



Comparison Sheet for Primary Reference Clock (ITU-T G.811), PTP 1588v2 Grandmaster, NTP Time Server		
Feature	VCL-2145-LC Primary Reference Clock (ITU-T G.811)	VCL-2145-D Primary Reference Clock (ITU-T G.811), NTP Time Server & IEEE-1588v2 PTP Grandmaster
Synchronization Inputs:		
GPS	✓	✓
GNSS (GPS/GLONASS/Galileo) Optional	x	✓
1+1 GPS / GNSS Receivers	x	✓
<100ns Accuracy when locked with GNSS (GPS/GLONASS)	✓	✓
ITU-T G.811 Compliant Clock Outputs	✓	✓
Synchronized Outputs:		
NTP Ports	x	4+1
8 x 1.544/2.048 Mbits (G.811) E1/T1 Clock Outputs	✓	✓
SSM Message Support on 2.048Mbits (G.811) Clock Outputs	✓	✓
8 x 2.048 MHz (G.811) Outputs	✓	✓
1 x 1/5/10MHz (G.811) Outputs (Configurable Output)	✓	✓
1 x NMEA [0183] (DB9)	✓	✓
1 x 1PPS	✓	✓
IRIG-B (BNC) Unmodulated	✓	✓
IEEE-1588v2 PTP Grandmaster	✓	✓
IEEE-1588v2 PTP:		
Up to 128 Unicast messages per second (Telecom Profile)	x	✓
Up to 32 Multicast messages per second (Power Profile)	x	✓
ITU-T G.8265.1 (Layer 3 Unicast, IPv4)	x	✓
Telecom-2008 Profile (Layer 3 unicast, pre-standard ITU-T G.8265.1, IPv4)	x	✓
Power Profile: IEEE C37.238-2011	x	✓
Communication: Unicast, Multicast or Mixed	x	✓
Best Master Clock Algorithm (BMCA)	x	✓
NTP TIME SERVER:		
High bandwidth NTP performance	x	✓
Processes up to 5000 NTP requests per second	x	✓
NTP Ports - 10/100 Mbit/s, RJ-45 Ethernet interfaces	x	4+1
Multiple IP addresses for complete network segregation (NTP Version 4.2.7p26 or higher)	x	4+1
Support for up to 64 VLANs for segregated NTP networks to serve separate classes of assets Synchronization of NTP and SNTP clients	x	✓
Meets and complies with Power Contact and Lightning Protection as per Telcordia GR-1089-CORE and EN61000-4-5 Level 4 specifications.	✓	✓
Concurrent IPv6 and IPv4 operation	x	✓

Feature	VCL-2145-LC Primary Reference Clock (ITU-T G.811)	VCL-2145D Primary Reference Clock (ITU-T G.811), NTP Time Server & IEEE-1588v2 PTP Grandmaster
MD5/ SHA1 Authentication for NTP Clients	x	✓
Others Features:		
IEC 61850-3 compliant	✓	✓
Leap Second Support	✓	✓
Double Oven Quartz Oscillator (OCXO) for High Stability Hold-Over Clock	✓	✓
Rubidium Oscillator (RbXO) for Ultra-High Stability Hold-Over Clock (Optional)	✓	✓
Stratum 1 when synchronized to GPS/GNSS, or Stratum 2 in Hold-Over Mode	✓	✓
Local / Remote Management and Monitoring Ports:		
LCD Display	✓	✓
RS-232C	✓	✓
USB	✓	✓
10/100BaseT Ethernet RJ45	✓	✓
2 x External Alarm Relay Contacts	✓	✓
Telnet	✓	✓
SSH (with option to disable clear text communication to comply with NERC security requirements)	x	✓
CLI Control Interface (HyperTerminal or VT100)	✓	✓
SNMP V2 Monitoring Traps	✓	✓
SNMP V3 Monitoring Traps	x	✓
Management Software:		
Network Management System to monitor multiple clocks from central location.	✓	✓
GUI (Graphical User Interface) Runs on any PC operating on Windows 7, Windows 8 or Windows 10 OS.	✓	✓
Power Supply:		
AC and DC Power Supply Options:		
DC options: 12V DC, 24V DC, 48V DC, 110V DC ~ 220V DC	✓	✓
AC Options: 100V AC to 240V AC (50/60 Hz)	✓	✓
AC + DC	✓	✓
AC + AC	✓	✓
DC + DC	✓	✓
Dual Redundant	✓	✓
Environmental	-10C to 60C IP40	-10C to 60C IP40
Mechanical Specification:		
Width	484 mm	484 mm
Height	89.0 mm	89.0 mm
Depth	305.0 mm	305.0 mm
Weight	4.5 Kgs	4.5 Kgs

Technical specifications are subject to changes without notice.
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