VALIANT COMMUNICATIONS

VCL-2486-G

GPS Receiver: Time Distribution Unit

Introduction:

The VCL-2486-G, GPS Receiver, Time Distribution Unit is designed to provide up to 16 outputs of Pulse and / or NMEA-0183 and / or IRIG-B (mix and match) that is locked to a GPS / GNSS Reference to provide time synchronization to private networks such as Railways and Metro (ticketing and platforms) networks, Airports and Air-Traffic Control facilities, Electric Sub-Stations, Power Distribution and Transmission companies, Oil and Gas Utilities, ISPs and Cable TV networks as well as to Campus networks.

The VCL-2486-G is a compact and cost-effective solution to provide up to 16 outputs of 1PPS or NMEA-0183 or IRIG-B.

Features and Highlights:

- Multi service platform - User selectable output modules
- Up to 9 User selectable output modules (Add any 4 output cards, in any combination Please specify in order)
  - Up to 16 x IRIG-B Un-Modulated outputs (RS422 - Terminal Block)
  - Up to 16 x IRIG-B Un-Modulated outputs (RS232 - Terminal Block)
  - Up to 16 x IRIG-B Un-Modulated outputs (BNC)
  - Up to 16 x IRIG-B Modulated outputs (BNC)
  - Up to 16 x 1 PPS outputs (BNC)
  - Up to 16 x 10MHz outputs (BNC)
  - Up to 8 x NMEA-0183 outputs (Rj45)
  - Up to 4 x 1PPS optical outputs (ST)
  - Up to 4 x IRIG-B optical outputs (ST)
- <100ns Accuracy when locked with GNSS (GPS/GLONASS)
- Leap Second Correction Support
- DC or AC Power Supply options.

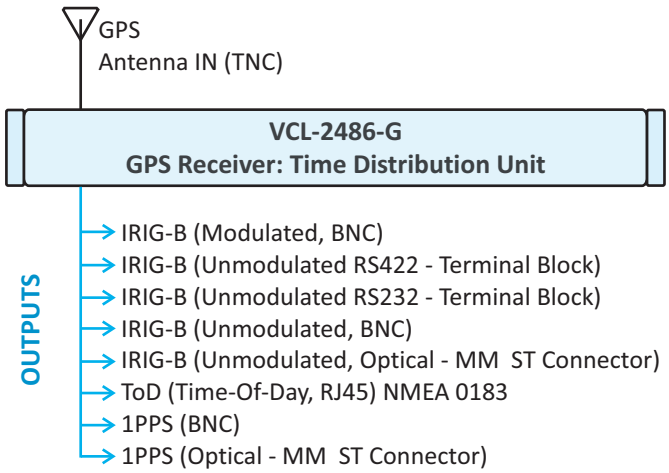
Core unit / Chassis

Core Unit	Number of Interfaces	Connector
GPS or GNSS (GPS + GLONASS)	1	TNC
Input Power Supply DC (24V / 48V / 110 to 220) or AC (100V AC to 240V AC, 50/60 Hz)	1	2 PIN DC Power Connector 3 Pin AC Power Inlet IEC60320
Output interface cards	Up to 4	User Selectable

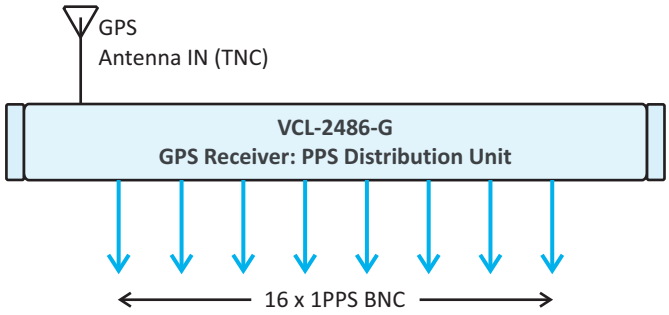
GPS/GNSS Receiver Specifications:

- 50 Channel GPS Receiver/ 72 Channel GNSS Receiver
- GPS L1 frequency, C/A Code Receiver
- Tracks up to 12 / 24 satellites in GPS / GNSS mode
- Synchronizing Time: Hot Start (1 sec.), Warm Start (28 sec.) and Cold Start (28 sec.)
- GPS Signal: Tracking and Navigation: -162 dBm
- Accuracy of Time-Pulse Signal referenced to GPS: ± 30ns
- Accuracy of Time-Pulse Signal referenced to GNSS: ± 20ns
- Accuracy of Time-Pulse Signal referenced to GPS/GNSS: ± 15ns (compensated)

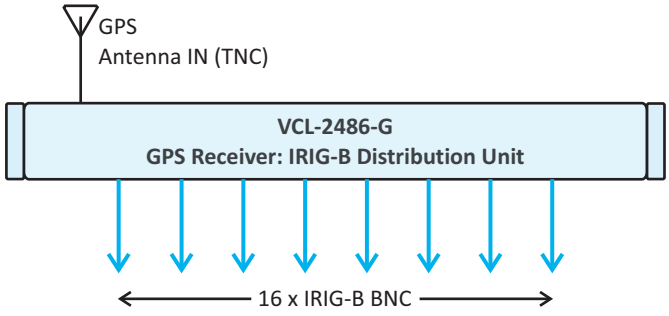
Application Diagram



**** Application Diagram #1 ****



**** Application Diagram #2 ****



**** Application Diagram #3 ****

Antenna Specifications:

- Antenna Type: Active
- Frequency Band: 1575.42 MHz
- Antenna Gain: -30dB
- VSWR: <2.0 Max, 1.0 Typical
- Operating temperature: -20C to +65C
- Reverse Polarity Protection

Synchronization Inputs:

- 1 x GPS (TNC)

Management and Monitoring

- USB Serial Port
- English Text CLI commands

Power Supply Options:

- AC (100V AC to 240V AC, 50/60 Hz)
  or
- DC (24 VDC, 48 VDC, 110 VDC to 220 VDC)

Power Consumption:

- < 10W at ambient (steady state 24°C)

Cards Specification

Optical Card (1PPS / IRIG-B)

Optical Output interface	Number of Outputs	Connector
Optical Output	1 output per Card	ST
Maximum cards	Up to 4 cards per chassis	ST
Maximum outputs	Up to 4 outputs per Chassis	ST

PPS Output Interface

PPS Output interface	Number of Outputs	Connector
1PPS, phase-locked to GPS / GNSS	4 outputs per card	BNC
Maximum cards	Up to 4 cards per chassis	BNC
Maximum outputs	Up to 16 outputs per chassis	BNC

10MHz Output Interface

10MHz Output interface	Number of Outputs	Connector
10MHz Synchronized to GPS / GNSS	4 outputs per card	BNC
Maximum cards	Up to 4 cards per chassis	BNC
Maximum outputs	Up to 16 outputs per chassis	BNC

PPS + NMEA output interface

PPS + NMEA Outputs	Number of Interface	Connector
PPS, phase-locked to GPS / GNSS	2 outputs per card	BNC
NMEA-0183	2 outputs per card	RJ45
Maximum cards	Up to 4 outputs cards per chassis	8 x BNC 8 x RJ45
Maximum outputs	8 x PPS outputs & 8 x NMEA Outputs	8 x BNC 8 x RJ45

IRIG-B (Modulated) output interfaces

IRIG-B (Modulated) Output interface	Number of Outputs	Connector
IRIG-B (Modulated) Outputs	4 outputs per card	BNC
Maximum cards	Up to 4 cards per chassis	BNC
Maximum outputs	Up to 16 outputs per chassis	BNC

IRIG-B (Un-modulated) output interfaces

IRIG-B (Un-modulated) Output interface	Number of Outputs	Connector
IRIG-B (Un-modulated) Outputs	4 outputs per card	BNC
Maximum cards	Up to 4 cards per chassis	BNC
Maximum outputs	Up to 16 outputs per chassis	BNC

IRIG-B (Un-modulated RS422/RS485 or RS232)*

IRIG-B (Un-modulated) Output interface	Number of interface	Connector
IRIG-B (Un-modulated) Outputs RS422 or RS232 Protocol	4 outputs per card	Terminal Block
Maximum cards	Up to 4 cards per chassis	
Maximum outputs	Up to 16 outputs per Chassis	
*User Selectable card- either RS422/RS485 or RS232		

IRIG-B Format

IRIG-B	Format
Un-Modulated	B004
Modulated	B124, 200-98

Regulatory Compliance:

- RoHS, CE Marking
- Complies to IEEE and IEC standards
- Transportation ETS 300 019 Class 2.3

Standards & Compliance:

- IEC - EMC – Certified to EN 55022: 2005 / CISPR 32, EN 55024:2005, IEC 61000-4-2
- CE – 2001/95/EC, 2006/95/EC, EN60950-1, EN61000-6-2, EN61000-6-4
- FCC – FCC Part 15 B Class A: Conducted Emission test on Power Line
- FCC Part 15 B Class A: Radiated Emission >1 GHz FCC, 6 GHz, on Power Line

Environmental (Equipment):

Operational	-10°C to +60°C (Typical: +25°C)
Cold start	0°C
Storage	-20°C to +70°C
Humidity	95% non-condensing
Cooling	Convention Cooled. No cooling fans are required.

Mechanical Specifications:

H x W x D	44 x 480 x 250 (mm)
Weight	2.0 Kg
Rack Mounts	19” rack mounting options

Ordering Information (Base Unit):

Part No.:	Description
VCL-2486-G	VCL-2486-G Includes: GPS Receiver Core Board GPS Antenna with 10 meter GPS Antenna Cable (20, 30 and 50 meter GPS antenna cable are also available optionally) 19-Inch, Rack mountable [supports upto 4 Cards] Supports : - Management: USB Serial Graphical User Interface (GUI) - Installation Kit: System Core Cables, Mounting Hardware, Documentation, User Manual

Add Power Supply:

AC	1 x 110-240V, 50/60Hz AC Power Supply Input
DC024	1 x 24V DC Power Supply Input
DC048	1 x 48V DC Power Supply Input
DC110	1 x 110V DC Power Supply Input
DC220V	1 x 220V DC Power Supply Input

Add Interface:

Part No.:	Description
2488	4 Port x Unmodulated, 50 Ohms IRIG-B Interfaces (BNC F Connector)
2482-P	4 Port x 1PPS, 50 Ohms (BNC F connector) interfaces
2727-P	1 Port x 1PPS (Optical, Transmitter, 820nm, ST, Tx) interface
2480	4 Port x Modulated IRIG-B (BNC F Connector) interfaces
2444-485	4 Port x Unmodulated IRIG-B [RS485 / Rs422] interfaces (8X2 M Terminal Block)
2447-232	4 Port x Unmodulated IRIG-B [RS232] interfaces (8X2 M Terminal Block)
2482-M	4 Port x 10MHz interfaces (BNC F connector)
2727-I	1 Port x IRIG-B (Optical, Transmitter 820nm, ST, Tx) interfaces
2485-N	- 2 Port x NMEA (RJ45 F Connector) and - 2 Port x 1PPS (BNC F Connector) Card (4 Cards (Max) per Chassis)

Technical specifications are subjects to changes without notice.
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U.K.

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