Low Profile 4G/5G, WiFi & GPS/GNSS

LP[G]E-6-60[-X]

Low Profile 4G/5G Antenna with Optional WiFi And GPS/GNSS

- Rugged Low Profile Design
- Wideband 4G/5G Element
- Optional up to 4x4 MiMo Dual Band WiFi + 6e
- Optional Integrated GPS/GNSS Antenna

The LP[G]E antenna series is a range of low profile antennas in a robust compact housing, with a wideband cellular element covering 4G/5G frequencies from 617-960/ 1427-6000MHz.

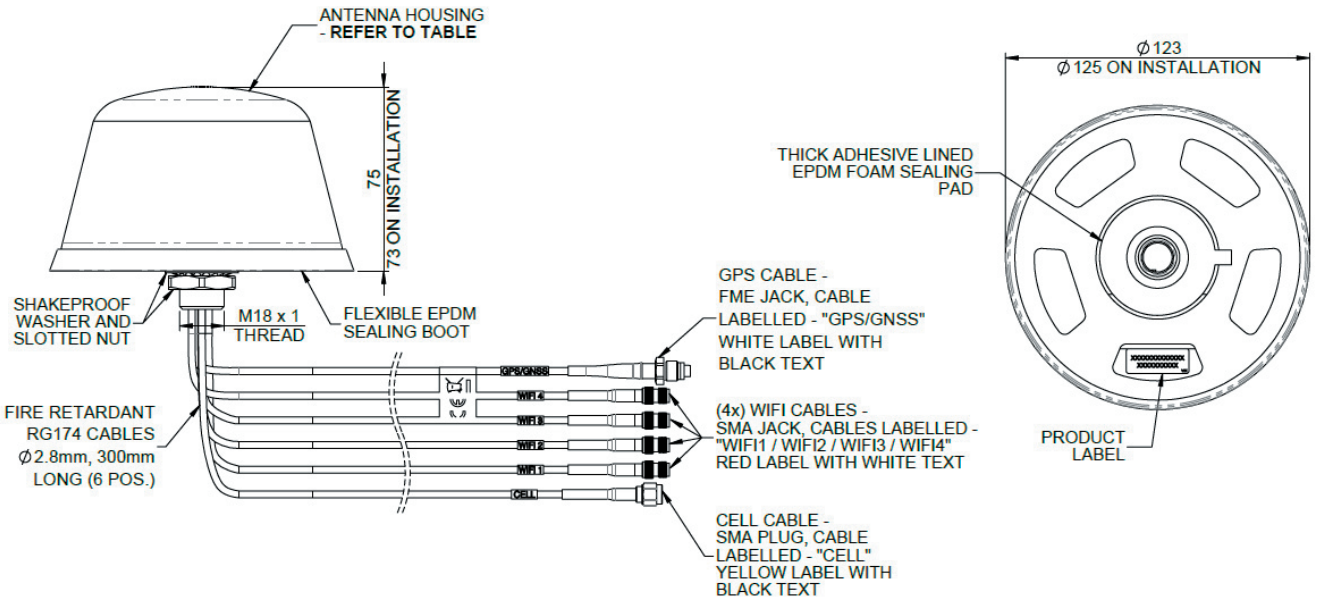
The LGE version incorporates an active GPS/GNSS antenna with a 26dB gain LNA and further variants can feature from one to four dual band WIFI + 6e elements.

Designed to be tough yet cost effective, the antenna features a IP69K / IK10 rated enclosure, moulded in LEXAN. The antenna is supplied with short coaxial cable tails and can be kitted with Panorama Antennas' low loss extension cables in various length and connector configurations.

This antenna does not require a ground plane for use above 698MHz and maintains a high level of performance even when mounted on a non-metallic surface.

Technical Drawing

LGE-6-60-QW Shown



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PANORAMA ANTENNAS

Part. No.			LPE-6-60	LGE-6-60	LGE-6-60-DW	LGE-6-60-QW
Electrical Data						
Frequency Range (MHz)	Element 1		-	1560-1612MHz		
	Element 2		617-960/1427-6000MHz			
	Elements 3-6		-	-	2x 2.4/4.9-7.2GHz	4x 2.4/4.9-7.2GHz
Peak Gain†	Element 2	617-960MHz	4dBi			
		1427-2700MHz	6dBi			
		3400-4200MHz	8dBi			
		4900-6000MHz	9dBi			
	Element 3 -6	2.4-2.5GHz	-	-	5dBi	
	Element 3 -6	4.9-7.2GHz	-	-	10dBi	
Typical VSWR*	Element 2		< 2.5:1			
	Elements 3-6		-	-	< 2.5:1	
Efficiency †	Element 2	617-960MHz	>50%			
		1427-2700MHz	>65%			
		3400-4200MHz	>80%			
		4900-6000MHz	>90%			
	Element 3 -6	2.4-2.5GHz	-	-	>65%	
	Element 3 -6	4.9-7.2GHz	-	-	>80%	
Polarisation			Vertical			
Impedance			50Ω			
Max input power (W)			50			
GPS/GNSS Data						
Frequency Range (MHz)			1560-1612MHz (GPS/GLONASS/BeiDou/Galileo)			
Gain: LNA			26dB			
Polarisation			Right Hand Circular			
Operating Voltage			3 -5V DC (fed via coax)			
Current			<20mA			
Mechanical Data						
Dimensions (mm)	Height		75mm (2.95”)			
	Diameter		123mm (4.84”)			
Operating Temp (°C)			-40° / +85°C (-40°/ 185°F)			
Material			PC			
Colour			Black			
Ingress Protection			IP69K			
Vandal Protection			IK10			
Mounting Data						
Mounting type			Panel mount			
Max panel thickness			10mm (0.4”)			
Mounting hole			19mm (3/4”)			
Cable Data						
All Cables	Type		FR RG174 (meets UN ECE R118 & EN45545-2)			
	Diameter		2.8mm (0.11”)			
	Length		~0.3m (1’)			
Terminations	Cell / LTE		SMA (m)			
	GPS/GNSS		-	FME(f)		
	WiFi		-	-	2x SMA (f)	4x SMA (f)

† Peak Gain and efficiency simulated in CST microwave studio on a ground plane without cable loss. *Typical VSWR measured on 600x600 (2’x2’) Ground plane without additional cable

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PANORAMA ANTENNAS

Part. No.			LGE-6-60-SW	LPE-6-60-QW
Electrical Data				
Frequency Range (MHz)	Element 1		1560-1612MHz	
	Element 2		617-960/1427-6000MHz	
	Elements 3-6	2.4/4.9-7.2GHz	**1x 2.4/4.9-7.2GHz**	**4x 2.4/4.9-7.2GHz**
Peak Gain†	Element 2	617-960MHz	4dBi	
		1427-2700MHz	6dBi	
		3400-4200MHz	8dBi	
		4900-6000MHz	9dBi	
	Element 3 -6	2.4-2.5GHz	5dBi	
	Element 3 -6	4.9-7.2GHz	10dBi	
Typical VSWR*	Element 2		< 2.5:1	
	Elements 3-6		< 2.5:1	
Efficiency †	Element 2	617-960MHz	>50%	
		1427-2700MHz	>65%	
		3400-4200MHz	>80%	
		4900-6000MHz	>90%	
	Element 3 -6	2.4-2.5GHz	>65%	
	Element 3 -6	4.9-7.2GHz	>80%	
Polarisation			Vertical	
Impedance			50Ω	
Max input power (W)			50	
GPS/GNSS Data				
Frequency Range (MHz)			1560-1612MHz (GPS/GLONASS/BeiDou/Galileo)	
Gain: LNA			26dB	
Polarisation			Right Hand Circular	
Operating Voltage			3 -5V DC (fed via coax)	
Current			<20mA	
Mechanical Data				
Dimensions (mm)	Height		75mm (2.95”)	
	Diameter		123mm (4.84”)	
Operating Temp (°C)			-40° / +85°C (-40°/ 185°F)	
Material			PC	
Colour			Black	
Ingress Protection			IP69K	
Impact Protection			IK10	
Mounting Data				
Mounting type			Panel mount	
Max panel thickness			10mm (0.4”)	
Mounting hole			19mm (3/4”)	
Cable Data				
All Cables	Type		FR RG174 (meets UN ECE R118 & EN45545-2)	
	Diameter		2.8mm (0.11”)	
	Length		~0.3m (1')	
Terminations	Cell / LTE		SMA (m)	
	GPS/GNSS		FME(f)	
	WiFi		1x SMA (f)	4x SMA (f)

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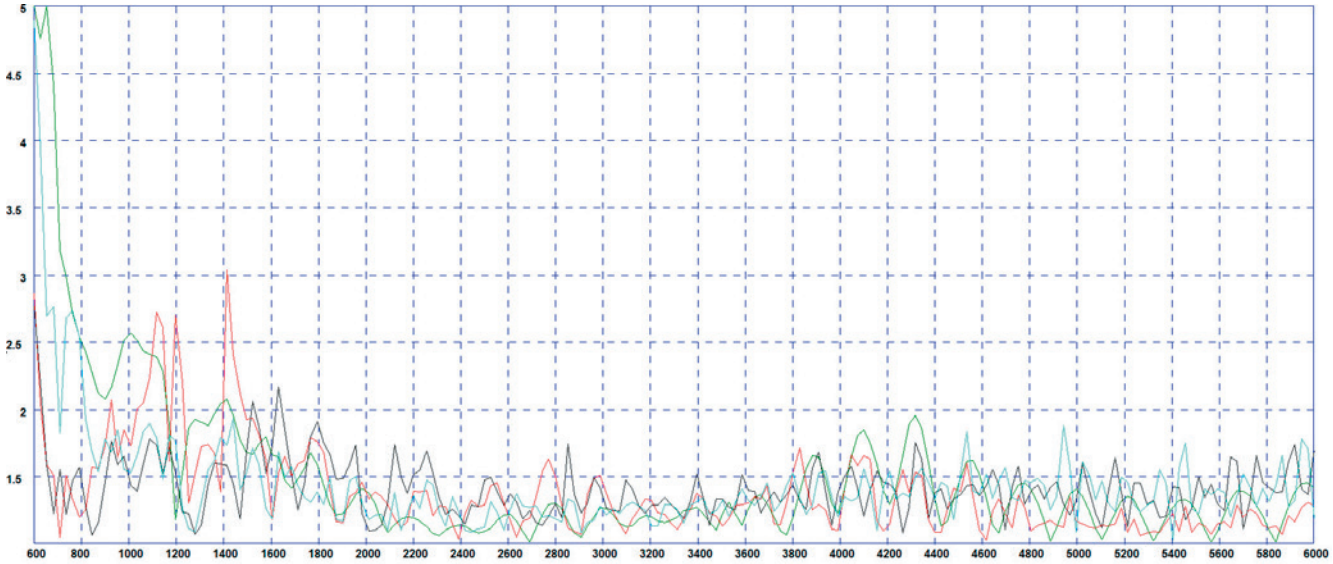
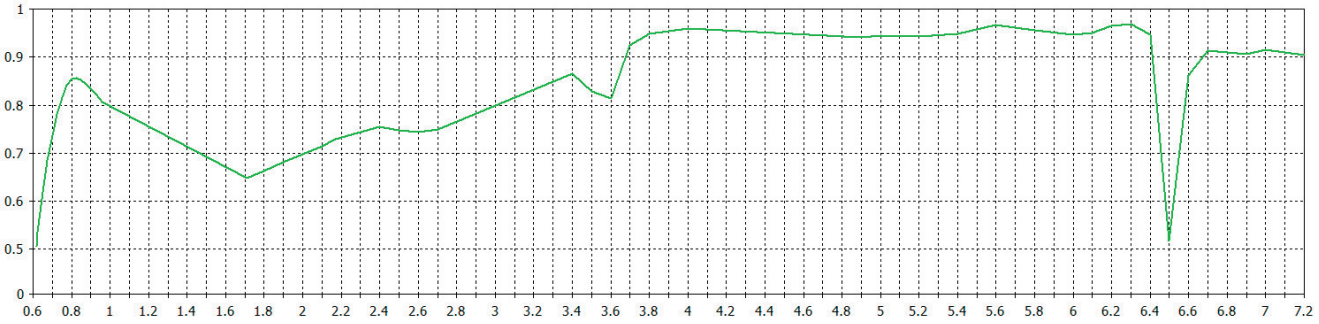
Typical VSWR cellular / LTE Element 2*



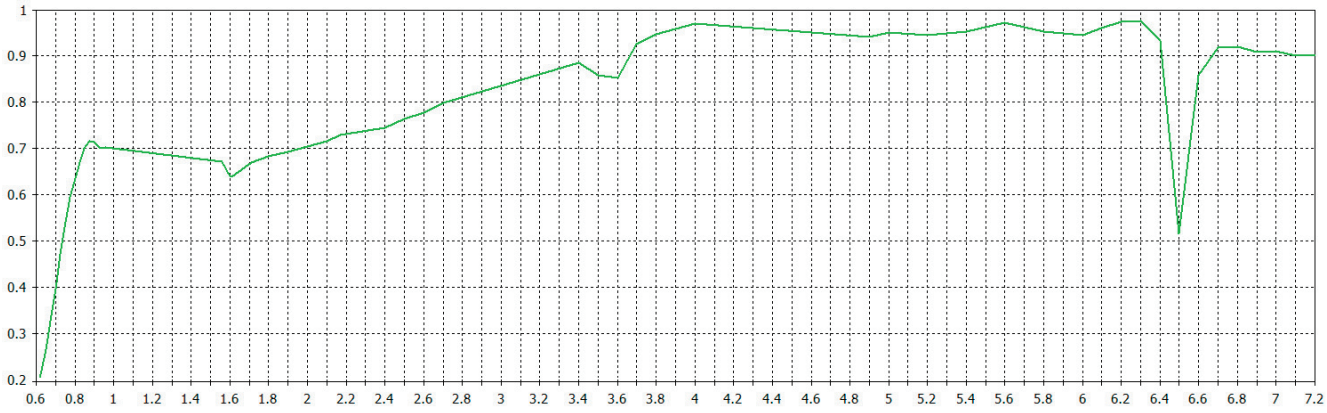
* Red VSWR measured on a 600 x600mm (2' x 2') ground plane without extension cables | Green VSWR measured in free space without extension cables. | Blue VSWR measured in free space with 3m (10') extension cables | Black VSWR measured on a 600 x600mm (2' x 2') ground plane with 3m (10') extension cables

Typical Efficiency Element 2 - on Ground Plane*



*Efficiency simulated in CST Microwave Studio on 600x600mm (2'x2') ground plane without cable loss.

Typical Efficiency Element 2 - in Free Space*



*Efficiency simulated in CST Microwave Studio in free space without cable loss.

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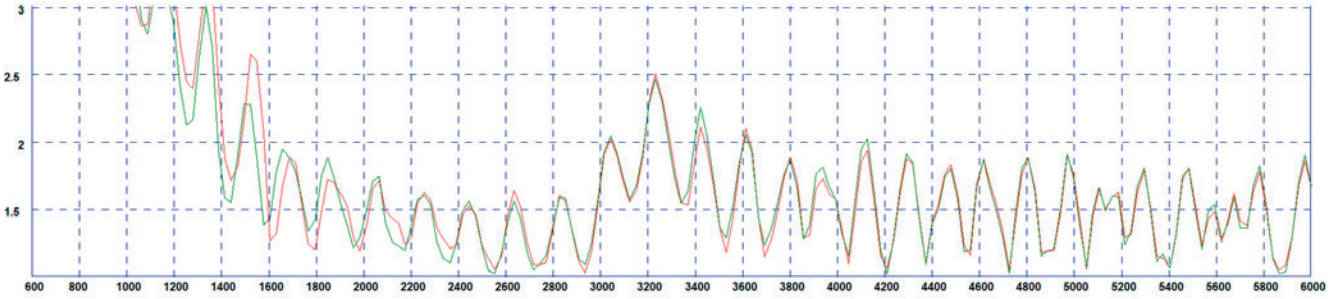
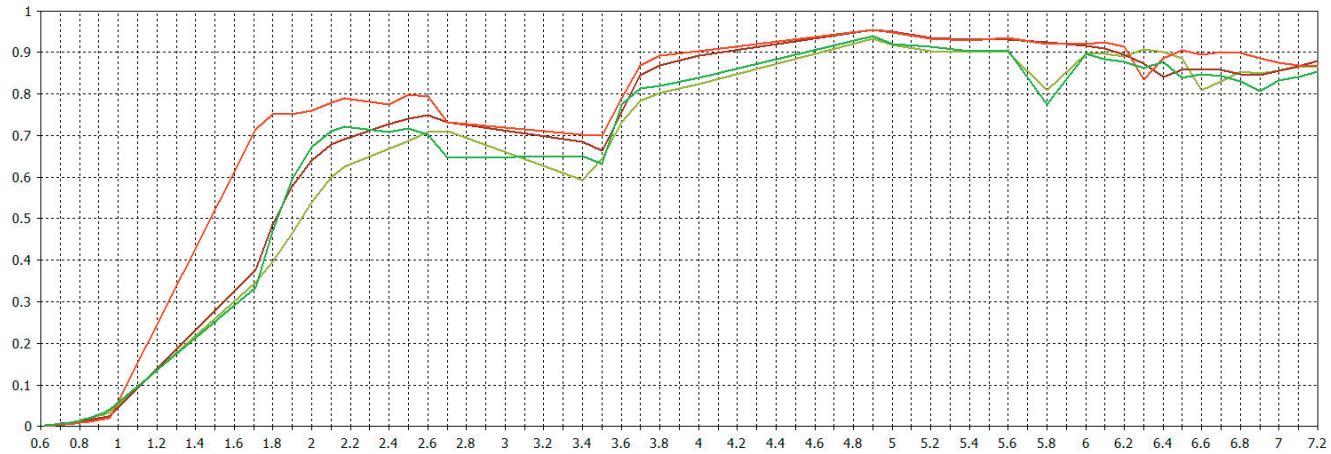
Electrical Data - WiFi

Typical VSWR WiFi Elements 3-6*



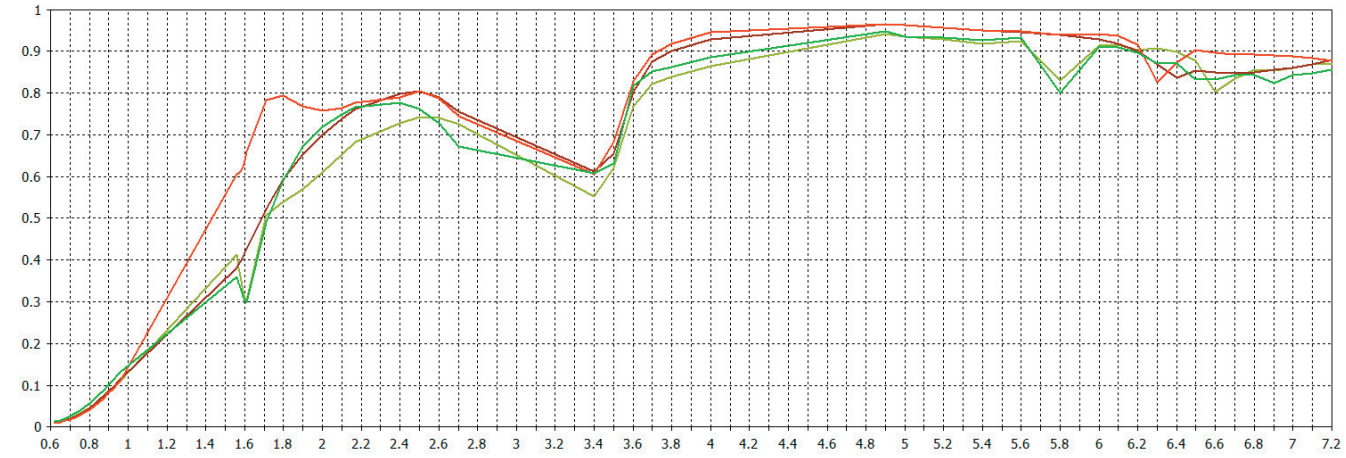
* Green VSWR measured in free space with 3m (10') extension cables | Red VSWR measured on a 600 x600mm (2' x 2') ground plane with 3m (10') extension cables

Typical Efficiency Elements 3-6 - on Ground Plane*



*Efficiency simulated in CST Microwave Studio on 600x600mm (2'x2') ground plane without cable loss.

Typical Efficiency Elements 3-6 - in Free Space*



*Efficiency simulated in CST Microwave Studio in free space without cable loss.

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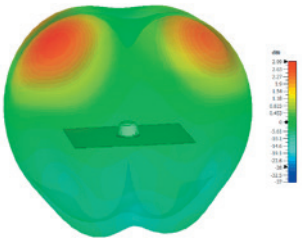
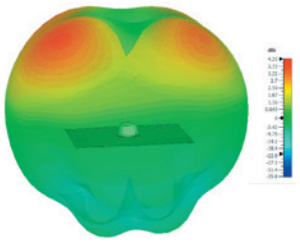
3D Patterns Cell Ground Plane

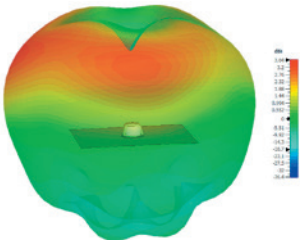
Typical 3D Pattern
Element 2 650MHz



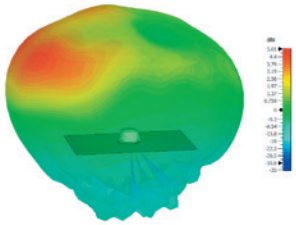
Typical 3D Pattern
Element 2 750MHz



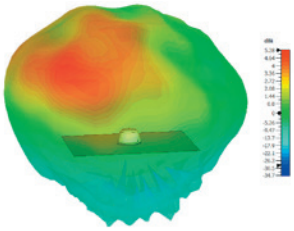
Typical 3D Pattern
Element 2 850MHz



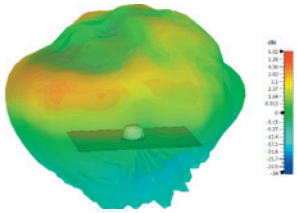
Typical 3D Pattern
Element 2 1800MHz



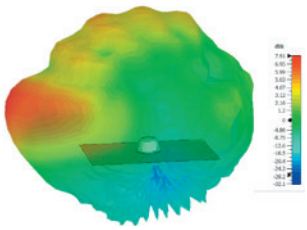
Typical 3D Pattern
Element 2 2170MHz



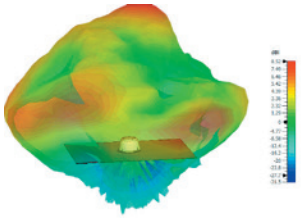
Typical 3D Pattern
Element 2 2600MHz



Typical 3D Pattern
Element 2 3500MHz

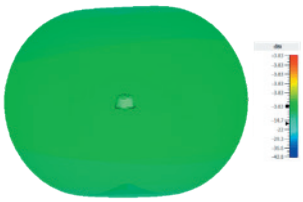


Typical 3D Pattern
Element 2 5400MHz

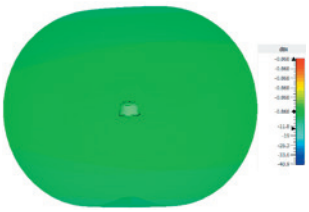


3D Patterns Cell Free Space

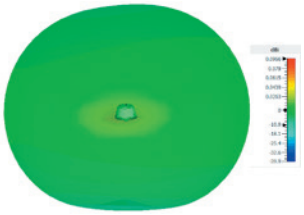
Typical 3D Pattern
Element 2 650MHz



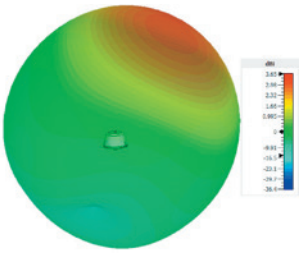
Typical 3D Pattern
Element 2 750MHz



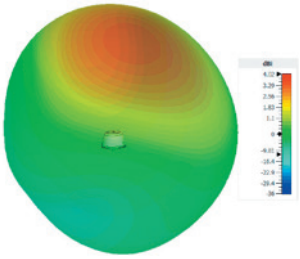
Typical 3D Pattern
Element 2 850MHz



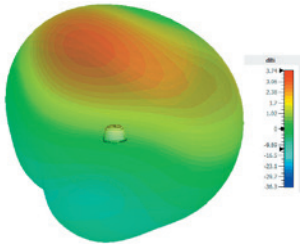
Typical 3D Pattern
Element 2 1800MHz



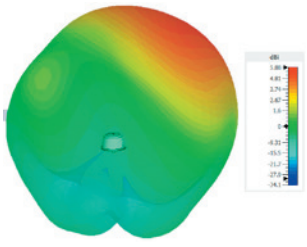
Typical 3D Pattern
Element 2 2170MHz



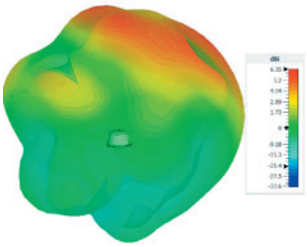
Typical 3D Pattern
Element 2 2600MHz



Typical 3D Pattern
Element 2 3500MHz



Typical 3D Pattern
Element 2 5400MHz



3D patterns simulated in CST microwave studio on a ground plane without cable loss.

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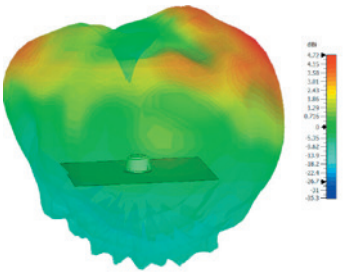
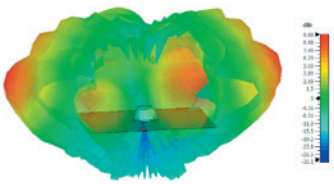
WiFi Patterns Ground Plane

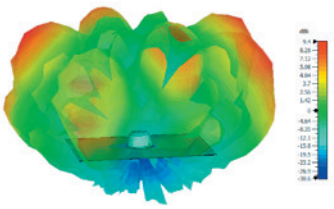
Typical 3D Pattern - 2450MHz



Typical 3D Pattern - 5400MHz

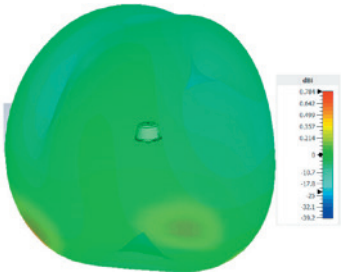


Typical 3D Pattern 7100MHz

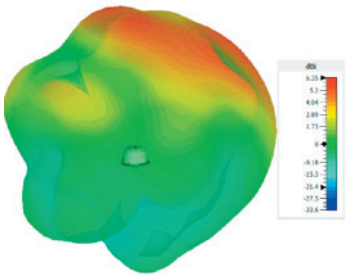


WiFi Patterns Free Space

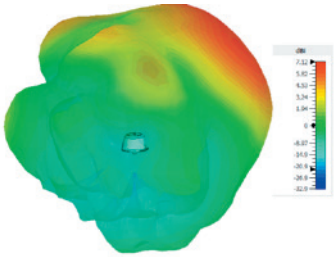
Typical 3D Pattern - 2450MHz



Typical 3D Pattern - 5400MHz

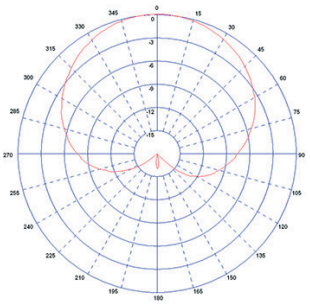


Typical 3D Pattern 7100MHz

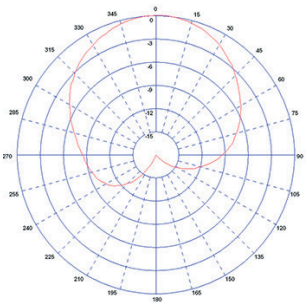


GPS/GNSS E Plane Patterns

GPS 1575MHz Typical E Plane



GPS 1602MHzTypical E Plane



3D patterns simulated in CST microwave studio on a ground plane without cable loss.

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