



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



Electrical Specifications

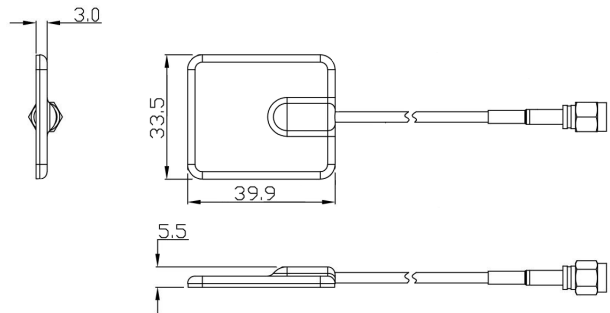
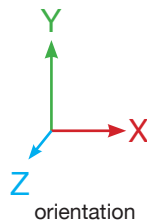
Polarization:	Linear
Impedance:	50 Ohm
Max Power Input:	10 W
Ground Plane Independent:	Yes

Environmental Specifications

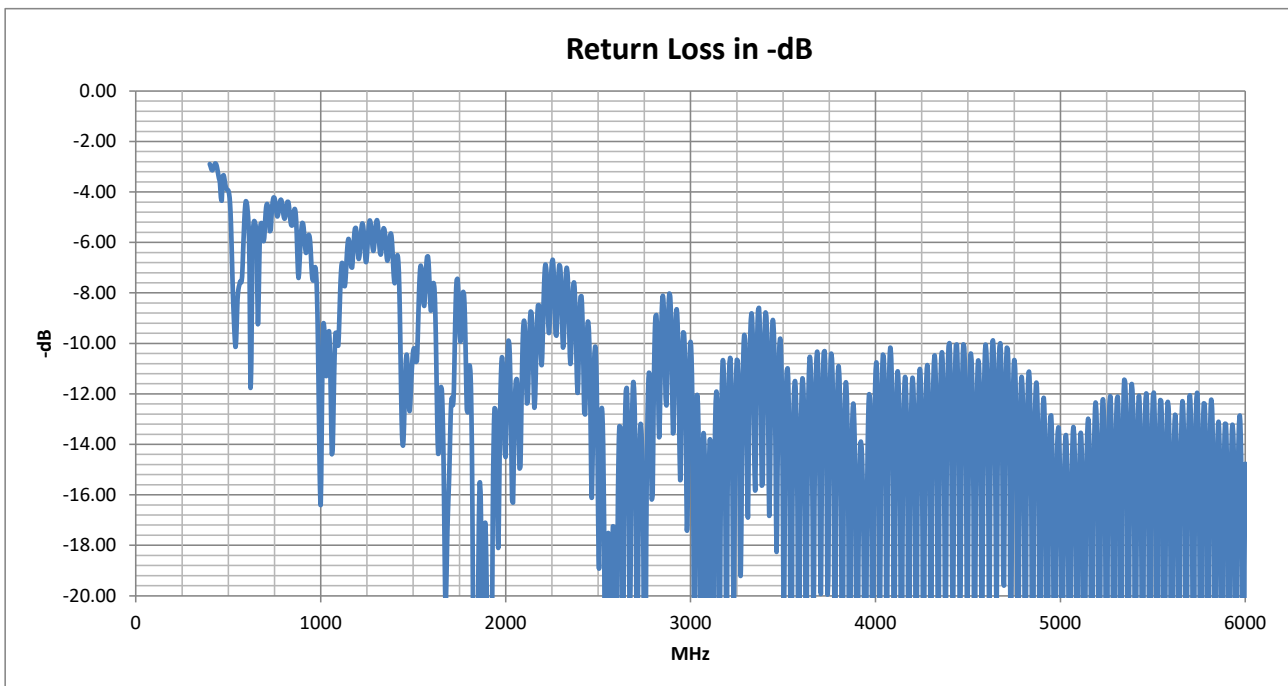
Operating Temperature:	-40 - +85 °C
Relative Humidity:	Up to 95 %

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

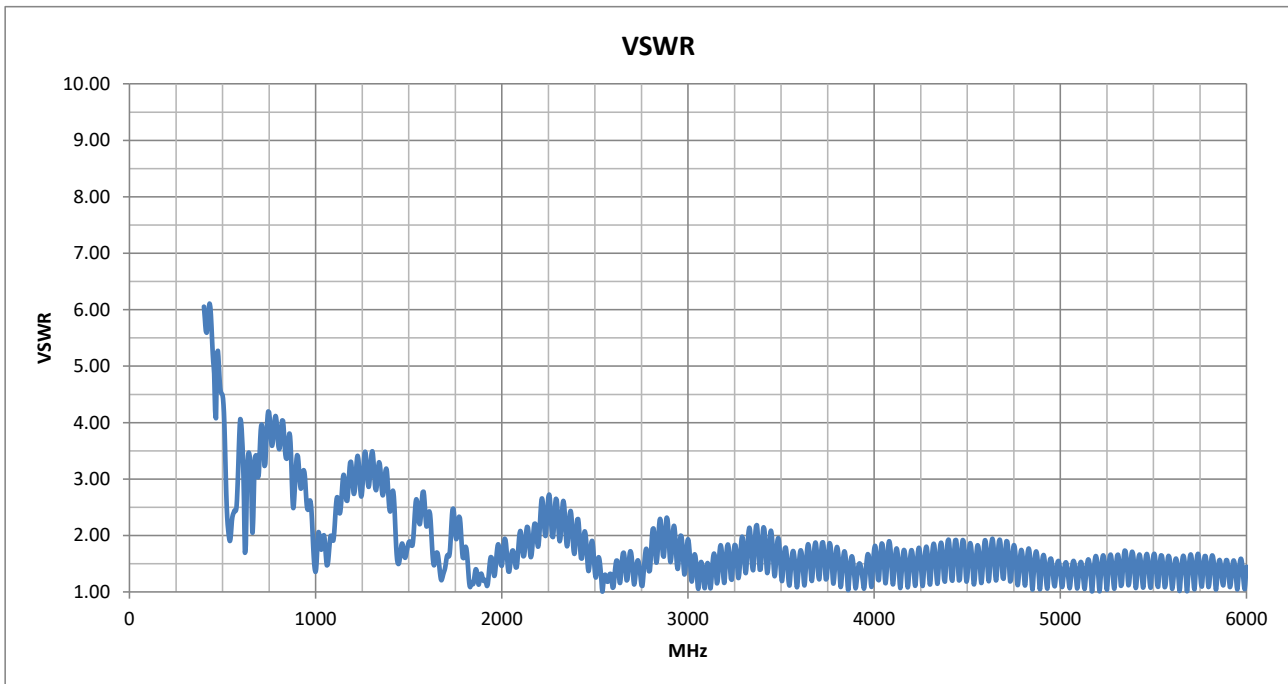


Return Loss tested with 2.5 m cable

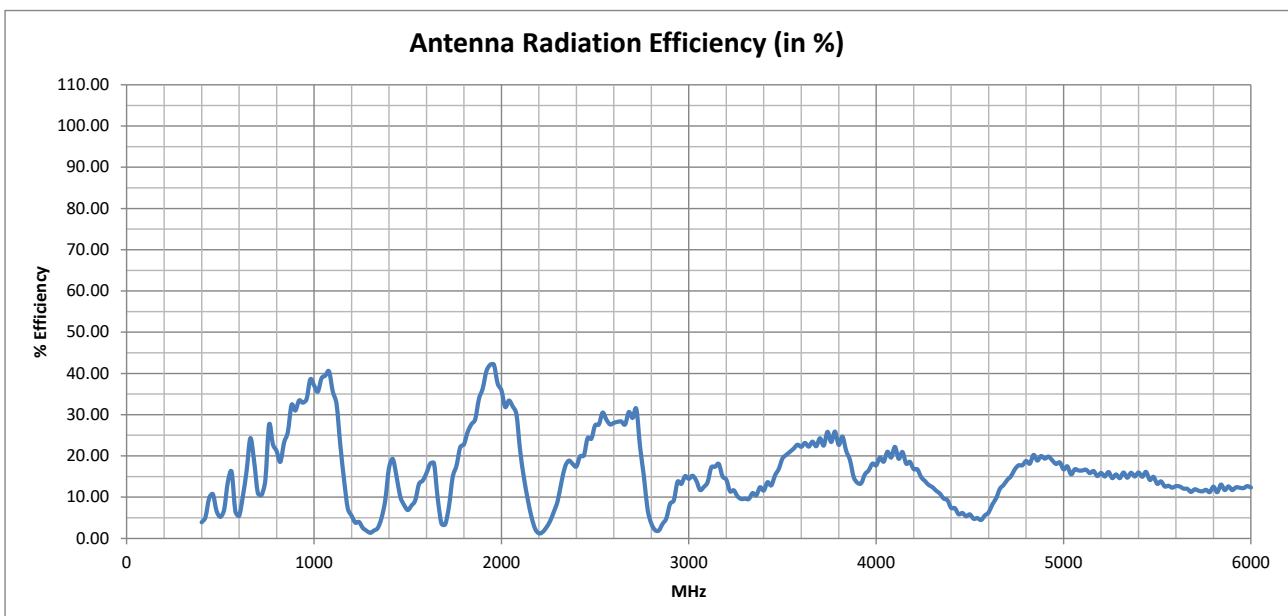




VSWR tested with 2.5 m cable



Radiation Efficiency tested with 2.5 m cable





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

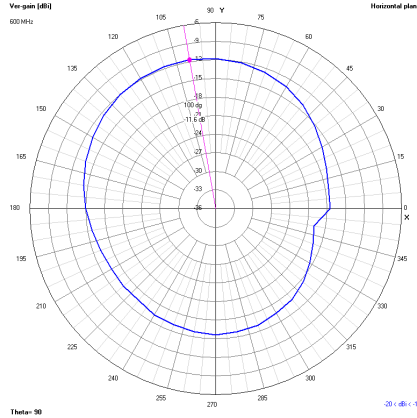
Table data for bands as detailed in 3GPP TS 38.101

● Usable Band
 ⊖ Adequate in good signal area
 ✘ Not Usable



Radiation Plots tested with 2.5 m cable

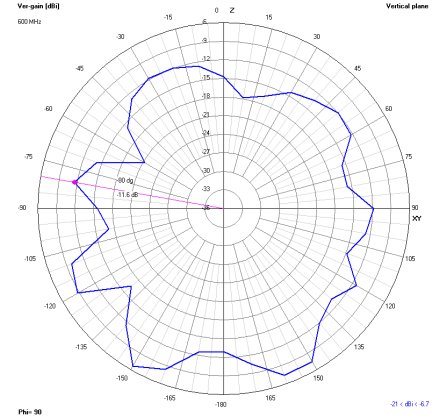
600 MHz XY



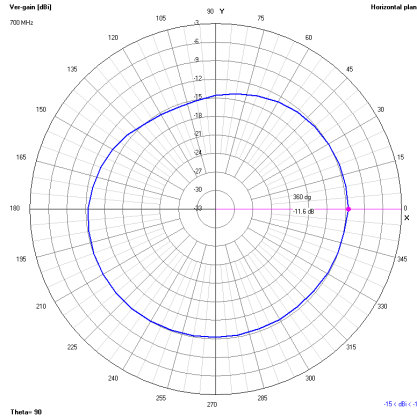
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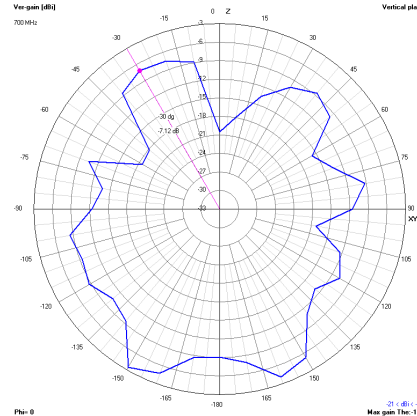
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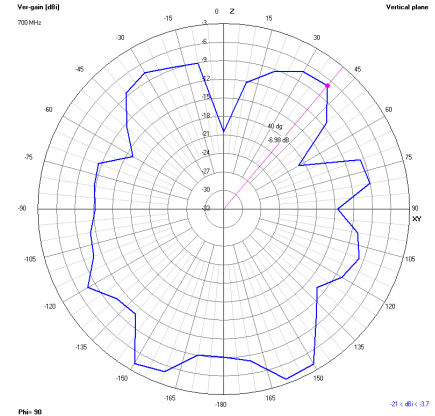
700 MHz XY



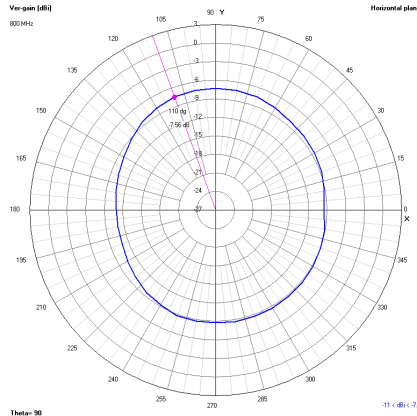
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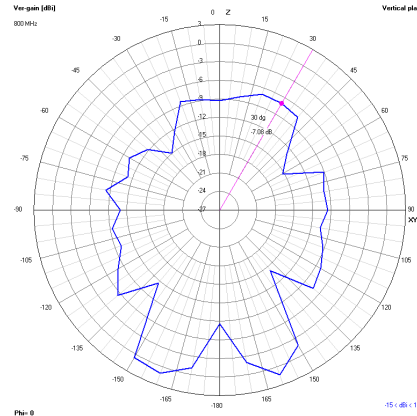
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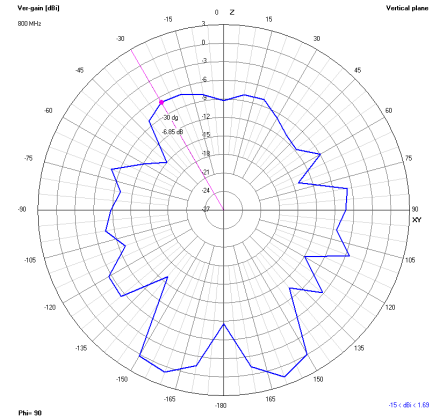
800 MHz XY



XZ



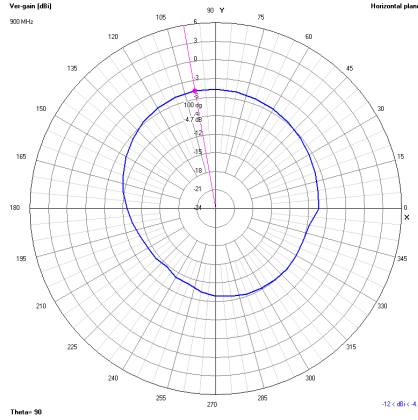
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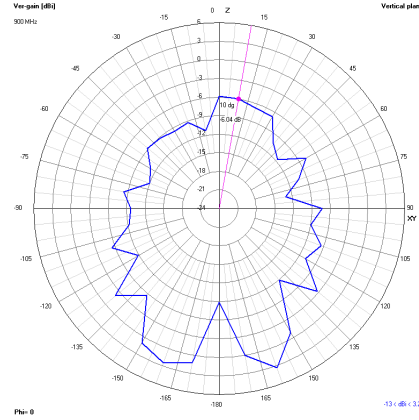


Radiation Plots tested with 2.5 m cable

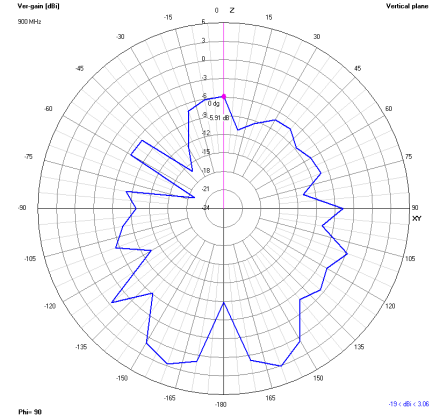
900 MHz XY



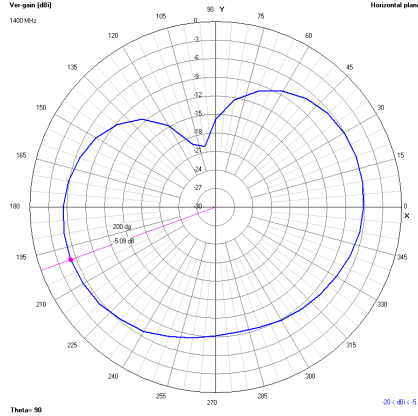
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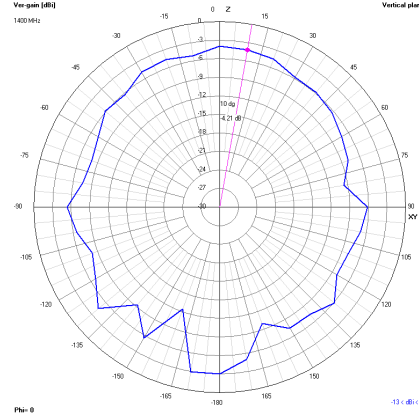
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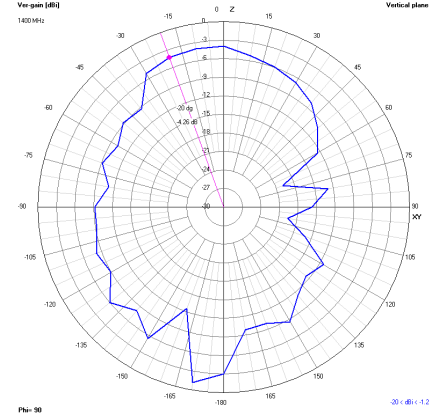
1400 MHz XY



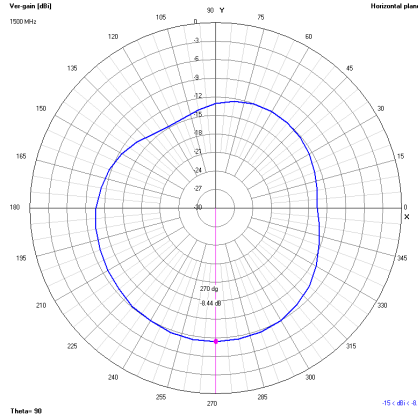
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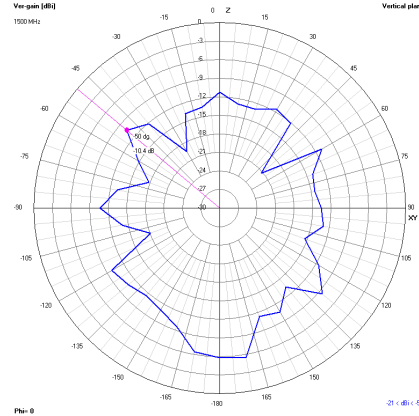
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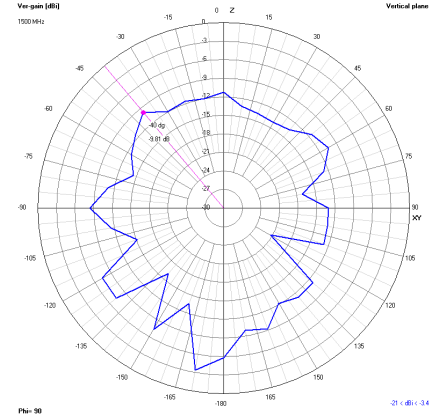
1500 MHz XY



XZ



YZ



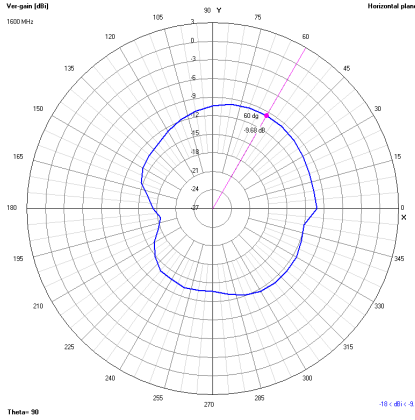


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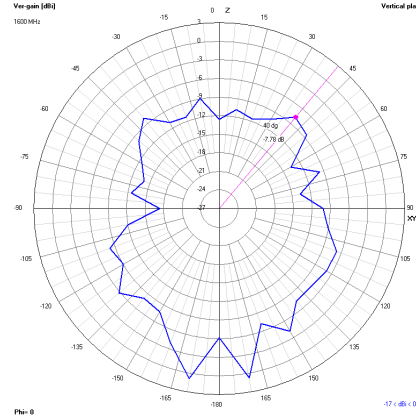
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

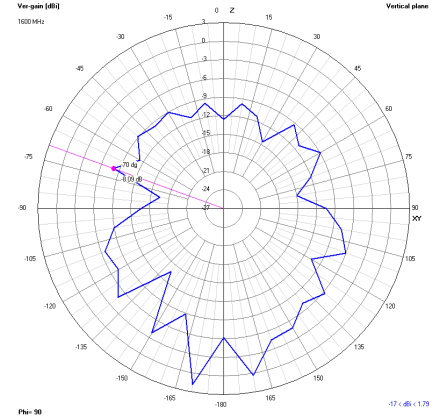
1600 MHz XY



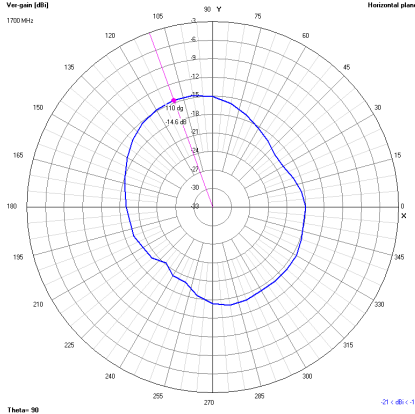
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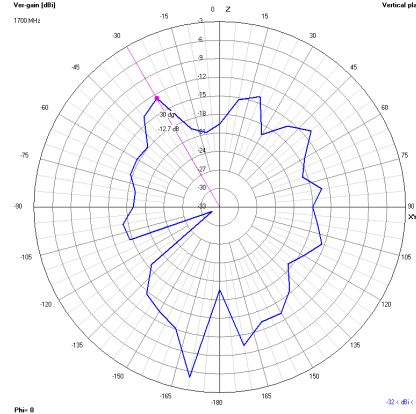
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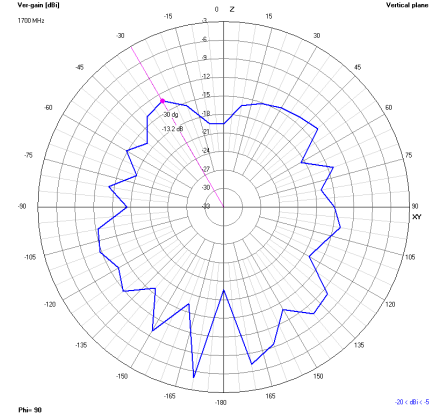
1700 MHz XY



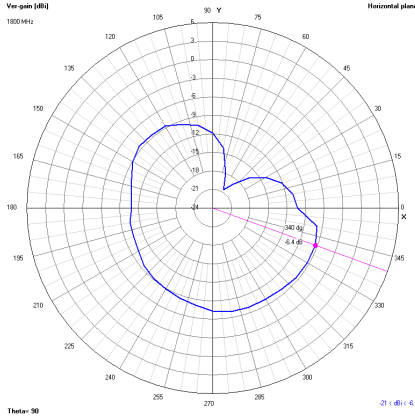
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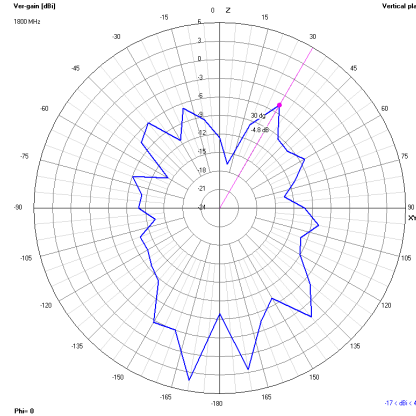
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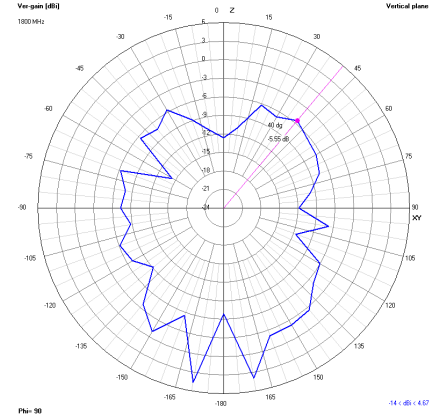
1800 MHz XY



XZ



YZ



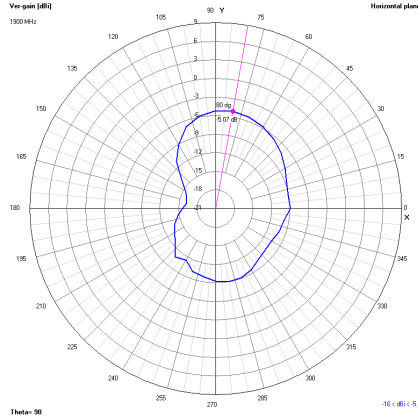


Alpha 14

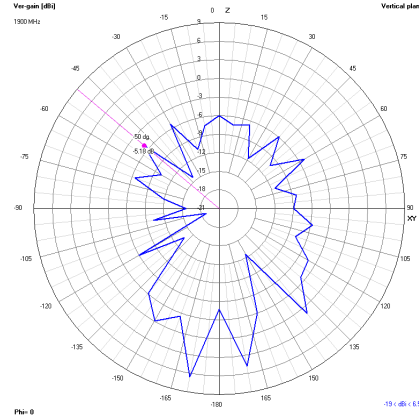
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

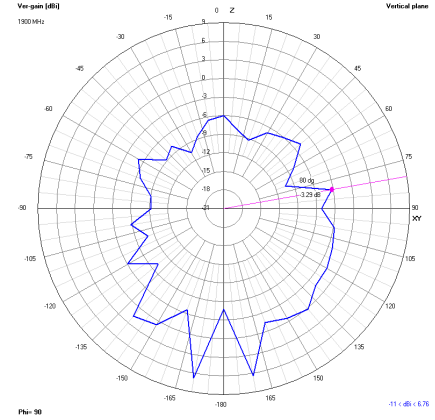
1900 MHz XY



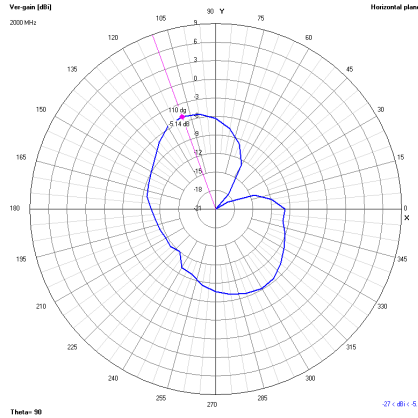
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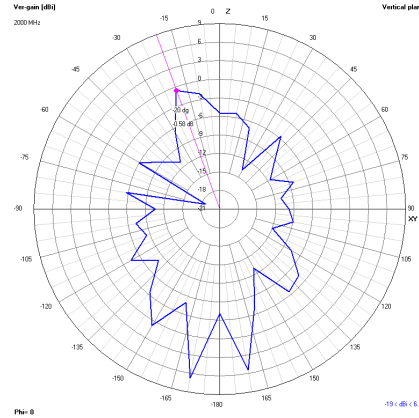
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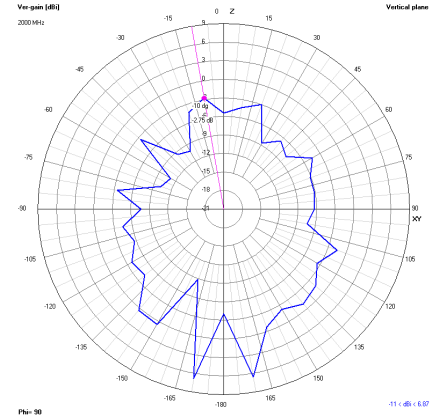
2000 MHz XY



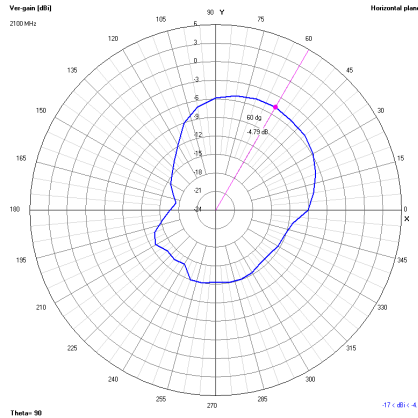
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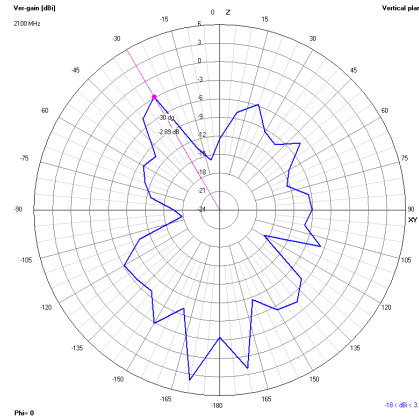
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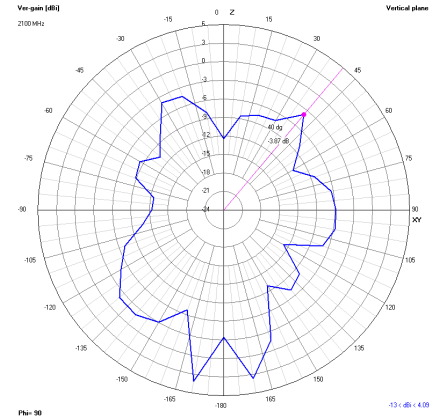
2100 MHz XY



XZ



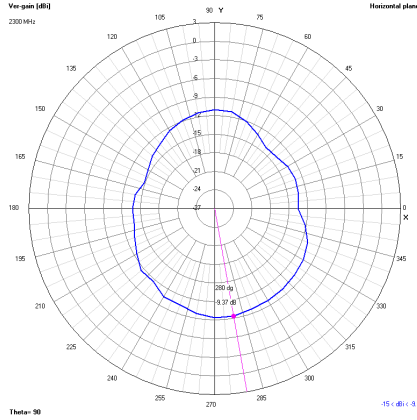
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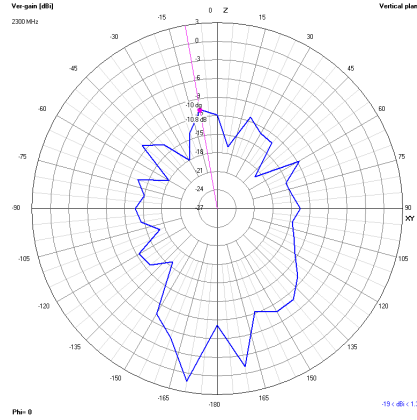


Radiation Plots tested with 2.5 m cable

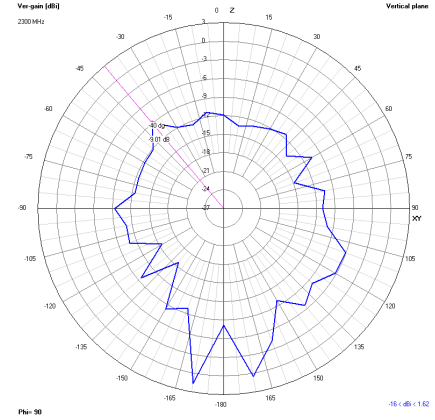
2300 MHz XY



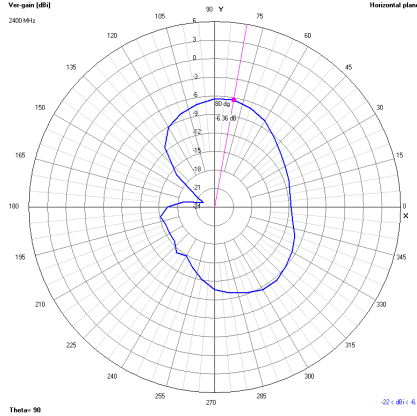
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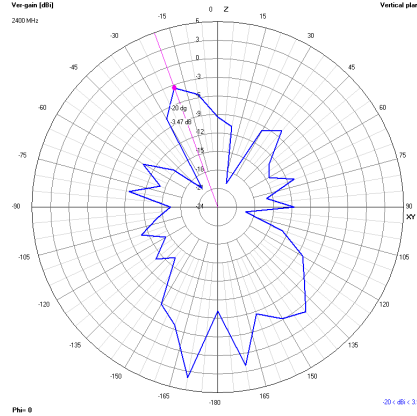
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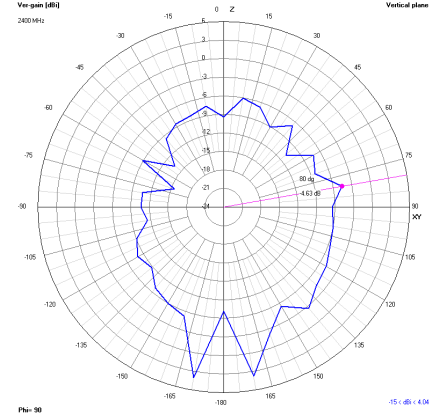
2400 MHz XY



XZ



YZ



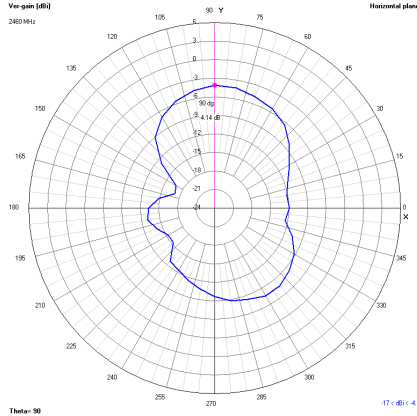
WiFi Band 2.4 GHz

Eff % 17.42

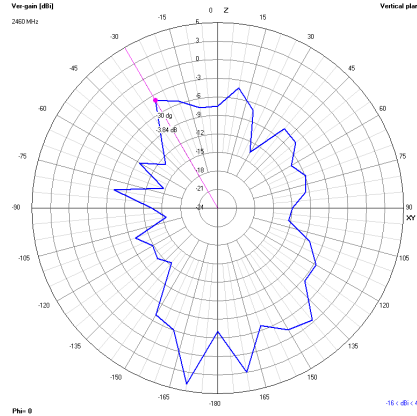
WiFi Band 2.4 GHz

Eff % 17.42

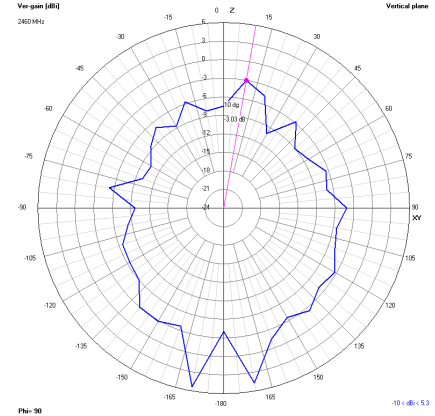
2460 MHz XY



XZ



YZ



WiFi Band 2.4 GHz

Eff % 24.32

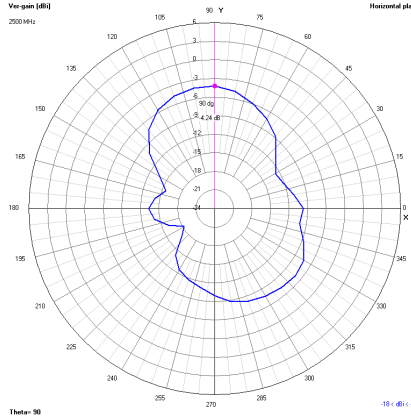
WiFi Band 2.4 GHz

Eff % 24.32

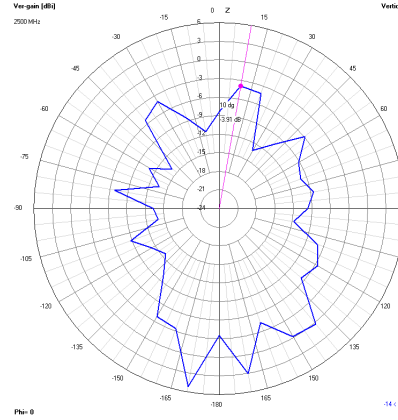


Radiation Plots tested with 2.5 m cable

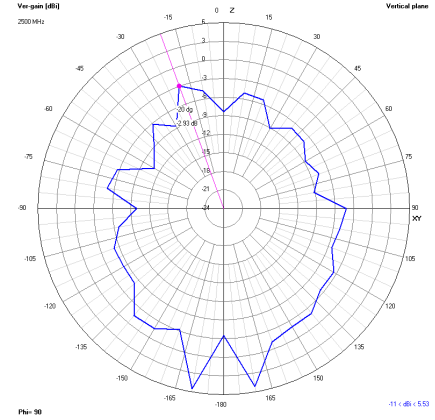
2500 MHz XY



XZ



YZ



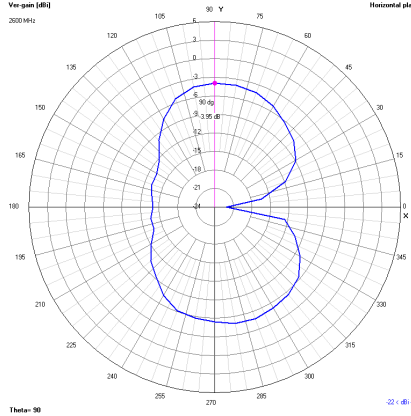
WiFi Band
2.4 GHz

Eff %
27.42

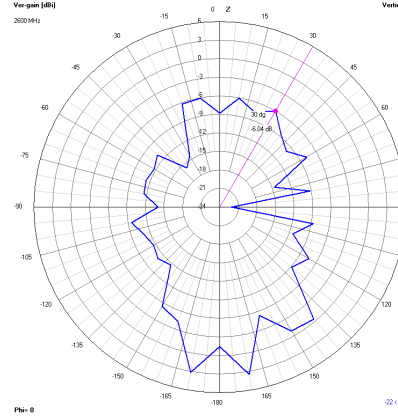
WiFi Band
2.4 GHz

Eff %
27.42

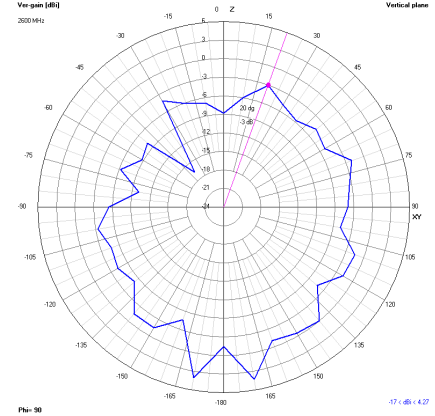
2600 MHz XY



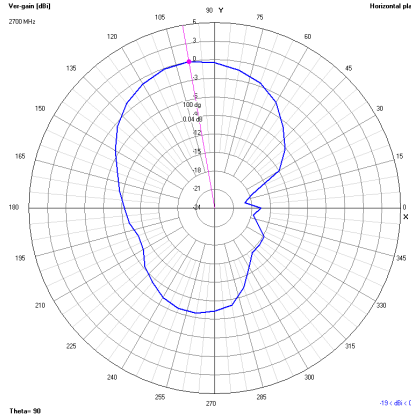
XZ



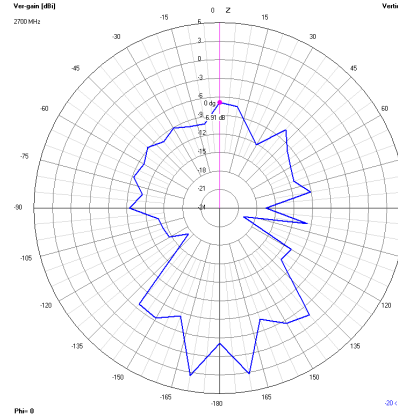
YZ



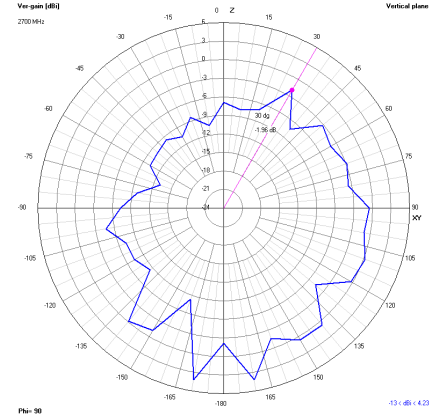
2700 MHz XY



XZ



YZ



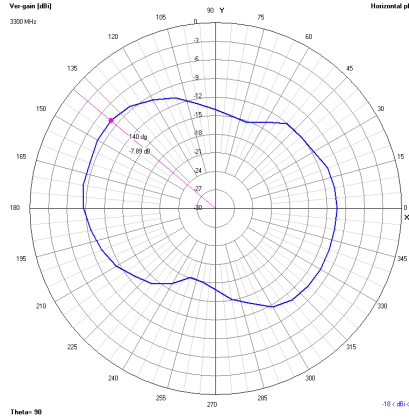


Alpha 14

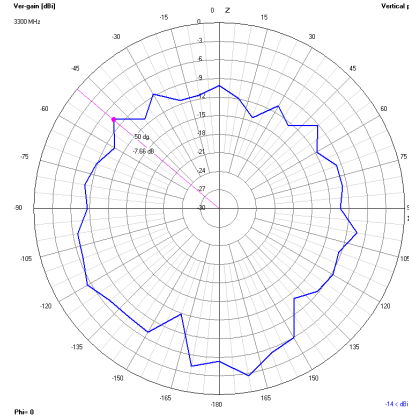
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 2.5 m cable

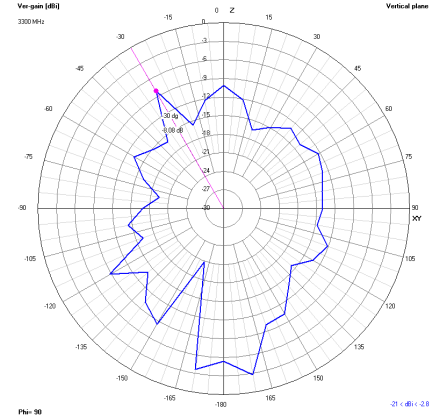
3300 MHz XY



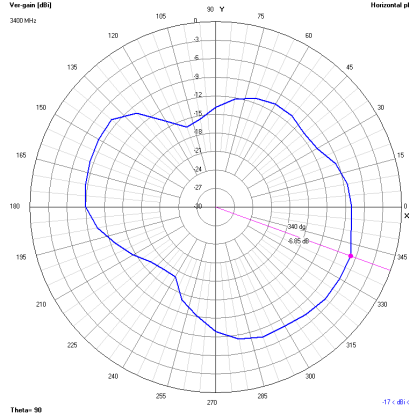
XZ



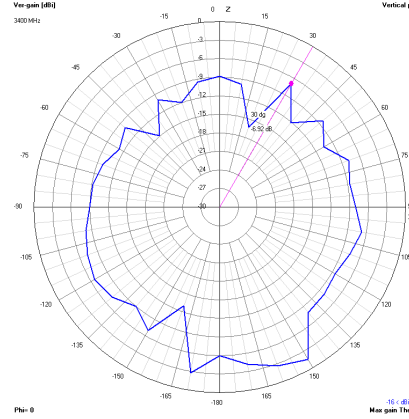
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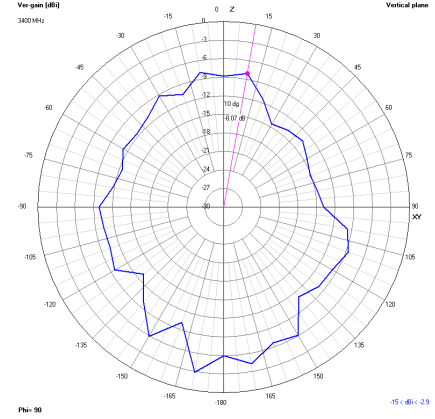
3400 MHz XY



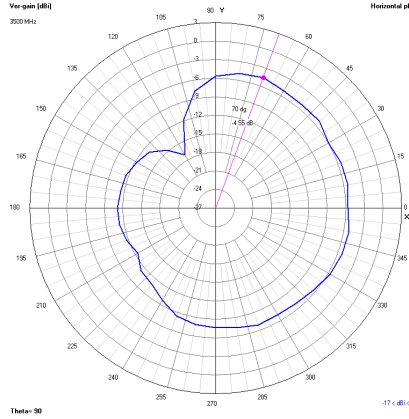
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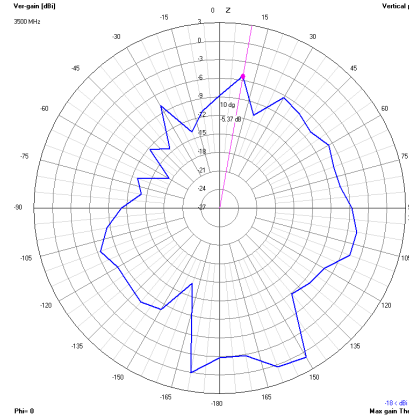
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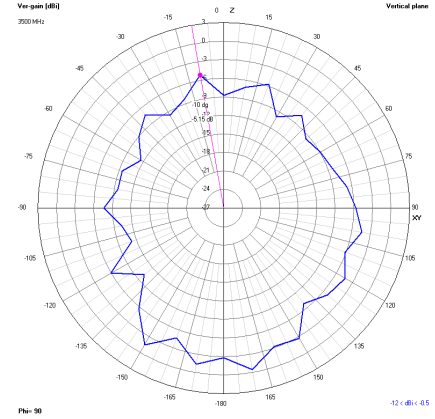
3500 MHz XY



XZ



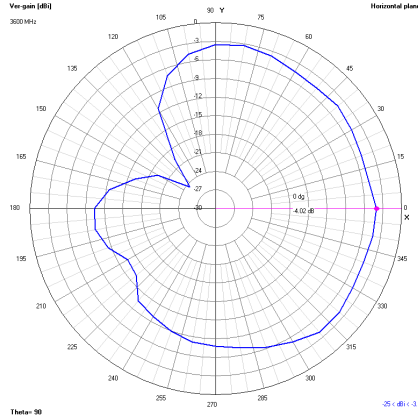
YZ



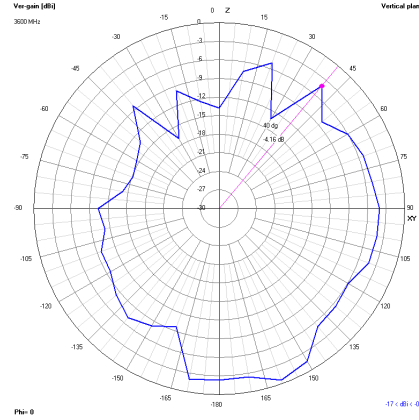


Radiation Plots tested with 2.5 m cable

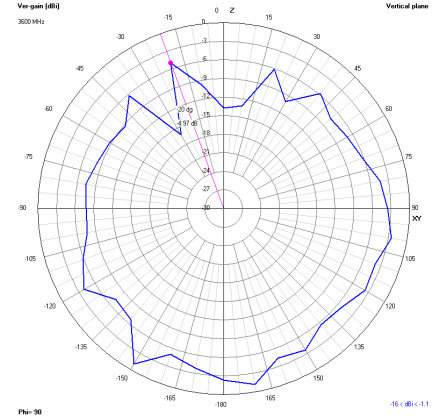
3600 MHz XY



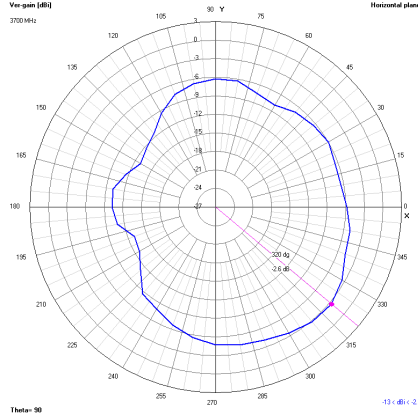
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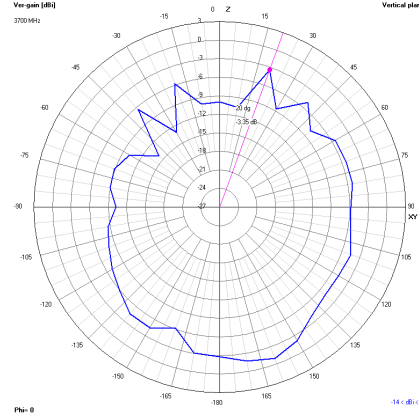
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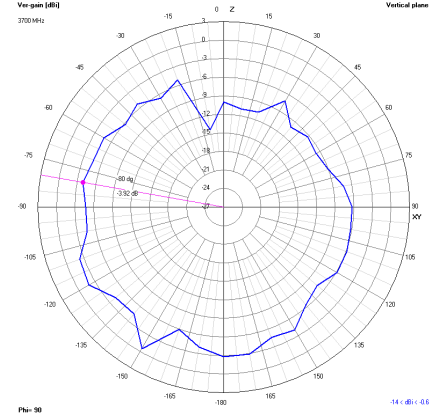
3700 MHz XY



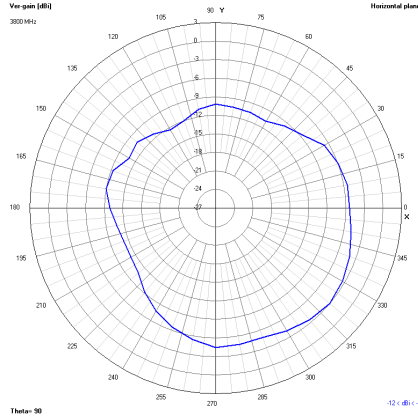
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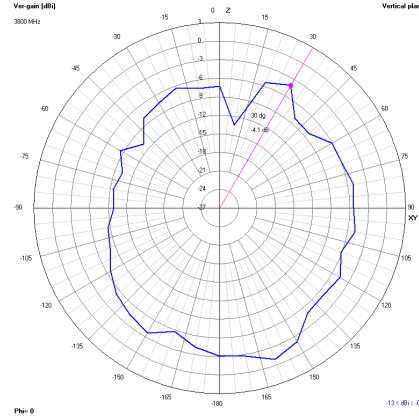
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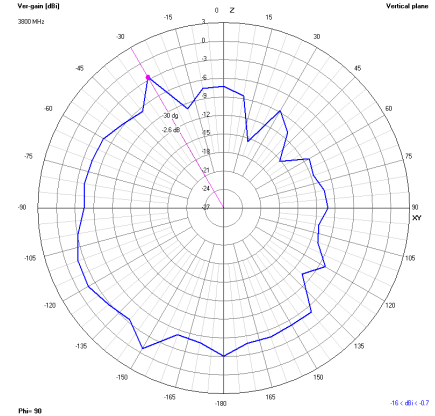
3800 MHz XY



XZ



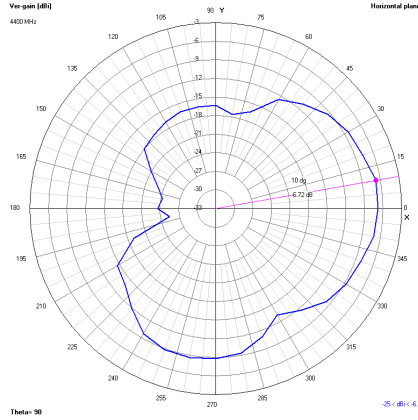
YZ



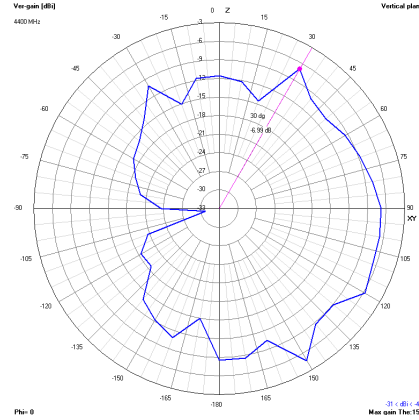


Radiation Plots tested with 2.5 m cable

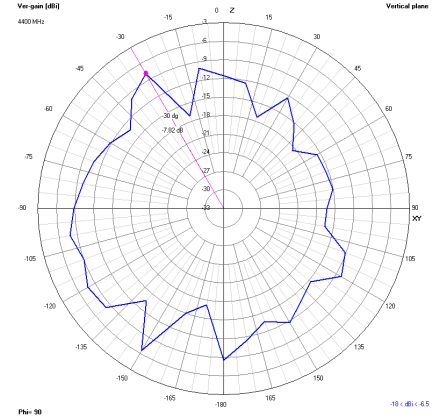
4400 MHz XY



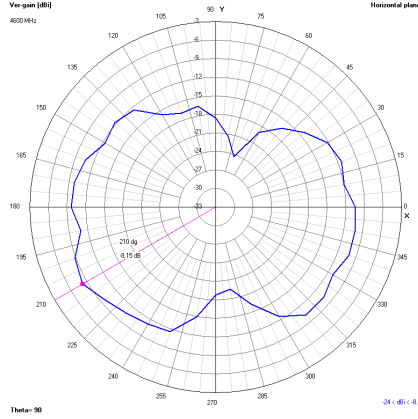
XZ



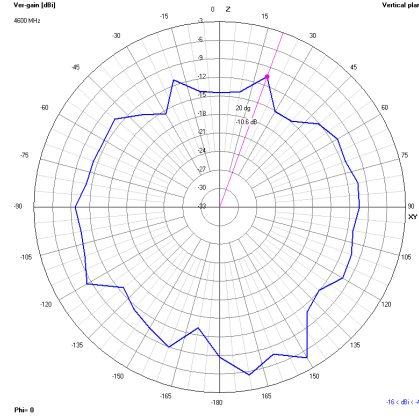
YZ



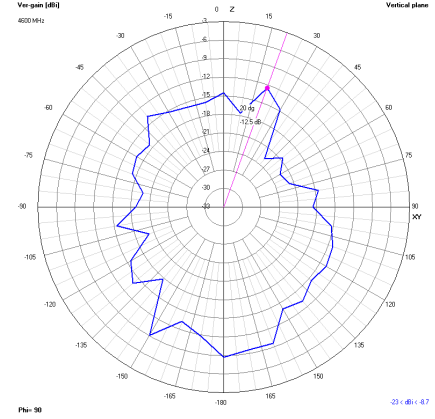
4600 MHz XY



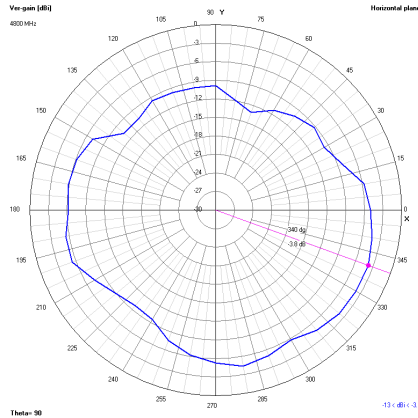
XZ



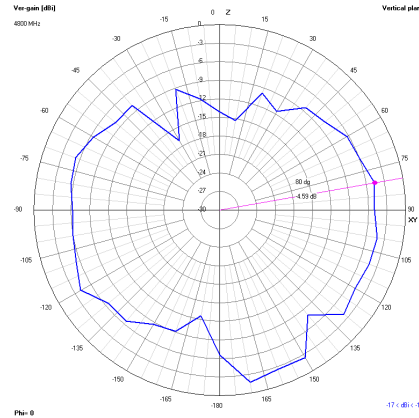
YZ



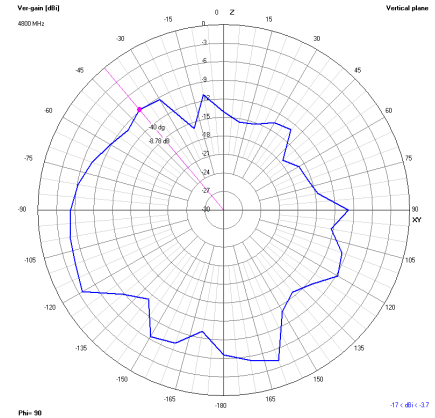
4800 MHz XY



XZ



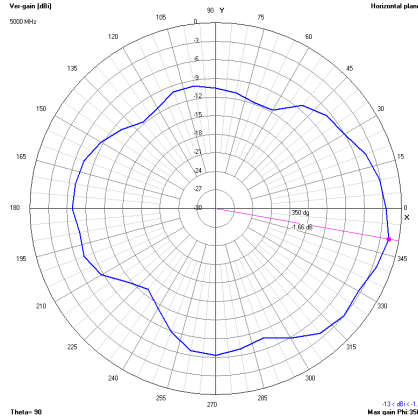
YZ



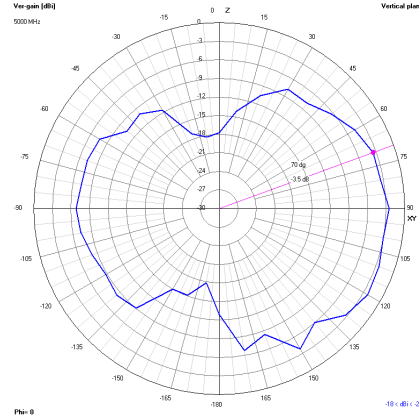


Radiation Plots tested with 2.5 m cable

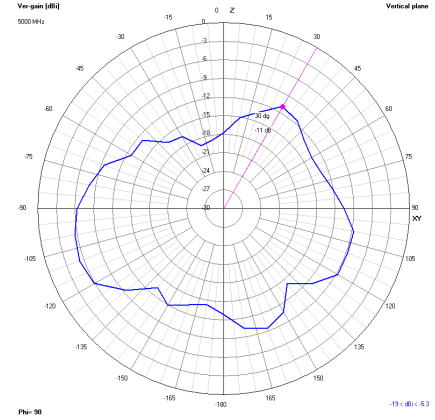
5000 MHz XY



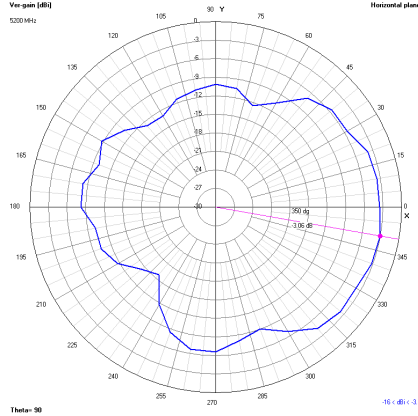
XZ



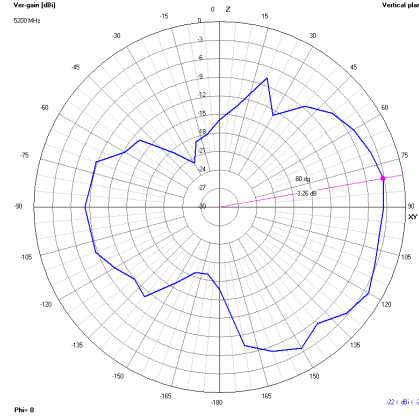
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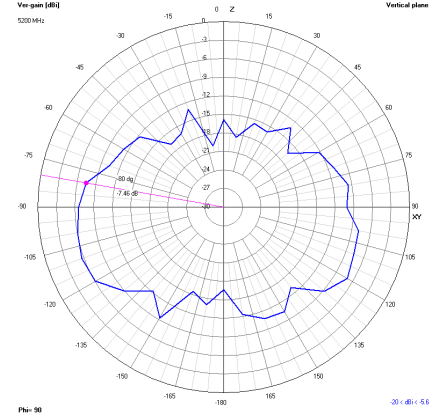
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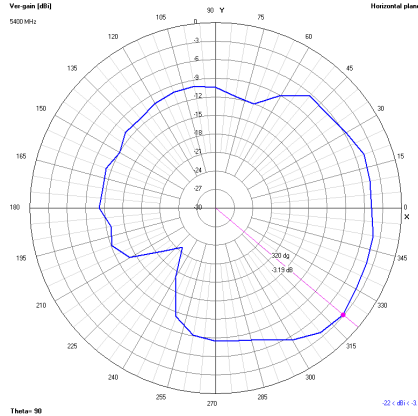
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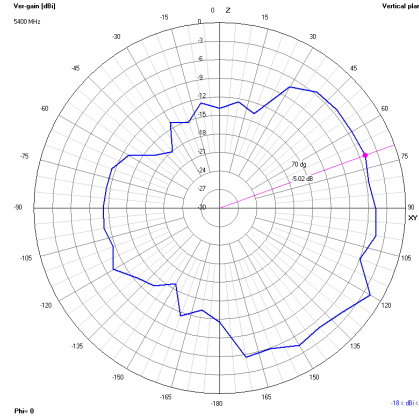
YZ



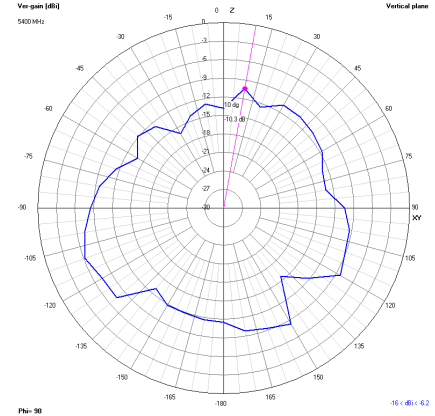
5400 MHz XY



XZ



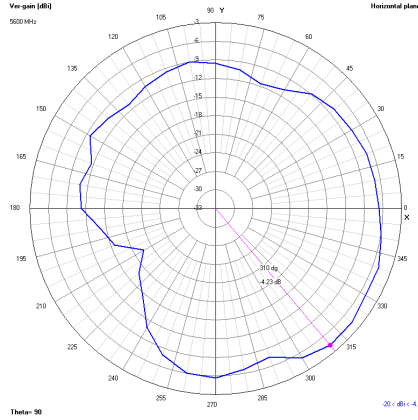
YZ



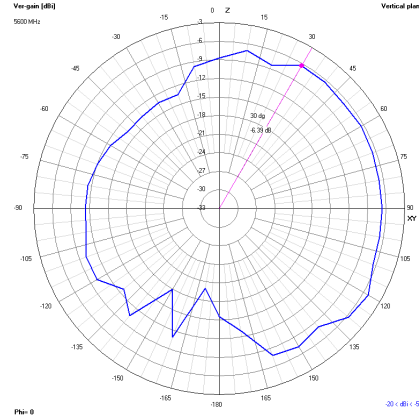


Radiation Plots tested with 2.5 m cable

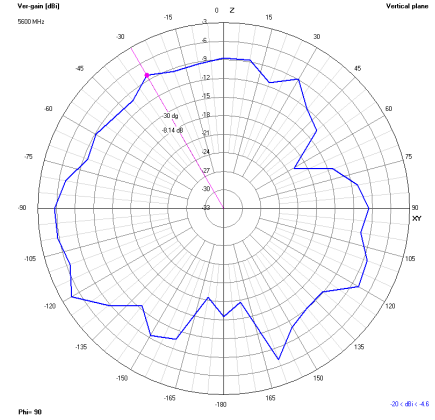
5600 MHz XY



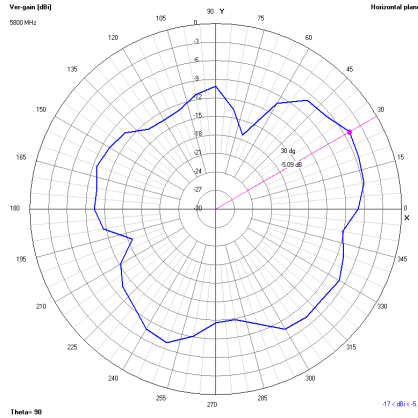
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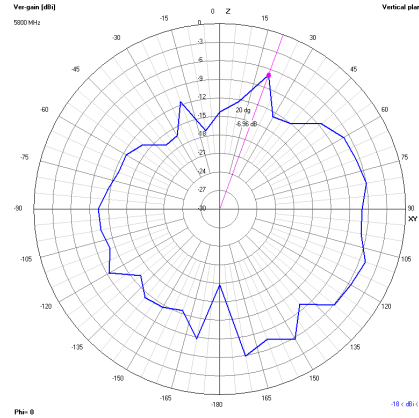
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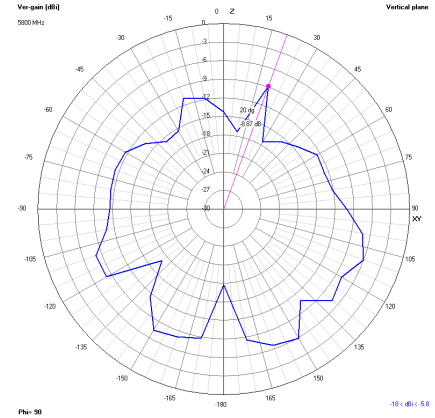
5800 MHz XY



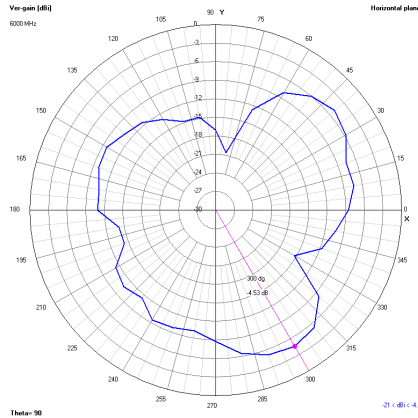
XZ



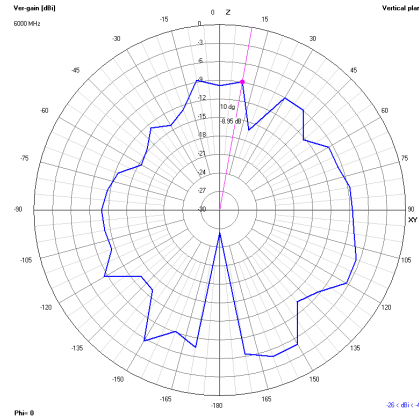
YZ



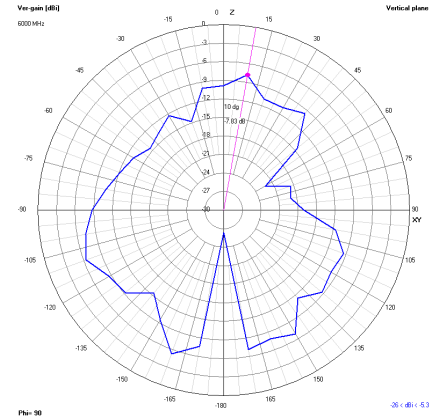
6000 MHz XY



XZ



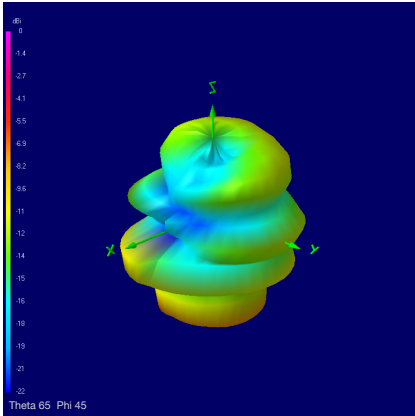
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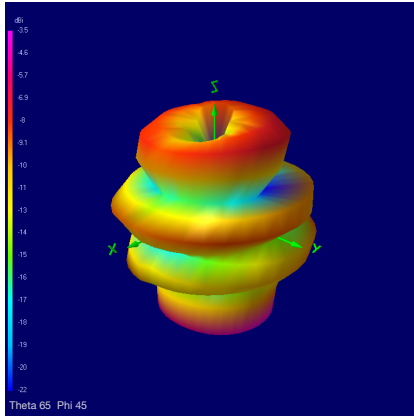


3D Radiation Plots tested with 2.5 m cable

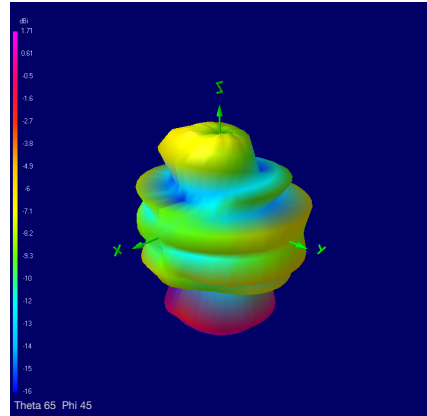
600 MHz



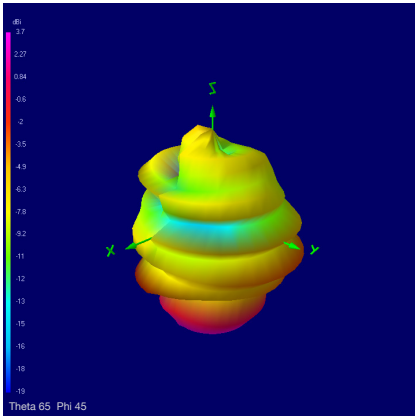
700 MHz



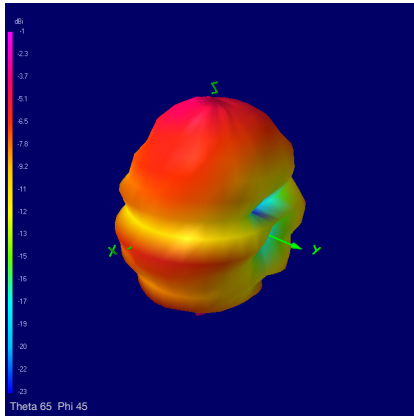
800 MHz



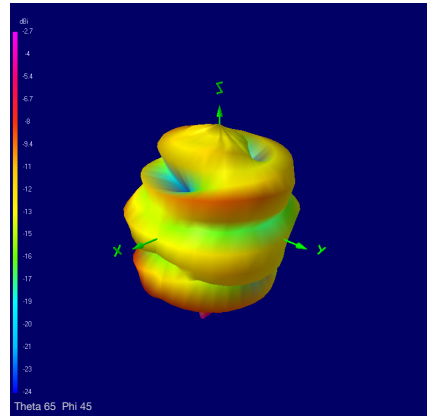
900 MHz



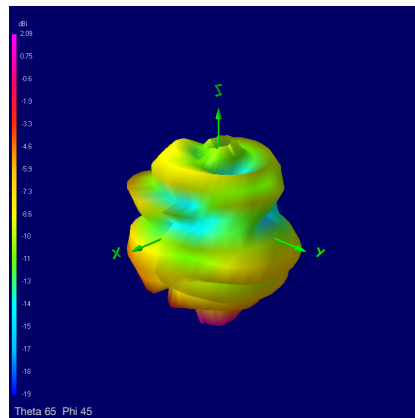
1400 MHz



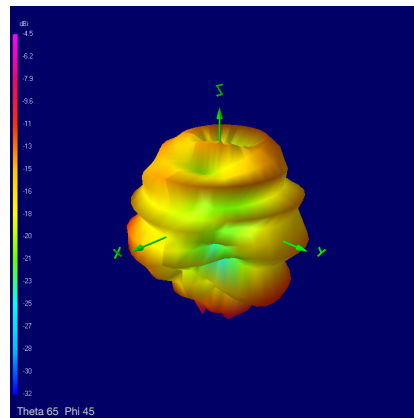
1500 MHz



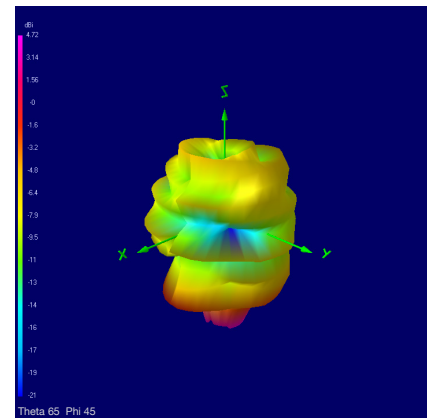
1600 MHz



1700 MHz



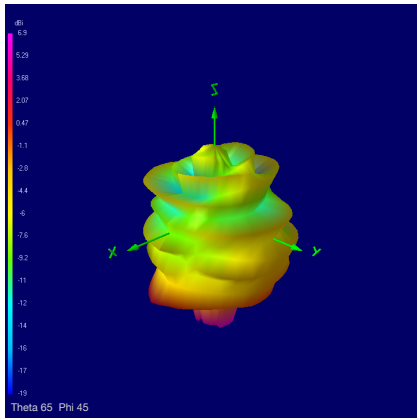
1800 MHz



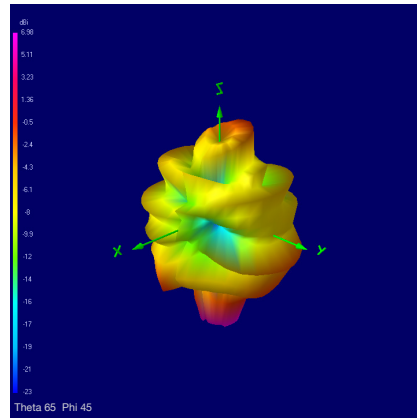


3D Radiation Plots tested with 2.5 m cable

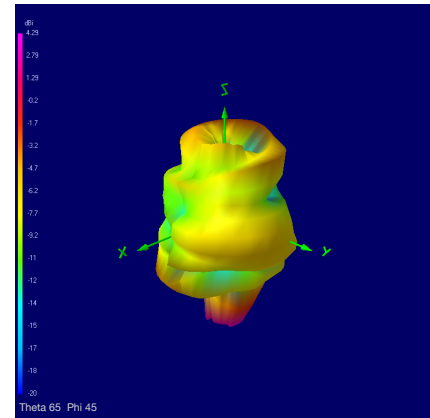
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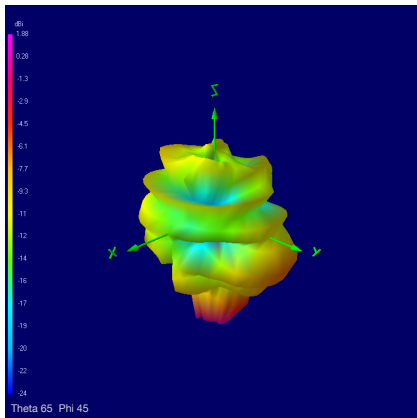
2000 MHz



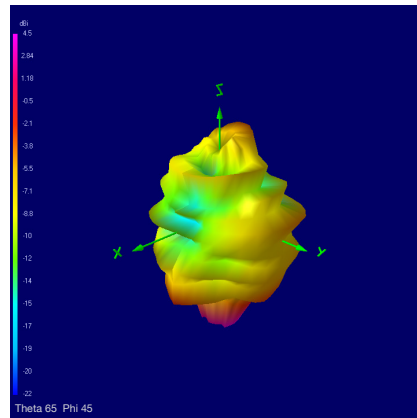
2100 MHz



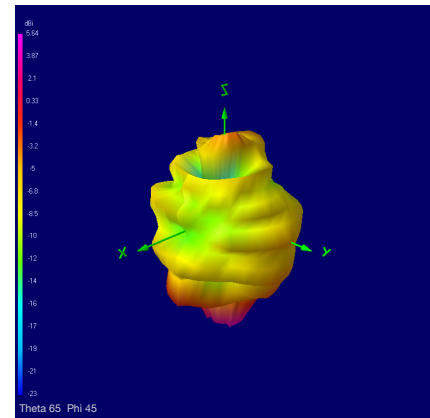
2300 MHz



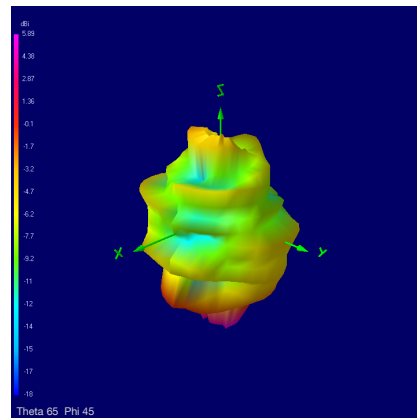
2400 MHz



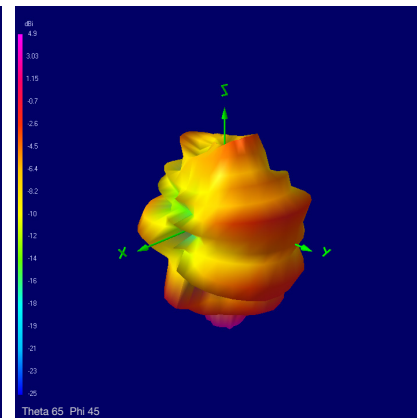
2460 MHz



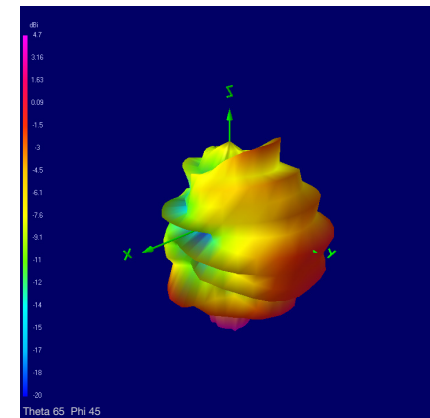
2500 MHz



2600 MHz



2700 MHz



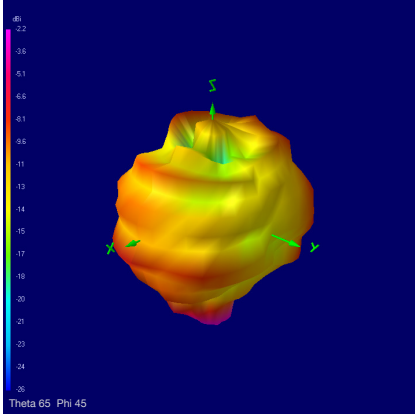


Alpha 14

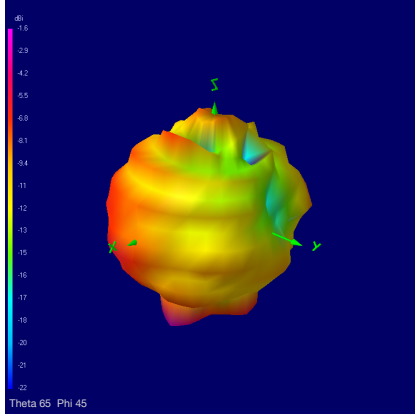
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 2.5 m cable

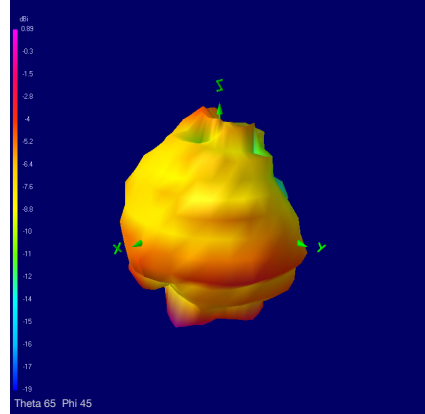
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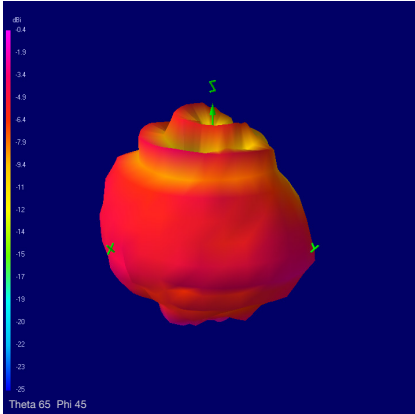
3400 MHz



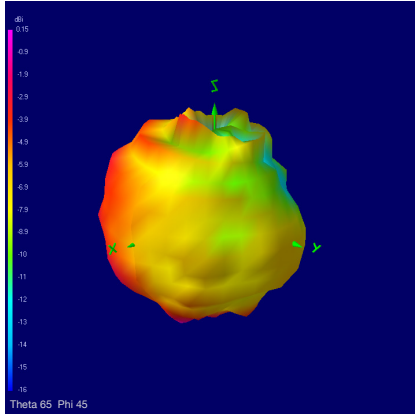
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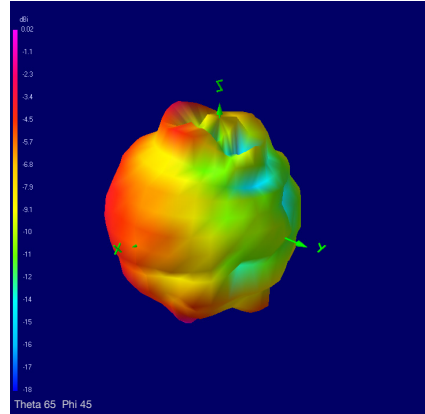
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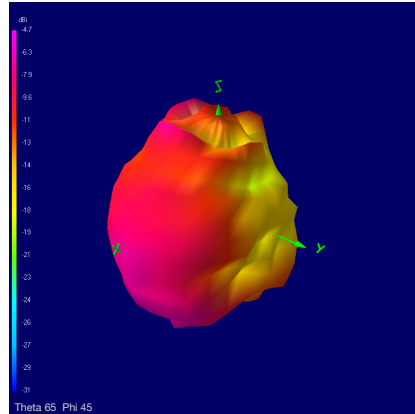
3700 MHz



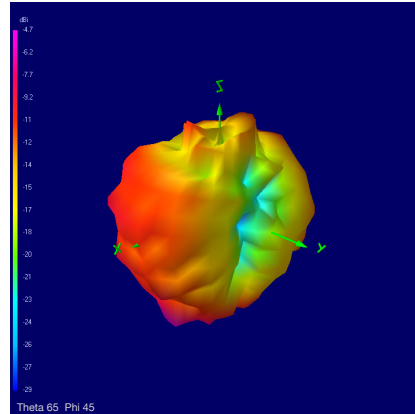
3800 MHz



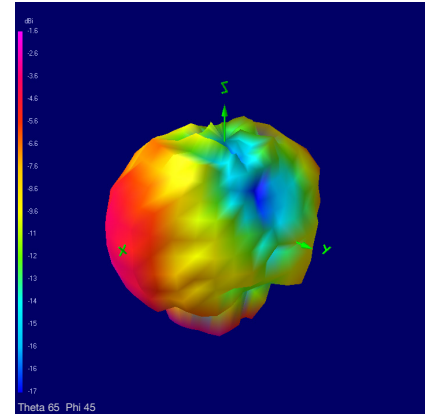
4400 MHz



4600 MHz



4800 MHz



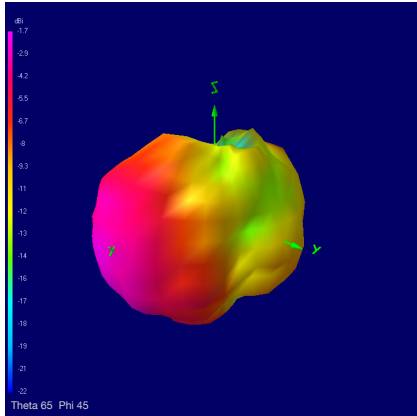


Alpha 14

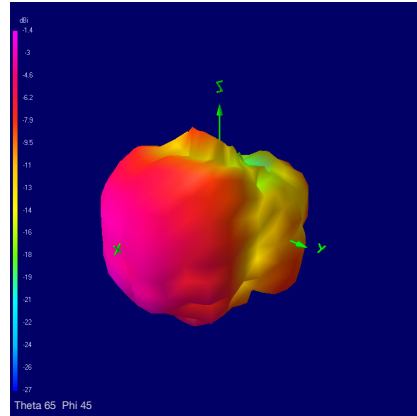
2G/3G/4G & ISM868/915MHz ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 2.5 m cable

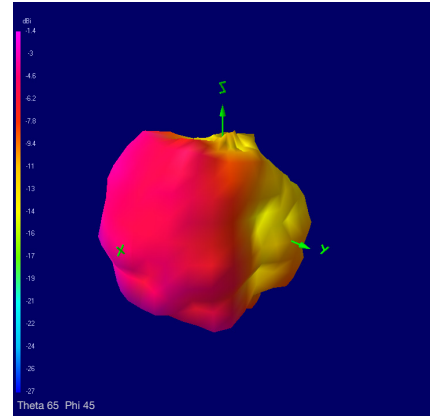
5000 MHz



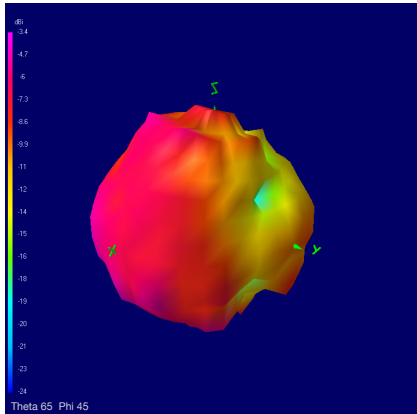
5200 MHz



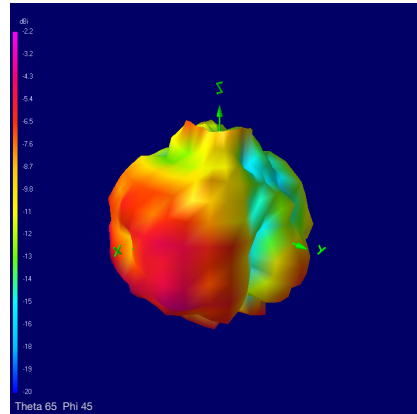
5400 MHz



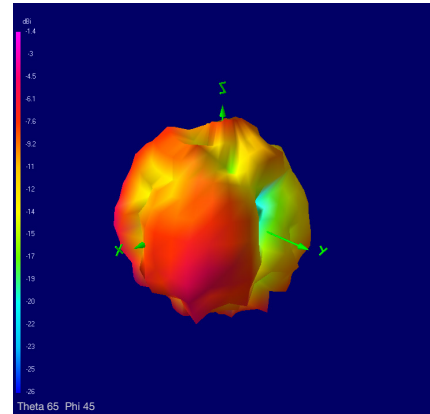
5600 MHz



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

Registered in England No. 08405712
VAT Registration No. GB163 04 0349



Siretta Ltd
Basingstoke Road
Spencers Wood
Reading
Berkshire RG7 1PW

sales
email
web

+44(0)118 976 9000
sales@siretta.com
www.siretta.com

Mouser Electronics

Authorized Distributor

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