Low Profile 4x4 MiMo Antenna

LGM[Q]M4-7-38[-24-58]

- Rugged low profile design
- 4x Wideband LTE/cellular elements
- Optional Integrated GPS/GNSS antenna
- Optional MiMo WiFi - up to 4x4 2.4/4.9-6GHz

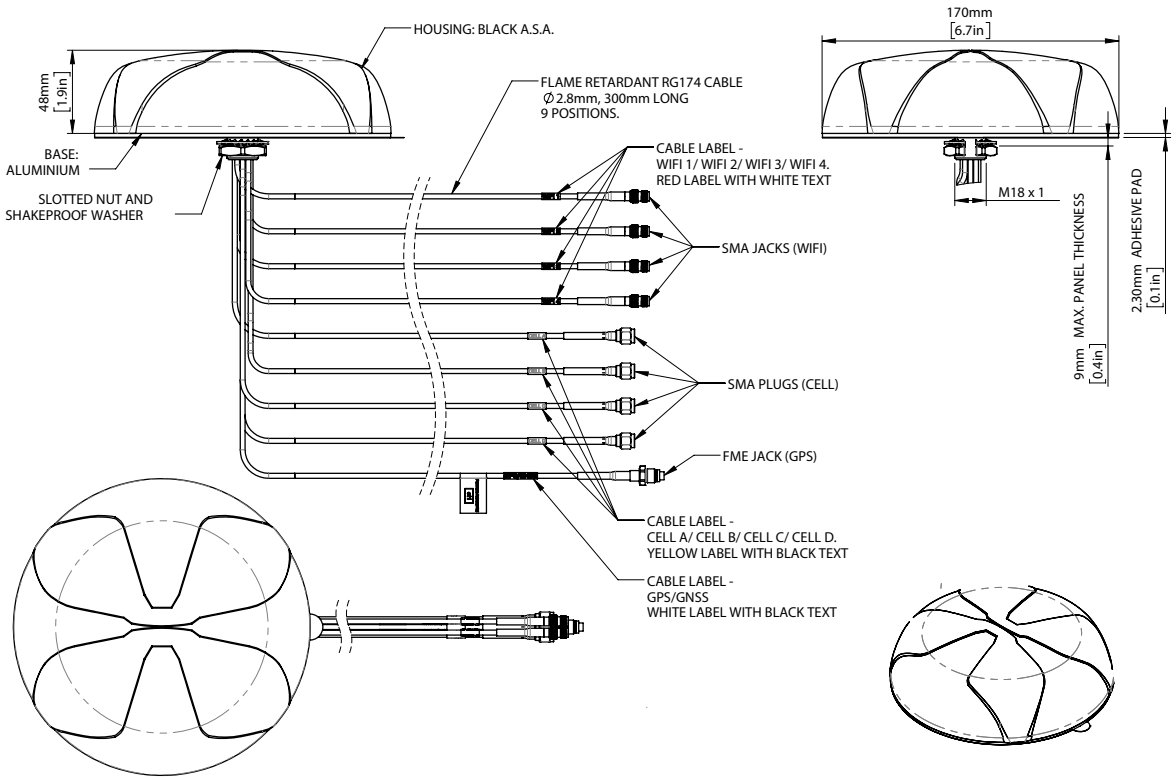
The Panorama L[G]M[Q]M4 low profile MiMo antenna range has been designed to support the next generation of vehicular LTE routers with 4x4 MiMo. The antenna enclosure can provide up to nine antenna elements.
All versions have four ultra-wideband elements for 698-3800MHz which support MiMo function for 4G/5G & cellular bands. LG versions offer a GNSS antenna which has a 26dB gain LNA with high performance filtering for reliable operation. Variants are also available which include 2, 3 or 4 dual band 2.4/4.9-6GHz WiFi elements for MiMo function designated by the suffix 24-58.

The antenna does not require a metallic ground plane, and maintains a high level of performance even when mounted on a non-metallic surface.
The GNSS antenna module carries an E11 Mark type approval under ECE R10.4, and the cables are certified to ECE 118.01.

Although the LTE elements are designed for 4x4 MiMo operation, it is possible to utilise these as 2 pairs of 2x2 MiMo for a router that has 2 SIMS (radio) in a failover configuration (i.e. only one SIM active at any time). As this configuration is using only 2 out of the 4 antennas for a single SIM, the network coverage should be checked to ensure that this use is suitable.
Guidance on correct connection of the LTE antennas is provided in the installation instructions. Please Note: This antenna is not intended for use with a router that has 2 SIMS to provide concurrent or aggregated data operation, as there is not sufficient isolation between the MiMo pairs.

Technical Drawing

Part No. LGMQM4-7-38-24-58



Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com

Low Profile 4x4 MiMo Antenna

LGM[Q]M4-7-38[-24-58]

PANORAMA ANTENNAS

Product Data

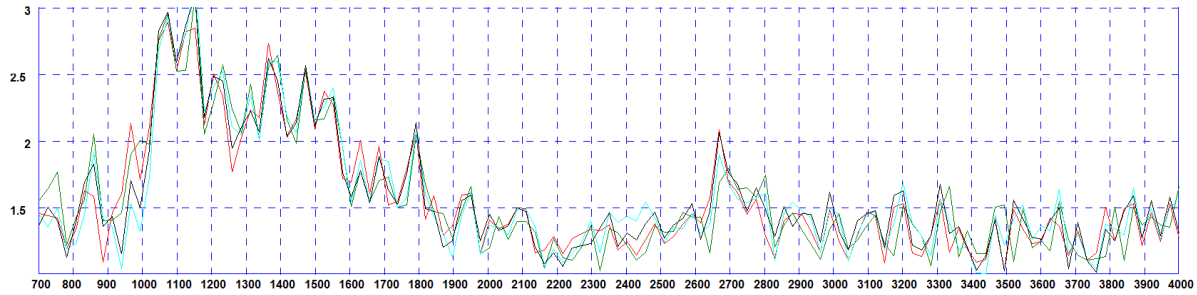
Part No.					
		LGMM4-7-38	LGMDM4-7-38-24-58	LGMTM4-7-38-24-58	LGMQM4-7-38-24-58
Electrical Data					
Frequency Range (MHz)	Cell Elements	4x 698-960/1710-3800			
	WiFi Elements	-	2x 2.4/4.9-6GHz	3x 2.4/4.9-6GHz	4x 2.4/4.9-6GHz
Operational Bands	Cell Elements	4x4 MiMo LTE / Cellular			
	WiFi Elements	-	2x2 WiFi	3x3 WiFi	4x4 WiFi
Nominal Peak Gain: Isotropic*	Cell Elements	698-960MHz	4dBi		
		1710-3800MHz-	6dBi		
	WiFi Elements	2.4/4.9-6.0GHz-	6dBi / 8dBi		
Correlation Co-efficient	Cell Elements	<0.3			
Typical Impedance	Elements 1&2	50Ω			
Max input power (W)		20			
GPS/GNSS Data					
Frequency Range (MHz)		1562-1612MHz			
VSWR		<2.0:1 ± 4MHz			
Gain: LNA		26dB			
Operating Voltage		3 - 5V DC			
Type Approval		E11 (ECE R10.4)			
Mechanical Data					
Dimensions	Height	48mm (1.9”)			
	Diameter	170mm (6.7”)			
Operating Temp (°C)		-30° / +80°C (-22° / 176°F)			
IP Rating		IP69K			
Colour		White (Black also available)			
Mounting Data					
Mounting type		Panel Mount			
Max panel thickness		7mm (0.27”)			
Mounting hole		19mm (3/4”)			
Cable Data					
4x Cell / LTE Cables	Type	RG174-FR (ECE118.01 Compliant)			
	Diameter	2.8mm (0.1”)			
	Length	0.3m (1’)			
	Termination	SMA (m)			
GPS/GNSS Cable	Type	RG174-FR (ECE118.01 Compliant)			
	Diameter	2.8mm (0.1”)			
	Length	0.3m (1’)			
	Termination	FME (f)			
WiFi Cables	Type	-	RG174-FR (ECE118.01 Compliant)		
	Diameter	-	2.8mm (0.1”)		
	Length	-	0.3m (1’)		
	Termination	-	SMA (f)-		

* Peak gain simulated with all elements fed on 600x600mm ground plane excluding cable loss

Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com

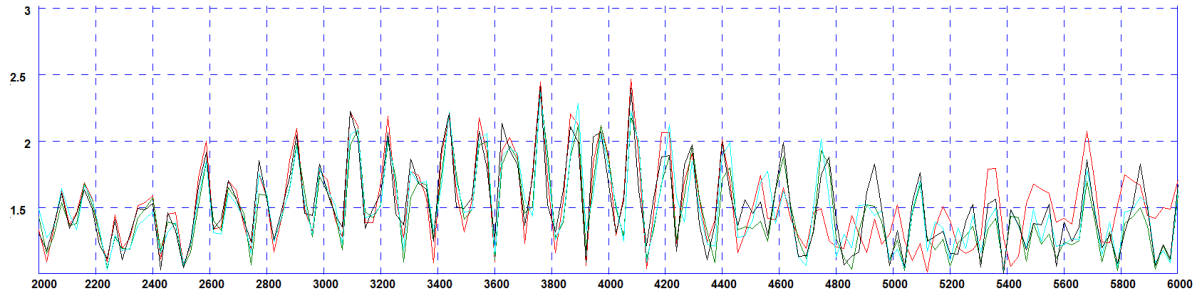
Electrical Data - Cell

Typical VSWR - CELL / LTE - Elements 1-4



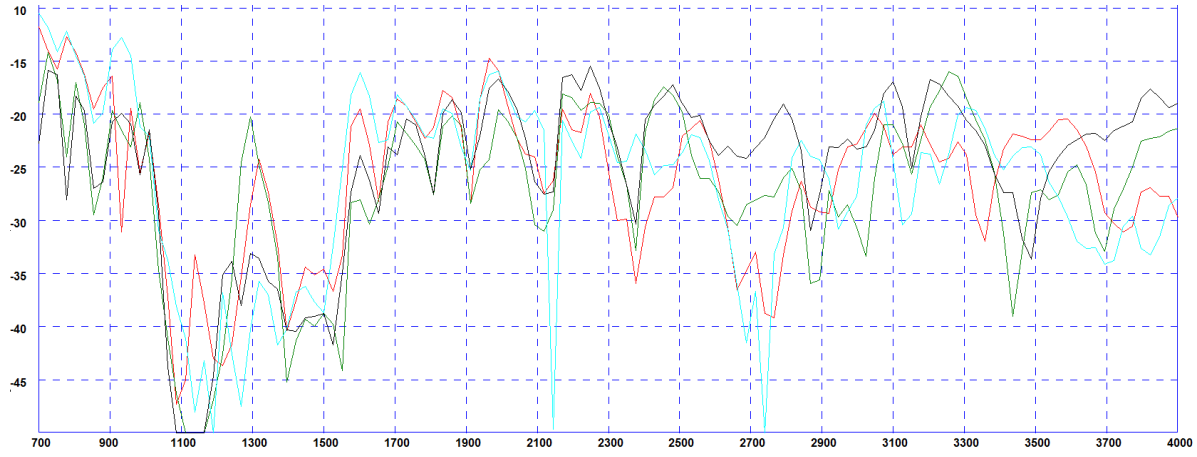
*VSWR measured with 5m (17') of CS29 (double shielded) cable in free space

Typical VSWR - WiFi - Elements 1-4



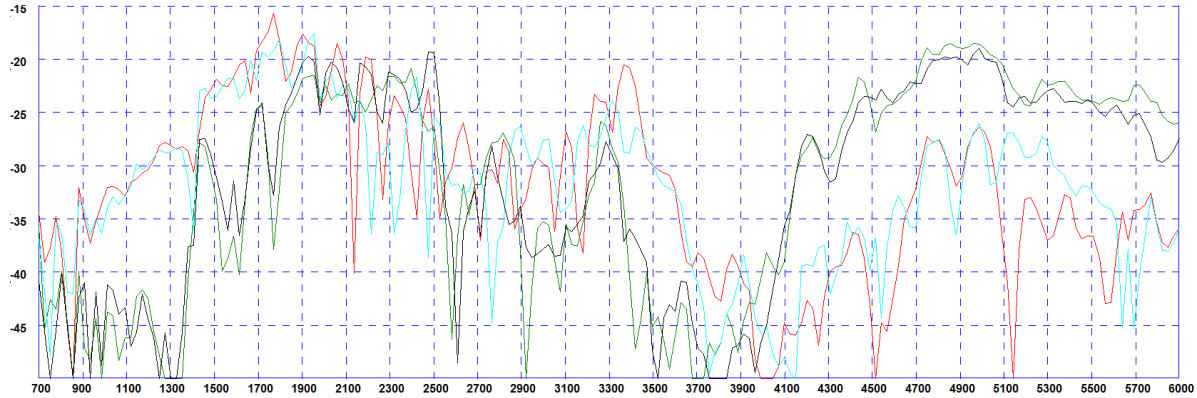
*VSWR measured with 5m (17') of CS32 (double shielded) cable in free space

Typical Isolation - CELL / LTE - Elements 1-4



*Isolation measured without additional cable in free space. Red trace = Element 1-2 | Green Trace = Element 1-3 | Blue Trace = Element 1-4 | Black Trace = Element 2-4

Typical Isolation - WiFi - Elements 1-4



*Isolation measured without additional cable in free space. Red trace = Element 1-2 | Green Trace = Element 1-3 | Blue Trace = Element 1-4 | Black Trace = Element 2-4

Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com

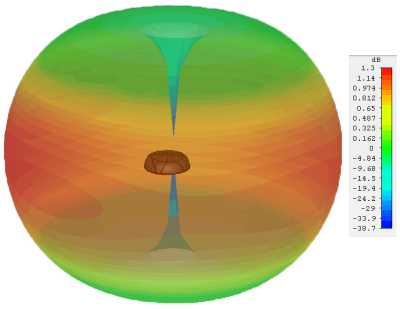
Low Profile 4x4 MiMo Antenna

LGM[Q]M4-7-38[-24-58]

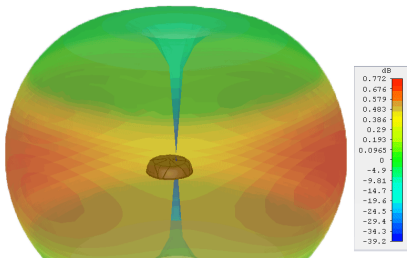
PANORAMA ANTENNAS

3D Patterns - Cell

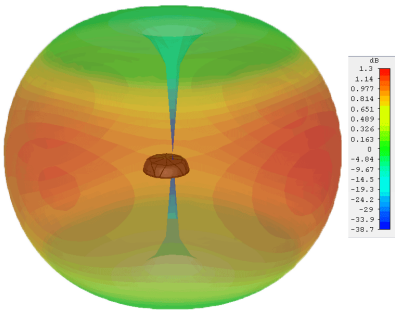
Typical 3D Pattern (700MHz)



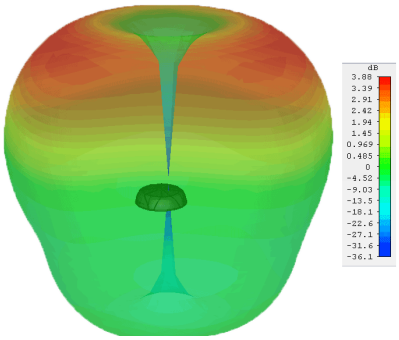
Typical 3D Pattern (800MHz)



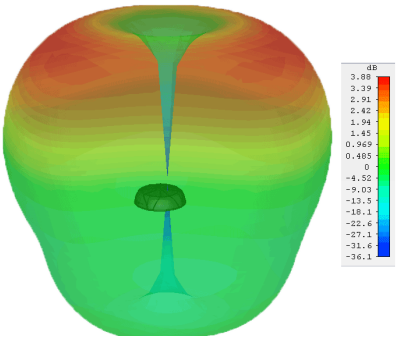
Typical 3D Pattern (900MHz)



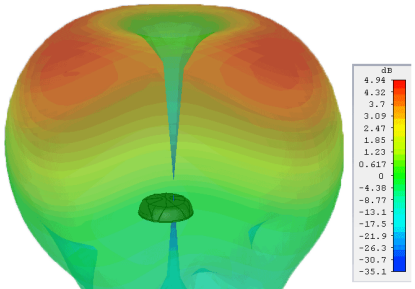
Typical 3D Pattern (1800MHz)



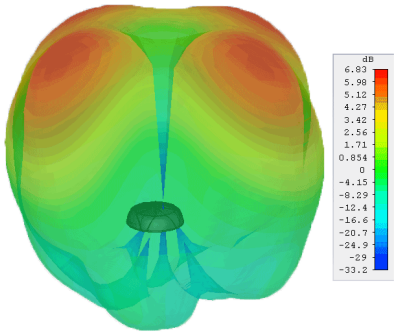
Typical 3D Pattern (1900MHz)



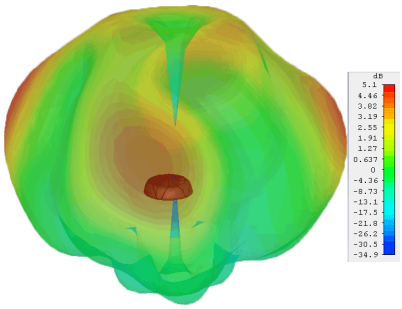
Typical 3D Pattern (2100MHz)



Typical 3D Pattern (2600MHz)

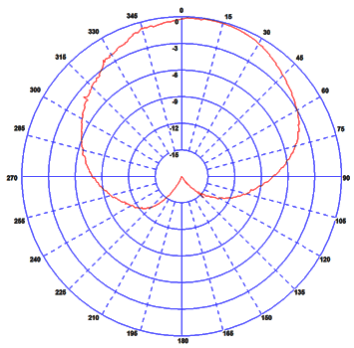


Typical 3D Pattern (3600MHz)



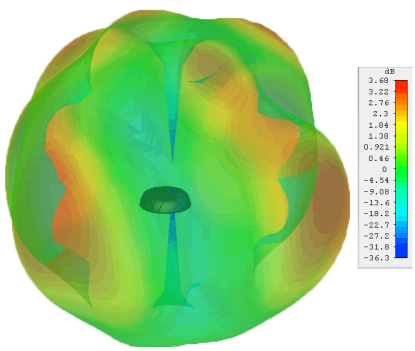
Pattern -GPS/GNSS

Typical E-Plane Pattern GPS/GNSS

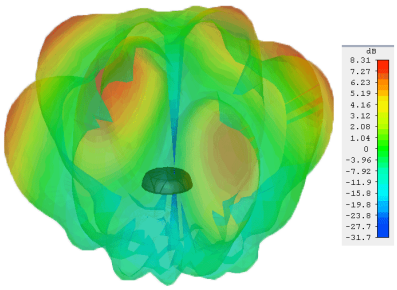


3D Patterns -WiFi

Typical 3D Pattern WiFi (2400MHz)



Typical 3D Pattern WiFi (5400MHz)



Panorama Antennas Ltd
Frogmore, London, SW18 1HF, United Kingdom
T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477
E: sales@panorama-antennas.com
W: www.panorama-antennas.com