

# Directional 4x4MiMo 4G/5G Antenna with GNSS

WMM4GG-6-60

PANORAMA ANTENNAS



- 4x4 MiMo High Gain Directional Antenna for 4G/5G
- Frequency range 617-960/1710-6000MHz
- Integrated High Performance GPS/GNSS Antenna Module
- Suitable for wall or mast mounting

The WMM4GG-6-60 is a high gain directional 4x4 MiMo antenna for 4G and 5G networks. It incorporates four pairs of wideband element assemblies in a single housing and is designed to support fixed site CAT18/20 client devices. It offers 6dBi peak gain for 617- 960MHz and 9dBi peak gain for 1710-6000MHz.

The antenna also includes an active, high performance GPS/GNSS antenna module with advanced filtering to give satellite acquisition resilience when used in LTE B13/14 and enables the user to have real time location of their asset.

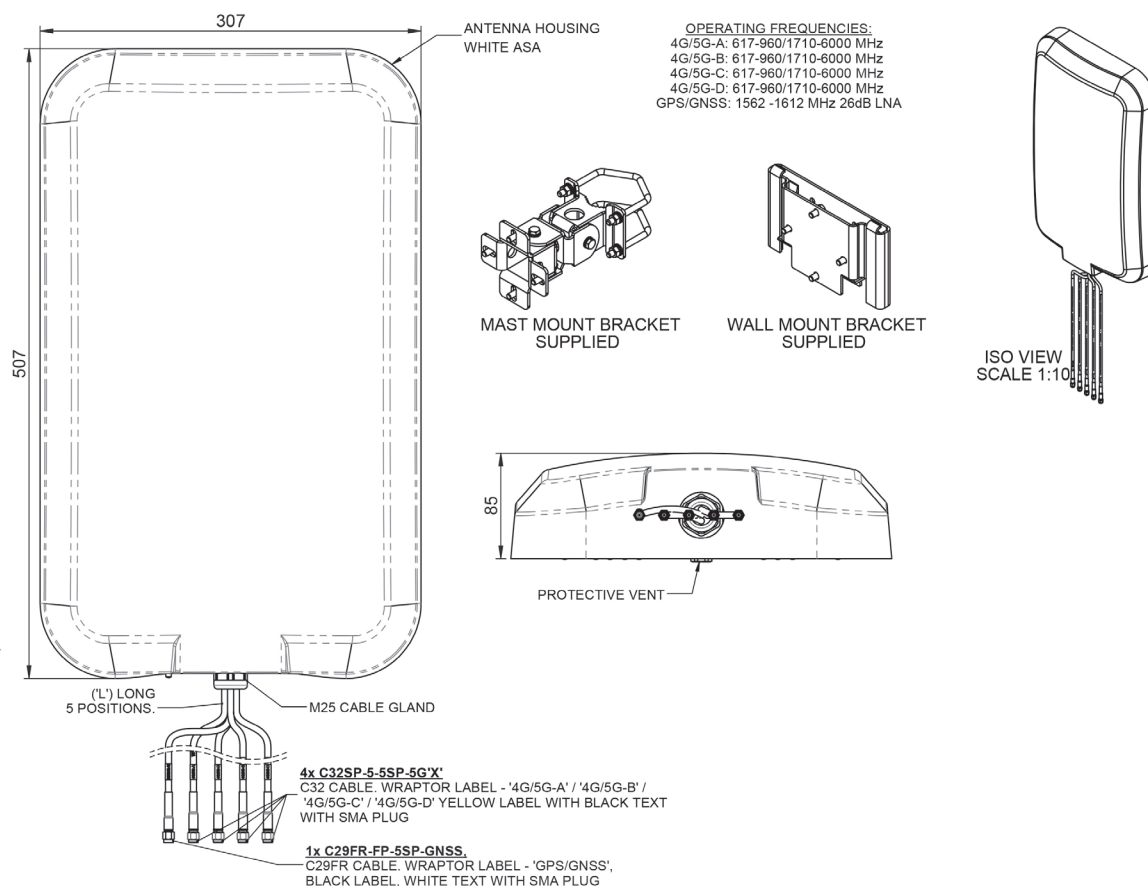
The weather resistant housing is designed for wall or mast mounting with the supplied hardware. WMM4GG-6-60-5FKJ version is fitted with FAKRA D jacks.

The standard WMM4G-6-60-5SP version has 5m length ultra-low loss CS32 type coaxial cables which eliminates exposed connector joints and simplifies the installation process. The WMM4GG-6-60-05NJ version has 50cm length cables, fitted with N type jack, which is ideal for installations that require a longer cable run, where Panorama's CS240 or CS400 type coaxial cable can be used to minimise the cable insertion loss.

The WMM4GG-6-60 is a value added product for network operators and service providers by improving the link resilience to the router, achieving increased data rates for the subscriber, resulting in customer satisfaction and retention.

## Technical Drawing

WMM4GG-6-60-5SP Shown



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## Product Data

Part No.				
		WMM4GG-6-60-5SP	WMM4GG-6-60-5FKJ	WMM4GG-6-60-05NJ
Electrical Data				
Frequency range (MHz)		617-960/1710-6000		
Operational bands		4G/5G		
Radiation pattern		Directional		
Nominal polarisation		+/- 45deg / Vertical		
Peak gain	617-960MHz	6dBi		
(excl cable loss)+	1710-6000MHz	9dBi		
Efficiency - excluding cable loss (all bands)		> 60%		
Correlation co-efficient ( all bands)		< 0.2		
Max input power (W)		20 Watts		
GPS/GNSS Data				
Frequency range (MHz)		1562-1612		
Typical LNA gain (dB)		26 +/- 3		
Out of band rejection		>40dB (@ > +/- 100MHz f)		
Noise figure (dB)		<2.7		
Notch Filter rejection @787MHz (dB)		24dB		
Typical Current (mA)		15		
Nominal Operating Voltage		3-5 V DC		
Mechanical Data				
Dimensions (mm)	Height	507 (19.96")		
	Width	307 (12.01")		
	Depth	85 (3.34")		
Operating temp (°C)		-40° / +80°C (-40° / 176°F)		
Material		ASA		
Colour		White		
IP Rating		IP66		
Radome material certifications		UL94-HB, UL746C-f2		
Weight (g)		5400		
Survival wind speed (m/s)		55		
Typical wind load @ 45 m/s (N)		200		
Mounting Data				
Fixing		wall mount / flush wall mount /mast mount		
Mounting bracket material		Coated steel / Aluminium / Stainless Steel		
Pole diameter (mm)		20-50 / (0.78 - 1.96")		
Cable & Connector Data				
Cable Type		Cell Cables: CS32 FRZH   GNSS Cable: CS29 FRZH ( Both meet EN6722 / EN45545-2)		
Diameter (mm)		5 (0.2")		
Length (m)		5 (16.4')		0.5 (19")
Connector		SMA(m) x 5	FAKRA D x 4	N Socket (f) x 5

+ Peak gain derived from CST Microwave Studio and excludes cable loss.

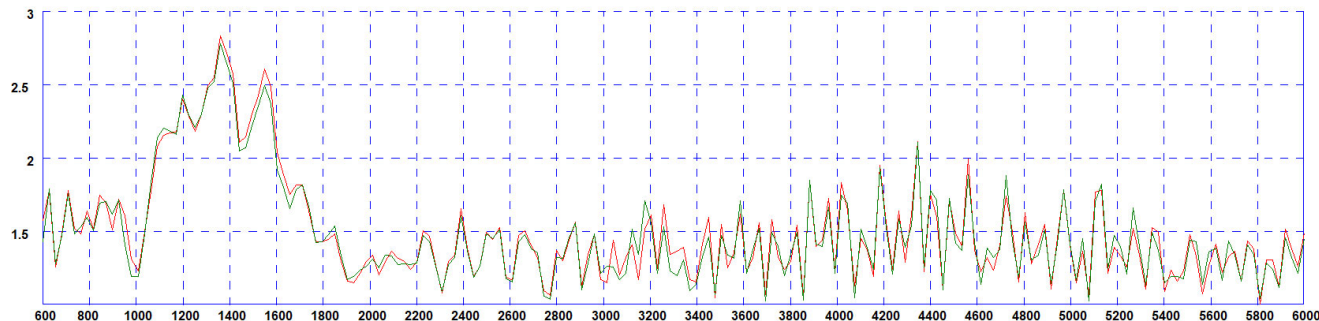
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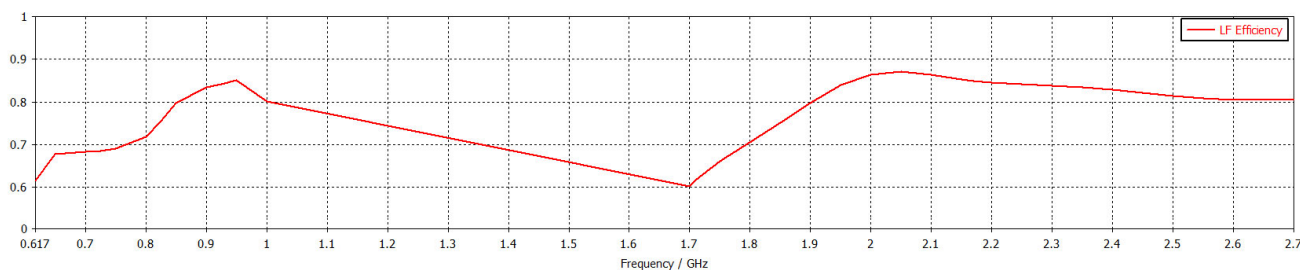
## Electrical Data

Typical VSWR\*



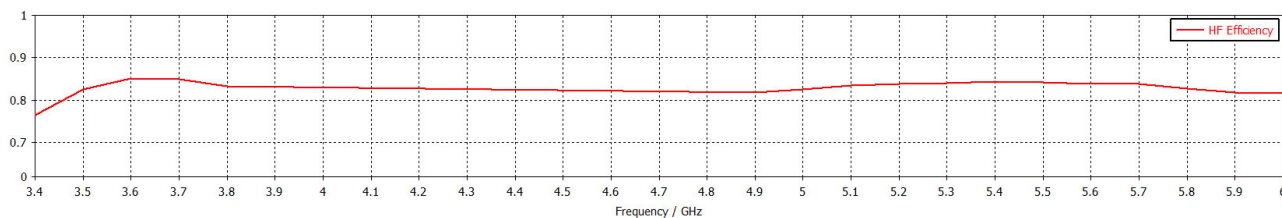
\*VSWR for elements assemblies 1 and 2 measured with 5m (16') of CS32 cable.

Typical Efficiency 617-2700MHz\*



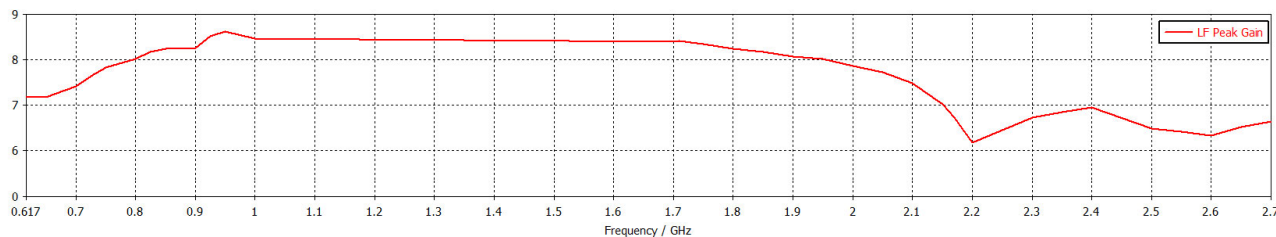
\*Efficiency simulated in CST Microwave Studio excluding cable loss.

Typical Efficiency 3400-6000MHz\*



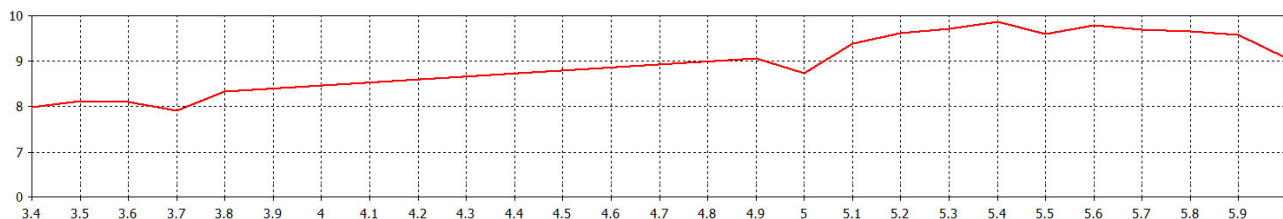
\*Efficiency simulated in CST Microwave Studio excluding cable loss.

Typical Swept Gain 617-2700MHz\*



\*Swept gain simulated in CST Microwave Studio excluding cable loss.

Typical Swept Gain 3400-6000MHz\*



\*Swept gain simulated in CST Microwave Studio excluding cable loss.

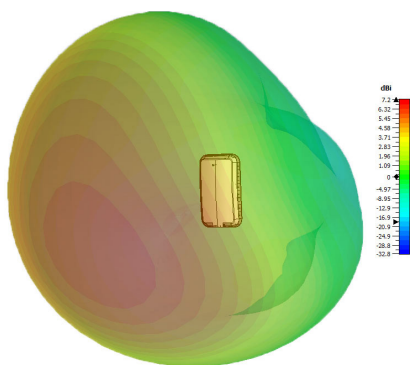
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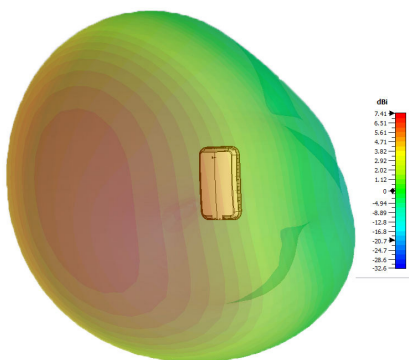
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## 3D Patterns

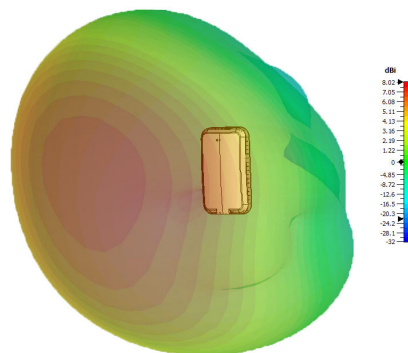
Typical 3D Pattern 617MHz\*



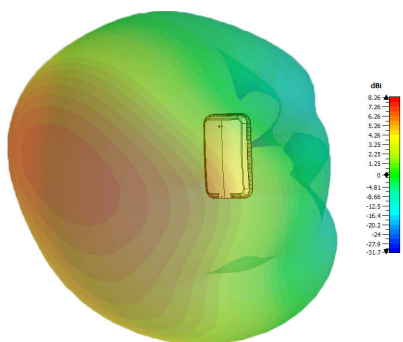
Typical 3D Pattern 700MHz\*



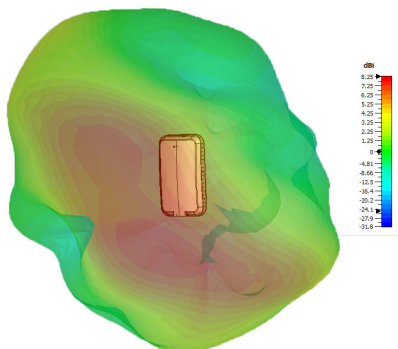
Typical 3D Pattern 800MHz\*



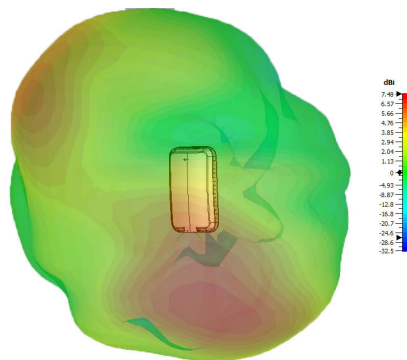
Typical 3D Pattern 900MHz\*



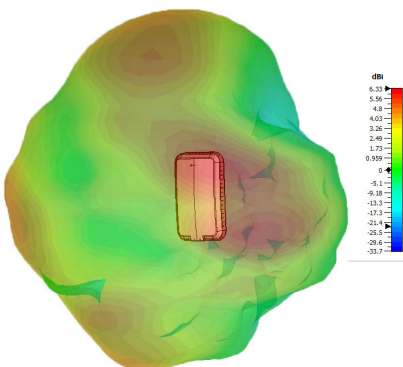
Typical 3D Pattern 1800MHz\*



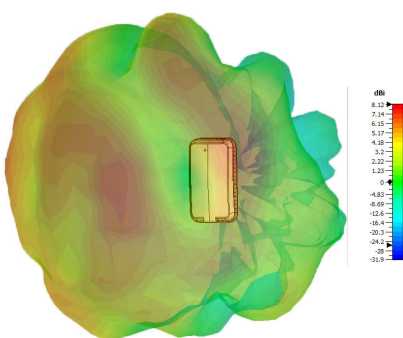
Typical 3D Pattern 2100MHz\*



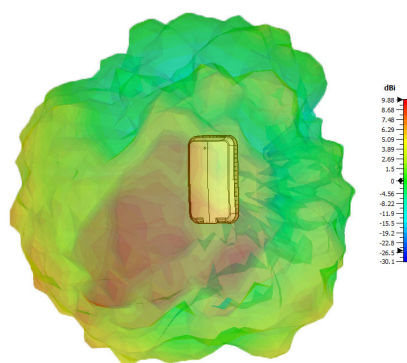
Typical 3D Pattern 2600MHz\*



Typical 3D Pattern 3600MHz\*



Typical 3D Pattern 5600MHz\*



Typical E Plane Pattern GPS 1575MHz\*

