



REF-DS-10 is an high-stability signal generator of Time (PPS) and Frequency (10 MHz), formed by two independent transport system of the time/freq reference, implemented in two separate extractable modules. Both modules allow the tuning of high-quality oscillator (OCXO). The equipment generates 10 high-precision signals both for Time (PPS) and Frequency (10 MHz).

Main Peculiarity of **REF-DS-10** is that in the extractable modules, in addition to the traditional GPS receiver, it's possible to choose as alternative also other kind of devices able to generate the time signal: ie. Satellite systems, Optical Fiber, E1/T1, according to the synchronization source that should be used. Assuming the possibility both to use secondary sources as control tool of the main, and to ensure the maximum precision in the crucial transmitting sites.

There is no logic of exchange between the two sources, as these can work in combination. In this way you do not get to put any gap in output in the references of time / frequency where one or both sources should not longer work properly or you were to break down, reducing the complexity of the parameters set by the user and at the same time being able to improve 'reliability of the equipment. Project staff of Digital Instruments, has also presented special care so that individual modules are removable and replaceable in a few moments.

Switch unit:

- 10 independents BNC connectors at 10 MHz frequency, with 13 dBm each of power level,
- 10 independents PPS connectors with TTL level terminated at 50 Ohm,
- 7 dry contact for electrical signaling of switch unit,
- 4 photo-coupled input for switch unit remotization,
- VSerial connection in RS232 Standard,
- Standard network connection Ethernet 10/100 with TCP/IP protocol complete of descriptive MIB on SNMPv1 protocol,
- Web server integrated for direct browser management,
- Device's supply in logical OR,
- AC 110Vac at 240 Vac 50/60 Hz,
- Rack 19" of 1U.

Generator module:

- 12 channels GPS receiver with automatic tracking and timing error management system,
- Removable drawer container 120x220 mm.

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 1 kHz.
Outputs: 10 independent.
Output level: 13 dBm each output.
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,
OCXO SC: 2e-11 daily average OCXO on free run.

Time reference

Signal: 1 PPS, 100 μs Duty, Rising Edge.
Output: 10 independent.
Output level: TTL 5 Vpp, Square wave.
Output impedance: 50 Ω.
Output Connectors: BNC.

GPS section

Receiver: 12 Channels L1 1575.42 MHz.
Tracking: correlation over 12 satellites.
PPS precision: < 50 ns on SA.
Antenna connector: TNC.
Capture time: < 4 min.

E1/T1 section

Signal standard: E1 256S multiframe CRC-4 (16 frame per multiframe).
Input impedance: 75 Ω.
Output impedance: 75 Ω.
Connectors: BNC.

Signaling

Serial connection: RS-232 Connector DB9 Male ± 15 kV (ESD).
Network connection: Ethernet interface 10/100, TCP/IP protocol.
Signaling: 7 dry contact over Weidmuller connector step 3.5 mm.
Remote: 4 photo-coupled contact over Weidmuller connector step 3.5 mm.

Supply

Network: 95 Vac – 240 Vac, Plug IEC320 integrated, filter EMI/RFI.
Battery: 2 independent power suppliers.

Size

Width: 1 Unity 19".
Depth: 300 mm connectors excluded.
Weight: 1.5 Kg.