

# Cobham Antenna Systems

# COBHAM

Microwave Antennas

Specialist Antenna Design and Manufacture

Commercial Antennas for WiMAX, LTE, WLAN & WiFi

The most important thing we build is trust



Robust base stations for all weathers



Sector or omni coverage



Base stations  
2.3 to 2.7 GHz  
3.3 to 3.8 GHz  
4.9 to 5.9 GHz



WiMAX  
LTE



## VECTOR Antennas

2GHz, 3GHz and 5GHz



The VECTOR range of antennas meets demanding RF and environmental specifications required for the WiMAX, LTE, WLAN and WiFi markets, offering flexible antenna solutions across a range of frequency bands.

The Cobham Antenna Systems engineering team, which is responsible for the design of rugged specification military antennas, has used

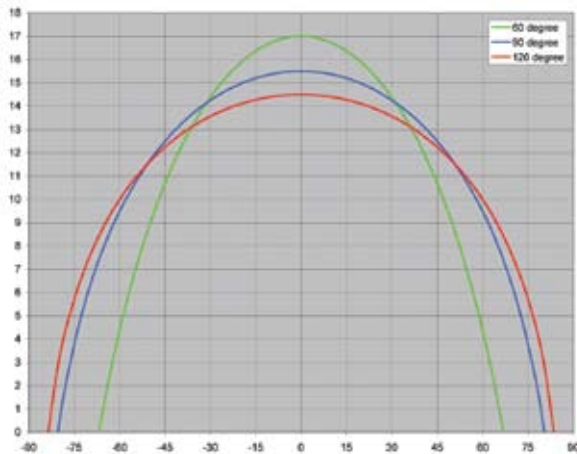
their skills to develop and extend this range of good value commercial antennas without compromising build or performance standards.

The VECTOR range consists of sector antennas (60°, 90° and 120° azimuth coverage), high gain directional flat panel antennas and omni antennas (2 to 11dBi gain).

All antennas are available with vertical polarisation, however base station sector antennas can also be supplied with horizontal, dual polar or dual slant  $\pm 45^\circ$  polarisation. In addition to this growing range of standard

products, VECTOR antennas may also be developed for integrated customer solutions.

Each antenna is rigorously measured during the design process to ensure that international standards for antenna radiation patterns are met. They are 100% tested during manufacture to ensure that they match quoted specification and customers' requirements.



Comparison of azimuth patterns for sector antennas

### VECTOR Antenna Series - Specification

Flat Panel	Omni-directional	Base Station Sector
2.3 to 2.7GHz	2.3 to 2.7GHz	2.3 to 2.7GHz
4.9 to 5.9GHz	3.3 to 3.8GHz	3.3 to 3.8GHz
Gain: up to 23dBi	4.9 to 5.9GHz	4.9 to 5.9GHz
Polarisation: Vertical or Horizontal, Dual Polar, Dual Slant	Gain: up to 11dBi	Gain: up to 19dBi
	Polarisation: Vertical	Polarisation: Vertical or Horizontal, Dual Polar, Dual Slant



### Quality and Value

- Dual slant options for more reliable coverage in metropolitan areas.
- LTE compatible, future proofing communication systems
- Null fill options available to provide better close-in coverage, essential in busy metropolitan area.
- Robust, light weight, discreet appearance
- 2-year product warranty
- High specification meets quoted pattern data
- Easy 'out of box' implementation
- Minimum environmental impact
- Available with optional adjustable steel mounting kit that ensures the antenna is mounted correctly and permanently

Antenna	Reference	Frequency GHz	Gain dBi	Beamwidth az' el'		Polarisation	Dimensions mm	Additional Notes
<b>2GHz range</b>								
60° Sector	SA15-60-2.5DS/9216	2.40 - 2.70	15.5	60	10	Dual slant	650x200x101	
60° Sector	SA17-60-2.5V/9213	2.30 - 2.70	17	64	8	Vertical	1100x200x101	
60° Sector	SA17-60-2.5DS/9218	2.40 - 2.70	17	60	6	Dual slant	1100x200x101	
60° Sector	SA16-60-2.5V/9201	2.40 - 2.70	16	60	10	Vertical	725x103x10	
90° Sector	SA15-90-2.5V/9214	2.30 - 2.70	15.5	90	8	Vertical	1100x200x101	2° down tilt
90° Sector	SA16-90-2.5V/9215	2.30 - 2.70	16	90	7	Vertical	1100x200x101	
90° Sector	SA14-90-2.5DS/9217	2.40 - 2.70	14	90	10	Dual slant	650x200x101	
90° Sector	SA15-90-2.5V/9202	2.40 - 2.70	15	90	10	Vertical	725x103x10	
90° Sector	SA16-90-2.5DS/9219	2.40 - 2.70	16	90	6	Dual slant	1100x200x101	
120° Sector	SA15-120-2.5V/9203	2.30 - 2.70	15.4	120	8	Vertical	1100x200x101	
Omni	OA4-2.3V/9211	2.20 - 2.40	4	360	42	Vertical	325x37 Ø	
Omni	OA4-2.5V/9205	2.40 - 2.70	4.5	360	42	Vertical	290x36 Ø	
Omni	OA7-2.3V/9212	2.20 - 2.40	7	360	21	Vertical	560x37 Ø	
Omni	OA7-2.5V/9206	2.40 - 2.70	7.4	360	21	Vertical	504x36 Ø	
Omni	OA9-2.5V/9207	2.40 - 2.50	10	360	10	Vertical	905x57 Ø	
Flat Panel	FPA9-2.4V/9210	2.30 - 2.50	8.8	67	60	Vertical	22x132 Ø	
Flat Panel	FPA14-2.5V/9208	2.40 - 2.70	13.5	37	37	Vertical	240x240x29	
Flat Panel	FPA19-2.5V/9209	2.40 - 2.70	19	17.5	17.5	Vertical	430x430x29	
<b>3GHz range</b>								
60° Sector	SA16-60-3.5H/9315	3.30 - 3.80	16.7	60	8	Horizontal	650x200x100	
60° Sector	SA17-60-3.5V/9330	3.40 - 3.60	17	60	8	Vertical	650x200x101	1st null fill, side lobe suppression
60° Sector	SA17-60/3.7V/9333	3.60 - 3.80	17	60	7.5	Vertical	650x200x101	1st null fill, side lobe suppression
65° Sector	SA17-60-3.5DS/9319	3.30 - 3.72	17.2	65	9	Dual slant	650x200x101	
60° Sector	SA17-60-3.5V/9301	3.30 - 3.80	17.5	60	8	Vertical	650x200x100	
60° Sector	SA19-60-3.5V/9314	3.30 - 3.80	19	60	5	Vertical	1100x200x101	1st null fill, side lobe suppression 2° down tilt
90° Sector	SA15-90-3.5H/9316	3.40 - 3.80	14.7	90	8	Horizontal	650x200x100	
90° Sector	SA15-90-3.5V/9331	3.40 - 3.60	15	90	8	Vertical	650x200x101	1st null fill, side lobe suppression
90° Sector	SA17-90-3.5DS/9325	3.40 - 3.60	15	90	8.5	Dual slant	650x200x101	
90° Sector	SA15-90-3.5V/9312	3.30 - 3.80	15.4	90	8	Vertical	650x200x100	
90° Sector	SA15-90-3.7V/9334	3.60 - 3.80	15.4	90	8	Vertical	650x200x101	1st null fill, side lobe suppression
120° Sector	SA14-120-3.5H/9317	3.40 - 3.72	13.8	120	8	Horizontal	650x200x100	
120° Sector	SA14-120-3.5V/9332	3.40 - 3.50	14	120	8	Vertical	650x200x101	1st null fill, side lobe suppression
120° Sector	SA16-120-3.5V/9313	3.30 - 3.80	14.8	120	8	Vertical	650x200x100	
120° Sector	SA14-120-3.7V/9335	3.60 - 3.80	14.9	120	8	Vertical	650x200x101	1st null fill, side lobe suppression
120° Sector	SA15-120-3.5V/9304	3.30 - 3.80	16.8	120	5.5	Vertical	1100x200x100	1st null fill, side lobe suppression
Omni	OA4-3.5V/9322	3.40 - 3.60	4	360	42	Vertical	235x36 Ø	
Omni	OA7-3.5V/9321	3.30 - 3.80	7	360	20	Vertical	405x36 Ø	
Omni	OA10-3.7V/9324	3.60 - 3.80	9.5	360	9	Vertical	730x36 Ø	
Omni	OA10-3.4V/9323	3.30 - 3.50	10	360	9	Vertical	785x36 Ø	
Omni	OA10-3.5V/9320	3.40 - 3.60	10	360	9	Vertical	750x36 Ø	
Omni	OA11-HP-3.5V/9306	3.30 - 3.72	11	360	7	Vertical	907x95 Ø	High Performance, Broadband
Omni	OA11-HP-3.5V/9307	3.30 - 3.72	11	360	7	Vertical	907x95 Ø	High Performance, Broadband
Flat Panel	FPA16-3.5V/9309	3.30 - 3.80	17.5	23	23	Vertical	240x240x29	
Flat Panel	FPA19-3.5V/9310	3.40 - 3.72	19	8.5	8.5	Vertical	430x430x26	
Flat Panel	FPA25-3.5V/9339	3.30 - 3.80	24.5	8.2	8.3	Vertical	573x573x18	
CPE Antenna	SA11wimax/9318	3.30 - 3.80	11	120	12	Vertical	385x54x12	

Antenna	Reference	Frequency GHz	Gain dBi	Beamwidth az' el'		Polarisation	Dimensions mm	Additional Notes
<b>5GHz range</b>								
60° Sector	SA17-60-5.5V/9501	4.90 - 5.90	17.5	62	6.5	Vertical	650x200x100	
90° Sector	SA16-90-5.5V/9502	4.90 - 5.90	16.6	90	6.5	Vertical	650x200x101	
120° Sector	SA15-120-5.5V/9503	4.90 - 5.90	15	120	6.5	Vertical	650x200x101	
Omni	OA4-5.5V/9515	5.15 - 5.85	5	360	38	Vertical	136x14 Ø	
Omni	OA8-5.6V/9505	5.40 - 5.85	8.9	360	11	Vertical	332x26 Ø	
Omni	OA9-5.1V/9512	4.90 - 5.30	9.5	360	12	Vertical	360x26 Ø	
Flat Panel	FPA18-5.5VH/9516	5.15 - 5.85	18	18.5	18.5	Dual V&H	240x240x29	
Flat Panel	FPA19-5.5V/9506	5.15 - 5.85	19	17.5	15.5	Vertical	240x240x29	
Flat Panel	FPA18-5.8V/9510	5.725 - 5.875	18	20	20	Vertical	240x240x29	
Flat Panel	FPA23-5.8V/9511	5.725 - 5.875	23	8	8	Vertical	430x430x29	

For more information and a quotation, please advise the following information.

<b>Name*</b>	_____	<b>Azimuth HPBW (°)</b>	_____
<b>Company*</b>	_____	<b>Elevation HPBW (°)</b>	_____
<b>Email*</b>	_____	<b>VSWR (maximum)</b>	_____
<b>Telephone*</b>	_____	<b>Mounting requirements</b>	_____
<b>Country of origin*</b>	_____	<b>Cross Polar/Axial Ratio (dB)</b>	_____
<b>Date*</b>	_____	<b>Electrical tilt (°)</b>	_____
<b>Project *</b>	_____	<b>Radiation pattern envelope (Regulatory Compliance)</b>	_____
<b>Market* (please circle) Civil Security Military Satellite</b>	_____	<b>Front to back ratio (dB)</b>	_____
<b>Quantity*</b>	_____	<b>Interport isolation (dB)</b>	_____
<b>Time scale*</b>	_____	<b>Connector type/location</b>	_____
<b>Antenna type* (eg sector, directional, omni)</b>	_____	<b>Antenna environment</b>	_____
<b>Frequency range* (GHz)</b>	_____		
<b>Gain* (dBi/dBiC)</b>	_____		
<b>Polarisation* (*Essential data)</b>	_____		
<b>Constraints</b>	<b>Dimensions (mm)</b>	<b>Power rating (W) including cyclic loading</b>	<b>Mass (Kg)</b>
_____	_____	_____	_____

## New Product Design

We use our experience to continually produce new antennas to meet requirements and specifications demanded by the market. We also work with our customers to develop specific new antennas to provide them with a competitive edge. Our engineering team use software modelling tools such as CST and

Concerto together with their vast knowledge to create antennas which meet all of our customers' commercial and technical needs. The company's spherical anechoic test chamber is calibrated to international standards to ensure that all products meet the agreed performance.



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