

# VCL-2145-PTP-NTP-PRC

## GPS PRC PTP/NTP & SSU SERVER



### TIMING

PTP NTP  
IRIG-B NMEA

### SYNCHRO

1PPS 1PPM  
1/5/10 MHz  
2.048 Mbps / MHz  
E1 / T1

### GPS PRC

G.811

### OCXO

### RUBIDIUM

G.812 holdover

### 2U COMPACT

Cost effective

## Introduction

VCL-2145 is a GPS PRC server with both PTP IEEE 1588 / NTP timing and G.811 synchronization reference services to Telecoms and Mobile network Operator, Utility substation, transportation networks.

VCL-2145 provides a complete set of synchronization interfaces including 1x PTP Grandmaster port, 4x NTP ports, industry standard 10MHz / 1PPS / IRIG-B / ToD / 1PPM-PPH ports, and synchronization distribution outputs - 8x E1/T1 and 8x 2.048 MHz ports.

VCL-2145 delivers a G.811 PRC synchronization accuracy when locked on GPS and G.812 holdover thanks to its high stability OCXO oscillator that keeps better than 0.5<sup>-9</sup> accuracy over 24 hours.

VCL-2145 integrated and compact design makes it a cost effective and easy to operate synchronization equipment. Its fan-less design for wide operating temperature range and redundant power supply modules provide high reliability and resilience that are required by mission critical applications.

VCL-2145-LC model is a cost effective G.811 PRC and SSU

VCL-2145 model is a G.811 PRC and SSU with NTP server

VCL-2145-D model is a G.811 PRC and SSU with both NTP server and PTP Grand Master

## Applications

VCL-2145 provides clock synchronization to various applications : telecoms and mobile networks, electricity automation networks, public transportation networks, air traffic control, video broadcasting, and many other.

### CVL-2145-D : PRC, NTP & PTP, SSU

### CVL-2145 : PRC, NTP, SSU

### CVL-2145-LC : PRC, SSU

#### Synchronization inputs

GPS  
1x 10MHz  
1x 2.048 Mbps  
1x 2.048 MHz



#### Synchronization outputs

NTP, PTP  
6x IRIG-B, 1x NMEA  
1xPPS, 1x 1/5/10 MHz  
8x 2.028 MHz  
8x 2,048 Mbps E1

## Specifications

SYNCHRONIZATION INPUTS	
<b>GPS receiver</b>	TNC F connector 50 channel GPS receiver Tracks up to 12 GPS satellites -150/-160 dBm sensibility Accuracy +/-15nS
<b>2.048 MHz</b>	75 Ohms, BNC
<b>2.048 Mbps</b>	75 Ohms, BNC
<b>10 MHz</b>	50 Ohms, BNC
<b>OCXO</b>	0.5ppb (10 <sup>-9</sup> )per day accuracy 50 ppb per year accuracy
<b>Rubidium</b>	6x10 <sup>-11</sup> per month accuracy 6x10 <sup>-10</sup> frequency stability
<b>Clock accuracy</b>	PRC G.811 when locked on GPS G.812 on holdover
TIMING OUTPUTS	
<b>PTP IEE 1588</b>	IEEE 1588 v2 Grand Master Up to 128 PTP Clients 1-step or 2-step L2 Ethernet or L3 UDP Telecom Profile G.8265.1 / G.8275.1 Power Profile IEC.61850-9-3, C37.328
<b>NTP</b>	4x NTP ports NTP v2 / v3 / v4, SNTP v4 MD5 authentication Unicast, Multicast, broadcast Support of 5K requests per second
<b>IRIG-B</b>	6x BNC
<b>NMEA Time Of Day</b>	1x RS232, DB9, NMEA.0183
SYNCHRONIZATION OUTPUTS	
<b>2,048 Mbps</b>	8x RJ45, 120 Ohms, E1 / T1
<b>2,048 MHz</b>	8x BNC, 75 Ohms
<b>1 / 5 / 10 MHz</b>	1x BNC, 50 Ohms
<b>1PPS</b>	1x BNC
<b>1PPM</b>	3 pin connector

Management	
<b>Protocols</b>	Telnet, ftp, SSH, sftp, scp HTTP/HTTPS, Syslog SNMP v2/v3 Radius CLI, GUI
Power supply	
<b>Redundancy</b>	2x AC or DC power inputs and converters
<b>110-230 Vac</b>	100 to 240 Vac, IEC connector 2x redundant AC converters
<b>48 Vdc</b>	40 to 60 Vdc, screw bloc
<b>Power consumption</b>	25 W max during startup
GPS Antenna	
<b>Format</b>	Active, wall mounting
<b>Frequency band</b>	1575.42 MHz, +/- 10MHz
<b>Amplifier gain</b>	40 dB +/-4dB
<b>Operating temperature</b>	-40 to + 85 °C
<b>Lightning protection</b>	EN61000-4-5, Level 4
Environmental	
<b>Size (WxDxH)</b>	480 x 225 x 44 mm
<b>Weight</b>	2,3 kg
<b>Operating temperature</b>	-10 to +60 °C
<b>Cold start temperature</b>	0 to + 60 °C
<b>Hygrometry</b>	5 to 95%, non condensing
<b>Compliance</b>	CE, ROHS, EN55022, EN55024
<b>MTBF</b>	210,000 Hours, Telcordia SSR332,

## Ordering information

Reference	Description
<b>VCL-2145-D</b>	GPS G.811 PRC and SSU with PTP Grand Master and NTP server, no power supply
<b>VCL-2145</b>	GPS G.811 PRC and SSU with NTP server, no power supply
<b>VCL-2145-LC</b>	GPS G.811 PRC and synchronization Supply Unit, no power supply
<b>-OCXO</b>	OCXO oscillator option for VCL-2145 clock system
<b>-RBXO</b>	Rubidium oscillator option for VCL-2145 clock system
<b>VCL-PS-AC220</b>	110-230 Vac power supply module
<b>VCL-PS-DC048</b>	48 Vdc power supply module
<b>VCL-GPS-ANT</b>	GPS antenna, 30dB, N-Type (F) connector
<b>VCLGPS-COAX-03M</b>	N-Type (M) to TNC (M) cable, 3 meters
<b>VCL-GPS-COAX-30M</b>	N-Type (M) to N-Type (F) cable, 30 meters
<b>VCL-GPS-COAX-60M</b>	N-Type (M) to N-Type (F) cable, 60 meters
<b>VCL-GPS-PROTEC</b>	GPS lightning protection kit, 50 Ohms, N-Type (M) to N-Type (F)



**CXR**  
T +33 (0) 237 62 87 90  
[www.cxr.com](http://www.cxr.com)

17 rue de l'Ornette 28410 Abondant France  
[contact@cxr.com](mailto:contact@cxr.com)