

# Installation Instruction – SW3-678 LP[G]E Series

SW3-678 - Document Version 2.0

## A.i. Introduction

The LP[G]E antenna series is a range of low profile antennas incorporating a wideband cellular element covering 2G/3G and 4G frequencies along with an optional active GPS/GNSS/BEIDOU antenna with 26dB LNA gain and either one or two dual band WIFI elements all in a robust compact housing. The antenna range can be deployed with or without a conductive ground plane.



### Electrical Safety Note

This product contains an active GPS antenna (part number SR8-HG26-04FJ). Rated voltage: 3-5VDC Rated current: 20mA maximum

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

## A.ii. Part Number Matrix

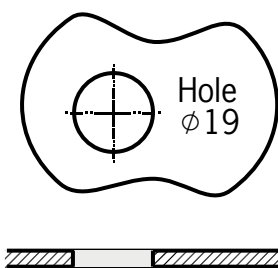
Part Number	Cellular Element (698-960/1710-2700MHz)	GPS/GNSS/Beidou Element (1552-1610MHz 26dB LNA)	Wifi Element 1 (2.4/5GHz)	Wifi Element 2 (2.4/5GHz)
LPE-7-27	Yes	No	No	No
LGE-7-27	Yes	Yes	No	No
LGE-7-27-24-58	Yes	Yes	Yes	No
LGEM-7-27-24-58	Yes	Yes	Yes	Yes

## B. Mounting requirements and selecting location

This antenna range can be deployed with or without a conductive ground plane. If the antenna is to be fitted to a conductive ground plane this should be a minimum of 400x400mm (1.3x1.3ft) in size.

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. For optimal performance the antenna should, if possible, be mounted at least 300mm (1ft) away from other conductive objects on the mounting panel.

## C. Prepare and drill hole



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, carefully removing all swarf. Do not mount to a hole larger than 19mm diameter.

If mounting to a conductive ground plane 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.

## D. Fitting the antenna

Remove protective backing from underside of antenna, feed coaxial cable(s) through panel. Position the antenna over the hole and stick to panel by applying firm downward pressure. Assemble nut from underside and tighten. **IMPORTANT:** Do not exceed a torque of 5Nm (3.6ft/lbs) when tightening the mounting nut.

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

Connect extension coaxial cables to antenna and route to equipment, taking care to avoid fouling any moving vehicle component. The cables must not be routed in front of any airbag device.

## F. Commission and test

### Check comms cable(s):

- Earth continuity: connector body to vehicle ground should measure  $<0.2\Omega$ ;
- Carry out VSWR check, should measure  $<2.0:1$ .

### Check GPS cable:

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

## G. Notices



### European Waste Electronic Equipment Directive 2002/96/EC

Please ensure that your old Waste Electricals and Electronics are recycled do not throw them away into standard waste.



### RF Safety Note

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



**R&TTE: DIRECTIVE 1999/5/EC** of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity. Compliance is declared according to:

**EN 301 489-1 V1.9.2** Electromagnetic compatibility and radio spectrum matters (ERM); Electromagnetic compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements -Referencing EN 301 489-3 V1.6.1 and 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; Part 2: Harmonised EN covering the essential requirements of article 3.2 of the R&TTE Directive.

**Low Voltage Directive: Directive 2006/95/EC** (Electrical Equipment designed for use within certain voltage limits) of August 2007. Compliance is declared according to:

**EN60950-1:** Safety of information technology equipment – according to test specification EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011.