

Oscar 18

5G/4G, Wi-Fi 6 and LPWAN Directional Wall/Pole Mount Antenna



Key Features

- Supports 5G NR / 4G LTE / 3G UMTS / 2G Quad-band GSM
- Supports Dual band Wi-Fi 2.4G & 5G
- Supports Bluetooth / Zigbee / IEEE 802.15.4 / ISM 2.4 GHz / ISM 5.8 GHz
- Supports LoRa / Sigfox / Helium / Weightless / ISM 868 MHz / ISM 915 MHz
- Compact size
- Wall or pole mount

Additional Considerations

- Easy Installation
- Wall/Pole bracket made of high quality A3 steel
- Highly versatile: excellent performance from 400 MHz to 6 GHz

General Description

The Oscar 18 is a plastic enclosed Yagi-directional wall / bracket mount antenna and a great solution covering many popular frequencies in use today. Its radome is UV and water resistant making it a great outdoor antenna.

Its Yagi design provides superior performance for cellular applications in rural areas where signal reception is particularly low.

The radiating element from this Yagi antenna performs in a directional manner, producing a peak gain of 8 dBi to maximise signal transmission and reception. It is supplied with a bracket for wall or pole mounting.

Typical applications include Train-to Ground Rail applications, Precision Agriculture, Smart Grid Implementation and signal strength enhancement for real time tracking of public transport systems.

O Wall/Pole	5G New Radio	4G LTE	3G UMTS	2G GSM
LTE Cat M	LTE NB IoT	NR NB IoT	ISM 868	ISM 915
ISM 2.4G	ISM 5.8G	WiFi 2.4G & 5G	WiFi 4 802.11n	WiFi 5 802.11ac
WiFi 6 802.11ax	WLAN 2400	WLAN 5800	IEEE 802.15.4	BLE Bluetooth
ZB Zigbee	Z Wave	LoRa Wireless	SF Sigfox	HNT Helium
W Weightless				

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Electrical Specifications

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

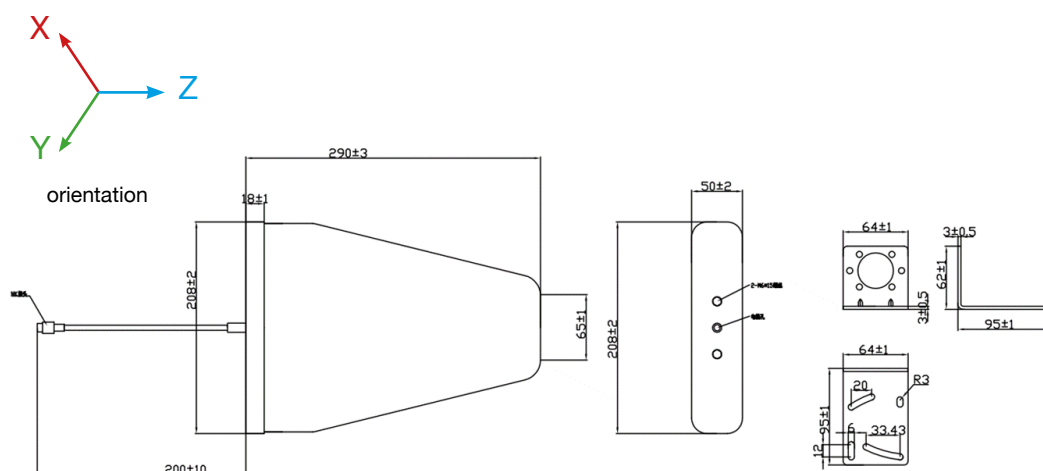
Environmental Specifications

Operating Temperature range:	-20 to +60 °C
Storage Temperature range:	-20 to +60 °C

Mechanical Specifications

Dimensions:	290×208×50
Weight:	0.9 kg
Connector:	N-TYPE Female, SMA Male
Antenna Cable:	RG58

Antenna Materials:	ABS Plastic Radome Aluminium Radiating Element A3 Steel Bracket
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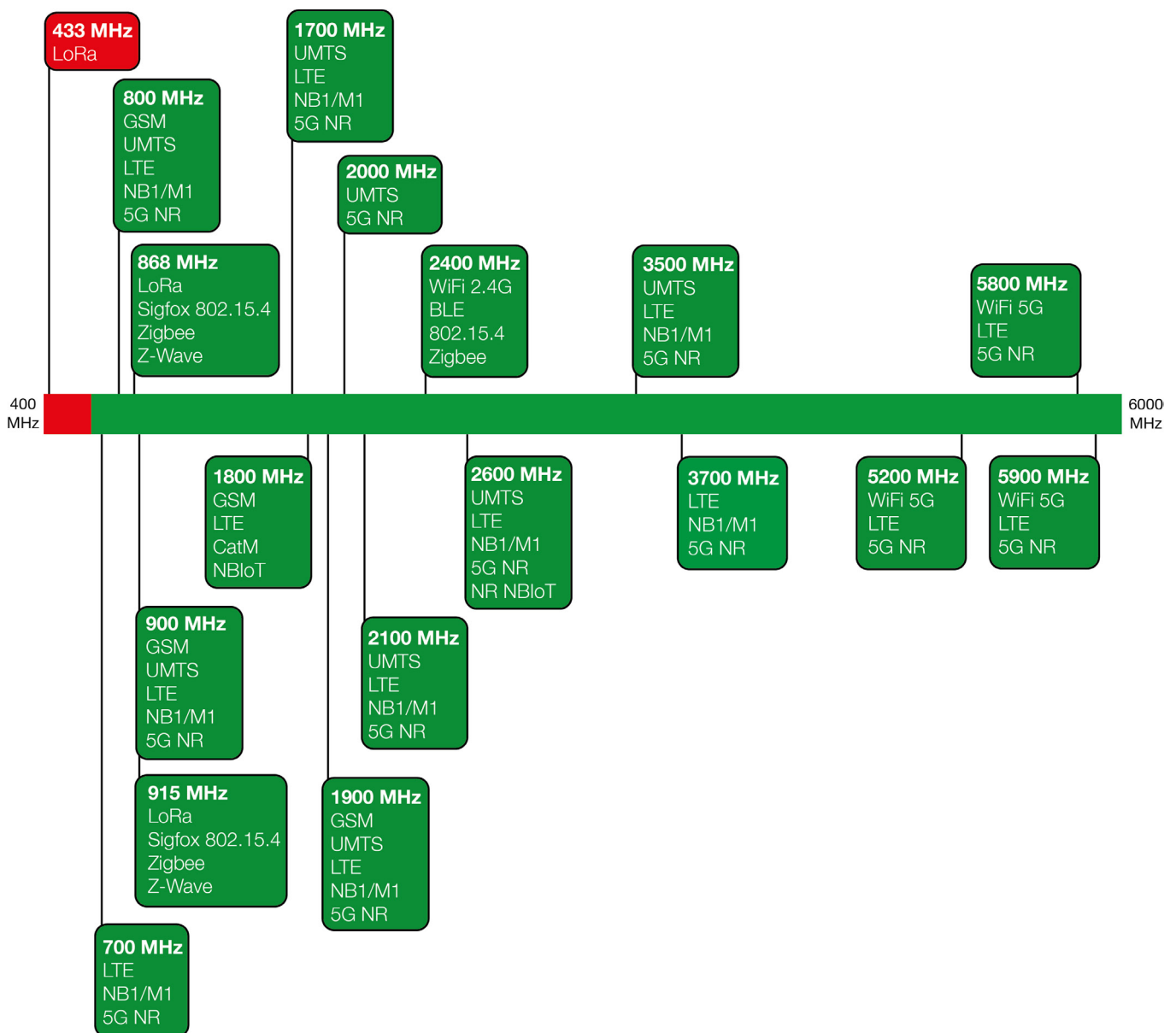




Oscar 18

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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)

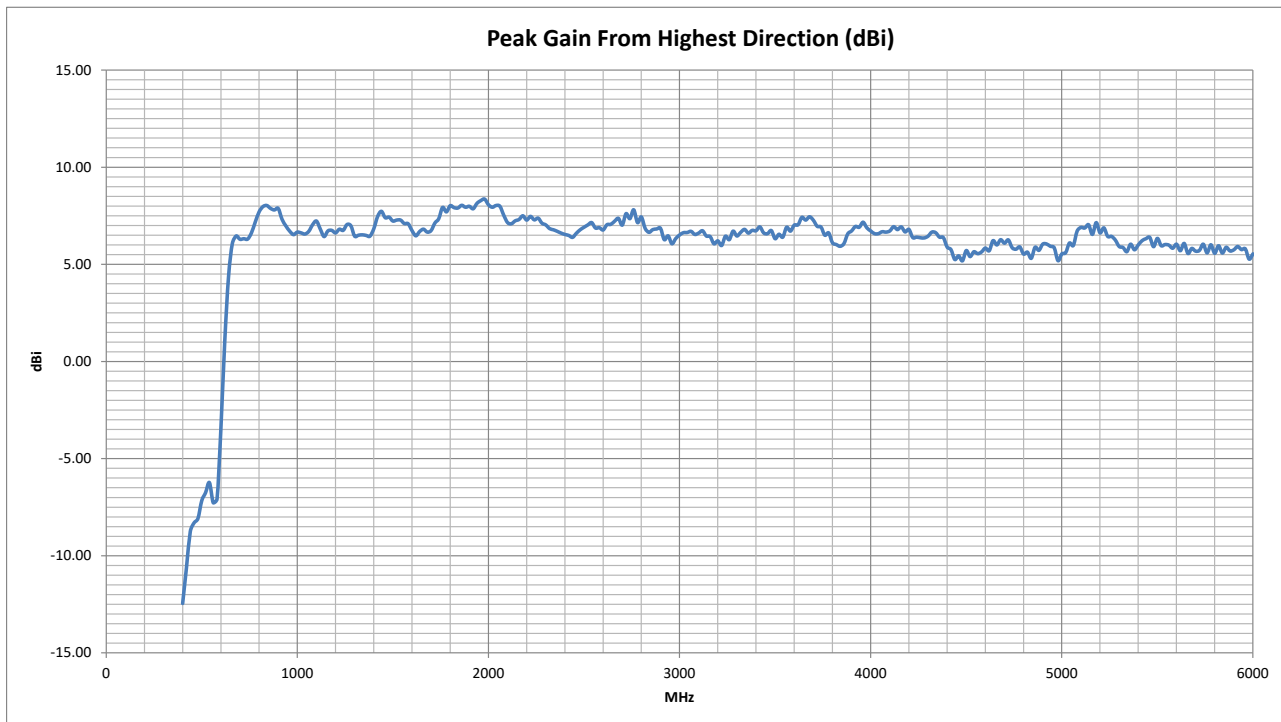
	433	868	915	2450	5800
Bluetooth				●	
IEEE 802.15.4		●	●	●	
LoRa		●	●		
Sigfox		●	●		
WiFi 2.4G				●	
WiFi 5G					●
Zigbee		●	●	●	
Z-Wave		●	●		



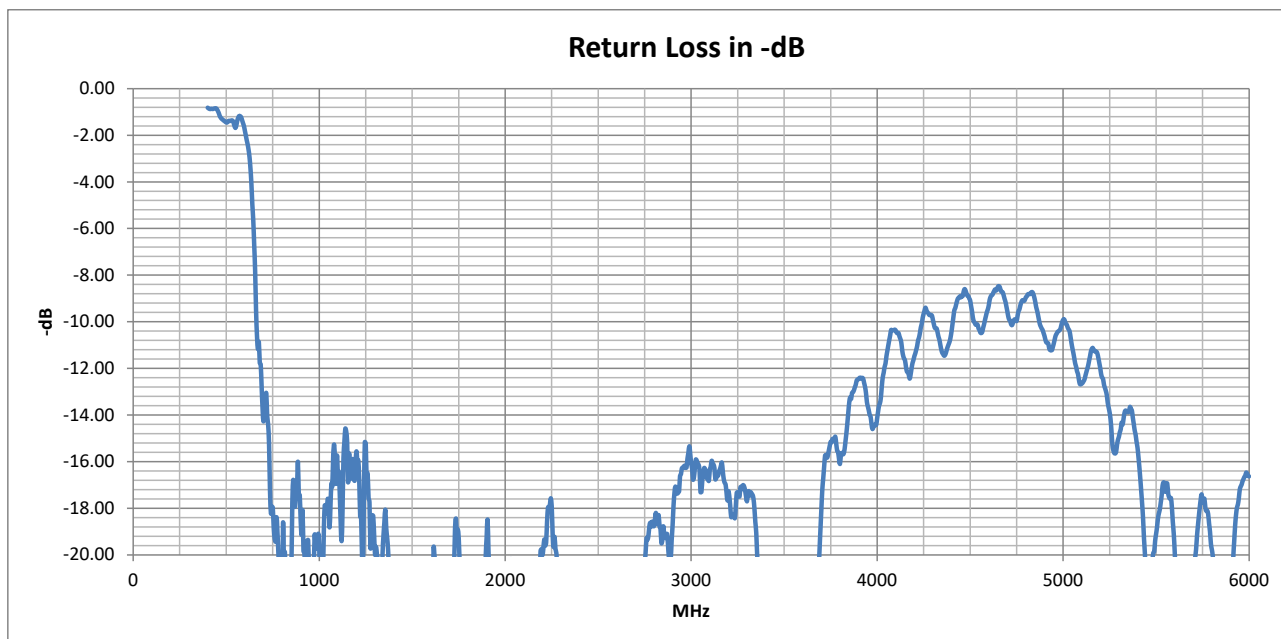
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Peak Gain vs. Frequency



Return Loss

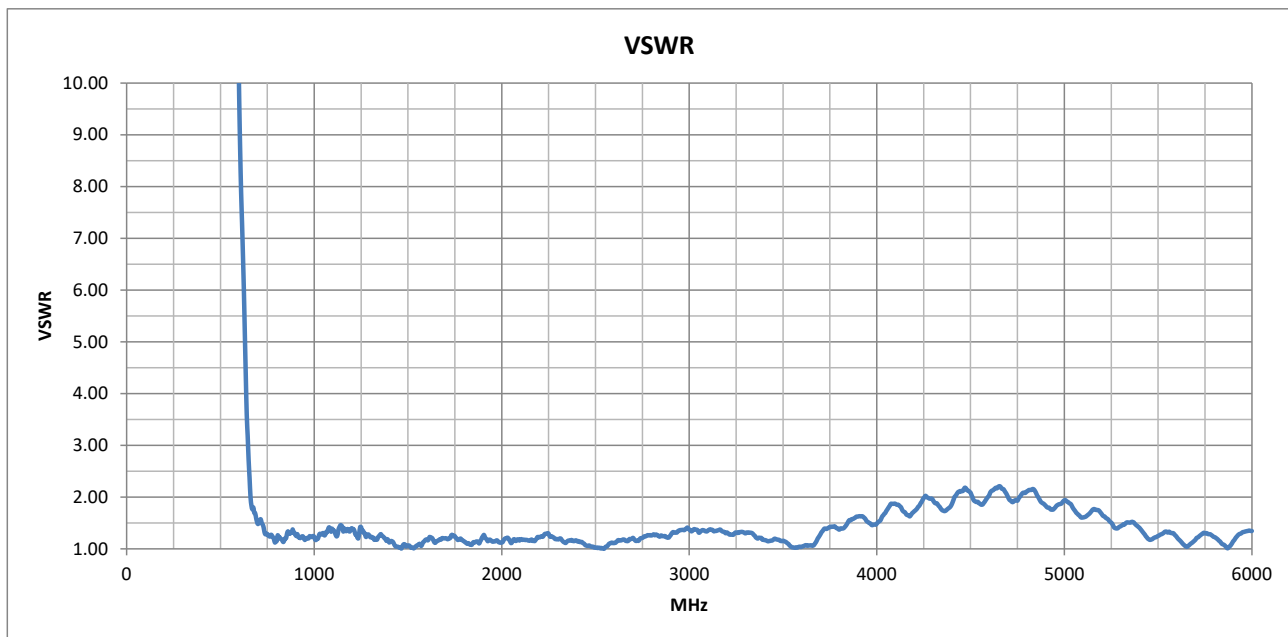




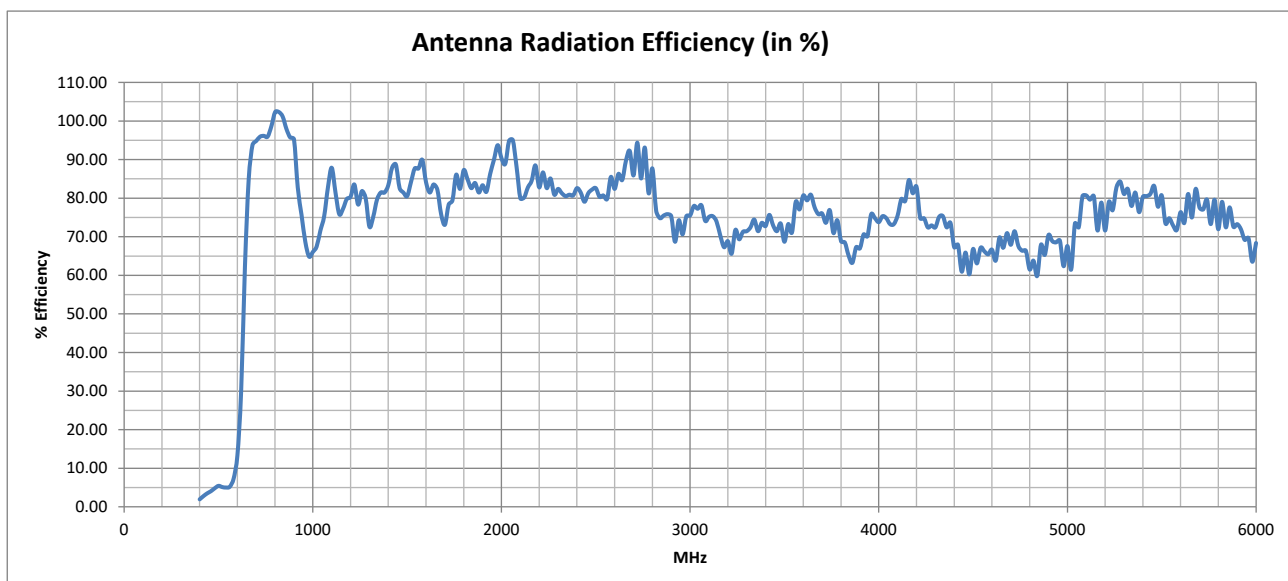
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VSWR



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	87.98	82.66	1.18	1.18	●
PCS-1900	2	2	2	2	n2	n2	1850 - 1910 MHz	1930 - 1990 MHz	82.80	89.66	1.27	1.18	●
DCS-1800	3	3	3	3	n3	n3	1710 - 1785 MHz	1805 - 1880 MHz	81.38	83.76	1.27	1.14	●
	4	4	4	4			1710 - 1755 MHz	2110 - 2155 MHz	79.49	81.83	1.27	1.18	●
GSM-850	5	5	5	5	n5	n5	824 - 849 MHz	869 - 894 MHz	101.20	95.90	1.21	1.38	●
	6						830 - 840 MHz	875 - 885 MHz	101.45	95.83	1.17	1.38	●
	7	7	7	7	n7	n7	2500 - 2570 MHz	2620 - 2690 MHz	80.83	88.31	1.09	1.19	●
E-GSM-900	8	8	8	8	n8	n8	880 - 915 MHz	925 - 960 MHz	93.39	74.83	1.38	1.24	●
	9	9					1749.9 - 1784.9 MHz	1844.9 - 1879.9 MHz	84.13	83.02	1.24	1.14	●
	10	10					1710 - 1770 MHz	2110 - 2170 MHz	80.92	82.66	1.27	1.18	●
	11	11	11	11			1427.9 - 1447.9 MHz	1475.9 - 1495.9 MHz	88.09	81.20	1.08	1.09	●
	12	12	12	12	n12	n12	699 - 716 MHz	729 - 746 MHz	95.25	96.11	1.57	1.43	●
	13	13	13	13	n13	n13	777 - 787 MHz	746 - 756 MHz	99.02	96.04	1.24	1.29	●
	14	14	14	14	n14		788 - 798 MHz	758 - 768 MHz	101.03	96.37	1.15	1.26	●
		17		17			704 - 716 MHz	734 - 746 MHz	95.39	96.13	1.57	1.34	●
		18	18	18	n18	n18	815 - 830 MHz	860 - 875 MHz	102.13	97.11	1.23	1.34	●
	19	19	19	19			830 - 845 MHz	875 - 890 MHz	101.22	95.74	1.21	1.38	●
	20	20	20	20	n20	n20	832 - 862 MHz	791 - 821 MHz	99.93	102.08	1.34	1.26	●
	21	21	21	21			1447.9 - 1462.9 MHz	1495.9 - 1510.9 MHz	84.08	81.28	1.04	1.07	●
	22	22					3410 - 3490 MHz	3510 - 3590 MHz	73.14	75.11	1.20	1.14	●
		24	24	24	n24		1626.5 - 1660.5 MHz	1525 - 1559 MHz	82.86	87.11	1.21	1.09	●
	25	25	25	25	n25	n25	1850 - 1915 MHz	1930 - 1995 MHz	82.76	89.81	1.27	1.18	●
	26	26	26	26	n26		814 - 849 MHz	859 - 894 MHz	101.51	96.36	1.23	1.38	●
		27	27				807 - 824 MHz	852 - 869 MHz	102.30	97.99	1.24	1.34	●
		28	28	28	n28	n28	703 - 748 MHz	758 - 803 MHz	95.84	98.98	1.57	1.27	●

● 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	95.71	97.75	1.57	1.27	●
		29			n29		N/A	717 - 728 MHz	N/A	95.95	N/A	1.54	●
		30			n30		2305 - 2315 MHz	2350 - 2360 MHz	81.85	80.82	1.20	1.16	●
		31	31	31			452.5 - 457.5 MHz	462.5 - 467.5 MHz	3.93	4.26	18.85	15.66	●
	32	32					N/A	1452 - 1496 MHz	N/A	82.02	N/A	1.09	●
		33					1900 - 1920 MHz	1900 - 1920 MHz	82.51	82.51	1.27	1.27	●
		34			n34		2010 - 2025 MHz	2010 - 2025 MHz	89.41	89.41	1.21	1.21	●
		35					1850 - 1910 MHz	1850 - 1910 MHz	82.80	82.80	1.27	1.27	●
		36					1930 - 1990 MHz	1930 - 1990 MHz	89.66	89.66	1.18	1.18	●
		37					1910 - 1930 MHz	1910 - 1930 MHz	82.46	82.46	1.23	1.23	●
		38			n38		2570 - 2620 MHz	2570 - 2620 MHz	84.14	84.14	1.17	1.17	●
		39	39		n39		1880 - 1920 MHz	1880 - 1920 MHz	82.46	82.46	1.27	1.27	●
		40	40		n40		2300 - 2400 MHz	2300 - 2400 MHz	81.19	81.19	1.20	1.20	●
		41	41	41	n41	n41	2496 - 2690 MHz	2496 - 2690 MHz	84.42	84.42	1.19	1.19	●
		42	42	42			3400 - 3600 MHz	3400 - 3600 MHz	73.96	73.96	1.20	1.20	●
		43	43	43			3600 - 3800 MHz	3600 - 3800 MHz	76.04	76.04	1.44	1.44	●
		44					703 - 803 MHz	703 - 803 MHz	97.27	97.27	1.57	1.57	●
		45					1447 - 1467 MHz	1447 - 1467 MHz	83.83	83.83	1.04	1.04	●
		46			n46		5150 - 5925 MHz	5150 - 5925 MHz	77.39	77.39	1.77	1.77	●
		47			n47		5855 - 5925 MHz	5855 - 5925 MHz	73.66	73.66	1.26	1.26	●
		48			n48		3550 - 3700 MHz	3550 - 3700 MHz	78.36	78.36	1.29	1.29	●
		49					3550 - 3700 MHz	3550 - 3700 MHz	78.36	78.36	1.29	1.29	●
		50			n50		1432 - 1517 MHz	1432 - 1517 MHz	83.27	83.27	1.09	1.09	●
		51			n51		1427 - 1432 MHz	1427 - 1432 MHz	88.29	88.29	1.08	1.08	●
		52					3300 - 3400 MHz	3300 - 3400 MHz	72.82	72.82	1.32	1.32	●

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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
		53			n53		2483.5 - 2495 MHz	2483.5 - 2495 MHz	82.40	82.40	1.04	1.04	●
		65		65	n65	n65	1920 - 2010 MHz	2110 - 2200 MHz	89.11	83.86	1.18	1.23	●
		66	66	66	n66	n66	1710 - 1780 MHz	2110 - 2200 MHz	81.26	83.86	1.27	1.23	●
		67			n67		N/A	738 - 758 MHz	N/A	96.07	N/A	1.30	●
		68					698 - 728 MHz	753 - 783 MHz	95.51	97.14	1.57	1.27	●
		69					N/A	2570 - 2620 MHz	N/A	84.14	N/A	1.17	●
		70		70	n70	n70	1695 - 1710 MHz	1995 - 2020 MHz	74.10	89.87	1.21	1.20	●
		71	71	71	n71		663 - 698 MHz	617 - 652 MHz	92.18	52.53	1.91	7.03	●
		72	72	72			451 - 456 MHz	461 - 466 MHz	3.89	4.21	19.32	16.15	●
		73	73	73			450 - 455 MHz	460 - 465 MHz	3.86	4.17	19.63	16.49	●
		74	74	74	n74		1427 - 1470 MHz	1475 - 1518 MHz	85.73	81.56	1.08	1.09	●
		75			n75		N/A	1432 - 1517 MHz	N/A	83.27	N/A	1.09	●
		76			n76		N/A	1427 - 1432 MHz	N/A	88.29	N/A	1.08	●
					n77		3300 - 4200 MHz	3300 - 4200 MHz	74.08	74.08	1.87	1.87	●
					n78		3300 - 3800 MHz	3300 - 3800 MHz	74.56	74.56	1.44	1.44	●
					n79		4400 - 5000 MHz	4400 - 5000 MHz	66.24	66.24	2.21	2.21	●
					n80		1710 - 1785 MHz	N/A	81.38	N/A	1.27	N/A	●
					n81		880 - 915 MHz	N/A	93.39	N/A	1.38	N/A	●
					n82		832 - 862 MHz	N/A	99.93	N/A	1.34	N/A	●
					n83		703 - 748 MHz	N/A	95.84	N/A	1.57	N/A	●
					n84		1920 - 1980 MHz	N/A	87.98	N/A	1.18	N/A	●
		85	85	85	n85		698 - 716 MHz	728 - 746 MHz	95.23	96.11	1.57	1.44	●
					n86		1710 - 1780 MHz	N/A	81.26	N/A	1.27	N/A	●
		87	87	87			410 - 415 MHz	420 - 425 MHz	2.47	2.88	20.05	20.29	●
		88	88	88			412 - 417 MHz	422 - 427 MHz	2.56	2.95	20.09	20.17	●

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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	101.20	N/A	1.21	N/A	●
					n90	n90	2496 - 2690 MHz	2496 - 2690 MHz	84.42	84.42	1.19	1.19	●
					n91		832 - 862 MHz	1427 - 1432 MHz	99.93	88.29	1.34	1.08	●
					n92		832 - 862 MHz	1432 - 1517 MHz	99.93	83.27	1.34	1.09	●
					n93		880 - 915 MHz	1427 - 1432 MHz	93.39	88.29	1.38	1.08	●
					n94		880 - 915 MHz	1432 - 1517 MHz	93.39	83.27	1.38	1.09	●
					n95		2010 - 2025 MHz	N/A	89.41	N/A	1.21	N/A	●
					n97		2300 - 2400 MHz	N/A	81.19	N/A	1.20	N/A	●
					n98		1880 - 1920 MHz	N/A	82.46	N/A	1.27	N/A	●
					n99		1626.5 - 1660.5 MHz	N/A	82.86	N/A	1.21	N/A	●
					n101		1900 - 1910 MHz	1900 - 1910 MHz	82.94	82.94	1.27	1.27	●
				103			787 - 788 MHz	757 - 758 MHz	100.02	95.97	1.16	1.25	●

● 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.



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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	3.29	20.49	-9.2336	●
ISM 868 MHz	863 - 870 MHz	97.22	1.32	7.868	●
ISM 915 MHz	902 - 928 MHz	86.25	1.29	7.824	●
ISM 2.4 GHz	2400 - 2500 MHz	81.33	1.16	6.91	●
WiFi 2.4G	2401 - 2483 MHz	81.09	1.15	6.7995	●
WiFi 2.4G (USA)	2401 - 2473 MHz	80.94	1.15	6.717	●
WiFi 2.4G (Japan)	2401 - 2495 MHz	81.25	1.15	6.8775	●
WiFi 5G (all channels)	5150 - 5990 MHz	76.67	1.77	7.15	●
WiFi 5G (Ch 32-48)	5150 - 5250 MHz	75.99	1.77	7.15	●
WiFi 5G (Ch 32-64)	5150 - 5330 MHz	78.81	1.77	7.15	●
WiFi 5G (Ch 32-161)	5150 - 5815 MHz	77.90	1.77	7.15	●
WiFi 5G (Ch 32-173)	5150 - 5875 MHz	77.71	1.77	7.15	●
ISM 5.8 GHz	5725 - 5875 MHz	76.10	1.31	6.04	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable

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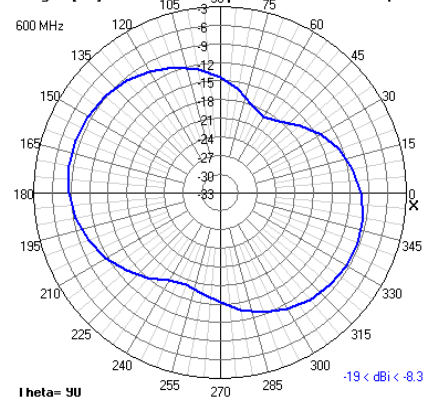
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2D Radiation Plots

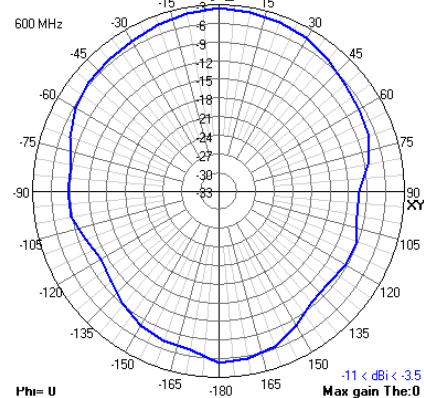
600 MHz XY

Ver-gain [dBi]



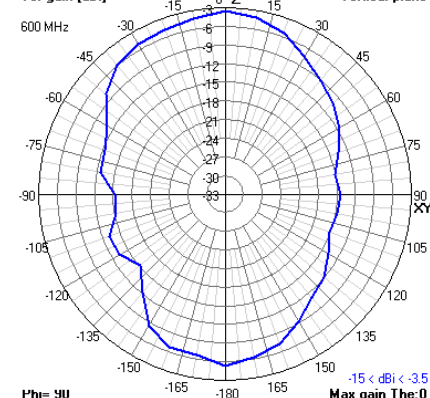
XZ

Ver-gain [dBi]



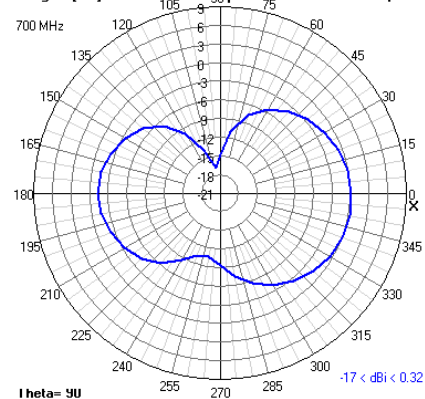
YZ

Ver-gain [dBi]



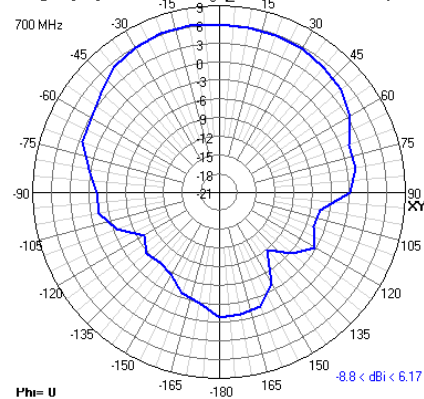
700 MHz XY

Ver-gain [dBi]



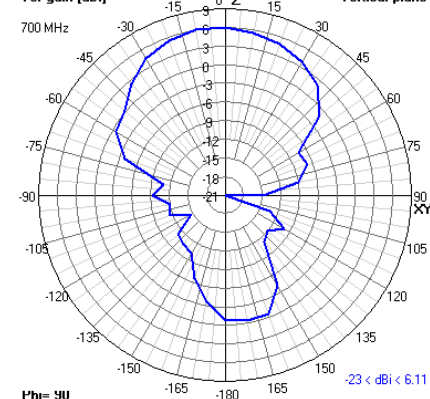
XZ

Ver-gain [dBi]



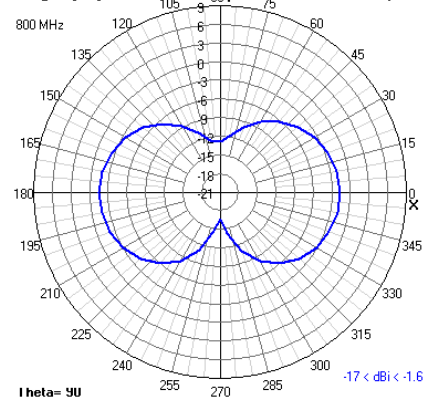
YZ

Ver-gain [dBi]



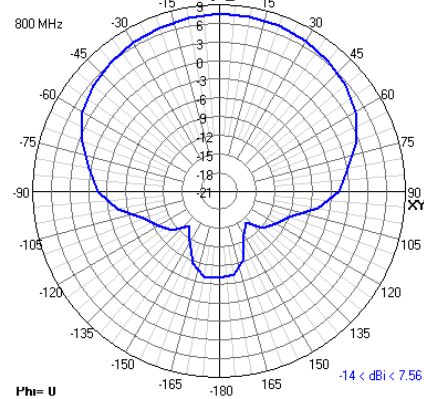
800 MHz XY

Ver-gain [dBi]



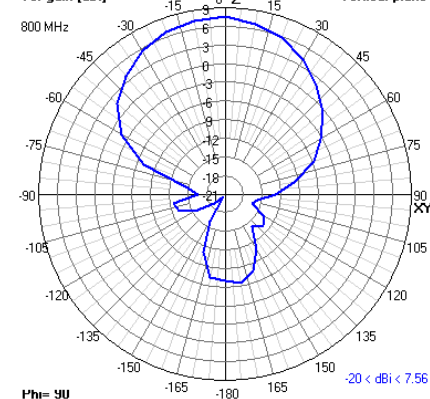
XZ

Ver-gain [dBi]



YZ

Ver-gain [dBi]



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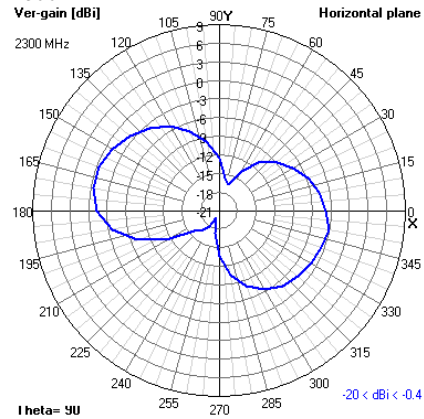


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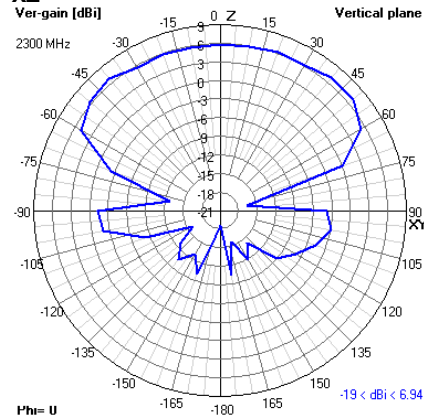
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2D Radiation Plots

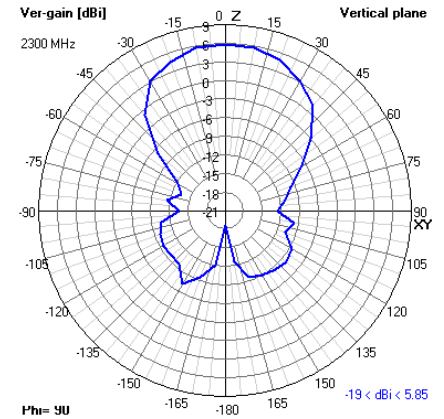
2300 MHz XY



XZ



YZ



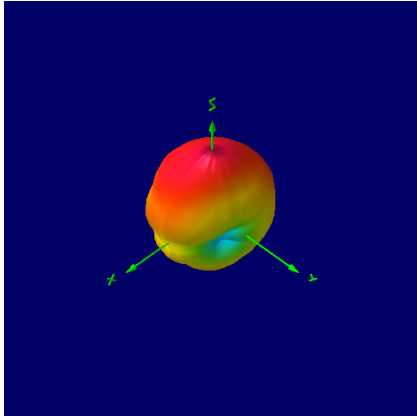


Oscar 18

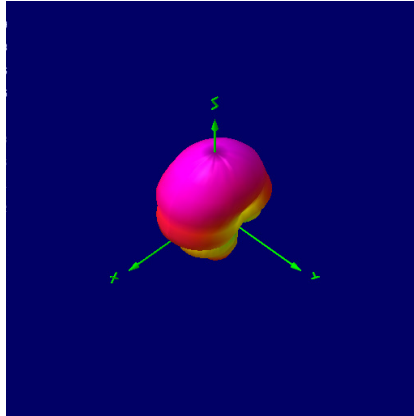
5G/4G, Wi-Fi 6 and LPWAN Directional Wall/Pole Mount Antenna

3D Radiation Plots

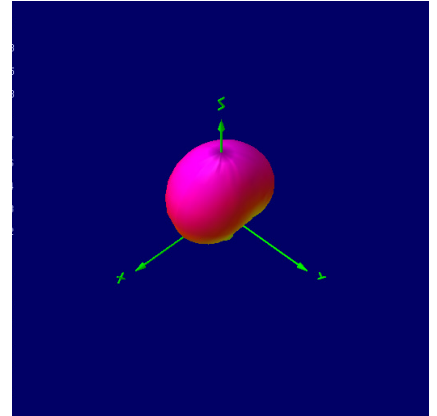
600 MHz



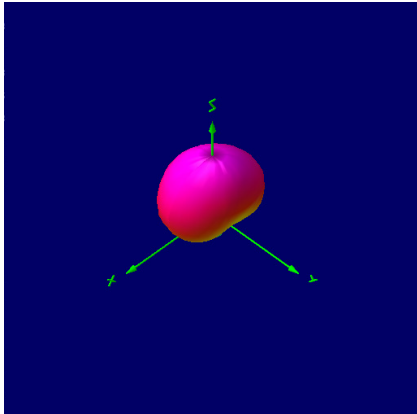
700 MHz



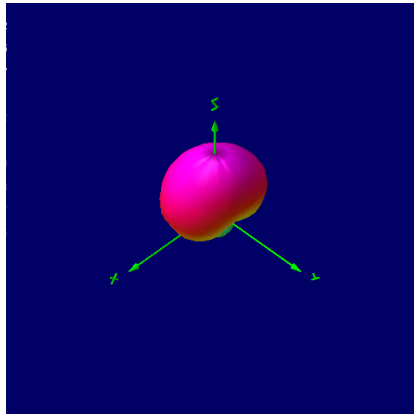
800 MHz



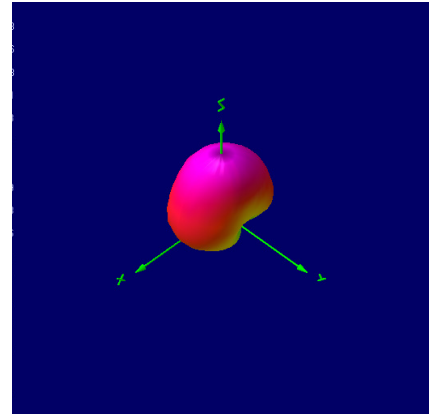
900 MHz



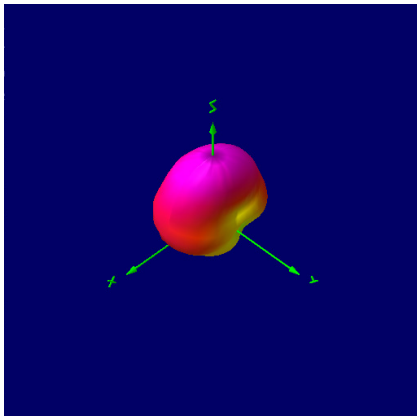
920 MHz



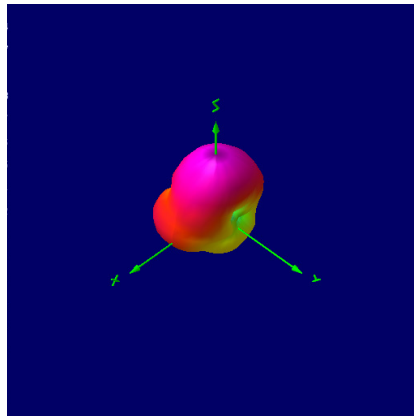
1500 MHz



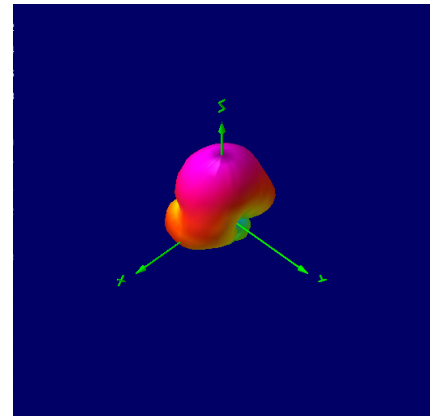
1600 MHz



1700 MHz



1800 MHz

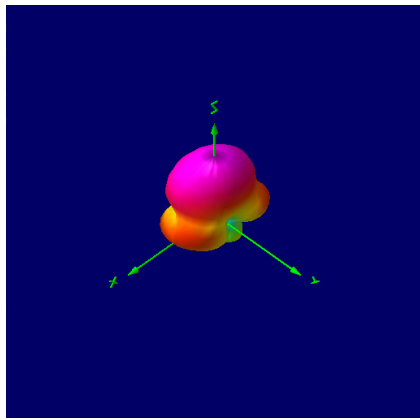


Oscar 18

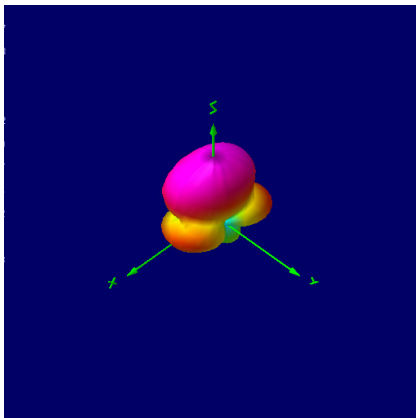
5G/4G, Wi-Fi 6 and LPWAN Directional Wall/Pole Mount Antenna

3D Radiation Plots

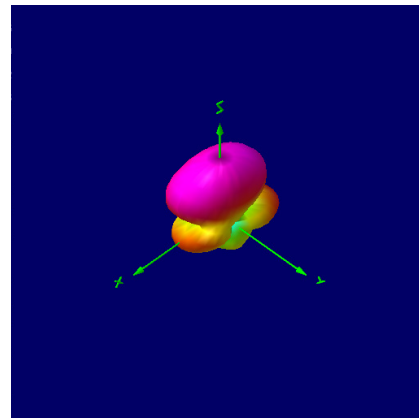
1900 MHz



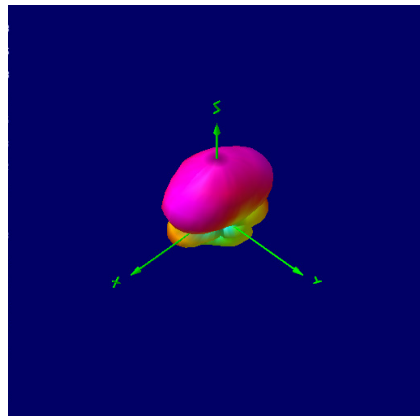
2000 MHz



2100 MHz



2300 MHz



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

Ordering Details:

Part Number	Description
OSCAR18/x/NF/S/S/22	5G/4G, Wi-Fi 6 and LPWAN Directional Wall/Pole Mount Antenna N-TYPE Female Connector
OSCAR18/1M/SMAM/S/S/22	5G/4G, Wi-Fi 6 and LPWAN Directional Wall/Pole Mount Antenna 1M Cable SMA Male Connector
OSCAR18/2.5M/SMAM/S/S/22	5G/4G, Wi-Fi 6 and LPWAN Directional Wall/Pole Mount Antenna 2.5 M Cable SMA Male Connector

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