



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 (40W power consumption) :

- Frequency stability (Allan Deviation) up to 3.10^{-12}
- Maximum frequency change over operating temp range from -20°C to +60°C: 1.10^{-10}
- Ageing : 5.10^{-11}
- Time drift (without synchronization over 180 days : < 10 msec)

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/SNTP (v2, v3, v4).
- NTP Client/Server, Broadcast, Multicast.
- HTTP(s).
- SNMP (v1, v2c, v3).
- IPv4 / IPv6. (compatible DHCP v4 / v6).
- FTP (can be disabled)
- Telnet (can be disabled)
- PTPv2 (IEEE1588)

Specifications

Power Supply	115-230VAC / 0.75-0.5 A /50-60Hz – IEC inlet C14
Certifications	CE, EN 60950 (safety), EN 55022 (EMC transmission), EN 55024 (EMC immunity)
Max. Consumption	45 VA (Rubidium)
IP	31
MTBF	Mother Board: 139 000 hrs. Display Board: 151 000 hrs. Output Board: 128 000 hrs.
MTTR	Mother board: 10 min. Display board : 5 min. Output Board: 5 min.
Weight	2 Kg
Dimensions	1U Rack 482 x 44 x 285 mm (LxHxD)
Front display	4 x 20 orange OLED screen with backlight.
Operating temperature	-10° to 50°C
Storage temperature	-20° to 70°C
Telecom Standards	Supporting G.811 and G.812
Shock and vibration Tests	MIL STD 810 G

Power consumption and starting mode

Rubidium

- At startup, there is a consumption peak for 12 minutes reaching about 40 W (room temperature of 25 ° C). This has no connection with the start time and access to server synchronization. When the oscillator is in continuous operation, the power consumption is from 25 to 30 W.



Ref : BDR_UK1-8_Master-clock-Time-servers-Software-V9.0-priceless
All technical changes, aesthetic, colour can be made without notice.

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.
- 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).
- 1 NTPv4 default output on the management RJ45 port.

Configuration

Remote configuration and time setting via web interface. (Secured connection available via HTTP(s))

Supervision is available via HTTP(s), SNMPv3, Telnet, “GT Network Manager”, time information and synchronization status is available on the front panel alphanumeric display. Firmware update via FTP.

- Web Interface available from any browser.

Configuration via SNMP:

- Account/ password,
- IP Parameters
- Time server IP addresses as NTP synchronization sources
- Reboot.

Synchronization inputs

Time server synchronized by (possibility to prioritize) :

- Multi-constellation GNSS Receiver: GPS, GLONASS, BEIDOU, GALILEO (cold start GNSS in less than 1 minute) on SMA connector.
- NTPv4 (IPv4, IPv6) (RJ45 port) up to 5 NTP servers (priority management).
- IRIG B
- Frequency: PPS or frequency of 1 kHz to 10 Mhz
- PTPv2 (IEEE 1588)

Synchronization outputs

- Comes with 1 SDHC memory card for main NTP output
- 2 independent and isolated NTPv4 outputs (RJ45 ports).
- 1 output PPS on BNC.
- 1 output 10Mhz on BNC.
- PTPv2 IEEE1588.
- E1 2.048 Mbps or 2.048 Mhz on BNC.
- (see table in next page)

GNSS Antenna (option)

- For more informations on GNSS antenna, please refer to GNSS datasheet.



LEDI® NETWORK ATS

ITEM CODE						
94031	/	<input type="checkbox"/>				
		↑	↑	↑	↑	↑

1st synchronization input (select one choice)*						
GNSS multiconstellation (GPS, GLONASS, BEIDOU, GALILEO)* <input type="checkbox"/>	B					
GPS receiver (Antenna and cable not included)* <input type="checkbox"/>	P					
none <input type="checkbox"/>	0					
*Antenna and cable to be ordered separately						
2nd synchronization input (select one choice)						
IRIG B - AFNOR NFS 87500 (Modulated 1Kz) <input type="checkbox"/>	8					
IRIGI B - AFNOR NFS 87500 (DCLS) <input type="checkbox"/>	T					
PTPv2 (IEEE 1588) <input type="checkbox"/>	Y					
NTPv4 <input type="checkbox"/>	N					
none <input type="checkbox"/>	0					
3rd synchronization (select one choice)						
done <input type="checkbox"/>	0					
Pulse input (PPS) <input type="checkbox"/>	M					
Frequency input: 10MHz* <input checked="" type="checkbox"/>	H					
POWER SUPPLY						
115-230 VAC 50-60Hz / 18 - 36 VDC <input type="checkbox"/>	5					
115-230 VAC 50-60Hz / 36 - 72 VDC <input type="checkbox"/>	8					
OSCILLATOR						
Rubidium <input type="checkbox"/>					R	
Micro Atomic clock <input type="checkbox"/>					C	
SYNCHRONIZATION OUTPUTS (please consult us for maximal number of output boards)						
2 x 2.048MHz & 2x E1 (2.048Mbit/s) or T1 (1.544Mbit/s), 75 ohm, BNC Connectors (limited to 1 output board "W" per time server) <input type="checkbox"/>						W
1 x PTPv2 output (IEEE 1588) 1Gbps / RJ45 – 1 RJ45 Ethernet port for management (10/100 Mbps) et 1 Fiber optic port <input type="checkbox"/>						C
4 outputs AFNOR NFS 87500/IRIGB IEEE1344 AC 2,2V on screw terminal <input type="checkbox"/>						B
1 ASCII RS232 output on DB9 + Pulse screw terminal <input type="checkbox"/>						E
1 ASCII RS485 output on DB9 + Pulse screw terminal <input type="checkbox"/>						F
1 NTP V4/SNTP server output on RJ45 <input type="checkbox"/>						K
2 NTP V4/SNTP server outputs on RJ45 <input type="checkbox"/>						L
4 pulse outputs PPS, PPM, PPH, DCF (TTL, phototransistor, DTTL) <input type="checkbox"/>						P
On screw terminal						
4 pulse outputs PPS, PPM, PPH, DCF (TTL, static relays, DTTL) <input type="checkbox"/>						Q
On screw terminal						
4 outputs AFNOR/IRIG B/IEEE1344 DCLS (TTL, phototransistor, DTTL) on screw terminal <input type="checkbox"/>						T
4 outputs AFNOR/IRIGB/IEEE1344 DCLS (TTL, static relays, DTTL) on screw terminal <input type="checkbox"/>						V
4 outputs ASCII RS 232 unidirectional on DB9 <input type="checkbox"/>						A
4 outputs ASCII RS 485 / RS 422 unidirectional on DB9 <input type="checkbox"/>						R
SMPTE / EBU output module fo SMPTE LTC12M –1999 And EBU/ UER LTC 3097 XLR 3 pts <input type="checkbox"/>						S
Blackburst / Genlock synchronization input on BNC <input type="checkbox"/>						
Tropicalization of electronic boards <input type="checkbox"/>						U
GNSS ANTENNA KIT (Please refer to datasheet of 92225: GNSS components)						

NTP/SNTP client software Windows® 98/NT/XP/2000/2003/Vista(32 bits) / Windows 7. Licence 10 postes.
This option is required for a secured synchronization of PC under Windows.

Windows® 98/NT/XP/2000/2003/Vista(32 bits) / Windows 7. <input type="checkbox"/>	CDG021
10 licenses.	
Additional SDHC memory card for other NTP outputs	réf.PCB0036A