

Delta 7A

DUAL BAND WIFI / 5G / 4G / Bluetooth / Zigbee / ISM 2.4G & 5.8G HINGED ANTENNA

Key Features

- Supports 5G NR / 4G LTE
- Supports Dual-Band WiFi full 2.4 GHz & 5 GHz spectrum
- Supports Bluetooth and BLE, Zigbee, ISM 2.4 GHz, ISM 5.8 GHz & IEEE 802.15.4 bands
- Hinged Mount
- Omni-Directional



General Description

The Delta 7A is primarily designed as a dual band WiFi antenna, tuned to the 2.4 GHz and 5 GHz bands. It also supports some of the 5G NR and 4G LTE Cellular bands. The hinged joint provides a flexible means of setting the antenna into the optimum position for WiFi transmission.

The Delta 7A supports WiFi, Bluetooth, Zigbee and ISM based applications and can be used with most modern-day WiFi modems that operate on the traditional 2.4 GHz and extended 5 GHz bands.

The table for 4G and 5G bands lists the supported frequency bands for LTE.

The Delta 7A is supplied, as standard, with either an SMA male or a reverse polarity SMA male connector.

Additional Considerations

- Adjustable mounting allows positioning for signal optimization
- Dual band flexibility – choose least congested network
- Meets all EU compliance criteria for electronic goods

D Direct	4G LTE	5G New Radio	BLE Bluetooth	ZB Zigbee
WLAN 2400	WLAN 5800	ISM 2450	ISM 5800	WiFi 2.4G & 5G
WiFi 4 802.11n	WiFi 5 802.11ac	WiFi 6 802.11ax		



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Electrical Specifications

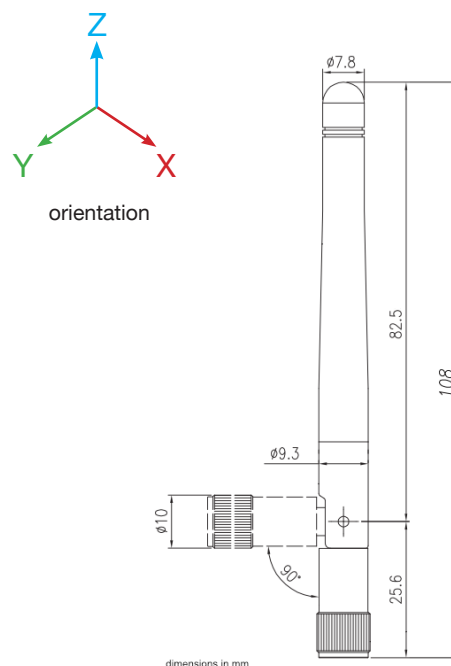
Impedance:	50 Ohms
Polarization:	Vertical
Max Input Power:	5 W
Ground plane independent	Yes

Environmental Specifications

Operating Temperature range:	-20 to +65 °C
Storage Temperature range:	-30 to +75 °C

Mechanical Specifications

Dimensions:	L108 x 10 mm Ø
Weight:	8.8 g
Connector:	SMA male / reverse polarity SMA male
Mounting method:	Direct connect
Housing materials:	TPEE

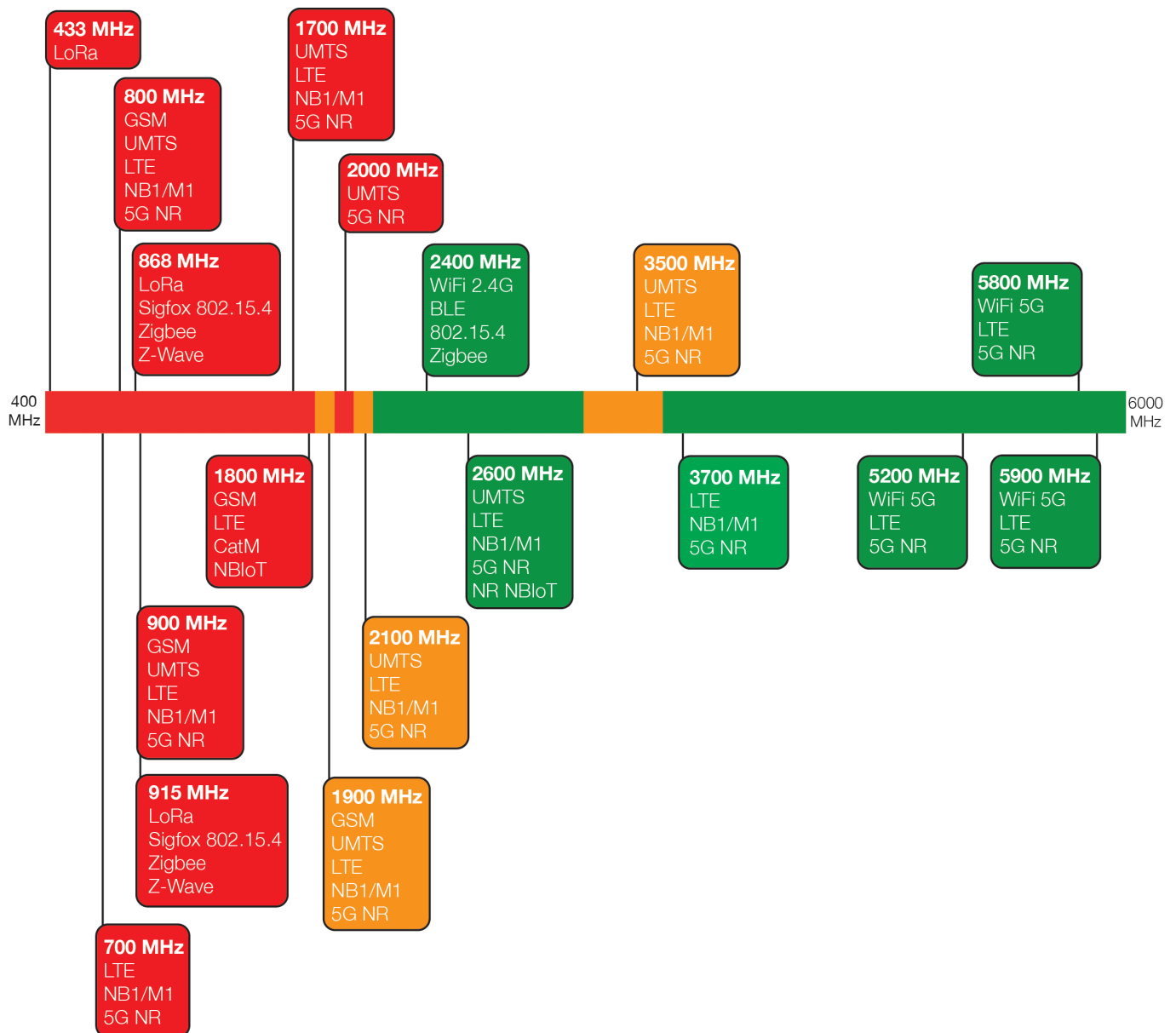




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Spectrum Coverage



● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



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Usable Cellular Frequency Support (410 MHz – 1900 MHz)

	410	450	600	700	800	850	900	1500	1600	1700	1800	1900
GSM Bands:												
UMTS Bands:												
LTE Bands:												
LTE Cat M Bands:												
LTE Cat NB Bands:												
5G NR Bands:												●
NR Cat NB Bands:												

Usable Cellular Frequency Support (2000 MHz – 5900 MHz)

	2000	2100	2300	2400	2500	2600	3300	3500	3700	4700	5200	5900
GSM Bands:												
UMTS Bands:						●						
LTE Bands:			●	●	●	●		●	●		●	●
LTE Cat M Bands:			●		●	●			●			
LTE Cat NB Bands:					●	●			●			
5G NR Bands:			●	●	●	●		●	●	●	●	●
NR Cat NB Bands:					●	●						

Usable ISM Frequency Support (433 MHz - 5800 MHz)

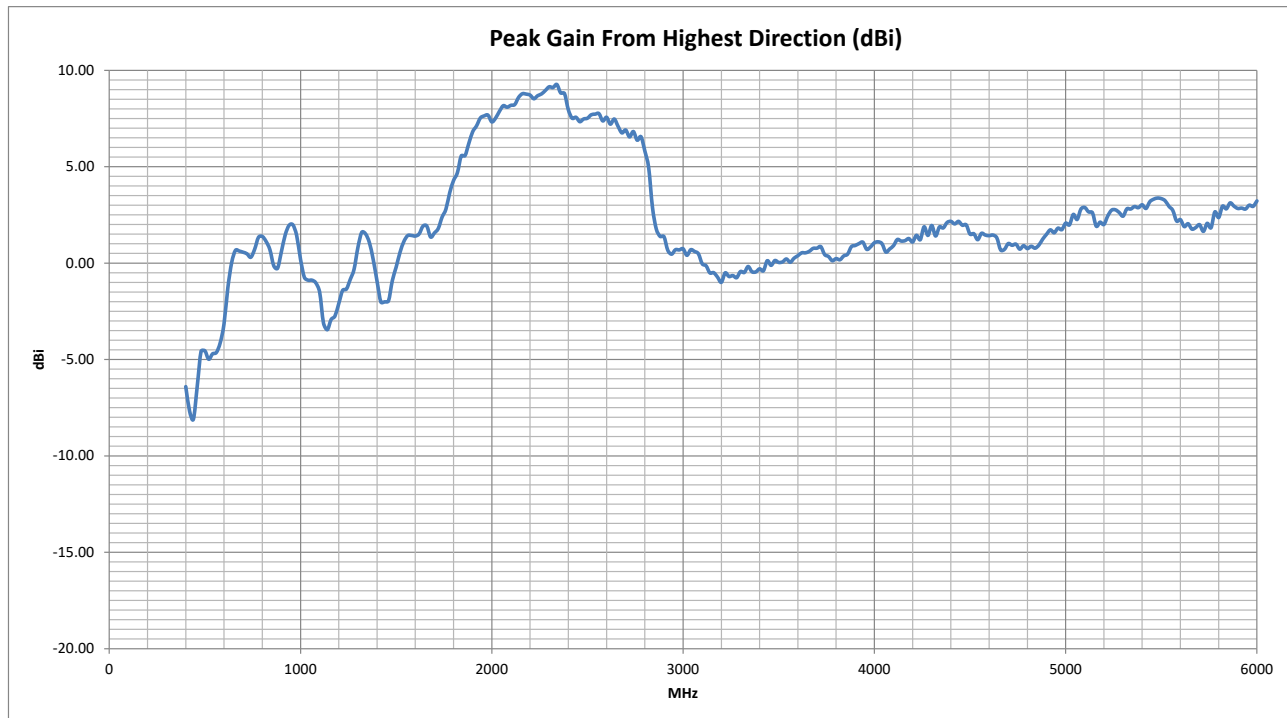
	433	868	915	2450	5800
Bluetooth				●	
IEEE 802.15.4				●	
LoRa					
Sigfox					
WiFi 2.4G				●	
WiFi 5G					●
Zigbee				●	
Z-Wave					



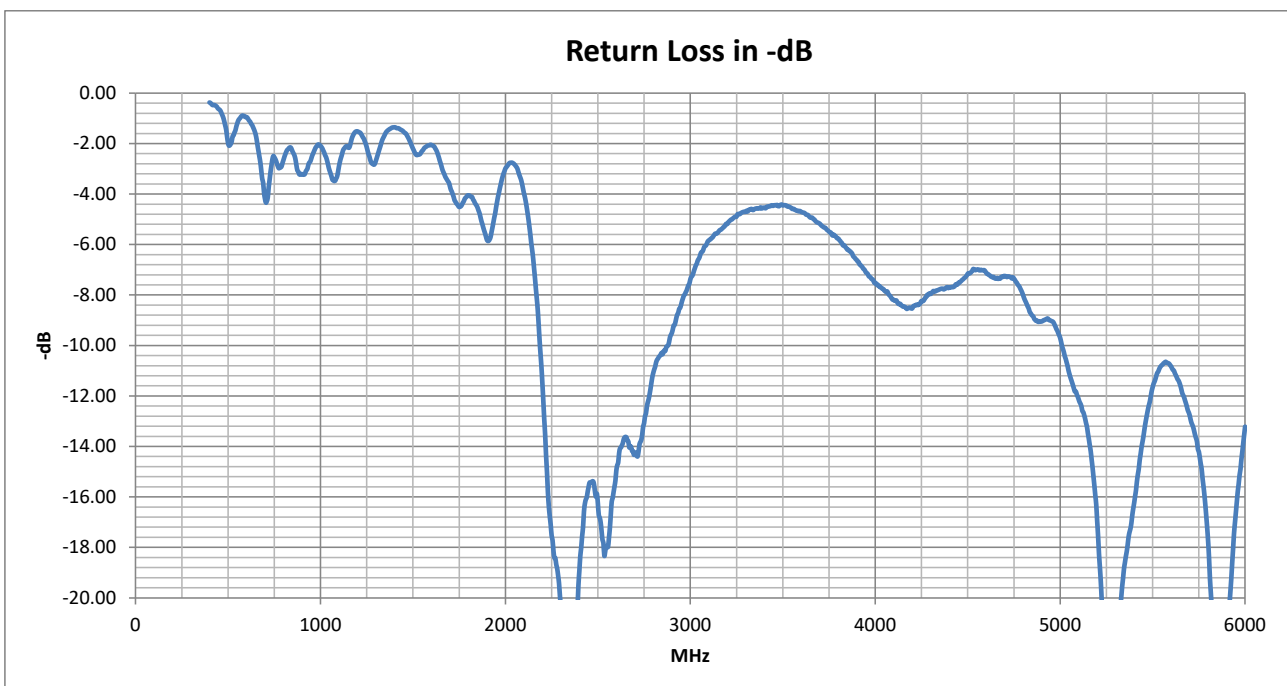
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Peak Gain vs. Frequency



Return Loss

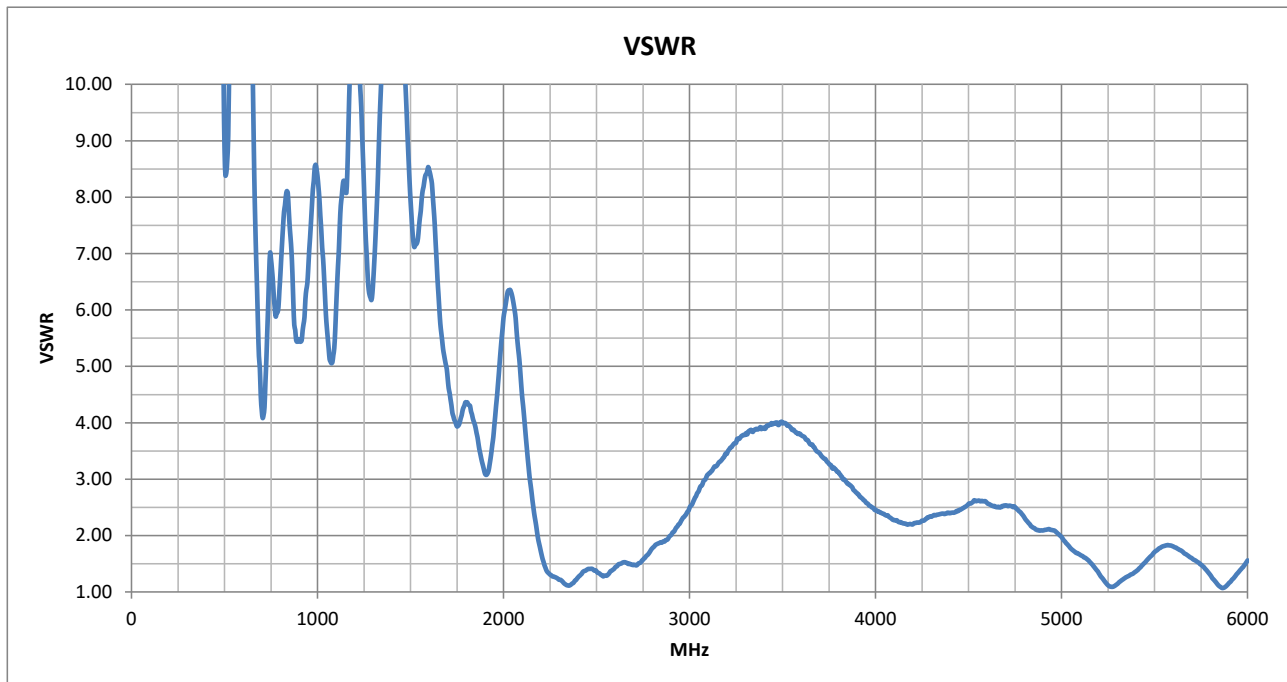




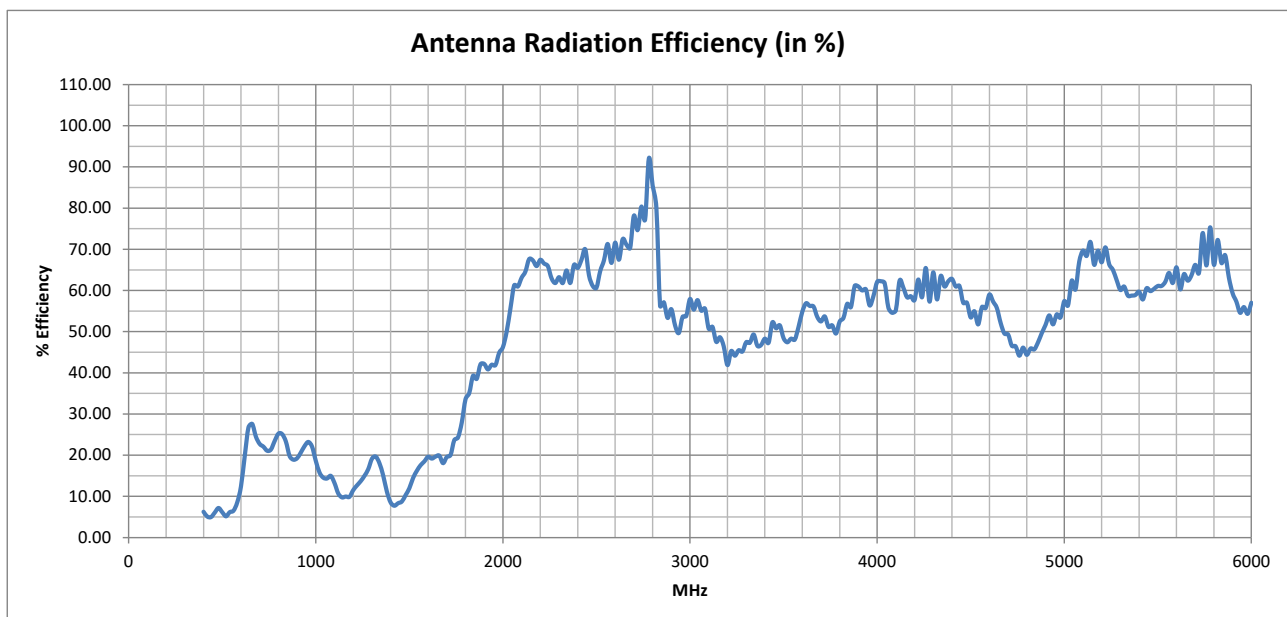
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VSWR



Radiation Efficiency





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Cellular Standards Band Support

GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
	1	1	1	1	n1	n1	1920 - 1980 MHz	2110 - 2170 MHz	42.24	66.37	5.10	4.13	●
PCS-1900	2	2	2	2	n2	n2	1850 - 1910 MHz	1930 - 1990 MHz	40.90	42.92	3.90	5.50	●
DCS-1800	3	3	3	3	n3	n3	1710 - 1785 MHz	1805 - 1880 MHz	23.76	37.94	4.53	4.36	●
	4	4	4	4			1710 - 1755 MHz	2110 - 2155 MHz	22.11	66.13	4.53	4.13	●
GSM-850	5	5	5	5	n5	n5	824 - 849 MHz	869 - 894 MHz	23.51	19.10	8.11	6.23	●
	6						830 - 840 MHz	875 - 885 MHz	23.78	19.00	8.11	5.73	●
	7	7	7	7	n7	n7	2500 - 2570 MHz	2620 - 2690 MHz	66.59	71.02	1.36	1.53	●
E-GSM-900	8	8	8	8	n8	n8	880 - 915 MHz	925 - 960 MHz	19.40	22.26	5.65	7.28	●
	9	9					1749.9 - 1784.9 MHz	1844.9 - 1879.9 MHz	25.91	39.66	4.27	3.97	●
	10	10					1710 - 1770 MHz	2110 - 2170 MHz	22.81	66.37	4.53	4.13	●
	11	11	11	11			1427.9 - 1447.9 MHz	1475.9 - 1495.9 MHz	8.28	10.82	12.24	9.75	●
	12	12	12	12	n12	n12	699 - 716 MHz	729 - 746 MHz	22.50	21.28	4.36	7.01	●
	13	13	13	13	n13	n13	777 - 787 MHz	746 - 756 MHz	23.62	21.25	5.99	6.99	●
	14	14	14	14	n14		788 - 798 MHz	758 - 768 MHz	24.61	21.71	6.50	6.60	●
		17		17			704 - 716 MHz	734 - 746 MHz	22.42	21.18	4.36	7.01	●
		18	18	18	n18	n18	815 - 830 MHz	860 - 875 MHz	24.83	19.48	8.02	7.03	●
	19	19	19	19			830 - 845 MHz	875 - 890 MHz	23.48	19.02	8.11	5.73	●
	20	20	20	20	n20	n20	832 - 862 MHz	791 - 821 MHz	22.02	25.07	8.11	7.76	●
	21	21	21	21			1447.9 - 1462.9 MHz	1495.9 - 1510.9 MHz	8.69	12.44	11.46	8.20	●
	22	22					3410 - 3490 MHz	3510 - 3590 MHz	50.41	48.89	4.01	4.00	●
		24	24	24	n24		1626.5 - 1660.5 MHz	1525 - 1559 MHz	19.68	16.29	7.70	7.92	●
	25	25	25	25	n25	n25	1850 - 1915 MHz	1930 - 1995 MHz	40.94	43.14	3.90	5.67	●
	26	26	26	26	n26		814 - 849 MHz	859 - 894 MHz	23.95	19.26	8.11	7.08	●
		27	27				807 - 824 MHz	852 - 869 MHz	25.10	20.04	7.83	7.41	●
		28	28	28	n28	n28	703 - 748 MHz	758 - 803 MHz	21.80	23.41	7.01	6.80	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



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GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
		28A					703 - 733 MHz	758 - 788 MHz	22.10	22.71	5.92	6.60	●
		29			n29		N/A	717 - 728 MHz	N/A	21.95	N/A	5.43	●
		30			n30		2305 - 2315 MHz	2350 - 2360 MHz	62.52	62.57	1.22	1.12	●
		31	31	31			452.5 - 457.5 MHz	462.5 - 467.5 MHz	5.81	6.36	26.77	23.02	●
	32	32					N/A	1452 - 1496 MHz	N/A	9.92	N/A	11.23	●
		33					1900 - 1920 MHz	1900 - 1920 MHz	41.50	41.50	3.16	3.16	●
		34			n34		2010 - 2025 MHz	2010 - 2025 MHz	49.61	49.61	6.34	6.34	●
		35					1850 - 1910 MHz	1850 - 1910 MHz	40.90	40.90	3.90	3.90	●
		36					1930 - 1990 MHz	1930 - 1990 MHz	42.92	42.92	5.50	5.50	●
		37					1910 - 1930 MHz	1910 - 1930 MHz	41.14	41.14	3.36	3.36	●
		38			n38		2570 - 2620 MHz	2570 - 2620 MHz	69.04	69.04	1.49	1.49	●
		39	39		n39		1880 - 1920 MHz	1880 - 1920 MHz	41.81	41.81	3.37	3.37	●
		40	40		n40		2300 - 2400 MHz	2300 - 2400 MHz	63.81	63.81	1.25	1.25	●
		41	41	41	n41	n41	2496 - 2690 MHz	2496 - 2690 MHz	68.70	68.70	1.53	1.53	●
		42	42	42			3400 - 3600 MHz	3400 - 3600 MHz	49.69	49.69	4.02	4.02	●
		43	43	43			3600 - 3800 MHz	3600 - 3800 MHz	53.49	53.49	3.78	3.78	●
		44					703 - 803 MHz	703 - 803 MHz	22.47	22.47	7.01	7.01	●
		45					1447 - 1467 MHz	1447 - 1467 MHz	8.78	8.78	11.51	11.51	●
		46			n46		5150 - 5925 MHz	5150 - 5925 MHz	63.86	63.86	1.83	1.83	●
		47			n47		5855 - 5925 MHz	5855 - 5925 MHz	61.89	61.89	1.24	1.24	●
		48			n48		3550 - 3700 MHz	3550 - 3700 MHz	53.75	53.75	3.87	3.87	●
		49					3550 - 3700 MHz	3550 - 3700 MHz	53.75	53.75	3.87	3.87	●
		50			n50		1432 - 1517 MHz	1432 - 1517 MHz	10.27	10.27	12.08	12.08	●
		51			n51		1427 - 1432 MHz	1427 - 1432 MHz	8.04	8.04	12.29	12.29	●
		52					3300 - 3400 MHz	3300 - 3400 MHz	47.57	47.57	3.92	3.92	●

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Cellular Standards Band Support

GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
		53			n53		2483.5 - 2495 MHz	2483.5 - 2495 MHz	60.90	60.90	1.39	1.39	●
		65		65	n65	n65	1920 - 2010 MHz	2110 - 2200 MHz	43.52	66.43	6.07	4.13	●
		66	66	66	n66	n66	1710 - 1780 MHz	2110 - 2200 MHz	23.41	66.43	4.53	4.13	●
		67			n67		N/A	738 - 758 MHz	N/A	21.21	N/A	7.01	●
		68					698 - 728 MHz	753 - 783 MHz	22.30	22.28	5.43	6.79	●
		69					N/A	2570 - 2620 MHz	N/A	69.04	N/A	1.49	●
		70		70	n70	n70	1695 - 1710 MHz	1995 - 2020 MHz	19.60	47.71	4.95	6.28	●
		71	71	71	n71		663 - 698 MHz	617 - 652 MHz	24.73	24.17	7.90	15.63	●
		72	72	72			451 - 456 MHz	461 - 466 MHz	5.73	6.28	27.11	23.83	●
		73	73	73			450 - 455 MHz	460 - 465 MHz	5.67	6.22	27.34	24.36	●
		74	74	74	n74		1427 - 1470 MHz	1475 - 1518 MHz	8.58	11.86	12.29	9.82	●
		75			n75		N/A	1432 - 1517 MHz	N/A	10.27	N/A	12.08	●
		76			n76		N/A	1427 - 1432 MHz	N/A	8.04	N/A	12.29	●
					n77		3300 - 4200 MHz	3300 - 4200 MHz	54.22	54.22	4.02	4.02	●
					n78		3300 - 3800 MHz	3300 - 3800 MHz	50.78	50.78	4.02	4.02	●
					n79		4400 - 5000 MHz	4400 - 5000 MHz	52.42	52.42	2.63	2.63	●
					n80		1710 - 1785 MHz	N/A	23.76	N/A	4.53	N/A	●
					n81		880 - 915 MHz	N/A	19.40	N/A	5.65	N/A	●
					n82		832 - 862 MHz	N/A	22.02	N/A	8.11	N/A	●
					n83		703 - 748 MHz	N/A	21.80	N/A	7.01	N/A	●
					n84		1920 - 1980 MHz	N/A	42.24	N/A	5.10	N/A	●
		85	85	85	n85		698 - 716 MHz	728 - 746 MHz	22.52	21.30	4.36	7.01	●
					n86		1710 - 1780 MHz	N/A	23.41	N/A	4.53	N/A	●
		87	87	87			410 - 415 MHz	420 - 425 MHz	5.55	5.10	40.52	36.76	●
		88	88	88			412 - 417 MHz	422 - 427 MHz	5.44	5.09	39.18	36.76	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



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Cellular Standards Band Support

GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
					n89		824 - 849 MHz	N/A	23.51	N/A	8.11	N/A	●
					n90	n90	2496 - 2690 MHz	2496 - 2690 MHz	68.70	68.70	1.53	1.53	●
					n91		832 - 862 MHz	1427 - 1432 MHz	22.02	8.04	8.11	12.29	●
					n92		832 - 862 MHz	1432 - 1517 MHz	22.02	10.27	8.11	12.08	●
					n93		880 - 915 MHz	1427 - 1432 MHz	19.40	8.04	5.65	12.29	●
					n94		880 - 915 MHz	1432 - 1517 MHz	19.40	10.27	5.65	12.08	●
					n95		2010 - 2025 MHz	N/A	49.61	N/A	6.34	N/A	●
					n97		2300 - 2400 MHz	N/A	63.81	N/A	1.25	N/A	●
					n98		1880 - 1920 MHz	N/A	41.81	N/A	3.37	N/A	●
					n99		1626.5 - 1660.5 MHz	N/A	19.68	N/A	7.70	N/A	●
					n101		1900 - 1910 MHz	1900 - 1910 MHz	41.84	41.84	3.10	3.10	●
				103			787 - 788 MHz	757 - 758 MHz	24.11	21.34	6.01	6.64	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable

NOTE: For each frequency band, Siretta provides a traffic light indication to show the suitability of the antenna for use at that frequency band. Determination of exactly what makes an antenna good or bad at any frequency is subjective.

The view presented is that of Siretta's engineering team having taken into account the efficiency and VSWR measurements. The end user is advised to use their own criteria and/or testing to confirm suitability.



ISM Standards Frequency Support

Application	Frequency Range	Efficiency (%)	Maximum VSWR	Peak Gain from highest direction (dBi)	Use Indicator
ISM 433 MHz	433.05 - 434.79 MHz	5.03	34.72	-7.953	●
IMT 868 MHz	863 - 870 MHz	19.53	6.80	-0.1595	●
ISM 915 MHz	902 - 928 MHz	20.32	5.82	1.656	●
ISM 2.4 GHz	2400 - 2500 MHz	65.05	1.41	7.95	●
WiFi 2.4G	2401 - 2483 MHz	65.92	1.41	7.928	●
WiFi 2.4G (USA)	2401 - 2473 MHz	66.55	1.41	7.928	●
WiFi 2.4G (Japan)	2401 - 2495 MHz	65.28	1.41	7.928	●
WiFi 5G (all channels)	5150 - 5990 MHz	63.20	1.83	3.37	●
WiFi 5G (Ch 32-48)	5150 - 5250 MHz	68.02	1.54	2.75	●
WiFi 5G (Ch 32-64)	5150 - 5330 MHz	65.40	1.54	2.81	●
WiFi 5G (Ch 32-161)	5150 - 5815 MHz	63.76	1.83	3.37	●
WiFi 5G (Ch 32-173)	5150 - 5875 MHz	64.14	1.83	3.37	●
ISM 5.8 GHz	5725 - 5875 MHz	69.39	1.54	3.12	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable

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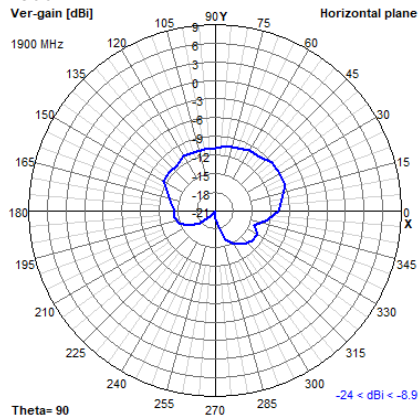


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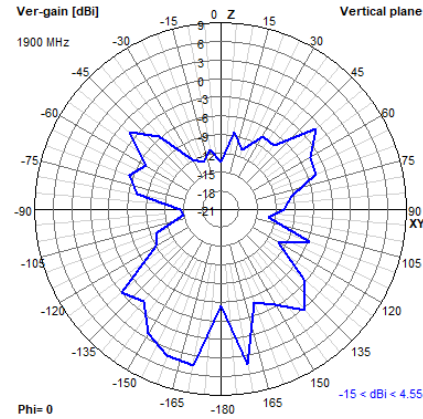
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2D Radiation Plots

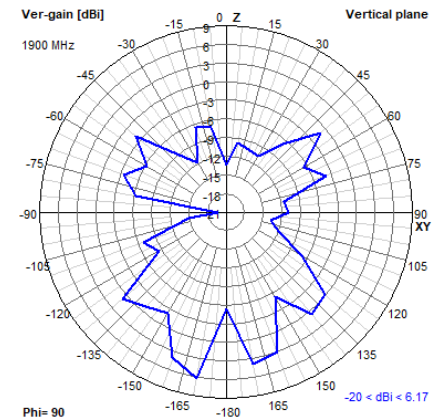
1900 MHz XY



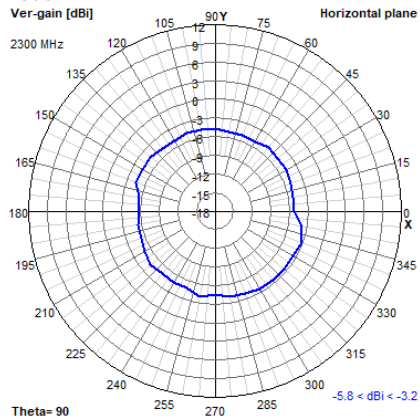
XZ



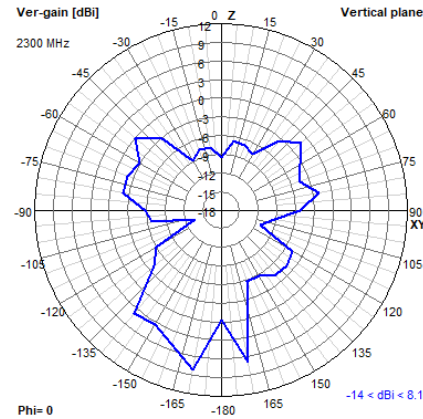
YZ



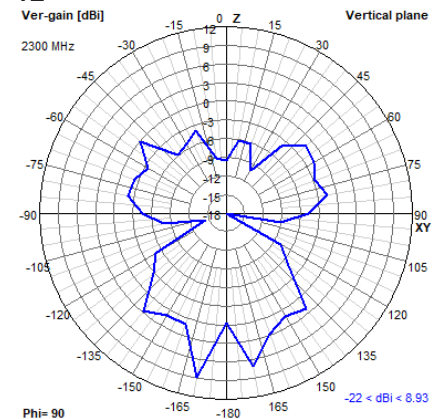
2300 MHz XY



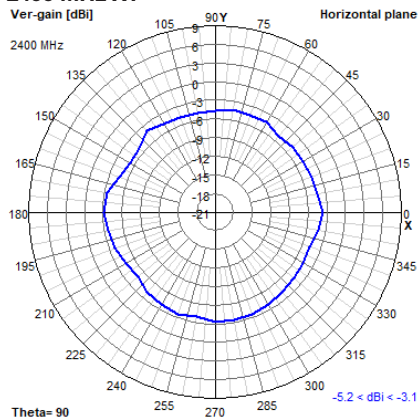
XZ



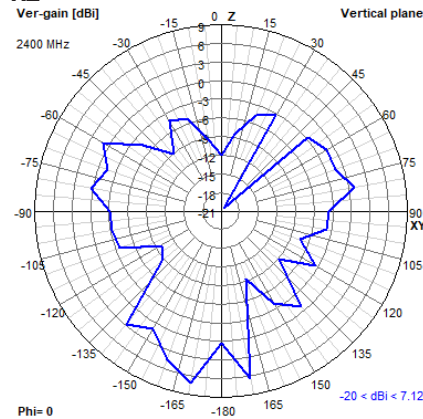
YZ



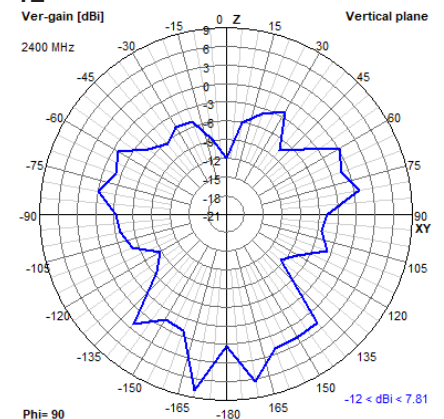
2400 MHz XY



XZ



YZ



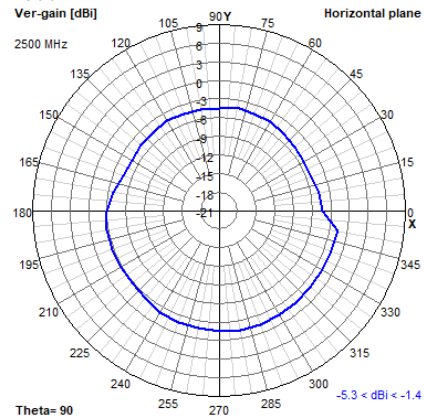


Delta 7A

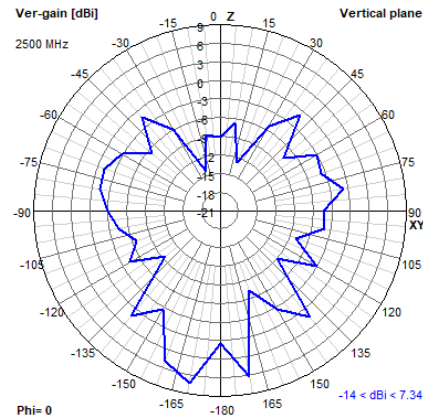
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2D Radiation Plots

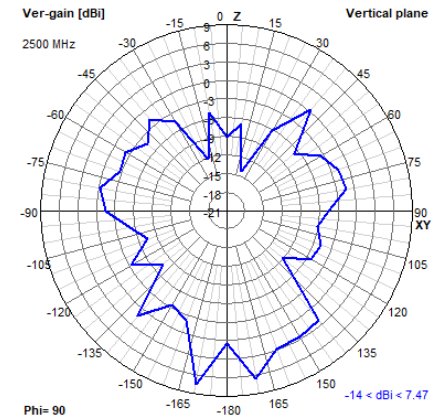
2500 MHz XY



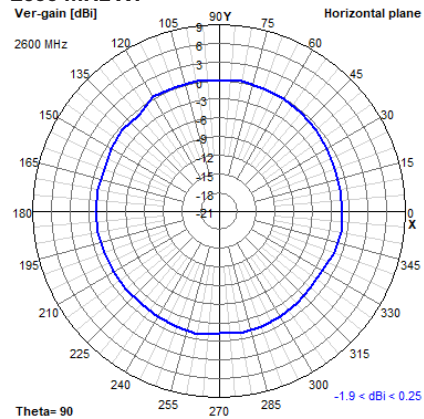
XZ



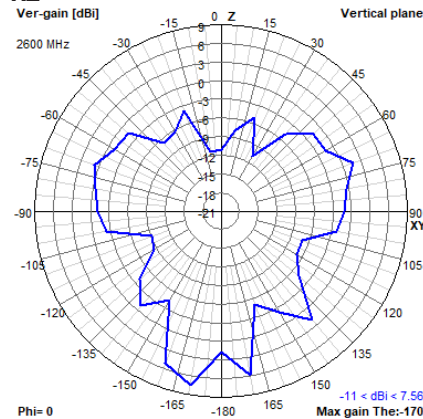
YZ



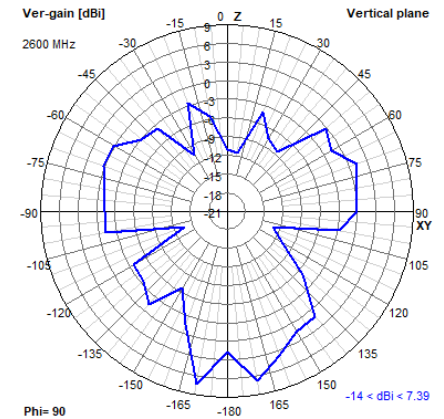
2600 MHz XY



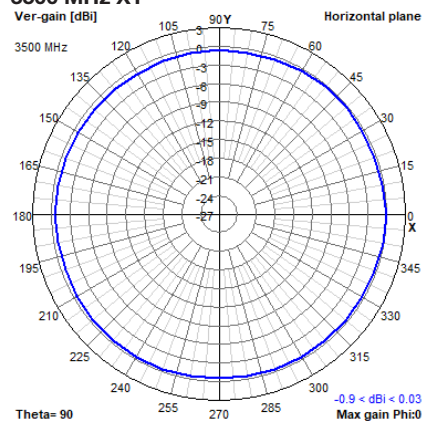
XZ



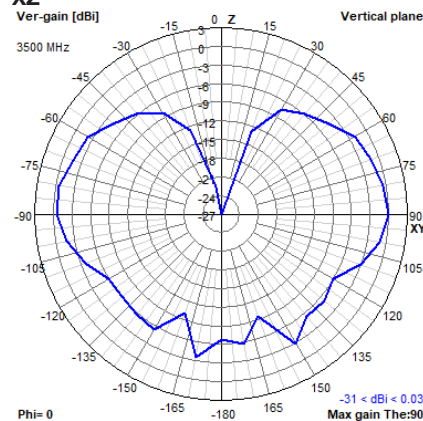
YZ



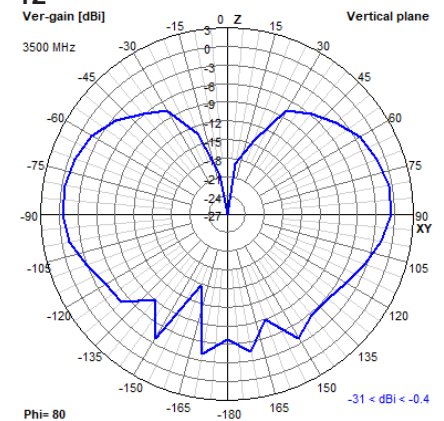
3500 MHz XY



XZ



YZ



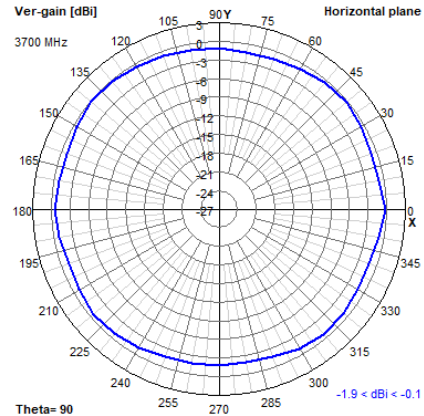


Delta 7A

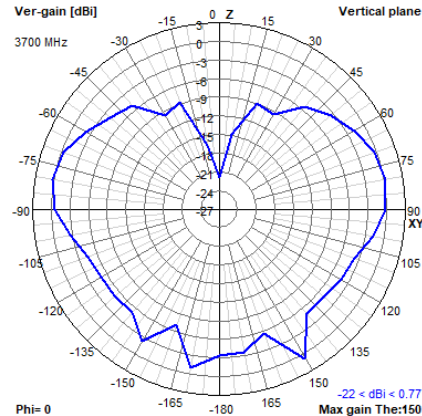
DUAL BAND WIFI / 5G / 4G / Bluetooth / Zigbee / ISM 2.4G & 5.8G HINGED ANTENNA

2D Radiation Plots

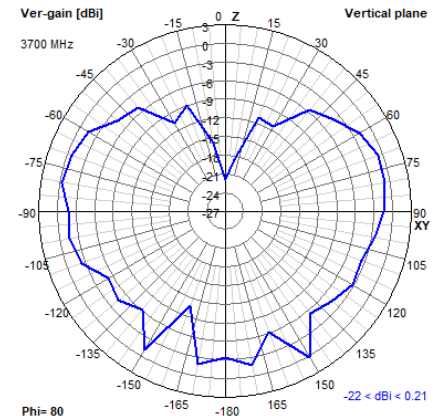
3700 MHz XY



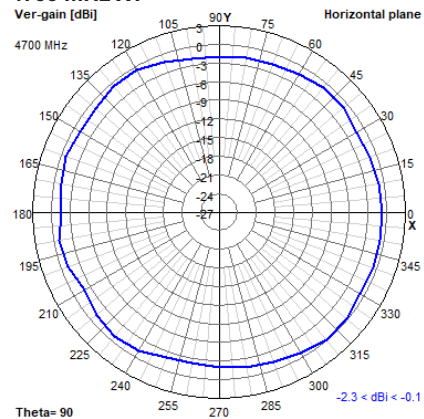
XZ



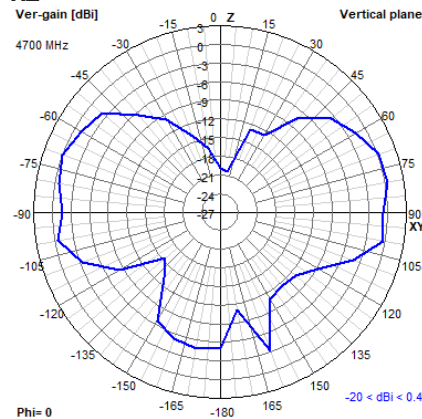
YZ



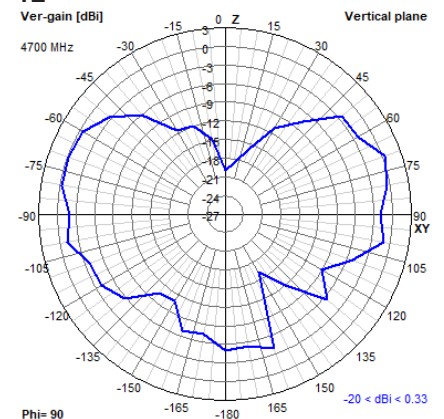
4700 MHz XY



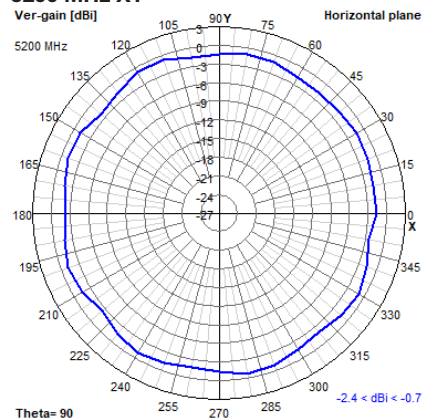
XZ



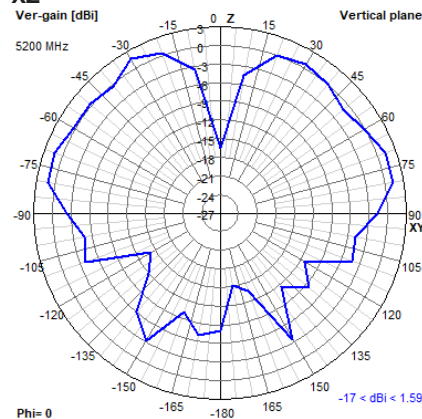
YZ



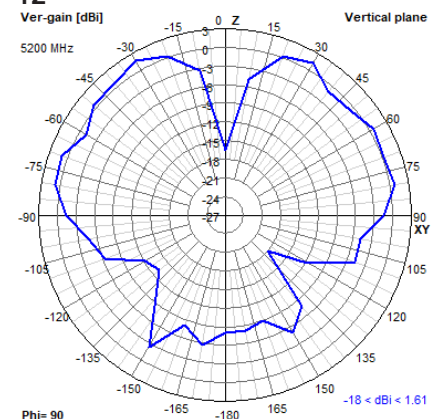
5200 MHz XY



XZ



YZ



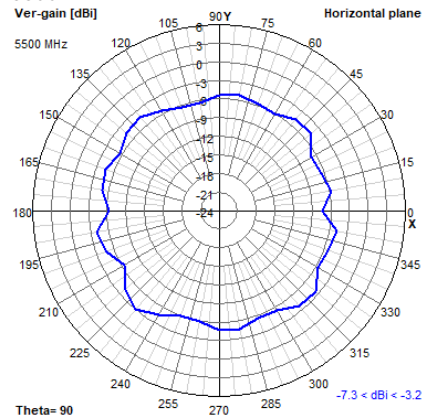


Delta 7A

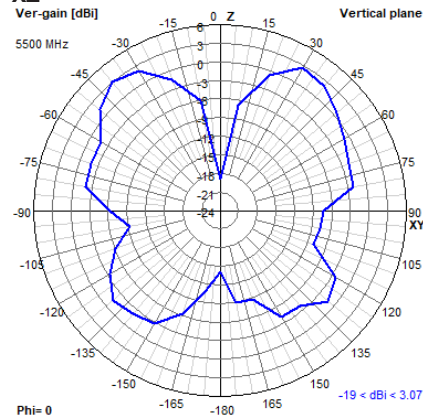
DUAL BAND WIFI / 5G / 4G / Bluetooth / Zigbee / ISM 2.4G & 5.8G HINGED ANTENNA

2D Radiation Plots

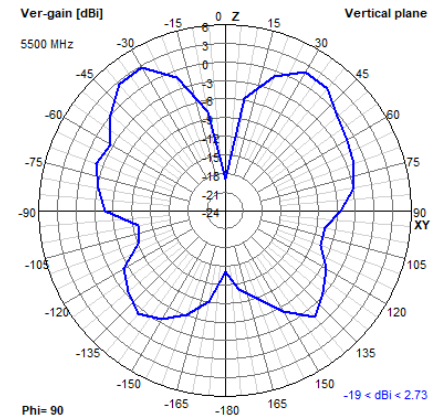
5500 MHz XY



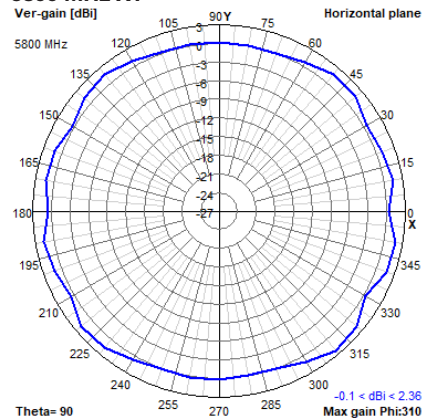
XZ



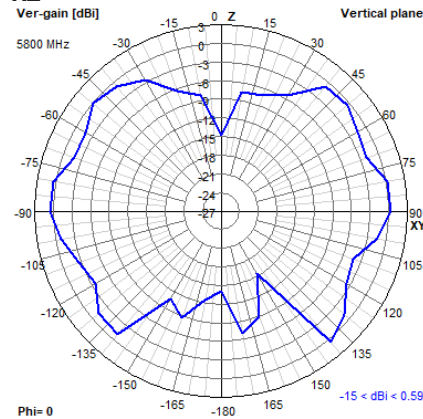
YZ



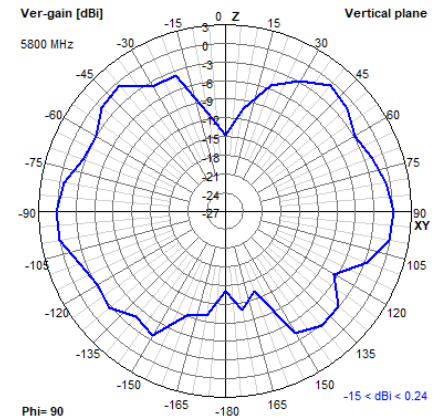
5800 MHz XY



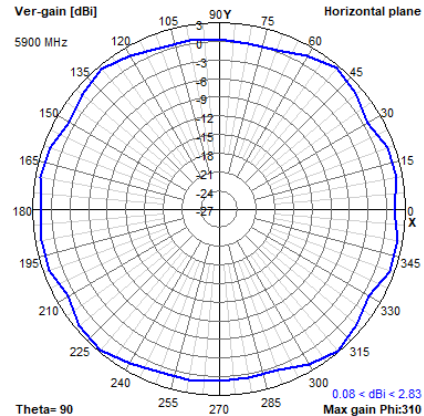
XZ



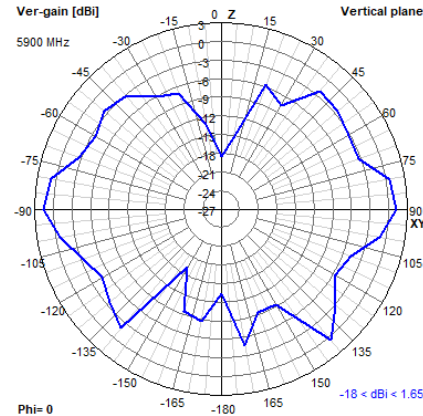
YZ



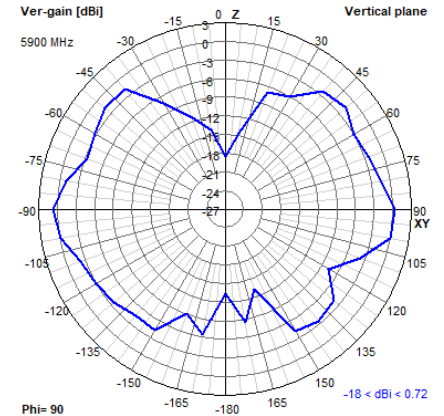
5900 MHz XY



XZ



YZ



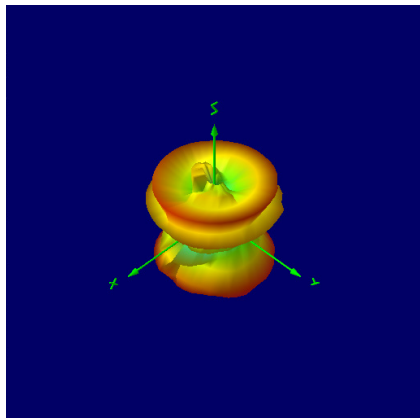


Delta 7A

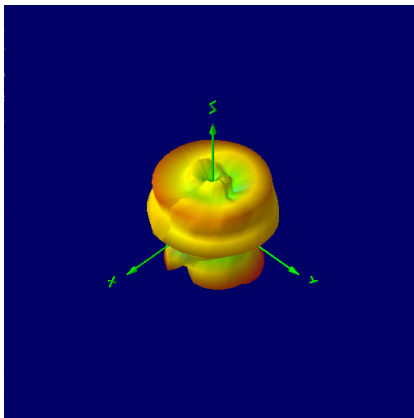
DUAL BAND WIFI / 5G / 4G / Bluetooth / Zigbee / ISM 2.4G & 5.8G HINGED ANTENNA

3D Radiation Plots

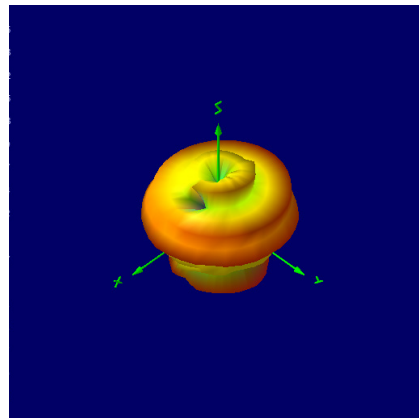
1900 MHz



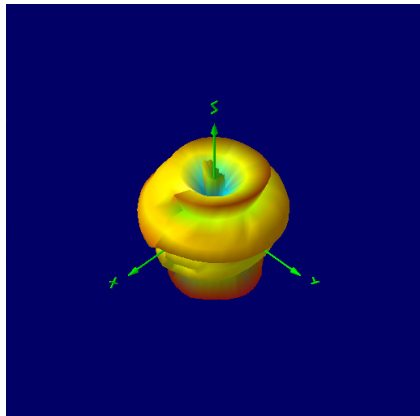
2300 MHz



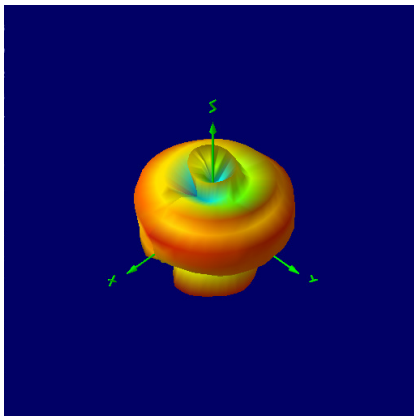
2400 MHz



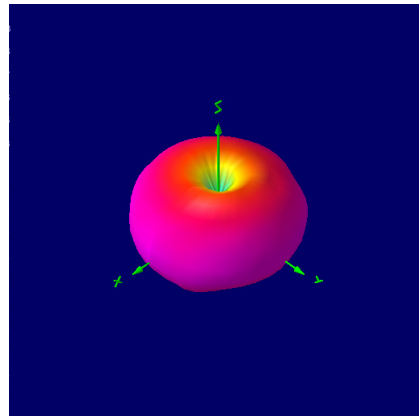
2500 MHz



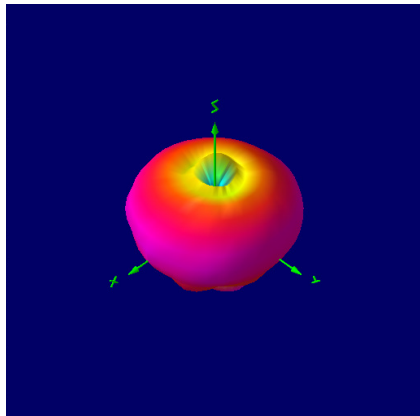
2600 MHz



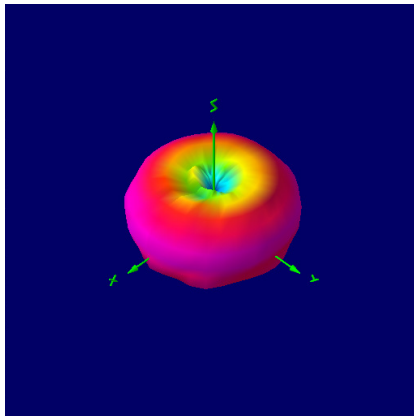
3500 MHz



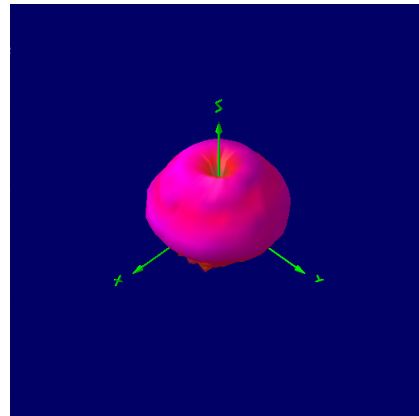
3700 MHz



4700 MHz



5200 MHz



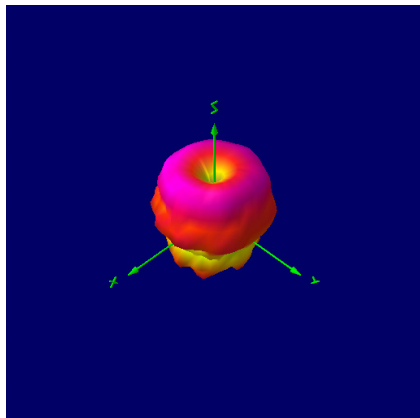


Delta 7A

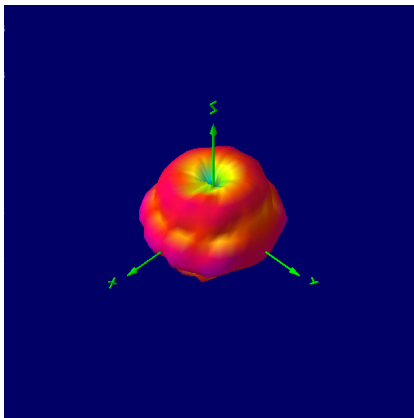
DUAL BAND WIFI / 5G / 4G / Bluetooth / Zigbee / ISM 2.4G & 5.8G HINGED ANTENNA

3D Radiation Plots

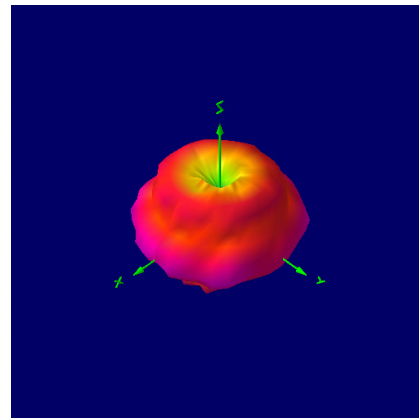
5500 MHz



5800 MHz



5900 MHz



NOTE: All 3D radiation plots are shown with Theta = 45 and Phi = 45.

Ordering Details:

Part Number	Description
DELTA7A/x/SMAM/S/S/11	DUAL BAND WIFI / 5G / 4G / Bluetooth / Zigbee / ISM 2.4G & 5.8G HINGED ANTENNA SMA MALE
DELTA7A/x/SMAM/RP/S/11	DUAL BAND WIFI / 5G / 4G / Bluetooth / Zigbee / ISM 2.4G & 5.8G HINGED ANTENNA REVERSE POLARITY SMA MALE