



Delta 2A

2G/3G/4G/(5G) 54MM RIGHT ANGLE STUBBY ANTENNA

Key Features

- Small size
- Quad band GSM (2G) 3G, 4G
- Some 5G Band Support
- ISM: 868 and 915MHz



General Description

The Delta 2A Multiband antenna combines good performance with a small size, enabling its use with many of today's 2G, 3G, 4G, (5G) and ISM products.

The omni directional, radiating element is over moulded in black high-grade rubber, which allows flexibility and provides a rugged and stylish finish.

Terminated with a right angle SMA male or SMA male reverse polarity right angle connector, it is suited to applications like Point of Sale terminals, metering or alarm panel equipment.

Additional Considerations

- Groundplane independent
- Suitable for GSM / GPRS and 3G terminal equipment
- Meets all EU compliance criteria for electronic goods

D Direct	2G GSM	3G UMTS	4G LTE
LTE Cat M	LTE NB IoT	5G LTE	ISM 868
ISM 915	LoRa Wireless	SF Sigfox	



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Electrical Specifications

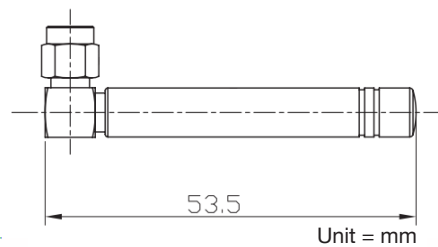
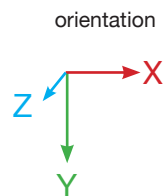
Impedance:	50 Ohms
Radiation:	Omni Directional
Polarization:	Vertical
Ground Plane Independent:	Yes
Max Input Power:	6 W

Environmental Specifications

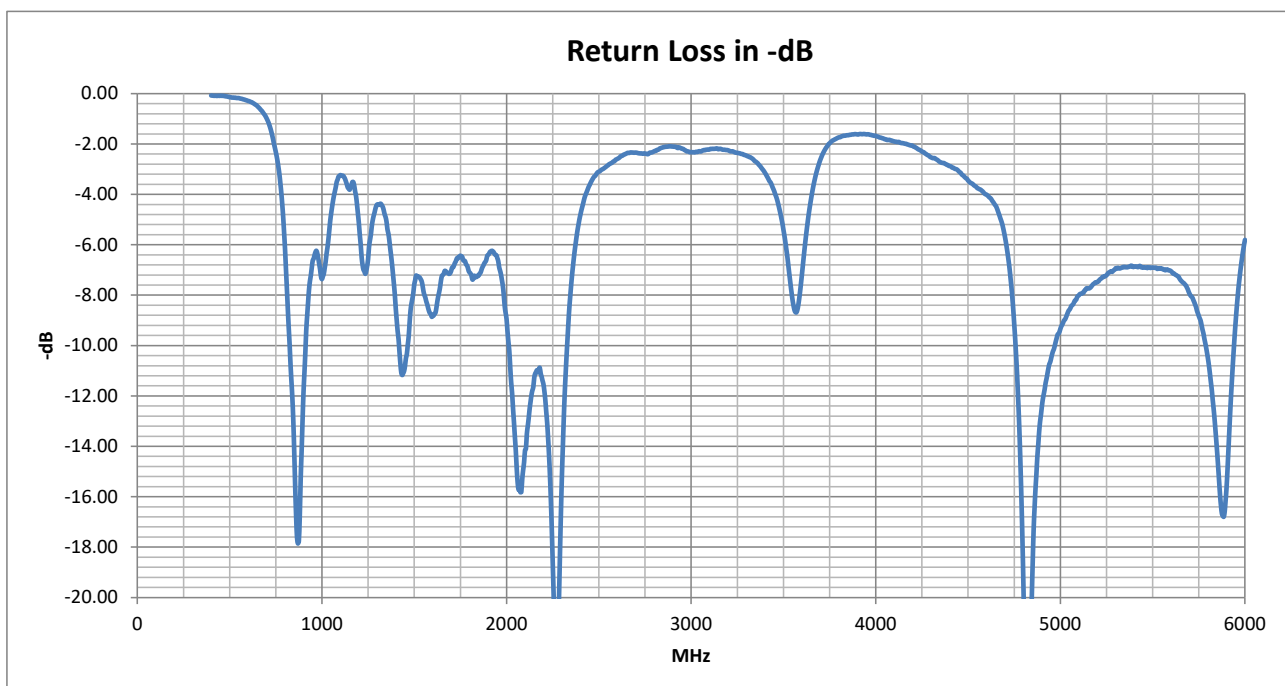
Operating Temperature range:	-20 - +60 °C
Storage Temperature range:	-30 - +75 °C

Mechanical Specifications

Dimensions:	L53.5 mm
Weight:	8.3 g
Connector:	Right Angle SMA male or Right Angle SMA male Reverse Polarity
Mounting Method:	Direct connect
Connector plating:	Gold/Nickel
Main Material:	TPR



Return Loss

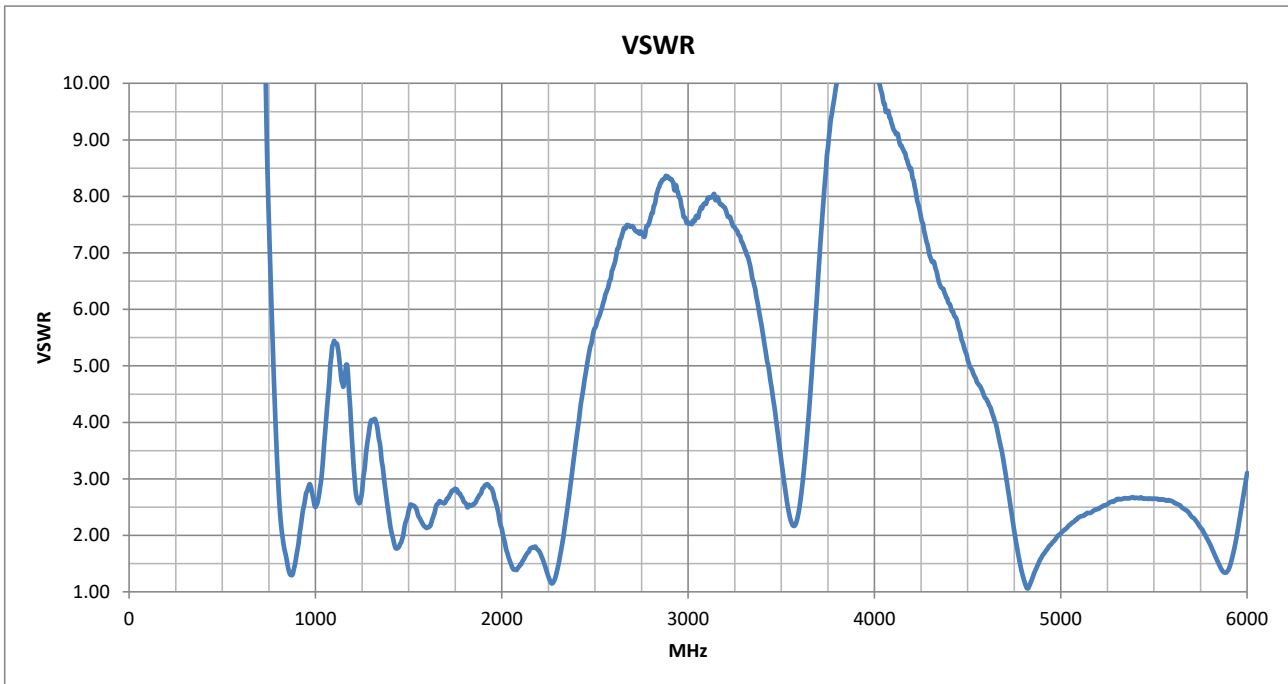




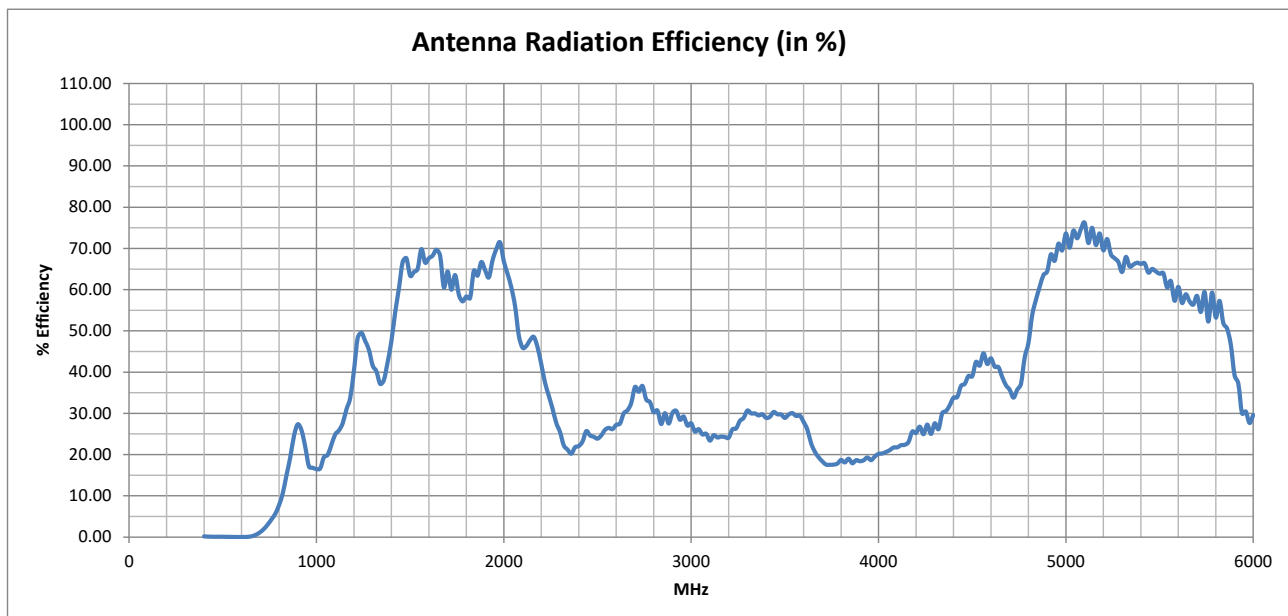
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VSWR



Radiation Efficiency





LTE/5G Band Coverage

LTE, CAT-M/5G Bands	NB-IoT Band	Regional Coverage	Uplink	Downlink	Avg Efficiency % over band	Max VSWR over Band
1/n1	B1	Europe / Asia	1920-1980 MHz	2110-2170 MHz	67.8 / 46.9	2.91 / 1.79
2/n2	B2	North America/Latin America/Caribbean	1850-1910 MHz	1930-1990 MHz	64.4 / 67.6	2.88 / 2.88
3/n3	B3	Europe/Africa/Asia/Oceania	1710-1785 MHz	1805-1880 MHz	60.3 / 62.1	2.82 / 2.71
4	B4	North America/Latin America/Caribbean	1710-1755 MHz	2110-2155 MHz	61.6 / 47.1	2.82 / 1.77
5/n5	B5	Country Specific	824-849 MHz	869-894 MHz	14.9 / 24.2	1.93 / 1.58
7/n7		Latin America/Europe/Asia +	2500-2570 MHz	2620-2690 MHz	25.4 / 31.4	6.38 / 7.49
8/n8	B8	Europe / Asia +	880-915 MHz	925-960 MHz	25.9 / 21.6	2.03 / 2.83
11	B11	Country Specific	1427.9-1447.9 MHz	1475.9-1495.9 MHz	60.4 / 65.8	1.82 / 2.35
12/n12	B12	North America/Caribbean +	699-716 MHz	729-746 MHz	1.62 / 3.13	17.8 / 10.6
13/n13	B13	North America/Caribbean +	777-787 MHz	746-756 MHz	5.9 / 3.68	4.94 / 8.15
14/n14	B14	Country Specific	788-798 MHz	758-768 MHz	6.7 / 4.34	4.04 / 7.02
17	B17	North America/Caribbean +	704-716 MHz	734-746 MHz	1.62 / 3.13	17.8 / 10.6
18/n18	B18	Country Specific	815-830 MHz	860-875 MHz	11.12 / 21.93	2.2 / 1.34
19	B19	Country Specific	830-845 MHz	875-890 MHz	14.9 / 23.7	1.81 / 1.49
20/n20	B20	Europe/Africa +	832-862 MHz	791-821 MHz	17.3 / 9.7	1.81 / 3.65
21		Country Specific	1447.9-1462.9 MHz	1495.9-1510.9 MHz	64.8 / 65.1	1.87 / 2.54
25/n25	B25	Country Specific	1850-1915 MHz	1525-1559 MHz	64.4 / 66.3	2.89 / 2.53
26/n26	B26	Country Specific	814-849 MHz	859-894 MHz	13.7 / 21.5	2.2 / 1.58
28/n28	B28	Latin America/Europe/Asia +	703-748 MHz	758-803 MHz	2.65 / 5.19	17.8 / 7.0
29/n29		Country Specific	-	717-728 MHz	2.1	14.03
30/n30		Country Specific	2305-2315 MHz	2350-2360 MHz	23.85 / 20.73	1.68 / 2.67
31	B31	Country Specific	452.5-457.5 MHz	462.5-467.5 MHz	0 / 0	219 / 206
32		Country Specific	-	1452-1496 MHz	64.48	2.44
38/n38		Europe +	2570-2620 MHz		26.8	7.07
39/n39		Country Specific	1880-1920 MHz		64.78	2.91
40/n40		Asia +	2300-2400 MHz		22.17	3.71
41/n41		Country Specific	2496-2690 MHz		28.0	7.48
42		Country Specific	3400-3600 MHz		29.4	5.58
43		Country Specific	3600-3800 MHz		20.4	10.05
46/n46		Country Specific	5150-5925 MHz		60.2	2.68
48/n48		Country Specific	3550-3700 MHz		24.8	6.69
65/n65		Country Specific	1920-2010 MHz	2110-2200 MHz	67 / 46.1	2.91 / 1.8
66/n66	B66	Country Specific	1710-1780 MHz	2110-2200 MHz	60.7 / 46.1	2.81 / 1.8
71/n71	B71	Country Specific	663-698 MHz	617-652 MHz	0.7 / 0	30.7 / 52.7

Table data for bands as detailed in 3GPP TS 36.101

● Usable Band

○ Adequate in good signal area

✘ Not Usable



5G Extended Table for Band Coverage

LTE/5G Band	NB-IoT Band	Uplink	Downlink	Avg Efficiency % over band		Max VSWR over Band
n24		1626.5 – 1660.5 MHz	1525 – 1559 MHz	68.7 / 66.3	●	2.57 / 2.53
n34		2010 – 2025 MHz		63.7	●	1.95
n47		5855 – 5925 MHz		42.6	●	1.68
n50		1432 – 1517 MHz		62.7	●	2.54
n51		1427 – 1432 MHz		62.7	●	1.89
n53		2483.5 – 2495 MHz		24.1	✘	5.64
n67		738 – 758 MHz		3.13	✘	9.69
n70	B70	1695 – 1710 MHz	1995 – 2020 MHz	61.6 / 67.3	●	2.65 / 2.16
n74		1427 – 1470 MHz	1475 – 1518 MHz	62.2 / 65.5	●	1.98 / 2.54
n75		1432 – 1517 MHz		62.7	●	2.54
n76		1427 – 1432 MHz		57.3	●	1.82
n77		3300 – 4200 MHz		25.5	✘	10.89
n78		3300 – 3800 MHz		25.7	✘	10.05
n79		4400 – 5000 MHz		51.1	●	6.1
n80		1710 – 1785 MHz		60.3	●	2.82
n81		880 – 915 MHz		25.9	●	2.03
n82		832 – 862 MHz		17.3	○	1.81
n83		703 – 748 MHz		2.65	✘	17.85
n84		1920 – 1980 MHz		67.8	●	2.91
n85	B85	698 – 716 MHz	728 – 746 MHz	1.3 / 3.1	✘	19.2 / 11.7
n86		1710 – 1780 MHz		60.7	●	2.82
n89		824 – 849 MHz		14.98	○	1.97
n90		2496 – 2690 MHz		28.0	✘	7.49
n91		832 – 862 MHz	1427 – 1432 MHz	17.3 / 57.3	○	1.81 / 1.82
n92		832 – 862 MHz	1432 – 1517 MHz	17.3 / 62.7	○	1.81 / 2.54
n93		880 – 915 MHz	1427 – 1432 MHz	25.9 / 57.3	●	2.03 / 1.82
n94		880 – 915 MHz	1432 – 1517 MHz	25.9 / 62.7	●	2.03 / 2.54
n95		2010 – 2025 MHz		63.7	●	1.95
n96		5925 – 7125 MHz		unmeasured		
n97		2300 – 2400 MHz		22.17	○	3.71
n98		1880 – 1920 MHz		64.7	●	2.91
n99		1626.5 – 1660.5 MHz		68.7	●	2.57

Table data for bands as detailed in 3GPP TS 38.101

● Usable Band

○ Adequate in good signal area

✘ Not Usable

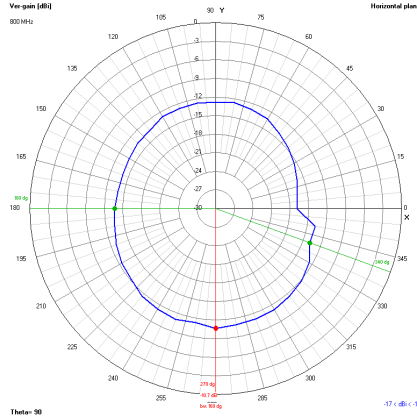


Delta 2A

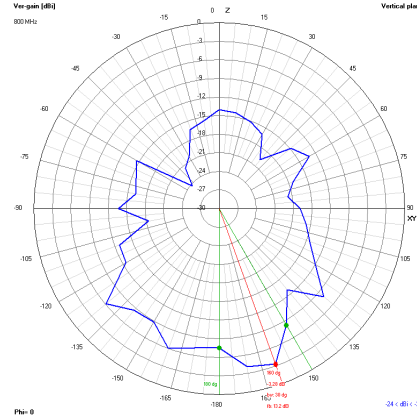
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Radiation Plots

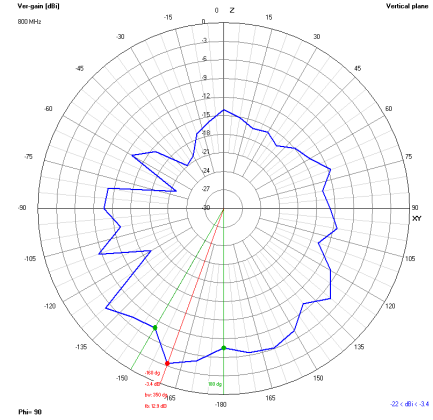
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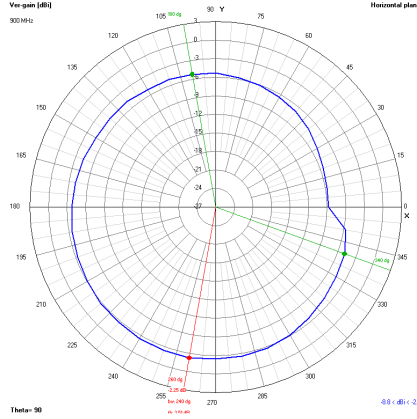
XZ



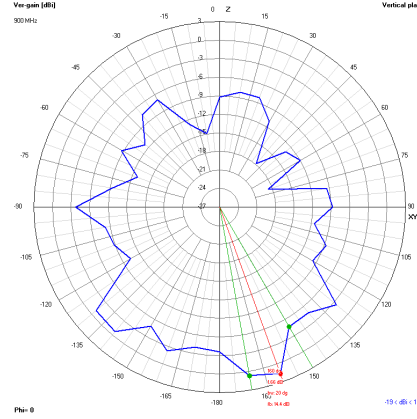
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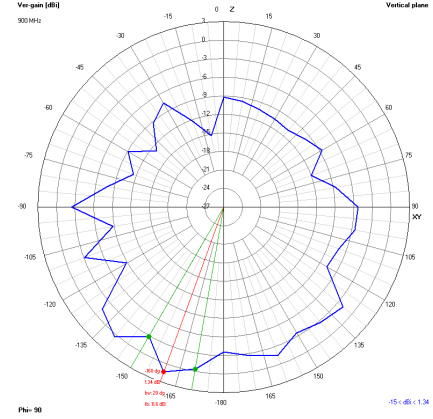
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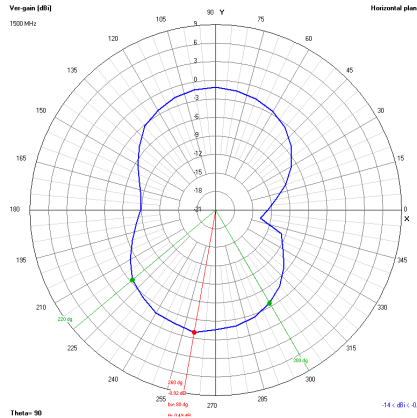
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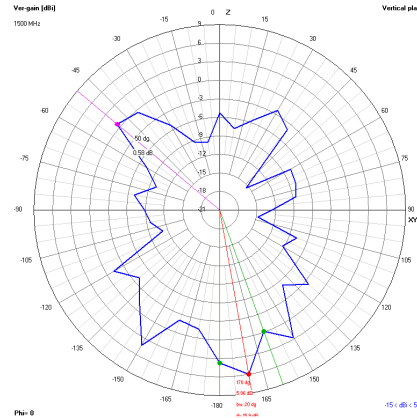
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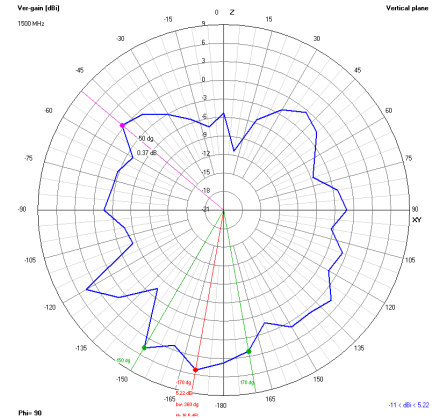
1500 MHz XY



XZ



YZ



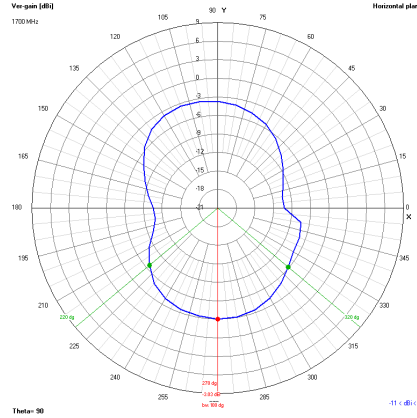


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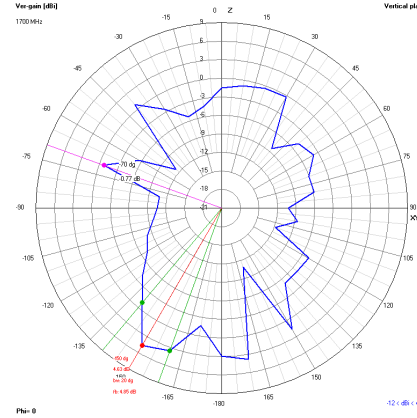
2G/3G/4G/(5G) 54MM RIGHT ANGLE STUBBY ANTENNA

Radiation Plots

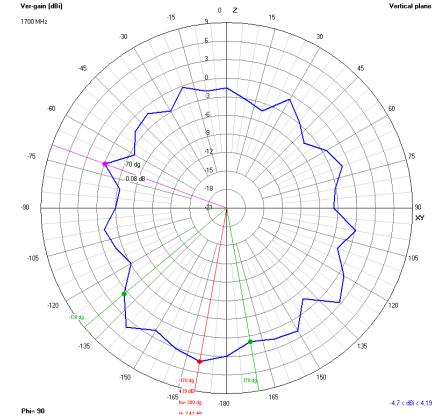
1700 MHz XY



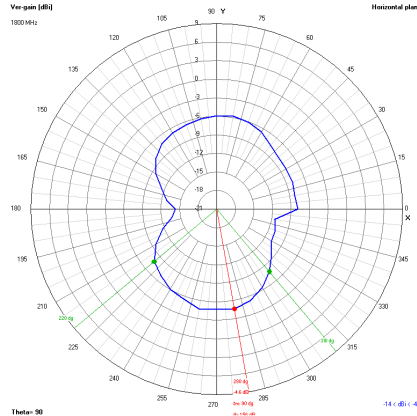
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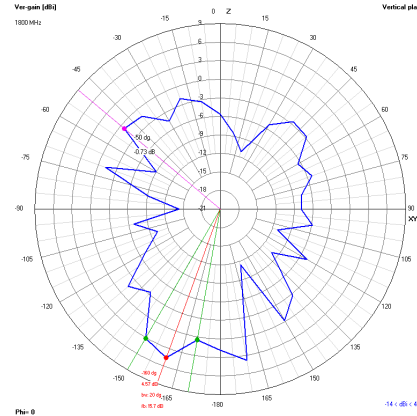
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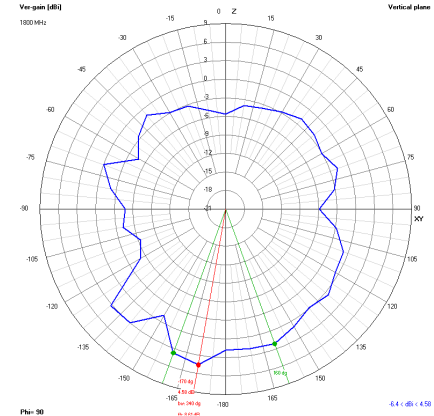
1800 MHz XY



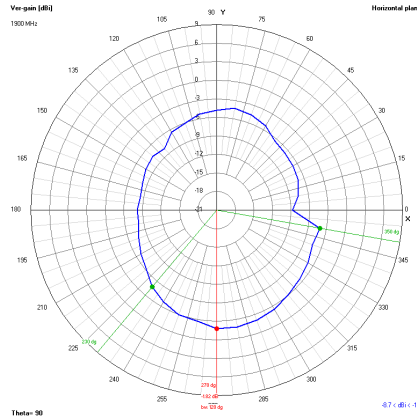
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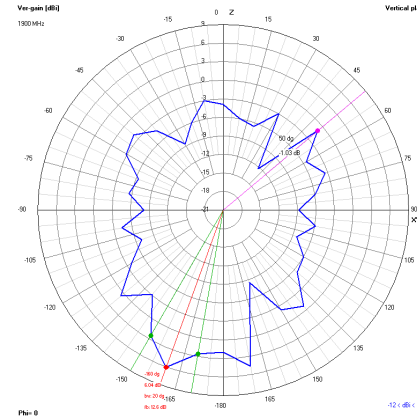
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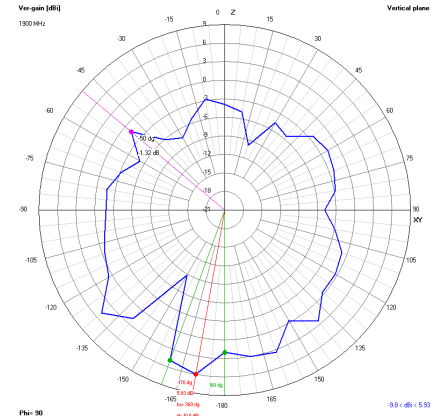
1900 MHz XY



XZ



YZ



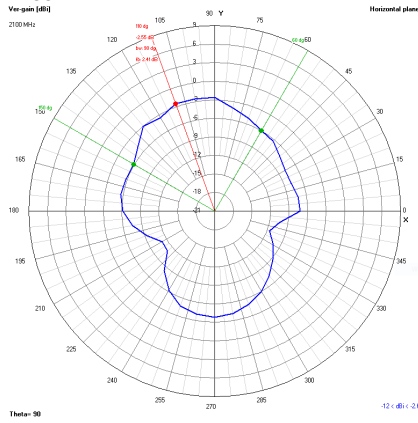


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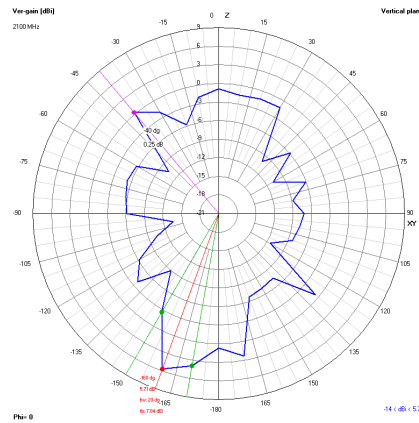
2G/3G/4G/(5G) 54MM RIGHT ANGLE STUBBY ANTENNA

Radiation Plots

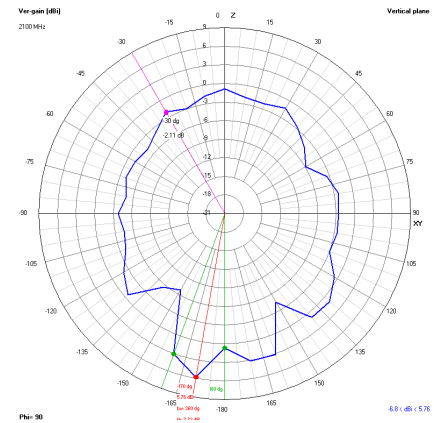
2100 MHz XY



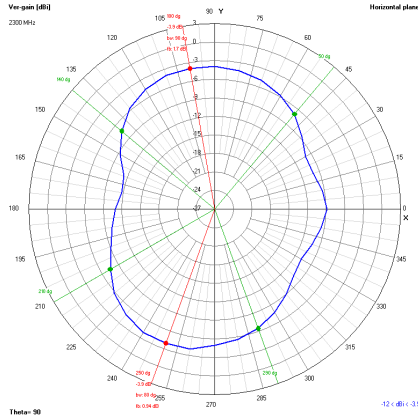
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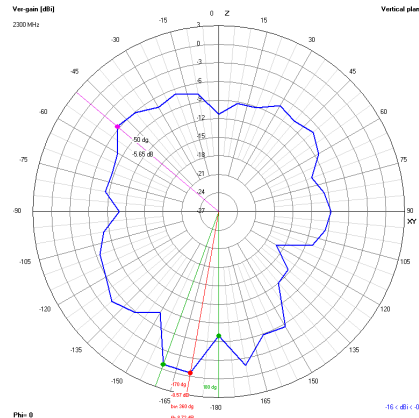
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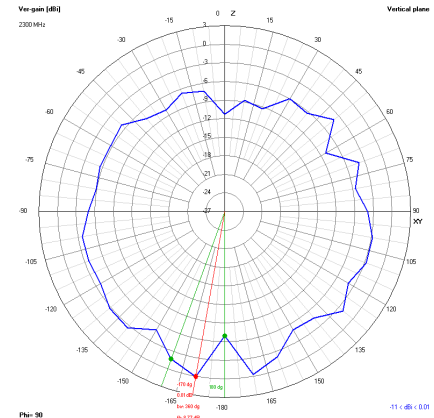
2300 MHz XY



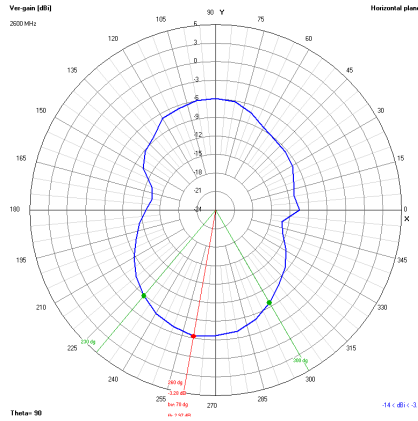
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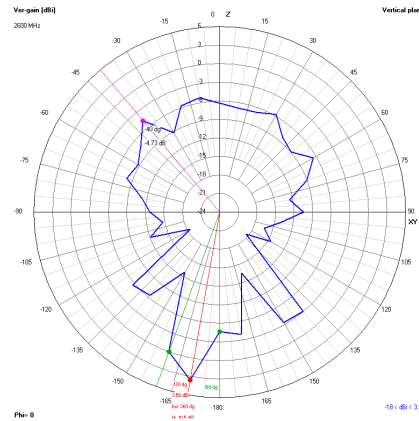
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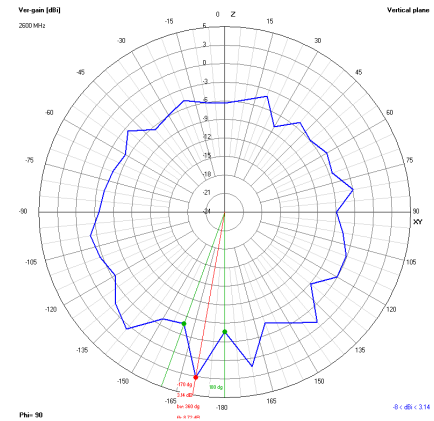
2600 MHz XY



XZ



YZ



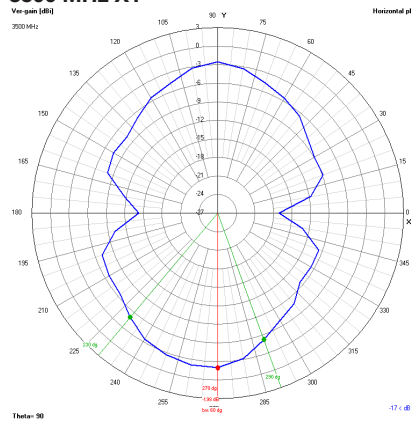


Delta 2A

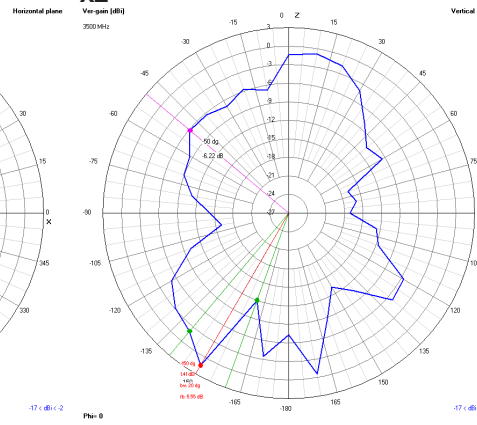
2G/3G/4G/(5G) 54MM RIGHT ANGLE STUBBY ANTENNA

Radiation Plots

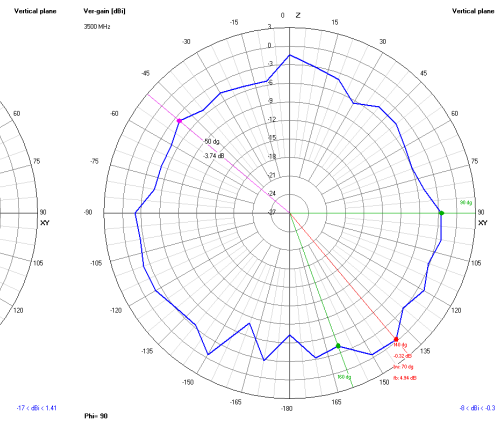
3500 MHz XY



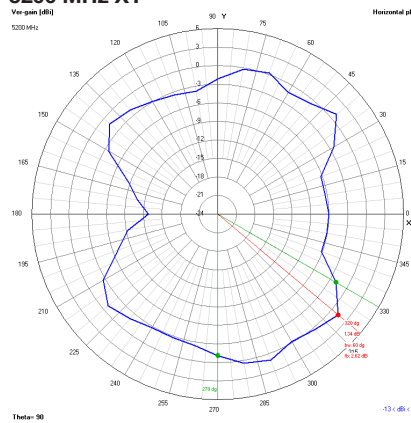
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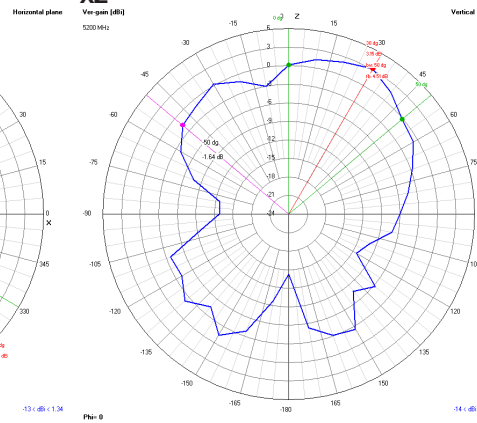
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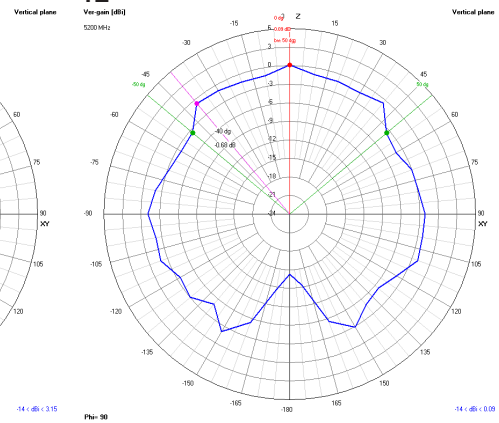
5200 MHz XY



XZ



YZ



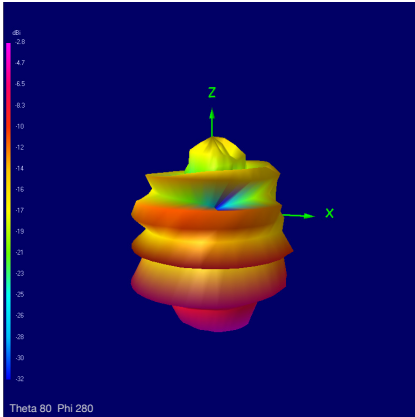


Delta 2A

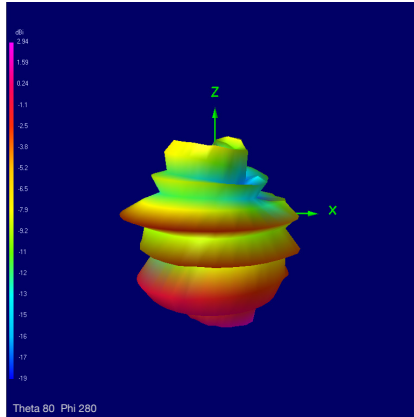
2G/3G/4G/(5G) 54MM RIGHT ANGLE STUBBY ANTENNA

3D Radiation Plots

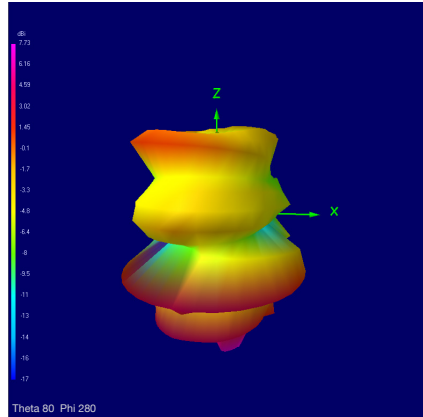
800 MHz



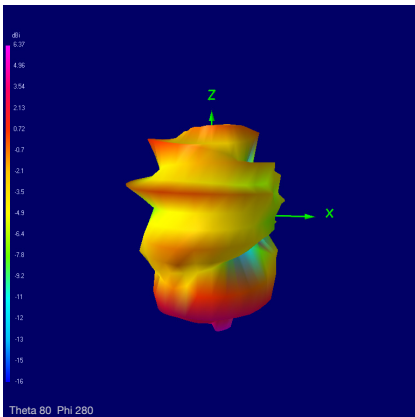
900 MHz



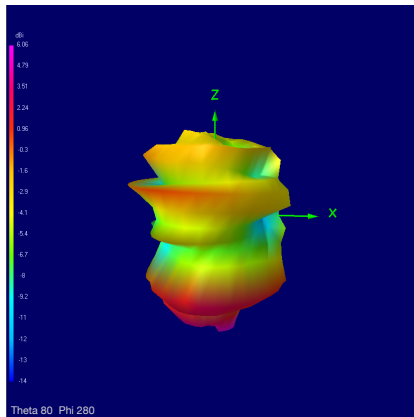
1500 MHz



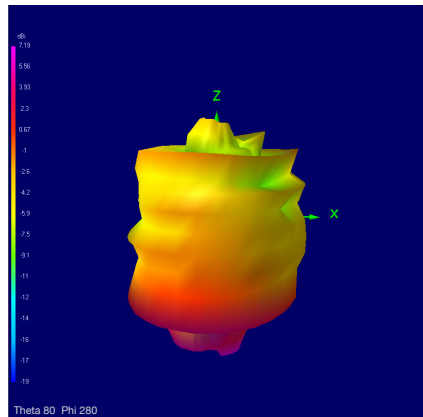
1700 MHz



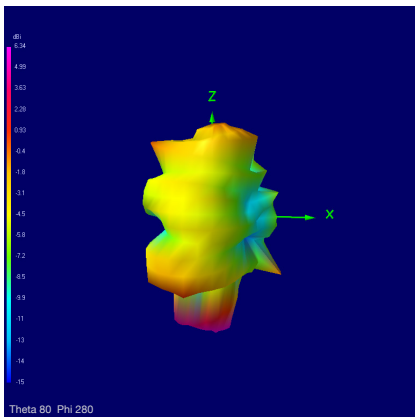
1800 MHz



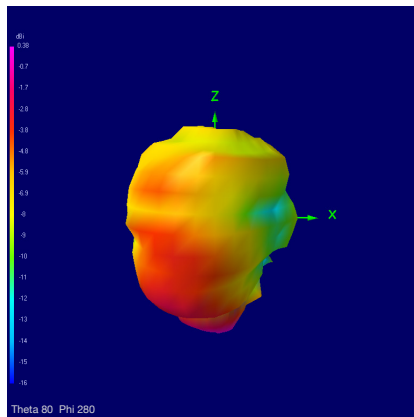
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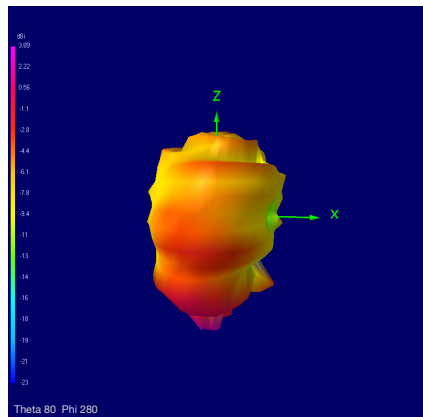
2100 MHz



2300 MHz



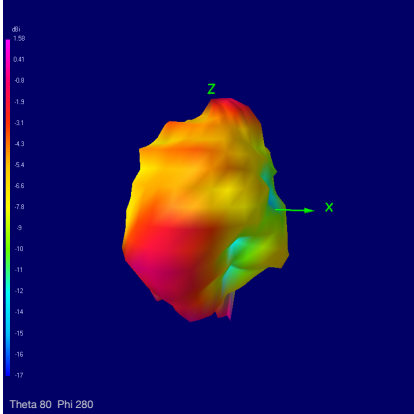
2600 MHz



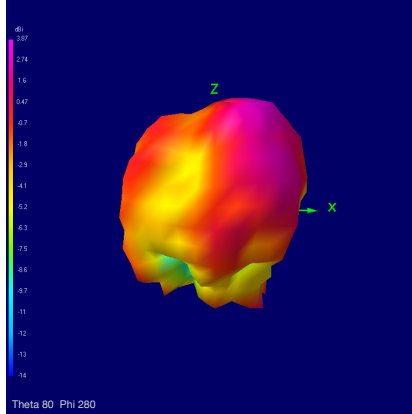


3D Radiation Plots

3500 MHz



5200 MHz



Ordering Details

Part number	Description
DELTA2A/X/SMAM/S/RA/11	2G/3G/4G/(5G) 54MM RIGHT ANGLE STUBBY ANTENNA SMA MALE
DELTA2A/X/SMAM/RP/RA/11	2G/3G/4G/(5G) 54MM RIGHT ANGLE STUBBY ANTENNA SMA MALE REVERSE POLARITY