

The IPS-100 combines precision timing generation with integrated networking capabilities, enabling seamless deployment in modern synchronization environments. Its hybrid architecture eliminates the need for external timing distribution hardware, simplifying system design and reducing operational complexity.



Overview

The **IPS-100** is a high-precision time and frequency reference system designed to deliver reliable synchronization across a wide range of critical applications, including:

- Satellite communications (DVB-RCS / DVB-RCS2)
- Digital radio and broadcast (DVB-T / DVB-T2)
- 5G and cellular base stations
- Synchronous Ethernet networks

Leveraging advanced disciplining algorithms, the IPS-100 meets stringent requirements for **frequency stability** and **absolute time accuracy**, ensuring continuous and dependable network synchronization.

Optimized for DVB-RCS2 platforms, the IPS-100 distributes a platform-wide NCR/PCR clock, synchronizing all remote terminals to a unified system reference. This results in improved network efficiency, enhanced robustness, and reduced timing drift across the VSAT infrastructure.

Applications and Uses

- VSAT and satellite ground systems
- Broadcast transmission networks
- Mobile and 5G infrastructure
- Financial and data center timing
- Critical infrastructure synchronization

Features

- High-stability Stratum 2 10 MHz reference
- Holdover stability: $\pm 1 \times 10^{-10}$ per day
- 3 isolated 1PPS outputs
- 3 isolated low phase-noise 10 MHz outputs
- Integrated 4-port Layer 2 switch
- Integrated 3-port Layer 3 router
- Remote management via GUI and SNMP
- RS-232 console and dedicated Ethernet management port
- Compact 1U 19" rack-mount chassis
- Front-panel LED status and alarm indicators

10 MHz Frequency Reference

Phase Noise (1 Hz /
10 Hz / 100 Hz / 1k /
10k) < -95/ -125 / -145 / -150 / -155
dBc/Hz

Harmonics < -35 dBc

Spurious Signals < -80 dBc

Input 1

Outputs 3

Waveform Sinewave

Output Level +7 dBm $\pm$ 2 dBm

Impedance 50 Ω

Connectors BNC (female)

Impedance 50 Ω

Return Loss 15 dB (typical)

FREQUENCY STABILITY

Short-term < 1×10^{-10} per day

Long-term < 1×10^{-8} per year

Frequency
Adjustment Range > 1.6×10^{-8}

1PPS TIME REFERENCE

Input 1

Outputs 3 (individually controlled)

Signal Level 5 V

Drive Capability 50 Ω

Accuracy $\pm$ 15 ns

Jitter $\pm$ 2.5 ns

Rise/Fall Time < 15 ns

Pulse Width 0–50 μ s (configurable)

Timing Reference Rising edge aligned with IPS-
100 update

Connectors BNC (female)

Impedance 50 Ω

Return Loss 15 dB (typical)

NETWORKING PROTOCOLS

Interfaces 7 $\times$ 10/100/1000 Base-T (RJ-45)

NTP Server RFC 1305 compliant

Protocols UDP/IP, TCP/IP, Ethernet (IEEE
802.3)

Management SNMP v1 / v2 and/or secure telnet

POWER

Input Voltage 90–264 VAC, 50–60 Hz

Power
Consumption 25 W

MECHANICAL AND ENVIRONMENT

Form Factor 1U, 19" rack-mount

Dimensions (H $\times$ W
 $\times$ D) 4.5 cm $\times$ 43.5 cm $\times$ 27.5 cm

Weight 5.5 kg

OPERATING CONDITIONS

Temperature 0°C to +50°C

Humidity 5% to 90% (non-condensing)