



Enabling Industrial IoT



## Tango 44

2G/3G/4G/5G & WiFi through hole mount puck antenna



### Key Features

- 2G, 3G, 4G including NB-IoT/Cat M Bands and 5G
- Low loss cable
- ISM bands, WiFi, Bluetooth and full Zigbee band allocation

### General Description

The Tango 44 is a wide band antenna with an even spread performance across the usable spectrum which allows it to be used in the upper ISM bands, GPRS, UMTS, LTE, WiFi, Bluetooth and the Zigbee band allocation.

Supplied as standard with an SMA male connector in three cable lengths, 1, 2.5 and 5 m. Alternative cable lengths and connectors can be specified for volume orders.

### Additional Considerations

- Wide operating temp range
- Weather resistant

T Through	2G GSM	3G UMTS	4G LTE
LTE Cat M	LTE NB IoT	5G LTE	WLAN 2400
WLAN 5800	BLE Bluetooth	ZB Zigbee	IP 67



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## Tango 44

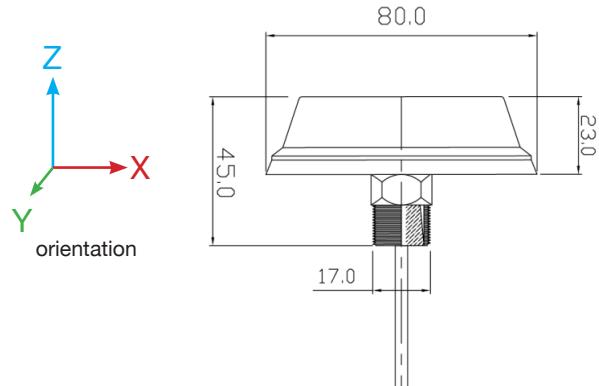
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### Electrical Specifications

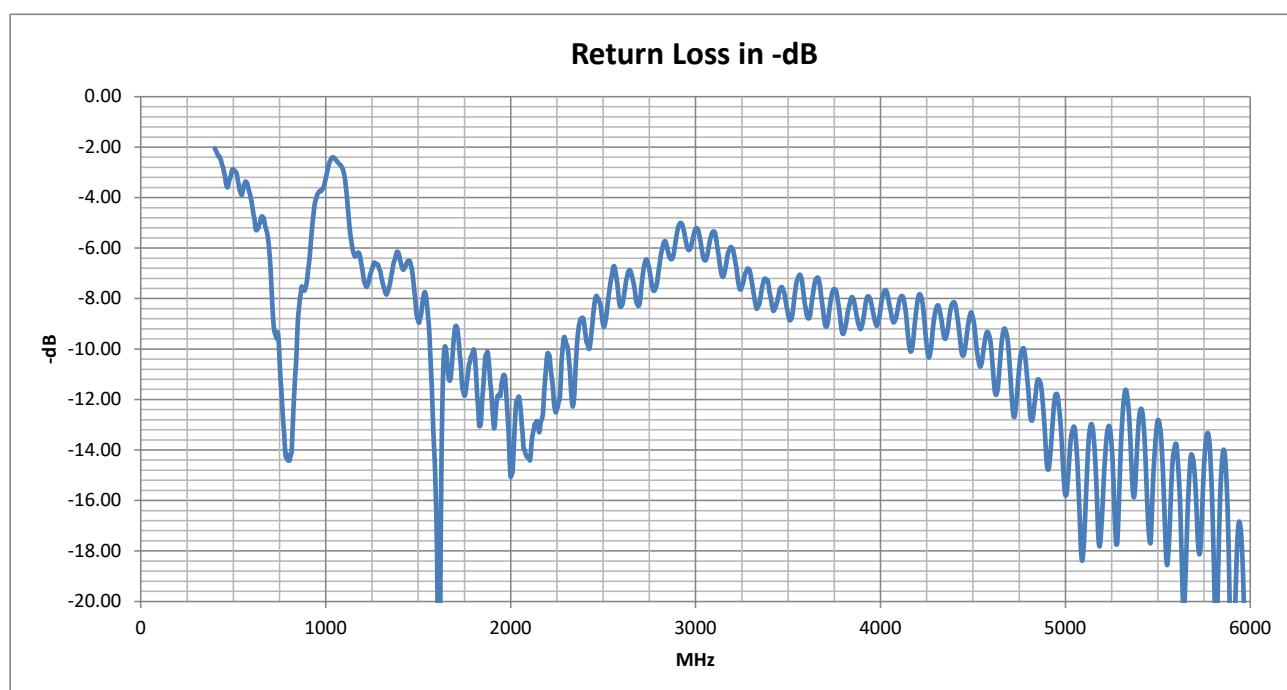
Operating Temperature:	-40 - +85 °C
Humidity:	40% - 95% RH
Polarization:	Linear Vertical
Maximum Power:	50 W
Impedance:	50 Ohms

### Mechanical Specifications

Dimensions:	Ø 80 x 23 mm
Cable:	RG174
Connector:	SMA Male
Mounting Method:	M17 mm Ø Pitch1.25
Maximum Material Thickness:	10 mm



### Return Loss tested with 1m cable





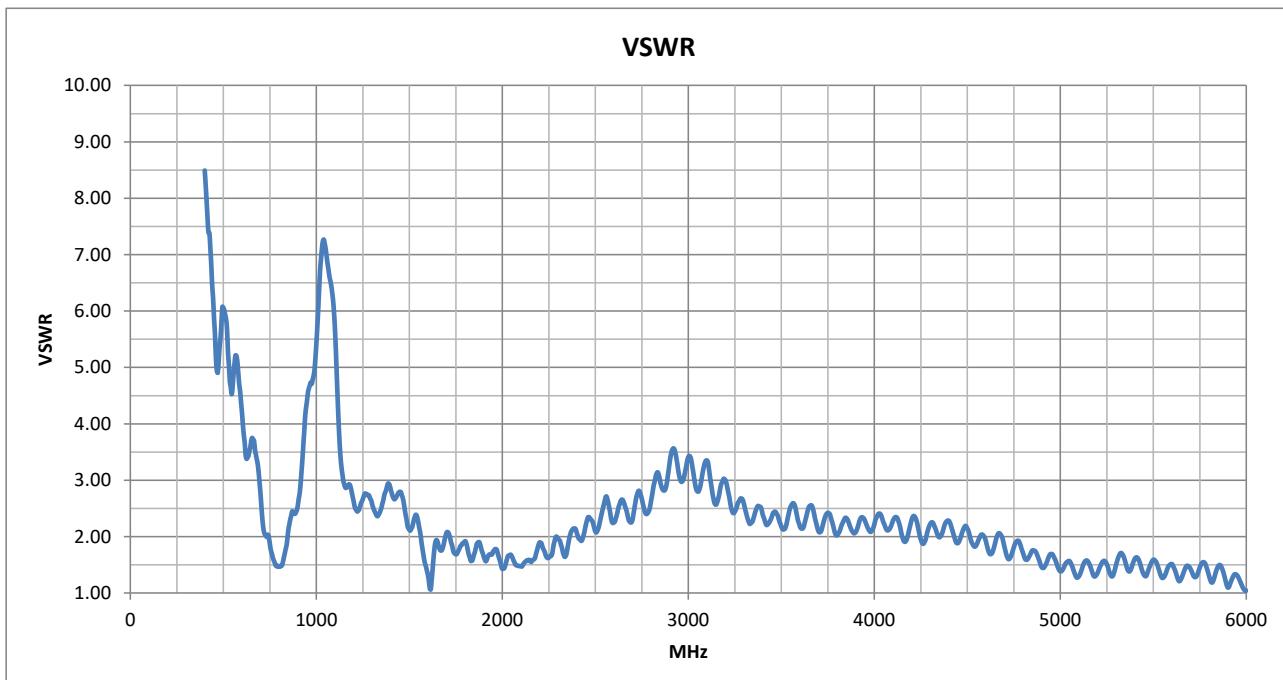
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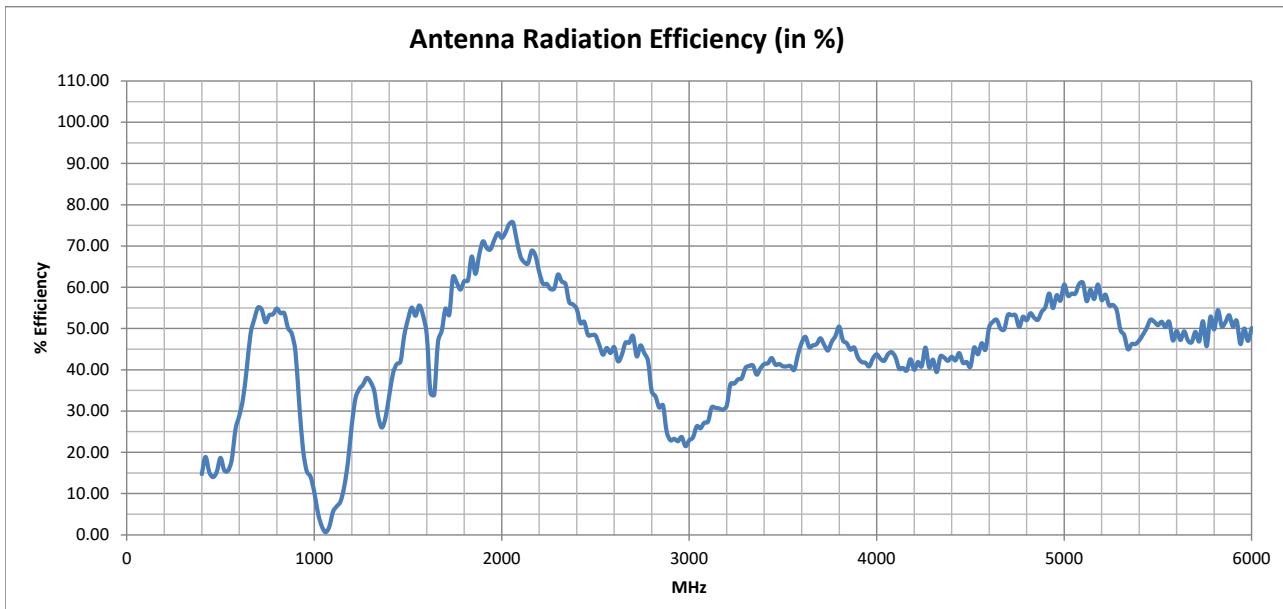
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**VSWR** tested with 1m cable



**Radiation Efficiency** tested with 1m 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	70.81 / 67.15 <span style="color: green;">●</span>	1.78 / 1.60
2/n2	B2	North America/Latin America/Caribbean	1850-1910 MHz	1930-1990 MHz	67.85 / 71.04 <span style="color: green;">●</span>	1.91 / 1.78
3/n3	B3	Europe/Africa/Asia/Oceania	1710-1785 MHz	1805-1880 MHz	58.79 / 64.36 <span style="color: green;">●</span>	2.07 / 1.91
4	B4	North America/Latin America/Caribbean	1710-1755 MHz	2110-2155 MHz	57.94 / 67.04 <span style="color: green;">●</span>	2.07 / 1.59
5/n5	B5	Country Specific	824-849 MHz	869-894 MHz	52.51 / 47.71 <span style="color: green;">●</span>	2.13 / 2.47
7/n7		Latin America/Europe/Asia +	2500-2570 MHz	2620-2690 MHz	45.47 / 45.39 <span style="color: green;">●</span>	2.71 / 2.66
8/n8	B8	Europe / Asia +	880-915 MHz	925-960 MHz	41.57 / 22.62 <span style="color: orange;">—</span>	2.93 / 4.63
11	B11	Country Specific	1427.9-1447.9 MHz	1475.9-1495.9 MHz	40.82 / 47.51 <span style="color: green;">●</span>	2.80 / 2.49
12/n12	B12	North America/Caribbean +	699-716 MHz	729-746 MHz	53.97 / 53.10 <span style="color: green;">●</span>	2.95 / 2.04
13/n13	B13	North America/Caribbean +	777-787 MHz	746-756 MHz	53.83 / 52.37 <span style="color: green;">●</span>	1.55 / 1.98
14/n14	B14	Country Specific	788-798 MHz	758-768 MHz	54.14 / 52.73 <span style="color: green;">●</span>	1.49 / 1.77
17	B17	North America/Caribbean +	704-716 MHz	734.746 MHz	54.83 / 53.10 <span style="color: green;">●</span>	2.76 / 2.04
18/n18	B18	Country Specific	815-830 MHz	860-875 MHz	54.08 / 49.44 <span style="color: green;">●</span>	1.70 / 2.45
19	B19	Country Specific	830-845 MHz	875-890 MHz	52.51 / 47.71 <span style="color: green;">●</span>	1.99 / 2.44
20/n20	B20	Europe/Africa +	832-862 MHz	791-821 MHz	51.57 / 53.92 <span style="color: green;">●</span>	2.37 / 1.63
21		Country Specific	1447.9-1462.9 MHz	1495.9-1510.9 MHz	43.89 / 51.88 <span style="color: green;">●</span>	2.80 / 2.15
25/n25	B25	Country Specific	1850-1915 MHz	1525-1559 MHz	67.85 / 54.59 <span style="color: green;">●</span>	1.91 / 2.39
26/n26	B26	Country Specific	814-849 MHz	859-894 MHz	53.09 / 49.21 <span style="color: green;">●</span>	2.13 / 2.47
28/n28	B28	Latin America/Europe/Asia +	703-748 MHz	758-803 MHz	53.60 / 53.80 <span style="color: green;">●</span>	2.76 / 1.77
29/n29		Country Specific	-	717-728 MHz	53.73 <span style="color: green;">●</span>	2.15
30/n30		Country Specific	2305-2315 MHz	2350-2360 MHz	62.24 / 58.59 <span style="color: green;">●</span>	1.95 / 1.97
31	B31	Country Specific	452.5-457.5 MHz	462.5-467.5 MHz	14.60 / 14.62 <span style="color: red;">✗</span>	5.87 / 5.17
32		Country Specific	-	1452-1496 MHz	45.98 <span style="color: green;">●</span>	2.80
38/n38		Europe +	2570-2620 MHz		44.23 <span style="color: green;">●</span>	2.59
39/n39		Country Specific	1880-1920 MHz		69.51 <span style="color: green;">●</span>	1.87
40/n40		Asia +	2300-2400 MHz		58.7 <span style="color: green;">●</span>	2.15
41/n41		Country Specific	2496-2690 MHz		45.68 <span style="color: green;">●</span>	2.71
42		Country Specific	3400-3600 MHz		41.93 <span style="color: green;">●</span>	2.60
43		Country Specific	3600-3800 MHz		46.91 <span style="color: green;">●</span>	2.56
46/n46		Country Specific	5150-5925 MHz		50.95 <span style="color: green;">●</span>	1.71
48/n48		Country Specific	3550-3700 MHz		44.93 <span style="color: green;">●</span>	2.60
65/n65		Country Specific	1920-2010 MHz	2110-2200 MHz	71.41 / 66.57 <span style="color: green;">●</span>	1.78 / 1.90
66/n66	B66	Country Specific	1710-1780 MHz	2110-2200 MHz	58.24 / 66.57 <span style="color: green;">●</span>	2.07 / 1.90
71/n71	B71	Country Specific	663-698 MHz	617-652 MHz	51.99 / 37.68 <span style="color: green;">●</span>	3.72 / 3.75

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

● Usable Band

— Adequate in good signal area

✗ Not Usable

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## 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	38.36 / 54.59	● 1.94 / 2.39
n34			2010 – 2025 MHz	73.52	● 1.60
n47			5855 – 5925 MHz	50.65	● 1.50
n50			1432 – 1517 MHz	46.35	● 2.80
n51			1427 – 1432 MHz	40.24	● 2.74
n53			2483.5 – 2495 MHz	48.36	● 2.29
n67			738 – 758 MHz	53.10	● 2.04
n70	B70	1695 – 1710 MHz	1995 – 2020 MHz	52.53 / 72.78	● 2.08 / 1.54
n74		1427 – 1470 MHz	1475 – 1518 MHz	42.69 / 49.40	● 2.80 / 2.49
n75			1432 – 1517 MHz	46.35	● 2.80
n76			1427 – 1432 MHz	40.24	● 2.74
n77			3300 – 4200 MHz	43.24	● 2.60
n78			3300 – 3800 MHz	43.55	● 2.60
n79			4400 – 5000 MHz	50.31	● 2.28
n80			1710 – 1785 MHz	58.79	● 2.07
n81			880 – 915 MHz	41.57	● 2.93
n82			832 – 862 MHz	51.57	● 2.37
n83			703 – 748 MHz	53.60	● 2.76
n84			1920 – 1980 MHz	70.81	● 1.78
n85	B85	698 – 716 MHz	728 – 746 MHz	53.97 / 53.10	● 2.95 / 2.04
n86			1710 – 1780 MHz	58.24	● 2.07
n89			824 – 849 MHz	52.51	● 2.13
n90			2496 – 2690 MHz	45.68	● 2.71
n91		832 – 862 MHz	1427 – 1432 MHz	51.57 / 40.24	● 2.37 / 2.74
n92		832 – 862 MHz	1432 – 1517 MHz	51.57 / 46.35	● 2.37 / 2.80
n93		880 – 915 MHz	1427 – 1432 MHz	41.57 / 40.24	● 2.93 / 2.74
n94		880 – 915 MHz	1432 – 1517 MHz	41.57 / 46.35	● 2.93 / 2.80
n95			2010 – 2025 MHz	73.52	● 1.60
n96			5925 – 7125 MHz	unmeasured	
n97			2300 – 2400 MHz	58.70	● 2.15
n98			1880 – 1920 MHz	69.51	● 1.87
n99			1626.5 – 1660.5 MHz	38.36	● 1.94

Table data for bands as detailed in 3GPP TS 38.101

● Usable Band

○ Adequate in good signal area

✗ Not Usable



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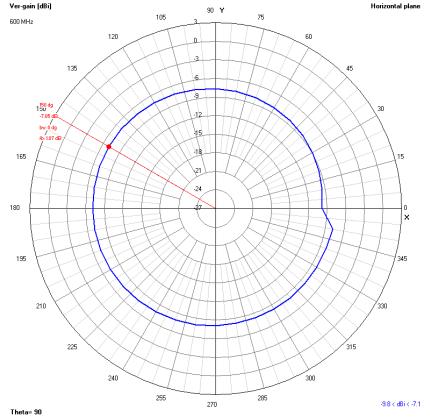


## Tango 44

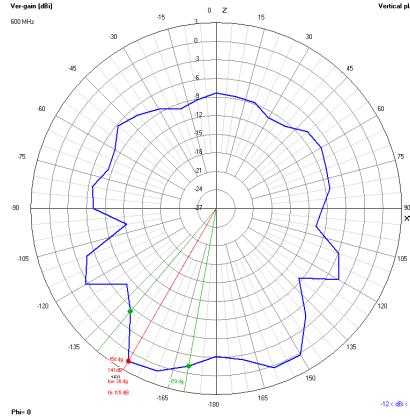
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### Radiation Plots tested with 1 m cable

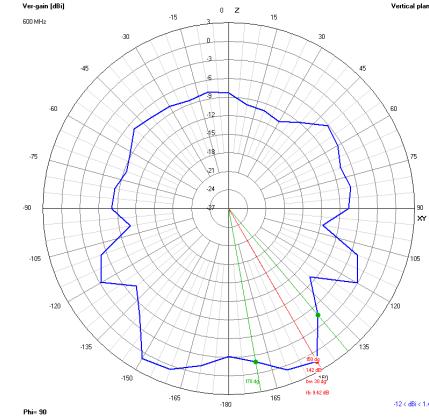
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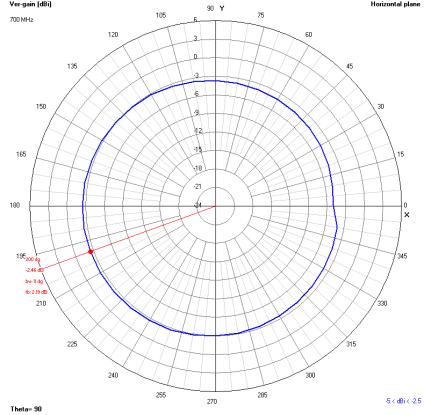
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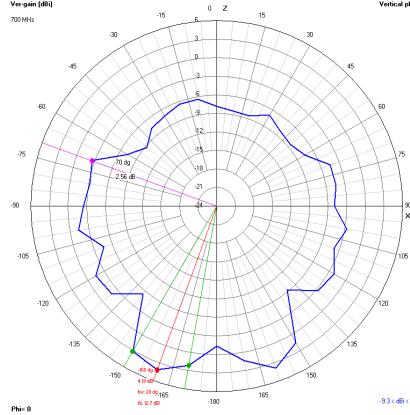
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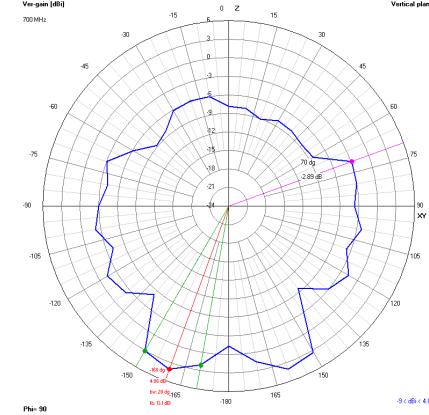
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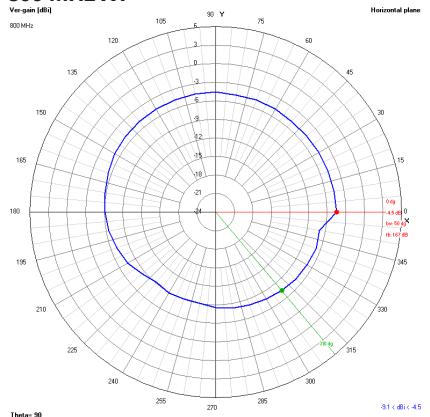
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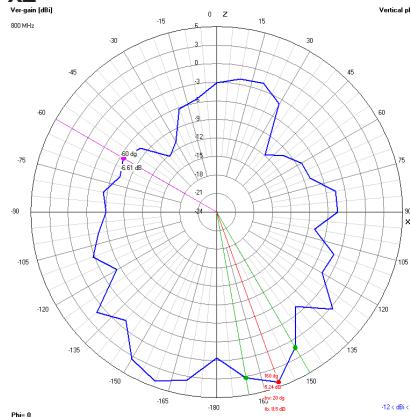
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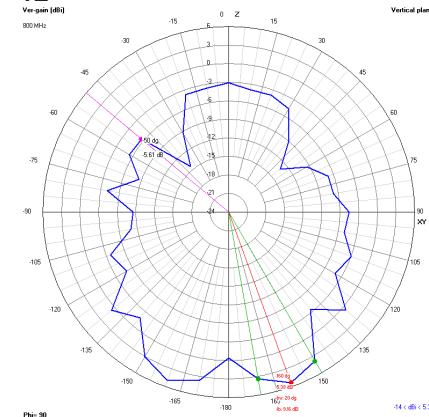
**800 MHz XY**



**XZ**



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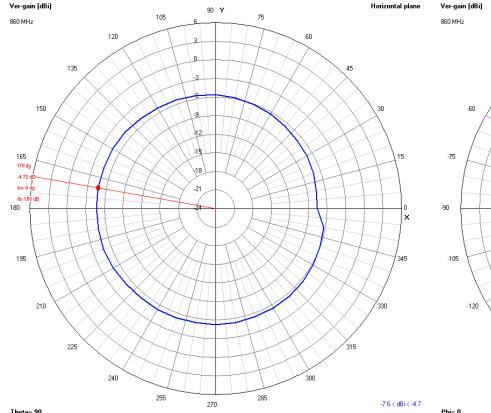


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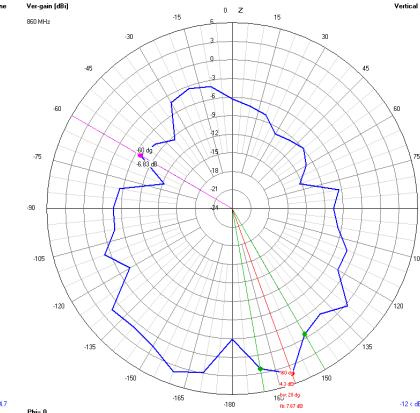
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### Radiation Plots tested with 1 m cable

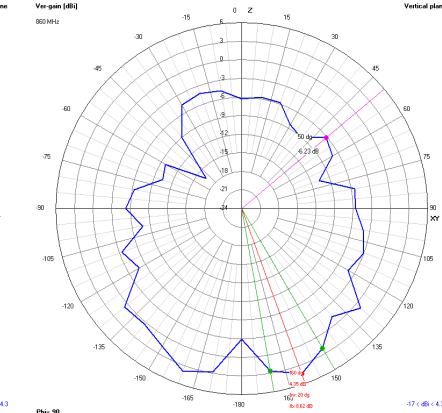
860 MHz XY



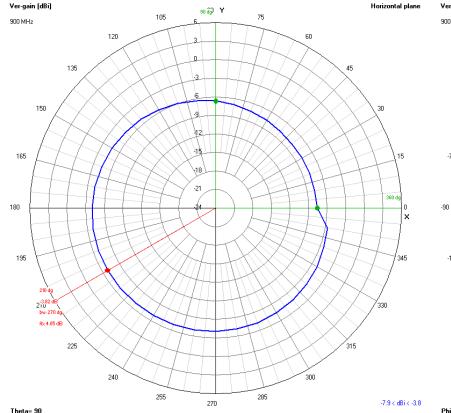
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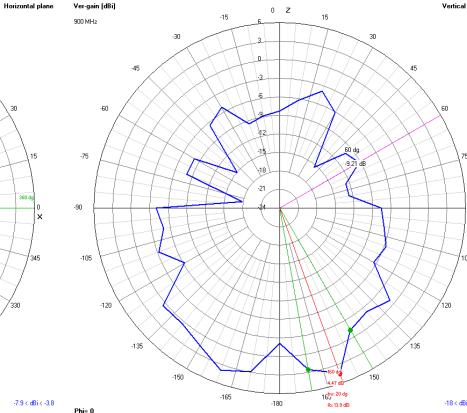
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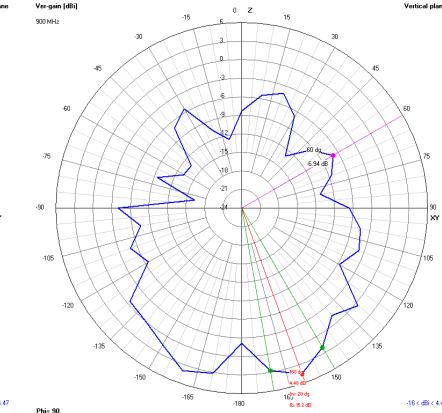
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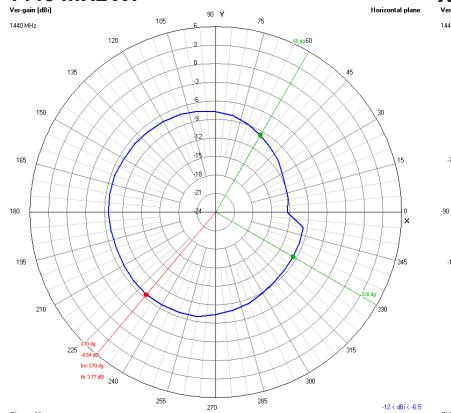
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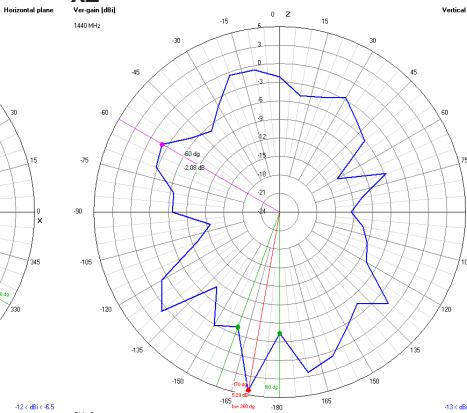
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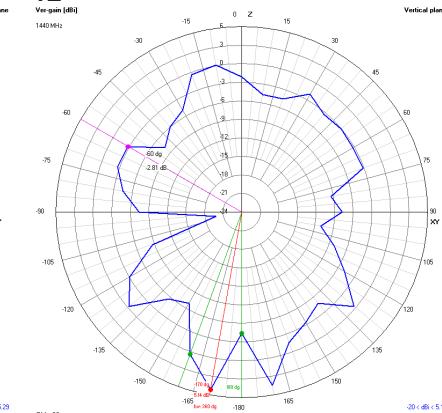
1440 MHz XY



XZ



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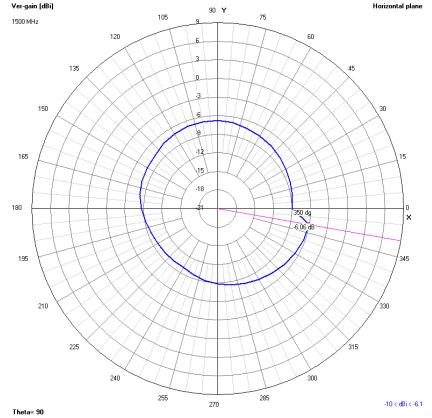


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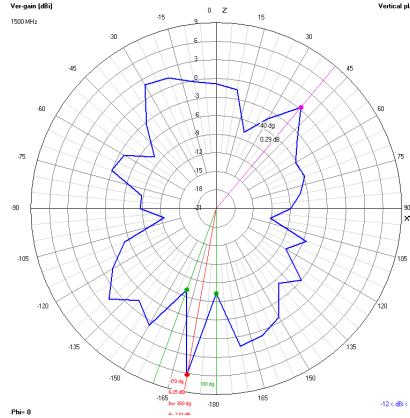
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### Radiation Plots tested with 1 m cable

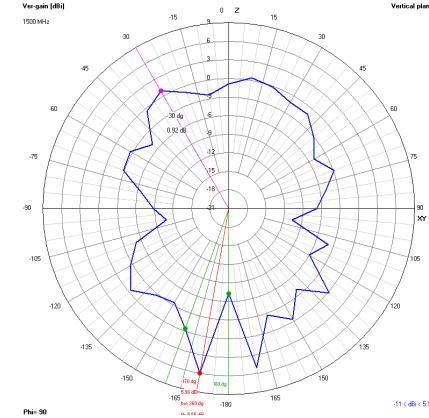
**1500 MHz XY**



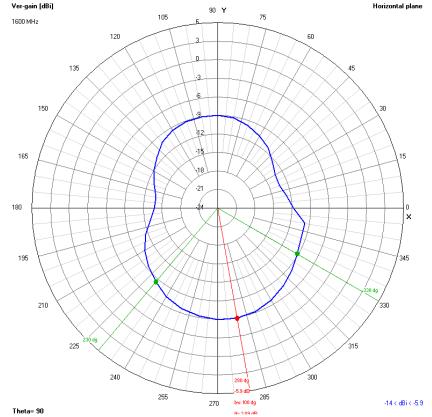
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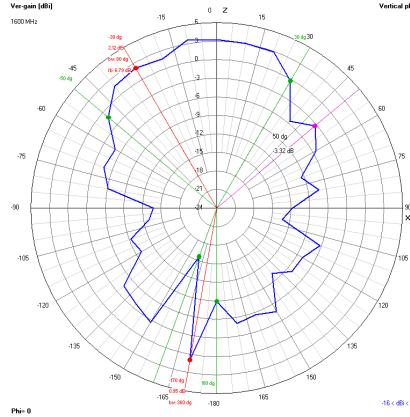
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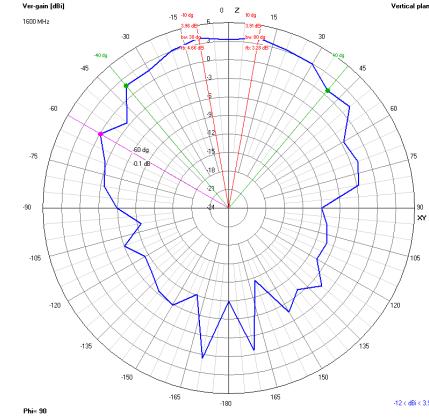
**1600 MHz XY**



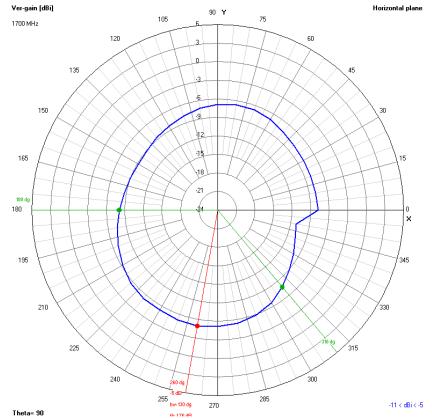
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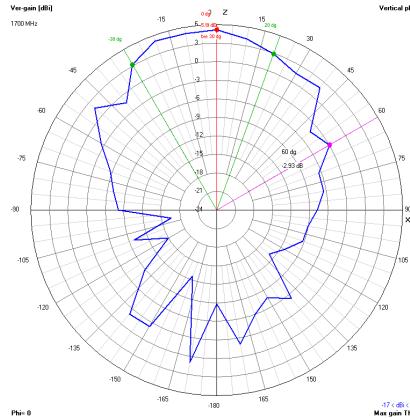
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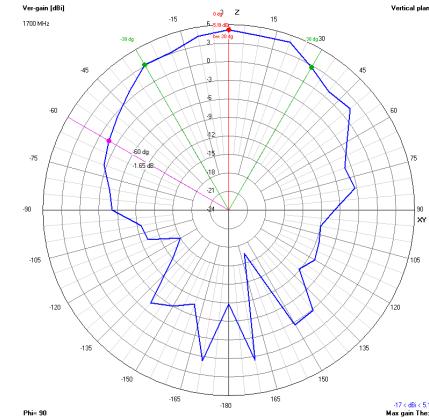
**1700 MHz XY**



**XZ**



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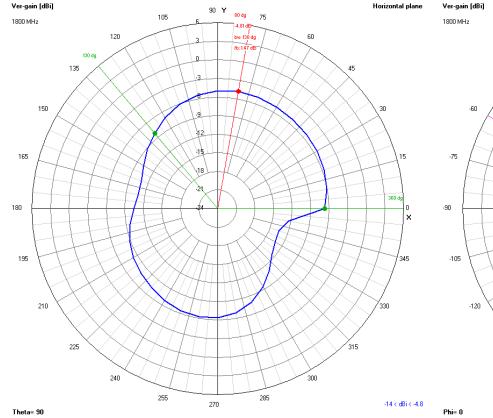


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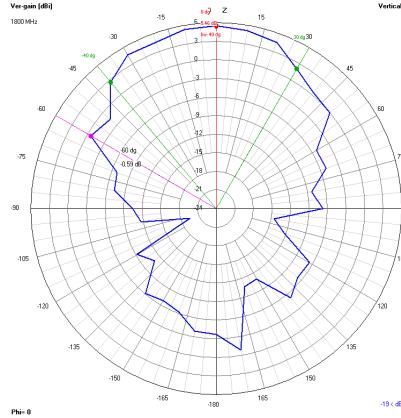
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### Radiation Plots tested with 1 m cable

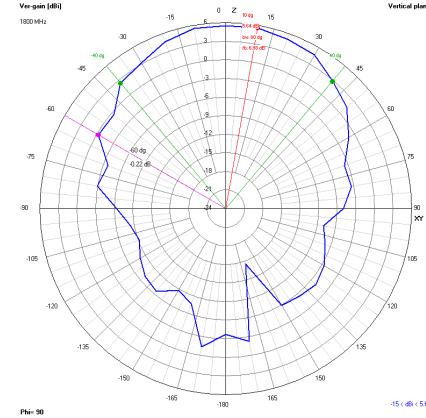
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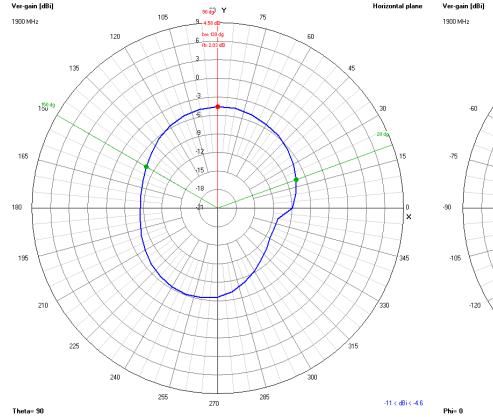
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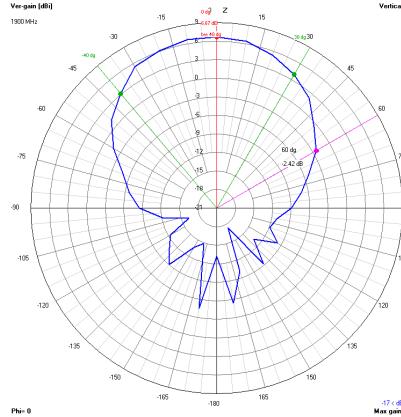
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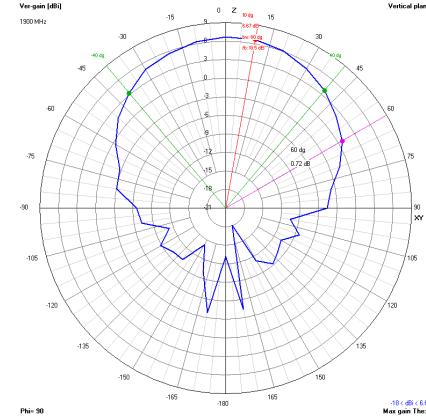
**1900 MHz XY**



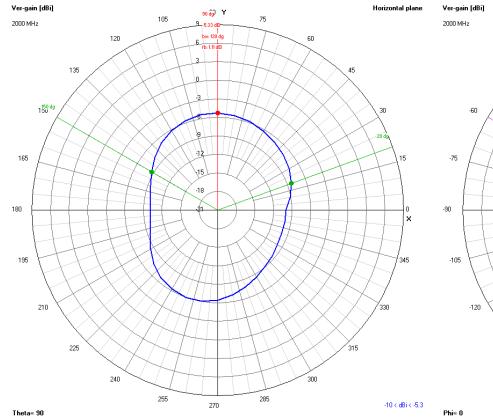
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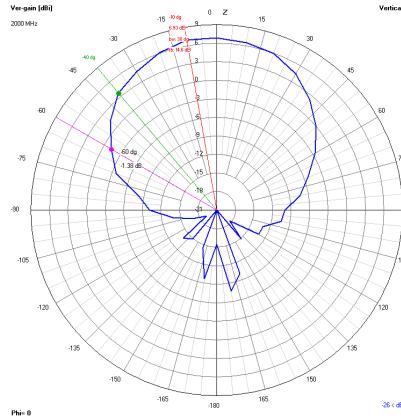
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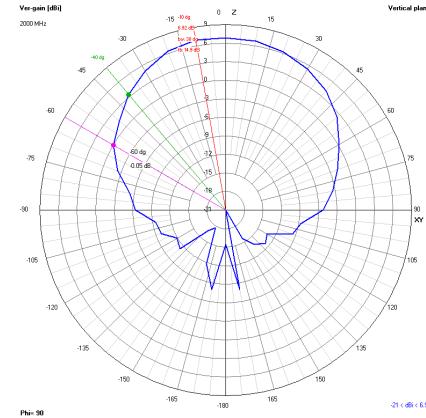
**2000 MHz XY**



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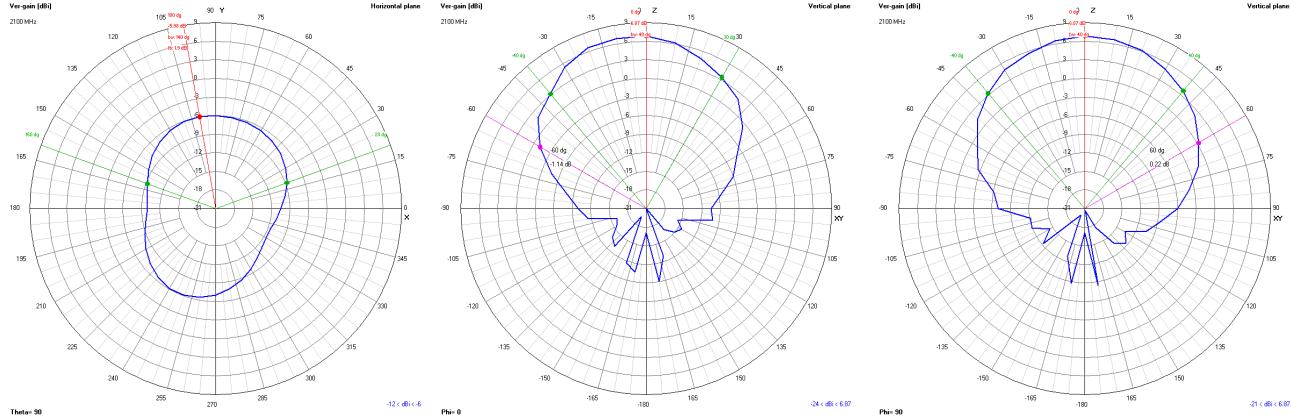


## Tango 44

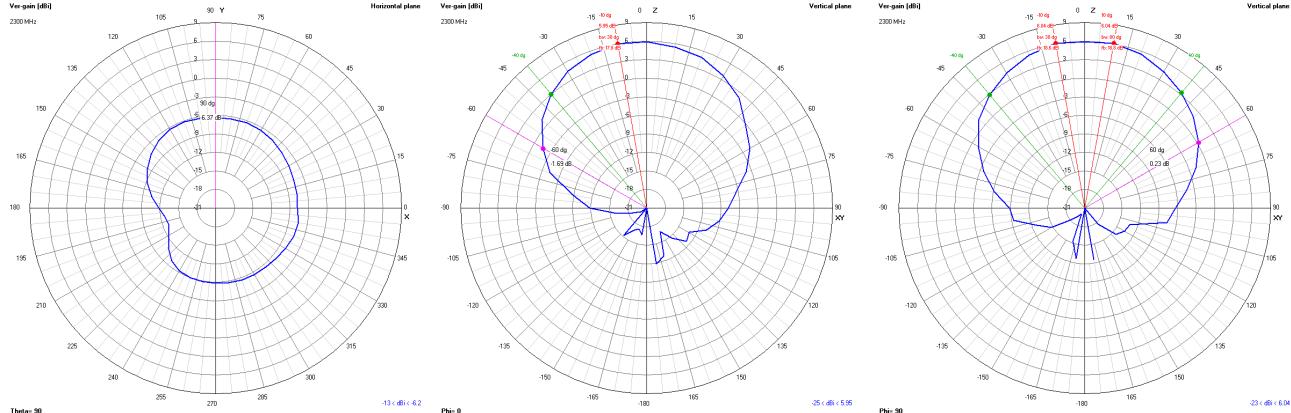
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### Radiation Plots tested with 1 m cable

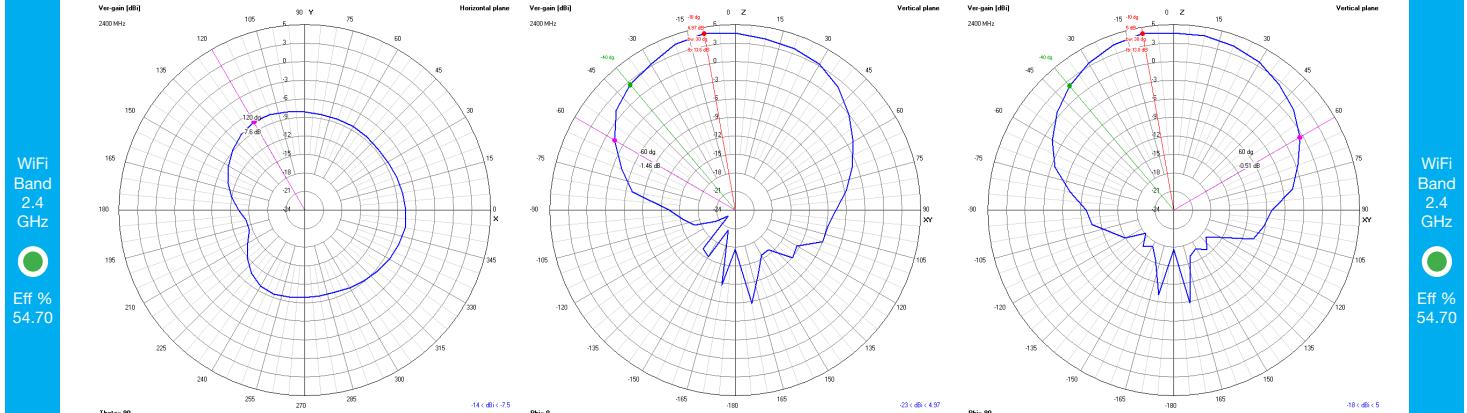
#### 2100 MHz XY



#### 2300 MHz XY



#### 2400 MHz XY



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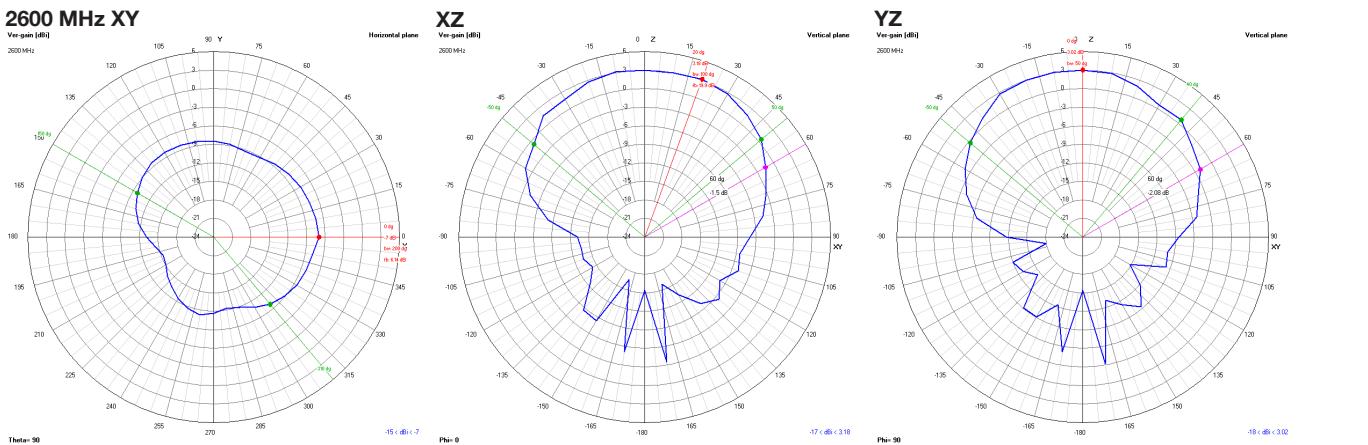
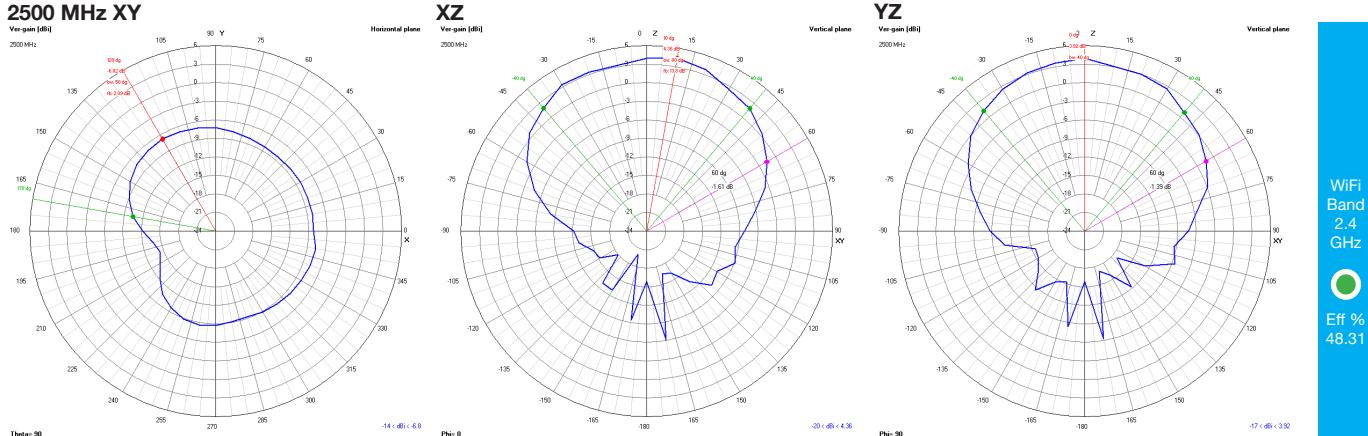
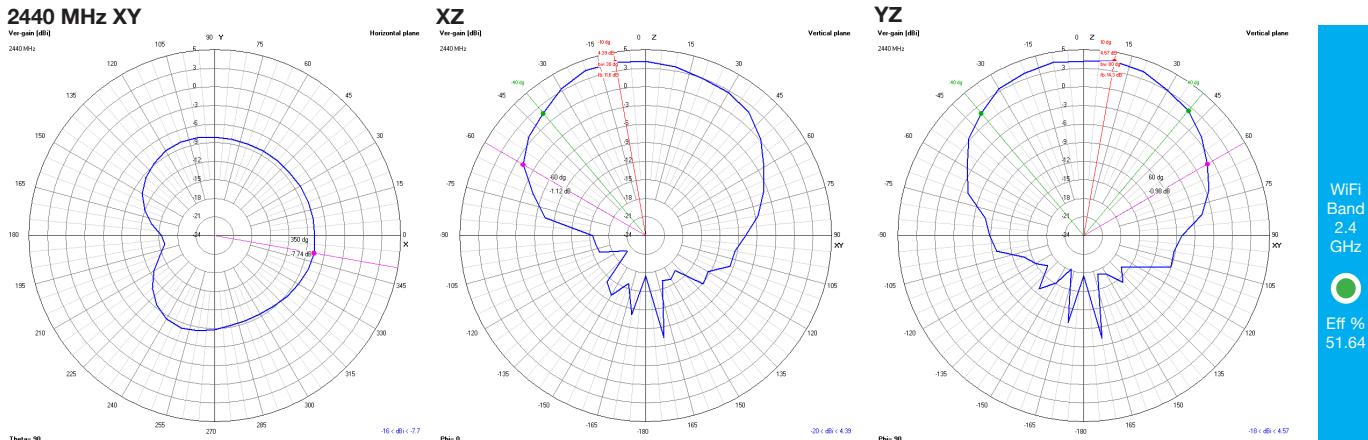
**2440 MHz XY**

WiFi Band 2.4 GHz  
Eff % 51.64

**2500 MHz XY**

WiFi Band 2.4 GHz  
Eff % 48.31

**2600 MHz XY**



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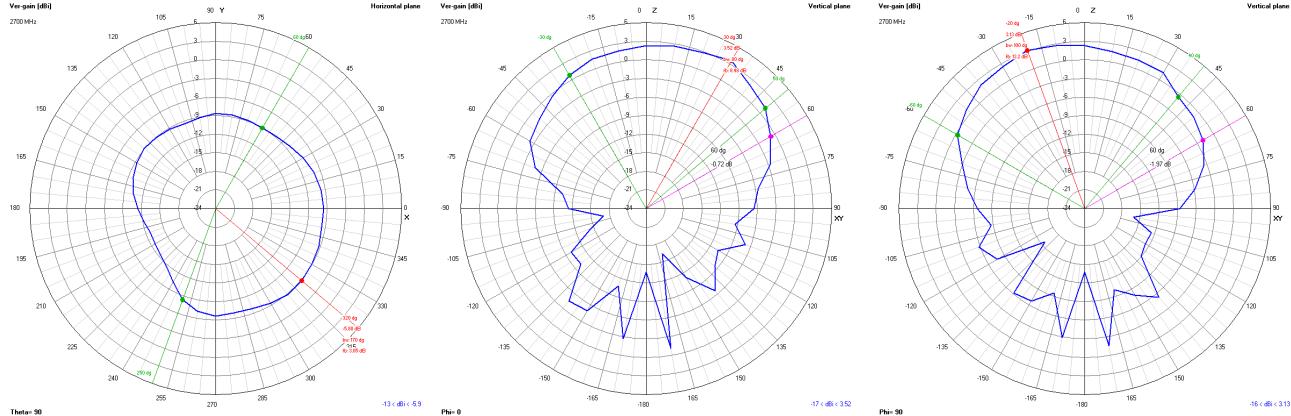


## Tango 44

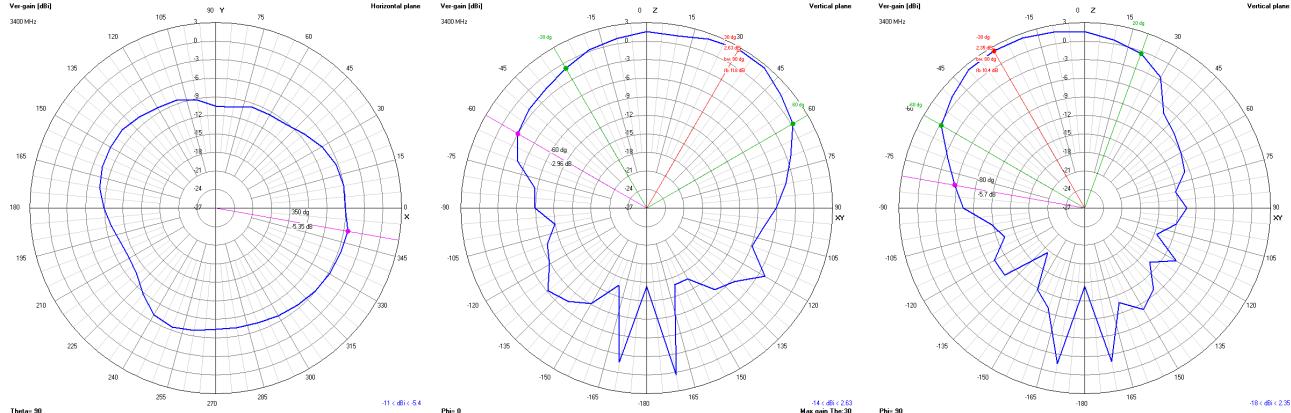
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### Radiation Plots tested with 1 m cable

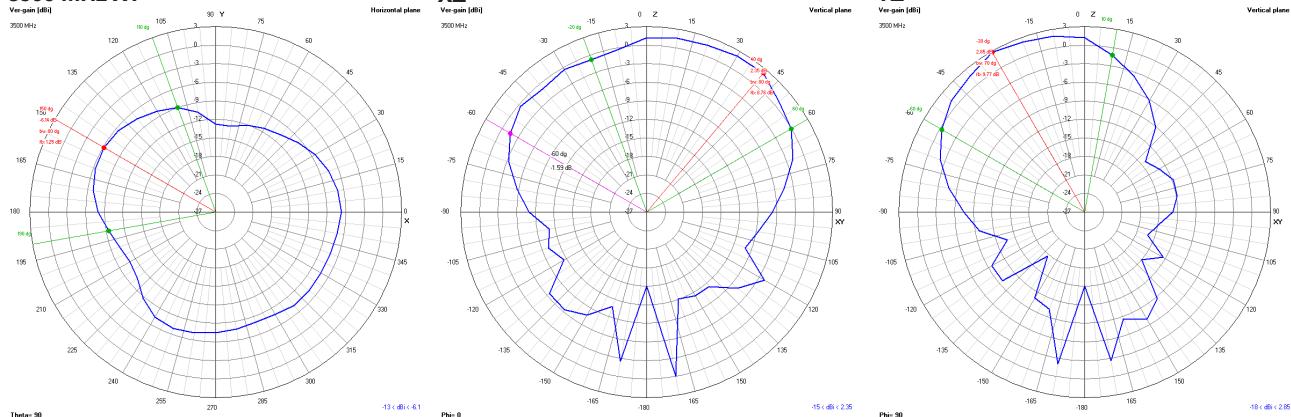
#### 2700 MHz XY



#### 3400 MHz XY



#### 3500 MHz XY



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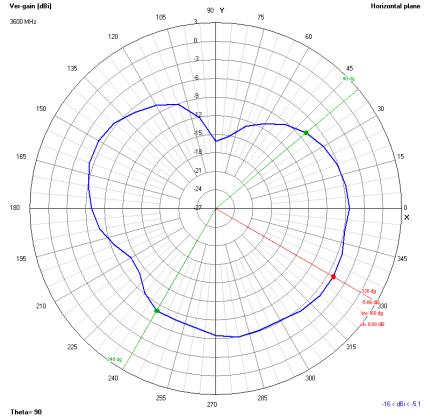


## Tango 44

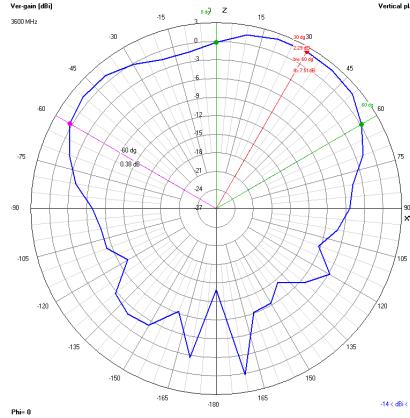
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### Radiation Plots tested with 1 m cable

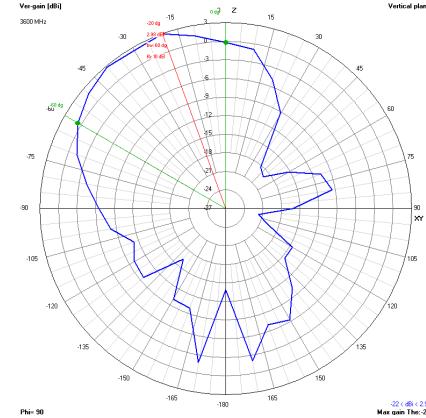
#### 3600 MHz XY



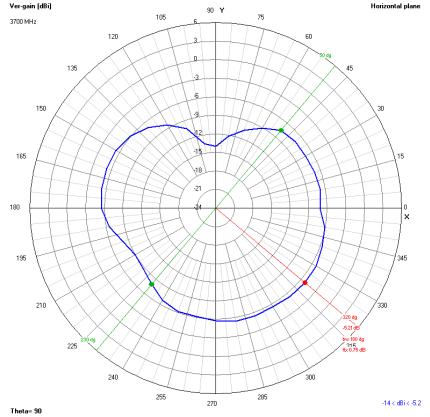
#### XZ



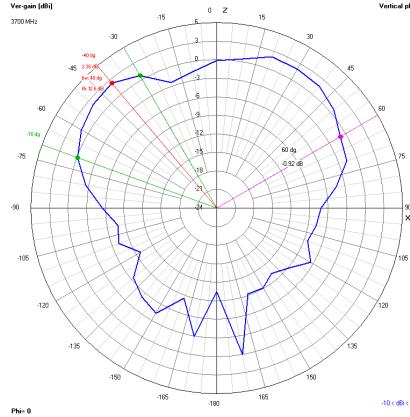
#### YZ



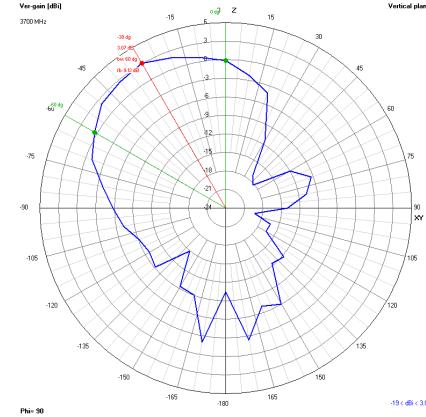
#### 3700 MHz XY



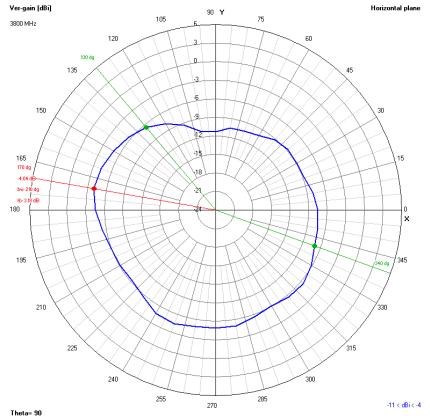
#### XZ



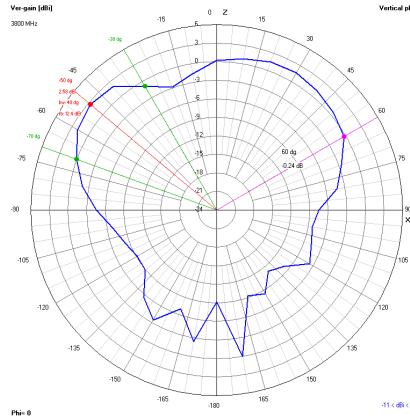
#### YZ



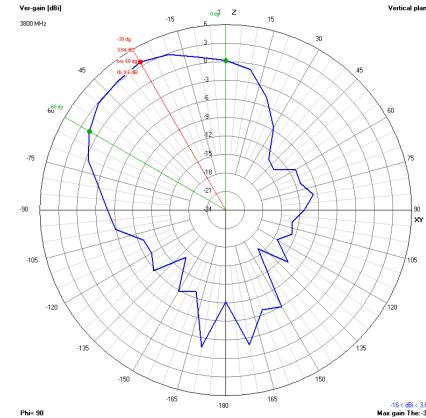
#### 3800 MHz XY



#### XZ



#### YZ



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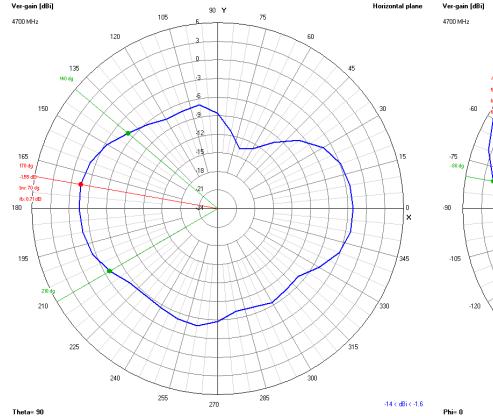


## Tango 44

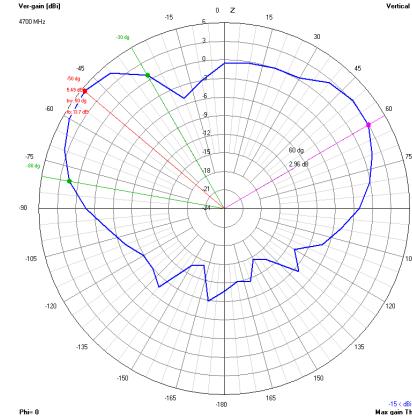
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### Radiation Plots tested with 1 m cable

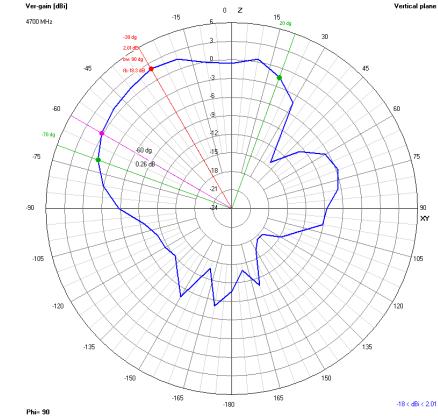
**4700 MHz XY**



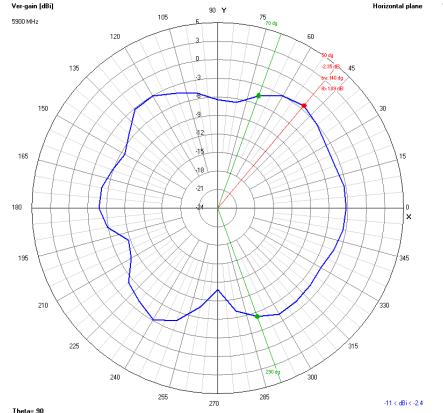
**XZ**



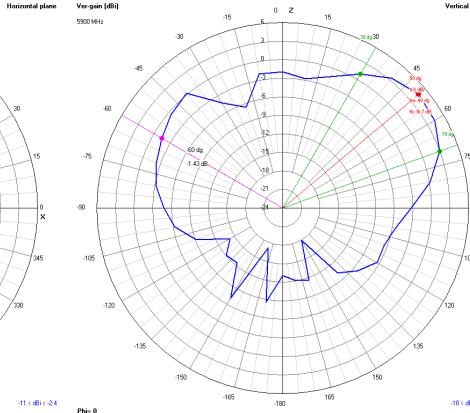
**YZ**



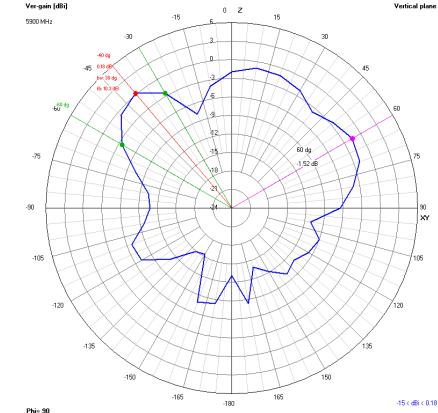
**5900 MHz XY**



**XZ**

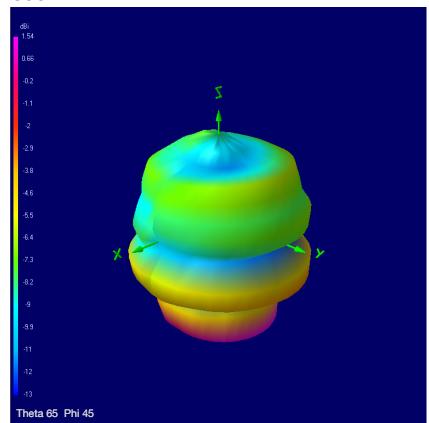


**YZ**

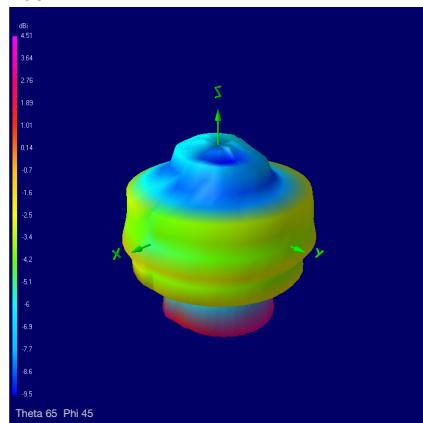


### 3D Radiation Plots tested with 1 m cable

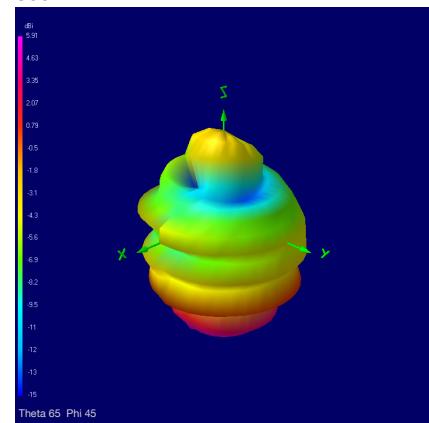
**600 MHz**



**700 MHz**



**800 MHz**



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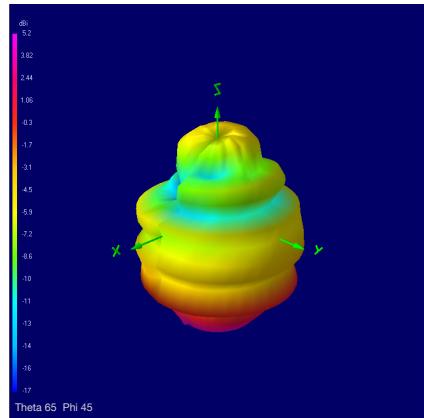


## Tango 44

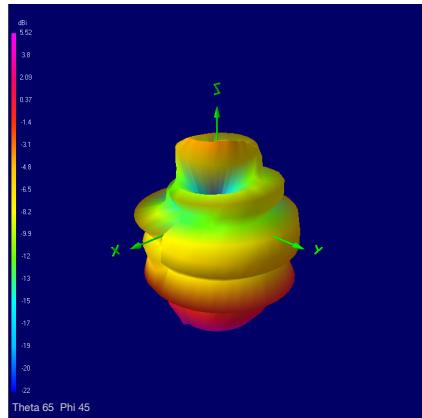
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### 3D Radiation Plots tested with 1 m cable

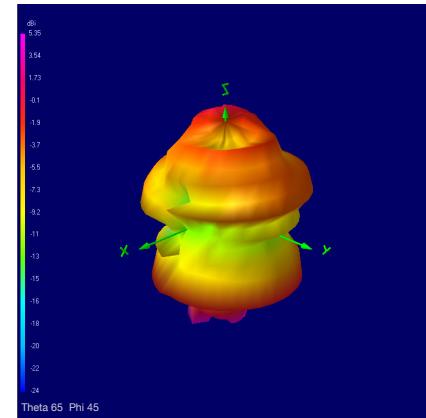
860 MHz



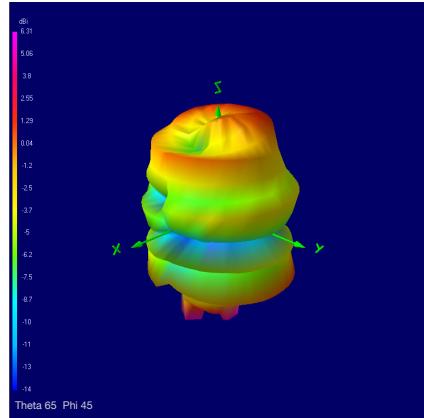
900 MHz



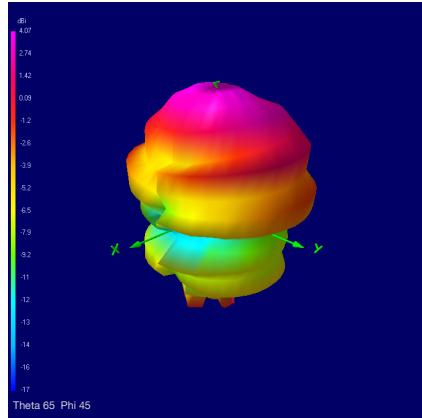
1440 MHz



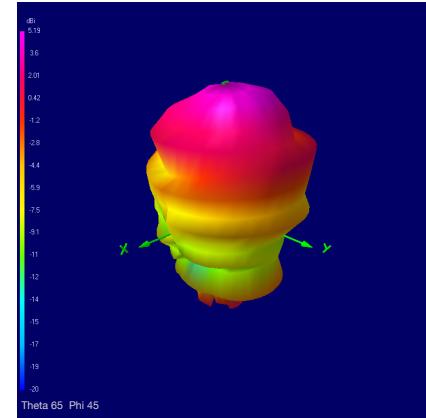
1500 MHz



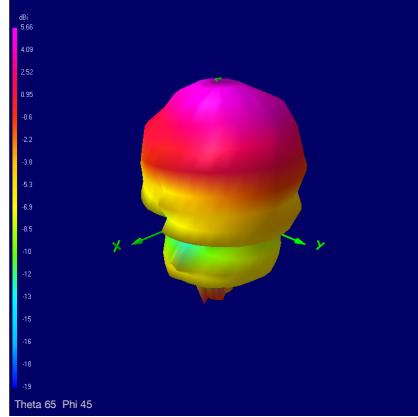
1600 MHz



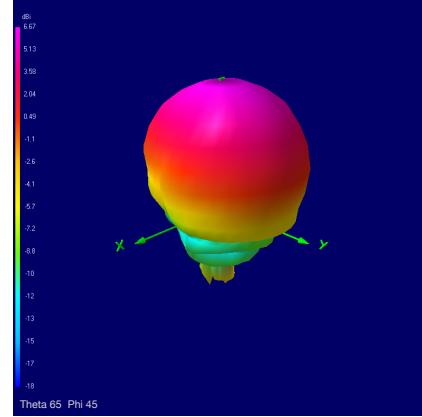
1700 MHz



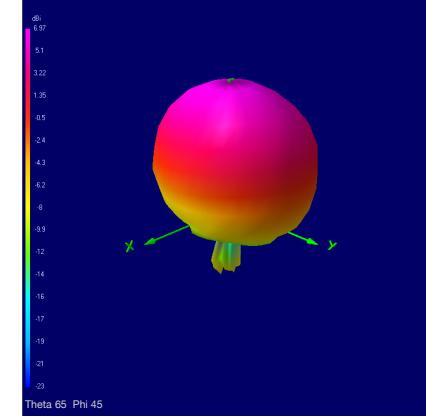
1800 MHz



1900 MHz



2000 MHz



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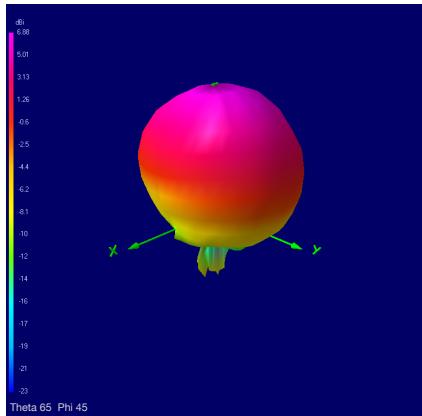


## Tango 44

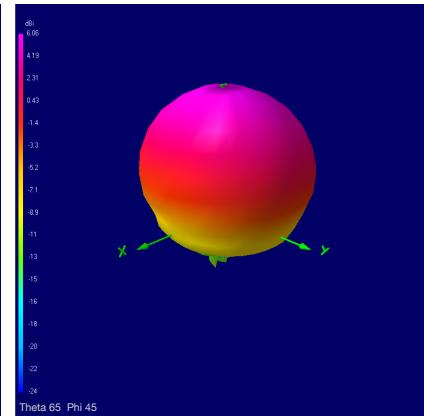
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### 3D Radiation Plots tested with 1 m cable

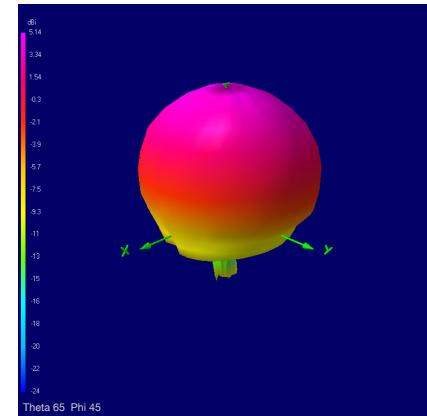
2100 MHz



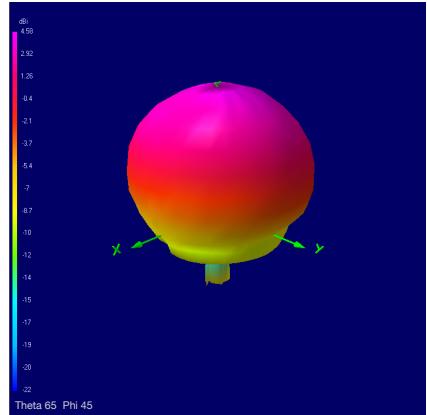
2300 MHz



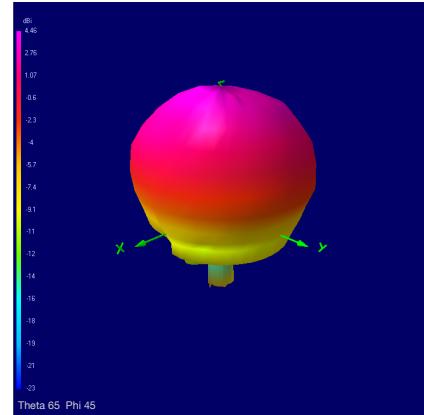
2400 MHz



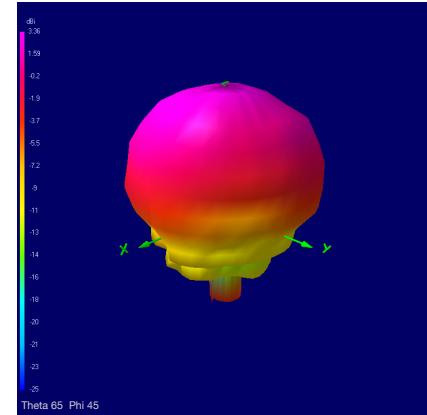
2440 MHz



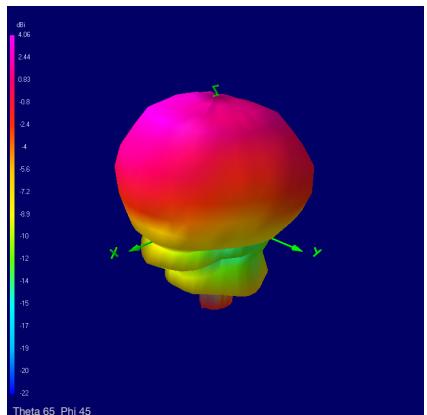
2500 MHz



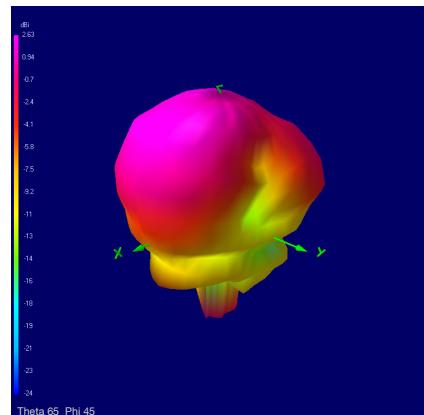
2600 MHz



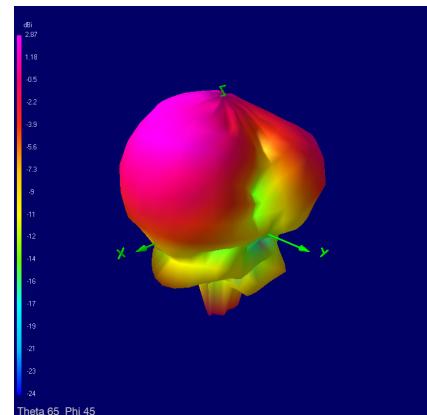
2700 MHz



3400 MHz



3500 MHz



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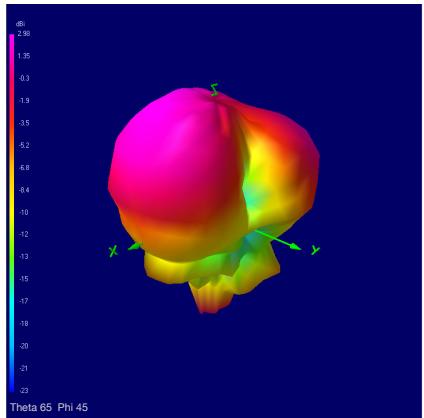


## Tango 44

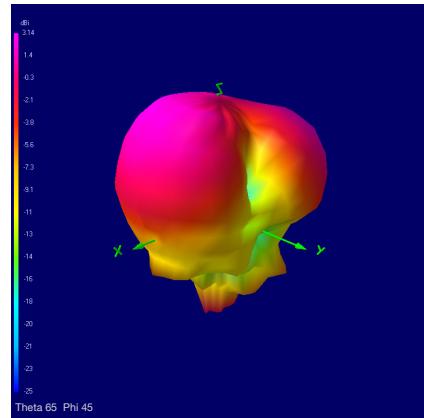
2G/3G/4G/5G & WiFi through hole mount puck Antenna

### 3D Radiation Plots tested with 1 m cable

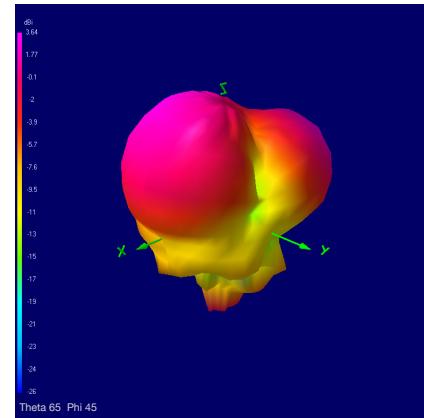
3600 MHz



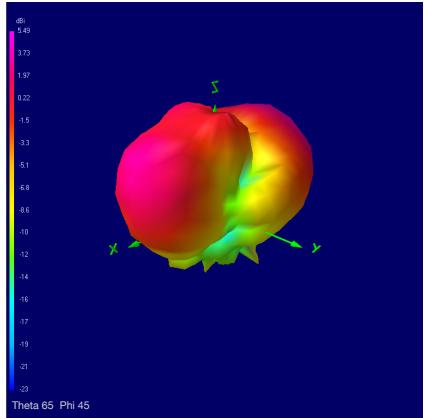
3700 MHz



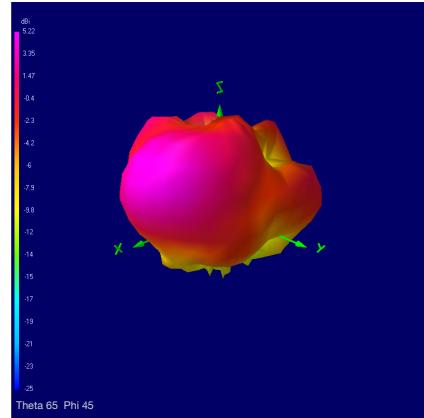
3800 MHz



4700 MHz



5900 MHz



### Ordering Details

Part Number	Description
TANGO44/1M/LL/SMAM/S/S/19	2G/3G/4G/5G & WIFI THROUGH HOLE MOUNT PUCK ANTENNA SMA MALE CONNECTOR 1M LOW LOSS CABLE
TANGO44/2.5M/LL/SMAM/S/S/19	2G/3G/4G/5G & WIFI THROUGH HOLE MOUNT PUCK ANTENNA SMA MALE CONNECTOR 2.5M LOW LOSS CABLE
TANGO44/5M/LL/SMAM/S/S/19	2G/3G/4G/5G & WIFI THROUGH HOLE MOUNT PUCK ANTENNA SMA MALE CONNECTOR 5M LOW LOSS CABLE

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