

# PTP8 - ENHANCED PTP SLAVE NETWORK TIME CLIENT



## PTP IEEE 1588v2 Enhanced Slave Network Time Client Unit



**PTP PORT CONFIGURATION**  
PTP domain: 0      master's time: No Requirement  
addressing mode: Mixed      transmission protocol: UDP  
Delay Mechanism: Delay Request

**PTP TIME CONFIGURATION**  
Enable Smoother: YES

**PTP HOLDOVER CONFIGURATION**  
Averaging Period: 7200 s      Duration: 7200 s  
Forced Time Holdover: NO      Forced Freq Holdover: NO

**UNICAST MESSAGE CONFIGURATION**  
Announce    Sync    Delay    Path Delay  
Message Period: 2s    16/s    4/s    1s  
Max Message Period: 2s    16/s    4/s  
grant duration: 300    300    300

STATUS PAGES: CLOCK PTP NETWORK ALARMS UNIT      CONFIG PAGES: CLOCK PTP NETWORK ALARMS OUTPUTS

**CLOCK STATUS**  
UTC Time: 20:47:52.217      Output Timebase: UTC  
05-Aug-2011  
Output Time: 20:47:52.217      TimeZone Offset: 0 hrs  
05-Aug-2011  
Last PTP Sync: 20:47:52.217      DST Applied: NO  
05-Aug-2011  
Leap Second Warning: NO  
If PTP does not carry TAI then the Clock will not receive a valid time, and so will free run. However, the PTP section can still generate a valid PPS.

**PTP OVERVIEW**  
Masters Visible: 1      PTP Lock Value: 1.000  
Master Address: 192.168.101.200      Est'd Phase Error: -2.0E-09s  
Algorithm State: Running      PTP Port State: Slave  
The PTP section first estimates phase and frequency. If there errors running state. The PTP Port state becomes SLAVE when a master is found. The Lock Value between 0-1 indicates how sure the PTP algorithm is of its output. It tends to 1 under steady state conditions. LOCK value is green when LOCKED and red when NOT LOCKED.  
The Status LED has the following function  
-off when PTP is not operational  
-red when operational but no master seen  
-amber when master seen but PTP port state not yet SLAVE  
-green when PTP port state SLAVE but no LOCK  
-green when LOCKED

STATUS PAGES: CLOCK PTP NETWORK ALARMS UNIT      CONFIG PAGES: CLOCK PTP NETWORK ALARMS OUTPUTS



AS9100D Certificate Number : C0210021-AS3



# PTP8 - ENHANCED PTP SLAVE NETWORK TIME CLIENT

## Product Overview



The PTP8 Enhanced Slave Network Time Client provides network operators and equipment manufacturers with a highly accurate packet-based timing and synchronisation solution.

The PTP8 receives, decode and converts the PTP IEEE1588v2 protocol supplied across a packet network in to industry standard E1/T1, 1PPS, 10MHz, IRIG B and Serial Time Of Day (TOD) signals and messages.

Commonly deployed as a local network time client alongside the Stratum 1 PTP80 Grandmaster, the unit provides a rapid and seamless upgrade of existing network infrastructure to packet based timing and synchronisation enabling operators to lower upgrade costs when migrating from a TDM to Ethernet backhaul architecture.

Built to AS9100D aerospace quality standards, these units are commonly specified for use in critical network timing applications that depend upon a reliable, quality time standard. The robust design and build quality delivers exceptional performance and product field longevity.

The unit provides two standard RJ45 connections to a 100BASE-T network one for configuration, firmware uploads and providing NTP (Network Time Protocol) and the other for PTP connection to the master or Grandmaster PTP clock. The units are available as desk mount or provided in a 1U 19" rack mount chassis with single or dual power supply options.

A 9 way D type socket is available for RS232 connection for configuration, status and firmware upload purposes (115.2kbaud, no parity, 8 bit characters and 1 stop bit). 1PPS and 10MHz outputs are provided via two BNC 50 Ohm sockets. E1 or T1 output via 75 Ohm BNC socket and 120 Ohm at RJ45 connector.



## Typical Applications

The PTP8 is commonly specified where precision, reliability and security are key considerations in the network application. These high integrity units are common place and thoroughly proven worldwide in PTP network timing applications where traceable, precision time stamping and time distribution is required.

- Telecommunications : LTE & Ethernet/IP Backhaul
- WiMAX
- DAB/DVB broadcast transmitter synchronisation
- Research Institutions, Test and measurement facilities
- HFT High Frequency Trading : Financial transaction time stamping
- Power Utilities - Time of day information

## Key Feature Summary

- 19" 1U Rack mount versions available with single or dual redundant power supplies
- High stability OCXO safeguarding GPS loss/ holdover periods
- IEEE 1588v2 Compliant : 2 x Ethernet 10/100 BaseT ports (RJ45)
- Time of Day Serial Message via 9 way D-type connector @ RS232 & RS422 levels
- Multiple output signals and formats that include 1PPS, 10MHz, E1/T1, IRIG-B and NTP
- 1PPS output On Time Sync Signal
- Comprehensive web browser for remote configuration and control
- PTPv2 (IEEE 1588), NTP (RFC 1305), SNMP (RFC 1769), SNMP v1, SNMP v3 (RFC 2271) (RFC 1157), Telnet (RFC 854), FTP (RFC 959), ANSI T1.101, GR-1244, HTTP (RFC 2616), Ipv4, ITU G.812, G.813, G.823, G.824, G.703, G.704, TL1 (GR-831-CORE), TFTP (RFC 1350) IEEE 802.3

RIGHT : PTP80 Grandmaster Stratum 1 PTP Network Server



# PTP8 - ENHANCED PTP SLAVE NETWORK TIME CLIENT

SPECIFICATIONS	
FEATURE	SPECIFICATIONS
<b>Oscillator</b>	
Internal Oscillator	Oven Controlled Crystal Oscillator : OCXO
Holdover Accuracy - Standard OCXO	Holdover Frequency 1x10 <sup>-9</sup> per °C : Time Holdover 60us for first day at 25°C
Oscillator Options	Please consult factory with requirement, options include ITU-T G.812 / 813
<b>IEEE 1588v2 (PTP) - Synchronisation</b>	
PTP Slave	PTP: IEEE 1588v2 - Connector: RJ45 10/100Base-T
<b>Outputs</b>	
1PPS	2.5Vpp +/- 0.1V into 50 Ohm load - BNC
10 MHz sinusoidal phase aligned +/- 100ns to 1PPS	1.0Vrms into 50 Ohm load - BNC
E1/T1 Frequency Output - E1 Standard T1 as option	2.048 Mbps - Line encoding : HDB3 : 75 Ohm Unbalanced BNC RJ45 - 120 Ohm Option
Time of Day Serial Message	NMEA GPRMC message format RS232 9600 baud, 1 stop bit and no parity
NTP (Network Time Protocol) - Up to 1ms accuracy	NTP v3 RFC 1305 : RJ45 10/100BaseT (via DCN port)
<b>Management</b>	
Configurable via remote management suite.	Local management: RS-232, RJ-45 port Remote management:HTML, RJ-45 port (Web Browser) SNMPv1 (RFC 1157) SNMPv3 (RFC 2271), TL1 (GR-831-CORE) Network Management System : Time & Frequency NMS OSS Integration
Status	LED: 3 status LEDs on front panel
Security	Protection from unauthorized access available via System Administrator Password Protection
Protocols	ANSI T1.101, GR-1244, HTTP (RFC 2616), Ipv4, ITU G.812, G.813, G.823, G.824, G.703,G.704, PTPv2 (IEEE 1588), SNMP v1 (RFC 1157), SNMP v3 (RFC 2271), TL1 (GR-831-CORE), Telnet (RFC 854), TFTP (RFC 1350) FTP (RFC 959),IEEE 802.3
<b>POWER SUPPLY</b>	
Input voltage range	15V DC - AC Mains Adapter 500mA
<b>MECHANICAL</b>	
Size	19-inch rack mounting 1U high 200mm deep ETSI Rack fixings or desktop mount
Weight	3 kg
<b>Environment (Operation &amp; Storage)</b>	
Temperature:	0°C to +50°C (Please consult factory if outside this range) - Storage -5°C- +60°C
Humidity	up to 95% RH (non-condensing)
Approvals - CE Compliant	EN 61000 - Generic Standards for Emissions, Susceptibility & Safety



**For complete PTP Network deployment solutions, the PTP80 Grandmaster Stratum 1 PTP Network Server is recommended as a Grandmaster or Transparent PTP master clock with PTP8 network clients.**

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