

| <b>Comparison Sheet for Primary Reference Clock, PTP 1588v2 Grandmaster, NTP Server</b> |   |  |
|---|---|--|
| <b>Feature</b>  | <b>VCL-2145LC<br/>Primary<br/>Reference<br/>Clock</b> | <b>VCL-2145D Primary<br/>Reference Clock,<br/>NTP Server &amp;<br/>IEEE-1588v2 PTP<br/>Grandmaster</b> |
| <b>Synchronization Inputs:</b>  |   |  |
| GPS   | ✓   | ✓  |
| GNSS (Optional)   | x   | ✓  |
| (GPS/GLONASS/Galileo)   | x   | ✓  |
| 1+1 GPS / GNSS Receivers  | x   | ✓  |
| <100ns Accuracy when locked with GNSS (GPS/GLONASS)                                     | ✓   | ✓  |
| Anti-Jamming Technology   | x   | ✓  |
| ITU-T G.811 Compliant Clock Outputs   | ✓   | ✓  |
| <b>Synchronized Outputs:</b>  |   |  |
| NTP Ports   | x   | 4+1  |
| 8 x 2.048 MBits (G.811) E1 Clock Outputs  | ✓   | ✓  |
| SSM Message Support on 2.048MBits (G.811) Clock Outputs                                 | ✓   | ✓  |
| 8 x 1.544 Mbits/Sec (G.811) T1 Clock Outputs (Optional)                                 |   |  |
| 8 x 2.048 MHz (G.811) Outputs   | ✓   | ✓  |
| 1 x 10MHz (G.811) Outputs   | ✓   | ✓  |
| 1 x NMEA [0183] (DB9)   | ✓   | ✓  |
| SyncE in as per ITU-T G.8261, G.8262 and G.8264   | ✓   | ✓  |
| 1 x 1PPS  | ✓   | ✓  |
| IRIG-B (BNC) Unmodulated  | x   | ✓  |
| IRIG-B (RJ-45) Modulated  | x   | x  |
| IEEE-1588v2 PTP Grandmaster   | x   | ✓  |
| <b>IEEE-1588v2 PTP:</b>   |   |  |
| Up to 128 unicast messages per second (Telecom Profile)                                 | x   | ✓  |
| Up to 32 multicast messages per second (Power Profile)                                  |   |  |
| 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   | ✓  |
| Remote Management and Monitoring  | ✓   | ✓  |
| LCD Display   | ✓   | ✓  |
| High bandwidth NTP performance  | x   | ✓  |
| Processes up to 3000 NTP requests per second  | x   | ✓  |
| NTP Ports - 4 x Independent 10/100 Mbit/s, RJ-45 Ethernet interfaces                    | x   | ✓  |

|  |                     |                     |
|--|---------------------|---------------------|
| NTP Ports - 1 x Independent 10/100 Mbit/s, RJ-45 Ethernet interface  | x                   | ✓                   |
| Multiple (supports up to 4 separate) IP addresses for complete network segregation   | x                   | ✓                   |
| 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. | ✓                   | ✓                   |
| IEC 61850 compliant  | ✓                   | ✓                   |
| Concurrent IPv6 and IPv4 operation   | x                   | ✓                   |
| Secure network management: enable or disable options   | x                   | ✓                   |
| MD5 Authentication for NTP Clients   | x                   | ✓                   |
| Leap Second Support  | x                   | ✓                   |
| Double Oven Quartz Oscillator (OCXO) for High Stability Hold-Over Clock  | ✓                   | ✓                   |
| Rubidium Oscillator (RbXO) for Ultra-High Stability Hold-Over Clock  | ✓                   | ✓                   |
| Stratum 1 when synchronized to GPS/GNSS, or Stratum 2 in Hold-Over Mode  | ✓                   | ✓                   |
| <b>Local / Remote Management and Monitoring Ports:</b>   |                     |                     |
| RS-232C  | ✓                   | ✓                   |
| USB  | ✓                   | ✓                   |
| 10/100BaseT Ethernet RJ45  | ✓                   | ✓                   |
| 2 x External Alarm Relay Contacts.   | ✓                   | ✓                   |
| <b>Local / Remote Communication and Management Options:</b>  |                     |                     |
| Telnet   | ✓                   | ✓                   |
| SSH (with option to disable clear text communication to comply with NERC security requirements)                                      | x                   | ✓                   |
| CLI Control Interface (HyperTerminal or VT100)   | ✓                   | ✓                   |
| SNMP V2 Traps  | ✓                   | ✓                   |
| <b>Configuration and Monitoring Software:</b>  |                     |                     |
| NMS - GUI (Graphical User Interface) Runs on any PC operating on Windows 7, Windows 8 or Windows 10 OS.                              | ✓                   | ✓                   |
| <b>Power Supply:</b>   |                     |                     |
| Dual Redundant   | ✓                   | ✓                   |
| 1+1 AC power (100 to 240V AC, 50/60 Hz)  | ✓                   | ✓                   |
| 1+1 DC 24V power   | ✓                   | ✓                   |
| 1+1 DC -48V power  | ✓                   | ✓                   |
| 1+1 DC 110/220V DC power   | ✓                   | ✓                   |
| AC or DC   | ✓                   | ✓                   |
| 48VDC, or AC, or 1+1 Redundant AC+DC Power Supply options.   | ✓                   | ✓                   |
| 18-60VDC Power Supply.   | ✓                   | ✓                   |
| Environmental:   | -10C to 60C<br>IP40 | -10C to 60C<br>IP40 |

Technical specifications are subject to changes without notice.  
Revision 1.2A – November 28, 2016

**U.K.**

Valiant Communications (UK) Ltd  
1, Acton Hill Mews,  
310-328 Uxbridge Road,  
London W3 9QN  
United Kingdom  
E-mail: gb@valiantcom.com

**U.S.A.**

Valcomm Technologies Inc.  
4000 Ponce de Leon,  
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