

# LP[G]MM[B]FFR-7-27[-24-58]

Low Profile MiMo Antenna

27/10/2016 V2

## Low Profile MiMo Antenna



Rugged low profile design

2x Wideband LTE/cellular elements

Optional integrated GPS antenna + optional MiMo WiFi

UN ECE 118.01 compliant cable & FAKRA connectors

The Panorama LP[G]MM low profile MIMO antenna range has been designed to support the new generation of vehicular LTE routers.

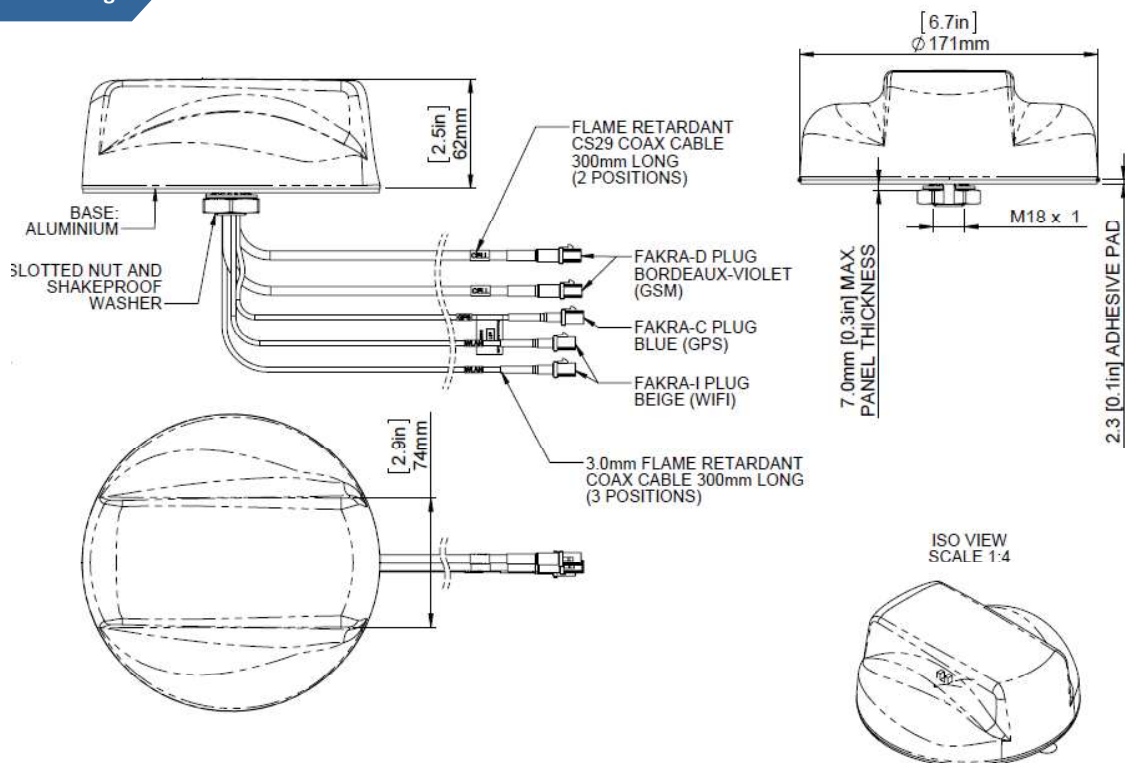
The antenna enclosure contains two to five isolated high performance antenna elements; two ultra-wideband elements covering 698-2700MHz support MiMo/diversity at cellular/LTE frequencies and in the case of the LGMM range a high performance GPS antenna with an integrated 26dB gain LNA and high quality filtering to combat noise. There are also variants incorporating two dualband WiFi elements covering 2.4/4.9-6.0GHz 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 GPS module in the LP[G]MM carries an E11 Mark type approval under ECE R10.4 .

### Technical Drawing

LGMMFFR-7-27-24-58 Shown

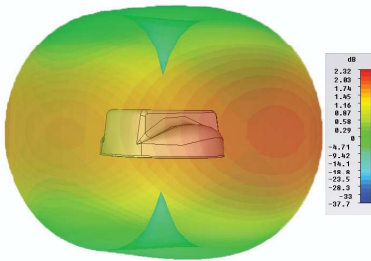


**Product Data**

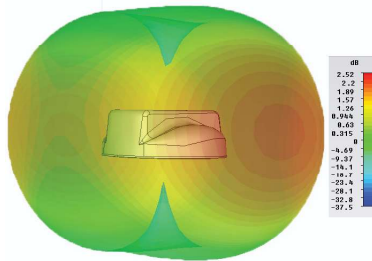
Part No.		LPMFFR-7-27	LGMMFFR-7-27	LGMMFFR-7-27-24-58	LPMFFR-7-27-24-58
<b>Electrical Data</b>					
Frequency Range (MHz)	Elements 1&2	698-960 / 1700-2700			
	Elements 3&4	-	2.4/4.9-6GHz		
Operational Bands	Elements 1&2	LTE / Cellular			
	Elements 3&4	-	WiFi		
Peak Gain: Isotropic	Elements 1&2	698-960MHz	2.3dBi		
		1710-2700MHz	5dBi		
	Elements 3&4	2.4/4.9-6.0GHz	-	2dBi	
Isolation	Elements 1&2	>15dB			
Correlation Co-efficient	Elements 1&2	<0.1			
Polarisation	Vertical				
Impedance	50Ω				
Max Input Power (W)	50				
<b>GPS Data</b>					
Frequency Range (MHz)	-	1575	-		
VSWR	-	<2.0:1 ± 4MHz	-		
Gain: LNA	-	26dB	-		
Operating Voltage	-	3 - 5V DC (fed via coax)		-	
Type Approval	E11 (ECE R10.4)				
<b>Mechanical Data</b>					
Dimensions	Height	2.4" (62mm)			
	Diameter	6.7" (176mm)			
Operating Temp	-22° / 176°F (-30° / +80°C)				
Colour	White (Black also available - add [B] suffix to part number e.g., LGMMB)				
Ingress Protection	IP66 (Certificate No. 45214)				
<b>Mounting Data</b>					
Mounting type	Panel mount				
Max panel thickness	0.27"(7mm)				
Mounting hole	3/4" (19mm)				
<b>Cable Data</b>					
Cell / LTE Cables	Type	CS29 (double shielded RG58) (ECE118.01 Compliant)			
	Diameter	0.2"(5mm)			
	Length	1' (0.3m +/- 50mm)			
	Termination	FAKRA D Plugs			
GPS Cable	Type	-	RG174 (ECE118.01 Compliant)	-	
	Diameter	-	0.11" (2.8mm)	-	
	Length	-	1' (0.3m +/- 50mm)	-	
	Termination	-	FAKRA C Plug	-	
WiFi Cables	Type	-	RG174 (ECE118.01 Compliant)	-	
	Diameter	-	0.1" (2.8mm)	-	
	Length	-	1' (0.3m +/- 50mm)	-	
	Termination	-	FAKRA I Plugs	-	

## Electrical Data

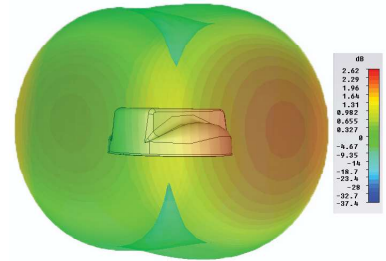
Typical 3D Pattern - Elements 1&2 700MHz



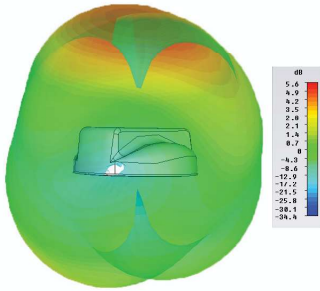
Typical 3D Pattern - Elements 1&2 800MHz



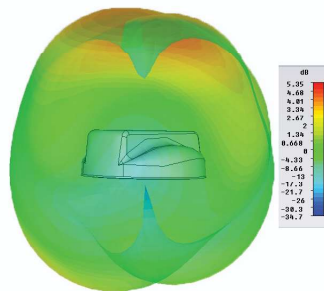
Typical 3D Pattern - Elements 1&2 900MHz



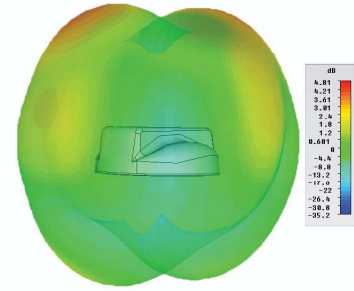
Typical 3D Pattern - Elements 1&2 1800MHz



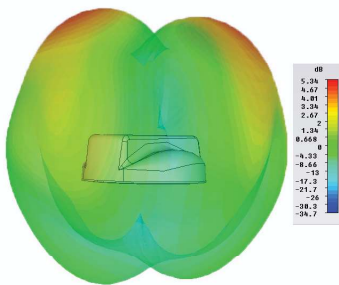
Typical 3D Pattern - Elements 1&2 1900MHz



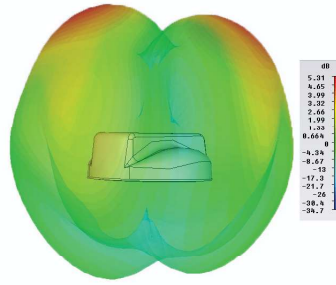
Typical 3D Pattern - Elements 1&2 2100MHz



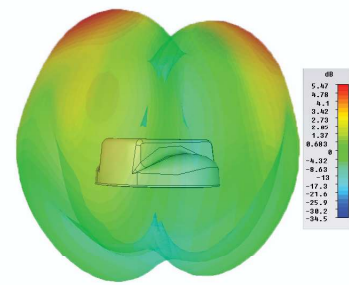
Typical 3D Pattern - Elements 1&2 2400MHz



Typical 3D Pattern - Elements 1&2 2500MHz

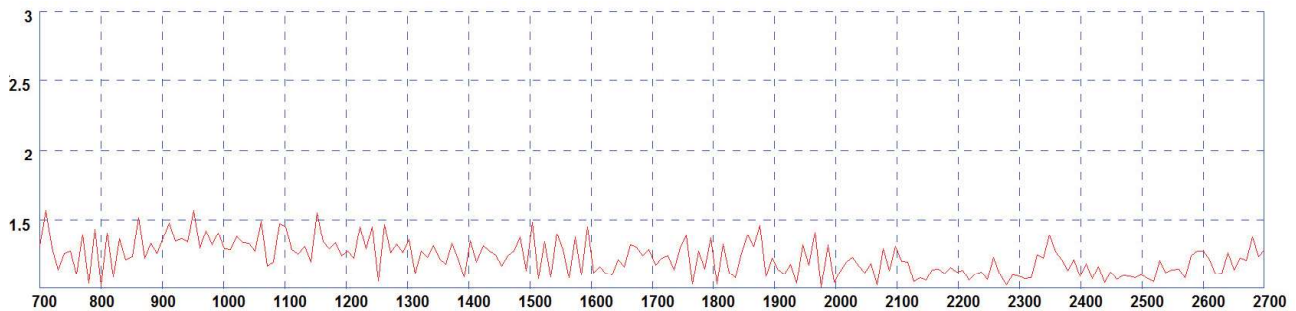


Typical 3D Pattern - Elements 1&2 2600MHz



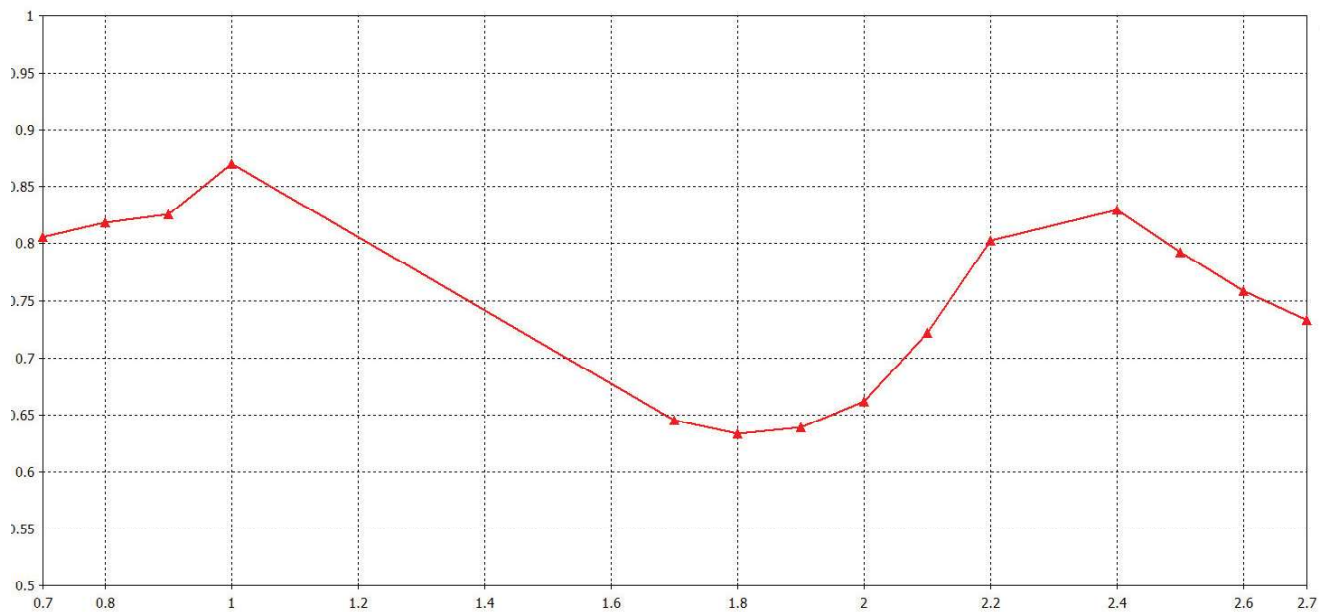
N.B. All pattern and gain measurements taken on a 400 x 400mm (2' x 2') ground plane without additional cable.

Typical VSWR (Elements 1 & 2)\*



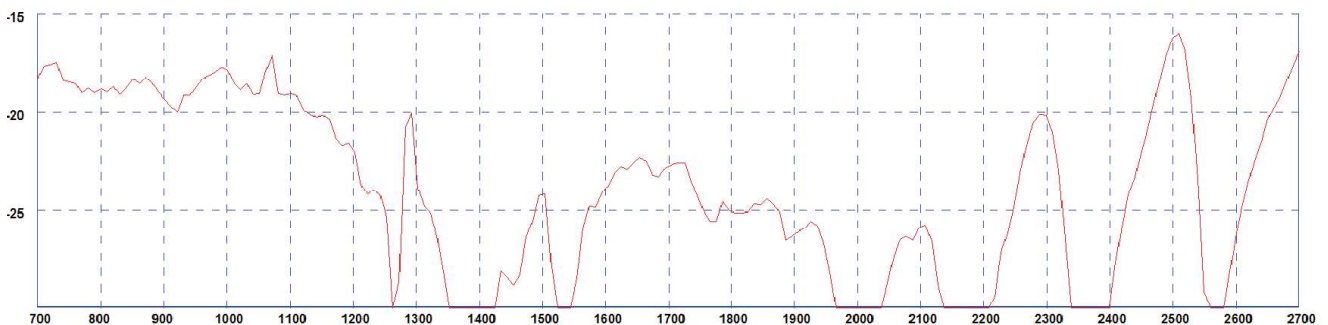
\* VSWR measured with 5m (16') of cable.

Typical Total Efficiency (Elements 1 & 2)\*



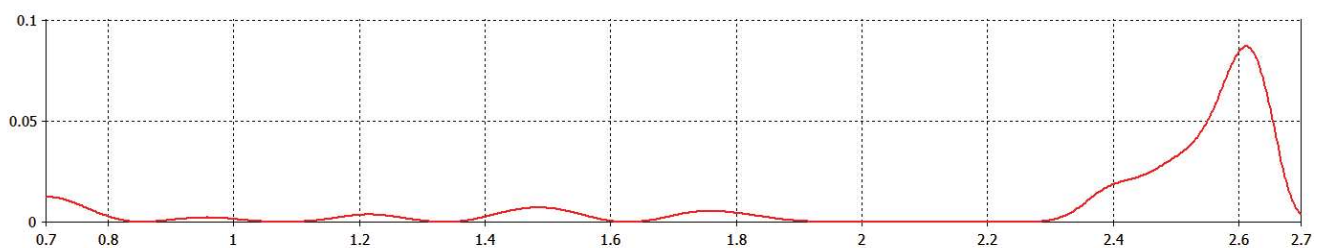
\* Total efficiency does not include cable loss

Typical Isolation (elements 1 & 2)\*



\* Isolation measured in free space with 300mm (1') of cable.

Correlation Coefficient (elements 1 & 2)



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.

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