals	1 PPS synchronized Event Marker IRIG
Status Indicator	Two LEDs, two function keys (TriPad)

Memory & Recording

Internal Memory	Up to 256MB of onboard non-removable memory for data storage
Raw Data Recording	Up to 100 times per second (100Hz)
Data Type	Code and Carrier from GPS L1/GLONASS L1/Galileo E1 (G3), GPS L1/L2/L5, Galileo E1/E5A (G2T) GPS L1/L2/L5, Galileo E1/E5A, GLONASS L1/L2 (G3T)

Data Output

Real time data outputs	RTCM SC104 versions 2.x and 3.x Input/Output
ASCII Output	NMEA 0183 versions 2.x and 3.0 Output
Output Rate	Code and Carrier

Environmental Specifications

Enclosure	Aluminum extrusion, waterproof IP 66
Operating Temperature	-30 ° C to +55° C (with batteries) / -40° C to +80° C (without batteries)
Storage Temperature	-20° C to +45° C (with batteries) / -45° C to +85° C (without batteries)
Humidity	95% non-condensing
Dimensions	W: 148 mm x H: 85 mm x D: 35 mm
Weight	
Alpha-G3	430 g
Alpha-G2T	435 g
Alpha-G3T	448 g

JAVAD GNSS
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