VALIANT COMMUNICATIONS

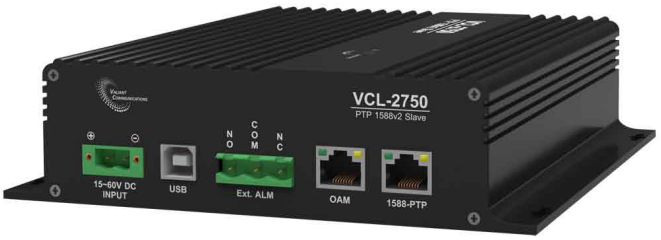
VCL-2750

IEEE-1588v2 PTP Slave

PTP to IRIG-B Converter

Introduction:

VCL-2750, PTP Slave Clock (DIN Rail Version) / PTP to IRIG-B Converter is a high precision, high reliability time and frequency synchronization solution which can be synchronized from a IEEE-1588v2 PTP Grandmaster to provide frequency and time-of-day synchronization across a PTP network with nanosecond accuracy. Multiple 1PPS / IRIG-B Outputs are provided to synchronize local clock (time-of-day) to IEDs, as well as RTUs to a central timing source.



The VCL-2750, PTP Slave Clock / PTP to IRIG-B Converter is specifically designed for providing synchronization in 2G/3G/4G, 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.

Features and Highlights:

- PTP to IRIG-B Converter
- Reliable, Cost-Efficient Reference
- BMCA (Best Master Clock Algorithm) - allows the unit to be installed in a redundant PTP Grandmaster network
- 1 PPS / IRIG-B outputs (user configurable)
- < 1000ns accuracy
- Standard RJ45 and BNC connectors for all inputs and outputs
- ToD compliant to NMEA 0183 outputs (RJ45 Port).
- 1 x PTP Input (10/100BaseT Ethernet Slave Port)

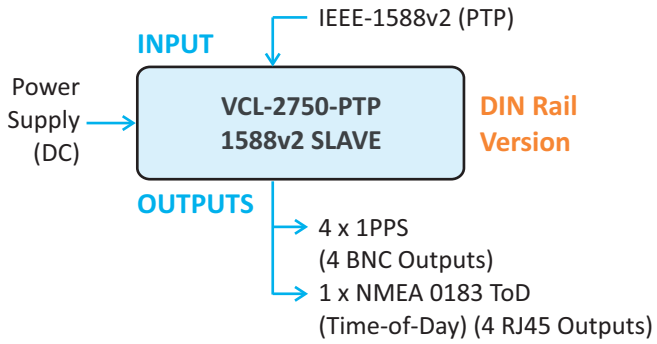
Management and Monitoring Ports:

- USB
- 1 x OAM (10/100BaseT Ethernet Port)
- 1 x External Alarm Relay Contact.

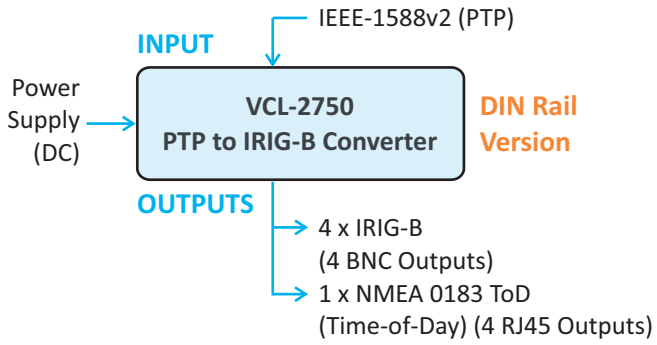
Additional Features:

- Password Protection
- 48V DC and 24V DC power supply options
- Power Contact and Lightening Protection as per Telcordia GR-1089-CORE.

Application # 1: PTP 1588v2 Slave to 1PPS application



Application # 2: PTP 1588v2 Slave to IRIG-B Converter



Typical Synchronization Applications:

- Synchronizing mobile communication networks such as UMTS, GPRS, HetNet, 2G, 3G, and 4G 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.

Time Inputs:

Input Type	Connector
IEEE-1588v2 (PTP)	RJ45

Standard Frequency and ToD Outputs:

Output Type	Connector
4x1PPS or 4xIRIG-B Synchronized to PTP Grandmaster*	BNC
1 x TOD (Time-Of-Day) output compliant to NMEA0183	RJ45

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

IRIG-B Format

IRIG-B	Format
Un-Modulated	B004

Power Supply Options:

Input DC Voltage	24V DC; 48V DC 110V DC or 220V DC (With external adaptor)
Full Load Current	< 0.5 A at 24V DC
Input Voltage Reversal Protection	Provided in the Card
Efficiency at Full Load	>96%

System Access, Control and Management Options:

- Telnet
- CLI Control Interface (HyperTerminal or VT100)
- SNMP V2 Traps (MIB File provided).
- Windows compatible GUI (Graphical User Interface)

EMI, EMC, Surge Withstand and other Compliances:

EN50081-2	EN50082-2	IEC 60068-2-29
IEC 61000-4-6 (Conducted Immunity)	IEC 60068-2-2	IEC 60068-2-78
IEC 60068-2-1	IEC 60068-2-14	IEC 60870-2-1
CISPR32 / EN55032 Class A (Conducted Emission and Radiated Emission)		
IS 9000 (Part II Sec. 1-4, Part III Sec. 1-5, Part IV, Part 14 Sec. 1-3)		
IEC 61000-4-5	IEC 61000-4-8	IEC 61000-4-2
IEC 61000-4-3 (Radiated Immunity)		IEC 61000-4-4

Electromagnetic Standards Compliance:

- EN50081-2, EN50082-2
- IEC 61000-6-2 (Immunity)
- IEC 610000-6-4 (Emission)
- Complies to IEEE and IEC standards

CE Compliance:

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility 2014/30/EU

Other Regulatory Compliances:

- RoHS,
- CE Marking
- Complies with FCC Part 68 and EMC FCC Part 15

Environmental:

Operational	20°C to +60°C (Typical: +25°C)
Cold Start	-10°C to +60°C
Storage	-40°C to +75°C
Humidity	95% non-condensing
Cooling	Convention Cooled, No cooling fans are required.

Mechanical Specifications:

- H x W x D: 73 mm x 190 mm x 190 mm
- Weight: 1.5 kg.
- DIN Rail Version

Ordering Information

Part#	Description
VCL-2750	VCL-2750, PTP (IEEE-1588v2) Slave Clock / PTP to IRIG-B Converter DIN Rail Mount, - Synchronizes to PTP Grandmaster to provide 1PPS/IRIG-B, NMEA Outputs - Management: SNMP, Telnet (RJ45 (F) Port), Serial Port (USB), EMS, Graphical User Interface (GUI) - Installation Kit: System Core Cables, Mounting Hardware, Documentation, User Manual - Add *power supply options

*Power Supply Options

Part #	Description
DC024	1 x 24V (9~32) DC Power Supply Input
DC048	1 x 48V (18~60) DC Power Supply Input
DC110	1 x 110V (80~150) DC Power Supply Input (with external adaptor)
DC220	1 x 220V (180~290) DC Power Supply Input (with external adaptor)
AC120	1 x 120V (90~260) AC Power Supply Input (with external adaptor)

© Copyright: Valiant Communications
Technical specifications are subject to changes without notice.
Revision – 2.4, June 20, 2026

U.K.

Valiant Communications (UK) Ltd
Central House Rear Office
124 High Street, Hampton Hill,
Middlesex, TW12 1NS, U.K.

E-mail: gb@valiantcom.com

U.S.A.

Valcomm Technologies Inc.
4000 Ponce de Leon Blvd,
Suite 470, Coral Gables,
FL 33146, U.S.A.

E-mail: us@valiantcom.com

INDIA

Valiant Communications Limited
71/1, Shivaji Marg,
New Delhi - 110015,
India

E-mail: mail@valiantcom.com