

PTS-30

3U Rack Mounting Time Server



- 3U 19 inch rack mounting time server
- Support dual satellite channels (GPS, BDS, GLONASS Optional)
- Time synchronization accuracy up to 50ns
- Support IRIG-B, IEEE1588 used as time source
- Support integrated Rubidium clock, TCXO or OCXO for time holdover
- Support max 8 slots(PTS-30M)/15 slots(PTS-30E)for time output modules
- Support 1PPS, IRIG-B-DC/AC, RS422/RS485, NTP, IEEE1588 V2.0, contact, etc time signal output
- Support safe and reliable multi-source selection algorithm to guarantee time output accuracy
- Support 5.7inch LCD touch-screen for operation

Overview

PTS-30M high precision time server supports dual channels to receive GPS/BDS/GLONASS satellite signals, redundant power inputs, Rubidium clock for reliable time holdover, various and a high number of time output signals, meeting precise time synchronization requirements in the fields of power, transportation, etc.

Product Specifications

Satellite Receiver and Antenna

Receiving Sensitivity of Receiver	Locking Sensitivity <math><-160\text{dBm}</math> Tracking Sensitivity <math><-167\text{dBm}</math>
Locking Time	<math><0.5\text{min}</math> (Warm Boot) <math><10\text{min}</math> (Cold Boot)
Time Accuracy of Receiver	Better than 20ns (1pps, relative to UTC)
Receiving Antenna Sensitivity	$\leq-163\text{dBm}$

Time Accuracy

1PPS	Fiber $\leq 60\text{ns}$ TTL $\leq 60\text{ns}$ Differential level $\leq 0.5\mu\text{s}$ Contact $\leq 3\mu\text{s}$
IRIG-B	Fiber $\leq 60\text{ns}$ TTL $\leq 60\text{ns}$ AC (3-12V, 3:1-6:1) $\leq 3\mu\text{s}$ Differential level $\leq 0.5\mu\text{s}$
Serial Data	RS232 $\leq 5\text{ms}$ RS485 $\leq 5\text{ms}$
NTP	$\leq 50\mu\text{s}$
PTP	$\leq 50\text{ns}$

LED

Power LED	3.3V/5V/12V
Running	LED RUN
Alarm	LED A1/A2

Holdover Accuracy

TCXO	55 μs per hour
OCXO	12 μs per 12h
OCXO	6 μs per 24h
Rubidium clock	2 μs per 24h

Input Interface

Satellite	SAT1: BNC connector (3.3-5VDC) SAT2: BNC connector (3.3-5VDC)
Fiber	F1: ST-850nm MM (IRIG-B-DC) F2: ST-850nm MM (IRIG-B-DC)

Network Interface

- ▼ Type 1: 2 × 10/100Base-TX RJ45 ports
- ▼ Type 2: 4 × 10/100Base-TX RJ45 ports
- ▼ Type 3: 2 × 1000Base-X SFP slot, 10/100/1000Base-T(X) Combo ports
- ▼ Type 4: 2 × 1000Base-X SFP slot, 10/100/1000Base-T(X) Combo ports + 2 × 10/100Base-TX RJ45 ports

Output Interface

TTL (Terminal)	Terminal connector, 1PPS/1PPM/1PPH or IRIG-B (DC)
TTL (BNC)	BNC connector, 1PPS/1PPM/1PPH or IRIG-B (DC)
Fiber	ST connector, 1PPS/1PPM/1PPH or IRIG-B (DC)
Serial Data (Terminal)	RS232, 1PPS/1PPM/1PPH or serial TOD RS485, 1PPS/1PPM/1PPH, IRIG-B or serial TOD
IRIG-B AC (Terminal)	Terminal connector, IRIG-B (AC) signal
Contact (Terminal)	Terminal connector, 1PPS/1PPM

Power Supply

Power Input	85-264VAC/DC, 48VDC, single/dual power input(s)
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(PTS-30M)
	483×135×280mm(PTS-30E)
Weight	5.5kg
Mounting	3U 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

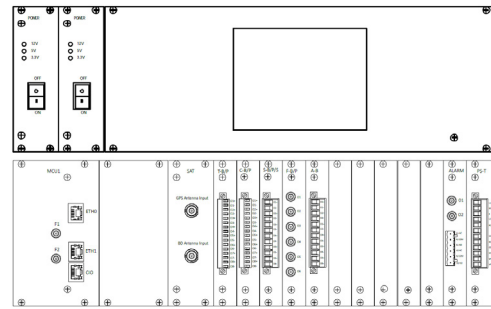
Approvals

CE

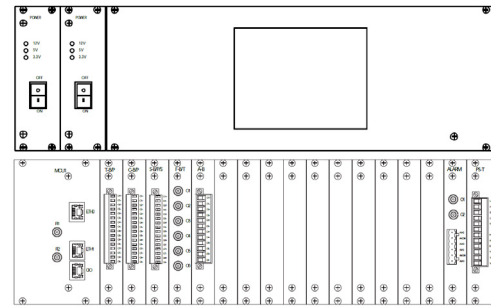
Standard

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-30M

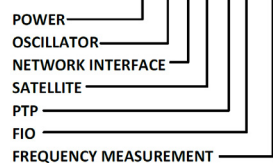


PTS-30E

➤ Ordering Information

EQUIPMENT

PTS-30M-C-DDDDDDDDXXXXXXXXXX-XX



POWER

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

OSCILLATOR

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

NETWORK INTERFACE

- 1 2 × 10/100Base-TX
- 2 4 × 10/100Base-TX (only 2 ports can support PTP)
- 6 2 × 1000Base-X SFP slot, 10/100/1000Base-T(X)

Combo ports

- 7 2 1000Base-X SFP slot, 10/100/1000Base-T(X)
Combo ports, 2 × 10/100Base-TX RJ45 ports

SATELLITE

- 1 GPS
- 2 GPS/BDS (Dual-Mode)
- 3 GPS/GLONASS (Dual-Mode)
- 4 GPS+GPS (Dual-channel)
- 5 GPS+BDS (Dual-channel)
- 6 GPS+GLONASS (Dual-channel)

PTP

- 0 N/A
- 1 PTPv2

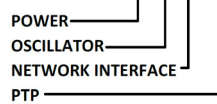
FIO

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

FREQUENCY MEASUREMENT

- 00 N/A
- 01 Frequency Measurement

PTS-30E-C-DDXDXXXXXXXXXXXXXXXX-XX



POWER

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

OSCILLATOR

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

NETWORK INTERFACE

- 1 2 × 10/100Base-TX
- 2 4 × 10/100Base-TX (only 2 ports can support PTP)
- 6 2 × 1000Base-X SFP slot, 10/100/1000Base-T(X)

Combo ports

- 7 2 × 1000Base-X SFP slot, 10/100/1000Base-T(X)
Combo ports, 2 × 10/100Base-TX RJ45 ports

PTP

- 0 N/A
- 1 PTPv2

TIME OUTPUT MODULE (max 8pcs for 8 slots)

PTS-30M-OUT-PPS-TTL-TB	Output module with terminal connector for 8 outputs of TTL PPS
PTS-30M-OUT-IRIG-TTL-TB	Output module with terminal connector for 8 outputs of TTL IRIG-B (DC)
PTS-30M-OUT-PPS-TTL-BNC	Output module with 5 BNC ports for TTL PPS
PTS-30M-OUT-IRIG-TTL-BNC	Output module with 5 BNC ports for TTL IRIG-B (DC)
PTS-30M-OUT-PPS-850-FO	Output module with 6 ST 850nm fiber ports for PPS
PTS-30M-OUT-IRIG-850-FO	Output module with 6 ST 850nm fiber ports for IRIG-B (DC)
PTS-30M-OUT-PPS-1310-FO	Output module with 6 ST 1310nm fiber ports for PPS
PTS-30M-OUT-IRIG-1310-FO	Output module with 6 ST 1310nm fiber ports for IRIG-B (DC)
PTS-30M-OUT-IRIG-AC-TB	Output module with terminal connector for 6 outputs of IRIG-B (AC)
PTS-30M-OUT-PPS-485-TB	Output module with terminal connector for 8 outputs of RS485 PPS
PTS-30M-OUT-IRIG-485-TB	Output module with terminal connector for 8 outputs of RS485 IRIG-B (DC)
PTS-30M-OUT-TOD-485-TB	Output module with terminal connector for 8 outputs of RS485 TOD
PTS-30M-OUT-PPS-232-TB	Output module with terminal connector for 6 outputs of RS232 PPS
PTS-30M-OUT-TOD-232-TB	Output module with terminal connector for 6 outputs of RS232 TOD
PTS-30M-OUT-CONTACT-TB	Output module with terminal connector for 8 outputs of PPS/PPM contact

TIME OUTPUT MODULE (max 15pcs for 15 slots)

PTS-30E-OUT-PPS-TTL-TB	Output module with terminal connector for 8 outputs of TTL PPS
PTS-30E-OUT-IRIG-TTL-TB	Output module with terminal connector for 8 outputs of TTL IRIG-B (DC)
PTS-30E-OUT-PPS-TTL-BNC	Output module with 5 BNC ports for TTL PPS
PTS-30E-OUT-IRIG-TTL-BNC	Output module with 5 BNC ports for TTL IRIG-B (DC)
PTS-30E-OUT-PPS-850-FO	Output module with 6 ST 850nm fiber ports for PPS
PTS-30E-OUT-IRIG-850-FO	Output module with 6 ST 850nm fiber ports for IRIG-B (DC)
PTS-30E-OUT-PPS-1310-FO	Output module with 6 ST 1310nm fiber ports for PPS
PTS-30E-OUT-IRIG-1310-FO	Output module with 6 ST 1310nm fiber ports for IRIG-B (DC)
PTS-30E-OUT-IRIG-AC-TB	Output module with terminal connector for 6 outputs of IRIG-B (AC)
PTS-30E-OUT-PPS-485-TB	Output module with terminal connector for 8 outputs of RS485 PPS
PTS-30E-OUT-IRIG-485-TB	Output module with terminal connector for 8 outputs of RS485 IRIG-B (DC)
PTS-30E-OUT-TOD-485-TB	Output module with terminal connector for 8 outputs of RS485 TOD
PTS-30E-OUT-PPS-232-TB	Output module with terminal connector for 6 outputs of RS232 PPS
PTS-30E-OUT-TOD-232-TB	Output module with terminal connector for 6 outputs of RS232 TOD
PTS-30E-OUT-CONTACT-TB	Output module with terminal connector for 8 outputs of PPS/PPM contact

SOFTWARE (Optional)

PTS-30M-S01	SNMP
PTS-30M-S02	IEC60870-104 + DNP TCP
PTS-30M-S03	IEC60870-104 + IEC61850 MMS
PTS-30M-S04	TMS GOOSE Trigger + IEC61850 MMS
PTS-30M-S10	WEB
PTS-30M-S11	WEB + SNMP
PTS-30M-S12	WEB + IEC60870-104 + DNP TCP
PTS-30M-S13	WEB + IEC60870-104 + IEC61850 MMS
PTS-30M-S14	WEB + TMS GOOSE Trigger + IEC61850 MMS
PTS-30E-S01	SNMP
PTS-30E-S02	IEC60870-104 + DNP TCP
PTS-30E-S03	IEC60870-104 + IEC61850 MMS
PTS-30E-S04	TMS GOOSE Trigger + IEC61850 MMS
PTS-30E-S10	WEB
PTS-30E-S11	WEB + SNMP
PTS-30E-S12	WEB + IEC60870-104 + DNP TCP
PTS-30E-S13	WEB + IEC60870-104 + IEC61850 MMS
PTS-30E-S14	WEB + TMS GOOSE Trigger + IEC61850 MMS

ANTENNA

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)