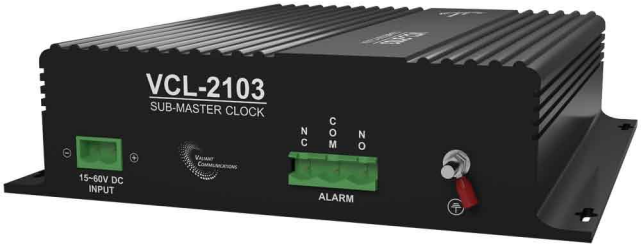
VALIANT COMMUNICATIONS

VCL-2103

High Performance NTP Sub-Master Clock

Product Overview:

The VCL-2103 NTP Time Sub-Master Clock is a compact, high-performance sub-master time server which may be locked multiple GPS / GNSS NTP Servers and provide a very resilient, pseudo-galvanically isolated (GPS / GNSS based) NTP time reference to provide time synchronization and protect ultra-sensitive zones of a private networks of Electric Sub-Stations, Power Distribution and Transmission companies, Railways / Metro assets, Oil and Gas Utilities.



The VCL-2103 functions as an intermediate, time synchronization source which pseudo-galvanically isolates the GPS / GNSS Master Time Servers and the various devices in the LAN to provide a high level of security and time-source redundancy by directly synchronizing to multiple (up to 3) Primary GPS Reference (Master) Clocks and provide highly reliable time-of-day synchronization to secondary NTP / SNTP Slave devices such as Servers, RTUs and Display Clocks in the LAN network. The VCL-2103 Sub-Master Clock mediates between several Primary GPS Reference (Master) Clocks, based on their Stratum levels, to automatically select the most stable time source with least latency and provide the Slave NTP / SNTP devices, such as Servers, RTUs or Time-Of-Day Display Clocks in a LAN, to reliably provide NTP / SNTP time-of-day synchronization with millisecond accuracy.

Features, Highlights and Options:

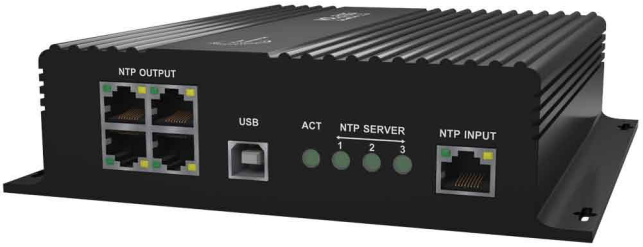
- IPv4 / IPv6 compliant NTP Sub-Master Clock
- Ethernet 10/100BaseT, NTP / SNTP, Year, Date and Time Synchronization
- High-Performance NTP Server running at 533MHz clock speed
- Unmatched security. Password Protection. Resistant to DoS (Denial of Service) attack and unauthorized access
- Capable of serving up to 3000, Servers, Slave Display Clocks, RTUs or any other standard NTP/SNTP Clients
- Remote Management over TCP-IP Network
- 1 x 10/100/1000BaseT Ethernet (NTP Time Input) NTP Receiver / Client Port
- 4 x 10/100BaseT Ethernet (NTP Time Output) NTP / SNTP Host / Server Ports

Input:

- 1 x 10/100/1000BaseT Ethernet NTP Input Port with automatic synchronization with multiple (redundant) NTP Server(s) based upon the Stratum level(s) of the source(s).

Output:

- 4 x 10/100BaseT Ethernet NTP / SNTP Output Ports for slave device(s) synchronization.



Environmental:

- Temperature:
  - Operating Range: -20C to +60C
  - Storage: -40C to +75C
- Humidity 0-95% (without condensation)
- Altitude: Up to 3000 meters
- Industrial Hardened Design. Non-corrosive chassis.
- Protection: IP 30

Certification:

- CE and FCC approval
- Conducted Immunity as per IEC 61000-4-6
- Radiated Immunity IEC 61000-4-3
- Meets and exceeds CISPR 32 / EN55032 Class A emission requirements
- Voltage and Surge Withstand: Meets and exceeds
- IEC 61000-4-2, IEC 61000-4-4, IEC 61000-4-5 specifications.
- Interruptions and Voltage variations meets and exceeds IEC 61000-4-11 specifications.

Local / Remote Management and Monitoring Ports:

- USB
- 10/100BaseT Ethernet Rj45
- 1 x External Alarm, Dry Contact Relay

Local / Remote System Access, Control and Management Options:

- Telnet, SSH
- Online Firmware upgrade
- CLI Control Interface (HyperTerminal or VT100)

Power Supply Options:

- 24V DC
- 48V DC
- 110V DC / 220VDC
- 90V AC-240V AC, 50/60 Hz

Power Consumption:

- < 10 Watts

MTBF:

Per MIL-HDBK-217F	≥ 37 years @24C
Per Telcordia SSR 332, Issue 1	≥ 42 years @ 24C

Mechanical Specifications:

Height	42 mm
Width	168 mm
Depth	175 mm
Weight	0.7 Kg
Mounting Options	DIN-Rail

Ordering Information:

Part No.	Description
VCL-2103-SMC -DIN	High Performance NTP Sub-Master Clock DIN Rail Mount Supports: – 1 x 10/100/1000BaseT Ethernet (NTP Time Input) NTP Receiver / Client Port – 4 x 10/100BaseT Ethernet (NTP Time Output) NTP / SNTP Host / Server Ports – Management: USB, 10/100BaseT Ethernet RJ45, Telnet, SSH – Installation Kit: System Core Cables, Mounting Hardware, Documentation, User Manual

Add Power Supply Option:

DC 024	1 x 24V DC Power Supply Input (Range 15VDC to 32VDC)
DC 048	1 x 48V DC Power Supply Input (Range 18VDC to 60VDC)
AC 110	1 x 110~240V AC, 50/60Hz External Power Supply Adapter
AC 240	1 x 110~250V AC, 50/60Hz External Power Supply Adapter
DC90~260	1 x 90~260V DC- External Power Supply Adapter

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U.K.

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