

# 184-GNSS

## SMART ANTENNA



The REF TEK 184-GNSS is a smart antenna capable of receiving signals from GPS, GLONASS, Galileo and Beidou satellite systems in the L1 bands. The 184-GNSS acts as a time source for the REF TEK 180 family of seismic data acquisition systems. This includes the SHMR2 and the Wrangler. It provides time and position information along with a 1Hz PPS signal that allows a seismic recorder to quickly discipline its timing TCXO to within  $\pm 10$   $\mu$ sec of UTC.

Each 184-GNSS is a self-contained IP68 sealed enclosure incorporating a GNSS receiver module and an antenna. The enclosure itself has built-in mounting features for quickly connecting the antenna to a pole or other vertical surface. A single interface connector is located on the bottom side of the case. Through this connector the 184-GNSS is powered by 12 VDC provided by the recorder, and RS422 communication with the recorder can occur. This allows for communication at distances of over 1500 ft from the recorder without repeater devices. The 184-GNSS can be optionally duty-cycled by the recorder to save power while maintaining timing performance.



## SPECIFICATIONS

### GNSS SYSTEM

**Received Signals** GPS L1 C/A, Galileo E1, GLONASS L1, BeiDou B1I, QZSS L1

**Accuracy** < 7 ns, 1 $\sigma$

**Rate** 1 Hz

**TTFF** Cold Start: 32 s Warm Start: 25 s

**Accuracy Horizontal Position** 1.5m

**Sensitivity** Acquisition: -147 dBm Tracking: -162 dBm

### ELECTRICAL

**Serial Communications** RS422

**Power** 12V DC

**Power Consumption** 0.3 Watts (Acquisition Mode)

**Duty Cyclable** Yes

**Maximum Cable Length** 1500 ft

### MECHANICAL

**Dimensions** 4" D x 2.25" H

**Weight** 0.3 lbs

**Connector** 10-pin round, waterproof

**Mounting** U-bolt (included) for pipe sizes between 2" and 1"

**Operating Temperature** -40°C to +85°C

**Humidity** 100% RH non-condensing

**Watertight Integrity** IP68