VCL-2112
IEEE-1588v2 PTP Slave

ORION TELECOM NETWORKS

Introduction:

VCL-2112, PTP Slave Clock is a high precision, high reliability time and frequency synchronization solution which can be used to synchronize with an IEEE-1588v2 PTP Grandmaster to provide reference frequency and time-of-day synchronization across all nodes of a PTP network. Multiple 1PPS / IRIG-B Outputs are also provided to synchronize local clock (time-of-day) display units as well as RTUs to a central timing source with nanosecond accuracy.

The VCL-2112, PTP Slave Clock is specifically designed for providing synchronization in 2G, 3G, HetNet and LTE mobile telecommunications networks as well as in backhaul wire-line TDM Networks. It may be also used by Railways, Airports (including air-traffic control), Power generation and distribution companies and other Utility companies who need to distribute highly precise time-of-day and frequencies locked to a PTP Grandmaster (GPS) Reference across multiple nodes of their networks.

The VCL-2112, PTP Slave Clock is equipped with a highly accurate, low-noise OCXO which provides a high stability holdover that is typical of a Network SSU in the event of a failure of the transmission link.

VCL-2112, PTP Slave Clock

Description: VCL-2112, PTP (IEEE-1588v2) Slave Clock - synchronizes to PTP Grandmaster to provide 1PPS, NMEA, 1/5/10MHz, 2.048MHz, 1.544Mbits / 2.048Mbits Frequency Outputs with high stability OCXO holdover.

Features and Highlights:

- Reliable, Cost-Efficient Reference
- BCMA (Best Master Clock Algorithm) - allows the unit to be installed in a redundant PTP Grandmaster network
- OCXO Holdover
- 1/5/10 MHz output
- 1 PPS / IRIG-B outputs
- Nanosecond accuracy
- Standard RJ45 and BNC connectors for all inputs and outputs
- ToD compliant to NMEA 0183 (DB9 Serial Port).

Additional Features:

- Password Protection
- Redundant AC and DC power supply options
- 10/100BaseT Network Interface Ethernet Ports
- 1 x OAM
- 1 x PTP
- VLAN and Packet priority
- Supports QoS, 802.1p based packet priority.
- Supports 802.1Q based VLANs.
- Power Contact and Lightening Protection as per Telcordia GR-1089-CORE.

Typical Synchronization Applications

- Synchronizing mobile communication networks such as UMTS, GPRS, HetNet, 2G and 3G networks
- Wireless and Wireline Telecom synchronization
- Distributing Time (ToD) and Frequency reference for power utilities across all nodes of the network
- Synchronization of Defense Networks
- Synchronizing airports and aviation communications
- Synchronizing railway signaling networks and railway communications
- Synchronizing traffic management
- Broadcasting Network and Broadcast equipment synchronization.

Standard Frequency and ToD* Outputs:

Output Type	Connector
1.544 Mbits (T1) / 2.048 Mbits (E1) compliant with ITU-T G.703	RJ45
2.048 MHz, 75 Ohms, phase-locked to PTP Grandmaster (GPS) Reference	BNC
1/5/10 MHz, 50 Ohms, phase-locked to PTP Grandmaster (GPS) Reference	BNC
IRIG-B, synchronized to PTP Grandmaster (GPS) reference**	BNC
TOD* (Time-Of-Day) output compliant to NMEA0183	DB9, RS-232C
1 PPS	BNC

**ToD Time Of Day*

***Note: User selectable between IRIG-B and 1PPS Outputs*

Management and Monitoring Ports:

- RS-232C
- USB
- 10/100BaseT Ethernet
- 1 x External Alarm Relay Contact.

System Access, Control and Management Options:

- Telnet
- CLI Control Interface (HyperTerminal or VT100)
- SNMP V2 Traps (MIB File provided).

Security and Protection:

- Password Protection
- Separate VLAN on monitoring and access.

Configuration and Monitoring Software:

- Telnet, CLI
- GUI (Graphical User Interface) - Runs on any PC operating on Windows XP, Windows 7 or Windows 8 OS.

Environmental:

Operational	-40°C to +60°C (Typical: +25°C)
Cold Start	-20°C to +60°C
Storage	-40°C to +75°C
Humidity	95% non-condensing
Cooling	Convention Cooled No cooling fans are required.

Mechanical Specifications:

Rack mounting	Standard 19-Inch. DIN Rack
Height	44.00 mm. (1RU)
Depth	280.00 mm.
Width	480.00 mm.
Weight	3.20 kg.

Ordering Information

VCL-2112	VCL-2112, PTP (IEEE-1588v2) Slave Clock 19-inch Rack Mount, 1U High - Synchronizes to PTP Grandmaster to provide 1PPS, NMEA, 1/5/10MHz, 2.048MHz, 1.544Mbits / 2.048Mbits Frequency Outputs with high stability OCXO Holdover - Management: SNMP, Telnet (RJ45 (F) Port), Serial Port (USB, DB-9 COM), EMS, Graphical User Interface (GUI) - Installation Kit: System Core Cables, Mounting Hardware, Documentation, User Manual

Add Power Supply Option

AC220	1 x 100-240V, 50/60 Hz, AC Power Supply Input
DC048	1 x (-) 48V DC Power Supply Input
AC220R	2 x 100-240V, 50/60 Hz, AC Power Supply Input [Redundant]
DC048R	2 x (-) 48V DC Power Supply Input [Redundant]

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Headquarters: Phoenix, Arizona

Orion Telecom Networks Inc.
20100, N 51st Ave,
Suite B240, Glendale AZ 85308
Phone: +1 480-816-8672,
Fax: +1 480-816-0115
E-mail: sales@oriontelecom.com

Regional Office: Miami, Florida

Orion Telecom Networks Inc.
4000 Ponce de Leon Blvd.
Suite 470, Coral Gables, FL 33146
Phone: + 1-305-777-0419,
Fax: + 1 786-536-4181
E-mail: sales@oriontelecom.com