



Alpha 14

2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA



Key Features

- 2G, 3G, 4G & ISM compatible
- Low profile of 3mm
- Small footprint
- ISM: 868 and 915MHz

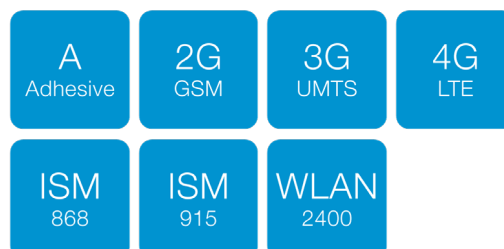
General Description

The Alpha 14 is one of the most compact adhesive antenna, with a slim low profile design. Typically used for applications such as smart energy meters or telemetry equipment. Supplied with a 3M™ adhesive base.

The Alpha 14 is tuned to quad band GSM / GPRS (2G), UMTS (3G), LTE (4G) and ISM 868MHz & 915MHz frequencies, allowing for worldwide use. The antenna will also support WiFi in the lower band.

Additional Considerations

- Low profile design makes it ideal for covert applications
- Intended for indoor use
- Quad band 2G & 3G compatible for worldwide use



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Electrical Specifications

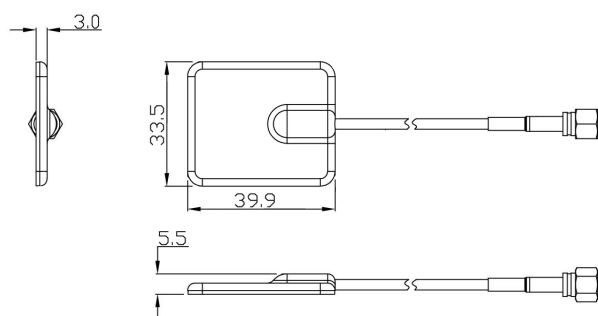
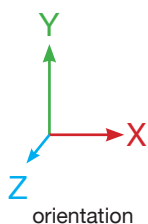
Polarization:	Linear
Impedance:	50 Ohm
Max Power Input:	10 W
Ground Plane Independent:	Yes

Environmental Specifications

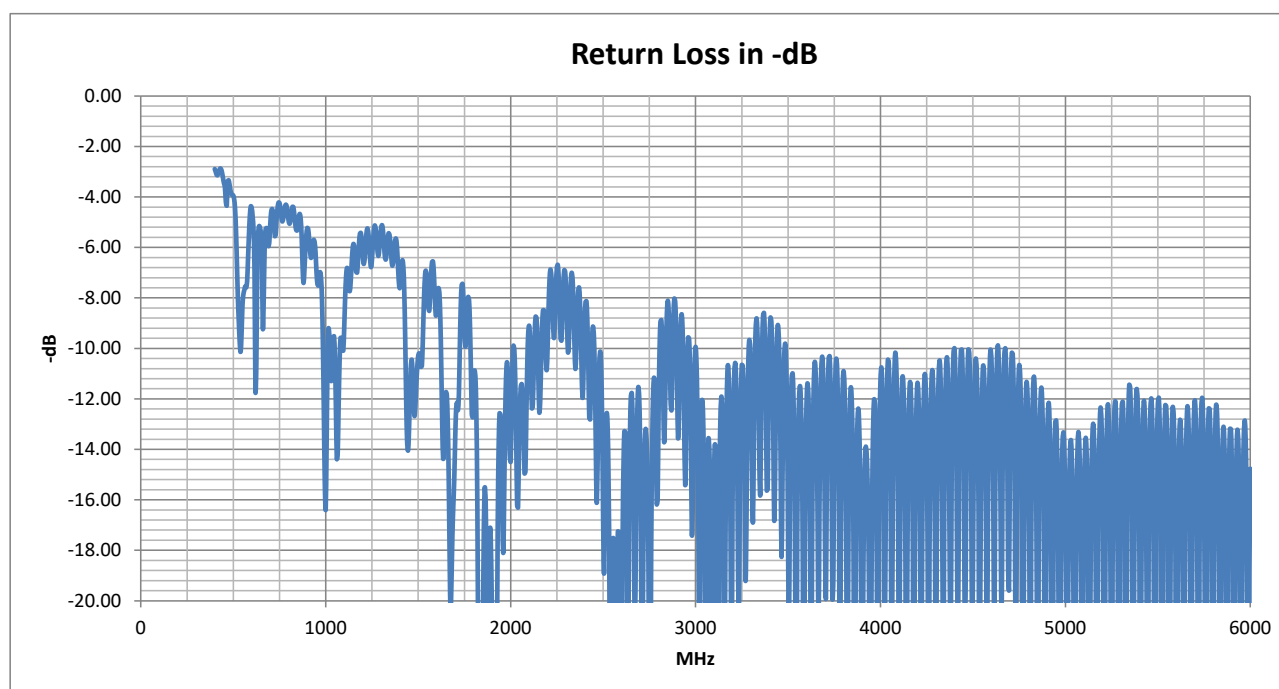
Operating Temperature:	-40 - +85 °C
Relative Humidity:	Up to 95 %

Mechanical Specifications

Dimensions:	L39.9 x W33.5 x H5.5 mm
Weight:	15 g
Cable:	RG174
Connector:	SMA Male
Mounting method:	Adhesive
Radome material:	ABS



Return Loss tested with 2.5 m cable

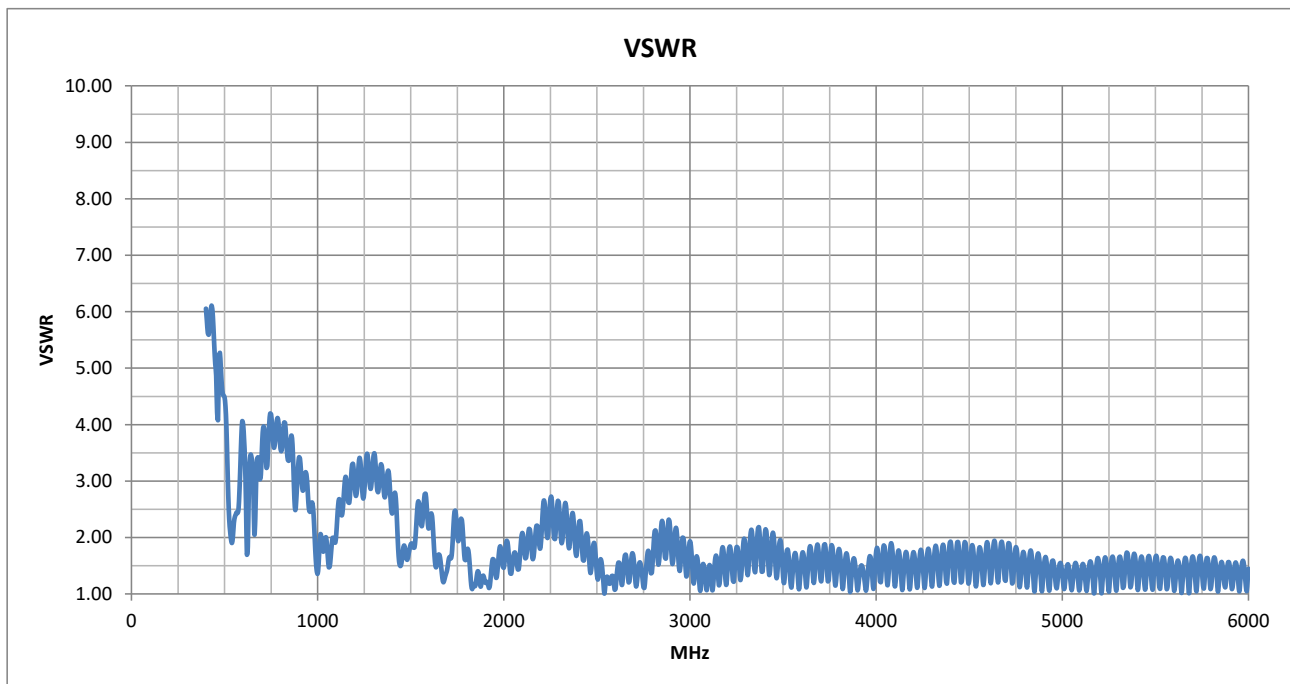




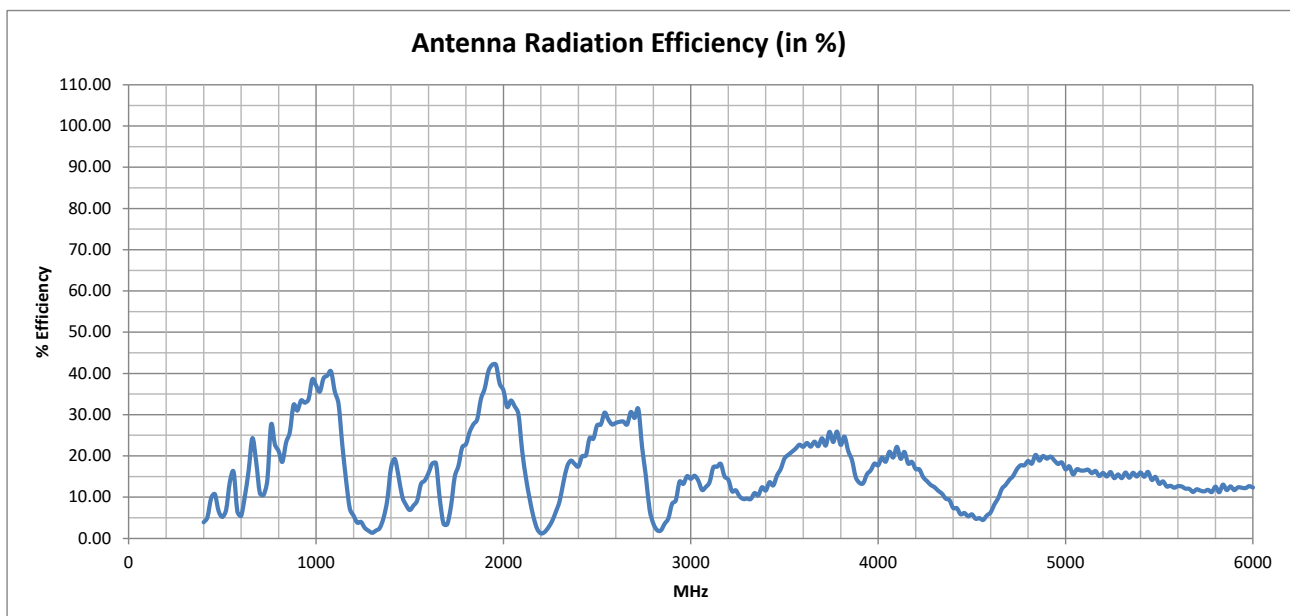
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VSWR tested with 2.5 m cable



Radiation Efficiency tested with 2.5 m cable





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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	40.55 / 10.59	1.84 / 2.15
2/n2	B2	North America/Latin America/Caribbean	1850-1910 MHz	1930-1990 MHz	33.43 / 39.62	1.40 / 1.84
3/n3	B3	Europe/Africa/Asia/Oceania	1710-1785 MHz	1805-1880 MHz	14.76 / 27.79	2.47 / 1.80
4	B4	North America/Latin America/Caribbean	1710-1755 MHz	2110-2155 MHz	10.91 / 12.67	2.47 / 2.15
5/n5	B5	Country Specific	824-849 MHz	869-894 MHz	22.51 / 29.70	4.04 / 3.64
7/n7		Latin America/Europe/Asia +	2500-2570 MHz	2620-2690 MHz	28.38 / 28.79	1.62 / 1.72
8/n8	B8	Europe / Asia +	880-915 MHz	925-960 MHz	32.25 / 33.34	3.42 / 3.16
11	B11	Country Specific	1427.9-1447.9 MHz	1475.9-1495.9 MHz	14.80 / 8.35	2.37 / 1.82
12/n12	B12	North America/Caribbean +	699-716 MHz	729-746 MHz	13.40 / 17.38	3.97 / 4.20
13/n13	B13	North America/Caribbean +	777-787 MHz	746-756 MHz	23.84 / 20.82	4.12 / 4.20
14/n14	B14	Country Specific	788-798 MHz	758-768 MHz	21.99 / 21.48	4.12 / 3.99
17	B17	North America/Caribbean +	704-716 MHz	734.746 MHz	10.74 / 17.38	3.97 / 4.20
18/n18	B18	Country Specific	815-830 MHz	860-875 MHz	20.98 / 29.06	4.04 / 3.81
19	B19	Country Specific	830-845 MHz	875-890 MHz	22.51 / 29.70	3.80 / 2.96
20/n20	B20	Europe/Africa +	832-862 MHz	791-821 MHz	24.97 / 21.44	3.81 / 4.04
21		Country Specific	1447.9-1462.9 MHz	1495.9-1510.9 MHz	11.09 / 7.64	1.86 / 1.90
25/n25	B25	Country Specific	1850-1915 MHz	1525-1559 MHz	33.43 / 10.10	1.40 / 2.64
26/n26	B26	Country Specific	814-849 MHz	859-894 MHz	22.18 / 28.08	4.04 / 3.81
28/n28	B28	Latin America/Europe/Asia +	703-748 MHz	758-803 MHz	17.38 / 20.83	4.20 / 4.12
29/n29		Country Specific	-	717-728 MHz	11.86	3.84
30/n30		Country Specific	2305-2315 MHz	2350-2360 MHz	11.29 / 18.13	2.09 / 2.16
31	B31	Country Specific	452.5-457.5 MHz	462.5-467.5 MHz	10.21 / 8.64	5.08 / 5.20
32		Country Specific	-	1452-1496 MHz	10.03	1.88
38/n38		Europe +	2570-2620 MHz		28.15	1.55
39/n39		Country Specific	1880-1920 MHz		36.89	1.32
40/n40		Asia +	2300-2400 MHz		15.72	2.61
41/n41		Country Specific	2496-2690 MHz		28.17	1.72
42		Country Specific	3400-3600 MHz		17.94	2.14
43		Country Specific	3600-3800 MHz		23.43	1.88
46/n46		Country Specific	5150-5925 MHz		13.58	1.73
48/n48		Country Specific	3550-3700 MHz		22.56	1.88
65/n65		Country Specific	1920-2010 MHz	2110-2200 MHz	38.32 / 9.03	1.84 / 2.21
66/n66	B66	Country Specific	1710-1780 MHz	2110-2200 MHz	13.15 / 9.03	2.47 / 2.21
71/n71	B71	Country Specific	663-698 MHz	617-652 MHz	17.98 / 14.06	3.51 / 3.47

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	15.32 / 10.10	1.82 / 2.64
n34		2010 – 2025 MHz		33.72	1.94
n47		5855 – 5925 MHz		12.27	1.57
n50		1432 – 1517 MHz		11.22	1.98
n51		1427 – 1432 MHz		17.15	2.37
n53		2483.5 – 2495 MHz		25.79	1.91
n67		738 – 758 MHz		17.38	4.20
n70	B70	1695 – 1710 MHz	1995 – 2020 MHz	4.91 / 35.08	1.66 / 1.94
n74		1427 – 1470 MHz	1475 – 1518 MHz	13.12 / 8.25	2.37 / 1.90
n75		1432 – 1517 MHz		11.22	1.98
n76		1427 – 1432 MHz		17.15	2.37
n77		3300 – 4200 MHz		18.58	2.18
n78		3300 – 3800 MHz		18.69	2.18
n79		4400 – 5000 MHz		12.74	1.94
n80		1710 – 1785 MHz		14.76	2.47
n81		880 – 915 MHz		32.25	3.42
n82		832 – 862 MHz		24.97	3.81
n83		703 – 748 MHz		15.78	4.20
n84		1920 – 1980 MHz		40.55	1.84
n85	B85	698 – 716 MHz	728 – 746 MHz	13.40 / 17.38	3.97 / 4.20
n86		1710 – 1780 MHz		13.15	2.47
n89		824 – 849 MHz		22.51	4.04
n90		2496 – 2690 MHz		28.17	1.72
n91		832 – 862 MHz	1427 – 1432 MHz	24.97 / 17.15	3.81 / 2.37
n92		832 – 862 MHz	1432 – 1517 MHz	24.97 / 11.22	3.81 / 1.98
n93		880 – 915 MHz	1427 – 1432 MHz	32.25 / 17.15	3.42 / 2.37
n94		880 – 915 MHz	1432 – 1517 MHz	32.25 / 11.22	3.42 / 1.98
n95		2010 – 2025 MHz		33.72	1.94
n96		5925 – 7125 MHz		unmeasured	
n97		2300 – 2400 MHz		15.72	2.61
n98		1880 – 1920 MHz		36.89	1.32
n99		1626.5 – 1660.5 MHz		15.32	1.82

Table data for bands as detailed in 3GPP TS 38.101

● Usable Band
 ○ Adequate in good signal area
 ✖ Not Usable

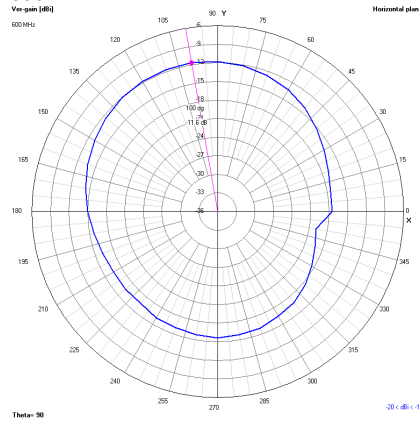


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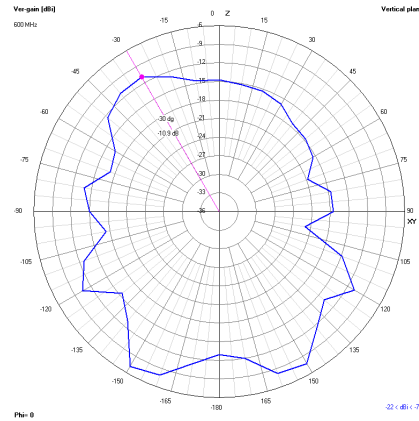
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Radiation Plots tested with 2.5 m cable

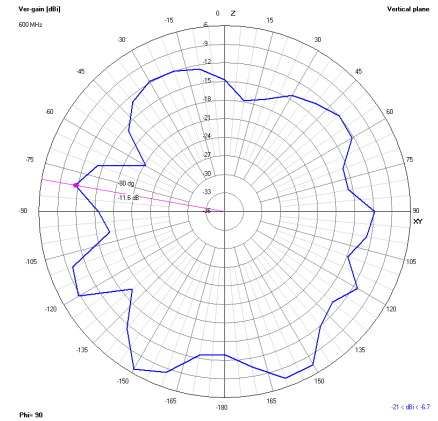
600 MHz XY



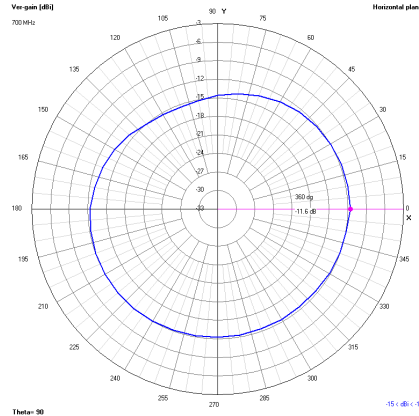
XZ



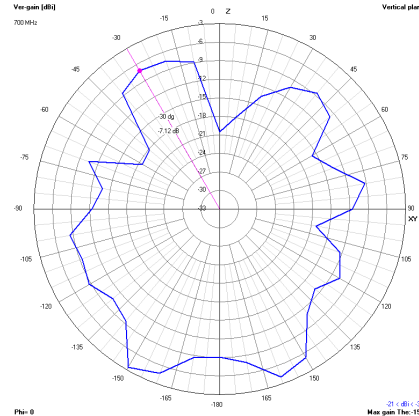
YZ



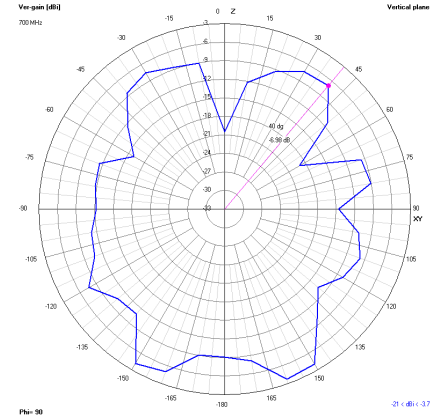
700 MHz XY



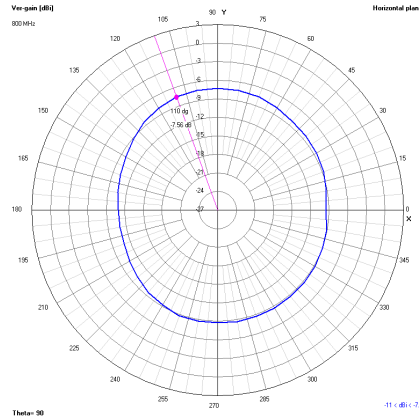
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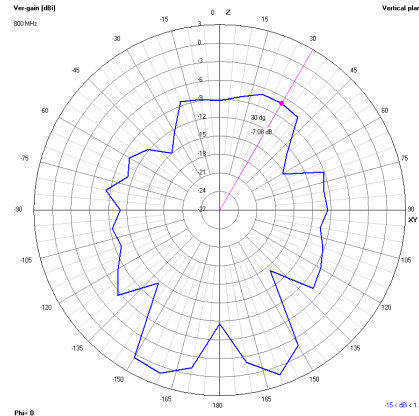
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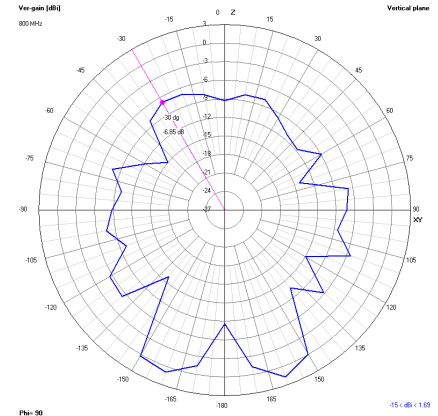
800 MHz XY



XZ



YZ



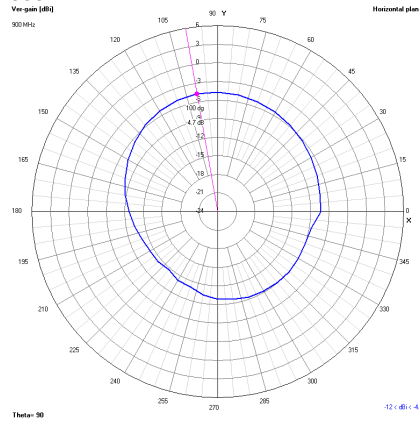


Alpha 14

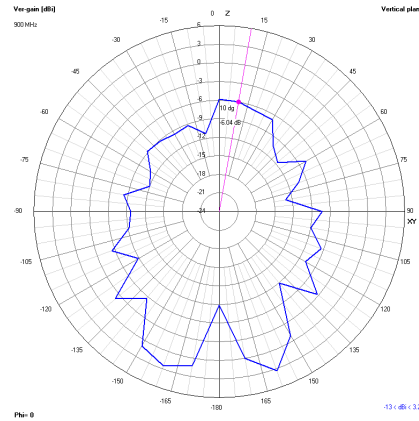
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Radiation Plots tested with 2.5 m cable

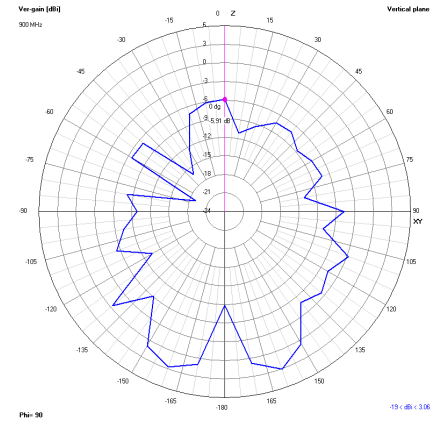
900 MHz XY



XZ



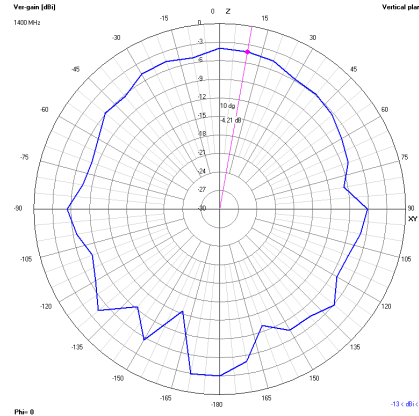
YZ



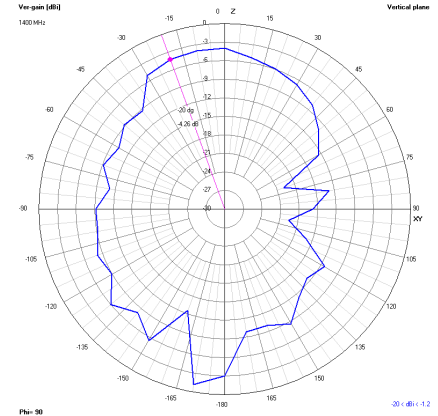
1400 MHz XY



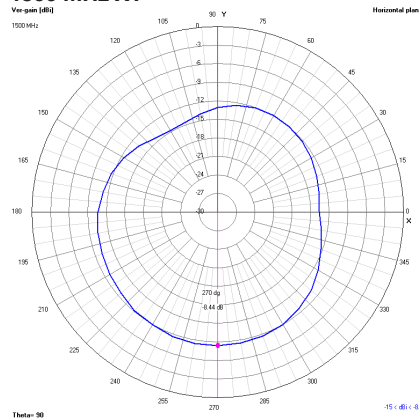
XZ



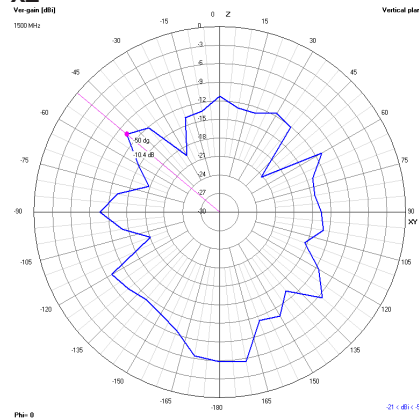
YZ



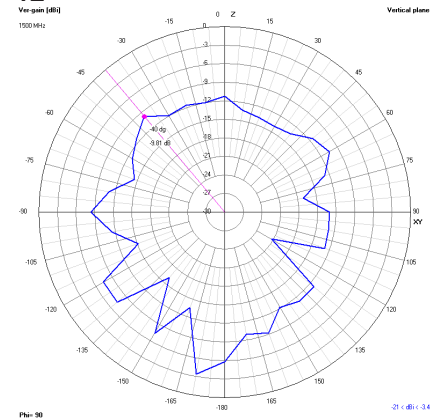
1500 MHz XY



XZ



YZ



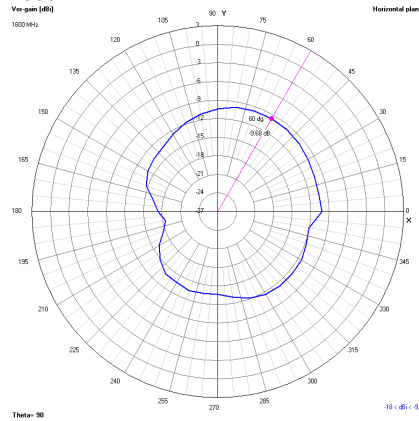


Alpha 14

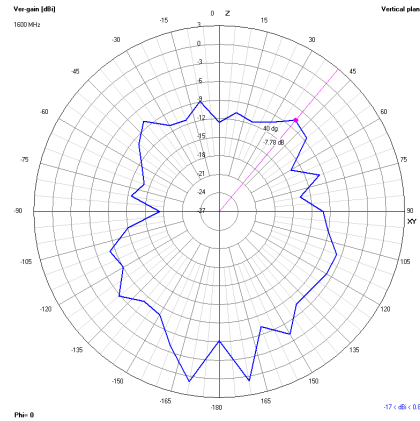
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Radiation Plots tested with 2.5 m cable

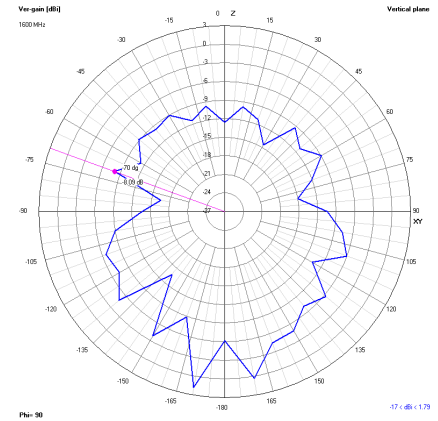
1600 MHz XY



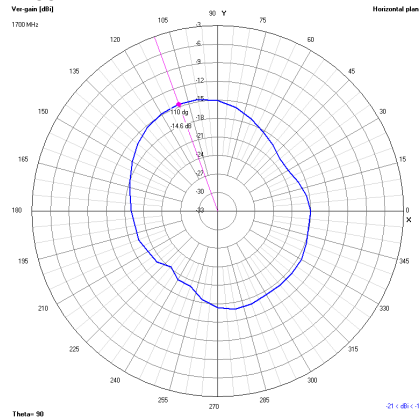
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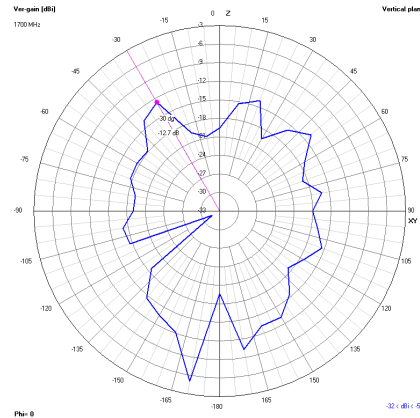
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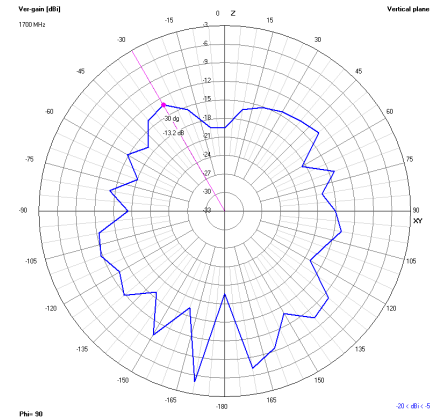
1700 MHz XY



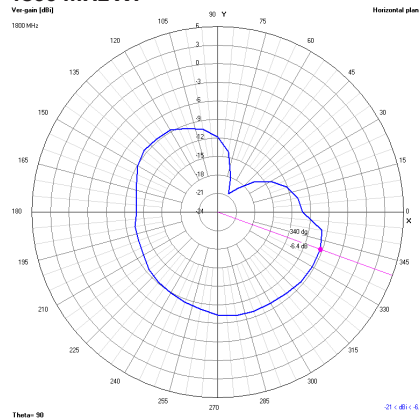
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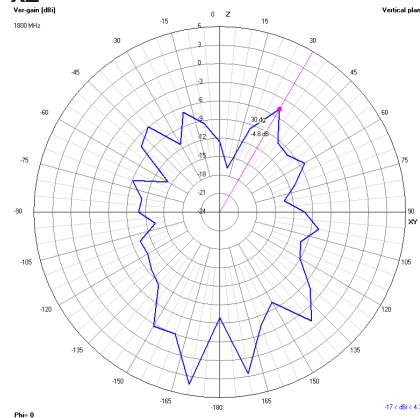
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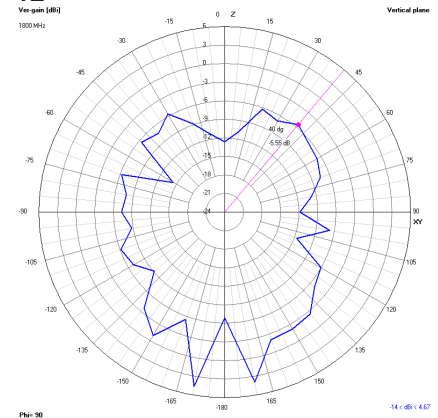
1800 MHz XY



XZ



YZ



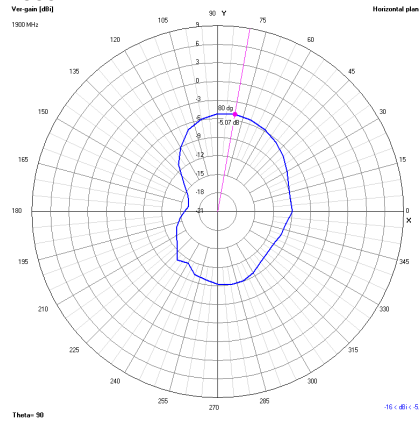


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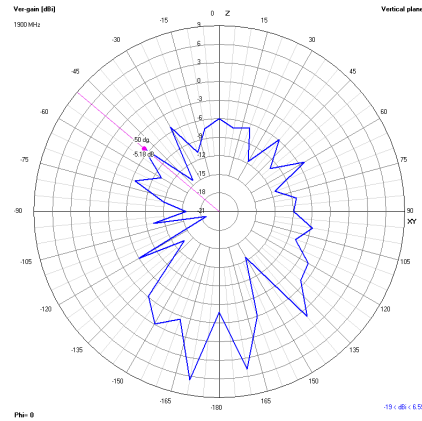
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Radiation Plots tested with 2.5 m cable

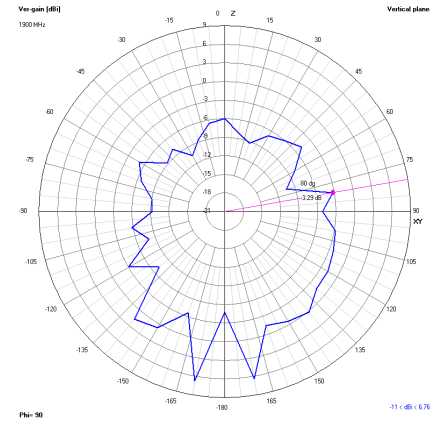
1900 MHz XY



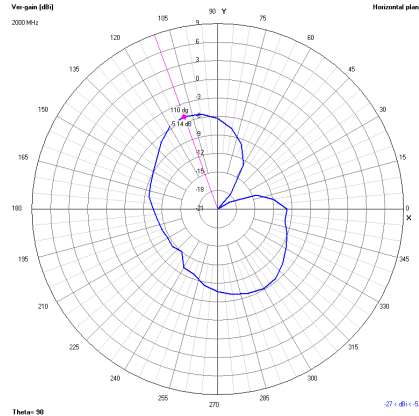
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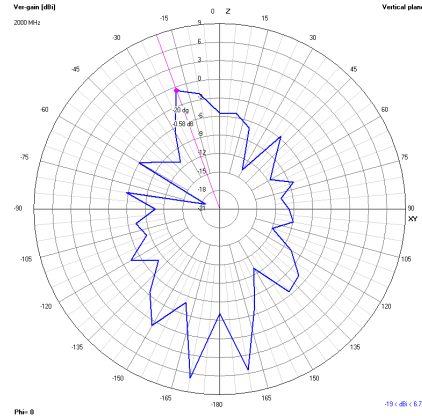
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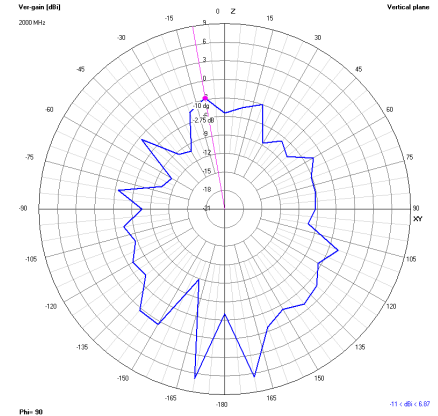
2000 MHz XY



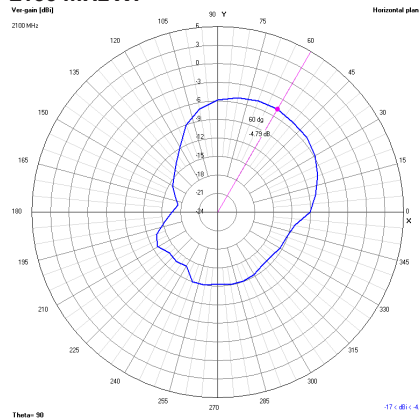
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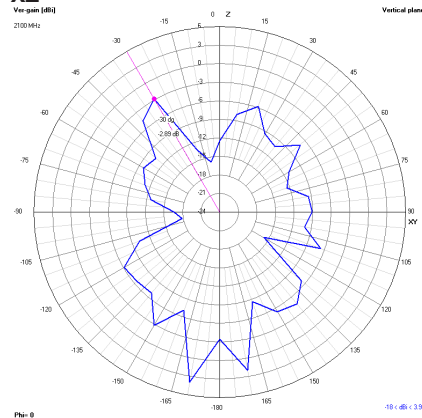
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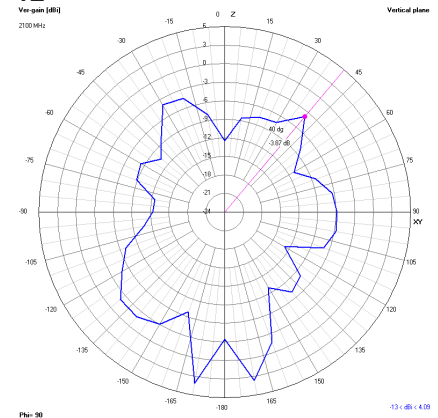
2100 MHz XY



XZ



YZ



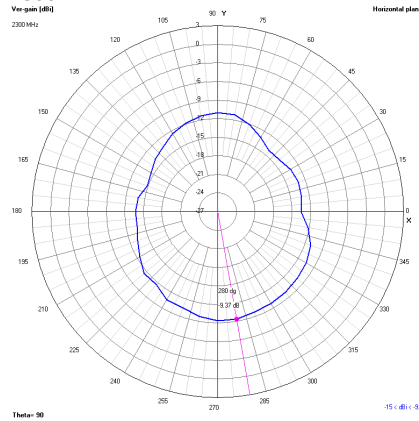


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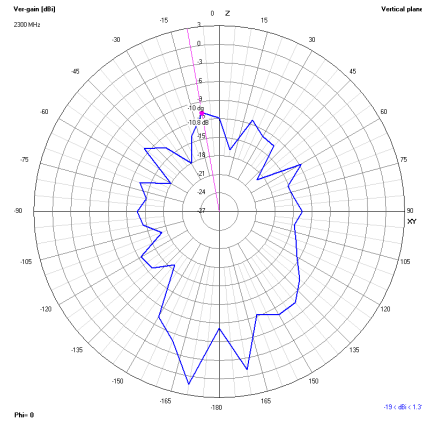
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Radiation Plots tested with 2.5 m cable

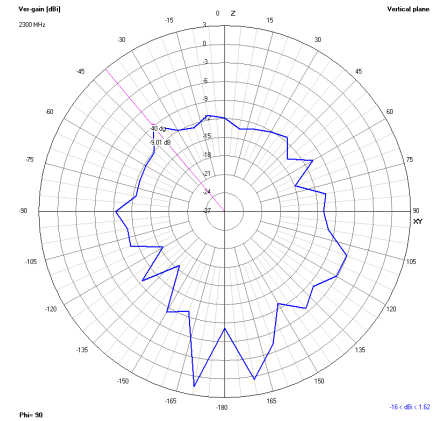
2300 MHz XY



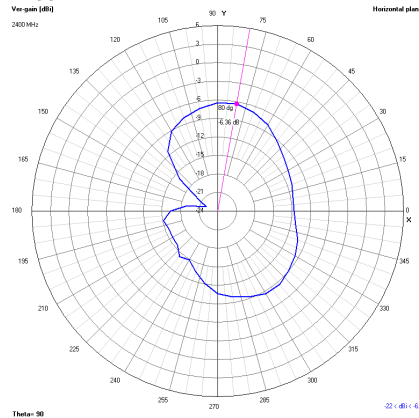
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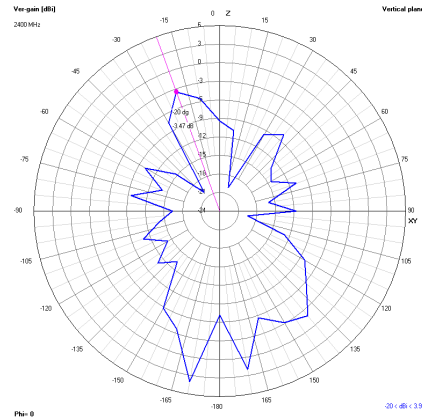
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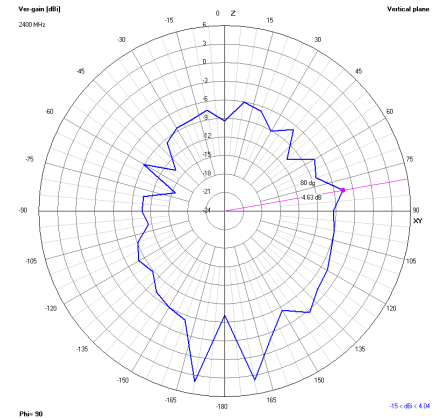
2400 MHz XY



XZ



YZ



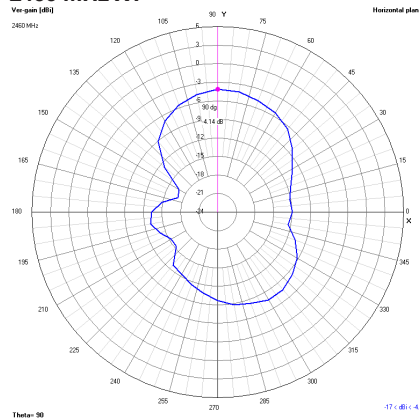
WiFi
Band
2.4
GHz

Eff %
17.42

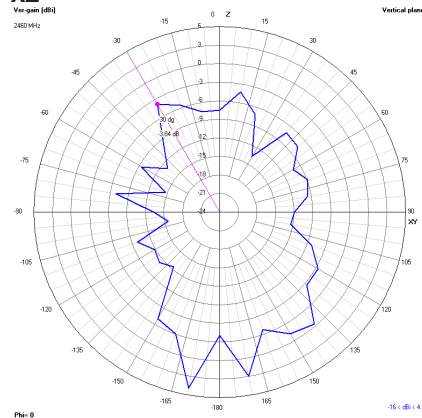
WiFi
Band
2.4
GHz

Eff %
17.42

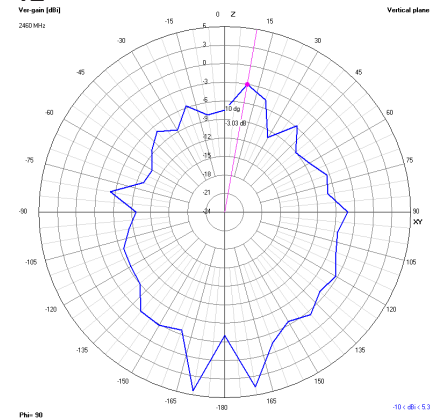
2460 MHz XY



XZ



YZ



WiFi
Band
2.4
GHz

Eff %
24.32

WiFi
Band
2.4
GHz

Eff %
24.32

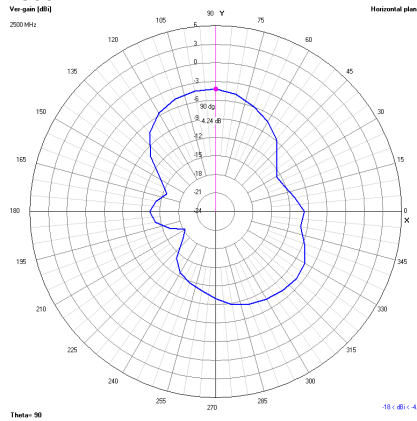


Alpha 14

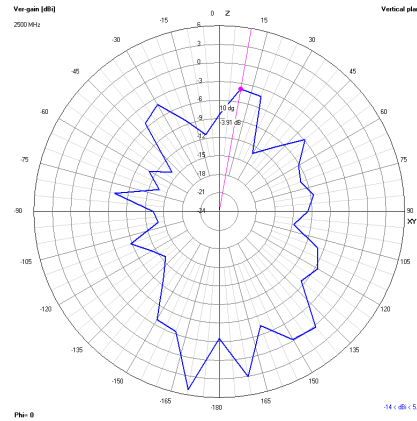
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Radiation Plots tested with 2.5 m cable

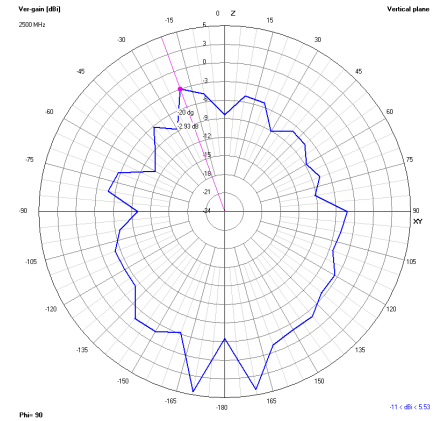
2500 MHz XY



XZ



YZ



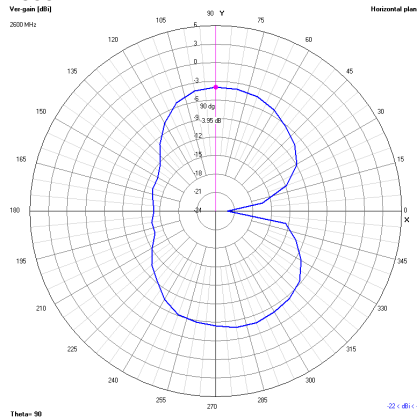
WiFi
Band
2.4
GHz

Eff %
27.42

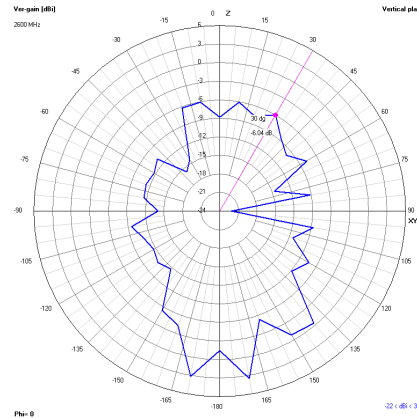
WiFi
Band
2.4
GHz

Eff %
27.42

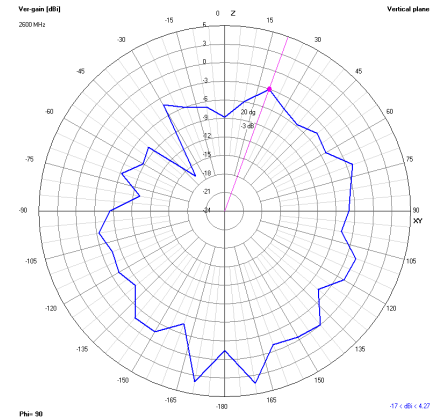
2600 MHz XY



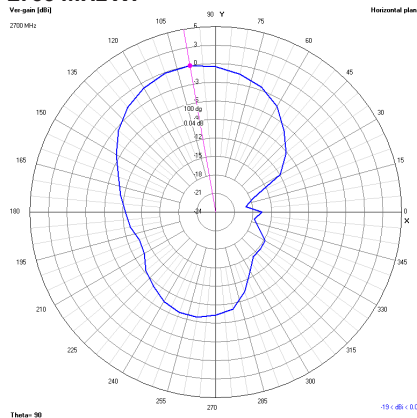
XZ



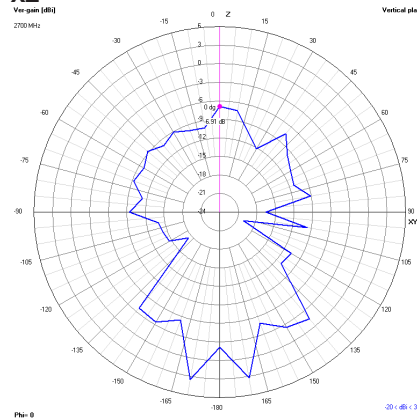
YZ



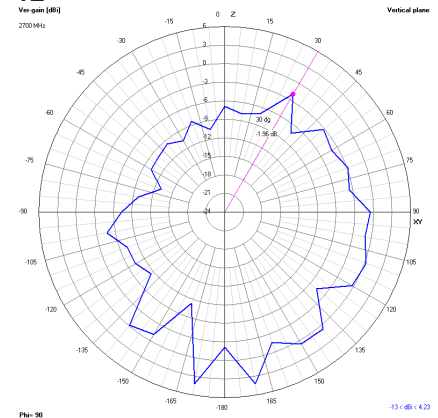
2700 MHz XY



XZ



YZ



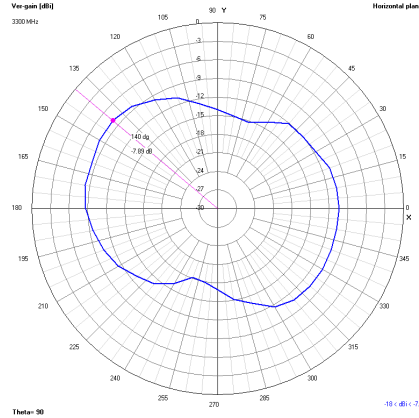


Alpha 14

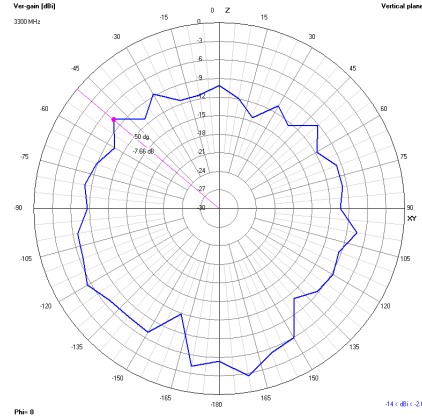
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

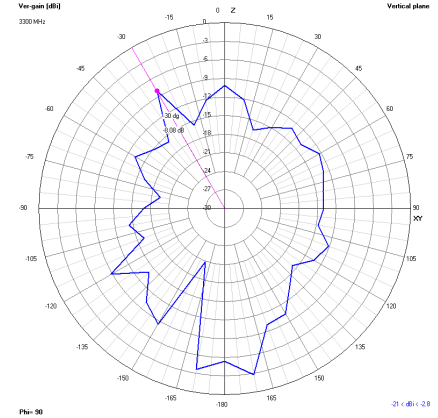
3300 MHz XY



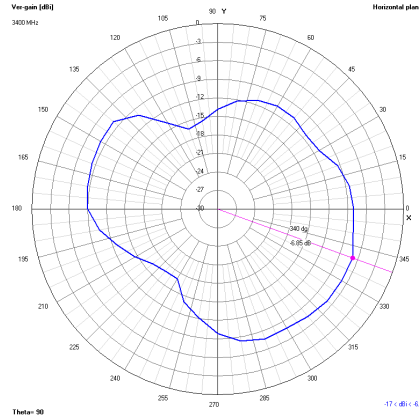
XZ



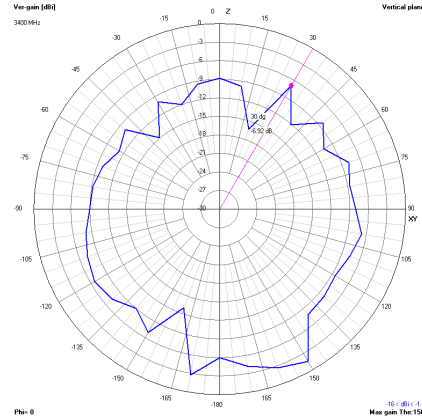
YZ



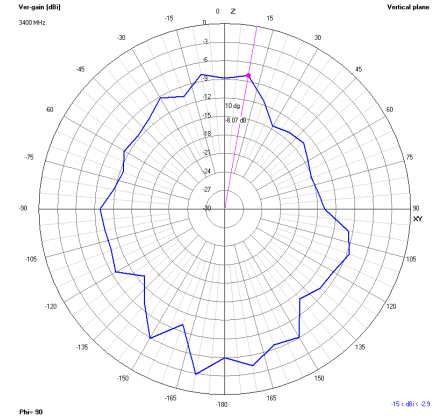
3400 MHz XY



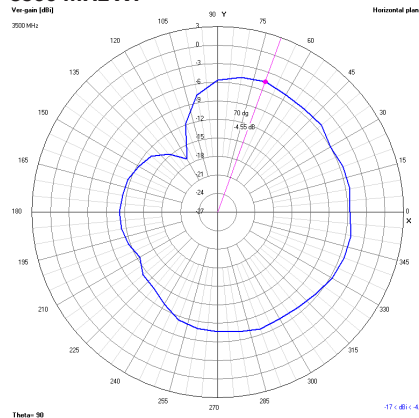
XZ



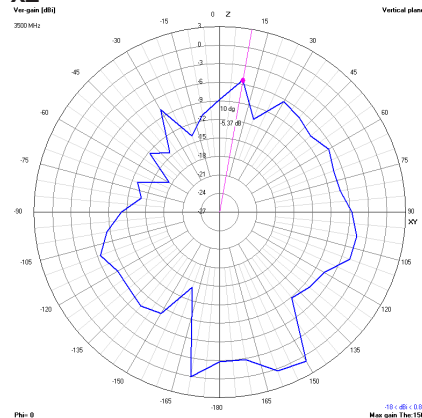
YZ



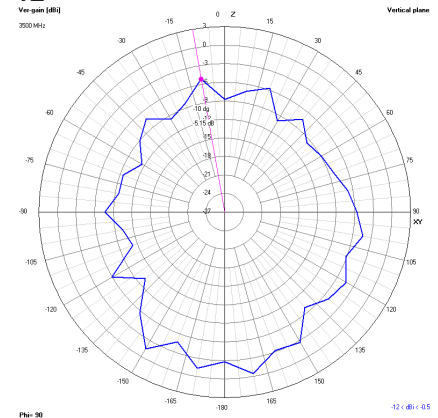
3500 MHz XY



XZ



YZ



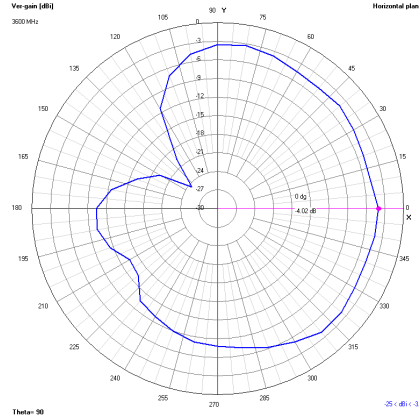


Alpha 14

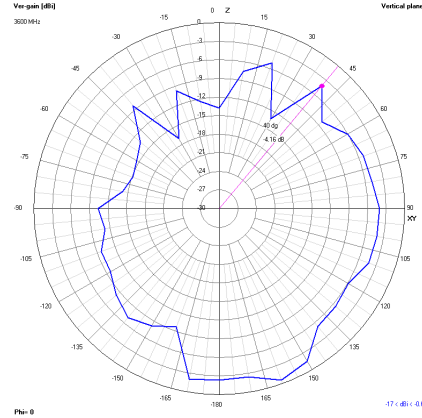
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

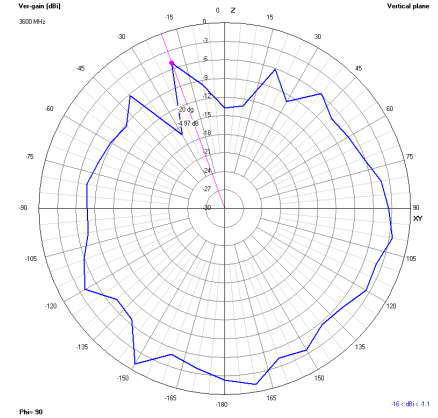
3600 MHz XY



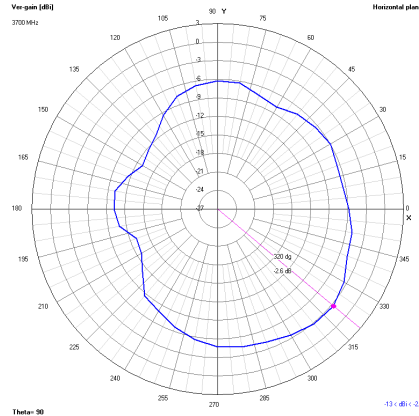
XZ



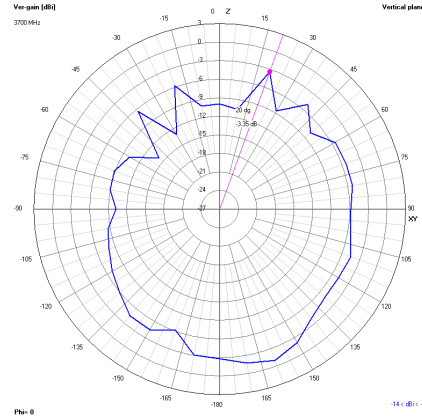
YZ



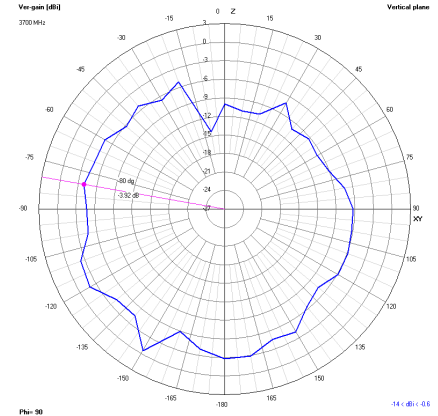
3700 MHz XY



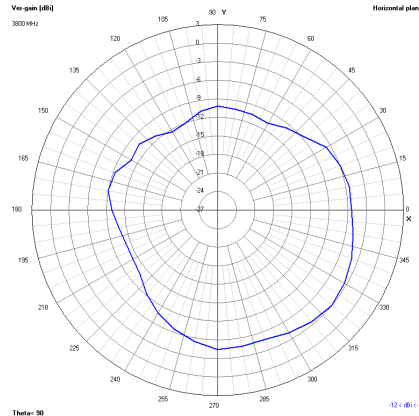
XZ



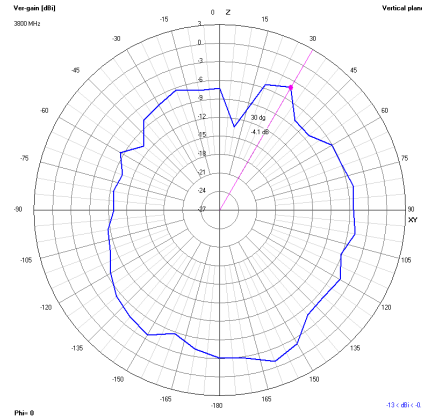
YZ



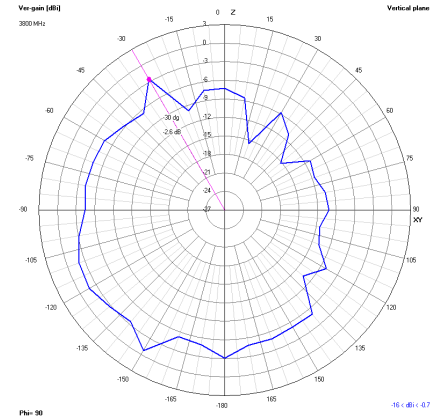
3800 MHz XY



XZ



YZ



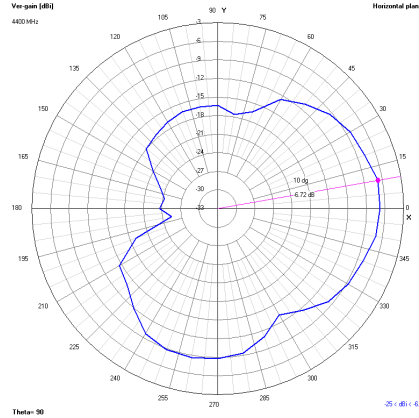


Alpha 14

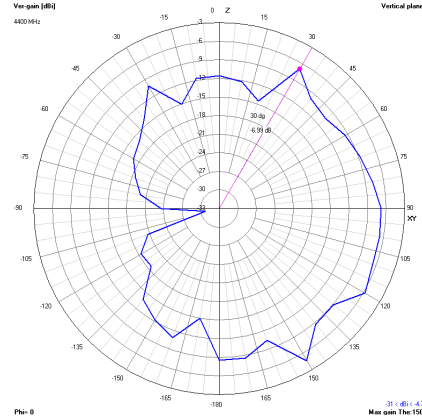
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

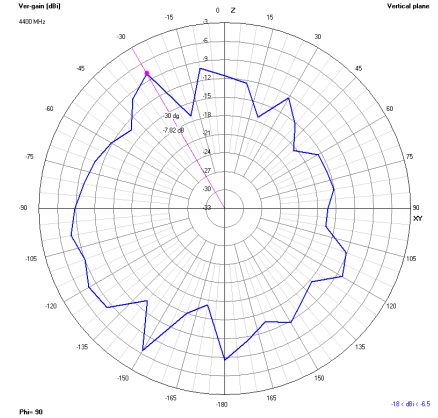
4400 MHz XY



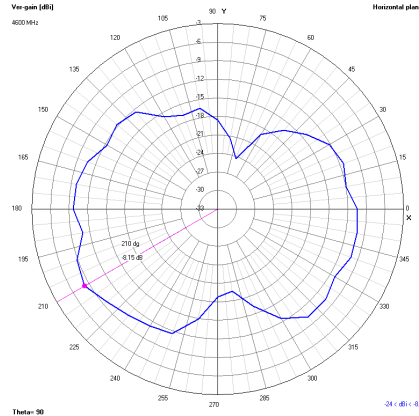
XZ



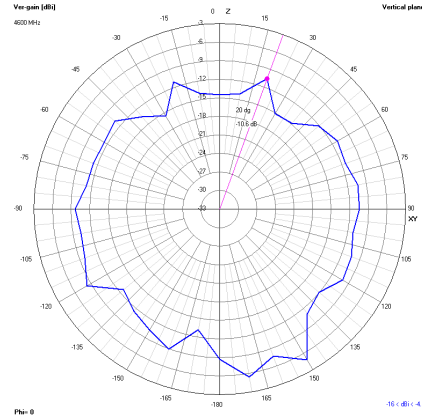
YZ



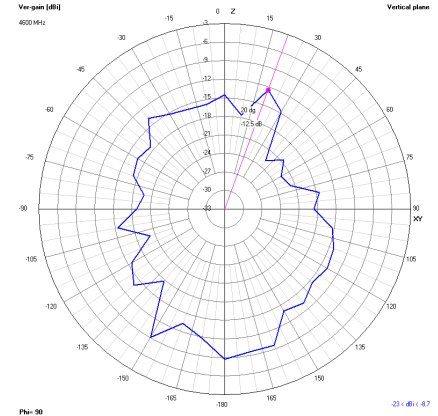
4600 MHz XY



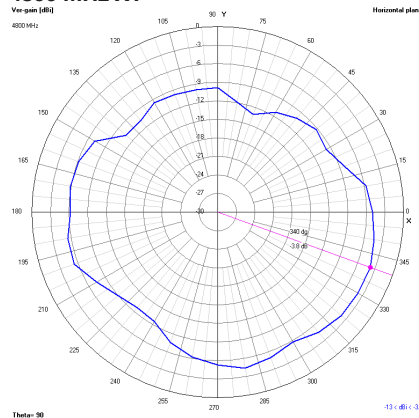
XZ



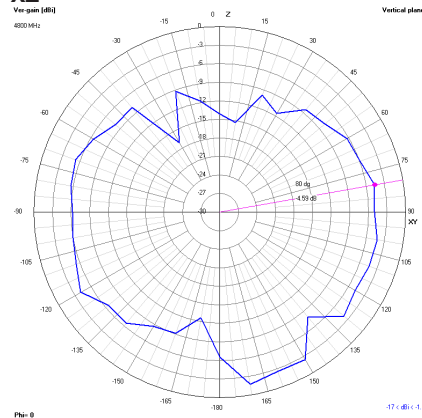
YZ



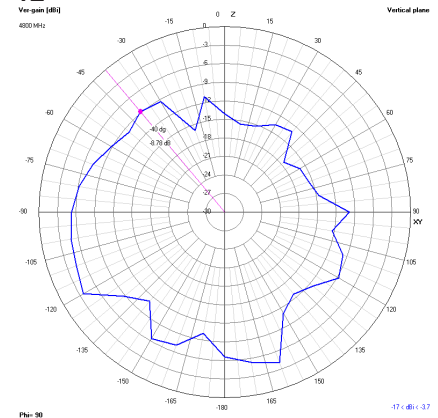
4800 MHz XY



XZ



YZ



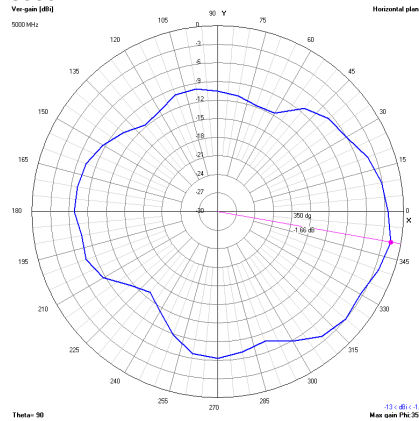


Alpha 14

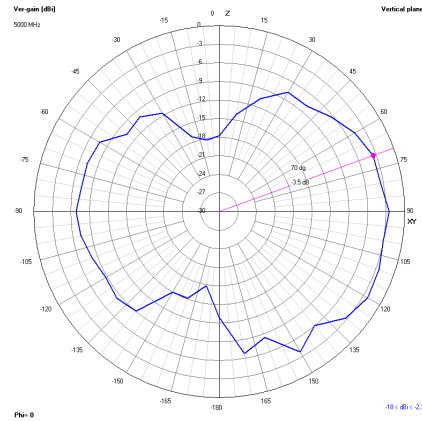
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

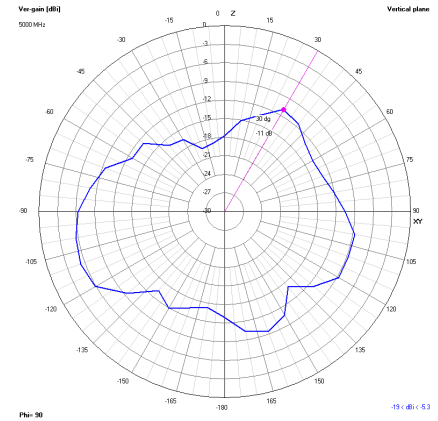
5000 MHz XY



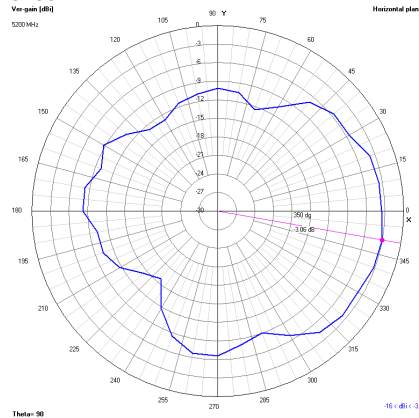
XZ



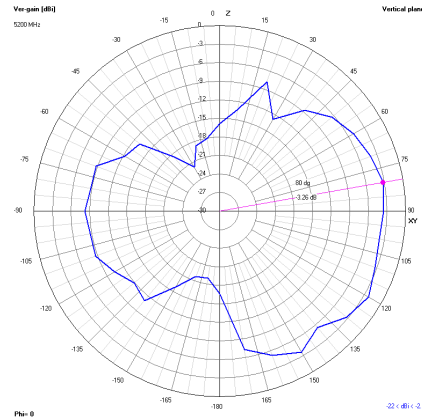
YZ



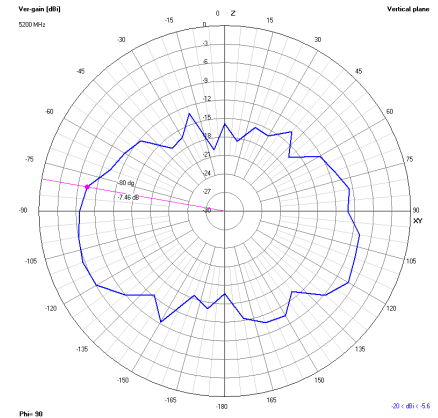
5200 MHz XY



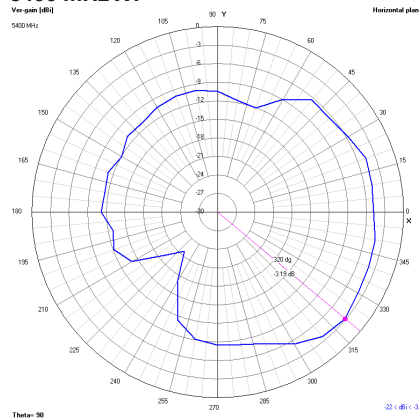
XZ



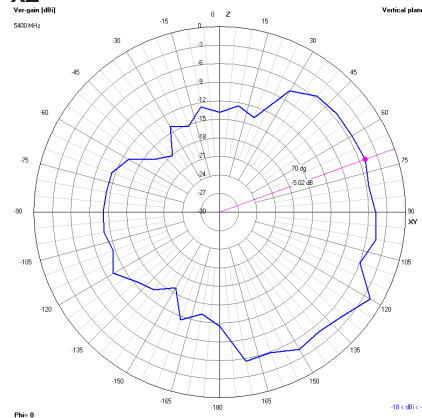
YZ



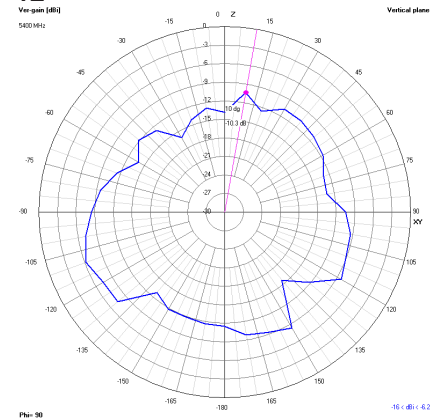
5400 MHz XY



XZ



YZ





Alpha 14

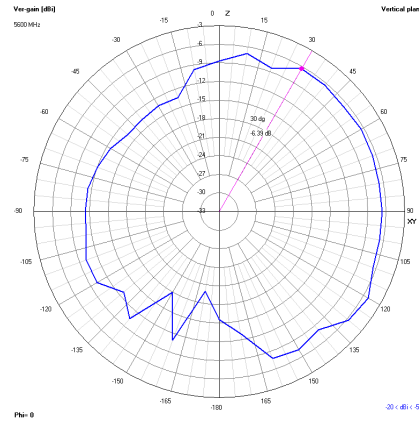
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

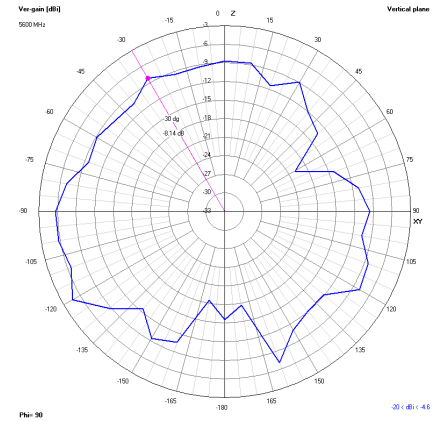
5600 MHz XY



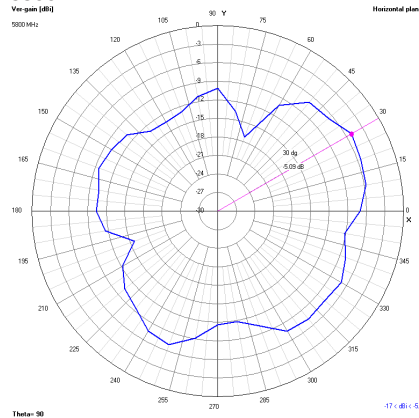
XZ



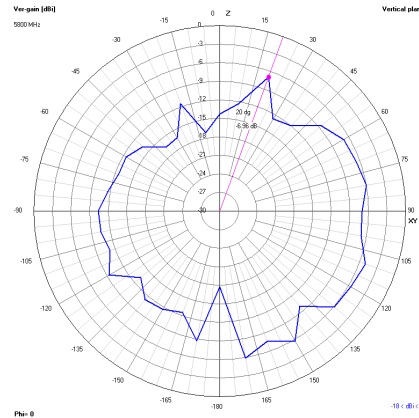
YZ



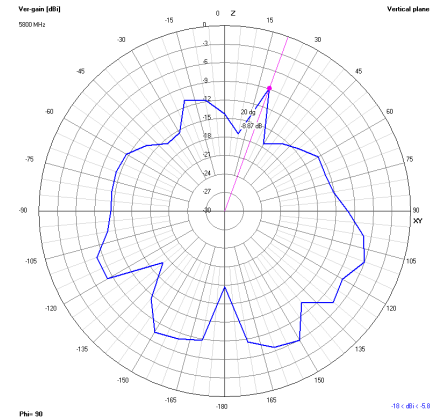
5800 MHz XY



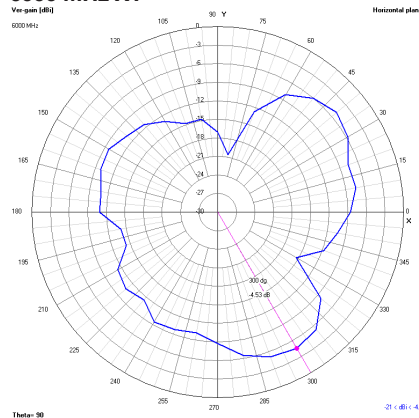
XZ



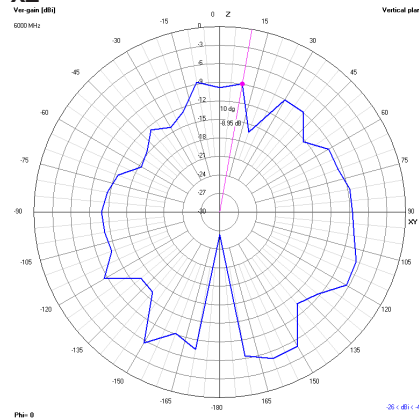
YZ



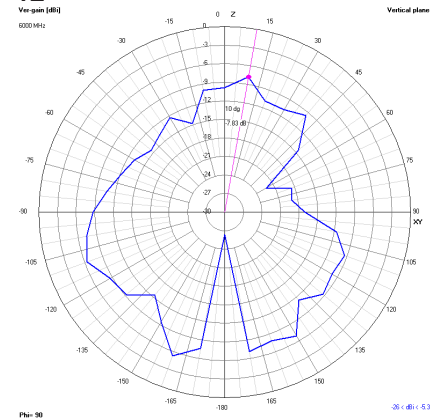
6000 MHz XY



XZ



YZ



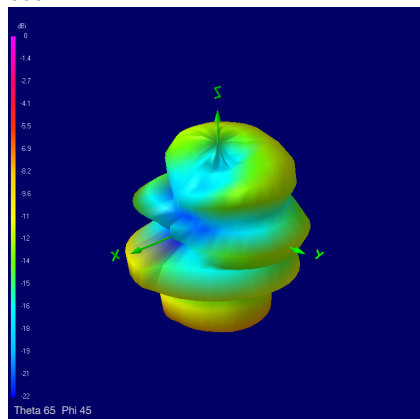


Alpha 14

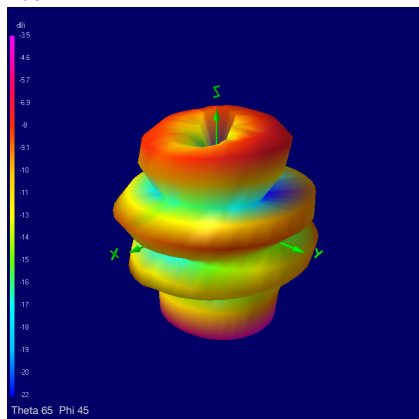
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 2.5 m cable

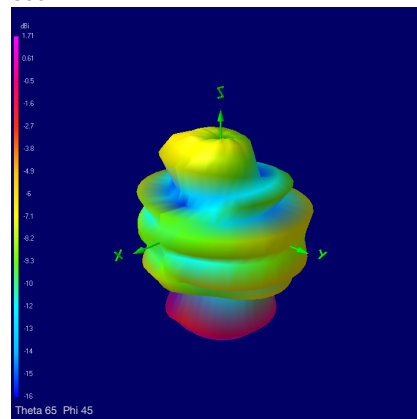
600 MHz



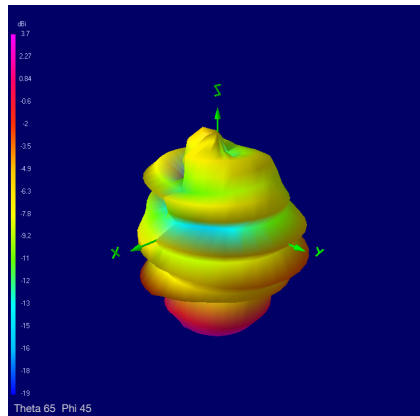
700 MHz



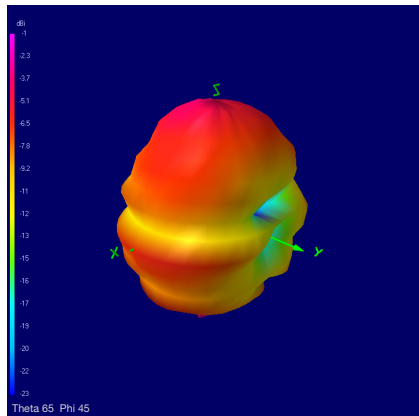
800 MHz



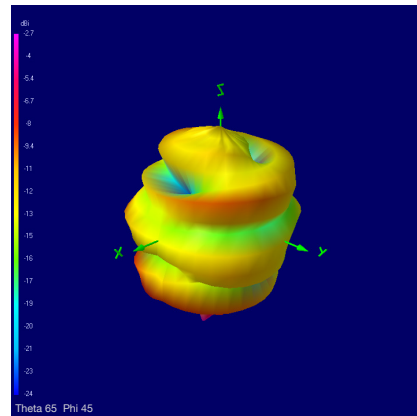
900 MHz



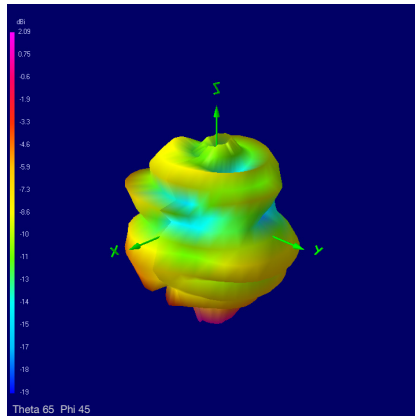
1400 MHz



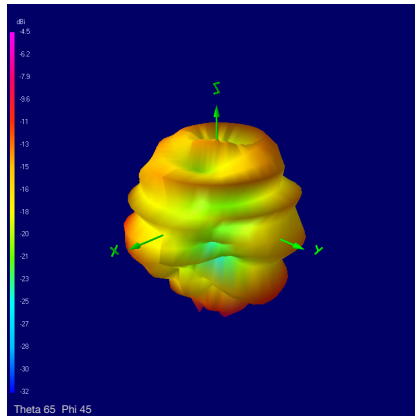
1500 MHz



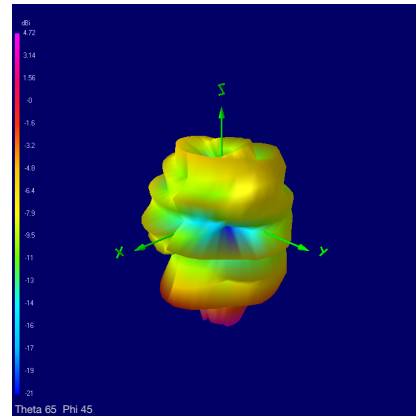
1600 MHz



1700 MHz



1800 MHz



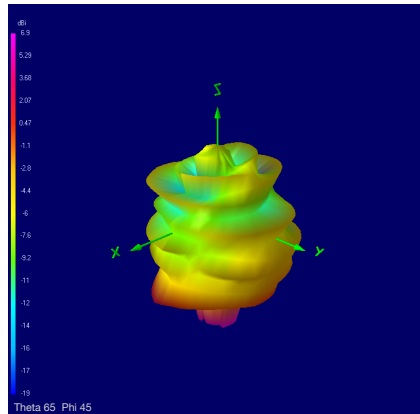


Alpha 14

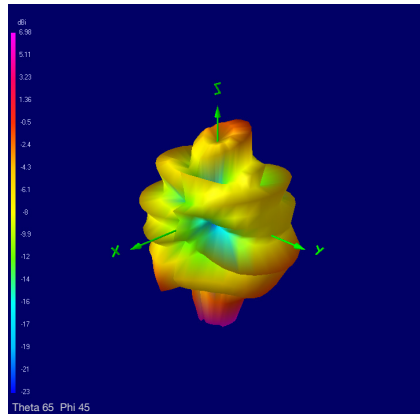
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 2.5 m cable

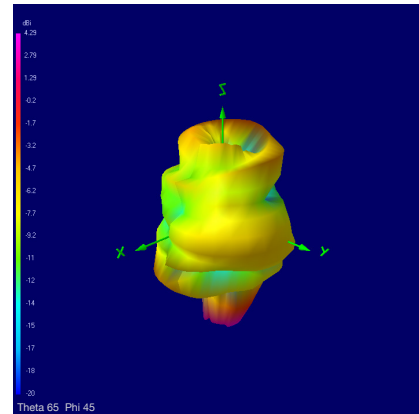
1900 MHz



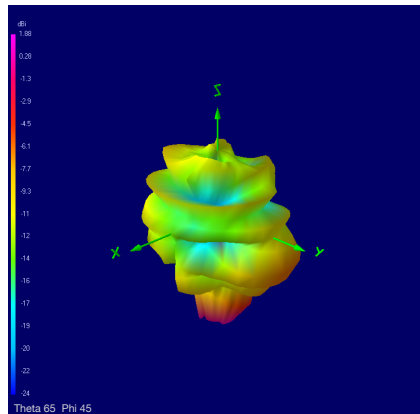
2000 MHz



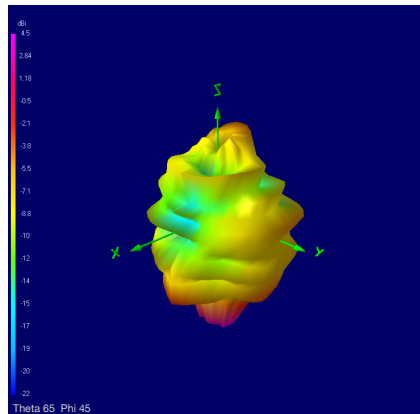
2100 MHz



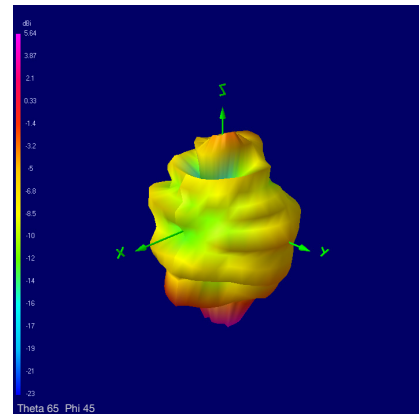
2300 MHz



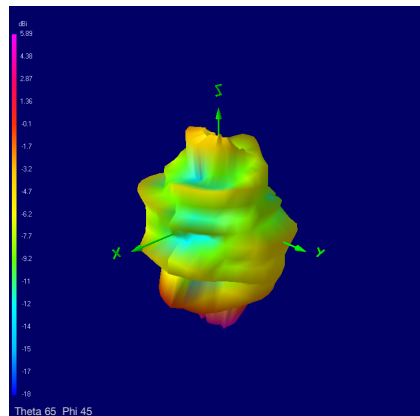
2400 MHz



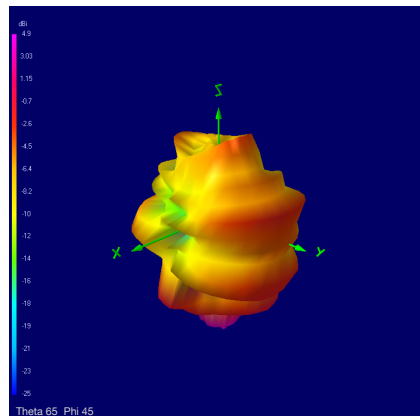
2460 MHz



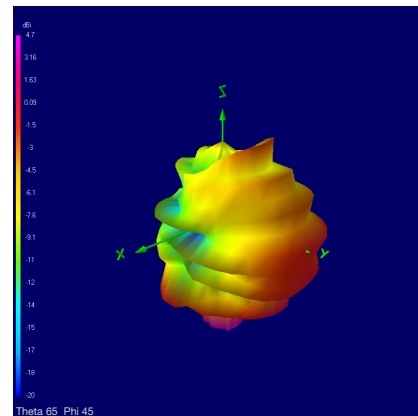
2500 MHz



2600 MHz



2700 MHz



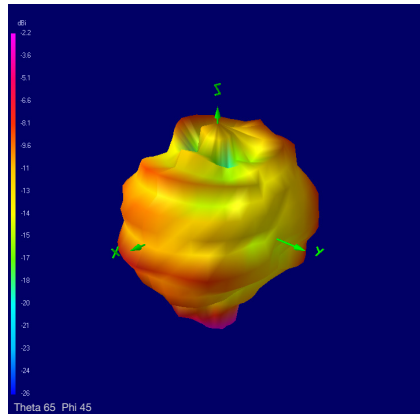


Alpha 14

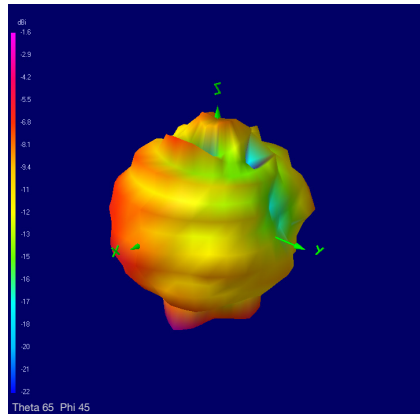
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 2.5 m cable

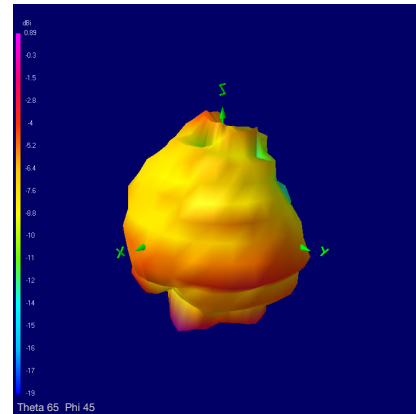
3300 MHz



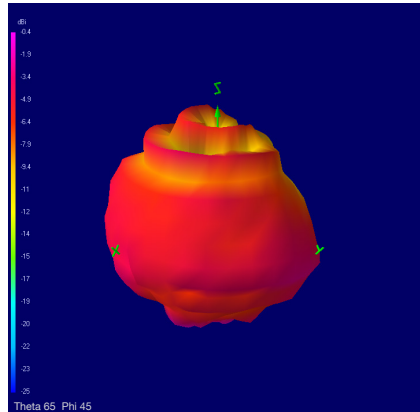
3400 MHz



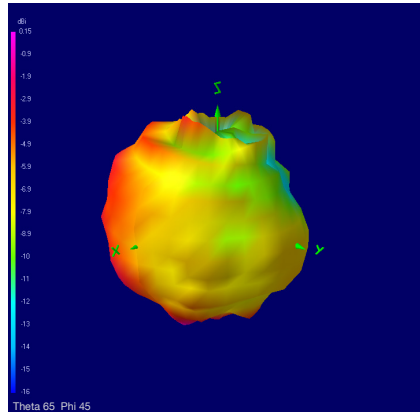
3500 MHz



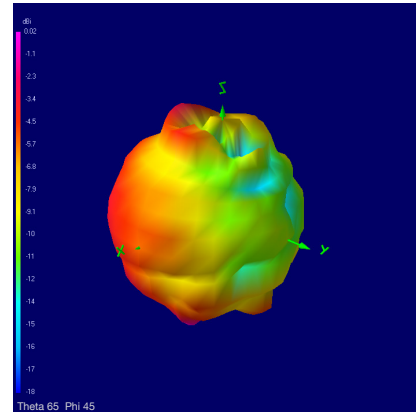
3600 MHz



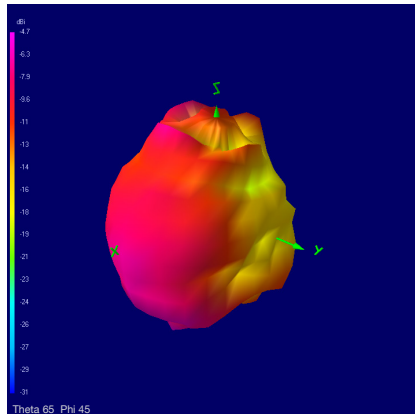
3700 MHz



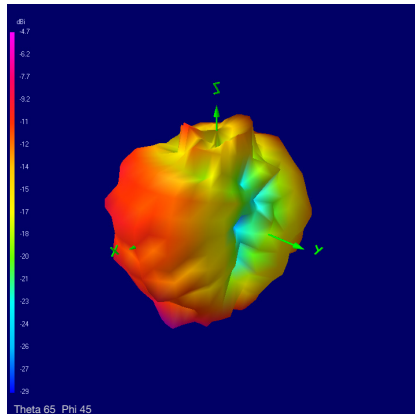
3800 MHz



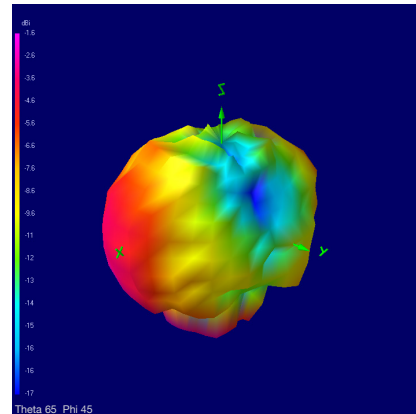
4400 MHz



4600 MHz



4800 MHz



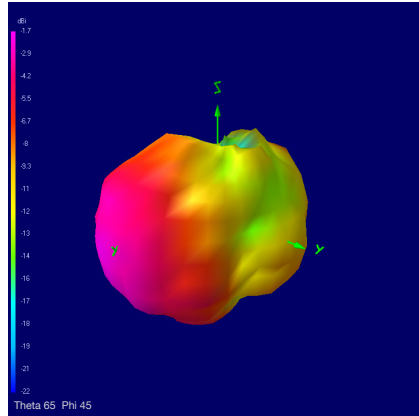


Alpha 14

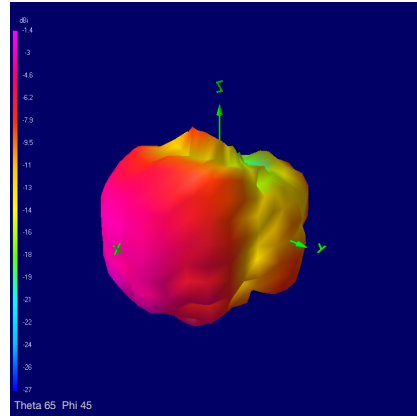
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 2.5 m cable

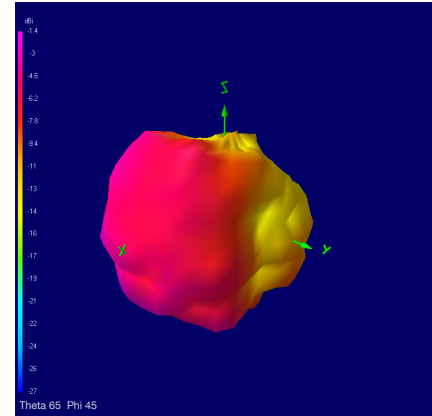
5000 MHz



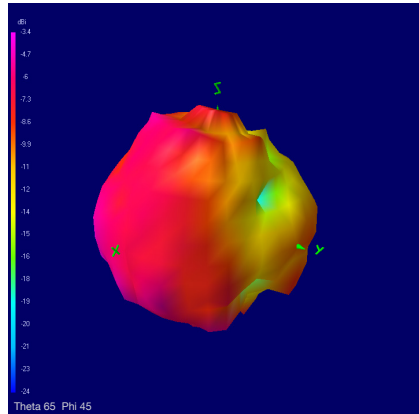
5200 MHz



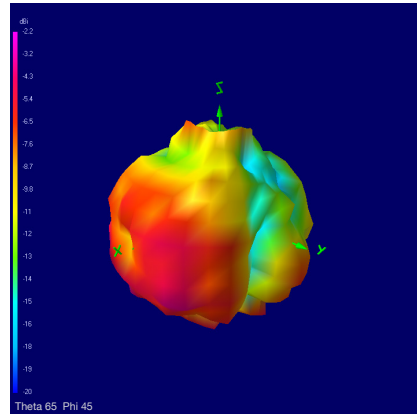
5400 MHz



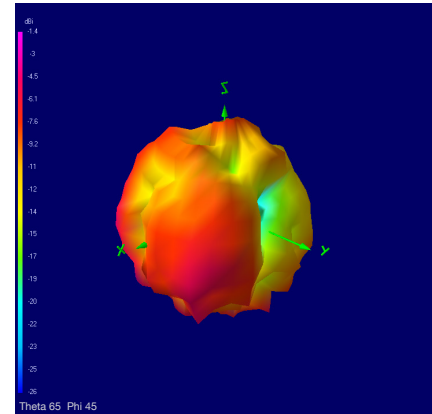
5600 MHz



5800 MHz



6000 MHz



Ordering Details

Part Number	Description
ALPHA14/0.5M/SMAM/S/S/26	2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA SMA MALE 0.5m CABLE
ALPHA14/2.5M/SMAM/S/S/26	2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA SMA MALE 2.5m CABLE