PANORAMA 💬 ANTENNAS



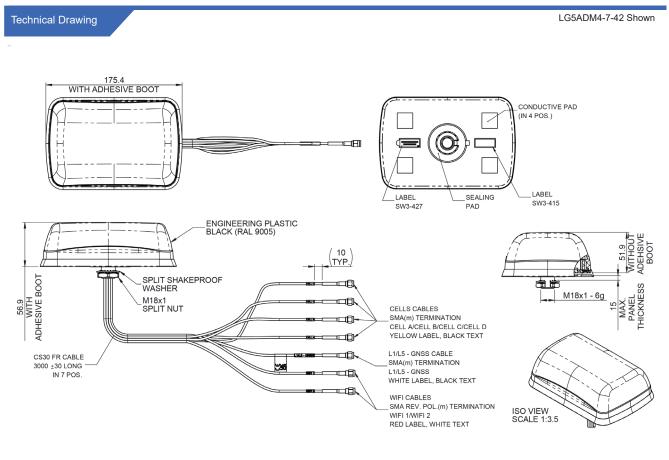
Low Profile IOT Antenna 4x4 MiMo 698-960/1427-4200MHz Up to 4x4 MiMo WiFi 6e (Optional) GPS/GNSS L1/L5 or L1 only 30dB / 26dB LNA (Optional) Meets IK10 and IP69K

The L[X]A[X]M4-7-42[-X] MiMo antenna is designed to be a one size fits all solution for IOT applications. The robust low profile housing contains 4x 4G LTE / 5G NR elements covering 698-960/1427-4200MHz. Versions of the product also contain up to 4x optional WiFi elements supporting WiFi 6e 2.4/5.150-7.125GHz and optional L1 only or L1/L5 GPS/GNSS.

The housing is constructed from robust, flame retardant, impact resistant plastic. The subtle, curved design makes the product hardert to vandalise and the IK10 rating ensures that the product is suitable for use in tough environments and devices located in public areas. The housing is UV stable and approved to IP69K for ingress protection.

The product is supplied with integrated low loss flame retardant cables approved to UN ECE R118 and fitted connectors offer plug and play connectivity for a huge range of devices.

The L[X]A[X]M4-7-42[-X] can be installed on conductive or non-conductive panels without significant detriment to performance.



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L[X]A[X]M4-7-42[-X] -13/06/2023 V1



Product Data

Frequency RMP2/ MMP2/ Cell ATE 4 x 698-960 / 1427-4200 Frequency RMP2/ MMP2 GRS (ONSS 1x 1559-1612 Fysical VSWR Cell Elements <2.5.1 Writ Elements <2.5.1 solation** Cell Elements <2.61 Writ Elements <2.61 solation** Cell Elements <2.61 Writ Elements <2.61 was Input Power Sol0 Solation** Sol0 Sol Was Input Power Sol Sol Solation* Sol Sol Solation* Sol Sol Solation* Sol Sol Solation* Solo Sol Solation* Solo Solo Solation* Solo <th>Part No.</th> <th></th> <th></th> <th></th> <th></th>	Part No.							
Frequency RAMP			LGAQM4-7-42	LGADM4-7-42	LGAM4-742			
Image Mike 4x 2396-7125 2x 2366-7125 - GPS/GNSS 1x 1569-1612 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Electrical Data							
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GPS/GNSS 1x 1559-1612 Cell Elements <2.5.1	Frequency Range (MHz)	WiFi	4x 2396-7125	2x 2396-7125	-			
Viprical VSWR* WiFi Elements < 2:1 . solation** Cell Elements > 26dB (698-660MHz) / 212dB (1427-4200MHz) . Pattern Omn-directional - predence 500 . SPS/CNSS Data 5 . Preduency Range (MHz) 1559-1612 . SPS/CNSS Data 26dB . Preduency Range (MHz) 1559-1612 . SPS/CNSS Data 26dB . Voltage / Current 3-50 v17ma Typical . Polarisation Right Hand Circular . Voltage / Current 3-50 v17ma Typical . Polarisation 118 (4.64") . . Polarisation 118 (4.64") . . Polarisation 100 v175 t (6.9") . .	(11112)	GPS/GNSS		1x 1559-1612				
Mr. (Mr. (F) Elements < 2:1 . Solation** 26 dB (698-960MHz) / 212dB (1427-4200MHz) . Pattern Onni-directional . mpedance 5000 . SPS/GNS Data 5 . Prequency Range (MHz) 1559-1612 . mpedance 500 . NA Kain put Power (W) 5 . SPS/GNS Data . . Trequency Range (MHz) 1559-1612 . mpedance 500 . NA Gain 26dB . Polarisation 26dB . No fain (Lumounted) 56.9 (2.27) . No fain (Lumounted) 56.9 (2.27) . No fain (Lumounted) 18 (4.64") . No fain (Lumounted) 18 (4.64") . Serviconmental Secture . . Contract (Lamounted) . . . Operating Temp (°C)		Cell Elements		<2.5:1				
solation** Vifi Elements >25dB (2.4.7.125GHz) - Pattern Omni-directional 50Ω mpedance 50Ω 5 SPS/GNSS Dat 5 5 Prequency Range (M+z) 1559-1612 0 mpedance 50Ω 5 SPS/GNSS Dat 26dB 0 Prequency Range (M+z) 1559-1612 0 NA Gain 26dB 0 0 Oblage / Current 3.5 v17ma Typical 0 Polarisation Right Hand Circular 0 Mechanical Data 118 (4.64*) 0 Leggth 118 (4.64*) 0 Leggth 175.4 (6.9*) 0 Environmental Specification Lexan EXL 9330 0 Radome Aperization UV(UL 94) / UL 746C (F1) 0 Ingress Protection IP69K 0 0 Adome Material CS30 (Compliant to UN ECE R118) 0 Sable Daneter (mm) 2.8 (0.1*) 2.8 (0.1*) 0 Sable Length (m 2.8	Typical VSWR	WiFi Elements	< 2:1		-			
Vifit Elements >>25dB (2.4.7.125GHz) - Pattern Omni-directional Omni-directional mpedance 500 S00 Vakk Input Power (W) 5 S00 SPS/GNES Dear 5 S00 Prequency Range (MHz) 1559-1612 S00 Indegator 500 S00 NA Gain 26dB S00 Indegator 500 S00 NA Gain 26dB S00 NA Gain 26dB S00 NA Gain 26dB S00 Polarisation S6.9 (2.2°) S00 Polarisation S6.9 (2.2°) S00 Contensions (min) Width 118 (4.64°) Dirensions (min) Width 118 (4.64°) Canget Lecture Leagth S00 Protocomental Specification Leagth S00 Sadome Approvals V0 (UL) 490 / UL 7460 (F1) S00 Radome Approvals V0 (UL) 940 / UL 7460 (F1) S00 Radome Approvals S030 (Compil	Isolation**	Cell Elements	≥6dB (698-960MHz) / ≥12dB (1427-4200MHz)			
50Ω Max Input Power (W) 5 CPS/CMSS Dats 5 Trequency Range (MHz) 1559-1612 mpedance 50Ω LNA Gain 26dBB Voltage / Current 3-5v 17ma Typical Polarisation Right Hand Circular Mechanical Data 66.9 (2.2") Methanical Data 56.9 (2.2") Vidta 118 (4.64") Length 754 (6.9") Torrentental Specification 66.9 (2.0") Poterting Temp (°C) -40° / +65° C (40° / +185° F) Radome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) operating Temp (°C) -40° / +65° C (40° / +185° F) Radome Approvals V0 (UL 94) / UL 746C (F1) ngress Protection IP66K Matrial Resistance IK10 Mouting Data CS30 (Compliant to UN ECE R118) Table Type CS30 (Compliant to UN ECE R118) Cable Dannet (°T) 2.8 (0.1°) Cable Longth (°T) 3m (9.8) Cable Longth (°T) 3m (9.8) <td>ISUIALION</td> <td>Wifi Elements</td> <td>>25dB (2.4-7.</td> <td>125GHz)</td> <td>-</td>	ISUIALION	Wifi Elements	>25dB (2.4-7.	125GHz)	-			
Aka knput Power (W) 5 SPS/CNSS Data 1559-1612 Frequency Range (MHz) 1559-1612 mpedance 500 NA Gain 26dB Voltage / Current 3-5v 17ma Typical Polarisation Right Hand Circular Wethanical Data Mechanical Data 56.9 (2.2°) Otmensions (mm) Width 118 (4.64°) Length 118 (4.64°) Length 118 (4.64°) Concentral Spectration Levan EXL 9330 Radome Material Levan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) Ingress Protection IP69K Aradal Resistance K10 Kouting Data K10 Mouting Data S20 (Compliant to UN ECE R118) Cable Type CS30 (Compliant to UN ECE R118) Cable Diameter (mm) 2.8 (0.1°) Cable Length (m) 3m (9.8') Cable Length (m) 3m (9.8')	Pattern			Omni-directional				
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requency Range (MHz) 1559-1612 mpedance 50Ω LNA Gain 26dB Joltage / Current 3-5v 17ma Typical Polarisation Right Hand Circular Mechanical Data 118 (4.64") Length 175.4 (6.9") Polarisation 56.9 (2.2") Width 118 (4.64") Length 175.4 (6.9") Environmental Specification 440" / +85°C (-40" / +185°F) Radome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) orgense Protection IP69K Vandal Resistance IK10 Mounting Data CS30 (Compliant to UN ECE R118) Cable Type CS30 (Compliant to UN ECE R118) Cable Type QS30 (Compliant to UN ECE R118) Cable Length (m) 3m (9.8) Cable Length (m) 3m (9.8)	Max Input Power (N)		5				
MA Gain 50Ω INA Gain 26dB Voltage / Current 3-5v 17ma Typical Orlanisation Right Hand Circular Mechanical Data Right Hand Circular Mechanical Data 118 (4.64") Length 175.4 (6.9") Environmental Specification Lexan EXL 9330 Operating Temp (*C) -40° / +85°C (-40° / +185°F) Radome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) Ingress Protection IP69K Vandal Resistance IK10 Mounting Data Exing Fixing M18 (3/4") Mounting Bush Cable Type CS30 (Compliant to UN ECE R118) Cable Type CS30 (Compliant to UN ECE R118) Cable Length (m) 3m (9.8") Cable Length (m) 3m (9.8")	GPS/GNSS Data							
NA Gain 26dB Voltage / Current 3-5v 17ma Typical Olarisation Right Hand Circular Mechanical Data 56.9 (2.2") Vidth 118 (4.64") Length 175.4 (6.9") Environmental Specification 440° / +85°C (40° / +185°F) Cadome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) Ingress Protection IP69K Vandal Resistance IK10 Fixing M18 (3/4") Mounting Bush Fermination Data 2.8 (0.1") Cable Diameter (m) 2.8 (0.1") Cable Diameter (m) 2.8 (0.1") Cable Length (m) 3m (9.8") Gable Stance 3m (9.8") Cable Length (m) WiFi 4x Reverse Polarity SMA Plug	Frequency Range ((MHz)		1559-1612				
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Page assigned Right Hand Circular Mechanical Data 56.9 (2.2°) Dimensions (mm) 148 (4.64") Length 118 (4.64") Length 175.4 (6.9°) Environmental Specification -40° / +85°C (.40° / +185°F) Cadome Material Lexan EXL 9330 Radome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) Ingress Protection IP69K Voutting Data IK10 Voutting Data Sc300 (Compliant to UN ECE R118) Cable Type CS300 (Compliant to UN ECE R118) Cable Diameter (mm) 2.8 (0.1°) Cable Length (m) 3m (9.8') Gadie Length (m) 3m (9.8')	LNA Gain			26dB				
Mechanical Data Feight (unmounted) 56.9 (2.2") Width 118 (4.64") Length 175.4 (6.9") Environmental Specification Diperating Temp (°C) -40° / +85°C (40° / +185°F) Radome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) Ingress Protection IP69K Vandal Resistance IK10 Vounting Data IK10 Fixing M18 (3/4") Mounting Bush Fermination Data 2.8 (0.1") Cable Type CS30 (Compliant to UN ECE R118) Cable Length (m) 3m (9.8') Gable Length (m) 3m (9.8')	Voltage / Current			3-5v 17ma Typical				
Height (unmounted) 56.9 (2.2") Width 118 (4.64") Length 175.4 (6.9") Environmental specification Deperating Temp (* Colspan="2">- 4-0° / +85°C (-40° / +185°F) Radome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) Ingress Protection IP69K Vandal Resistance IK10 Voutting Data K18 (3/4") Mounting Bush Fermination Data CS30 (Compliant to UN ECE R118) Cable Type CS30 (Compliant to UN ECE R118) Cable Length (m 3m (9.8) Cable Length (m 3m (9.8) Fermination ViFi 4x Reverse Polarity SMA Plug 2x Reverse Polarity SMA Plug	Polarisation			Right Hand Circular				
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Length 175.4 (6.9°) Environmental Specification		Height (unmounted)		56.9 (2.2")				
Environmental Specification Operating Temp (°C) -40° / +85°C (-40° / +185°F)	Dimensions (mm)	Width	118 (4.64")					
Operating Temp (°C) -40° / +85°C (-40° / +185°F) Radome Material Lexan EXL 9330 Radome Approvals V0 (UL 94) / UL 746C (F1) Ingress Protection IP69K /andal Resistance IK10 Mounting Data IK10 Fixing M18 (3/4") Mounting Bush Fermination Data CS30 (Compliant to UN ECE R118) Cable Type CS30 (Compliant to UN ECE R118) Cable Diameter (mm) 3m (9.8) Cable Length (m) 3m (9.8) Fermination 4G/5G 4x SMA Plug (m) ViFi 4x Reverse Polarity SMA Plug 2x Reverse Polarity SMA Plug		Length		175.4 (6.9")				
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IP69K /andal Resistance IK10 /andal Resistanc	Radome Material			Lexan EXL 9330				
IP69K /andal Resistance IK10 /andal Resistanc	Radome Approvals	;		V0 (UL 94) / UL 746C (F1)				
Mounting Data Mill (3/4") Mounting Bush Fixing M18 (3/4") Mounting Bush Fermination Data CS30 (Compliant to UN ECE R118) Cable Type CS30 (Compliant to UN ECE R118) Cable Diameter (m) 2.8 (0.1") Cable Length (m) 3m (9.8') 4G/5G 4x SMA Plug (m) Fermination WiFi 4x Reverse Polarity SMA Plug -	Ingress Protection							
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Cable Type CS30 (Compliant to UN ECE R118) Cable Diameter (mm) 2.8 (0.1") Cable Length (m) 3m (9.8') 4G/5G 4x SMA Plug (m) Fermination WiFi 4x Reverse Polarity SMA Plug -	Fixing			M18 (3/4") Mounting Bush				
Cable Diameter (mm) 2.8 (0.1") Cable Length (m) 3m (9.8') 4G/5G 4x SMA Plug (m) Termination WiFi 4x Reverse Polarity SMA Plug -	Termination Data							
Cable Length (m) 3m (9.8') 4G/5G 4x SMA Plug (m) Termination WiFi 4x Reverse Polarity SMA Plug 2x Reverse Polarity SMA Plug	Cable Type		C	S30 (Compliant to UN ECE R118)				
4G/5G 4x SMA Plug (m) Termination WiFi 4x Reverse Polarity SMA Plug 2x Reverse Polarity SMA Plug	Cable Diameter (m	m)		2.8 (0.1")				
Termination WiFi 4x Reverse Polarity SMA Plug 2x Reverse Polarity SMA Plug -	Cable Length (m)		3m (9.8')					
		4G/5G		4x SMA Plug (m)				
GPS/GNSS 1x SMA Plug (m)	Termination	WiFi	4x Reverse Polarity SMA Plug	2x Reverse Polarity SMA Plug	-			
		GPS/GNSS		1x SMA Plug (m)				

*Across 90% of relevant bands when measured in free space with 0.5m (20") of CS30 cable **Worst case isolation measured for LGADM4-7-42 in free space with 0.5m (1.5') CS30 cable

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Product Data

Part No.							
		LG5AQM4-7-42	LG5ADM4-7-42	LG5AM4-7-42			
Electrical Data							
	Cell /LTE		4x 698-960 / 1427-4200				
Frequency Range (MHz)	WiFi	4x 2396-7125	2x 2396-7125	-			
< ',	GPS/GNSS		1x 1164-1189 / 1559-1612				
Typical VSWR*	Cell Elements		<2.5:1				
	WiFi Elements	< 2	< 2:1				
Isolation**	Cell Elements	≥6dI	3 (698-960MHz) / ≥12dB (1427-4200MHz)				
130141011	Wifi Elements	>25dB (2.4-	7.125GHz)	-			
Pattern			Omni-directional				
Impedance			50Ω				
Max Input Power (\	W)		5				
GPS/GNSS Data							
Frequency Range	(MHz)		1164-1189 / 1559-1612				
Impedance			50Ω				
LNA Gain			30dB / 26dB				
Voltage / Current			3-5v 37ma Typical				
Polarisation			Right Hand Circular				
Mechanical Data							
	Height		56.9 (2.2")				
Dimensions (mm)	Width		118 (4.64")				
	Length		175.4 (6.9")				
Environmental Spe	ecification						
Operating Temp (°0	C)		-40° / +85°C (-40° / +185°F)				
Radome Material			Lexan EXL 9330				
Radome Approvals	3		V0 (UL 94) / UL 746C (F1)				
Ingress Protection			IP69K				
Vandal Resistance			IK10				
Mounting Data							
Fixing			M18 (3/4") Mounting Bush				
Termination Data							
Cable Type			CS30 (Compliant to UN ECE R118)				
Cable Diameter (mm)			2.8 (0.1")				
Cable Length (m)			3m (9.8')				
	4G/5G		4x SMA Plug (m)				
Termination	WiFi	4x Reverse Polarity SMA Plug	2x Reverse Polarity SMA Plug	-			
	GPS/GNSS		1x SMA Plug (m)				

*Across 90% of relevant bands when measured in free space with 0.5m (20") of CS30 cable **Worst case isolation measured for LGADM4-7-42 in free space with 0.5m (1.5') CS30 cable



Product Data

Part No.							
		LPAQM4-7-42	LPADM4-7-42	LPAM4-7-42			
Electrical Data							
Frequency Range	Cell /LTE		4x 698-960 / 1427-4200				
(MHz)	WiFi	4x 2396-7125	2x 2396-7125	-			
Typical VSWR*	Cell Elements		<2.5:1				
	WiFi Elements	< 2:1		-			
Isolation**	Cell Elements	≥6dB (698-960MHz) / ≥12dB (1427-4200MHz)				
130/41/011	Wifi Elements	>25dB (2.4-7.1	l25GHz)	-			
Pattern			Omni-directional				
Impedance			50Ω				
Max Input Power (W	N)		5				
Mechanical Data							
	Height		56.9 (2.2")				
Dimensions (mm)	Width	118 (4.64")					
	Length		175.4 (6.9")				
Environmental Spe	cification						
Operating Temp (°C	C)		-40° / +85°C (-40° / +185°F)				
Radome Material		Lexan EXL 9330					
Radome Approvals		V0 (UL 94) / UL 746C (F1)					
Ingress Protection			IP69K				
Vandal Resistance			IK10				
Mounting Data							
Fixing			M18 (3/4") Mounting Bush				
Termination Data							
Cable Type		C	CS30 (Compliant to UN ECE R118)				
Cable Diameter (mm)			2.8 (0.1")				
Cable Length (m)			3m (9.8')				
	4G/5G		4x SMA Plug (m)				
Termination	WiFi	4x Reverse Polarity SMA Plug	2x Reverse Polarity SMA Plug	-			

*Across 90% of relevant bands when measured in free space with 0.5m (20") of CS30 cable **Worst case isolation measured for LGADM4-7-42 in free space with 0.5m (1.5') CS30 cable

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Electrical Data- Cell-

Free space					
Measurement Conditions	4G/5G Anten	nas			
LGADM4-7-42 measured in free space with 0.5m (1.6') CS30 Cable	Frequency Range (MHz)	LTE Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
	699-798	12,13, 14 17,28	Cell A	0.8	45
			Cell B	-0.2	45
			Cell C	-0.2	45
			Cell D	-0.1	46
	007 000	- /	Cell A	1.8	50
	807-862	5,19,20,26,27	Cell B	0.5	50
+			Cell C	0.7	50
			Cell D	0.6	52
			Cell A	1.9	53
	880-960	8	Cell B	1.3	57
			Cell C	1.6	53
			Cell D	1.6	56
			Cell A	1.3	40
× · · ·	1427-1518	11, 21, 74,75,76	Cell B	1.8	46
			Cell C	1.0	35
			Cell D	1.5	45
	1710-1920	2,3,4,9,25,35, 39,66	Cell A	2.2	52
			Cell B	2.0	47
			Cell C	2.2	48
			Cell D	1.2	44
	1920-2170		Cell A	3.7	56
		1,23	Cell B	2.5	48
			Cell C	3.9	55
			Cell D	2.2	47
		30,40	Cell A	4.4	63
	2300-2400		Cell B	1.3	53
			Cell C	4.5	60
			Cell D	1.4	51
			Cell A	5.4	64
	2496-2690	7,38,41	Cell B	3.3	53
			Cell C	5.2	61
			Cell D	2.6	54
	3300-4200	00-4200 22,42,43,48,77, 78,79	Cell A	6.3	65
			Cell B	4.5	47
			Cell C	4.9	62
			Cell D	4.4	47

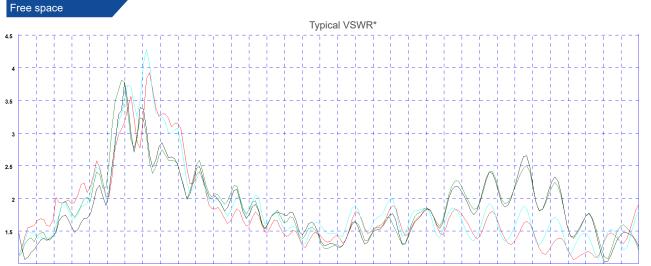
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					Electrical Data - WiFi-Free Space
Measurement Conditions	WiFi Antenna	s			
LGADM4-7-42 measured in free space with 0.5m (1.6') CS30 Cable	Frequency Range (MHz)	WiFi Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
	2396-2485	2.5GHz	WiFi 1	3.6	60
			WiFi 2	3.4	57
	5450 5050	UNII-1	WiFi 1	6.6	64
	5150-5250	UNII-1	WiFi 2	6.2	61
	5050 5050		WiFi 1	6.3	63
	5250-5350	UNII-2A	WiFi 2	6.6	61
	5470-5725	UNII-2B	WiFi 1	6.1	61
			WiFi 2	6.5	55
	5725-5900	UNII-3	WiFi 1	6.0	65
			WiFi 2	6.2	56
	5845-5885	UNII-4	WiFi 1	5.3	64
			WiFi 2	5.5	55
	5935-6415	UNII-5	WiFi 1	5.3	63
			WiFi 2	5.3	57
	0405 0545	6515 UNII-6	WiFi 1	5.4	61
	6435-6515		WiFi 2	5.5	60
	6535-6875	UNII-7	WiFi 1	5.2	57
			WiFi 2	6.2	58
			WiFi 1	4.8	51
	6875-7125	UNII-8	WiFi 2	5.6	58

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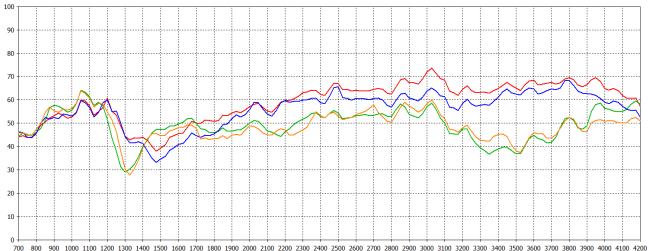
L[X]A[X]M4-7-42[-X]

Electrical Data- Cell-



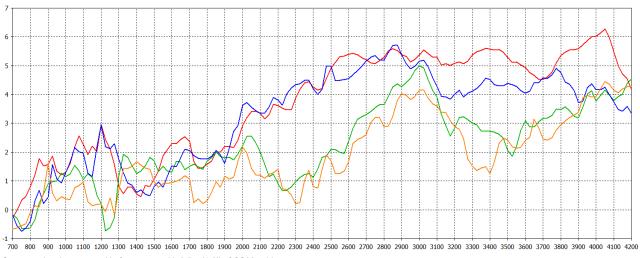






700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 4100 4200 *Efficiency measured in free space with 0.5m (1.6') of CS30 cable

Typical Swept Peak Gain*



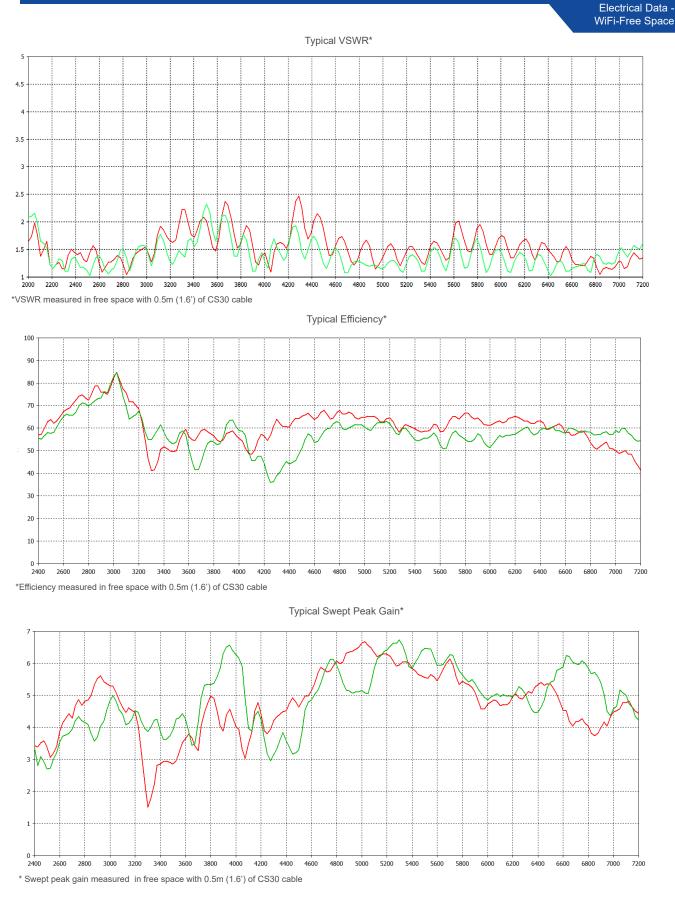
* Swept peak gain measured in free space with 0.5m (1.6') of CS30 cable

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L[X]A[X]M4-7-42[-X] -13/06/2023 V1 Page 7

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X]A[X]M4-/-42[-X]



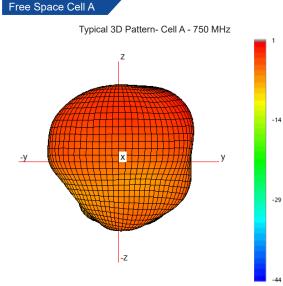
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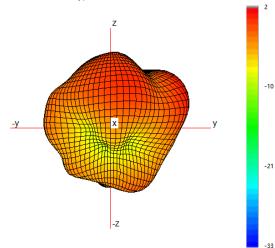
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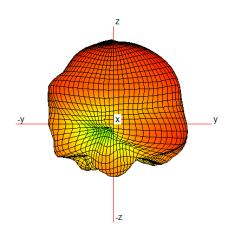
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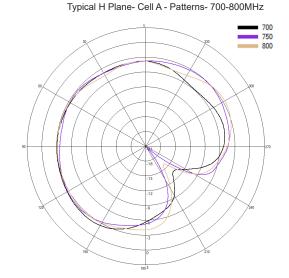


Typical 3D Pattern- Cell A - 850 MHz

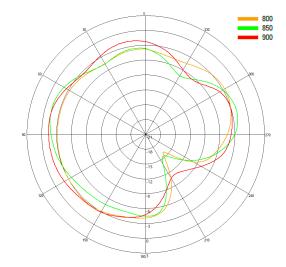


Typical 3D Pattern- Cell A - 1475 MHz

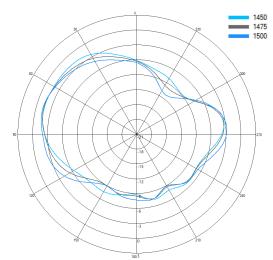




Typical H Plane- Cell A - Patterns- 800-900MHz



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



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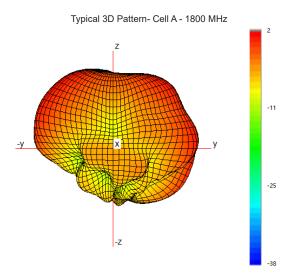
L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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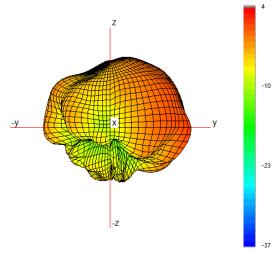
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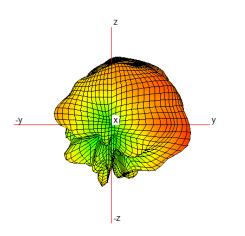
3D Pattern Data in Free Space Cell A



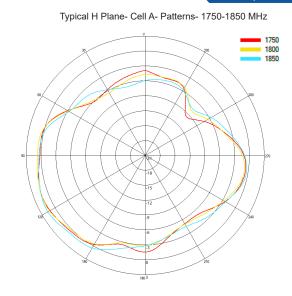
Typical 3D Pattern- Cell A - 2150 MHz



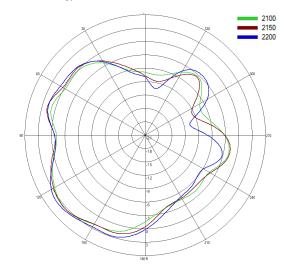
Typical 3D Pattern- Cell A - 2350 MHz



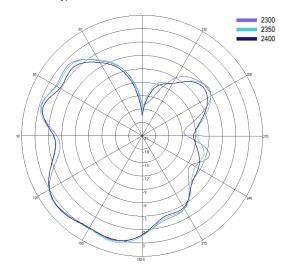
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Typical H Plane- Cell A- Patterns- 2100-2200 MHz



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



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L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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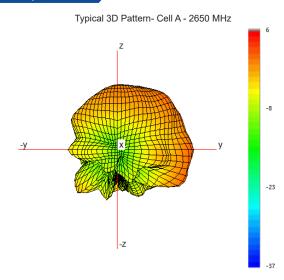
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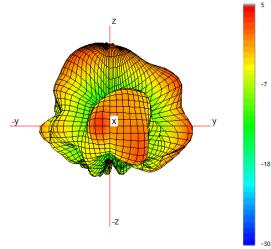
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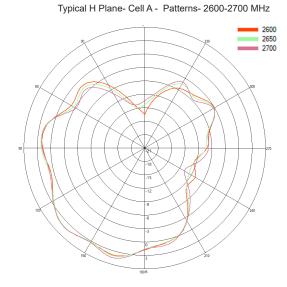
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3D Pattern Data in Free Space Cell A

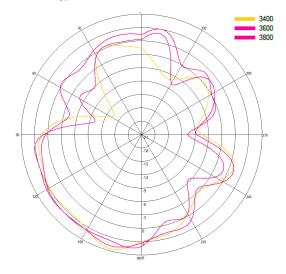


Typical 3D Pattern- Cell A - 3600 MHz



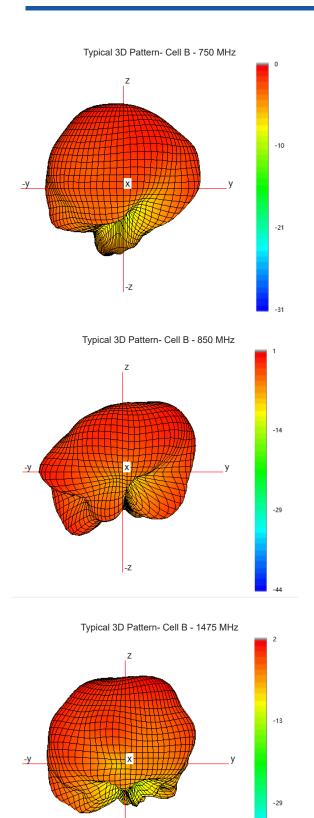


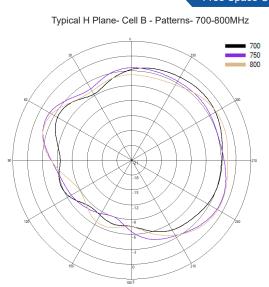
Typical H Plane- Cell A - Patterns- 3400-3800 MHz



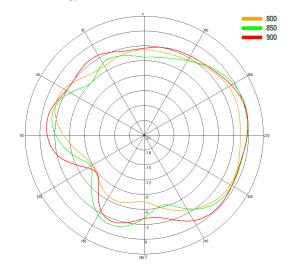
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3D Pattern Data in Free Space Cell B

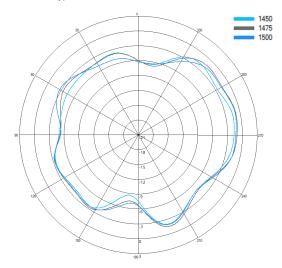




Typical H Plane- Cell B - Patterns- 800-900MHz



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



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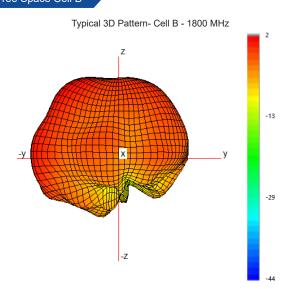
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L[X]A[X]M4-7-42[-X] -13/06/2023 V1

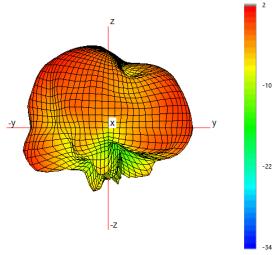
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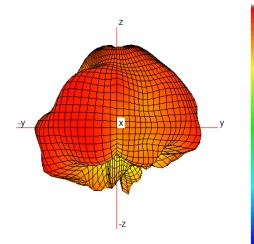
3D Pattern Data in Free Space Cell B

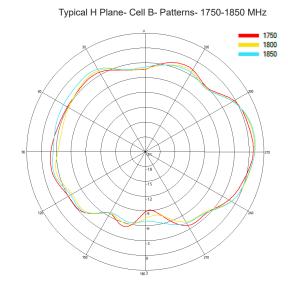


Typical 3D Pattern- Cell B - 2150 MHz

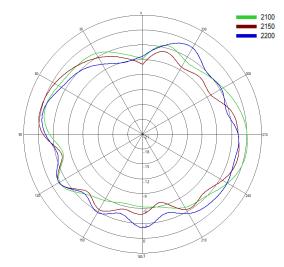


Typical 3D Pattern- Cell B - 2350 MHz

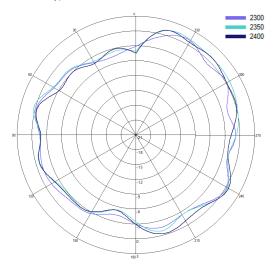




Typical H Plane- Cell B- Patterns- 2100-2200 MHz



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



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L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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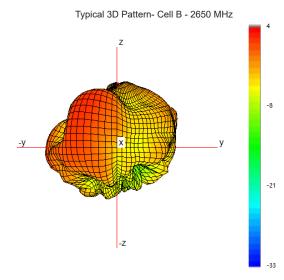
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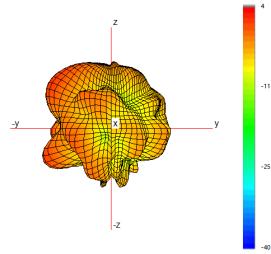
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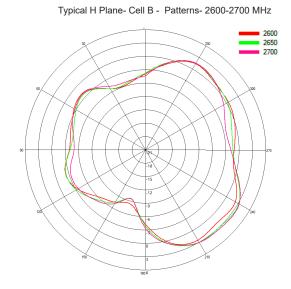
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3D Pattern Data in Free Space Cell B

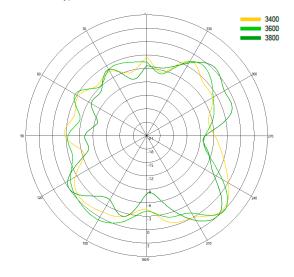


Typical 3D Pattern- Cell B - 3600 MHz





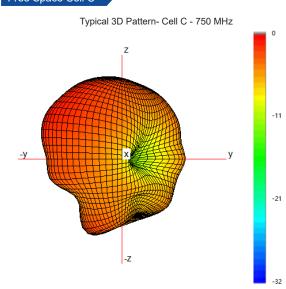
Typical H Plane- Cell B - Patterns- 3400-3800 MHz



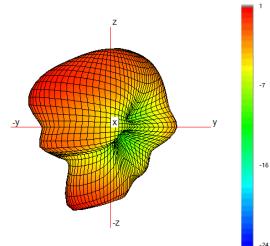
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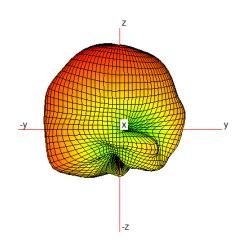
3D Pattern Data in Free Space Cell C

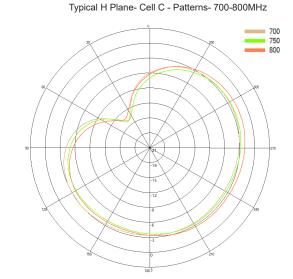


Typical 3D Pattern- Cell C - 850 MHz

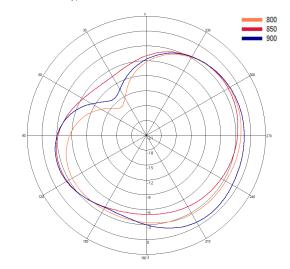


Typical 3D Pattern- Cell C - 1475 MHz

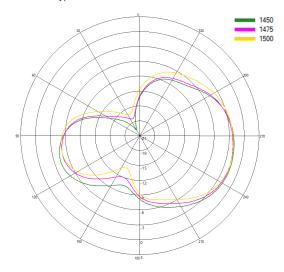




Typical H Plane- Cell C - Patterns- 800-900MHz



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



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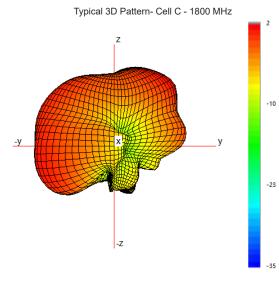
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-24

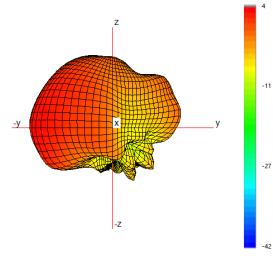
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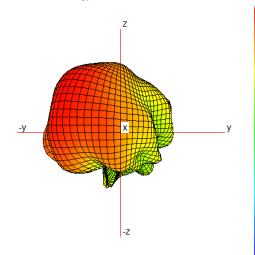
3D Pattern Data in Free Space Cell C



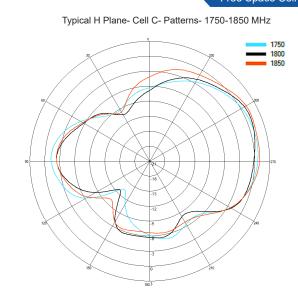
Typical 3D Pattern- Cell C - 2150 MHz



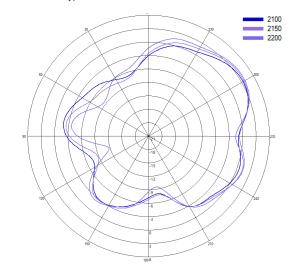
Typical 3D Pattern- Cell C - 2350 MHz



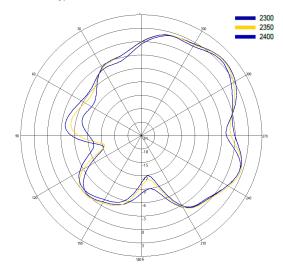




Typical H Plane- Cell C- Patterns- 2100-2200 MHz



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



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L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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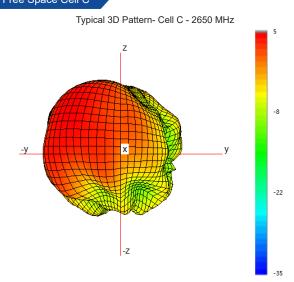
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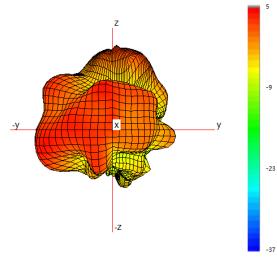
L[X]A[X]M4-7-42[-X]

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

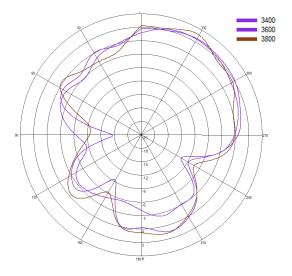
3D Pattern Data in Free Space Cell C



Typical 3D Pattern- Cell C - 3600 MHz

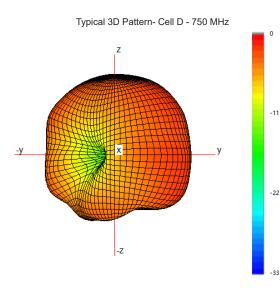


Typical H Plane- Cell C - Patterns- 3400-3800 MHz



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3D Pattern Data in Free Space Cell D



Typical 3D Pattern- Cell D - 850 MHz

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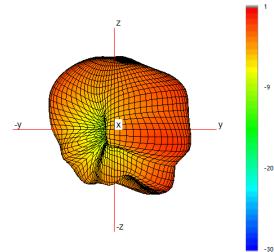
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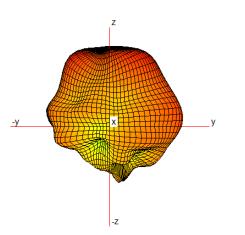
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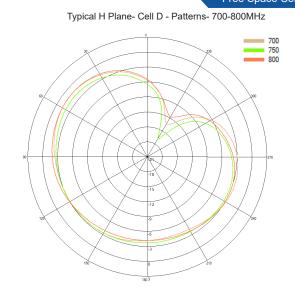
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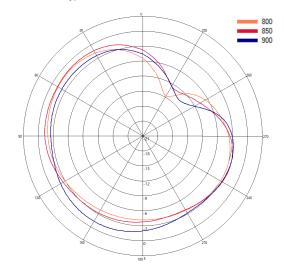


Typical 3D Pattern- Cell D - 1475 MHz

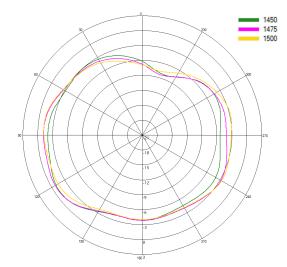




Typical H Plane- Cell D - Patterns- 800-900MHz



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

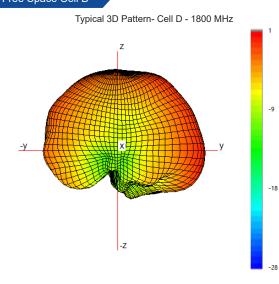


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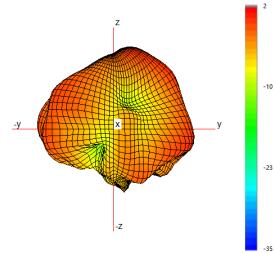
L[X]A[X]M4-7-42[-X] -13/06/2023 V1

L[X]A[X]M4-7-42[-X]

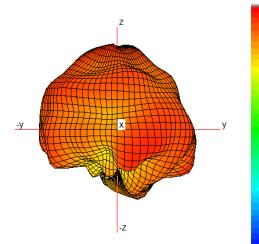
3D Pattern Data in Free Space Cell D



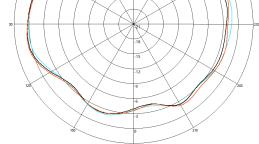
Typical 3D Pattern- Cell D - 2150 MHz



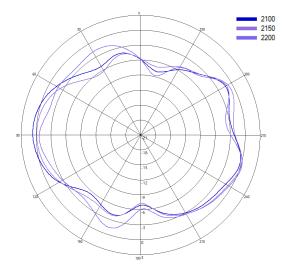
Typical 3D Pattern- Cell D - 2350 MHz



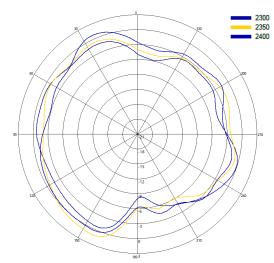
Typical H Plane- Cell D- Patterns- 1750-1850 MHz



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



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



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L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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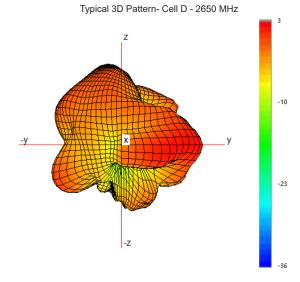
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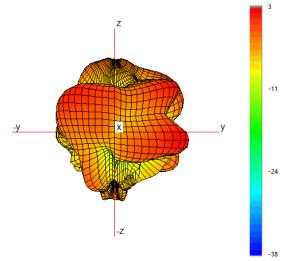
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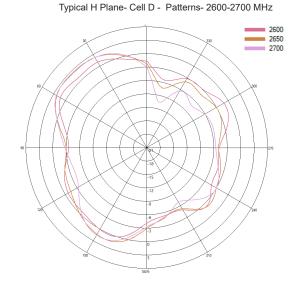
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3D Pattern Data in Free Space Cell D

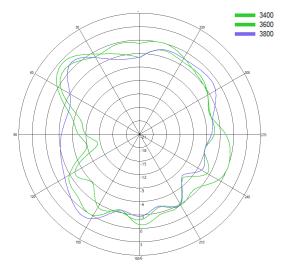


Typical 3D Pattern- Cell D - 3600 MHz





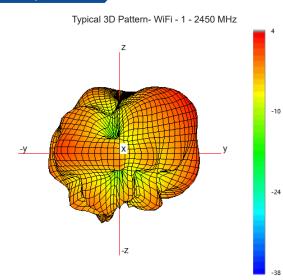
Typical H Plane- Cell D - Patterns- 3400-3800 MHz



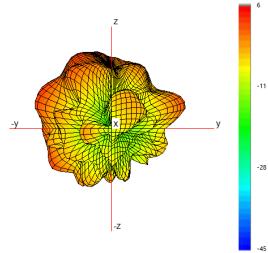
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L[X]A[X]M4-7-42[-X]

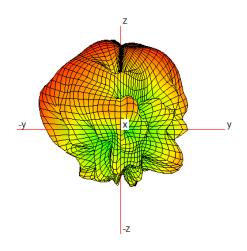
WiFi Pattern-Data in Free Space -WiFi -1



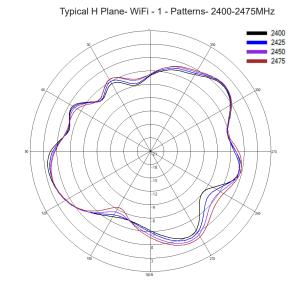
Typical 3D Pattern- WiFi - 1 - 5500 MHz



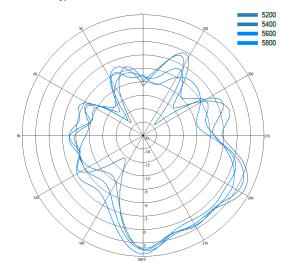
Typical 3D Pattern- WiFi - 1 - 6500 MHz



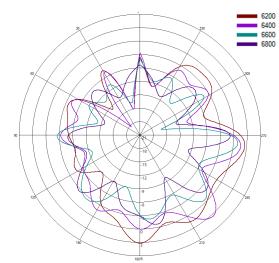




Typical H Plane- WiFi - 1 - Patterns- 5200-5800MHz



Typical H Plane- WiFi - 1 - Patterns- 6200-6800MHz



L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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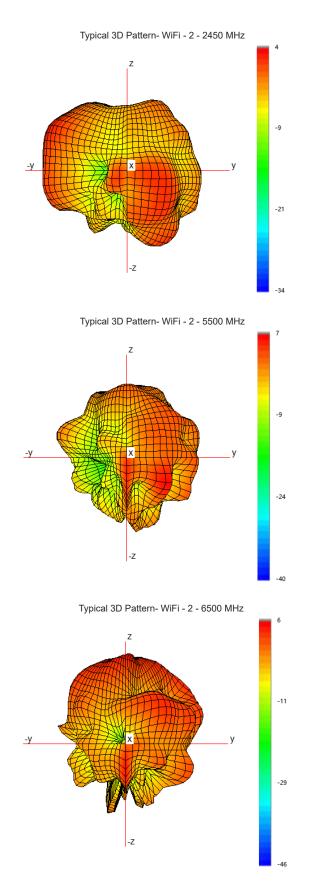
-35

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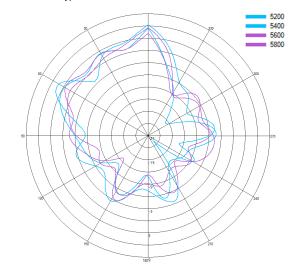
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WiFi Pattern-Data in Free Space -WiFi -2

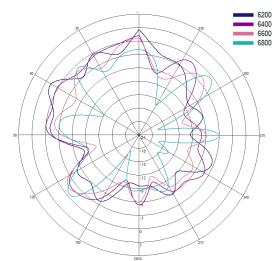


Typical H Plane- WiFi - 2 - Patterns- 2400-2475MHz

Typical H Plane- WiFi - 2 - Patterns- 5200-5800MHz



Typical H Plane- WiFi - 2 - Patterns- 6200-6800MHz



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Electrical Data Cell on Ground Plane

Measurement Conditions	4G/5G Antennas				
LGADM4-7-42 measured on 400x400mm (1.3'x1.3')	Frequency Range		Antenna	Peak Gain (dBi)	Efficiency (%)
ground plane with 0.5m (1.6') CS30 Cable	(MHz) 699-798	12,13, 14 17,28	Element Cell A	3.5	44
			Cell B	3.0	44
			Cell C	3.7	40
			Cell D	2.4	46
			Cell A	3.8	46
	807- 862	5,19,20,26,27	Cell B	4.0	49
÷			Cell C	3.5	43
			Cell D	3.9	50
			Cell A	4.2	64
	880-960	8	Cell B	4.2	55
			Cell C	4.5	59
			Cell D	3.9	56
			Cell A	3.3	31
×	1427-1518	11, 21, 74,75,76	Cell B	4.4	47
HERE AND			Cell C	3.3	35
			Cell D	4.1	46
		2,3,4,9,25,35, 39,66	Cell A	5.6	54
	1710-1920		Cell B	4.8	47
			Cell C	5.0	49
			Cell D	4.4	47
			Cell A	7.6	61
	1920-2170	1,23	Cell B	5.9	49
			Cell C	7.1	58
			Cell D	5.2	49
		00.40	Cell A	8.6	64
	2300-2400		Cell B	6.1	49
			Cell C	7.8	61
			Cell D	5.5	51
	2496-2690		Cell A	7.8	57
	2490-2090		Cell B	7.2	56
			Cell C	7.5	59
			Cell D	6.5	54
	3300-4200	22,42,43,48,77, 78,79	Cell A	6.9	61
			Cell B	6.8	49
			Cell C	7.1	61
			Cell D	6.6	49

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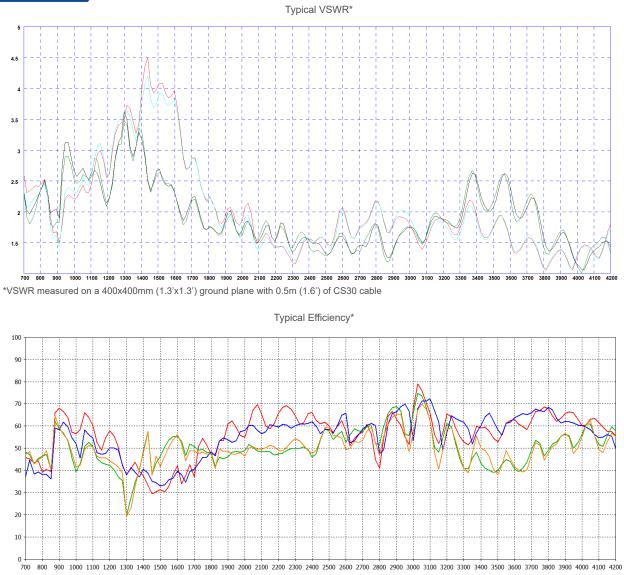
Electrical Data WiFi on Ground Plane

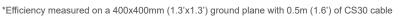
Measurement Conditions	WiFi Antenna	S			
LGADM4-7-42 measured on 400x400mm (1.3'x1.3') ground plane with 0.5m (1.6') CS30 Cable	Frequency Range (MHz)	WiFi Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
	2396-2485	2.5GHz	WiFi 1	5.7	55
			WiFi 2	5.6	47
			WiFi 1	7.8	57
	5150-5250	UNII-1	WiFi 2	8.1	59
	5050 5050		WiFi 1	8.0	57
	5250-5350	UNII-2A	WiFi 2	8.6	60
+	5470 5705		WiFi 1	6.7	55
	5470-5725	UNII-2B	WiFi 2	7.0	52
	5725-5900	UNII-3	WiFi 1	5.9	60
			WiFi 2	6.6	55
	5845-5885	UNII-4	WiFi 1	5.8	58
			WiFi 2	6.0	53
	5935-6415	UNII-5	WiFi 1	7.8	60
			WiFi 2	6.8	57
	6435-6515	UNII-6	WiFi 1	7.3	60
			WiFi 2	6.4	58
	6535-6875	UNII-7	WiFi 1	5.9	62
			WiFi 2	5.8	58
			WiFi 1	5.7	59
	6875-7125	UNII-8	WiFi 2	5.5	56

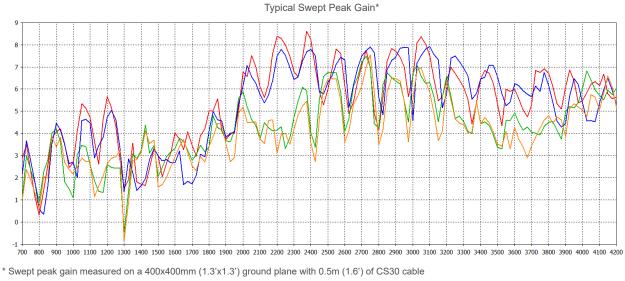


L[X]A[X]M4-7-42[-X]

Electrical Data Cell on Ground Plane







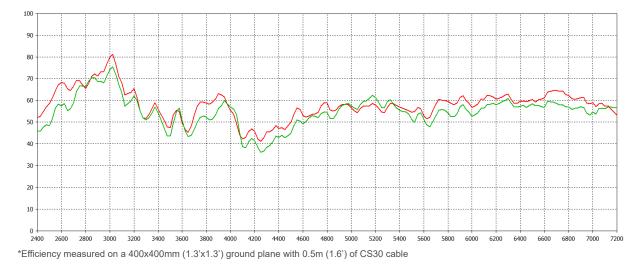
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Electrical Data WiFi on Ground Plane

Typical VSWR* 4.5 3.5 2.5 2 1.5 2200 2400 2600 2800 3000 3200 3400 3600 3800 4000 4200 4400 4600 4800 5000 5200 . 5400 5600 5800 6000 6200 2000 6400 6600 6800 7200 *VSWR measured on a 400x400mm (1.3'x1.3') ground plane with 0.5m (1.6') of CS30 cable

Typical Efficiency*





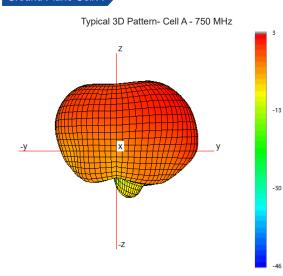
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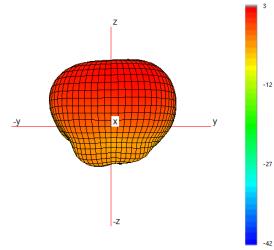
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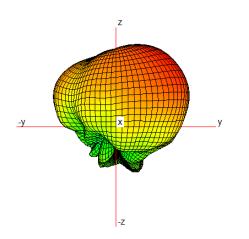
3D Pattern Data on Ground Plane Cell A

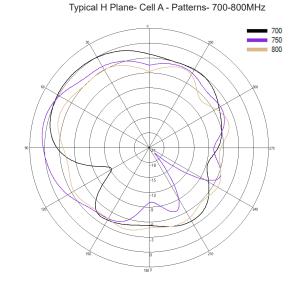


Typical 3D Pattern- Cell A - 850 MHz

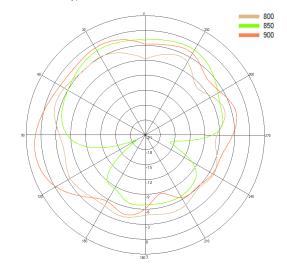


Typical 3D Pattern- Cell A - 1475 MHz

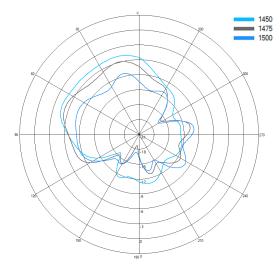




Typical H Plane- Cell A - Patterns- 800-900MHz



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



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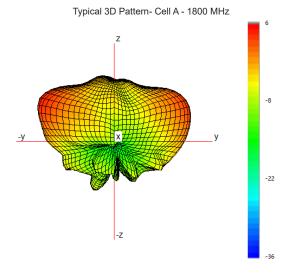
L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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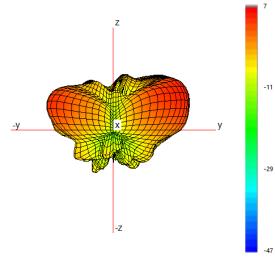
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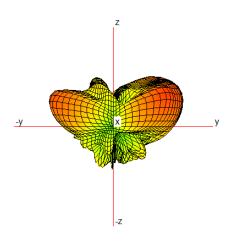
3D Pattern Data on Ground Plane Cell A



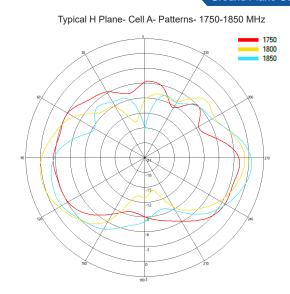
Typical 3D Pattern- Cell A - 2150 MHz



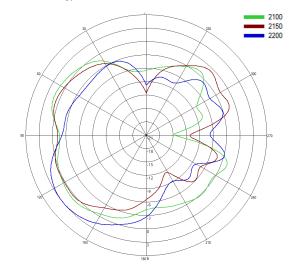
Typical 3D Pattern- Cell A - 2350 MHz



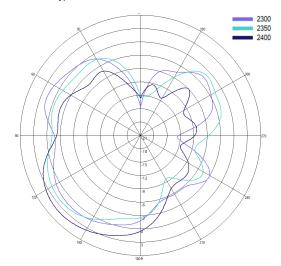
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Typical H Plane- Cell A- Patterns- 2100-2200 MHz



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



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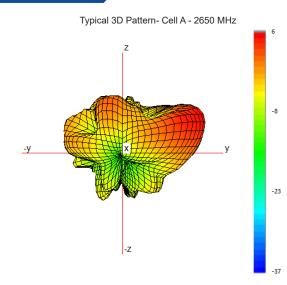
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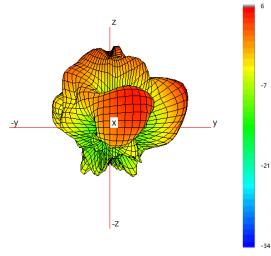
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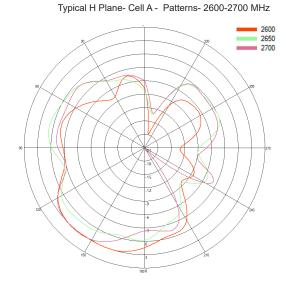
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3D Pattern Data on Ground Plane Cell A

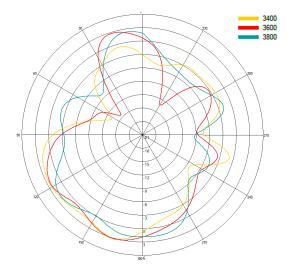


Typical 3D Pattern- Cell A - 3600 MHz



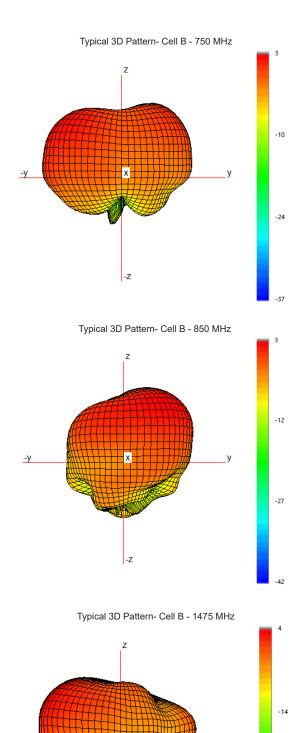


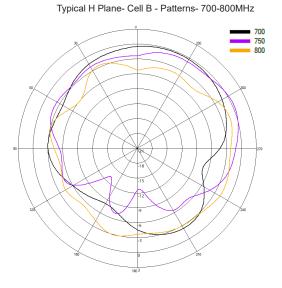
Typical H Plane- Cell A - Patterns- 3400-3800 MHz



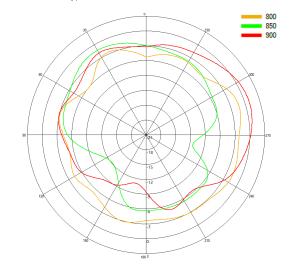
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3D Pattern Data on Ground Plane Cell B

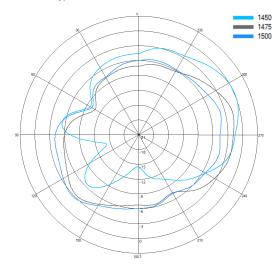




Typical H Plane- Cell B - Patterns- 800-900MHz



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



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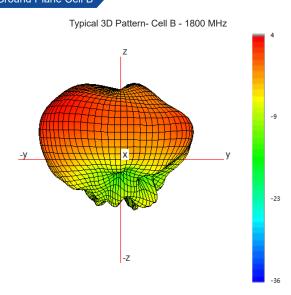
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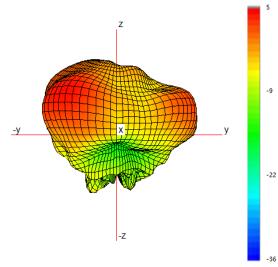


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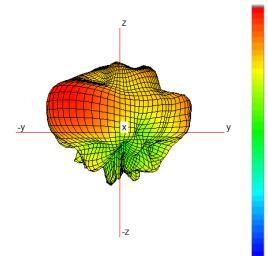
3D Pattern Data on Ground Plane Cell B



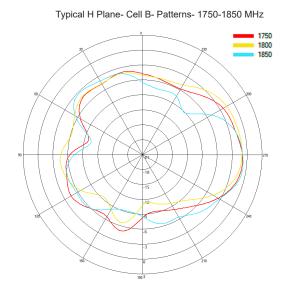
Typical 3D Pattern- Cell B - 2150 MHz



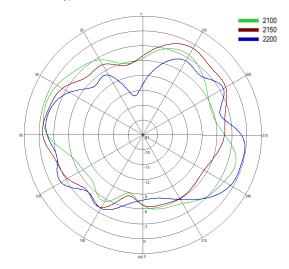
Typical 3D Pattern- Cell B - 2350 MHz



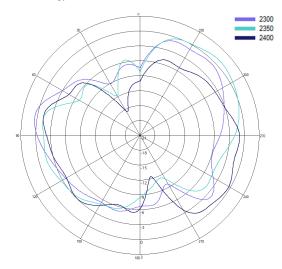




Typical H Plane- Cell B- Patterns- 2100-2200 MHz



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



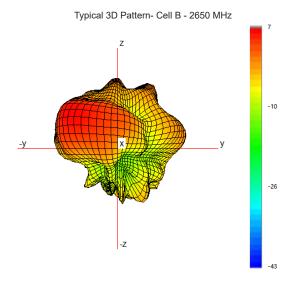
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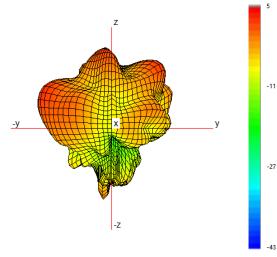
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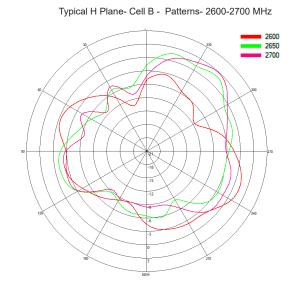
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3D Pattern Data on Ground Plane Cell B

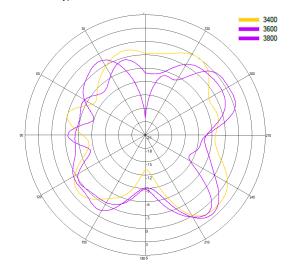


Typical 3D Pattern- Cell B - 3600 MHz





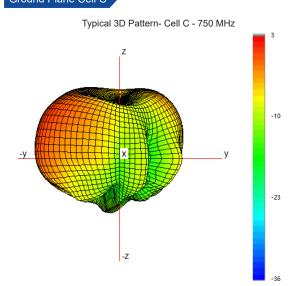
Typical H Plane- Cell B - Patterns- 3400-3800 MHz



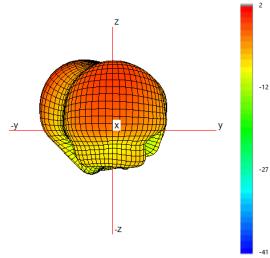
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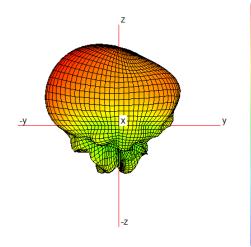
3D Pattern Data on Ground Plane Cell C

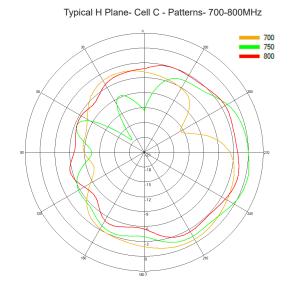


Typical 3D Pattern- Cell C - 850 MHz

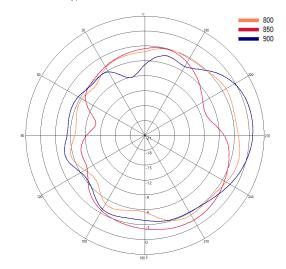


Typical 3D Pattern- Cell C - 1475 MHz

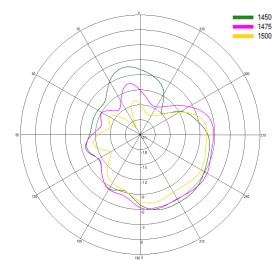




Typical H Plane- Cell C - Patterns- 800-900MHz



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



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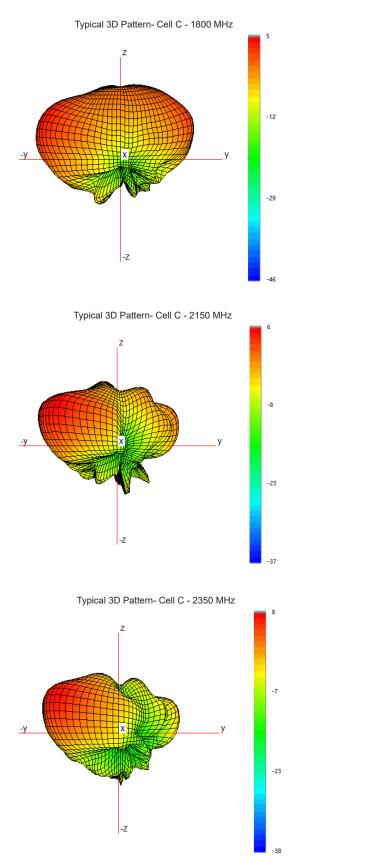
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-33

-52

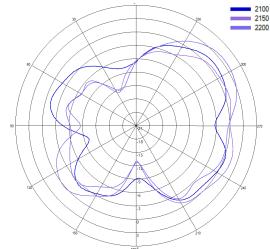
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3D Pattern Data on Ground Plane Cell C

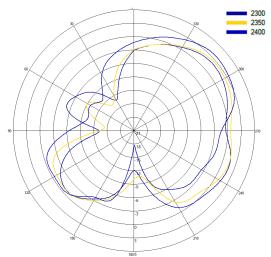


Typical H Plane- Cell C- Patterns- 1750-1850 MHz

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



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



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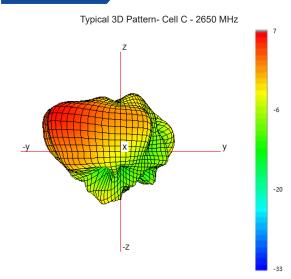
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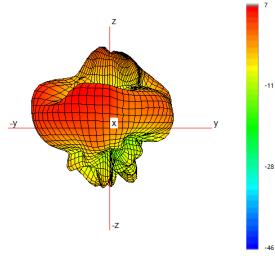
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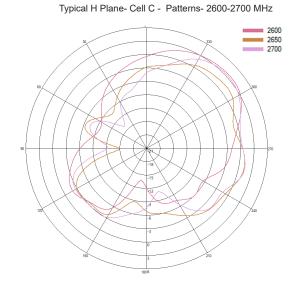
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3D Pattern Data on Ground Plane Cell C

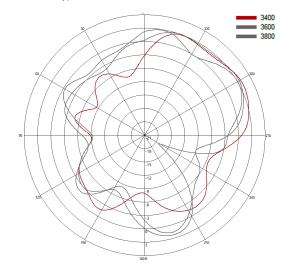


Typical 3D Pattern- Cell C - 3600 MHz



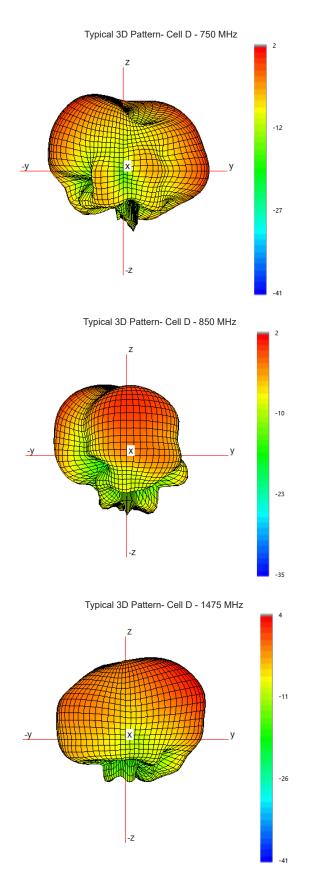


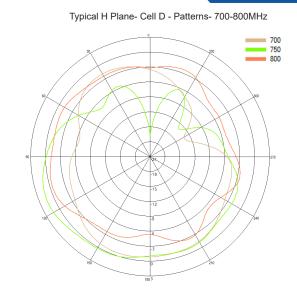
Typical H Plane- Cell C - Patterns- 3400-3800 MHz



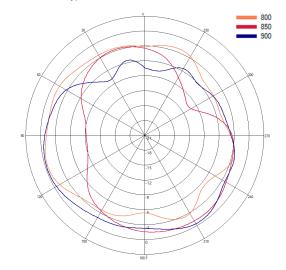
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3D Pattern Data on Ground Plane Cell D

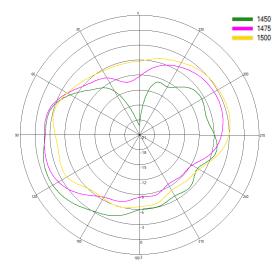




Typical H Plane- Cell D - Patterns- 800-900MHz



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



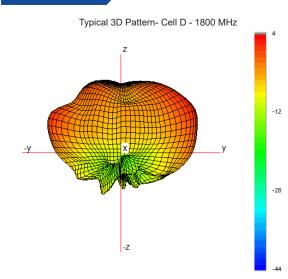
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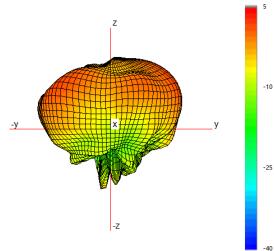
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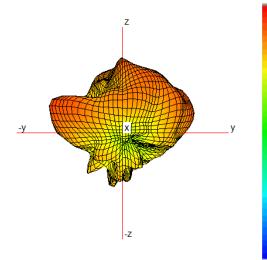
3D Pattern Data on Ground Plane Cell D

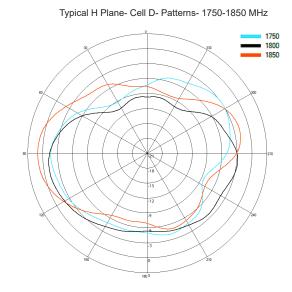


Typical 3D Pattern- Cell D - 2150 MHz

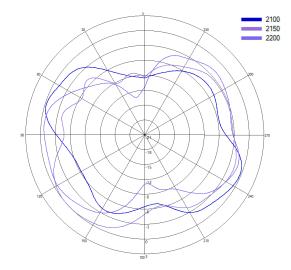


Typical 3D Pattern- Cell D - 2350 MHz

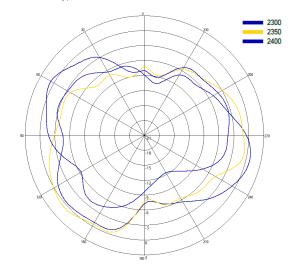




Typical H Plane- Cell D- Patterns- 2100-2200 MHz



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



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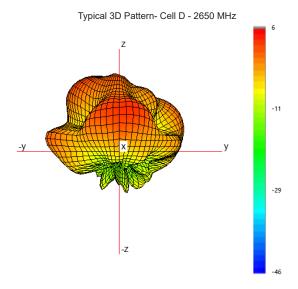
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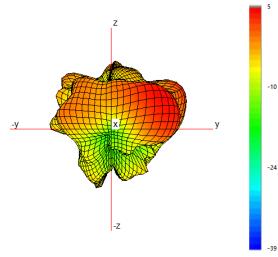
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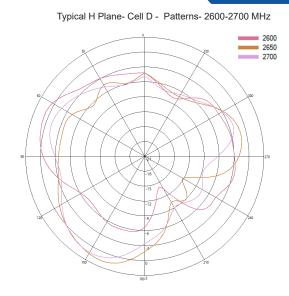
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3D Pattern Data on Ground Plane Cell D

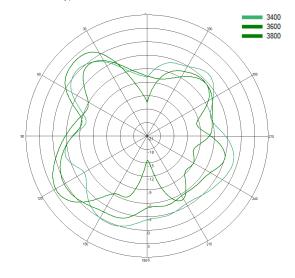


Typical 3D Pattern- Cell D - 3600 MHz





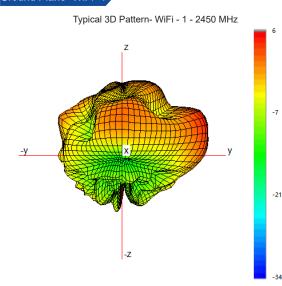
Typical H Plane- Cell D - Patterns- 3400-3800 MHz



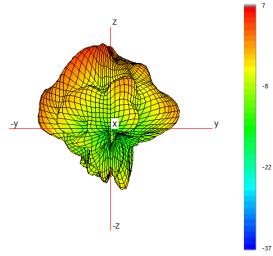
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L[X]A[X]M4-7-42[-X]

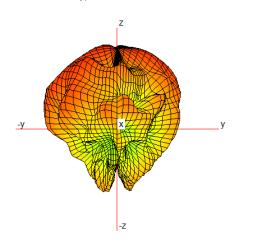
WiFi Pattern-Data on Ground Plane -WiFi -1

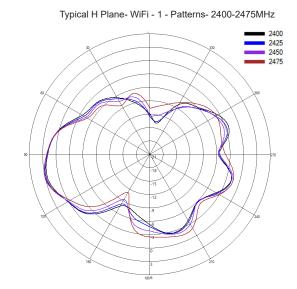


Typical 3D Pattern- WiFi - 1 - 5500 MHz

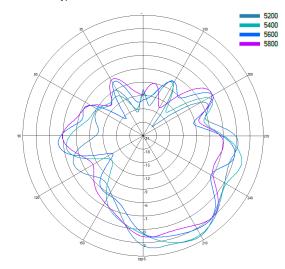


Typical 3D Pattern- WiFi - 1 - 6500 MHz

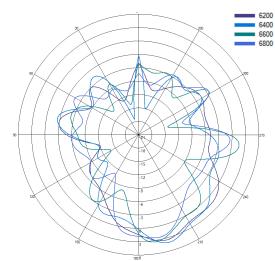




Typical H Plane- WiFi - 1 - Patterns- 5200-5800MHz



Typical H Plane- WiFi - 1 - Patterns- 6200-6800MHz



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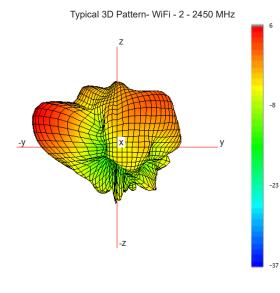
L[X]A[X]M4-7-42[-X] -13/06/2023 V1

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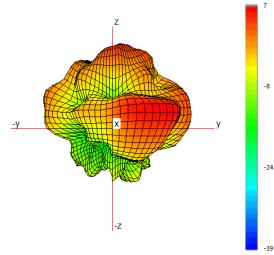
-34

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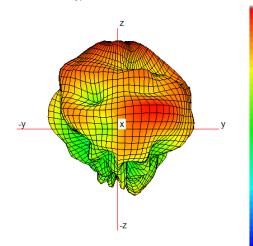
WiFi Pattern-Data on Ground Plane -WiFi -2



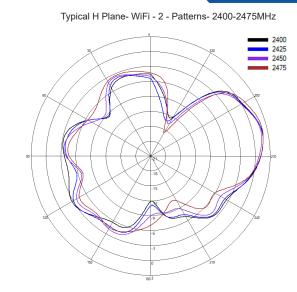
Typical 3D Pattern- WiFi - 2 - 5500 MHz



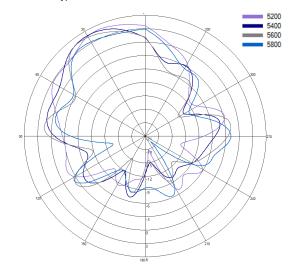
Typical 3D Pattern- WiFi - 2 - 6500 MHz



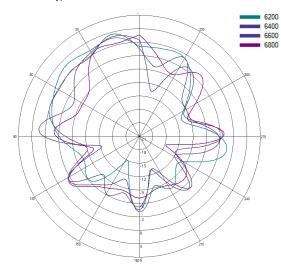




Typical H Plane- WiFi - 2 - Patterns- 5200-5800MHz



Typical H Plane- WiFi - 2 - Patterns- 6200-6800MHz



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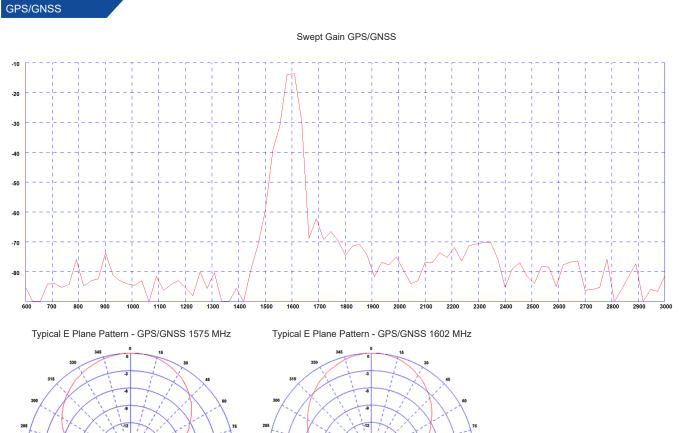
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L[X]A[X]M4-7-42[-X]

Electrical Data- L1

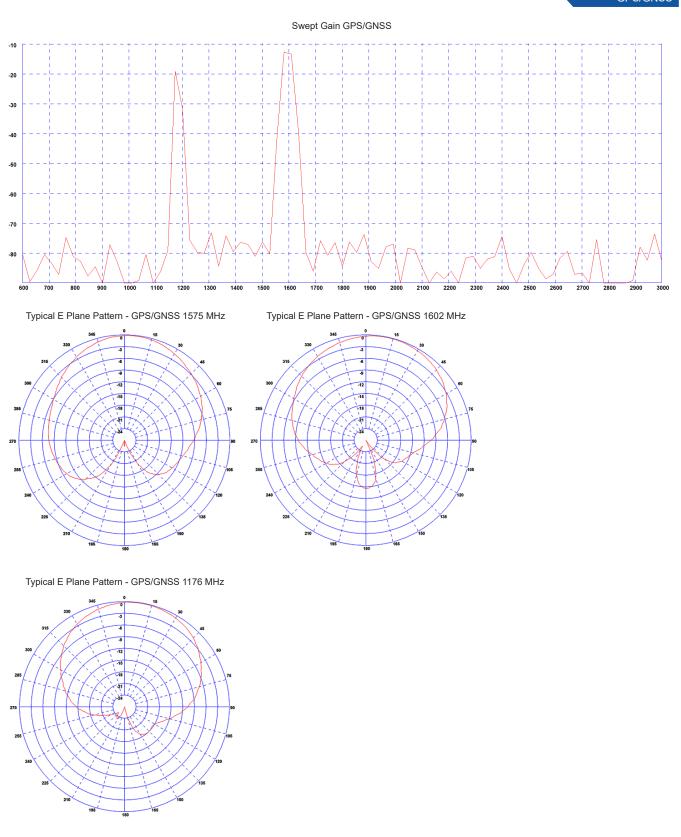
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GPS/GNSS Measurements taken on 190x190mm (7.4" x 7.4") ground plane excluding cable loss



Electrical Data- L1/L5 GPS/GNSS



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

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