The right one.™

ACUTIME GG
MULTI-GNSS SMART ANTENNA

KEY FEATURES

- **Multi-Constellation**
- **Improved Sensitivity**
- **Reduced TTFF (Time-To-First-Fix)**
- **Stratum 1 time source**
- **Timing pulse synchronized to within 15 nanoseconds (one sigma) of GNSS/UTC**
- **Weatherproof and corrosion resistant housing**

The Acutime GG is the premier time source for synchronization of wireless networks.

ADVANCED MULTI-GNSS SMART ANTENNA FOR PRECISE TIMING AND SYNCHRONIZATION

The Trimble® Acutime™ Multi-GNSS (GPS, GLONASS) smart antenna is the 3rd generation Acutime product of integrated GNSS technology in a rugged and weatherproof self contained unit. The Acutime GG is an integrated pipe thread-mounted multi-GNSS receiver, antenna and power supply solution in a single environmentally sealed easy to install enclosure.

Demonstrated Performance
The Acutime Multi-GNSS smart antenna design continues the Trimble line of GPS smart antennas, which have been in production since 1991. This multi-GNSS smart antenna is optimized for precise timing and network synchronization needs, including broadband wireless applications. It provides a cost-effective and independent timing source (within the firewall) for any application, such as fault detection systems and synchronization of wireless networks.

Power Efficiency
The ACutime GG Multi-GNSS smart antenna requires less than 1 Watt to operate. Once power is applied, the Acutime GG smart antenna automatically tracks satellites and surveys its position to within meters. It then switches to overdetermined time mode and generates a pulse-per-second (PPS) output synchronized to UTC within 15 nanoseconds (one sigma), outputting a time tag for each pulse. The Acutime GG smart antenna's T-RAIM (Time-Receiver Autonomous Integrity Monitor) algorithm ensures PPS integrity.

Designed for long-term reliability, the Acutime GG smart antenna is corrosion-resistant and weatherproof, and has a rounded top that facilitates run-off from the elements.

Physical Interface
The RS-422 interface is ideal for long cable runs required by buildings or towers. Standard cables are available in lengths up to 400 feet. Custom lengths up to 1800 feet may be ordered.

Getting Started
The Acutime GG Starter Kit makes it easy to evaluate the exceptional performance of this multi-GNSS smart antenna and integrate state-of-the-art technology into your system. The Starter Kit includes the Acutime GG smart antenna (RS-422), a 100' interface cable, user guide, RS-422 to USB converter, and a Microsoft® Windows® software tool for monitoring and communication.

®Trimble.

PHYSICAL CHARACTERISTICS

Dimensions . . . . .3.74" D, 2.85" H (95 mm × 72.5 mm)
Weight . . . . 5.4 oz (154 g)
Connector . . . . 12-pin round, waterproof
Mounting . . . . 1"-14" straight thread or 3/4" pipe thread
Mechanical drawing
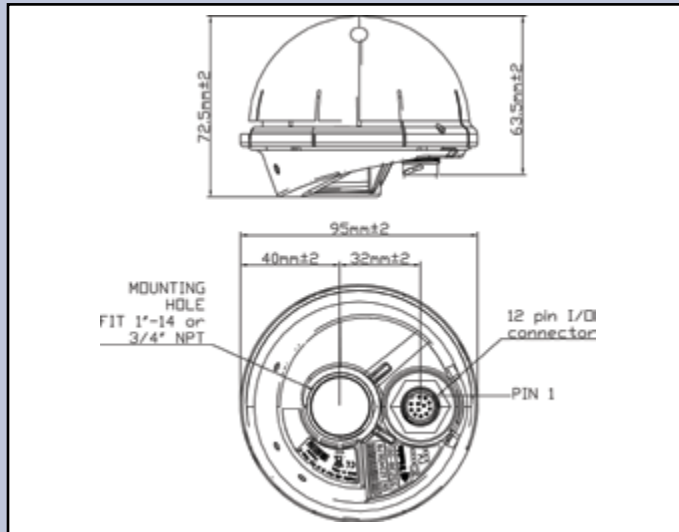
ENVIRONMENTAL SPECIFICATIONS

Operating temp: . . . . –40 °C to +85 °C
Storage temp:. . . . . –55 °C to +105 °C
Vibration: 0.008 g2/Hz . . . . 5 Hz to 20 Hz
                                 0.05 g2/Hz . . . . 20 Hz to 100 Hz
                                 –3dB/octave . . . . . . 100 Hz to 900 Hz
Operating humidity: . . . . 95% RH, non-condensing @ 60 °C
EMC: . . . . CE, FCC Class B
Ingress Protection: . . . . IP 67

PERFORMANCE SPECIFICATIONS

General: . . . . Commercial GNSS Signal continuous
                tracking receiver, static overdetermined clock mode (default)
Update Rate . . . . .1 Hz
Accuracy Horizontal Position . . . . <6 meters (50%) <9 meters (90%)
Accuracy Altitude Position . . . . <11 meters (50%) <18 meters (90%)
Velocity . . . . .0.06 m/sec
Time to First Fix (no stored position) . . . . .<46 sec. (50%) <50 sec. (90%)
Time to First PPS (stationary with stored position,
 e.g., recovery after power outage): . . . . .<14 sec. (50%) <18 sec. (90%)
Re-acquisition after 60-second signal loss:. . . . . <2 sec. (90%)
Dynamics
   Velocity. . . . . .500 m/sec maximum
   Acceleration. . . . . .4 g (39.2 m/sec2)
   Jerk 20 m/sec3

PPS output

Physical Interface RS-422
Width . . . . 10 microseconds (default); user-programmable
                                 from 10 microseconds to 500 milliseconds
On-Time Edge . . . . . . Rising edge on-time (default); user-programmable
                                 rising or falling
Resolution . . . .<32 nanoseconds (quantization error reported
                                 through TSIP)
Accuracy (one sigma): . . . . UTC 15 nanoseconds (static)
                                 UTC 90 nanoseconds (dynamic, TDOP ≤3)
Minimum pulse width . . . . 10 microsecond, rising edge on-time
Reporting mechanism . . . . TSIP packet

ELECTRICAL SPECIFICATIONS

Prime power . . . .+5 V DC* to +36 V DC, reverse polarity protection
Power consumption . 50 mA @ 12 volts, 0.6 watts (typical), <1 watt max
reduced cable length@ +5 V DC to +12 V DC

SERIAL PROTOCOLS

Port	Interface	Protocols	Defaults
TxB (primary)	RS-422	TSIP, NMEA	TSIP @ 115.2K, 8-odd-1
RxB (primary)	RS-422	TSIP	TSIP @ 115.2K, 8-odd-1
TxA (secondary)	RS-422	TSIP	TSIP @ 115.2K, 8-odd-1
RxA (secondary)	RS-422		

All ports support baud rates of 4,800 – 115,200; 8 data bits; even, odd, no parity.

NMEA messages: . . . . GGA, GLL, VTG, GSV, GSA, ZDA, RMC

ORDERING INFORMATION & ACCESSORIES

Please go to www.trimble.com/timing for the latest documentation & tools, part numbers and ordering information

Trimble has relied on representation made by its suppliers in certifying this product as RoHS compliant.

Specifications subject to change without notice

Trimble Navigation Limited is not responsible for the operation or failure of operation of GNSS satellites or the availability of GNSS satellite signals.