



# Installation Instructions

## GPSB Series

SW3-606 - v1.3

### 1. Introduction

The GPSB series is a high performance quad function antenna in an OEM style shark fin housing. It incorporates an active GPS antenna with 30dB gain LNA, a multi-band cellular antenna, a dual band WiFi antenna and mounting bush for external whip. The GPSB is suitable for fitment to standard vehicle panels of up to 4mm (0.16") thickness. Heat shrink tubes are included in the kit, to enable the coaxial connections to be sealed as an extra precaution if required.



#### Electrical Safety Note

This product contains an active GPS/GNSS antenna (part number SR8-HG30). Rated voltage: 3-5VDC Rated current: 20mA maximum. **The supply to this device must be provided with over-current protection of 1A maximum.**

### 2. Mounting requirements and selecting location

This antenna must be fitted on a conductive ground plane of minimum 1/2 wavelength diameter at the lowest frequency of operation; to calculate see below:

**150 / frequency in MHz = 1/2 wavelength (m)**

Examples: 150MHz =100cm (39.4"); 400MHz = 38cm (15"); 900MHz =16cms (6.3").

When fitting on a non-metallic panel, a ground plane plate of suitable size should be fabricated and fitted under the mounting panel. The securing washer and nut must make a low resistance electrical contact ( $< 0.2\Omega$ ) with the ground plane. Select a mounting location, checking for roof curvature to ensure that the antenna base will have a flat mounting surface. The antenna should be located as far as possible from surrounding roof mounted items (e.g light bar, air con unit). Ensure that there is adequate under panel clearance and that there is no double skin panel or cross brace present. Measure to check for central position if applicable.

### 3. Prepare and drill hole



Fig.1

Mask panel area around hole position to protect paintwork and headliner.

Drill a pilot hole, and then increase to 19mm (3/4"), ensuring that drill/cutter bit does not contact headliner. Clean area around the hole, remove any burrs and carefully remove all swarf.

Remove paint and primer from under panel surface to ensure adequate earth contact by washer and nut. Apply some petroleum jelly or paint around the hole to prevent corrosion.

### 4. Fitting the antenna

Remove protective backing from underside of antenna, feed coaxial cable(s) through panel. Position the antenna over the hole ensuring correct orientation and stick to panel by applying firm downward pressure. Assemble washer and nut from underside and tighten - recommended torque is 5Nm (3.7ft/lbs). Remove blanking cap and screw comms antenna whip securely to mounting stud (if applicable).

## 5. Routing and terminating coaxial cable(s)

If heat shrink tubes are to be used, slide onto antenna cable tails prior to connecting extension cables – it is recommended that these are heat shrunk only after tests have been satisfactorily completed. Connect extension coaxial cables to antenna and route to equipment, taking care to avoid running adjacent to existing vehicle wiring or fouling any moving vehicle component. The cables must not be routed in front of any airbag device. Fit correct coaxial connector or adapter to cables as required.

## 6. Commission and test

### Check GPS/GNSS cable (where applicable):

- Check the GPS cable with DC to measure high resistance.
- Connect the GPS cable to the GPS receiver and check for satellite acquisition.

### Check comms cable(s)

- Earth continuity: connector body to vehicle ground should measure  $<0.2\Omega$ ;
- Connector body to centre pin should measure open circuit.
- Carry out VSWR check, should measure as specified in the antenna data sheet.
- Connect GSM / Cellular, LTE & WLAN cables or stow unused pigtailed.

## 7. Notices



### RF Safety Note

*This antenna should be mounted in such a way that no person is within 20cm (8") of the antenna during use.*



Waste electrical products should not be disposed of with household waste. All electronic products with the WEEE logo must be collected and sent to approved operators for safe disposal or recycling. Please recycle where facilities exist. Many electrical/electronic equipment retailers facilitate "Distributor Take-Back scheme" for household WEEE. Check with your Local Authority or electronic retailers for designated collection facilities where WEEE can be disposed of for free.



### Directive 2011/65/EU (RoHS 2)

RoHS 2 compliance is declared per Directive 2011/65/EU and its subsequent amendments with exemption 6.c applied.

### REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals, EC 1907/2006)

This product contains Lead (CAS No. 7439-92-1) which is classified as an SVHC (Substance of Very High Concern) as being toxic to reproduction under Article 57c. of REACH. **Do not chew parts or put them in mouth, keep away from unsupervised children. Dispose of parts as WEEE waste do not send to landfill.**

### EU Declaration of Conformity

Object Reference: **GPSB**

Object Description: **Multi-band Sharkfin with GNSS Antenna**

Manufacturer: **Panorama Antennas Ltd 61 Frogmore, London, SW18 1HF, U.K.**

### Directive 2014/53/EU Radio Equipment Directive (RED)

Harmonised Standards and References:

EN 301 489-1 (V2.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements".

Referencing EN 61000-4-2:2009 – Electrostatic Discharge Immunity and EN 61000-4-3:2006 +A1:2008 +A2:2010 – Radiated RF Immunity

EN 300 440-1 V1.6.1 (2010-08) – Electromagnetic compatibility and radio spectrum matters (ERM); short range devices; radio equipment to be used in the 1GHz to 40GHz frequency range; Part 1: Technical characteristics and Test methods in accordance with EN 300 440-2 V1.4.1 (2010-8) - Electromagnetic compatibility and radio spectrum matters (ERM); short range devices; radio equipment to be used in the 1GHz to 40GHz frequency range

Low Voltage Directive: Directive 2014/35/EU (Electrical Equipment designed for use within certain voltage limits) of 26th February 2014.

EN62368-1: 2014 Audio/video, information and communication technology equipment. Safety requirements

Waiver: This document represents information compiled to the best of our present knowledge. It is not intended to be a representation or warranty of fitness of the products described for any particular purpose. This document details guidelines for general information purposes only. Always seek specialist advice when planning installations and ensure that antennas are always installed by a properly qualified installer in compliance with local laws and regulations.