



# Installation Instructions

4x4 MiMo Directional Panel Antenna  
WMM4G[G]-6-60  
SW3-091 - v2

# Content

EN

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# 1. Introduction

The WMM4G[G]-6-60 is a range of directional panel antennas for 4G/5G applications requiring support for 4x4 MiMo with optional GPS/GNSS. Ideal for branch or failover applications the antenna is suitable for external or internal mounting. The antenna is supplied as standard with a low profile wall mount bracket and a multi-tilt bracket for wall or mast mounting.



## Electrical Safety Note

Variants of this product contain an active GPS/GNSS antenna.

Rated voltage: 3-5VDC Rated current: 20mA maximum.

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

# 2. Planning the Installation

To minimize the effects of surrounding objects, the antenna should be located as far away from other structures as possible. If fitted with GPS/GNSS the antenna should have a clear view of the sky. The antenna is directional with a horizontal beam width of around 90 degrees depending on frequency band. Select a mounting location to ensure that the antenna is facing the direction of the strongest signal, which may not be pointing directly towards the network base station. The orientation of the antenna should be vertical with the cable exiting downwards.

A low profile wall mount bracket is supplied, allowing flat fitment to a wall with no directional adjustment. A multi-tilt bracket is also supplied for mounting to a mast (diameter <60mm [2.36"] ) or wall – this allows adjustable vertical and horizontal tilt. Alternatively, if the antenna is fitted to a panel with rear access, then it can be secured to the panel using suitable length M6x1 machine screws into the threaded bushes in the antenna back plate.

# 3. Safety Notes

- The antenna is designed to be mounted by a professional installer. Please seek professional advice from an accredited installer regarding the installation if in any doubt.
- If the antenna will be fitted to an existing mast, please ensure that it will not overload it.
- Ensure that the installation location can be safely accessed with the equipment that you have available.
- If mounting to a wall in a position which is accessible care should be taken to ensure that no one comes within 1m (3') of the antenna during use.

## CAUTION

Parts of the antenna are an electrical conductor. Contact with power lines can result in death, or serious injury. Do not install the antenna where there is any possibility of contact with (or high voltage arc-over from) power cables. The antenna and supporting mast must not be close to any power lines during installation, removal or in the event that part of the system should accidentally fall.

If the antenna is installed above the roof line or in an exposed location, it is advisable to fit lightning surge arrestors in the coaxial cable feed lines. Suitable units should be sourced and installed as per the manufacturer instructions. The installer is responsible for determining if this is a requirement for the antenna installation.

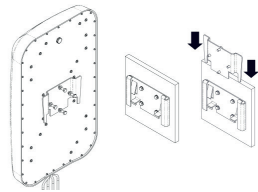
## 4. Mounting Using the Low Profile Wall Bracket

Offer the antenna to the mounting bracket face, fit the supplied bolts with washers and tighten securely. Do not over-tighten as it may warp the back plate.

Ensure there are no obstructions or utilities behind the mounting surface. Use the bracket as a template to mark the mounting hole positions. Select the correct size drill bit to suit the wall plug, drill holes and insert wall plugs. Align the bracket over the prepared holes, insert screws and fully tighten evenly. Drill any hole/s required for cable routing as appropriate.

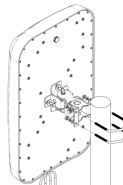
**Safety Check:** Ensure that the bracket is securely fixed to wall before fitting the antenna.

Offer the antenna and bracket to the wall mounting tilting the antenna slightly away from the wall and sliding the two prongs on the antenna bracket into the locations on the wall bracket until the antenna locates. Be careful not to trap or damage the cable.



## 5. Pole Mounting using the Adjustable Bracket

Fit bracket to antenna using supplied screws, washers and nuts. Offer the multi-tilt bracket to mast in selected position and fit V bolts with washer & nuts. Tighten by hand to allow final positioning and alignment of the bracket. Note: directional adjustment in both azimuth (horizontal)[ $\pm 40$ deg] and elevation (vertical) [ $\pm 20$ deg] can be made using the tilt/swivel feature. Once correctly aligned, fully tighten the V bolts evenly from each side to secure the bracket.



**Caution:** Do not overtighten the V bolts as this may damage or distort the mast tube section.

## 6. Routing and Terminating Coaxial Cable(s)

Plan the coaxial cable route to the wireless device to avoid running adjacent to any existing electrical wiring and ensuring that they will not be subjected to damage.

The antenna feeds consist of a low frequency element covering 617-960/1710-2700MHz and a high frequency element covering 2.7-6.0GHz. The higher frequency component of all feeds is vertically polarised while the lower frequency component is configured with the following polarisations:

**Cable 4G/5G A : +45° | Cable 4G/5G B : -45° | Cable 4G/5G C : -45° | Cable 4G/5G D : +45°**

Secure the cable run using correct size cable clips, so as not to distort/compress the cable. It is important that the cable is not bent sharply – note that the minimum bend radius for the cable is 25mm (1”) and this should be considered when routing to the cable entry point. Where the antenna is installed externally, it is good practice to create a ‘drip-loop’ at the entry point to avoid water ingress. Any excess cable must not be coiled - it should be laid out in a figure of eight pattern and loosely secured.

SMA (m) connectors are fitted as standard. A 9mm clearance hole is required for the connector – ensure it is not damaged when inserting through the hole.

## 7. Commission and Test

### Check the comms cables:

- Carry out VSWR check, the VSWR should measure <2.5:1
- Connect the Cellular/LTE cables.

### Check GPS 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.

## 8. 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 power lines.
- chew parts or put them in mouth, keep away from unsupervised children.
- install the antenna in such a way that it may fall and cause injury.



#### **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.

#### **EU Declaration of Conformity**

**Object Reference:** WMM4GG-6-60

**Object Description:** Wall Mount 4x4 MiMo Antenna with 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

# Contact Information

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