VALIANT COMMUNICATIONS

VCL-6066 Compact

Primary Reference Clock

Introduction:

The **VCL-6066** is a compact, cost-effective, high performance, ITU-T G.811 compliant Primary Reference Clock. The VCL-6066 provides 2 x 2.048 MHz frequency and 2 x 2.048 Mbits (E1) clock outputs that are derived from its integrated GPS receiver.

The **VCL-6066**, Primary Reference Clock is specifically designed for the synchronization of 2G, 3G and LTE mobile telecommunications networks as well as backhaul wireline SDH / SONET and Synchronous Ethernet networks. It may also be used by Railways, Airports (including air-traffic control), power generation and power distribution companies and other utilities who require multiple frequency or bits outputs locked to a GPS Reference to provide highly precise synchronization reference Clock.

Synchronization Input Options:

Input Type	Number of Inputs	Connector
GPS	1	TNC (F)
10 MHz	1	SMA (F)
1PPS	1	SMA (F)

GPS Synchronised (G.811) Outputs:

Output Type	Number of Outputs	Connector
2.048 MHz	2	BNC (F)
2.048 Mbits (E1)	2	RJ45

Applications:

- SDH/SONET transport networks
- Wireless and Wireline Telecom synchronization
- Cellular networks like UMTS, GPRS, 3G and LTE
- Frequency Reference for power generation and distribution companies and other utility companies
- Synchronization of Defence Networks
- Synchronizing airports and aviation communications
- Synchronizing railway signalling networks and railway communications.

Features and Highlights:

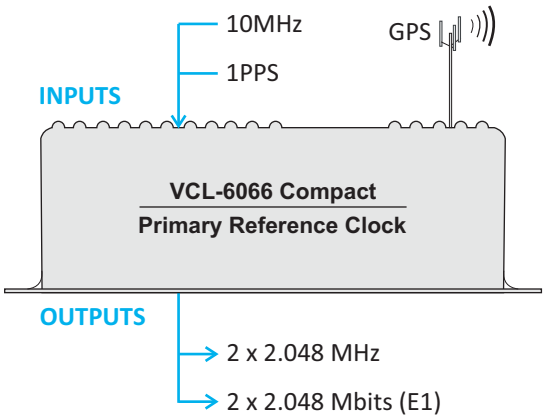
- ITU-T G.811 / Stratum 1 compliant (PRC) Primary Reference when locked to GPS
- **Multiple Synchronization Inputs Source**
  - GPS - 50 Channels , L1 frequency, C/A Code Receiver
  - 10 MHz
  - 1PPS
- **Multiple Synchronization outputs**
  - ITU-T G.811 compliant, dual 2.048 MHz*
  - ITU-T G.811 compliant, dual 2.048 Mbits (E1)*

  **When locked to GPS*

Holdover Clock:

- High Stability OCXO disciplined PLL
- OCXO Frequency Stability: ±0.008 (±8 ppb)

Application Diagram:



Technical Specifications

GPS Receiver:

- GPS L1 frequency, C/A Code Receiver
- 50 Channel GPS Receiver
- Tracks up to 12 satellites simultaneously
- Synchronizing Time:
  - Cold Start (includes almanac acquisition time): 27 seconds
  - Time-To-Fix (almanac acquisition already completed): 1 second

  (Note: with all satellites in view at -130db)
- GPS Signal
  - Tracking and Navigation: -162 dBm
  - Reacquisition -160 dBm
  - Cold Start -148 dBm

Technical Specifications

Antenna Port:

- Antenna Connector: TNC (F)
- Antenna Types: Active

Frequency Accuracy:

- ITU-T, G.811 quality when locked to GPS

Power:

- 18V DC to 60V DC - DIN Rail Mounting
- Power Consumption: 15W at maximum load

EMI, EMC, Surge Withstand and other Compliances: Terminal Equipment

EN 50081-2	EN 50082-2	IEC 60068-2-29
IEC 61000-4-6 (Conducted Immunity)	IEC 60068-2-14	IEC 60068-2-6
IEC 60068-2-2	IEC 60068-2-78	IEC 60068-2-1
CISPR 32 / EN55022 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 60870-2-1	IEC 61000-4-2	IEC 61000-4-5
IEC 61000-4-4	IEC 61000-4-8	IEC 61000-4-10
IEC 61000-4-3 (Radiated Immunity)		IEC 61000-4-11
Telcordia, GR-1089 Surge and Power Contact		

MTBF:

- Per MIL-HDBK-217F: ≥ 27 years @ 24C
- Per Telcordia SSR 332, Issue 1: ≥ 32 years@ 24C

CE Compliance:

- Immunity as per EN 60255-26
- Low voltage directive as per EN 60255-27

Environmental (Operational):

- Operating Temperature: -20C to +60C (-4F to 140F) (Fanless design – Does not require any forced air cooling)
- Maximum Operational Humidity 95% R.H. (Non-condensing)

Physical Dimensions (DIN Rail):

- H x W x D: 42.0mm x 168.0mm x 175.0mm
- Weight: 0.7 KG

Ordering Information:

Part #	Description
VCL-6066-DIN	VCL-6066 Compact Primary Reference Clock DIN Rail Mount Version - **Inputs:** GPS, 10 MHz and 1PPS - **Outputs:** 2 x 2.048 MHz (BNC) and 2 x 2.048 Mbits (RJ45) - **Power Supply:** 48VDC (Range: 18V to 60V DC)

Technical specifications are subjects to changes without notice.

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U.K.

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