



## Oscar 68

High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz



### Key Features

- Supports ISM 868, 915 and 2450 Bands
- Supports IEEE 802.15.4, LoRa, Sigfox, Zigbee and Z-Wave and Helium bands
- Supports 2.4GHz applications: ISM 2.4 GHz, Wi-Fi 2.4G, Bluetooth
- 12.8 dBi high gain for long range coverage or transmission
- Engineering grade ASA/ABS plastic radome

### General Description

The OSCAR 68 is a highly efficient wide beam directional antenna designed for use in the 868, 915 and 2450 MHz frequency bands. With a peak gain of 13 dBi, a VSWR of 1.5 and the ability to handle up to 100 watts of power, this antenna is perfect for your ISM, LoRa, Sigfox, Zigbee, Helium and Z-Wave applications.

The antenna's radome is made of Engineering grade ASA plastic and can be set up with vertical or horizontal polarization. Some common applications include Remote Sensor Telemetry, Smart Manufacturing and Medical Device Communication.

The OSCAR 69 comes with a pole mounting bracket made of steel with an anti-rust treatment and can be adjusted to optimise signal strength.

### Additional Considerations

- Pole mount kit included
- Ground plane independent

O Wall/Pole	ISM 868	ISM 915	ISM 2.4G	IEEE 802.15.4
LoRa Wireless	SF Sigfox	ZB Zigbee	Z Wave	BLE Bluetooth
HNT Helium				

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### Electrical Specifications

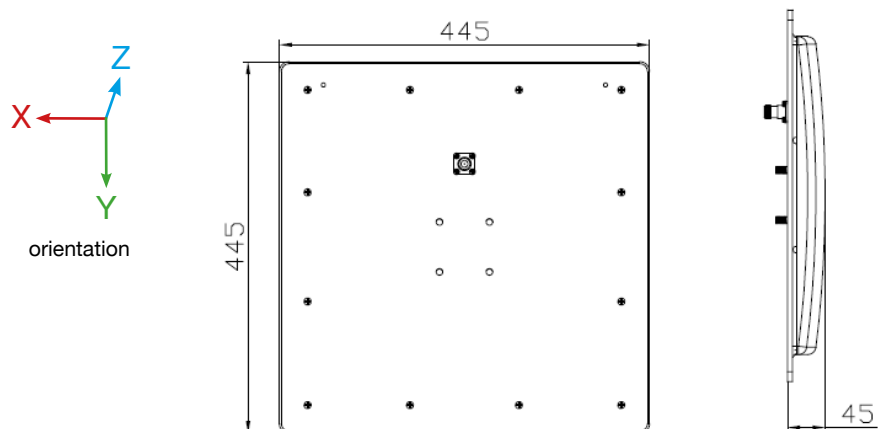
Impedance:	50 Ohm
Polarization:	Vertical / Horizontal
Max Input Power:	100 W
Ground plane independent:	Yes

### Environmental Specifications

Operating Temperature range:	-45 to +75 °C
Storage Temperature range:	-50 to +75 °C

### Mechanical Specifications

Dimensions:	445 x 445 x 45 mm
Weight:	3.2 Kg
Connector:	N Female, Long Neck
Mounting method:	Pole mount
Housing materials:	ASA plastic

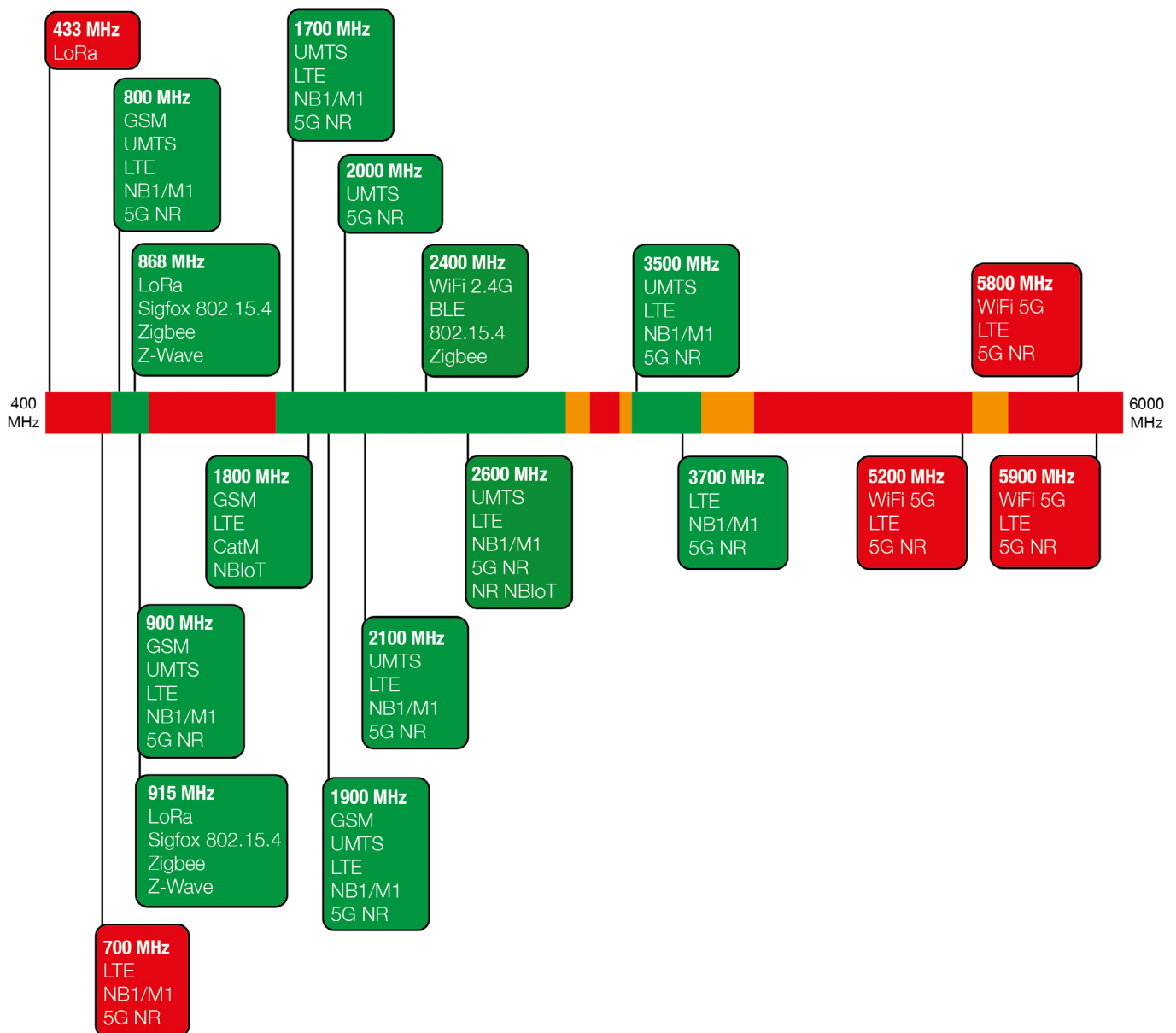




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### Spectrum Coverage



● 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)

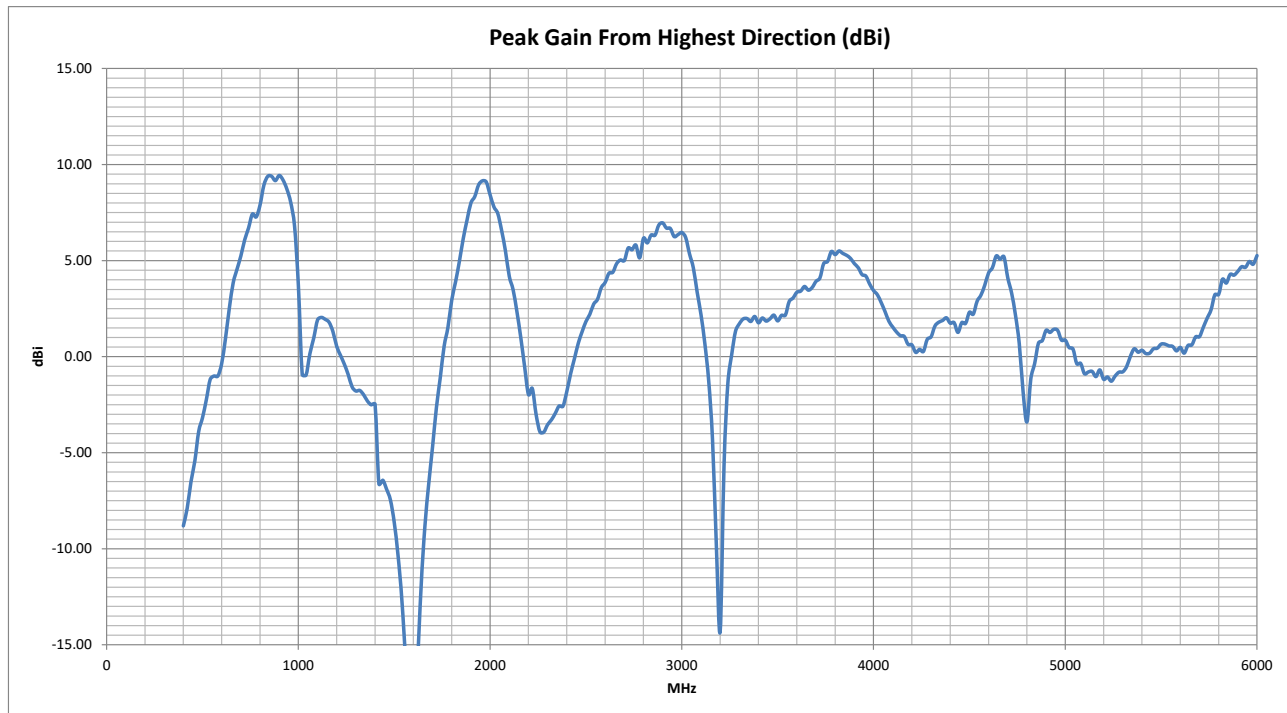
	433	868	915	2450	5800
Bluetooth				●	
IEEE 802.15.4		●	●	●	
LoRa		●	●		
Sigfox		●	●		
WiFi 2.4G				●	
WiFi 5G					
Zigbee		●	●	●	
Z-Wave		●	●		



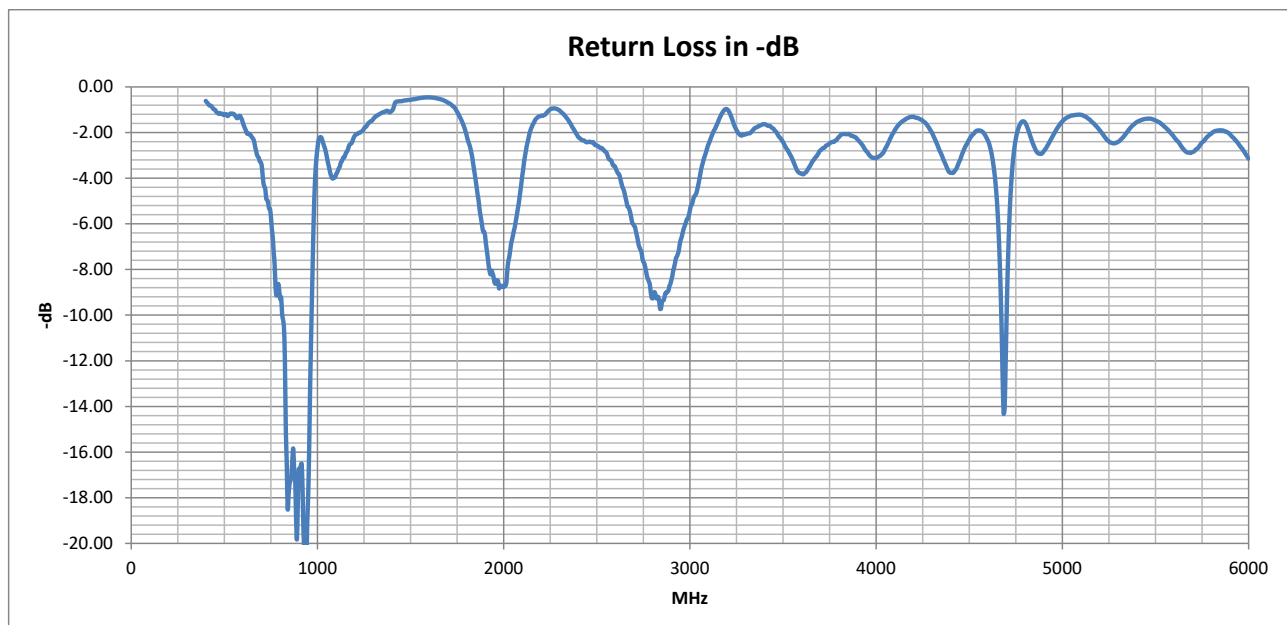
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### Peak Gain vs. Frequency



### Return Loss

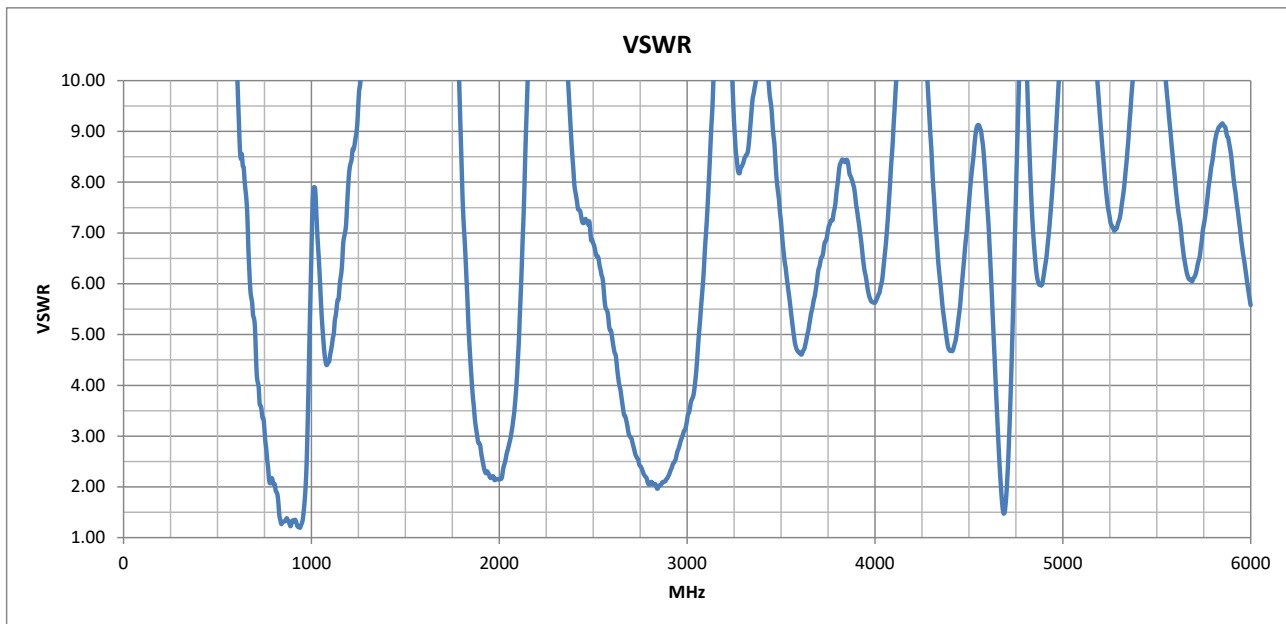




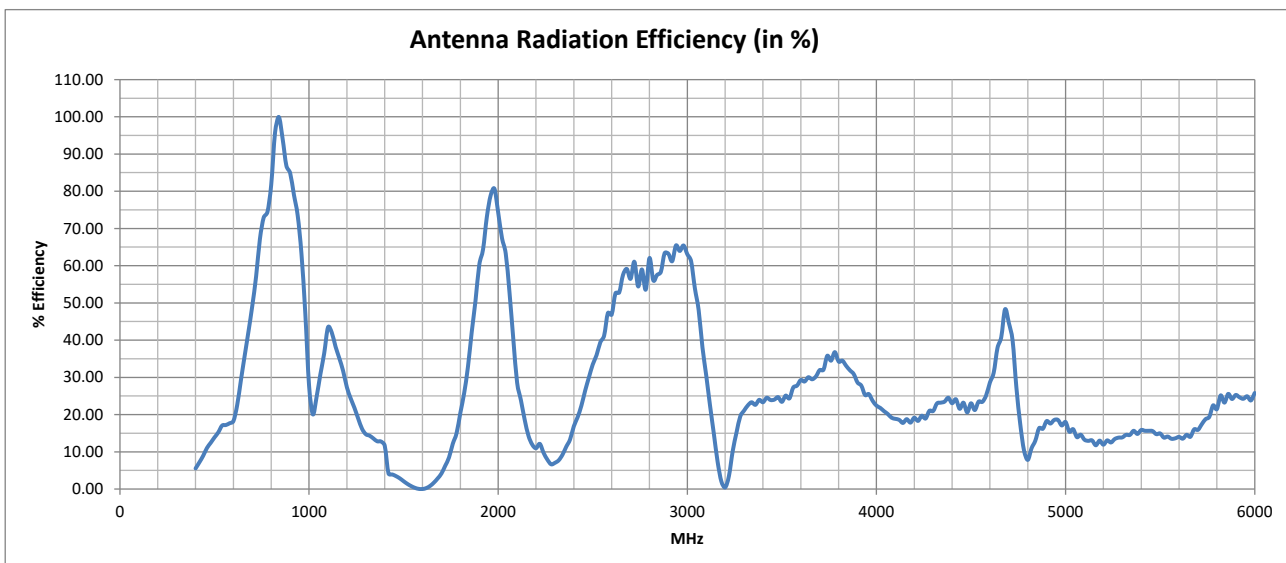
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### VSWR



### Radiation Efficiency





## Oscar 68

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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	65.21	98.15	3.50	1.99	●
PCS-1900	2	2	2	2	n2	n2	1850 - 1910 MHz	1930 - 1990 MHz	58.68	67.37	3.87	3.42	●
DCS-1800	3	3	3	3	n3	n3	1710 - 1785 MHz	1805 - 1880 MHz	59.71	56.82	4.00	4.21	●
	4	4	4	4			1710 - 1755 MHz	2110 - 2155 MHz	61.29	97.68	4.00	1.99	●
GSM-850	5	5	5	5	n5	n5	824 - 849 MHz	869 - 894 MHz	96.62	107.73	3.66	1.38	●
	6						830 - 840 MHz	875 - 885 MHz	96.28	107.27	3.30	1.38	●
	7	7	7	7	n7	n7	2500 - 2570 MHz	2620 - 2690 MHz	75.30	89.88	2.77	2.61	●
E-GSM-900	8	8	8	8	n8	n8	880 - 915 MHz	925 - 960 MHz	107.20	88.64	1.38	1.80	●
	9	9					1749.9 - 1784.9 MHz	1844.9 - 1879.9 MHz	57.64	57.91	4.00	3.87	●
	10	10					1710 - 1770 MHz	2110 - 2170 MHz	60.71	98.15	4.00	1.99	●
	11	11	11	11			1427.9 - 1447.9 MHz	1475.9 - 1495.9 MHz	23.88	32.78	13.81	9.49	●
	12	12	12	12	n12	n12	699 - 716 MHz	729 - 746 MHz	10.01	10.97	32.33	31.26	●
	13	13	13	13	n13	n13	777 - 787 MHz	746 - 756 MHz	25.46	13.29	14.93	27.61	●
	14	14	14	14	n14		788 - 798 MHz	758 - 768 MHz	34.44	16.45	12.64	21.88	●
		17		17			704 - 716 MHz	734 - 746 MHz	9.89	11.23	32.33	31.26	●
		18	18	18	n18	n18	815 - 830 MHz	860 - 875 MHz	76.40	109.41	5.09	1.42	●
	19	19	19	19			830 - 845 MHz	875 - 890 MHz	99.20	107.37	3.30	1.38	●
	20	20	20	20	n20	n20	832 - 862 MHz	791 - 821 MHz	105.18	50.98	3.26	11.90	●
	21	21	21	21			1447.9 - 1462.9 MHz	1495.9 - 1510.9 MHz	26.11	37.27	12.92	7.71	●
	22	22					3410 - 3490 MHz	3510 - 3590 MHz	57.91	63.07	4.43	3.19	●
		24	24	24	n24		1626.5 - 1660.5 MHz	1525 - 1559 MHz	73.21	49.83	2.65	5.44	●
	25	25	25	25	n25	n25	1850 - 1915 MHz	1930 - 1995 MHz	58.72	67.82	3.87	3.42	●
	26	26	26	26	n26		814 - 849 MHz	859 - 894 MHz	89.25	108.41	5.25	1.48	●
		27	27				807 - 824 MHz	852 - 869 MHz	65.20	109.80	6.68	1.92	●
		28	28	28	n28	n28	703 - 748 MHz	758 - 803 MHz	10.37	26.32	32.33	21.88	●

● 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	9.87	21.10	32.33	21.88	●
		29			n29		N/A	717 - 728 MHz	N/A	9.68	N/A	32.27	●
		30			n30		2305 - 2315 MHz	2350 - 2360 MHz	92.15	94.30	1.82	1.57	●
		31	31	31			452.5 - 457.5 MHz	462.5 - 467.5 MHz	1.16	1.13	217.58	221.82	●
	32	32					N/A	1452 - 1496 MHz	N/A	30.04	N/A	12.43	●
		33					1900 - 1920 MHz	1900 - 1920 MHz	59.30	59.30	3.64	3.64	●
		34			n34		2010 - 2025 MHz	2010 - 2025 MHz	77.04	77.04	2.77	2.77	●
		35					1850 - 1910 MHz	1850 - 1910 MHz	58.68	58.68	3.87	3.87	●
		36					1930 - 1990 MHz	1930 - 1990 MHz	67.37	67.37	3.42	3.42	●
		37					1910 - 1930 MHz	1910 - 1930 MHz	59.29	59.29	3.57	3.57	●
		38			n38		2570 - 2620 MHz	2570 - 2620 MHz	77.34	77.34	2.81	2.81	●
		39	39		n39		1880 - 1920 MHz	1880 - 1920 MHz	59.23	59.23	3.70	3.70	●
		40	40		n40		2300 - 2400 MHz	2300 - 2400 MHz	93.27	93.27	1.83	1.83	●
		41	41	41	n41	n41	2496 - 2690 MHz	2496 - 2690 MHz	81.22	81.22	2.81	2.81	●
		42	42	42			3400 - 3600 MHz	3400 - 3600 MHz	60.21	60.21	4.75	4.75	●
		43	43	43			3600 - 3800 MHz	3600 - 3800 MHz	61.65	61.65	3.49	3.49	●
		44					703 - 803 MHz	703 - 803 MHz	17.88	17.88	32.33	32.33	●
		45					1447 - 1467 MHz	1447 - 1467 MHz	26.41	26.41	13.02	13.02	●
		46			n46		5150 - 5925 MHz	5150 - 5925 MHz	42.43	42.43	9.13	9.13	●
		47			n47		5855 - 5925 MHz	5855 - 5925 MHz	41.81	41.81	9.13	9.13	●
		48			n48		3550 - 3700 MHz	3550 - 3700 MHz	64.60	64.60	3.27	3.27	●
		49					3550 - 3700 MHz	3550 - 3700 MHz	64.60	64.60	3.27	3.27	●
		50			n50		1432 - 1517 MHz	1432 - 1517 MHz	30.72	30.72	13.63	13.63	●
		51			n51		1427 - 1432 MHz	1427 - 1432 MHz	22.91	22.91	13.87	13.87	●
		52					3300 - 3400 MHz	3300 - 3400 MHz	48.32	48.32	6.03	6.03	●

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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	82.27	82.27	2.06	2.06	●
		65		65	n65	n65	1920 - 2010 MHz	2110 - 2200 MHz	68.01	96.87	3.50	1.99	●
		66	66	66	n66	n66	1710 - 1780 MHz	2110 - 2200 MHz	60.04	96.87	4.00	1.99	●
		67			n67		N/A	738 - 758 MHz	N/A	12.69	N/A	30.58	●
		68					698 - 728 MHz	753 - 783 MHz	9.89	18.77	32.33	24.41	●
		69					N/A	2570 - 2620 MHz	N/A	77.34	N/A	2.81	●
		70		70	n70	n70	1695 - 1710 MHz	1995 - 2020 MHz	66.40	75.24	3.29	2.89	●
		71	71	71	n71		663 - 698 MHz	617 - 652 MHz	14.59	7.41	28.09	53.39	●
		72	72	72			451 - 456 MHz	461 - 466 MHz	1.16	1.14	217.23	221.82	●
		73	73	73			450 - 455 MHz	460 - 465 MHz	1.17	1.14	217.50	221.82	●
		74	74	74	n74		1427 - 1470 MHz	1475 - 1518 MHz	25.34	35.57	13.87	9.60	●
		75			n75		N/A	1432 - 1517 MHz	N/A	30.72	N/A	13.63	●
		76			n76		N/A	1427 - 1432 MHz	N/A	22.91	N/A	13.87	●
					n77		3300 - 4200 MHz	3300 - 4200 MHz	55.48	55.48	6.54	6.54	●
					n78		3300 - 3800 MHz	3300 - 3800 MHz	58.41	58.41	6.03	6.03	●
					n79		4400 - 5000 MHz	4400 - 5000 MHz	43.86	43.86	9.41	9.41	●
					n80		1710 - 1785 MHz	N/A	59.71	N/A	4.00	N/A	●
					n81		880 - 915 MHz	N/A	107.20	N/A	1.38	N/A	●
					n82		832 - 862 MHz	N/A	105.18	N/A	3.26	N/A	●
					n83		703 - 748 MHz	N/A	10.37	N/A	32.33	N/A	●
					n84		1920 - 1980 MHz	N/A	65.21	N/A	3.50	N/A	●
		85	85	85	n85		698 - 716 MHz	728 - 746 MHz	10.04	10.92	32.33	31.26	●
					n86		1710 - 1780 MHz	N/A	60.04	N/A	4.00	N/A	●
		87	87	87			410 - 415 MHz	420 - 425 MHz	1.35	1.24	139.89	156.15	●
		88	88	88			412 - 417 MHz	422 - 427 MHz	1.32	1.24	141.47	166.59	●

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● Adequate band in good signal conditions

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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	96.62	N/A	3.66	N/A	●
					n90	n90	2496 - 2690 MHz	2496 - 2690 MHz	81.22	81.22	2.81	2.81	●
					n91		832 - 862 MHz	1427 - 1432 MHz	105.18	22.91	3.26	13.87	●
					n92		832 - 862 MHz	1432 - 1517 MHz	105.18	30.72	3.26	13.63	●
					n93		880 - 915 MHz	1427 - 1432 MHz	107.20	22.91	1.38	13.87	●
					n94		880 - 915 MHz	1432 - 1517 MHz	107.20	30.72	1.38	13.63	●
					n95		2010 - 2025 MHz	N/A	77.04	N/A	2.77	N/A	●
					n97		2300 - 2400 MHz	N/A	93.27	N/A	1.83	N/A	●
					n98		1880 - 1920 MHz	N/A	59.23	N/A	3.70	N/A	●
					n99		1626.5 - 1660.5 MHz	N/A	73.21	N/A	2.65	N/A	●
					n101		1900 - 1910 MHz	1900 - 1910 MHz	59.64	59.64	3.64	3.64	●
				103			787 - 788 MHz	757 - 758 MHz	29.85	14.62	12.79	22.43	●

● 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	1.20	186.23	-16.818	●
IMT 868 MHz	863 - 870 MHz	109.61	1.26	13.09	●
ISM 915 MHz	902 - 928 MHz	103.98	1.59	13.552	●
ISM 2.4 GHz	2400 - 2500 MHz	87.17	2.08	7.91	●
WiFi 2.4G	2401 - 2483 MHz	88.11	1.95	7.874	●
WiFi 2.4G (USA)	2401 - 2473 MHz	88.79	1.86	7.874	●
WiFi 2.4G (Japan)	2401 - 2495 MHz	87.37	2.06	7.874	●
WiFi 5G (all channels)	5150 - 5990 MHz	42.34	9.14	4.62	●
WiFi 5G (Ch 32-48)	5150 - 5250 MHz	44.80	5.67	4.31	●
WiFi 5G (Ch 32-64)	5150 - 5330 MHz	44.94	5.67	4.31	●
WiFi 5G (Ch 32-161)	5150 - 5815 MHz	42.52	8.84	4.5	●
WiFi 5G (Ch 32-173)	5150 - 5875 MHz	42.49	8.90	4.62	●
ISM 5.8 GHz	5725 - 5875 MHz	41.71	8.90	4.62	●

● Suitable band

● Adequate band in good signal conditions

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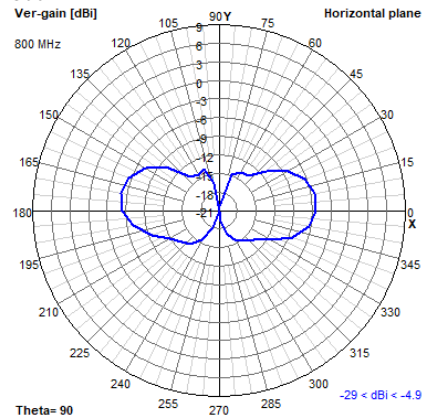
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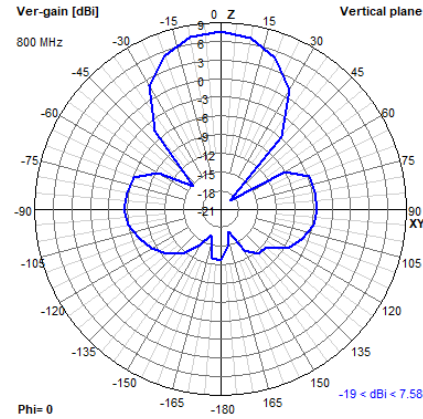
High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz

### 2D Radiation Plots

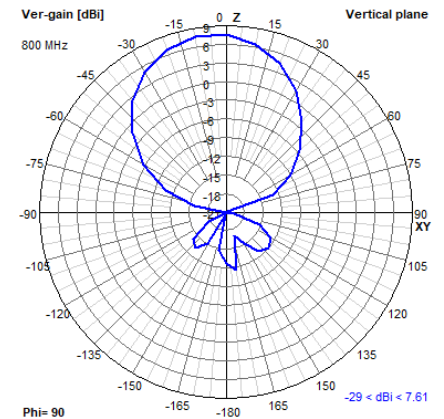
#### 800 MHz XY



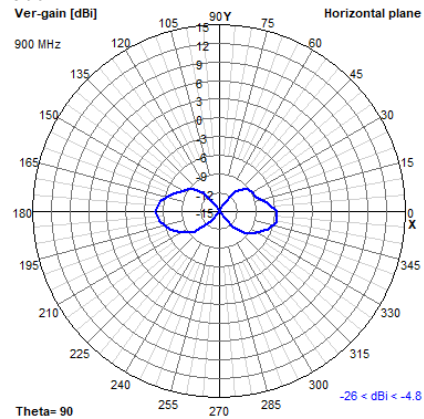
#### XZ



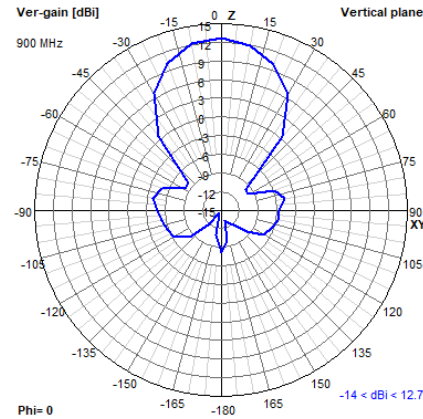
#### YZ



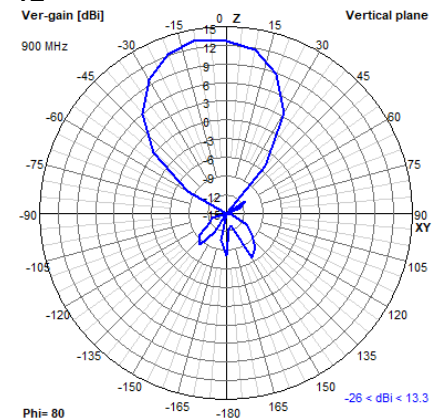
#### 900 MHz XY



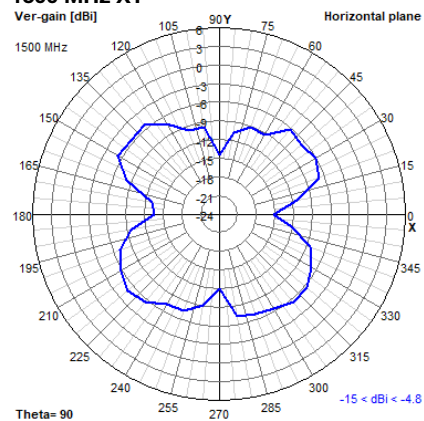
#### XZ



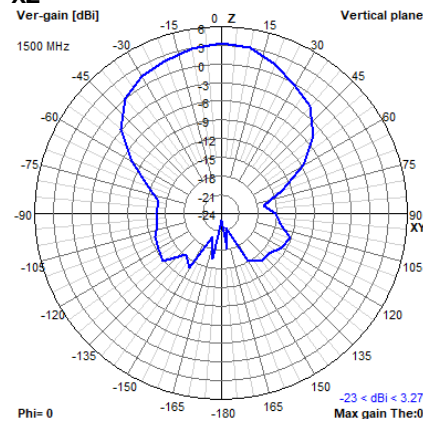
#### YZ



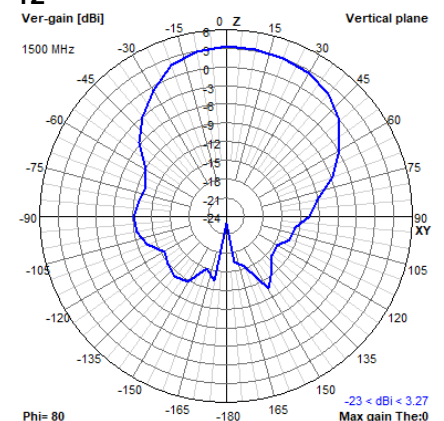
#### 1500 MHz XY



#### XZ



#### YZ

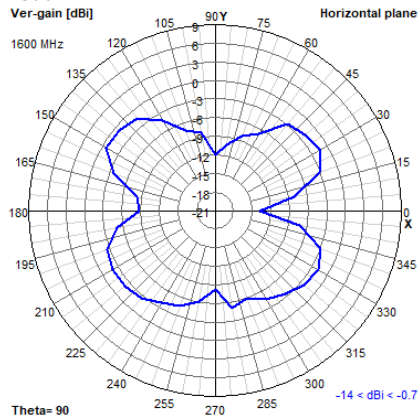


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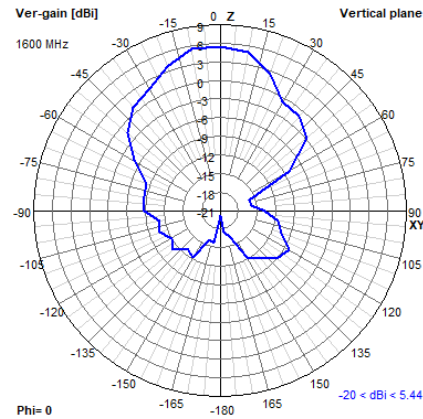
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### 2D Radiation Plots

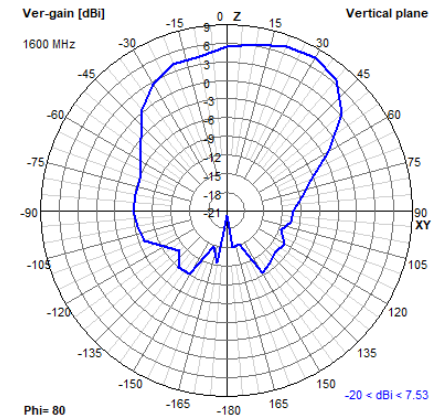
#### 1600 MHz XY



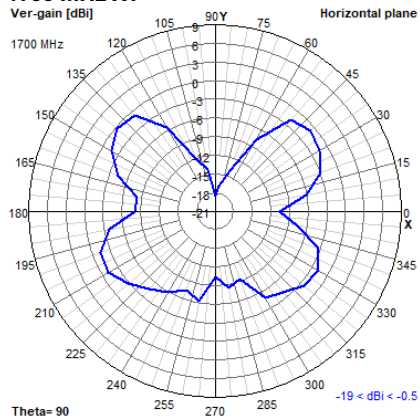
#### XZ



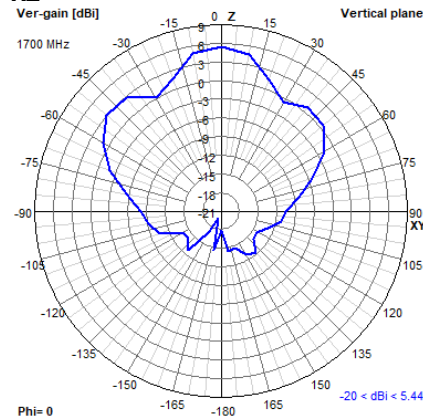
#### YZ



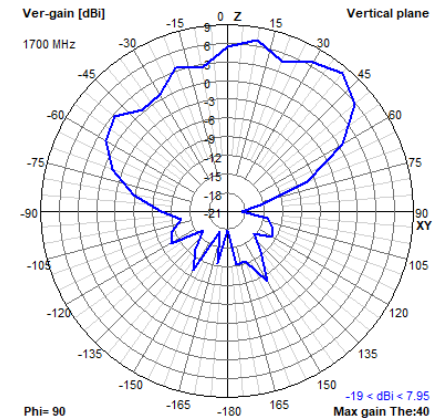
#### 1700 MHz XY



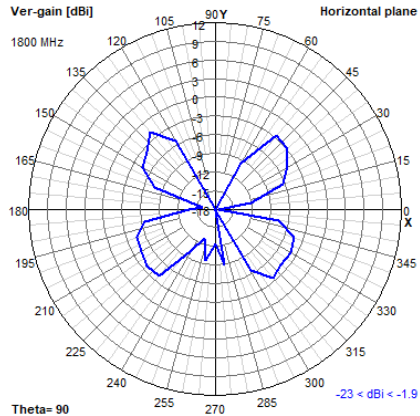
#### XZ



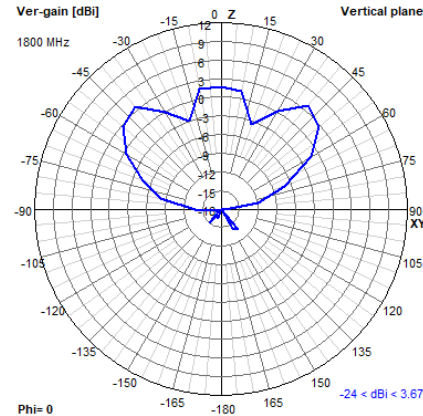
#### YZ



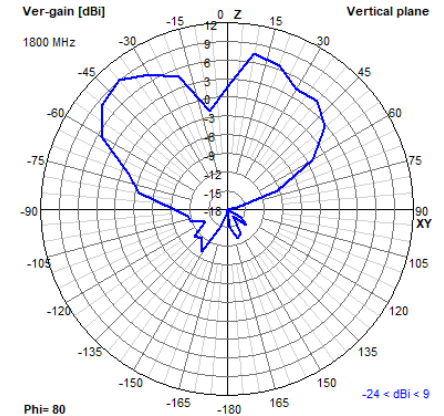
#### 1800 MHz XY



#### XZ



#### YZ



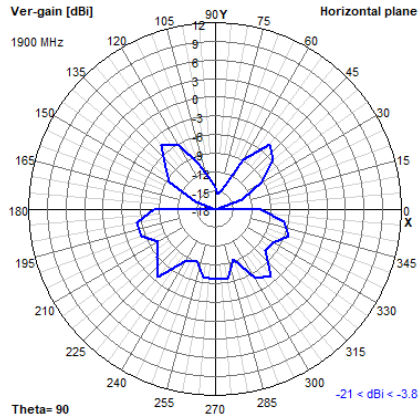


## Oscar 68

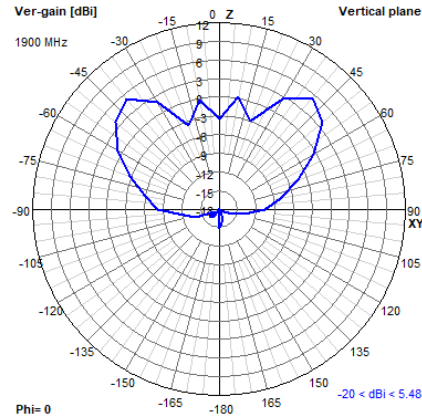
High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz

### 2D Radiation Plots

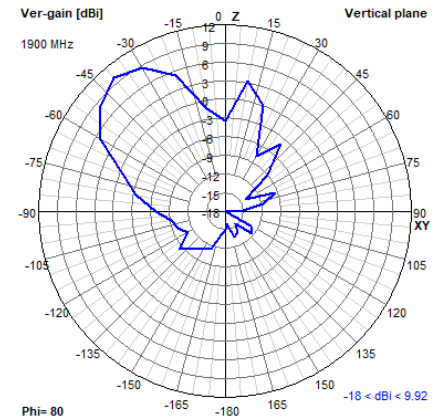
#### 1900 MHz XY



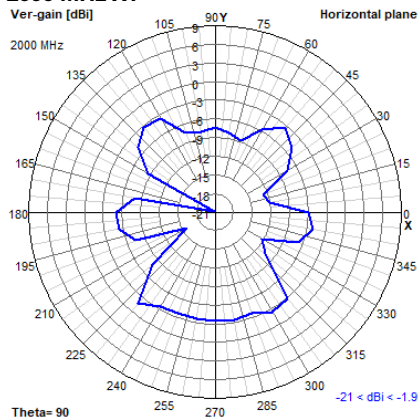
#### XZ



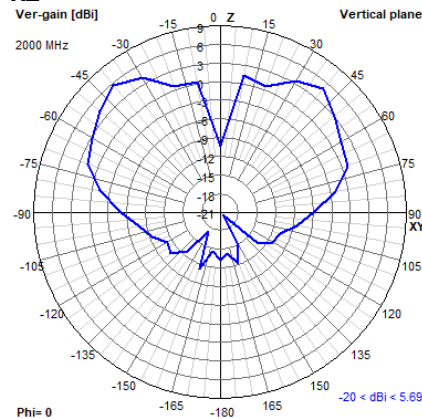
#### YZ



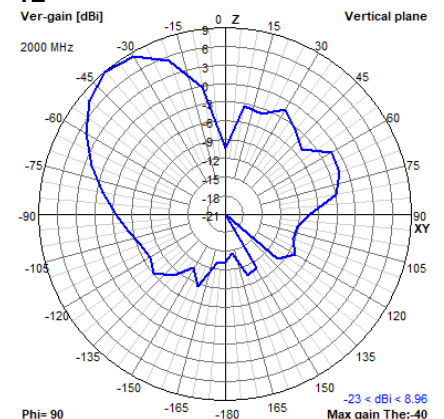
#### 2000 MHz XY



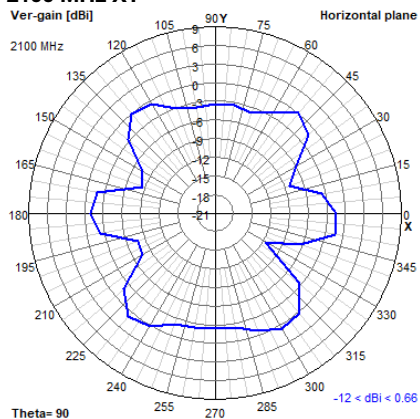
#### XZ



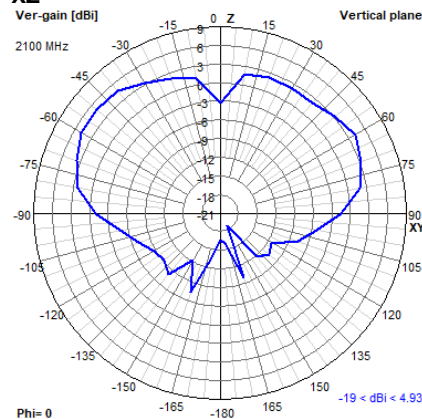
#### YZ



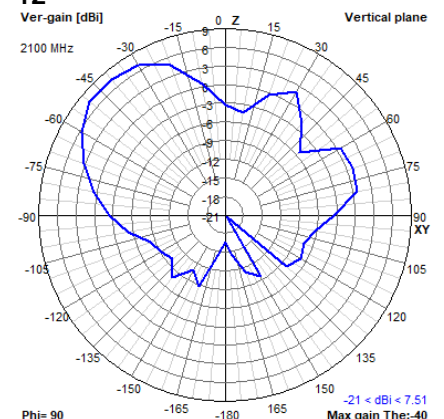
#### 2100 MHz XY



#### XZ



#### YZ



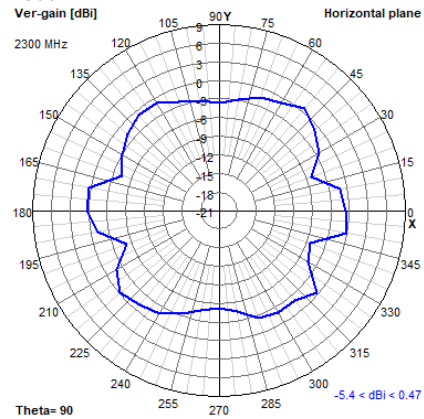


## Oscar 68

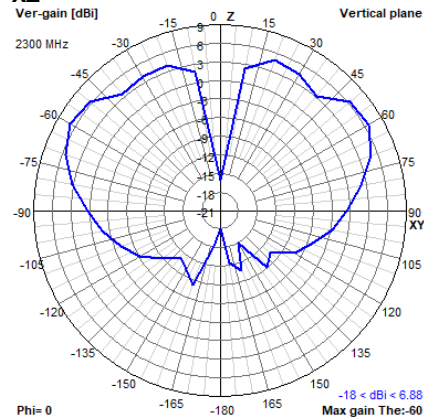
High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz

### 2D Radiation Plots

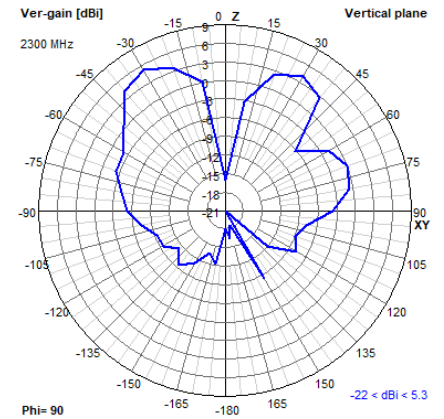
#### 2300 MHz XY



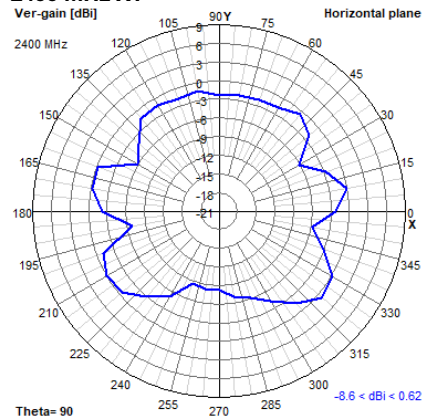
#### XZ



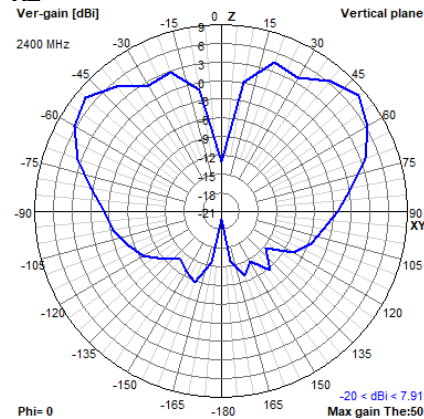
#### YZ



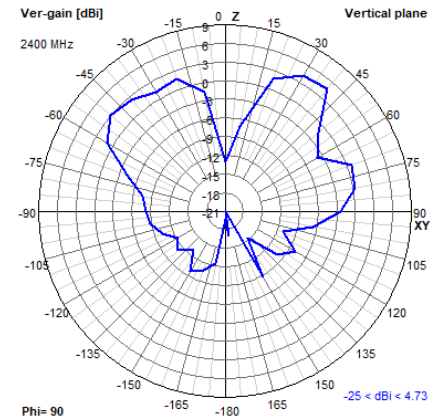
#### 2400 MHz XY



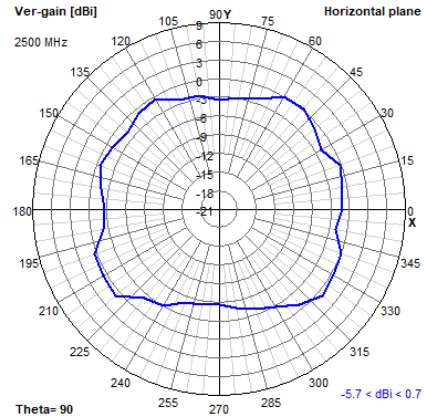
#### XZ



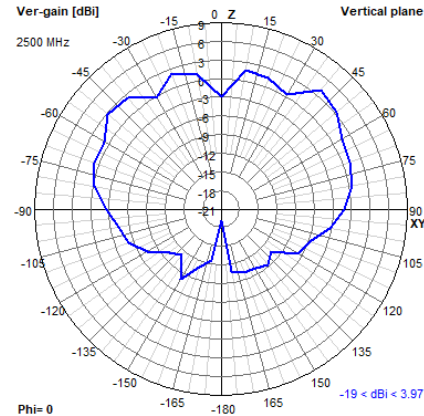
#### YZ



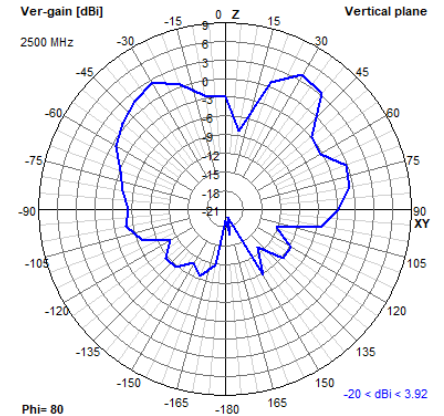
#### 2500 MHz XY



#### XZ



#### YZ

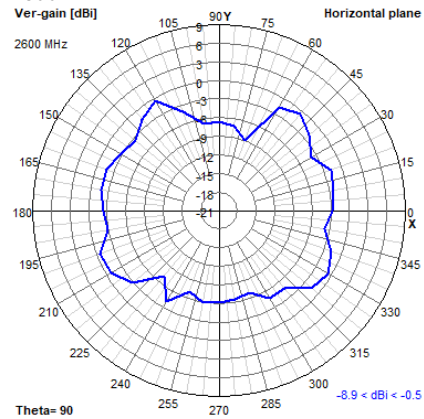


## Oscar 68

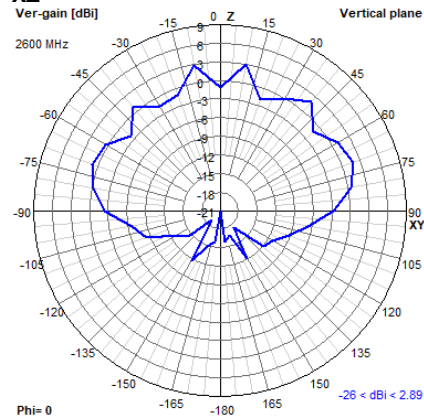
High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz

### 2D Radiation Plots

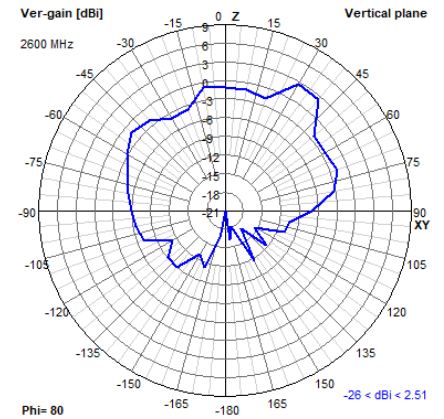
#### 2600 MHz XY



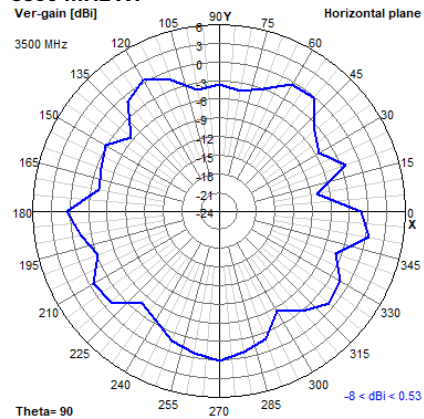
#### XZ



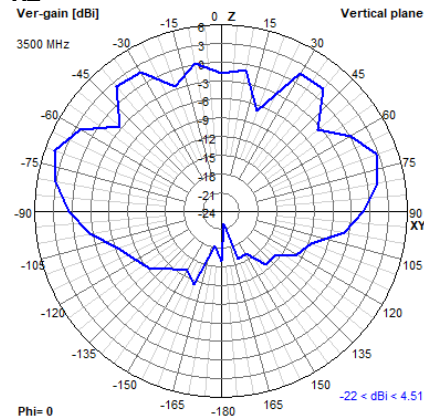
#### YZ



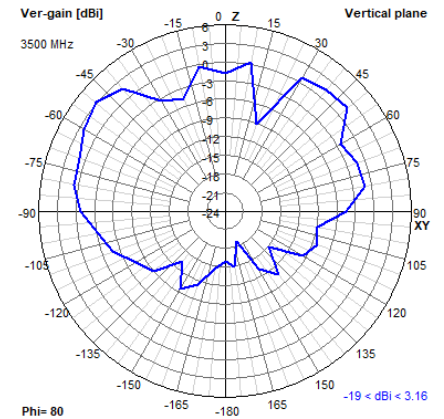
#### 3500 MHz XY



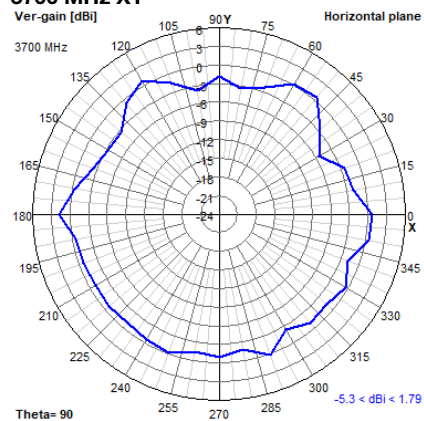
#### XZ



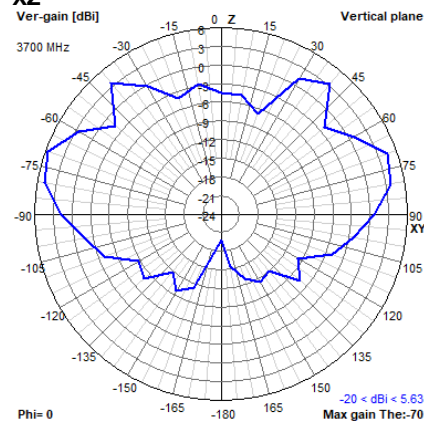
#### YZ



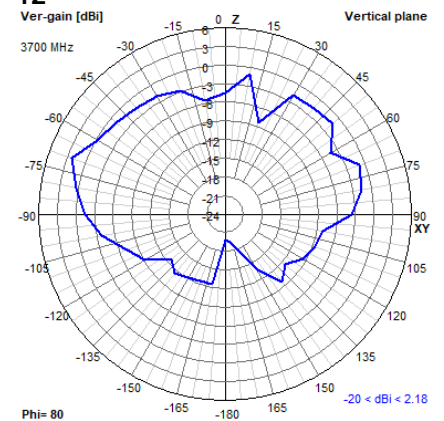
#### 3700 MHz XY



#### XZ



#### YZ





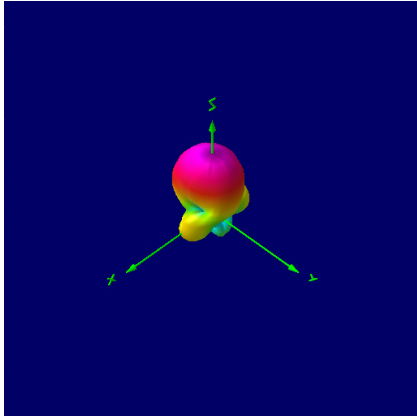


## Oscar 68

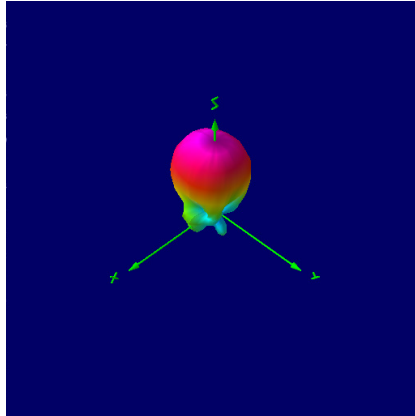
High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz

### 3D Radiation Plots

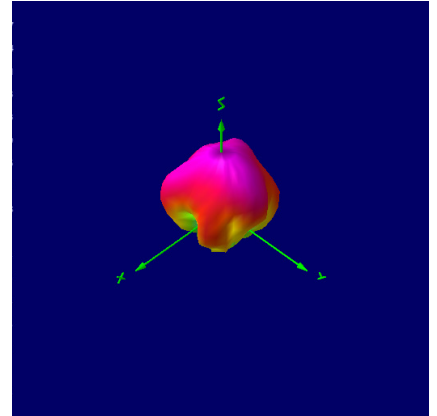
800 MHz



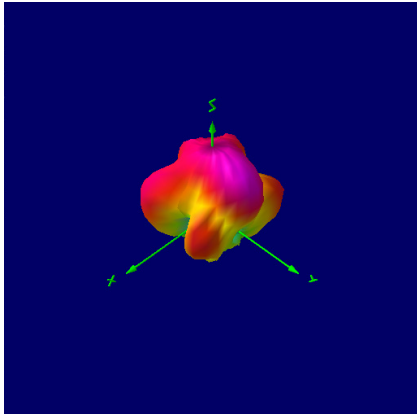
900 MHz



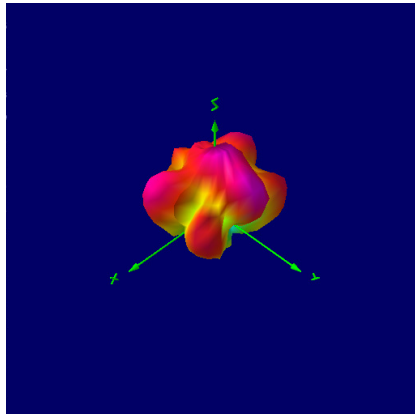
1500 MHz



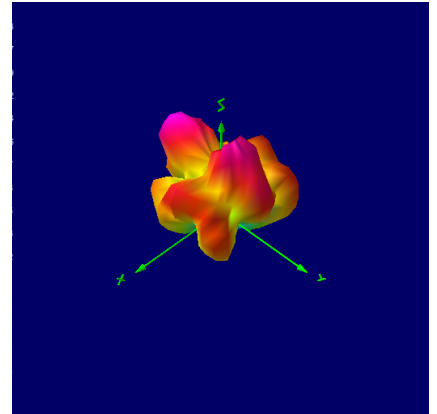
1600 MHz



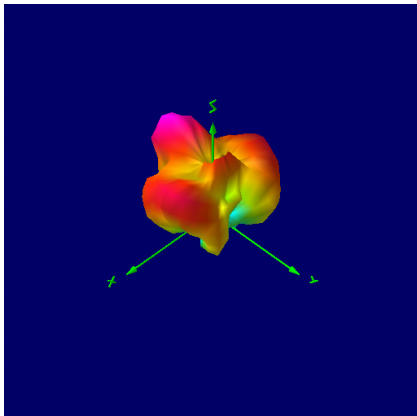
1700 MHz



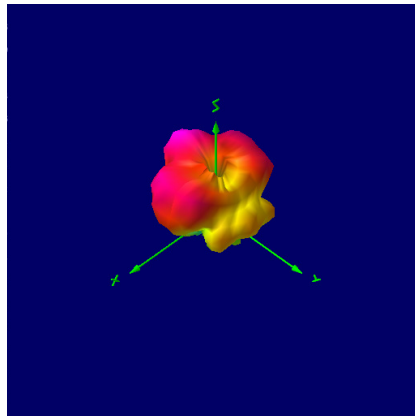
1800 MHz



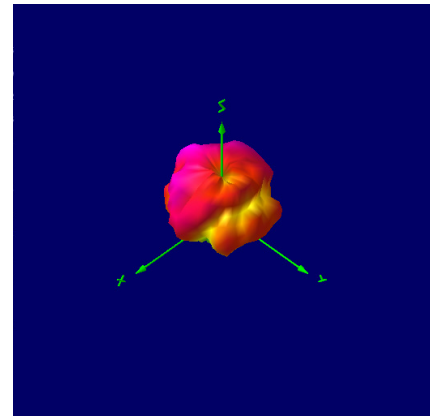
1900 MHz



2000 MHz



2100 MHz



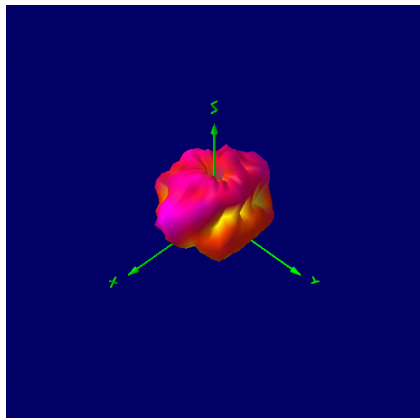


## Oscar 68

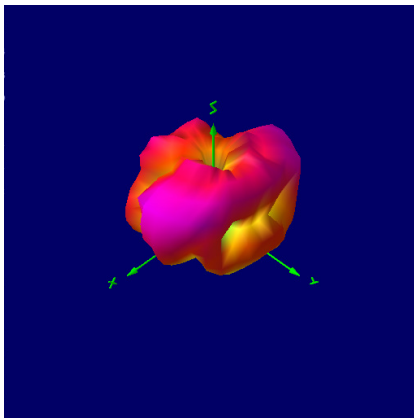
High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz

### 3D Radiation Plots

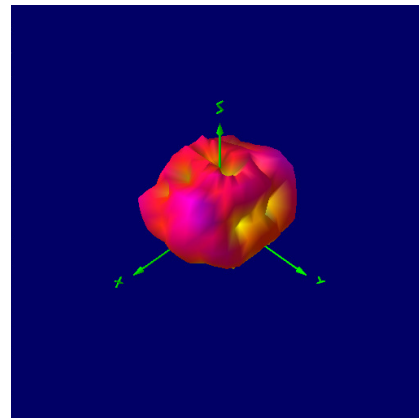
2300 MHz



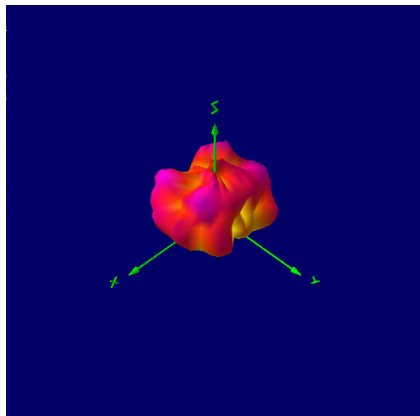
2400 MHz



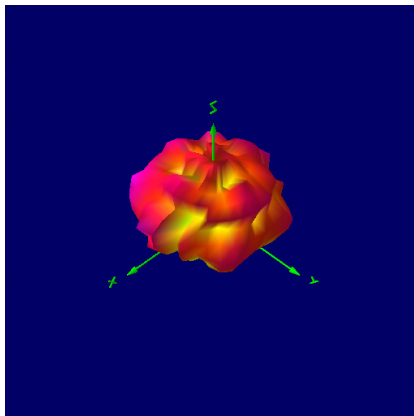
2500 MHz



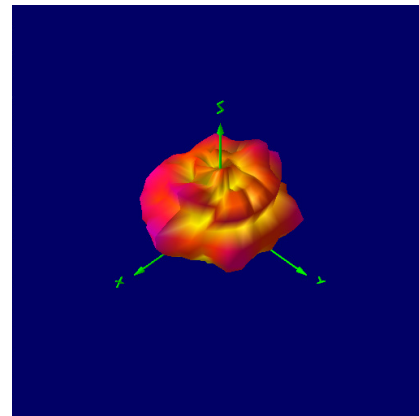
2600 MHz



3500 MHz



3700 MHz



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

### Ordering Details:

Part Number	Description
OSCAR68/X/NTYPEF/33	High Gain 13 dBi Directional ISM Outdoor Panel Antenna for 868/915/2450 MHz with N-TYPE Female connector
ASMR600A058L13	N-TYPE(M) TO SMA(M) 6M LOW LOSS (SLL200) CABLE ASSEMBLY
ASMR1000A058L13	N-TYPE(M) TO SMA(M) 10M LOW LOSS (SLL200) CABLE ASSEMBLY
ASMR1500A058L13	N-TYPE(M) TO SMA(M) 15M LOW LOSS (SLL200) CABLE ASSEMBLY
ASMR2000A058L13	N-TYPE(M) TO SMA(M) 20M LOW LOSS (SLL200) CABLE ASSEMBLY