

RADIO TIMING® 4000

Modular Time Centre allowing a redundancy on all the outputs for a high security level.



Modular rack mount system

- Equipped with an inter-modules bus, a backplane with connectors and terminals. Guiding system of modules. Connection system and switch between racks
- From 1 to 4 racks stackable

Time base

- High accuracy oscillator TCXO or OCXO
- Holdover stability between 0° and 60°C:
 - TCXO 1.10⁻⁶/ day
 - OCXO 1.10⁻⁸/ day

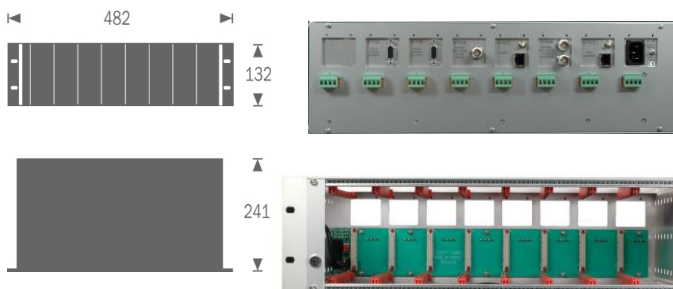
Security

- Automatic or manual modules redundancy
- Power reserve in case of main power supply cutting of
- Battery and power supply alarm Led indicators
- Key control lock

Specifications

Power Supply	230VAC Or 115VAC Or 24VDC Ou 48VDC Or 85-264VAC / 100-375VDC
Power Cable	IEC 60320 defined C13 / MALE SCHUKO 2 (EUROPE) & (Type F)*
Certifications	CE, EN 62368 (sécurité), EN 55032 (CEM émission), EN 55035 (CEM immunité), ROHS
IP	20
MTBF	100 000 h
MTTR	5 min per module
Weight	Empty rack: 2.2 Kg Average weight of 1 module/8: 0.3 Kg
Dimensions	Rack 19" 3U 482x132x241 mm Module: 1/8th of rack
Operating temperature	0° to 60°C
Storage temperature	- 20° to 80°C

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



Key features

- Allows a specific composition and perfectly adapted to each use.
- Remote supervision over Ethernet (SNMP, HTTP), support NTP/SNTP.
- Protection filter, against over voltage and industrial noise.
- Changing of module « hot plug », without cutting off sector.
- Full redundancy of synchronization inputs and outputs.

Supervision

- Automatic selection of time zone and daylight saving time
- Supervision via HTTP, SNMP

Synchronization Inputs

- Standalone synchronized on one or several sources:
 - DCF (Europe)
 - GNSS (BEIDOU, GLONASS, GPS, GALILEO): 50ns
 - AFNOR NFS 87500/IRIG B/ IEEE1344 and DCLS
 - NTP on Ethernet 10/100T Base (RJ45 connector)

Synchronization outputs

- Multiples outputs (see RT4000 reference table)

Display / LED characteristics

Some modules are equipped with an alphanumeric Led display.



RADIO TIMING® 4000

ITEM CODE

RACK 19" 3U

Equipped with an inter-modules bus, a backplane circuit with connectors and terminals. Guiding system of modules. Connection system and switch between racks. Key control lock.		
Simple rack	■	NTRK01
Double rack	■	NTRK02
Triple rack	✱	NTRK03
Quadruple rack	✱	NTRK04

POWER SUPPLY MODULE

Battery and power supply alarm leds.1/8 th rack		
230VAC input. Ni-mh 2.1AH Batteries	■	NT102
115VAC input. Ni-mh 2.1AH Batteries	■	NT112
24VDC input. Ni-mh 2.1AH Batteries	■	NT124
48VDC input. Ni-mh 1.8AH Batteries or 48 VDC « telecom »	■	NT148
85-264 VAC 100-375VDC input Ni-mh 2.1AH Batteries	■	NT127
Power supply alarm leds.1/8 th rack		
230VAC input	■	NT302
115VAC input.	■	NT312
24VDC input.	■	NT324
48VDC input. Ni-mh 1.8AH Batteries or 48 VDC « telecom »	■	NT348
Battery and power supply alarm leds.1/8 th rack	■	NT327

TCXO TIME BASE MODULE

TCXO high accuracy oscillator. Frequency stability 1.10 ⁻⁶ /day (0° to 60°C). Temperature range -30° to 75°C. Ageing 5.10 ⁻⁹ /day Redundancy up to 8 time base modules Alphanuméric HMS LED display, 4 programming keys AFNOR NFS87500/IRIG-B 1000Hz output - 1/8 th rack		
DCF Radiosynchronization. Consumption 1W	■	NT812
AFNOR NFS 87500 / IRIG-B 1000Hz IEEE1344 code and DCLS synchronization input. consumption 1W	■	NT818
GPS synchronization input (Antenna not provided). Consumption 1,2W	■	NT819
NTPv4 Ethernet 10/100BaseT (RJ45 connector) synchronization input. consumption 3,5W	■	NT825
GLONASS synchronization input (Antenna not provided). Consumption 2W	■	NT814

OCXO TIME BASE MODULE

OCXO high accuracy oscillator - Frequency stability 1.10 ⁻⁸ /day (0° to 60°C) Temperature range -20° to 70°C - Ageing 2.10 ⁻¹⁰ /day Redundancy up to 8 time base modules Alphanuméric HMS LED display, 4 programming keys AFNOR NFS87500/IRIG-B 1000 Hz output, 10 MHz output (sinewave), PPS (TTL)output - 1/8 th rack		
GPS synchronization input (Antenna not provided, refer to GPS ANTENNA Option). Consumption 4W Protection against unexpected time jumps of more than one second	■	NT829
GNSS (BEIDOU, GLONASS, GPS, GALILEO) synchronization input (Antenna not provided, refer to GPS ANTENNA Option). Consumption 4W	■	NT839

SNMP SUPERVISION MODULE

SNMP V1/ V2/V3, alarm management on 5 different SNMP supervisors. Configuration via web browser (http et http(s)) and/or Telnet by Ethernet 10/100 Base T. Supporting IP V4/V6. ■ NT022 One dry contact alarm, LED indicator on front panel. Consumption 2W. 1/8th rack		
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NTP/SNTP SYNCHRONISATION SERVER MODULE

Network Time Protocol V4 output (RFC-1305 & RFC-1769). Remote Supervision and configuration via a WEB browser (http et http(s)). LED indicator on front panel. Compatible with GT NTP Client software CDG 021 (to be ordered separately). ■ NT023 Ethernet 10/100 base T interface. Supporting IP V4/V6 Consumption 2.1W. Accuracy of 50µs to millisecond depending on network configuration. 1/8th rack.		
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ASCII CODE MODULE

Keypad configuration of speed, format, parity and number of stop bits. Operating in unidirectional or bi-directional.(Gorgy Timing standard protocol) 1/8 th rack.		
4 ASCII outputs module RS232 unidirectional or one bi-directional output + one configurable Pulse output (TTL, DTTL, Relay) including DCF pulse on static relay - Consumption 1W to 3,5W depending on the load lines.	■	NT709
4 ASCII outputs module RS422-RS485 unidirectional or one bi-directional output + one configurable Pulse output (TTL, DTTL, Relay) including DCF pulse on static relay - Consumption 1W to 3,5W depending on the load lines.	■	NT729

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ITEM CODE

AFNOR NFS 87500 TIME CODE AMPLIFIER OUTPUT

Modulated code frequency 1000Hz and DCLS
2 AFNOR NFS 87500/IRIG B outputs or IEEE 1344.
Consumption 0.5W.
1/8th rack

■ NT600

SMPTE / EBU OUTPUTS MODULE

Generates a SMPTE LTC12M –1999 and EBU / UER LTC 3097 time codes
Blackburst /Glenlock synchronisation input.
Consumption 2W.
1/8th rack.

■ NT650

FTM MODULE

Measures the time & frequency drifts of the electrical network. Input test 115VAC or 230VAC (+/- 10%, 15%) 50-60Hz.
Frequency drift accuracy: +/- 1MHz. Time drift accuracy +/- 1ms.
16 digits display, 4 key-pad.
Measure data outputs on RS232.
Consumption 1,6W.
1/8th rack.

* NT509

PULSES DRIVER MODULE

7 segment LED display
Electronically automatic reset protection in case of short circuit.
Permanent analyse of the line with alphanumerical display in case of event of faults: power supply, voltage, fuse failure and non sync. of slave clocks.
Visual indicator in case of over voltage, short-circuit or power supply failure.
Dry contact output. Automatic time setting of the time distribution.
Voltage and current measurement display.
Consumption 1W (on NT1XX).
1/8th rack.

Minute 1A/24V parallel reversed pulses output ■ NT423

DCF-24v output + 1A/24v pulse ■ NT424

Second 24V/200mA parallel reversed pulses output ■ NT426

½ minute 48V series reversed pulses output ■ NT445

Second 200mA/48V parallel reversed pulses output ■ NT446

minute 48V/0.5A parallel reversed pulses output ■ NT443

CHARGER BATTERY FOR PULSES OUTPUT MODULE

Consommation 0,5W (sur NT1XX)

230 VAC power supply, 24VDC output - 24 VDC battery - Size 1/8th of rack ■ NT202

115 VAC power supply, 24VDC output - 24 VDC battery – Size 1/8th of rack * NT212

24 VDC power supply, 24VDC output - 24 VDC battery – Size 1/8th of rack * NT222

230 VAC power supply, 48VDC output - 48 VDC battery – Size 2/8th of rack * NT204

115 VAC power supply, 48VDC output - 48 VDC battery - Size 2/8th of rack * NT214

24 VDC power supply, 48VDC output - 48 VDC battery - Size 2/8th of rack * NT224

OPTIONS

Blank front size 1/8th ■ NT019

Spare: Fuse, Fuse carrier, Keys, blank front ■ 92110

ANTENNA OPTION

See GNSS Elements table □ 92225/xxxx

IP55 WATERTIGHT CABINET FOR RACK 19"

Case in 3 parts. Protective glass and Bâti rotating lock, allowing the access by the rear racks.
Dimensions: width: 600mm – Depth: 400mm

1 rack 19"3U NTRK01 – Height 233mm ■ B04U

2 racks 19" 3U (19"6U) – Height 366 mm ■ B07U

3 racks 19"3U (19" 9U) – Height 500 mm ■ B10U

Tropicalization of the electronic circuits of the product

Upon the completion of the offer, add a line "TROPICALIZATION » for product. ■ TROPICALIZATION
On the form for order, add a comment « BE/production for each line of product RT4000 the word « TROPICALIZATION ».