GPS[X]D4[X]-6-60[-X]





#### GPS[X]D4[X]-6-60[-X]

- 4x4 MiMo Sharkfin for 4G/5G
- L1 GPS/GNSS with advanced filtering (Optional)
- Up to 4x WiFi elements covering WiFi 6e (Optional)

The GPS[X]D4[X]-6-60[-X] is advanced 4G/5G, GPS/GNSS and WiFi antenna with a dual sharkfin style housing. The housing contains a 4x4 MiMo antenna function for 4G/5G (617-960/1427-6000MHz), up to 4x WiFi elements covering WiFi 6e and an active L1 GPS/GNSS antenna (optional) with advanced filtering for LTE Band 13/14 operation.

The antennas may be fitted on a non-metallic panel whilst still offering similar performance.

The dual fin design provides multiple antenna functions while remaining discreet and is suitable for public safety (overt/covert), industrial and transport applications, where a cost-effective, efficient and robust antenna is essential. Requiring only a single hole mounting, the antenna reduces vehicle damage, installation time, cost and visual impact whilst protecting a vehicle's resale value.

GPSD4VAR-6-60-Q Shown

Technical Drawing

HOUSING: SEE TABLE M6 x 0.75 TERMINAL TERMINAL BLANKING CAP BLANKING CA FLEXIBLE SILICONE SEALING SKIRT CELL CABLES 300mm +/-30mm SMA PLUG TERMINATION.
CABLES LABELLED - CELL A/
CELL B/ CELL C/ CELL D.
YELLOW LABEL WITH BLACK
TEXT. PRODUCT LABEL AND CONDUCTIVE PADS (x4) ON UNDERSIDE M18 x 1 STAINLESS STEEL MOUNTING BUSH WIFI CABLES 300mm +/-30mm -SMA JACK TERMINATION. CABLES LABELLED - WIFI 1/ WIFI 2/ WIFI 3/ WIFI 4. RED LABEL WITH WHITE TEXT. SHAKEPROOF WASHER STAINLESS STEEL SLOTTED NUT DETAIL SECTION VIEW - BASE 4.0 MAX PANEL THICKNESS **HEVSIVE** FLAME RETARDANT RG174 CABLE, 10 POSITIONS WHIP CABLE 300mm +/-30mm -FME PLUG TERMINATION. CABLE LABELLED - WHIP. GREEN LABEL WITH BLACK TEXT. -GPS/GNSS CABLE 300mm +/-30mm - FME JACK TERMINATION. CABLE LABELLED - GPS/GNSS. WHITE LABEL WITH BLACK TEXT. 255 ON INSTALLATION ISO VIEW SCALE 1:4 142 151 ON INSTALLATION CABLE MANAGEMENT ITEMS -SUPPLIED LOOSE 13 x 12.7mm X 60mm LONG HEAT SHRINK SLEEVE





					Product Data		
Dart Na							
Part No.		CDC2D4544 6 60 O	CDS2D4BML6.60.T	CDC2D4IMI C CO D	CDC2D4IMI 6 60		
Electrical Data		GPS2D4[W]-6-60-Q	GPS2D4[W]-6-60-T	GPS2D4[W]-6-60-D	GPS2D4[W]-6-60		
Electrical Data	GPS/GNSS Elements		2v 156	i2-1612			
	4G/5G Elements						
Frequency Range (MHz)	WiFi Elements	4x 2.4/5.0/7.1GHz	4x 617-960 3x 2.4/5.0/7.1GHz	2x 2.4/5.0/7.1GHz	_		
	Whip	17 2. 170.077.10112		nt on whip			
				-960MHz)			
	4G/5G Elements		·	-6000MHz)			
Peak gain: Isotropic*			6dBi (2396-2485MHz)		-		
	WiFi Elements		9dBi (4900-7200MHz)				
	4G/5G Elements			15dB (1427-6000MHz)			
Isolation**	WiFi Elements		> 15dB	13db (1427-0000ivii 12)			
Typical Efficiency* W/o Cable							
Loss	4G/5G Elements	į	≥46% (617-698MHz) ≥60%	% (698-960/1427-6000MHz)			
Correlation Co-efficient	4G/5G Elements		<0	.25			
Polarisation			Ver	tical			
Pattern			Omni-di	rectional			
Impedance			50	Ω			
Max Input Power (W)			Internal elements 5	W / main whip 60W			
GPS/GNSS Data							
Frequency Range (MHz)			1562-	-1612			
Gain: LNA		26dB					
Polarisation		Right Hand Circular					
Out of Band Rejection		>40dB (+/- 100MHz f)   Notch Filter @787MHz - 23dB					
Operating Voltage		3-5V DC (fed via coax)					
Current			Typical <20mA				
Mechanical Data							
	Total Height (excl whip)		82 (	3.2")			
Dimensions (mm) - Installed	Length		253 (9	9.96")			
	Width		142 (	5.56")			
Operating Temp (°C)			-40° / +80°C	(-40° / 176°F)			
Material				er, Aluminium Alloy			
Colour				enotes White variant)			
Ingress Protection			IP6	9K			
Mounting Info							
Fixing			Panel				
Hole Size (mm)			19 (:	3/4″)			
Cable Data			ED DO474 (19) = 0	E D 440 C			
Cable Type - All Pigtails	Diamata	FR RG174 (UN ECE R 118 Compliant)					
Dimensions (mm)	Diameter	2.8 (0.11")					
	Length	300 mm (12")					
	Whip			IE (m)			
Termination	GPS/GNSS	2x FME (f)					
	4G/5G		4x SM	A plug			
,	WiFi	4x SMA (f)	3x SMA (f)	2x SMA (f)	-		

<sup>\*</sup>Peak Gain and efficiency measured on 600x600mm (2'x2') ground plane without additional cable

<sup>\*\*</sup> Isolation measured as worst case for elements of the same type on a 600x600 (2'x2') ground plane without additional cable





#### **Product Data**

		GPSD4[W]-6-60-Q	GPSD4[W]-6-60-T	GPSD4[W]-6-60-D	GPSD4[W]-6-6			
Electrical Data		GPSD4[VV]-6-60-Q	GP3D4[W]-6-60-1	GPSD4[W]-6-60-D	GPSD4[VV]-6-60			
Liectifical Data	GPS/GNSS Elements		1v 156	2 1612				
		1x 1562-1612						
Frequency Range (MHz)	4G/5G Elements	4 0 4/5 0/7 4011	4x 617-960, 1427-6000					
	WiFi Elements	4x 2.4/5.0/7.1GHz	3x 2.4/5.0/7.1GHz	2x 2.4/5.0/7.1GHz	-			
	Whip		dependen					
	4G/5G Elements		5dBi (617-	•				
Peak gain: Isotropic*			8dBi (1427-	·6000MHz)				
9	WiFi Elements		-					
	VIII I Elomonio		9dBi (4900-7200MHz)		-			
solation**	4G/5G Elements		>8dB (617-960 MHz)   >	15dB (1427-6000MHz)				
solation	WiFi Elements		> 15dB		-			
Typical Efficiency* W/o Cable Loss	4G/5G Elements		≥46% (617-698MHz) ≥60%	(698-960/1427-6000MHz)				
Correlation Co-efficient	4G/5G Elements		<0.	25				
Polarisation			Vert	ical				
Pattern			Omni-dir	rectional				
Impedance			50	Ω				
Max Input Power (W)			Internal elements 5\	N / main whip 60W				
GPS/GNSS Data				<u> </u>				
Frequency Range (MHz)			1562-	1612				
Gain: LNA		26dB						
Polarisation		Right Hand Circular						
Out of Band Rejection			>40dB (+/- 100MHz f)   Not					
Operating Voltage			3-5V DC (fe	_				
Current		Typical <20mA						
Mechanical Data			турісаг	<b>120111A</b>				
Wechanical Data	Total Height (eval whip)		92./2	0.0"\				
Dimensions (mm) Installed	Total Height (excl whip)		82 (3	,				
Dimensions (mm) - Installed	Length		253 (9					
	Width		142 (5	•				
Operating Temp (°C)			-40° / +80°C (					
Material			ASA,Silicone Rubb	-				
Colour			Black (GPS[X]D4W de					
Ingress Protection			IP6	9K				
Mounting Info								
Fixing			Panel					
Hole Size (mm)			19 (3	3/4")				
Cable Data								
Cable Type - All Pigtails			FR RG174 (UN EC	E R 118 Compliant)				
Dimensions (mm)	Diameter	2.8 (0.11")						
Jimonaiona (mill)	Length	300 mm (12")						
	Whip		1x FM	E (m)				
	GPS/GNSS		1x FM	1E (f)				
Termination	4G/5G		4x SM	A plug				

<sup>\*</sup>Peak Gain and efficiency measured on 600x600mm (2'x2') ground plane without additional cable

<sup>\*\*</sup> Isolation measured as worst case for elements of the same type on a 600x600 (2'x2') ground plane without additional cable





**Product Data** 

Part No.								
		FIND4[W]-6-60-Q	FIND4[W]-6-60-T	FIND4[W]-6-60-D	FIND4[W]-6-60			
Electrical Data		1 IND4[W]-0-00-Q	1 114D4[44]-0-00-1	1 IND4[W]-0-00-D	1 114D4[VV]-0-00			
	4G/5G Elements		4x 617-960	, 1427-6000				
Frequency Range (MHz)	WiFi Elements	4x 2.4/5.0/7.1GHz	3x 2.4/5.0/7.1GHz	2x 2.4/5.0/7.1GHz	-			
	Whip		depender	nt on whip				
	4G/5G Elements							
Peak gain: Isotropic*			6dBi (2396-2485MHz)		-			
	WiFi Elements		9dBi (4900-7200MHz)		_			
	4G/5G Elements		,	> 15dB (1427-6000MHz)				
solation**	WiFi Elements	>8dB (617-960 MHz)   > 15dB (1427-6000MHz) > 15dB						
Гурісаl Efficiency* W/o Cable	4G/5G Elements			/ (COO OCO/4 407 COOOMI I=)				
LOSS		24	,	6 (698-960/1427-6000MHz)				
Correlation Co-efficient	4G/5G Elements			.25				
Polarisation				tical				
Pattern				rectional				
mpedance			50	Ω				
Max Input Power (W)		Internal elements 5W / main whip 60W						
Mechanical Data								
	Total Height (excl whip)		82 (	3.2")				
Dimensions (mm) - Installed	Length	253 (9.96")						
	Width	142 (5.56")						
Operating Temp (°C)			-40° / +80°C	(-40° / 176°F)				
Material			ASA,Silicone Rubb	er, Aluminium Alloy				
Colour			Black (FIND4W der	notes White variant)				
ngress Protection			IP6	69K				
Mounting Info								
Fixing			Panel	Mount				
Hole Size (mm)			19 (	3/4")				
Cable Data								
Cable Type - All Pigtails			FR RG174 (UN EC	E R 118 Compliant)				
Di	Diameter	2.8 (0.11")						
Dimensions (mm)		300 mm (12")						
Dimensions (mm)	Length		300 mi	( )				
Dimensions (mm)	Length Whip			1E (m)				
Dimensions (mm)			1x FM	. ,				

<sup>\*</sup>Peak Gain and efficiency measured on 600x600mm (2'x2') ground plane without additional cable

<sup>\*\*</sup> Isolation measured as worst case for elements of the same type on a 600x600 (2'x2') ground plane without additional cable





Electrical Data
Ground Plane - Cell

Ground Plane - Cell					
Measurement Conditions	4G/5G Antennas				
GPSD4-6-60-Q measured on 600x600mm (2'x2') ground plane without additional cable	Frequency Range (MHz)	LTE / NR Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
	617-698	71	Cell A	3.3	44
		12,13, 14 17,28	Cell B	3.8	48
			Cell C	3.2	47
			Cell D	3.5	47
# 100000 To 10000000000000000000000000000	699-798		Cell A	4.9	52
	000-100	12,10, 14 17,20	Cell B	4.9	55
			Cell C	4.3	53
			Cell D	5.0	54
	807- 862	5,19,20,26,27	Cell A	5.9	58
			Cell B	5.8	57
			Cell C	5.2	56
ALTERNATION OF THE PARTY OF THE			Cell D	5.6	56
	880-960	8	Cell A	5.9	55
			Cell B	5.8	56
CAND!			Cell C	5.2	53
			Cell D	5.6	53
	1427-1518	11, 21, 74,75,76	Cell A	7.2	81
			Cell B	8.0	80
			Cell C	7.4	82
		2 2 4 0 25 25	Cell D	7.8	79
	1710-1920	2,3,4,9,25,35, 39,66	Cell A	6.4	61
			Cell B Cell C	7.0 6.3	65 64
			Cell D	6.8	60
			Cell A	6.1	57
	1920-2170	1,23	Cell B	6.6	62
			Cell C	5.4	57
			Cell D	6.4	61
	2300-2400	30,40	Cell A	6.3	54
			Cell B	5.6	58
			Cell C	6.5	54
			Cell D	6.1	67
		7,38,41	Cell A	5.6	66
	2496-2690		Cell B	5.2	60
			Cell C	4.7	61
			Cell D	6.4	61
	2200 4200	22,42,43,48,77,	Cell A	6.9	52
	3300-4200	78	Cell B	7.2	57
			Cell C	7.1	55
			Cell D	7.1	58
	4400-5000	79	Cell A	6.4	54
	.100 0000		Cell B	6.1	59
			Cell C	6.3	57
			Cell D	6.1	57
	5000-6000	96,102,104	Cell A	6.4	46
		,,	Cell B	8.2	61
			Cell C	6.8	53
			Cell D	7.7	53





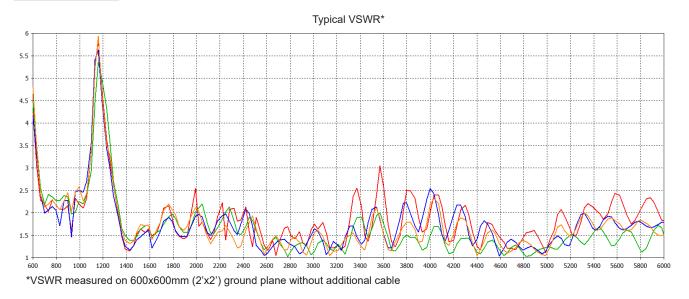
Electrical Data Ground Plane- WiFi

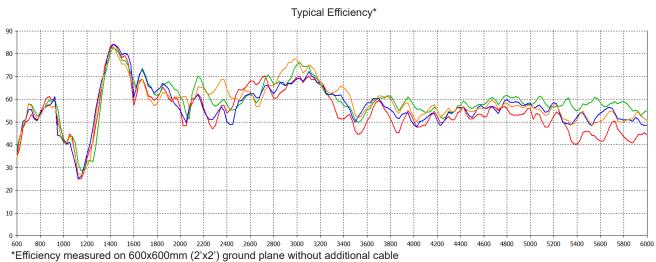
Measurement Conditions	4G/5G Antennas				
GPSD4-6-60-Q measured on 600x600mm (2'x2')	Frequency	WiFi Bands	Antenna	Peak Gain (dBi)	Efficiency (%)
ground plane without additional cable	Range (MHz)		Element		.=
	2396-2485	2.4GHz	WiFi 1	5.5	47
FIFTH AND			WiFi 2 WiFi 3	6.1	55 54
			WiFi 4	6.0 3.8	47
#			WiFi 1	8.2	52
	5150-5250	UNII-1	WiFi 2	8.3	55
			WiFi 3	9.2	55
			WiFi 4	8.1	57
			WiFi 1	8.7	55
	5250-5350	UNII-2A	WiFi 2	8.7	54
CARRE COAST			WiFi 3	8.8	56
			WiFi 4	8.9	58
	5350-5470	UNII-2B	WiFi 1	8.6	50
Plants Inhans	0000-0470	OIVII-2B	WiFi 2	8.6	52
			WiFi 3	8.8	59
			WiFi 4	8.8	51
	5470-5725	UNII-2C	WiFi 1	8.3	42
			WiFi 2	7.9	44
			WiFi 3 WiFi 4	9.1	57
			WiFi 1	7.7 7.5	45 36
	5725-5850	UNII-3	WiFi 2	8.1	43
			WiFi 3	9.1	56
			WiFi 4	6.2	37
	5850-5925	UNII-4	WiFi 1	5.9	28
			WiFi 2	5.9	33
			WiFi 3	8.5	53
			WiFi 4	5.8	43
	5925-6425	UNII-5	WiFi 1	5.5	33
	0020-0420		WiFi 2	6.1	40
			WiFi 3	8.5	37
			WiFi 4	6.9	56
	6425-6525	UNII-6	WiFi 1	6.1	49
			WiFi 2	6.8	53
			WiFi 3	4.1	27
			WiFi 4 WiFi 1	7.9 6.6	55 48
	6525-6875	UNII-7	WiFi 2	6.8	47
			WiFi 3	6.5	45
		UNII-8	WiFi 4	7.9	51
			WiFi 1	6.5	43
	6875-7125		WiFi 2	6.4	39
			WiFi 3	7.0	52
			WiFi 4	5.5	41

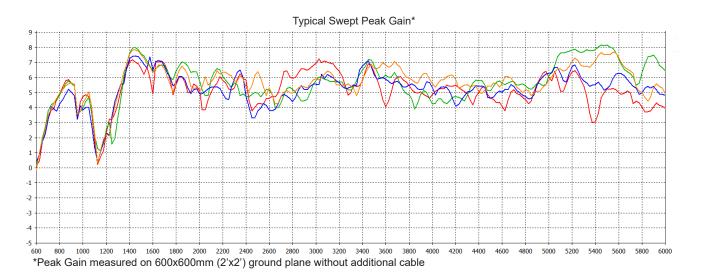
PANORAMA PANTENNAS

GPS[X]D4[X]-6-60[-X]

Electrical Data Ground Plane - Cell



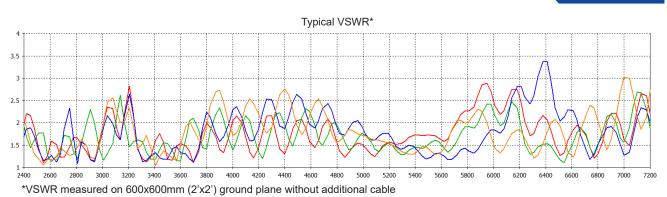


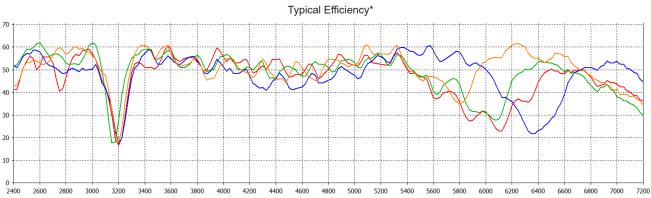




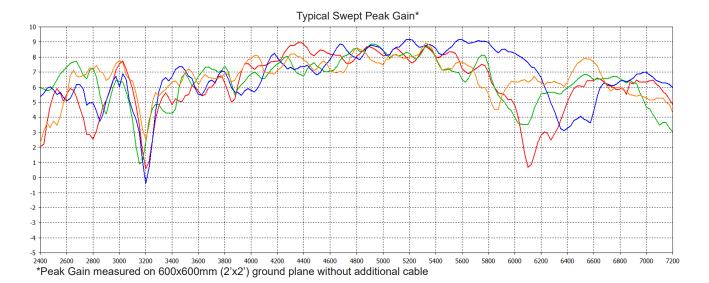


Electrical Data Ground Plane- WiFi



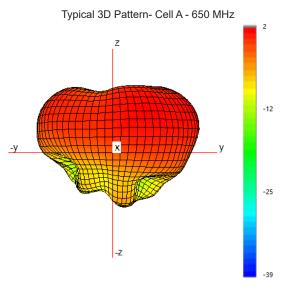


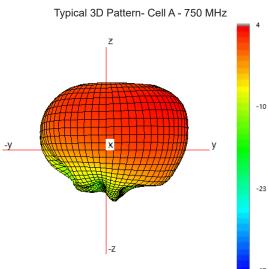
\*Efficiency measured on 600x600mm (2'x2') ground plane without additional cable

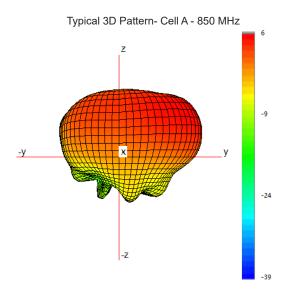


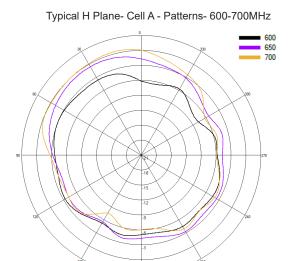
GPS[X]D4[X]-6-60[-X]

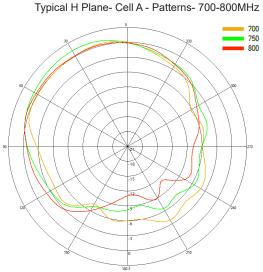


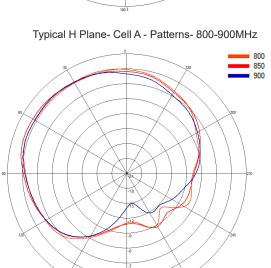






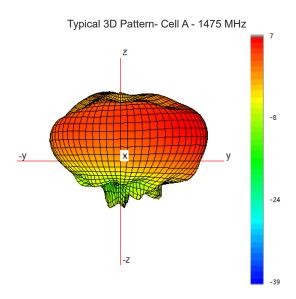


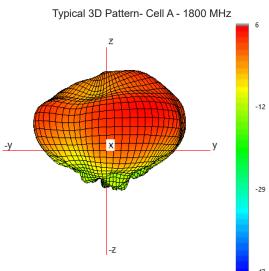


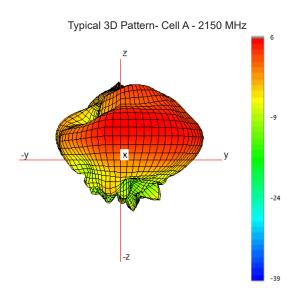


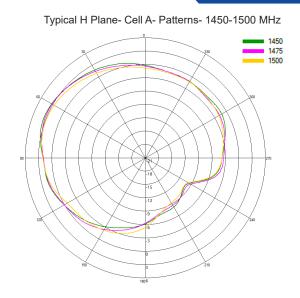
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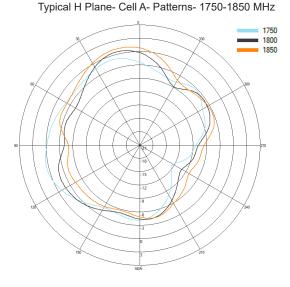


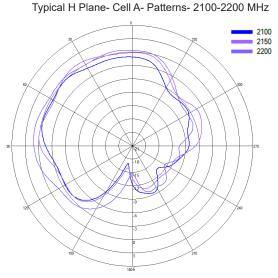






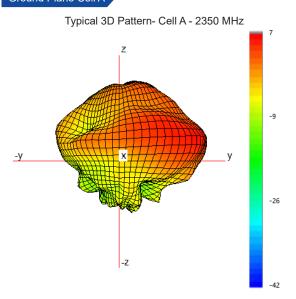




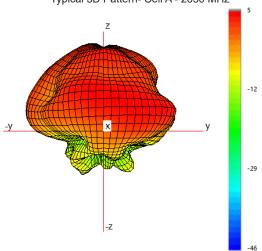


GPS[X]D4[X]-6-60[-X]

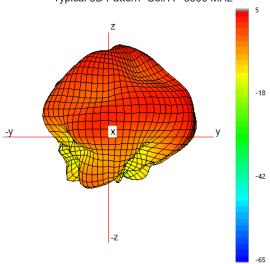




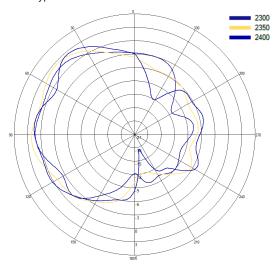




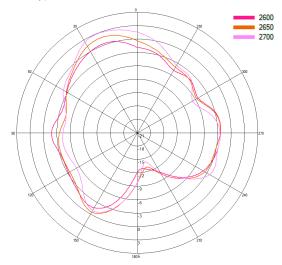
Typical 3D Pattern- Cell A - 3600 MHz



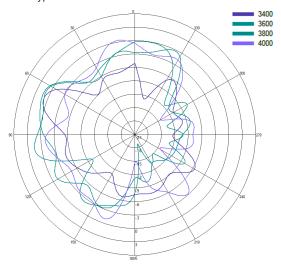
Typical H Plane- Cell A - Patterns- 2300-2400 MHz



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



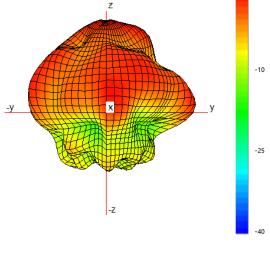
Typical H Plane- Cell A - Patterns- 3400-4000 MHz

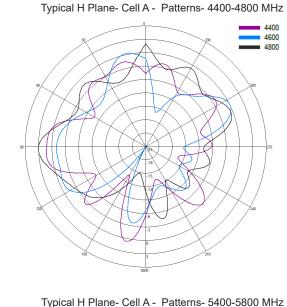


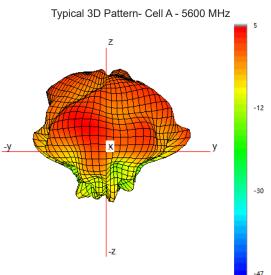


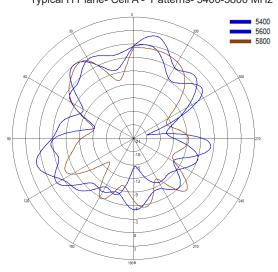


Typical 3D Pattern- Cell A - 4700 MHz -10 -25 -Z



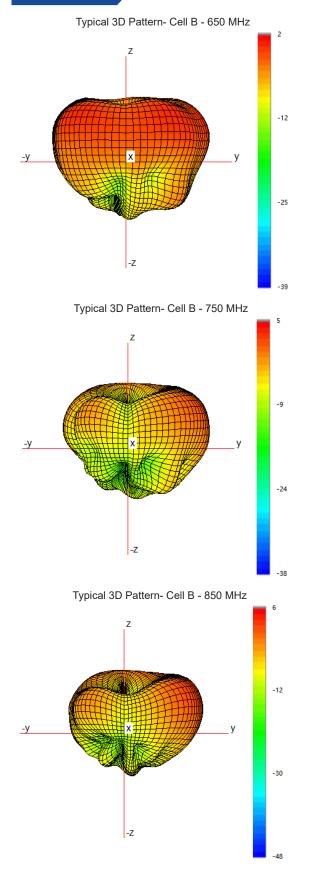


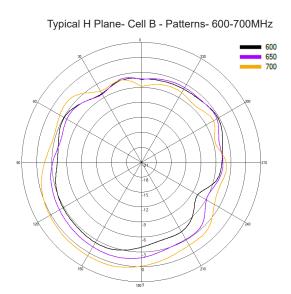


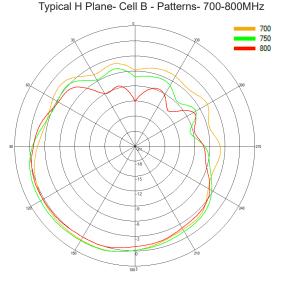


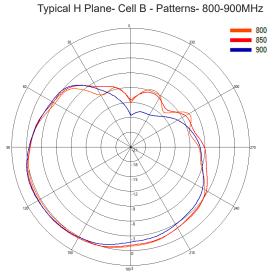
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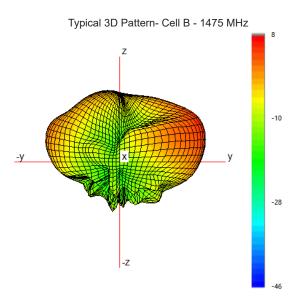


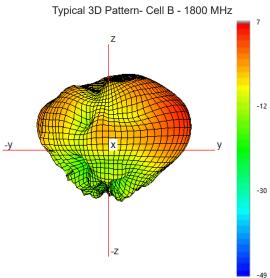


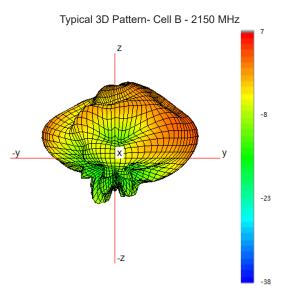


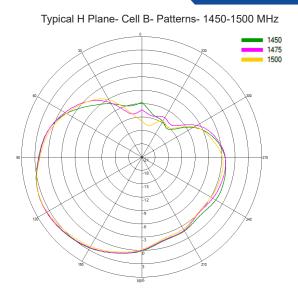
GPS[X]D4[X]-6-60[-X]

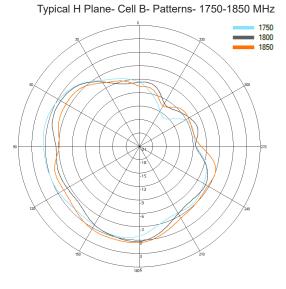


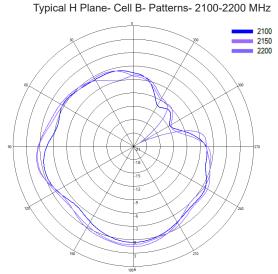






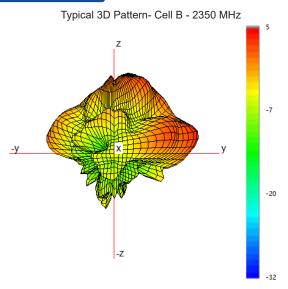


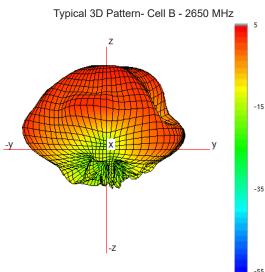


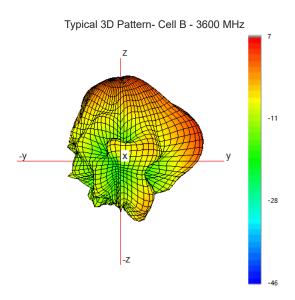


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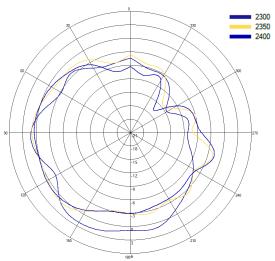
GPS[X]D4[X]-6-60[-X]



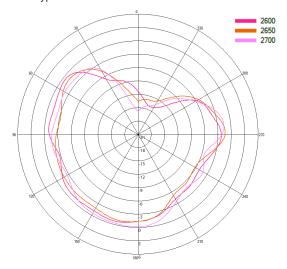




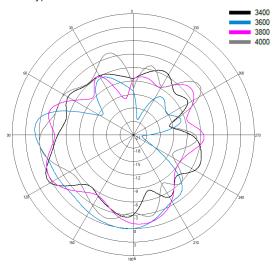
Typical H Plane- Cell B - Patterns- 2300-2400 MHz



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

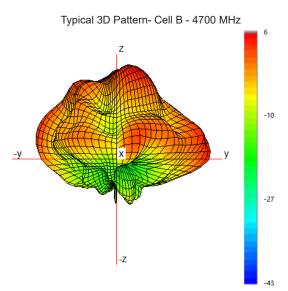


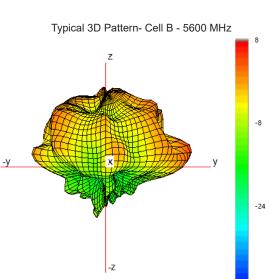
Typical H Plane- Cell B - Patterns- 3400-4000 MHz

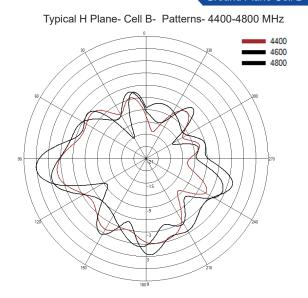


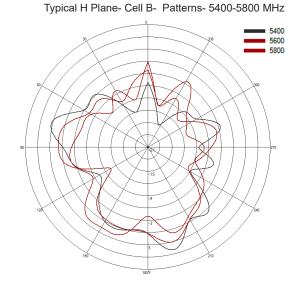






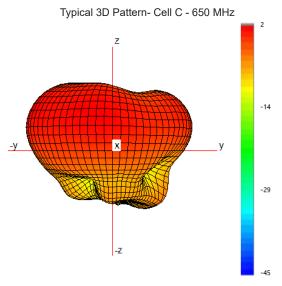


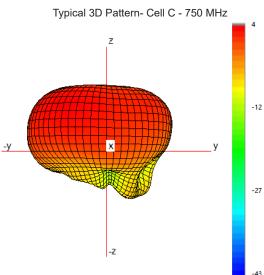


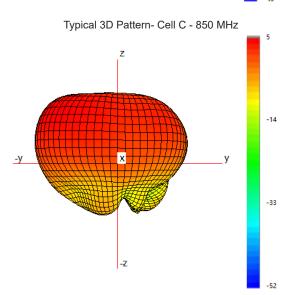


PANORAMA PANTENNAS

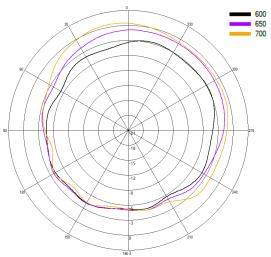
GPS[X]D4[X]-6-60[-X]



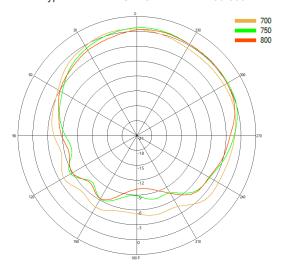




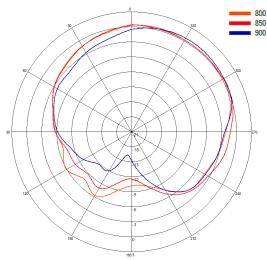
Typical H Plane- Cell C - Patterns- 600-700MHz



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

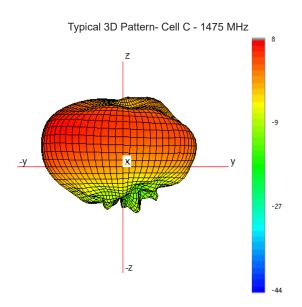


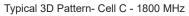
Typical H Plane- Cell C - Patterns- 800-900MHz

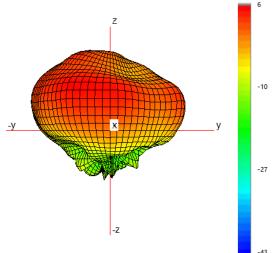


GPS[X]D4[X]-6-60[-X]

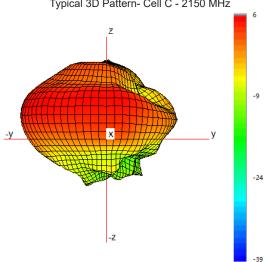




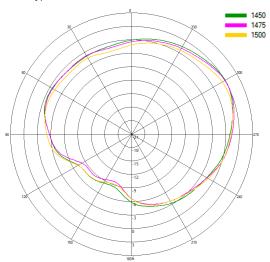




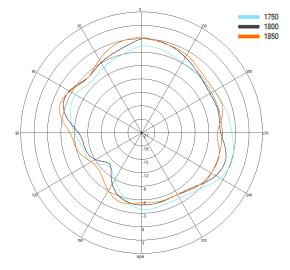
Typical 3D Pattern- Cell C - 2150 MHz



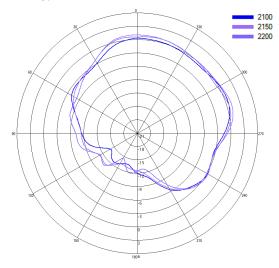
Typical H Plane- Cell C- Patterns- 1450-1500 MHz



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



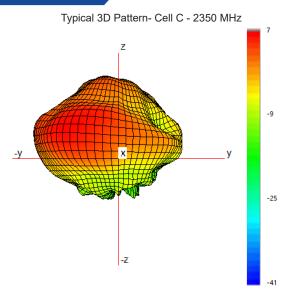
Typical H Plane- Cell C- Patterns- 2100-2200 MHz

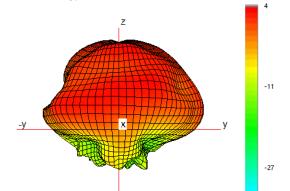


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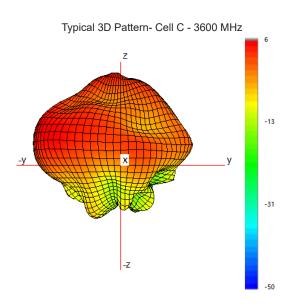
GPS[X]D4[X]-6-60[-X]

### 3D Pattern Data on Ground Plane Cell C

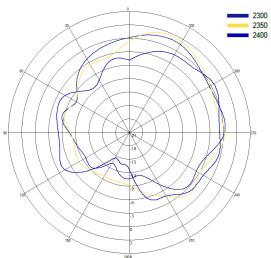




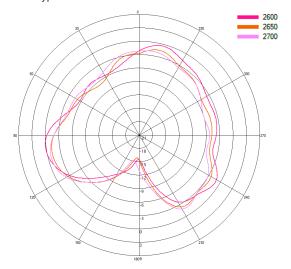
Typical 3D Pattern- Cell C - 2650 MHz



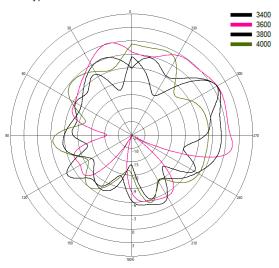
Typical H Plane- Cell C - Patterns- 2300-2400 MHz



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



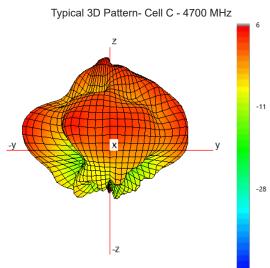
Typical H Plane- Cell C - Patterns- 3400-4000 MHz

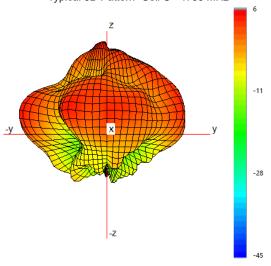


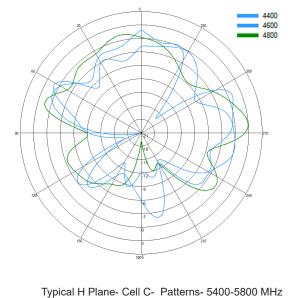
GPS[X]D4[X]-6-60[-X]

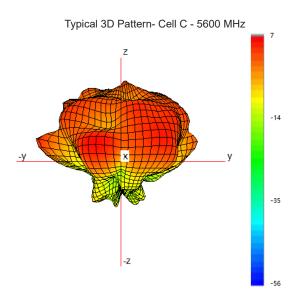


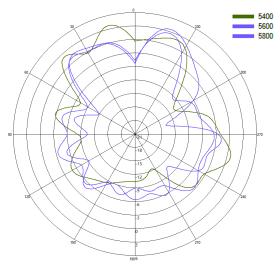
Typical H Plane- Cell C- Patterns- 4400-4800 MHz



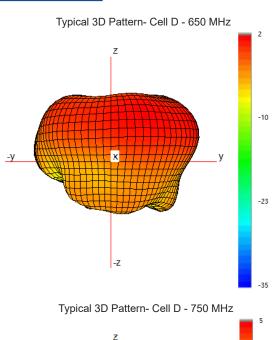


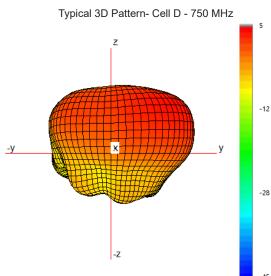


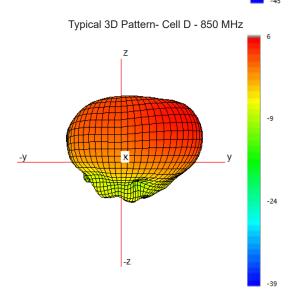


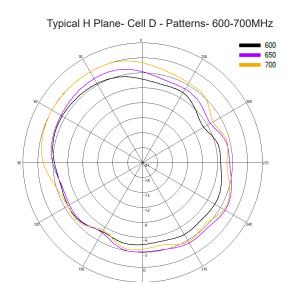


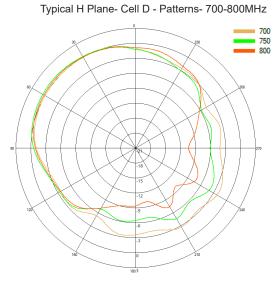
GPS[X]D4[X]-6-60[-X]

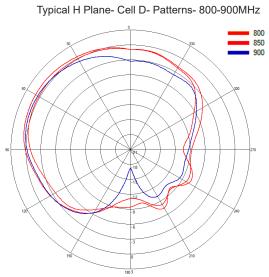






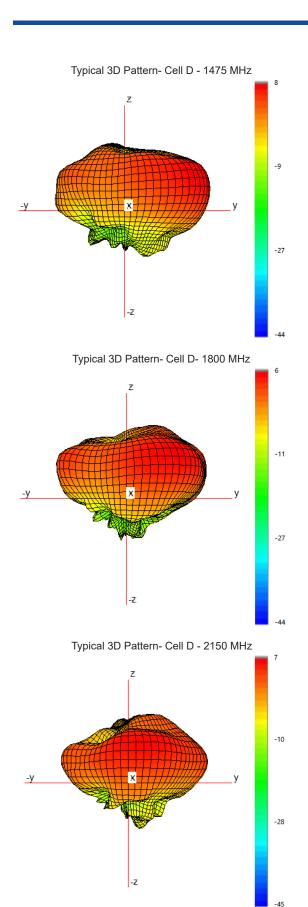


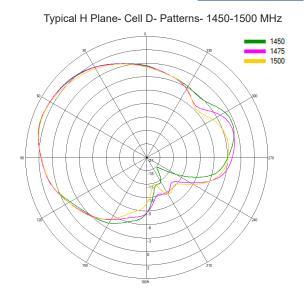


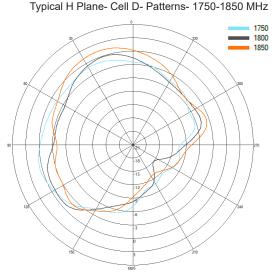


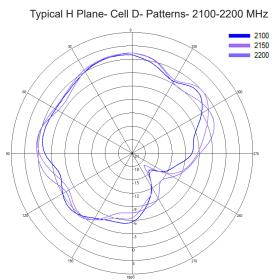
GPS[X]D4[X]-6-60[-X]





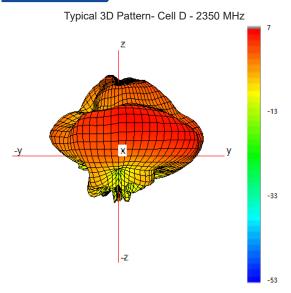




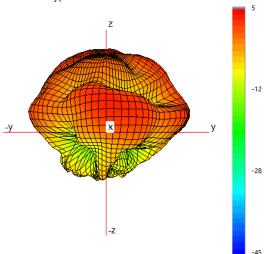


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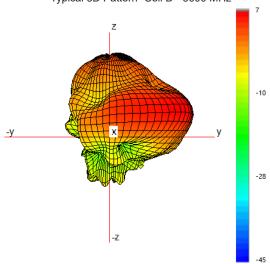
GPS[X]D4[X]-6-60[-X]



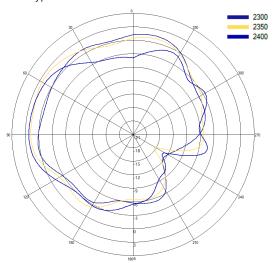
Typical 3D Pattern- Cell D - 2650 MHz



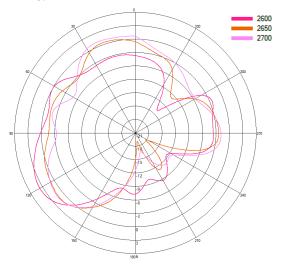
Typical 3D Pattern- Cell D - 3600 MHz



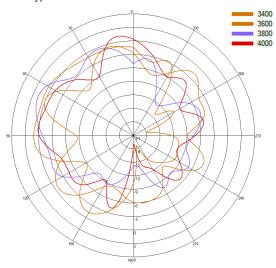
Typical H Plane- Cell D - Patterns- 2300-2400 MHz



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

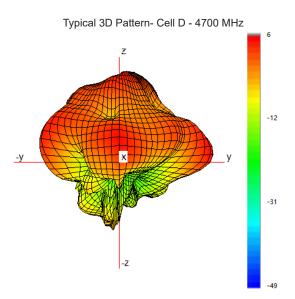


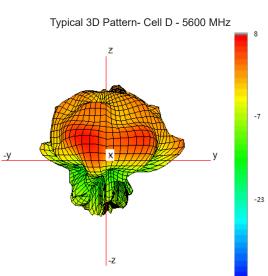
Typical H Plane- Cell D - Patterns- 3400-4000 MHz

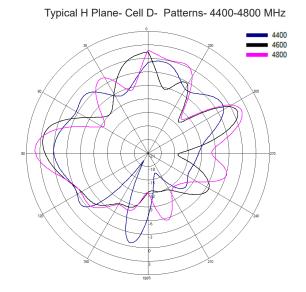


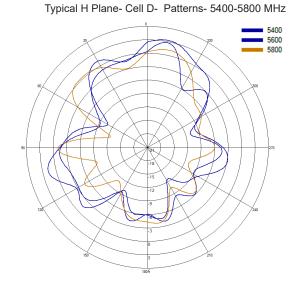








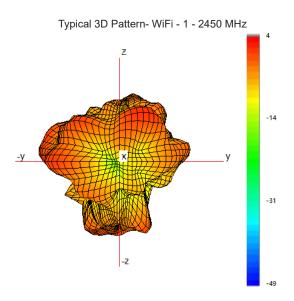




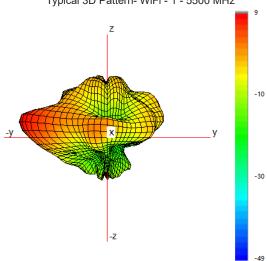
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GPS[X]D4[X]-6-60[-X]

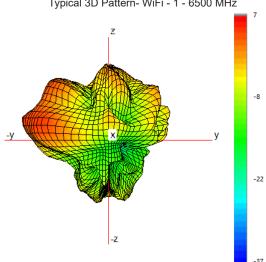
#### 3D Pattern Data on Ground Plane WIFI - 1



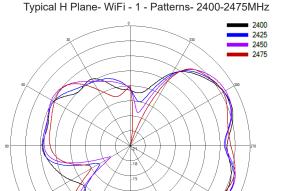
Typical 3D Pattern- WiFi - 1 - 5500 MHz



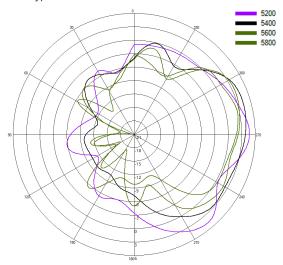
Typical 3D Pattern- WiFi - 1 - 6500 MHz



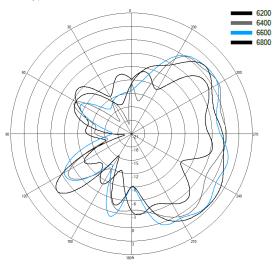
Panorama Antennas Ltd Frogmore, London, SW18 1HF, United Kingdom T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477 E: sales@panorama-antennas.com W: www.panorama-antennas.com



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



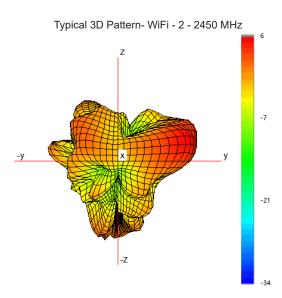
Typical H Plane- WiFi - 1 - Patterns- 6200-6800MHz

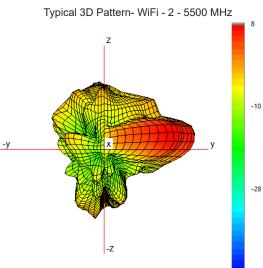


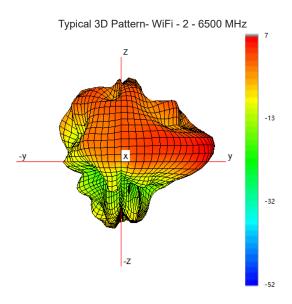
GPS[X]D4[X]-6-60[-X]



3D Pattern Data on Ground Plane WIFI- 2

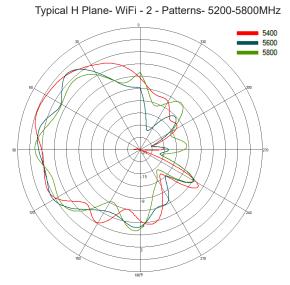


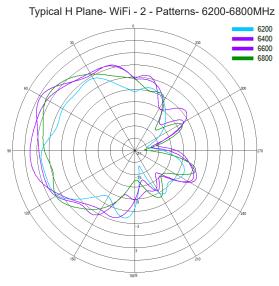




Typical H Plane- WiFi - 2 - Patterns- 2400-2475MHz

2400
2425
2450
2475

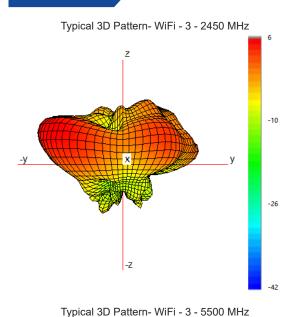


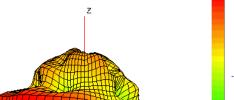


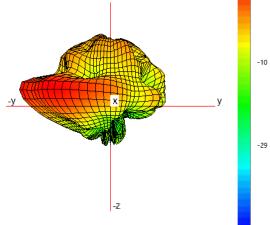
PANORAMA (PANTENNAS

GPS[X]D4[X]-6-60[-X]

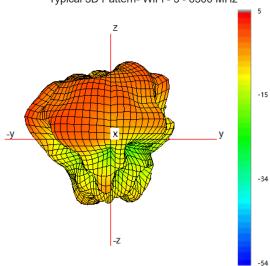
#### 3D Pattern Data on Ground Plane WIFI- 3



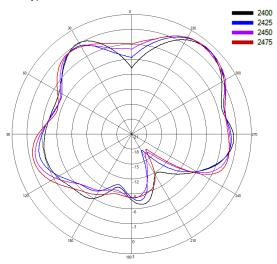




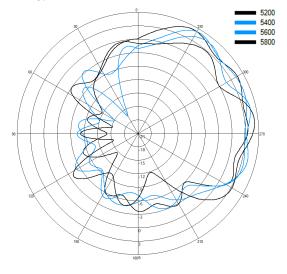
Typical 3D Pattern- WiFi - 3 - 6500 MHz



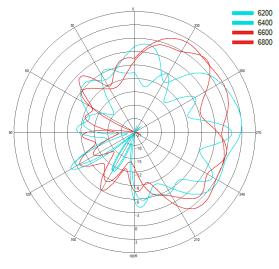
Typical H Plane- WiFi - 3 - Patterns- 2400-2475MHz



Typical H Plane- WiFi - 3 - Patterns- 5200-5800MHz



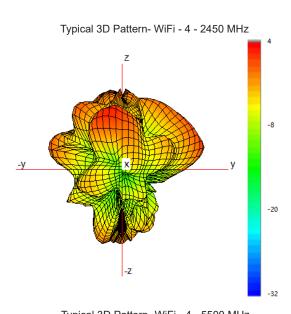
Typical H Plane- WiFi - 3 - Patterns- 6200-6800MHz

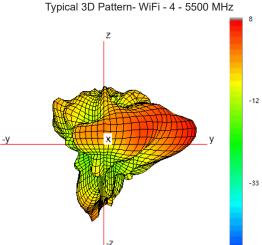


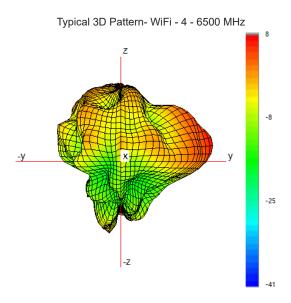
GPS[X]D4[X]-6-60[-X]

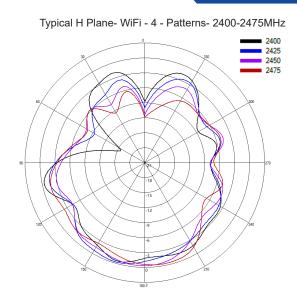


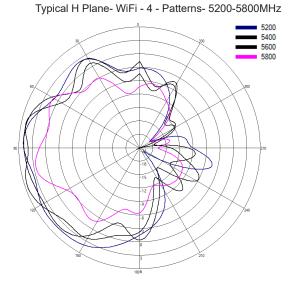
3D Pattern Data on Ground Plane WIFI- 4

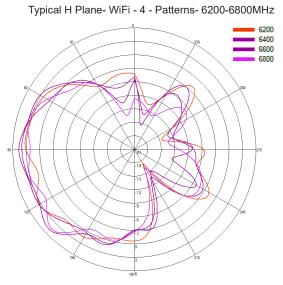












GPS[X]D4[X]-6-60[-X]



Electrical Data Free Space - Cell

Space - Cell					
Measurement Conditions	4G/5G Antennas				
GPSD4-6-60-Q measured in free space without additional cable	Frequency Range (MHz)	LTE / NR Bands	Antenna Element	Peak Gain (dBi)	Efficiency (%)
ANALY SEE	617-698	71	Cell A	2.6	50
			Cell B	0.8	49
MARINE THE PROPERTY OF THE PRO			Cell C	2.5	55
			Cell D	0.7	52
A CONTRACTOR OF THE PARTY OF TH	699-798	12,13, 14 17,28	Cell A	3.2	63
A A A A A A A A A A A A A A A A A A A	033-730	12,10, 14 17,20	Cell B	2.8	59
THE PROPERTY OF THE PROPERTY O			Cell C	3.2	66
	1		Cell D	2.4	64
	807- 862	5,19,20,26,27	Cell A	3.7	70
CONTRACTOR OF STATE	00. 002	0,10,20,20,21	Cell B	3.5	72
			Cell C	3.3	71
			Cell D	3.5	71
	880-960	8	Cell A	3.9	67
			Cell B	3.7	68
			Cell C	3.6	67
			Cell D	3.5	67
CARR DESTRUCTION	1427-1518	11, 21, 74,75,76	Cell A	5.2	84
WAR			Cell B	4.1	76
Mall.			Cell C	4.9	83
THE STATE OF THE S			Cell D	4.6	82
	1710-1920	2,3,4,9,25,35, 39,66	Cell A	5.4	65
		39,00	Cell B	4.8	59
			Cell C	5.1	68
			Cell D	4.7	67
	1920-2170	1,23	Cell A	4.6	59
			Cell B	3.9	54
			Cell C	4.6	64
			Cell D	4.6 4.6	68
	2300-2400	30,40	Cell A	4.0	66 67
			Cell C	4.4	63
			Cell D Cell A	4.6 6.1	72 70
	2496-2690	7,38,41	Cell B	5.2	56
			Cell C	4.5	60
			Cell D	4.7	65
		22 42 42 49 77	Cell A	6.4	56
	3300-4200	22,42,43,48,77, 78	Cell B	5.2	51
			Cell C	6.2	57
			Cell D	5.9	60
			Cell A	6.7	59
	4400-5000	79	Cell B	4.5	55
			Cell C	5.8	64
			Cell D	6.6	64
			Cell A	6.5	50
	5000-6000	96,102,104	Cell B	4.6	47
			Cell C	5.8	56
			Cell D	6.4	56





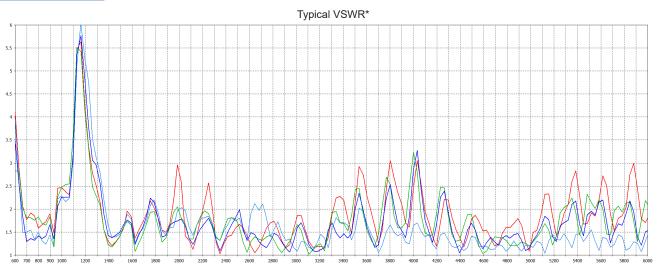
Electrical Data Free Space- WiFi

GPSD4-6-60-Q measured in free space without Fre	G/5G Antenna equency ange (MHz)				
GPSD4-6-60-Q measured in free space without additional cable	equency	WiFi Banda			
	95 (2)		Element	Peak Gain (dBi)	Efficiency (%)
239	96-2485	2.4GHz		3.2	53
				4.3	59
				2.3	48
				2.8 6.0	53 56
515	50-5250	UNII-1		5.6	57
				6.6	58
				6.5	56
				6.3	57
525	50-5350	UNII-2A	WiFi 2	5.9	57
#			WiFi 3	6.9	61
THE STATE OF THE S			WiFi 4	6.7	60
535	50-5470	UNII-2B	WiFi 1	6.0	50
333	30-3470	UNII-2B	WiFi 2	5.8	54
			WiFi 3	7.2	61
CARA CARANTO				6.6	59
547	70-5725			5.1	41
				5.0	44
				7.2	54
				6.1 4.2	53 38
572	25-5850	UNII-3		5.0	43
				5.5	50
				5.7	48
				2.5	31
585	50-5925	UNII-4	WiFi 2	3.8	35
			WiFi 3	4.1	38
			WiFi 4	4.2	40
502	25-6425	UNII-5	WiFi 1	4.2	35
332	20-0420	01411-3	WiFi 2	4.5	45
				5.6	52
				5.7	53
642	25-6525	UNII-6		4.4	52
				4.6	56
				5.2	58
				5.4	57
652	25-6875	UNII-7		5.3 4.7	52 52
				5.0	55
				6.2	55
				5.2	47
687	75-7125	UNII-8		4.7	43
				4.6	46
				5.9	46

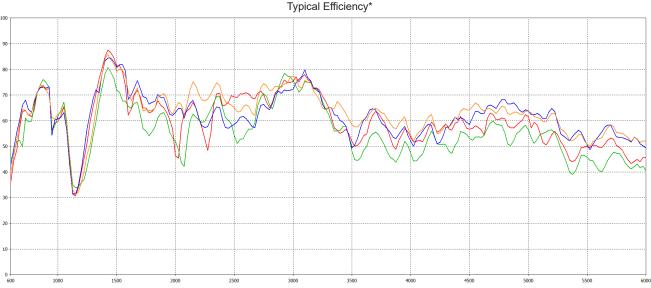
PANORAMA PANTENNAS

GPS[X]D4[X]-6-60[-X]

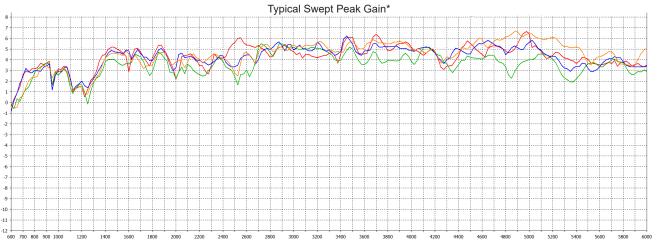
#### Electrical Data Free Space - Cell



\*VSWR measured in free space without additional cable



\*Efficiency measured in free space without additional cable

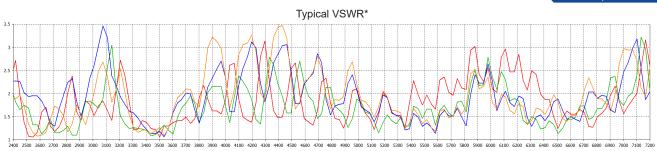


\*Peak Gain measured in free space without additional cable

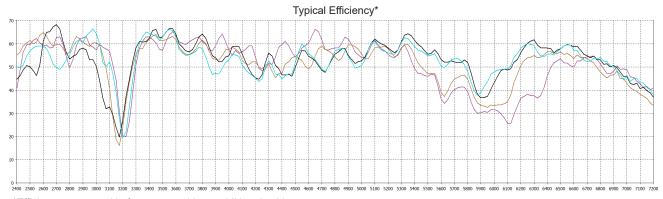




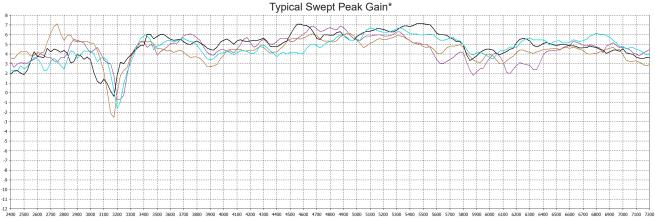
Electrical Data Free Space - WiFi



\*VSWR measured in free space without additional cable



\*Efficiency measured in free space without additional cable

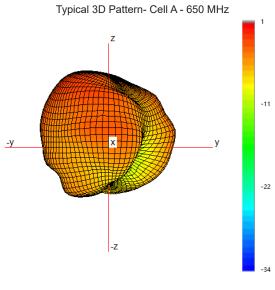


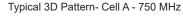
\*Peak Gain measured in free space without additional cable

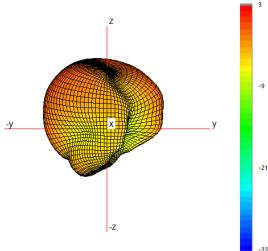
PANORAMA (PANTENNAS

GPS[X]D4[X]-6-60[-X]

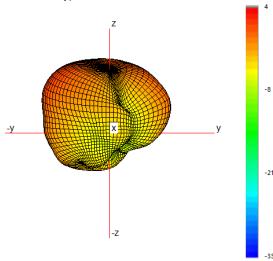




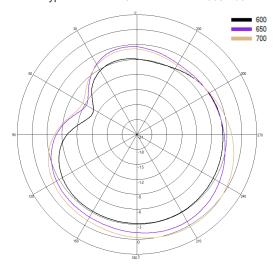




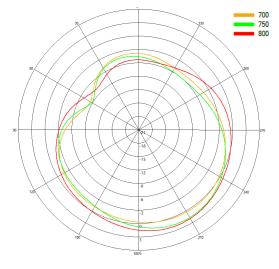
Typical 3D Pattern- Cell A - 850 MHz



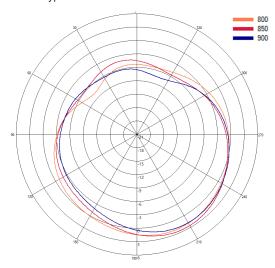
Typical H Plane- Cell A - Patterns- 600-700MHz



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



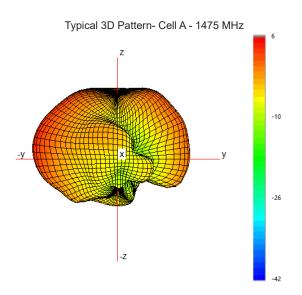
Typical H Plane- Cell A - Patterns- 800-900MHz



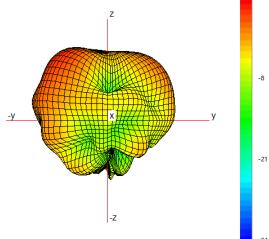
GPS[X]D4[X]-6-60[-X]



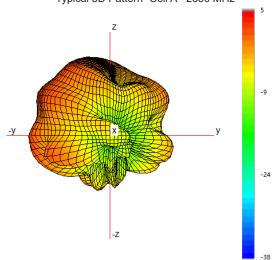
3D Pattern Data in Free Space Cell A



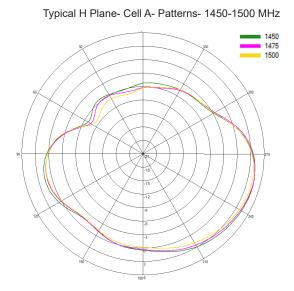




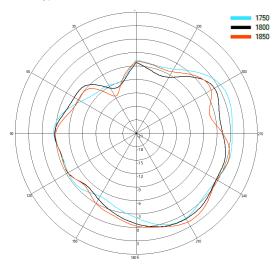
Typical 3D Pattern- Cell A - 2350 MHz



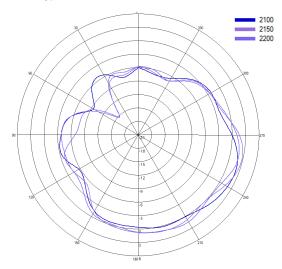
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Typical H Plane- Cell A- Patterns- 1750-1850 MHz



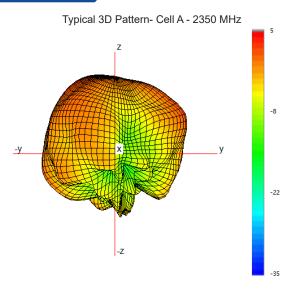
Typical H Plane- Cell A- Patterns- 2100-2200 MHz

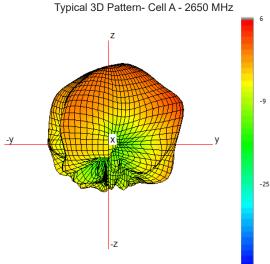


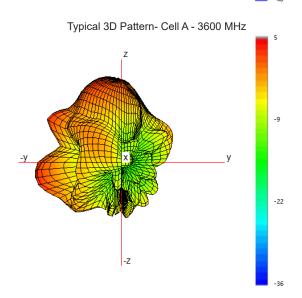
GPS[X]D4[X]-6-60[-X]

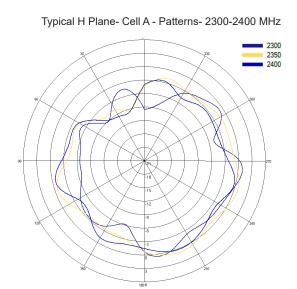


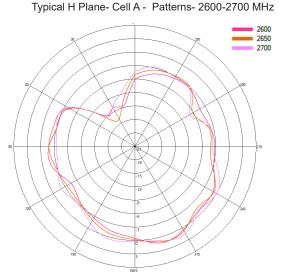
3D Pattern Data in Free Space Cell A

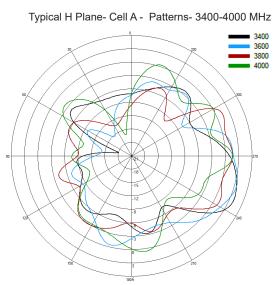








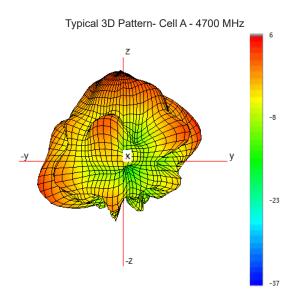


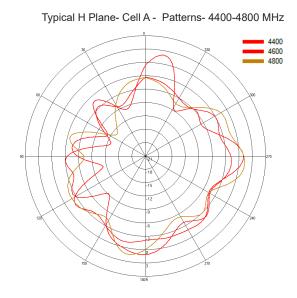


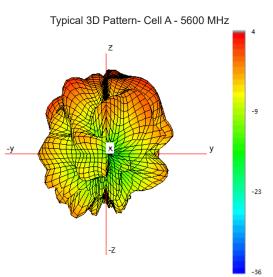


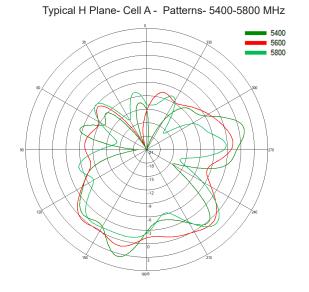


3D Pattern Data in Free Space Cell A



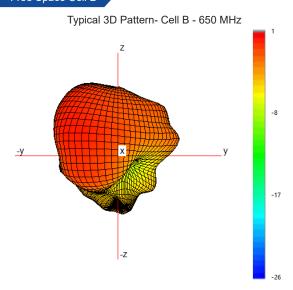




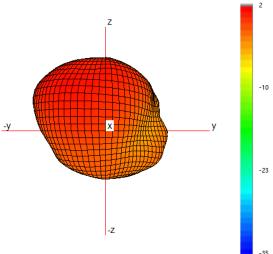


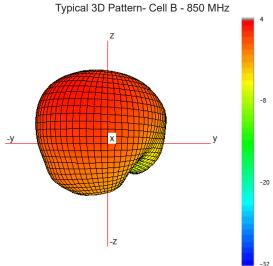
PANORAMA (P) ANTENNAS

GPS[X]D4[X]-6-60[-X]

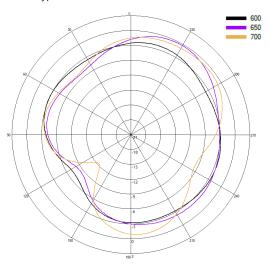


Typical 3D Pattern- Cell B - 750 MHz

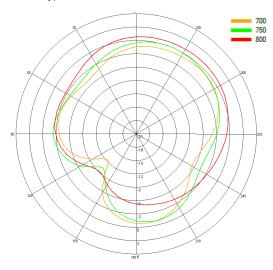




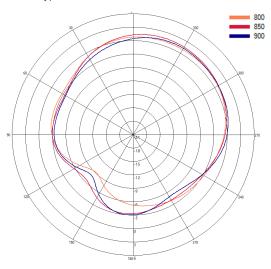
Typical H Plane- Cell B - Patterns- 600-700MHz



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



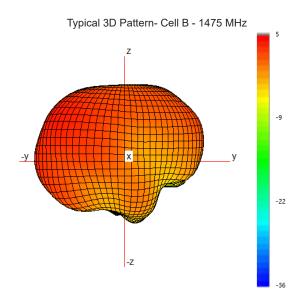
Typical H Plane- Cell B - Patterns- 800-900MHz

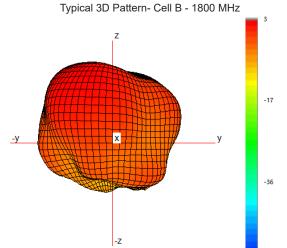


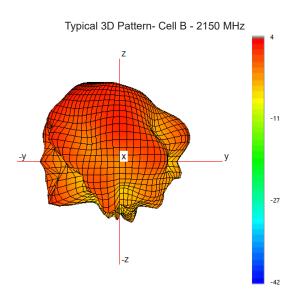
GPS[X]D4[X]-6-60[-X]

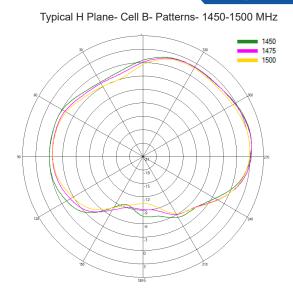


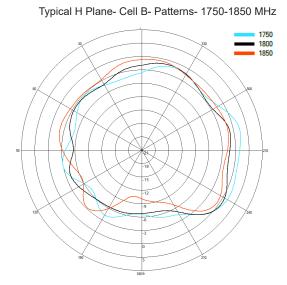
3D Pattern Data in Free Space Cell B

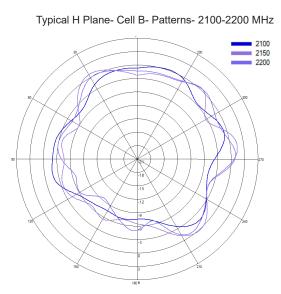






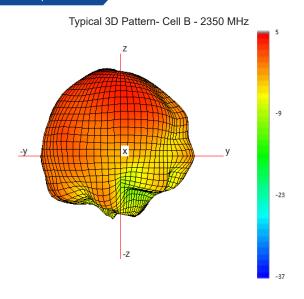


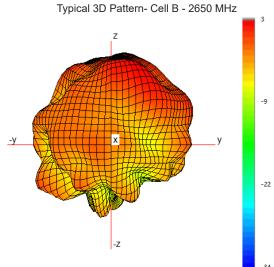


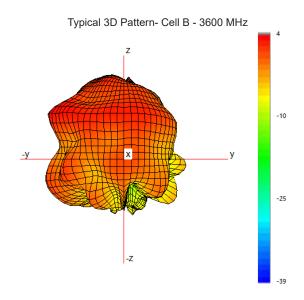


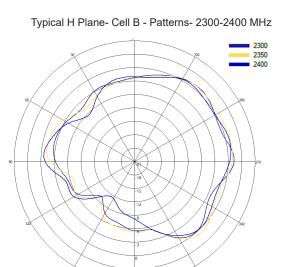
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GPS[X]D4[X]-6-60[-X]

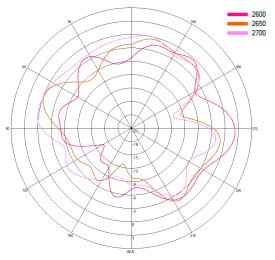




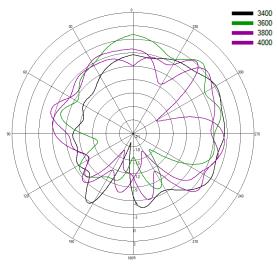




Typical H Plane- Cell B - Patterns- 2600-2700 MHz

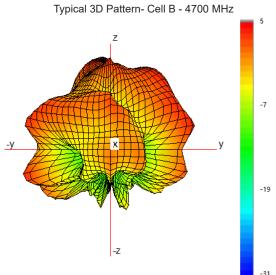


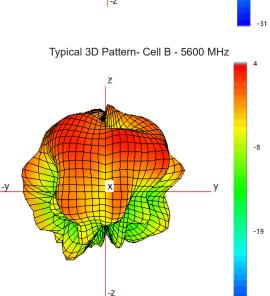
Typical H Plane- Cell B - Patterns- 3400-4000 MHz

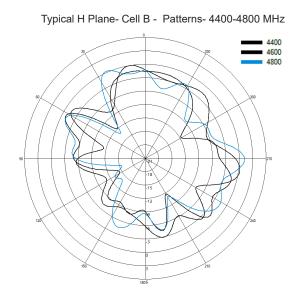


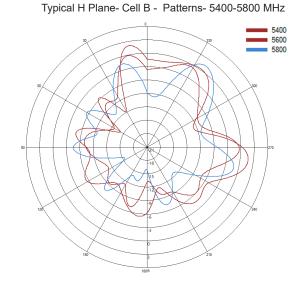






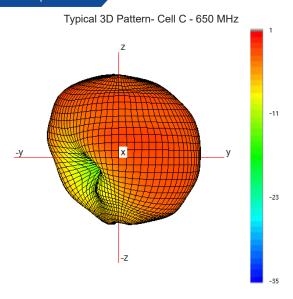




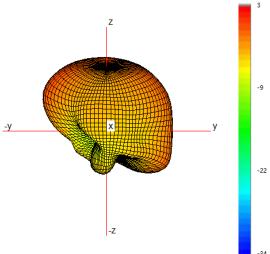


PANORAMA P ANTENNAS

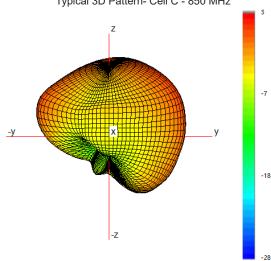
GPS[X]D4[X]-6-60[-X]



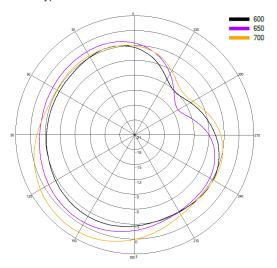
Typical 3D Pattern- Cell C - 750 MHz



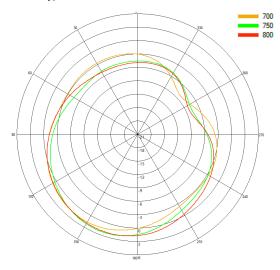
Typical 3D Pattern- Cell C - 850 MHz



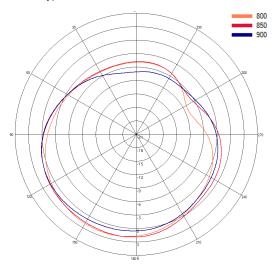
Typical H Plane- Cell C - Patterns- 600-700MHz



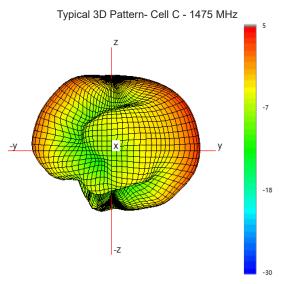
Typical H Plane- Cell C - Patterns- 700-800MHz

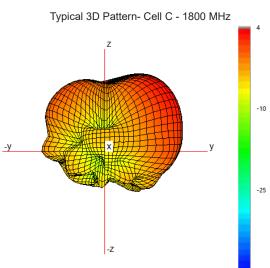


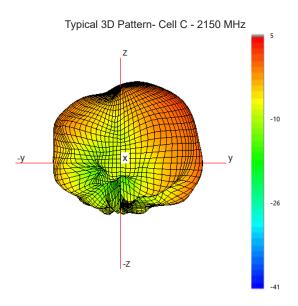
Typical H Plane- Cell C - Patterns- 800-900MHz

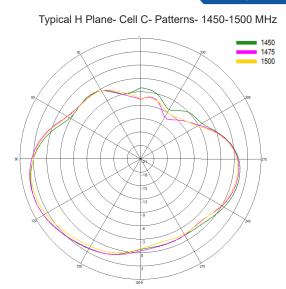


GPS[X]D4[X]-6-60[-X]

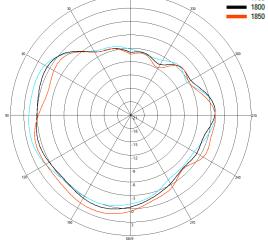




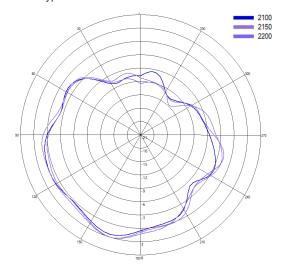




Typical H Plane- Cell C- Patterns- 1750-1850 MHz

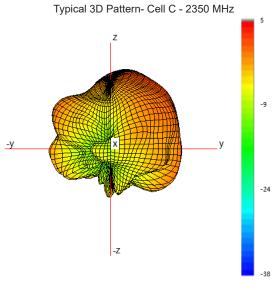


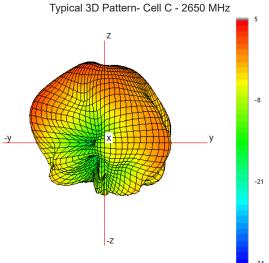
Typical H Plane- Cell C- Patterns- 2100-2200 MHz

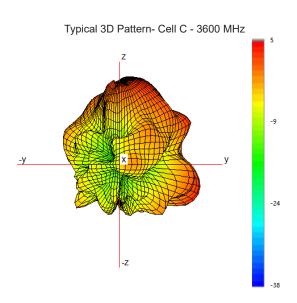


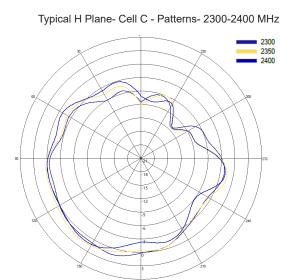
PANORAMA PANTENNAS

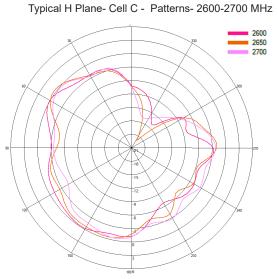
GPS[X]D4[X]-6-60[-X]

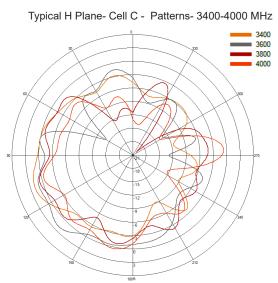






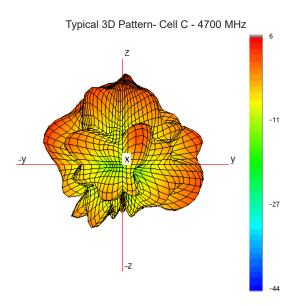


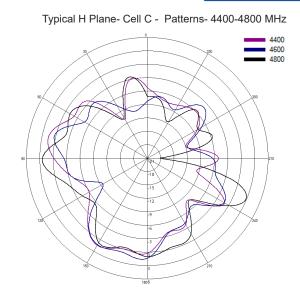


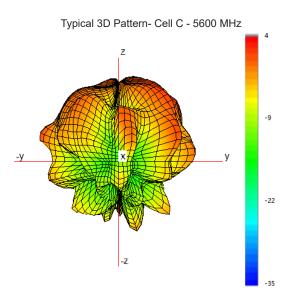


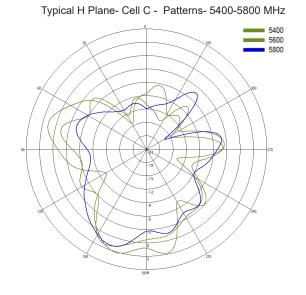
GPS[X]D4[X]-6-60[-X]





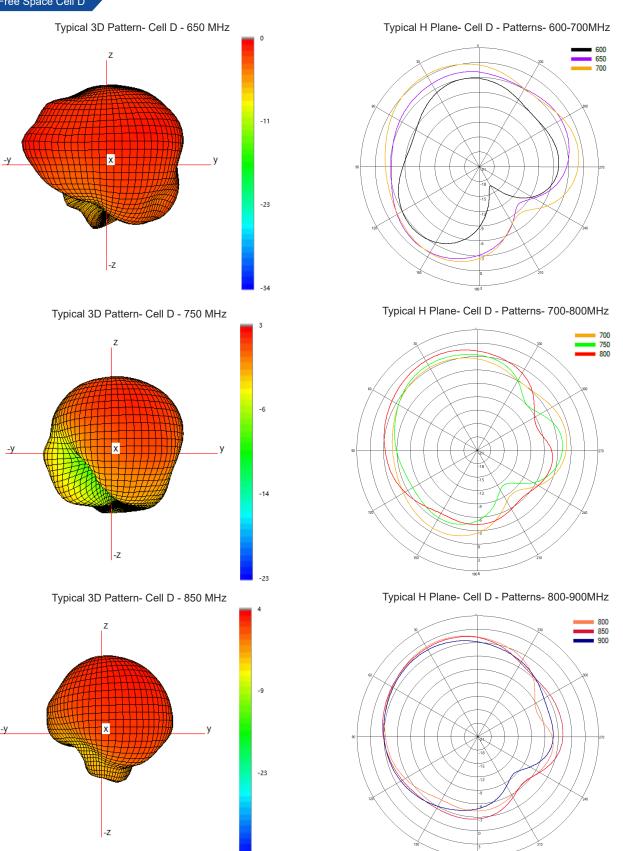






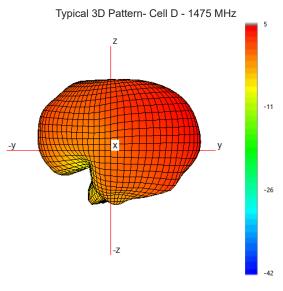
PANORAMA (P) ANTENNAS

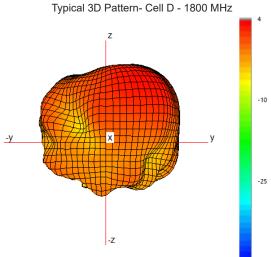
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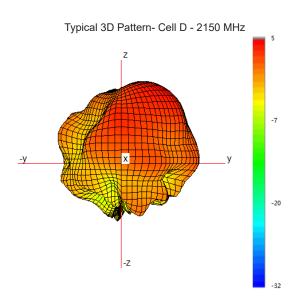


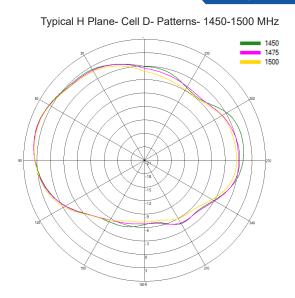
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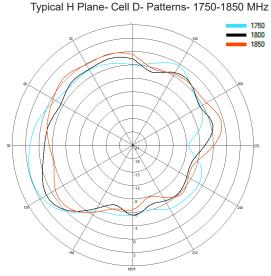


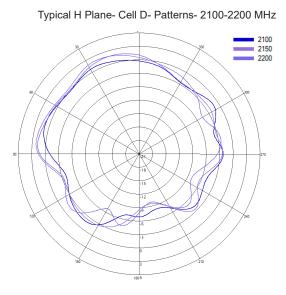








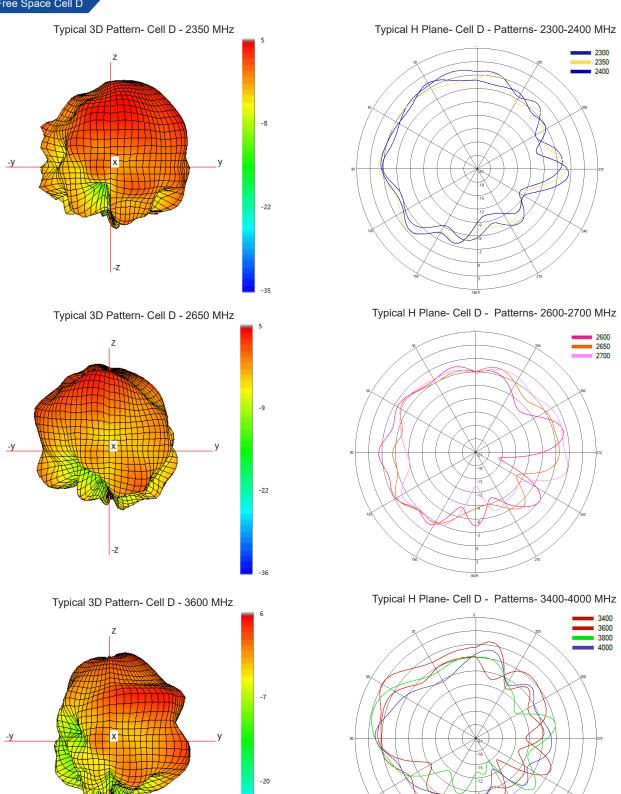




GPS[X]D4[X]-6-60[-X]



3D Pattern Data in Free Space Cell D

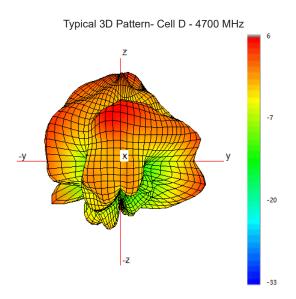


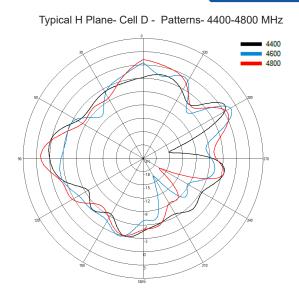
Panorama Antennas Ltd Frogmore, London, SW18 1HF, United Kingdom T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477 E: sales@panorama-antennas.com W: www.panorama-antennas.com Waiver: The data given above is indicative of the performance of the product/s under particular conditions and does not imply a guarantee of performance. These specifications are subject to change without notice.

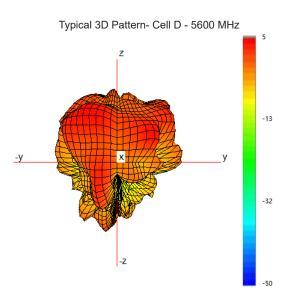
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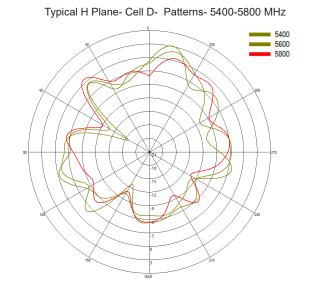






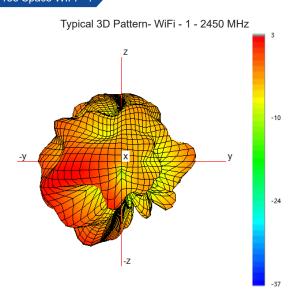


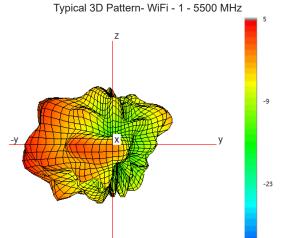


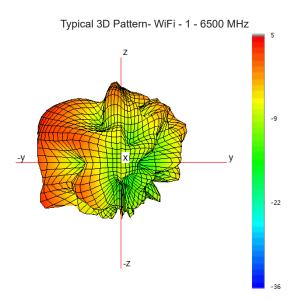


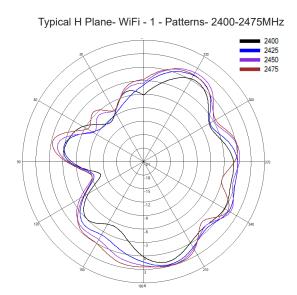
GPS[X]D4[X]-6-60[-X]

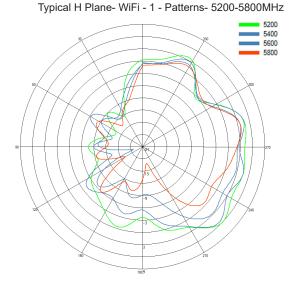
3D Pattern Data in Free Space WIFI - 1

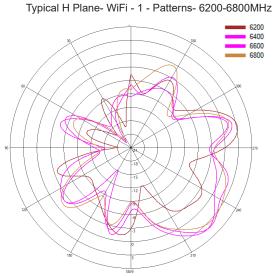








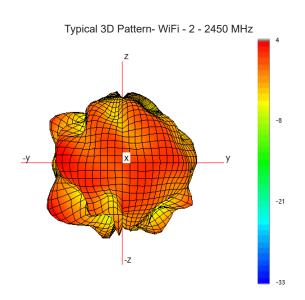


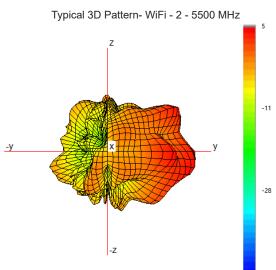


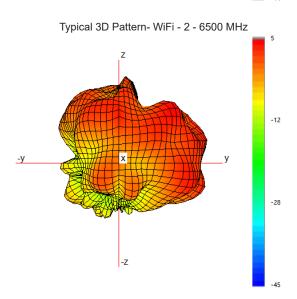
GPS[X]D4[X]-6-60[-X]

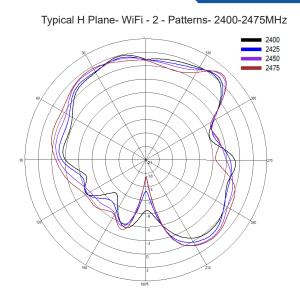


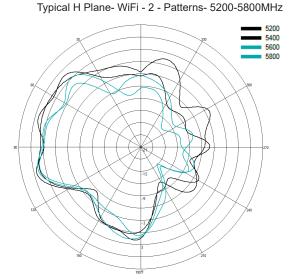
3D Pattern Data in Free Space WIFI - 2

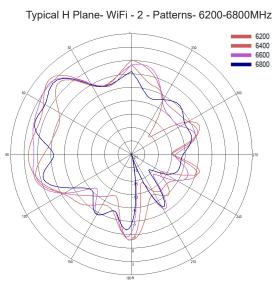










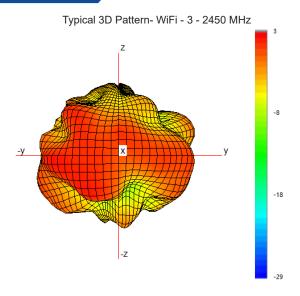


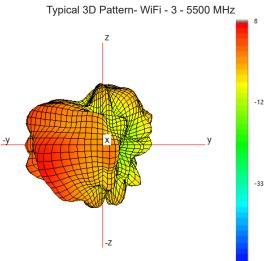
Panorama Antennas Ltd Frogmore, London, SW18 1HF, United Kingdom T: +44 (0)20 8877 4444 | F: +44 (0)20 8877 4477 E: sales@panorama-antennas.com W: www.panorama-antennas.com

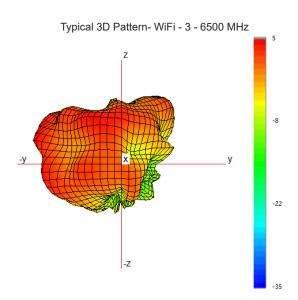
GPS[X]D4[X]-6-60[-X]

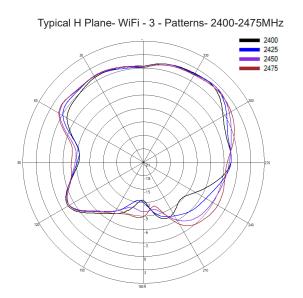


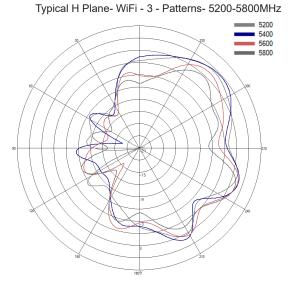
3D Pattern Data in Free Space WIFI - 3

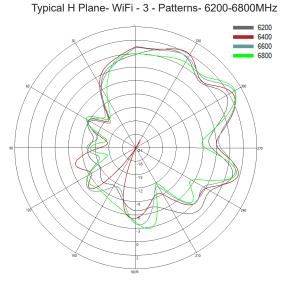








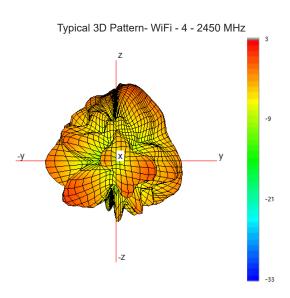


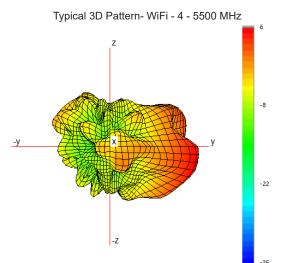


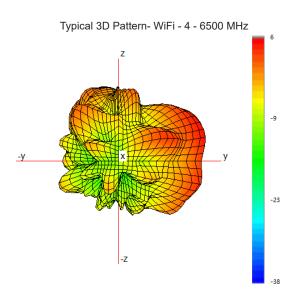
GPS[X]D4[X]-6-60[-X]

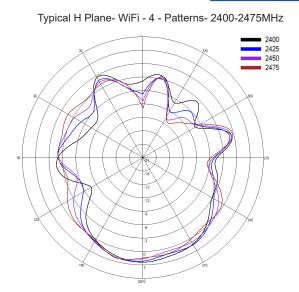


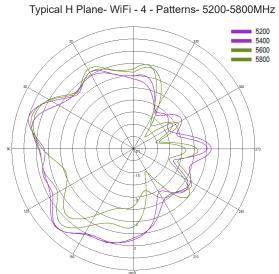
3D Pattern Data in Free Space WIFI - 4

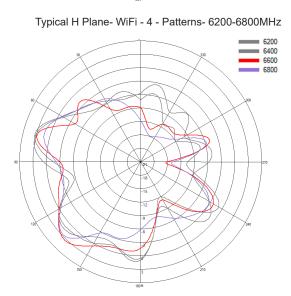








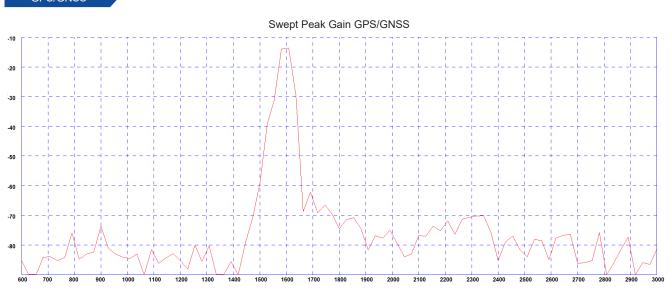




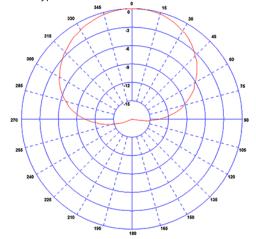


GPS[X]D4[X]-6-60[-X]

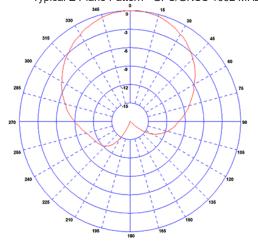
#### Electrical Data- L1 GPS/GNSS



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