Integrated GPS Receiver & Antenna

Model: VP-302/ VP-302T

WI-RD-D-060 V1.0

The integration of a high-performance GPS receiver & an active GPS antenna to fulfill your needs of rapid & excellent vehicle navigation.

Overview:
The NAVPAC VP-302 is the integration of a high performance GPS receiver and an active GPS antenna in a very compact/weatherproof enclosure, which mounts just like an antenna! It outputs Lat/Lon, Time, Speed, Course, and Satellite Data in standard NMEA0183 protocol and at RS-232 level which can be linked directly to a broad range of navigation equipment such as plotters, sounders, radar, fishfinders, and electronic charts for navigation on GPS 24 hours a day at free of charge.

The NAVPAC VP-302 is capable of operating over a wide range of unregulated input voltages with low power consumption by the use of a built-in switching regulator. Its GPS receiver and associated circuit are properly shielded with metal frames to prevent interference induced by other radio transmitting equipment.

When input with RTCM SC-104 correction data, the NAVPAC VP-302 is capable of...
processing differential GPS (DGPS) real time to provide the user with a low cost solution for obtaining a higher positioning accuracy. With the most advanced GPS receiver and antenna design, the NAVPAC VP-302 has been proven to have exceptionally high performance even under the most adverse condition. It continues to track on satellites and provides GPS data during severe pitching and rolling in navigation. It is also proven to be able to re-acquire the satellites and fix on the position very quickly after a short period of signal obstruction.

In brief, the NAVPAC VP-302 facilitates GPS upgrades on your existing equipment and offers you immediate value in terms of equipment savings and also exceptional GPS navigation performance!

Features:
- Fast acquisition & re-acquisition
- Low power consumption, only 0.6 Watt
- DGPS capable. (RTCM SC-104 interface)
- User configurable output sentences
- Standard NMEA 0183 output
- User programmable output time interval
- User selectable datum
- Pole mount to 1”-14 UNS threaded mast
- Wide operating voltage range 8~40V DC *Compact construction/fully waterproof
- Excellent noise immunity
- Easy installation/operation
- RS232 or RS422 (optional)

Applications:
- Marine GPS
- GIS
- Land Surveyor
- Mobile GPS
**Specification:**

### PHYSICAL CONSTRUCTION
- **Dimension**: 11.5cm x 10.39cm(H)
- **Weight**: 360 gram(w/o cable & connector)
- **Construction**: Full EMI shielding

### ENVIRONMENTAL CONDITIONS
- **Temperature**
  - Operating: -30 ~ +75 °C
  - Storage: -40 ~ +85 °C

### COMMUNICATION
- **Protocol**: NMEA, UBX binary
- **Signal level**: UART/USB

### INTERFACE CAPABILITY
- **Signal Level**: RS-232 or RS-422
- **Standard Output Sentences**: GGA, GLL, GSA, GSV, RMC, VTG. Optional: ZDA (Setting the record to be Backup Battery)

### PERFORMANCE
- **Antenna**: High-reliability ceramic patch
- **Antenna LNA Gain**: 26+/-2dBi, NF: 2.0dB max.
- **Receiving Frequency**: 1575.42MHZ, C/A code
- **Sensitivity**: Tracking & Navigation GPS -163 dBm
- **Receiver architecture**: 56-channel
- **Start-up time**
  - hot start: 1 s
  - cold start: 40 s
  - Aided start: 3 s
- **Position accuracy**
  - Without aid: 2.5 m
  - SBAS: 2.0 m
- **Velocity**: 500 m/s
- **Altitude**: 50,000m (Maximum)
- **Update Rate**: 1 Hz(standard) GPS Only 10 Hz
- **Power Supply**: 8V~40V
- **Power Consumption**: 55~90 mA @DC12V
- **Baud Rate**: 9600 bps (default)
  - Optional: 4800/19200/38400/115200 bps are adjustable

*1 CEP, 50%, 24 hours static, -130 dBm, > 6 SVs

*2 Ready to support GALILEO E1B/C when available
Mechanical Diagram: