

**Introduction:**

The **VCL-2156-Ext, NTP Extension (NTP Client), Time Distribution Unit** is designed to provide up to 16 IRIG-B outputs and / or 16 IRIG-B and / or 1PPS (Pulse per second) and / or NMEA-0183 (mix and match) that is synchronized from a NTP Server to provide time synchronization to private networks such as Electric Sub-Stations, Railways and Metro (ticketing and platforms) networks, Airports and Air-Traffic Control facilities, Power Distribution and Transmission companies, Oil and Gas Utilities, ISPs and Cable TV networks as well as to Campus networks.

The VCL-2156-Ext operates as NTP Receiver / NTP Client with multiple interface option. Our solution simultaneously supports IRIG-B (Modulated / Unmodulated), NMEA 0183, 1PPS (Pulse per Second), and optical 1PPS port.



**Features and Highlights:**

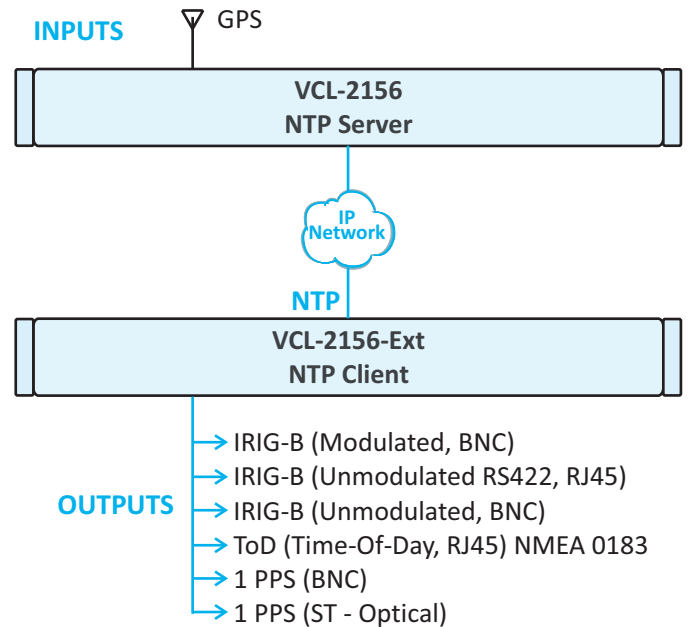
- Multi service platform - User selectable output modules
- Up to 6 User selectable output modules (Add any 4 output cards, in any combination, Please specify in order)
  - Up to 16 x IRIG-B Un-Modulated outputs (RS422, RS232)
  - Up to 16 x IRIG-B Un-Modulated outputs (BNC)
  - Up to 16 x IRIG-B Modulated outputs (BNC)
  - Up to 8 x NMEA-0183 outputs (RJ45)
  - Up to 16 x 1 PPS outputs (BNC)
  - Up to 4 x 1 PPS outputs (ST, 850nm, MM)
- High accuracy clock
- Leap Second Correction Support
- DC or AC Power Supply options.

**Technical Specification**

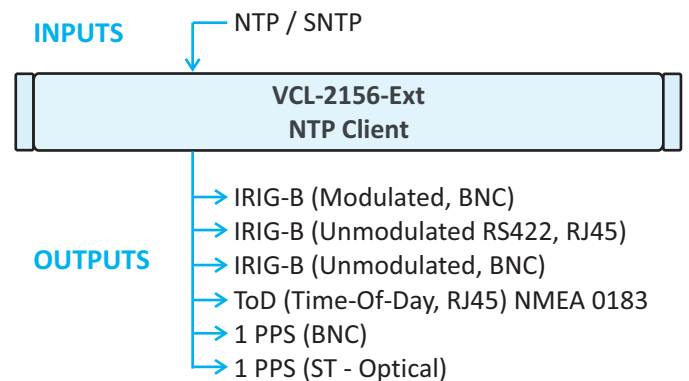
**Core unit / Chassis**

Core Unit	Number of Interfaces	Connector
NTP Extension	1	RJ45
Input Power Supply DC (24V / 48V / 110 to 220)	1	2 PIN DC Power Connector
AC (100V AC to 240V AC, 50/60 Hz)	1	3 Pin AC Power Connector IEC60320
Output interface cards	Up to 4	-

**Application Diagram**



**Block Diagram**



**PPS + NMEA output interface**

PPS + NMEA Outputs	Number of interface	Connector
PPS	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

## Technical Specification

### PPS Output Interface

PPS Output interface	Number of Outputs	Connector
1PPS	4 outputs Per card	BNC
Maximum cards	Up to 4 cards per chassis	
Maximum outputs	16 outputs per chassis	

### 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	
Maximum outputs	Up to 16 outputs per Chassis	

### 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	16 x BNC
Maximum outputs	Up to 16 outputs per chassis	16 x BNC

### IRIG-B (Un-modulated RS422) output interfaces

IRIG-B (Un-modulated) Output interface	Number of interface	Connector
IRIG-B (Un-modulated) Outputs RS422 Protocol	4 outputs per card	RJ45
Maximum cards	Up to 4 cards per chassis	16 x RJ45
Maximum outputs	Up to 16 outputs per Chassis	16 x RJ45

### Optical Pulse card

Optical Pulse Output interface	Number of Outputs	Connector
Optical Output	1 outputs per Card	ST, 850nm, Multi-Mode
Maximum cards	Up to 4 cards per chassis	4xST, 850nm, Multi-Mode
Maximum outputs	Up to 4 outputs per Chassis	4xST, 850nm Multi-Mode

### Synchronization Inputs:

- NTP / SNTP

### Power Consumption:

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

### Management and Monitoring:

- USB serial port
- English Text CLI commands

### Power Supply Options:

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

### Environmental (Equipment):

Operational	-10 C to +60 C (Typical: +25 C)
Cold start	0 C
Storage	-40 C to +85 C
Humidity	95% non-condensing
Cooling	Convention Cooled. No cooling fans are required

### Mechanical Specifications:

H x W x D	90 x 480 x 250 (mm)
Weight	3.0 Kg
Rack Mounts	19" rack mounting options

### Ordering Information (Base Unit):

Part No.:	Description
VCL-2156-Ext	VCL-2156-Ext 16/32 x IRIG-B NTP Client 19-Inch, Rackmountable [supports upto 4 Cards] Supports : - USB Serial Port, Graphical User Interface (GUI) - Installation Kit: System Core Cables, Mounting Hardware, User Manuals

### Add Interface:

2485-MOD-IRIGB	4 x Modulated IRIG-B interface (RJ45) Card (4 Cards (Max) per Chassis)
2485-1PPS-NMEA	2 x 1PPS (2xBNC) + 2 x NMEA (RJ45) interface Card (4 Cards (Max) per Chassis)
2488-UNMOD-IRIGB	4 x Un-modulated IRIG-B interface (BNC) Card (4 Cards (Max) per Chassis)
2438-UNMOD-IRIGB	4 x Un-modulated IRIG-B interface (BNC) Card (4 Cards (Max) per Chassis)
2425-IRIGB-RS422	4 x IRIG-B (RS422) Interface (RJ45) Card (4 Cards (Max) per Chassis)
2426-IRIGB-RS422	4 x IRIG-B (RS422) Interface (RJ45) Card (4 Cards (Max) per Chassis)
2482-1PPS	4 x 1PPS Interface (BNC) Card (4 Cards (Max) per Chassis)
2727-OPTL-PPS	1xPPS Optical (ST)

### Add Power Supply:

AC220	1 x 110-240V AC Power Supply Input
DC048	1 x 24~48V DC Power Supply Input
DC110~220	1 x 110~220V DC Power Supply Input

**U.K.**  
Valiant Communications (UK) Ltd  
Central House Rear Office  
124 High Street, Hampton Hill  
Middlesex, TW12 1NS, U.K.  
**E-mail:** gb@valiantcom.com

**U.S.A.**  
Valcomm Technologies Inc.  
4000 Ponce de Leon Blvd.,  
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