



Delta 1A

2G/3G/4G/5G & ISM868/915MHz 56MM STUBBY ANTENNA

Key Features

- Quad band GSM (2G), 3G, 4G & 5G
- ISM: 868 and 915 MHz
- Groundplane independent



General Description

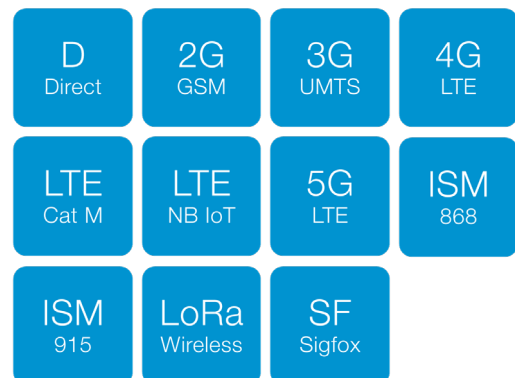
The Delta 1A Multiband antenna combines good performance with a small size, enabling its use with many of today's GSM / GPRS (2G), UMTS (3G), LTE (4G/5G) and ISM 868/915 MHz band applications.

The omni-directional, radiating element is capped with a black high-grade plastic mould which allows flexibility and provides a rugged stylish finish.

Typical applications are point of sale terminals, metering and alarm panel equipment.

Additional Considerations

- Antenna can be discretely mounted
- Fits to many popular GSM / GPRS (2G) and UMTS (3G) terminal equipment
- Meets all EU compliance criteria for electronic goods





Delta 1A

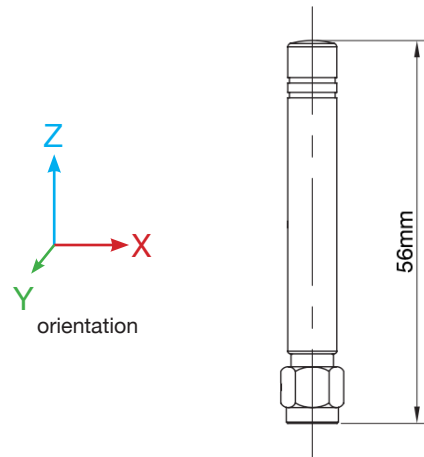
2G/3G/4G/5G & ISM868/915MHz 56MM STUBBY ANTENNA

Electrical Specifications

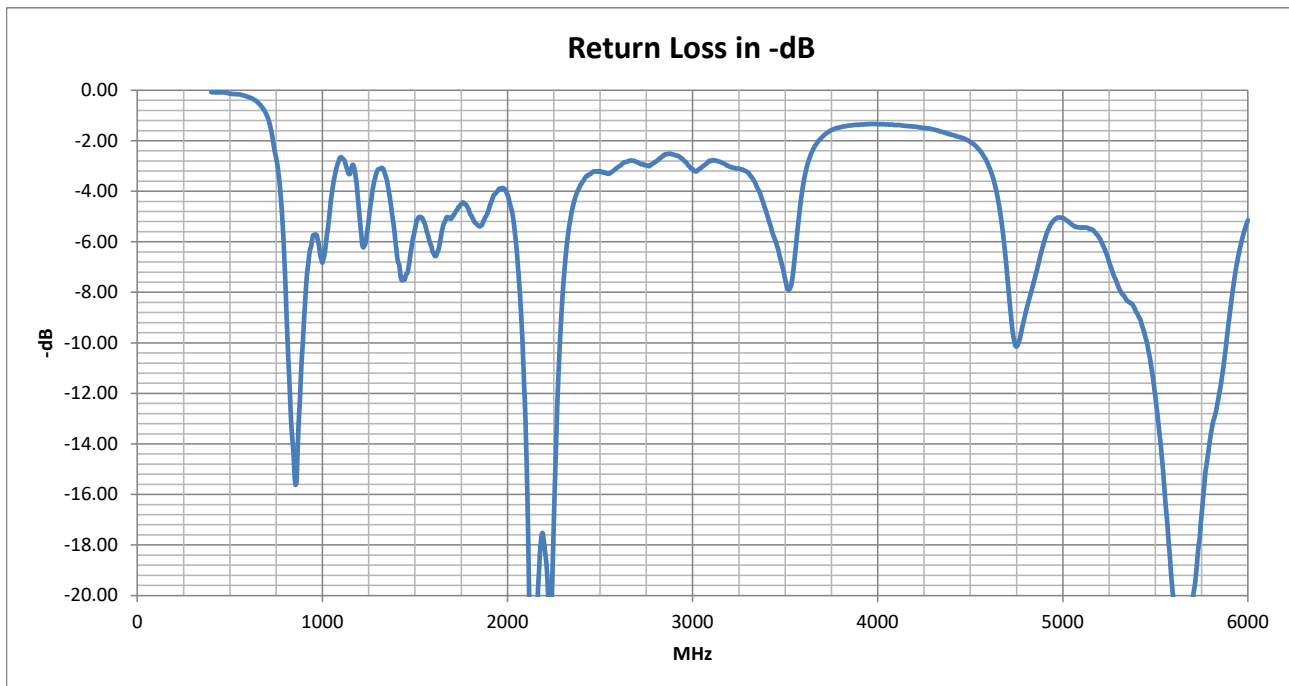
Storage Temperature range:	-30 - +75 °C
Operating Temperature range:	-20 - +60 °C
Impedance:	50 Ohms
Radiation:	Omni
Polarization:	Vertical
Ground Plane Independent:	Yes
Max Input Power:	50 W

Mechanical Specifications

Dimensions:	56 mm
Connector:	SMA male
Mounting Method:	Direct connect
Connector plating:	Gold/Nickel



Return Loss

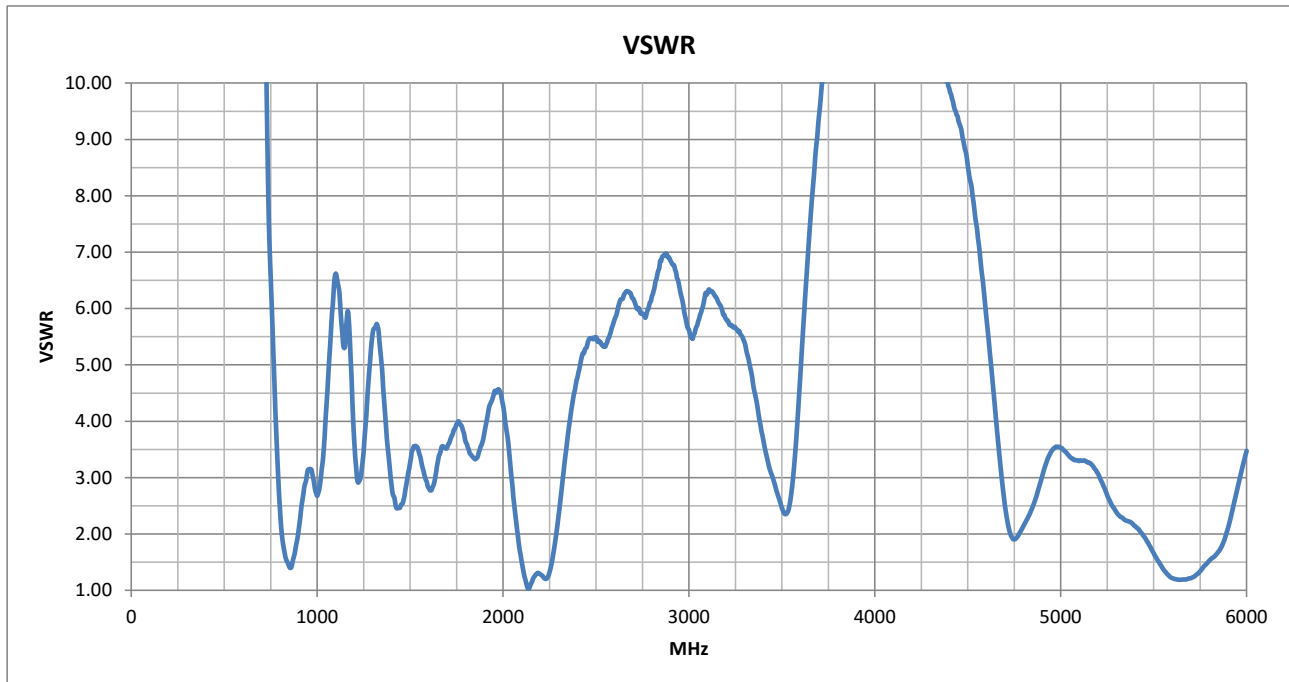




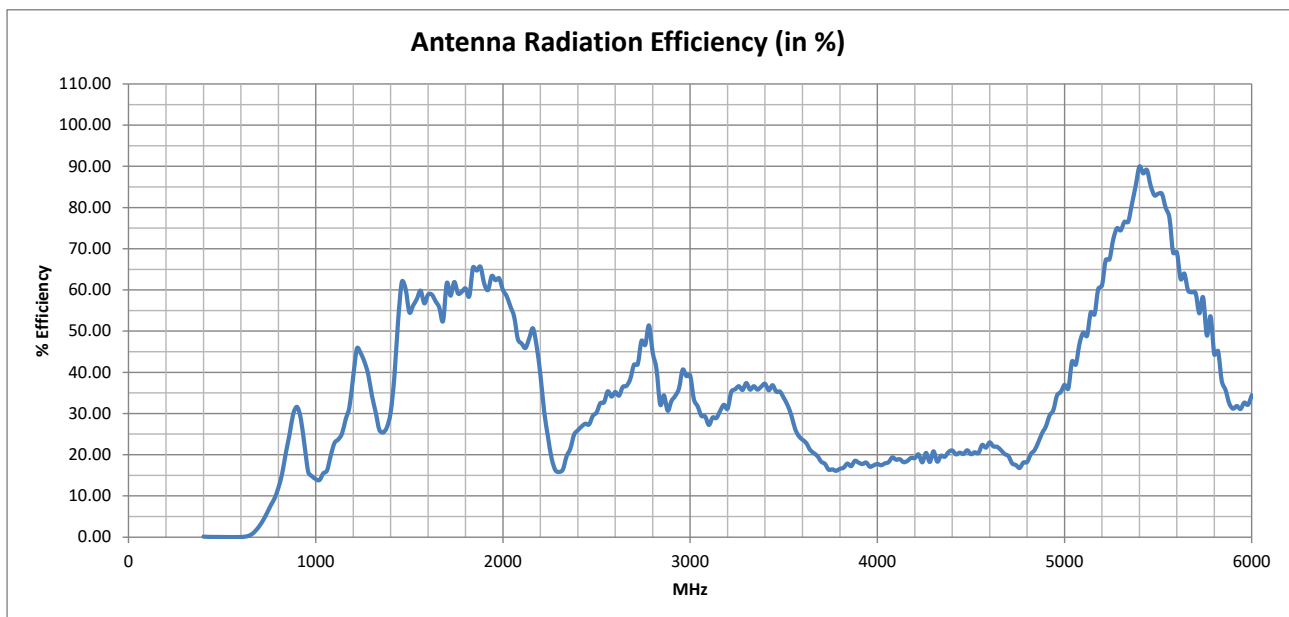
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VSWR



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	62.1 / 47.6	4.57 / 1.33
2/n2	B2	North America/Latin America/Caribbean	1850-1910 MHz	1930-1990 MHz	63.4 / 61.7	3.98 / 4.57
3/n3	B3	Europe/Africa/Asia/Oceania	1710-1785 MHz	1805-1880 MHz	60.2 / 62.9	4.00 / 3.60
4	B4	North America/Latin America/Caribbean	1710-1755 MHz	2110-2155 MHz	60.3 / 47.9	3.97 / 1.33
5/n5	B5	Country Specific	824-849 MHz	869-894 MHz	20.24 / 28.8	1.76 / 1.94
7/n7		Latin America/Europe/Asia +	2500-2570 MHz	2620-2690 MHz	33.0 / 37.5	5.49 / 6.31
8/n8	B8	Europe / Asia +	880-915 MHz	925-960 MHz	30.1 / 22.2	2.48 / 3.15
11	B11	Country Specific	1427.9-1447.9 MHz	1475.9-1495.9 MHz	51.1 / 58.9	2.51 / 3.16
12/n12	B12	North America/Caribbean +	699-716 MHz	729-746 MHz	2.87 / 5.96	19.1 / 10.5
13/n13	B13	North America/Caribbean +	777-787 MHz	746-756 MHz	9.71 / 6.83	4.21 / 7.00
14/n14	B14	Country Specific	788-798 MHz	758-768 MHz	10.68 / 7.69	3.41 / 6.11
17	B17	North America/Caribbean +	704-716 MHz	734.746 MHz	3.49 / 5.96	17.48 / 9.45
18/n18	B18	Country Specific	815-830 MHz	860-875 MHz	15.9 / 27.4	1.85 / 1.60
19	B19	Country Specific	830-845 MHz	875-890 MHz	20.2 / 28.8	1.58 / 1.86
20/n20	B20	Europe/Africa +	832-862 MHz	791-821 MHz	20.2 / 14.2	1.58 / 3.04
21		Country Specific	1447.9-1462.9 MHz	1495.9-1510.9 MHz	58.2 / 57.0	2.61 / 3.48
25/n25	B25	Country Specific	1850-1915 MHz	1525-1559 MHz	63.4 / 57.9	4.07 / 3.56
26/n26	B26	Country Specific	814-849 MHz	859-894 MHz	18.16 / 28.8	1.85 / 1.94
28/n28	B28	Latin America/Europe/Asia +	703-748 MHz	758-803 MHz	5.16 / 8.76	17.48 / 6.11
29/n29		Country Specific	-	717-728 MHz	4.29	13.45
30/n30		Country Specific	2305-2315 MHz	2350-2360 MHz	16.1 / 20.5	2.79 / 4.03
31	B31	Country Specific	452.5-457.5 MHz	462.5-467.5 MHz	0 / 0	-
32		Country Specific	-	1452-1496 MHz	57.3	3.26
38/n38		Europe +	2570-2620 MHz		34.7	6.04
39/n39		Country Specific	1880-1920 MHz		62.3	4.16
40/n40		Asia +	2300-2400 MHz		20.6	4.77
41/n41		Country Specific	2496-2690 MHz		34.7	6.31
42		Country Specific	3400-3600 MHz		31.8	4.86
43		Country Specific	3600-3800 MHz		19.04	11.95
46/n46		Country Specific	5150-5925 MHz		63.7	3.26
48/n48		Country Specific	3550-3700 MHz		22.9	9.43
65/n65		Country Specific	1920-2010 MHz	2110-2200 MHz	61.1 / 46.2	4.57 / 1.33
66/n66	B66	Country Specific	1710-1780 MHz	2110-2200 MHz	60.1 / 46.2	4.00 / 1.33
71/n71	B71	Country Specific	663-698 MHz	617-652 MHz	1.72 / 0.31	31.8 / 56.1

Table data for bands as detailed in 3GPP TS 36.101 & 38.101

● 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	57.2 / 57.9	3.42 / 3.56
n34		2010 – 2025 MHz		58.1	4.02
n47		5855 – 5925 MHz		33.3	2.45
n50		1432 – 1517 MHz		54.1	3.55
n51		1427 – 1432 MHz		45.8	2.46
n53		2483.5 – 2495 MHz		29.8	5.48
n67		738 – 758 MHz		7.76	8.41
n70	B70	1695 – 1710 MHz	1995 – 2020 MHz	57.5 / 60.4	3.61 / 4.36
n74		1427 – 1470 MHz	1475 – 1518 MHz	54.1 / 58.2	2.68 / 3.55
n75		1432 – 1517 MHz		54.1	3.55
n76		1427 – 1432 MHz		57.0	2.46
n77		3300 – 4200 MHz		23.5	13.07
n78		3300 – 3800 MHz		27.6	11.95
n79		4400 – 5000 MHz		22.8	9.91
n80		1710 – 1785 MHz		60.2	4.00
n81		880 – 915 MHz		30.1	4.07
n82		832 – 862 MHz		20.2	1.58
n83		703 – 748 MHz		7.76	17.48
n84		1920 – 1980 MHz		62.1	4.57
n85	B85	698 – 716 MHz	728 – 746 MHz	2.87 / 5.96	19.0 / 10.57
n86		1710 – 1780 MHz		60.1	4.00
n89		824 – 849 MHz		20.2	1.76
n90		2496 – 2690 MHz		34.7	5.70
n91		832 – 862 MHz	1427 – 1432 MHz	20.2 / 57.0	1.58 / 2.46
n92		832 – 862 MHz	1432 – 1517 MHz	20.2 / 54.1	1.58 / 3.55
n93		880 – 915 MHz	1427 – 1432 MHz	30.1 / 57.0	4.07 / 2.46
n94		880 – 915 MHz	1432 – 1517 MHz	30.1 / 54.1	4.07 / 3.55
n95		2010 – 2025 MHz		58.1	4.02
n96		5925 – 7125 MHz		not measured	
n97		2300 – 2400 MHz		20.6	4.77
n98		1880 – 1920 MHz		62.3	4.16
n99		1626.5 – 1660.5 MHz		57.3	3.42

Table data for bands as detailed in 3GPP TS 38.101

● Usable Band

○ Adequate in good signal area

✘ Not Usable

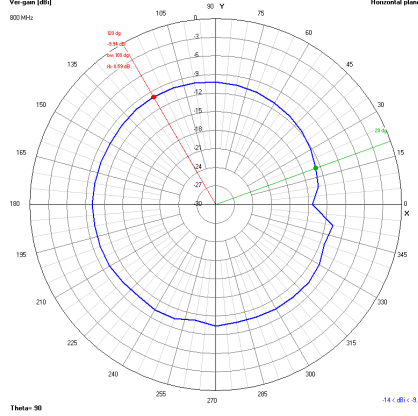


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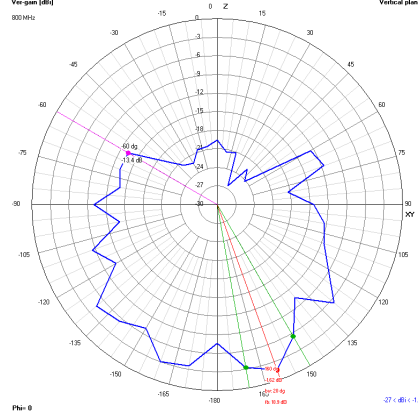
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Radiation Plots

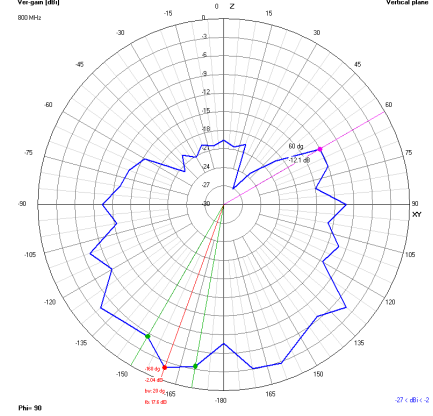
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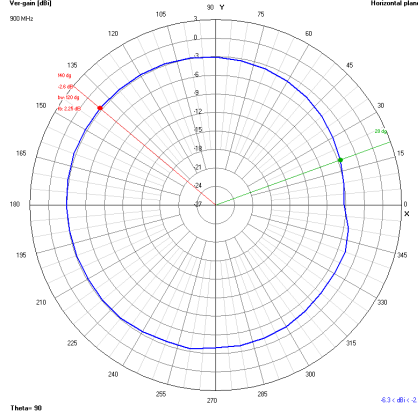
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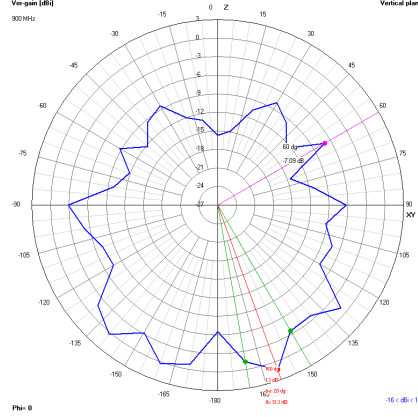
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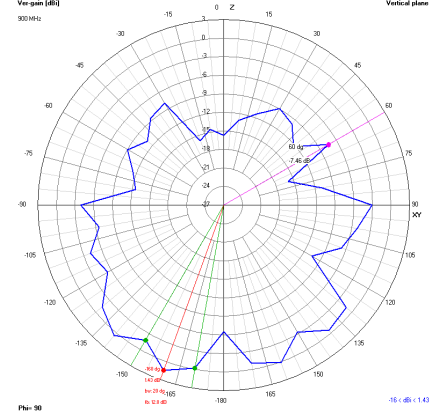
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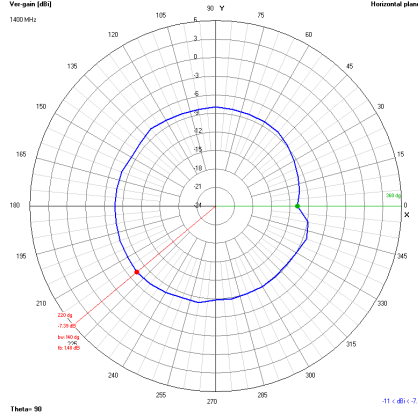
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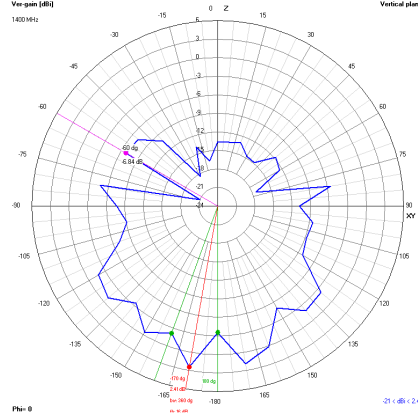
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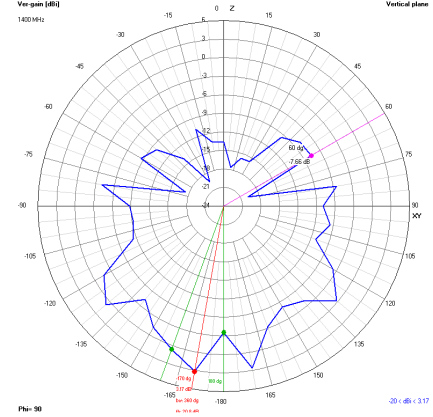
1400 MHz XY



XZ



YZ



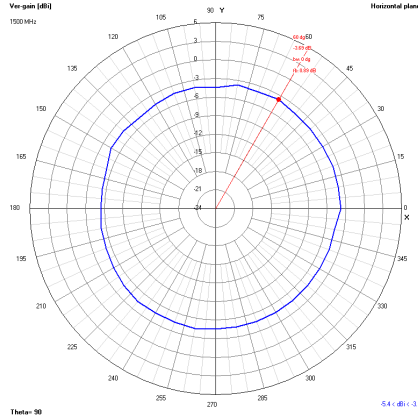


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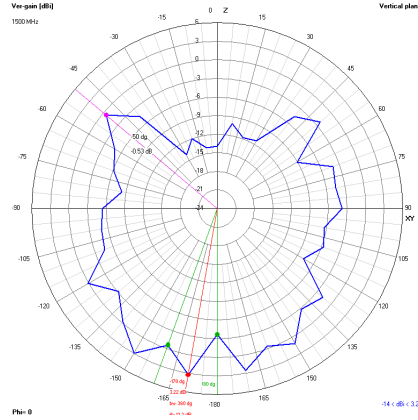
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Radiation Plots

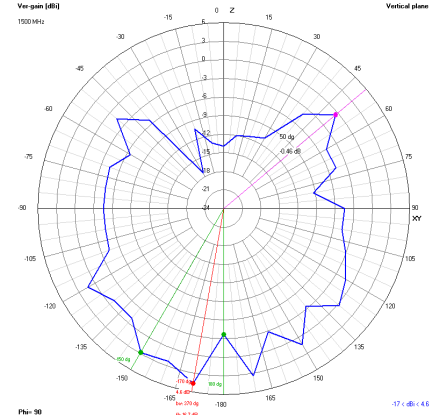
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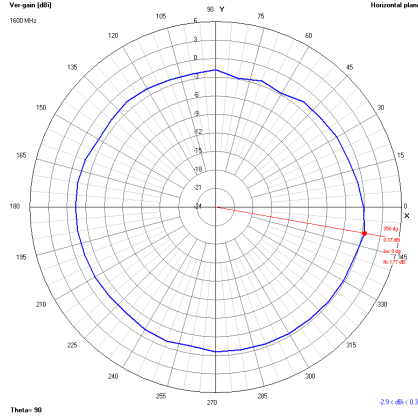
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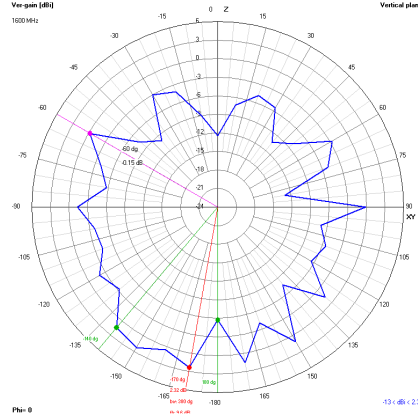
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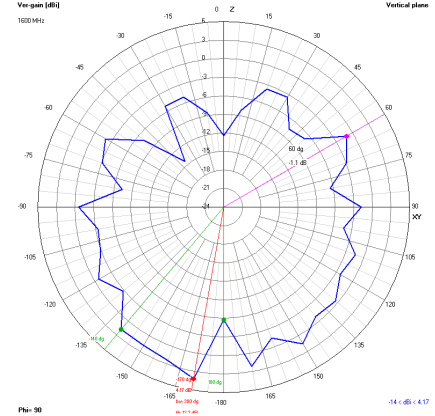
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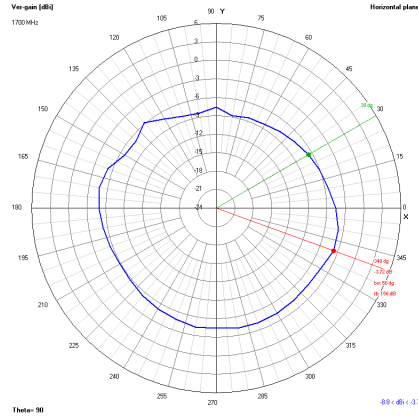
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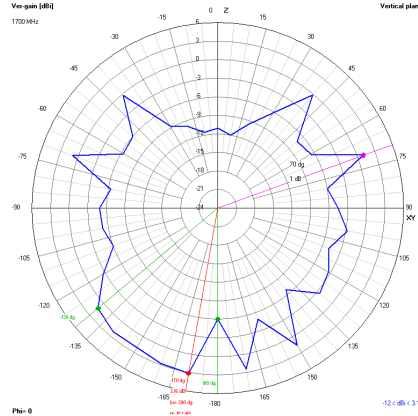
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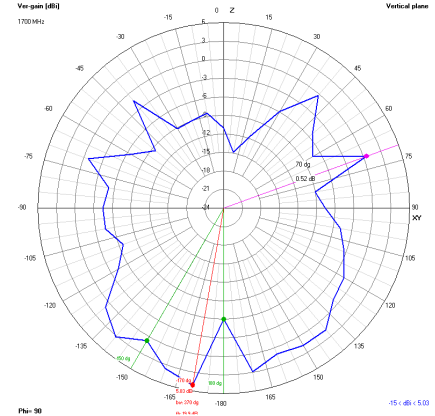
1700 MHz XY



XZ



YZ



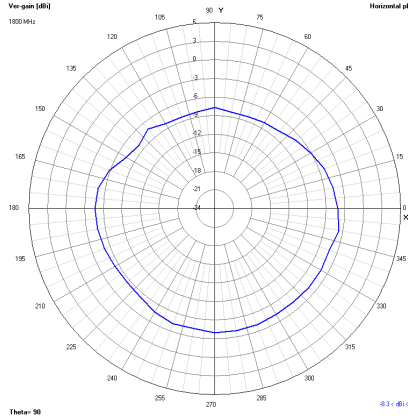


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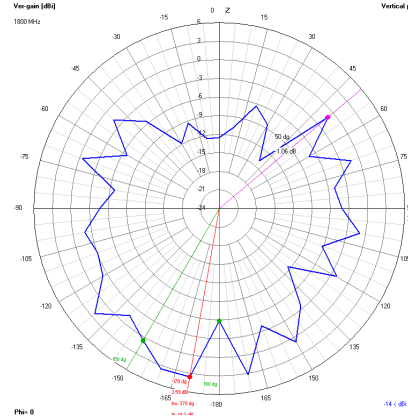
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Radiation Plots

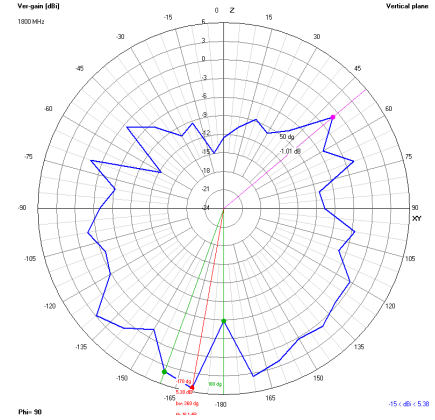
1800 MHz XY



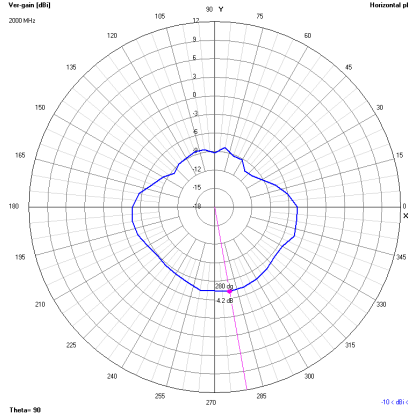
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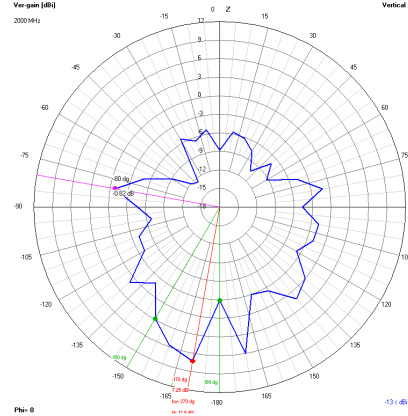
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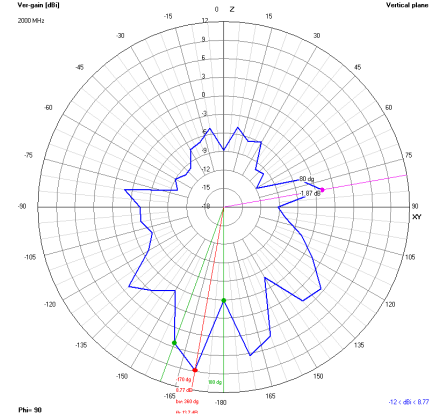
2000 MHz XY



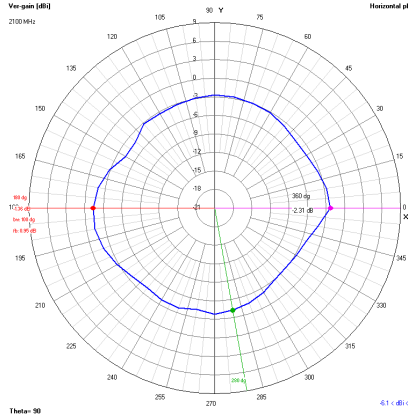
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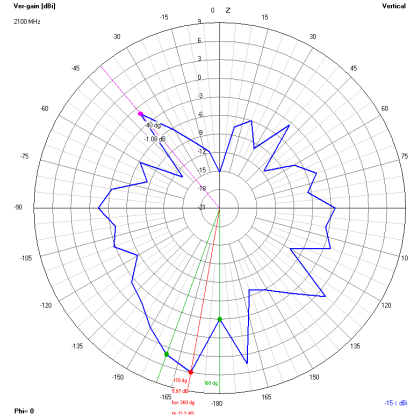
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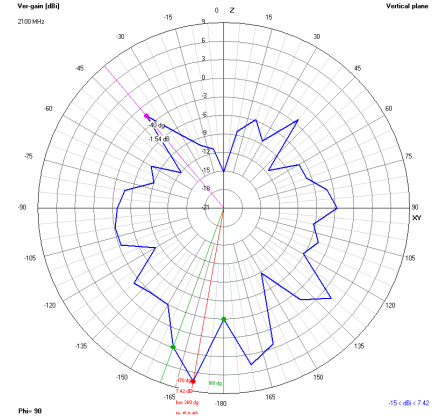
2100 MHz XY



XZ



YZ



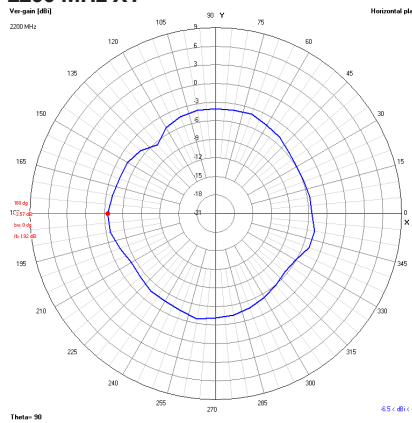


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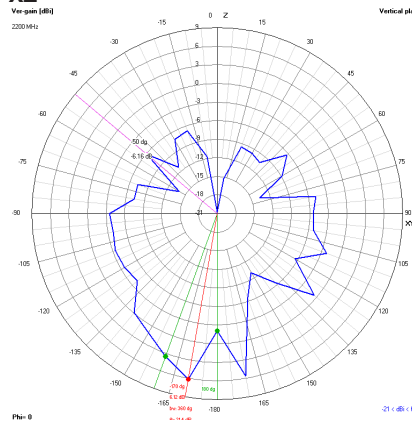
2G/3G/4G/5G & ISM868/915MHz 56MM STUBBY ANTENNA

Radiation Plots

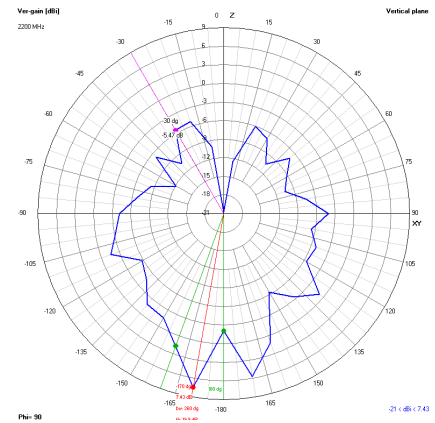
2200 MHz XY



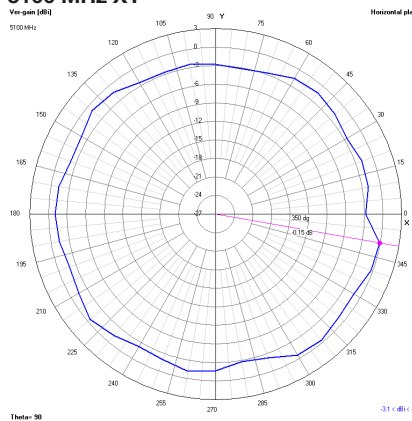
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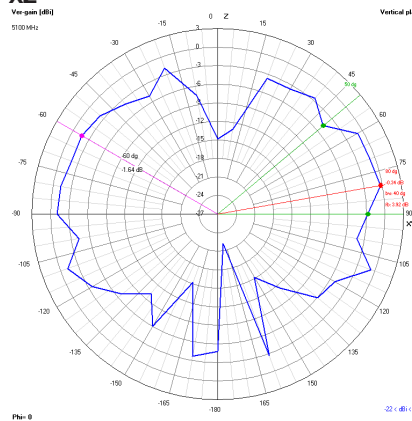
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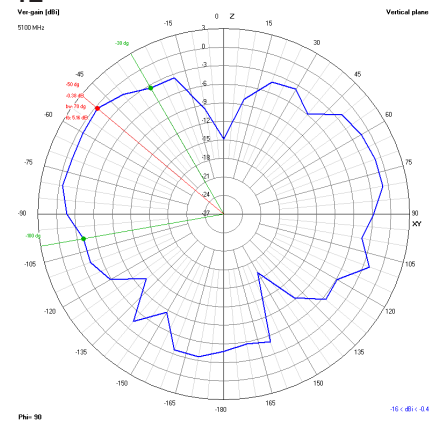
5100 MHz XY



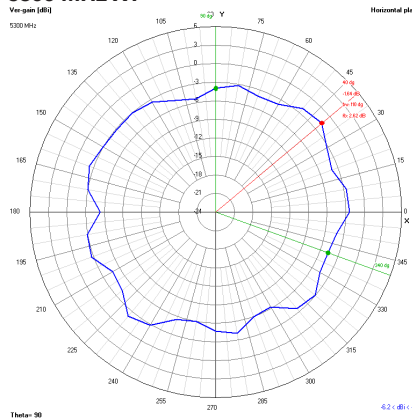
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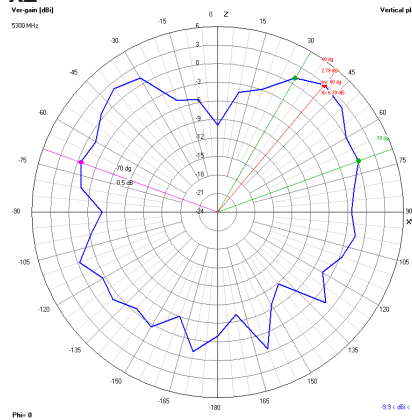
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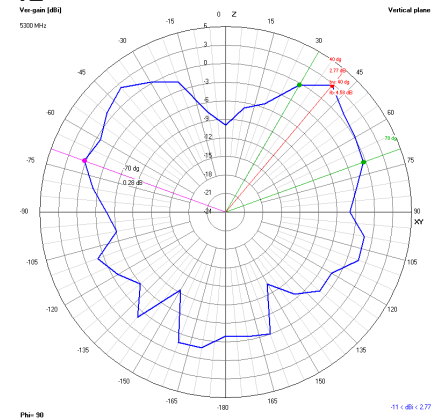
5300 MHz XY



XZ



YZ



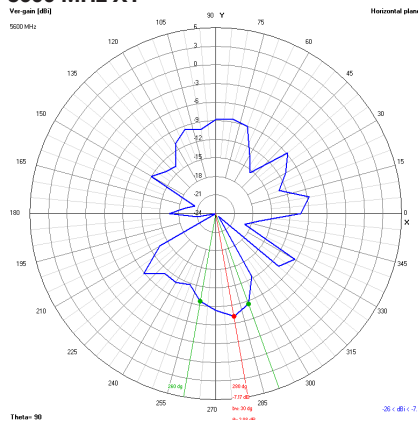


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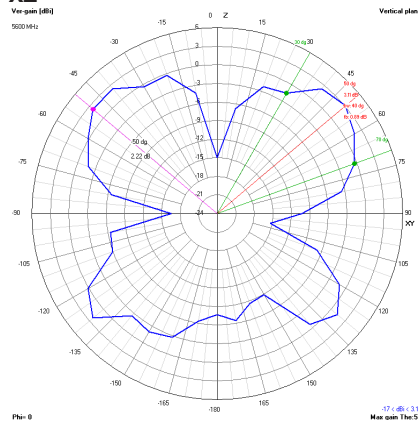
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Radiation Plots

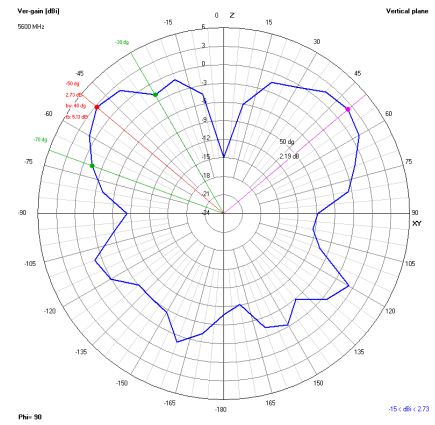
5600 MHz XY



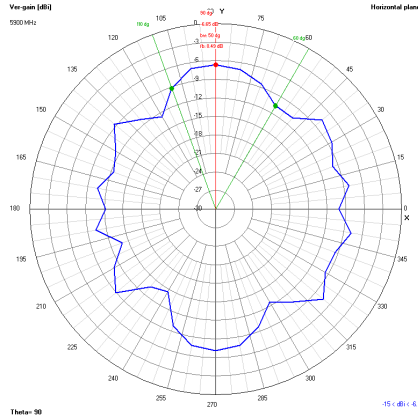
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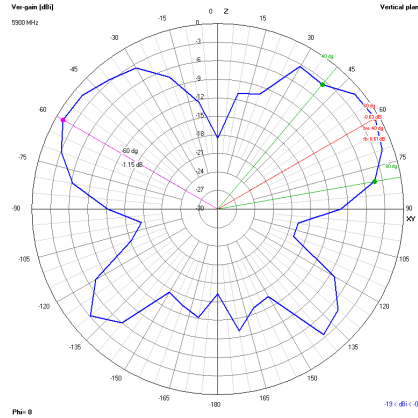
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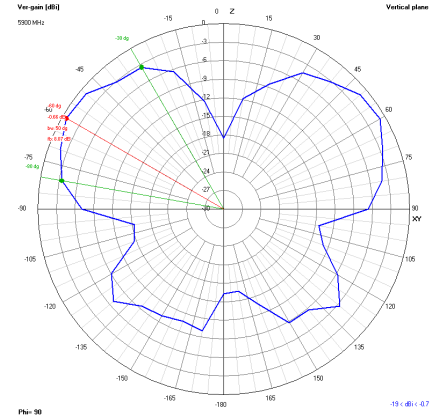
5900 MHz XY



XZ



YZ



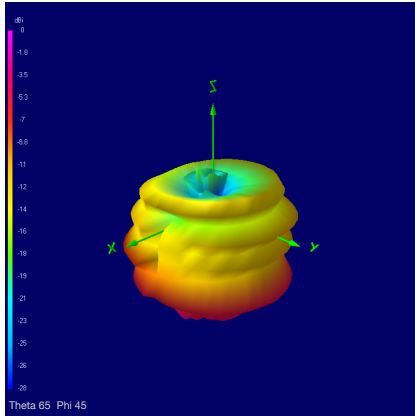


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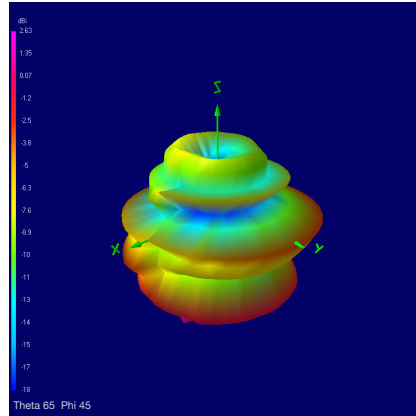
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3D Radiation Plots

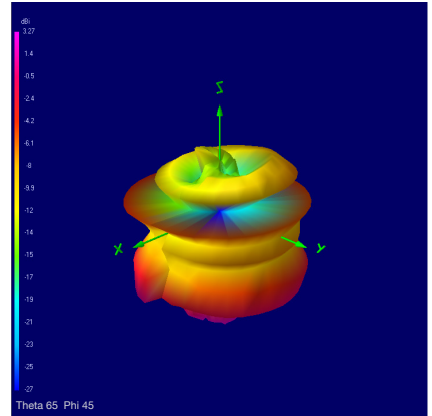
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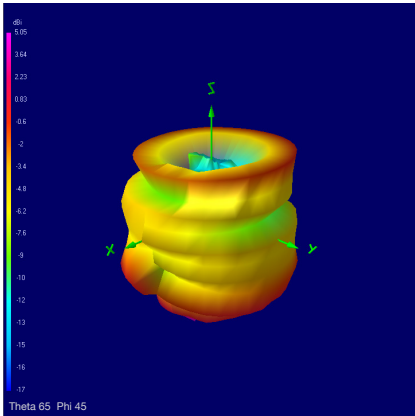
900 MHz



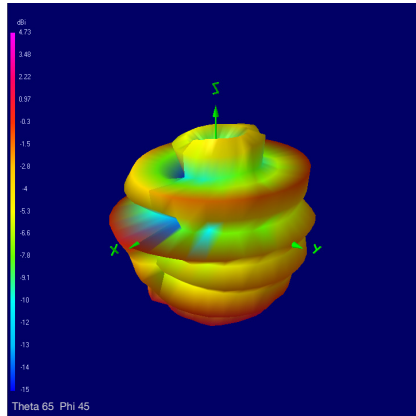
1400 MHz



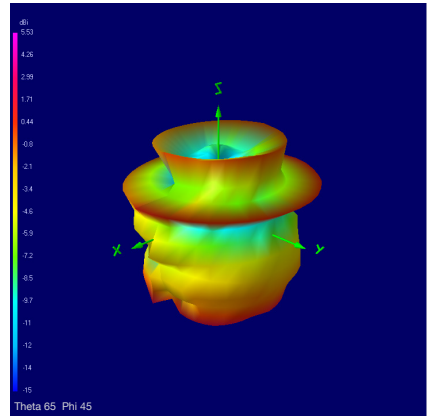
1500 MHz



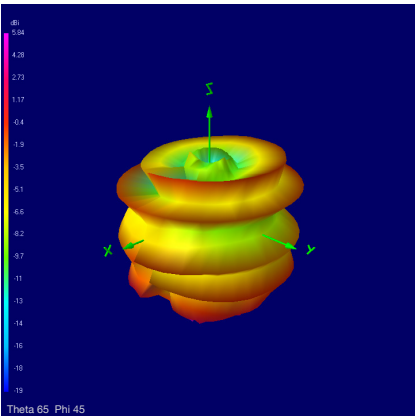
1600 MHz



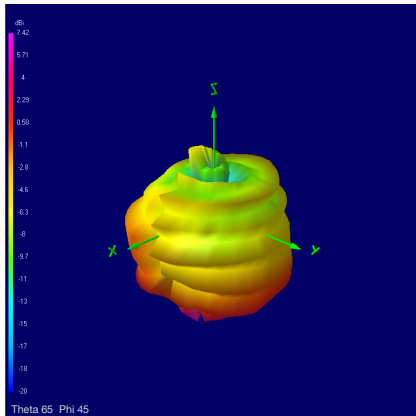
1700 MHz



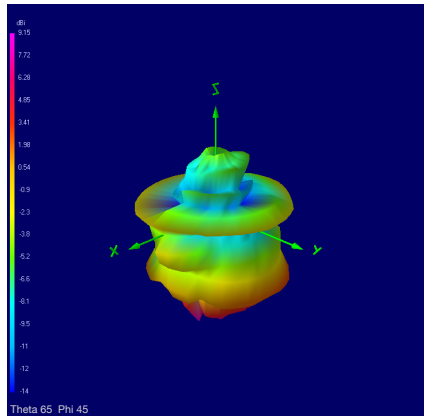
1800 MHz



1900 MHz



2000 MHz



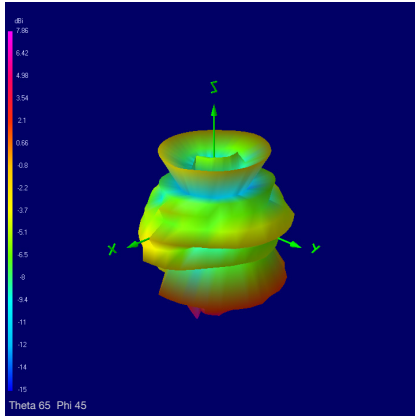


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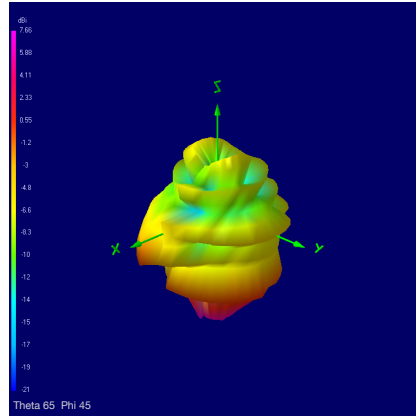
2G/3G/4G/5G & ISM868/915MHz 56MM STUBBY ANTENNA

3D Radiation Plots

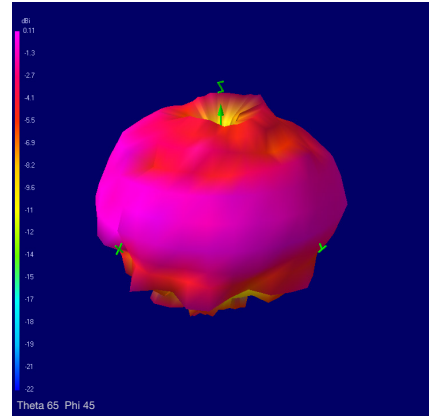
2100 MHz



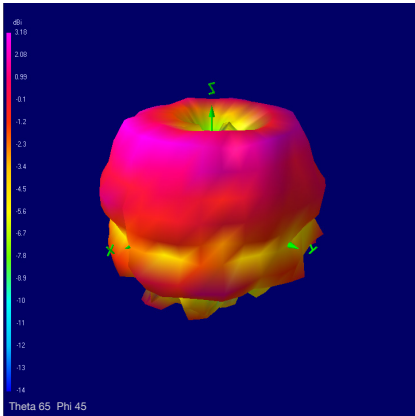
2200 MHz



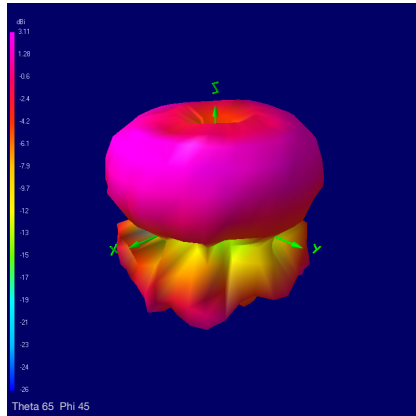
5100 MHz



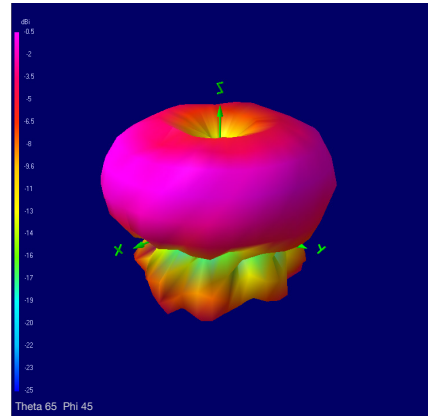
5300 MHz



5600 MHz



5900 MHz



Ordering Details

Part Number	Description
DELTA1A/X/SMAM/S/S/11	2G/3G/4G/5G & ISM868/915MHz 56MM STUBBY ANTENNA SMA MALE
DELTA1A/X/SMAF/S/S/11	2G/3G/4G/5G & ISM868/915MHz 56MM STUBBY ANTENNA SMA FEMALE