



MINIREF is a generator of Time and Frequency (PPS, 10 MHz) reference signals. High-stability is obtained through management algorithms of OCXO operation referenced by GPS. In standard version are presents two independent outputs of frequency reference at 10 MHz, 1 independent outputs of time reference PPS (pulse per second) and 1 IRIG-B (00x) optical output via ST or BNC. The device offers a 10 MHz and a TTL ouput customizable (e.g. IRIG B)

MINIREF results extremely flexible in all applications where is essential supply a Time-Frequency reference to many devices in the same time, guaranteeing a complete electrical insulation. It's very easy to use for both installation and servicing . All functions are completely accessible through PC both in local mode, through serial communication RS-232/RS485, and in remote mode through communication on Ethernet network 10/100 with protocol TCP/IP.

MINIREF works as NTP server: Stratum1 when locked to the GPS receiver and Stratum2 when stand alone.

MINIREF, on request, could supply furthermore a linear signal of voltage, proportional to the reference coming from GPS receiver. This option allows to tune a possible external apparatus utilized as External frequency source (e.g. Rubidium).

MINIREF supplies the most important indications on his status through four dry contact placed on the back. Allows event logger functionality through four photo-coupled input placed on the back. The report allows to view the instant that event is verified with values of day, hour, minute and second with precision guaranteed from GPS receiver. It's also furnished with double switching supply operating on logical OR between network supply and external battery supply.

- Zilog eZ80F91 @ 50 MHz CPU
- 2 MB SRAM
- Embedded RZK + ZTS Operative System
- 1x 10/100 Network interface via RJ45 interface
- Support up to 1.000 NTP Client
- Integrated GPS receiver
- Internal high stability OCXO
- 2x TTL customizable interfaces via BNC
- Status LED's for local management (LCD and crosspad as option)
- Integrated web server and SNMP for remote management.

Frequency reference

Signal: 10 MHz sine wave.
Spectral purity: -70 dBc at full output power. (harmonics),
-75 dBc at full output power (non-harmonics).
Phase noise: -125 dBc at 1kHz.
Output: 2 independents.
Output level: tunable from -2dBm to 16 dBm (or 13 dBm static).
Output impedance: 50 Ω.
Output connectors: BNC.
Stability: 1e-12 daily average OCXO locked at GPS in SA.
OCXO Standard: 1e-10 daily average OCXO in free run.

Time reference

Signal:
1 PPS, 100µs Duty, Rising Edge.
1 IRIG-B output (00x) via ST or BNC
Output: N° 2 independents.
Output level: TTL 5 Vpp, Square wave.
Output impedance: 50 Ω.
Output connectors: BNC.

GPS Section

Receiver: 1.575,42 MHz – 12 channel
Tracking: 12 satellites correlation
PPS accuracy: < 50 nsec
Antenna Connector: TNC
Acquisition time: < 4 minutes

NTP Section

Protocol: NTP Version 4
Role: NTP Server
Precision: < 10 ms
Stratum: 1

Supply

Network: 95 Vac – 240 Vac, Plug IEC320 integrated, filter EMI/RFI.
Battery: 48Vdc +10 % -15% rear Molex connector.

Signaling

Serial connection: RS-232 Connector DB9 Male ± 15 kV (ESD).
Network connection: Ethernet interface 10/100, TCP/IP protocol.
TLS & TLC: 4 dry contact over Weidmuller connector step 3.5 mm (both).

Size

Width: 1 Unity 19".
Depth: 300 mm connectors excluded.