



# Wi-Sys Communications Inc.

## WS3997 Low Profile Surface Mount GPS Antenna

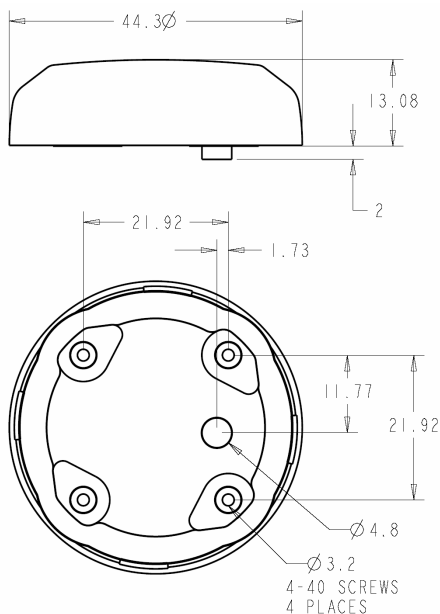
### Applications:

- ◆ Permanent Surface Mount Vehicle Installations
- ◆ Fleet Management & Telematics
- ◆ Marine Vessel Installations
- ◆ Cellular Base Station Clocking and Timing
- ◆ WiMAX & Fixed Wireless Broadband Clocking and Timing



The WS3997 surface mount GPS Antenna provides very high performance in a very small form factor. It features 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 the WS3997 to provide a consistent, clear signal while minimizing loss-of-lock when GPS conditions are less than ideal. The WS3997 is housed in a very compact all-plastic, non-corrosive low profile package. Designed for permanent mount installations, the WS3997's thru surface connector provides the lowest in-vehicle profile. Truly is the optimum choice for dependable, clear and consistent GPS signal reception. The WS3997 comes with a MCX jack connector, and a flying cable option is also available.

### WS3997 dimensions (mm)



### Features:

- ◆ Extremely compact all-plastic, weather proof, non-corrosive housing
- ◆ Lowest external profile
- ◆ Lowest in-vehicle connector profile
- ◆ Small mounting holes
- ◆ Large, high performance patch element
- ◆ Voltage range 2.7 – 5 V
- ◆ LNA 28 dB gain typical
- ◆ Low noise figure 1.5dB
- ◆ Good out-of-band signal rejection
- ◆ Value priced



## Wi-Sys Communications Inc. WS3997 Surface Mount GPS Antenna

*Designed for maximum GPS performance, the very compact WS3997 antenna's advanced circuitry integrates a SAW filter and low-noise amplifier to ensure a most reliable and clear signal for the GPS receiver even in most difficult conditions. Where other GPS antennas fail, the WS3997's great out-of-band rejection and low noise characteristics can provide a very reliable signal – 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

**WS3917:** Low cost filtered GPS antenna

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

**WS3940-ULD:** Active GPS + Cellular combined 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

- ◆ Operating temp: -40c to +85c (-45c to +85c storage)
- ◆ Humidity: 95% max (non condensing)

### Mechanical

- ◆ Dimensions: 44.28 mm dia. x 13.42 mm H
- ◆ Weight: 26g
- ◆ Housing: GE Lexan EXL9330, Colour BK1334 (other colours available)
- ◆ Mounting: 4 x 4-40 screw mounting holes
- ◆ Connector: MCX Jack (flying cable option also available)
- ◆ 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 VDC
- ◆ Current: 15mA @ 5V, 9mA @ 3.3V

### LNA Specifications

- ◆ Frequency: 1572.5 – 1578 MHz
- ◆ Output Impedance: 50 Ohm
- ◆ VSWR: 1.5:1 max (at connector)
- ◆ Gain: @ 3.3VDC: 28 dB (typical)  
@ 5VDC: 30 dB (typical)
- ◆ Noise figure: 1.5 dB (typical)
- ◆ Out-of-band rejection: +/- 15 MHz: 5 dB  
+/- 20 MHz: 10 dB  
+/- 30 MHz: 32 dB  
+/- 40 MHz: 40 dB

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