# CAN-GPS

Integrated GNSS and wireless.

Lightweight and minimally sized for emergency deployment and response.

Site-arrival to power-on in less than 90 seconds.

GNSS technology providing L1 or L1/L2 GPS and GLONASS[1].

Wireless Ethernet via 900MHz FHSS or 2.4GHz 802.11b/g (WiFi).

Power-source independent. Use any existing 12VDC infrastructure or an Orion portable supply.

Portable supplies provide power for up to 5 days. Transport cases are pre-wired and regulated for solar charge (6A standard; 10-20A optional).

Hardened package is equally suited for permanent site installations.

Design options for enhanced station security.

Couple with Orion's ***InteTrak*** GPS network monitoring software for high-precision static and kinematic carrier phase differential processing.

**Orion Monitoring Systems' CAN-GPS field station provides an ideal integrated system for the full spectrum of high-precision deformation monitoring applications, from emergency response to permanent installations.**

Since 2000, **Orion Monitoring Systems, Inc.** has designed and implemented GPS field stations for tall building, bridge, dam, landslide, slope and tectonic deformation monitoring. Our latest offering, **CAN-GPS**, compresses our traditional integrated systems into the smallest, lightest package yet.

CAN-GPS combines high-precision GNSS and wireless communications hardware into a modular, portable, lightweight, and inexpensive package to simplify the task of monitoring station installation. Although the design was targeted for rapid deployment and emergency response, this hardened station has proven just as well-suited for permanent sites.

Now completing its first year of field operation in networks from blistering desert to alpine tundra, the CAN-GPS has the proven reliability to meet any displacement monitoring need.

ORION

**Orion Monitoring Systems, Inc.**
www.orionmonitoring.com
gps@orionmonitoring.com
Phone 702.240.4747

**Dimensions** Cylindrical enclosure, less than 18" (457 mm) installed height:
- CAN: 6.625" diam. by 12" length (168 x 304 mm)
- Mount Adapter: 2.5" or 3.5" (64-89 mm)
- Antenna Clearance: ~2.5" (64 mm)

**Weight**
- 14 lbs (6.4 kg)

**Mount**
- 5/8"-11 female threaded adapter

**Power**
- 9-18VDC input (12VDC nominal)
- Externally fused; 1-1/4" 6A slow blow
- Power LED

**Consumption**[2]
- 275 mA max, 245 mA avg. (WiFi-2.4G)
- 240 mA max, 170 mA avg. (FHSS-900)

**Ports**
- N-female bulkhead (Wireless antenna)
- TNC-female bulkhead (GPS antenna)
- USB Mini-B (GPS receiver comm.)
- Power: Mil-C, 3-pin, waterproof

**Accessories**
- Comm: USB-A to Mini-B cable, 6 ft.
- Power: Mil-C power cable, 10 ft. MSHA rated (custom length and termination options available on request)

**Color**
- White, Black; others available on request.

**Portable Power Supply Options**

Orion offers two 12 VDC portable power options packaging battery, solar module and regulator fully pre-integrated and pre-wired in a compact, weatherproof enclosure.
- 36 and 52 Ah battery supply options
- 50W solar module and side-of-pole mount
- 6A regulator w/low voltage disconnect (standard)
- Fully pre-wired and ready for rapid field-connect
- Custom configurations and modified power systems can be specified and quoted upon request. Options include expanded solar and backup capacity or use of AC source with DC charger.

# Wireless Equipped

Two Integrated Options:
- 2.4 GHz 802.11b/g (WiFi) w/6dB omni antenna
- 902-928 MHz FHSS (Spread spectrum) w/3dB low-profile omni antenna (6dB optional)
- 10" horizontal-offset omni antenna mount
- 10" right angle N-m/N-m antenna cable
- Optional Yagi directional antenna mount adapter

# GNSS Enabled

GPS or GPS/GLONASS tracking depending on selected receiver type.

| | CAN-L1 | CAN-L1G | CAN-L2G |
|---|---|---|---|
| Channels | 36 | 36 | 72 |
| GPS | L1 | L1 | L1/L2 |
| GLONASS | | L1 | L1/L2 |

**Measurement Rate** 50 sps (max)

**Antenna (standard)**

| | |
|---|---|
| L1 | Novatel GPS-701-GG |
| L1/L2 | Novatel GPS-702-GG |

Receivers enabled for active antenna pre-amp at 5VDC

**Environmental**

| | |
|---|---|
| Temperature | |
| Operating | -40° to +75°C |
| Storage | -40° to +85°C |
| Altitude | 18,288 m |
| Velocity | 515 m/sec |

**Positioning Precision**[3]

| | |
|---|---|
| 15 minute solutions | |
| Horizontal | 3-5 mm |
| Vertical | 6-10 mm |
| 12 hour solutions | |
| Horizontal | 1 mm |
| Vertical | 1-3 mm |

1. GLONASS is not presently enabled in the InteTrak static processing.
2. Power consumption is rated for CAN-GPS-L1 at 12VDC, nominally tracking 10 SVs at a 5 second sampling and transmission interval.
3. Standard positioning results using Orion's ***InteTrak*** GPS network management software's carrier phase differential static processing of L1 GPS on 1-3 km baselines in 15 minute sessions over a 24 hour span and 12 hour solutions over a 7 day span. Results will vary with solution span, baseline length, increased carrier phase observables and local site conditions, among other effects.