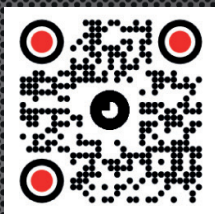# TIME SERVERS

LEDI® NETWORK ATS
LEDI® NETWORK ITS V2m
Radio Timing® 4000
LEDI® NETWORK TS
LEDI® NETWORK TDS

Use an authentic time reference!
Keep your system's time safe and consistent!

GORGY ● TIMING

www.gorgy-timing.com

You can trust the European number one to *synchronize* your equipment

GORGY TIMING has been designing high-precision time references for more than twenty years.
These time installations have garnered international renown in industries such as airports, railways, metro lines, radio and television studios, hospitals, power stations, industry, safety…

What is a time server?

It is a system that lets you synchronize a diverse array of equipment (computer systems, clocks, automatic products…) using a time reference to ensure that all of your peripheral devices are at the same time (the coordinated universal time).
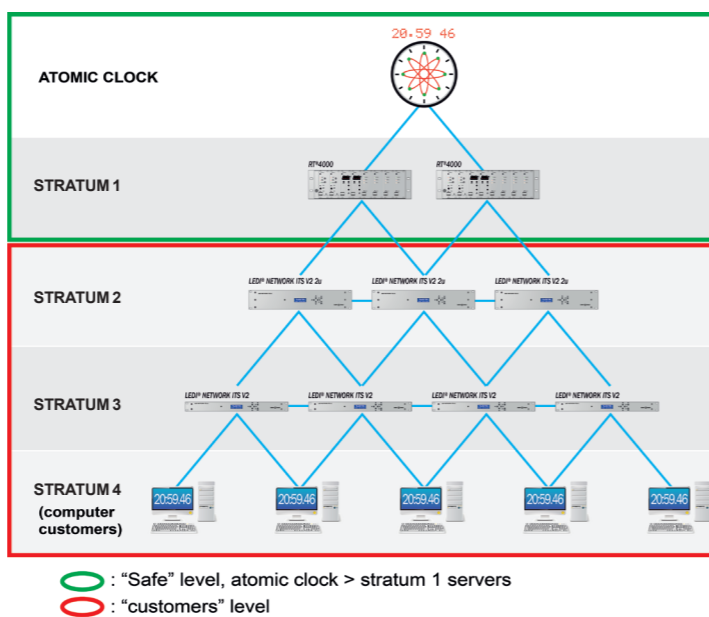
What is the NTP?

The Network Time Protocol (NTP) is a protocol used to accurately synchronize the local clocks with a network time server. The NTP network is an open hierarchical network as shown on the opposite pattern.

What is the PTP?

The PTP (Precision Time Protocol) is a network protocol used to precisely synchronize PTP slaves with PTP Grandmasters.
The PTP is highly recommended for transport, defense, industry and telecommunication applications.

Why choose an NTP time server?

Right now, as you're reading this document, your workstations and your servers fitted with their own clock are time- and date-stamping files, e-mails, transactions etc…
GORGY TIMING time servers use the time transmitted by GPS satellites to deliver a synchronized time by using the NTP protocol. They can also produce other time codes: IRIG-B, AFNOR NFS 87500, SMPTE, NMEA messages, PPS… These servers, dedicated to synchronizing your networks with atomic time, are equipped with an extremely accurate, reliable time base.

ATOMIC CLOCK

20:59:46

STRATUM 1 RT4000 RT4000

STRATUM 2 LEDI® NETWORK ITS V2.2u   LEDI® NETWORK ITS V2.2u   LEDI® NETWORK ITS V2.2u

STRATUM 3 LEDI® NETWORK ITS V2   LEDI® NETWORK ITS V2   LEDI® NETWORK ITS V2   LEDI® NETWORK ITS V2

STRATUM 4 (computer customers) 20:59:46 20:59:46 20:59:46 20:59:46 20:59:46

◯ : "Safe" level, atomic clock > stratum 1 servers
◯ : "customers" level

ARE YOU LOOKING FOR A SECURED AND RELIABLE SYSTEM? CHOOSE A GORGY TIMING SOLUTION:

A time server is an integrated component of an ICT network, and its role is to distribute the time to the other network components. For this, it has a synchronization input (GPS, IRIG…) as well as an internal clock based on a precise oscillator. Time distribution is made possible thanks to the NTP network protocol.
As well as an NTP output, GORGY TIMING time servers provide a range of additional outputs enabling systems which do not have an Ethernet interface to be synchronized (IRIG B, 1 PPS, ASCII, SMPTE, E1/T1).

Gorgy Timing systems adapt to the precision you need
The precision you need depends on the application and on the operations to be carried out.
Most operations which involve event time-stamping require precision to a hundred milliseconds.
In order for systems including a sampling unit to work correctly, the required precision may reach tens of nanoseconds.

Audio or video recording systems generally require precision to a millisecond. If the objective is to supply time information to clocks or communications displays, a tenth of a second will usually suffice.

To achieve good time precision, we recommend using a GNSS (GPS/ GLONASS/BEIDOU/GALILEO) synchronization input. Currently, this offers the best value for money in terms of performance.

Time information security
In the event of a loss of time information reference, lags from several milliseconds up to several seconds may appear in synchronization equipment. When synchronizing, GORGY TIMING products use fine corrections enough to avoid setting off the security alarm. In the event of too great a time difference between servers, the servers send the alarm so that the administrator can decide upon which actions to take.

APPLICATIONS

Key fields where synchronization can directly affect network operations :

• Journal file time-stamping, verification and surveillance
• Recovering network transmission errors
• Directory management
• Access security and authentication
• Planned operations (scripts…)

• Network messaging (Microsoft Exchange, Postfix, Lotus Notes…)
• Microsoft Active Directory
• Log centralization (e.g. syslog)
• Server supervision
• Video surveillance systems

GORGY TIMING SERVER	Synchronization inputs	Quartz	Available output time codes	Maximum number of inputs	Number of supported NTP requests (per server output)	Maximum number of independent NTP ports	Accuracy on GNSS input +/- 10ns	IP connectivity	Hot plug system	Redundancy power supplies 230VAC+18-36VDC	SNMP supervision	Price	Target applications
LEDI® Network ATS	GNSS, GPS, NTP, PTPv2, IRIG-B, ASCII+TOP, Frequency	Rubidium (1.10^{-12})	IRIG-B, PTP, NTP, ASCII multi-protocol, PPS, 10MHz, SMPTE-EBU, Configurable Pulses, DCF, E1/T1, PTPv2	2	> 3000 requests/second	5	10 µs	IPv4/IPv6		✔	✔ (versions 1, 2C, 3 supported)	€€€€	Military & defense, on board system, high-frequency trading, Telecom, power plant
LEDI® Network ITS V2m	GNSS, GPS, NTP, IRIG-B, ASCII+TOP, Frequency	OCXO (1.10^{-10}) TCXO (1.10^{-8})	IRIG-B, PTP, NTP, ASCII multi-protocol, PPS, 10MHz, SMPTE-EBU, Configurable Pulses, DCF	3	> 2500 requests/second	19 2"rack	10 µs	IPv4/IPv6		✔	✔ (versions 1, 2C, 3 supported)	€€€	Broadcasting, banks, administrations, ICT servers, airports, power stations
RT 4000	GNSS, GPS, NTP, IRIGB, ASCII+TOP	OCXO (1.10^{-10}) TCXO (1.10^{-8})	IRIG-B, NTP, ASCII multi-protocol, PPS, 10MHz, SMPTE-EBU, Configurable Pulses, DCF, impulsed DCF 24v	8	> 2500 requests/second	25	10 µs	IPv4/IPv6	✔	✔ (up to 10 independent feed inputs)	✔ (versions 1, 2C, 3 supported)	€€€€	Airports, power stations, railways
LEDI® Network TS	GPS, NTP, DCF, IRIG-B	TCXO (1.10^{-8}) XO (1.10^{-6})	IRIG-B, NTP, ASCII multi-protocol, PPS, SMPTE-EBU, Configurable Pulses, DCF 24v	1	> 2000 requests/second	2	100 ns	IPv4/IPv6		VAC or VDC	✔ (versions 1, 2C, 3 supported)	€€	Administrations, ICT servers, broadcasting
LEDI® Network TDS	GPS or NTP	TCXO (1.10^{-8})	NTP, IRIGB, ASCII, impulsed	1	1500 requests/second	1	100 ns	IPv4		VAC	✔ (versions 1, 2C, 3 supported)	€	Substations, digital clocks

2 YEARS WARRANTY

MULTIPLE AND MODULAR CONFIGURATIONS

- In addition to the GPS, the GORGY TIMING time servers can use GLONASS, BEIDOU, GALILEO, NTP, PTP, IRIG-B/AFNOR NFS87500, 1PPS, NMEA message and DCF as time sources.
- A 1 to 10MHz frequency input as backup is also available.
- The servers are also capable of generating a large number of output signals: IRIG-B, ASCII messages, NTP, pulsed code, DHW, SMPTE, 1PPS and 10MHz.

THE PRIMARY CHARACTERISTICS OF A NEXT GENERATION NTP TIME SERVER

- Stratum 1 function via GPS satellites.
- Up to 19 10/100Base-T independent ports.
- Graphic frontal LCD display.
- IPv6 and IPv4 compatible.
- Secure web interface access (HTTPS).
- Https, SNMP v3.
- Private MIB.
- Supports Telnet, Syslog and FTP protocols.
- Maintain of Stratum 1 function if there is no primary reference.
- Nanosecond precision to UTC time.
- E-mail and SNMP trap alarms.
- Major alarms on static relays.
- System 100% operational in under 40 seconds from power-up.
- Event recording on SD card.

French design and manufacture

TIME INFORMATION REDUNDANCY AND CONTROL

- IRIG-B, SCPTime®, PTP and NTP receivers are also available as options, giving you a real alternative to GNSS.
- All of our receivers are based on at least 3 consecutive and coherent pieces of information for synchronization, guaranteeing time information integrity.

UP TO 25 INDEPENDENT ETHERNET PORTS, GIVING YOU EXTRAORDINARY FLEXIBILITY AND SECURITY

- Up to 25 dedicated and isolated Ethernet ports, more than enough to reply to thousands of NTP requests per second while maintaining the clock's precision to the microsecond.
- Having multiple ports gives you great flexibility and adaptability to your networks while ensuring security for sensitive networks.

Time available on the internet: what are the risks?

You can find a large number of time sources on the internet via the NTP protocol (which is considered by many users to be as precise and reliable as a dedicated server). Another difficulty: sources have demonstrated that many on-line time servers are inaccurate, and less than a third can be used for synchronization, mainly because they are not Stratum 1 servers.

In other words, they don't receive their time information from an atomic clock, but from a third-party system whose information cannot be guaranteed. Lastly, the great distance between the NTP client and the source entails a certain reduction in precision, sometimes to a degree of several hundred of milliseconds. In the world of synchronization, this is not acceptable for many applications.

OPTIONAL SERVICES*

- Presales support.
- Training and Commissioning Assistance.
- Technical support.
- Pre-configuration and complete configuration of the product in the factory, on-site or remotely.
- Maintenance contract.
- Installation.

* Information available from the GORGY TIMING sales department.

CERTIFICATIONS

All GORGY TIMING product ranges comply with the following standards:
- **CE, EN 60950** (safety), **EN 55022** (EMC emission), **EN 55024** (EMC immunity), **ROHS**.
- **ISO 9001** and **ISO 14001** certified company.

CE — afaq ISO 9001 Qualité AFNOR CERTIFICATION — afaq ISO 14001 Environnement AFNOR CERTIFICATION

MADE IN FRANCE