



Document #	Gps-SRV-01
Version:	1.0
Date:	August, 11, 2017

Visec GPS-Time-Velocity Server

FEATURES

- GPS/GLONASS Receiver
- 10/100-Base-T Ethernet
- WEB Server
- Metal Case
- Automotive 12V Power Input
- LED's For Status Indication

OPTIONS

- GPS Antenna
- Power Supply Cable
- Mounting Kit

GPS Server Functional Overview

The GPS Server unit is a compact device specially designed to be used in mobile and industrial systems as a precision position and time source.

The position/time/speed data are all available to read by using Ethernet/WEB interface.

After power is on the server starts its operations autonomously and data becomes available on the local WEB page

The external 9-pins D-Sub connector contains power supply and control terminals for external supply and data transmission.

Specifications

GPS-Time-Velocity Server		
Supply Voltage	Min	Max
V, DC	6	23
Current Consumption		
mA	80	150
Environment temperature, C deg	0	50
Antenna Connector	SMA receptacle, panel mounted	
Enclosure material	Aluminum alloy, stainless steel	
Antenna type	Active, 3.3V supply voltage	
Weight, g	300	

Figure 1. Front Panel

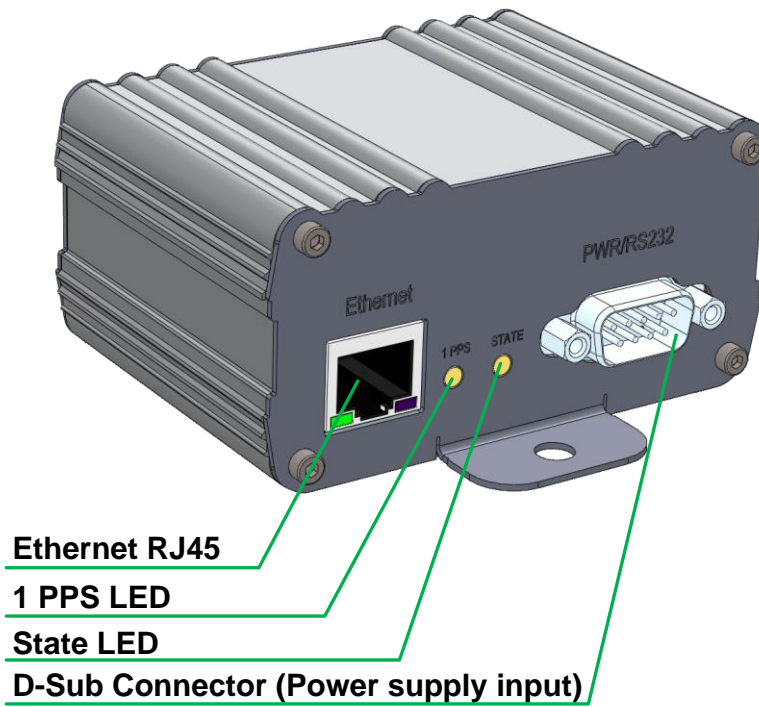
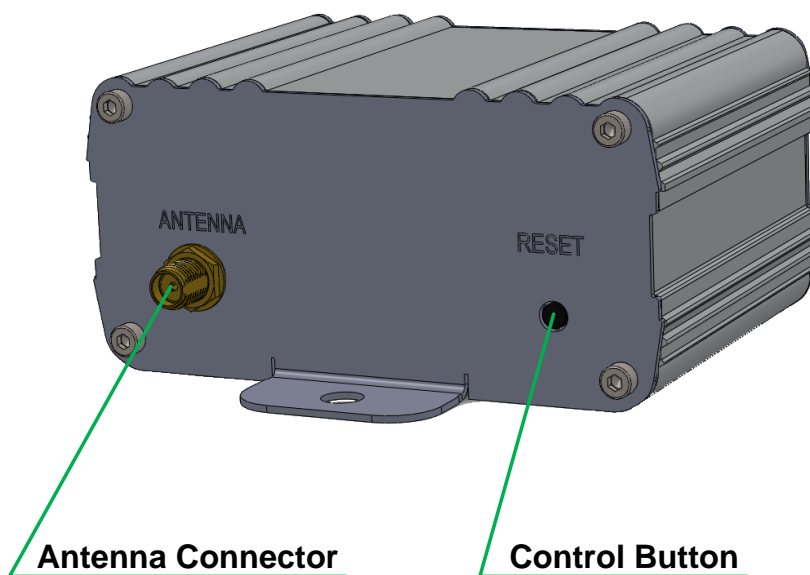


Figure 2. Rear Panel



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Figure 3. D-Sub Connector Pinout

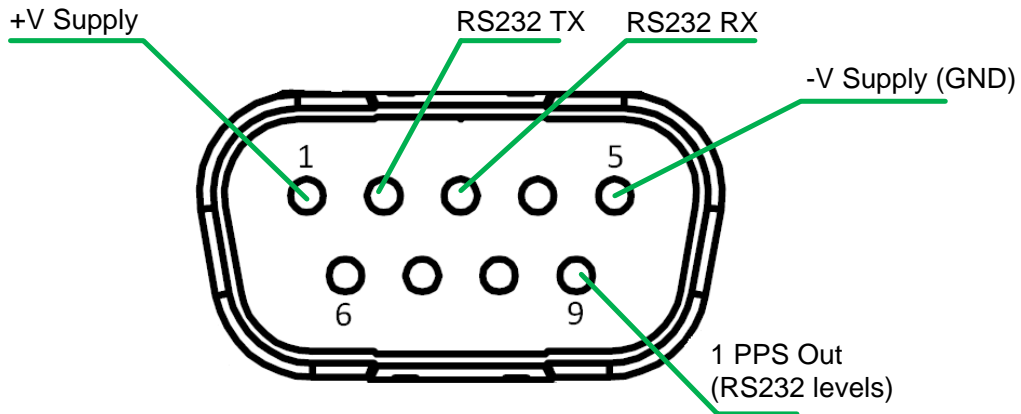
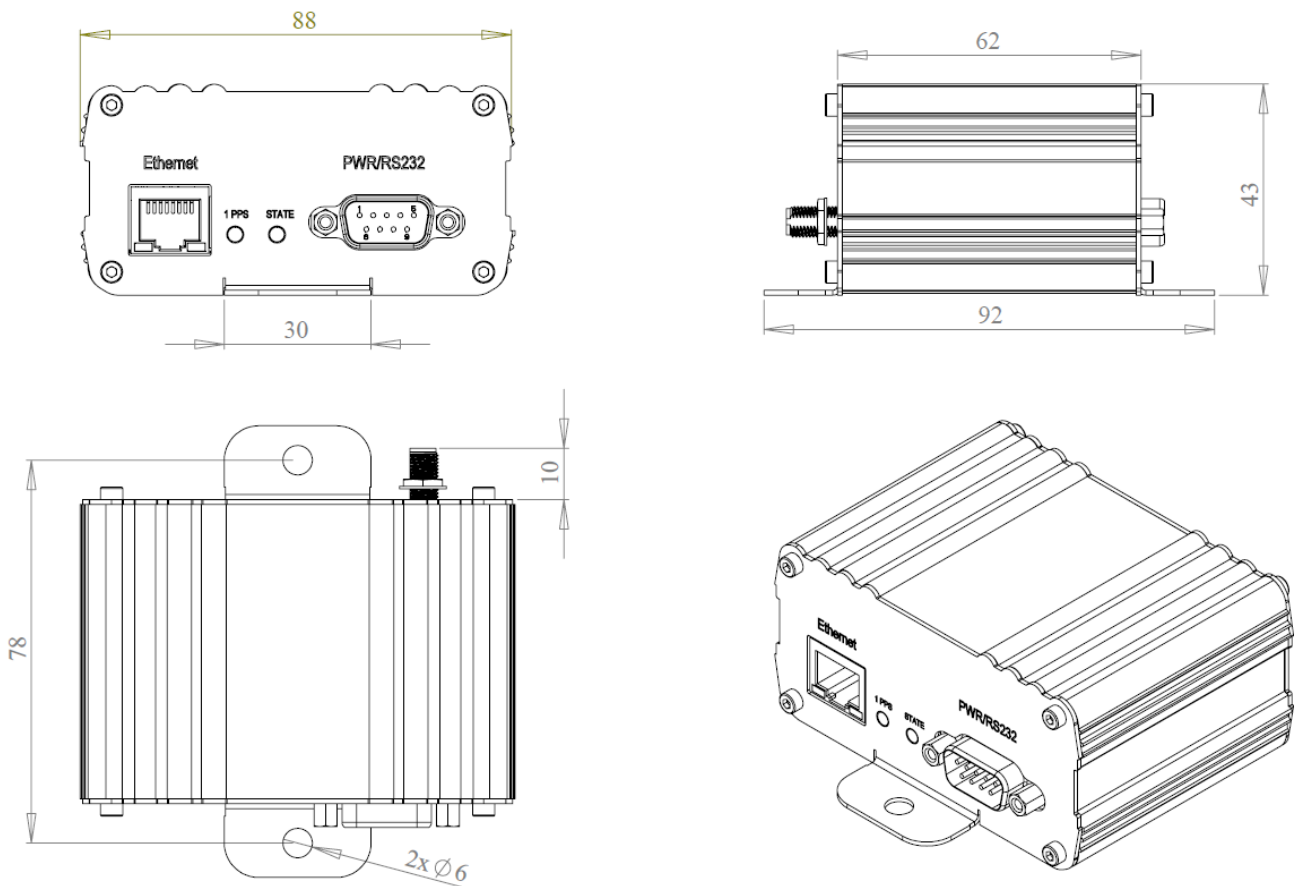


Figure 4. External Dimensions





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Table 2. GPS/GLONASS Performance

GPS-Time-Velocity Server	
Channels	33 tracking, 99 acquisition
Position Accuracy	< 2.5 m CEP
Velocity Accuracy	< 0.1 m/s
Timing Accuracy (1 PPM Out)	10ns
Reacquisition Time	< 2s
Clear Sky Startup Time	
Cold Start	< 36s
Warm Start	<31s
Hot Start	<2s



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Detailed Description

After boot the unit automatically begins GPS data acquisition and received data processing. All GPS/GLONASS data are cached inside the internal RAM and ready upon the first NMEA packet received from the GPS module.

The parsed NMEA data are available via WEB interface.

The unit has a small embedded WEB server for settings and position data access. These WEB pages are available by using most of PC/mobile Internet browsers i.e. Opera, Chrome, IE.

Figure 5 shows the main page for the unit at IP address 192.168.100.10

Figure 5. Main Page (Opera)

192.168.1.10

VISEC
Surveillance software

VISEC GPS SERVER
REMOTE GPS RECEIVER MODULE WITH ETHERNET AND 1 PPS OUTPUT

Main Settings GPS Position

GPS-SRV

The GPS Server unit is a compact device specially designed to be used in mobile and industrial systems as a precision position and time source.

The position/time/speed data are all available to read by using Ethernet/WEB interface.

At power on the server starts its operations autonomously and data become available on the local WEB page.

Features:

- 10/100-Base-T Ethernet
- Internal tiny WEB server
- Metal case
- Automotive power input
- LEDs for status indication

[Company web site](#)

Usage

1. Set up your Ethernet connection.
2. Load GPS_SRV_IP_ADDRESS/GPSStat.html page
3. Parse your GPS coordinates



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Settings Page

The IP settings are available by clicking "Settings" on the main WEB page. Figure 7 shows the page contents.

The default IP parameters are shown below

IP Address: 192.168.1.10
Net mask: 255.255.255.0
Gateway: 0.0.0.0
DHCP: OFF

To change IP parameters just enter the updated values into the corresponding fields and press "Update Values" button.

Note: the new IP settings become available after Reset only.

Figure 7. Settings Page

192.168.1.10/Settings.html

GPS-SRV Settings

Main | **GPS Data**

WARNING,
INCORRECT IP SETTING MAY CAUSE CONNECTION FAULT

Reset CPU

Update Network Settings

IP Address: 192.168.1.10
IP Mask: 255.255.255.0
Gateway: 0.0.0.0
DHCP Mode:

Update Values



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Automatic GPS Data Parsing

To obtain GPS data client must send the http GET request for the "*GPSSStat.html*" page on server's IP address:

GET /GPSSStat.html HTTP/1.1

The server will parse only first 17 bytes and respond with a dynamically created web page containing cached GPS data.

```
$GPSUPDATE
$GPS_TIME = 111905.000
$GPS_DATE = 140417
$GPS_LATITUDE = 5953.6801
$GPS_LONGITUDE = 03026.3748
$GPS_VALID
$GPS_MODE = 2
$GPS_SATS = 17
$GPS_COURSE = 263.24
$GPS_SPEED = 0.00
$GPS_ALT = 10.3
$GPS_HEIGHT = 18.0
$GPSUPDATE_END
```

Each GPS field begins with a predefined tokens listed below

1. UTC Time in format 'hhmmss.sss'.

\$GPS_TIME = 111905.000

2. Date in format 'ddmmyy'.

\$GPS_DATE = 140417

3. Latitude in format 'ddmm.mmmm' (degree and minutes)

\$GPS_LATITUDE = 5953.6801

North - Positive value

South - Negative value

4. Longitude in format 'ddmm.mmmm' (degree and minutes)

\$GPS_LONGITUDE = 03026.3748

East - Positive value

West - Negative value

5. Validity flag

\$GPS_VALID if all data are correct

\$GPS_INVALID if there's no valid positioning signal received



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6. Receiver Operating Mode

$\$GPS_MODE = 2$

- 0: Invalid Fix
- 1: GNSS mode
- 2: GPS mode
- 6: Estimated position (Dead reckoning mode)

7. Number of satellites being used

$\$GPS_SATS = 17$

8. Detected course in degree

$\$GPS_COURSE = 263.24$

9. Calculated speed in knots

$\$GPS_SPEED = 0.00$

10. Altitude in meters in according to WGS84 ellipsoid in meters

$\$GPS_ALT = 10.3$

11. Height of GeoID (MSL) above WGS84 ellipsoid in meters

$\$GPS_HEIGHT = 18.0$

Indication And Modes

There are three main operational modes available:

- *bootloader mode:*
both LEDs are ON

- *normal mode:*
1 PPS blinks once per second (if GPS signal is available), Status LED shows the GPS receiver state (ON - Data are valid, Blinking - No valid GPS data)

In case the IP address is unknown the IP settings can be set to default by long pressing the Reset button in Normal operational mode.

During reset both LEDs will turn ON for 5 seconds. You need to reset your device for updated IP settings take effect.

Firmware Update

The bootloader mode is entered on power ON if the Reset button is pressed.

The unit will boot with a default IP settings (192.168.1.10) and expect a new firmware image to be uploaded via TFTP protocol on port 69.

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Figure 8 shows an example of possible TFTP loader software ready to flash new binary image.

You can download tftpd32 [here](#)

Figure 8. TFTP Loader Program

