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

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

## Low Profile 4G/5G Antenna With WiFi And GPS

Rugged Low Profile Design

Wideband 4G/5G Element

Up to 4x4 MiMo 2.4 & 4.9-7.2GHz Wifi 6e

Optional Integrated GPS/GNSS/BEIDOU antenna

The L[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.

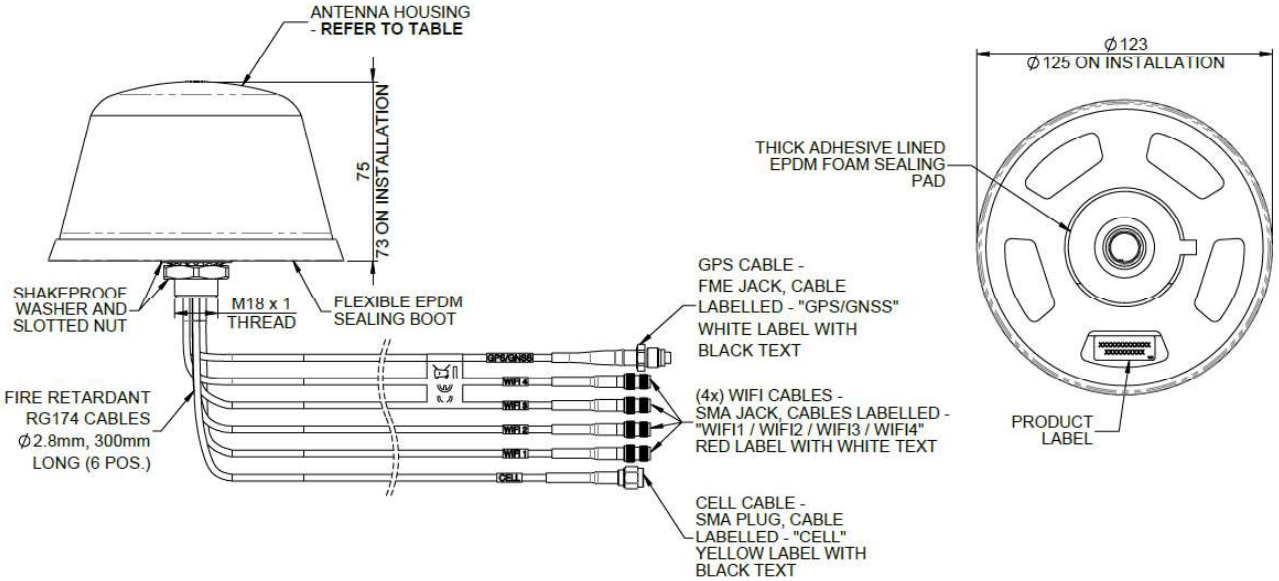
The LGE version incorporates an active GPS/GNSS antenna with a 26dB gain LNA and further variants can feature one to four dual band WIFI 6e elements.

Designed to be tough yet cost effective, the antennas are housed in a IP69K / IK10 rated enclosure, moulded in LEXAN for effective impact resistance. The range is supplied with short fly leads 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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# Low Profile 4G/5G, WiFi & GPS

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

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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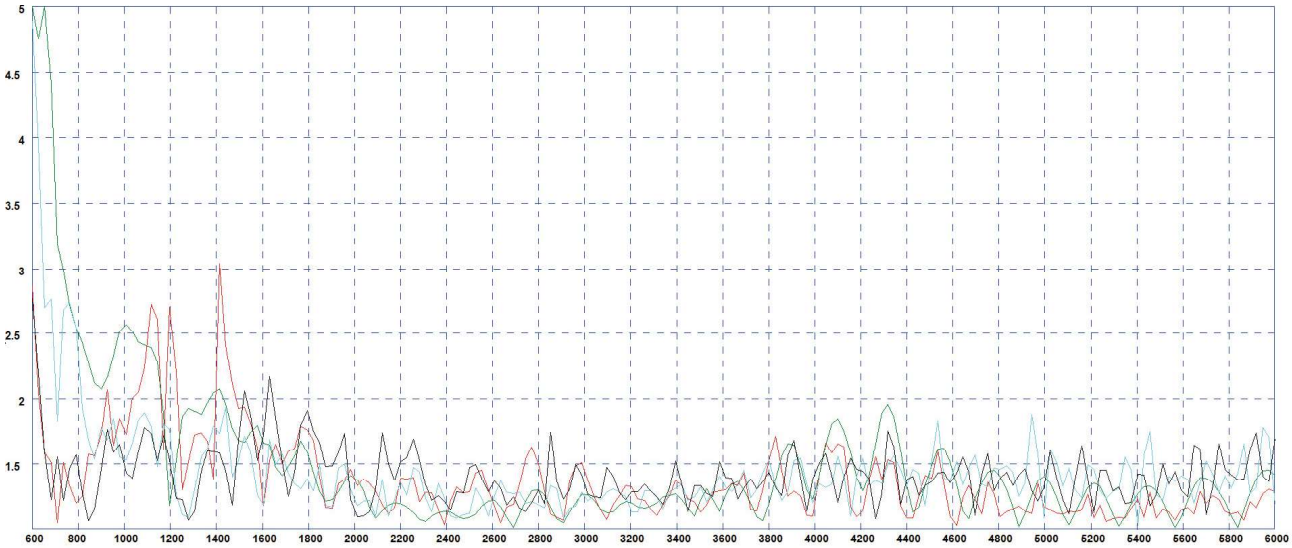
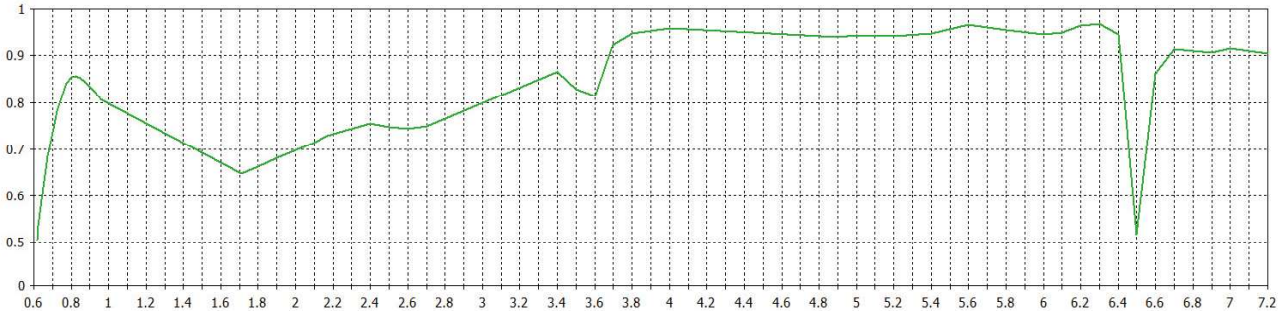
## Electrical Data - Cell

Typical VSWR cellular / LTE Element 2*



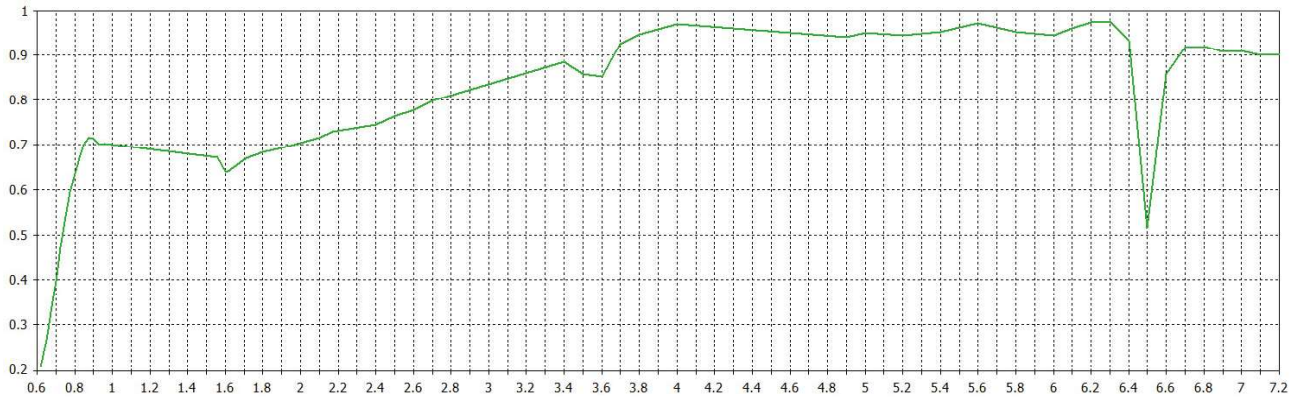

* Red VSWR measured on a 600 x600mm (2' x 2') ground plane without extension cables | Green VSWR measured in free space without extension cables. | Blue VSWR measured in free space with 3m (10') extension cables | Black VSWR measured on a 600 x600mm (2' x 2') ground plane with 3m (10') extension cables

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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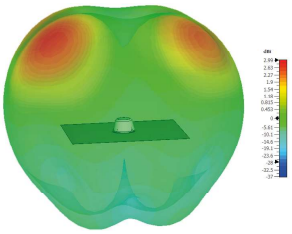
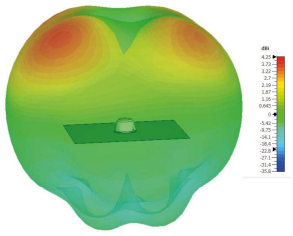
## 3D Patterns Cell Ground Plane

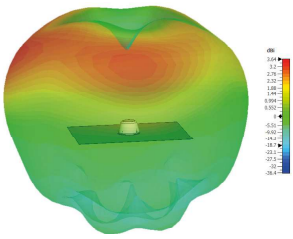
Typical 3D Pattern - Element 2 650MHz



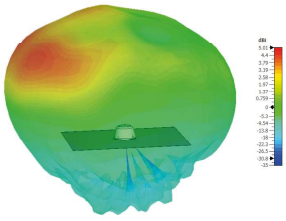
Typical 3D Pattern - Element 2 750MHz



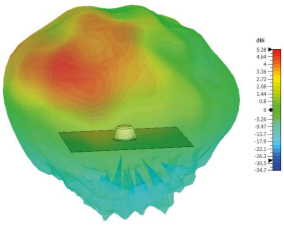
Typical 3D Pattern - Element 2 850MHz



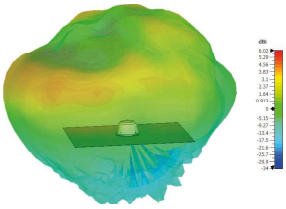
Typical 3D Pattern - Element 2 1800MHz



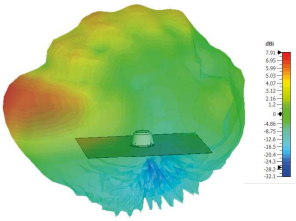
Typical 3D Pattern - Element 2 2170MHz



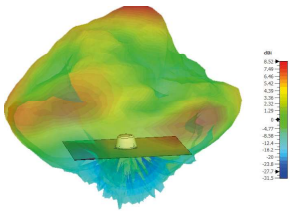
Typical 3D Pattern - Element 2 2600MHz



Typical 3D Pattern - Element 2 3500MHz

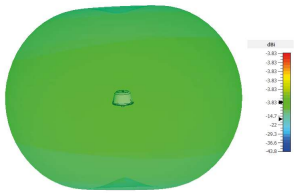


Typical 3D Pattern - Element 2 5400MHz

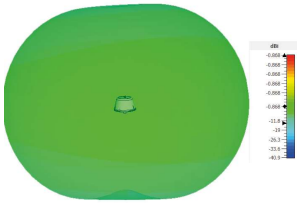


## 3D Patterns Cell Free Space

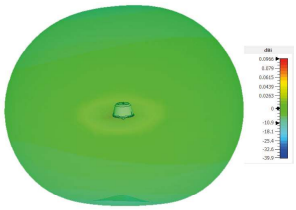
Typical 3D Pattern - Element 2 650MHz



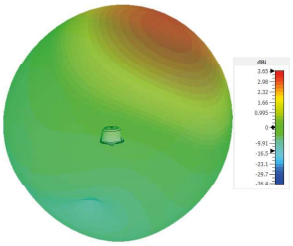
Typical 3D Pattern - Element 2 750MHz



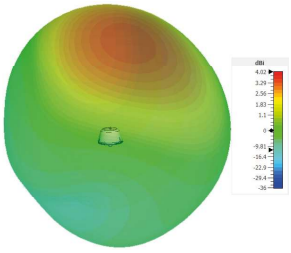
Typical 3D Pattern - Element 2 850MHz



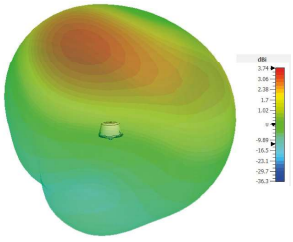
Typical 3D Pattern - Element 2 1800MHz



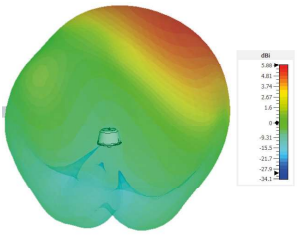
Typical 3D Pattern - Element 2 2170MHz



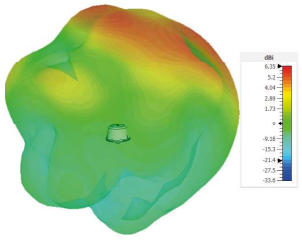
Typical 3D Pattern - Element 2 2600MHz



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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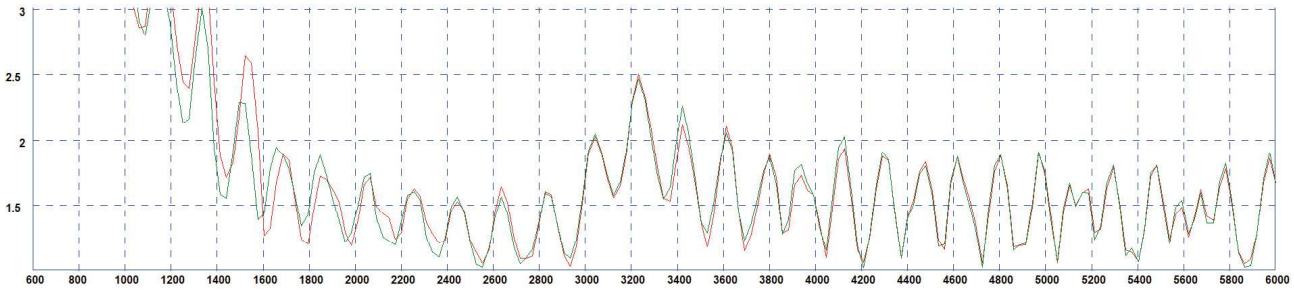
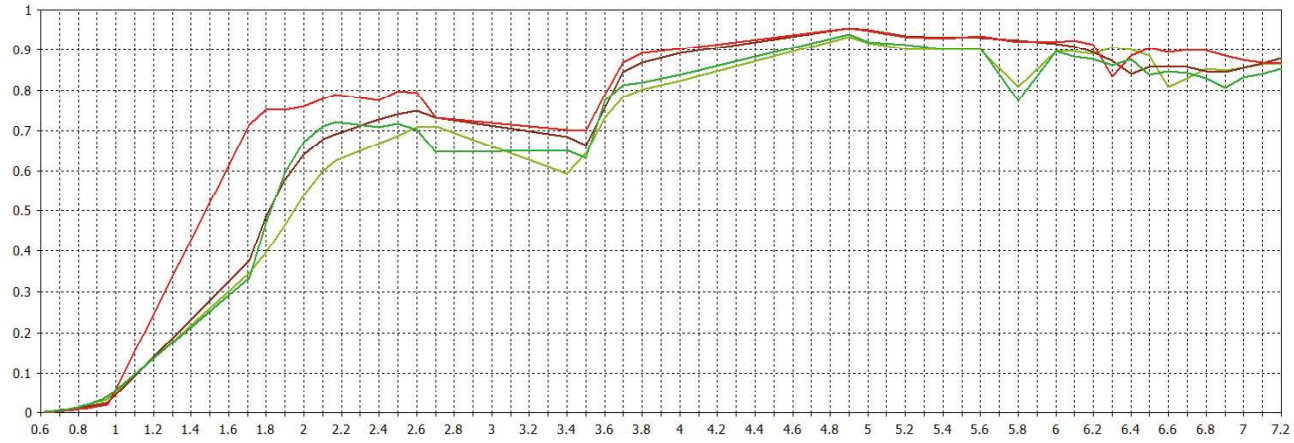
## Electrical Data - WiFi

Typical VSWR WiFi Elements 3-6*



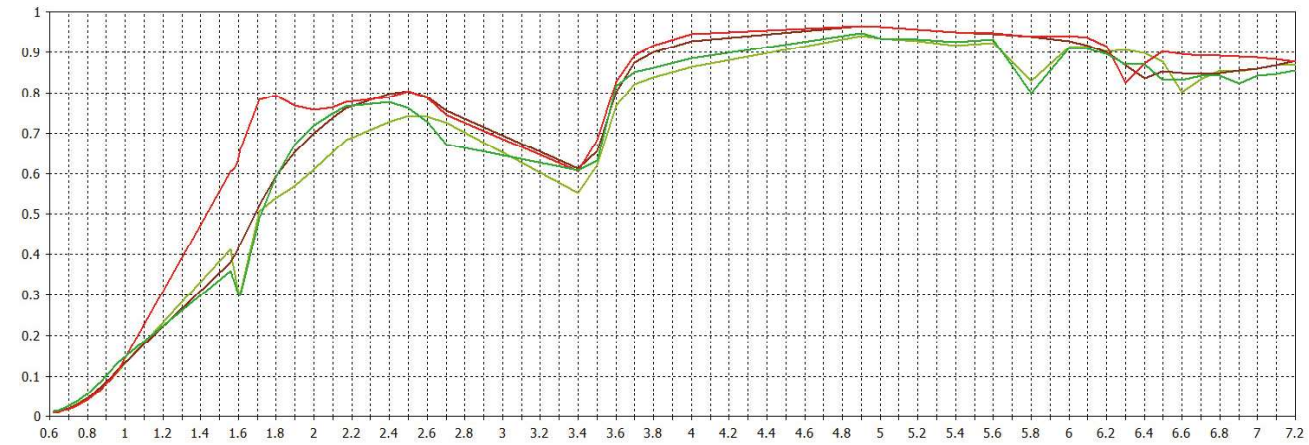

* Green VSWR measured in free space with 3m (10') extension cables | Red VSWR measured on a 600 x600mm (2' x 2') ground plane with 3m (10') extension cables

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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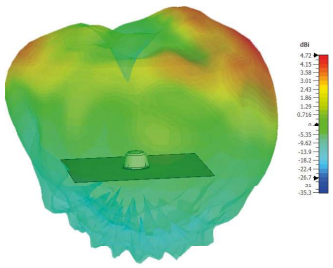
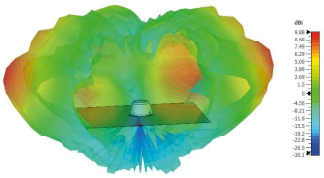
## WiFi Patterns Ground Plane

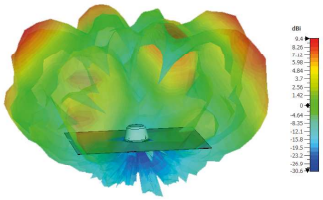
Typical 3D Pattern - 2450MHz



Typical 3D Pattern - 5400MHz

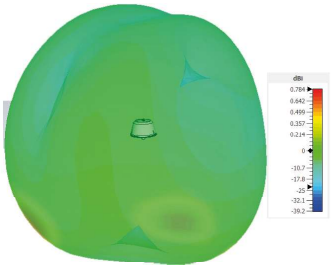


Typical 3D Pattern 7100MHz

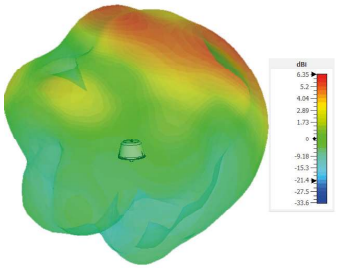


## WiFi Patterns Free Space

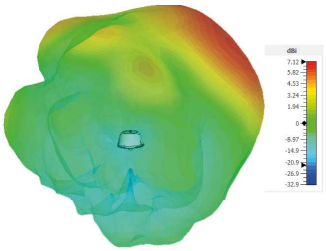
Typical 3D Pattern - 2450MHz



Typical 3D Pattern - 5400MHz

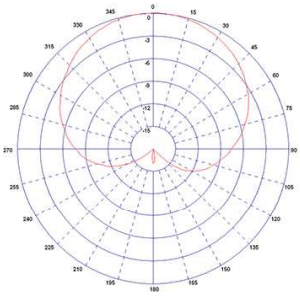


Typical 3D Pattern 7100MHz

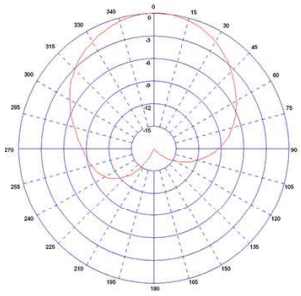


## GPS/GNSS E Plane Patterns

GPS 1575MHz Typical E Plane



GPS 1602MHzTypical E Plane



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