GFClock Yasapersada

PT. YASA PERSADA DEWANTARA

Add: Graha Krama Yudha lt.4 Unit B Jl. Warung Jati Barat No.43, Jakarta 12760 Telp./Fax.: +62 21 794 5301
Web: www.yasapersada.co.id - Direct Calls/WA +62 821 146 11732

Network Time Server - PTP and NTP Time Server

for GPS and Beidou/GLONASS/Galileo - MA-902S

MA-902S PTP/NTP Server- Network Time Server
for GPS L1/Beidou B1

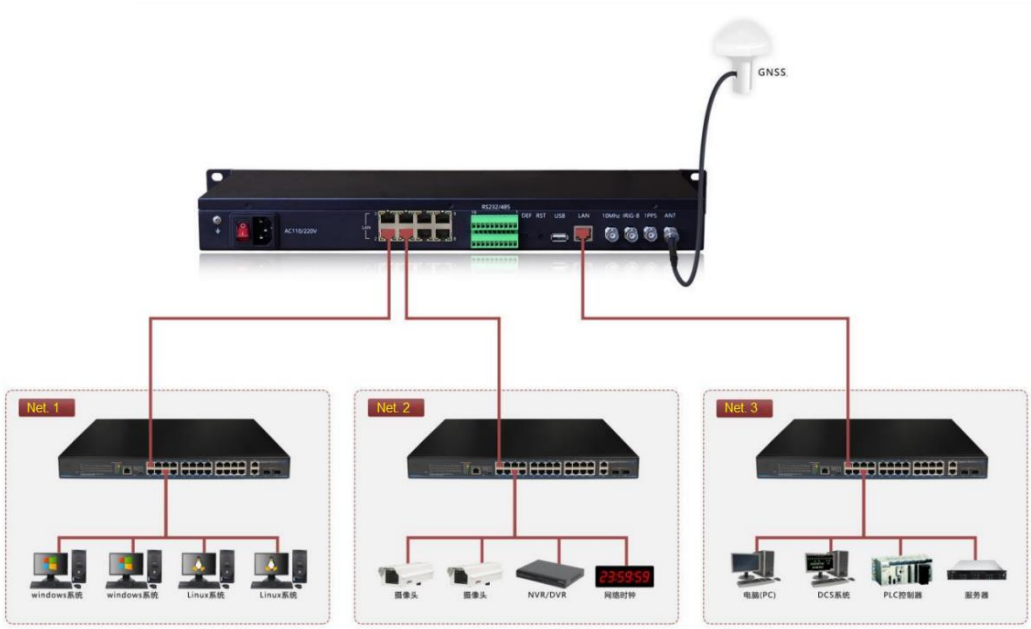
Description:

MA-902S series time server is a high-precision, highly concurrent and multi-functional satellite time synchronization device, which can support multiple time synchronization protocols, including NTP, PTP, IRIG-B code, 1PPS, RS485 and RS232 output. It adopts high-quality professional domestic clock timing chips, ensuring high-precision clock synchronization, supporting up to nine 10/100/1000M adaptive Ethernet ports, and physically isolating each other. NTP synchronization accuracy is better than 1ms. In terms of

high concurrency, the time server can process about 100000 times service requests per second, providing efficient time synchronization support for your applications.

This series of time server are configured with WEB web page management, which can view and configure the device status without installing software on the computer. At the same time, the device also supports the SNMP v2 network management protocol and multi machine hot standby function.

The Time server adopts 1U rack design, with beautiful appearance and easy installation. In addition, it is equipped with a 4.7-inch VA color screen, providing an intuitive and easy to understand interface. Users can monitor various states of the Time server through the screen, which is easy to use.



Project and Application

Features:

- Multi time source synchronization: the device can support three types of time sources, and users can choose and configure them according to their own needs. High precision, global coverage GNSS global satellite navigation system; Convenient and wirelessly connected 4G network; A first level master clock with strong stability and high security.
- Based on the MA-802 series products, MA-902 upgraded various interfaces and performance to provide superior performance and higher stability, ensuring that the product can unleash its maximum potential.
- To adapt to various application scenarios, we provide multiple time interfaces and protocol output options, allowing you to choose your usage more flexibly:
    - Main network port: supports NTP, PTP, MODBUS-TCP, MODBUS-UDP [applicable to computers, servers, switches, monitoring, network clocks, etc.]
    - 10MHz: supports output of 10M frequency, square wave [applicable to scientific experimental equipment, communication equipment, measuring instruments]
    - IRIG-B code: supports IEEE-1344, GJB 2991A-2008 [applicable to aerospace equipment, power systems, industrial automation equipment]
    - 1PPS: PPS pulse width 100MS [applicable to GPS receivers, scientific instruments, measuring equipment, etc.

- WEB management, convenient and fast: with WEB webpage management, you can easily view status and configure parameters, which is convenient, fast, and easy to operate.
- Time servers use various methods to ensure the security and accuracy of time. By setting the time deviation range, effective time range, and satellite deception alarm, we ensure that your system clock is always stable and accurate.
- After multiple rigorous technical inspections and certifications by authoritative institutions, including 20 inspection items, the product has passed quality inspection and you can use it with confidence.

Satellite Receiver:
- Adopting domestically produced professional timing satellite receiving modules
- Supports for Beidou (DBS), GPS, GLONASS, GALILEO satellite constellations, and can freely combine working modes
- Support constellation priority selection, default priority for Beidou
- Support antenna delay adjustment
- Support antenna short circuit, open circuit, signal interference, and deception signal detection
- RF input impedance: 50Ω
- Antenna gain: 5~35dB
- BDS B1: 1561.098MHz, GPS L1: 1575.42MHz, GLONASS L1OF: 1602MHz
- Galileo E1-B/C: 1575.42MHZ
- First positioning time: cold start < 28s, hot start < 1s, re-acquisition < 1s
- Sensitivity GNSS, tracking -147dBm, acquisition -160dBm, hot start -155dBm, re-acquisition -158dBm
- UTC accuracy: better than 20ns

Time Output Protocol and Interface:

NTP Protocol:
- Synchronization accuracy: LAN≤1ms, typical accuracy of WAN≤50ms
- Can respond to up to 100000 NTP requests per second
- Support for NTPv1, v2, v3, v4, SNTP, NTP Broadcast, NTP MD5
- Supports up to 40 NTP whitelist addresses (clients outside the whitelist will be prohibited from accessing)
- Support synchronous recording and real-time uploading to the central platform
- Support saving synchronization records of 100 clients

PTP Protocol:
- Support for PTP Master mode
- Support for IEEE1588v2, gPTP
- PTP synchronous precision ≤ 100ns
- Support for UDPV4 and IEEE 802.3 mode
- Support for E2E mode

1PPS:
- PPS pulse width: 100MS
- Rising edge and whole second deviation after locking the satellite ≤ 100ns
- Level: TTL
- Interface type: BNC

10MHz:

- Support output 10M frequency, square wave
- Level: TTL
- Interface type: BNC

IRIG-B code output:

- Supports 1 IRIG-B (DC) code.
- DC code start level alignment accuracy ≤50ns.
- DC code level: TTL
- Supports 4 differential B codes (customized)
- Supports IEEE-1344, GJB 2991A-2008.
- Interface type: BNC

Timekeeping Unit:

- Built-in time backup battery, supports RTC power-off timing.
- Crystal oscillator stability (ppm): ±20 ~ ±0.5
- Crystal oscillator annual aging rate (ppm): ±3 ~ ±1
- Time deviation after 1 day of lock loss: ≤60ms

Time Safety:

To prevent obtaining incorrect times from malicious or unreliable time sources, the time server supports time security settings including:

a. Support maximum synchronization deviation setting
b. Support setting of effective time range
c. Support out of range alarm

Display Screen:

- Adopting a 4.7-inch VA color screen and supporting display brightness adjustment.
- Support displaying current year, month, day, hour, minute, second, week, IP address, NTP synchronization times, number of satellites, mobile network signal status, and synchronization time source.
- Support operation status, fault, and lock indicator light reminders.

Front Panel

- Configure LCD display, which can display IP address, year, month, day, hour, minute, second, number of locked satellites, time locked state, locked time source, working state.

Back Panel:

- GPS antenna entry: BNC, 1 channel, L1, 1575.42MHz
- Network port: RJ-45, 1 channel, 10/100/1000M adaptive Ethernet interface 1 reset button, 1 factory reset button
- Customizable: serial port, multiple network ports, PPS output

Physical Parameters:

- Size: 480 × 44 × 180mm, size: 1U rackmount
- Power supply: AC 220V ±20%, Power consumption: 5W
- Working temperature: -10℃～+70℃ (host); -40℃～+75℃ (antenna)
- Storage temperature: -45℃～+85℃
- Humidity: 95% (no condensation)

Others:

- Support up to 5 servers for multi machine hot backup, automatically switching to normal servers in case of failure.
- Supports binding 6 IPs to a single network port.
- Supports IPv4 and IPv6.
- Support setting static routing, and support time server anti-ping client.
- Support obtaining time from higher-level NTP, up to 5 higher-level NTP, and automatically select the optimal higher-level NTP.
- Support the SNMP v2 network management protocol to obtain the main status of the device.
- Support calibrating internal crystal oscillators through satellite modules.
- Support remote firmware upgrade via web.
- Support switching between Chinese and English on web pages, and can be extended to other languages.
- Support manual setting of device time, time zone, and time safety range.
- Support web whitelist configuration.
- Support daylight saving time (can choose the effective range of time output)

Packing List:

- 1 x Time Server
- 1 x Antenna
- 1 x Antenna Fixing Stand, and 3 x Screws
- 1 x Power Cable
- 1 x User Manual

Note:

- Default IP: 192.168.0.30