

# 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 GPS/GNSS antenna which has a 30dB 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 E11 Mark type approval under ECE R10 and pigtail cables are certified to ECE R118.

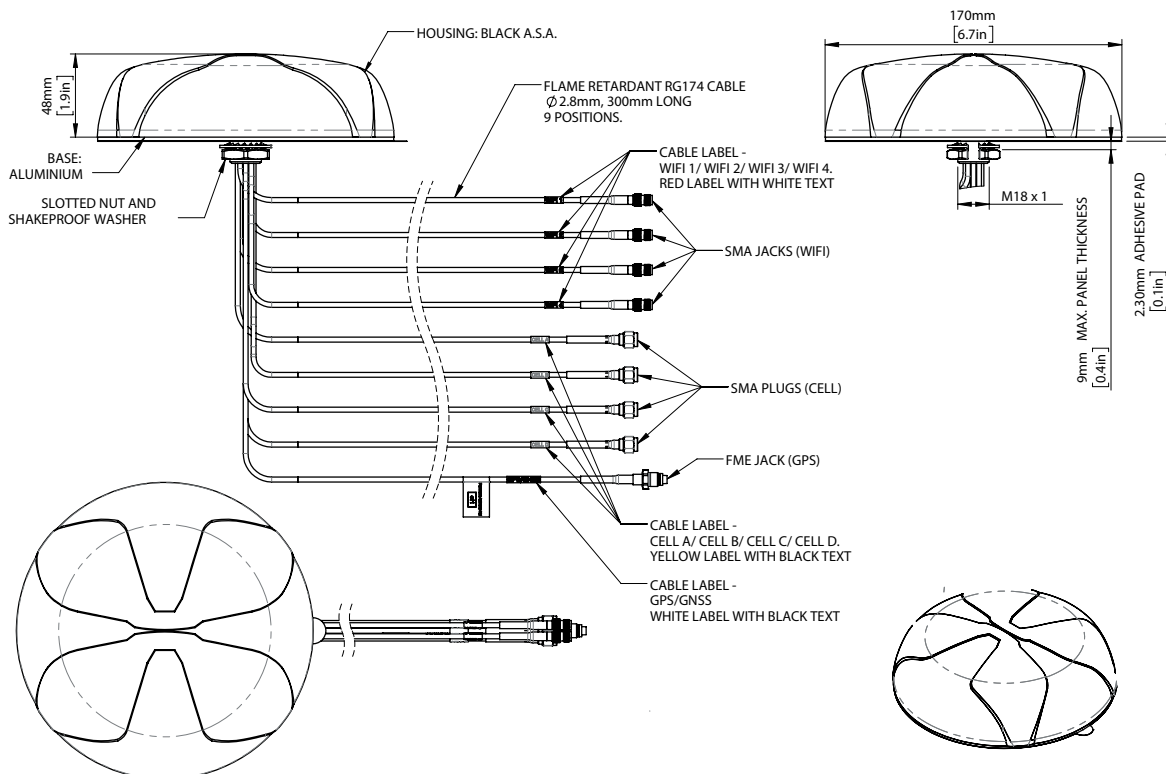
The LTE elements are designed for 4x4 MiMo operation, however it is possible to utilise these as 2 pairs of 2x2 MiMo for a router with dual radios used in a failover configuration (i.e. only one radio active at any time). As this configuration only uses 2 out of the 4 antennas for a single radio, the network coverage should be checked to ensure that this use is a suitable solution.

Guidance on correct connection of the LTE antennas is provided in the installation instructions. Please Note: This antenna is not intended for use with dual radios that use concurrent 2x2 MiMo operation, as there is not sufficient isolation between the MiMo pairs.



## Technical Drawing

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



# Low Profile 4x4 MiMo Antenna

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

## Product Data

Part No.	LPMM4-7-38	LGMM4-7-38	LGMDM4-7-38-24-58	LGMTM4-7-38-24-58	LGMQM4-7-38-24-58
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Electrical Data		LPMM4-7-38	LGMM4-7-38	LGMDM4-7-38-24-58	LGMTM4-7-38-24-58	LGMQM4-7-38-24-58
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		LPMM4-7-38	LGMM4-7-38	LGMDM4-7-38-24-58	LGMTM4-7-38-24-58	LGMQM4-7-38-24-58
Frequency Range (MHz)		-			1562-1612MHz	
VSWR		-			<2.0:1 ± 4MHz	
Gain: LNA		-			30dB	
Operating Voltage		-			3 - 5V DC	
Type Approval		-			E11 (ECE R10)	

Mechanical Data		LPMM4-7-38	LGMM4-7-38	LGMDM4-7-38-24-58	LGMTM4-7-38-24-58	LGMQM4-7-38-24-58
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		LPMM4-7-38	LGMM4-7-38	LGMDM4-7-38-24-58	LGMTM4-7-38-24-58	LGMQM4-7-38-24-58
Mounting type		Panel Mount				
Max panel thickness		7mm (0.27")				
Mounting hole		19mm (3/4")				

Cable Data		LPMM4-7-38	LGMM4-7-38	LGMDM4-7-38-24-58	LGMTM4-7-38-24-58	LGMQM4-7-38-24-58
4x Cell / LTE Cables	Type	RG174-FR (ECE R118 Compliant)				
	Diameter	2.8mm (0.1")				
	Length	0.3m (1')				
	Termination	-	SMA (m)			
GPS/GNSS Cable	Type	-	RG174-FR (ECE R118 Compliant)			
	Diameter	-	2.8mm (0.1")			
	Length	-	0.3m (1')			
	Termination	-	FME (f)			
WiFi Cables	Type	-	-	-	RG174-FR (ECE R118 Compliant)	
	Diameter	-	-	-	2.8mm (0.1")	
	Length	-	-	-	0.3m (1')	
	Termination	-	-	-	SMA (f)-	

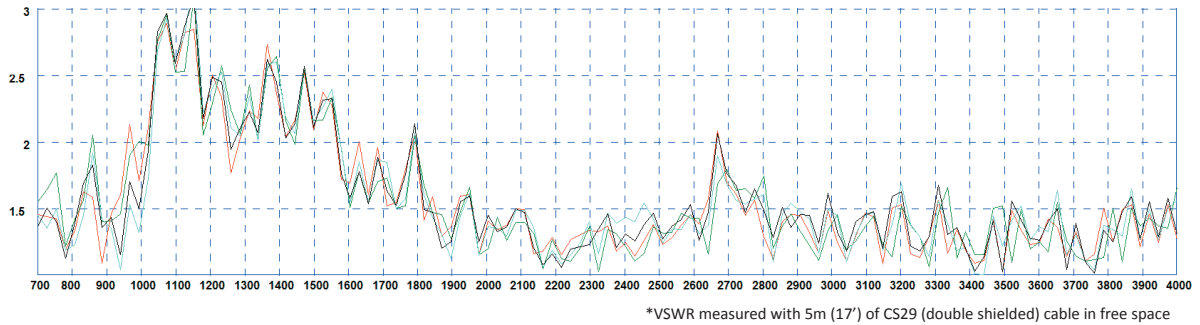
\* Peak gain simulated with all elements fed on 600x600mm ground plane excluding cable loss

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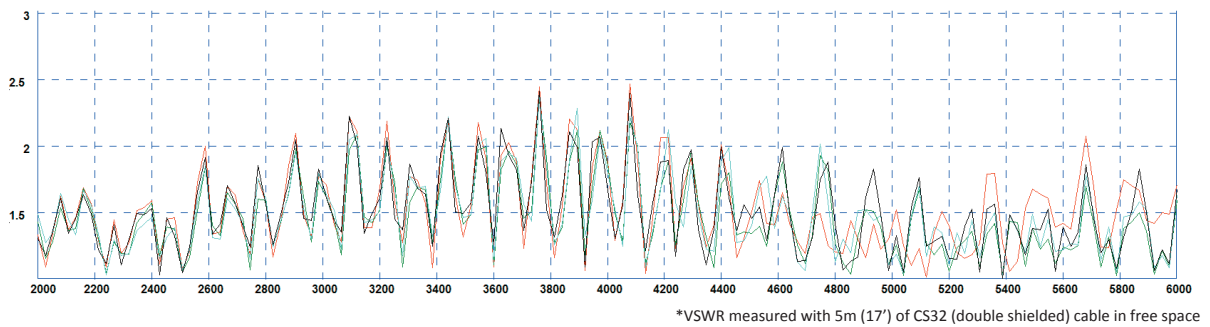
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## Electrical Data - Cell

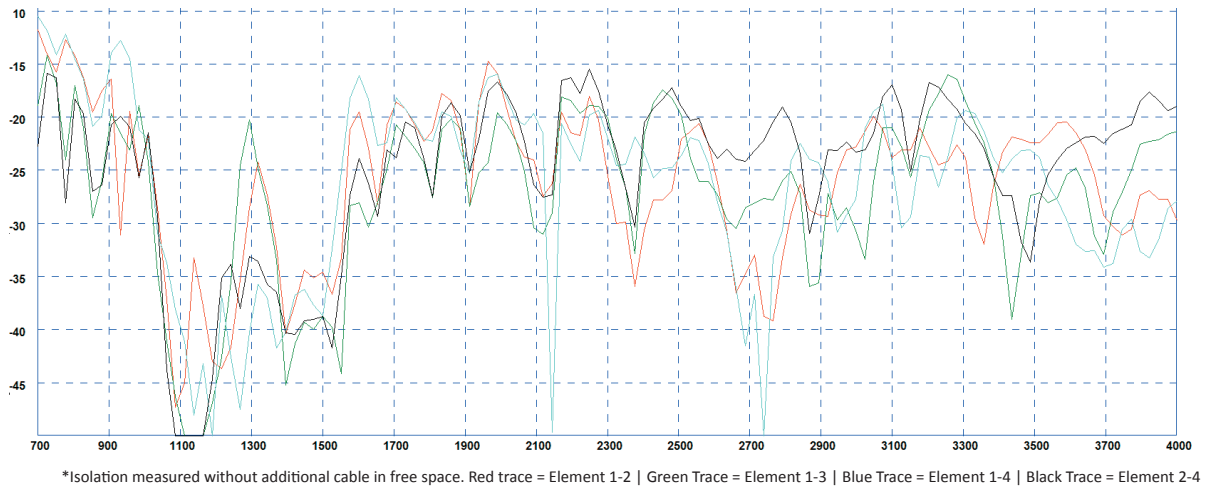
### Typical VSWR - CELL / LTE - Elements 1-4



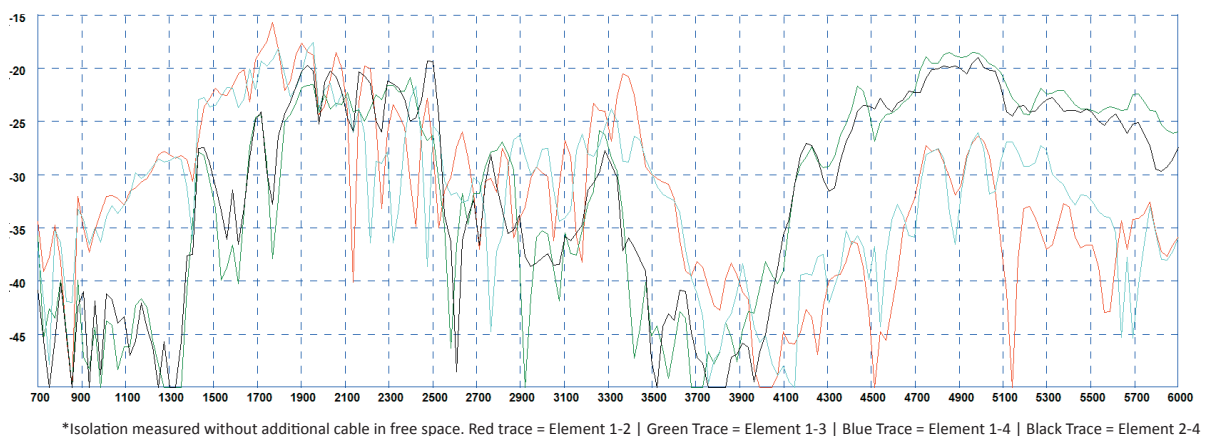
### Typical VSWR - WiFi - Elements 1-4



### Typical Isolation - CELL / LTE - Elements 1-4

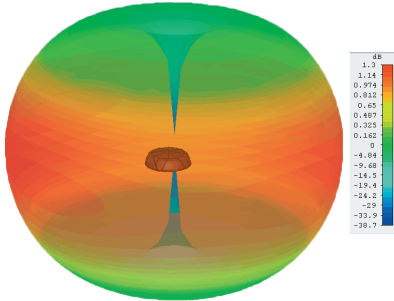


### Typical Isolation - WiFi - Elements 1-4

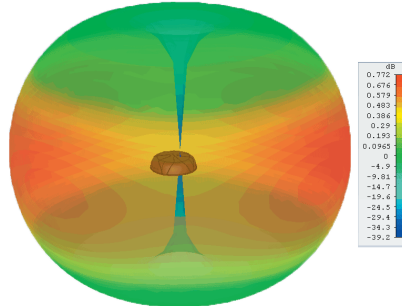


3D Patterns - Cell

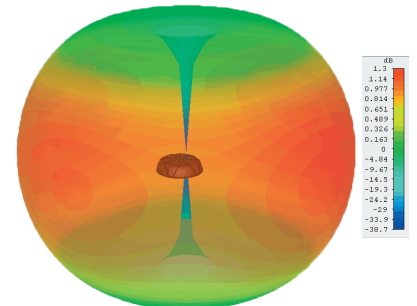
Typical 3D Pattern (700MHz)



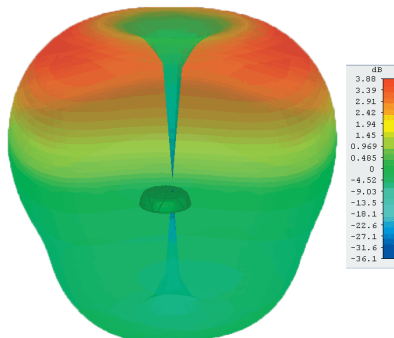
Typical 3D Pattern (800MHz)



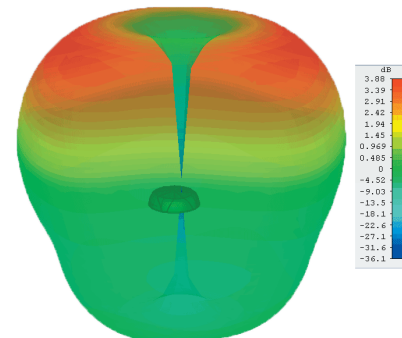
Typical 3D Pattern (900MHz)



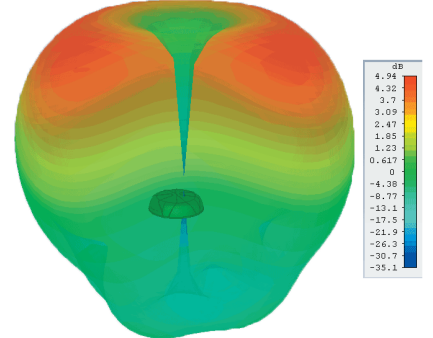
Typical 3D Pattern (1800MHz)



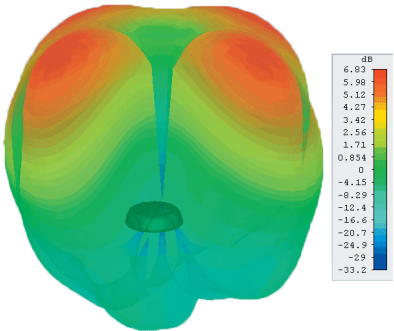
Typical 3D Pattern (1900MHz)



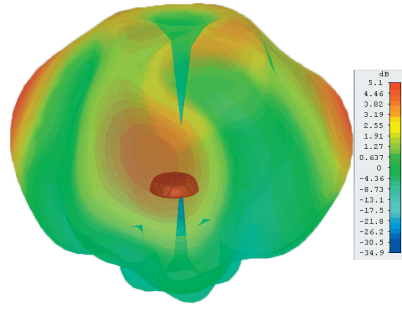
Typical 3D Pattern (2100MHz)



Typical 3D Pattern (2600MHz)

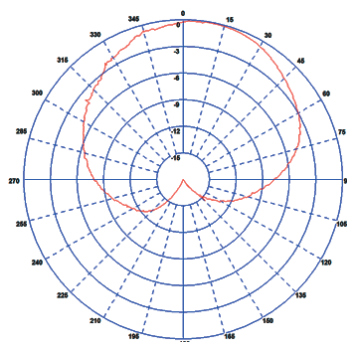


Typical 3D Pattern (3600MHz)



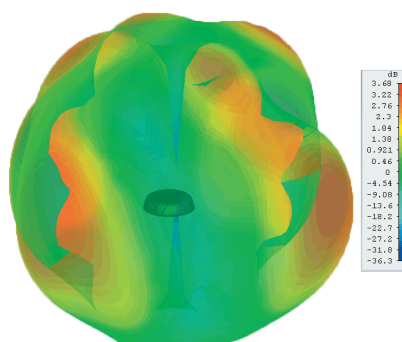
Pattern -GPS/GNSS

Typical E-Plane Pattern GPS/GNSS



3D Patterns -WiFi

Typical 3D Pattern WiFi (2400MHz)



Typical 3D Pattern WiFi (5400MHz)

