



## 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 <sup>-12</sup>	
Frequency stability in T° between -20°C and +60°C	1.10 <sup>-10</sup>	
Ageing	5.10 <sup>-11</sup> month	5.10 <sup>-11</sup> month
Time drift (without synchronization over 180 days)	< 10 msec	
Vibration in operation	<ul style="list-style-type: none"> <li>GR-CORE-63, Section 5.4.2</li> <li>Random et Sinusoïdal MIL-PRF- 28800F, Class 3, 4</li> </ul>	<ul style="list-style-type: none"> <li>MIL-STD-810F, 514.5 Method, Category 24</li> <li>Average acceleration: 7,7g rms duration: 1 h/axis</li> <li>Axis: X/Y/Z axis</li> </ul>

### Security and network protocols

- **Backup of configuration** setting in flash memory
- **Supervision** via SNMP V3 or supervision software GT SCADA or Syslog
- **Remote configuration** via secured web page
- **Configuration setting** command prompt via SSH
- **Firmware update** via FTP or SCP
- **Compatible IP v4/v6** (compatible DHCP v4/v6)
- **Configuration on Web interface via HTTP et HTTPS**
- **Secure access** to web interface by identifier and password
- **Authentication protocol and MD5 encryption**
- **Network communication** ports can be disabled
- **PTPv2 IEEE 1588** (TELECOM, ENERGIE profiles)

### Specifications

<b>Power supply</b>	110-250VAC – 1,4 A max. – 50/60Hz – type IEC 60320 defined C14 and 18 - 36 VDC or 36 – 72 VDC – 2 points screw terminal block
<b>Power Cable</b>	IEC 60320 defined C13 / MALE SCHUKO 2 (EUROPE) & (Type F)*
<b>Certifications</b>	CE, EN62368 (safety), EN 55032 (EMC transmission), EN 55035 (EMC immunity), ROHS
<b>Maximal Consumption</b>	45 VA (Rubidium version) at start 25 VA in operation between 10 and 30 °C
<b>IP</b>	31
<b>MTBF/ MTTR</b>	Mother board: 139 000 h / 10 min Display board: 151 000 h / 5min Output board: 128 000 h / 5min
<b>Weight</b>	2,3 kg
<b>Dimensions</b>	1U Rack 482 x 44 x 285 mm (LxHxD)
<b>Display</b>	Orange OLED screen with backlight
<b>Temperature in operation</b>	-10 to 50°C
<b>Storage temperature</b>	-20 to 70°C
<b>Telecom certifications</b>	G.811 and G.812 Compatible
<b>Shock and vibration tests</b>	MIL STD 810 G

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

### Key features

- **NTP/SNTP output included by default on RJ45**
- **Power Supply Redundancy** 18-36 or 36-72 VDC with 110-250 VAC
- **Configurable priorities of synchronization inputs**
- **Compensation of input delay due to transmission distance and threshold setting for security**
- **Time Base and algorithm ensuring output accuracy up to 50ns when synchronized to GPS/GNSS**
- **Independence and modularity of output boards**
- **PPS and 10Mhz output** (available with OCXO oscillator only) via BNC connectors
- **Alarm management via SNMP TRAP (V1, V2C, V3) and two static relay outputs** on screw terminal for synchronization and power supply alarms
- **Manual or automatic adjustment for transmission delay**
- **Local or UTC time display on front panel**
- **Internal Temperature monitoring (°C)**

### Configuration

- **Remote Configuration** and time setting via embedded web interface
- **IP Configuration** by front panel keyboard
- **Configuration file** can be retrieved and uploaded via secured web interface
- **Activating and deactivating configurations**
- **Auto-IP v4**

### Synchronization inputs

#### 1st time reference input (at choice):

- **Multi-constellation GNSS Receiver:** (GPS, GLONASS, BEIDOU, GALILEO) or GPS. Cold start : accuracy 10 to 50 ns

#### 2nd time reference input (at choice):

- **NTPv4 Ethernet 10/100BaseT- RJ45 input**
- **PTPv2 (IEEE 1588)**
- **ASCII (NMEA 0183 RMC or ZDA by auto-detection) + TOP**

#### 3rd reference input (backup):

- **PPS input**
- **Frequency input (between 1kHz and 10MHz)**

### Synchronization outputs

- **Multiple outputs** (see reference table 92167/)
- **NTP/SNTP output included by default on RJ45**
- **PPS and 10Mhz output** (available with OCXO oscillator only) via BNC connectors

NB: The RJ45 ports of the optional NTP outputs are independent and isolated by means of protocol break.

### GNSS Antenna (option)

- For more information on our GNSS antennas, refer to the technical specifications (see reference table 92225/)

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		ITEM CODE						
		94031	/					
<b>1st SYNCHRONIZATION INPUT</b>				↑	↑	↑	↑	↑
<sup>(1)</sup> GNSS multiconstellations (GPS, GLONASS, BEIDOU, GALILEO) – SMA connector	■	B						
<sup>(1)</sup> GPS Receiver – SMA connector	■	P						
Without	■	0						
<i>(1) Antenna and cable to be ordered separately see table 92225/</i>								
<b>2nd SYNCHRONIZATION INPUT</b>								
PTPv2 (IEEE 1588) – RJ45 Port and SFP port	■	Y						
NTP 10/100 Base T – RJ45 port	■	N						
<sup>(2)</sup> ASCII (auto-detection NMEA RMC or NMEA ZDA) – DB9 port + TOP – 2 points screw terminal block	■	A						
Without	■	0						
<i>(2) Configuration form to complete</i>								
<b>3rd SYNCHRONIZATION INPUT</b>								
Without	■	0						
TOP input (PPS) – BNC connector	■	M						
<sup>(3)</sup> External frequency input 1Hz - 10MHz – BNC connector	✗	H						
<i>(3) Frequency Input: only available with OCXO oscillator, 1 other required input</i>								
<b>POWER SUPPLY</b>								
110-250 VAC 50/60Hz / 18 - 36 VDC	■	5						
110-250 VAC 50/60Hz / 36 - 72 VDC	■	8						
<b>OSCILLATEUR</b>								
Rubidium	■	R						
Advanced hardened vibration Rubidium	■	B						
<b><sup>(4)</sup>SYNCHRONIZATION OUTPUTS</b>								
2x 2.048MHz & 2x E1 (2.048Mbit/s) ou T1 (1.544Mbit/s), 75 ohms - BNC connectors (limited to 1 x «W» board per time server) BNC->RJ adaptor is included (75 Ohms ▶ 120 Ohms)	■	W						
4x AFNOR NFS 87-500/IRIGB/IEEE1344 (12x version ) AC 2,2V – 8 points screw terminal block	■	B						
1x ASCII RS232 – DB9 port + TOP – 2 points screw terminal block (Protocols selectable)	■	E						
1x ASCII RS485 – DB9 port + TOP – 2 points screw terminal block (Protocols selectable)	■	F						
1x NTP V4/SNTP - RJ45 port	■	K						
2x NTP V4/SNTP - RJ45 ports	■	L						
4x PPS, PPM, PPH, PP2S, DCF (TTL, phototransistor, DTTL) – 8 points screw terminal block	■	P						
4x PPS, PPM, PPH, PP2S, DCF (TTL, static relay, DTTL) – 8 points screw terminal block	■	Q						
4x AFNOR/IRIG B/IEEE1344 DCLS (00x version ) (TTL, phototransistor, DTTL) – 8 points screw terminal block	■	T						
4x AFNOR/IRIGB/IEEE1344 DCLS (00x version ) (TTL, static relay, DTTL) – 8 points screw terminal block	■	V						
4x ASCII RS 232 unidirectional – DB9 port (unique GT Protocole)	■	A						
4x ASCII RS 485/RS 422 unidirectional – DB9 port (unique GT Protocole)	■	R						
1x SMPTE / EBU module output format SMPTE LTC12M –1999 and EBU/ UER LTC 3097 – 3 points XLR connector Blackburst / Glenlock synchronization input – BNC ConnectorS	■	S						
Tropicalized	■	U						

<sup>(4)</sup> max. 3, in case of PTP input: max. 2.

**SOFTWARE**

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	☑	CDG021	
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