

Ultra Low Profile MiMo Antenna WiFi/5G

LPM[X]-24-72-2[X]

- 2x2, 3x3 or 4x4 MiMo antenna
- Covers WiFi, 4G and 5G frequencies from 2.3-7.2GHz
- Ultra low profile
- Meets IP69K and IK10



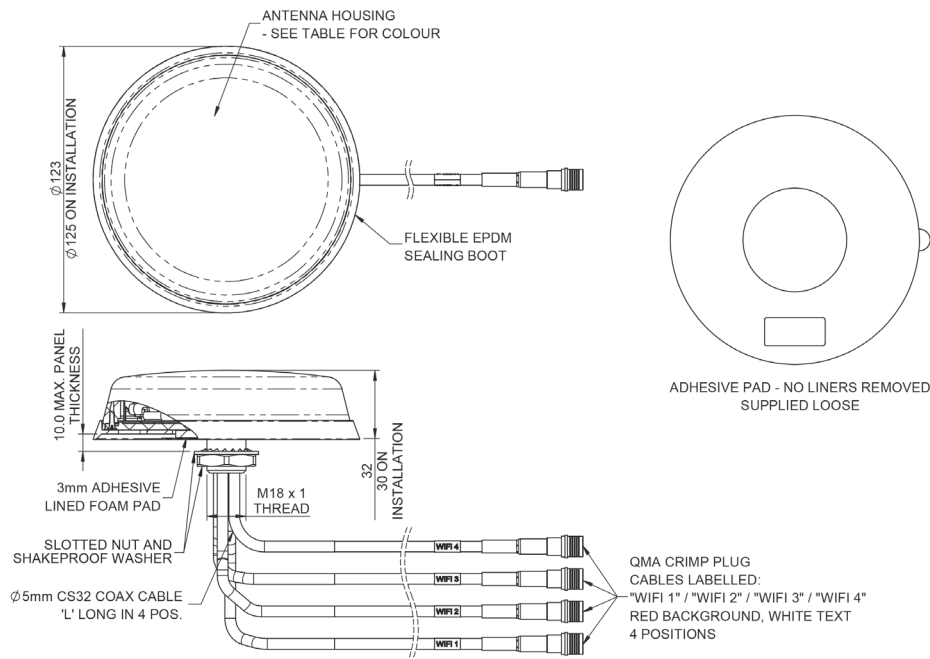
The LPM[X]-24-72-2[X] range has been designed to provide an optimised antenna solution for applications requiring 2x2, 3x3 or 4x4 MiMo capability. The compact, robust, low-profile housing contains four elements covering WiFi 6e, 4G and 5G frequencies from 2300-7125MHz with optimised isolation and low correlation co-efficient.

The antenna can be fitted on a conductive or non-conductive panel for device mounted, fixed site or vehicle applications.

The antenna is supplied with integrated flame retardant CS32 cables (Compliant to UN ECE R 118 and EN45545-2) and a halogen free flame retardant radome which is ingress protected to IP69K and vandal resistant to IK10 when correctly installed. It has approvals to both EN45545-2 and EN50155 for use in rolling stock, light rail and trackside applications.

Technical Drawing

LPM4VAR-24-72-VARQMAP Shown



Ultra Low Profile MiMo Antenna WIFI/5G

LPM[X]-24-72-2[X]

Product Data

| Part No. | LPM4W-24-72-2QMAP | LPM3W-24-72-2QMAP | LPM2W-24-72-2QMAP |
|---------------------------------|--|--|-------------------|
| Frequency Range | Ports 1-4 4x 2300-7125MHz | 3x 2300-7125MHz | 2x 2300-7125MHz |
| Typical VSWR* (all elements) | < 2:1 | | |
| Typical Isolation* (worst case) | > 10dB | | |
| Pattern | Omni-directional | | |
| Nominal Impedance | 50Ω | | |
| Max Input Power | 10W | | |
| Mechanical Data | | | |
| Dimensions | Diameter | 123mm (4.84") | |
| | Height | 32mm (1.26") | |
| Operating Temp | -40° / +80°C (-40° / 176°F) | | |
| Material | LEXAN EXL9330 | | |
| Colour | White | | |
| IP Rating | IP69K** | | |
| Relative Humidity | 95% | | |
| Vandal Protection | IK10 | | |
| Approvals Data | | | |
| Regulatory Approvals | EN50155:2021 (Dry heat & Cooling, Damp Heat), EN61373:2010 / EN50155:2021 (Shock & Vibration), EN45545:2020- HL3 (flammability) | | |
| Mounting Data | | | |
| Fixing | Panel Mount - 18mm (3/4") | | |
| Cable Data | | | |
| Comms Cables | Cable Type | CS32 - Flame Retardant to UN ECE R 118 / EN45545-2 | |
| | Diameter | 5mm (0.2") | |
| | Length | 2m (6.6') | |
| | Termination | 4x QMA Plugs(m) | 3x QMA Plugs(m) |

* Typical Isolation and VSWR stated as measured with 0.5m (1.5') of cable in free space.

** When mounted to a sealed panel / enclosure with fitted boot in accordance with installation instructions.

Ultra Low Profile MiMo Antenna WIFI/5G

LPM[X]-24-72-2[X]

PANORAMA  ANTENNAS

Product Data

| Part No. | LPM4W-24-72-2RANP | LPM3W-24-72-2RANP | LPM2W-24-72-2RANP | |
|---------------------------------|--|--|---------------------------|---------------------------|
| Frequency Range | Ports 1-4 | 4x 2300-7125MHz | 3x 2300-7125MHz | 2x 2300-7125MHz |
| Typical VSWR* (all elements) | < 2:1 | | | |
| Typical Isolation* (worst case) | > 10dB | | | |
| Pattern | Omni-directional | | | |
| Nominal Impedance | 50Ω | | | |
| Max Input Power | 10W | | | |
| Mechanical Data | | | | |
| Dimensions | Diameter | 123mm (4.84") | | |
| | Height | 32mm (1.26") | | |
| Operating Temp | -40° / +80°C (-40° / 176°F) | | | |
| Material | LEXAN EXL9330 | | | |
| Colour | White | | | |
| IP Rating | IP69K** | | | |
| Relative Humidity | 95% | | | |
| Vandal Protection | IK10 | | | |
| Approvals Data | | | | |
| Regulatory Approvals | EN50155:2021 (Dry heat & Cooling, Damp Heat), EN61373:2010 / EN50155:2021 (Shock & Vibration), EN45545:2020- HL3 (flammability) | | | |
| Mounting Data | | | | |
| Fixing | Panel Mount - 18mm (3/4") | | | |
| Cable Data | | | | |
| Comms Cables | Cable Type | CS32 - Flame Retardant to UN ECE R 118 / EN45545-2 | | |
| | Diameter | 5mm (0.2") | | |
| | Length | 2m (6.6') | | |
| | Termination | 4x Right Angle N Plugs(m) | 3x Right Angle N Plugs(m) | 2x Right Angle N Plugs(m) |

* Typical Isolation and VSWR stated as measured with 0.5m (1.5') of cable in free space.

**When mounted to a sealed panel / enclosure with fitted boot in accordance with installation instructions.

Ultra Low Profile MiMo Antenna WIFI/5G

LPM[X]-24-72-2[X]

Product Data

| Part No. | LPM4W-24-72-2SP | LPM3W-24-72-2SP | LPM2W-24-72-2SP |
|---------------------------------|--|--|-----------------|
| Frequency Range | 4x 2300-7125MHz | 3x 2300-7125MHz | 2x 2300-7125MHz |
| Ports 1-4 | | | |
| Typical VSWR* (all elements) | < 2:1 | | |
| Typical Isolation* (worst case) | > 10dB | | |
| Pattern | Omni-directional | | |
| Nominal Impedance | 50Ω | | |
| Max Input Power | 10W | | |
| Mechanical Data | | | |
| Dimensions | Diameter | 123mm (4.84") | |
| | Height | 32mm (1.26") | |
| Operating Temp | -40° / +80°C (-40° / 176°F) | | |
| Material | LEXAN EXL9330 | | |
| Colour | White | | |
| IP Rating | IP69K** | | |
| Relative Humidity | 95% | | |
| Vandal Protection | IK10 | | |
| Approvals Data | | | |
| Regulatory Approvals | EN50155:2021 (Dry heat & Cooling, Damp Heat), EN61373:2010 / EN50155:2021 (Shock & Vibration), EN45545:2020- HL3 (flammability) | | |
| Mounting Data | | | |
| Fixing | Panel Mount - 18mm (3/4") | | |
| Cable Data | | | |
| Comms Cables | Cable Type | CS32 - Flame Retardant to UN ECE R 118 / EN45545-2 | |
| | Diameter | 5mm (0.2") | |
| | Length | 2m (6.6') | |
| | Termination | 4x SMA Plugs(m) | 3x SMA Plugs(m) |

* Typical Isolation and VSWR stated as measured with 0.5m (1.5') of cable in free space.

**When mounted to a sealed panel / enclosure with fitted boot in accordance with installation instructions.

Ultra Low Profile MiMo Antenna WIFI/5G

LPM[X]-24-72-2[X]

PANORAMA  ANTENNAS

Product Data

| Part No. | LPM4W-24-72-2RPSP | LPM3W-24-72-2RPSP | LPM2W-24-72-2RPSP |
|---------------------------------|------------------------------|-------------------|-------------------|
| Frequency Range | Ports 1-4 4x 2300-7125MHz | 3x 2300-7125MHz | 2x 2300-7125MHz |
| Typical VSWR* (all elements) | < 2:1 | | |
| Typical Isolation* (worst case) | > 10dB | | |
| Pattern | Omni-directional | | |
| Nominal Impedance | 50Ω | | |
| Max Input Power | 10W | | |

Mechanical Data

| | | |
|-------------------|-----------------------------|---------------|
| Dimensions | Diameter | 123mm (4.84") |
| | Height | 32mm (1.26") |
| Operating Temp | -40° / +80°C (-40° / 176°F) | |
| Material | LEXAN EXL9330 | |
| Colour | White | |
| IP Rating | IP69K** | |
| Relative Humidity | 95% | |
| Vandal Protection | IK10 | |

Approvals Data

Regulatory Approvals EN50155:2021 (Dry heat & Cooling, Damp Heat), EN61373:2010 / EN50155:2021 (Shock & Vibration), EN45545:2020- HL3 (flammability)

Mounting Data

Fixing Panel Mount - 18mm (3/4")

Cable Data

| | | | | |
|--------------|-------------|--|----------------------|----------------------|
| Comms Cables | Cable Type | CS32 - Flame Retardant to UN ECE R 118 / EN45545-2 | | |
| | Diameter | 5mm (0.2") | | |
| | Length | 2m (6.6') | | |
| | Termination | 4x Rev Pol SMA Plugs | 3x Rev Pol SMA Plugs | 2x Rev Pol SMA Plugs |

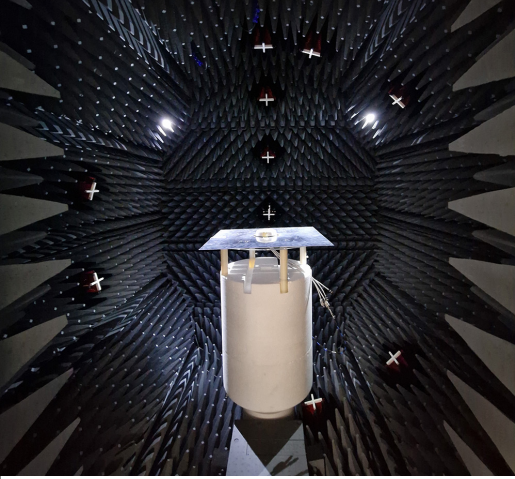
* Typical Isolation and VSWR stated as measured with 0.5m (1.5') of cable in free space.

**When mounted to a sealed panel / enclosure with fitted boot in accordance with installation instructions.

Ultra Low Profile MiMo Antenna WiFi/5G

LPM[X]-24-72-2[X]

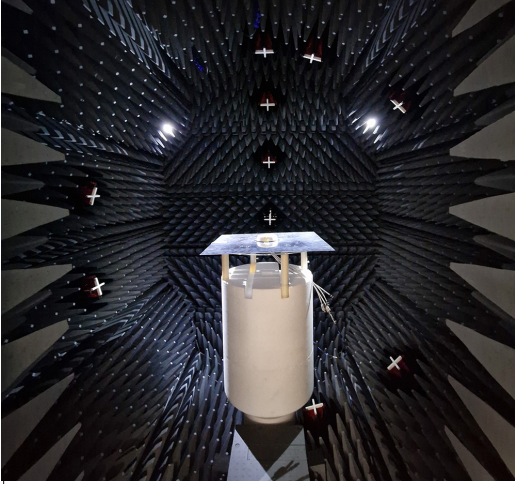
Electrical Data on Ground Plane

| Measurement Conditions | Ports 1-4 WiFi Bands | | | | |
|---|-----------------------|------------|-----------------|-----------------|----------------|
| On 600x600mm (2' x 2') ground plane with 0.5m (1.5') C32 cables | Frequency Range (MHz) | WiFi Bands | Antenna Element | Peak Gain (dBi) | Efficiency (%) |
|  | 2396-2485 | 2.4GHz | Port 1 | 5.2 | 79 |
| | | | Port 2 | 5.5 | 76 |
| | | | Port 3 | 5.6 | 78 |
| | | | Port 4 | 5.4 | 76 |
| | 5150-5250 | UNII-1 | Port 1 | 9.8 | 82 |
| | | | Port 2 | 9.3 | 75 |
| | | | Port 3 | 8.9 | 80 |
| | | | Port 4 | 9.5 | 77 |
| | 5250-5350 | UNII-2A | Port 1 | 9.5 | 76 |
| | | | Port 2 | 8.4 | 78 |
| | | | Port 3 | 9.4 | 80 |
| | | | Port 4 | 9.8 | 79 |
| | 5350-5470 | UNII-2B | Port 1 | 8.4 | 75 |
| | | | Port 2 | 9.1 | 76 |
| | | | Port 3 | 9.1 | 81 |
| | | | Port 4 | 9.2 | 78 |
| | 5470-5725 | UNII-2C | Port 1 | 8.4 | 75 |
| | | | Port 2 | 9.1 | 76 |
| | | | Port 3 | 9.1 | 81 |
| | | | Port 4 | 9.2 | 78 |
| | 5725-5850 | UNII-3 | Port 1 | 9.0 | 81 |
| | | | Port 2 | 8.8 | 75 |
| | | | Port 3 | 9.6 | 83 |
| | | | Port 4 | 9.3 | 81 |
| | 5850-5925 | UNII-4 | Port 1 | 9.0 | 81 |
| | | | Port 2 | 9.1 | 81 |
| | | | Port 3 | 10.1 | 83 |
| | | | Port 4 | 9.5 | 81 |
| | 5925-6425 | UNII-5 | Port 1 | 9.7 | 82 |
| | | | Port 2 | 9.2 | 77 |
| | | | Port 3 | 10.1 | 84 |
| | | | Port 4 | 9.5 | 81 |
| | 6425-6525 | UNII-6 | Port 1 | 9.4 | 81 |
| | | | Port 2 | 9.0 | 74 |
| | | | Port 3 | 10.1 | 80 |
| | | | Port 4 | 9.5 | 75 |
| | 6525-6875 | UNII-7 | Port 1 | 9.5 | 81 |
| | | | Port 2 | 9.1 | 75 |
| | | | Port 3 | 10.3 | 82 |
| | | | Port 4 | 9.6 | 77 |
| 6875-7125 | UNII-8 | Port 1 | 9.7 | 83 | |
| | | Port 2 | 9.4 | 75 | |
| | | Port 3 | 10.0 | 83 | |
| | | Port 4 | 9.0 | 79 | |

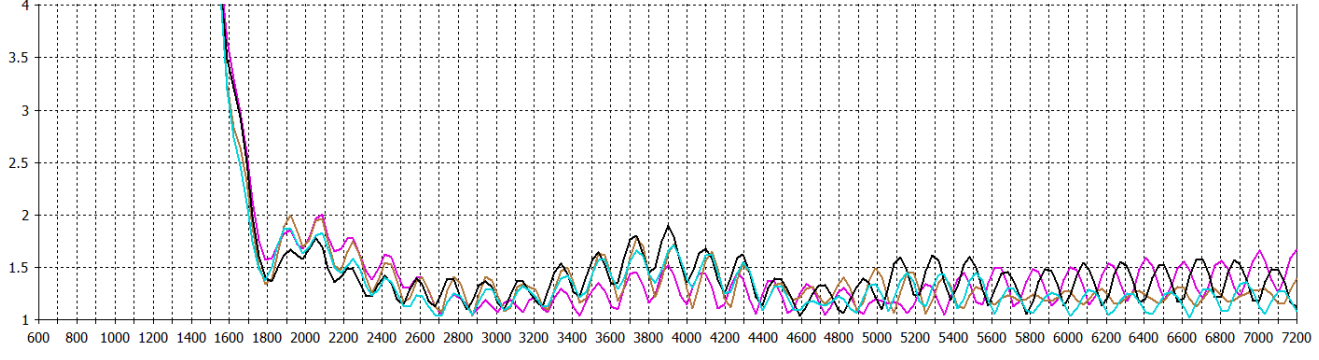
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LPM[X]-24-72-2[X]

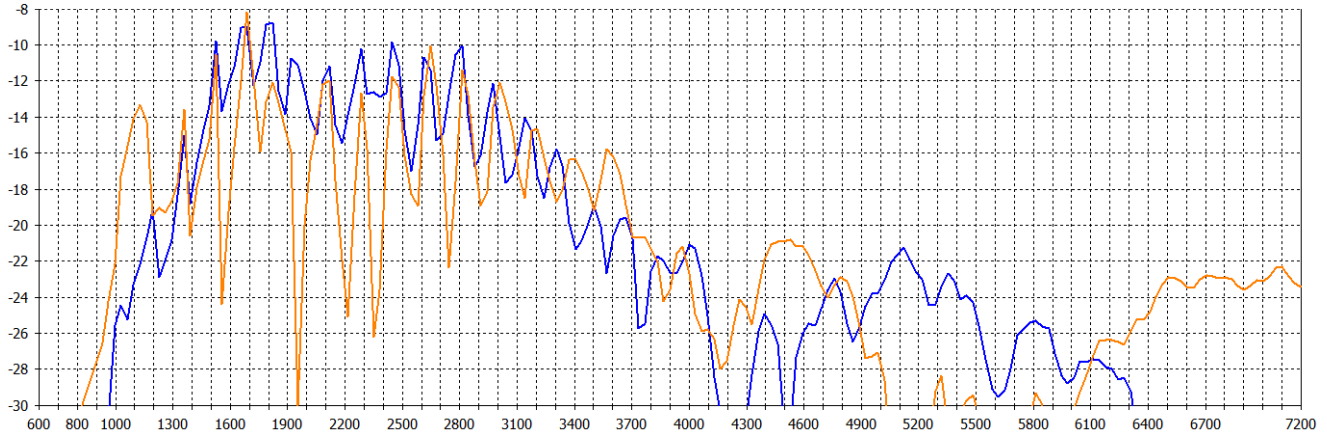
Electrical Data on Ground Plane

| Measurement Conditions | Ports 1-4 Cellular Bands | | | | |
|---|--------------------------|-------------------|-----------------|-----------------|----------------|
| On 600x600mm (2' x 2') ground plane with 0.5m (1.5') C32 cables | Frequency Range (MHz) | LTE Bands | Antenna Element | Peak Gain (dBi) | Efficiency (%) |
|  | 2300-2400 | 30,40 | Port 1 | 4.7 | 80 |
| | | | Port 2 | 5.0 | 76 |
| | | | Port 3 | 5.6 | 77 |
| | | | Port 4 | 5.4 | 76 |
| | 2496-2690 | 7,38,41 | Port 1 | 6.1 | 78 |
| | | | Port 2 | 5.5 | 75 |
| | | | Port 3 | 6.0 | 79 |
| | | | Port 4 | 5.6 | 74 |
| | 3300-4200 | 22,42,43,48,77,78 | Port 1 | 8.2 | 76 |
| | | | Port 2 | 8.3 | 73 |
| | | | Port 3 | 7.9 | 76 |
| | | | Port 4 | 8.3 | 76 |
| | 4400-5000 | 79 | Port 1 | 10.0 | 83 |
| | | | Port 2 | 9.6 | 70 |
| | | | Port 3 | 9.5 | 82 |
| | | | Port 4 | 9.7 | 83 |
| | 5925-7125 | 96, 102,104 | Port 1 | 9.7 | 82 |
| | | | Port 2 | 9.4 | 76 |
| | | | Port 3 | 10.3 | 83 |
| | | | Port 4 | 9.6 | 79 |

Typical VSWR - Elements 1-4

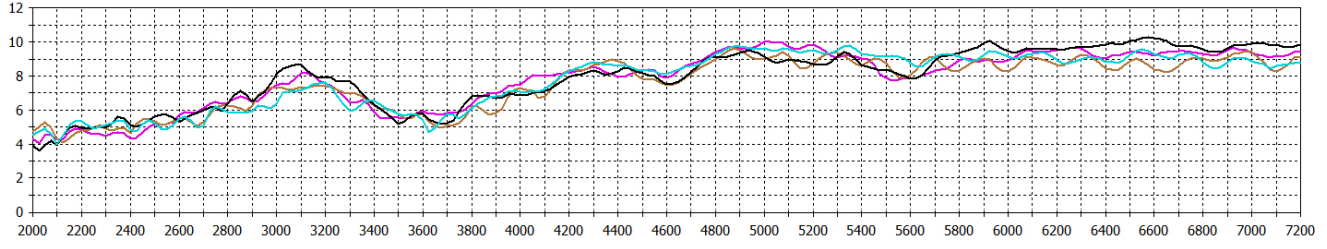


Typical Isolation*

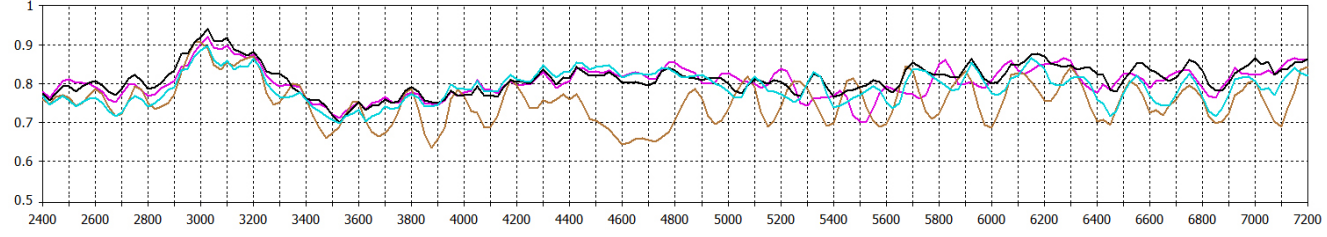


*Orange plot = opposite elements Blue plot = adjacent elements

Typical Swept Peak Gain - Elements 1-4



Typical Efficiency - Elements 1-4

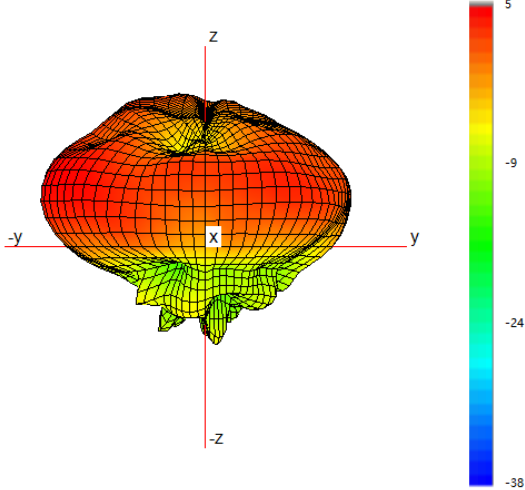


Ultra Low Profile MiMo Antenna WiFi/5G

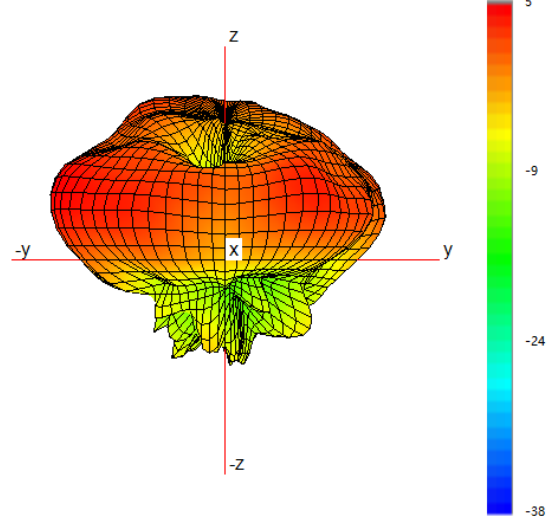
LPM[X]-24-72-2[X]

3D Pattern Data on Ground Plane Port 1

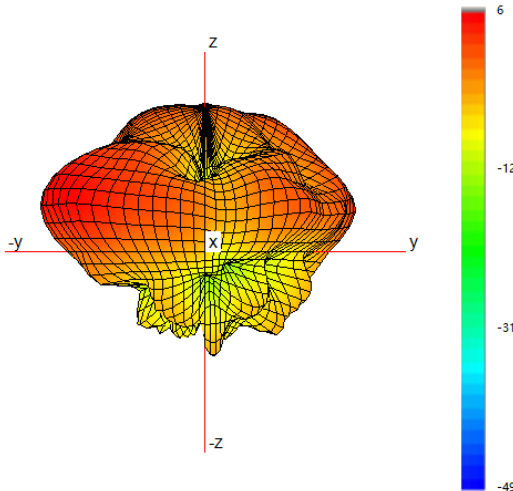
Typical 3D Pattern - Port 1 2350 MHz



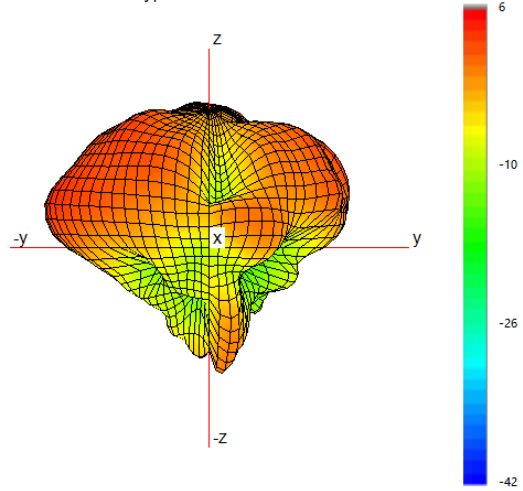
Typical 3D Pattern - Port 1 2450 MHz



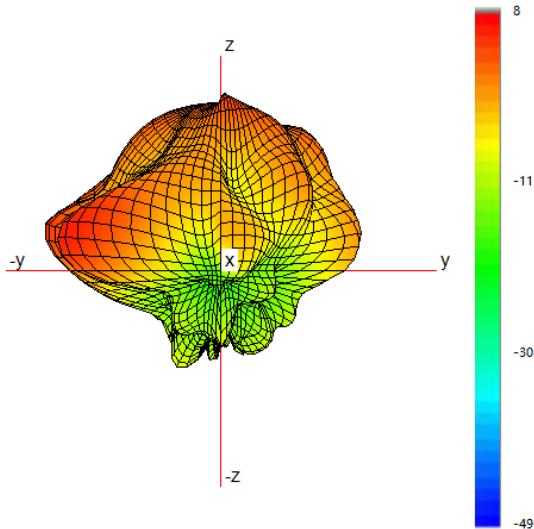
Typical 3D Pattern - Port 1 2650 MHz



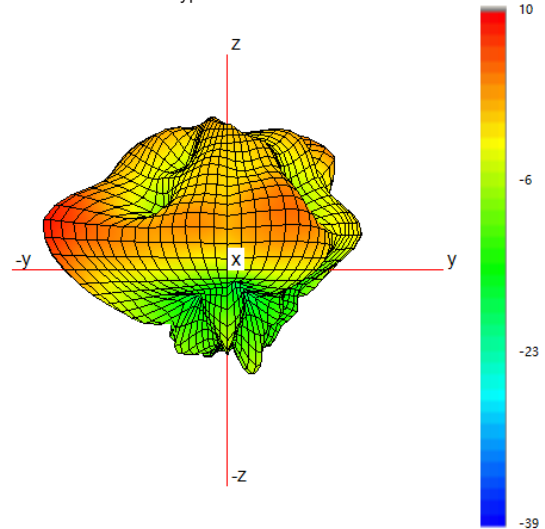
Typical 3D Pattern - Port 1 3600 MHz



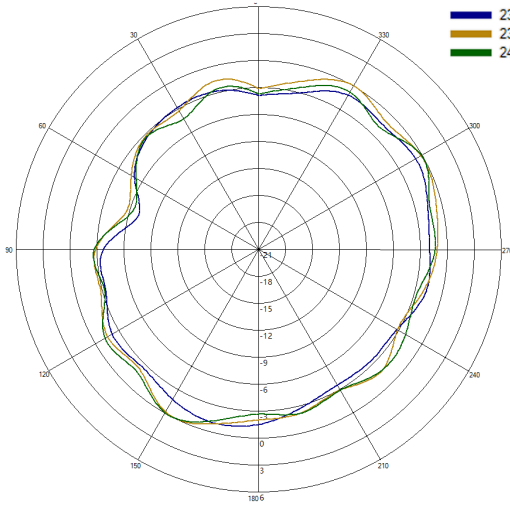
Typical 3D Pattern - Port 1 5500 MHz



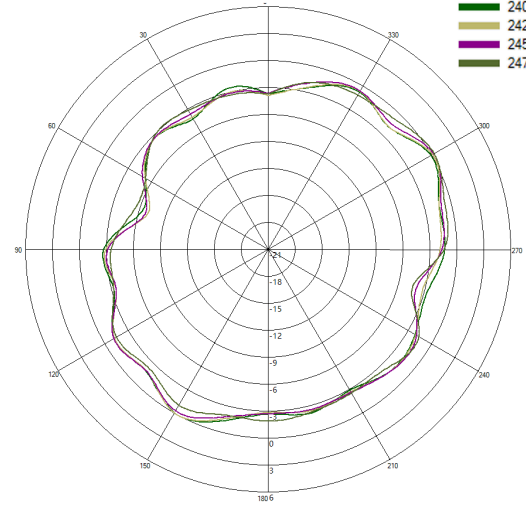
Typical 3D Pattern - Port 1 6500 MHz



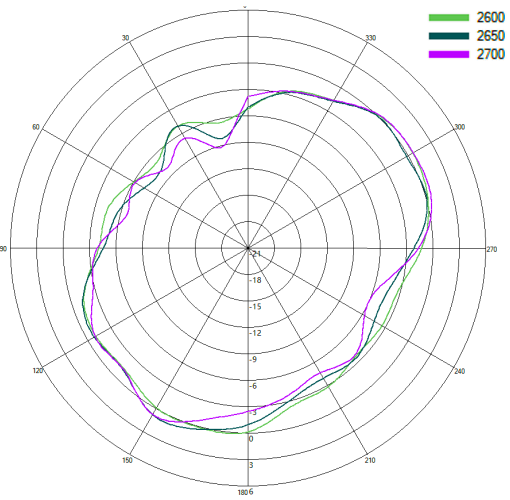
Typical H Plane Pattern - Port 1 2300-2400 MHz



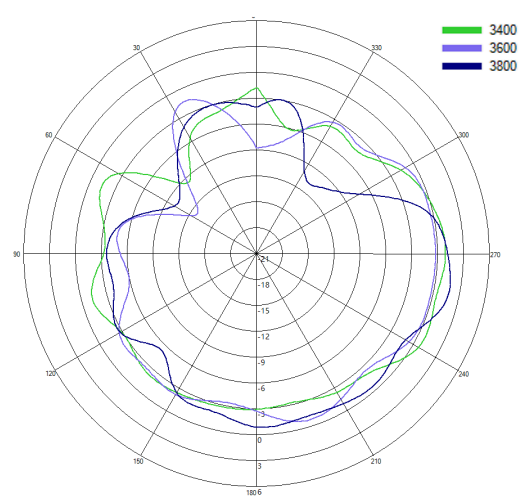
Typical H Plane Pattern - Port 1 2400-2475 MHz



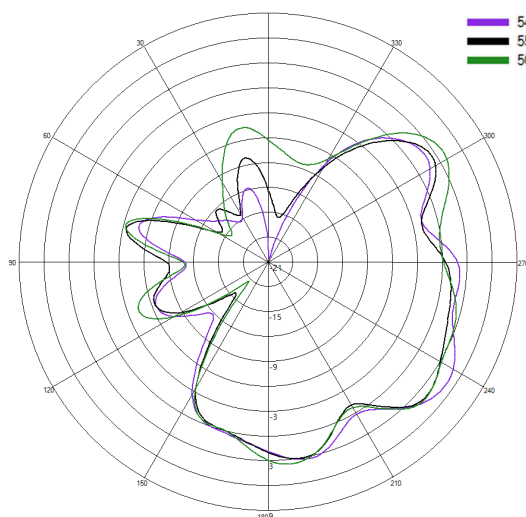
Typical H Plane Pattern - Port 1 2600-2700 MHz



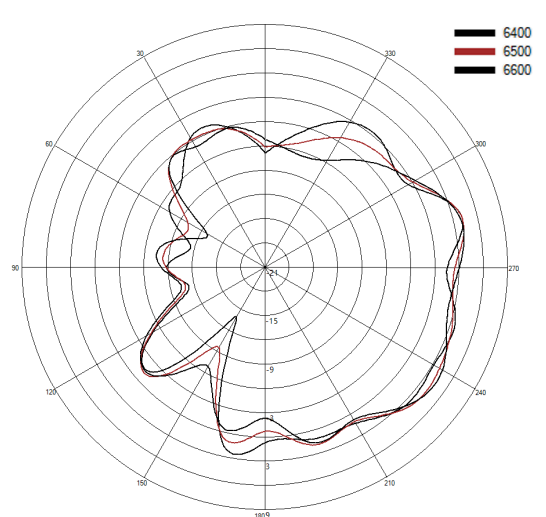
Typical H Plane Pattern - Port 1 3400-3800 MHz



Typical H Plane Pattern - Port 1 5400-5600 MHz



Typical H Plane Pattern - Port 1 6400-6600 MHz

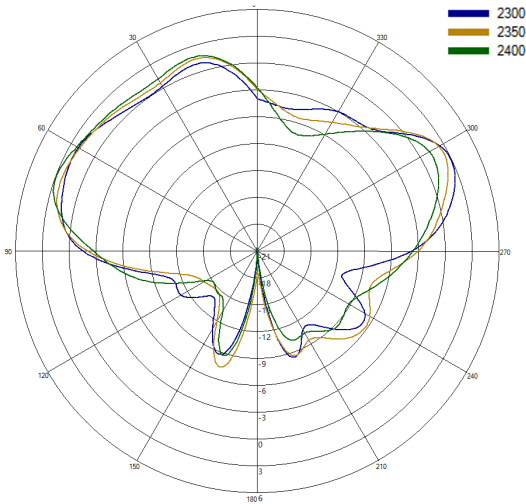


Ultra Low Profile MiMo Antenna WIFI/5G

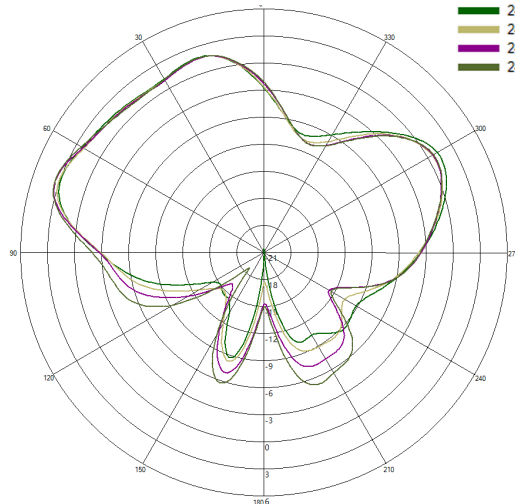
LPM[X]-24-72-2[X]

2D Pattern Data on Ground
Plane Port 1 E Plane

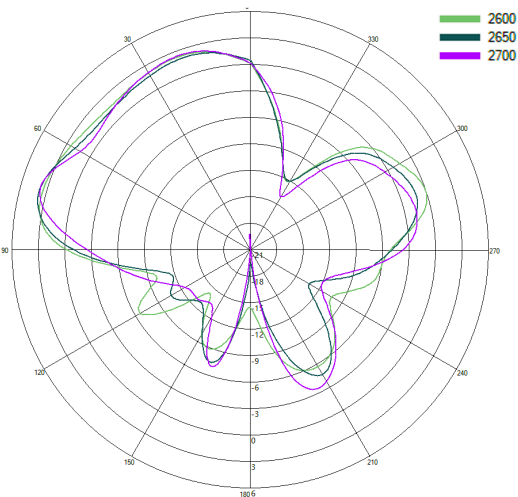
Typical E Plane Pattern - Port 1 2300-2400 MHz



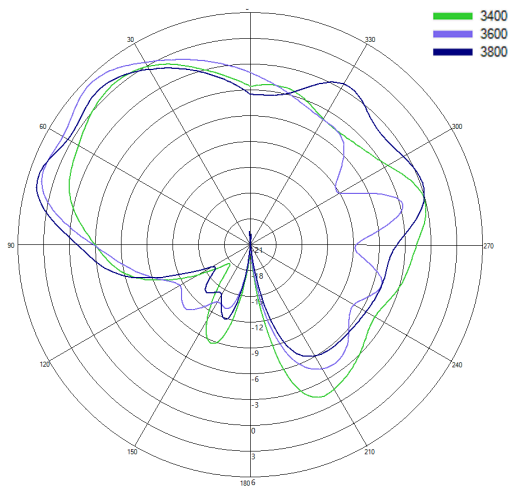
Typical E Plane Pattern - Port 1 2400-2475 MHz



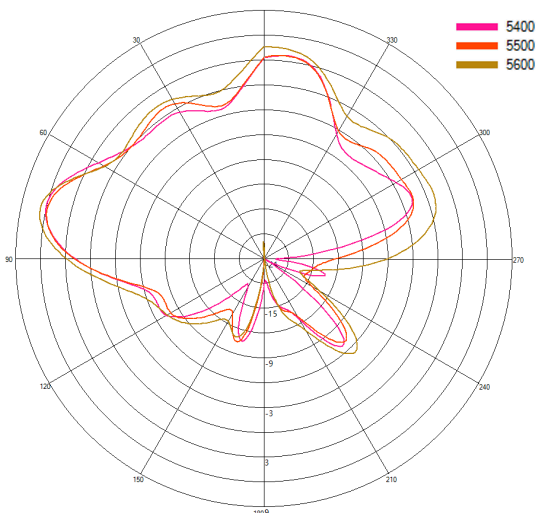
Typical E Plane Pattern - Port 1 2600-2700 MHz



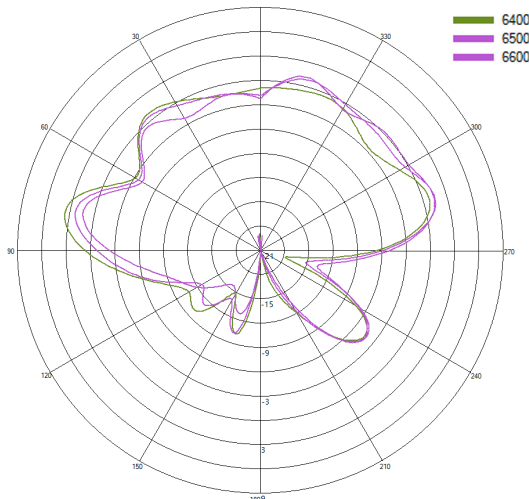
Typical E Plane Pattern - Port 1 3400-3800 MHz



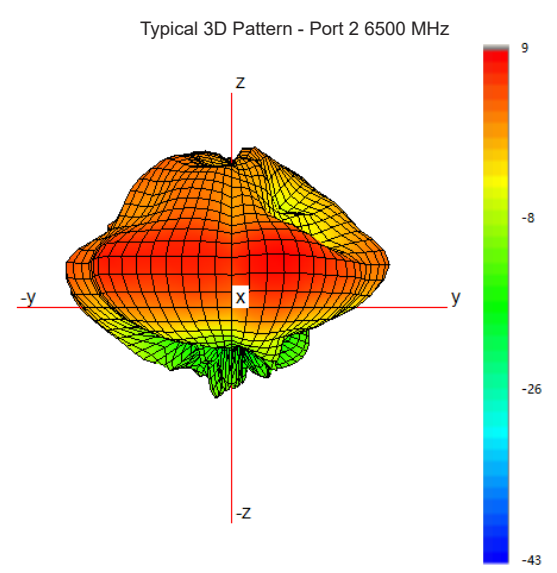
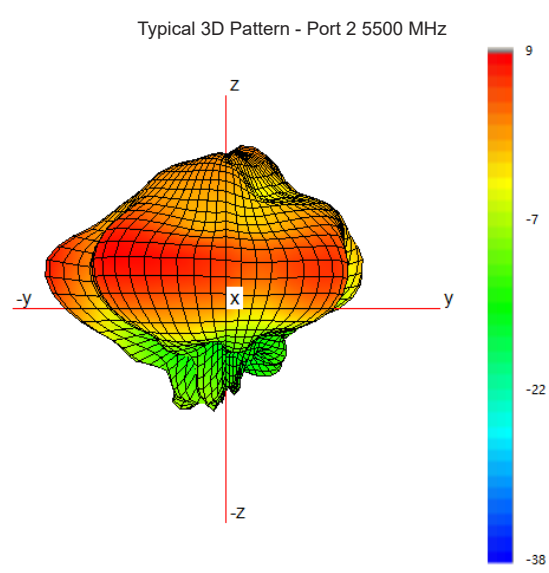
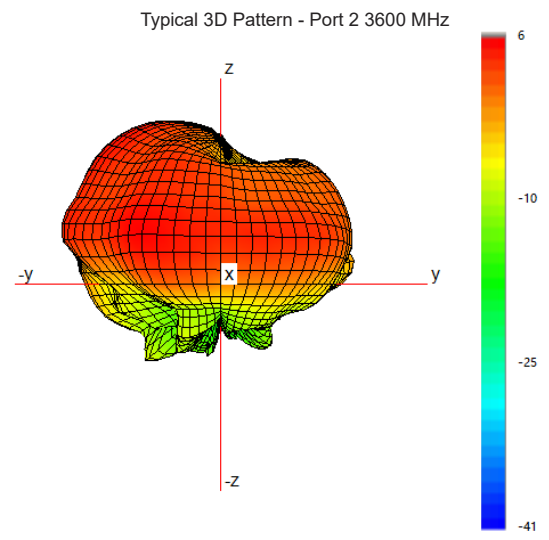
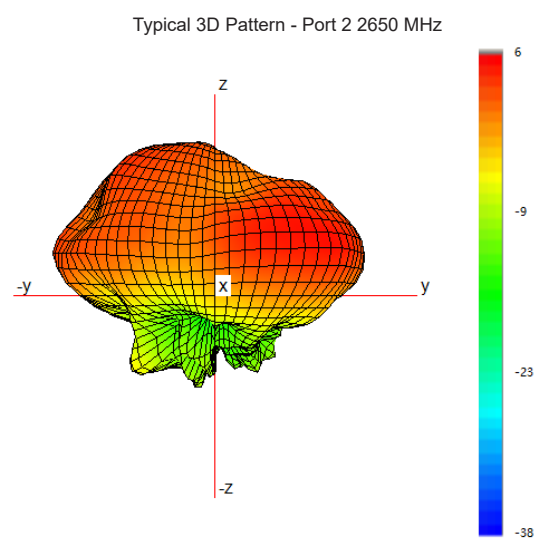
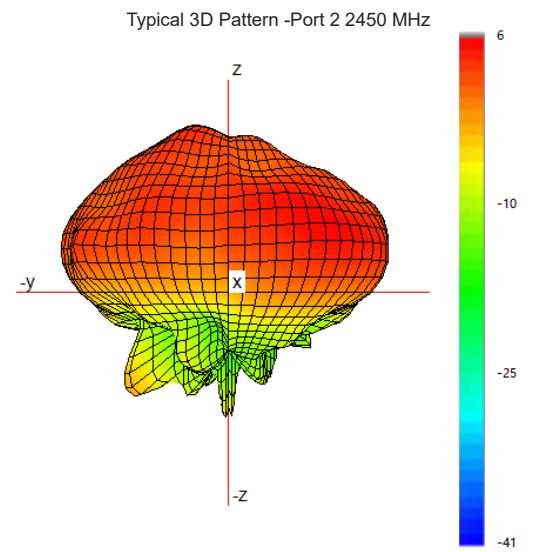
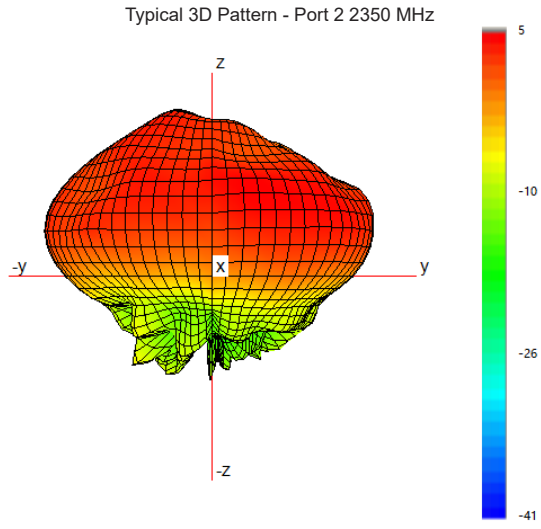
Typical E Plane Pattern - Port 1 5400-5600 MHz



Typical E Plane Pattern - Port 1 6400-6600 MHz



3D Pattern Data on
Ground Plane Port 2

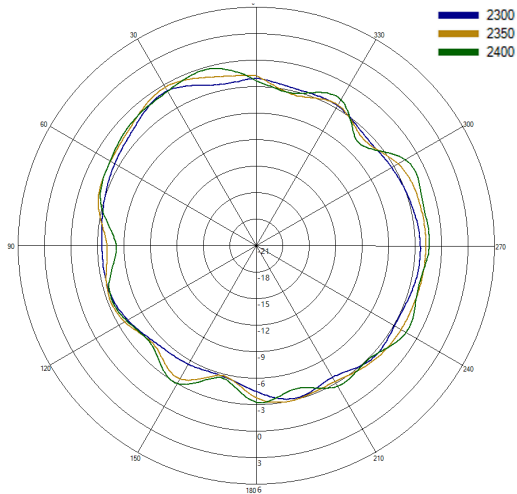


Ultra Low Profile MiMo Antenna WIFI/5G

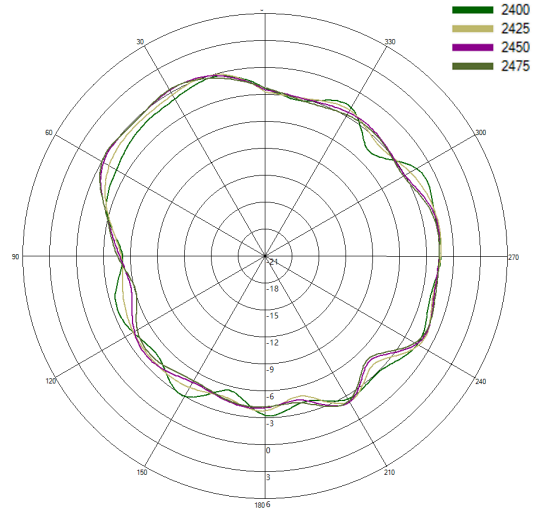
LPM[X]-24-72-2[X]

2D Pattern Data on Ground
Plane Port 2 H Plane

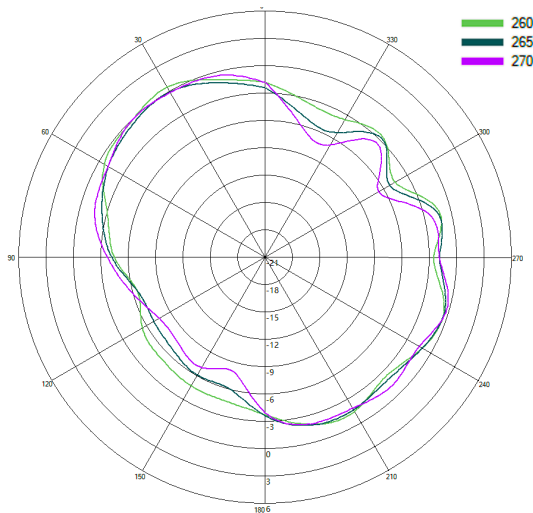
Typical H Plane Pattern - Port 2 2300-2400 MHz



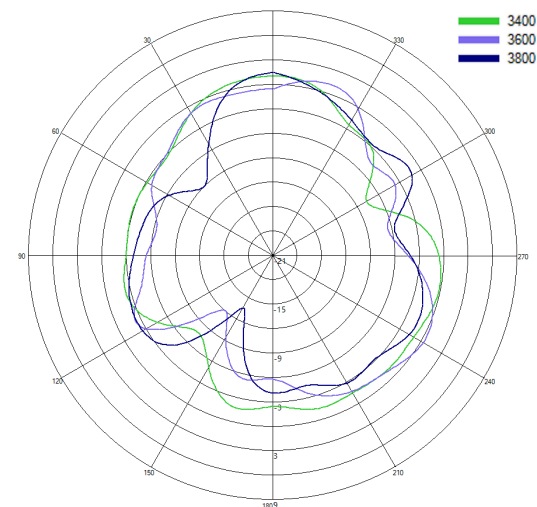
Typical H Plane Pattern - Port 2 2400-2475 MHz



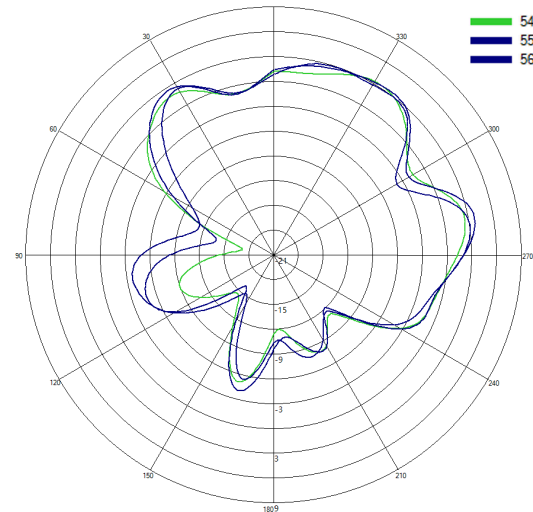
Typical H Plane Pattern - Port 2 2600-2700 MHz



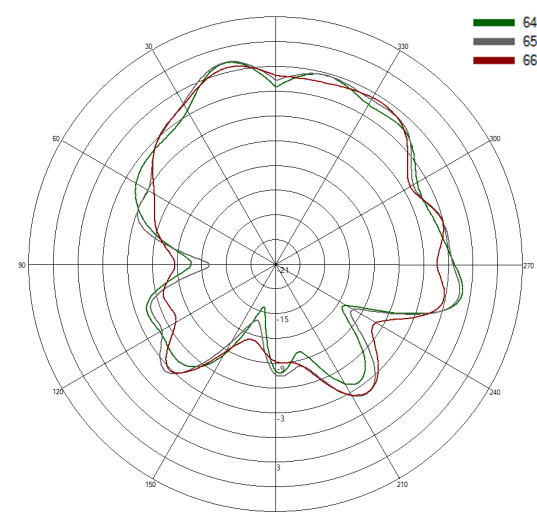
Typical H Plane Pattern - Port 2 3400-3800 MHz



Typical H Plane Pattern - Port 2 5400-5600 MHz



Typical H Plane Pattern - Port 2 6400-6600 MHz

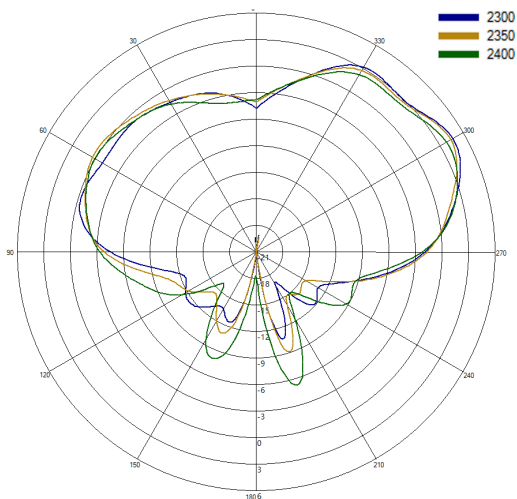


Ultra Low Profile MiMo Antenna WIFI/5G

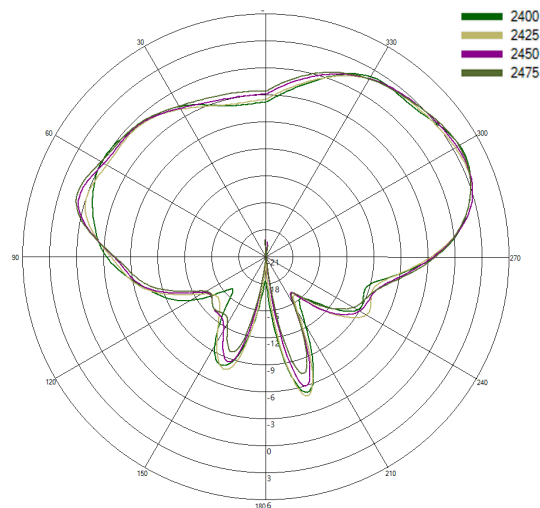
LPM[X]-24-72-2[X]

2D Pattern Data on Ground
Plane Port 2 E Plane

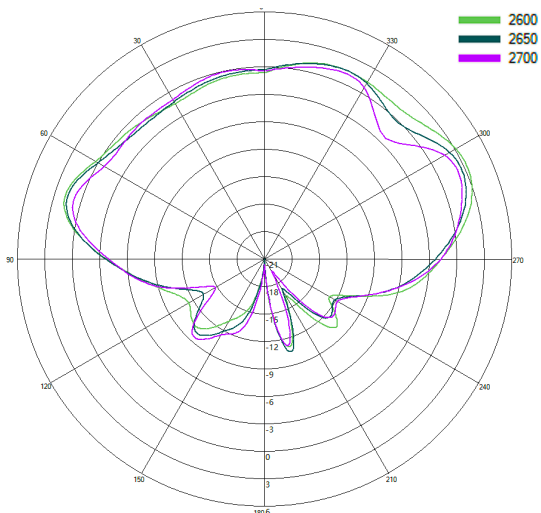
Typical E Plane Pattern - Port 2 2300-2400 MHz



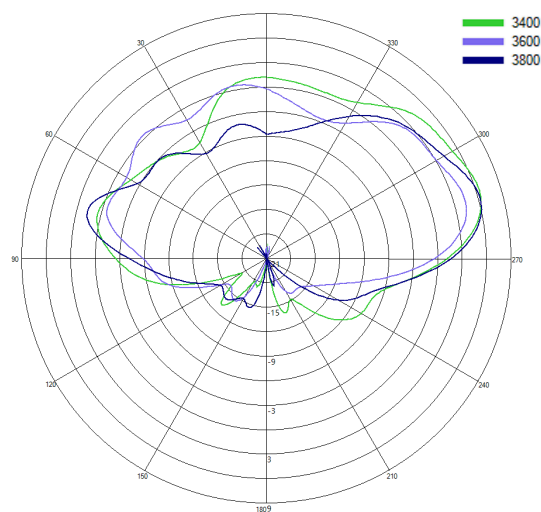
Typical E Plane Pattern - Port 2 2400-2475 MHz



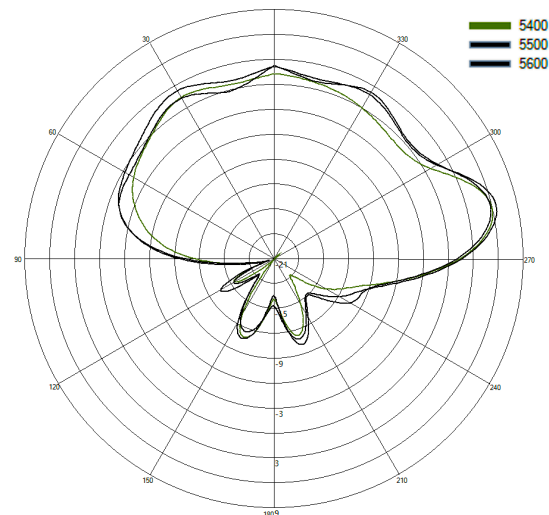
Typical E Plane Pattern - Port 2 2600-2700 MHz



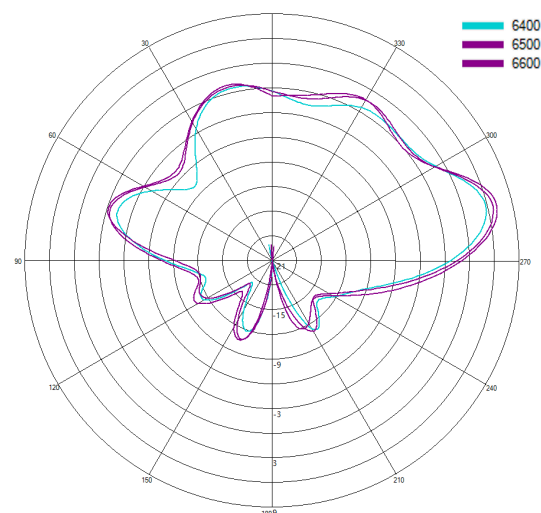
Typical E Plane Pattern - Port 2 3400-3800 MHz



Typical E Plane Pattern - Port 2 5400-5600 MHz

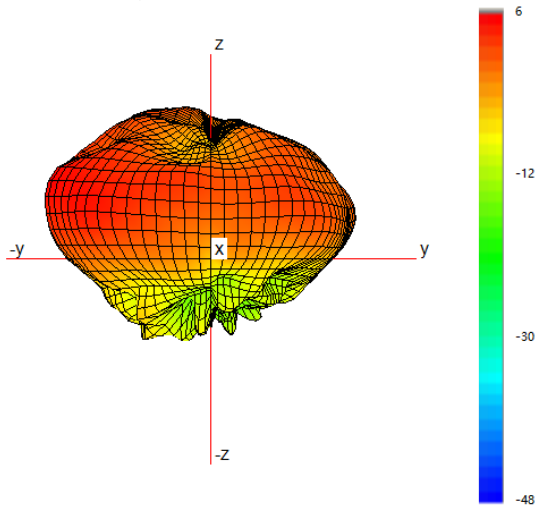


Typical E Plane Pattern - Port 2 6400-6600 MHz

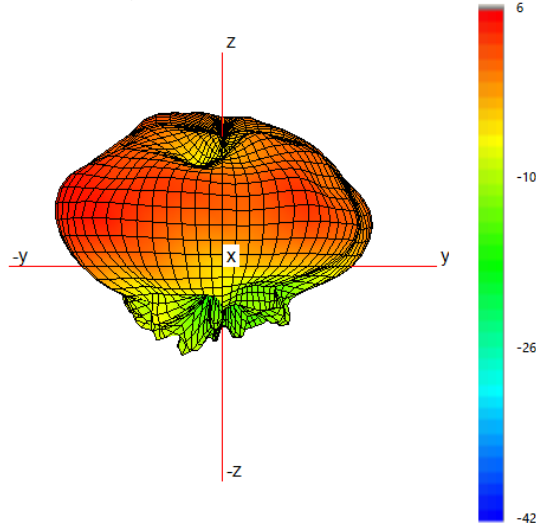


3D Pattern Data on
Ground Plane Port 3

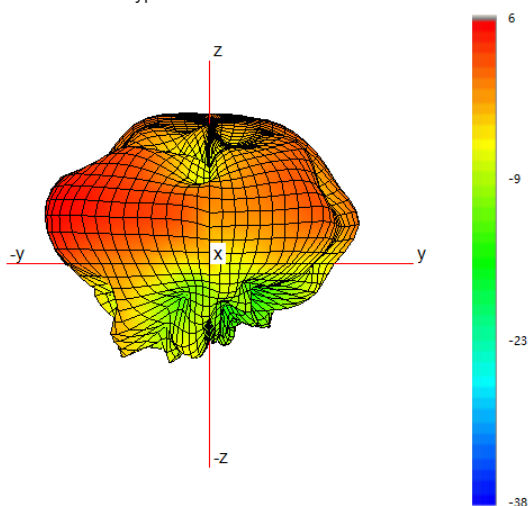
Typical 3D Pattern - Port 3 2350 MHz



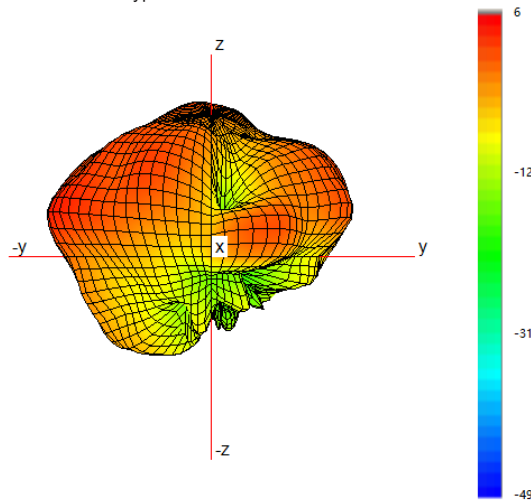
Typical 3D Pattern - Port 3 2450 MHz



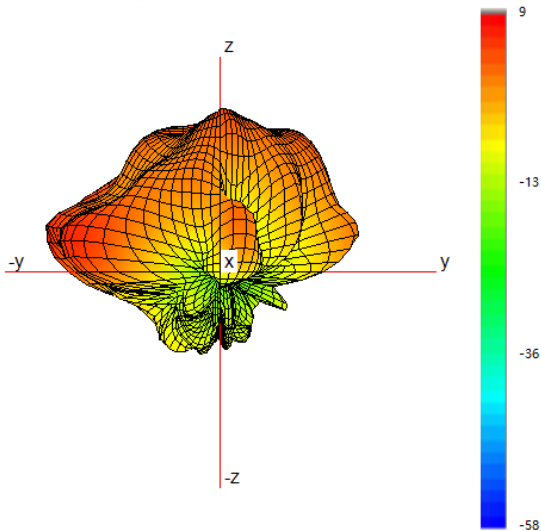
Typical 3D Pattern - Port 3 2650 MHz



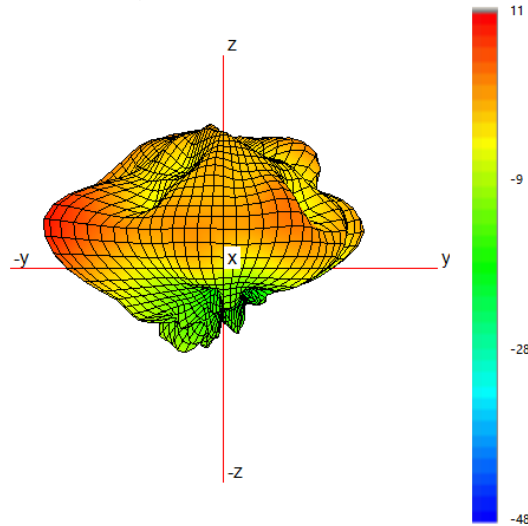
Typical 3D Pattern - Port 3 3600 MHz



Typical 3D Pattern - Port 3 5500 MHz



Typical 3D Pattern - Port 3 6500 MHz

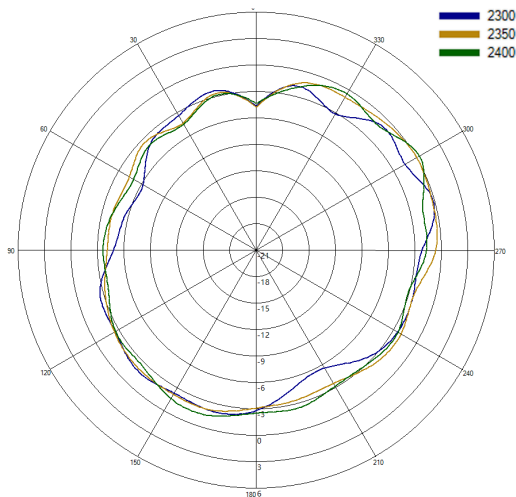


Ultra Low Profile MiMo Antenna WIFI/5G

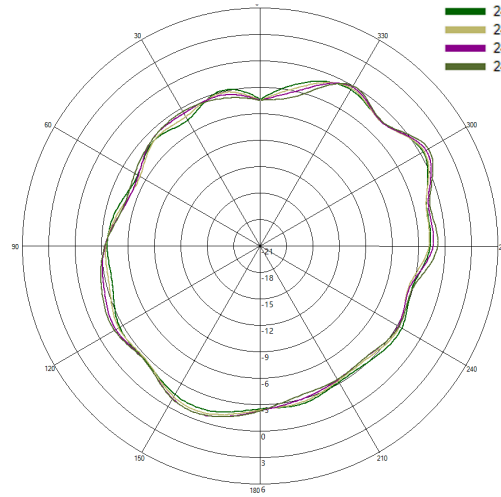
LPM[X]-24-72-2[X]

2D Pattern Data on Ground
Plane Port 3 H Plane

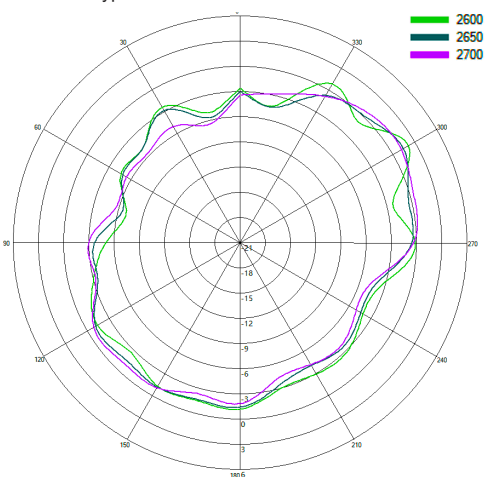
Typical H Plane Pattern - Port 3 2300-2400 MHz



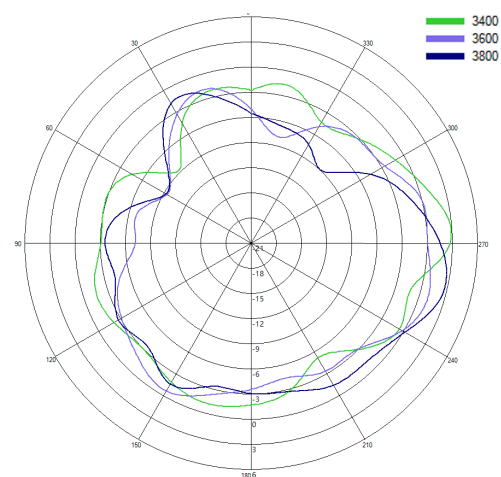
Typical H Plane Pattern - Port 3 2400-2475 MHz



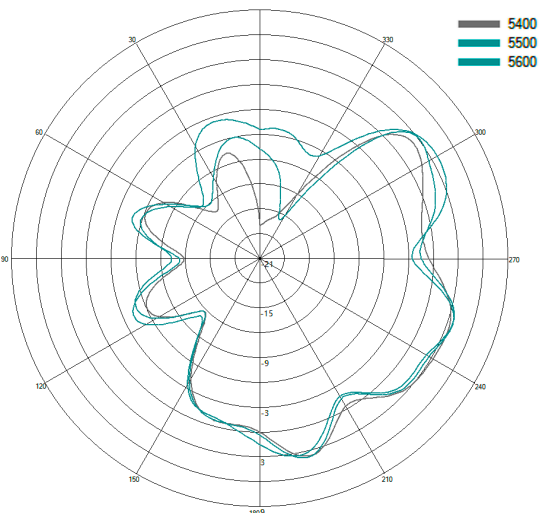
Typical H Plane Pattern - Port 3 2600-2700 MHz



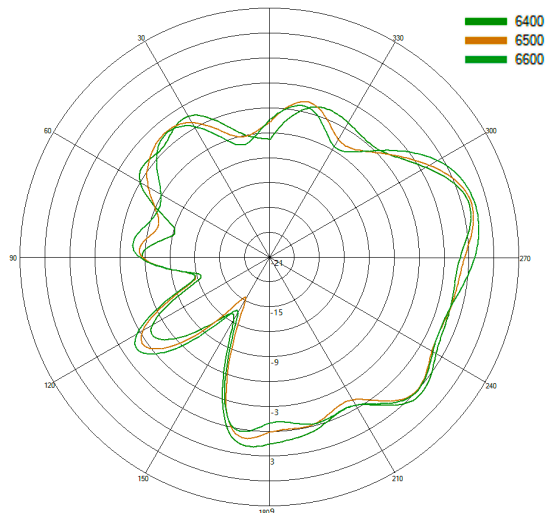
Typical H Plane Pattern - Port 3 3400-3800 MHz



Typical H Plane Pattern - Port 3 5400-5600 MHz



Typical H Plane Pattern - Port 3 6400-6600 MHz

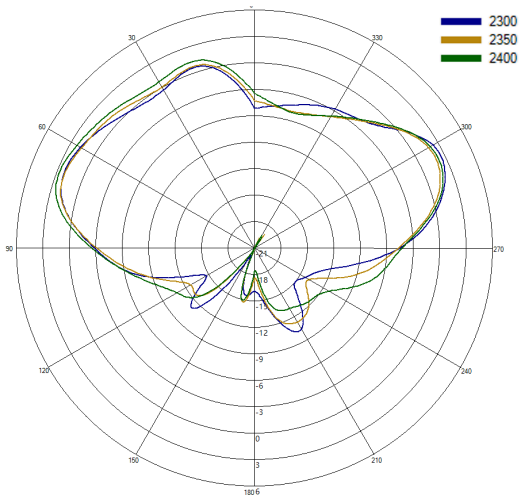


Ultra Low Profile MiMo Antenna WiFi/5G

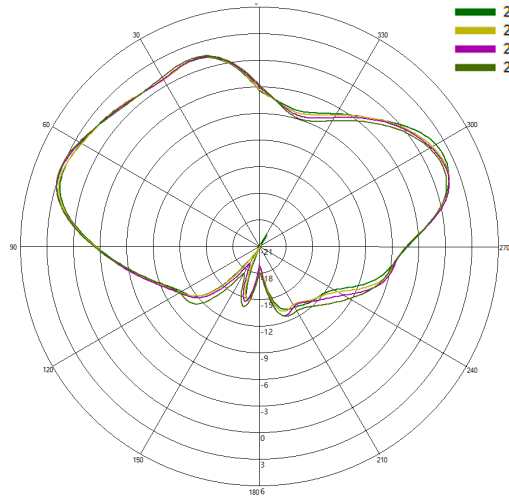
LPM[X]-24-72-2[X]

2D Pattern Data on Ground
Plane Port 3 E Plane

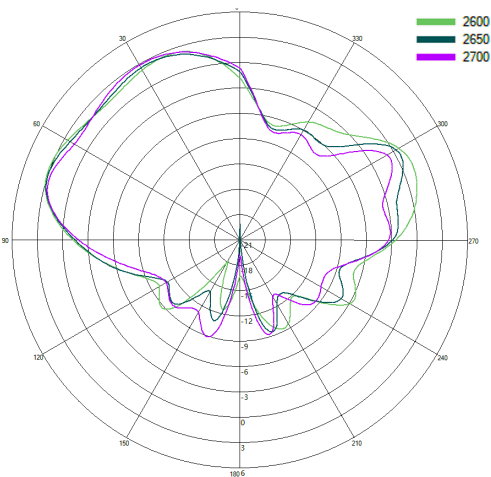
Typical E Plane Pattern - Port 3 2300-2400 MHz



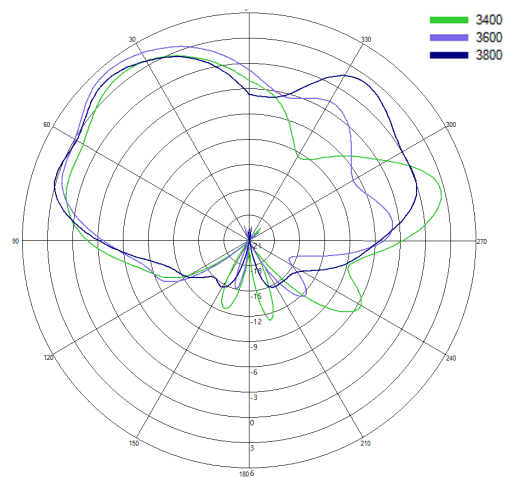
Typical E Plane Pattern - Port 3 2400-2475 MHz



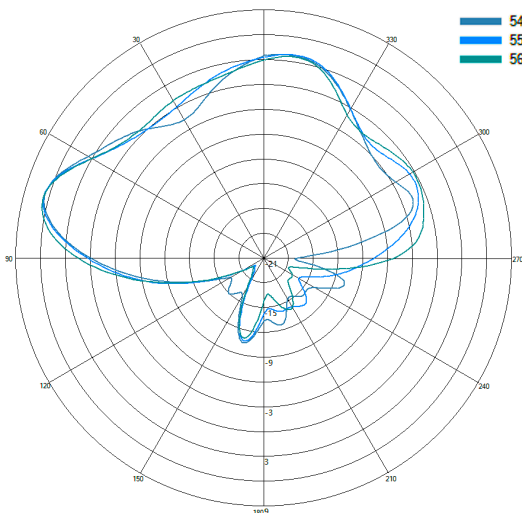
Typical E Plane Pattern - Port 3 2600-2700 MHz



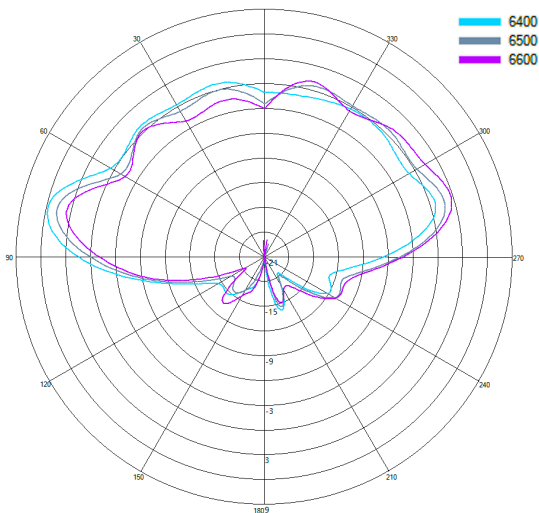
Typical E Plane Pattern - Port 3 3400-3800 MHz



Typical E Plane Pattern - Port 3 5400-5600 MHz

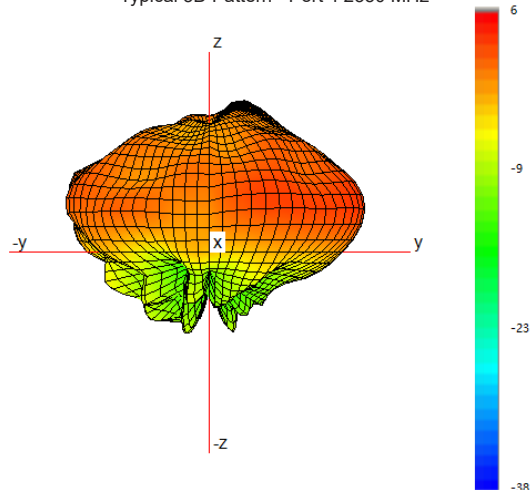


Typical E Plane Pattern - Port 3 6400-6600 MHz

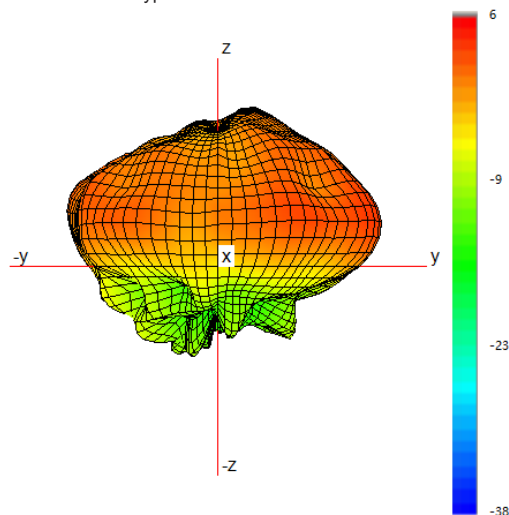


3D Pattern Data on Ground Plane Port 4

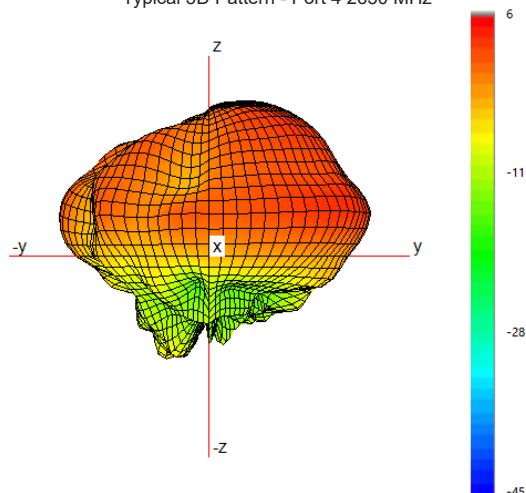
Typical 3D Pattern - Port 4 2350 MHz



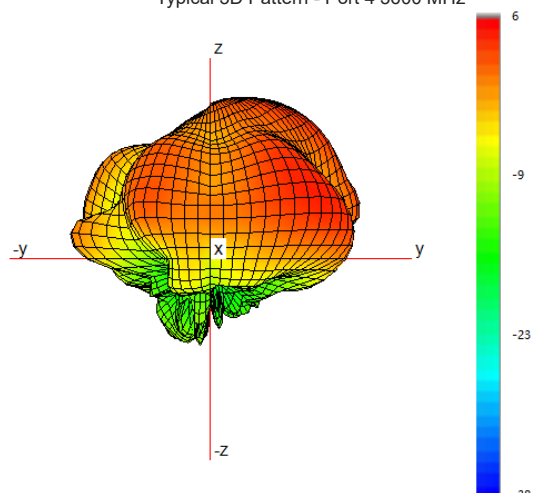
Typical 3D Pattern - Port 4 2450 MHz



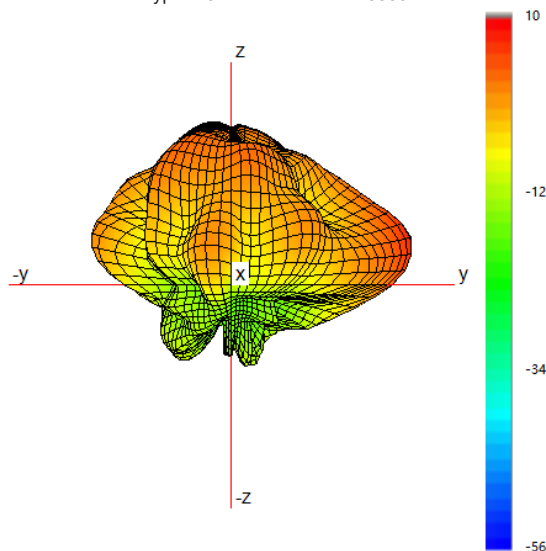
Typical 3D Pattern - Port 4 2650 MHz



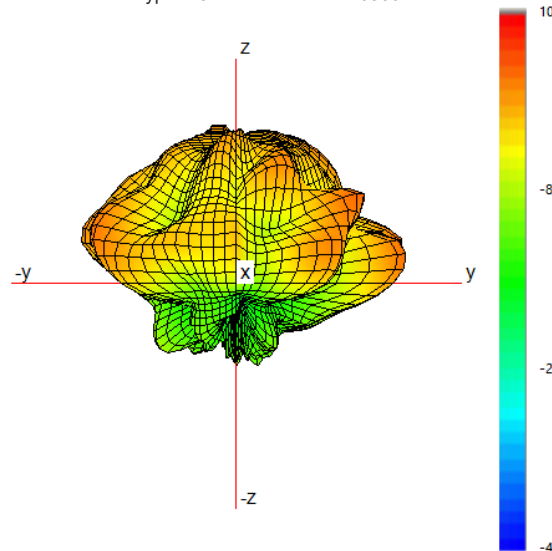
Typical 3D Pattern - Port 4 3600 MHz



Typical 3D Pattern - Port 4 5500 MHz



Typical 3D Pattern - Port 4 6500 MHz

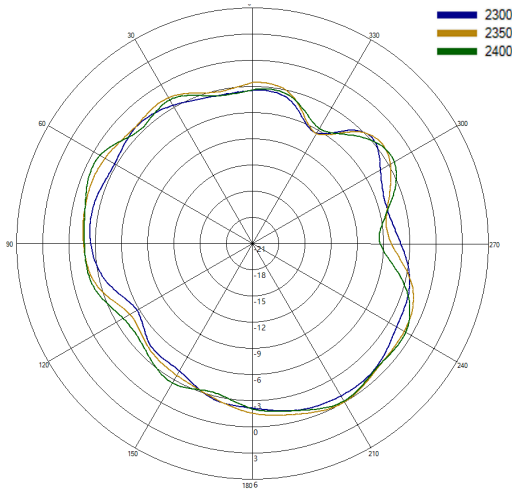


Ultra Low Profile MiMo Antenna WIFI/5G

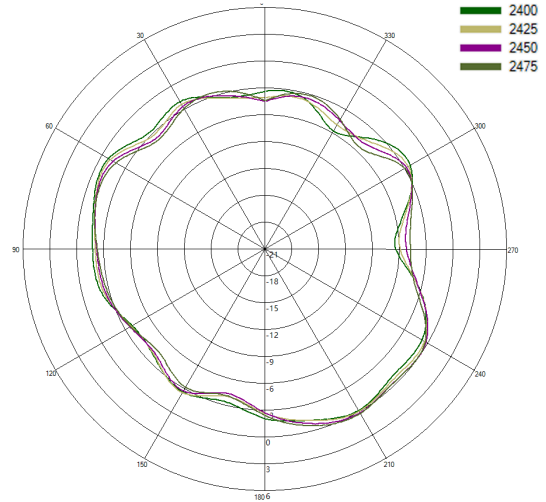
LPM[X]-24-72-2[X]

2D Pattern Data on Ground Plane Port 4 H Plane

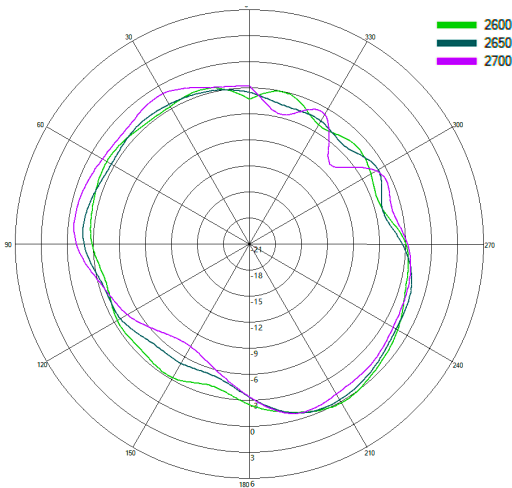
Typical H Plane Pattern - Port 4 2300-2400 MHz



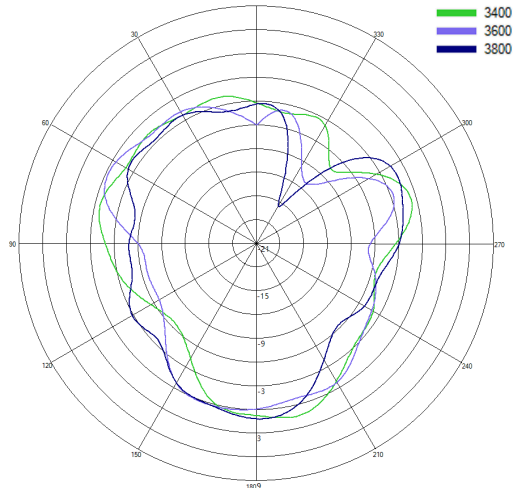
Typical H Plane Pattern - Port 4 2400-2475 MHz



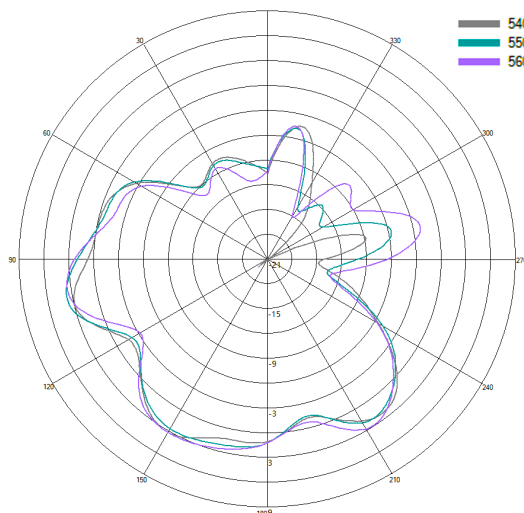
Typical H Plane Pattern - Port 4 2600-2700 MHz



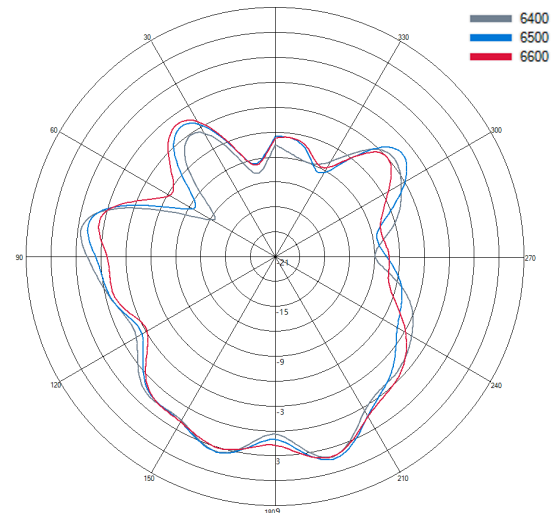
Typical H Plane Pattern - Port 4 3400-3800 MHz



Typical H Plane Pattern - Port 4 5400-5600 MHz

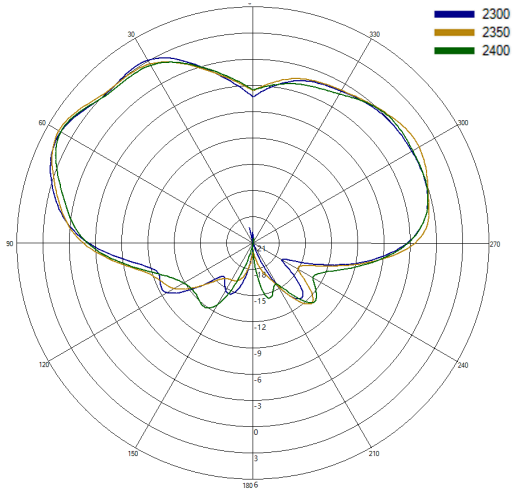


Typical H Plane Pattern - Port 4 6400-6600 MHz

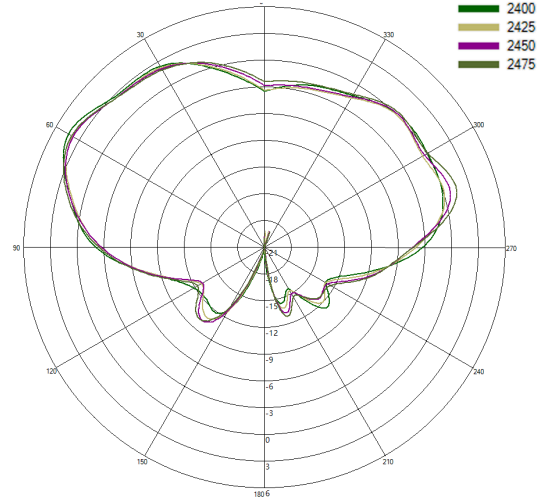


2D Pattern Data on Ground
Plane Port 4 E Plane

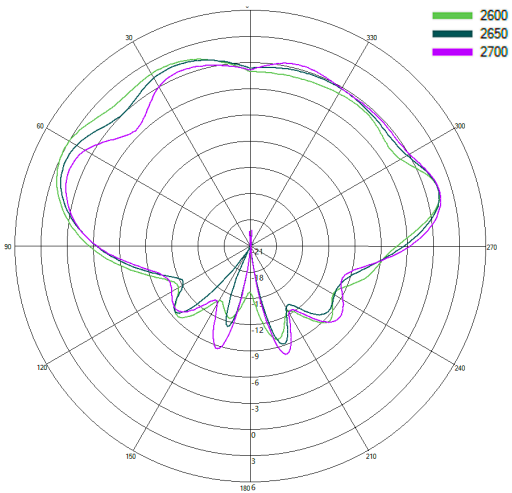
Typical E Plane Pattern - Port 4 2300-2400 MHz



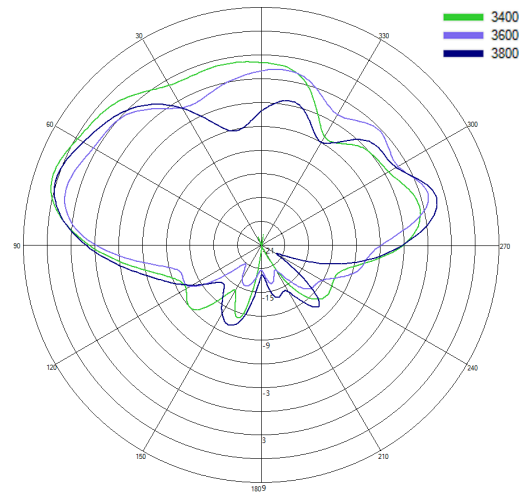
Typical E Plane Pattern - Port 4 2400-2475 MHz



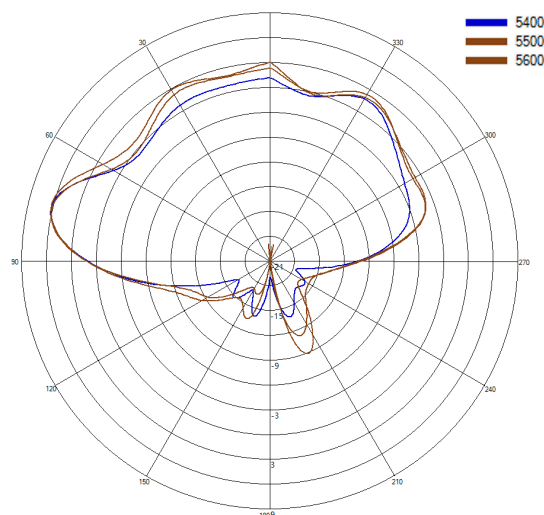
Typical E Plane Pattern - Port 4 2600-2700 MHz



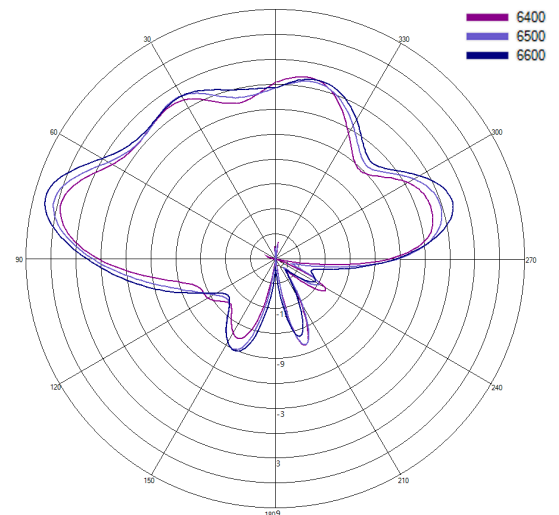
Typical E Plane Pattern - Port 4 3400-3800 MHz



Typical E Plane Pattern - Port 4 5400-5600 MHz



Typical E Plane Pattern - Port 4 6400-6600 MHz



Ultra Low Profile MiMo Antenna WiFi/5G

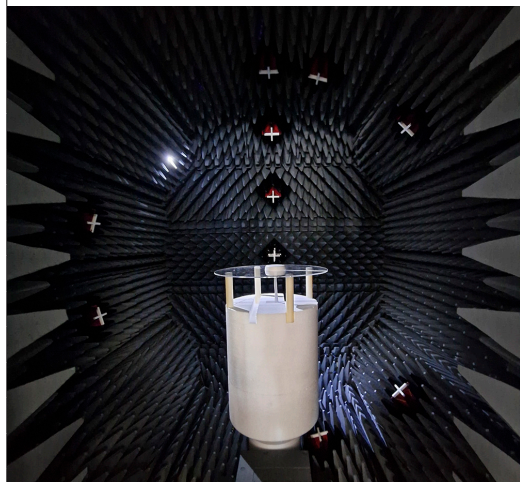
LPM[X]-24-72-2[X]

Electrical Data Free Space

Measurement Conditions

In free space with 0.5m (1.5') C32 cables

Ports 1-4 WiFi Bands

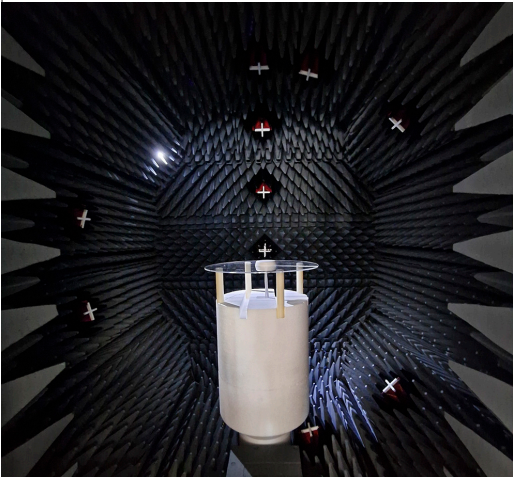


| Frequency Range (MHz) | WiFi Bands | Antenna Element | Peak Gain (dBi) | Efficiency (%) |
|-----------------------|------------|-----------------|-----------------|----------------|
| 2396-2485 | 2.4GHz | Port 1 | 3.4 | 77 |
| | | Port 2 | 3.1 | 74 |
| | | Port 3 | 3.1 | 74 |
| | | Port 4 | 3.4 | 74 |
| 5150-5250 | UNII-1 | Port 1 | 4.8 | 72 |
| | | Port 2 | 6.0 | 70 |
| | | Port 3 | 6.5 | 71 |
| | | Port 4 | 6.3 | 67 |
| 5250-5350 | UNII-2A | Port 1 | 5.1 | 70 |
| | | Port 2 | 5.4 | 71 |
| | | Port 3 | 6.9 | 71 |
| | | Port 4 | 6.8 | 72 |
| 5350-5470 | UNII-2B | Port 1 | 5.4 | 67 |
| | | Port 2 | 6.1 | 68 |
| | | Port 3 | 7.1 | 70 |
| | | Port 4 | 7.1 | 73 |
| 5470-5725 | UNII-2C | Port 1 | 5.4 | 67 |
| | | Port 2 | 6.1 | 68 |
| | | Port 3 | 7.1 | 70 |
| | | Port 4 | 7.1 | 73 |
| 5725-5850 | UNII-3 | Port 1 | 5.8 | 66 |
| | | Port 2 | 5.6 | 66 |
| | | Port 3 | 6.8 | 70 |
| | | Port 4 | 7.1 | 72 |
| 5850-5925 | UNII-4 | Port 1 | 5.9 | 65 |
| | | Port 2 | 5.6 | 71 |
| | | Port 3 | 6.3 | 71 |
| | | Port 4 | 6.9 | 69 |
| 5925-6425 | UNII-5 | Port 1 | 5.9 | 62 |
| | | Port 2 | 6.3 | 67 |
| | | Port 3 | 6.9 | 72 |
| | | Port 4 | 6.9 | 70 |
| 6425-6525 | UNII-6 | Port 1 | 5.4 | 65 |
| | | Port 2 | 6.3 | 67 |
| | | Port 3 | 6.5 | 71 |
| | | Port 4 | 6.5 | 66 |
| 6525-6875 | UNII-7 | Port 1 | 5.9 | 70 |
| | | Port 2 | 6.8 | 67 |
| | | Port 3 | 6.7 | 72 |
| | | Port 4 | 6.6 | 67 |
| 6875-7125 | UNII-8 | Port 1 | 5.8 | 73 |
| | | Port 2 | 5.9 | 67 |
| | | Port 3 | 6.8 | 69 |
| | | Port 4 | 6.2 | 64 |

Ultra Low Profile MiMo Antenna WIFI/5G

LPM[X]-24-72-2[X]

Electrical Data - Free Space

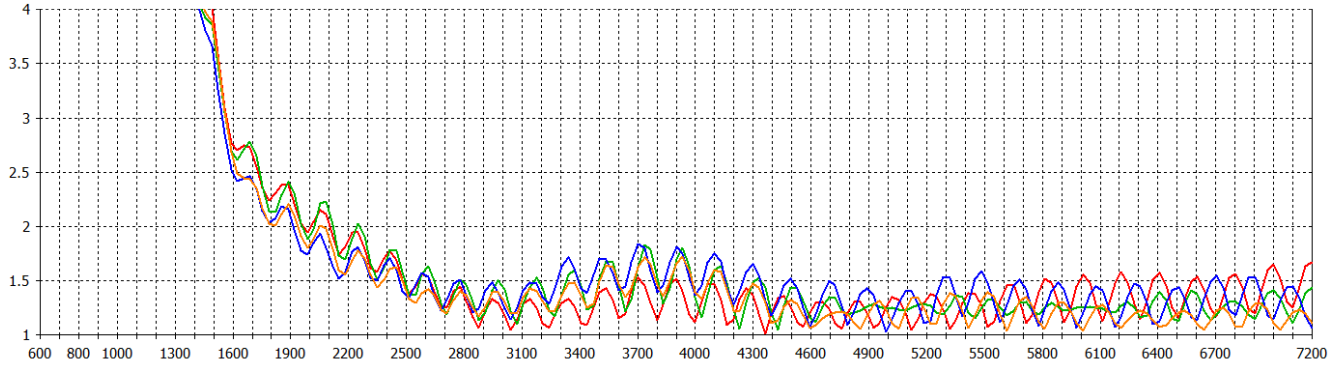
| Measurement Conditions | Ports 1-4 Cellular Bands | | | | |
|---|--------------------------|-------------------|-----------------|-----------------|----------------|
| In free space with 0.5m (1.5') C32 cables | Frequency Range (MHz) | LTE Bands | Antenna Element | Peak Gain (dBi) | Efficiency (%) |
|  | 2300-2400 | 30,40 | Port 1 | 2.5 | 74 |
| | | | Port 2 | 3.1 | 73 |
| | | | Port 3 | 2.6 | 73 |
| | | | Port 4 | 2.9 | 72 |
| | 2496-2690 | 7,38,41 | Port 1 | 3.7 | 78 |
| | | | Port 2 | 3.6 | 74 |
| | | | Port 3 | 3.7 | 76 |
| | | | Port 4 | 3.7 | 73 |
| | 3300-4200 | 22,42,43,48,77,78 | Port 1 | 5.3 | 77 |
| | | | Port 2 | 5.9 | 77 |
| | | | Port 3 | 5.2 | 77 |
| | | | Port 4 | 4.7 | 75 |
| | 4400-5000 | 79 | Port 1 | 5.8 | 80 |
| | | | Port 2 | 5.9 | 70 |
| | | | Port 3 | 5.9 | 78 |
| | | | Port 4 | 6.1 | 75 |
| | 5925-7125 | 96, 102,104 | Port 1 | 5.9 | 67 |
| | | | Port 2 | 6.8 | 67 |
| | | | Port 3 | 6.9 | 71 |
| | | | Port 4 | 6.9 | 68 |

Ultra Low Profile MiMo Antenna WiFi/5G

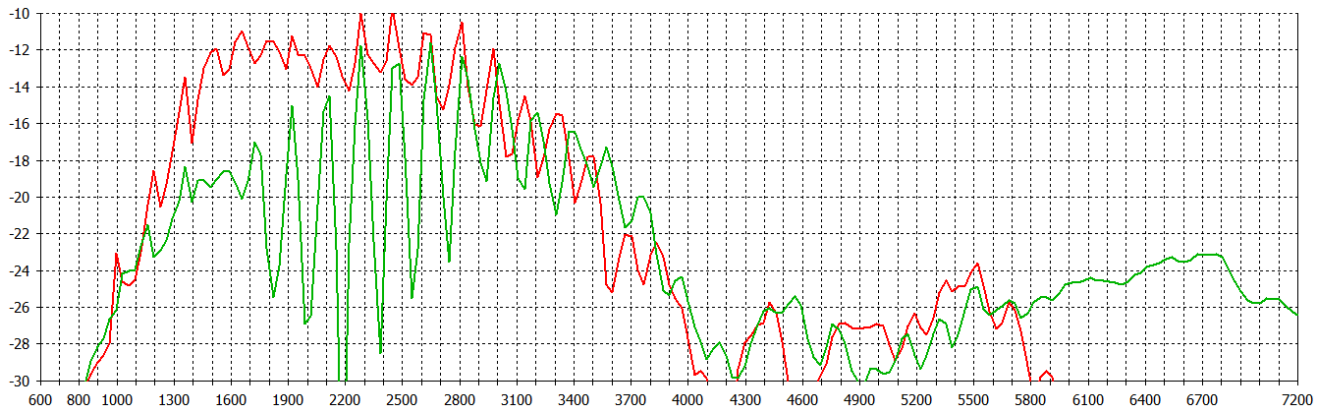
LPM[X]-24-72-2[X]

Electrical Data Free
Space

Typical VSWR - Elements 1-4

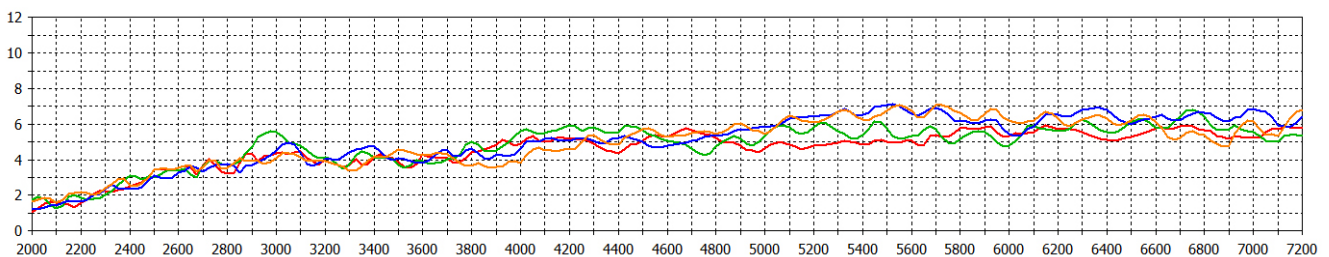


Typical Isolation*

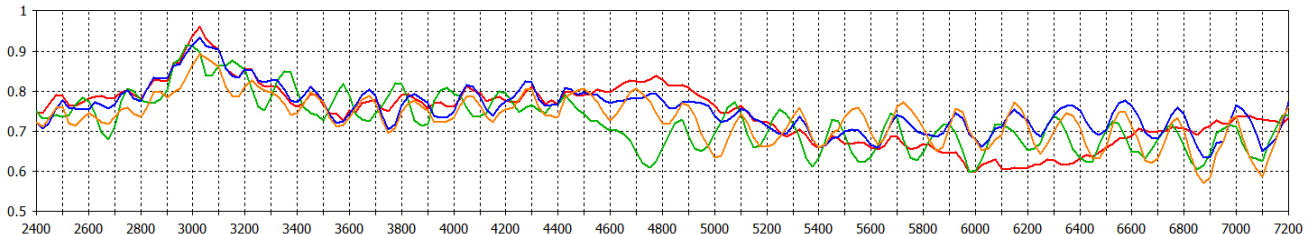


*Green plot = opposite elements Red plot = adjacent elements

Typical Swept Peak Gain - Elements 1-4

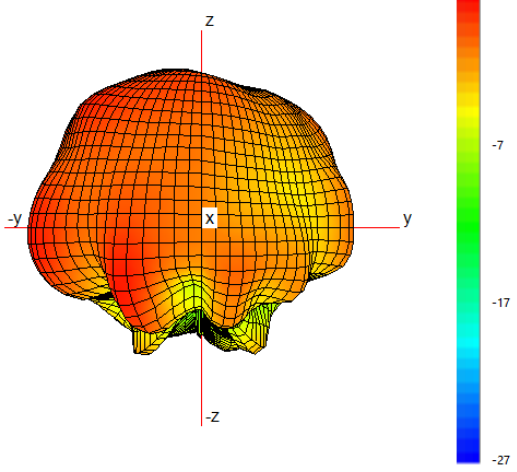


Typical Efficiency - Elements 1-4

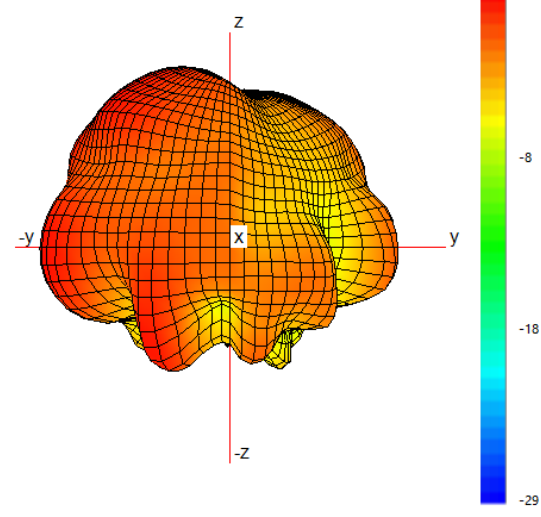


3D Pattern Data in
Free Space Port 1

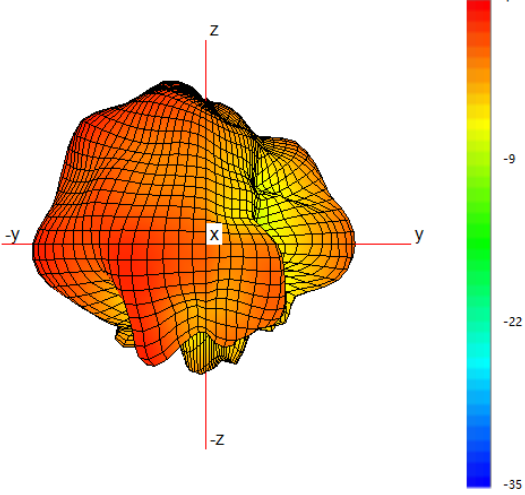
Typical 3D Pattern - Port 1 2350 MHz



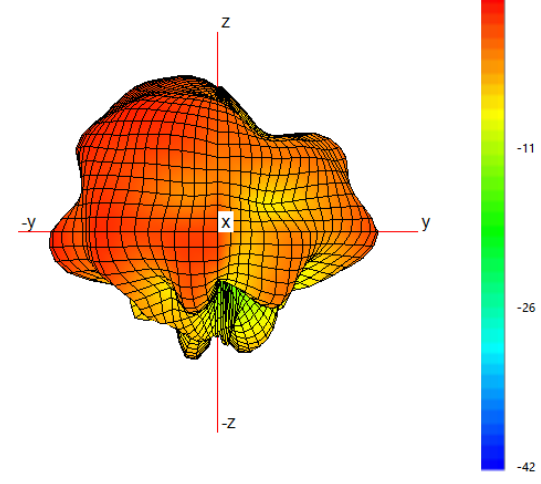
Typical 3D Pattern - Port 1 2450 MHz



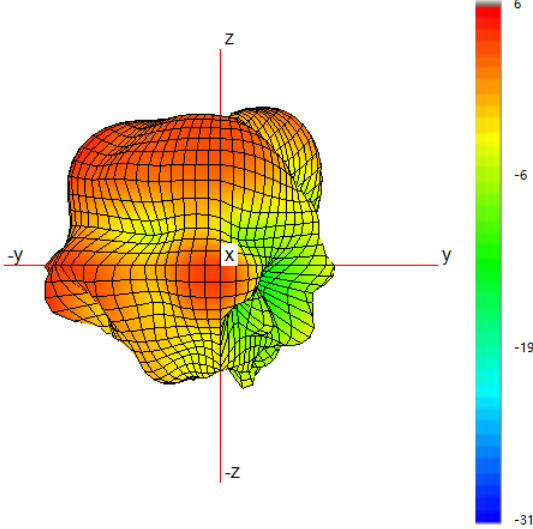
Typical 3D Pattern - Port 1 2650 MHz



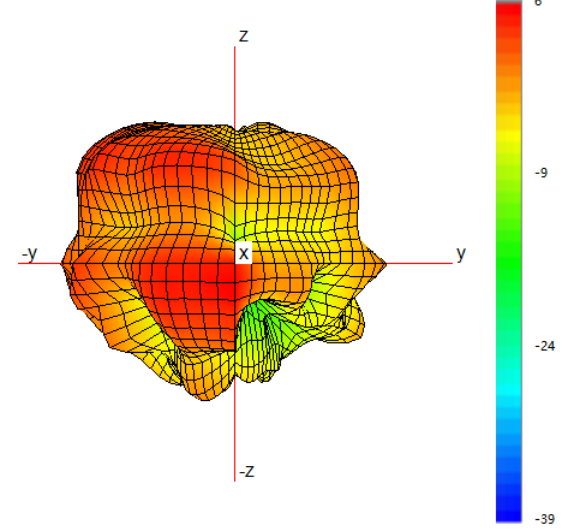
Typical 3D Pattern - Port 1 3600 MHz



Typical 3D Pattern - Port 1 5500 MHz



Typical 3D Pattern - Port 1 6500 MHz

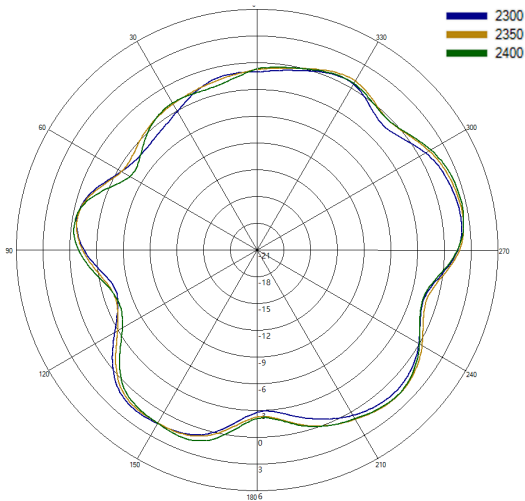


Ultra Low Profile MiMo Antenna WIFI/5G

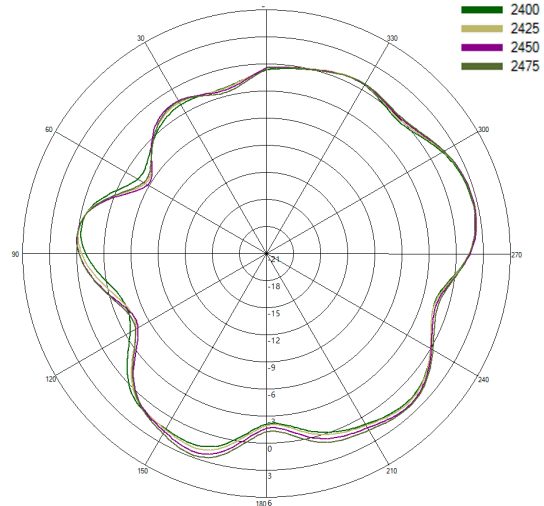
LPM[X]-24-72-2[X]

2D Pattern Data in Free Space Port 1 H Plane

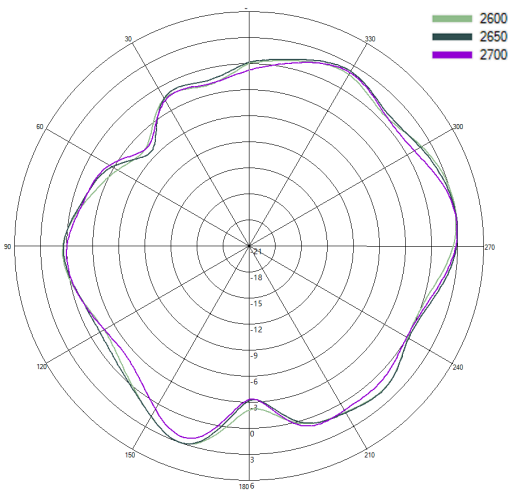
Typical H Plane Pattern - Port 1 2300-2400 MHz



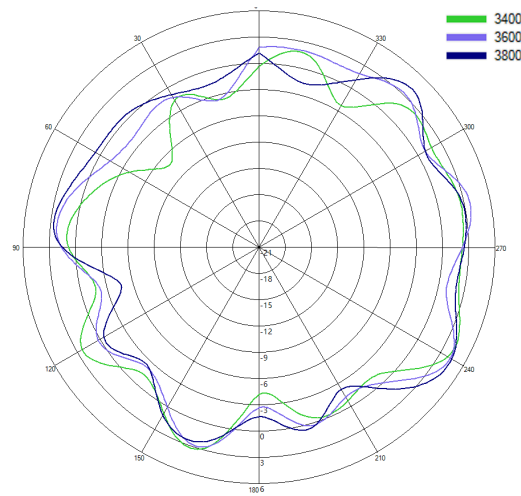
Typical H Plane Pattern - Port 1 2400-2475 MHz



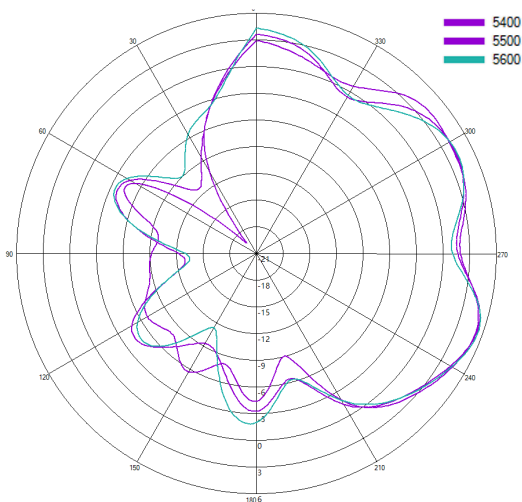
Typical H Plane Pattern - Port 1 2600-2700 MHz



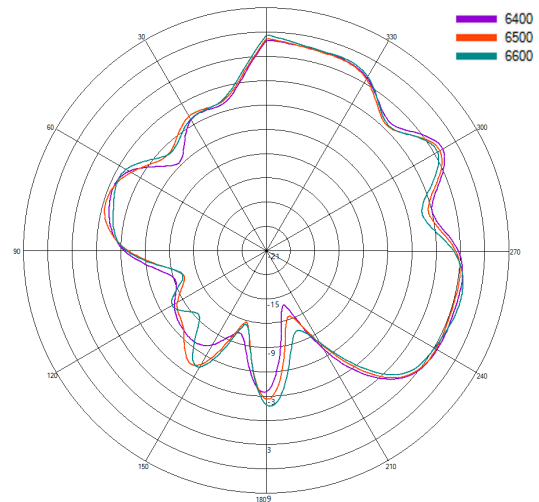
Typical H Plane Pattern - Port 1 3400-3800 MHz



Typical H Plane Pattern - Port 1 5400-5600 MHz



Typical H Plane Pattern - Port 1 6400-6600 MHz

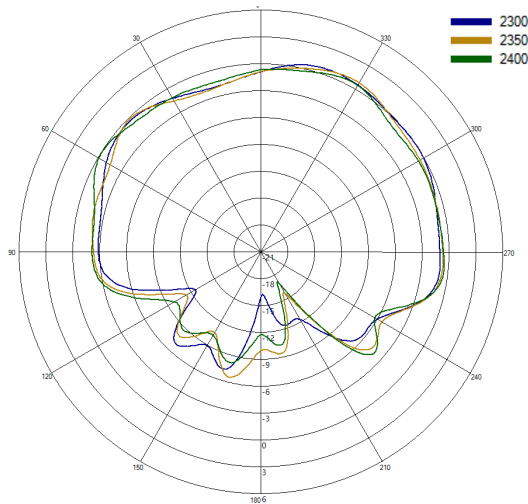


Ultra Low Profile MiMo Antenna WIFI/5G

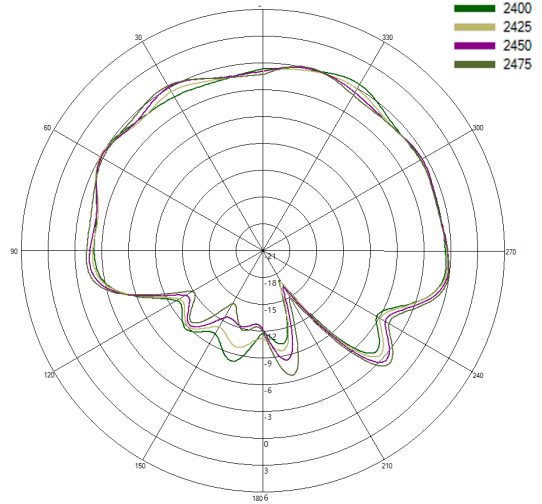
LPM[X]-24-72-2[X]

2D Pattern Data in Free
Space Port 1 E Plane

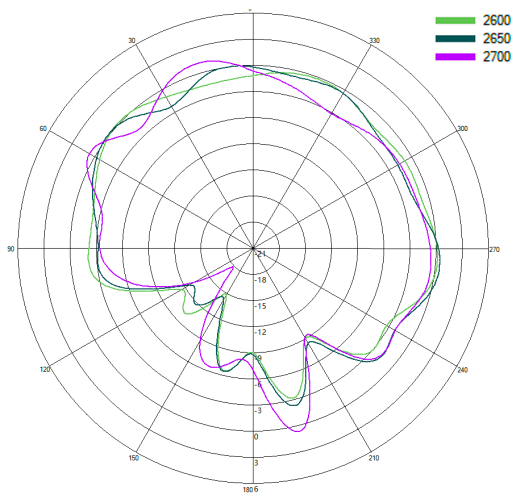
Typical E Plane Pattern - Port 1 2300-2400 MHz



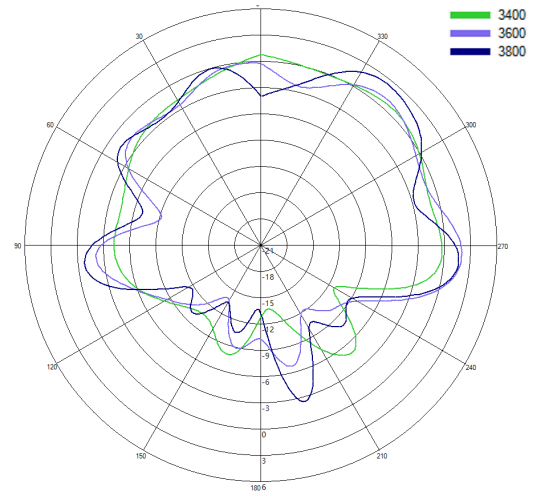
Typical E Plane Pattern - Port 1 2400-2475 MHz



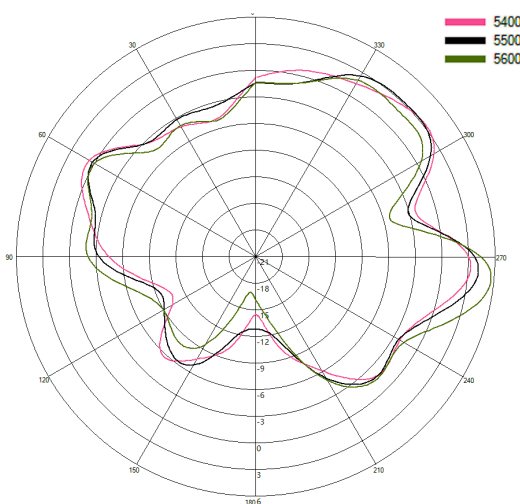
Typical E Plane Pattern - Port 1 2600-2700 MHz



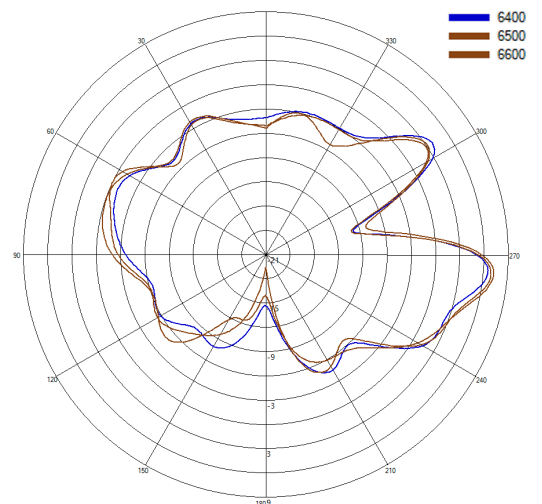
Typical E Plane Pattern - Port 1 3400-3800 MHz



Typical E Plane Pattern - Port 1 5400-5600 MHz



Typical E Plane Pattern - Port 1 6400-6600 MHz

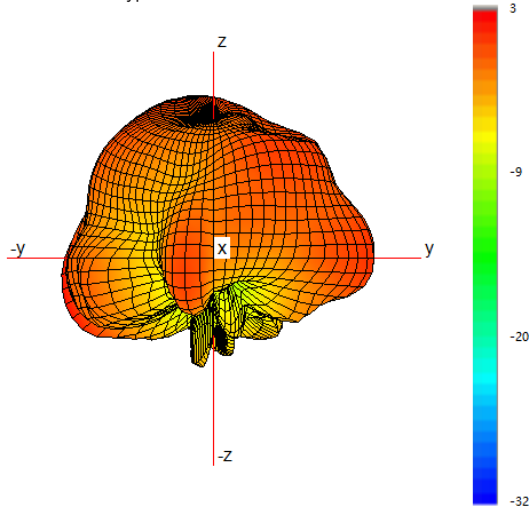


Ultra Low Profile MiMo Antenna WiFi/5G

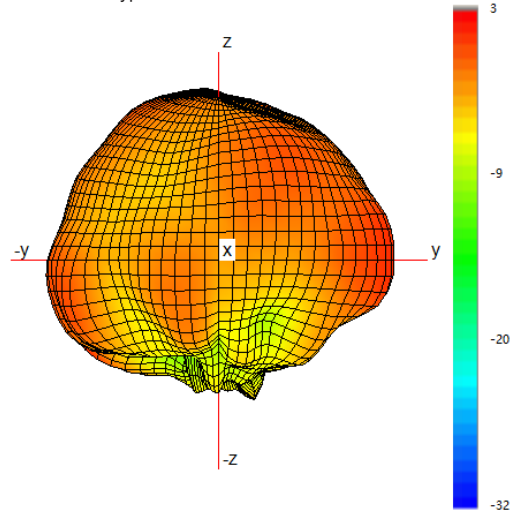
LPM[X]-24-72-2[X]

3D Pattern Data in Free Space Port 2

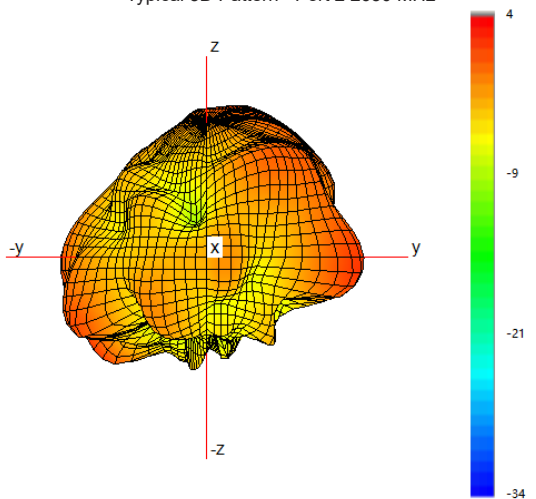
Typical 3D Pattern - Port 2 2350 MHz



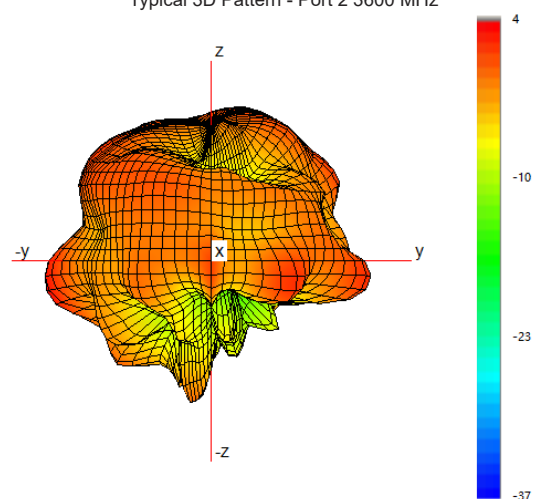
Typical 3D Pattern - Port 2 2450 MHz



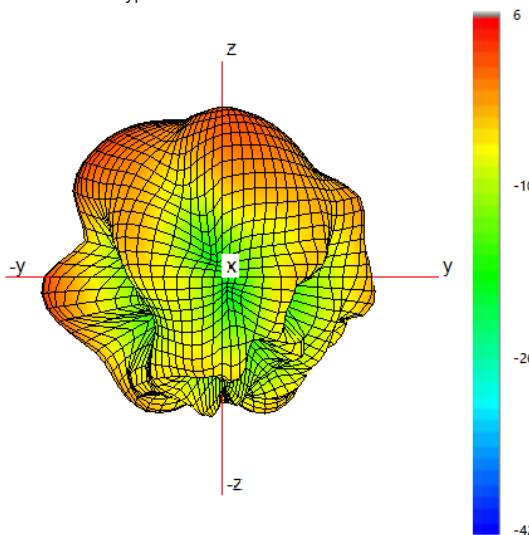
Typical 3D Pattern - Port 2 2650 MHz



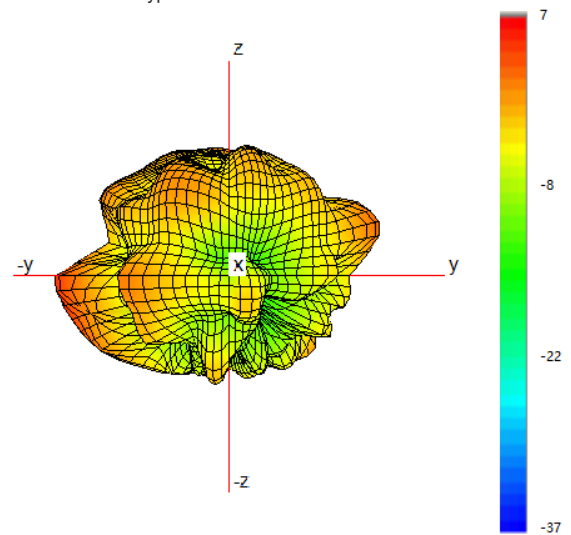
Typical 3D Pattern - Port 2 3600 MHz



Typical 3D Pattern - Port 2 5500 MHz

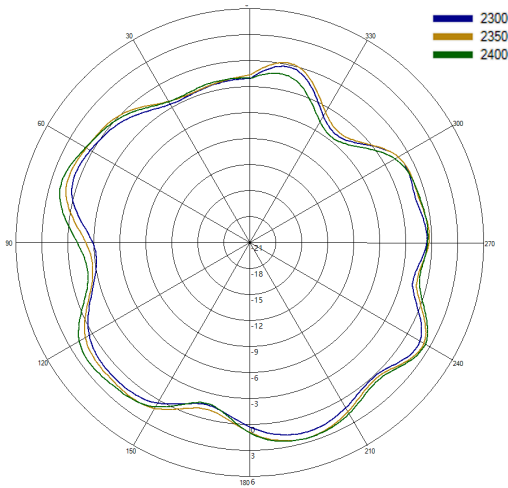


Typical 3D Pattern - Port 2 6500 MHz

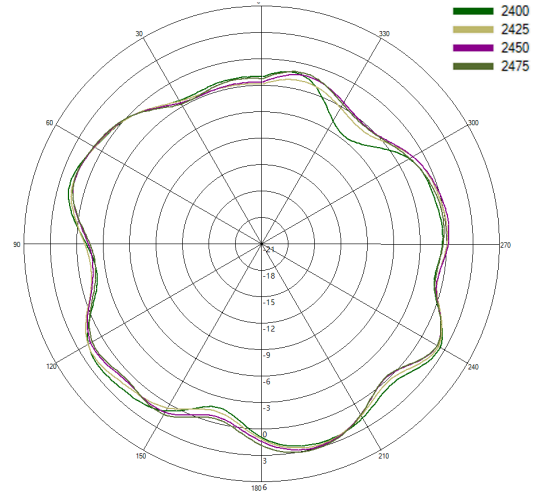


2D Pattern Data in Free
Space Port 2 H Plane

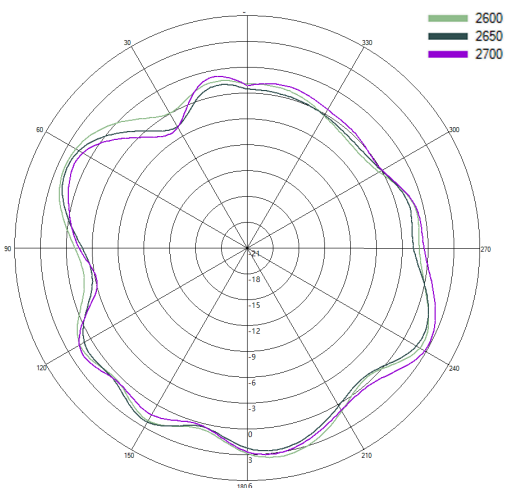
Typical H Plane Pattern - Port 2 2300-2400 MHz



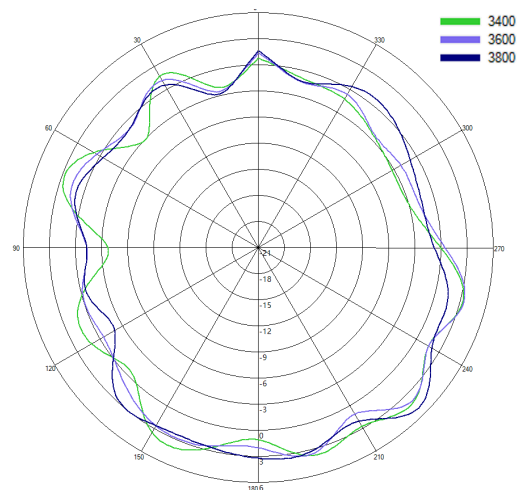
Typical H Plane Pattern - Port 2 2400-2475 MHz



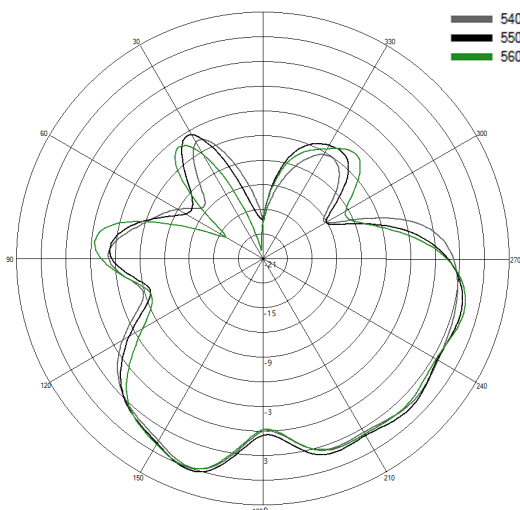
Typical H Plane Pattern - Port 2 2600-2700 MHz



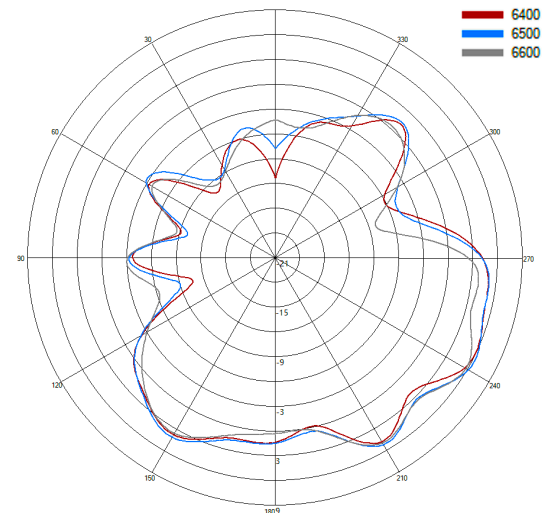
Typical H Plane Pattern - Port 2 3400-3800 MHz



Typical H Plane Pattern - Port 2 5400-5600 MHz



Typical H Plane Pattern - Port 2 6400-6600 MHz

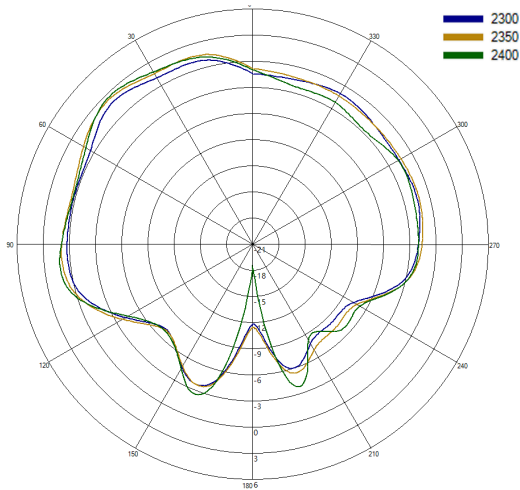


Ultra Low Profile MiMo Antenna WIFI/5G

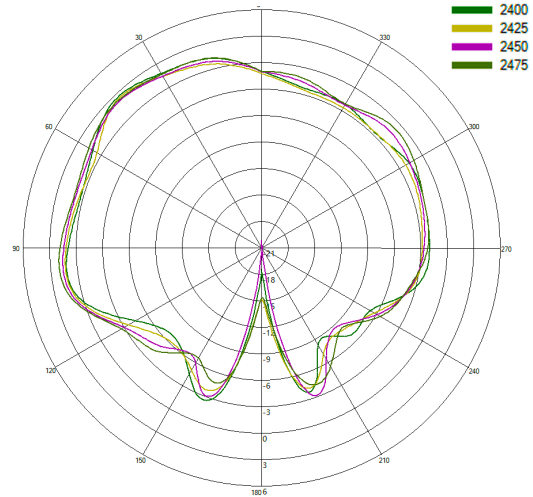
LPM[X]-24-72-2[X]

2D Pattern Data in Free Space Port 2 E Plane

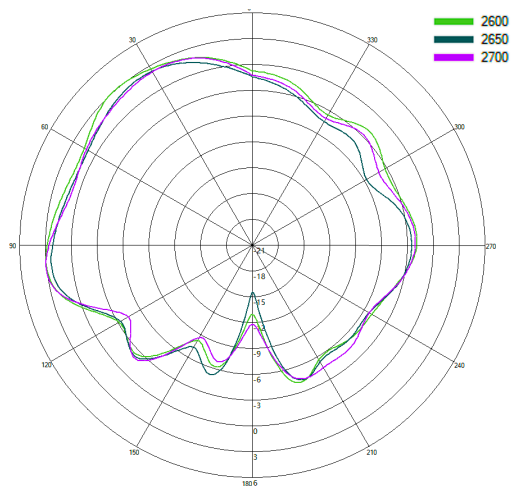
Typical E Plane Pattern - Port 2 2300-2400 MHz



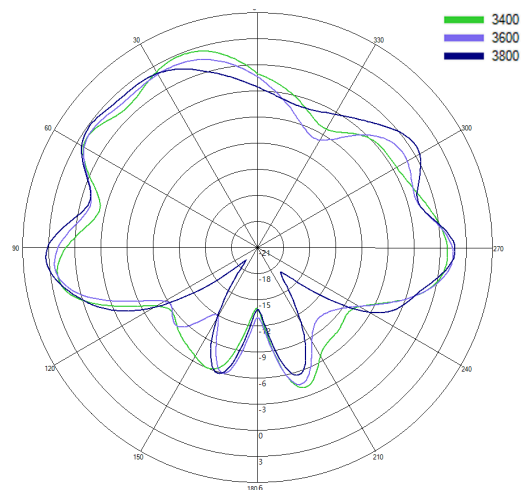
Typical E Plane Pattern - Port 2 2400-2475 MHz



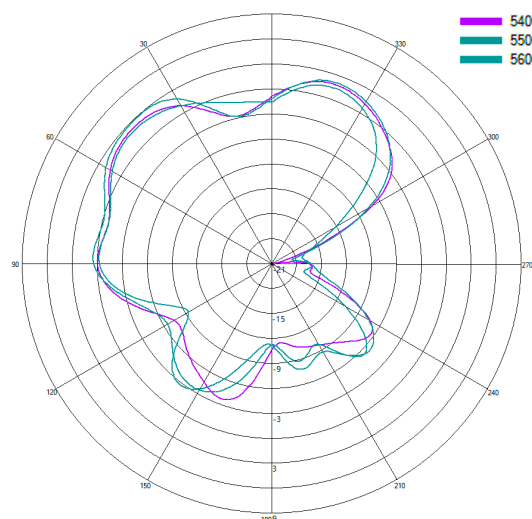
Typical E Plane Pattern - Port 2 2600-2700 MHz



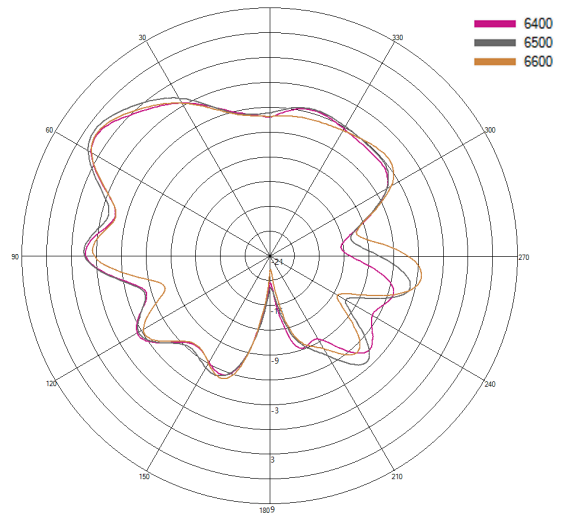
Typical E Plane Pattern - Port 2 3400-3800 MHz



Typical E Plane Pattern - Port 2 5400-5600 MHz



Typical E Plane Pattern - Port 2 6400-6600 MHz

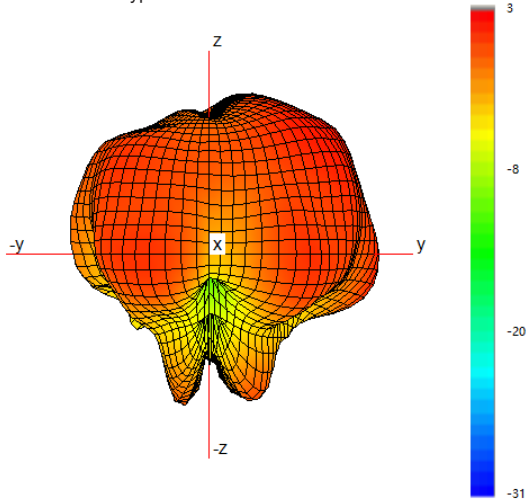


Ultra Low Profile MiMo Antenna WIFI/5G

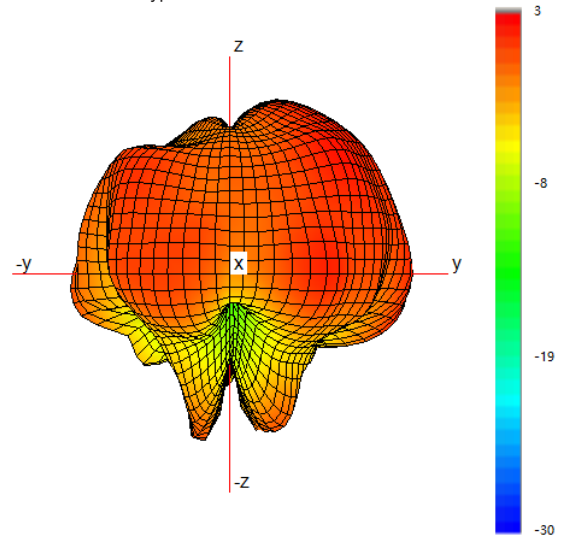
LPM[X]-24-72-2[X]

3D Pattern Data in Free Space Port 3

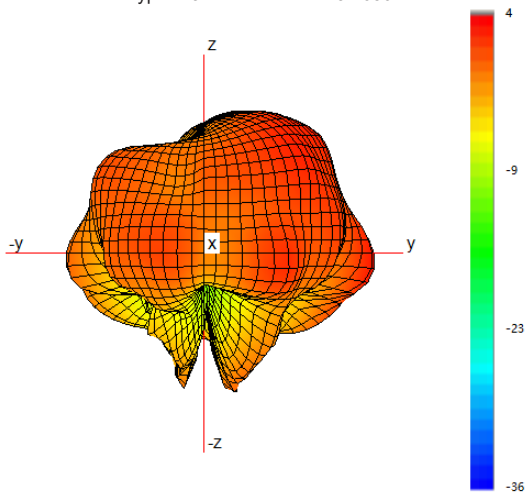
Typical 3D Pattern - Port 3 2350 MHz



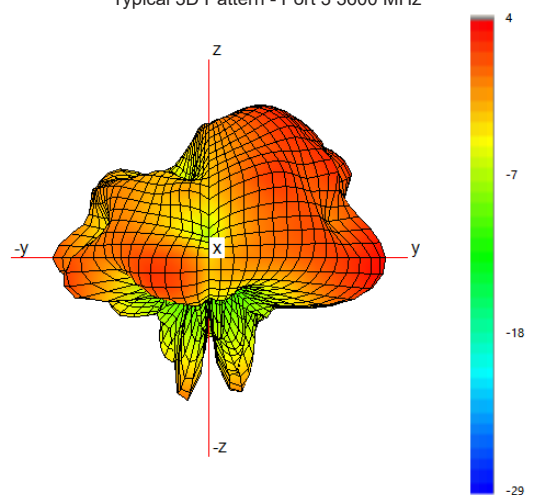
Typical 3D Pattern - Port 3 2450 MHz



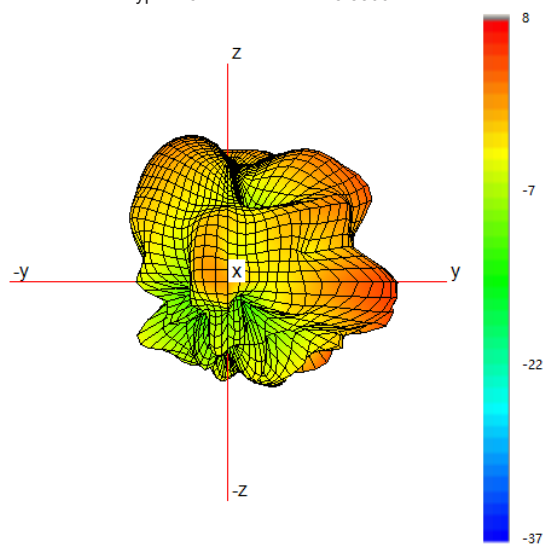
Typical 3D Pattern - Port 3 2650 MHz



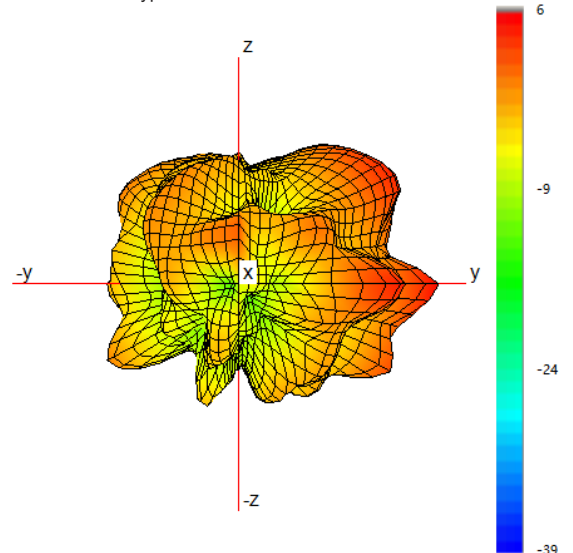
Typical 3D Pattern - Port 3 3600 MHz



Typical 3D Pattern - Port 3 5500 MHz



Typical 3D Pattern - Port 3 6500 MHz

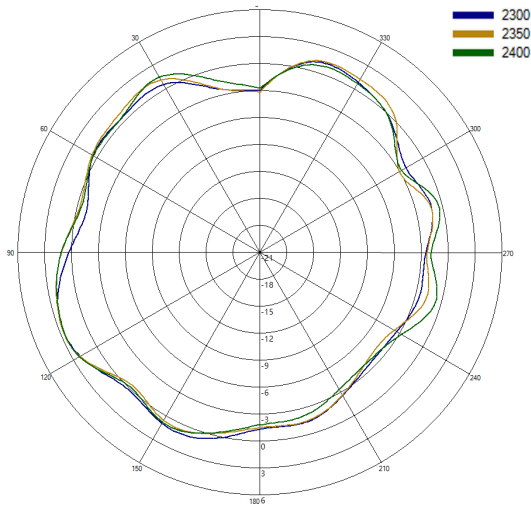


Ultra Low Profile MiMo Antenna WIFI/5G

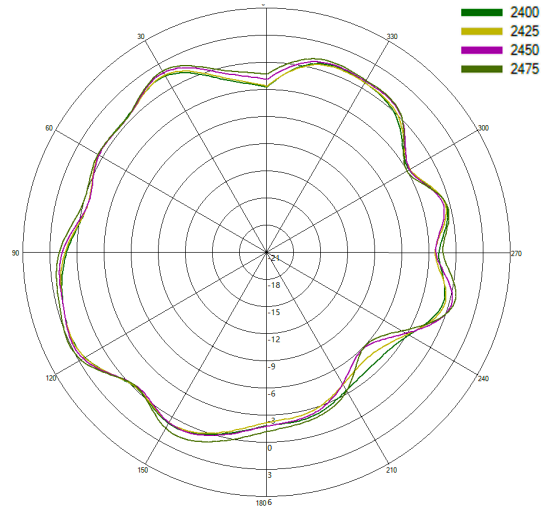
LPM[X]-24-72-2[X]

2D Pattern Data in Free Space Port 3 H Plane

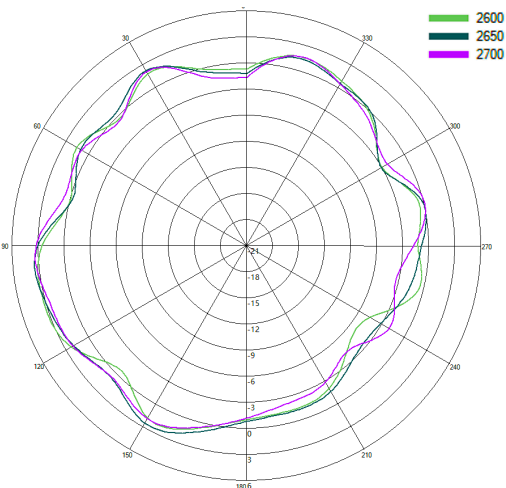
Typical H Plane Pattern - Port 3 2300-2400 MHz



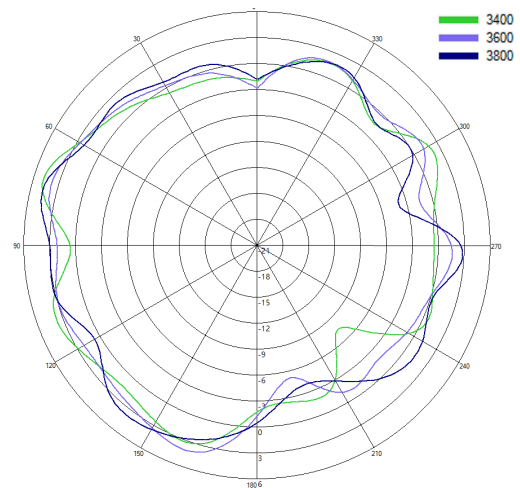
Typical H Plane Pattern - Port 3 2400-2475 MHz



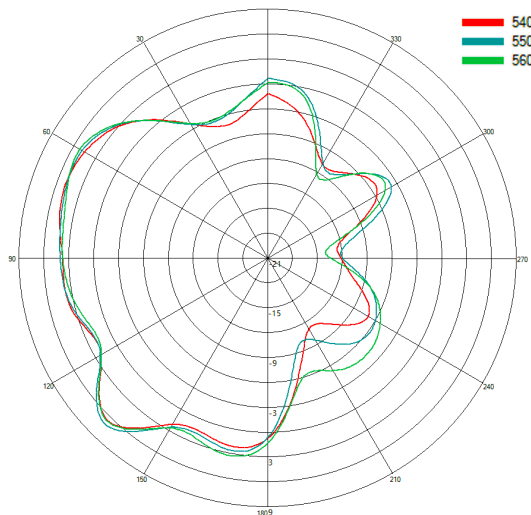
Typical H Plane Pattern - Port 3 2600-2700 MHz



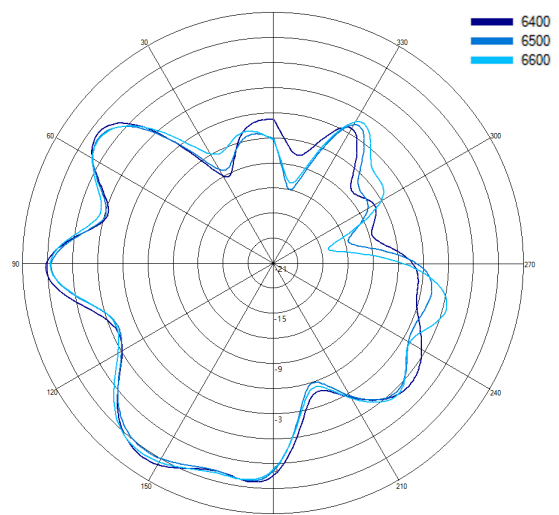
Typical H Plane Pattern - Port 3 3400-3800 MHz



Typical H Plane Pattern - Port 3 5400-5600 MHz

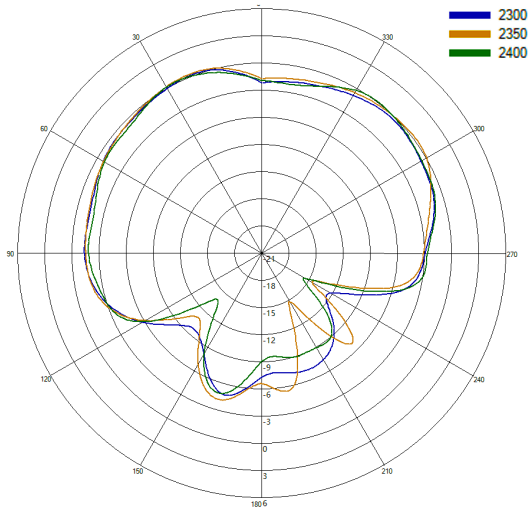


Typical H Plane Pattern - Port 3 6400-6600 MHz

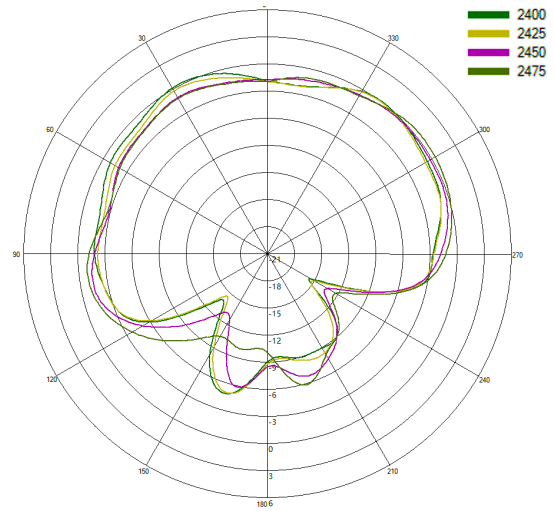


2D Pattern Data in Free
Space Port 3 E Plane

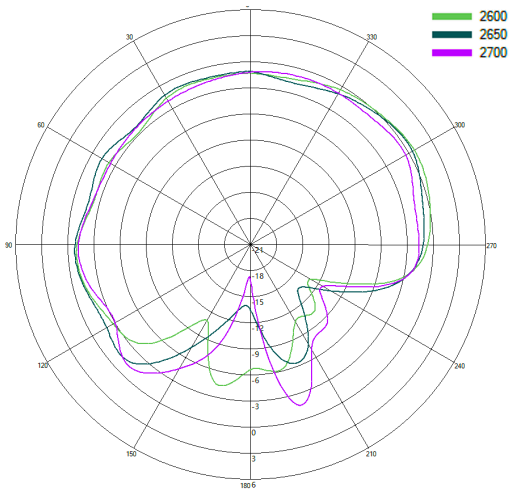
Typical E Plane Pattern - Port 3 2300-2400 MHz



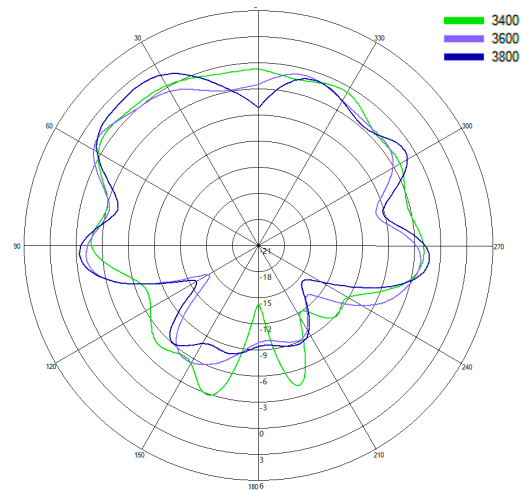
Typical E Plane Pattern - Port 3 2400-2475 MHz



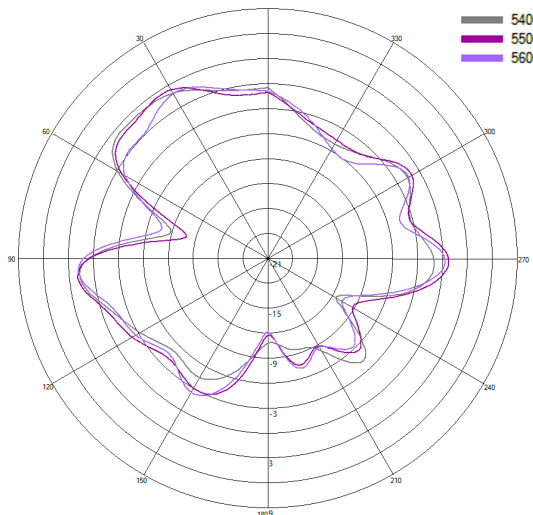
Typical E Plane Pattern - Port 3 2600-2700 MHz



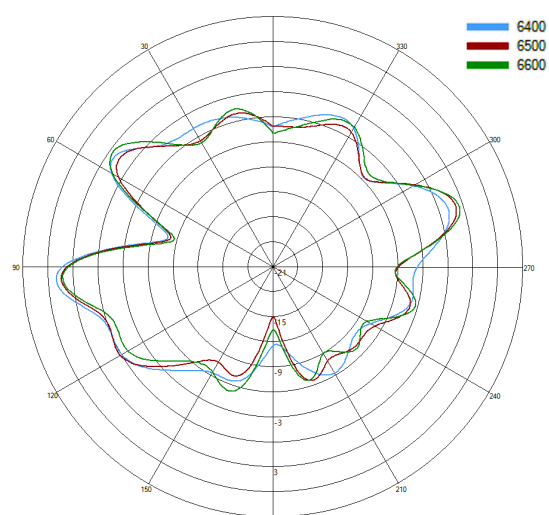
Typical E Plane Pattern - Port 3 3400-3800 MHz



Typical E Plane Pattern - Port 3 5400-5600 MHz



Typical E Plane Pattern - Port 3 6400-6600 MHz

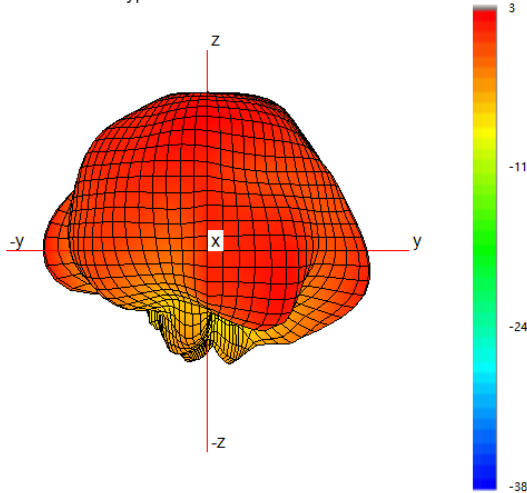


Ultra Low Profile MiMo Antenna WIFI/5G

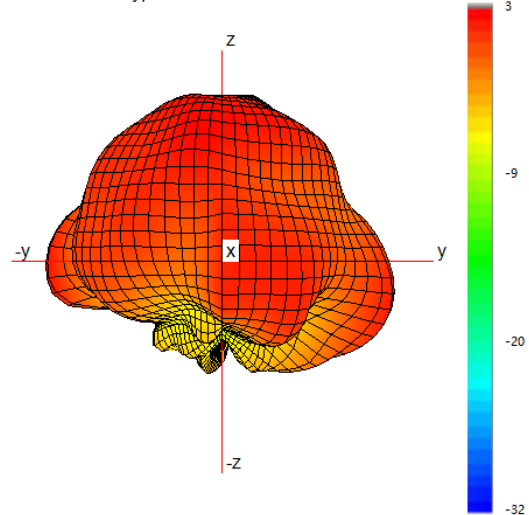
LPM[X]-24-72-2[X]

3D Pattern Data in Free Space Port 4

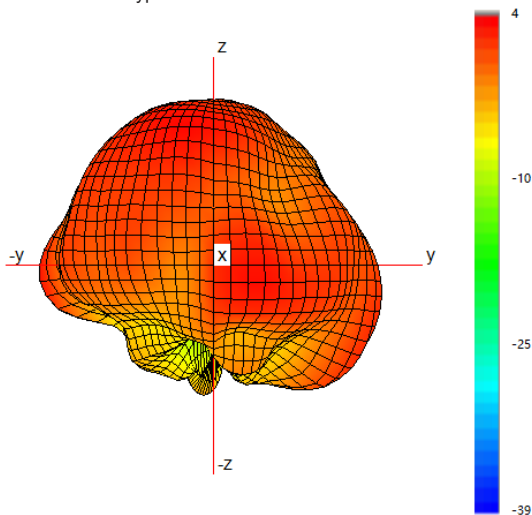
Typical 3D Pattern - Port 4 2350 MHz



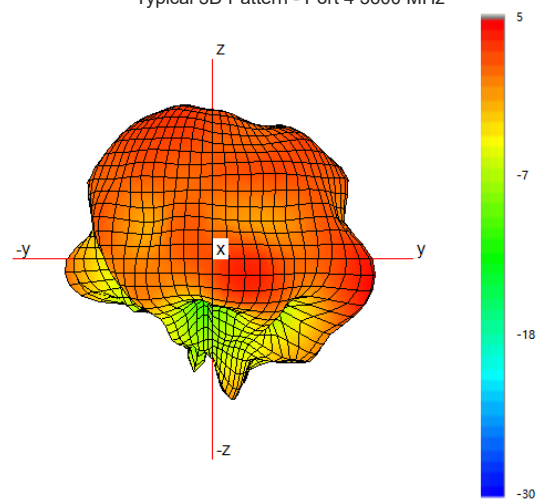
Typical 3D Pattern - Port 4 2450 MHz



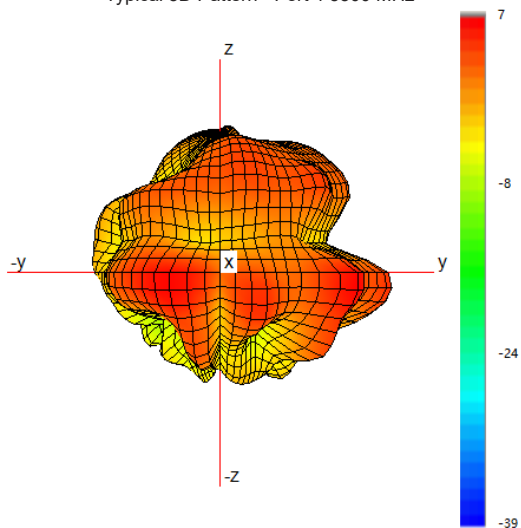
Typical 3D Pattern - Port 4 2650 MHz



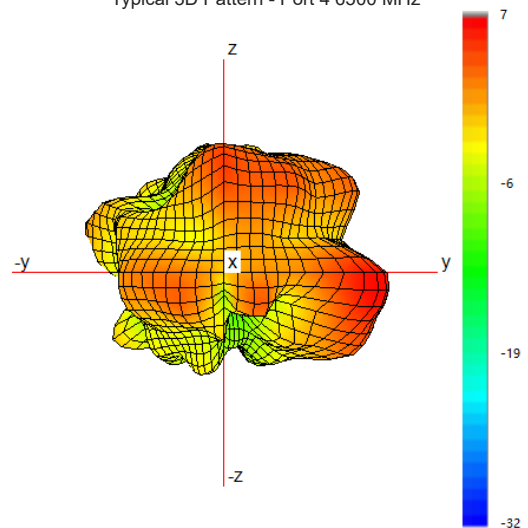
Typical 3D Pattern - Port 4 3600 MHz



Typical 3D Pattern - Port 4 5500 MHz



Typical 3D Pattern - Port 4 6500 MHz

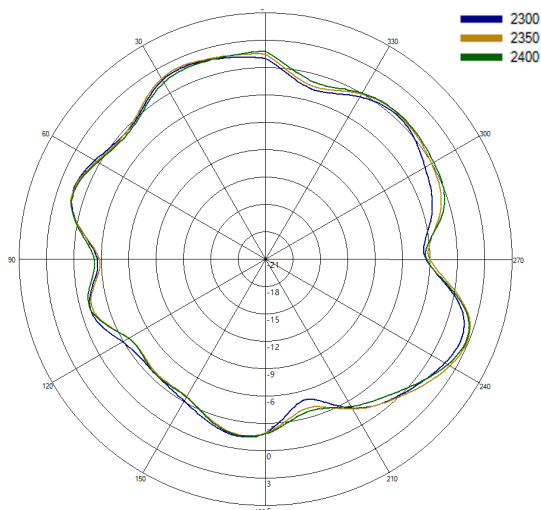


Ultra Low Profile MiMo Antenna WIFI/5G

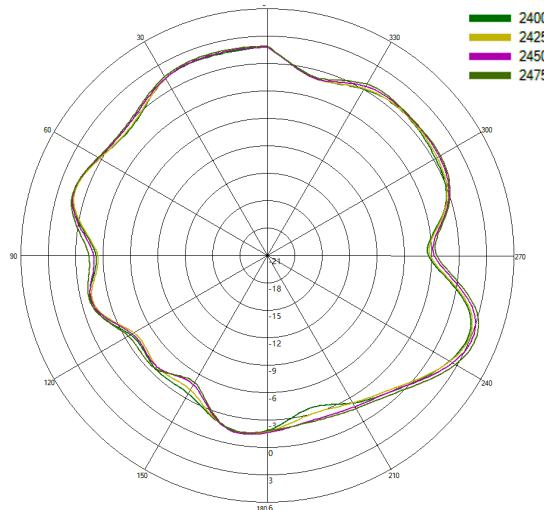
LPM[X]-24-72-2[X]

2D Pattern Data in Free
Space Port 4 H Plane

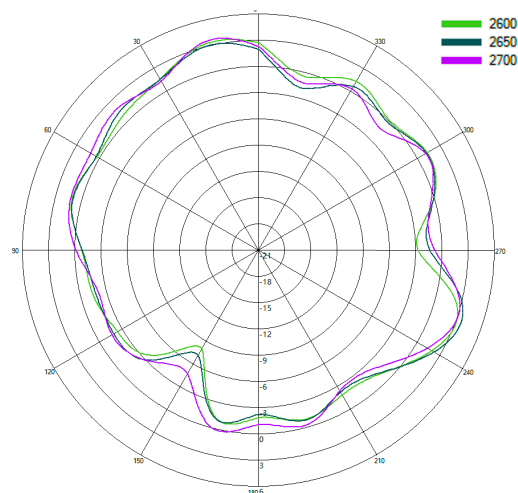
Typical H Plane Pattern - Port 4 2300-2400 MHz



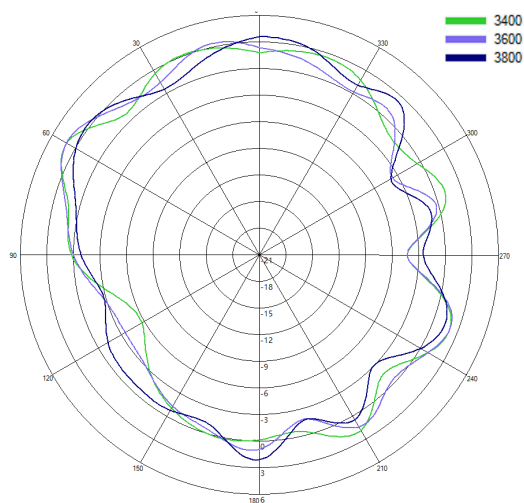
Typical H Plane Pattern - Port 4 2400-2475 MHz



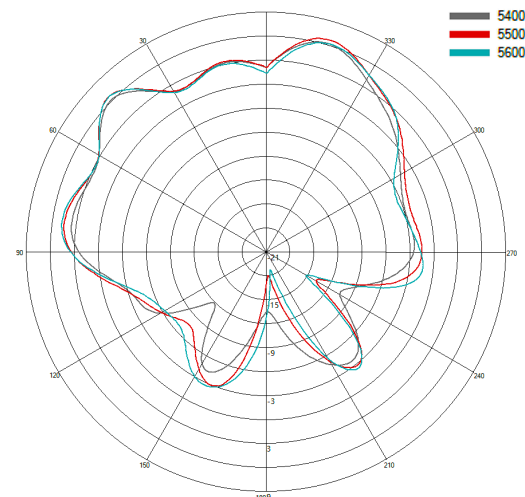
Typical H Plane Pattern - Port 4 2600-2700 MHz



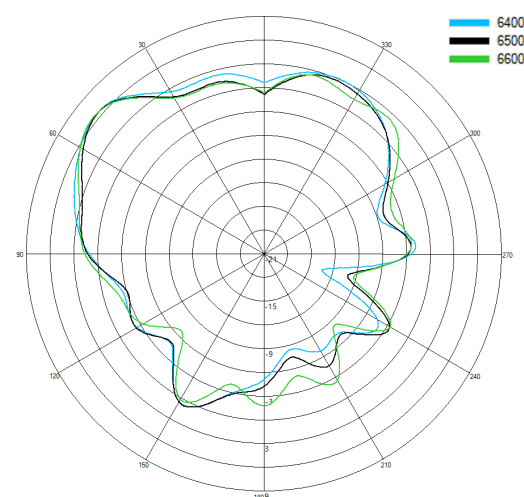
Typical H Plane Pattern - Port 4 3400-3800 MHz



Typical H Plane Pattern - Port 4 5400-5600 MHz



Typical H Plane Pattern - Port 4 6400-6600 MHz

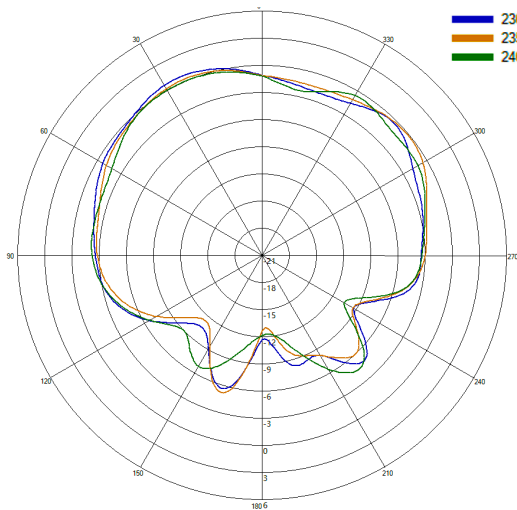


Ultra Low Profile MiMo Antenna WIFI/5G

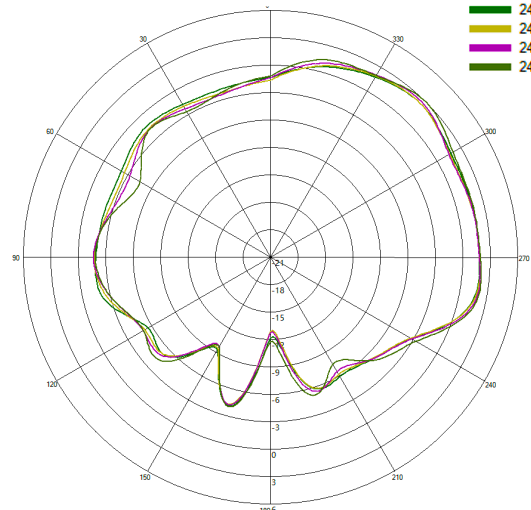
LPM[X]-24-72-2[X]

2D Pattern Data in Free Space Port 4 E Plane

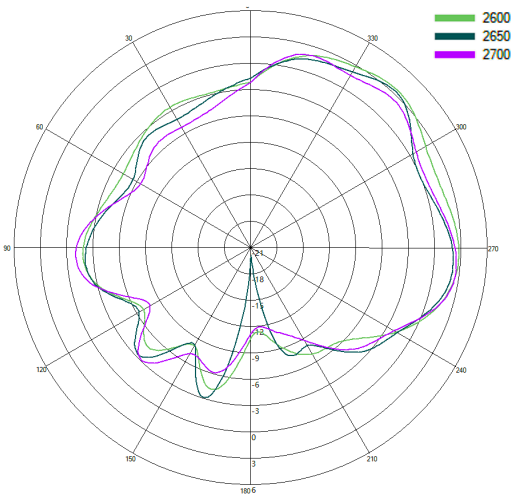
Typical E Plane Pattern - Port 4 2300-2400 MHz



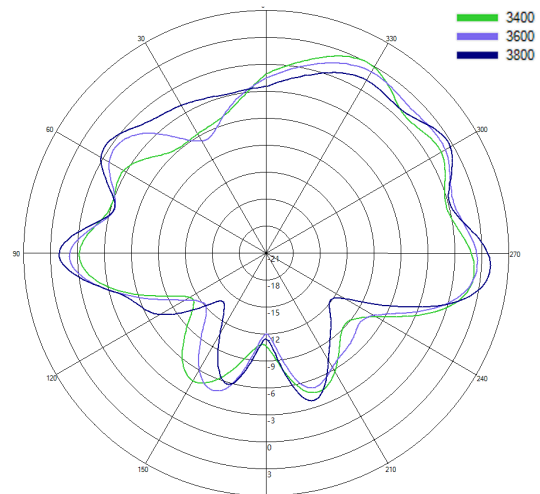
Typical E Plane Pattern - Port 4 2400-2475 MHz



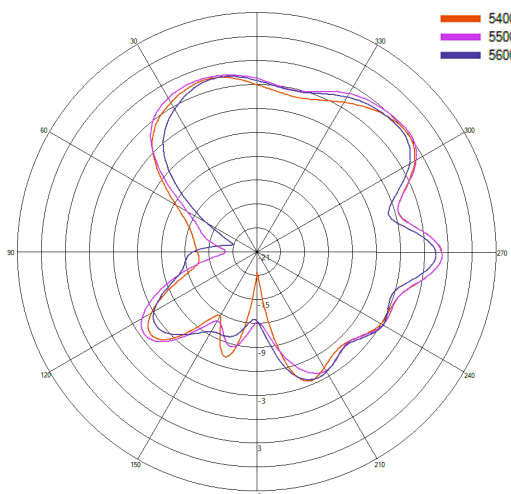
Typical E Plane Pattern - Port 4 2600-2700 MHz



Typical E Plane Pattern - Port 4 3400-3800 MHz



Typical E Plane Pattern - Port 4 5400-5600 MHz



Typical E Plane Pattern - Port 4 6400-6600 MHz

