IPITEK
INTEGRATED PHOTONICS TECHNOLOGY
ISO 9001 Registered

PRECISION TIMING & SYNCHRONIZATION
MSP-1588

FEATURES & BENEFITS

- **Precise Timing and Synchronization over Packet Networks**
- **Precision Timing Protocol (PTP) using IEEE 1588v2**
- **Multi-Function Solution: Master, Slave, or Repeater Clock**
- **Various Timing Signals: 10MHz, 1 PPS, TOD (Time of Day) and GPS**
- **Applications: Wireless Mobile Backhaul, TDM Circuit Emulation, Network Timing**
- **Stratum 3E Holdover Clock**
- **ITU-T G.8261 Network Conformance**
- **Highly Integrated 1/3 RU Design**
- **Lowest Power Consumption (10 Watts)**
- **Outstanding Scalability and Robustness**
- **Remotely Managed**
- **Fan-less Operation**

Description

Timing and synchronization is a crucial aspect in the operation of various applications such as wireless mobile networks, circuit emulation, and legacy business services. IPITEK's MSP-1588 provides the most cost-effective, most precise, flexible, and application-specific synchronization solution for any network.

IPITEK's MSP-1588 is a performance-centered solution. Therefore, its major functions (such as PTP time stamping) are implemented in hardware to ensure the maximum possible clock accuracy. Because IPITEK's MSP-1588 supports all these features and capabilities, it achieves nanosecond-level accuracy under harsh and unpredictable network conditions (ITU G.8261 defined traffic cases as one example). At such performance, and given the dynamic network conditions it has been tested under, the MSP-1588 far exceeds the performance requirements of the most stringent applications.

Applications

IPITEK's MSP-1588 is the industry-leading solution for packet-based based timing protocol (PTP) using IEEE1588v2. With its 1/3 RU footprint, the MSP-1588 is the industry's most integrated and cost-effective PTP solution available.

IPITEK's MSP-1588 enables migration from legacy networks to IP/Ethernet transport networks. For example, existing 2/3G and emerging 4G wireless mobile networks, including Frequency Division Duplexing (FDD) (GSM, WCDMA, UMTS, etc) and Time Division Duplexing (TDD) (WiMAX, LTE, etc) are systems that demand microsecond-level clock synchronization (usually supplied by the legacy SONET/SDH network). These systems can now rely on the MSP-1588 to supply a telecom-grade timing source to ensure non-stop error-free operation after moving from legacy SONET/SDH equipment.

The MSP-1588 carries IEEE 1588v2 timing packets as standard Ethernet packets and is fully interoperable with 3rd party equipment. The MSP-1588 can be used as a stand-alone platform to provide timing over any packet network.
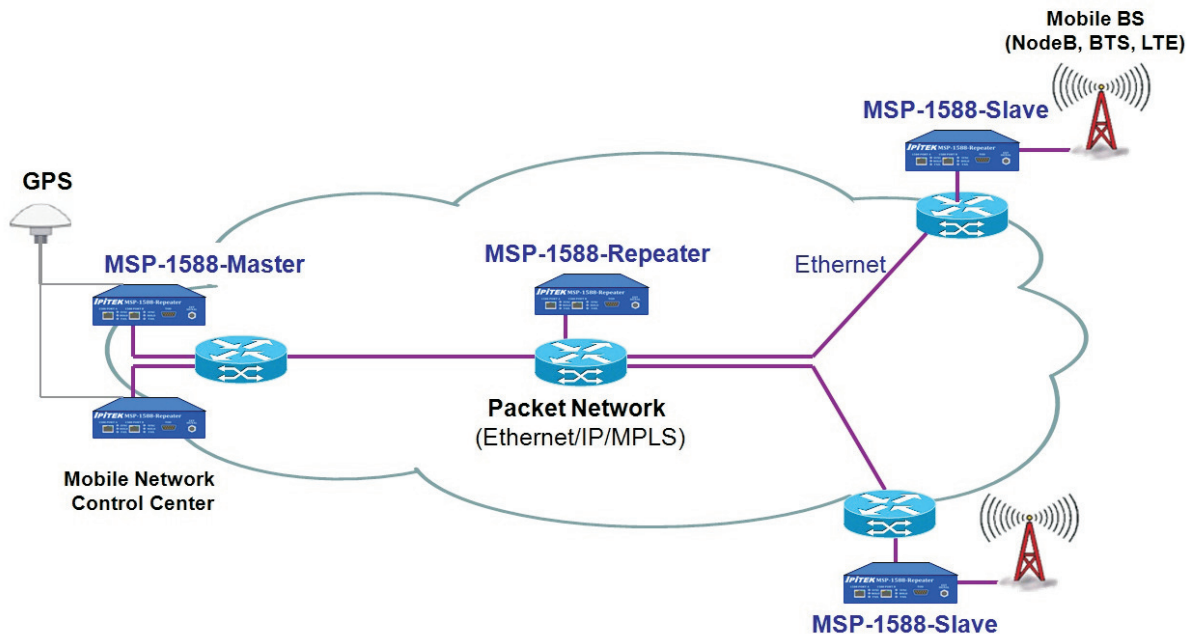
Example Application: MSP-1588-based timing overlay for use by a wireless backhaul network. MSP-1588 operation-mode flexibility (Master, Repeater, Slave) allows for cost-effective and extremely accurate timing.

SPECIFICATIONS

Interfaces

Front Panel
100BASE-T Synchronization Ports
RS232 Serial Port for ToD (Time of Day)
BNC Output for 1 PPS, 10MHz, 1.544MHz, 2.048MHz

Back Panel
SMA Input GPS Connector
BNC Input for 10MHz or 1 PPS
Dual BITS Input
RS232 Serial Port for Management
10/100BASE-T for Management

Timing Accuracy Information
Meets Standards ITU G.811, G.812, G.823, G.8261, G.703, G.704
<100 nsecs Accuracy When Traced to GPS Clock
Stratum 3E OCXO Holdover Clock

Power

Input Volage (DC):	-42 to -56 VDC (GR-513)
Power Consumption:	10 Watts Max

Environmental

Operating Temperature:	0° to 50°C
Storage Temperature:	-10° to +75°C
Relative Humidity:	10 to 90%

Physical

Chassis Dimensions:	5.7" x 10" x 1.75" (3 in 1RU)
	(14.48cm x 25.4cm x 4.44cm)
Chassis Weight:	3 lbs (1.4kg)
Rack Mount Requirements:	19 EIA Cabinet or Open-Frame Rack

Provisioning

CRAFT:	DB9 RS232 Async
Network MGMT:	10/100BaseT (OOB rear port)
Protocol:	Telnet, SSH, HTTP/S, SNMP-v2c
Software Download:	Dual Flash Bank, FTP, TFTP
Upload/Download Config:	FTP, TFTP

Security
Tiered Access Privileges
RADIUS
HTTPS
Secure Shell v2 (SSHv2)
Access Control Lists (ACL)
Custom SNMP String and Access Privileges
Telnet, HTTP, and HTTPS Can Be Disabled
Automatic Logout from the Management Interface

Monitoring
User Configurable Event Notification
Local Logs of all Command Entries and Events
Syslog
SNMPv2

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