

# PTS-10

## 1U Rack Mounting Time Server



- 1U 19 inch rack mounting time server
- Support up to 2 100/1000M combo ports
- 85-264VAC/DC or 48VDC single power input
- Single satellite channel (Optional GPS, GPS/BDS dual-mode, GPS/Glonass dual-mode)
- Support integrated TCXO or OCXO for time holdover
- Support LCD screen display and operation by keys on front panel
- Support up to 2 slots for Time Output Module (11 types of module for flexible configuration)
- Support time status management function
- Support Web, SNMP management

### Overview

PTS-10 is a modular-designed high precision time server, capable of output multiple types of time synchronization signals, satisfying needs of different applications. It has been widely deployed in power, industrial automation, health care and other industries.

### Product Specifications

#### Satellite Receiver and Antenna

Receiving Sensitivity of Receiver	Locking Sensitivity < -160dBm Tracking Sensitivity < -167dBm
Locking Time	< 0.5min (Warm Boot) < 10min (Cold Boot)
Time Accuracy of Receiver	Better than 20ns (1pps, relative to UTC)
Receiving Antenna Sensitivity	≤ -163dBm

#### Time Accuracy

1PPS	Fiber ≤ 60ns
TTL	≤ 60ns
RS485	≤ 0.5μs
Contact	≤ 3μs
IRIG-B Fiber	≤ 60ns
TTL	≤ 60ns
RS485	≤ 0.5μs
Modulated	≤ 3μs
Serial Data RS232	≤ 5ms
RS485	≤ 5ms
NTP	≤ 50μs
PTP	≤ 50ns

#### LED

PSW ON:	Power ON; OFF: Power OFF
SAT ON:	Satellite number ≥ 4; OFF: Satellite number < 4
ANT ON:	Antenna status is normal;
OFF:	Antenna status is abnormal
LOCK Flash per second:	Clock is locked
Flash per 3 seconds:	Clock is hold
OFF:	Clock is unlocked

#### Key

UP	Move the cursor up
DOWN	Move the cursor down
ENTER	Confirm operation
ESC	Cancel operation

#### Holdover Accuracy

TCXO	55μs per hour
OCXO	12μs per 12h
OCXO	6μs per 24h

#### Input Interface

Satellite	SAT1: BNC connector (3.3-5VDC)
Fiber	F11: ST-850nm MM (IRIG-B-DC) F12: ST-850nm MM (IRIG-B-DC)

#### Network Interface

- Ethernet
- ▼ Type 1: 2 × 10/100Base-TX RJ45 ports or
  - ▼ Type 2: 2 × 1000Base-X SFP slot, 10/100/1000Base-T(X) Combo ports

## Output Interface

- ▼ TTL(Terminal)
- ▼ Terminal connector, 1PPS/1PPM/1PPH or IRIG-B
- ▼ TTL(BNC)
- ▼ BNC connector, 1PPS/1PPM/1PPH or IRIG-B
- ▼ Fiber
- ▼ ST multimode connector, 1PPS/1PPM/1PPH or IRIG-B
- ▼ Serial Data (Terminal)
- ▼ RS232, 1PPS/1PPM/1PPH or serial time signal
- ▼ RS485, 1PPS/1PPM/1PPH, IRIG-B or serial time signal
- ▼ Serial Data (DB9)
- ▼ DB9 connector, 1PPS/1PPM/1PPH, IRIG-B or serial time signal
- ▼ IRIG-B Modulated (Terminal)
- ▼ Terminal connector, IRIG-B modulated signal
- ▼ IRIG-B Modulated (BNC)
- ▼ BNC connector, IRIG-B modulated signal
- ▼ Contact (Terminal)
- ▼ Terminal connector, 1PPS/1PPM/1PPH or IRIG-B

## Power Supply

- ▼ Power Input 85-264VAC/DC, 48VDC,
- ▼ single power input
- ▼ Power Terminal 5-pin 5.08 mm-spacing
- ▼ plug-in terminal block
- ▼ Power Alarm Support
- ▼ Status Alarm Support

## Physical Characteristics

- ▼ Housing Metal
- ▼ Cooling Natural cooling, fanless
- ▼ Protection Class IP40
- ▼ Dimensions(WxHxD) 483 × 45 × 280mm
- ▼ Weight 4.5kg
- ▼ Mounting 1U 19 inch rack mounting

## Environmental Limits

- ▼ Operating temperature -20°C to +70°C
- ▼ Storage temperature -40°C to +85°C
- ▼ Ambient Relative Humidity 5% to 95% (non-condensing)

## Quality Assurance

- ▼ MTBF 50000hrs
- ▼ Warranty 5 years

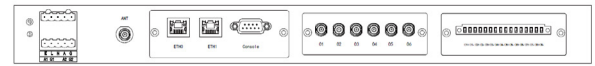
## Approvals

- ▼ CE

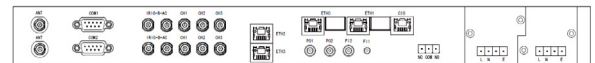
## Standard

- ▼ DL/T 1100.1-2009
- ▼ IEC 60068-2-78
- ▼ IEC 61000-4-2
- ▼ IEC 61000-4-4
- ▼ IEC 61000-4-5
- ▼ IEC 61000-4-8
- ▼ IEC 61000-4-9
- ▼ IEC 61000-4-10
- ▼ IEC 61000-4-12

## Mechanical Drawing



PTS-10

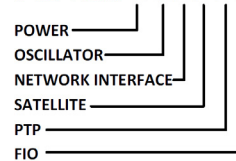


PTS-10A

## Ordering Information

### EQUIPMENT

**PTS-10X-C-DDDDDDXXXXXXXXXXXX-XX**



#### POWER

- 1 85-264VAC/DC Single
- 3 48VDC Single

#### OSCILLATOR

- 1 TCXO (<55μs/1h)
- 2 OCXO (<12μs/12h)
- 3 OCXO (<6μs/24h)

#### NETWORK INTERFACE

- 1 2 × 10/100Base-TX
- 6 2 × 1000Base-X SFP slot, 10/100/1000Base-T(X) Combo ports

#### SATELLITE

- 1 GPS
- 2 GPS/BDS (Dual-Mode)
- 3 GPS/GLONASS (Dual-Mode)

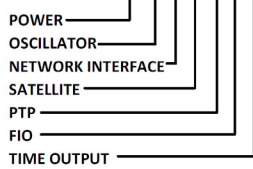
#### PTP

- 0 N/A
- 1 PTPv2

#### FIO

- 0 N/A
- 1 FI1 (ST 850nm MM) + FI2 (ST 850nm MM)

## PTS-10A-C-DDDDDDXXXXXXXXXXXX-XX



### POWER

- 1 85-264VAC/DC Single
- 2 85-264VAC/DC Dual
- 3 48VDC Single
- 4 48VDC Dual

### OSCILLATOR

- 1 TCXO (<55 $\mu$ s/1h)
- 2 OCXO (<12 $\mu$ s/12h)
- 3 OCXO (<6 $\mu$ s/24h)
- 4 Rubidium clock (<2 $\mu$ s/24h)

### NETWORK INTERFACE

- 6 2  $\times$  1000Base-X SFP slot, 10/100/1000Base-T(X)  
Combo ports
- 7 2  $\times$  1000Base-X SFP slot, 10/100/1000Base-T(X)  
Combo ports + 2  $\times$  10/100Base-TX RJ45 ports

### SATELLITE

- 1 GPS
- 2 GPS/BDS (Dual-Mode)
- 3 GPS/GLONASS (Dual-Mode)

### PTP

- 0 N/A
- 1 PTPv2

### FIO

- 0 N/A
- 1 FI1 (ST 850nm MM) + FI2 (ST 850nm MM)

## TIME OUTPUT MODULE (max 2pcs for 2 slots)

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- PTS-10X-OUT-PPS-TTL-TB Output module with terminal connector for 8 outputs of TTL PPS
- PTS-10X-OUT-IRIG-TTL-TB Output module with terminal connector for 8 outputs of TTL IRIG-B (DC)
- PTS-10X-OUT-PPS-TTL-BNC Output module with 5 BNC ports for TTL PPS
- PTS-10X-OUT-IRIG-TTL-BNC Output module with 5 BNC ports for TTL IRIG-B (DC)
- PTS-10X-OUT-PPS-850-FO Output module with 6 ST 850nm fiber ports for PPS
- PTS-10X-OUT-IRIG-850-FO Output module with 6 ST 850nm fiber ports for IRIG-B (DC)
- PTS-10X-OUT-PPS-1310-FO Output module with 6 ST 1310nm fiber ports for PPS
- PTS-10X-OUT-IRIG-1310-FO Output module with 6 ST 1310 nm fiber ports for IRIG-B (DC)
- PTS-10X-OUT-IRIG-AC-TB Output module with terminal connector for 6 outputs of IRIG-B (AC)
- PTS-10X-OUT-PPS-485-TB Output module with terminal connector for 8 outputs of RS485 PPS
- PTS-10X-OUT-IRIG-485-TB Output module with terminal connector for 8 outputs of RS485 IRIG-B (DC)
- PTS-10X-OUT-TOD-485-TB Output module with terminal connector for 8 outputs of RS485 TOD
- PTS-10X-OUT-PPS-232-TB Output module with terminal connector for 6 outputs of RS232 PPS
- PTS-10X-OUT-TOD-232-TB Output module with terminal connector for 6 outputs of RS232 TOD
- PTS-10X-OUT-CONTACT-TB Output module with terminal connector for 8 outputs of PPS/PPM contact
- PTS-10X-OUT-COMBO-DB9 Output module with 1 BNC port for IRIG-B (AC), 2 BNC ports for TTL PPS/IRIG-B (DC), 1 DB9 port for RS232 TOD
- PTS-10X-OUT-COMBO-FO Output module with 2 BNC ports for IRIG-B (AC), 2 BNC ports for TTL PPS/IRIG-B (DC), 1 ST 850nm fiber port for PPS/IRIG-B

## **SOFTWARE (Optional)**

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PTS-10X-S01 SNMP  
PTS-10X-S02 IEC60870-104 + DNP TCP  
PTS-10X-S03 IEC60870-104 + IEC61850 MMS  
PTS-10X-S04 TMS GOOSE Trigger + IEC61850 MMS  
PTS-10X-S10 WEB  
PTS-10X-S11 WEB + SNMP  
PTS-10X-S12 WEB + IEC60870-104 + DNP TCP  
PTS-10X-S13 WEB + IEC60870-104 + IEC61850 MMS  
PTS-10X-S14 WEB + TMS GOOSE Trigger + IEC61850 MMS  
PTS-10A-S01 SNMP  
PTS-10A-S02 IEC60870-104 + DNP TCP  
PTS-10A-S03 IEC60870-104 + IEC61850 MMS  
PTS-10A-S04 TMS GOOSE Trigger + IEC61850 MMS  
PTS-10A-S10 WEB  
PTS-10A-S11 WEB + SNMP  
PTS-10A-S12 WEB + IEC60870-104 + DNP TCP  
PTS-10A-S13 WEB + IEC60870-104 + IEC61850 MMS  
PTS-10A-S14 WEB + TMS GOOSE Trigger + IEC61850 MMS

## **ANTENNA**

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PTS-ANT-GPS-BDS-TNC GPS/BDS, TNC Female Connector  
PTS-ANT-GPS-BDS-N GPS/BDS, N Female Connector  
PTS-ANT-GPS-BDS-GLN\_TNC GPS/BDS/GLONASS, TNC Female Connector  
PTS-ANT-GPS-BDS-GLN\_N GPS/BDS/GLONASS, N Female Connector  
PTS-ANT-CABLE-15 Coaxial Cable (15 meters)  
PTS-ANT-CABLE-30 Coaxial Cable (30 meters)  
PTS-ANT-CABLE-50 Coaxial Cable (50 meters)  
PTS-ANT-CABLE-80 Coaxial Cable (80 meters)  
PTS-ANT-CABLE-100 Coaxial Cable (100 meters)  
PTS-ANT-AMPLIFIER Antenna Amplifier  
PTS-ANT-LIGHTING Lighting Arrester (BNC Female to Male Connector)