TIME & FREQUENCY
SOLUTIONS
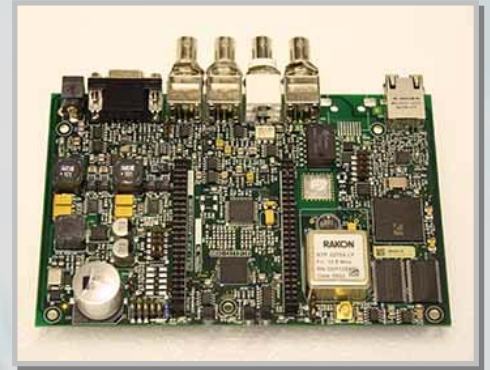UNRIVALLED EXPERTISE & TECHNOLOGIES FOR A DEMANDING WORLD

# PTP8 Network Time Client - Board Solutions

**Time & Frequency Solutions offer two distinct versions of board-level time and synchronisation via the PTP IEEE1588v2 protocol.**

### Features *(applicable to both board solutions)*

- **Provides Equipment with a fast track embedded PTP Client solution with either OEM or PCI options**
- **Client system time accuracy of up to 100 nanoseconds possible using Gigabit network switches.**
- **Frequency accuracy better than 10ppb possible using Gigabit switches**
- **Precision timing circuits ensure stability in event of synchronisation signal interruption**



### PCI Card

- **Standard PCI card**

- **Delivers highly accurate time and synchronisation via the PTP IEEE1588 v2 protocol**

- **Provides PTP Client functionality**

- **Slots into computer or can also operate as a standalone under external power**

### OEM Board

- **Provides equipment manufacturers with a custom-built packet-based timing and synchronisation solution at PCB level.**

- **Fast track implementation equipment manufacturers to deploy packet-based timing with an immediate cost saving and a quick return on investment.**

- **Custom PCB solution designed to your requirement for adding PTP Client functionality to your equipment**

- **Time of day (TOD) is available for support of legacy equipment using IRIG B, RS232, RS422 and RS485**

Both these PTP board solutions utilise the technology of our proven PTP8 Network Time Client to provide equipment manufacturers with a custom-built PTP offering designed to an agreed specification for integration into your own product.

Providing PTP Client functionality to operators enables lower operating costs migrating from a TDM to Ethernet backhaul and can be equipped with E1/T1, 1PPS and 10MHz outputs for synchronising remote network equipment such as UMTS, LTE, WiMAX and PON devices.
Typical Applications may include:

- LTE & Mobile Network Backhaul
- WiMAX
- Industrial Automation
- Passive Optical Networks (PON)

- Circuit Emulation Services (CES)
- Applications requiring Precise Timing delivered over a Packet Network

### Benefits:

- Seamless Upgrade to PTP IEEE1588v2
- Complete End to End PTP Solution with PTP80 Grandmaster Clock
- Interoperability with 3rd Party Grandmaster Clocks
- Accelerates PTP Client Deployments
- Time Outputs (1PPS, TOD)
- Unicast / Multicast Operation

**PCI Card:**



**Stand-alone box unit:**

# PTP8 BOARD SOLUTIONS SPECIFICATIONS

| | PCI Card | OEM Board |
|---|---|---|
| **INPUTS** | IEEE 1588v2 2008 | IEEE 1588v2 2008 |
| | | 10/100Base-T Ethernet |
| **OUTPUTS** | PCI | E1/T1 ITU G.703 synchronisation clock signal AMI and HDB3 encoding. |
| | | 10MHz sinusoidal Phase aligned +/- 100ns of 1PPS output. 1 Vrms into a 50Ω load. |
| | | 1PPS: - 2.5Vpp +/- 0.1Vpp into a 50Ω load phase aligned to master +/-100ns dependant on architecture of LAN i.e. router, hubs, switches used and quality of oscillator specified. |
| | | DC-Level Shifted Irig B: DC Timecode/Time Pulse output 2.5Vpp +/- 0.1Vpp into a 50Ω load. |
| | | Serial message RS232: - NMEA GPRMC message format. 9600 baud, 1stop bit and no parity. |
| | | Synchronous Ethernet Frequency outputs also available. |
| | | **Further outputs available by consultation.** |
| **CUSTOMER INTERFACE** | By consultation to interface with customer equipment | By consultation to interface with customer equipment |
| **POWER** | Standard (5V or 3.3V) PCI Slot | DC supply voltage –48V +/- 12V. |
| | | Possible on–board supply design if required. |
| **PHYSICAL** | Standard PCI Slot | PCB Designed to Customer physical requirements. |
| **ENVIRONMENT (Operation & Storage)** | Temperature 0°C to + 40°C (Wider range by consultation) | Temperature 0°C to +40°C (Wider range by consultation) |
| | Humidity: up to 95% RH (non-condensing) | Humidity: up to 95% RH (non-condensing) |
| **PTP OVER PACKET SUPPORT** | PTP packets IEEE 1588v2-2008 | PTP packets IEEE 1588v2-2008 |
| | Unicast / Multicast | Unicast / Multicast |
| | ITU-T G.8261 compliant | ITU-T G.8261 compliant |
| **MANAGEMENT, ALARMS & DIAGNOSTICS** | Windows / Linux Driver, GUI and a set of API Calls | SNMP and TL1 |
| | | Web Browser (HTTP) |

As we are always seeking to improve our products, the information in this document only provides general indications of product capability, suitability and performance, none of which shall form any part of any contract.

**Rev 1.1**

TIME & FREQUENCY
**SOLUTIONS**
UNRIVALLED EXPERTISE & TECHNOLOGIES FOR A DEMANDING WORLD