Time Transfer GPS Receiver

MODEL: MR-600T

GPS receiver and antenna in a fully weather proof enclosure
for time transfer application

- Quick start, 18 seconds warm start typical
- Low power consumption (0.9W typical)
- Wide supply voltages range (9~34VDC)

The AQTIME **MR-600T** is the integration of a timing GPS receiver and antenna in a compact/weather proof enclosure for time transfer application. It outputs UTC synchronized 1PPS with +/- 1 microseconds tolerance, which is close to an atomic clock in accuracy.

As a time transfer device, the AQTIME **MR-600T** is capable of operating with even 3(three) satellites after having a fix position with 3 or more satellites previously, so you can get precise time base anywhere on the Earth even under a very harsh environment where only one satellite is available.

Key Features：

- UTC synchronized precise time base can be obtain anywhere on the earth at a relatively low cost
- Ultra compact, fully weather-proof, easy to mount
- Quick start, 18 seconds warm start typical
- Continue to output time data with even one satellite tracked
- Wide supply voltages range (9~34VDC)
- Low power consumption (0.9W typical)

Applications:

- Time Stamp Data Logger
- Synchronization of radio base stations for cellular
- Phone, pagers,…etc.

  Time control of computer terminals connected to network

1 PPS OUTPUT：

- **Output signal level:** RS232 (std), RS422(optional)
- **Output data format:** NMEA 0183
- **Accuracy:** +/- 1 u second (2DRMS) to UTC adjustment

Specifications	Parameter	Description
General		L1 frequency, C/A code(SPS), 12 Independent tracking channel (GPSP8633 & BBP1202)
Sensitivity		-143 dBm (tracking)
Accuracy	Position	15m CEP , 5m(waas)
	Velocity	0.1 m/sec. 0.05m/s(waas)
	Time	+/- 1 μs RMS (static mode)
Acquisition	Cold start	70 sec. (typical)
	Warm start	38 sec. (typical)
	Hot start	8 sec. (typical)
Reacquisition		100 ms typical (signal reacquisition)
Dynamics	Altitude	18000m max.
	Velocity	500 m/sec.
	Vibration	4G max.
Operation Temperature		-40°C to +85°C
Storage Temperature		-45°C to +90°C
Operating Humidity		0% to 95% RH, non condensing
Water Resistance		100% waterproof
Primary Power		9V ~ 34V DC
Power Consumption		130mA
Protocol		NMEA-0183 v3.0 baud rate 4800/9600/19200/38400/115200, default 4800
Signal level		RS-232(standard),USB & RS-422 optional
NMEA Message		GGA, GLL, GSA, GSV, RMC, and VTG
EMI filter		Rejects power line interference
Power cable		UL 2464 , 15M
Enclosure		High impact, corrosion-proof polycarbonate resin
Connector		open
Dimensions	GPS Locator	112mm(Dia.) × 104 mm(H)
	Mounting Base	
Weight		270 grams
Standard Mounting		Concinnity and Solid design
waterproof		IPX7

＊This specification is subject to change without prior notice

User selectable datum *Pole mount to 1"-14 UNS threaded mast

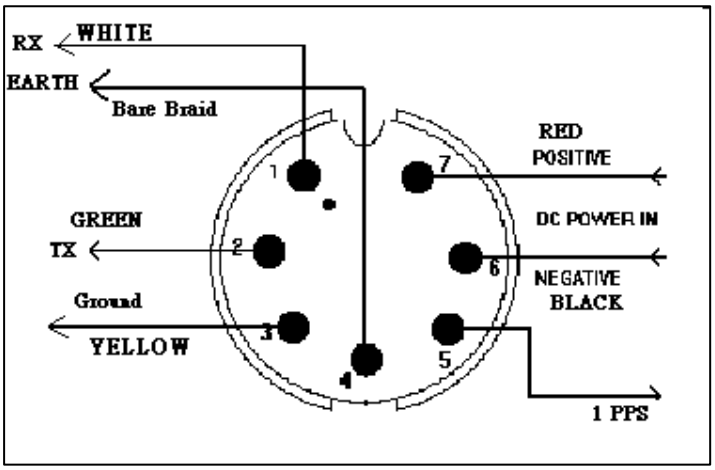
MR600T 1PPS Specification

1. The signal is generated after the MR-600T power on and continues until power down.
2. The rising edge of the signal is synchronized to the start of each GPS second.
3. The signal is valid after the initial position fix has been calculated.
4. The accuracy of the one-pulse-per-second output is maintained only while the MR600T can compute a valid position fix.
5. The default pulse width is 1u second.
6. The pulse height is 3V.

7. The accuracy is +/-1usec with respect to the GPS second.

Power Interface RS232:

I/O PIN & CABLE		
Connector	**Wire**	**Function**
PIN1	White	Receive
PIN2	Green	Transmit
PIN3	Yellow	Ground
PIN4	Bare Braid	Earth
PIN5	Blue	1 PPS
PIN6	Black	Power-
PIN7	Red	Power+



RS422 I/O Connection

Connector	Wire	Function
PIN1	White (R+)	Differential input +
PIN2	Green (T+)	Differential output +
PIN3	Yellow (T-)	Differential output -
PIN4	To be detemined(R-)	Differential input -
PIN5	Blue	1PPS
PIN6	Black (-)	Power-
PIN7	Red (+)	Power+