NTS-G-427001

NTP Time Server

Network time server with GPS / BeiDou satellite and 4G / 5G base-station reference inputs, seven Gigabit Ethernet ports and 1PPS output.

Time sources and timing performance

Satellite reference	GPS / BDS (BeiDou) dual-mode satellite input; configurable GPS-only or BDS-only operation.
Cellular reference	4G / 5G base-station signal reference input. The input reference type can be selected by configuration.
Secondary time source	Configurable secondary time source using NTP.
Timing protocols	NTP v1 / v2 / v3 / v4 and SNTP.
NTP synchronization accuracy	0.5-5 ms, typical on a local area network (LAN).
Receiver accuracy	High-precision BeiDou / GPS receiver; hardware synchronization accuracy <30 ns.
Holdover	Built-in temperature-compensated crystal oscillator (TCXO); holdover accuracy <40 ms / 24 h. Supports continued operation during short-term loss of the antenna signal.
NTP throughput	≥15,000 requests/s.
Client capacity	Supports tens of thousands of time-synchronization clients.

10 MHz frequency stability

Interval	1 s	10 s	100 s	1000 s
Specified stability	≤6.34E-13	≤1.53E-12	≤1.77E-12	≤2.30E-12

The source specification does not state the stability metric, test conditions or a dedicated 10 MHz output connector. Holdover test conditions are also not stated.

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Hardware and Management

Hardware and power

Enclosure and dimensions	1U chassis; 250 × 430 × 45 mm (D × W × H).
Weight	≤3.5 kg, excluding outer packaging and antenna accessories.
Power	Two 220 V AC power supplies; power consumption ≤5 W.
Processor and memory	Industrial-grade quad-core ARM processor; 2 GB DDR RAM.
Storage	16 GB eMMC; supports booting from a TF card.
Display	1.8-inch LCD with live server status, including date, time and signal reception status.
MTBF	>80,000 h.

Interfaces

Ethernet	7 × RJ45, 10 / 100 / 1000 Mbps.
USB	1 × USB 2.0 for automatic firmware upgrades and data backup.
Console	1 × DB9 for management and control.
SMA connectors	1 × 1PPS pulse output; 1 × 4G / 5G signal input; 1 × satellite signal input.

Management and service continuity

Configuration and security	Remote configuration via Telnet, SSH and other supported methods; console management; MD5 support; integration with third-party authentication platforms; configurable built-in firewall.
Network management	SNMP support for integration with gateway management systems; syslog support for forwarding log data to third-party systems.
Monitoring and logs	Remote software support for server operating data, device information, fault alarms, log queries and client status monitoring; synchronization and system log export.
High availability	Dual-server hot standby using a floating IP mechanism. Automatic primary / standby switchover is transparent to clients to support continuous 24/7 service.
Load balancing	Cluster deployment supported for load balancing.

HCE0020-1

Analog Synchronized Clock

400 mm analog clock with automatic master-clock synchronization over NTP / SNTP, an RJ45 network connection and PoE power support.

Construction and display

Model	HCE0020-1
Clock type	Analog.
Dimensions	400 mm diameter.
Materials	Brushed stainless steel frame and glass front panel.
Display	Three hands displaying hours, minutes and seconds.

Synchronization and accuracy

Synchronization	Automatically receives the master-clock signal; supports NTP / SNTP network time synchronization via RJ45.
Network integration	Can share the computer LAN and network switches.
Network synchronization accuracy	≤10 ms.
Free-running accuracy	≤200 ms/day.

Power and operating environment

Power options	External adapter: 220 V ±20%; device power input: 12 V ±20%; PoE power supported.
Operating power consumption	≤15 W.
Operating temperature	-10 °C to 65 °C.

Configuration and management

Discovery	Management software supports automatic discovery of slave clocks.
Remote configuration	Configure the clock device name, IP address, NTP server address and serial connection settings via management software.
Console access	Supports console configuration and management without a network connection.

Applications

Airports, railway stations, metro systems, dispatch centers, factory workshops and hospitals.