

Ultra Low Profile MiMo IOT Antenna

LPM2-7-27[-X]



Ultra Low Profile
2x2 MiMo 4G LTE
Cost effective solution for M2M and IOT applications
Meets IK10 & IP69K

The LPM2-7-27 range has been designed to provide MiMo 4G/LTE coverage in an ultra low profile package. The compact, robust, low-profile housing is weatherproof and contains two antenna elements with effective isolation and low correlation coefficient covering 698-960/1427-2700MHz.

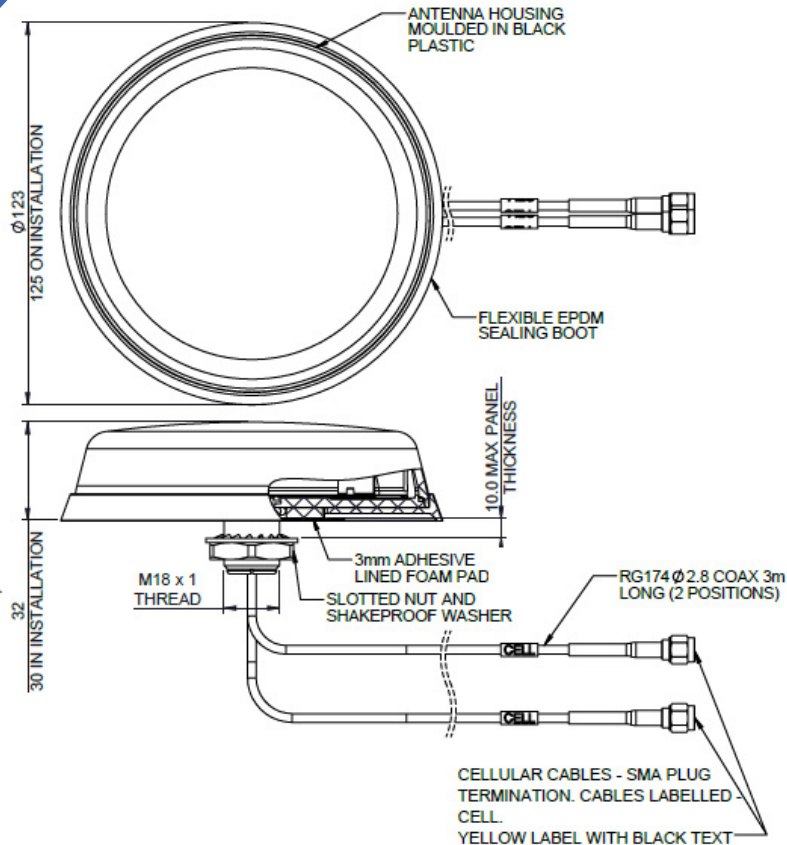
The antenna is designed to be panel mounted. Supplied with integrated flame retardant RG174 (Compliant to UN ECE 118.03) cables and SMA plug connectors, the antenna will offer plug and play connectivity with many different routers and modems.

The antenna is supplied in black flame retardant LEXAN EXL9330 plastic as standard.

The product is engineered specifically for installation on a non-conductive ground plane and performance will be detrimentally affected by installation on a metallic or conductive panel.

Technical Drawing

LPM2-7-27-2SP Shown



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PANORAMA  ANTENNAS

Product Data

| | | |
|------------------------|---------------|---------------------------------|
| Part No. | | LPM2-7-27-2SP |
| Electrical Data | | |
| 4G LTE Elements (MiMo) | | 2x2 |
| Frequency Range (MHz) | | 698-960/1427-2700 |
| Typical VSWR* | | >2.5:1 |
| Typical Isolation* | | >15dB |
| Pattern | | Omni-directional |
| Nominal Impedance | | 50Ω |
| Max input power (W) | | 5 |
| Mechanical Data | | |
| Dimensions (mm) | Diameter | 123 (4.84") |
| | Height | 32 (1.25") |
| Operating Temp (°C) | | -40° / +80°C (-40° / 176°F) |
| Material | | LEXAN EXL 9330 Plastic |
| Colour | | Black |
| Typical Weight (g) | | 225 |
| Ingress Protection** | | IP69K |
| Vandal Protection | | IK10 |
| Mounting Data | | |
| Fixing | | Panel Mount - 18mm (3/4") |
| Cable Data | | |
| 4G / LTE | Cable Type | RG174 FR (meets UN ECE R118.03) |
| | Diameter (mm) | 2.8 (0.1") |
| | Length (m) | 2(6.5') |
| | Termination | 2x SMA (m) |

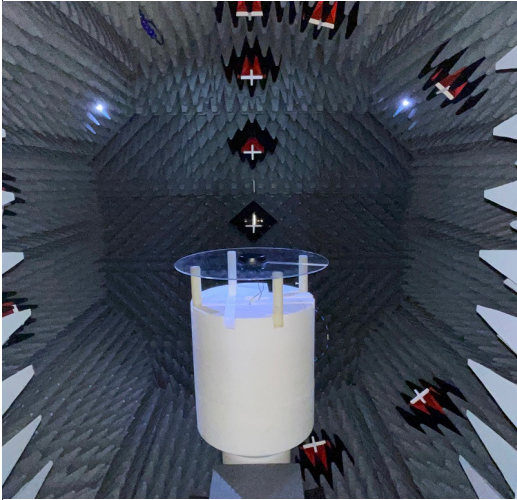
*Typical Isolation and VSWR measured in free space with 2m (6.6') of RG174 cable.

** IP rating mounted to a sealed enclosure in accordance with the installation instructions.

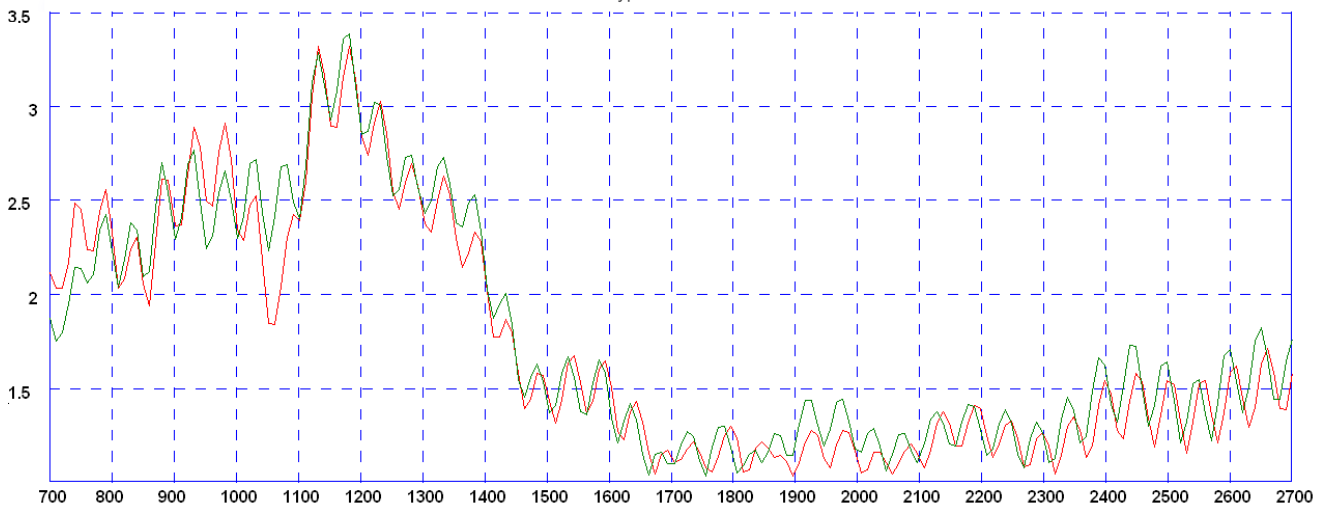
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Electrical Data - Free Space

| Measurement Conditions | 4G Antennas | | | | |
|---|-----------------------|---------------------|-----------------|-----------------|----------------|
| In free space with 0.5m (1.5') RG174 cables | Frequency Range (MHz) | LTE Bands | Antenna Element | Peak Gain (dBi) | Efficiency (%) |
|  | 699-798 | 12,13,14,17,28 | Cell A | 1.2 | 50 |
| | | | Cell B | 2.7 | 55 |
| | 807-862 | 5,19,20,26,27 | Cell A | 0.5 | 47 |
| | | | Cell B | 1.5 | 50 |
| | 880-960 | 8 | Cell A | 0.8 | 44 |
| | | | Cell B | 0.2 | 42 |
| | 1427-1518 | 11,21,74,75,76 | Cell A | 1.8 | 56 |
| | | | Cell B | 2.0 | 63 |
| | 1710-1920 | 2,3,4,9,25,35,39,66 | Cell A | 4.1 | 72 |
| | | | Cell B | 4.3 | 71 |
| | 1920-2170 | 1,23 | Cell A | 4.9 | 68 |
| | | | Cell B | 4.7 | 66 |
| | 2300-2400 | 30,40 | Cell A | 4.6 | 70 |
| | | | Cell B | 4.5 | 65 |
| | 2496-2690 | 7,38,41 | Cell A | 5.1 | 60 |
| | | | Cell B | 4.3 | 55 |

Typical VSWR



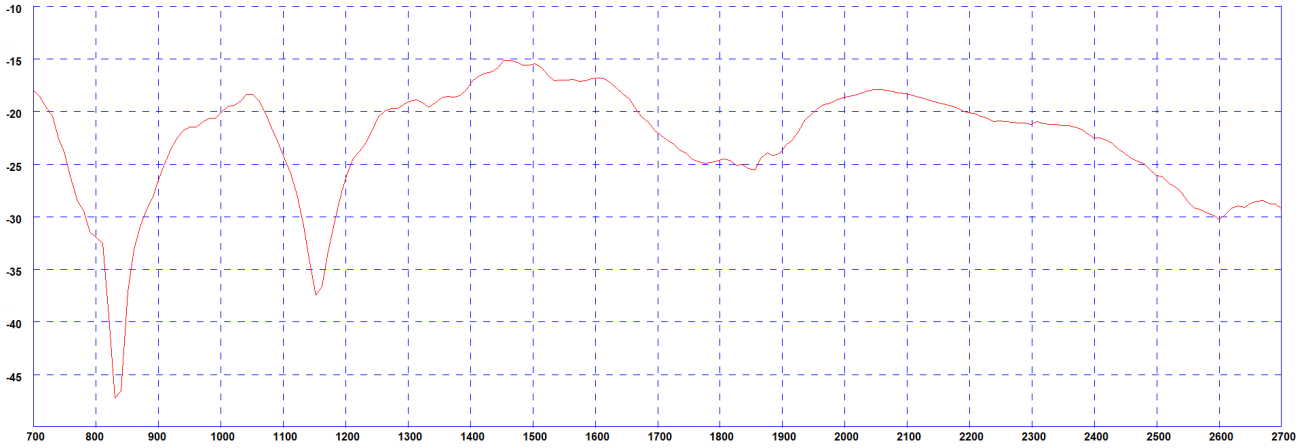
LPM2-7-27 VSWR measured with 2m (6.6') of RG174 cable in free space

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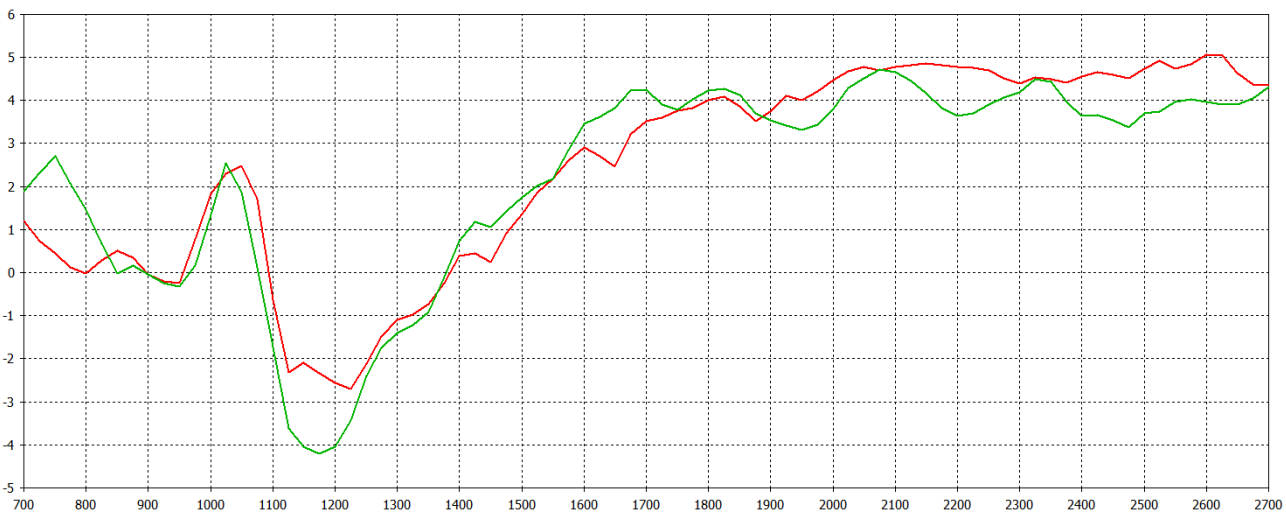
Electrical Data - Free Space

Typical Isolation*



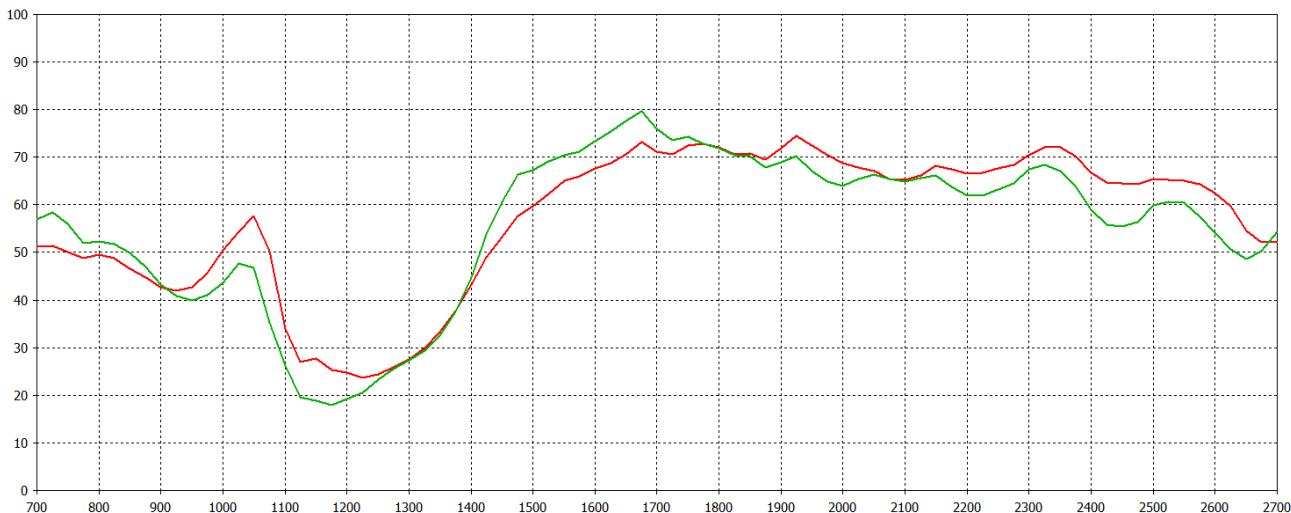
LPM2-7-27 Isolation measured with 2m (6.6') of RG174 cable in free space

Typical Swept Peak Gain



LPM2-7-27 Swept Peak Gain measured with 0.5m (1.5') of RG174 cable in free space

Typical Efficiency



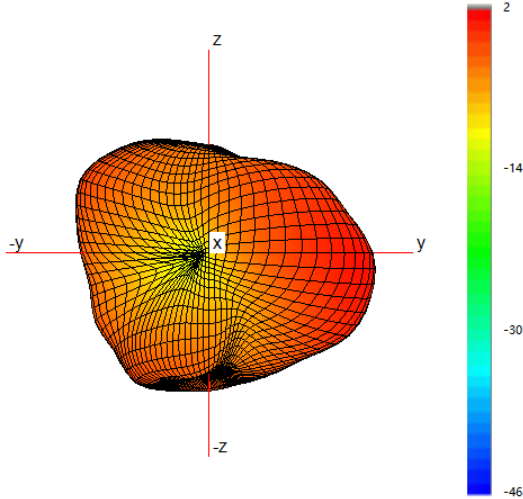
LPM2-7-27 Efficiency measured with 0.5m (1.5') of RG174 cable in free space

Ultra Low Profile MiMo IOT Antenna

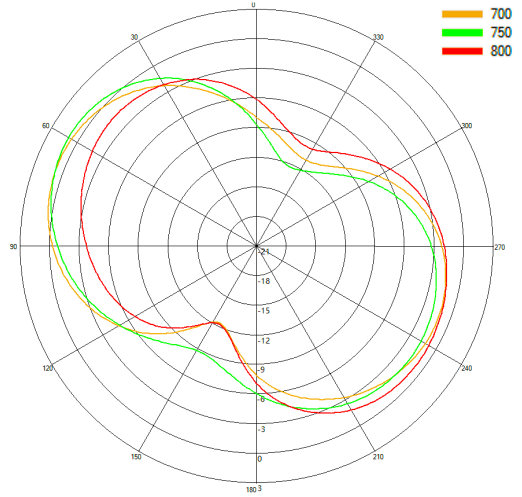
LPM2-7-27[-X]

Pattern Data in Free
Space Cell A

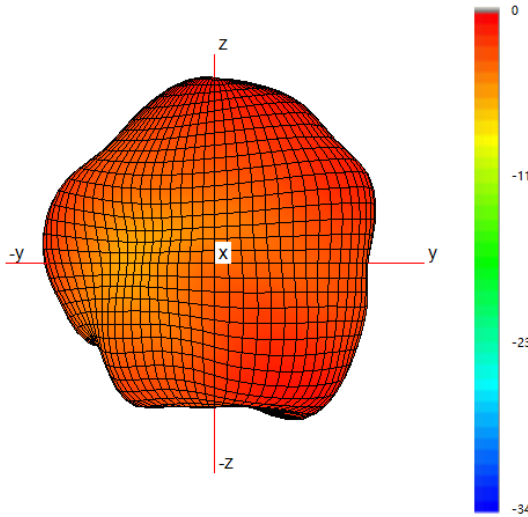
Typical 3D Pattern- Cell A - 750 MHz



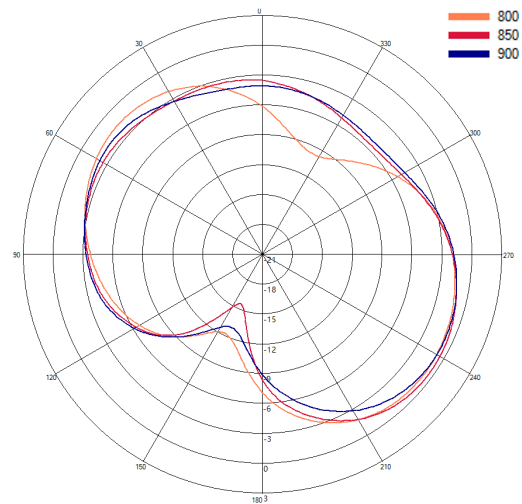
Typical H Plane- Cell A - Patterns- 700-800 MHz



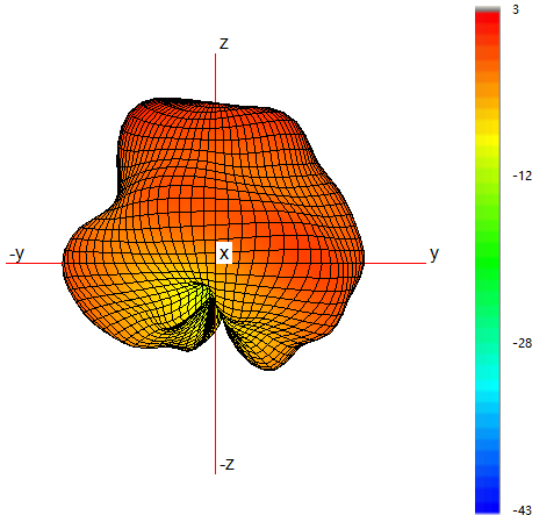
Typical 3D Pattern- Cell A - 850 MHz



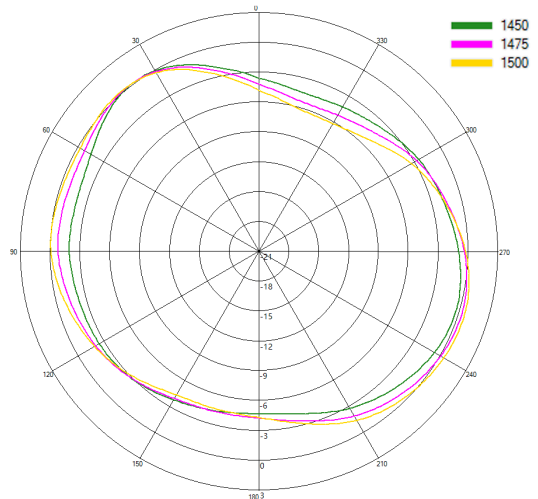
Typical H Plane- Cell A- Patterns- 800-900 MHz



Typical 3D Pattern- Cell A - 1475 MHz



Typical H Plane- Cell A- Patterns- 1450-1500 MHz

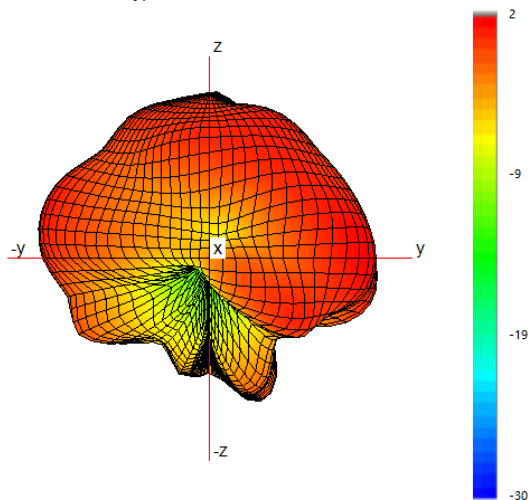


Ultra Low Profile MiMo IOT Antenna

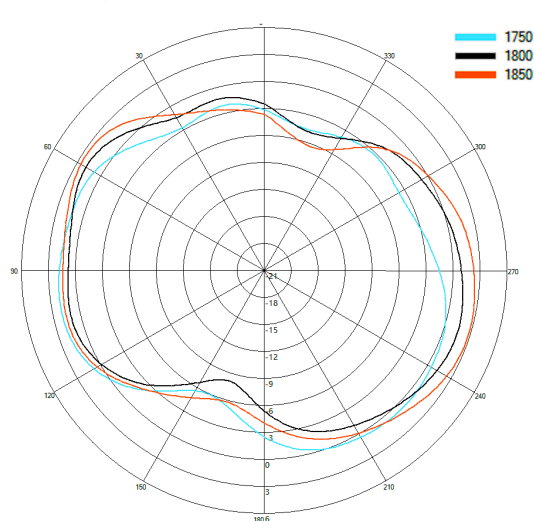
LPM2-7-27[-X]

Pattern Data in Free
Space Cell A

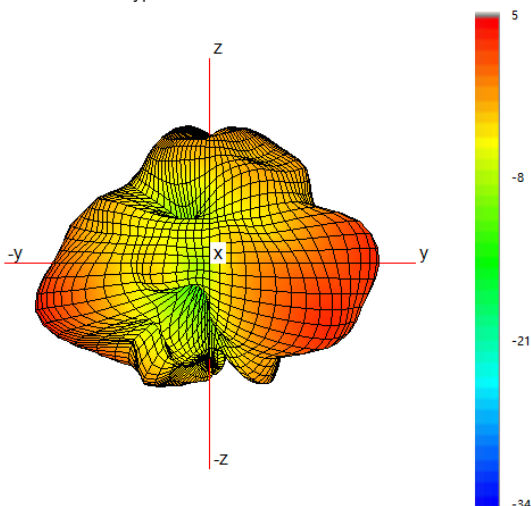
Typical 3D Pattern- Cell A - 1800 MHz



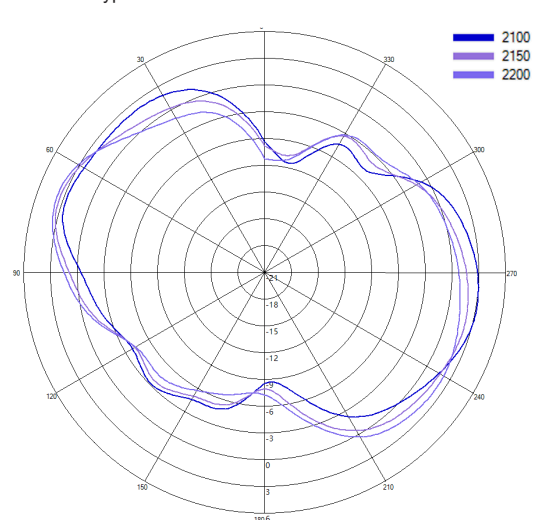
Typical H Plane- Cell A- Patterns- 1750-1850 MHz



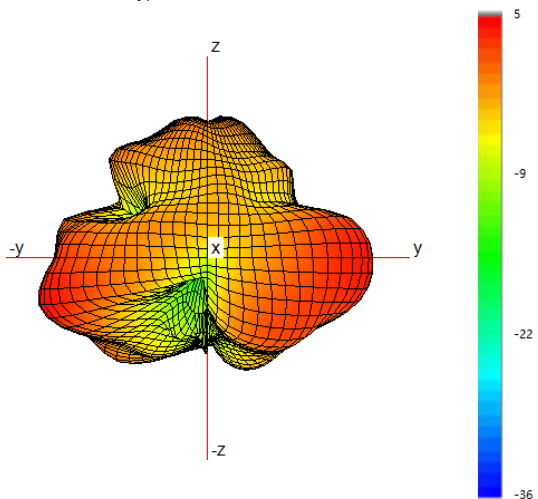
Typical 3D Pattern- Cell A - 2150 MHz



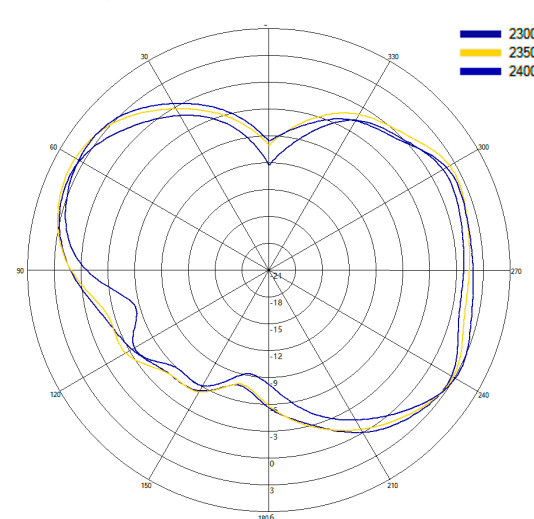
Typical H Plane- Cell A - Patterns- 2100-2200 MHz



Typical 3D Pattern- Cell A - 2350 MHz



Typical H Plane- Cell A - Patterns- 2300-2400 MHz

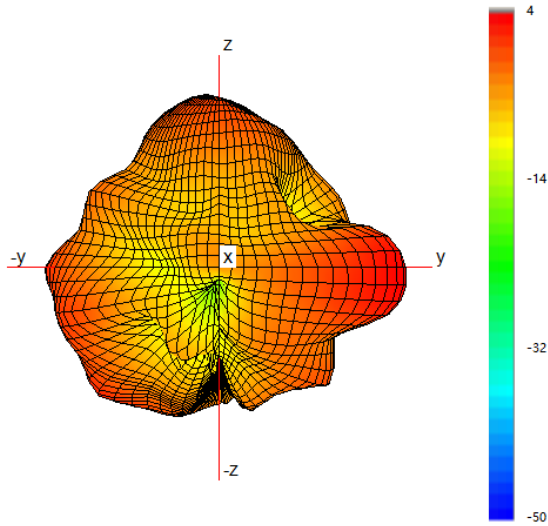


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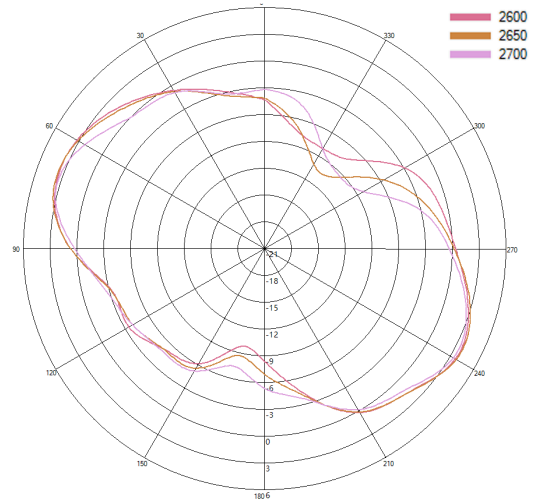
LPM2-7-27[-X]

Pattern Data in Free
Space Cell A

Typical 3D Pattern- Cell A - 2650 MHz



Typical H Plane- Cell A - Patterns- 2600-2700 MHz

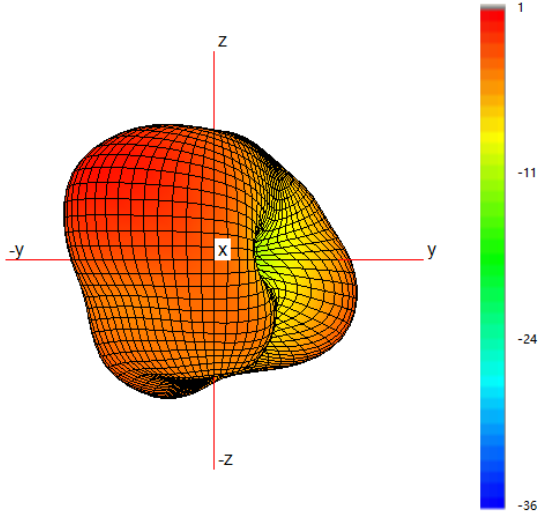


Ultra Low Profile MiMo IOT Antenna

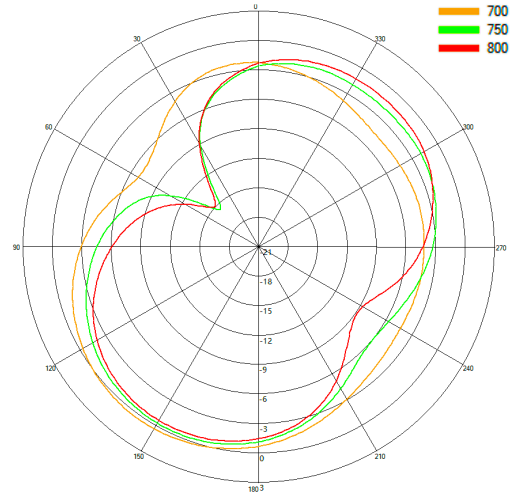
LPM2-7-27[-X]

Pattern Data in Free
Space Cell B

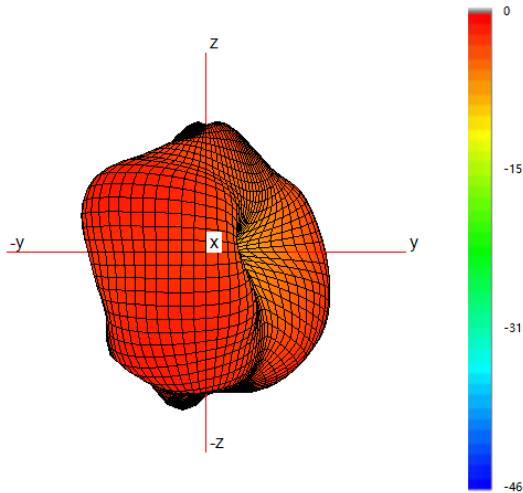
Typical 3D Pattern- Cell B - 750 MHz



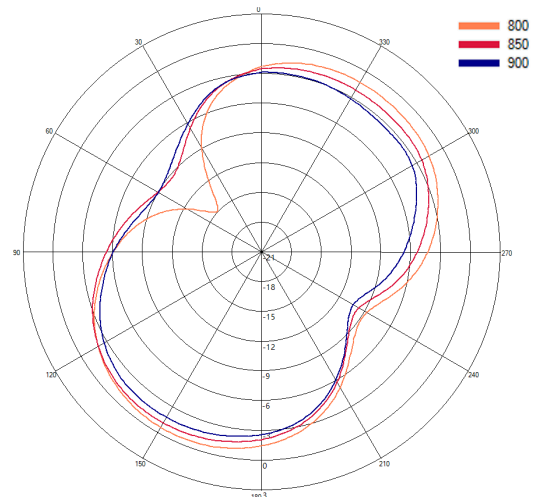
Typical H Plane- Cell B - Patterns- 700-800 MHz



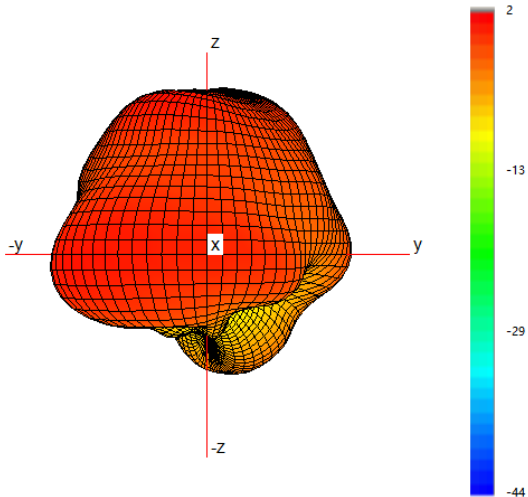
Typical 3D Pattern- Cell B - 850 MHz



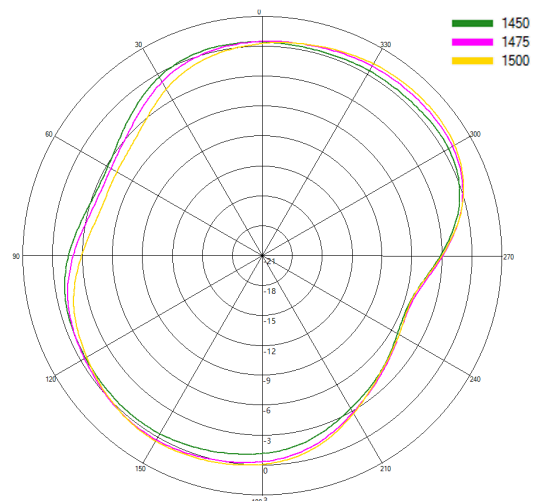
Typical H Plane- Cell B - Patterns- 800-900 MHz



Typical 3D Pattern- Cell B - 1475 MHz



Typical H Plane- Cell B - Patterns- 1450-1500 MHz

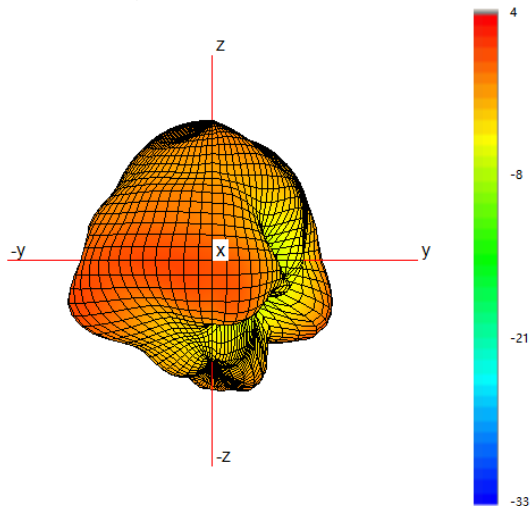


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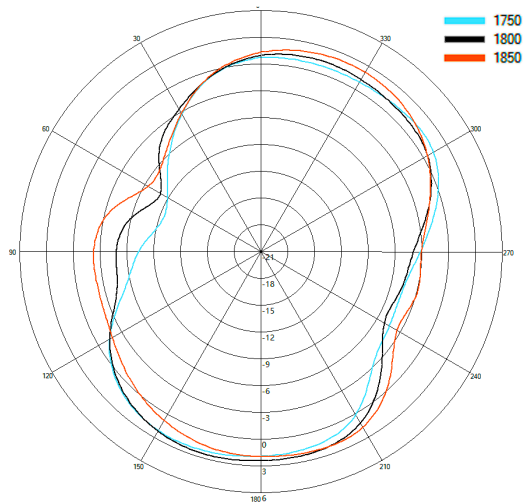
LPM2-7-27[-X]

Pattern Data in Free
Space Cell B

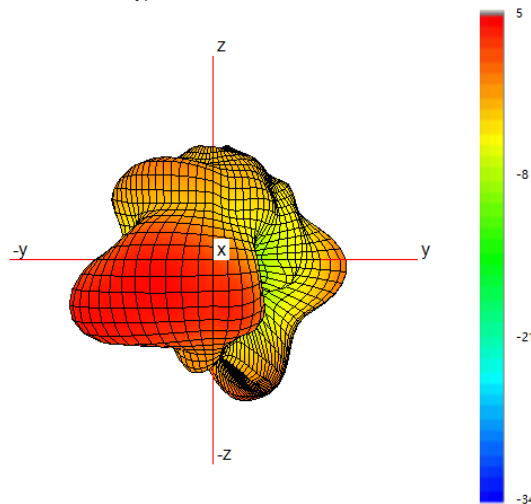
Typical 3D Pattern- Cell B - 1800 MHz



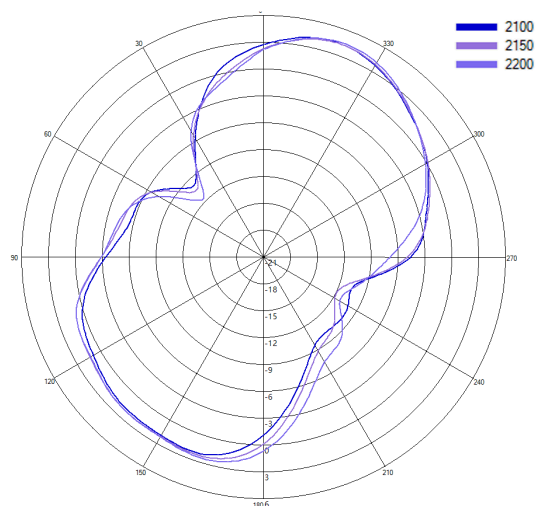
Typical H Plane- Cell B- Patterns- 1750-1850 MHz



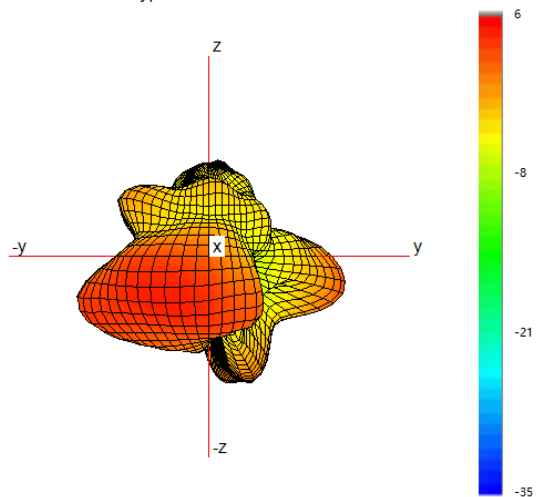
Typical 3D Pattern- Cell B - 2150 MHz



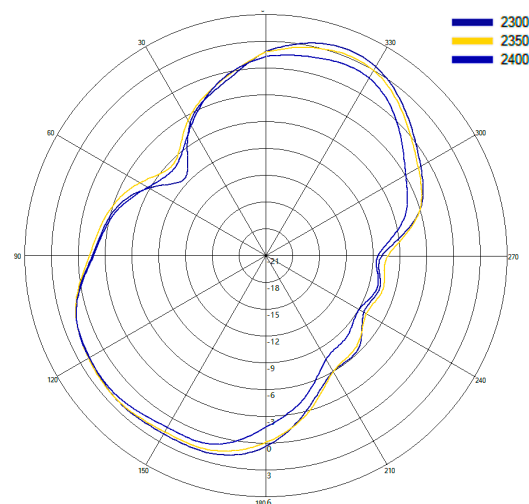
Typical H Plane- Cell B - Patterns- 2100-2200 MHz



Typical 3D Pattern- Cell B - 2350 MHz



Typical H Plane- Cell B - Patterns- 2300-2400 MHz

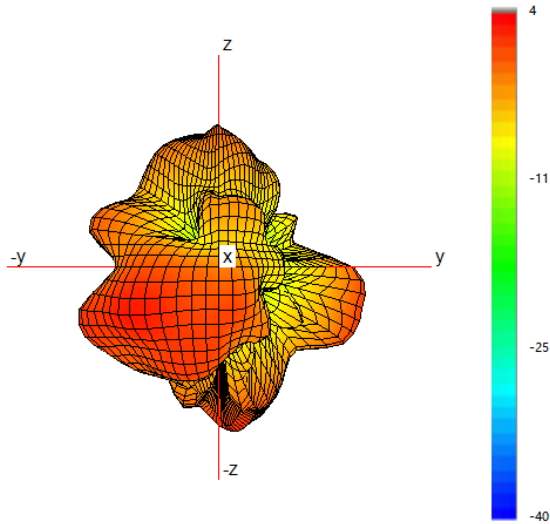


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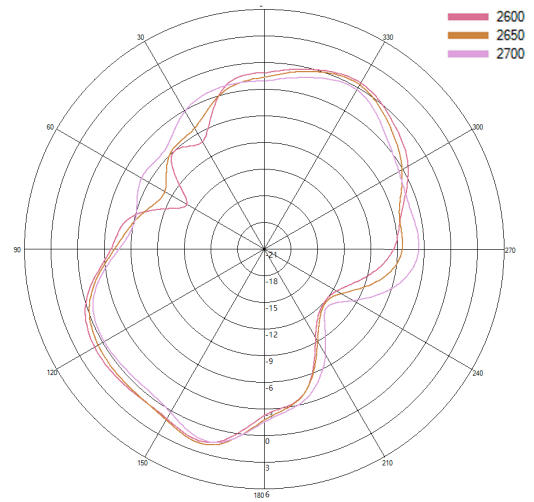
LPM2-7-27[-X]

Pattern Data in Free
Space Cell B

Typical 3D Pattern- Cell B - 2650 MHz



Typical H Plane- Cell B - Patterns- 2600-2700 MHz



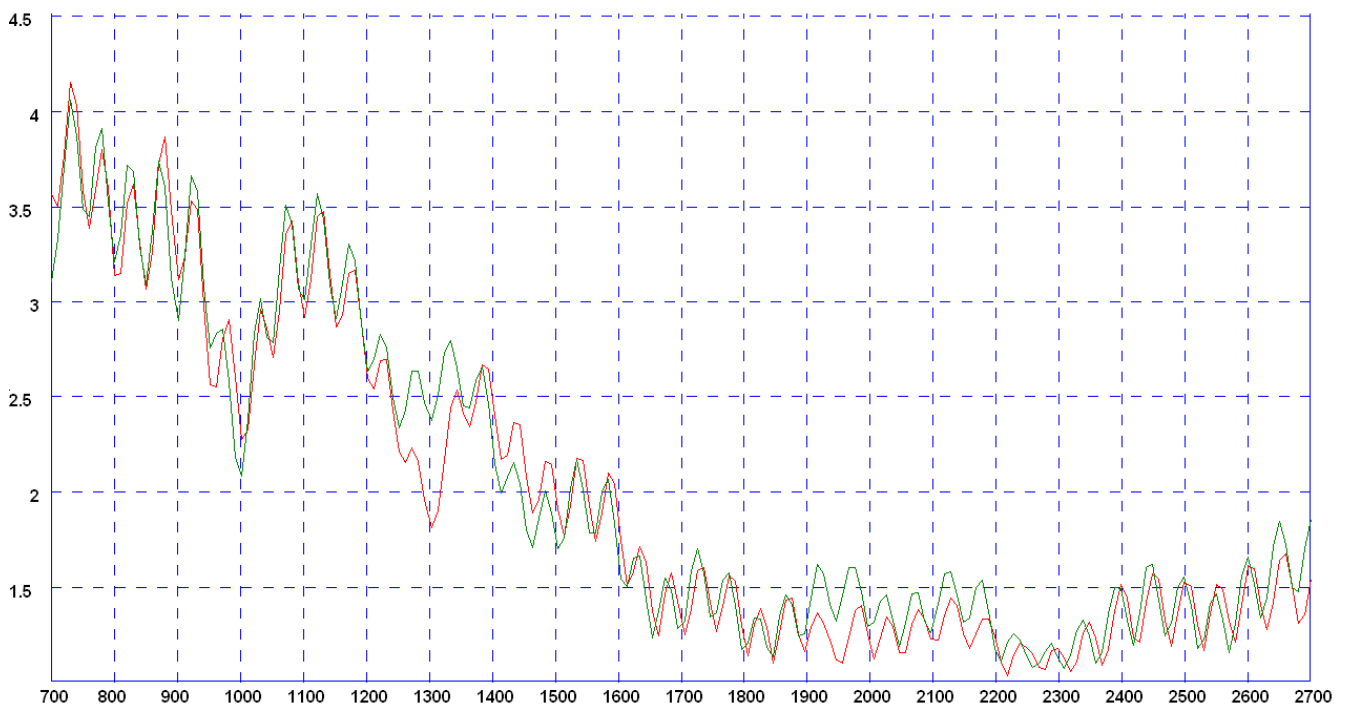
Ultra Low Profile MiMo IOT Antenna

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Electrical Data on
Ground Plane

| Measurement Conditions | | 4G Antennas | | | | |
|---|-----------|-----------------------|-----------|-----------------|-----------------|----------------|
| On 600x600mm (2'x2') ground plane with 0.5m (1.5') FR RG174 cables | | Frequency Range (MHz) | LTE Bands | Antenna Element | Peak Gain (dBi) | Efficiency (%) |
|  | 699-798 | 12,13,14,17,28 | Cell A | -1.8 | 19 | |
| | | | Cell B | 0.2 | 22 | |
| | 807- 862 | 5,19,20,26,27 | Cell A | -0.6 | 19 | |
| | | | Cell B | -1.3 | 22 | |
| | 880-960 | 8 | Cell A | 1.2 | 25 | |
| | | | Cell B | 0.7 | 26 | |
| | 1427-1518 | 11,21,74,75,76 | Cell A | 4.8 | 50 | |
| | | | Cell B | 5.3 | 47 | |
| | 1710-1920 | 2,3,4,9,25,35,39,66 | Cell A | 6.1 | 66 | |
| | | | Cell B | 5.7 | 65 | |
| | 1920-2170 | 1,23 | Cell A | 7.4 | 64 | |
| | | | Cell B | 7.5 | 67 | |
| | 2300-2400 | 30,40 | Cell A | 7.9 | 79 | |
| | | | Cell B | 8.1 | 76 | |
| | 2496-2690 | 7,38,41 | Cell A | 6.7 | 65 | |
| | | | Cell B | 6.9 | 63 | |

Typical VSWR



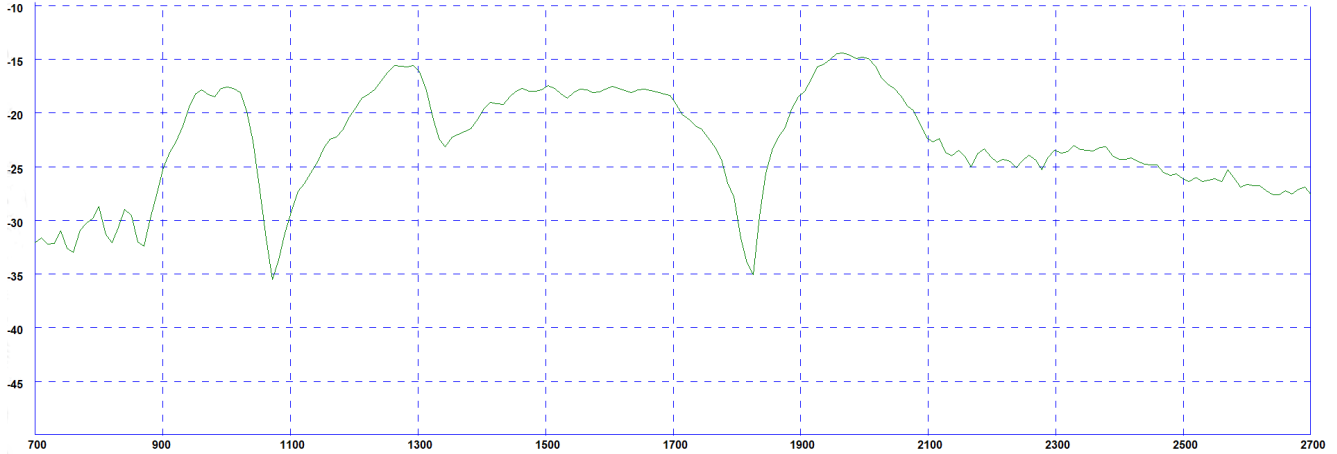
LPM2-7-27 VSWR measured with 2m (6.6') of RG174 cable on 600x600 (2'x2') ground plane

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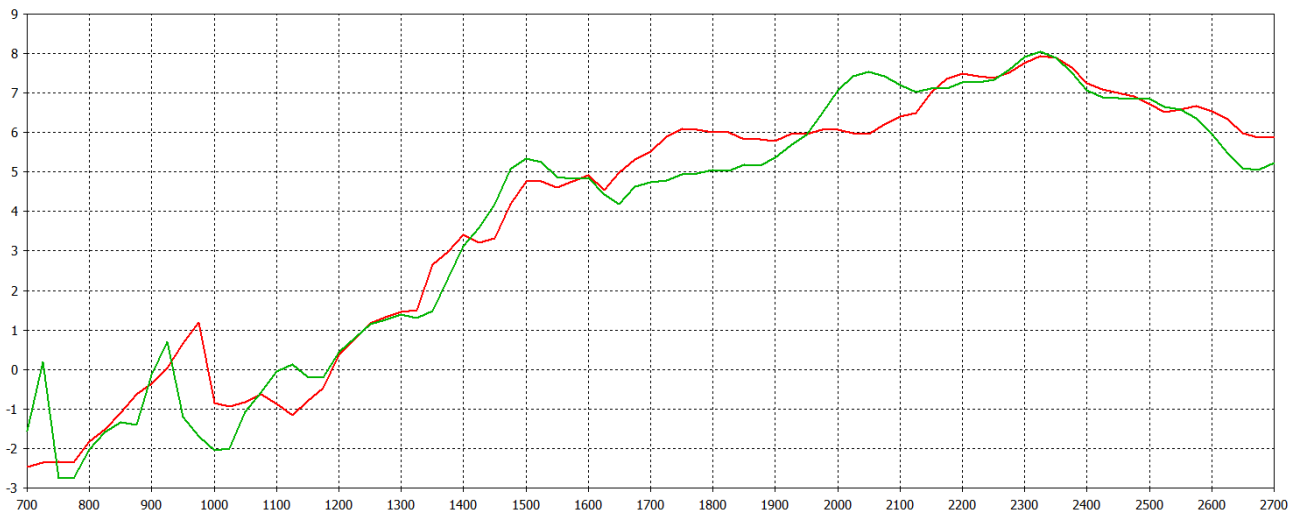
Electrical Data on
Ground Plane

Typical Isolation*



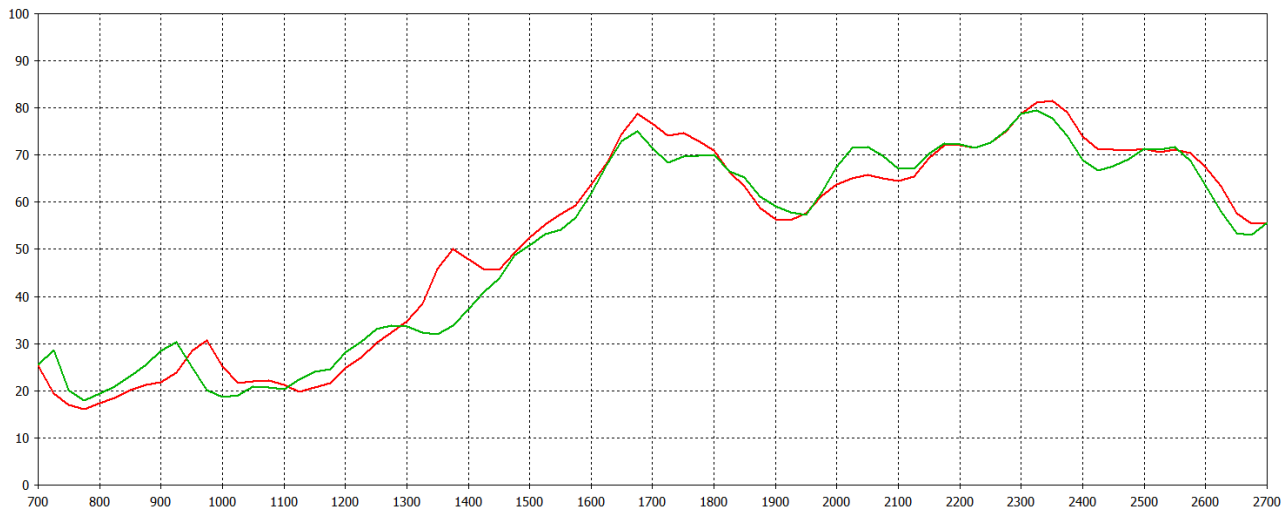
LPM2-7-27 Isolation measured with 2m (6.6') of RG174 cable on 600x600 (2'x2') ground plane

Typical Swept Peak Gain



LPM2-7-27 Swept Peak Gain measured with 0.5m (1.5') of RG174 cable on 600x600 (2'x2') ground plane

Typical Efficiency



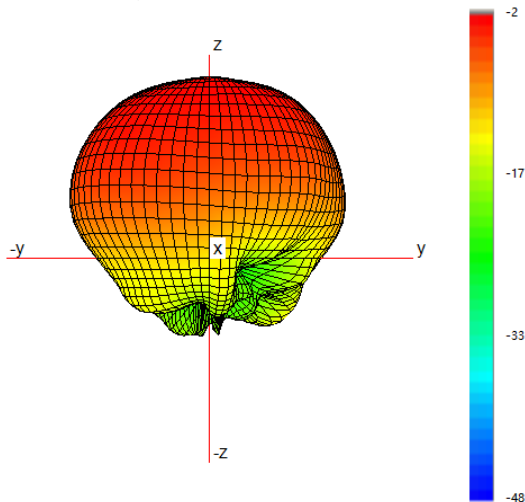
LPM2-7-27 Efficiency measured with 0.5m (1.5') of RG174 cable on 600x600 (2'x2') ground plane

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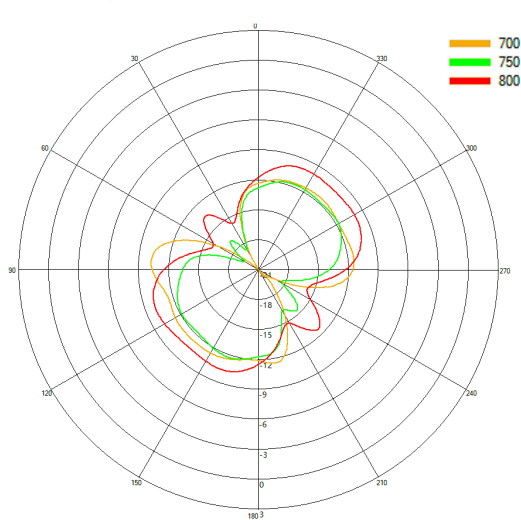
LPM2-7-27[-X]

Pattern Data on
Ground Plane Cell A

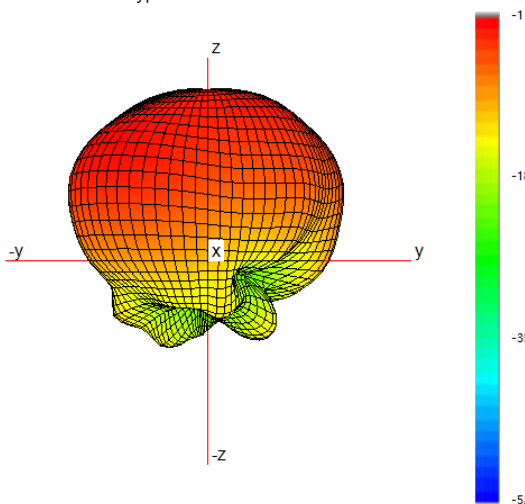
Typical 3D Pattern- Cell A - 750 MHz



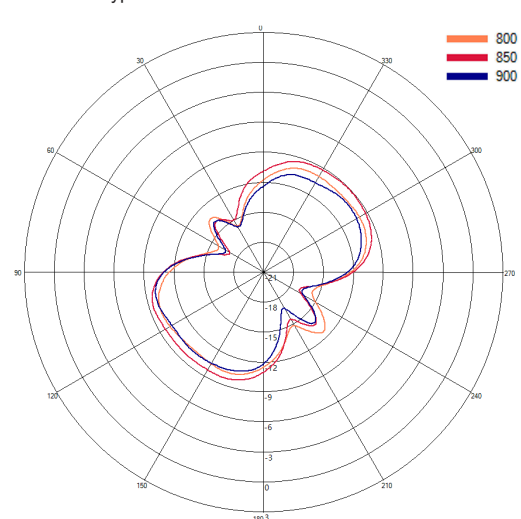
Typical H Plane- Cell A - Patterns- 700-800 MHz



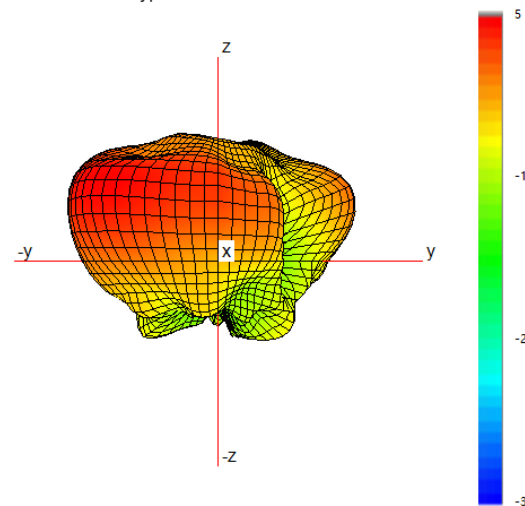
Typical 3D Pattern- Cell A - 850 MHz



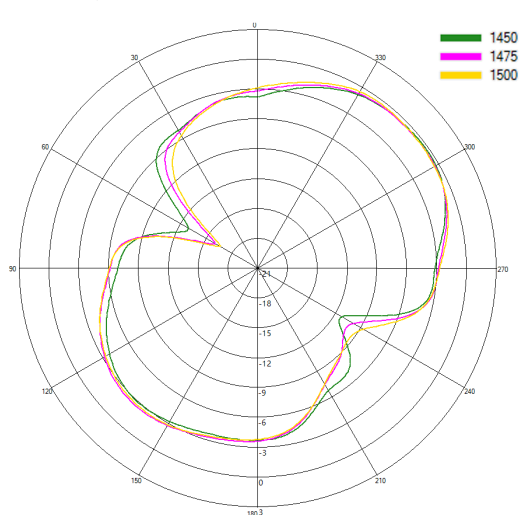
Typical H Plane- Cell A- Patterns- 800-900 MHz



Typical 3D Pattern- Cell A - 1475 MHz



Typical H Plane- Cell A- Patterns- 1450-1500 MHz

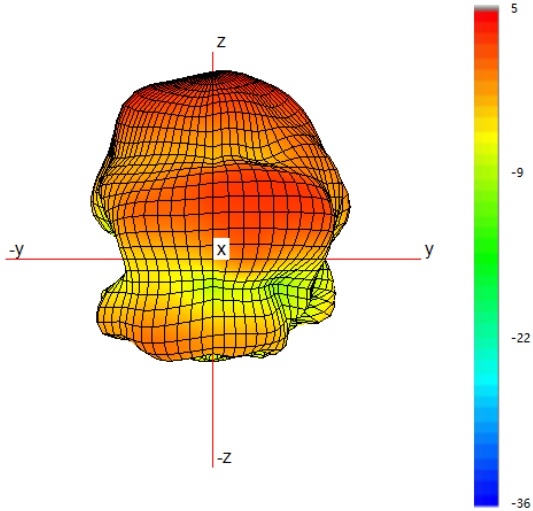


Ultra Low Profile MiMo IOT Antenna

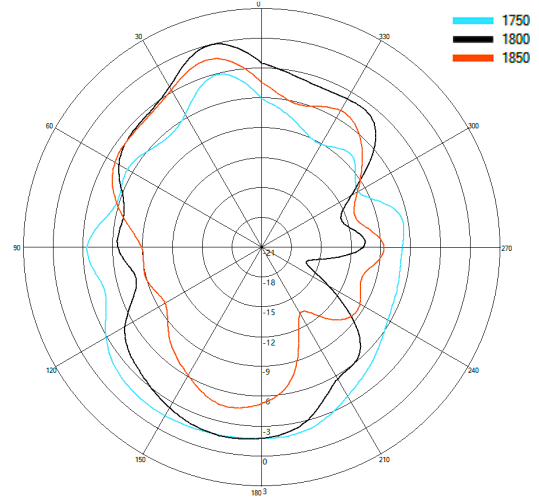
LPM2-7-27[-X]

Pattern Data on
Ground Plane Cell A

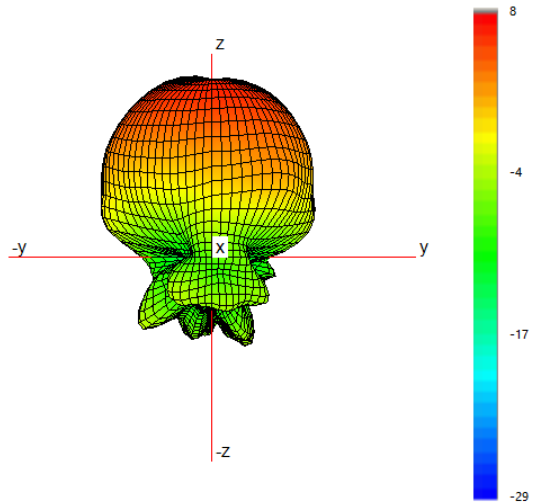
Typical 3D Pattern- Cell A - 1800 MHz



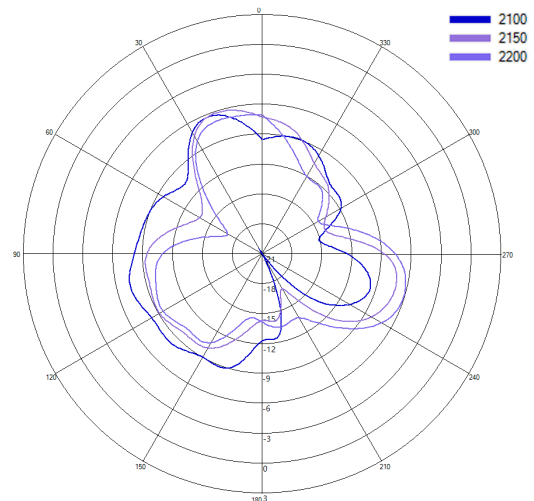
Typical H Plane- Cell A- Patterns- 1750-1850 MHz



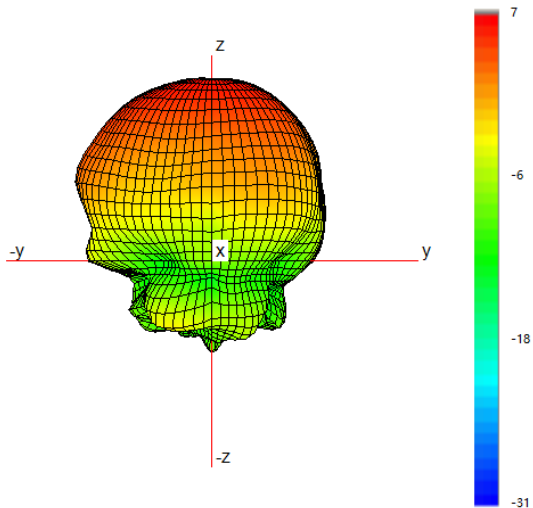
Typical 3D Pattern- Cell A - 2150 MHz



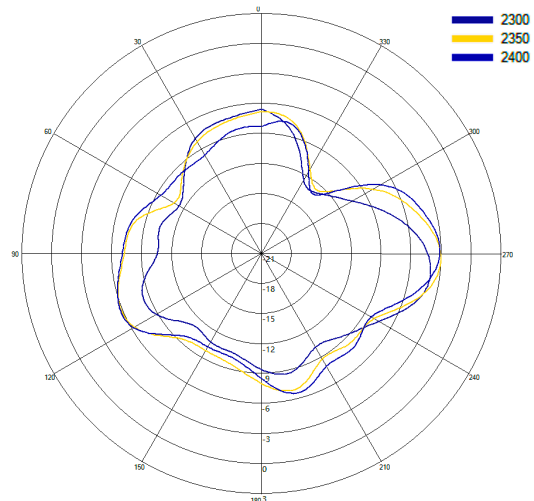
Typical H Plane- Cell A - Patterns- 2100-2200 MHz



Typical 3D Pattern- Cell A - 2350 MHz



Typical H Plane- Cell A - Patterns- 2300-2400 MHz

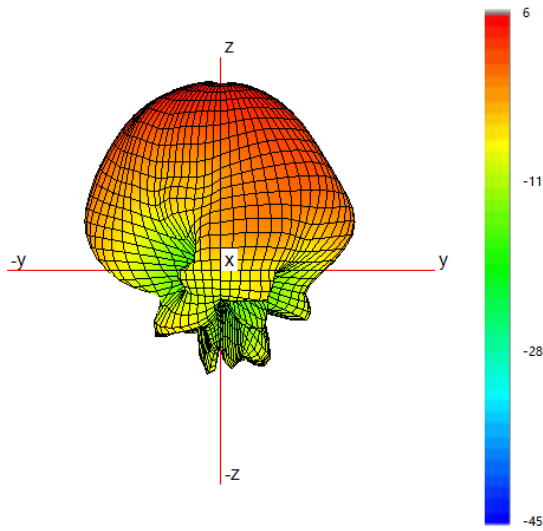


Ultra Low Profile MiMo IOT Antenna

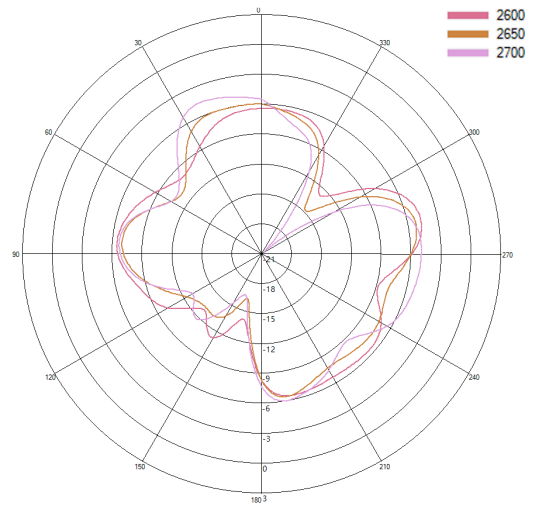
LPM2-7-27[-X]

Pattern Data on
Ground Plane Cell A

Typical 3D Pattern- Cell A - 2650 MHz



Typical H Plane- Cell A - Patterns- 2600-2700 MHz

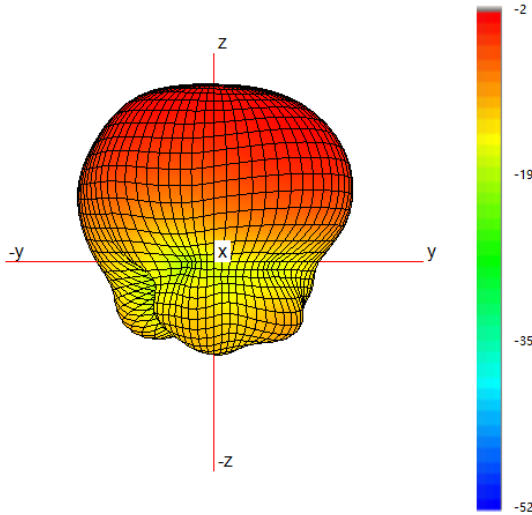


Ultra Low Profile MiMo IOT Antenna

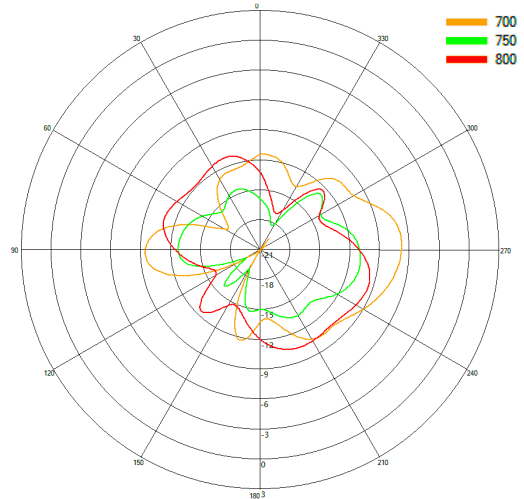
LPM2-7-27[-X]

Pattern Data on
Ground Plane Cell B

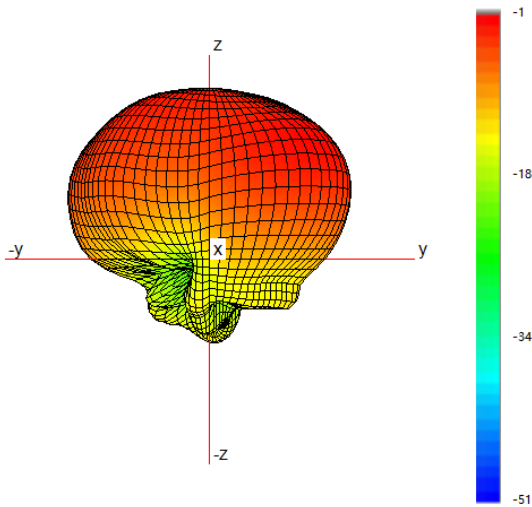
Typical 3D Pattern- Cell B - 750 MHz



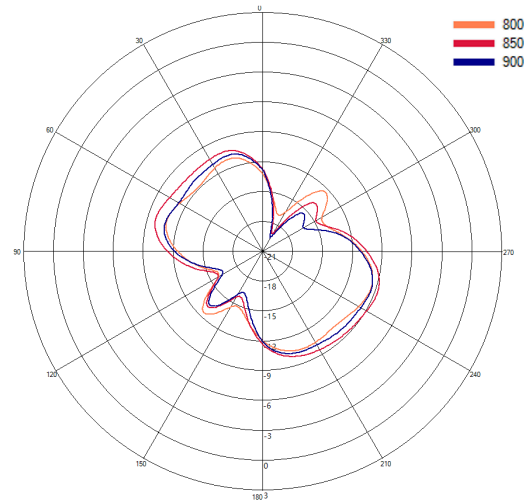
Typical H Plane- Cell B - Patterns- 700-800 MHz



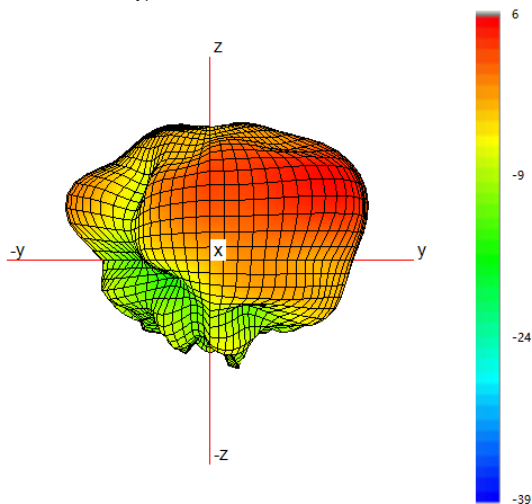
Typical 3D Pattern- Cell B - 850 MHz



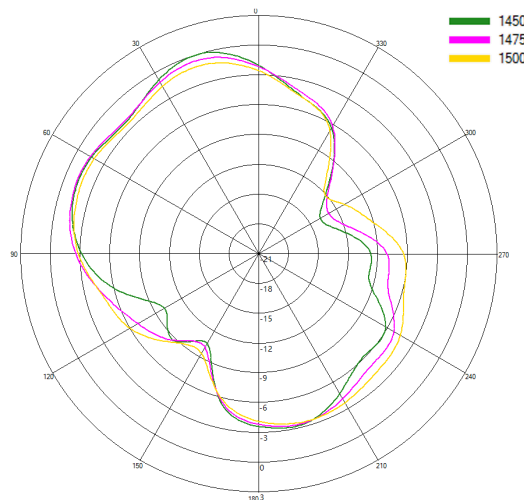
Typical H Plane- Cell B - Patterns- 800-900 MHz



Typical 3D Pattern- Cell B - 1475 MHz



Typical H Plane- Cell B - Patterns- 1450-1500 MHz

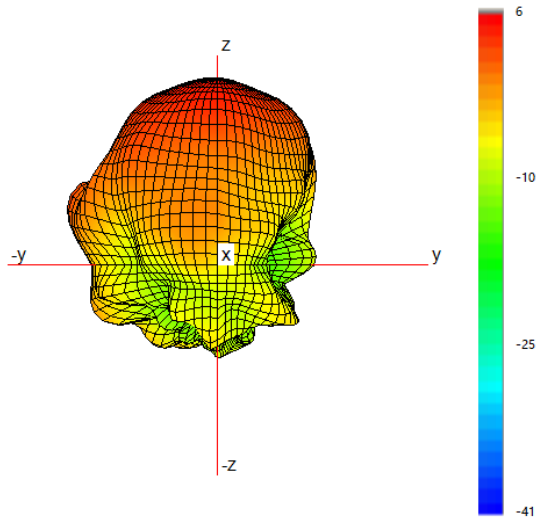


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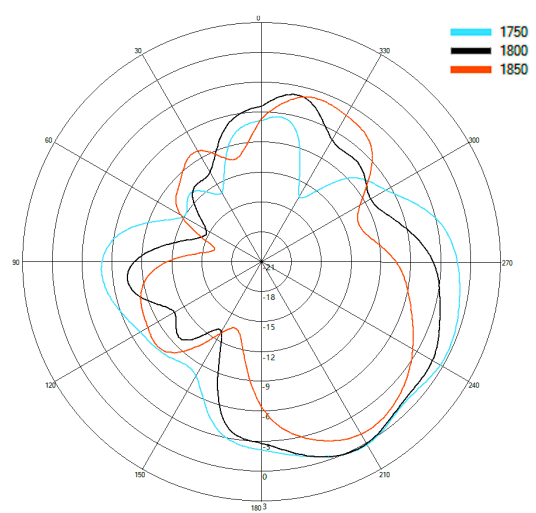
LPM2-7-27[-X]

Pattern Data on
Ground Plane Cell B

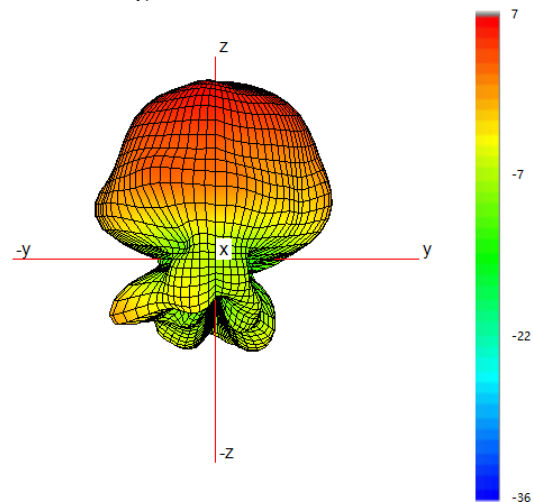
Typical 3D Pattern- Cell B - 1800 MHz



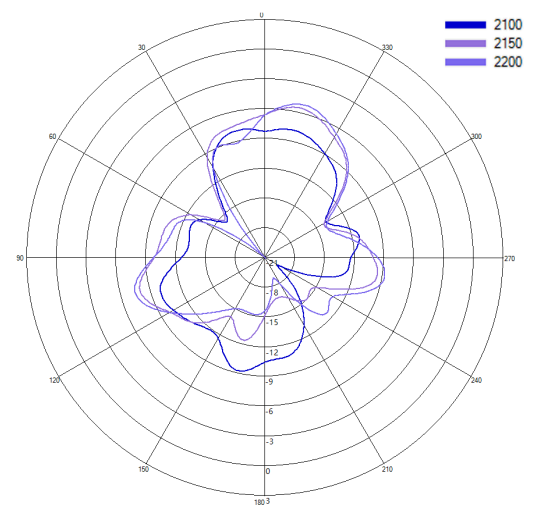
Typical H Plane- Cell B- Patterns- 1750-1850 MHz



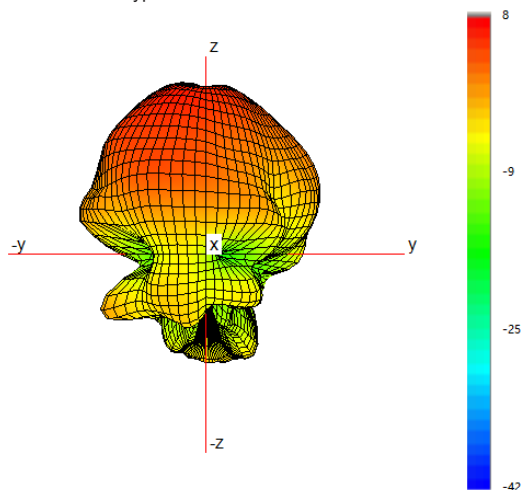
Typical 3D Pattern- Cell B - 2150 MHz



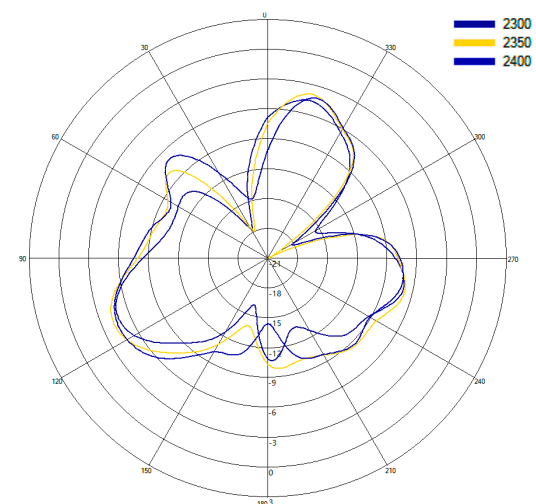
Typical H Plane- Cell B - Patterns- 2100-2200 MHz



Typical 3D Pattern- Cell B - 2350 MHz



Typical H Plane- Cell B - Patterns- 2300-2400 MHz

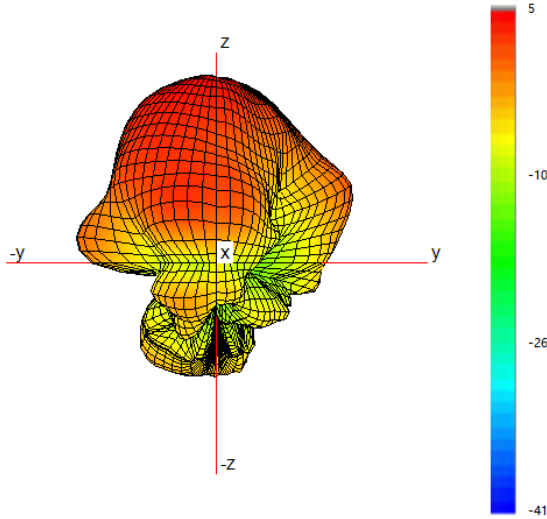


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Pattern Data on
Ground Plane Cell B

Typical 3D Pattern- Cell B - 2650 MHz



Typical H Plane- Cell B - Patterns- 2600-2700 MHz

