



4410A

GPS Disciplined Rb Reference

KEY FEATURES

- Provides Five Timing Signal Types
 - 1 PPS: 4 TTL Outputs
 - 10 MHz: 4 Sinewave Outputs
1 TTL Output
 - IRIG-B: 4 Modulated Outputs
2 DC Level Shift Outputs
- Front Panel Time Display
- Front Panel LEDs Indicate System Status
- Ethernet Monitoring
- Stratum 1 via GPS

The 4410A is a time and frequency recovery system that generates precise signals traceable to UTC. It utilizes a GPS disciplined rubidium frequency reference to provide timing outputs characterized by the short-term stability of the atomic reference and the long-term stability of GPS.

The versatility of the TSC 4410A makes it suitable for a variety of applications. It provides multiple copies of 5 different timing signals on the rear of the 1U-high, 19" rack-mount chassis.

Year, day, and time-of-day are displayed on the front panel. The standard Ethernet connection simplifies integration with complex systems by allowing health and status information to be monitored remotely.



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4410A Specifications

ELECTRICAL SPECIFICATIONS

- GPS Antenna input: BNC female with 5 V on center conductor
- 10 MHz Sine output (4)
 - Connector: BNC female
 - Level: 13 ± 1 dBm
 - Impedance: $50 \pm 5\Omega$
 - SSB Phase noise
 - 10 Hz -90 dBc/Hz
 - 100 Hz -128 dBc/Hz
 - 1 kHz -140 dBc/Hz
 - 10 kHz -148 dBc/Hz
 - 100 kHz -148 dBc/Hz
 - Long term stability in Holdover: $<5 \times 10^{-11}$ per month
- 10 MHz TTL Output (1)
 - Connector: BNC female
 - Level: 3 V into 50Ω
- 1PPS Output (4)
 - Connector: BNC female
 - Level: 4.5 V into 50Ω
 - Impedance: $50 \pm 5\Omega$
 - UTC Offset accuracy: 50 ns RMS
 - Holdover accuracy: 1 μ s @ 24 hours
- IRIG-B Modulated output (4)
 - Connector: BNC female
 - Timecode: IRIG-B 123
 - Level: 3 Vpp into 50Ω
 - Impedance: $50 \pm 5\Omega$
 - Accuracy: 7 ± 2 μ s relative to 1PPS
- IRIG-B DC Level shift output (2)
 - Connector: BNC female
 - Timecode: IRIG-B 003
 - Level: 4.4 V into 50Ω

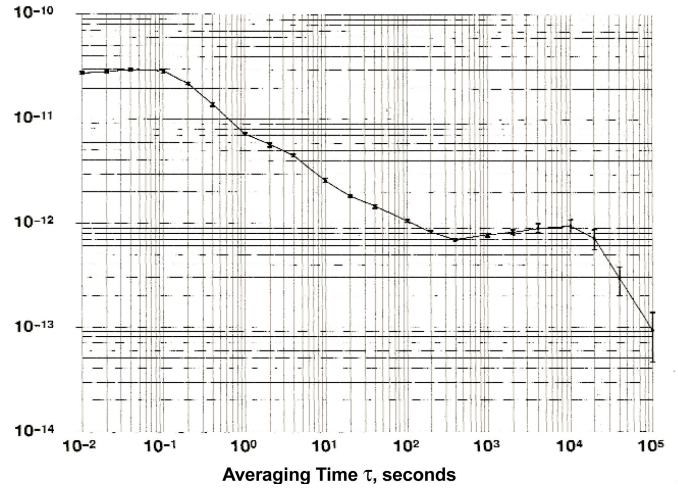
ENVIRONMENTAL & PHYSICAL SPECIFICATIONS

- Temperature range: 0°C-50°C (operating)
- Humidity: 0-95% Non-condensing (operating)
- AC Input: 90 – 264 V AC, 85 W, 47 – 63 Hz
- Dimensions: 1.75" (4.45 cm) H x 19" (48.26 cm) W x 12" (30.48 cm) D
- Weight: 9 lb (4 kg)

OPTIONS

- 001 GPS Antenna
- 002 30 m GPS Antenna cable
- 003 60 m GPS Antenna cable
- 004 Lightning arrestor

Allan Deviation $\sigma_y(\tau)$



Typical Frequency Stability



Rear View



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