

LEDI® NETWORK ATS “Grand Master Clock”

Secured time server with high precision



Internal Time Base

The Quality of its oscillator allows to provide stable time signal even in holdover mode.

	Rubidium	Advanced Rubidium
Max. consumption	40W	
Frequency stability (Allan Deviation)	Up to 3.10 ⁻¹²	
Frequency stability in T° between -20°C and +60°C	1.10 ⁻¹⁰	
Ageing	5.10 ⁻¹¹ mois	3.10 ⁻¹¹ mois
Time drift (without synchronization over 180 days)	< 10 msec	
Vibration in operation	<ul style="list-style-type: none"> GR-CORE-63, Section 5.4.2 Random and Sinusoidal MIL-PRF-28800F, Class 3, 4 	<ul style="list-style-type: none"> MIL-STD-810F, 514.5 Method, Category 24 Average acceleration: 7,7g rms duration: 1 h/axis Axis: X/Y/Z axis

Security

Configuration settings saved in flash memory.

High level of security: 64 bits RSA™ MD5 signature, HTTPS protocol.
SNMP Supervision supporting version 2c, version 3 (authentication + encryption)

Network protocols

- **NTP** (v2, v3, v4)
- NTP Client/Server, Broadcast, Multicast
- SNTP (v4)
- HTTPS
- **SNMP** (v1, v2c, v3)
- IPv4 / **IPv6** (DHCP v4 / v6 compatible)
- FTP / SCP
- SYSLOG
- PTPv2 IEEE 1588 (TELECOM, ENERGY profiles)

Specifications

Power Supply	110-250VAC – 1,4 A max. – 50/60Hz – type IEC 60320 defined C14 and 18 - 36 VDC or 36 – 72 VDC – on screw terminal
Power Cable	IEC 60320 defined C13 / MALE SCHUKO 2 (EUROPE) & (Type F)*
Certifications	CE, EN62368 (safety), EN 55032 (EMC transmission), EN 55035 (EMC immunity), ROHS
Max. consumption	45 VA (Rubidium version) at start 25 VA in operation between 10 and 30 °C
IP	31
MTBF/ MTTR	Mother Board: 139 000 h / 10 min Display Board: 151 000 h / 5min Output Board: 128 000 h / 5min
Weight	2 Kg
Dimensions	1U Rack 482 x 44 x 285 mm (LxHxP)
Display	4 x 20 orange OLED screen with backlight.
Operating temperature	-10° to 50°C
Storage temperature	-20° to 70°C
Telecom standards	G.811 and G.812 Compatible
Shock and vibration tests	MIL STD 810 G

*For other types of power cables, refer to the power cable reference table

Key Features

- **Compensation of input delay due to transmission distance and security threshold setting.** Time Base and algorithm ensuring output accuracy up to 50ns when synchronized to GNSS (GPS, GLONASS, BEIDOU, GALILEO).
- PPS and 10 Mhz output via BNC connectors.
- Alarm management via **SNMP TRAP** for alarms and events.
- **Manual or automatic adjustment for transmission delay.**
- Event recording system.
- 100% operational within 15 minutes (with min. 6 satellites available).
- Configuration modifiable via SNMP.
- **Internal Temperature monitoring** (°C).
- **Configurable dry contacts to loss of synchronization or power supply alerts**

Configuration

- **Remote configuration and time setting via web interface. (Secured connection available via HTTP(s))**
- Supervision is available via HTTP(s), SNMPv3, Telnet, time information and synchronization status is available on the front panel alphanumeric display.
- Firmware upgrade via FTP or SCP (Secure Copy Protocol)
- Web Interface available from any browser
- Configuration via SNMPv3:
- Account/ password,
- IP Parameters
- Time server IP addresses as NTP synchronization sources
- Reboot.
- 1 NTPv4 default output on the management RJ45 port
- Provided with 1 SDHC memory card for main NTP output

Synchronization inputs

Time server synchronized by (possibility to prioritize):

- GNSS multiconstellations: GPS, GLONASS, BEIDOU, GALILEO SMA connector
- NTPv4 (IPv4, IPv6) (RJ45 port) up to 5 NTP servers (priority management).
- ASCII (NMEA 0183 RMC or ZDA) + TOP
- Frequency: PPS or frequency between 1 kHz to 10 Mhz
- PTPv2 (IEEE 1588)

Synchronization outputs

- Independent and isolated NTPv4 outputs (RJ45 ports)
- 1 PPS output on BNC
- 1 10Mhz output on BNC
- Alarmss
- PTPv2 IEEE1588 output
- E1 2.048 Mbps or 2.048 Mhz outputs on BNC
- ASCII (NMEA RMC or NMEA ZDA by auto-detection) on DB9 + TOP



LEDI® NETWORK ATS

ITEM CODE

94031

1st SYNCHRONIZATION INPUT

(1)GNSS multiconstellations (GPS, GLONASS, BEIDOU, GALILEO) <input type="checkbox"/>	B								
(1)GPS Receiver (Antenna and cable not included) <input type="checkbox"/>	P								
Without <input type="checkbox"/>	0								

(1) Antenna and cable to be ordered separately, see table 92225//

2nd SYNCHRONIZATION INPUT

PTPv2 (IEEE 1588) <input type="checkbox"/>	Y								
NTPv4 <input type="checkbox"/>	N								
ASCII (auto-detection NMEA RMC or NMEA ZDA) + TOP <input type="checkbox"/>	A								
Without <input type="checkbox"/>	0								

3rd SYNCHRONIZATION INPUT

Without <input type="checkbox"/>	0								
TOP input (PPS) <input type="checkbox"/>	M								
(2) External frequency input 10MHz <input checked="" type="checkbox"/>	H								

(2) Frequency Input: only available with OCXO oscillator, 1 other required input

POWER SUPPLY

110-250 VAC 50/60Hz / 18-36 VDC <input type="checkbox"/>	5								
110-250 VAC 50/60Hz / 36-72 VDC <input type="checkbox"/>	8								

CLOCK OSCILLATOR

Rubidium <input type="checkbox"/>	R								
Advanced hardened vibration Rubidium <input type="checkbox"/>	B								

(3) SORTIE DE SYNCHRONISATION

(3) max. 3, in case of PTP input: max. 2

2x 2.048MHz & 2x E1 (2.048Mbit/s) or T1 (1.544Mbit/s) outputs, 75 ohms, BNC connectors (limited to 1 x "W" board per time server) BNC->RJ adaptor is included (75 Ohms ► 120 Ohms) <input type="checkbox"/>	W								
1 x PTPv2 (IEEE 1588) 1Gbps / RJ45 output – 1 x Ethernet management port (10/100 Mbps) on RJ45 and 1 x SFP Optical Fibre port (to associate to GNSS input) <input type="checkbox"/>	C								
4 x AFNOR NFS 87500/IRIGB IEEE1344 (12x version) AC 2,2V on screw terminal <input type="checkbox"/>	B								
1 x ASCII RS232 output on DB9 + Pulse on screw terminal (Protocoles selection via embedded web page) <input type="checkbox"/>	E								
1 x ASCII RS485 output on DB9 + Pulse on screw terminal (Protocoles selection via embedded web page) <input type="checkbox"/>	F								
1 x NTP V4/SNTP server output on RJ45 <input type="checkbox"/>	K								
2 x NTP V4/SNTP server output on RJ45 <input type="checkbox"/>	L								
4 x PPS, PPM, PPH, DCF (TTL, phototransistor, DTTL) outputs on screw terminal <input type="checkbox"/>	P								
4 x PPS, PPM, PPH, DCF (TTL, static relays, DTTL) outputs on screw terminal <input type="checkbox"/>	Q								
4 x AFNOR/IRIG B/IEEE1344 DCLS (00x version) (TTL, phototransistor, DTTL) outputs on screw terminal <input type="checkbox"/>	T								
4 x AFNOR/IRIGB/IEEE1344 DCLS (00x version) (TTL, relais statique, DTTL) outputs on screw terminal <input type="checkbox"/>	V								
4 x ASCII RS 232 unidirectional outputs on DB9 (Unique Protocole) <input type="checkbox"/>	A								
4 x ASCII RS 485 / RS 422 unidirectional outputs on DB9 (Unique Protocole) <input type="checkbox"/>	R								
SMPTE / EBU output module SMPTE LTC12M –1999 and EBU/ UER LTC 3097 XLR 3 pts <input type="checkbox"/>	S								
Blackburst / Genlock synchronization input on BNC <input type="checkbox"/>	U								
Tropicalization <input type="checkbox"/>									

NTP/SNTP client software Windows®. 10 licenses.

This option is required for a secure synchronization of PC under Windows.

NTP/SNTP client software Compatibles OS Windows® 10 licenses <input type="checkbox"/>	CDG021
Additional SDHC memory card for other NTP outputs <input type="checkbox"/>	ref.PCB0036A