



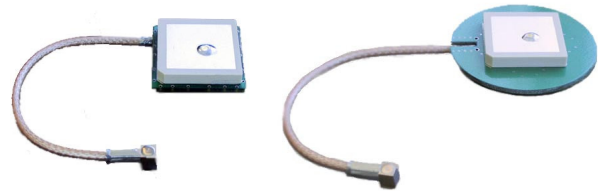
a time and place...  
for everything

# Wi-Sys Communications Inc.

## WS3950 / WS3960 - Embedded GPS Antennas

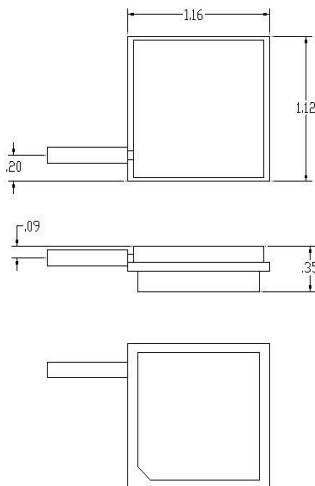
### Applications:

- ◆ Portable Telematics
- ◆ Automotive Navigation Systems
- ◆ Fleet Management & Telematics Systems
- ◆ Marine Navigation Systems
- ◆ Asset Tracking Equipment
- ◆ Military Radios and In-Vehicle-Systems
- ◆ Law Enforcement Radios and In-Vehicle-Systems

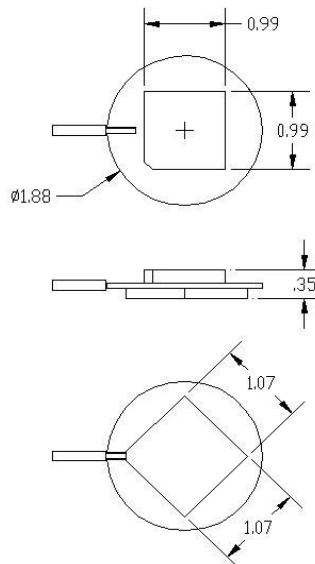


The WS3950/WS3960 GPS antennas are unparalleled in quality and performance, and ideal for embedded mobile applications. They feature a custom designed ceramic patch element that minimizes detuning effects caused by adjacent objects. This element, along with a low noise amplifier and SAW filter, enables these antennas to provide a consistent, clear signal while minimizing loss-of-lock when GPS conditions are less than ideal. The WS3950 comes in a compact square package and the WS3960 comes with a 1.85" mini-ground plane.

**WS3950**



**WS3960**



### Features:

- ◆ 28 dB gain @ 3.3 VDC
- ◆ Available with or without internal ground plane
- ◆ Extremely low noise figure: 0.8 dB
- ◆ Excellent out-of-band signal rejection
- ◆ Wide range of connector types available
- ◆ High performance patented LNA
- ◆ Excellent low elevation angle coverage



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### WS3950/WS3960 GPS Antenna

*Designed for maximum GPS performance, the WS3950/60 antennas' advanced circuitry integrates a SAW filter and low-noise amplifier to ensure a reliable and clear signal for the GPS receiver even in difficult conditions. Where other GPS antennas fail, the WS3950/60s' superior out-of-band rejection and low noise characteristics can provide a reliable signal, which can be critical for improving acquisition times and minimizing outages*

### The Wi-Sys Antenna Family

**WS3910:** High gain, low noise GPS antenna

**WS3914:** Low current GPS antenna

**WS3916:** Low cost GPS antenna

**WS3917:** Low cost filtered GPS antenna

**WS3940:** Active GPS + Cellular Combined Glass mount/covert antenna

**WS3942:** Active GPS + Cellular Combined Magnetic mount antenna

**WS3950/WS3960:** High gain, low noise Embedded antenna

**WS3954/WS3964:** low current Embedded GPS antenna

**WS3957/WS3967:** low price filtered Embedded GPS antenna

**WS3977:** Through-hole Mount GPS Antenna

## Technical Specifications

### Environmental Specifications

- ◆ 40c to +80c operating temp. (-45c to +80c storage)
- ◆ Humidity 95% max (non condensing)

### Mechanical

- ◆ **WS3950** - 28mm x 28mm x 9mm (1.1" x 1.1" x 0.35")
- ◆ **WS3960** - 47mm diameter x 9mm with ground plane (1.85" diameter x 0.35")
- ◆ Shock: Vertical axis 50G, Other axes 30G
- ◆ Vibration: 3 axis, sweep = 15 min,
- ◆ 10–200 Hz log sweep: 3G

### Antenna Response

- ◆ Frequency 1575.42 MHz
- ◆ Gain @ 90° 3 dBic, @ 20° -2.0 dBic
- ◆ Polarization: Right Hand Circular
- ◆ Axial ratio @ 90° 4 dB, @ 20° 6 dB

### Electrical

- ◆ Voltage 2.7 – 5.0 VDC
- ◆ Current: 7.5 mA @ 3.3VDC (typical)
- ◆ Connector: MCX right angle  
Other connector types available
- ◆ Cable: Shikoku Coax Cable p/n 1.5QEHV(TA)
- ◆ Cable length: 15 cm (6"), other lengths available

### LNA Specifications

- ◆ Frequency: 1572.5 – 1578 MHz
- ◆ Output Impedance: 50 Ohm
- ◆ VSWR 1.5:1 max (at connector)
- ◆ Gain @ 3.3VDC: 28 dB (typical)  
@ 5.0VDC: 30 dB (typical)
- ◆ Noise figure: 0.8 dB
- ◆ Out-of-band rejection: + 15 MHz: 10 dB/- 15 MHz: 30 dB  
+ 20 MHz: 20 dB/- 20 MHz: 30 dB  
+ 40 MHz: 40 dB/- 40 MHz: 40 dB

### Wi-Sys Communications Inc.

31B Richardson Side Road  
Ottawa, ON K2K 0A1 Canada  
Tel 613.254.7386 Fax 613.254.7388  
sales@wi-sys.com www.wi-sys.com

