Installation Instruction - SW3-159

A. Introduction

This document is a guide for the installation of L[G]V range of low profile VHF antennas onto a vehicle roof and should be utilized as advice in the context of a planned installation .
It should be noted that the requirements of any particular installation may differ from those envisaged in this document, which is not a substitute for advice from installation experts or the vehicle manufacturer, whose advice should be sought if required.
The antenna can be fitted to panels of a maximum 12mm (1/2") thickness using the standard M14 mounting bush.
The L[G]V range of antennas is supplied pre-tuned to the required freq. range and installation condition (groundplane of advised size/no-groundplane) – please check that the antenna specification is suitable for the installation condition.

Electrical Safety Note

The LG versions of this product contain an active GPS antenna.
Rated voltage: 3-5VDC Rated current: 20mA maximum

The supply to this device must be provided with overcurrent protection of 1A maximum.

B. Select A Suitable Mounting Location

The mounting location should be flat– the antenna enclosure may be stressed and damaged if an attempt is made to fix it to conform to excessive curvature. Select a suitable mounting location which is spaced away from other structures (e.g. air conditioner, battery packs) on the mounting panel and check for clearance below the mounting panel. The appropriate spacing distance will depend on height of the structure, but the minimum recommended spacing is 1/2 wavelength at the lowest operating frequency of the antenna. To calculate this, see below:
150 / frequency in MHz = ½ Wave length (m) As an example for 150MHz - 150/150 = 1m (3' 3").
Measure to check for central position, if applicable.
When fitting on a ground plane, the securing washer and nut must make a low resistance electrical contact with the metal panel.

C. Prepare and Make Holes

Make a 14mm (1") clearance hole for the main cable entry mounting bush.
The antenna enclosure also has 12x 6 mm (0.24") mounting holes around the periphery of the antenna housing. It is recommended that M6 fasteners of appropriate length, preferably with environmentally stable rubber sealing washers, are used to secure the antenna to the mounting panel. The antenna cover can be used as a drilling template. Clean the area around the holes, removing all swarf & burrs. Consider applying an appropriate conductive corrosion resistant coating or spray to bare metal surfaces to prevent corrosion.

D. Fitting and Sealing the Antenna

The antenna enclosure is supplied assembled and sealed to the base plate. The installer should ensure effective seal of the antenna to the mounting panel, as part of the installation process. It is important to consider the curvature of any mounting surface when determining how to seal the antenna to the panel. For most types of installation it is recommended to apply a suitable environmentally stable, neutral cure sealant in at least 3 areas:

1. In a ring around the cable entry mounting bush on the base of the antenna
2. Around the entire circumference of the antenna
3. On the underside of the antenna - it may be best to apply 2 or 3 concentric circles of sealant to the base of the antenna

Ensure that the mounting panel is clean within the antenna baseplate "footprint" area. Place the antenna in position, check that mounting holes are correctly aligned and that connector(s) is/are accessible from the underside. Fit the antenna using the selected mounting method. Check the sealing of the installation and apply any extra sealing to the antenna as required. Once the antenna is fixed in place, seal the perimeter fastener heads, (if applicable).

E. Routing and Terminating Coaxial Cable(s)

Route the coaxial cable(s) to the equipment, taking care to avoid running adjacent to existing wiring or fouling any moving controls or components. Fit connectors to the cable if required. Consider securing connectors in place to prevent them coming loose during service. When planning the cable routing, consider minimum cable bend radius (25mm / 1" for CS23 and 13mm / 1/2" for RG174) and ensure that no undue stress is placed on connector joints.

F. Test and Commission

The comms antenna is d.c. grounded and will present a short circuit across the connector. In versions with GNSS function, this will present a high resistance (~70-85kΩ) across the GNSS connector. It is recommended to carry out a VSWR check on the comms antenna, the VSWR should be as specified in the product datasheet or agreed VSWR plot.

Installation Instruction - SW3-159

G. Important Notices

DO NOT
- operate the transmitter when someone is within 1m (3'3") of the antenna.
- operate the equipment in an explosive atmosphere.
- attempt to install the antennas without the proper safe equipment to access the install location.
- install the antenna near overhead power lines or where power lines may come into contact with the antenna during use.
- chew parts or put them in mouth, keep away from unsupervised children.

European Waste Electronic Equipment Directive 2002/96/EC
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.**

H. Additional Compliance Notice For LG Variants

EU Declaration of Conformity (RED)

Object Reference: LGV
Object Description: Low Profile Antenna with active GPS Antenna
Manufacturer: Panorama Antennas Ltd 61 Frogmore, London, SW18 1HF, U.K.

This declaration is issued under the sole responsibility of the manufacturer
The object of the declaration described above is in conformity with the relevant Union Harmonization Legislation below:

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.

EN60950-1: Safety of information technology equipment – according to test specification EN 60950-1:2006+A2:2013