2x2 MiMo 4G/5G Antenna

W[X]MM-6-60-[X]



- 2x2 MiMo antenna system for 4G/5G
- Two highly efficient wideband elements
- 1x GPS/GNSS L1 or L1/L5 bands (Optional)
- Compact but durable housing for external or internal use
- Suitable for mast, wall and desk mounting

The W[X]MM-6-60-[X] antenna provides a future proof solution for 4G and 5G connectivity. Incorporating two separately fed, ultra wideband elements in a single housing, it provides a client side 2x2 MiMo antenna system and optional L1 only or L1/L5 bands GPS/GNSS antenna for the networks of today and tomorrow.

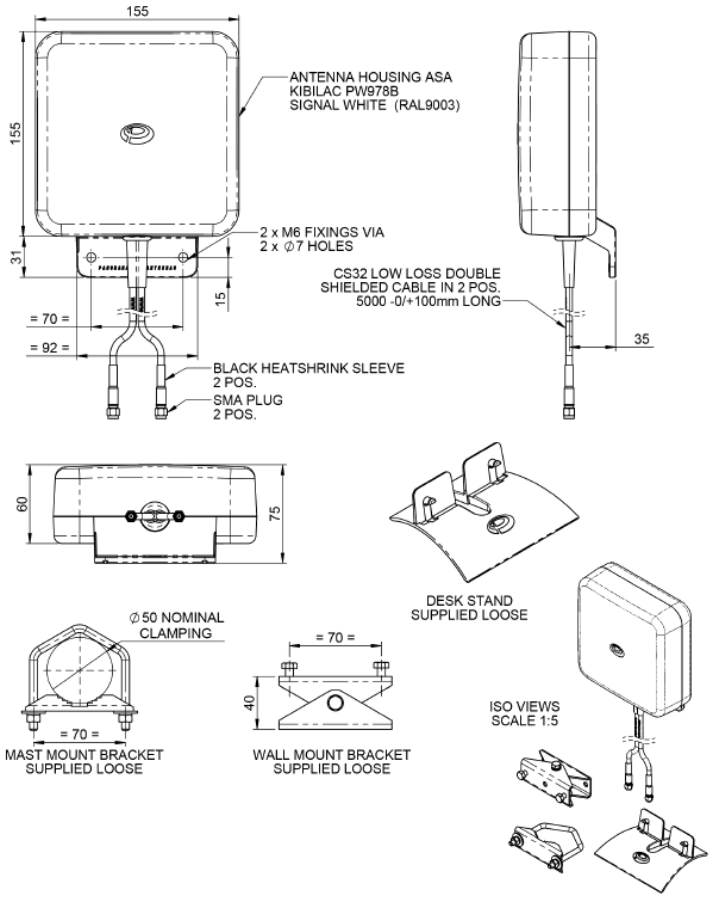
The rugged, weatherproof housing is designed for wall or mast mounting and hardware is provided. A desk stand is also included to enable the antenna to be easily used out of the box and installed internally.

The antenna is supplied with integrated 5m length ultra-low loss, double shielded, solid core CS32 coaxial cables which are halogen free, low smoke, flame retardant and meets the EU CPR with a Dca s2 d1 a1 classification, terminated with SMA plugs.

The W[X]MM-6-60-[X] is a cost effective value added product for network operators and service providers ensuring a stable network connection with improved data rates for subscribers, improving satisfaction and retention.

Technical Drawing

W[X]MM-6-60-[X] Shown



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2x2 MiMo 4G/5G Antenna

W[X]MM-6-60-[X]

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Product Data

Part No.		WMM-6-60-5SP	WMM-6-60-05NJ
Frequency Range	Element 1	617-960 / 1427-6000 MHz	
	Element 2	617-960 / 1427-6000 MHz	
Operational bands		4G/5G	
Typical VSWR*		< 2.5:1	
Typical Correlation Co-efficient		< 0.2	
Typical Element Isolation*		> 15dB	
Element Polarisation		+/-45deg	
Max Input Power		10 W	
Impedance		50Ω	
Mechanical Data			
Dimensions (mm)	Height	155 (6.1”)	
	Width	155 (6.1”)	
	Depth (inc offset)	75 (2.95")	
Operating Temp.		-30° / +80°C (-22° / 176°F)	
Material		ASA	
Colour		White	
Ingress Protection		IP65	
Mounting Data			
Fixing		Wall mount / Mast mount / Desk mount	
Mounting Bracket Material		Stainless steel / Aluminium	
Pole Diameter		20-50mm / (0.78 - 1.96”)	
Cable Data			
Type		2 x CS32 (double shielded, solid core 5mm cable)	
Jacket Material		Grey, flame retardant, halogen free TPE (PVC free)	
Cable Approvals		CPR Dca s2 d1 a1 | UN ECE R118.03 | EN45545-2 HL3	
Diameter (mm)		5mm (0.2”)	
Length (m)		5m (16.4’)	0.5m (1.64’)
Termination		2x SMA (m)	2x N (f)

*Typical VSWR and isolation applies across >90% of relevant bands measured in free space with 3m (10’) of CS32 cable

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W[X]MM-6-60-[X]

PANORAMA ANTENNAS

Product Data

Part No.		WGMM-6-60-5SP	WGMM-6-60-05NJ
Frequency Range	Element 1&2	617-960 / 1427-6000 MHz	
	Element 3	1559-1612 MHz	
Operational bands		4G/5G	
Typical VSWR*		< 2.5:1	
Typical Correlation Co-efficient		< 0.2	
Typical Element Isolation*		> 15dB	
Element Polarisation		+/-45deg	
Max Input Power		10 W	
Impedance		50Ω	
GPS/GNSS Data			
Frequency Range (MHz)		1559-1612	
Impedance		50Ω	
LNA Gain		26dB	
Voltage / Current		3-5v 17ma Typical	
Polarisation		Right Hand Circular	
Mechanical Data			
Dimensions (mm)	Height	155 (6.1”)	
	Width	155 (6.1”)	
	Depth (inc offset)	75 (2.95")	
Operating Temp.		-30° / +80°C (-22° / 176°F)	
Material		ASA	
Colour		White	
Ingress Protection		IP65	
Mounting Data			
Fixing		Wall mount / Mast mount / Desk mount	
Mounting Bracket Material		Stainless steel / Aluminium	
Pole Diameter		20-50mm / (0.78 - 1.96”)	
Cable Data 4G/5G			
Type		2 x CS32 (double shielded, solid core 5mm cable)	
Jacket Material		Grey, flame retardant, halogen free TPE (PVC free)	
Cable Approvals		CPR Dca s2 d1 a1 | UN ECE R118.03 | EN45545-2 HL3	
Diameter (mm)		5mm (0.2”)	
Length (m)		5m (16.4’)	0.5m (1.64’)
Termination		2x SMA (m)	2x N (f)
Cable Data GPS/GNSS			
Type		1 x FR RG174	
Jacket Material		Black, flame retardant, halogen free TPE (PVC free)	
Cable Approvals		UN ECE R118.03 | EN45545-2 HL3	
Diameter		2.8mm (0.1")	
Length		5.5m (18’)	0.5m (1.64’)
Termination		1x SMA (m)	1x N (f)

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2x2 MiMo 4G/5G Antenna

W[X]MM-6-60-[X]

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Product Data

Part No.		WG5MM-6-60-5SP	WG5MM-6-60-05NJ
Frequency Range	Element 1&2	617-960 / 1427-6000 MHz	
	Element 3	1559-1612 / 1164-1189 MHz	
Operational bands		4G/5G	
Typical VSWR*		< 2.5:1	
Typical Correlation Co-efficient		< 0.2	
Typical Element Isolation*		> 15dB	
Element Polarisation		+/-45deg	
Max Input Power		10 W	
Impedance		50Ω	
GPS/GNSS Data			
Frequency Range (MHz)		1559-1612 / 1164-1189	
Impedance		50Ω	
LNA Gain		30dB / 26dB	
Voltage / Current		3-5v 36ma Typical	
Polarisation		Right Hand Circular	
Mechanical Data			
Dimensions (mm)	Height	155 (6.1”)	
	Width	155 (6.1”)	
	Depth (inc offset)	75 (2.95")	
Operating Temp.		-30° / +80°C (-22° / 176°F)	
Material		ASA	
Colour		White	
Ingress Protection		IP65	
Mounting Data			
Fixing		Wall mount / Mast mount / Desk mount	
Mounting Bracket Material		Stainless steel / Aluminium	
Pole Diameter		20-50mm / (0.78 - 1.96”)	
Cable Data 4G/5G			
Type		2 x CS32 (double shielded, solid core 5mm cable)	
Jacket Material		Grey, flame retardant, halogen free TPE (PVC free)	
Cable Approvals		CPR Dca s2 d1 a1 | UN ECE R118.03 | EN45545-2 HL3	
Diameter (mm)		5mm (0.2”)	
Length (m)		5m (16.4’)	0.5m (1.64’)
Termination		2x SMA (m)	2x N (f)
Cable Data GPS/GNSS			
Type		1 x FR RG174	
Jacket Material		Black, flame retardant, halogen free TPE (PVC free)	
Cable Approvals		UN ECE R118.03 | EN45545-2 HL3	
Diameter		2.8mm (0.1")	
Length		5.5m (18’)	0.5m (1.64’)
Termination		1x SMA (m)	1x N (f)

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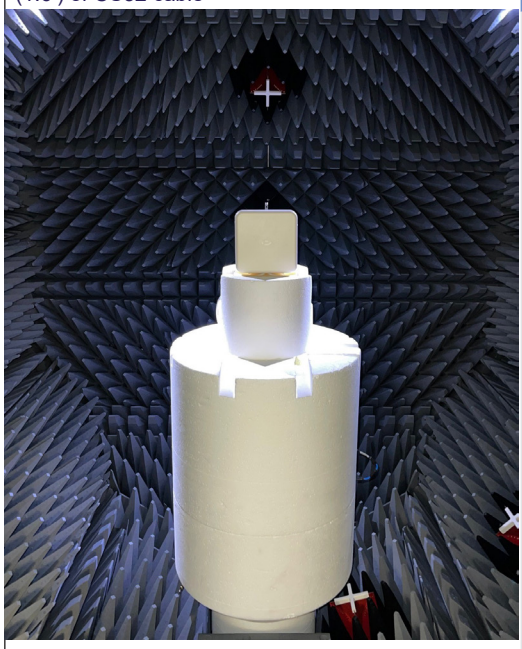
Electrical Data - Cell

Measurement Conditions

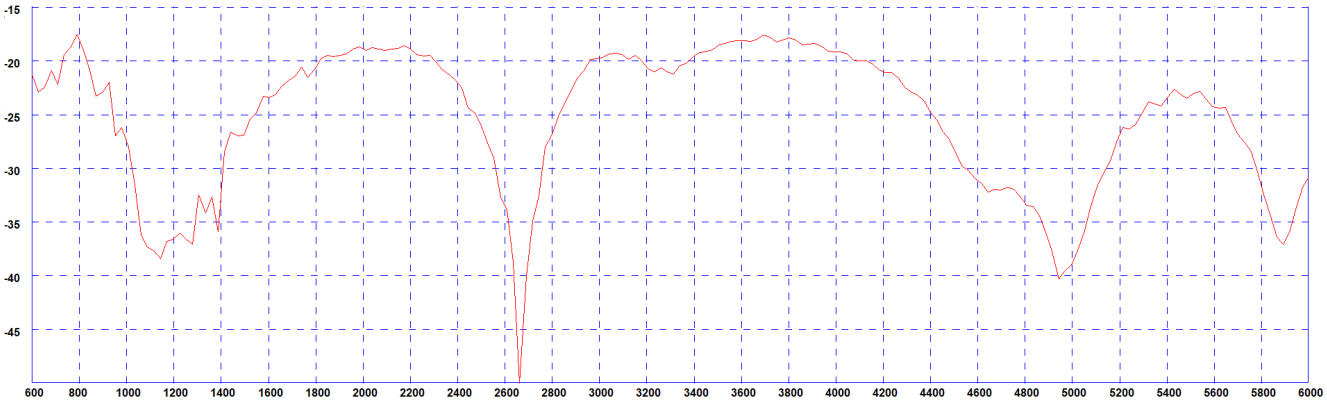
WMM-6-60-05 measured in free space with 0.5m (1.6') of CS32 cable



4G/5G Antennas

Frequency Range (MHz)	LTE Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
617-698	71, 105	Cell A	2.6	62
		Cell B	3.2	60
699-798	12,13, 14 17,28	Cell A	2.7	80
		Cell B	3.4	84
807- 862	5,19,20,26,27	Cell A	3.6	89
		Cell B	3.2	93
880-960	8	Cell A	3.8	93
		Cell B	3.3	96
1427-1518	11, 21, 74,75,76	Cell A	5.0	89
		Cell B	4.6	92
1710-1920	2,3,4,9,25,35,39,66	Cell A	4.9	78
		Cell B	5.1	79
1920-2170	1,23	Cell A	4.5	74
		Cell B	4.1	74
2300-2400	30,40	Cell A	4.1	76
		Cell B	3.9	78
2496-2690	7,38,41	Cell A	4.3	82
		Cell B	4.6	81
3300-4200	22,42,43,48,77,78	Cell A	6.1	83
		Cell B	4.4	84
4400-5000	79	Cell A	5.6	68
		Cell B	5.3	75
5000-6000	96, 102, 104	Cell A	6.8	75
		Cell B	6.6	72

Typical Isolation Elements 1 & 2 *



*Isolation measured in free space with 3m (10') of CS32 cable

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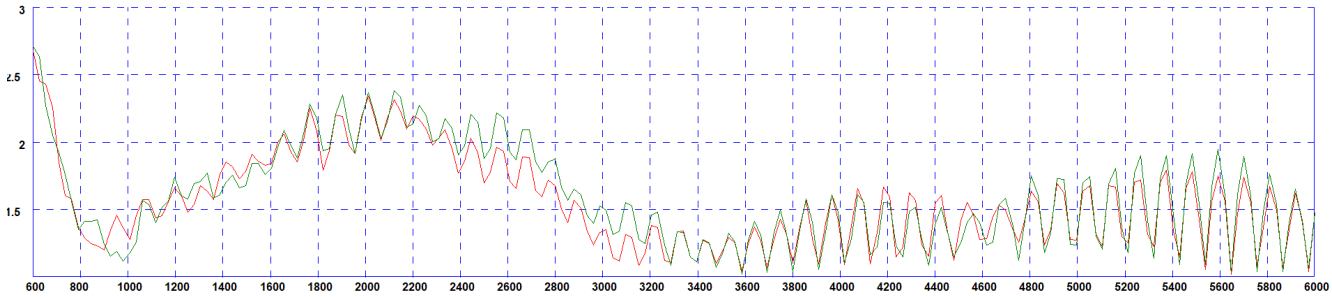
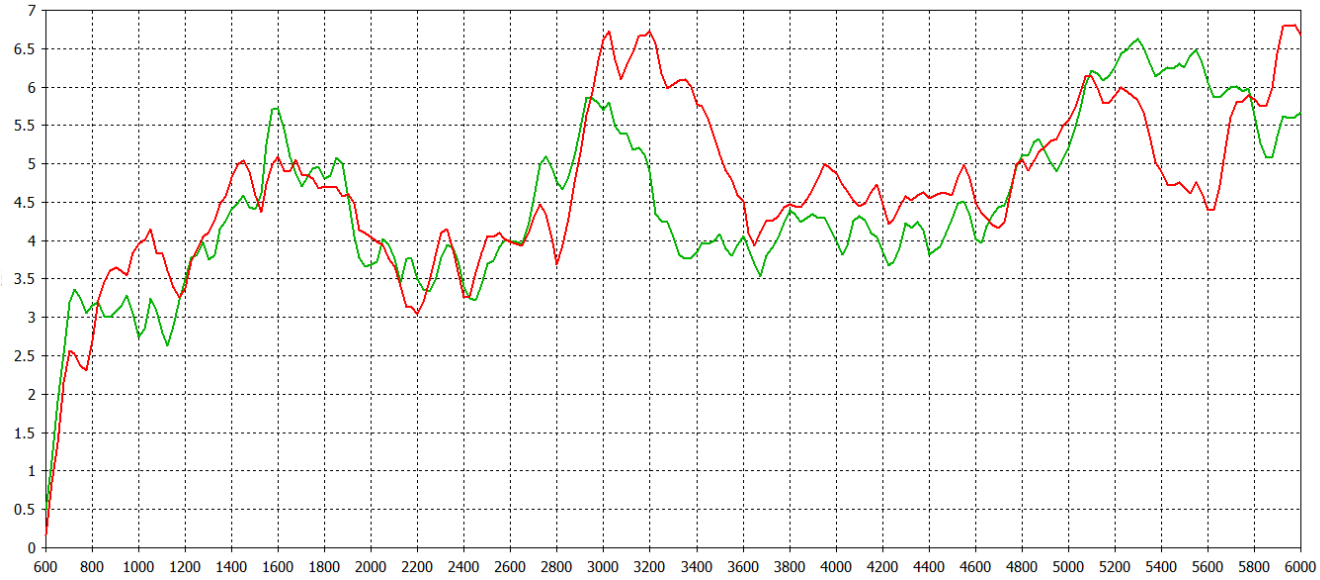
Typical VSWR Elements 1 & 2 *



*VSWR Measured in free space with 3m (10') of CS32 cable

Typical Swept Peak Gain Elements 1 & 2 *



*Swept Peak Gain measured in free space with 0.5m (1.6') of CS32 cable

Typical Efficiency Elements 1 & 2 *



* Efficiency measured in free space with 0.5m (1.6') of CS32 cable

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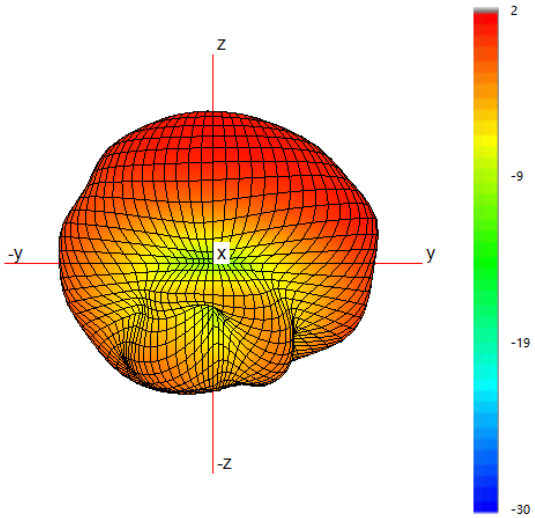
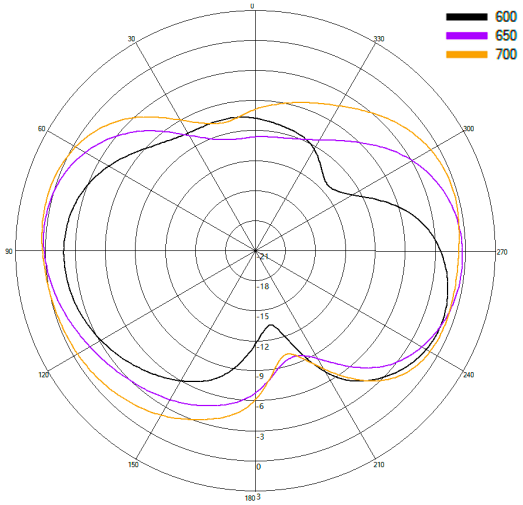
3D Patterns - Cell A

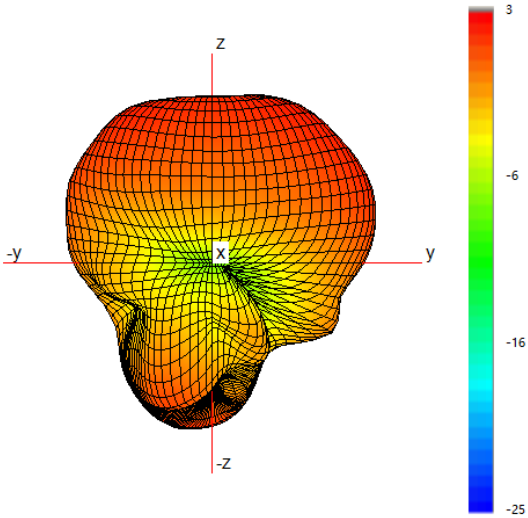
Typical 3D Pattern- Cell A - 650 MHz



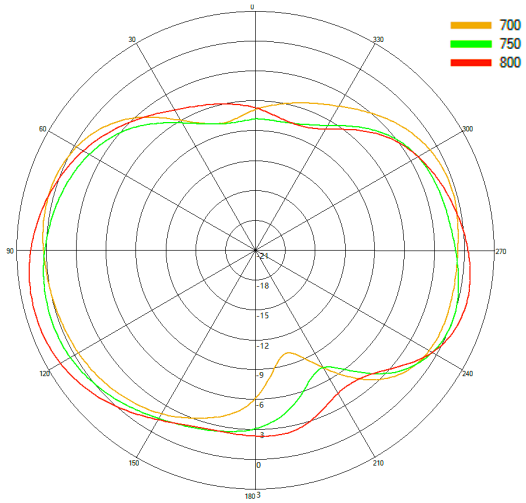
Typical H Plane- Cell A - Patterns- 600-700MHz



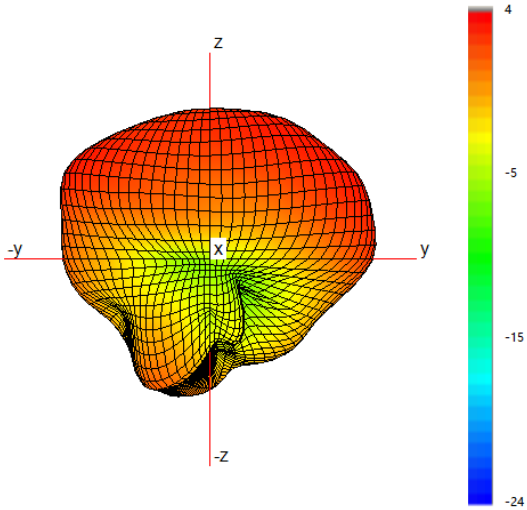
Typical 3D Pattern- Cell A - 750 MHz



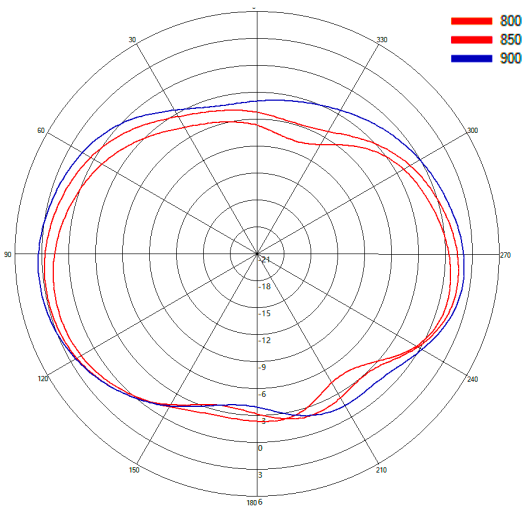
Typical H Plane- Cell A - Patterns- 700-800MHz



Typical 3D Pattern- Cell A - 850 MHz



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



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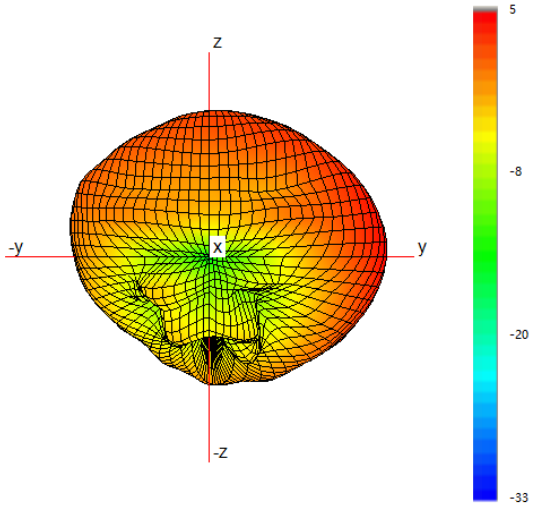
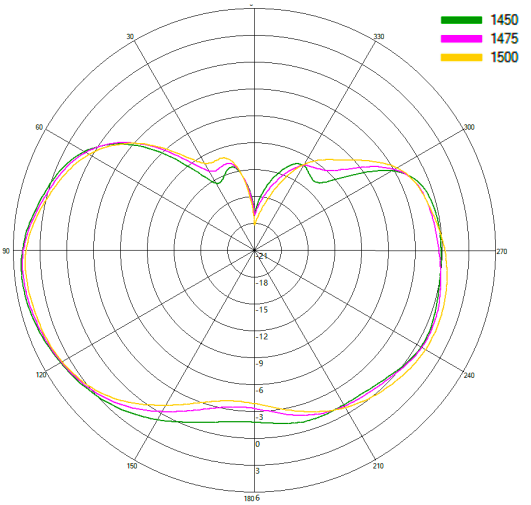
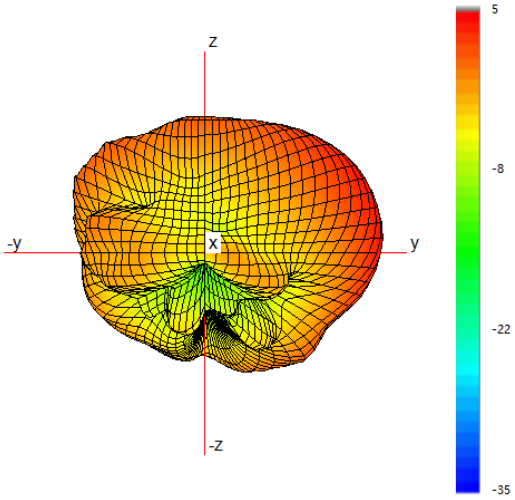
Typical 3D Pattern- Cell A - 1475 MHz



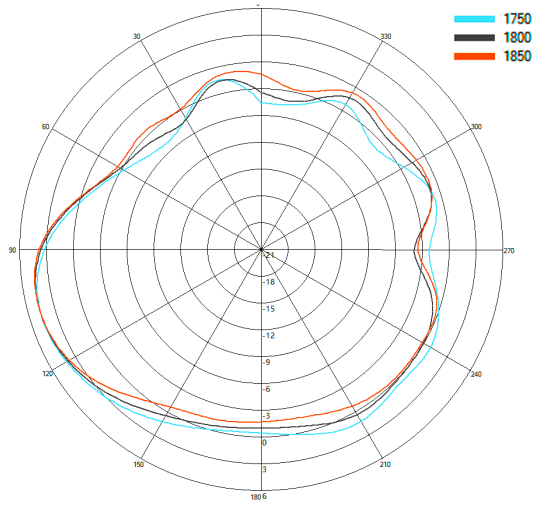
Typical H Plane- Cell A- Patterns- 1450-1500 MHz



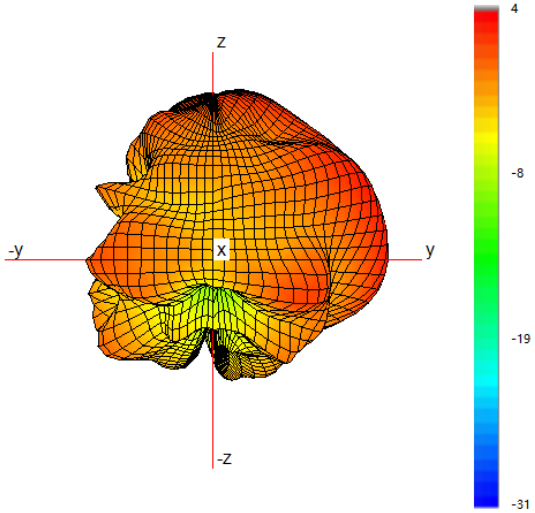
Typical 3D Pattern- Cell A - 1800 MHz



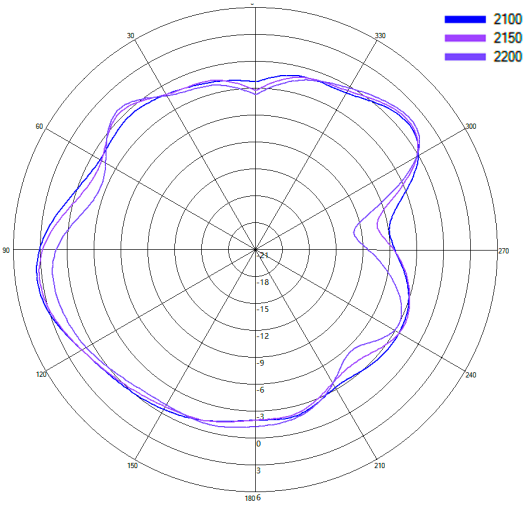
Typical H Plane- Cell A- Patterns- 1750-1850 MHz



Typical 3D Pattern- Cell A - 2150 MHz



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



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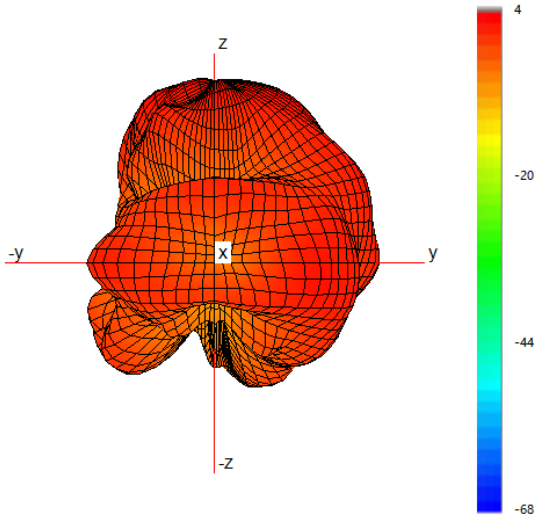
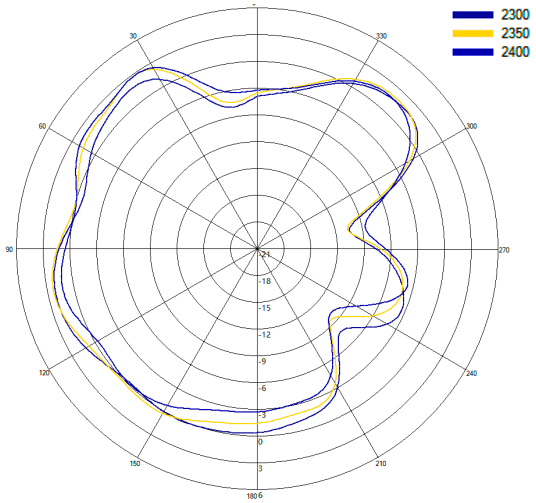
3D Patterns - Cell A

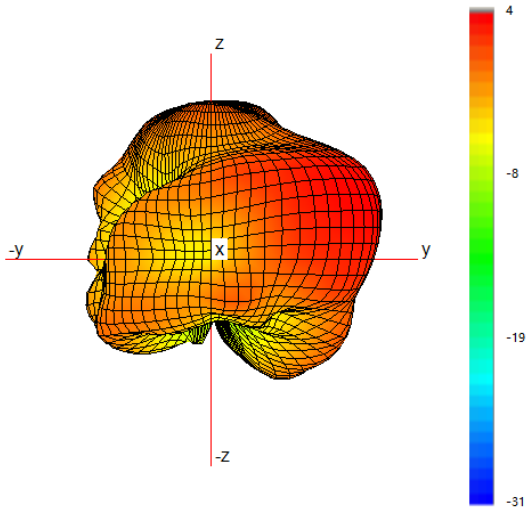
Typical 3D Pattern- Cell A - 2350 MHz



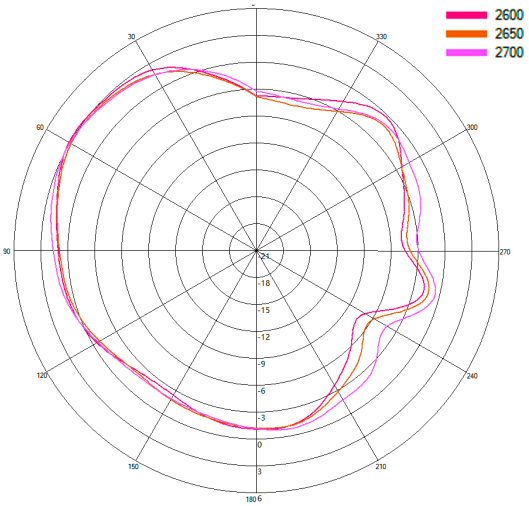
Typical H Plane- Cell A - Patterns- 2300-2400 MHz



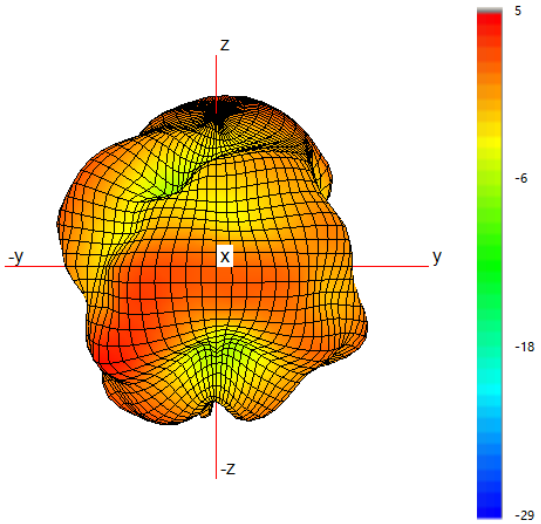
Typical 3D Pattern- Cell A - 2650 MHz



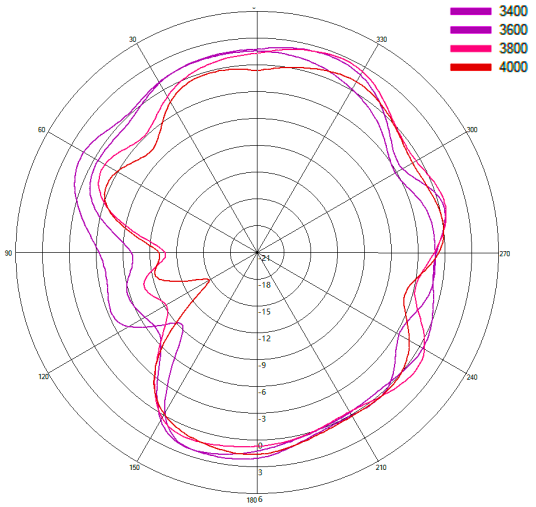
Typical H Plane- Cell A - Patterns- 2600-2700 MHz



Typical 3D Pattern- Cell A - 3600 MHz



Typical H Plane- Cell A - Patterns- 3400-4000 MHz



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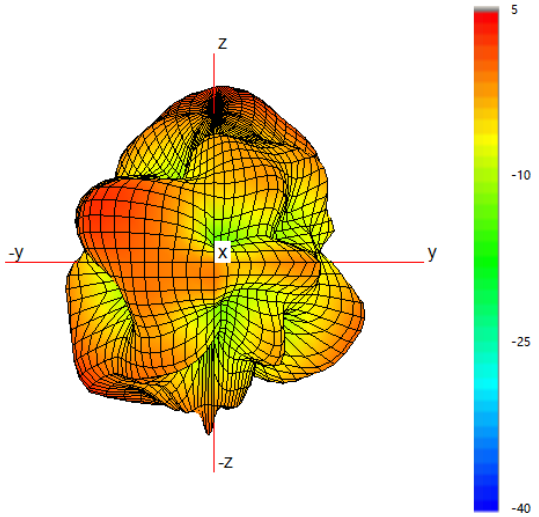
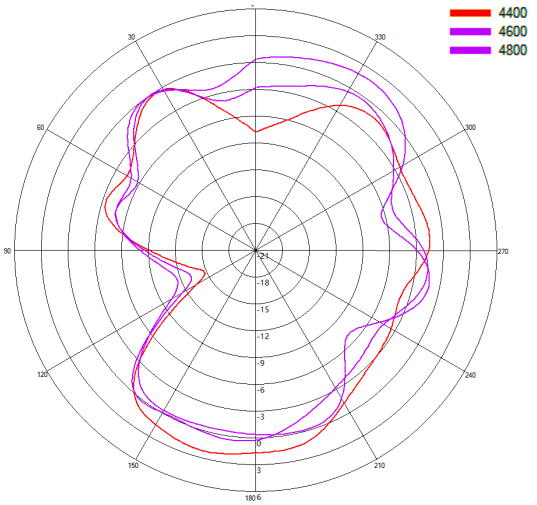
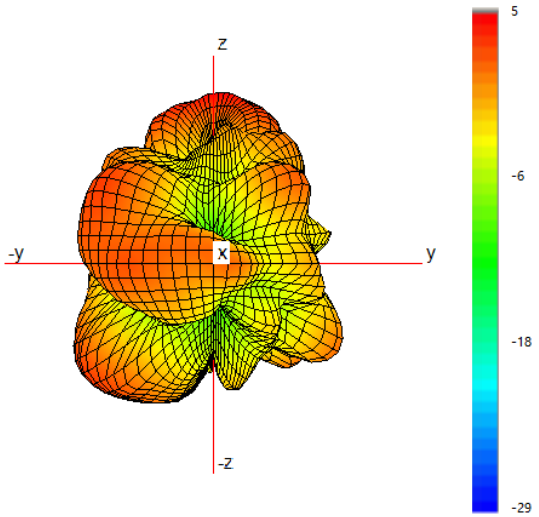
Typical 3D Pattern- Cell A - 4700 MHz



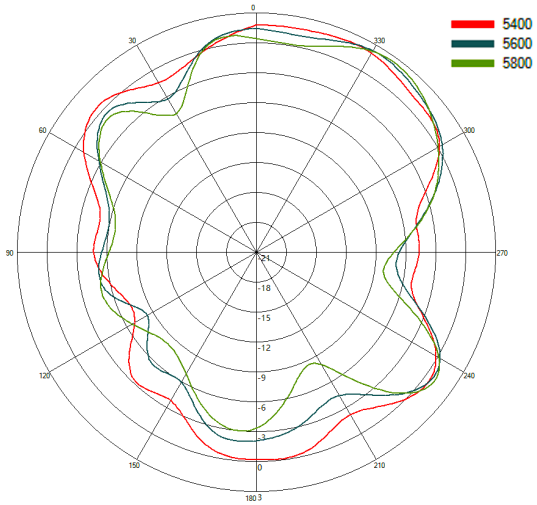
Typical H Plane- Cell A - Patterns- 4400-4800 MHz



Typical 3D Pattern- Cell B - 5600 MHz



Typical H Plane- Cell B - Patterns- 5400-5800 MHz



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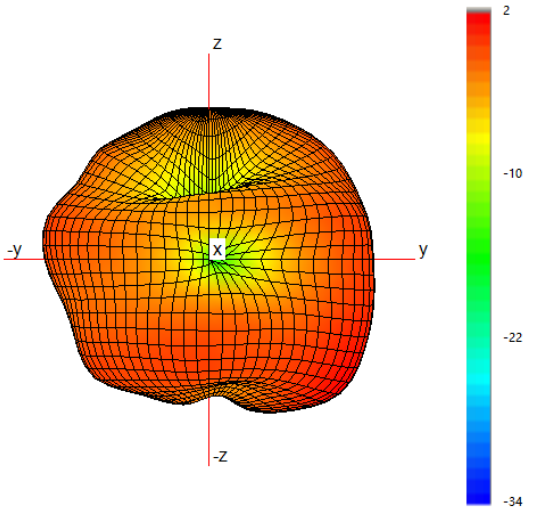
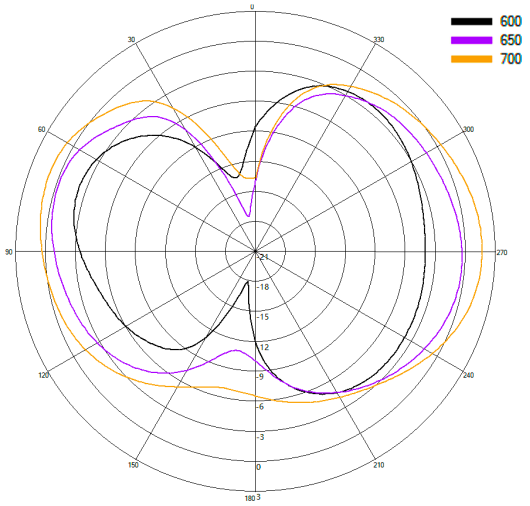
3D Patterns - Cell B

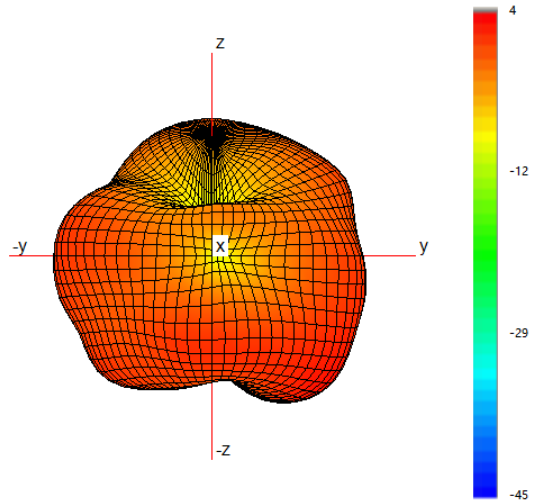
Typical 3D Pattern- Cell B - 650 MHz



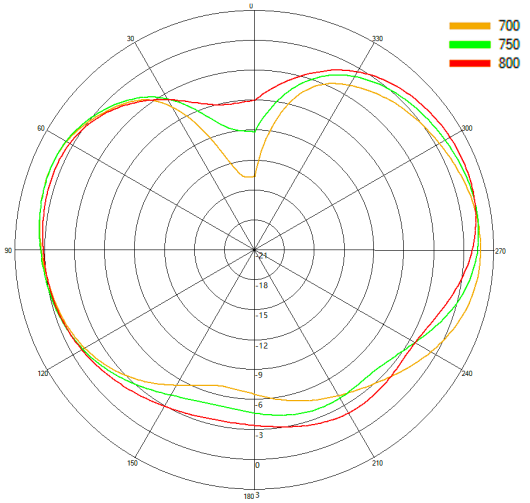
Typical H Plane- Cell B - Patterns- 600-700MHz



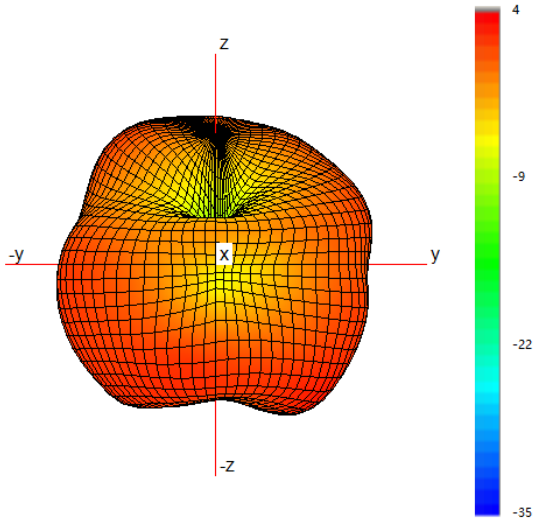
Typical 3D Pattern- Cell B - 750 MHz



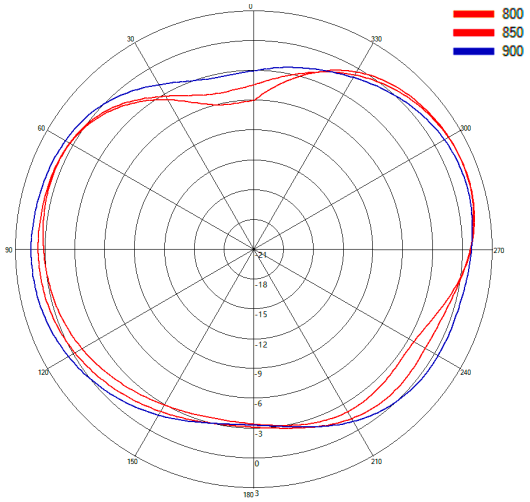
Typical H Plane- Cell B - Patterns- 700-800MHz



Typical 3D Pattern- Cell B - 850 MHz



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



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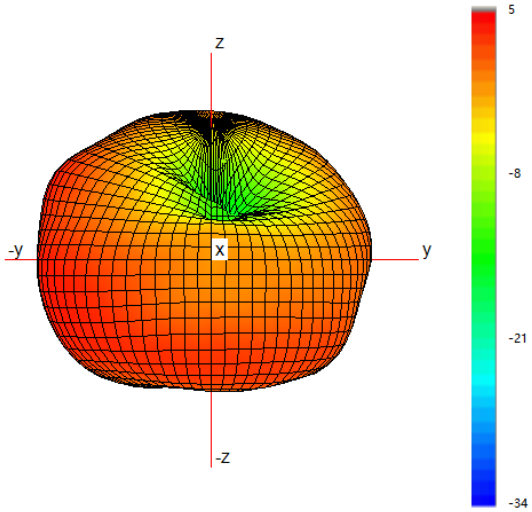
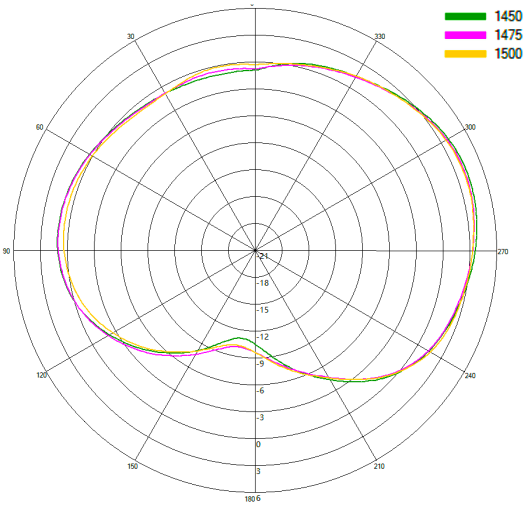
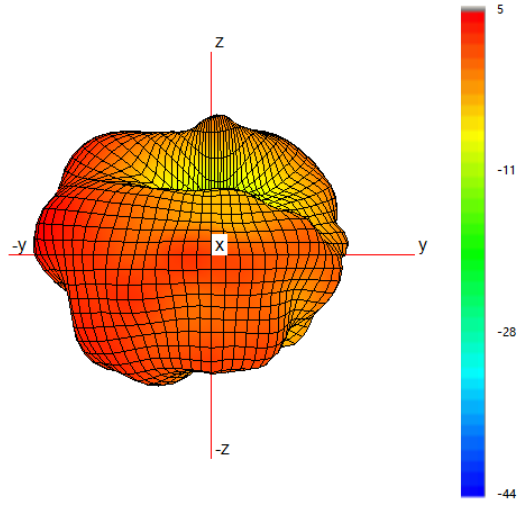
Typical 3D Pattern- Cell B - 1475 MHz



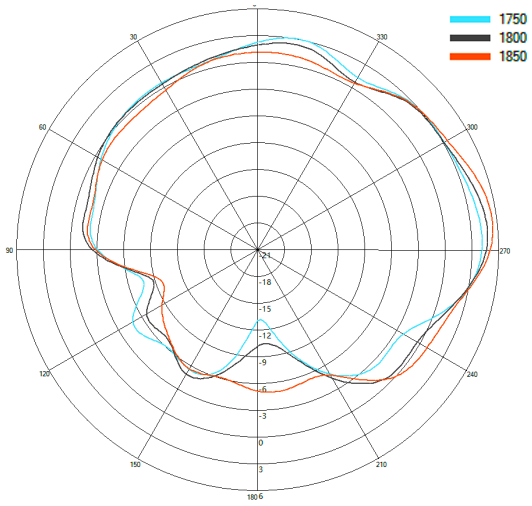
Typical H Plane- Cell B- Patterns- 1450-1500 MHz



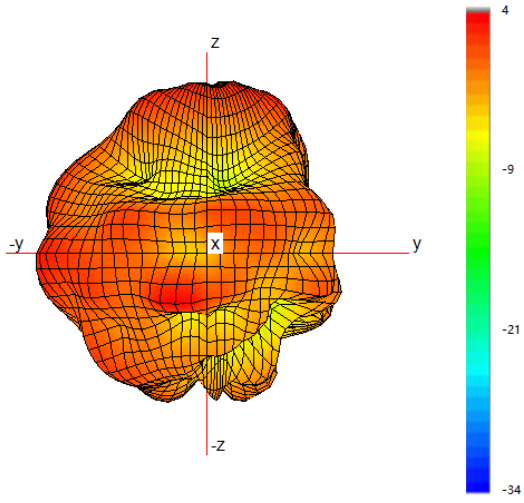
Typical 3D Pattern- Cell B - 1800 MHz



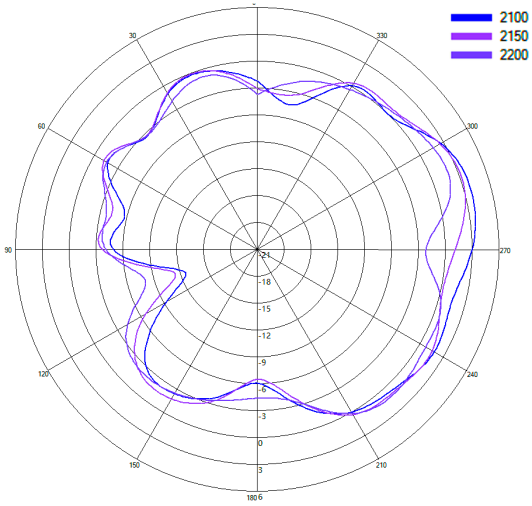
Typical H Plane- Cell B- Patterns- 1750-1850 MHz



Typical 3D Pattern- Cell B - 2150 MHz



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



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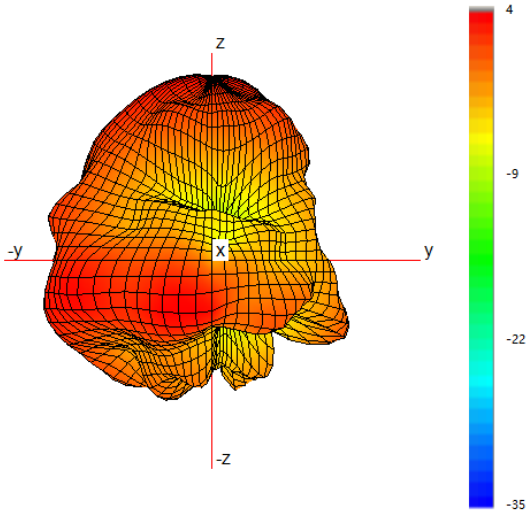
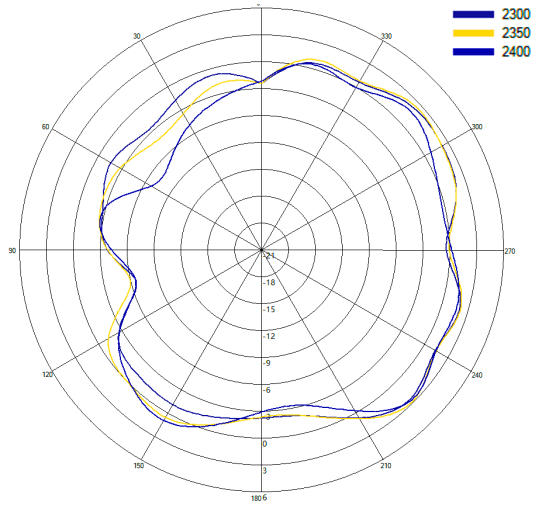
3D Patterns - Cell B

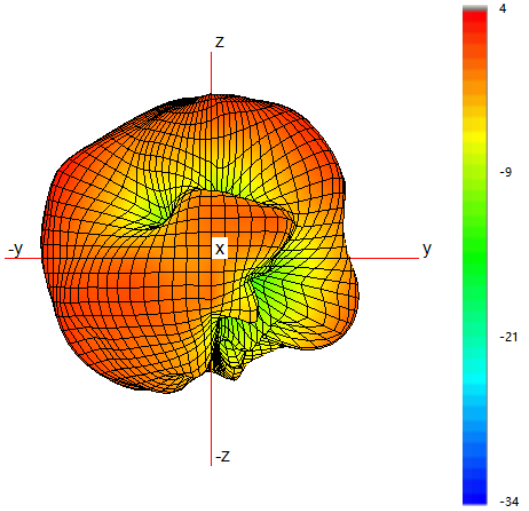
Typical 3D Pattern- Cell B - 2350 MHz



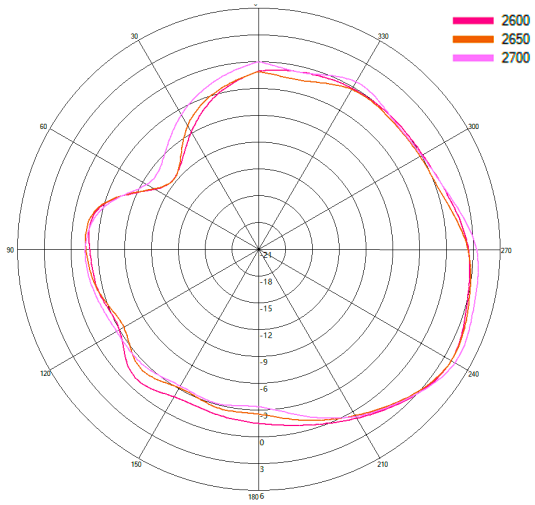
Typical H Plane- Cell B - Patterns- 2300-2400 MHz



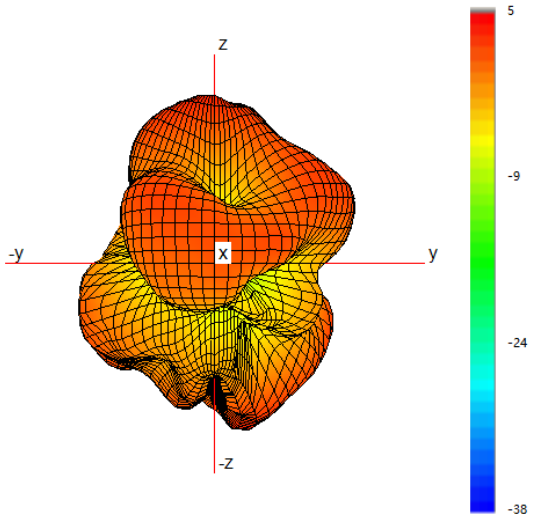
Typical 3D Pattern- Cell B - 2650 MHz



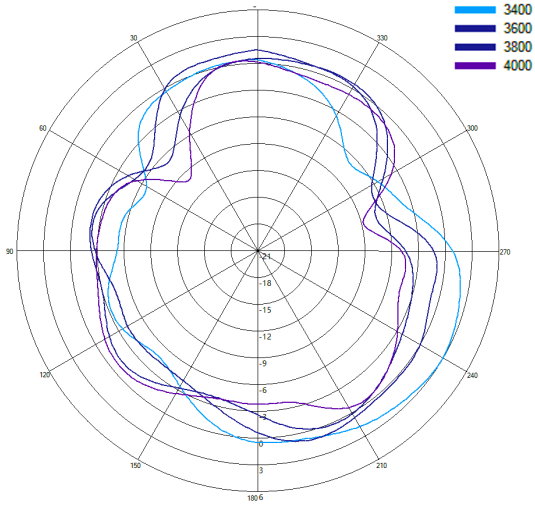
Typical H Plane- Cell B - Patterns- 2600-2700 MHz



Typical 3D Pattern- Cell B - 3600 MHz



Typical H Plane- Cell B - Patterns- 3400-4000 MHz



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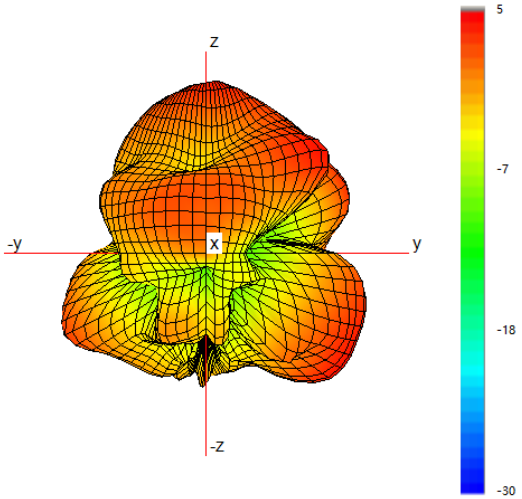
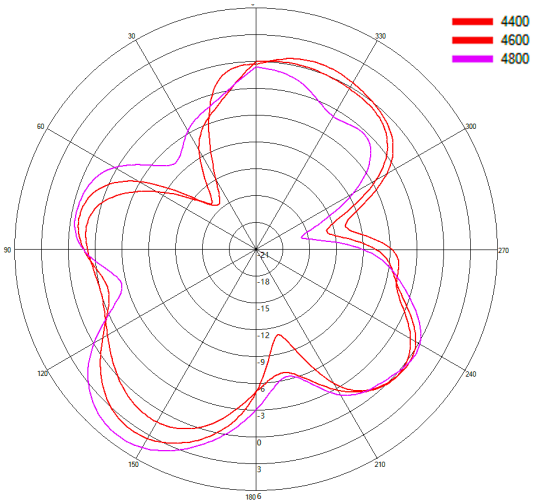
3D Patterns - Cell B

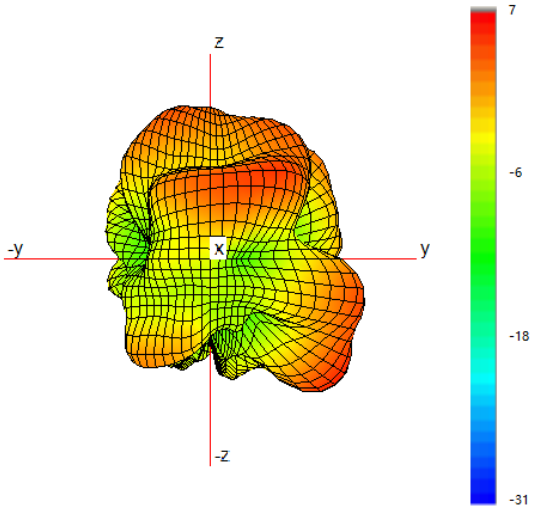
Typical 3D Pattern- Cell B - 4700 MHz



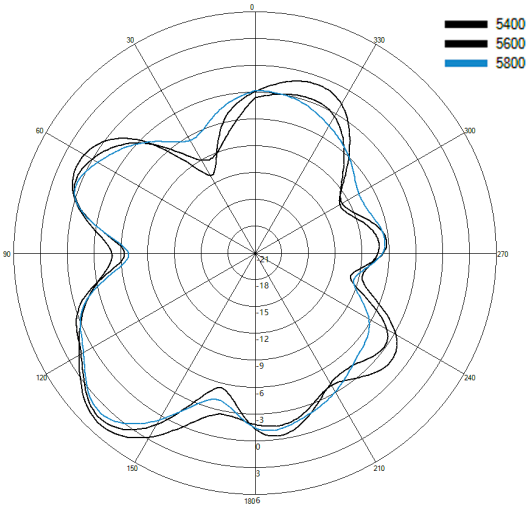
Typical H Plane- Cell B - Patterns- 4400-4800 MHz



Typical 3D Pattern- Cell B - 5600 MHz



Typical H Plane- Cell B - Patterns- 5400-5800 MHz



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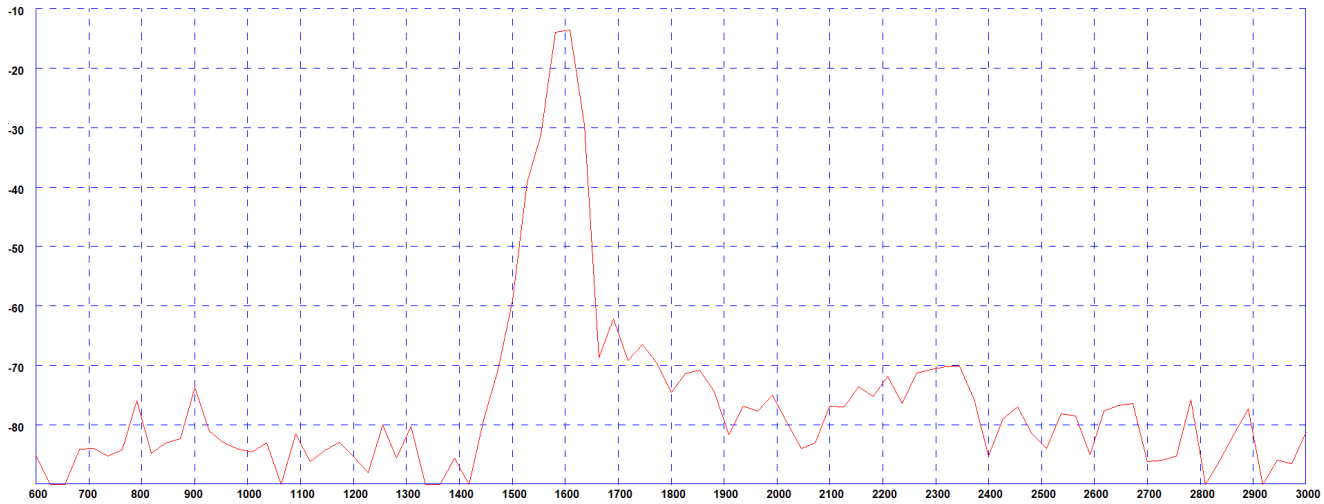
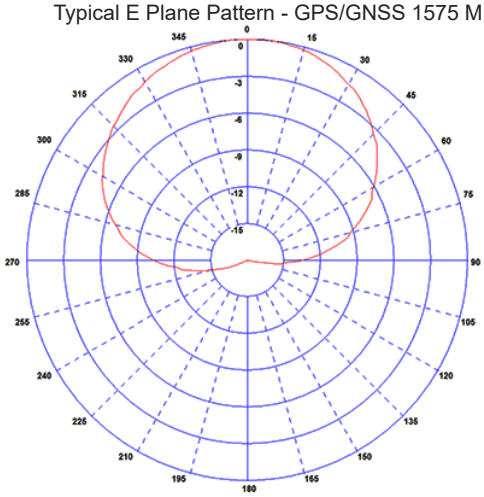
Electrical Data- L1
GPS/GNSS

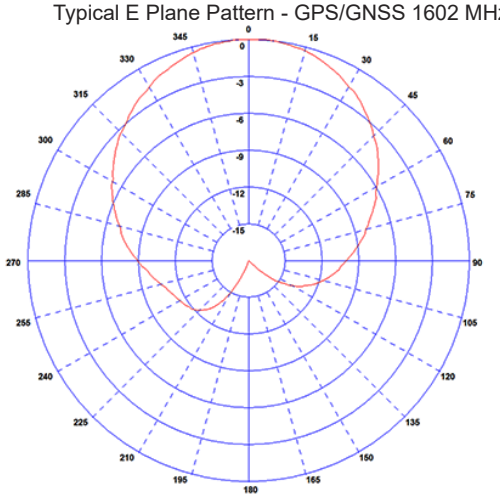
Swept Peak Gain GPS/GNSS



Typical E Plane Pattern - GPS/GNSS 1575 MHz



Typical E Plane Pattern - GPS/GNSS 1602 MHz



GPS/GNSS Measurements taken on 190x190mm (7.4" x 7.4") ground plane excluding cable loss

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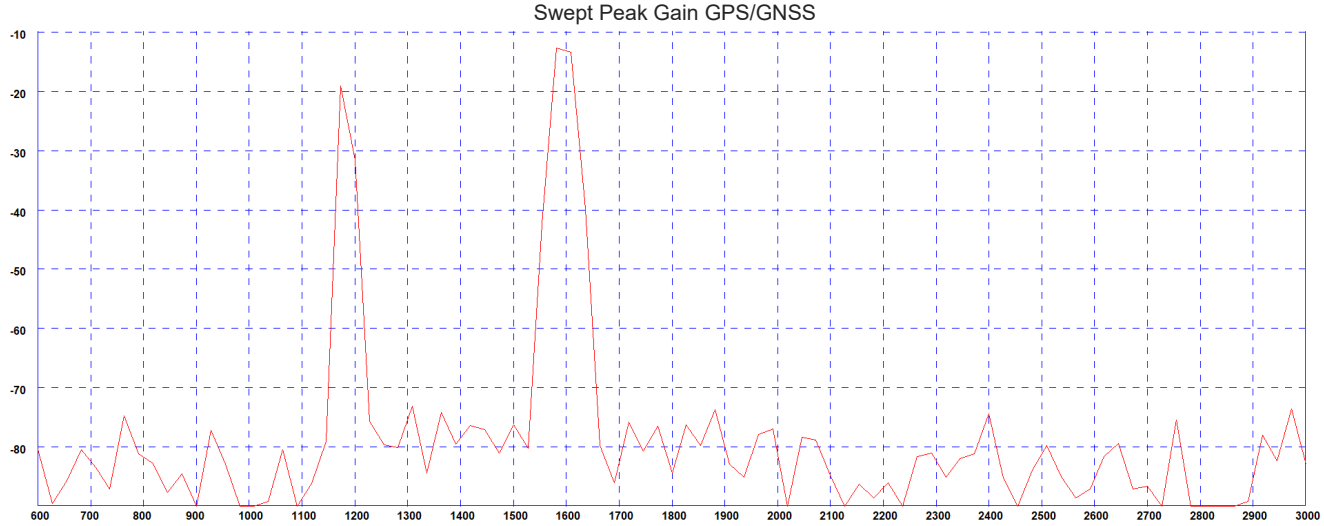
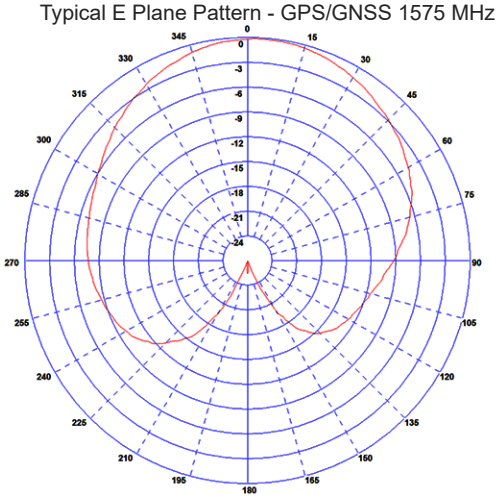
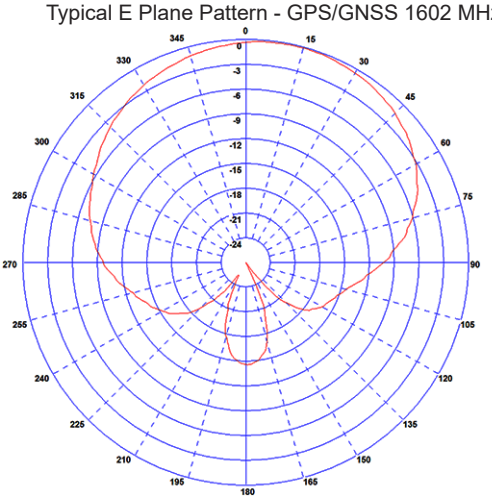
Swept Peak Gain GPS/GNSS



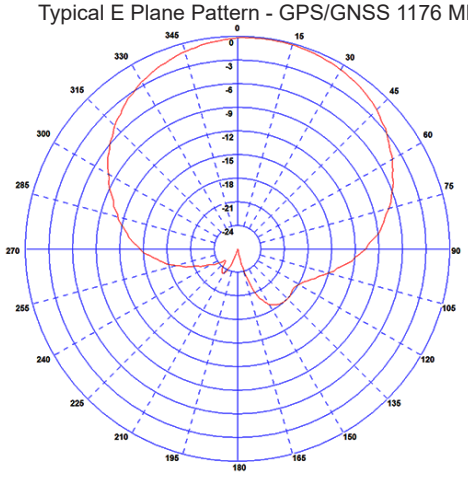
Typical E Plane Pattern - GPS/GNSS 1575 MHz



Typical E Plane Pattern - GPS/GNSS 1602 MHz



Typical E Plane Pattern - GPS/GNSS 1176 MHz



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