

Cobham Antenna Systems

Microwave Antennas

COBHAM

Antennas for Unmanned Systems

Data Links, Control Links, Robotics

The most important thing we build is trust



Designed to the highest specification



Critical and efficient communications



Control links and robotics



Antennas used worldwide on all types of unmanned airborne vehicles and target drones



Unmanned Systems Data Links, Control Links, Robotics

Blade, Omni, Directional and Sector Antennas

Conformal
Antennas



Unmanned Vehicle Antennas

UVs provide many operational functions including airborne surveillance, video transmission, border patrol and tactical systems. In all cases uninterrupted communication to the control centre is vital.

As the demand for Unmanned Systems increases, so does the need for a wider range of antennas for payloads, data communications systems, command and control.

Competing performance and cost criteria are an important consideration when selecting an antenna. Cobham Antenna Systems (Microwave Antennas) has a range of standard cost-effective, entry-level, COTS antennas that are already used in extreme environments.

As frequencies increase from L-band to Ku-band to provide wider bandwidths to enable higher data rates, the selection of the right antenna is critical to ensure system performance, battery-life and transmission range.

- High gain collinear, vertically polarised, omni antennas are installed in aerodynamic foil structures
- Common Data Link (CDL) Ku-band omni antennas have circular polarisation and up to 4dBiC gain
- Spiral antennas for direction finding
- Directional antennas for communications between an airborne towed target and the towing aircraft
- Radar cross-section enhancement and radar detection
- Pattern data is available for all antennas

Aerodynamic, omni-directional blade antenna

SBA-900/1249
0.90 - 0.93 GHz



Blade for integration into wing of target drone

HDA-1275/1148
1.20 - 1.35 GHz



Ultra wideband antenna to Mil-Spec for helicopters

PSA0218L/1084
2.00 - 18.00 GHz



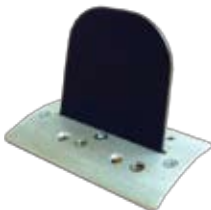
S-band aerodynamic, 5dBi omni-directional, vertically polarised blade antenna

VOA5-2350-ADT/1403
2.30 - 2.40 GHz



Blade antenna - Forward looking (180°) sector antenna mounted on airborne towed target for communication with towing aircraft.

HDA-2450-FRA/1225
2.40 - 2.428 GHz



Rugged omni antenna for robots

EVD2-1400-D1/1248
1.35 - 1.45 GHz



Robust, omni antenna

EVD2-2450-D2/631
2.35 - 2.55 GHz



Ku-band, Common Data Link circular polarised omni-directional antenna

RCO4-149/1447
14.40 - 15.35 GHz

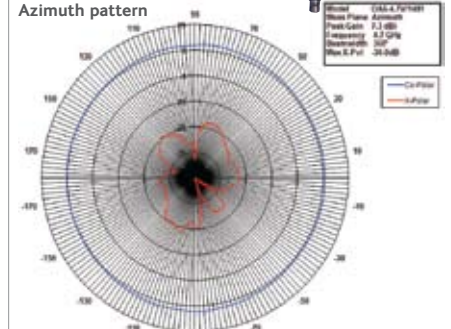


Heavy duty omni for C-band COFDM data link

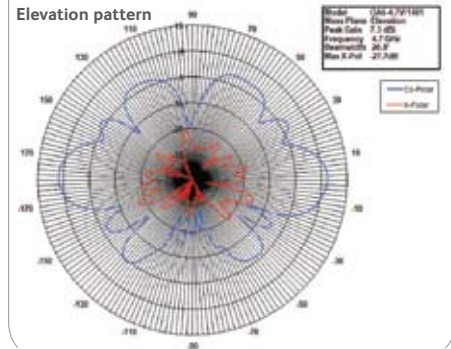
OA6-4.7V/1481
4.40 - 5.00 GHz



Azimuth pattern



Elevation pattern



Control and data links for robotics applications



Unmanned helicopter



Ground Control Centre Antennas

Cobham Antenna Systems (Microwave Antennas) provides antennas for both ends of the link between control centre and remote vehicle.

The ground based antenna usually provides the higher gain part of the link and can be a

medium to high gain omni, medium gain sector or a high gain directional antenna.

A directional antenna is likely to require a two-axis steering system which may be expensive to implement. A less complex but compact multi-sector antenna array provides intermediate range coverage for communicating with a UV.

This type of arrangement can be used for quick deployment, tactical applications.

Cobham Antenna Systems (Microwave Antennas) can develop multi-sector and multi-omni arrays.

High performance, rugged, 120° sector antenna for ground based links
SA9-120-1.3V/1445
1.20 - 1.45 GHz



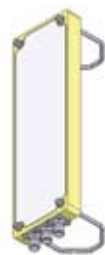
High performance, rugged, sector antenna for ground based links
SA12-110-2.4V/1480
2.00 - 2.70 GHz



S-band 7-way multi-sector antenna (with and without radome)
MSA7-16R-2350R/829
2.30 - 2.40 GHz



Three-in-one directional antenna for control and data link to robot
FPA8-4.7R-3.5R-4.7R/1537
Port 1 3.4-3.7 GHz
Ports 2/3 4.4-5.0 GHz



Low profile, circular polarised, 10dBiC gain, directional antenna
FPA10-4.7R/1564
4.40 - 5.00 GHz



X-band 6-way multi-sector antenna
MSA10-HEX-105V/250
10.30 - 10.80 GHz



Cranfield Aerospace prototype Boeing X-48B Blended Wing Body UAV

Cranfield Aerospace built two complete working prototypes of the X-48B BWB and a ground control station for Boeing Phantom Works, featuring blade antennas designed and manufactured within tight deadlines.

The antennas weigh less than 20 grams, are robust, weatherproof and measure 105x30mm and are 2.4mm thin. Each antenna covers a different frequency and forms part of the telecommand, telemetry and AV systems.

Blade antenna mounted on cross spar of Boeing X-48B

SBA-1480/1297	SBA-1790/1298	SBA-2295/1299
1.43 - 1.52 GHz	1.75 - 1.82 GHz	2.20 - 2.39 GHz



Examples of Antennas from our Catalogue

Part Number	Frequency	Gain dBi	Beamwidth		Polarisation	Dimensions mm	Connector	Photo ▲
	GHz		Azimuth*	Elevation*				
Antennas for Unmanned Vehicles								
SBA-0.36V/1573	0.344 - 0.374	0 to 2	360	80	Vertical	160x32x40	SMA(F)	
SBA-0.4V/1469	0.415 - 0.435	2	360	80	Vertical	40x40x171	SMA(F)	
SBA-900/1249	0.90 - 0.93	0 to 2	360	100	Vertical	98x77, base 44 Ø	TNC(F)	▲
HDA-1275/1148	1.20 - 1.35	4	75	175	Horizontal	120x74x1	SMA(M) 90°	▲
EVD2-1400-D1/1248	1.35 - 1.45	2	360	80	Vertical	220x45 Ø	N(F)	▲
SBA-1480/1297	1.43 - 1.52	2	360	80	Vertical	120x22x2	SMA(F)	
SBA-1500-502/445	1.45 - 1.55	2	360	80	Vertical	72x14x126	SMA(F)	
SBA-2.3V/1470	2.00 - 2.50	2	360	50	Vertical	89x40x3	SMA(F)	
PSA0218L/1084	2.00 - 18.00	-3(2-4), 2(4-18)	75	75	Left Circular	65x68 Ø	SMA(F)	▲
VOA5-2350-ADT/1403	2.30 - 2.40	6	360	20	Vertical	546x110x45	N(F)	▲
EVD2-2450-D2/631	2.35 - 2.55	2	360	80	Vertical	150x14 Ø	N(F)	▲
HDA-2450-FRA/1225	2.40 - 2.428	4	220	48	Vertical	100x70x85	SMA(F)	▲
SBA-38/919	3.80 - 4.00	4	360	60	Vertical	112x25x3	SMA(F)	
LC06-4600-D1/908	4.40 - 4.80	6.5	360	22	Left Circular	342x109 Ø	N(F)	
OAG-4.7V/1481	4.40 - 5.00	6.5	360	23	Vertical	329x38 Ø	TNC(F)	▲
EVD2-47-TNC/1181	4.40 - 5.00	1.5	360	80	Vertical	120x14 Ø	TNC(F)	
PSA0818L/1045	8.00 - 18.00	4	90	90	Left Circular	21x24 Ø	SMA(F)	
RCO4-149/1385	14.40 - 15.35	4	360	30	Right Circular	74x69 Ø	SMA(F)	
RCO4-149/1447	14.40 - 15.35	4	360	30	Right Circular	74x69 Ø	TNC(F)	
RCO4-149/1389	14.40 - 15.40	4	360	40	Right Circular	74x69 Ø	N(F)	

Directional Base Station

SA7-150-0.36V/1572	0.344 - 0.374	4 to 7	150	40	Vertical	1090x386x3	N(F)	
SA11-120-1.3V/1384	1.15 - 1.40	11	120	16	Vertical	870x98 Ø	TNC(F)	
SA9-120-1.3V/1445	1.20 - 1.45	9	120	36	Vertical	490x96 Ø	N(M)	▲
MSA5-1400/1131	1.31 - 1.43	12 sector	88	19	Vertical			
		6.5 o/head	57	56	Right Circular	743x197 Ø	N(F)	
SA12-110-2.4V/1480	2.00 - 2.70	12	112	17	Vertical	569x80 Ø	TNC(F)	▲
MSA7-16-2350R/829	2.30 - 2.40	14 sector	70	10				
		6.5 o/head	60	53	Right Circular	812x231 Ø	N(F)	▲
MSA5-10-24R/389	2.30 - 2.50	10 sector	90	40				
		6 o/head	90	90	Right Circular	210x140 Ø	SMA(F) x5	
MSA4-24R/199	2.30 - 2.50	13	90	20	Right Circular	606x155 Ø	N(F)	
MSA5-24R/223	2.30 - 2.50	13 sector	80	20				
		7 o/head	80	80	Right Circular	706x155 Ø	N(F)	
MSA5-26L/117	2.48 - 2.68	13 sector	90	20				
		7 o/head	80	80	Left Circular	706x155 Ø	N(F)	
MSA7-16-35R/497	3.40 - 3.50	15 sector	70	10				
		7 o/head	70	60	Right Circular	681x158 Ø	N(F)	
MSA5-34L-ECS/963	3.40 - 3.60	13 sector	80	20				
		7 o/head	80	80	Left Circular	606x155 Ø	N(F)	
FPA8-4.7R-3.5R-4.7R/1537	Port 1 3.4-3.7 Port 2 4.4-5.0		62	67				
		9	48	54	Right Circular	250x80x18	TNC(F) x3	▲
FPA10-4.7R/1564	4.40 - 5.00	9	54	58	Right Circular	10x84 Ø	TNC(F)	▲
MSA6-15-46L/879	4.40 - 4.80	15 sector	70	8.4				
		8.5 o/head	60	55	Left Circular	527x158 Ø	N(F)	
MSA10-HEX-105V/250	10.30 - 10.80	10	80	40	Vertical	50x60 Ø	SMA(M) x6	▲

Cobham Antenna Systems, Microwave Antennas

M: Cobham Antenna Systems, Microwave Antennas
 Lambda House, Cheveley, Newmarket, Suffolk CB8 9RG, UK
 T: +44 (0)1638 732177
 F: +44 (0)1638 731999
 E: antennasystems.ma@cobham.com

European Antennas Limited trading as Cobham Antenna Systems, Microwave Antennas

UAV Antennas Issue 2, 2009-07

©European Antennas Limited

European Antennas Limited has a policy of continuous development and stress that the information provided is a guide only and does not constitute an offer or contract or part thereof.

Whilst every effort is made to ensure the accuracy of the information contained in this brochure, no responsibility can be accepted for any errors or omissions.

All photography is copyright and is used with thanks to the respective owners.



Certificate No 9263 For
European Antennas Limited

www.cobham.com/antennasystems