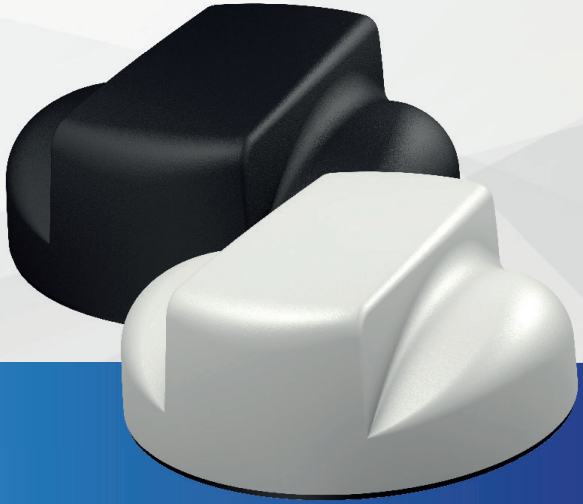
PANORAMA ANTENNAS



Installation Instructions

L[G]MM Series

SW3-259 - v2

Content

EN

1. Introduction

The L[G]MM antenna series offers a comprehensive range of antennas for vehicular applications requiring MiMo function for 4G/LTE. The antenna range offers a robust, low profile housing incorporating two ultra-wideband cellular elements supporting 4G bands, with fall back capability to 3G/2G.

Versions of the antenna are available with additional 2x2, 3x3 or 4x4 MiMo function for dual band WiFi and the LG version incorporates an active GNSS antenna suitable for use with GPS, GLONASS, BeiDou and Galileo devices.

Please ensure that you have the correct version before you commence installation.

Electrical Safety Note

The LG version of this product contains an active GNSS antenna (part number SR8-HG30). Rated voltage: 3-5VDC Rated current: 25mA maximum
The supply to this device must be provided with overcurrent protection of 1A maximum.

2. Mounting Requirements and Selecting Location

Ground plane independent - This antenna range does not require a ground plane in order to operate, so may be fitted on a metal or plastic roof panel.

When the antenna is to be co-located with other antennas or roof mounted equipment, try to achieve a minimum of 30cm (12”) clearance around the L[P]GMM antenna in order to avoid de-tuning and interference issues.

The antenna will fit on a panel up to 7mm (0.28in) thick – extender kit M18-EXT is available for thicker panels. For the mounting location, select a flat panel area to accommodate the 17cm (6.7in) diameter footprint of the antenna. For curved or ribbed roof panels, fitting kit LGMM-EXT-R is available as an accessory item.
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

Mask the panel area around the hole position to protect the paintwork and headliner. Drill a pilot hole, and then either use a hole cutter of correct size or increase the hole diameter to 19mm (3/4"), ensuring that drill/cutter bit does not contact the internal headliner. Clean area around the hole, carefully removing all swarf. Apply some petroleum jelly or paint around the hole to prevent corrosion

4. Fitting the Antenna

Note: The adhesive pad provides the sealing function of the antenna to mounting panel. The temperature range for optimum pad bonding process is 21°C (70°F) to 37°C (100°F) - it is recommended that the installation is not carried out in temperatures of less than 50°F (10°C).
Remove the protective backing from the underside of the antenna and feed the coaxial cables through the panel. Position the antenna over the hole ensuring correct orientation and stick the antenna to the panel by applying firm downward pressure.

Caution – A slotted/split nut is provided in order to simplify fitting it over the coaxial cables. When fitting the nut, it is important to ensure that the cables are held centrally whilst the nut is correctly started on the threads.
The nut should fit freely by hand and only require a final tighten by spanner.
Assemble the nut and washer from underside and tighten to recommended torque of 5Nm.

5. Routing and Terminating Coaxial Cable(s)

Connect extension coaxial cables to antenna, ensuring that the connectors are fully inserted and tightened Route the cables to the equipment

When routing the cables take care to avoid running them adjacent to any existing vehicle wiring or fouling any moving vehicle components. The cables must not be routed in front of any airbag device.

Fit the correct coaxial connectors or adapters to the cables as required.

6. Commission and Test

Check the GNSS cable (if applicable):

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

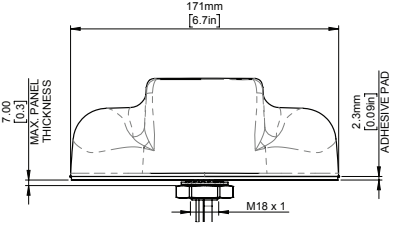
Check the comms cables:

- Earth continuity: connector body to vehicle ground should measure <0.2Ω (where applicable).
- Connector body to centre pin should measure low resistance (elements are DC grounded).
- Carry out VSWR check - the VSWR on all feeds should meet the specification in product data sheet.
- Connect the Cellular/LTE and WiFi cables (if applicable) or secure unused pigtails.

7. Notices

CAUTION: *To comply with FCC RF Exposure requirements in section 1.1310 of the FCC Rules, antennas used with this device must be installed to provide a separation distance of at least 20 cm from all persons to satisfy RF exposure compliance.*

DO NOT: *Operate the transmitter when someone is within 20 cm of the antenna.*
Operate the equipment in an explosive atmosphere.



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.

EU Declaration of Conformity (RED)

Object Reference: **LGMM/LGMTM/LGMQM-xx**
Object Description: **Low Profile MiMo Antenna with active GNSS 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.

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

Directive 2011/65/EU and its subsequent amendments RoHS 2:
EU RoHS compliance is declared with exemption 6c* (* Lead as an alloying element in a copper alloy containing up to 4% lead by weight.) Homogeneous materials composing parts that are compliant with this legislation have less than 0.1% by weight each of lead, mercury, hexavalent chromium, PBB, and PBDE, and 0.01% by weight of cadmium. In situations where an exemption applies, the preceding limits, corresponding to the exempted substance(s), may be higher.

Panorama's sole liability for incorrectly certifying a product shall be either replacement of the product or, alternatively and in the sole discretion of Panorama, return of the purchase price paid for the relevant Panorama Antennas product.

Contact Information

Panorama Antennas Ltd

Head Office - United Kingdom
61 Frogmore, Wandsworth, London, SW18 1HF

sales@panorama-antennas.com
+44 (0)20 8877 4444

Panorama Antennas Inc

USA
1551 Heritage Parkway, Suite 101, Mansfield, TX, 76063

sales.nam@panorama-antennas.com
+1 817-539-1888

Panorama Antennas Pty Ltd

Australia
Unit 1, 5 Jaggs Way, Kardinya, WA 6163

sales.apac@panorama-antennas.com
+61 406 812 364

Panorama Antennas SAS

France
16 Allée des Acacias, 33700 Mérignac

fr.sales@panorama-antennas.com
+33 554 070 436

Panorama Antennas Pte Ltd

Singapore
Space@ Tampines, 18 Tampines Industrial Crescent, 528605

sales.sea@panorama-antennas.com
+65 9155 4194

Panorama Antennas Ltd

Germany
de.sales@panorama-antennas.com
+49 2303 902 88 00

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