



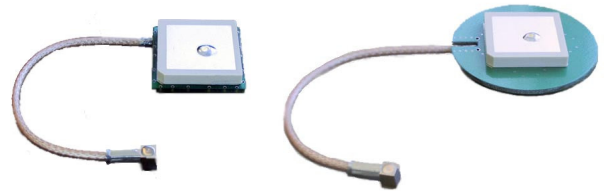
expanding the borders  
of wireless systems

# Wi-Sys Communications Inc.

## WS3954 / WS3964 – Embedded GPS Antennas

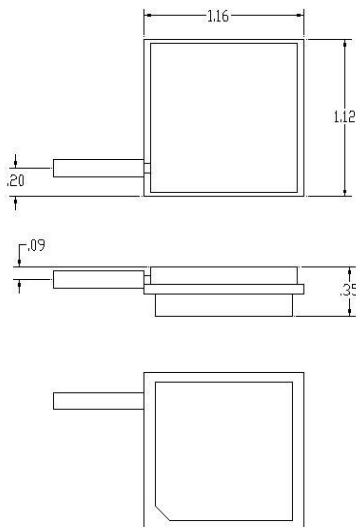
### Applications:

- ◆ 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

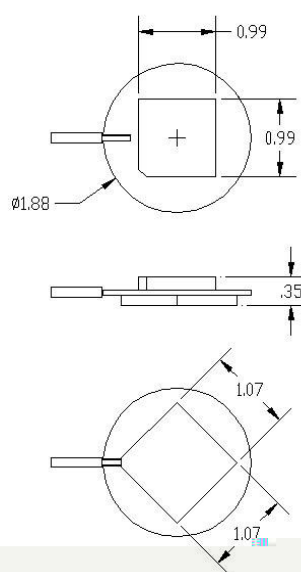


The WS3954/WS3964 GPS antennas are ideal for personal GPS applications including handheld computers and PDAs. With an industry leading 2mA current, and compact size, the WS3954/WS3964 series is perfectly suited for OEM applications. Performance is not sacrificed; the WS3954/WS3964 features a custom designed ceramic patch element along with a low noise amplifier and SAW filter, enabling these antennas to provide a consistent, clear signal while minimizing loss-of-lock. The WS3954 comes in a compact, square package and the WS3964 comes with a 1.85” mini-ground plane.

**WS3954**



**WS3964**



### Features:

- ◆ Extremely low current:  
2 mA @ 2.7 VDC
- ◆ Extremely low noise figure:  
1 dB
- ◆ Excellent out-of-band  
signal rejection
- ◆ High performance patented LNA
- ◆ Available with and without an  
internal ground plane
- ◆ Wide range of connector types  
available



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### WS3954/WS3964 GPS Antennas

*Designed for low power use while maintaining GPS performance, the WS3954/64 antenna's 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. The antenna design and industry leading low current draw makes the WS3954/64 series ideal for portable or telematics applications using MONITOR, STANDBY or SLEEP modes.*

### 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 (-45c to +80c storage)
- ◆ Humidity: 95% max (non condensing)

### Mechanical

- ◆ WS3954: 28mm x 28mm x 9mm  
(1.1" x 1.1" x 0.35")
- ◆ WS3964: 47mm diameter x 9mm  
(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: 2.5 – 3.3 VDC
- ◆ Current: 2.0 mA @ 2.7VDC (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: 18 dB (typical)
- ◆ Noise figure: 1 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

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