

# Low Profile 4x4 MiMo Antenna

PANORAMA ANTENNAS

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.

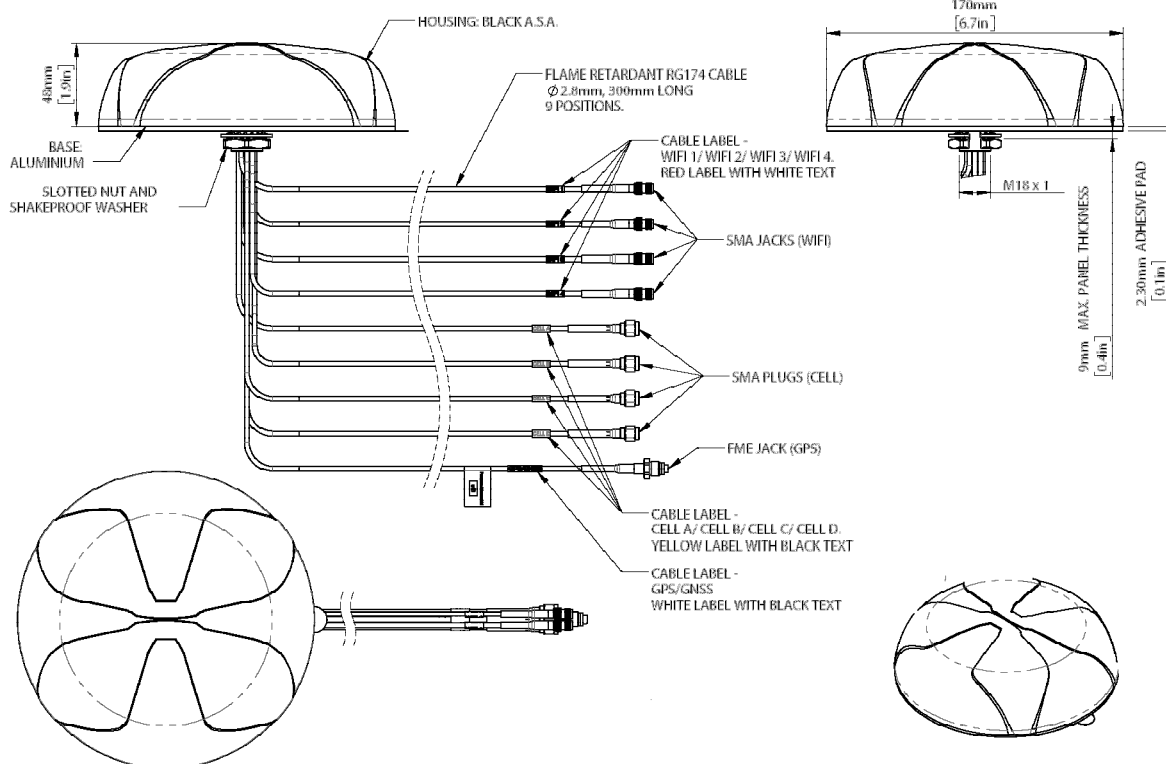
The antenna does not require a metallic ground plane, and maintains a high level of performance even when mounted on a non-metallic surface.

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

LGMQM4-7-38-24-58 shown



# 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	50Ω				
Max Input Power (W)	10				
GPS/GNSS Data					
Frequency Range (MHz)	1562-1612				
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	-30° / +80°C (-22° / 176°F)				
Colour	White (Black also available)				
IP Rating	IP69K				
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 (0.11")			
	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

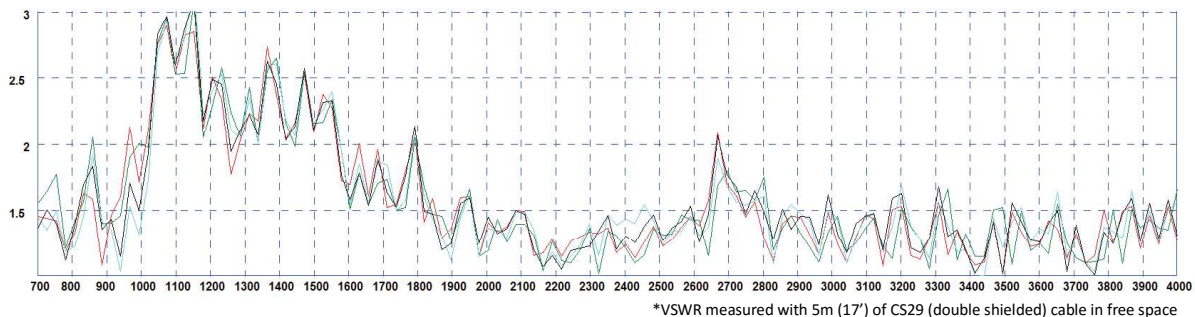
# Low Profile 4x4 MiMo Antenna

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

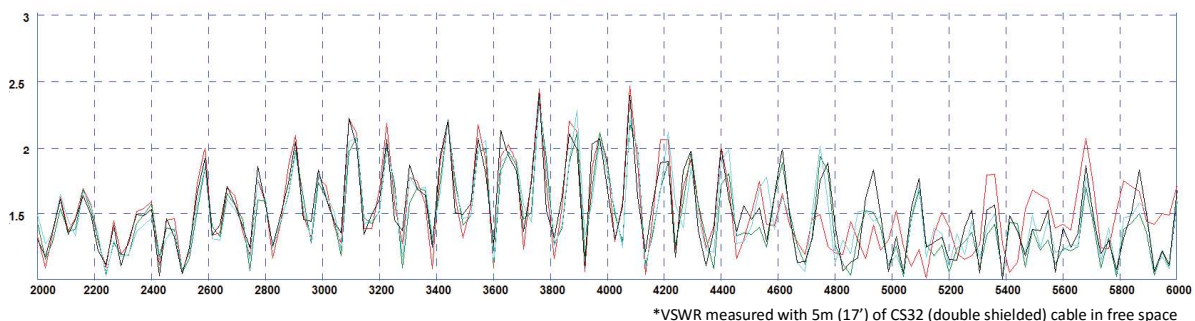
PANORAMA ANTENNAS

## Electrical Data

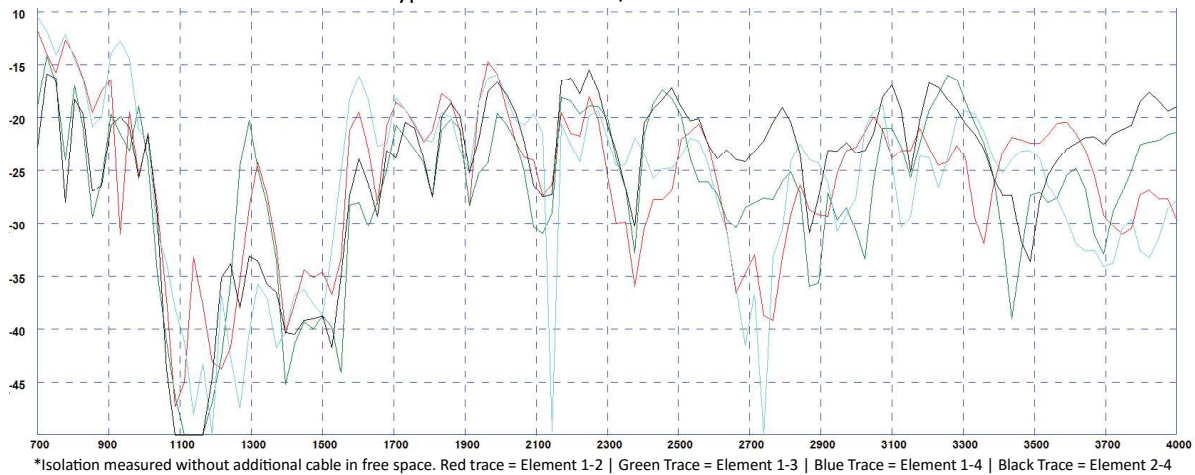
Typical VSWR - CELL/LTE - Elements 1-4



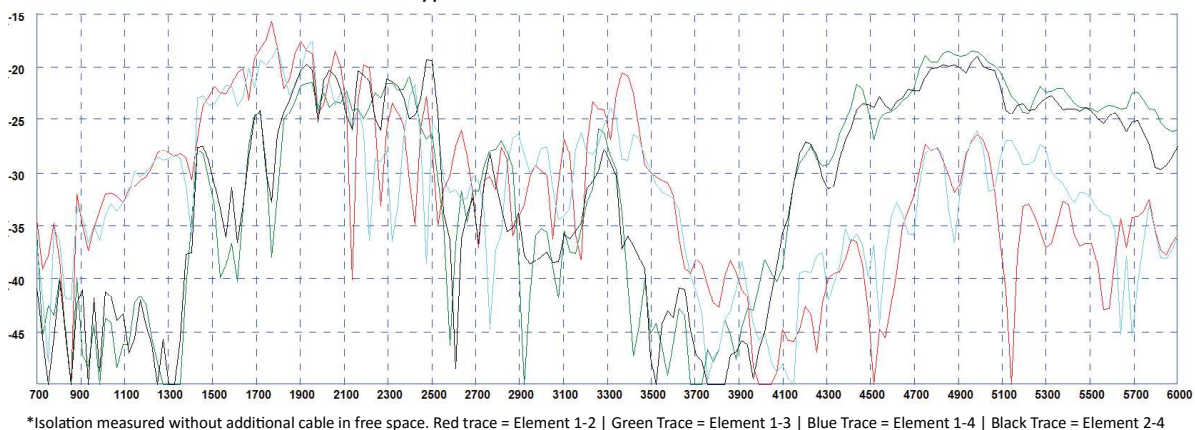
Typical VSWR - WiFi - Elements 1-4



Typical Isolation - CELL/LTE - Elements 1-4



Typical Isolation - WiFi - Elements 1-4



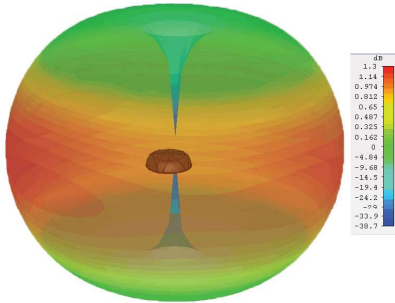
# Low Profile 4x4 MiMo Antenna

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

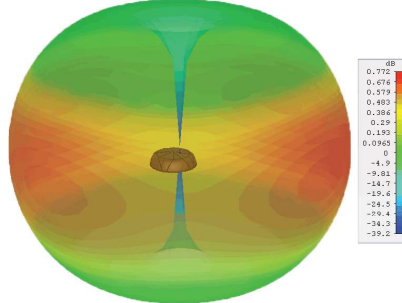
PANORAMA ANTENNAS

## Cell 3D Patterns

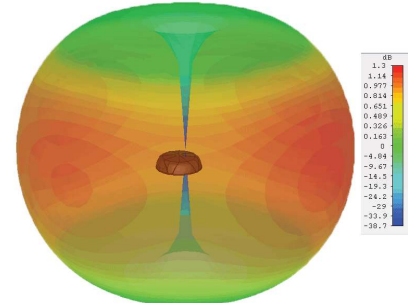
Typical 3D Pattern (700MHz)



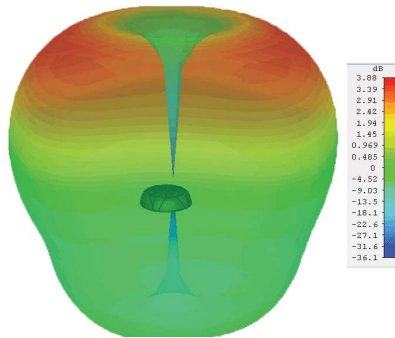
Typical 3D Pattern (800MHz)



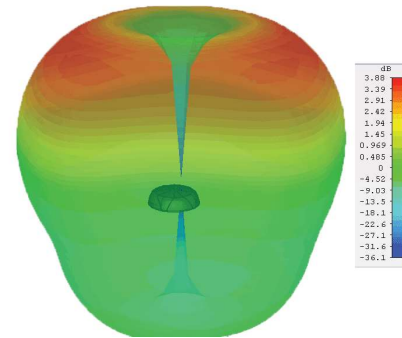
Typical 3D Pattern (900MHz)



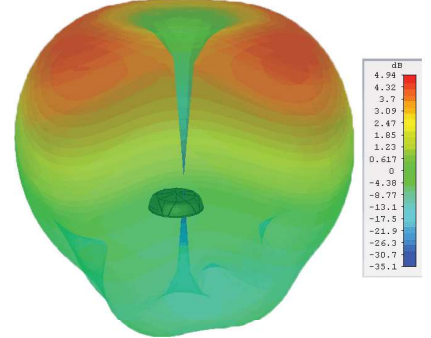
Typical 3D Pattern (1800MHz)



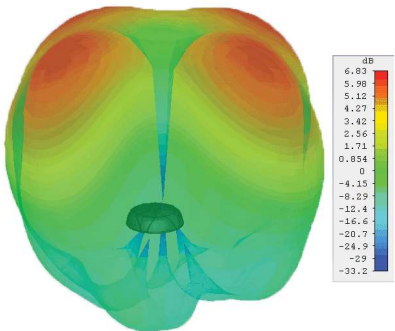
Typical 3D Pattern (1900MHz)



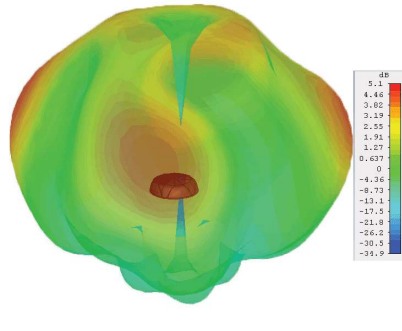
Typical 3D Pattern (2100MHz)



Typical 3D Pattern (2600MHz)

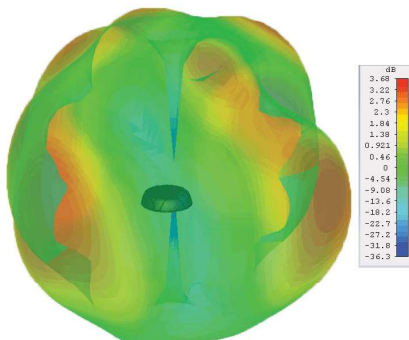


Typical 3D Pattern (3600MHz)

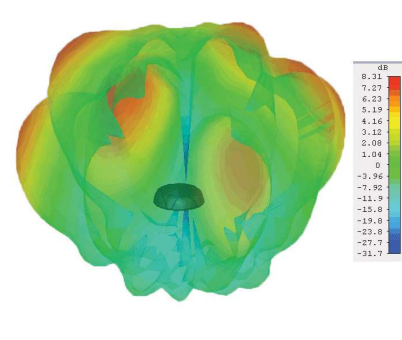


## WiFi 3D Patterns

Typical 3D Pattern WiFi (2400MHz)

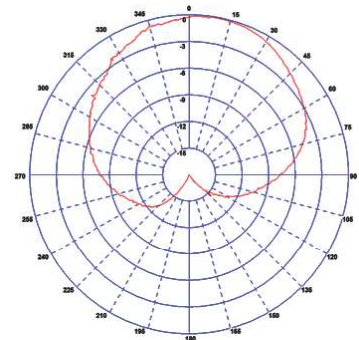


Typical 3D Pattern WiFi (5400MHz)



## GPS/GNSS Patterns

Typical E-Plane Pattern GPS/GNSS



\*3d patterns simulated in CST Microwave Studio with no ground plane or additional cable and all elements fed.

**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

PANORAMA ANTENNAS

Waiver: The data given above is indicative of the performance of the product/s under particular conditions and does not imply a guarantee of performance. These specifications are subject to change without notice. Copyright © Panorama Antennas Ltd. All rights reserved.  
31/07/2018 V2.3