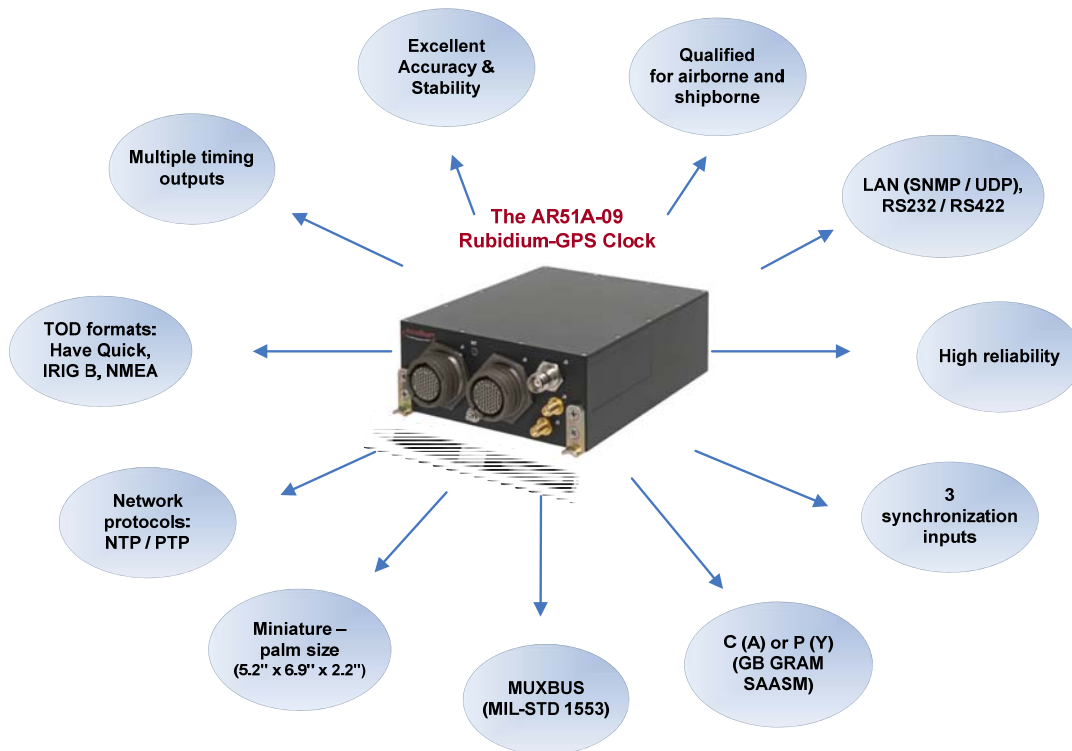


AR51A-09 Accurate Time & Frequency System

GPS - Disciplined Rubidium Clock for Military Applications



Main Features:

- Ultra miniature – palm size (5.2" x 6.9" x 2.2")
- Frequency Accuracy: 1E-12
- ADEV: 3E-11@1s, 6E-13 @ 10,000s
- 1PPS Accuracy: 5ns RMS (25°C)
- Free run Time drift (no GPS reception): 1 μs/ day (25°C)
- Free run Frequency drift: ≤ 5E-11 / month
- Up to 30 outputs (timing / frequency)
- Network time server (NTP) per RFC1305
- External inputs (1PPS or frequency) for disciplining
- 12 channel C(A) code GPS receiver or P (Y) code SAASM
- Monitor & control: by LAN (UDP & SNMP) and by RS232 / RS422
- Supply Voltage: 28VDC per MIL STD 704
- Full MIL - STD qualified for fighter aircraft, helicopters, cargo airborne, shipborne and land platforms

Marketing & Sales

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AR51A-09 Accurate Time & Frequency System

GPS - Disciplined Rubidium Clock for Military Applications

Accurate Time and Frequency (T&F) plays a crucial role in most modern military electronics equipment. The wide spectrum of applications and uses for T&F devices within military systems encompasses the fields of Navigation, Communications, Identification, Remote Sensing, Intelligence, and Weapons. These systems are being used on diverse airborne, ship-borne and land platforms. Interoperability of systems on different platforms as well as interoperability of elements on the same platform requires all units and elements of the operating forces to be referenced to the same time. To date, most of these systems rely on GPS for accurate reference Time and Frequency. However, it has been well recognized that the GPS system could be easily **jammed, spoofed or blocked**; thereby posing a serious threat on the performance of critical electronics systems and on the mission of the platforms that use these systems.



Herein we propose the **model AR51A**, a **GPS-Rubidium Clock**, as a **Time & Frequency Center (TFC)** for **airborne, Shipborne and land military platforms**. The unit provides numerous T&F outputs adapted for use in various systems such as military radios, EW systems, munitions guidance and more. The AR51A provides a comprehensive T&F solution to all electronics systems onboard these platforms. It comprises a Rubidium Clock, a GPS receiver and a sophisticated servo-loop that locks the Rubidium Clock on the GPS signal. When the GPS is interrupted for short or for the long term, the Rubidium clock backups and maintains T&F with great accuracy. This combination improves the accuracy and stability of both the GPS and the Rubidium and at the same time **substantially reduces the dependency of the system on the availability of the GPS, thus mitigating the GPS vulnerabilities**. The unit is designed, qualified for operation in the harsh environment dictated by various the airborne, ship-borne and land-mobile platforms. **The unit has a field proof record in airborne and ship-borne platforms for many years.**