

# VCL-2486-G

## GPS RECEIVER : TIME DISTRIBUTION UNIT

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 16xIRIG-B Un-Modulated outputs (RS422—Terminal Block)

Up to 16xIRIG-B Un-Modulated outputs (RS232—Terminal Block)

Up to 16xIRIG-B Un-Modulated outputs (BNC)

Up to 16xIRIG-B Modulated outputs (BNC)

Up to 16x1PPS outputs (BNC)

Up to 16x10MHz outputs (BNC)

Up to 8xNMEA-0183 outputs (RJ45)

Up to 4x1PPS optical outputs (ST)

Up to 4xIRIG-B optical outputs (ST)

<100ns Accuracy when locked with GNSS (GPS/Glonass)



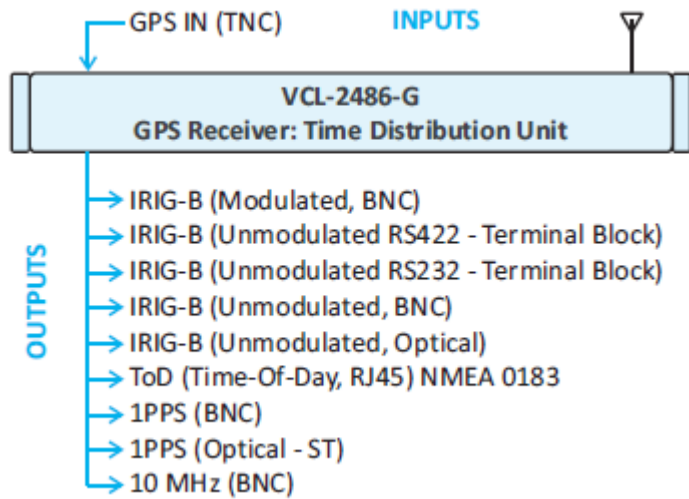
### Description

**VCL-2486-G**, GPS Receiver provides up to 16 x IRIG-B Outputs, or any “mix” of IRIG-B, 1PPS and NMEA Outputs. It can be also distribute IRIG-B signals over optical fiber(s) to extend the reach of these signals and distribute them over a large installed area using VCL-2728, remote optical fiber IRIG-B distribution terminals. VCL-2486-G, GPS / GNSS Receiver, Time Distribution Unit provides IRIG-B un-modulated / modulated, 1PPS, NMEA (0183) and NTP outputs along with a range of IRIG-B ports including RS-422, RS-232, RS-485, IRIG-B optical, RJ45, BNC.

The **VCL-2486-G** 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-Station, 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.

### Applications Diagram



Leap Second Correction Support

DC or AC Power Supply options.

## Mechanical Specifications

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

## Technical Specification

### 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

### GPSS/GNSS Receiver Specifications

- 50 Channel GPS receiver / 72 Channel GNSS Receiver
- GPS L1 Frequency, C/A Code Receiver
- Track 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 :  $\pm 30$ ns
- Accuracy of Time-Pulse Signal referenced to GNSS :  $\pm 20$ ns
- Accuracy of Time-Pulse Signal referenced to GPS /GNSS :  $\pm 15$ ns (compensated)

### Antenna Specifications

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

## Synchronization Inputs

- 1 x GPS (TNC)

## Management and Monitoring

- USB Serial Port
- English Text CLI commands

## Power Supply Options

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

## Power Consumption

- <10W at ambient (steady state 24°C)

## 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.

## 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

## 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 / CISPR22, 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 15B class A : conducted Emission test on Power Line
- FCC Part 15B Class A : Radiated Emission> 1GHz FCC, 6GHz, on Power Line

## IRIG-B

Signal Type- Amplitude Modulation, Polarity Non-Inverted

Signal Data Time Format- UTC+ Day of Year

Signal Standard- IRIG 200-98

Signal Properties- High Amplitude 5.2V

The VCL-2186 server supports 4 types of IRIG-B formats: **B120, B122, B123 and B124**

## Product References

Reference	GPS Receiver : Time Distribution Unit
VCL-2486	GPS Sync—Mutiple output VCL-2486-G, GPS Receiver, 19 inch, rack mountable. Supports : Inputs : 1xGPS (TNC (F)). Up to 4 outputs cards. Installation Kit : system core cables, mounting Hardware.
VCL-2486-G	1x50 ohms 30dB Gain—Precision Timing GPS antenna. 1x50 ohms Co-axial Cable—3m Indoor. 1x50 ohms Co-axial cable—10m Outdoor (other lenght available in options). Supports : management, USB Serial, Graphic User Interface (GUI) - User manual. (add power supply)
VCL-2480-F-01	Output card for VCL-2486. Modulated IRIG-B 4x BNC (BNC F connector).
VCL-2482-M	Output card for VCL-2486. 4 x 10MHz (BNC F connector)
VCL-2482-P	Output card for VCL-2486. 4 x 1PPS (TTL) (BNC F connector)
VCL-AC220	110-230Vac power supply module for VCL-2486. Installation in our factory.
VCL-DC048	48VDC power supply module for VCL-2486. Installation in our factory.



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