



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

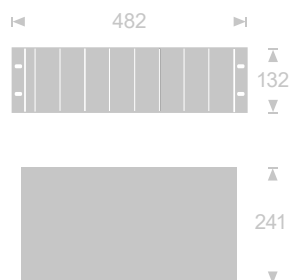
Security

- 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 or 48VDC or 85-264VAC - 100-375VDC
Power Cable <i>(for alternative power supply)</i>	IEC 60320 defined C13 / MALE SCHUKO 2 (EUROPE) & (Type F)*
Certifications	CE, EN 62368 (safety), 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 482 x 132 x 241mm (LxHxD) 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
- Inputs and outputs modularity
- Independence of modules by means of break protocol
- Module priority

Supervision

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

Synchronization inputs

Standalone synchronized on one or several sources:

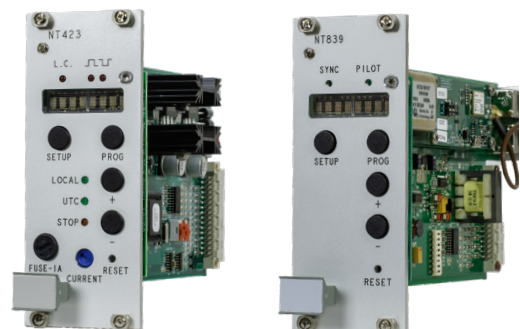
- DCF 77kHz (Europe)
- GNSS (BEIDOU, GLONASS, GPS, GALILEO): 50ns
- AFNOR NFS 87-500/IRIG B/ IEEE1344 and DCLS
- NTP 10/100BaseT (RJ45 port)

Synchronization outputs

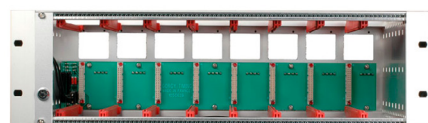
- Multiple outputs (see RT4000 reference table)

Display / LED characteristics

Some modules are equipped with an alphanumerical Led display



Front



Rear



RADIO TIMING® 4000

	ITEM CODE	
RACK 19" 3U		
<p>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</p>		
Simple rack	■	NTRK01
Simple rack without lock	■	NTRK01-1
Double rack	✕	NTRK02
Double rack without lock	✕	NTRK02-2
Triple rack	■	NTRK03
Triple rack without lock k	■	NTRK03-3
Quadruple rack	✕	NTRK04
Quadruple rack without lock	✕	NTRK04-4
MODULE POWER SUPPLY		
<p>Battery and power supply alarm leds.1/8th rack</p>		
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
<p>Power supply alarm leds.1/8th rack</p>		
230VAC input	■	NT302
115VAC input.	■	NT312
24VDC input.	■	NT324
48VDC input. Ni-mh 1.8AH Batteries or 48 VDC "telecom"	■	NT348
85-264 VAC / 100-375VDC	■	NT327
TCXO TIME BASE MODULE		
<p>TCXO high accuracy oscillator. Frequency stability 1.10⁻⁹/day (0° to 60°C). Temperature range -30° to 75°C. Ageing 5.10⁻⁹/day; Redundancy up to 8 time base modules Alphanumeric HMS LED display, 4 programming keys AFNOR NFS87-500/IRIG-B 1000Hz output - 1/8th rack</p>		
DCF Radiosynchronization. Consumption 1W	■	NT812
AFNOR NFS 87-500 / IRIG-B 1000Hz IEEE1344 code and DCLS synchronization input (antenna supplied with 4m cable). Consumption 1W	■	NT818
NTPv4 Ethernet 10/100BaseT (RJ45 connector) synchronization input. Consumption 3,5W	■	NT825
OCXO TIME BASE MODULE		
<p>OCXO high accuracy oscillator - Frequency stability 1.10⁻⁹/day (0° to 60°C) Temperature range -20° to 70°C - Ageing 2.10⁻¹⁰/day Redundancy up to 8 time base modules. Alphanumeric HMS LED display, 4 programming keys AFNOR NFS 87-500/IRIG-B 1000 Hz output, 10 MHz output (sinewave), PPS (TTL) output - 1/8th rack</p>		
GPS synchronization input (Antenna not provided, refer to GPS ANTENNA Option). Consumption 4W	■	NT829
Protection against unexpected time jumps of more than one second. GNSS (BEIDOU, GLONASS, GPS, GALILEO) synchronization input (Antenna not provided, refer to GPS ANTENNA Option). Consumption 4W	■	NT839
SNMP SUPERVISION MODULE		
<p>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. One dry contact alarm, LED indicator on front panel. Consumption 2W. 1/8th rack</p>		
■		NT022
NTP/SNTP SYNCHRONISATION SERVER MODULE		
<p>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). 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. Compatible with GT NTP CDG021 software (to be ordered separately).</p>		
■		NT023
ASCII CODE MODULE		
<p>Keypad configuration of speed, format, parity and number of stop bits. Operating in unidirectional or bi-directional.(GT standard protocol) 1/8th rack</p>		
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 87-500 TIME CODE AMPLIFIER OUTPUT		
Modulated code frequency 1000Hz and DCLS. 2 AFNOR NFS 87500/IRIG B outputs or IEEE 1344. Consumption 0.5W. 1/8 th rack.	■ NT600	
SMPTE / EBU OUTPUTS MODULE		
Generates a SMPTE LTC12M –1999 and EBU / UER LTC 3097 time codes Blackburst /Glenlock synchronisation input. Consumption 2W. 1/8 th 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. 1/8 th rack.	* NT509	
PULSES DRIVER MODULE		
<p>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.</p>		
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		
Consumption 0,5W (on NT1XX)		
230 VAC power supply, 24VDC output - 24 VDC battery - Size 1/8 th of rack	■ NT202	
115 VAC power supply, 24VDC output - 24 VDC battery – Size 1/8 th of rack	* NT212	
24 VDC power supply, 24VDC output - 24 VDC battery – Size 1/8 th of rack	* NT222	
230 VAC power supply, 48VDC output - 48 VDC battery - Size 2/8 th of rack	* NT204	
115 VAC power supply, 48VDC output - 48 VDC battery - Size 2/8 th of rack	* NT214	
24 VDC power supply, 48VDC output - 48 VDC battery - Size 2/8 th of rack	* NT224	
OPTIONS		
Blank front size 1/8 th	■ NT019	
Spare: Fuse, Fuse carrier, Keys, blank front	■ 92110	
ANTENNA OPTION		
See GNSS Elements table	☐ 92225/xxxx	
IP55 WATERTIGHT CABINET FOR RACK 19"		
Glass door with safety glass and security lock Cable entry top/bottom access		
19" 4U - 600 x 450 x 280mm (LxDxH)	■ NTB04U	
19" 6U - 600 x 600 x 368mm (LxDxH)	■ NTB06U	
19" 9U - 600 x 600 x 500mm (LxDxH)	■ NTB09U	
19" 12U - 600 x 600 x 635mm (LxDxH)	■ NTB12U	
Tropicalization of the electronic circuits of the product		
Upon the completion of the offer, add a line "TROPICALIZATION" for product. On the form for order, add a comment "BE/production" for each line of product RT4000 the word "TROPICALIZATION".	■ TROPICALIZATION	