antenna catalogue

RFI

welcome to the revolution

RF Industries (RFI) is committed to the communications revolution. We have evolved from the days of despatched two way radio to be a significant manufacturer of antenna systems for the latest generation in wireless technologies. With continually expanding export markets we have become a globally relevant manufacturer working with all levels of the value chain across diverse markets including automotive, mobile telephony, digital radio, wireless LAN, and industrial, scientific and medical (ISM) applications.

We strive to provide a service that is of world standard yet retains the agility of a small player. Our motivated team of engineering and manufacturing professionals pride themselves on their design philosophy of "bettering the best". Our experience pays off when new technologies require an antenna solution that matches the latest in sophisticated design.

RFI utilises

- The latest in antenna design software
- Specialised test equipment
- An enormous depth of experience providing solutions to carriers, manufacturers and end users
- A flexible manufacturing environment for base and mobile antennas

And we can supply everything else you need to complete your system. Antenna combining equipment, coaxial cables, connectors, lightning protection, solar power, DC power supplies, hand portable antennas, installation accessories…the lot!

This catalogue is intended as our definitive guide to RFI's range of mobile and base station antennas. We have included comprehensive accurate technical information on each and every antenna offered for engineers, technicians and purchasing staff but we cannot hope to cover every product in one catalogue.

Our most up to date information is always on our website and we encourage you to utilise it when needed or alternatively contact one of our sales specialists for any further information you may require.

Where is the next step for the wireless juggernaut….time will tell. What we do know is that RFI will be there when it happens, providing solutions for the next revolution.

the RFI antenna catalogue

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Our policy and that of our partners is of continual improvement.

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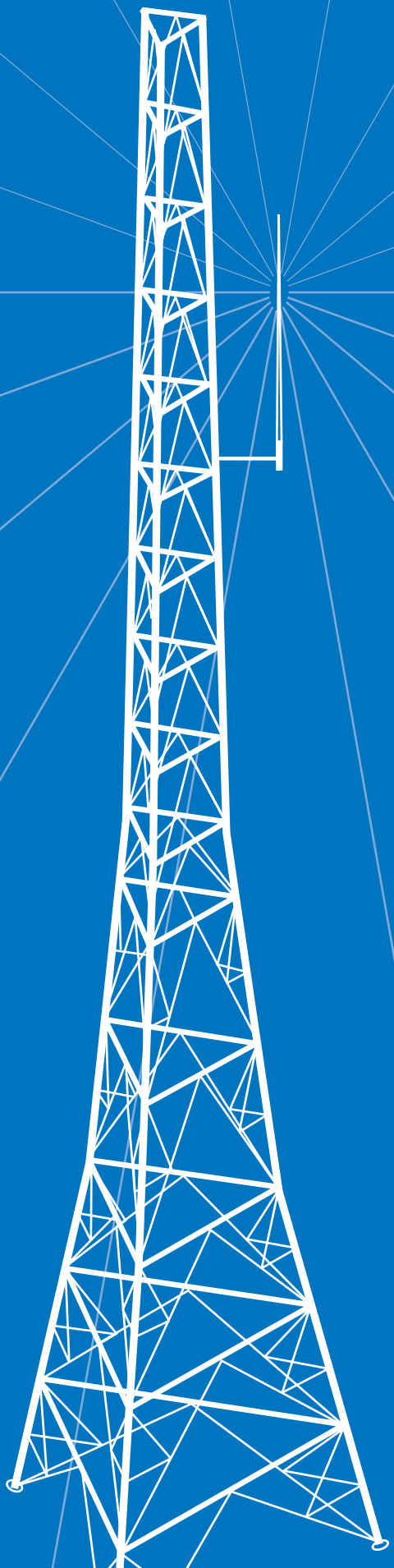


base station antennas

VHF Adjustable Ground Plane Antennas

70-175 MHz

GP Series

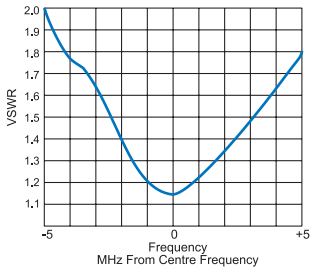
GP1

The GP Series is a range of omnidirectional unity gain adjustable ground plane antennas ideal for local area coverage when a high gain antenna is not required or justified. The broad vertical beamwidth offers excellent null fill for consistent signal coverage. GP Series antennas are easily tuned in the field by adjusting the position of the ground plane elements.

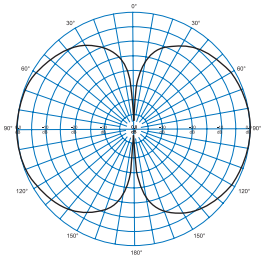
Electrically, the GP Series antenna is a quarter wave radiating element with the radials acting as a counterpoise. These radials are of one-piece construction and utilise a unique single bolt clamping design. The antennas are DC grounded for superior lightning protection and the reduction of precipitation static noise.

- Easily field tuned by adjusting the position of the radials
- Lightweight and easy to mount
- Broad vertical beamwidth for excellent null fill
- Compact - Shipped disassembled for ease of handling

Typical VSWR response (GP1)



GP1 - E Plane



Electrical

Model Number	GP1	GP3	GP4	GP2
Nominal Gain *dBi (dBd)*	2 (Unity)			
Frequency *MHz*	70 - 85	118 - 136	137 - 151	148 - 175
Tuned Bandwidth *MHz*	5	10	10	15
VSWR (Return Loss)	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	110°	75°		
Horizontal Beamwidth	Omni +/-0.5dB			
Input Power *W*	200			

Mechanical

Model Number		GP1	GP3	GP4	GP2
Construction		Heavy duty aluminium radiating element encased in a PVC radome			
Length *m*		1.8	1.5	1.4	1.3
Weight *kg*		3.0	3.0	2.3	2.0
Termination		N female with 0.5m RG213 cable tail			
Mounting Area		500mm x 40mm diam. aluminium			
Suggested Clamps		2 x UB1 or 2 x UC1			
Projected Area *cm²*	No ice	1752	1246	1121	988
	With ice	3349	2160	1959	1730
Wind Load (Thrust) @ 160km/h *N*		208	148	133	117
Torque @160 km/h *Nm*		67	33	21	11

VHF Vertical Enclosed Dipole Antenna

30-50 MHz

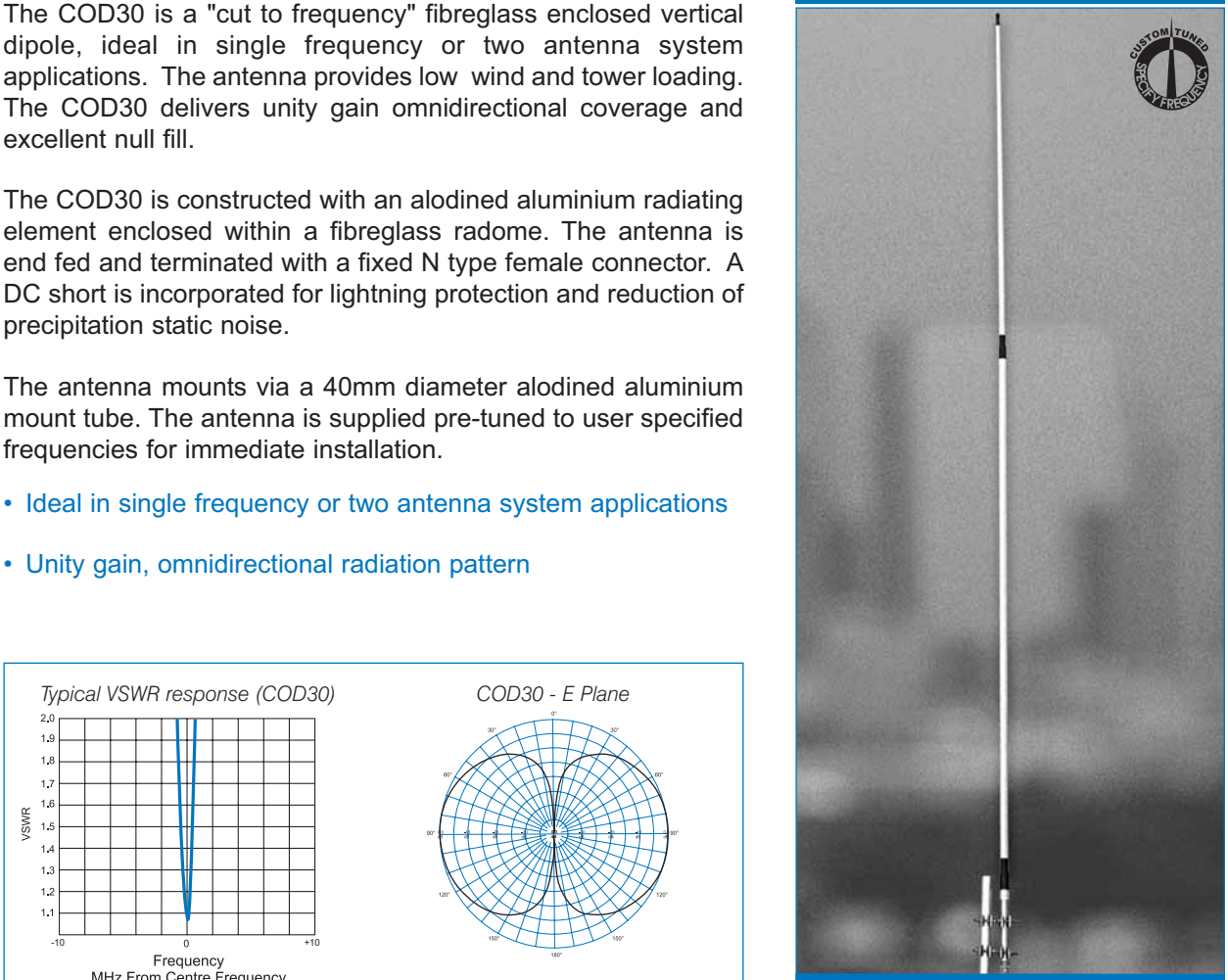
COD30

The COD30 is a "cut to frequency" fibreglass enclosed vertical dipole, ideal in single frequency or two antenna system applications. The antenna provides low wind and tower loading. The COD30 delivers unity gain omnidirectional coverage and excellent null fill.

The COD30 is constructed with an alodined aluminium radiating element enclosed within a fibreglass radome. The antenna is end fed and terminated with a fixed N type female connector. A DC short is incorporated for lightning protection and reduction of precipitation static noise.

The antenna mounts via a 40mm diameter alodined aluminium mount tube. The antenna is supplied pre-tuned to user specified frequencies for immediate installation.

- Ideal in single frequency or two antenna system applications
- Unity gain, omnidirectional radiation pattern



COD30

Typical VSWR response (COD30)

COD30 - E Plane

Electrical

Model Number	**COD30**
Nominal Gain ***dBi (dBd)***	2 (Unity)
Frequency ***MHz***	30 - 50
Tuned Bandwidth	1.0%
VSWR (Return Loss)	<1.5 :1 (14dB)
Nominal Impedance **Ω**	50
Vertical Beamwidth	77°
Horizontal Beamwidth	Omni +/- 0.5dB
Input Power ***W***	150

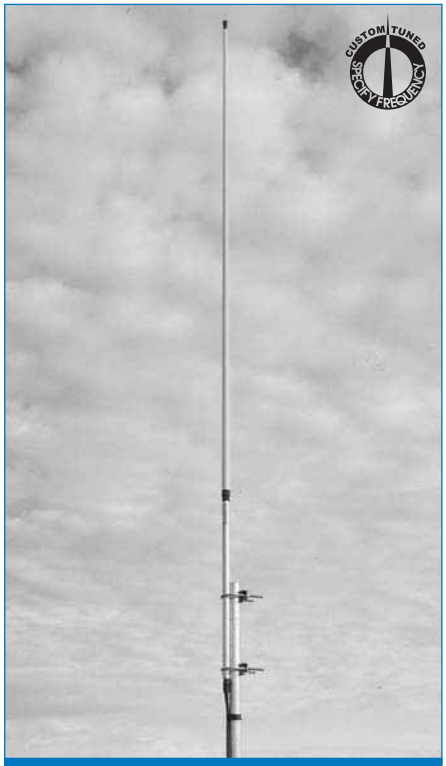
Mechanical

Model Number		**COD30**
Construction		Alodined aluminium elements with white fibreglass radome
Length ***m***		5.5
Weight ***kg***		4.0
Termination		N female bulkhead
Mounting Area		500mm x 40mm diam. alodined aluminium
Suggested Clamps		2 x UC1
Projected Area ***cm²***	No ice	1632
	With ice	3291
Wind Load (Thrust) @ 160km/h ***N***		193
Torque @160 km/h ***Nm***		447

VHF Vertical Enclosed Dipole Antennas

66-140 MHz

COD1 Series

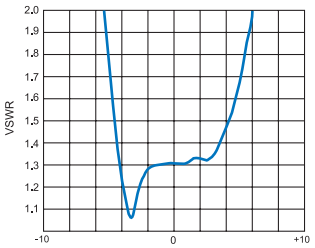


COD1

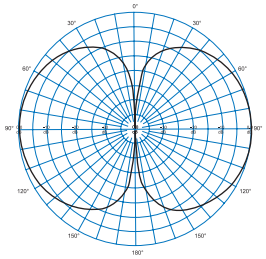
The COD1 series antennas are "cut to frequency" fibreglass enclosed vertical dipoles, featuring extremely broad vertical beamwidths and omnidirectional patterns for localised coverage.

- Low wind and tower loading - ideal in conditions where high winds are a factor.
- Ruggedised version (COD12) in an extra heavy duty black fibreglass radome to maximise solar heat retention - aiding in ice shedding
- Models available with 5% tuned bandwidth for duplex applications
- DC grounded for lightning protection and the reduction of precipitation static noise

VSWR response (COD14) @140MHz



COD14 - E Plane



Electrical

Model Number	COD1	COD12	COD14
Nominal Gain *dBi (dBd)*	2 (Unity)		
Frequency *MHz*	66 - 140		
Tuned Bandwidth	2.0%	5.0%	
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	77°	76°	
Horizontal Beamwidth	Omni +/- 0.5dB		
Input Power *W*	150	200	

Mechanical

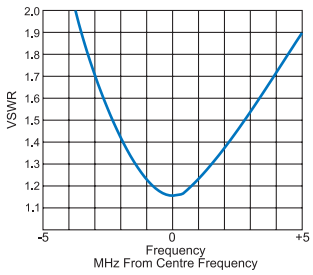
Model Number		COD1	COD12	COD14
Construction		Alodined alum. elements with white fibreglass radome	Alodined alum. elements with ruggedised black fibreglass radome	Alodined alum. elements with white fibreglass radome
Length *m*		3.4	3.0	2.7
Weight *kg*		1.0	3.2	2.5
Termination		N female bulkhead		
Mounting Area		280mm x 25mm diam. alodined aluminium	500mm x 60mm diam. alodined aluminium	600mm x 38mm diam. stainless steel
Suggested Clamps		2 x UB1	2 x UC1	
Projected Area *cm²*	No ice	728	1568	1297
	With ice	1706	2305	2284
Wind Load (Thrust) @ 160km/h *N*		86	186	154
Wind Gust Rating *km/h*		> 240		
Torque @160 km/h *Nm*		77	192	156

VHF Vertical Enclosed Dipole Antennas

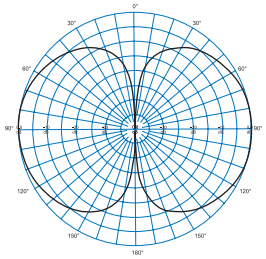
The COD2 series antennas are "cut to frequency" fibreglass enclosed vertical dipoles, featuring extremely broad vertical beamwidths and omnidirectional patterns for localised coverage.

- Low wind and tower loading
- Ruggedised version (COD22) in an extra heavy duty black fibreglass radome to maximise solar heat retention - aiding in ice shedding
- Stainless steel mounting version available (COD24) for corrosive marine environments
- DC grounded for lightning protection and the reduction of precipitation static noise

Typical VSWR response (COD2)

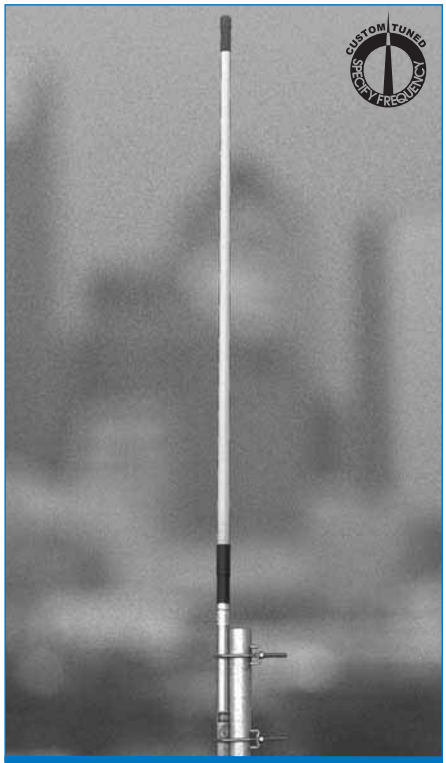


COD2 - E Plane



140-205 MHz

COD2 Series



COD2

Electrical

Model Number	COD2	COD22	COD24
Nominal Gain *dBi (dBd)*	2 (Unity)		
Frequency *MHz*	140 - 205	140 - 175	140 - 205
Tuned Bandwidth *MHz*	5		
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	78°		
Horizontal Beamwidth	Omni +/- 0.5dB		
Input Power *W*	100		

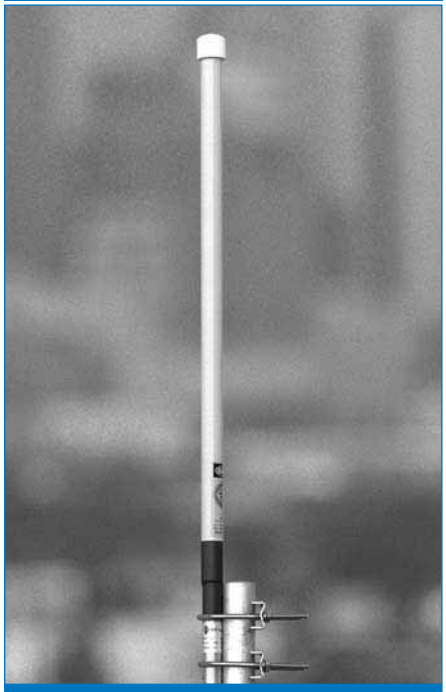
Mechanical

Model Number		COD2	COD22	COD24
Construction		Alodined aluminium elements with white fibreglass radome	Alodined aluminium elements with ruggedised black fibreglass radome	Alodined aluminium elements with white fibreglass radome
Length *m*		1.7	1.8	1.7
Weight *kg*		1.5	2.2	2.0
Termination		N female bulkhead		
Mounting Area		215mm x 25mm diam. alodined aluminium	500mm x 60mm diam. alodined aluminium	215mm x 25mm diam. stainless steel
Suggested Clamps		2 x UC1 or 2 x UB1	2 x UC1	2 x UC1 or 2 x UB1
Projected Area *cm²*	No ice	402	873	403
	With ice	804	1289	805
Wind Load (Thrust) @ 160km/h *N*		48	103	48
Wind Gust Rating *km/h*		>240		
Torque @160 km/h *Nm*		23	45	24

UHF Vertical Enclosed Dipole Antennas

375-520 MHz

COD4

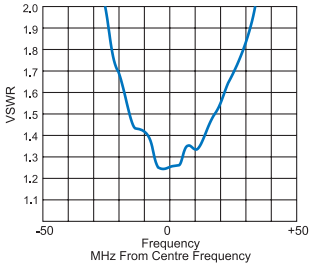


COD4

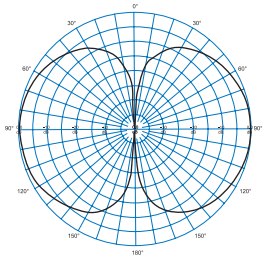
The COD4 series antennas are a range of fibreglass enclosed vertical dipoles ideal in local coverage applications. COD4 series antennas deliver extremely broad beamwidths which enhance close-in coverage. They are supplied pre-tuned in set bands and can be held as a stock antenna if required.

- Ideal for local area coverage
- Available spot tuned to user specified frequencies or in a number of pre-determined band configurations
- Unity gain omnidirectional radiation pattern with excellent null-fill characteristics
- Dual decoupling choke to ensure distortion-free pattern

Typical VSWR response (COD4)



COD4 - E Plane



Electrical

Model Number	COD4-65	COD4-70	COD4-71	COD4-63	COD4-72	COD4-99
Nominal Gain *dBi (dBd)*	2 (Unity)					
Frequency *MHz*	400 - 420	450 - 470	470 - 490	480 - 500	500 - 520	375 - 520
Tuned Bandwidth	Full					4%
VSWR (Return Loss)	<1.5 :1 (14dB)					
Nominal Impedance Ω	50					
Vertical Beamwidth	78°					
Horizontal Beamwidth	Omni +/- 0.5dB					
Input Power *W*	50					
Passive IM 3rd order *dBc*	-125					

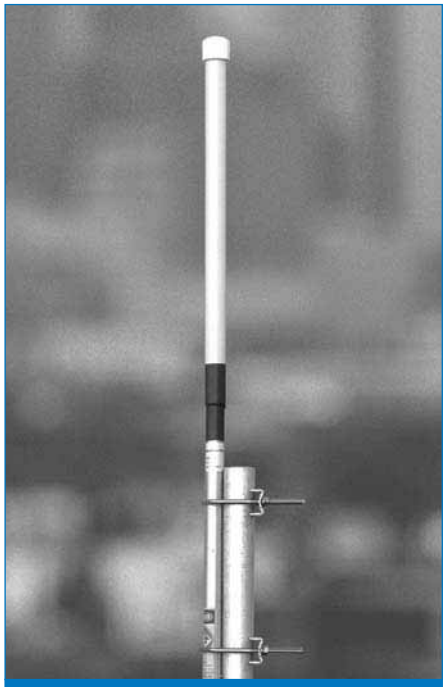
Mechanical

Model Number		COD4-65	COD4-70	COD4-71	COD4-63	COD4-72	COD4-99
Construction		Alodined aluminium elements with white fibreglass radome					
Length *m*		1.0	0.9				Variable
Weight *kg*		0.5					
Termination		N female bulkhead					
Mounting Area		100mm x 25mm diam. alodined aluminium					
Suggested Clamps		2 x UC1 or 2 x UB1					
Projected Area *cm²*	No ice	266	250	250	250	250	270
	With ice	494	463	463	463	463	497
Wind Load (Thrust) @ 160km/h *N*		32	30				32
Wind Gust Rating *km/h*		>240					
Torque @160 km/h *Nm*		10	8				11

UHF Vertical Enclosed Dipole Antennas

600-960 MHz

COD8

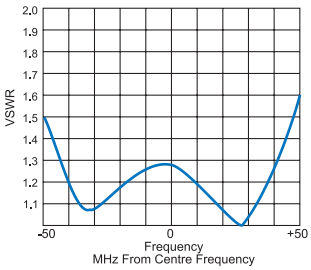


COD8

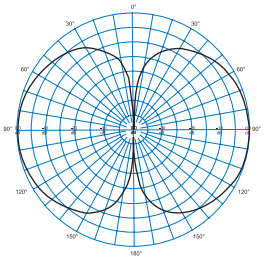
The COD8 Series antennas are a range of fibreglass enclosed vertical dipoles, ideal in point to multipoint, trunking, cellular and local coverage area applications. The antenna has a relatively broad bandwidth and easily accommodates both transmit and receive portions of any of the common 800MHz operating bands.

- Available spot tuned to user specified frequencies or in a number of pre-determined band configurations
- Excellent null fill coverage
- Omnidirectional unity gain performance

Typical VSWR response (COD8)



COD8 - E Plane



Electrical

Model Number	COD8-81	COD8-82	COD8-99
Nominal Gain *dBi (dBd)*	2 (Unity)		
Frequency *MHz*	820 - 880	850 - 930	600 - 960
Tuned Bandwidth *MHz*	Full		80
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	78°		
Horizontal Beamwidth	Omni +/- 0.5dB		
Input Power *W*	25		
Passive IM 3rd order *dBc*	-120		

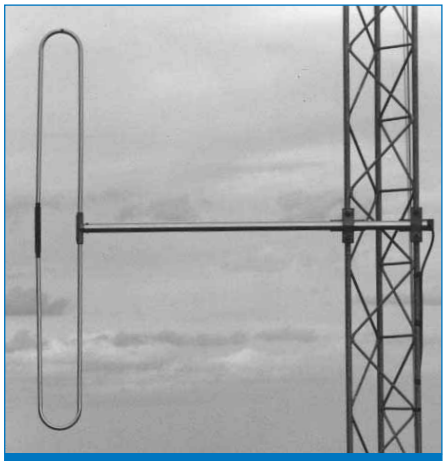
Mechanical

Model Number		COD8-81	COD8-82	COD8-99
Construction		Alodined aluminium elements with white fibreglass radome		
Length *m*		0.8		Variable
Weight *kg*		0.5		
Termination		N female bulkhead		
Mounting Area		315mm x 25mm diam. alodined aluminium	325mm x 25mm diam. alodined aluminium	230mm (minimum) x 25mm diam. alodined aluminium
Suggested Clamps		2 x UB1		
Projected Area *cm²*	No ice	267	266	285
	With ice	488	484	525
Wind Load (Thrust) @ 160km/h *N*		32	32	34
Wind Gust Rating *km/h*		>240		
Torque @160 km/h *Nm*		5	4	8

VHF Side Mounted Dipole Antennas

66-108 MHz

SMD1 Series



SMD1

The SMD1 Series side mounted dipoles are broad band antennas which, through different phasing and mounting arrangements, can offer a variety of patterns (generally cardioid) tailored to specific coverage requirements. These antennas can be mounted in dual arrays for 3dB gain, or four-stack arrays for 6dB gain over a single dipole.

The SMD1 is constructed of heavy gauge corrosion resistant anodised aluminium tubing with a high pressure cast aluminium hub assembly and stainless steel fittings. This combination provides an exceptionally strong antenna, suited for extreme weather conditions.

The SMD12, is a ruggedised antenna featuring extremely heavy walled tubing, all welded alodined aluminium construction and a black epoxy coating to aid in solar heat retention. The SMD14 is a stainless steel version and is ideal in corrosive marine environments. All of the antennas are electrically identical.

SMD antenna construction allows for the entire antenna to rest at ground potential making it highly recommended in lightning prone applications.

- Can be phased to provide 3dBd or 6dBd gain in a variety of patterns to suit specific requirements. See page 74 for our full range of phasing harnesses.
- Full bandwidth coverage for both single antennas and phased arrays - ideal in community sites
- Ruggedised and stainless steel versions available
- Normally available ex-stock for immediate delivery

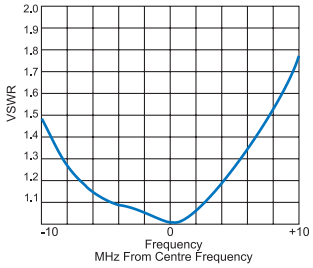
SMD series antennas are supplied with a boom for ¼ wave antenna to mast spacing. Booms for ½ wave spacing and full wave spacing are also available. Application details on phasing and mounting of SMD antennas are included in the technical notes at the back of this catalogue.

VHF Side Mounted Dipole Antennas

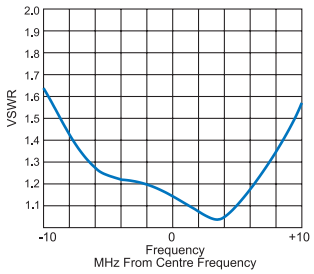
66-108 MHz

SMD1 Series

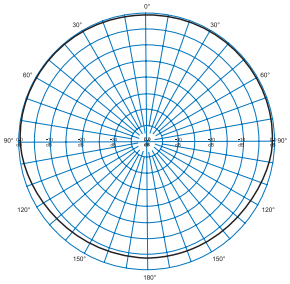
Typical VSWR response (SMD1,12,14) at ¼ wave spacing



Typical VSWR response (SMD1,12,14) at ½ wave spacing

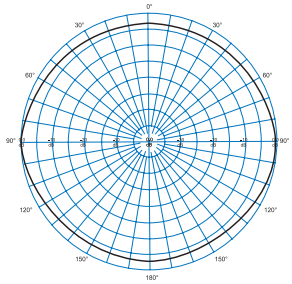


H Plane at ¼ wave antenna to mast spacing



Peak gain at 0° of 1dBd

H Plane at ½ wave antenna to mast spacing



Peak gain at 90°, 270° of 1dBd

Electrical

Model Number	SMD1	SMD12	SMD14	SMD1-99
Nominal Gain *dBi (dBd)*	Nominally 2 (Unity) but varies with mounting arrangements			
Frequency *MHz*	70 - 85			66 - 108
Tuned Bandwidth	Entire band			10%
VSWR (Return Loss)	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	Typically 74° at ¼ λ antenna - mast spacing			
Horizontal Beamwidth	Typically 260° at ¼ λ antenna - mast spacing			
Input Power *W*	300			

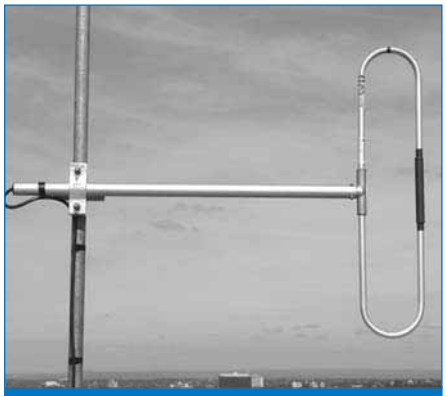
Mechanical

Model Number		SMD1	SMD12	SMD14	SMD1-99
Construction		Thick walled aluminium with cast aluminium hub	Heavy duty aluminium with black epoxy finish	Stainless steel with cast aluminium hub	Thick walled aluminium with cast aluminium hub
Length *m*		1.8			1.9
Weight *kg*		2.5	3.0	4.4	3.0
Termination		N female with RG213 cable tail			
Mounting Area		300mm x 40mm diam. aluminium		300mm x 38mm diam. stainless steel	300mm x 40mm diam. aluminium
Suggested Clamps		1 x UCR1 or UCR2			
Projected Area *cm²*	No ice	1566	1752	1501	1872
	With ice	3000	3157	2930	3527
Wind Load (Thrust) @ 160km/h *N*		186	208	178	222
Torque @160 km/h *Nm*		139	160	133	150

VHF Side Mounted Dipole Antennas

108-200 MHz

SMD2 Series



SMD2

The SMD2 Series side mounted dipoles are broad band antennas which, through different phasing and mounting arrangements can offer a variety of patterns (generally cardioid) tailored to specific coverage requirements. These antennas can be mounted in dual arrays for 3dB gain, or four-stack arrays for 6dB gain over a single dipole.

The SMD2 is constructed of heavy gauge corrosion resistant anodised aluminium tubing with a high pressure cast aluminium hub assembly and stainless steel fittings. This combination provides an exceptionally strong antenna, suited for extreme weather conditions.

The SMD22 is a ruggedised antenna featuring extremely heavy walled tubing, all welded aluminium construction and a black epoxy coating to aid in solar heat retention. The SMD24 is a stainless steel version and is ideal in corrosive marine environments. All of the antennas are electrically identical.

SMD antenna construction allows for the entire antenna to rest at ground potential, making it highly recommended in lightning prone applications.

- Can be phased to provide 3 dBd or 6 dBd gain, in a variety of patterns tailored to suit specific requirements. See page 74 for our full range of phasing harnesses.
- Full bandwidth coverage for both single antennas and phased arrays - ideal in community sites
- High strength - SMD2 features anodised aluminium construction and high pressure cast aluminium centrepiece
- Rugged and stainless steel versions also available
- Normally available ex-stock for immediate delivery

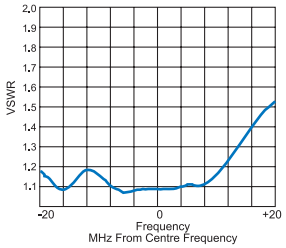
All antennas are supplied with a boom for ¼ wave antenna to mast spacing. Booms for ½ wave spacing and full wave spacing are also available. Application details on phasing and mounting of SMD antennas are included in the technical notes at the back of this catalogue.

VHF Side Mounted Dipole Antennas

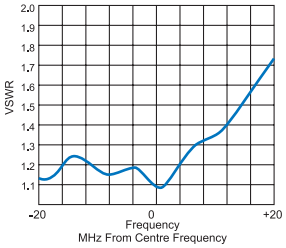
108-200 MHz

SMD2 Series

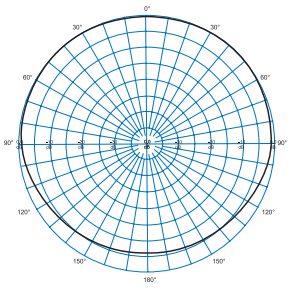
Typical VSWR response (SMD2,22,24) at ¼ wave spacing



Typical VSWR response (SMD2,22,24) at ½ wave spacing

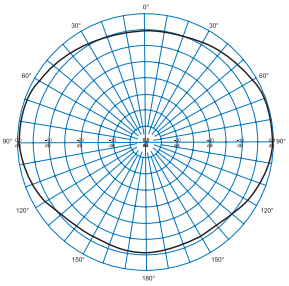


H Plane at ¼ wave antenna to mast spacing



Peak gain at 0° of 1dBd

H Plane at ½ wave antenna to mast spacing



Peak gain at 90°, 270° of 2dBd

Electrical

Model Number	SMD2	SMD22	SMD24	SMD2-99
Nominal Gain *dBi (dBd)*	Nominally 2 (Unity) but varies with mounting arrangements			
Frequency *MHz*	148 - 175			108 - 200
Tuned Bandwidth	Entire band			10%
VSWR (Return Loss)	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	Typically 74° at ¼ λ antenna - mast spacing			
Horizontal Beamwidth	Typically 230° at ¼ λ antenna - mast spacing			
Input Power *W*	250			

Mechanical

Model Number		SMD2	SMD22	SMD24	SMD2-99
Construction		Thick walled aluminium with cast aluminium hub	Heavy duty aluminium with black epoxy finish	Stainless steel with cast aluminium hub	Thick walled aluminium with cast aluminium hub
Length *m*		0.9			1.3
Weight *kg*		1.5	2.0	3.0	2.0
Termination		N female with RG213 cable tail			
Mounting Area		300mm x 40mm diam. aluminium		300mm x 38mm diam. stainless steel	300mm x 40mm diam. aluminium
Suggested Clamps		1 x UCR1 or UCR2			
Projected Area *cm²*	No ice	849	927	810	1373
	With ice	1644	1633	1604	2524
Wind Load (Thrust) @ 160km/h *N*		101	110	96	163
Torque @160 km/h *Nm*		50	57	48	110

UHF Side Mounted Dipole Antennas

360-600 MHz

SMD4 Series

SMD4-67

The SMD4 series are a range of unity gain side mounted dipoles which can be used as a single antenna for short range applications or, if desired, phased together to provide high gain array coverage characteristics.

The SMD4-67 is of all welded aluminium construction. The feed point is protected by an ABS cap, with the internal PTFE based cable construction providing excellent intermodulation performance (-150dBc).

The stainless steel SMD41-67 is electrically identical to its aluminium counterpart and is recommended for corrosive environments.

All of the SMD4 series antennas are directly DC grounded for superior lightning protection and the reduction of precipitation static noise.

The SMD4 Series antennas are supplied with a boom for ¼ wave antenna to mast spacing. Application details on phasing and mounting of SMD antennas are included in the technical notes at the back of this catalogue.

- Versatile - Antennas can be phased and manipulated to achieve a variety of horizontal radiation patterns and varying gains. See page 74 for our full range of phasing harnesses
- Stock Antennas - Generally available off the shelf
- Lightweight - Easily mounted and installed with single clamps
- All welded, full folded dipole construction
- Varying boom lengths available to suit coverage requirements

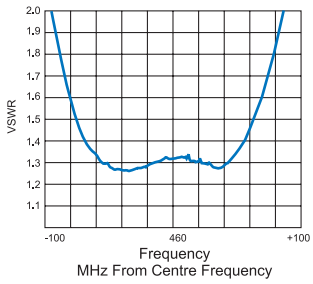
The SMD4-99 is a specific frequency version of the SMD4. This antenna is designed only for use as a single dipole, not as a component of a phased dipole array as the antenna is custom made to user specified frequencies and is not specifically matched to a phasing harness. It can be ordered with a specified centre frequency anywhere in the band from 360 to 600 MHz with an operating bandwidth of approximately 20% of centre frequency.

UHF Side Mounted Dipole Antennas

360-600 MHz

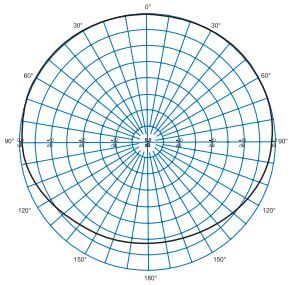
SMD4 Series

Typical VSWR response (SMD4-67)



SMD4-67 at ¼ wave antenna to mast spacing

SMD4-67 - H Plane



Peak gain at 0° of 2dBd

Electrical

Model Number	SMD4-67	SMD41-67	SMD4-99	SMD41-99
Nominal Gain *dBi (dBd)*	Nominally 2 (Unity) but varies with mounting arrangements			
Frequency *MHz*	400 - 520		360 - 600	
Tuned Bandwidth	Entire band		20.0%	
VSWR (Return Loss)	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	Typically 70° at ¼ λ antenna - mast spacing			
Horizontal Beamwidth	Typically 220° at ¼ λ antenna - mast spacing			
Input Power *W*	500			
Passive IM 3rd order *dBc*	-150			

Mechanical

Model Number		SMD4-67	SMD41-67	SMD4-99	SMD41-99
Construction		All welded aluminium with alodined finish	Stainless steel	All welded aluminium with alodined finish	Stainless steel
Length *m*		0.4	0.4	0.5	0.5
Weight *kg*		0.3	0.6	0.3	0.6
Termination		N female with short 9142 cable tail			
Mounting Area		100mm x 25mm diam. alodined aluminium			
Suggested Clamps		1 x UNV			
Projected Area *cm²*	No ice	200		213	
	With ice	423		480	
Wind Load (Thrust) @ 160km/h *N*		24		25	
Wind Gust Rating *km/h*		>240			
Torque @160 km/h *Nm*		3		5	

UHF Side Mounted Dipole Antenna

806-960 MHz

SMD8-90

SMD8-90

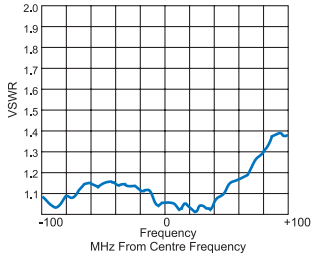
The SMD8-90 side mount dipole is an extremely broad bandwidth antenna recommended for local area coverage or short haul RF link applications.

The antenna is internally DC grounded for lightning protection and the reduction of precipitation static noise.

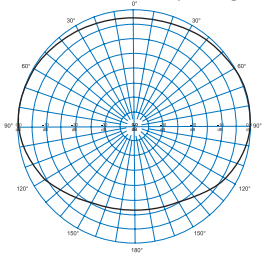
- Provides either directional or largely omnidirectional radiation pattern
- All welded and alodined aluminium construction

Please note, we recommend against phasing the SMD8-90 antenna as the required accuracy is far too critical to be adequately controlled in the field. Thus, we do not publish any information to assist in the phasing of our 800 MHz side mount dipole antennas.

Typical VSWR response (SMD8-90)



SMD8-90 H Plane at ¼ wave antenna to mast spacing



Peak gain at 0° of 2dBd

Electrical

Model Number	SMD8-90
Nominal Gain *dBi (dBd)*	Nominally 2 (Unity) but varies with mounting arrangements
Frequency *MHz*	806 - 960
Tuned Bandwidth	Entire band
VSWR (Return Loss)	<1.5 :1 (14dB)
Nominal Impedance Ω	50
Vertical Beamwidth	Typically 85° at ¼ λ antenna - mast spacing
Horizontal Beamwidth	Typically 213° at ¼ λ antenna - mast spacing
Input Power *W*	200

Mechanical

Model Number		SMD8-90
Construction		All welded aluminium with alodined finish
Length *m*		0.3
Weight *kg*		0.2
Termination		N female with short 9142 cable tail
Mounting Area		100mm x 25mm diam. alodined aluminium
Suggested Clamps		1 x UNV
Projected Area *cm²*	No ice	96
	With ice	227
Wind Load (Thrust) @ 160km/h *N*		11
Wind Gust Rating *km/h*		>240
Torque @160 km/h *Nm*		1

waves

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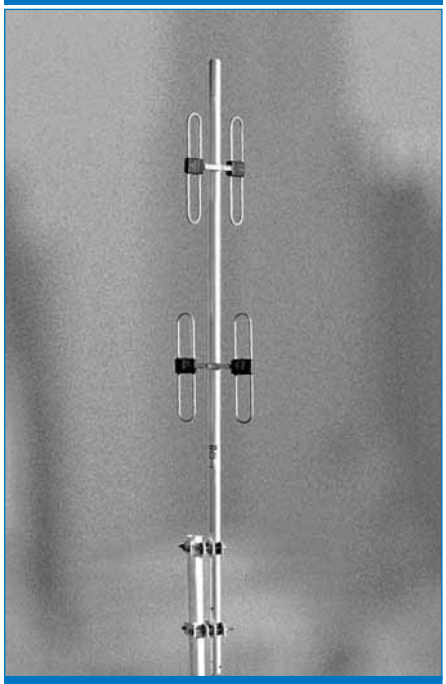
VHF Omnidirectional Dipole Arrays

136-174 MHz

BA40-41 Series
BA80-41 Series



BA40-41

These high performance VHF dipole omnidirectional arrays are for use in highly populated radio sites requiring long haul omnidirectional coverage. The arrays feature high gain, low noise performance and enhanced null fill coverage with omnidirectional coverage characteristics.

Each of the dipoles are fed via an internal phasing harness in stable, PTFE based double-screened coaxial cable with PE jacket for optimum weatherproofing. These omnidirectional arrays incorporate extensive side lobe suppression and null fill, and the binary phasing arrangement ensures consistent omnidirectional coverage and vertical pattern control.

These arrays provide unparalleled bandwidth, covering the entire 136-174 MHz band and offer gain of 3 or 6dBd over that band with a VSWR of less than 1.5:1. With input power levels of 750 watts, the antennas are suitable for high power paging sites or high density, multi-channel installations requiring maximum performance and service life.

With all welded construction and superior internal harness construction, these antennas provide not only excellent pattern characteristics but also defined, high levels of intermodulation and noise suppression. The entire array rests at ground potential and offers the ultimate in lightning resistant antennas.

- High gain omnidirectional patterns
- Operate over entire 136-174 MHz VHF band without tuning or adjustment
- Modular mix and match format allows future-proofing installations
- 3° downtilt option available on BA80 (four pair) version
- Inverted mounting version available
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

Options available include

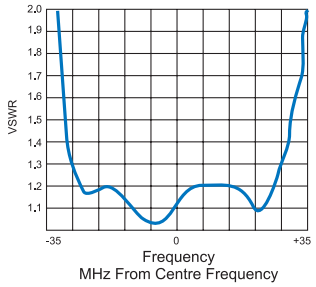
- *All stainless steel 316 grade construction (3dBd array only)*
- *Inverted mounting configuration*
- *BA80-41 may be operated as 2 x 3dBd arrays by removing external cable harness*

VHF Omnidirectional Dipole Arrays

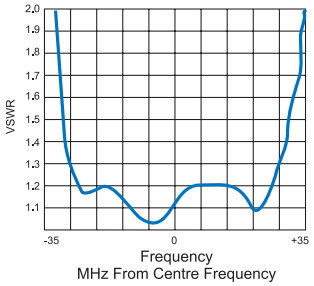
136-174 MHz

BA40-41 Series
BA80-41 Series

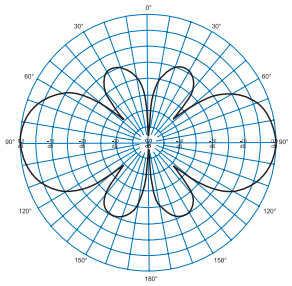
Typical VSWR response (BA40-41)



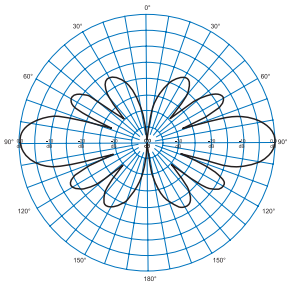
Typical VSWR response (BA80-41)



BA40-41 - E Plane



BA80-41 - E Plane



Electrical

Model Number	BA40-41	BA80-41
Nominal Gain *dBi (dBd)*	5 (3)	8 (6)
Frequency *MHz*	136 - 174	
Tuned Bandwidth	Entire band	
VSWR (Return Loss)	<1.5 :1 (14dB)	
Nominal Impedance Ω	50	
Downtilt	Not offered	0° Std, -3°. See note (1)
Vertical Beamwidth	35°	18°
Horizontal Beamwidth	Omni +/-0.5dB	
Input Power *W*	750	
Passive IM 3rd order *dBc*	-150	

Mechanical

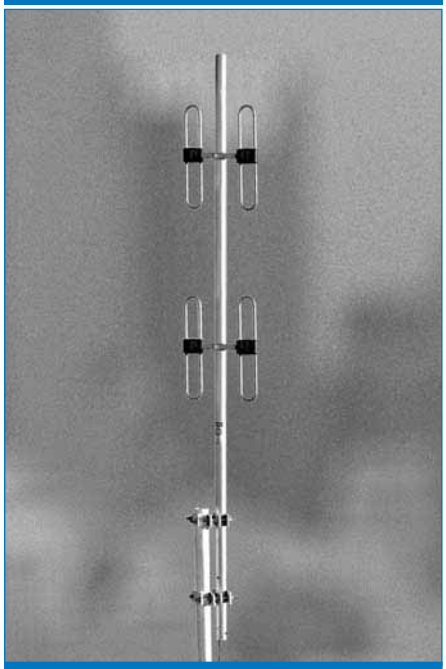
Model Number		BA40-41	BA80-41
Construction		All welded aluminium with alodined finish. See note (2)	
Length *m*		3.5	6.3
Weight *kg*		14.5	31
Termination		N female with 0.5m 9142 cable tail. See note (3)	
Mounting Area		500mm x 63mm diam. aluminium	500mm x 76mm diam. aluminium
Suggested Clamps		2 x UC1	
Projected Area *cm²*	No ice	4164	8294
	With ice	7117	13325
Wind Load (Thrust) @ 160km/h *N*		494	983
Wind Gust Rating *km/h*		240	184
Torque @160 km/h *Nm*		617	2605

(1) Factory pre-set downtilt of 3° may be specified on BA80 series antennas using model no. trailer -T3
(2) BA40 series can be optionally supplied in all welded 316 grade stainless steel. Dimensions vary slightly
(3) Connector termination option available of 7/16 DIN female connector using model no. trailer -DIN

VHF Elliptical Dipole Arrays

136-174 MHz

EA40-41
EA80-41



EA40-41

These high performance VHF binary phased elliptical arrays are ideal for the bi-directional coverage requirement of paging and VHF high band mobile “corridor” applications. The main lobe of these arrays is strong and highly controlled with extensive side lobe suppression ensuring the integrity of the pattern.

The folded dipoles utilise an internal phasing harness in stable, PTFE based double-screened coaxial cable with PE Jacket for optimal weatherproofing. These elliptical arrays incorporate extensive side lobe suppression, null fill, and accommodate power input levels of 750 watts continuous.

With all welded construction and superior internal harness construction these antennas provide not only excellent radiation characteristics but also high levels of intermodulation and noise suppression. The entire array rests at ground potential and offers the ultimate in lightning resistant antennas.

- High gain elliptical pattern with 5dBd or 8dBd versions available
- Operate over entire 136-174 MHz band without tuning or adjustment
- Inverted mounting version available
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

Options available include

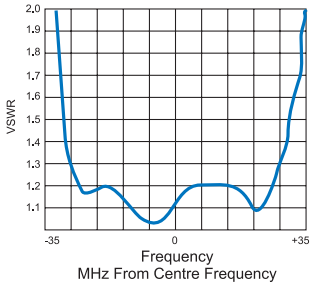
- *All stainless steel 316 grade construction (5dBd array only)*
- *Inverted mounting configuration*
- *EA40-41 may be operated as 2 x 5dBd arrays by removing external cable harness*

VHF Elliptical Dipole Arrays

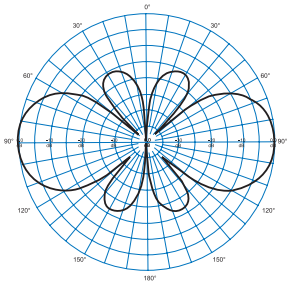
136-174 MHz

EA40-41
EA80-41

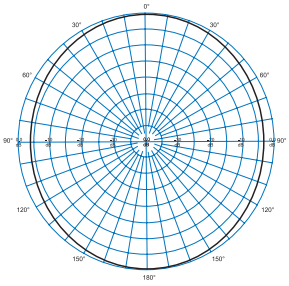
Typical VSWR response (EA40-41)



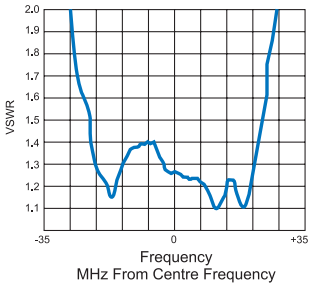
EA40-41 - E Plane



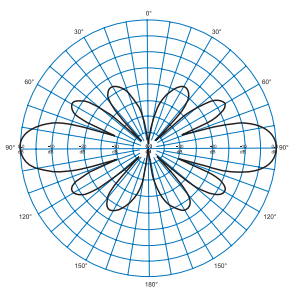
EA40-41 - H Plane



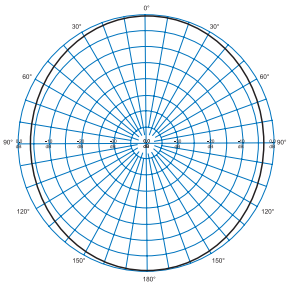
Typical VSWR response (EA80-41)



EA80-41 - E Plane



EA80-41 - H Plane



Electrical

Model Number	EA40-41	EA80-41
Nominal Gain *dBi (dBd)*	7 (5)	10 (8)
Frequency *MHz*	136 - 174	
Tuned Bandwidth	Entire band	
VSWR (Return Loss)	<1.5 :1 (14dB)	
Nominal Impedance Ω	50	
Downtilt	Not offered	0° Std, -3°. See note (1)
Vertical Beamwidth	35°	17°
Horizontal Beamwidth	104°	128°
Input Power *W*	750	
Passive IM 3rd order *dBc*	-150	

Mechanical

Model Number		EA40-41	EA80-41
Construction		All welded aluminium with alodined finish. See note (2)	
Length *m*		3.5	6.3
Weight *kg*		14.5	31.0
Termination		N female with 0.5m 9142 cable tail. See note (3)	
Mounting Area		500mm x 63mm diam. aluminium	500mm x 76mm diam. aluminium
Suggested Clamps		2 x UC1	
Projected Area *cm²*	No ice	4781	9513
	With ice	8701	16475
Wind Load (Thrust) @ 160km/h *N*		567	1127
Wind Gust Rating *km/h*		240	175
Torque @160 km/h *Nm*		708	2988

(1) Factory pre-set downtilt of 3° may be specified on EA80 series antennas using model no. trailer -T3
(2) EA40 series can be optionally supplied in all welded 316 grade stainless steel. Dimensions vary slightly
(3) Connector termination option available of 7/16 DIN female connector using model no. trailer -DIN

VHF Offset Dipole Arrays

136-174 MHz

OA20-41
OA40-41

OA20-41

These high performance VHF dipole offset arrays are ideal for use when a cardioid pattern is required. The arrays feature high gain, low noise performance and enhanced null fill coverage with typical cardioid coverage characteristics.

OA series arrays have an almost full 180° horizontal beamwidth. This eliminates the possibility of fading at the extremities of the target coverage area. Antenna gain is approximately unity at the rear of the antenna.

As would be expected from a cardioid array, the vertical beamwidth is slightly greater than its BA (omnidirectional) or EA (elliptical) pattern counterparts.

OA series arrays feature the same solid construction as the BA and EA Series. The folded dipoles utilise an internal phasing harness in stable, PTFE based double-screened coaxial cable with PE jacket for optimum weatherproofing. The offset arrays incorporate extensive side lobe suppression, null fill, and power input level of 750 watts continuous.

With all welded construction and superior internal harness construction these antennas provide not only excellent pattern characteristics but also high levels of intermodulation and noise suppression. The entire array rests at ground potential and offers the ultimate in lightning resistant antennas.

- High gain offset (cardioid) pattern. 5dBd or 9dBd versions available
- Operate over entire 136-174 MHz VHF band without tuning or adjustment
- Modular mix and match format allows future-proofing installations
- 3° downtilt option available
- Inverted mounting version available
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

Options available include

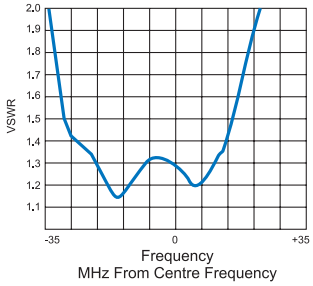
- *All stainless steel 316 grade construction (5dBd array only)*
- *Inverted mounting configuration*
- *OA40-41 may be operated as 2 x 5dBd arrays by removing external cable harness*

VHF Offset Dipole Arrays

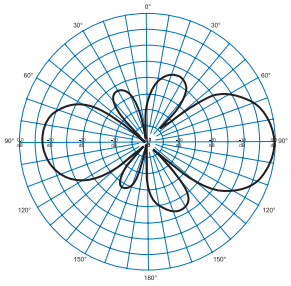
136 - 174 MHz

OA20-41
OA40-41

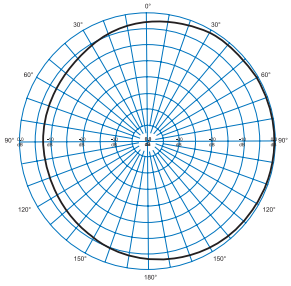
Typical VSWR response (OA20-41)



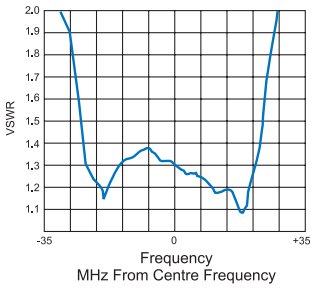
OA20-41 - E Plane



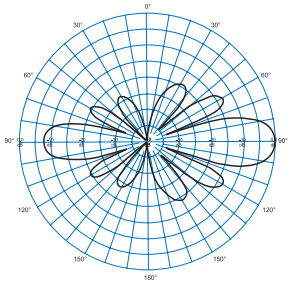
OA20-41 - H Plane



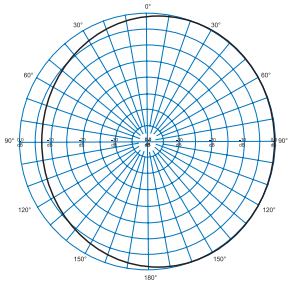
Typical VSWR response (OA40-41)



OA40-41 - E Plane



OA40-41 - H Plane



Electrical

Model Number	OA20-41	OA40-41
Nominal Gain *dBi (dBd)*	7 (5)	11 (9)
Frequency *MHz*	136 - 174	
Tuned Bandwidth *MHz*	Entire band	
VSWR (Return Loss)	<1.5 :1 (14dB)	
Nominal Impedance Ω	50	
Downtilt	Not offered	0 Std, -3°. See note (1)
Vertical Beamwidth	35°	17°
Horizontal Beamwidth	178°	176°
Input Power *W*	750	
Passive IM 3rd order *dBc*	-150	

Mechanical

Model Number		OA20-41	OA40-41
Construction		All welded aluminium with alodined finish. See note (2) for stainless steel options.	
Length *m*		3.5	6.3
Weight *kg*		12.5	29.0
Termination		N female with 0.5m 9142 cable tail. See note (3).	
Mounting Area		500mm x 63mm diam. aluminium	500mm x 76mm diam. aluminium
Suggested Clamps		2 x UC1	
Projected Area *cm²*	No ice	3710	7396
	With ice	6188	11481
Wind Load (Thrust) @ 160km/h *N*		440	877
Wind Gust Rating *km/h*		240	191
Torque @160 km/h *Nm*		550	2323

(1) Factory pre-set downtilt of 3° may be specified on OA40 series antennas using model no. trailer - T3
(2) OA20 series can be optionally supplied in all welded 316 grade stainless steel. Dimensions vary slightly
(3) Connector termination option available of 7/16 DIN female connector using model no. trailer -DIN

UHF Omnidirectional Dipole Arrays

330-520 MHz

BA40 Series
BA80 Series
BA160 Series

BA80

These high performance UHF dipole arrays are ideal for highly populated radio sites requiring long haul omnidirectional coverage. They operate over entire bands and offer gains of 3, 6 or 9dBd (depending on model) exhibiting a VSWR of <1.5:1 across the band.

The arrays utilise an internal phasing harness in PTFE based double screened coaxial cable with polyethylene jacket to aid waterproofing and resist bird attack. The use of a unique phasing arrangement provides extensive side lobe suppression and null fill characteristics. The arrays will accept an input power level of 500 watts continuous, making them ideal for high power multiple transmitter applications. The BA80 series are offered with 3°, 5° or 8° downtilt, to further enhance close-in coverage characteristics.

All welded alodined aluminium construction and new fabrication techniques in both the harness and dipole sections have proven to minimise intermodulation and noise generated within the antennas. The entire array rests at ground potential and offers the ultimate in lightning resistant antennas.

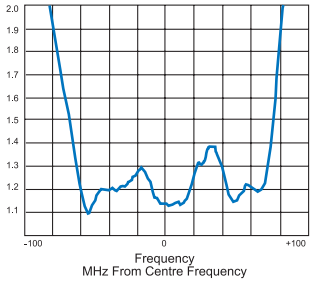
- Ideal for highly populated sites requiring long haul omnidirectional coverage
- Operate over entire 330-420 or 400-520 MHz bands
- 3, 6 or 9 dBd gain versions available
- Inverted mounting version available
- Versions with 0°, 3°, 5° or 8° of downtilt available
- Extensive side lobe suppression and null fill
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

UHF Omnidirectional Dipole Arrays

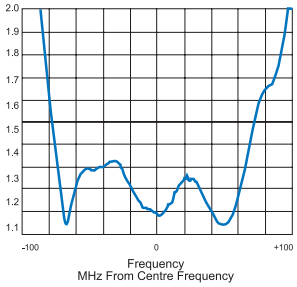
330-520 MHz

BA40 Series
BA80 Series
BA160 Series

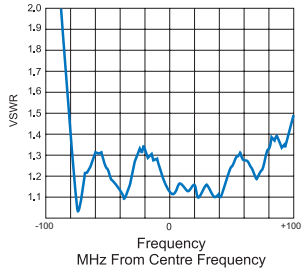
Typical VSWR response (BA40-67)



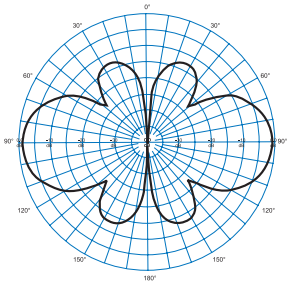
Typical VSWR response (BA80-67)



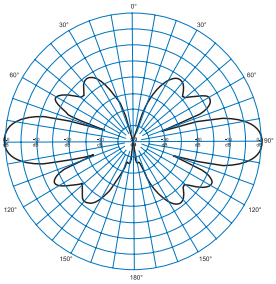
Typical VSWR response (BA160-67-T3)



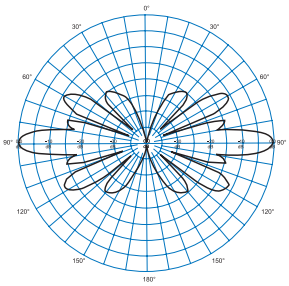
BA40-67 - E Plane



BA80-67 - E Plane



BA160-67 - E Plane



Electrical

Model Number	BA40-57	BA40-67	BA80-57	BA80-67	BA160-67-T3
Nominal Gain *dBi (dBd)*	5 (3)		8 (6)		11 (9)
Frequency *MHz*	330 - 420	400 - 520	330 - 420	400 - 520	
Tuned Bandwidth	Entire band				
VSWR (Return Loss)	<1.5 :1 (14dB)				
Nominal Impedance Ω	50				
Downtilt	Not offered		0° Std, -3°, -5°, -8°. See note (1)		3°
Vertical Beamwidth	30°		16°		9°
Horizontal Beamwidth	Omni +/- 0.5dB				
Input Power (Watts)	500				
Passive IM 3rd order *dBc*	-150				

Mechanical

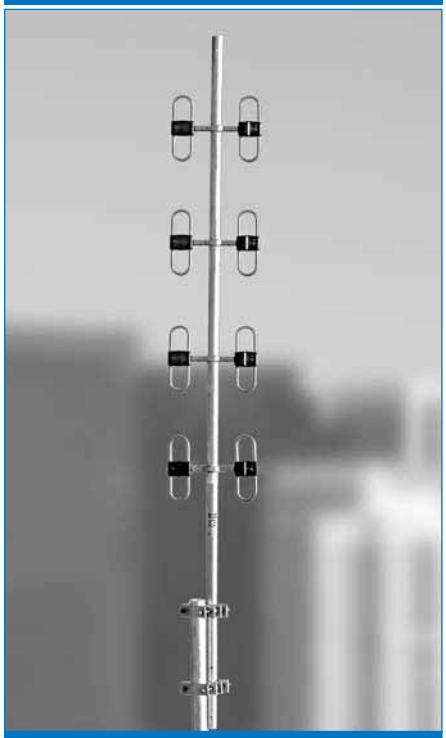
Model Number		BA40-57	BA40-67	BA80-57	BA80-67	BA160-67-T3
Construction		All welded aluminium with alodined finish. See (2) and (3) for alternate finishes				
Length *m*		2.1	2.1	3.0		5.0
Weight *kg*		5.0		8.0		20.0
Termination		N female with 0.5m 9142 cable tail. See note (4)				
Mounting Area		500mm x 48mm diam. aluminium				500mm x 63mm diam. aluminium
Suggested Clamps		2 x UC1				
Projected Area *cm²*	No ice	1913	1833	3222	3063	6040
	With ice	3182	2990	5835	5451	10085
Wind Load (Thrust) @ 160km/h *N*		227	217	382	363	716
Wind Gust Rating *km/h*		240		235	240	216
Torque @160 km/h *Nm*		116	111	382	363	1417

(1) Factory pre-set downtilt of 3°, 5° or 8° may be specified on BA80 series antennas using model no. trailer - T3, -T5 or -T8
(2) Ruggedised black powder coat finish (aids in ice shedding for extreme conditions) is available on all aluminium arrays.
(3) BA40 and BA80 series may be optionally supplied in all welded 316 Marine Grade Stainless steel. Dimensions vary slightly
(4) Connector termination option available of 7/16 DIN female connector using model no. trailer -DIN

UHF Elliptical Dipole Arrays

330-520 MHz

EA40 Series
EA80 Series



EA80

The EA series arrays provide exceptionally high gain with an elliptical shaped radiation pattern, ideal for the bi-directional coverage requirements of some "corridor" applications.

The array utilises an internal phasing harness in PTFE based double screened coaxial cable with polyethylene jacket to aid waterproofing and resist bird attack.

The main lobe of these antennas is strong and highly controlled with extensive side lobe suppression ensuring the integrity of the pattern. To further boost performance, users of the EA80 array may specify beamtilt of 0, -3 or -5 degrees. Superior performance is maintained over the entire operating bandwidth of the antenna (330-420 MHz or 400-520 MHz). VSWR is maintained at <1.5:1 and input power levels of 500 watts are catered to for true high density site requirements.

With all welded construction and superior internal harness construction (using highly stable PTFE based cables) the antennas provide not only excellent radiation characteristics but also high levels of intermodulation and noise suppression. IM performance is a world leading -150dBC based on a two carrier test. The entire array rests at ground potential and offers the ultimate in lightning resistant antennas.

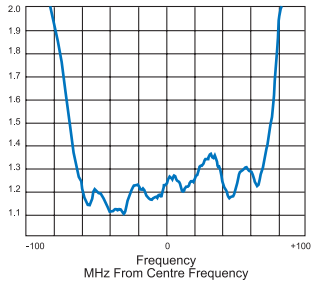
- Ideal for highly populated sites requiring "corridor" style largely bidirectional coverage
- 5dBd or 8dBd gain versions available
- Inverted mounting version available
- 0°, 3° or 5° of downtilt available
- Extensive side lobe suppression and null fill
- Hermetically sealed internal phasing harness
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

UHF Elliptical Dipole Arrays

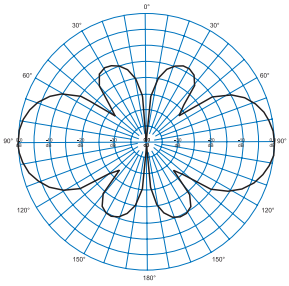
330-520 MHz

EA40 Series
EA80 Series

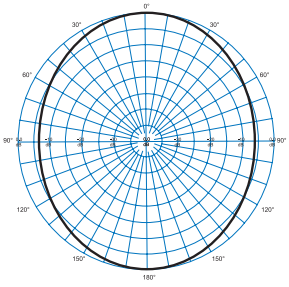
Typical VSWR response (EA40-67)



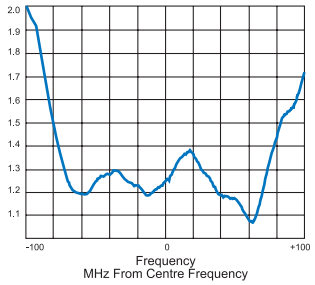
EA40-67 - E Plane



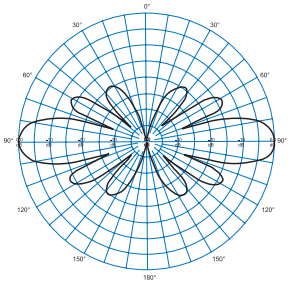
EA40-67 - H Plane



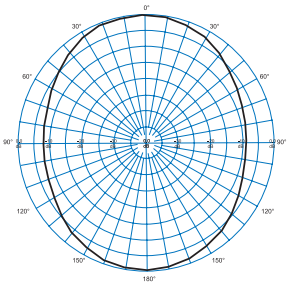
Typical VSWR response (EA80-67)



EA80-67 - E Plane



EA80-67 - H Plane



Electrical

Model Number	EA80-57	EA40-67	EA80-67
Nominal Gain *dBi (dBd)*	10 (8)	7 (5)	10 (8)
Frequency *MHz*	330 - 420	400 - 520	
Tuned Bandwidth *MHz*	Entire band		
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Downtilt	Not offered	Not offered	0° Std -3°, -5°. See note (1)
Vertical Beamwidth	17°	34°	17°
Horizontal Beamwidth	74°	70°	74°
Input Power *W*	500		
Passive IM 3rd order *dBc*	-150		

Mechanical

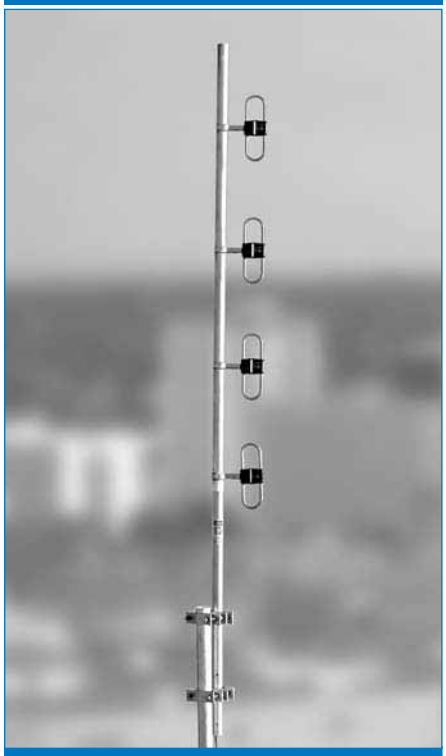
Model Number		EA80-57	EA40-67	EA80-67
Construction		All welded aluminium with alodined finish. See note (2)		
Length *m*		3.0	2.1	3.0
Weight *kg*		8.0	5.0	8.0
Termination		N female with 0.5m 9142 cable tail. See note (3)		
Mounting Area		500mm x 48mm diam. aluminium		
Suggested Clamps		2 x UC1		
Projected Area *cm²*	No ice	3827	2118	3633
	With ice	7053	3527	6527
Wind Load (Thrust) @ 160km/h *N*		454	251	431
Wind Gust Rating *km/h*		226	240	219
Torque @160 km/h *Nm*		454	128	431

(1) Factory pre-set downtilt of 3° or 5° may be specified on EA80-67 series antennas using model no. trailer -T3 or -T5
(2) EA40 and EA80 series may be optionally supplied in all welded 316 Marine Grade Stainless steel. Dimensions vary slightly
(3) Connector termination option available of 7/16 DIN female connector using model no. trailer -DIN

UHF Offset Dipole Arrays

330-520 MHz

OA20 Series
OA40 Series



OA40

Offset arrays are directional antennas for use when a base station is at one end of the coverage area. These new arrays feature improved gains, low noise performance and enhanced null fill coverage in an array with typical cardioid coverage characteristics.

OA Series arrays feature the same solid construction as the BA and EA series. The array utilises an internal phasing harness in PTFE based double screened coaxial cable with polyethylene jacket to aid waterproofing and resist bird attack.

The OA Series have slightly more than 170° horizontal beamwidth, thus everything in front of the antenna is given coverage. This eliminates the possibility of fading at the extremities of the target coverage area. The level of radiation at the rear of the antenna is approximately unity gain.

As would be expected from a cardioid array, the vertical beamwidth is slightly greater than its BA omnidirectional or EA elliptical pattern counterparts.

These antennas are also offered with -3°, -5° or -8° of beamtilt, and all include extensive side lobe suppression, null fill and a power input level of 500 Watts continuous.

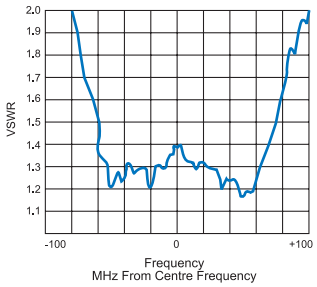
- Operate over entire 330-420MHz or 400-520 MHz bands
- Inverted mounting version available
- 5dBd or 9dBd gain versions available
- Hermetically sealed internal phasing harness
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

UHF Offset Dipole Arrays

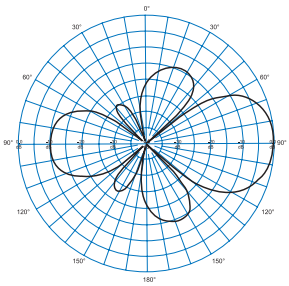
330-520 MHz

OA20 Series
OA40 Series

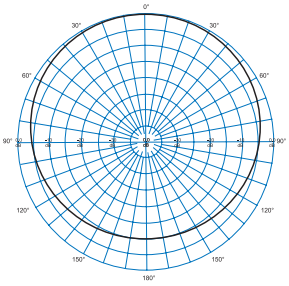
Typical VSWR response (OA20-67)



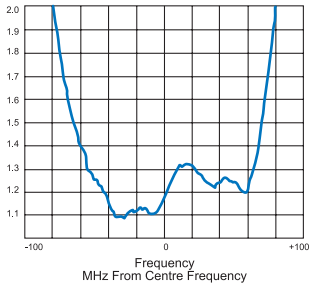
OA20-67 - E Plane



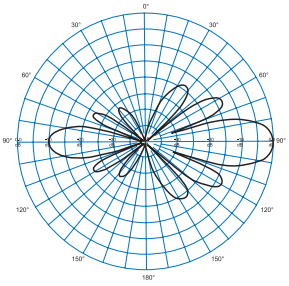
OA20-67 - H Plane



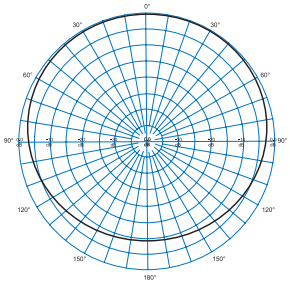
Typical VSWR response (OA40-67)



OA40-67 - E Plane



OA40-67 - H Plane



Electrical

Model Number	OA20-57	OA20-67	OA40-57	OA40-67
Nominal Gain *dBi (dBd)*	7 (5)		11 (9)	
Frequency *MHz*	330 - 420	400 - 520	330 - 420	400 - 520
Tuned Bandwidth *MHz*	Entire band			
VSWR (Return Loss)	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Downtilt	Not offered		0° Std, -3°, -5°, -8°. See Note (1)	
Vertical Beamwidth	35°		17°	
Horizontal Beamwidth	175°	180°	173°	178°
Input Power (Watts)	500			
Passive IM 3rdOrder *dBc*	-150			

Mechanical

Model Number		OA20-57	OA20-67	OA40-57	OA40-67
Construction		All welded aluminium with alodined finish. See notes (2) and (3) for alternative finishes.			
Length *m*		2.1		3.0	
Weight *kg*		4.0		6.5	
Termination		N female with 0.5m 9142 cable tail. See note (4).			
Mounting Area		500mm x 48mm diam. aluminium			
Suggested Clamps		2 x UC1			
Projected Area *cm²*	No ice	1694	1646	2785	2688
	With ice	2697	2565	4865	4602
Wind Load (Thrust) @ 160km/h *N*		201	195	330	319
Wind Gust Rating *km/h*		>240			
Torque @160 km/h *Nm*		102	99	330	319

(1) Factory pre-set downtilt may be specified on OA40 series antennas using model no. trailer - T3, -T5 or -T8
(2) Ruggedised black powder coated finish (aids in ice shedding for extreme conditions) is available on all aluminium arrays
(3) OA20 and OA40 series may be optionally supplied in all welded 316 Marine Grade Stainless steel. Dimensions vary slightly
(4) Connector termination option available of 7/16 DIN female connector using model no. trailer - DIN

Array Combinations

330-520 MHz

UHF Array Combinations

The RFI range of UHF dipole arrays provide expanded bandwidth, high power ratings and unequalled performance in gain, pattern and intermodulation performance.

Ever increasing costs and site density requirements are reducing availability of antenna positions on prime sites. In order to reduce the overall number of antennas the RFI dipole array series provides system engineers and site owners with a flexible solution to reduce antenna numbers.

The RFI combination arrays are available in three types:

The Single Section Multiple Array

A combination of two arrays mounted upon a single piece of 48.4mm diameter, 3 meter length mast section. These arrays are common where any combination of medium gain UHF omnidirectional, offset or elliptical arrays are required. The feeding of each of the arrays is via separate coaxial cable tails at the base of the array.

Some common configuration examples are shown in the following tables. The electrical specifications are very similar to those provided for the individual arrays listed within the catalogue. *Shown on the left is the BA4040-67.*

The Dual Section Combination Dipole Array

These arrays are provided in two sections for ease of shipping and handling and can be assembled on site.

The lower section array is made on a larger diameter mast stock, the upper array telescoping into the lower section. Both upper and lower arrays can be any one of our standard UHF arrays or be externally coupled for even higher gain using a PH42-67 phasing harness. This type of configuration provides unrestricted gain, pattern and beamtilt combinations.

Some more common configuration examples are shown in the following table. The electrical specifications are very similar to those provided for the individual arrays previously listed within the catalogue. *Shown on the left is the BA80-67L lower section with OA40-67 upper section.*

The Combination Collinear and Dipole Array

Similar in many regards to the above arrays this type of combination array employs a collinear antenna as the upper section of the array. These arrays are ideal where tower wind loading is a critical consideration. The collinear antenna fits into a lower section array, which can be essentially any style of our higher gain UHF dipole arrays.

The collinear antenna (COL8 or COL17) is held in an adaptor which can be fitted to any appropriately configured UHF dipole array.

A sample of the more common configurations are provided in the following table. The electrical specifications are very similar to those provided for the individual arrays previously listed within the catalogue. *Shown on the left is the BX80-67 lower section with COL8 upper section.*

Array Combinations

Ordering Details

Single Section Multiple Arrays

Part number	Description	Frequency
Omnis		
BA4040-57	2 x 3dBd omnis with separate feeds	330-420MHz
BA4040-67	2 x 3dBd omnis with separate feeds	400-520MHz
Elliptical		
EA4040-57	2 x 5dBd ellipticals with separate feeds	330-420MHz
EA4040-67	2 x 5dBd ellipticals with separate feeds	400-520MHz
Offset Sections		
OA2020-67	2 x 5dBd offsets with separate feeds	400-520MHz

Dual Section Combination Dipole Arrays

Shown below are lower sections only which include a through harness to connect your choice of upper section. Select your upper section from the arrays section shown on pages **22** to **27**.

Part number	Description	Frequency
Omnis		
BA4040-57L	2 x 3dBd omnis with separate feeds	330-420MHz
BA80-57L	1 x 6dBd omni	330-420MHz
BA4040-67L	2 x 3dBd omnis with separate feeds	400-520MHz
BA80-67L	1 x 6dBd omni	400-520MHz
Elliptical Sections		
EA4040-57L	2 x 5dBd ellipticals with separate feeds	330-420MHz
EA80-57L	1 x 8dBd elliptical	330-420MHz
EA4040-67L	2 x 5dBd ellipticals with separate feeds	400-520MHz
EA80-67L	1 x 8dBd elliptical	400-520MHz
Offset Sections		
OA2020-67L	2 x 5dBd offsets with separate feeds	400-520MHz
OA40-67L	1 x 9dBd offset	400-520MHz

When ordering a dual section combination array you will need to order as follows:

1. Specify your lower Section from the list above eg: BA80-67L **PLUS**
2. Specify your single upper section from pages **22** to **27**. eg: OA40-67.

Combination Collinear and Dipole Arrays

These lower sections are for use with COL series collinears. They are provided with a through harness to connect your choice of COL8 (UHF), COL15 (VHF) or COL17 (VHF) collinears.

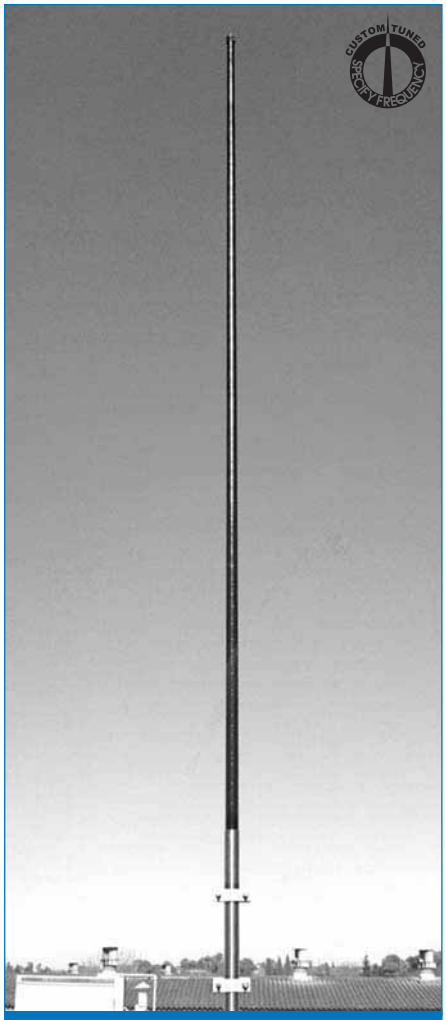
Omnis		
BX40-67	1 x 3dBd omni	400-520MHz
BX4040-67	2 x 3dBd omnis with separate feeds	400-520MHz
BX80-67	1 x 6dBd omni	400-520MHz
Elliptical Sections		
EX40-67	1 x 5dBd elliptical	400-520MHz
EX4040-67	2 x 5dBd ellipticals with separate feeds	400-520MHz
EX80-67	1 x 8dBd elliptical	400-520MHz
Offset Sections		
OX2020-67	2 x 5dBd offsets with separate feeds	400-520MHz
OX40-67	1 x 9dBd offset	400-520MHz

When ordering a combination collinear and dipole array you will need to order as follows:

1. Specify your lower Section from the list above eg: BX80-67 **PLUS**
2. Specify your COL collinear either COL15, COL17 or COL8 eg: COL8 (and remember to specify frequency)

66-88 MHz

COL16
COL1
COL34-T1



COL1

The 66-88 MHz COL range is a series of "cut to frequency" 3dBd gain vertical collinears. The range includes models suitable for simplex, duplex and heavy duty applications. They all include internal DC grounding for lightning protection and the reduction of static noise. Drainage vents at the base allow the antennas to 'breathe' and thus prevent condensation build up.

COL16

The COL16 is specifically designed to cater for transmit to receive separations of up to 2.0 MHz. The antenna is a series fed Collinear which is housed in a heavy duty tapered fibreglass radome, fitted with a alodined aluminium mounting tube. The COL16 (and the electrically identical COL1) have been specifically designed to maintain stable vertical radiation pattern characteristics at the extremities of the tuned bandwidth. This ensures reciprocity of transmit and receive signal characteristics.

COL1

The COL1 is an electrically identical internal design to the COL16 with ruggedised construction, designed for use in the most extreme climatic conditions. The radome which houses the active elements of the COL1 was originally designed to serve as the mast of recreational sail boards and is immensely strong. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. The antenna is fitted with a large, 60mm diameter alodined aluminium mounting tube.

COL34-T1

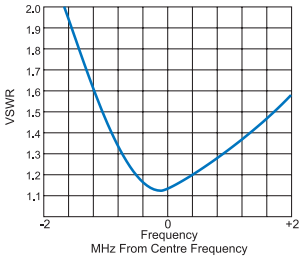
The COL34 is a two piece antenna designed for applications where the overall length of collinears for this band create transportation/ logistic issues. The antenna employs a machined brass coupling to ensure long term integrity over the service life of the antenna.

VHF Vertical Collinear Antennas

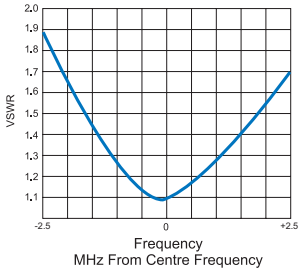
66-88 MHz

COL16
COL1
COL34-T1

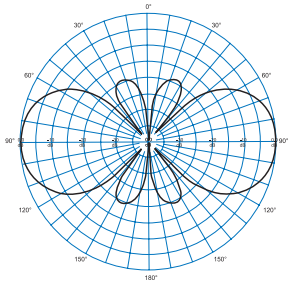
Typical VSWR response (COL16)



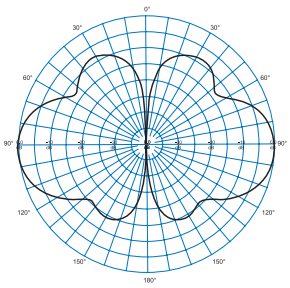
Typical VSWR response (COL34-T1)



COL16 - E Plane



COL34-T1 - E Plane



Electrical

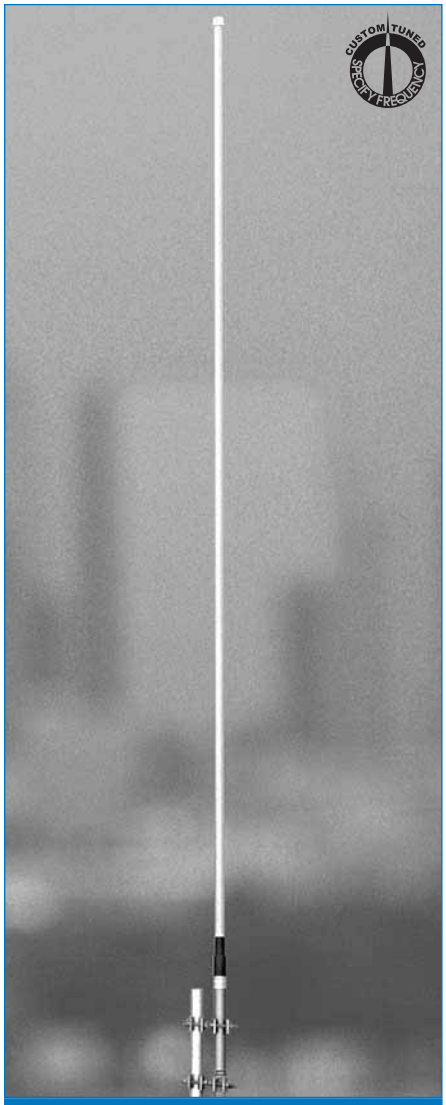
Model Number	COL16	COL1	COL34-T1
Nominal Gain *dBi (dBd)*	5 (3)		4 (2)
Frequency *MHz*	67 - 88	70 - 88	66 - 88
Tuned Bandwidth	3.0%		3.7%
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	36°		40°
Horizontal Beamwidth	Omni +/- 0.5dB		
Input Power *W*	200		100

Mechanical

Model Number		COL16	COL1	COL34-T1
Construction		Alodined aluminium elements with white fibreglass radome	Alodined aluminium elements with ruggedised black fibreglass radome	Two part antenna joins with brass ferrules. White fibreglass radome
Length *m*		5.9	5.8	5.2
Weight *kg*		4.5	8.0	4.0
Termination		N female bulkhead		0.45m of RG213 with N female
Mounting Area		500mm x 44mm diam. alodined aluminium	750mm x 60mm diam. alodined aluminium	670mm x 38mm diam. stainless steel
Suggested Clamps		2 x UC1		
Projected Area *cm²*	No ice	1974	2736	1435
	With ice	3761	4459	2819
Wind Load (Thrust) @ 160km/h *N*		234	324	170
Wind Gust Rating *km/h*		212	240	164
Torque @160 km/h *Nm*		588	712	335

88-148 MHz

COL22
COL28
COL29



COL28

A series of "cut to frequency" 3 dBd gain vertical collinears. The range includes antennas suitable for simplex, duplex and heavy duty applications. These antennas are all rated at 200watt input power. They are DC grounded to provide maximum resistance to lightning and reduction of precipitation static noise.

COL22

This antenna is suited to single frequency applications in the 88-115 MHz band. The centre fed two-element design eliminates distortion of the radiation pattern and ensures a vertical pattern free of beamtilt. The radiating elements are of welded aluminium construction which minimise generation of intermodulation and spurious products. The radiating elements are enclosed in a tapered fibreglass radome which is fitted to a 40mm diameter alodined aluminium mounting tube. The antenna is terminated with a fixed N-type female connector which is easily accessible for sealing.

COL28

This is a broadband duplex antenna for the 115-148 MHz band specifically designed to cater for transmit to receive separations of up to 4.6 MHz. The antenna is a series fed Collinear which is housed in a heavy duty tapered fibreglass radome, fitted to an alodined aluminium mounting tube. The COL28 (and the electrically identical COL29) have been specifically designed to maintain stable vertical radiation pattern characteristics at the extremities of the spot tuned bandwidth.

COL29

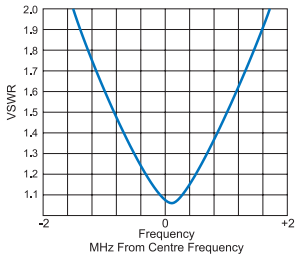
The COL29 is electrically identical to the COL28 antenna and may be used in duplex or simplex applications in the 115-148 MHz band. The COL29 is a ruggedised antenna, designed for use in the most extreme climatic conditions. The radome which houses the active elements of the COL29 was originally designed to serve as the mast of recreational sail boards and is immensely strong. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. A 60mm aluminium mounting tube supports the radome, the alodine finish providing a conductive surface to ensure effective earthing of the antenna when mounted.

VHF Vertical Collinear Antennas

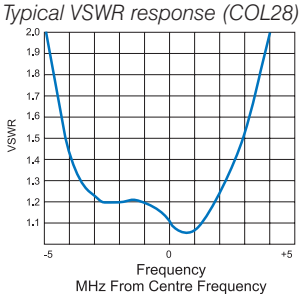
88-148 MHz

COL22
COL28
COL29

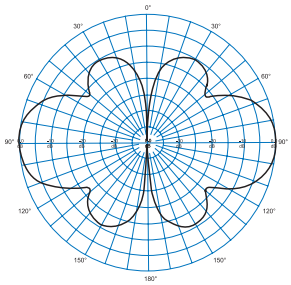
Typical VSWR response (COL22)



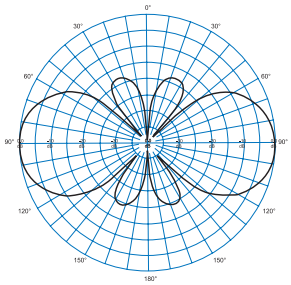
Typical VSWR response (COL28)



COL22 - E Plane



COL28 - E Plane



Electrical

Model Number	COL22	COL28	COL29
Nominal Gain *dBi (dBd)*	5 (3)		
Frequency *MHz*	88 - 115	115 - 148	
Tuned Bandwidth	1.0%	4.0%	
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	32°	38°	
Horizontal Beamwidth	Omni +/- 0.5dB		
Input Power *W*	200		

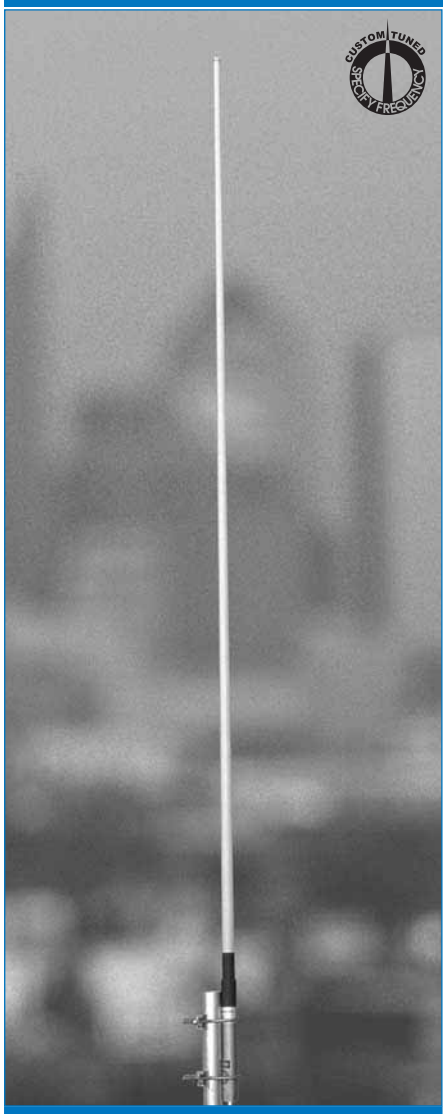
Mechanical

Model Number		COL22	COL28	COL29
Construction		Alodined aluminium elements with white fibreglass radome		Alodined aluminium elements with ruggedised black fibreglass radome
Length *m*		4.8	3.8	
Weight *kg*		4.0	4.2	5.0
Termination		N female bulkhead		
Mounting Area		500mm x 40mm diam. alodined aluminium	500mm x 44mm diam. alodined aluminium	500mm x 60mm diam. alodined aluminium
Suggested Clamps		2 x UC1		
Projected Area *cm²*	No ice	1483	1533	1904
	With ice	2906	2650	2852
Wind Load (Thrust) @ 160km/h *N*		176	182	226
Wind Gust Rating *km/h*		164	212	240
Torque @160 km/h *Nm*		338	260	325

VHF Vertical Collinear Antennas

144-175 MHz

COL15
COL17
COL3
COL35



COL15

The 144-175 MHz COL range is a series of "cut to frequency" 3dBd gain vertical collinears. The range includes antennas suitable for simplex, duplex and rugged applications. All of the antennas include internal DC grounding for lightning protection and the reduction of static noise. Drainage vents at the base allow the antennas to 'breathe' and thus prevent condensation build up. The alodine finish of the aluminium mounting tube provides a conductive surface which ensures effective earthing when mounted.

COL 15

The COL15 is a centre fed two-element design which eliminates distortion of the radiation pattern and ensures a true omnidirectional horizontal pattern. The radiating elements are constructed from welded alodined aluminium to minimise generation of intermodulation and spurious products. The radiating elements are enclosed in a tapered fibreglass radome which is fitted to an alodined aluminium mounting tube. This lightweight antenna has minimal wind loading and is ideal for mounting on moderate support structures.

COL17

The COL17 is suited for broadband and duplex applications designed to cater for transmit to receive separations of up to 5.0 MHz. The antenna is a series fed collinear which is housed in a heavy duty tapered fibreglass radome, fitted to a ruggedised alodined aluminium mounting tube. The COL17 (and the electrically identical COL3) have been specifically designed to maintain stable vertical radiation pattern characteristics at the extremities of the tuned bandwidth, ensuring reciprocity of transmit and receive signal.

COL3

The COL3 is electrically identical to the COL17 antenna. The COL3 is a ruggedised antenna, designed for use in the most extreme climatic conditions. The radome which houses the active elements of the COL3 was originally designed to serve as the mast of recreational sail boards and is immensely strong. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. A large alodined aluminium mounting tube supports the radome.

COL35

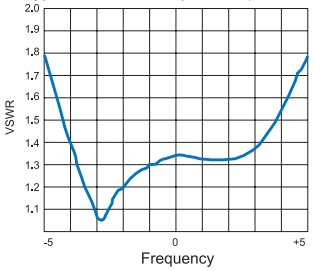
The COL35 is a high gain omnidirectional collinear antenna specifically designed for the most extreme conditions. It incorporates sleeved broadband dipole elements enclosed with a ruggedised, heavy walled fibreglass radome. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. A heavy duty hot dip galvanised steel mounting tube supports the radome.

VHF Vertical Collinear Antennas

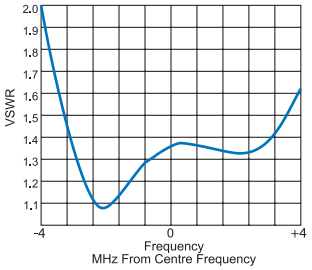
144-175 MHz

COL15
COL17
COL3
COL35

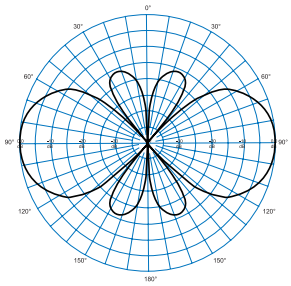
Typical VSWR response (COL35)



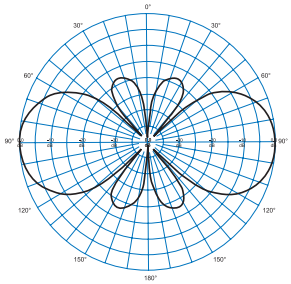
Typical VSWR response (COL17)



COL35 - E Plane



COL17 - E Plane



Electrical

Model Number	COL15	COL17	COL3	COL35
Nominal Gain *dBi (dBd)*	5 (3)			
Frequency *MHz*	144 - 175			148 - 175
Tuned Bandwidth	1.0%	4.0%		
VSWR (Return Loss)	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	30°	38°		39°
Horizontal Beamwidth	Omni +/- 0.5dB			
Input Power *W*	200			250

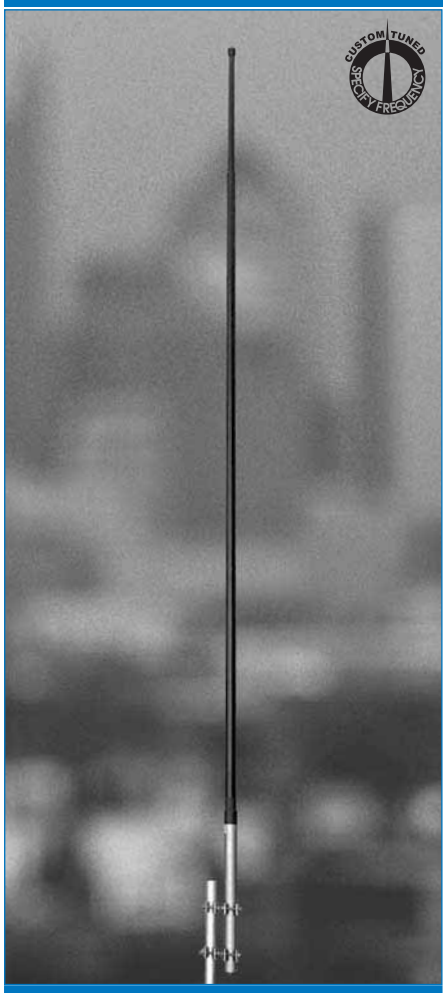
Mechanical

Model Number		COL15	COL17	COL3	COL35
Construction		Alodined aluminium elements with white fibreglass radome		Alodined aluminium elements with ruggedised black fibreglass radome	Extra heavy duty black fibreglass radome
Length *m*		2.9	3.0		2.9
Weight *kg*		2.0	3.2	4.2	9
Termination		N female bulkhead. For COL17 see note (1)			
Mounting Area		300mm x 44mm diam. alodined aluminium	500mm x 40mm diam. alodined aluminium	500mm x 60mm diam. alodined aluminium	358mm x 73mm diam. galvanised steel
Suggested Clamps		2 x UC1			
Projected Area *cm²*	No ice	906	1160	1607	1662
	With ice	1791	2045	2384	2358
Wind Load (Thrust) @ 160km/h *N*		107	137	190	197
Wind Gust Rating *km/h*		>240			
Torque @160 km/h *Nm*		129	146	201	215

(1) COL17 is available with 1 metre of RG213 cable tail with N female connector using model no. trailer - T1

144-175 MHz

COL4
COL18
COL24
COL36



COL36

This range of 'custom tuned' collinear antennas all exhibit very similar radiation patterns. The antennas are suitable for single frequency or duplex applications and vary only in their construction.

COL4

The COL4 is a broadband antenna manufactured to suit high power operation. The collinear is specifically designed to cater for transmit to receive separations of up to 6.0 MHz. The antenna is a series fed collinear which is housed in a heavy duty tapered fibreglass radome, fitted to a rugged aluminium mounting tube. The COL4 (and the electrically identical COL18 and COL24) have been specifically designed to maintain stable vertical radiation pattern characteristics at the extremities of the operating bandwidth. This ensures reciprocity of transmit and receive signal characteristics.

COL18

The COL18 is electrically identical to the COL4 antenna. The COL18 is a ruggedised antenna, designed for use in the most extreme climatic conditions. The radome which houses the active elements of the COL18 was originally designed to serve as the mast of recreational sail boards and is immensely strong. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. A substantial diameter alodine aluminium mounting tube supports the radome.

COL24

The COL24 is electrically identical to the COL4 but features a stainless steel mounting tube and upgraded construction for superior resistance to weathering, particularly in corrosive environments.

COL36

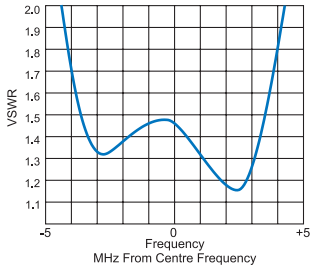
The COL36 is a high gain omnidirectional collinear antenna specifically designed for the most extreme conditions. It incorporates sleeved broadband dipole elements enclosed with a ruggedised, heavy walled fibreglass radome. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. A heavy duty hot dip galvanised steel mounting tube supports the radome.

VHF Vertical Collinear Antennas

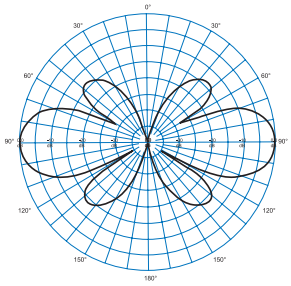
144-175 MHz

COL4
COL18
COL24
COL36

Typical VSWR response (COL4)



COL4 - E Plane



Electrical

Model Number	COL4	COL24	COL18	COL36
Nominal Gain *dBi (dBd)*	6.6 (4.5)			
Frequency *MHz*	144 - 175			148 - 175
Tuned Bandwidth	4.0%			
VSWR (Return Loss)	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	20°			
Horizontal Beamwidth	Omni +/- 0.5dB			
Input Power *W*	200			250
Passive IM 3rd order *dBc*	-125			

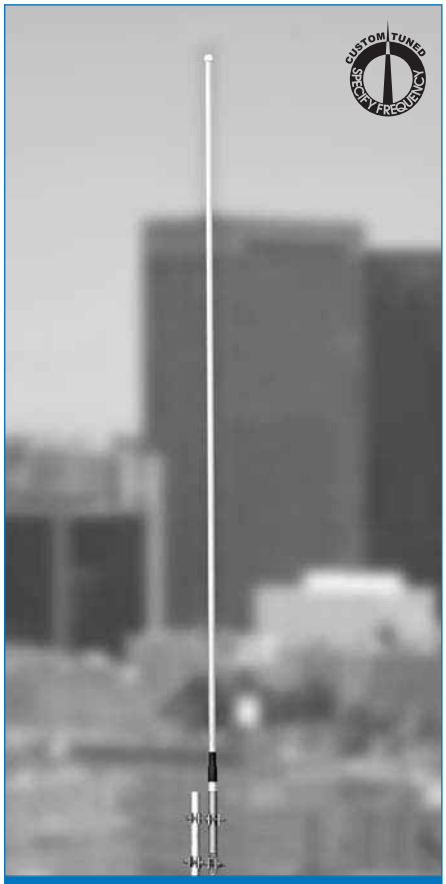
Mechanical

Model Number		COL4	COL24	COL18	COL36
Construction		Alodined aluminium elements, white fibreglass radome		Alodined aluminium elements with ruggedised black fibreglass radome	Sleeved dipole elements with extra heavy duty black fibreglass radome
Length *m*		4.4		4.7	4.6
Weight *kg*		4.5		6.0	12
Termination		N female bulkhead			
Mounting Area		500mm x 44mm diam. alodined aluminium	500mm x 48mm diam. stainless steel	750mm x 60mm diam. alodined aluminium	500mm x 73mm diam. galvanised steel
Suggested Clamps		2 x UC1			
Projected Area *cm²*	No ice	1698	1711	2403	2457
	With ice	2977	2993	3697	3553
Wind Load (Thrust) @ 160km/h *N*		201	203	285	291
Wind Gust Rating *km/h*		>240			
Torque @160 km/h *Nm*		355	358	468	536

VHF Vertical Collinear Antenna

175-310 MHz

COL27



COL27

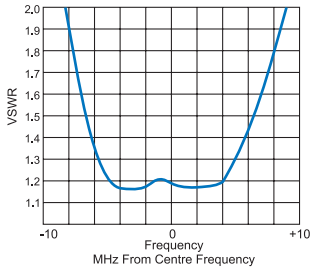
The COL27 is a "cut to frequency" 3 dBd gain broadband vertical collinear suitable for single frequency or duplex applications.

This antenna can be used in multiple transmitter or paging applications at 200 watts input. Being relatively broadband, the COL27 caters to bandwidths of 5% of the specified frequency (It is advisable to specify both transmit and receive frequencies when ordering).

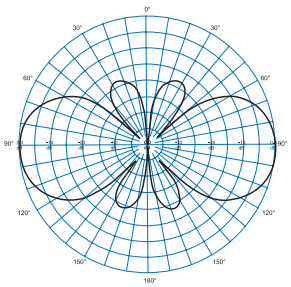
The COL27 is a series fed collinear design with the radiating element housed in a heavy duty fibreglass radome, fitted with an alodined aluminium mounting tube.

This antenna has been specifically designed to maintain stable vertical radiation pattern characteristics at the extremities of the tuned bandwidth. This ensures reciprocity of transmit and receive signal characteristics. The lightweight design delivers minimum wind loading and is ideal for mounting on moderate support structures.

Typical VSWR response (COL27)



COL27 - E Plane



Electrical

Model Number	COL27
Nominal Gain *dBi (dBd)*	5 (3)
Frequency *MHz*	175 - 310
Tuned Bandwidth	5.0%
VSWR (Return Loss)	<1.5 :1 (14dB)
Nominal Impedance Ω	50
Vertical Beamwidth	38°
Horizontal Beamwidth	Omni +/- 0.5dB
Input Power *W*	200
Passive IM 3rd order *dBc*	-125

Mechanical

Model Number		COL27
Construction		Alodined aluminium elements with white fibreglass radome
Length *m*		2.7
Weight *kg*		3.5
Termination		N female bulkhead
Mounting Area		500mm x 40mm diam. alodined aluminium
Suggested Clamps		2 x UC1
Projected Area *cm²*	No ice	1033
	With ice	1795
Wind Load (Thrust) @ 160km/h *N*		122
Wind Gust Rating *km/h*		>240
Torque @160 km/h *Nm*		110

UHF Vertical Collinear Antenna

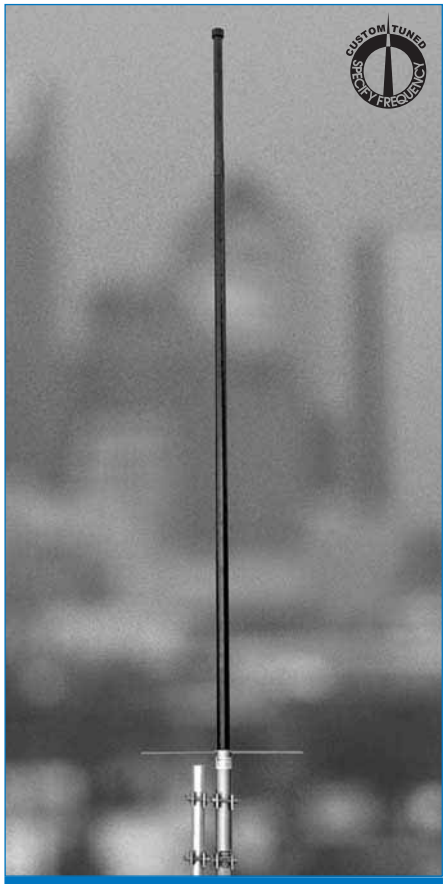
300-390 MHz

COL23

The COL23 is a high gain omnidirectional collinear antenna suitable for simplex, duplex or multiple transmit/receive applications. The combination of 6 dBd gain and a nominal 2° of negative beamtilt results in a vertical radiation pattern that is ideal for almost all coverage requirements, both local and wide area.

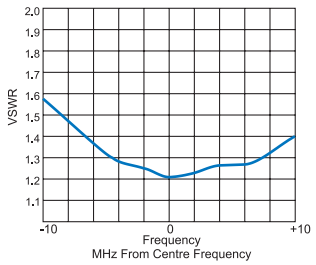
The COL23 is a series fed collinear design which is custom tuned to user specified frequencies. The radiating element is constructed of alodined aluminium, enclosed in a tapered ruggedised fibreglass radome, which is fitted to a alodined aluminium mounting tube. The mounting tube is fitted with three radials to aid in decoupling and enhance pattern control.

The antenna is internally DC grounded aiding in lightning protection and the reduction of static noise. Drainage vents at the base allow the antenna to "breathe," and thus prevent condensation build up.

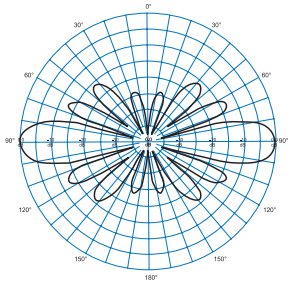


COL23

Typical VSWR response (COL23)



COL23 - E Plane



Electrical

Model Number	COL23	COL23-T1
Nominal Gain *dBi (dBd)*	8 (6)	
Frequency *MHz*	300 - 390	
Tuned Bandwidth	4.0%	
VSWR (Return Loss)	<1.5 :1 (14dB)	
Nominal Impedance Ω	50	
Vertical Beamwidth	14°	
Horizontal Beamwidth	Omni +/- 0.5dB	
Input Power *W*	200	

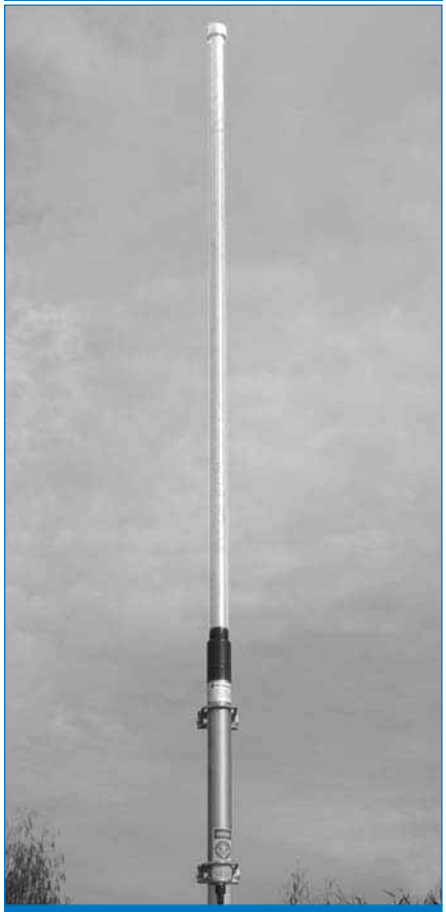
Mechanical

Model Number		COL23	COL23-T1
Construction		Alodined aluminium elements with two piece black ruggedised fibreglass radome with radials	
Length *m*		3.7	
Weight *kg*		3.3	
Termination		N female bulkhead	1m RG213 cable tail with N female
Mounting Area		468mm x 60mm diam. alodined aluminium	500mm x 60mm diam. alodined aluminium
Suggested Clamps		2 x UC1	
Projected Area *cm²*	No ice	1853	
	With ice	2785	
Wind Load (Thrust) @ 160km/h *N*		220	
Wind Gust Rating *km/h*		>240	
Torque @160 km/h *Nm*		310	

UHF Vertical (Tetra) Collinear Antennas

380-400 MHz

COL40 Series



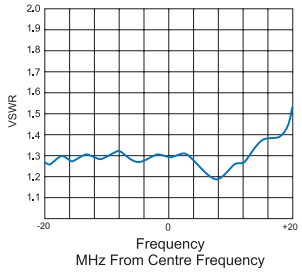
COL43

This range of collinear antennas have been specifically designed for Tetra UHF applications requiring high performance, broad bandwidth and exceptional PIM specifications.

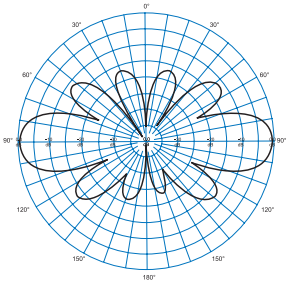
Utilising RFI's patented meander collinear technology, the unique design of this radiating element offers pattern stability across the band. This antenna is extremely robust in design with a single PCB based radiating element housed in a parallel fibreglass radome fitted to an alodined aluminium mounting tube.

- Broad Bandwidth
- Tightly controlled radiation patterns for optimum coverage
- Patented PCB design for optimum RF pattern stability
- Full band coverage
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

Typical VSWR response (COL43)



COL43 - E Plane



Electrical

Model Number	COL42	COL43
Nominal Gain *dBi (dBd)*	5 (3)	8 (6)
Frequency *MHz*	380 - 400	
Tuned Bandwidth	Entire band	
VSWR (Return Loss)	<1.5:1 (14dB)	
Nominal Impedance Ω	50	
Vertical Beamwidth	21°	13°
Horizontal Beamwidth	Omni +/- 0.5dB	
Input Power *W*	250	
Passive IM 3rd order *dBc*	-150	

Mechanical

Model Number		COL42	COL43
Construction		Flexible PCB radiator with white fibreglass radome	
Length *m*		2.3	3.5
Weight *kg*		3.2	4.6
Termination		N female bulkhead	
Mounting Area		500mm x 50mm diam. alodined aluminium	
Suggested Clamps		2 x UC1	
Projected Area *cm²*	No ice	1076	1649
	With ice	1598	2699
Wind Load (Thrust) @ 160km/h *N*		127	195
Wind Gust Rating *km/h*		>240	
Torque @160 km/h *Nm*		89	253

USA Patent: 6909403
Patent App. No.: Australia 2003255049 / Europe 03 023406.6 / China 200310100548.5 / India 844/CHE/2003

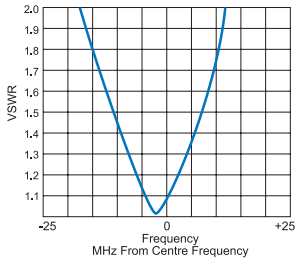
UHF Vertical Collinear Antennas

These are 3dBd gain omnidirectional collinear antennas characterised by broad operating bandwidths making them suitable for single frequency or duplex applications.

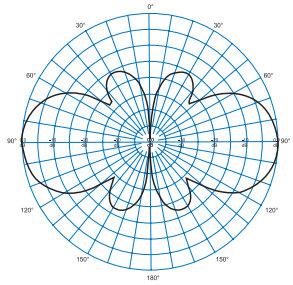
The COL7 is a lightweight collinear design with minimal wind loading, making it ideal for mounting on moderate support structures. The radiating elements are constructed from alodined aluminium and are arranged as a series fed array. The internal elements are enclosed in a fibreglass radome which is fitted to a aluminium mounting tube.

The COL11 is electrically identical to the COL7 antenna (although it does feature an up-rated stub design for additional power handling capabilities). The ruggedised radome which houses the active elements of the COL11 was originally designed to serve as the mast of recreational sail boards and is immensely strong. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. A large, 60mm diameter alodined aluminium mounting tube supports the radome.

Typical VSWR response (COL7)

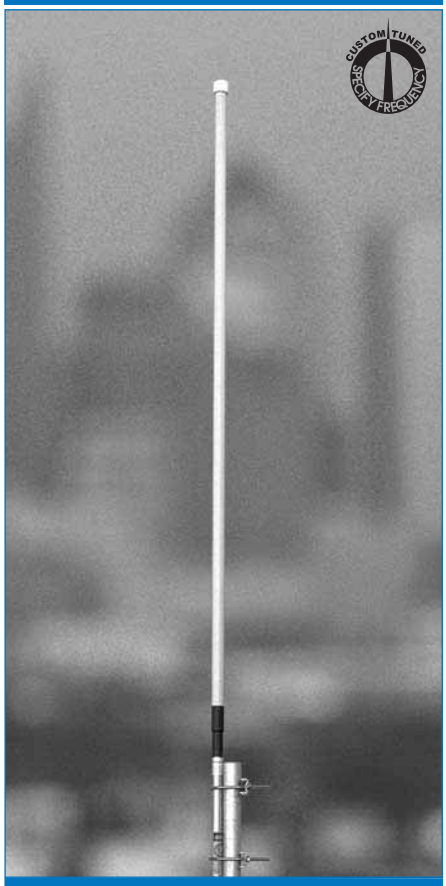


COL7 - E Plane



380-530 MHz

COL7
COL11



COL7

Electrical

Model Number	COL7	COL11
Nominal Gain *dBi (dBd)*	5 (3)	
Frequency *MHz*	380 - 530	390 - 520
Tuned Bandwidth	4.0%	
VSWR (Return Loss)	<1.5 :1 (14dB)	
Nominal Impedance Ω	50	
Vertical Beamwidth	30°	
Horizontal Beamwidth	Omni +/- 0.5dB	
Input Power *W*	150	200
Passive IM 3rd order *dBc*	-130	

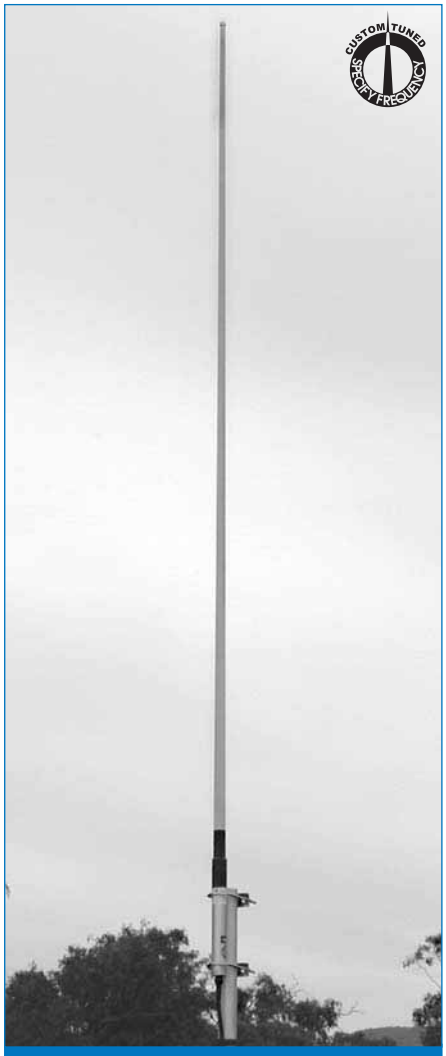
Mechanical

Model Number		COL7	COL11
Construction		Alodined aluminium elements with white fibreglass radome	Alodined aluminium elements with black ruggedised fibreglass radome
Length *m*		2.2	
Weight *kg*		0.5	1.2
Termination		N female bulkhead	
Mounting Area		200mm x 25mm diam. alodined aluminium	500mm x 60mm diam. alodined aluminium
Suggested Clamps		2 x UB1	
Projected Area *cm²*	No ice	666	1134
	With ice	1138	1615
Wind Load (Thrust) @ 160km/h *N*		79	134
Wind Gust Rating *km/h*		>240	
Torque @160 km/h *Nm*		62	85

UHF Vertical Collinear Antennas

380-530 MHz

COL8
COL12
COL19



COL8

A range of high gain omnidirectional collinear antennas, the COL8, COL12 and COL19 are electrically identical and differ only in their physical construction. An operating bandwidth of 10 MHz is provided within VSWR limits of less than 1.5:1, making them suitable for single and multi frequency applications. The antennas include internal DC grounding for lightning protection and the reduction of static noise.

COL8

The COL8 is our most popular and widely used UHF base station antenna. The COL8 is a series fed collinear which is custom tuned to user specified frequencies. By design, each antenna is constructed to exhibit a beam tilt of -2° at the highest of the operating frequencies specified. This negative beam tilt gradually increases with lower frequencies within the defined operational bandwidth. The result is an antenna which provides excellent null fill coverage and optimised range for antenna sites where average height above ground level is not greater than 2000m.

COL12

The COL12 is electrically identical to the COL8 however it's ruggedised design makes it ideal for use in the most extreme climatic conditions. The radome which houses the active elements of the COL12 was originally designed to serve as the mast of recreational sail boards and is immensely strong. The radome is coloured black to maximise solar heat retention and this has been shown to aid significantly in ice shedding. A large, 60mm dia.x 500mm aluminium mounting tube supports the radome.

COL19

The COL19 is also electrically identical to the COL8 but features a super heavy duty radome which is double the thickness (4.5mm) of the COL12 to withstand extremely severe conditions. The COL19 also features a heavy duty galvanised mounting tube, measuring 73mm in diameter and 7mm thick to support the radome. It is recommended in areas where extreme icing is anticipated.

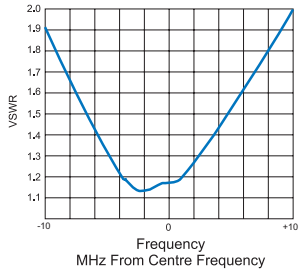
- 6dBd gain omnidirectional pattern
- Range of models to cater for varying environments
- The radiating elements are constructed of alodined aluminium with all internal metal junctions welded to prevent the generation of intermodulation products and spurious emissions

UHF Vertical Collinear Antennas

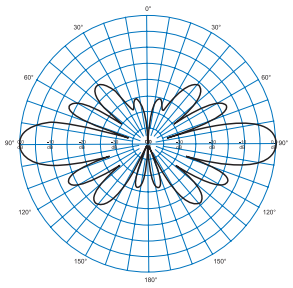
380-530 MHz

COL8
COL12
COL19

Typical VSWR response (COL12)



COL12 - E Plane



Electrical

Model Number	COL8	COL12	COL19
Nominal Gain *dBi (dBd)*	8 (6)		
Frequency *MHz*	380 - 530		
Tuned Bandwidth *MHz*	10		
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	14°		
Horizontal Beamwidth	Omni +/- 0.5dB		
Input Power *W*	200		
Passive IM 3rd order *dBc*	-130		

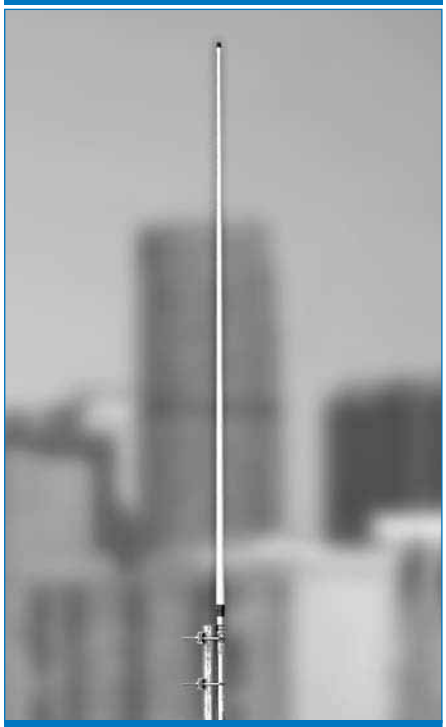
Mechanical

Model Number		COL8	COL12	COL19
Construction		Alodined aluminium elements with white fibreglass radome	Alodined aluminium elements with black ruggedised fibreglass radome	Alodined aluminium elements with black ultra ruggedised fibreglass radome
Length *m*		3.1	3.0	3.0
Weight *kg*		1.5	3.0	7.5
Termination		N female bulkhead		
Mounting Area		300mm x 38mm diam. alodined aluminium	500mm x 60mm diam. alodined aluminium	750mm x 73mm diam. galvanised steel
Suggested Clamps		2 x UC1		
Projected Area *cm²*	No ice	816	1624	1831
	With ice	1746	2421	2489
Wind Load (Thrust) @ 160km/h *N*		97	193	217
Wind Gust Rating *km/h*		211	240	240
Torque @160 km/h *Nm*		124	205	176

UHF CBRS Vertical Collinear Antennas

477 MHz

COL477-6
COL477-9



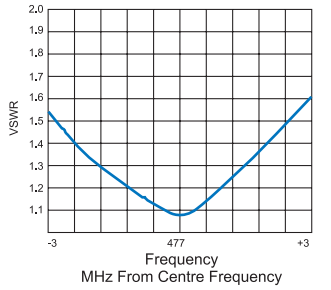
COL477-6

The COL477 Series are collinear antennas designed specifically to provide maximum range and performance in all UHF citizen band applications. Two models are offered according to gain and coverage requirements.

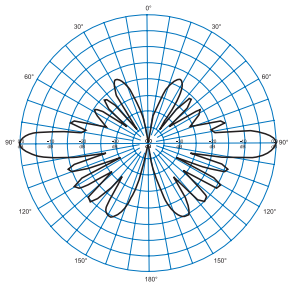
Both antennas are series fed collinear arrays within an enclosed tapered fibreglass radome. The antennas are low profile and lightweight so they can be easily mounted. They are DC grounded providing lightning protection and reduced precipitation noise.

- Specially designed for UHFCB requirements
- Performance - high gain with omnidirectional pattern
- Broad Beamwidth - provides excellent null fill coverage
- Lightweight - easy to mount
- Protection - DC grounded for lightning protection and reduction of precipitation noise

Typical VSWR response (COL477-6)



COL477-9 - E Plane



Electrical

Model Number	COL477-6	COL477-9
Nominal Gain *dBi (dBd)*	6.1 (4.0)	9.6 (7.5)
Frequency *MHz*	477	
Tuned Bandwidth *MHz*	2	
VSWR (Return Loss)	<1.5 :1 (14dB)	
Nominal Impedance Ω	50	
Vertical Beamwidth	17°	15°
Horizontal Beamwidth	Omni +/- 0.5dB	
Input Power *W*	50	

Mechanical

Model Number		COL477-6	COL477-9
Construction		Aluminium elements with white fibreglass radome	
Length *m*		2.3	4.0
Weight *kg*		0.5	2.0
Termination		N female bulkhead	
Mounting Area		300mm x 25mm diam. anodised aluminium	400mm x 40mm diam. anodised aluminium
Suggested Clamps		2 x UB1	
Projected Area *cm²*	No ice	604	1115
	With ice	1291	2293
Wind Load (Thrust) @ 160km/h *N*		72	132
Torque @160 km/h *Nm*		62	207

CDMA/GSM Collinear Antennas

824-960 MHz

COL1790 Series

COL1798

The COL1790 Series are high gain cellular antennas catering for both CDMA and GSM900 bands and ideally suited for use in fringe areas and rural applications.

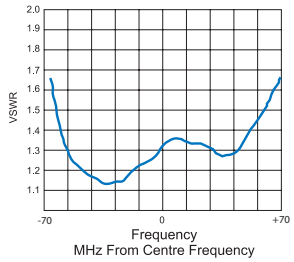
These antennas are extremely robust in design with a patented PCB designed radiating element housed in a black fibreglass radome fitted to an integral heavy duty electro-polished stainless steel spring.

With a 13mm stud mount, these antennas may be installed on a number of mounting brackets and are ideal as fixed base station antennas for wireless local loop applications.

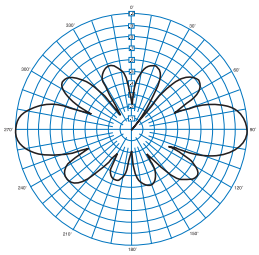
The COL1790 series antennas have been factory terminated to simplify installation.

- CDMA and GSM900 compatible
- High gain ideal for fringe areas and rural applications
- Patented PCB based collinear design offering the ultimate in pattern and gain stability
- Also available in white radome. COL1798-W or COL1799-W

Typical VSWR response (COL1798)

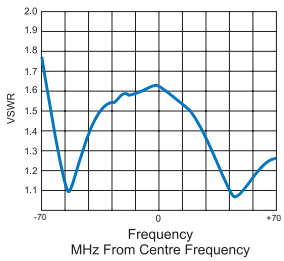


Typical E-Plane response (COL1798)

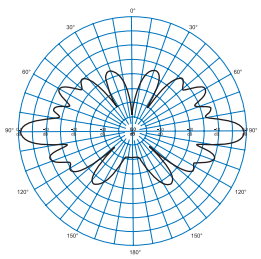


E plane radiation pattern at 892MHz

Typical VSWR response (COL1799)



Typical E-Plane response (COL1799)



Electrical

Model Number	COL1798	COL1799
Gain ***dBi***	6.5	9
Frequency ***MHz***	824 - 960	
Max Power ***W***	25	
Tuned Bandwidth	Full	
Tuning	Supplied pre-tuned	

Mechanical

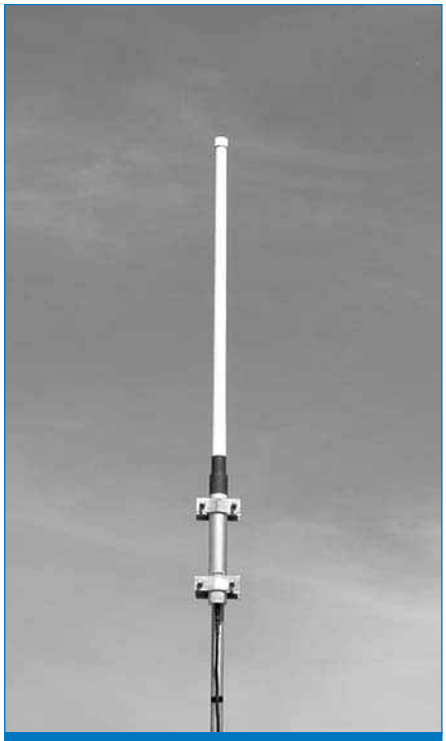
Model Number	COL1798	COL1799
Construction	Flexible PCB radiator in high gloss black radome on 19mm stainless steel mounting tube	
Whip Length ***mm***	920	1770
Mounting	2 x Hose Clamps (supplied)	2 x Hose Clamps (supplied)
Cable and Connector	12m Low Loss Cellfoil® fitted with FME 101 connector. 1 x Terminated, 1 x loose.	500mm of Low Loss Cellfoil® fitted with N series jack

USA Patent: 6909403
Patent App. No.: Australia 2003255049 / Europe 03 023406.6 / China 200310100548.5 / India 844/CHE/2003

800 MHz Collinear Antennas

806-960 MHz

COL803 Series
COL806 Series
COL809 Series



COL803

The COL800 Series are high gain base station collinear antennas built to the highest specifications. These antennas were engineered to minimise intermodulation and utilise a superior matching technique, integrating the coaxial connector directly into a precision brass feedline section. Better control in the feedline section delivers higher efficiencies and superior bandwidth.

The gain is stable and predictable with well defined major lobes across the entire band. As tilt in vertical collinears varies with frequency, the COL800 patterns are controlled to deliver defined tilt and gain over their rated bandwidths.

The COL800 series are built with white, super thick walled radomes and heavy duty alodined aluminium mounting tubes. Strong power ratings make these collinears well suited to single or combined Tx applications.

The COL800 range includes 3dBd, 6dBd and 9dBd gain versions across the 800MHz band.

- High power handling capability
- Broad bandwidth
- Controlled patterns and consistent gain at band edges
- Available in the following bands

  806-870MHz (when ordering use **-89** suffix eg: COL803-89)

  820-896MHz (when ordering use **-81** suffix eg: COL803-81)

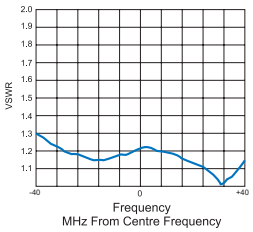
  850-930MHz (when ordering use **-82** suffix eg: COL803-82)

  890-960MHz (when ordering use **-94** suffix eg: COL803-94)

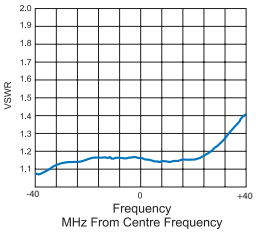
806-960 MHz

COL803 Series
COL806 Series
COL809 Series

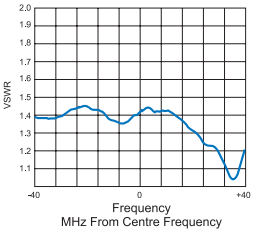
Typical VSWR response (COL803-82)



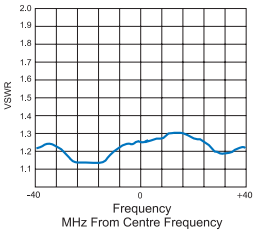
Typical VSWR response (COL806-94)



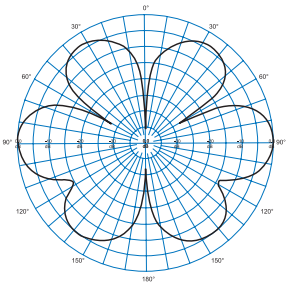
Typical VSWR response (COL809-82)



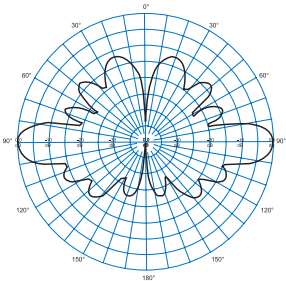
Typical VSWR response (COL809-94)



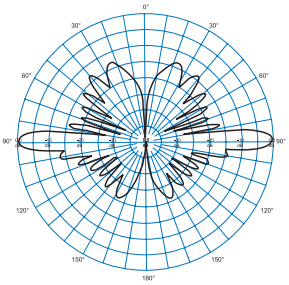
COL803-82 - E Plane



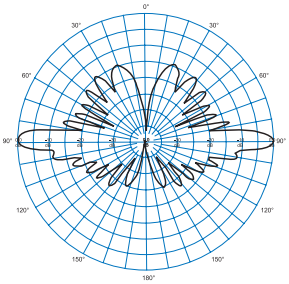
COL806-94 - E Plane



COL809-82 - E Plane



COL809-94 - E Plane



Electrical

Model Number	COL803 Series	COL806 Series	COL809 Series
Nominal Gain *dBi (dBd)*	5 (3)	8 (6)	11 (9)
Frequency *MHz*	806 - 960	806 - 960	806 - 960
Tuned Bandwidth *MHz*	Supplied in bands: 806-870, 820-896, 850-930 or 890-960		
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	33°	16°	8°
Horizontal Beamwidth	Omni +/- 0.5dB		
Input Power *W*	500		
Passive IM 3rd order *dBc*	-140		

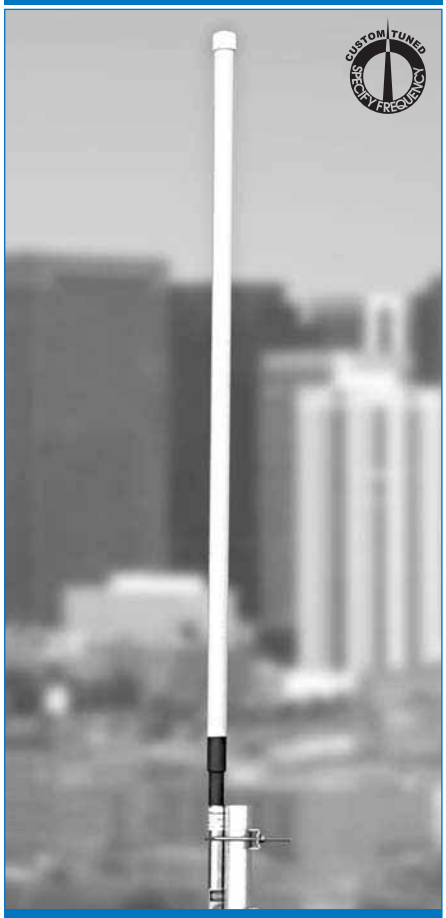
Mechanical

Model Number		COL803 Series	COL806 Series	COL809 Series
Construction		Alodined aluminium elements with ruggedised white fibreglass radome		
Length *m*		1.1	1.7	2.9
Weight *kg*		3.3	3.8	4.8
Termination		N female bulkhead		
Mounting Area		500mm x 63mm diam. alodined aluminium		
Suggested Clamps		2 X UC1		
Projected Area *cm²*	No ice	526	829	1469
	With ice	771	1232	2285
Wind Load (Thrust) @ 160km/h *N*		62	98	174
Wind Gust Rating *km/h*		240		
Torque @160 km/h *Nm*		9	44	183

UHF Vertical Collinear Antennas

600-1000 MHz

COL903
COL906

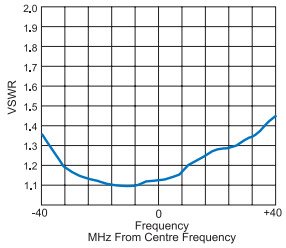


COL906

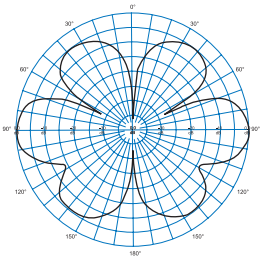
These omnidirectional collinear antennas are ideal for use in trunking, point to multipoint base station sites and rural distributed television applications. The centre fed design of the array eliminates distortion of the radiation pattern and delivers a vertical pattern free of beamtilt across the operating range.

- DC grounded for superior lightning protection and reduction of precipitation static noise
- Supplied pre-tuned to spot frequency, ready for installation
- Mount easily on lightweight support structures

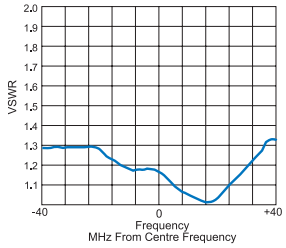
Typical VSWR response (COL903) at 800MHz



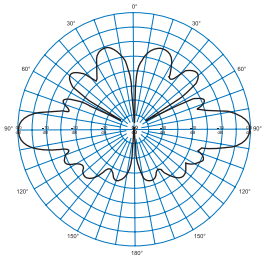
COL903 - E Plane



Typical VSWR response (COL906) at 800MHz



COL906 - E Plane



Electrical

Model Number	COL903	COL906
Nominal Gain *dBi (dBd)*	5 (3)	8 (6)
Frequency *MHz*	600 - 1000	
Tuned Bandwidth	5% <800MHz 9% >800MHz	
VSWR (Return Loss)	<1.5 :1 (14dB)	
Nominal Impedance Ω	50	
Vertical Beamwidth	33°	15°
Horizontal Beamwidth	Omni +/- 0.5dB	
Input Power *W*	500	
Passive IM 3rd order *dBc*	-140	

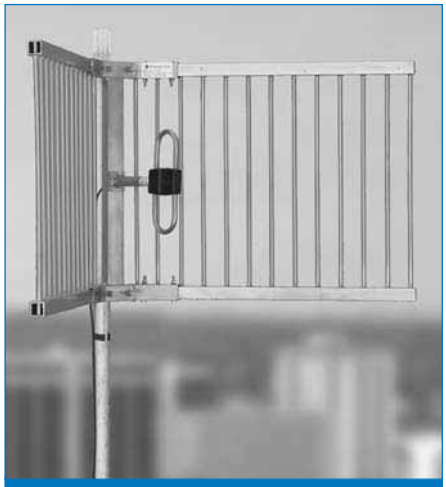
Mechanical

Model Number		COL903	COL906
Construction		Alodined aluminium elements with white fibreglass radome	
Length *m*		1.5	2.2
Weight *kg*		1.2	1.5
Termination		N female bulkhead	
Mounting Area		320mm x 25mm diam. stainless steel	
Suggested Clamps		2 x UB1 or UB2	
Projected Area *cm²*	No ice	516	835
	With ice	847	1445
Wind Load (Thrust) @ 160km/h *N*		61	99
Wind Gust Rating *km/h*		>240	
Torque @160 km/h *Nm*		29	86

Corner Reflector Antennas

136-960 MHz

CR Series



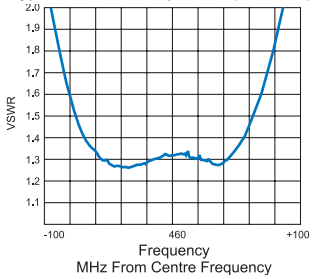
CR4-67

The CR Series are single element 90° corner reflectors, delivering high gain and high front to back ratios for critical long path or high interference applications. The CR2 and CR4 are constructed with an aluminium grid-style back screen with close element spacing to maximise pattern control characteristics. The all welded screens are of alodined aluminium finish for corrosion protection and the single folded dipole element is mounted using all stainless steel fittings.

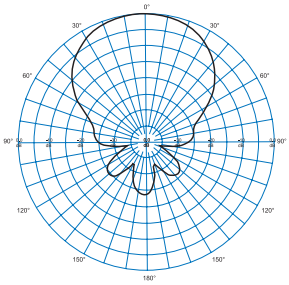
The CR8 corner reflector is similar in electrical design however it features a solid sheet back screen, constructed of all stainless steel with a dipole element enclosed in a small UPVC radome.

- Extremely high front to back ratios and minimal side lobe characteristics
- Shipped unassembled for ease of handling, easily assembled on site
- Direct DC grounded for lightning protection and reduction of precipitation static noise

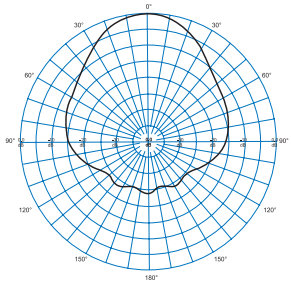
Typical VSWR response (CR4-67)



CR4 - E Plane



CR4 - H Plane



Electrical

Model Number	CR2	CR4-67	CR8
Nominal Gain *dBi (dBd)*	9 (7)	11 (9)	11 (9)
Frequency *MHz*	136 - 174	400 - 520	800 - 960
Tuned Bandwidth *MHz*	Entire band		60
VSWR (Return Loss)	<1.5 :1 (14dB)		
Nominal Impedance Ω	50		
Vertical Beamwidth	69°	57°	52°
Horizontal Beamwidth	57°	40°	45°
Front / Back Ratio *dB*	27	23	30
Input Power *W*	750	500	50

Mechanical

Model Number		CR2	CR4	CR8
Construction		Welded aluminium grid with alodined finish and stainless steel fittings		Solid stainless steel screen, dipole enclosed in UPVC radome
Length *m*		1.3 x 1.3 x 1.2	0.9 x 0.9 x 0.6	0.4 x 0.4 x 0.4
Weight *kg*		13.0	6.0	5.0
Termination		N female with short 9142 cable tail		N female bulkhead
Mounting Area		Clamps to diam. 40-85mm, 1166mm apart	Clamps to diam. 40-52mm, 568mm apart	Clamps to diam. <50mm, 236mm apart
Suggested Clamps		Supplied	Supplied	Supplied
Projected Area *cm²*	No ice	9170	3868	4004
	With ice	15452	8463	4488
Wind Load (Thrust) @ 160km/h *N*		1087	458	479
Wind Gust Rating *km/h*		214	240	178
Torque @160 km/h *Nm*		602	181	86

Panel Reflector Antenna

400-520 MHz

CRA40-67

CRA40-67

The CRA series panel reflectors are based on the popular OA series offset arrays, but incorporate a fully alodined grid reflector. The array features 11 dBi gain, low noise performance and enhanced null fill coverage in an array with typical cardioid coverage characteristics.

The CRA Series have slightly more than 130° horizontal beamwidth. The use of the grid reflector boosts the front to back ratio considerably making the CRA40 series ideal for tailoring antenna patterns to allow frequency re-use in extended networks. The optional electrical beamtilt allows for significant further suppression of unwanted signals and allows enhanced coverage in the target areas.

CRA Series arrays feature the same solid construction as the standard array series. The folded dipoles utilise an internal phasing harness in PTFE based double screened coaxial cable with polyethylene jacket. The antennas are offered with 0°, 5°, 8° or 10° of downtilt, and all include extensive side lobe suppression, null fill and a power input level of 500 watts continuous.

With all welded construction and superior internal harness construction the antennas provide not only excellent radiation characteristics but also defined, high levels of intermodulation and noise suppression. IM performance is a world leading -150dBC based on a two carrier test. The entire array rests at ground potential and offers the ultimate in lightning resistant antennas.

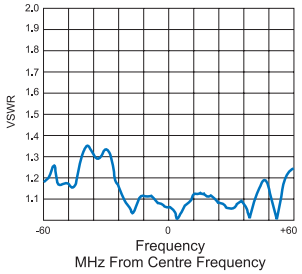
- Offset (cardioid) pattern
- 0°, 5°, 8° or 10° of downtilt available
- High front to back ratio and use of optional beamtilt to allow frequency re-use by tailoring coverage areas
- Extensive side lobe suppression and null fill
- Hermetically sealed internal phasing harness
- **Industry leading PIM ratings (-150dBc) providing low IM and low noise characteristics for optimum performance**

Panel Reflector Antenna

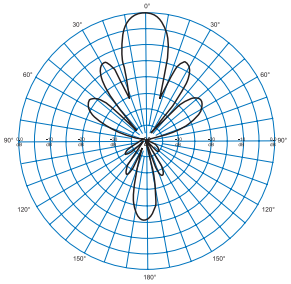
400-520 MHz

CRA40-67

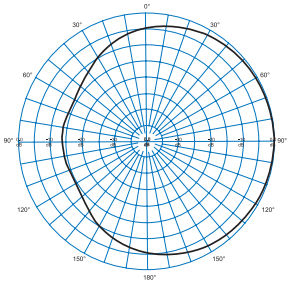
Typical VSWR response (CRA40-67)



CRA40-67 - E Plane



CRA40-67 - H Plane



Electrical

Model Number	CRA40-67
Nominal Gain ***dBi (dBd)***	11 (9)
Frequency ***MHz***	400 - 520
Tuned Bandwidth ***MHz***	Entire band
VSWR (Return Loss)	<1.5 :1 (14dB)
Nominal Impedance **Ω**	50
Downtilt	0° Std, -5°, -8°, -10°. See note (1)
Vertical Beamwidth	7°
Horizontal Beamwidth	167°
Front / Back Ratio ***dB***	13
Input Power ***W***	500
Passive IM 3rd order ***dBc***	-150

Mechanical

Model Number		CRA40-67
Construction		All welded aluminium with alodined finish
Length ***m***		3.0
Weight ***kg***		10
Termination		N female with 0.5m 9142 cable tail. See note (2)
Mounting Area		500mm x 48mm diam. aluminium
Suggested Clamps		2 x UC1
Projected Area ***cm²***	No ice	4802
	With ice	9487
Wind Load (Thrust) @ 160km/h ***N***		569
Wind Gust Rating ***km/h***		180
Torque @160 km/h ***Nm***		569

(1) Factory pre-set downtilt of -5°, -8° or -10° may be specified on CRA40 series antennas using model no. trailer -T5, -T8 or -T10
(2) Connector termination option available of 7/16 DIN female connector using model no. trailer -DIN

VHF Directional Yagi Antennas

70-250 MHz

YL Series
YH Series

YL03

The YL and YH Series yagi antennas are ideal in applications requiring directional gain. These yagis, with predictable beamwidths and consistently high front to back ratios are ideal for long or short haul links and other applications demanding specific radiation pattern control.

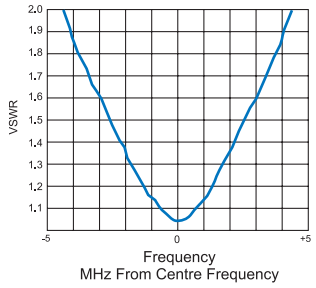
The boom and the elements are constructed from thick walled alodined aluminium tubing. The passive elements are of one-piece construction and clamped to the boom with a unique wrap around single bolt bracket. The radiating element is through mounted onto the boom. All fittings and fasteners are made from marine grade stainless steel and self locking nuts are used throughout the assembly to prevent loosening due to vibration.

All yagi antennas are directly DC grounded to provide lightning protection and reduced precipitation static noise. Termination is via an N-type female coaxial connector fitted to a short RG213 cable tail.

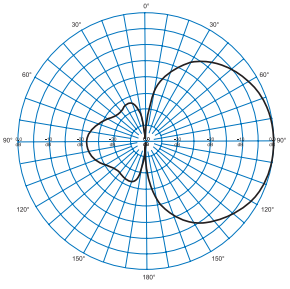
YL and YH yagis are supplied unassembled for ease of handling and are quickly assembled using only basic tools. Colour coding of elements and the boom section further simplify the assembly and installation.

- High performance - ideal in long or short haul applications
- Controlled Beamwidths - predictable beamwidths and consistently high front to back ratios
- Simplified Installation - colour coding and unique single bolt clamps simplify installation

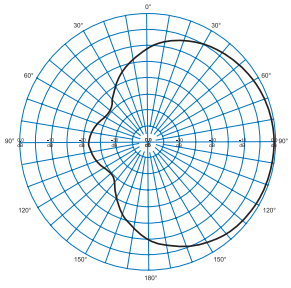
Typical VSWR response (YL03)



YL03 - E Plane



YL03 - H Plane

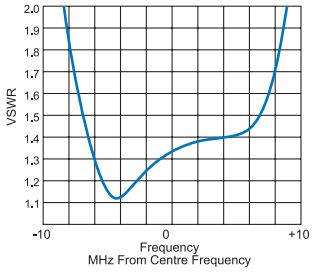


VHF Directional Yagi Antennas

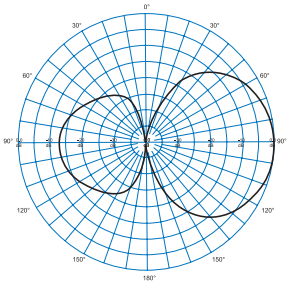
70-250 MHz

YL Series
YH Series

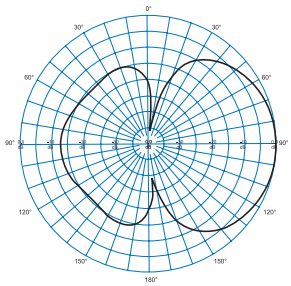
Typical VSWR response (YH04)



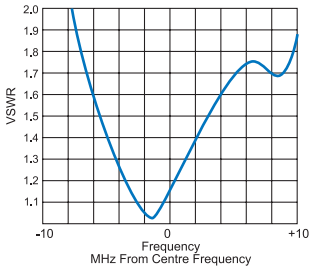
YH04 - E Plane



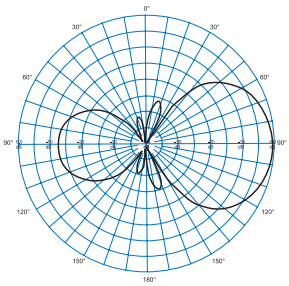
YH04 - H Plane



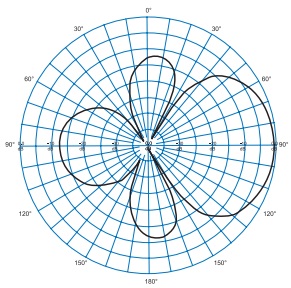
Typical VSWR response (YH06)



YH06 - E Plane



YH06 - H Plane



Electrical

Model Number	YL02	YL02D	YL03	YL04	YH02	YH02D	YH03	YH04	YH06	YH09
Nominal Gain *dBi (dBd)*	5 (3)	6 (4)	8 (6)	9 (7)	5 (3)	6 (4)	8 (6)	9 (7)	11 (9)	12 (10)
Frequency *MHz*	70 - 100				100 - 250					
Tuned Bandwidth *MHz*	6	3	5	4	12	6	9	8		
VSWR (Return Loss)	<1.5 :1 (14dB)									
Nominal Impedance Ω	50									
Vertical Beamwidth	70°	60°	60°	55°	80°	70°	60°	55°	52°	35°
Horizontal Beamwidth	140°	105°	75°	60°	140°	130°	75°	70°	50°	50°
Front / Back Ratio *dB*	10	up to 20 See note (1)	15	16	11	up to 20 See note (1)	Typically 15			
Input Power *W*	250									

Mechanical

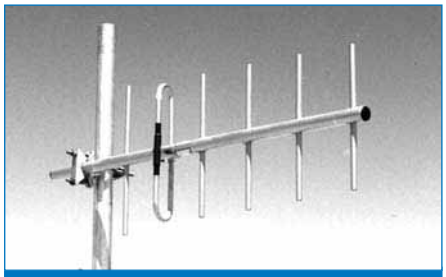
Model Number		YL02	YL02D	YL03	YL04	YH02	YH02D	YH03	YH04	YH06	YH09
Construction		Thick walled aluminium boom and elements with alodined finish									
Length *m*		1.5	2.0	2.1	3.1	1.0	1.0	1.8	2.4	3.5	5.4
Weight *kg*		3.0	3.0	4.0	5.0	2.0	2.0	2.6	3.5	5.0	7.3
Termination		N female with RG213 cable tail									
Mounting Area		300mm x 40mm diam. alum.	400mm x 40mm diam. aluminium			100mm x 40mm diam. alum.	200mm x 40mm diam. alum.	400mm x 40mm diam. aluminium			
Suggested Clamps		UCR1		UCR2		UCR1		UCR2			
Projected Area *cm²*	No ice	2186	2332	2878	3814	1456	1358	2141	2772	3870	5650
	With ice	4418	4584	5826	7790	3001	2735	4080	5368	7434	10698
Wind Load (Thrust) @ 160km/h *N*		259	276	341	452	173	161	254	329	459	670
Torque @160 km/h *Nm*		104	249	320	648	69	64	199	355	764	1748

(1) The front to back ratio of the YL02D and YH02D "deep null" yagis is dependent on mounting arrangements. Correctly mounted as per the supplied instructions, 18-20dB front to back ratio is achieved.

UHF Directional Yagi Antennas

300-600 MHz

YB Series



YB6

YB16

The YB Series are high gain yagi antennas which will provide excellent point to point communication in RF control, short or long haul link and other applications calling for highly directional antennas. YB Series antennas exhibit narrow beamwidths and high front to back ratios to help minimise potential interference to and from other systems.

The feed element of each antenna is of full folded dipole construction thus offering maximum bandwidth and reliability. The dipole element is welded to the boom to ensure low intermodulation performance and maximum durability. The passive elements are through mounted to the circular boom section and welded at each side to further minimise the potential for both corrosion and generation of intermodulation products. The alodined protective finish provides a conductive surface to ensure effective earthing of the antenna when mounting.

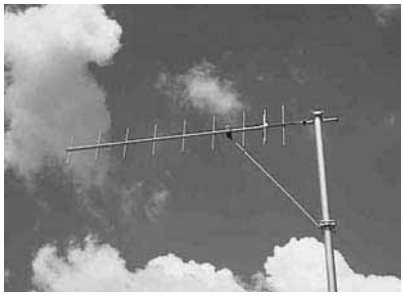
Constructed with 2 to 16 elements, YB Series yagi antennas offer a choice of gain and beamwidth characteristics and can be configured in stacks or bays for higher gain applications in either horizontally or vertically polarised systems. Application details on phasing and mounting yagi antennas are included in the technical notes section of this catalogue.

Yagi antennas rest at ground potential to provide excellent lightning protection and reduced precipitation static noise.

Termination is via an 'N' female coaxial connector fitted to a short Durathene cable tail. Durathene polyethylene jacketed cable provides superior resistance to weathering and abrasion and is less susceptible to bird attack than standard PVC sheathed cables.

For extreme climatic or corrosive applications, the stainless steel YBSS Series or black ruggedised RDA Series yagis should be considered.

- All welded construction for maximum and reliable performance
- Narrow beamwidths & high front to back ratios effective in reducing interference
- Alodine finish provides an excellent conductive surface for earthing
- Can be configured in stacks or bays for higher gain applications using PH and PHE series phasing harnesses



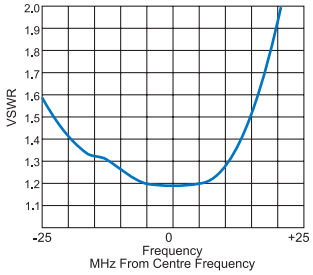
Bracing kit available
Part No. M-4528

UHF Directional Yagi Antennas

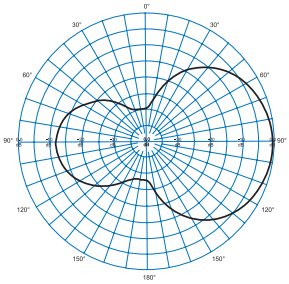
300-600 MHz

YB Series

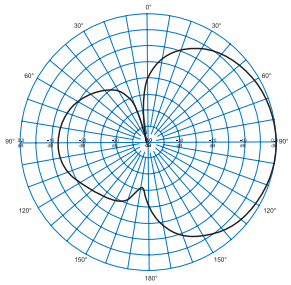
Typical VSWR response (YB03-99)



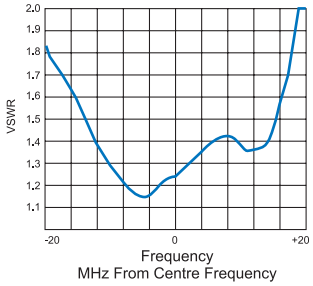
YB03-99 - E Plane



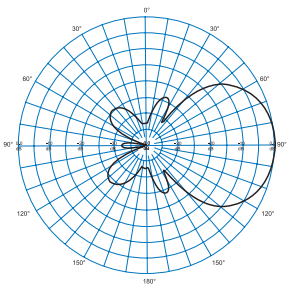
YB03-99 - H Plane



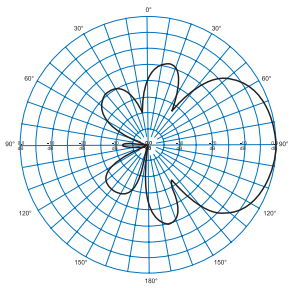
Typical VSWR response (YB6-61)



YB6-61 - E Plane



YB6-61 - H Plane



Electrical

Model Number	YB02-99	YB03-99	YB6-65	YB6-61	YB6-62	YB6-75	YB6-99
Nominal Gain *dBi (dBd)*	5 (3)	8 (6)	11 (9)				
Frequency *MHz*	300 - 600	350 - 600	400 - 420	450 - 480	480 - 520	580 - 600	350 - 600
Tuned Bandwidth	5%		Full band				5%
VSWR (Return Loss)	<1.5 :1 (14dB)						
Nominal Impedance Ω	50						
Vertical Beamwidth	77°	63°	47°				
Horizontal Beamwidth	161°	98°	56°				
Front / Back Ratio *dB*	9	13	18 (Typical)				
Input Power *W*	100						

Mechanical

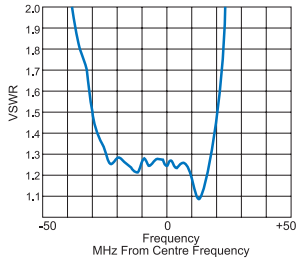
Model Number		YB02-99	YB03-99	YB6-65	YB6-61	YB6-62	YB6-75	YB6-99
Construction		All welded aluminium with alodined finish						
Length *m*		0.6	0.7	0.9	1.0	0.8	0.8	1.3
Weight *kg*		0.4	0.5	0.7	0.7	0.6	0.6	0.8
Termination		N female with short 9008 cable tail						
Mounting Area		100mm x 25mm diam. alodined aluminium						
Suggested Clamps		1 X UNV						
Projected Area *cm²*	No ice	283	337	485	477	394	349	600
	With ice	676	811	1169	1099	967	857	1367
Wind Load (Thrust) @ 160km/h *N*		33	40	57	56	47	41	71
Wind Gust Rating *km/h*		>240						
Torque @160 km/h *Nm*		6	10	22	24	16	13	42

UHF Directional Yagi Antennas

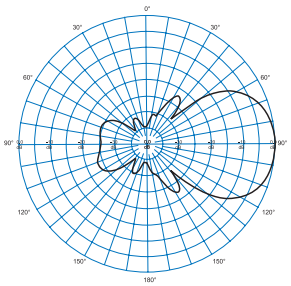
300-600 MHz

YB Series

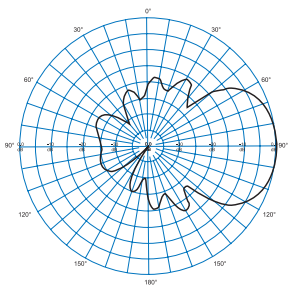
Typical VSWR response (YB9-61)



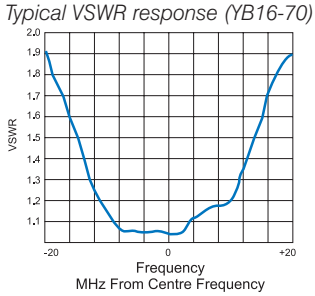
YB9-61 - E Plane



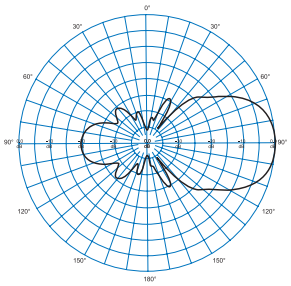
YB9-61 - H Plane



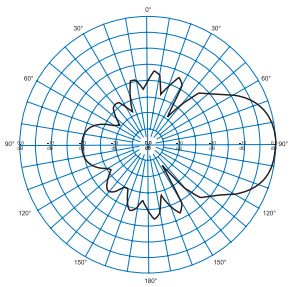
Typical VSWR response (YB16-70)



YB16-70 - E Plane



YB16-70 - H Plane



Electrical

Model Number	YB9-65	YB9-61	YB9-62	YB9-99	YB16-65	YB16-70	YB16-71	YB16-63	YB16-72	YB16-99
Nominal Gain *dBi (dBd)*	13 (11)				14 (12)					
Frequency *MHz*	400 - 420	450 - 480	480 - 520	400 - 600	400 - 420	450 - 470	470 - 490	480 - 500	500 - 520	400 - 600
Tuned Bandwidth	Full band			5.0%	Full band					5.0%
VSWR (Return Loss)	<1.5 :1 (14dB)									
Nominal Impedance Ω	50									
Vertical Beamwidth	46°			42°	34°					
Horizontal Beamwidth	54°			48°	36°					
Front / Back Ratio *dB*	18 (Typical)									
Input Power *W*	100									

Mechanical

Model Number		YB9-65	YB9-61	YB9-62	YB9-99	YB16-65	YB16-70	YB16-71	YB16-63	YB16-72	YB16-99
Construction		All welded aluminium with alodined finish									
Length *m*		2.0	1.8	1.6	2.0	2.5	2.3	2.3	2.2	2.2	2.5
Weight *kg*		1.2	1.0	1.0	1.2	1.7	1.5	1.5	1.4	1.4	1.7
Termination		N female with short 9008 cable tail									
Mounting Area		100mm x 25mm diam. alodined aluminium									
Suggested Clamps		1 X UCR1				1 X UCR1 + 1 x M-4528 bracing kit					
Projected Area *cm²*	No ice	859	771	694	859	1186	1048	1030	989	981	1186
	With ice	2078	1842	1640	2078	2983	2666	2617	2530	2507	2983
Wind Load (Thrust) @ 160km/h *N*		102	91	82	102	141	124	122	117	116	141
Wind Gust Rating *km/h*		207	220	240	207	147	165	165	173	173	147
Torque @160 km/h *Nm*		92	75	60	92	165	130	128	117	116	165

UHF Stainless Steel Yagi Antennas

350-600 MHz

YBSS Series

YBSS6

The YBSS Series is a range of high gain stainless steel yagi antennas which provide excellent point to point communications in highly corrosive environments. YBSS Series antennas exhibit narrow beamwidths and high front to back ratios to help minimise potential interference to and from other radio systems.

The antennas are constructed from 316 marine grade stainless steel with the passive elements through mounted to the boom and welded at each side. The feed element is of full folded dipole construction and is also welded to the boom to ensure low intermodulation performance and durability.

Available with 6, 9 or 16 elements, YBSS antennas can be configured in stacks or bays for higher gain applications in both horizontally or vertically polarised systems. Application details on phasing and mounting yagi antennas are included in the technical notes section in the back of this catalogue.

Yagi antennas rest at ground potential to provide excellent lightning protection and reduced precipitation static noise.

Termination is via an 'N' female coaxial connector fitted to a short Durathene cable tail. Durathene polyethylene jacketed cable provides superior resistance to weathering and abrasion and is less susceptible to bird attack than standard PVC sheathed cables.

- All welded construction for maximum performance and reliability
- Deliver high front to back ratios - reducing interference to and from other radio systems
- Marine grade stainless steel construction ideal in highly corrosive environments
- Full folded dipole driven element construction for maximum reliability
- Can be configured in stacks or bays for higher gain applications using PH and PHE series phasing harnesses

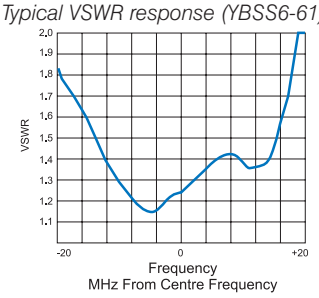
Bracing kit available
Part No. M-4528

UHF Stainless Steel Yagi Antennas

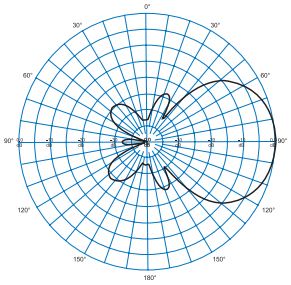
350-600 MHz

YBSS Series

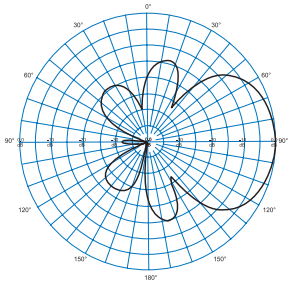
Typical VSWR response (YBSS6-61)



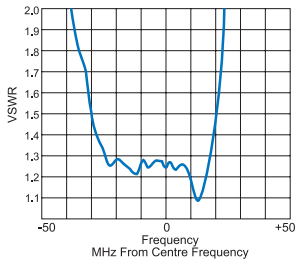
YBSS6-61 - E Plane



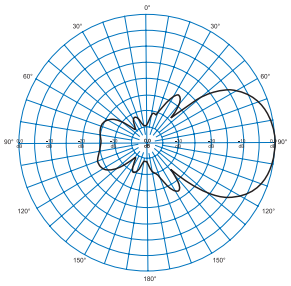
YBSS6-61 - H Plane



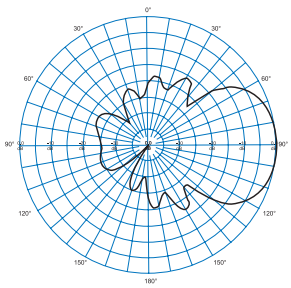
Typical VSWR response (YBSS9-61)



YBSS9-61 - E Plane



YBSS9-61 - H Plane



Electrical

Model Number	YBSS6-65	YBSS6-61	YBSS6-62	YBSS6-75	YBSS6-99	YBSS9-65	YBSS9-61	YBSS9-62	YBSS9-99
Nominal Gain *dBi (dBd)*	11 (9)					13 (11)			
Frequency *MHz*	400 - 420	450 - 480	480 - 520	580 - 610	350 - 600	400 - 420	450 - 480	480 - 520	400 - 600
Tuned Bandwidth	Full band				5%	Full band			5%
VSWR (Return Loss)	<1.5 :1 (14dB)								
Nominal Impedance Ω	50								
Vertical Beamwidth	47°					46°			42°
Horizontal Beamwidth	56°					54°			48°
Front / Back Ratio *dB*	>18 (Typical)								
Input Power *W*	100								

Mechanical

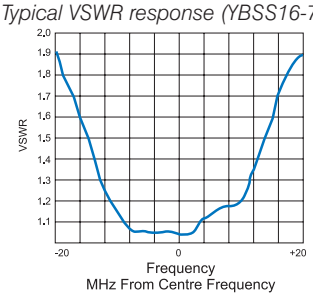
Model Number		YBSS6-65	YBSS6-61	YBSS6-62	YBSS6-75	YBSS6-99	YBSS9-65	YBSS9-61	YBSS9-62	YBSS9-99
Construction		All welded stainless steel construction with polished finish								
Length *m*		0.9	1.0	0.8	0.8	1.3	2.0	1.8	1.6	2.0
Weight *kg*		0.7	0.7	0.6	0.6	0.8	1.2	1.0		1.2
Termination		N female with short 9008 cable tail								
Mounting Area		100mm x 25mm diam. stainless steel								
Suggested Clamps		1 X UNV					1 X UCR1			
Projected Area *cm²*	No ice	485	477	394	349	600	859	771	694	859
	With ice	1169	1099	967	857	1367	2078	1842	1640	2078
Wind Load (Thrust) @ 160km/h *N*		57	56	47	41	71	102	91	82	102
Wind Gust Rating *km/h*		>240					201	220	240	201
Torque @160 km/h *Nm*		22	24	16	13	42	92	75	60	92

UHF Stainless Steel Yagi Antennas

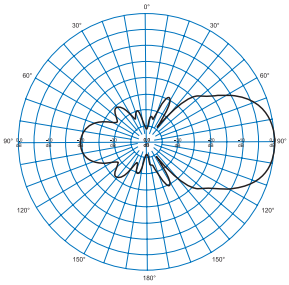
350-600 MHz

YBSS Series

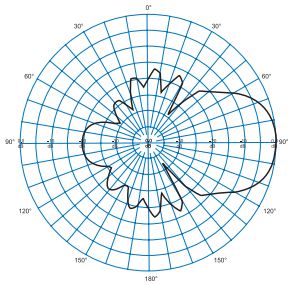
Typical VSWR response (YBSS16-70)



YBSS16-70 - E Plane



YBSS16-70 - H Plane



Electrical

Model Number	YBSS16-65	YBSS16-70	YBSS16-71	YBSS16-63	YBSS16-99
Nominal Gain *dBi (dBd)*	14 (12)				
Frequency *MHz*	400 - 420	450 - 470	470 - 490	480 - 500	400 - 600
Tuned Bandwidth	Full band				5.0%
VSWR (Return Loss)	<1.5 :1 (14dB)				
Nominal Impedance Ω	50				
Vertical Beamwidth	34°				
Horizontal Beamwidth	36°				
Front / Back Ratio *dB*	18 (Typical)				
Input Power *W*	100				

Mechanical

Model Number		YBSS16-65	YBSS16-70	YBSS16-71	YBSS16-63	YBSS16-99
Construction		All welded stainless steel construction with polished finish				
Length *m*		2.5	2.3	2.3	2.2	2.5
Weight *kg*		1.7	1.5	1.5	1.4	1.7
Termination		N female with short 9008 cable tail				
Mounting Area		100mm x 25mm diam. stainless steel				
Suggested Clamps		1 X UCR1 + 1 x M-4528 bracing kit				
Projected Area *cm²*	No ice	1186	1048	1030	989	1186
	With ice	2983	2666	2617	2530	2983
Wind Load (Thrust) @ 160km/h *N*		141	124	122	117	144
Wind Gust Rating *km/h*		147	165	165	173	147
Torque @160 km/h *Nm*		165	130	128	117	165

Ruggedised UHF Yagi Antennas

300-600 MHz

RDA Series

RDA16

The RDA Series are ruggedised high gain yagi antennas which will provide excellent point to point communication in extreme climatic environments. RDA Series antennas exhibit narrow beamwidths and high front to back ratios to help minimise any potential interference to and from other radio systems.

Built specifically for hostile conditions, the boom and the elements of the RDA Series yagis are significantly larger and more robust than on the standard YB range. The feed element is of full folded dipole construction for maximum bandwidth and performance and all elements, including the feed element are welded to the boom. Welding ensures both maximum strength and minimal potential for the generation of intermodulation and other interference products.

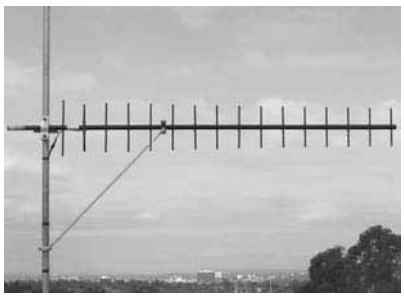
The entire welded assembly is etched and finished with a black powder coating which aids significantly in ice shedding by maximising solar heat retention.

Constructed with 3, 6, 9 or 16 elements, RDA yagis can be configured in stacks or bays for higher gain applications in horizontally or vertically polarised systems. Application details on phasing and mounting yagi antennas are included in the technical notes section in the back of this catalogue.

RDA Yagis rest at DC ground potential and, properly earthed, provide excellent lightning protection and aid in the reduction of precipitation static noise.

Termination is via an 'N' female coaxial connector fitted to a short Durathene cable tail. Durathene is a PTFE dielectric and polyethylene jacketed cable providing superior resistance to weathering and abrasion and is less susceptible to bird attack than standard PVC sheathed cables.

- All welded construction for maximum and reliable performance
- High front to back ratios - reducing interference to and from other systems
- Black powder coating aids in snow and ice shedding by maximising solar heat retention
- Ruggedised construction for use in extreme conditions
- Can be configured in stacks or bays for higher gain applications using PH and PHE series phasing harnesses



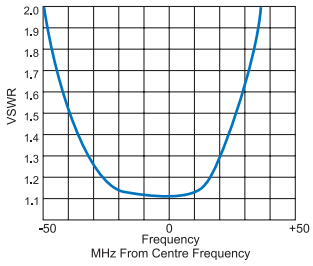
Bracing kit available
Part No. M-4529

Ruggedised UHF Yagi Antennas

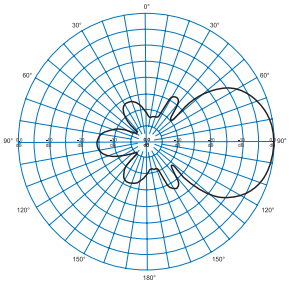
300-600 MHz

RDA Series

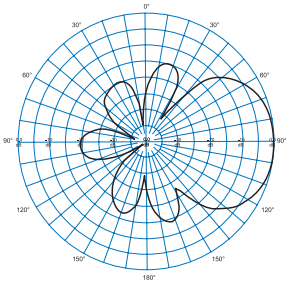
Typical VSWR response (RDA6-99)



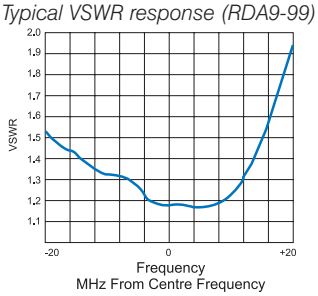
RDA6-99 - E Plane



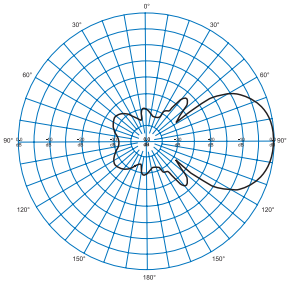
RDA6-99 - H Plane



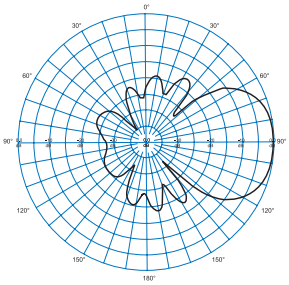
Typical VSWR response (RDA9-99)



RDA9-99 - E Plane



RDA9-99 - H Plane



Electrical

Model Number	RDA3-99	RDA6-65	RDA6-61	RDA6-62	RDA6-99	RDA9-65	RDA9-61	RDA9-62	RDA9-99
Nominal Gain *dBi (dBd)*	8 (6)	11 (9)				13 (11)			
Frequency *MHz*	300 - 600	400 - 420	450 - 480	480 - 520	330 - 600	400 - 420	450 - 480	480 - 520	350 - 600
Tuned Bandwidth	4%	Full band			4%	Full band			4%
VSWR (Return Loss)	<1.5 :1 (14dB)								
Nominal Impedance Ω	50								
Vertical Beamwidth	62°	45°				41°			
Horizontal Beamwidth	90°	54°				46°			
Front / Back Ratio *dB*	15	20				18			
Input Power *W*	250								
Passive IM 3rd order *dBc*	-150								

Mechanical

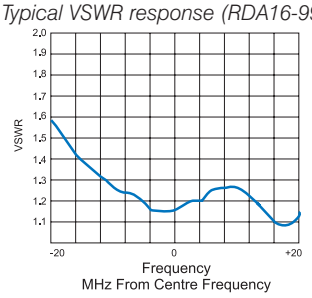
Model Number		RDA3-99	RDA6-65	RDA6-61	RDA6-62	RDA6-99	RDA9-65	RDA9-61	RDA9-62	RDA9-99
Construction		All welded aluminium with black powder coated finish. See note (1)								
Length *m*		0.8	1.3	1.1	1.0	1.5	2.0	1.8	1.7	2.4
Weight *kg*		0.7	1.0	0.9	0.8	1.3	1.6	1.4	1.3	1.9
Termination		N female with short 9302 cable tail								
Mounting Area		100mm x 32mm diam. powder coated aluminium								
Suggested Clamps		1 X UCR1								
Projected Area *cm²*	No ice	469	710	572	531	879	1057	948	867	1293
	With ice	1007	1433	1211	1137	1770	2209	1954	1774	2746
Wind Load (Thrust) @ 160km/h *N*		56	84	68	63	104	125	112	103	153
Wind Gust Rating *km/h*		>240								
Torque @160 km/h *Nm*		17	46	31	27	69	113	93	77	172

(1) RDA series yagis may be ordered in alternative unpainted, plain alodined aluminium finish. Specify "RDB" prefix.

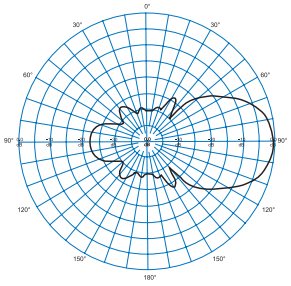
300-600 MHz

RDA Series

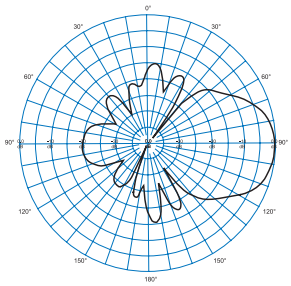
Typical VSWR response (RDA16-99)



RDA16-99 - E Plane



RDA16-99 - H Plane



Electrical

Model Number	RDA16-65	RDA16-70	RDA16-71	RDA16-63	RDA16-72	RDA16-99
Nominal Gain *dBi (dBd)*	14 (12)					
Frequency *MHz*	400 - 420	450 - 470	470 - 490	480 - 500	500 - 520	350 - 600
Tuned Bandwidth	Full band					4.0%
VSWR /Return Loss	<1.5 :1 (14dB)					
Nominal Impedance Ω	50					
Vertical Beamwidth	35°					
Horizontal Beamwidth	36°					
Front / Back Ratio *dB*	20					
Input Power *W*	250					
Passive IM 3rd order *dBc*	-150					

Mechanical

Model Number		RDA16-65	RDA16-70	RDA16-71	RDA16-63	RDA16-72	RDA16-99
Construction		All welded aluminium with black powder coated finish. See note (1)					
Length *m*		2.5	2.3	2.3	2.2	2.2	2.9
Weight *kg*		2.2	1.9	1.8	1.9	1.8	2.5
Termination		N female with short 9302 cable tail					
Mounting Area		100mm x 32mm diam. powder coated aluminium					
Suggested Clamps		1 x UCR1 + 1 x M-4529 bracing kit					
Projected Area *cm²*	No ice	1448	1281	1261	1212	1202	1730
	With ice	3245	2894	2843	2741	2695	3814
Wind Load (Thrust) @ 160km/h *N*		172	152	149	144	142	205
Wind Gust Rating *km/h*		174	195	195	205	205	147
Torque @160 km/h *Nm*		202	159	157	144	142	285

(1) RDA series yagis may be ordered in alternative unpainted, plain alodined aluminium finish. Specify "RDB" prefix.

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CORPORATION

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PolyPhaser Corporation designs quality lightning protection and grounding solutions to safeguard your equipment. Setting the standards for the lightning protection industry, Polyphaser offer solutions for all segments of the wireless market:

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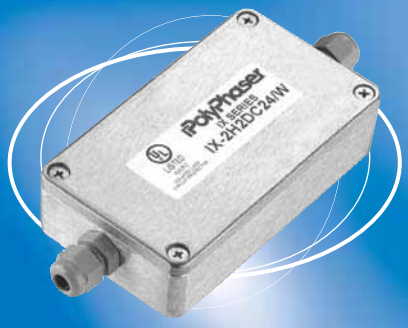
- Cellular - CDMA & GSM



- Microwave
- 900 MHz & 2.5 GHz ISM bands

RFI holds extensive stock of grounding and lightning protection products and our qualified engineers provide expertise to recommend products suited to your applications.

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RFI

700 MHz Yagi Antennas

700-820 MHz

YB700 Series

YB715

The YB700 Series are high gain yagi antennas which will provide excellent point to point communication in RF control, short or long haul link and other applications calling for highly directional antennas. YB700 Series antennas exhibit narrow beamwidths and high front to back ratios to help minimise potential interference to and from other systems.

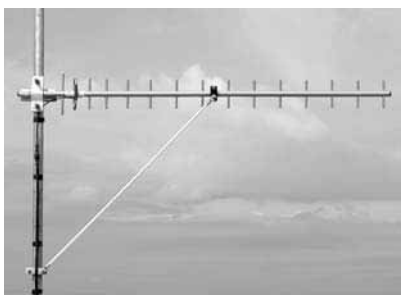
The feed element of each antenna is of full folded dipole construction thus offering maximum bandwidth and reliability. The dipole element is welded to the boom to ensure low intermodulation performance and maximum durability. The passive elements are through mounted to the circular boom section and welded at each side to further minimise the potential for both corrosion and generation of intermodulation products. The alodined protective finish provides a conductive surface to ensure effective earthing of the antenna when mounting.

Constructed with 3, 6, 9 or 15 elements, YB700 Series yagi antennas offer a choice of gain and beamwidth characteristics and can be configured in stacks or bays for higher gain applications in either horizontally or vertically polarised systems. Application details on phasing and mounting yagi antennas are included in the technical notes section of this catalogue.

Yagi antennas rest at ground potential to provide excellent lightning protection and reduced precipitation static noise.

Termination is via an 'N' female coaxial connector fitted to a short 9302 Durathene cable tail. Durathene is a PTFE dielectric and polyethylene jacketed cable providing superior resistance to weathering and abrasion and is less susceptible to bird attack than standard PVC sheathed cables.

- All welded construction for maximum and reliable performance
- Narrow beamwidths & high front to back ratios effective in reducing interference
- Alodine finish provides an excellent conductive surface for earthing
- Can be configured in stacks or bays for higher gain applications using PH and PHE series phasing harnesses

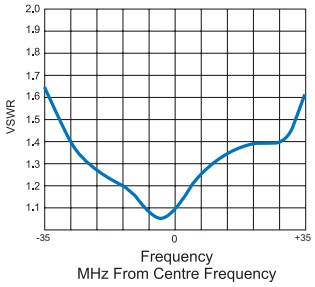


Bracing kit available
Part No. M-4528

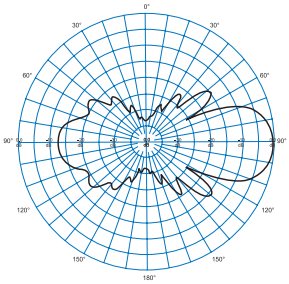
700-820 MHz

YB700 Series

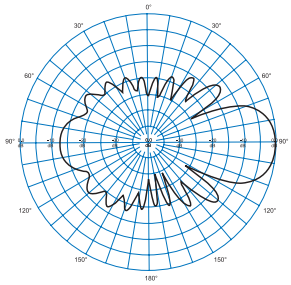
Typical VSWR response (YB715-99)



YB715-99 - E Plane



YB715-99 - H Plane



Electrical

Model Number	YB703-99	YB706-99	YB709-99	YB715-99
Nominal Gain *dBi (dBd)*	8 (6)	11 (9)	13 (11)	15 (13)
Frequency *MHz*	700 - 820			
Tuned Bandwidth	10%			
VSWR /Return Loss	<1.5 :1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	64°	47°	39°	30°
Horizontal Beamwidth	102°	57°	44°	31°
Front / Back Ratio *dB*	14			13
Input Power *W*	500			
Passive IM 3rd order *dBc*	-150			

Mechanical

Model Number		YB703-99	YB706-99	YB709-99	YB715-99
Construction		All welded aluminium with alodined finish			
Length *m*		0.3	0.7	1.0	2.0
Weight *kg*		0.2	0.4	0.6	1.2
Termination		N female with short 9302 cable tail			
Mounting Area		100mm of 25mm diam. aluminium			
Suggested Clamps		1 x UNV	1 x UCR1		1 x UCR1 + 1 x M-4528
Projected Area *cm²*	No ice	123	265	439	785
	With ice	339	676	1031	1963
Wind Load (Thrust) @ 160km/h *N*		15	31	52	93
Wind Gust Rating *km/h*		240			210
Torque @160 km/h *Nm*		1	7	22	82

800 MHz Yagi Antennas

540-1000 MHz

YB800 Series

YB815-81

The YB800 Series are high gain yagi antennas which provide excellent point to point communications in RF control, short or long haul link, point to multipoint and other applications calling for highly directional antennas. YB800 Series antennas exhibit narrow beamwidths and high front to back ratios to help minimise any potential interference to and from other systems.

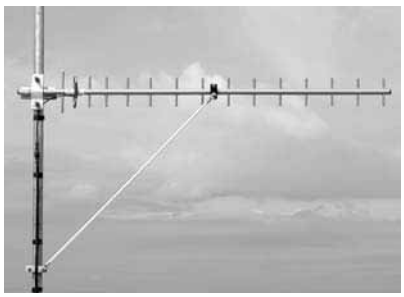
The feed element of each antenna is of full folded dipole construction, welded to the mounting boom for maximum bandwidth, low intermodulation performance and reliability. The passive elements are through mounted to the circular boom section and welded at each side before plating. The alodine protective finish provides a conductive surface to ensure effective earthing of the antenna when mounting.

The YB800 Series are offered in 3, 6, 9, 15 or 20 element form and are generally held in stock for immediate delivery in the commercial bands.

YB800 Series antennas can be configured in stacks or bays for higher gain applications in either horizontally or vertically polarised systems. Application details on phasing and mounting yagi antennas are included in the technical notes section in the back of this catalogue.

YB800 Series rest at ground potential and provide excellent lightning protection and reduced precipitation static noise. Termination is via an 'N' female coaxial connector fitted to a short 9302 Durathene cable tail. Durathene is a PTFE dielectric and polyethylene jacketed cable providing superior resistance to weathering and abrasion and is less susceptible to bird attack than standard PVC sheathed cables.

- All welded construction for maximum and reliable performance
- Narrow beamwidth & high front to back ratios effective in reducing interference
- Standard units feature alodine finish providing an excellent conductive surface for earthing. Full stainless steel versions also available.
- Can be configured in stacks or bays for higher gain applications using PH and PHE series phasing harnesses



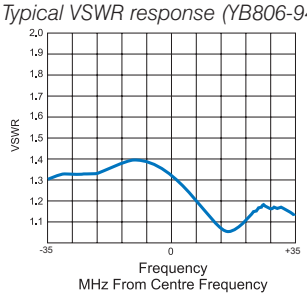
Bracing kit available
Part No. M-4528

800 MHz Yagi Antennas

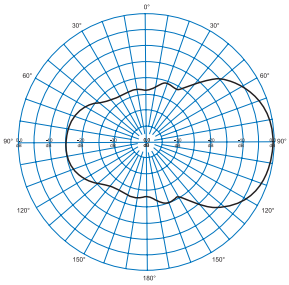
540-1000 MHz

YB800 Series

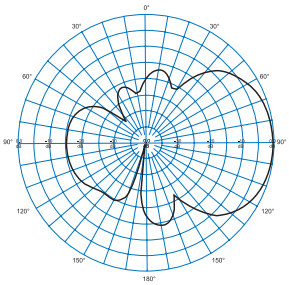
Typical VSWR response (YB806-94)



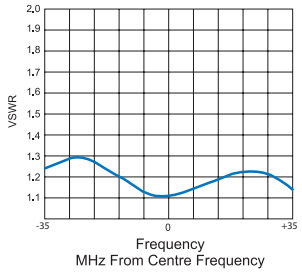
YB806-94 - E Plane



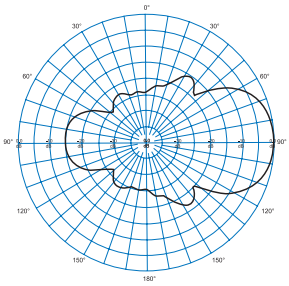
YB806-94 - H Plane



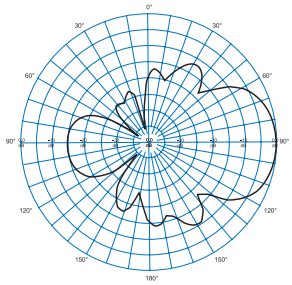
Typical VSWR response (YB809-94)



YB809-94 - E Plane



YB809-94 - H Plane



Electrical

Model Number	YB803-82	YB803-99	YB806-81	YB806-82	YB806-94	YB806-99	YB809-81	YB809-82	YB809-94	YB809-99
Nominal Gain *dBi (dBd)*	8 (6)		11 (9)				12 (10)			
Frequency *MHz*	850 - 930	540 - 1000	806 - 896	850 - 930	890 - 960	540 - 1000	806 - 896	850 - 930	890 - 960	540 - 1000
Tuned Bandwidth	Full band	5%	Full band			5%	Full band			5%
VSWR (Return Loss)	<1.5 :1 (14dB)									
Nominal Impedance (Ω)	50									
Vertical Beamwidth	64	65	49				41			
Horizontal Beamwidth	100	103	61				48			
Front / Back Ratio *dB*	14		22	20	15	17	16	18	15	16
Input Power *W*	100									
Passive IM 3rd order *dBc*	-150									

Mechanical

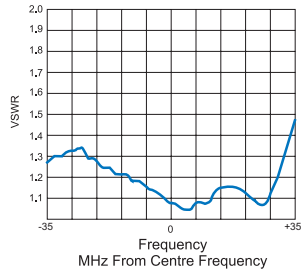
Model Number		YB803-82	YB803-99	YB806-81	YB806-82	YB806-94	YB806-99	YB809-81	YB809-82	YB809-94	YB809-99
Construction		All welded aluminium with alodined finish									
Length *m*		0.3	0.4	0.6	0.6	0.6	0.8	0.9	0.9	1.0	1.4
Weight *kg*		0.2	0.4	0.5	0.4	0.4	0.6	0.7	0.6	0.5	0.9
Termination		N female with short 9302 cable tail									
Mounting Area		100mm x 25mm diam. aluminium									
Suggested Clamps		1 x UNV									
Projected Area *cm²*	No ice	97	167	230	238	213	368	361	343	372	590
	With ice	281	439	593	600	547	902	878	842	874	1396
Wind Load (Thrust) @ 160km/h *N*		11	20	27	28	25	44	43	41	44	70
Wind Gust Rating *km/h*		>240									
Torque @160 km/h *Nm*		1	1	5	6	4	13	15	13	16	40

800 MHz Yagi Antennas

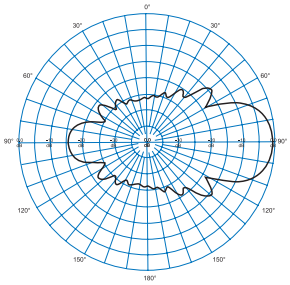
540-1000 MHz

YB800 Series

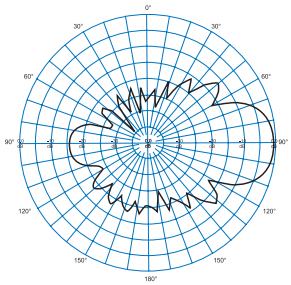
Typical VSWR response (YB815-94)



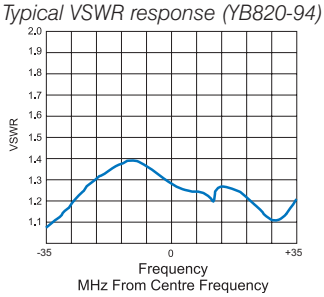
YB815-94 - E Plane



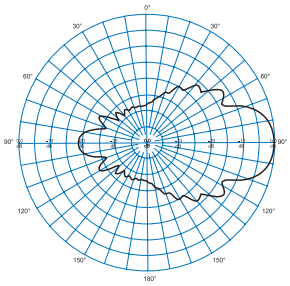
YB815-94 - H Plane



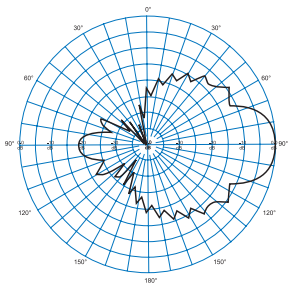
Typical VSWR response (YB820-94)



YB820-94 - E Plane



YB820-94 - H Plane



Electrical

Model Number	YB815-81	YB815-82	YB815-94	YB815-99	YB820-82	YB820-94
Nominal Gain *dBi (dBd)*	14 (12)				16 (14)	
Frequency *MHz*	806 - 896	850 - 930	890 - 960	540 - 1000	850 - 930	890 - 960
Tuned Bandwidth	Full band			5.0%	Full band	
VSWR (Return Loss)	<1.5 :1 (14dB)					
Nominal Impedance Ω	50 Ohm					
Vertical Beamwidth	30°				27°	
Horizontal Beamwidth	30°				24°	27°
Front / Back Ratio *dB*	20	18	17	17	18	
Input Power *W*	100					
Passive IM 3rd order *dBc*	-150					

Mechanical

Model Number		YB815-81	YB815-82	YB815-94	YB815-99	YB820-82	YB820-94
Construction		All welded aluminium with alodined finish					
Length *m*		1.6			2.6	2.3	2.2
Weight *kg*		1.0		0.9	1.6	1.3	
Termination		N female with short 9302 cable tail					
Mounting Area		100mm x 25mm diam. aluminium					
Suggested Clamps		1 x UCR1 + 1 x M-4528 bracing kit					
Projected Area *cm²*	No ice	636	639	628	1067	863	846
	With ice	1539	1550	1514	2630	2168	2121
Wind Load (Thrust) @ 160km/h *N*		75	76	74	126	102	100
Wind Gust Rating *km/h*		240			156	186	189
Torque @160 km/h *Nm*		53	53	52	152	104	100

800MHz Broadband Yagi Antenna

850-930 MHz

YBA818-82

YBA818-82

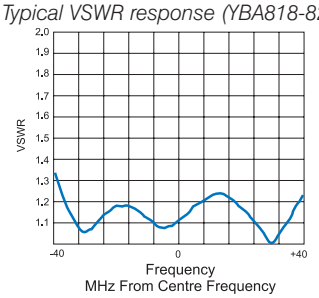
The YBA818-82 is a highly directional antenna ideally suited for point to point communications in RF Control and Point to Multi-Point long haul link applications.

Both feed elements are constructed from a fully folded dipole welded to the boom, providing maximum bandwidth, excellent intermodulation performance and high reliability. The passive elements are thru mounted to the circular boom section which is fully welded to the mounting tube with a welded spacer between both booms before plating. The entire antenna is then plated in an alodine finish to provide an excellent conductive surface to ensure effective earthing of the antenna when it is mounted.

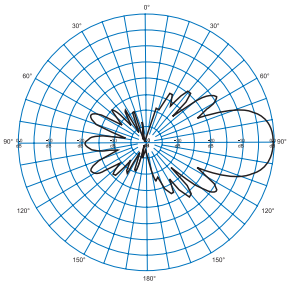
The YBA818-82 can be double stacked into a 4-boom array for additional gain by simply ordering two antennas and the PA84-82 stacking kit which includes 2 spacing control frames, two fibreglass upright supports and a two-way phasing harness for phasing both arrays together.

Note: Suitable for vertically polarised installations only

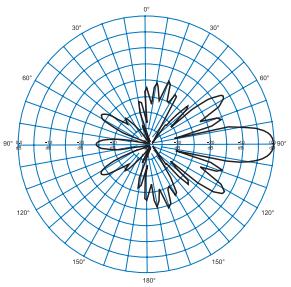
Typical VSWR response (YBA818-82)



YBA818-82 - E Plane



YBA818-82 - H Plane



Electrical

Model Number	YBA818-82
Nominal Gain *dBi (dBd)*	19 (17)
Frequency *MHz*	850 - 930
Tuned Bandwidth	Full band
VSWR (Return Loss)	<1.5 :1 (14dB)
Nominal Impedance Ω	50
Vertical Beamwidth	28
Horizontal Beamwidth	14
Front / Back Ratio *dB*	24
Input Power *W*	200
Passive IM 3rd order *dBc*	-150

Mechanical

Model Number		YBA818-82
Construction		Welded aluminium with alodined finish with fibreglass supports
Length *m*		1.9
Weight *kg*		5.5
Termination		External harness with N female and short 9142 cable tail
Mounting Area		Clamps to diam. 40-85mm
Suggested Clamps		Clamps supplied
Projected Area *cm²*	No ice	2127
	With ice	4821
Wind Load (Thrust) @ 160km/h *N*		252
Wind Gust Rating *km/h*		>177
Torque @160 km/h *Nm*		221

800 MHz Stainless Steel Yagi Antennas

540-1000 MHz

YBS800 Series

YBS815

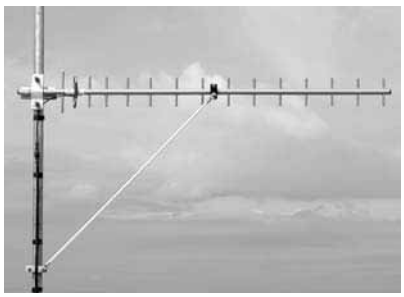
The stainless steel YBS800 series yagis are high gain antennas specifically designed to cater for extreme and corrosive environments. They provide an excellent solution for point to point applications in RF control, short or long haul link, point to multipoint and other applications requiring highly directional antennas.

Manufactured from all welded 316 grade stainless steel these antennas provide identical performance to the YB800 series yagis but are better suited for extreme climatic or corrosive applications. The feed element of each antenna is of full folded dipole construction, welded to the boom for maximum bandwidth and reliability.

The YBS800 series antennas are offered in 3, 6, 9 or 15 element form and are available ex stock in small quantities. They can be configured in stacks or bays for higher gain applications in either horizontally or vertically polarised systems. Application details on phasing and mounting yagi antennas are included in the technical notes at the back of this catalogue.

Yagi antennas rest at ground potential and provide excellent lightning protection and reduced precipitation static noise. Termination is via an N female connector fitted to a short 9302 Durathene cable tail. Durathene is a PTFE dielectric and polyethylene jacketed cable providing superior resistance to weathering and abrasion and is less susceptible to bird attack than standard PVC sheathed cables.

- Rugged construction 316 grade stainless steel for extreme conditions
- Broadband available in a number of models to cover trunking, cellular and ISM bands
- Narrow beamwidth and high front to back ratios
- Can be configured is stacks or bays for higher gain applications using PH and PHE series phasing harnesses
- Ideal for point to point or point to multipoint applications



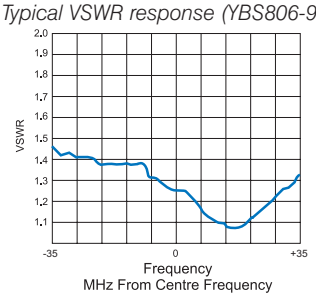
Bracing kit available
Part No. M-4528

800 MHz Stainless Steel Yagi Antennas

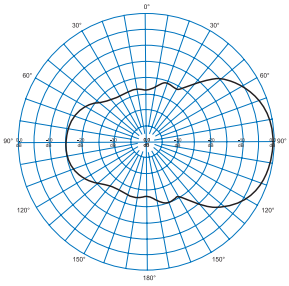
540-1000 MHz

YBS800

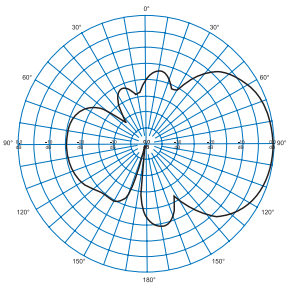
Typical VSWR response (YBS806-94)



YBS806-94 - E Plane



YBS806-94 - H Plane



Electrical

Model Number	YBS803-82	YBS803-99	YBS806-81	YBS806-82	YBS806-94	YBS806-99
Nominal Gain *dBi (dBd)*	8 (6)		11 (9)			
Frequency *MHz*	850 - 930	540 - 1000	806 - 896	850 - 930	890 - 960	540 - 1000
Tuned Bandwidth	Full band	5%	Full band			5%
VSWR (Return Loss)	<1.5 :1 (14dB)					
Nominal Impedance Ω	50					
Vertical Beamwidth	64°	65°	49°	50°		
Horizontal Beamwidth	100°	103°	61°	62°		
Front / Back Ratio *dB*	14		22	20	15	17
Input Power *W*	100					
Passive IM 3rd order *dBc*	-150					

Mechanical

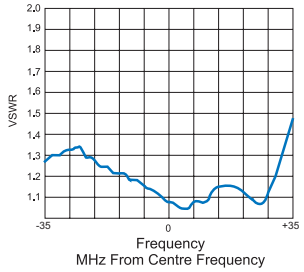
Model Number		YBS803-82	YBS803-99	YBS806-81	YBS806-82	YBS806-94	YBS806-99
Construction		All welded stainless steel with polished finish					
Length *m*		0.3	0.4	0.6			0.8
Weight *kg*		0.3	0.5	0.7	0.7	0.7	1.0
Termination		N female with short 9302 cable tail					
Mounting Area		100mm of 25mm diam. stainless steel					
Suggested Clamps		1 x UNV					
Projected Area *cm²*	No ice	95	164	228	236	211	364
	With ice	279	436	584	597	543	897
Wind Load (Thrust) @ 160km/h *N*		11	19	27	28	25	43
Wind Gust Rating *km/h*		>240					
Torque @160 km/h *Nm*		0.2	1	5	6	4	13

800 MHz Stainless Steel Yagi Antennas

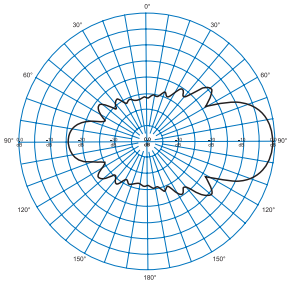
540-1000 MHz

YBS800

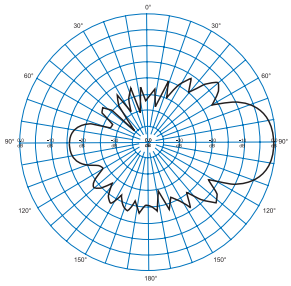
Typical VSWR response (YBS815-94)



YBS815-94 - E Plane



YBS815-94 - H Plane



Electrical

Model Number	YBS809-81	YBS809-82	YBS809-94	YBS809-99	YBS815-81	YBS815-82	YBS815-94	YBS815-99
Nominal Gain *dBi (dBd)*	12 (10)			13 (11)		15 (13)		
Frequency *MHz*	806 - 896	850 - 930	890 - 960	540 - 1000	806 - 896	850 - 930	890 - 960	540 - 1000
Tuned Bandwidth	Full band			5.0%	Full band			5.0%
VSWR (Return Loss)	<1.5 :1 (14dB)							
Nominal Impedance Ω	50							
Vertical Beamwidth	43°		41°	44°	36°	30°	31°	36°
Horizontal Beamwidth	49°	49°	48°	51°	39°	30°	32°	39°
Front / Back Ratio *dB*	16	18	15	16	20	18	17	17
Input Power *W*	100							
Passive IM 3rd order *dBc*	-150							

Mechanical

Model Number		YBS809-81	YBS809-82	YBS809-94	YBS809-99	YBS815-81	YBS815-82	YBS815-94	YBS815-99
Construction		All welded stainless steel with polished finish							
Length *m*		0.9		1.0	1.4	1.6			2.6
Weight *kg*		1.0			1.6	1.7	1.8	1.7	2.8
Termination		N female with short 9302 cable tail							
Mounting Area		100mm of 25mm diam. stainless steel							
Suggested Clamps		1 x UCR1				1 x UCR1 + 1 x M-4528 bracing kit			
Projected Area *cm²*	No ice	358	341	370	589	635	639	628	1067
	With ice	874	838	870	1390	1533	1543	1508	2626
Wind Load (Thrust) @ 160km/h *N*		42	40	44	70	75	76	74	127
Wind Gust Rating *km/h*		240							156
Torque @160 km/h *Nm*		15	13	16	40	53		52	152

UHF GridPak™ Antennas

403-960 MHz

KP Series

The KP Series GridPak™ antennas are aluminium grid construction parabolic antennas manufactured by Andrew. They deliver high wideband gain and excellent pattern characteristics making them ideal in applications where extremely high front to back ratios are required. The KP Series antennas are lightweight with low windload specifications, to minimise tower loadings.

GridPak™ antennas are shipped disassembled in a flat, lightweight package to simplify handling.

Each antenna is supplied with 750mm of flexible cable eliminating the necessity for a separate jumper cable. The input connector is an N type female.

- Easy installation - Lightweight aluminium grid construction
- Deliver high wideband gain and superior front to back ratios
- Shipped disassembled for easy and economical shipping and handling

KP Series

Electrical

Part No		KP6F-403-NWM	KP6F-820-NWM	KP10F-403-NWM	KP10F-820-NWM	KP13F-403-NWM	KP13F-820-NWM
Gain *dBi* +/- 0.2 dBi	Bottom	16.4	21.8	20.0	25.2	22.0	27.3
	Mid	16.3	22.6	19.6	25.9	22.2	28.0
	Top	16.6	23.2	20.4	26.5	22.6	28.6
Frequency *MHz*		403 - 470	820 - 960	403 - 470	820 - 960	403 - 470	820 - 960
Tuned Bandwidth		Entire specified bandwidth					
VSWR		1.35:1	1.4:1	1.35:1	1.35:1	1.35:1	1.35:1
Vertical Beamwidth		19.3°	9.5°	12.6°	6.7°	13.0°	4.9°
Horizontal Beamwidth		22.9°	10.8°	16.8°	8.0°	13.0°	5.8°
Front / Back Ratio *dB*		20	28	22	25	24	30

Mechanical

Model No.		KP6F-403-NWM	KP6F-820-NWM	KP10F-403-NWM	KP10F-820-NWM	KP13F-403-NWM	KP13F-820-NWM
Construction		Aluminium grid with N female input connector on cable tail. See note (1)					
Diameter *m*		2	2	3	3	4	4
Weight *kg*		90	90	190	190	235	235
Wind forces at 200kph *N*	F_A max	3650	3650	8120	8120	13940	13940
	F_S max	1910	1910	4540	4540	7780	7780
	M_T max	1824	1824	5259	5259	10903	10903

F_A = Axial force
F_S = Side force
M_T = Twisting moment

(1) Connector termination options available of 7/16 DIN female, 7/8 EIA or F flange upon request

PH & PHE Series Phasing Harnesses

PH and PHE Series phasing harnesses are for use in feeding multiple antennas from a single input. These are impedance matching harnesses of coaxial cable construction which can be used in a large variety of applications.

PH Series harnesses, our standard range, suit side mounted dipole and smaller yagi antenna applications. Larger yagi antennas require significantly larger antenna to antenna spacings and require the PHE (E for extended length) Series.

For technical information regarding phasing of side mount dipole antennas see pages 186-188.

PLEASE NOTE: For ALL applications using side mounted dipole antennas, the standard PH Series are recommended.

To ensure that you choose the correct phasing harness for your application, please use the following matrix.

PH Series Harnesses for VHF Applications

Model No.	No. of Antenna Outputs	Frequency *MHz*	Side Mount Dipoles	Yagis 2-4 Elements	Yagis 6-9 Elements	Bandwidth
PH12-24	2	70 - 85	Ideal for this application		Not suitable for this application. These antennas require significantly larger antenna to antenna spacing and require PHE Series Phasing Harnesses.	Full band as shown
PH12-99	2	60 - 136	Used only with custom antennas. Specify frequency.			20%
PH14-24	4	70 - 85	Ideal for this application			Full band as shown
PH14-99	4	60 - 136	Used only with custom antennas. Specify frequency.			20%
PH22-41	2	148 - 174	Ideal for this application			Full band as shown
PH22-99	2	137 - 250	Used only with custom antennas. Specify frequency.			20%
PH24-41	4	148 - 174	Ideal for this application			Full band as shown
PH24-99	4	137 - 250	Used only with custom antennas. Specify frequency.			20%

PHE Series Harnesses for VHF Applications

Model No.	No. of Antenna Outputs	Frequency *MHz*	Side Mount Dipoles	Yagis 2-4 Elements	Yagis 6-9 Elements	Bandwidth
PHE12-99	2	60 - 136	Suitable but not recommended as cable length is excessive. Specify frequency.		Suitable with custom antennas Specify frequency.	8%
PHE14-99	4	60 - 136				
PHE22-99	2	137 - 250				
PHE24-99	4	137 - 250				

PH Series Harnesses for UHF Applications

<table>
<tr><th>Model No.</th><th>No. of Antenna Outputs</th><th>Frequency MHz</th><th>Side Mount Dipoles</th><th>Yagis 2-6 Elements</th><th>Yagis 9-16 Elements</th><th>Bandwidth</th></tr>
<tr><td>PH42-65</td><td>2</td><td>400 - 420</td><td colspan="2" rowspan="4">Ideal for this application</td><td rowspan="11">Not suitable for this application. These antennas require significantly larger antenna to antenna spacing and require PHE Series Phasing Harnesses.</td><td rowspan="4">Full band as shown</td></tr>
<tr><td>PH42-70</td><td>2</td><td>450 - 470</td></tr>
<tr><td>PH42-71</td><td>2</td><td>470 - 490</td></tr>
<tr><td>PH42-72</td><td>2</td><td>490 - 520</td></tr>
<tr><td>PH42-99</td><td>2</td><td>300 - 600 (Specify)</td><td>Used only with custom SMD antennas. Specify frequency</td><td>Ideal with custom antennas (Outside standard bands). Specify frequency.</td><td>20%</td></tr>
<tr><td>PH44-65</td><td>4</td><td>400 - 420</td><td colspan="2" rowspan="4">Ideal for this application</td><td rowspan="4">Full band as shown</td></tr>
<tr><td>PH44-70</td><td>4</td><td>450 - 470</td></tr>
<tr><td>PH44-71</td><td>4</td><td>470 - 490</td></tr>
<tr><td>PH44-72</td><td>4</td><td>490 - 520</td></tr>
<tr><td>PH44-99</td><td>4</td><td>300 - 600 (Specify)</td><td colspan="2">Ideal with custom antennas (Outside standard bands). Specify frequency.</td><td>20%</td></tr>
<tr><td>PH82-81</td><td>2</td><td>820 - 900</td><td rowspan="2">Not suitable for this application</td><td rowspan="2">Ideal for six element yagis only</td><td rowspan="2">Full band as shown</td></tr>
<tr><td>PH82-82</td><td>2</td><td>850 - 930</td></tr>
<tr><td>PH82-99</td><td>2</td><td>600 - 999 (Specify)</td><td rowspan="2">Not suitable. SMD8 dipoles are not suited for phasing.</td><td rowspan="2">Ideal with custom antennas (outside standard bands). Specify frequency.</td><td rowspan="2">20%</td></tr>
<tr><td>PH84-99</td><td>4</td><td>600 - 999 (Specify)</td></tr>
</table>

PHE Series Harnesses for UHF Applications

<table>
<tr><th>Model No.</th><th>No. of Antenna Outputs</th><th>Frequency MHz</th><th>Side Mount Dipoles</th><th>Yagis 2-6 Elements</th><th>Yagis 9-16 Elements</th><th>Bandwidth</th></tr>
<tr><td>PHE42-65</td><td>2</td><td>400 - 420</td><td colspan="2" rowspan="4">Suitable but not recommended as cable length is excessive.</td><td rowspan="4">Ideal for this application</td><td rowspan="4">Full band as shown</td></tr>
<tr><td>PHE42-70</td><td>2</td><td>450 - 470</td></tr>
<tr><td>PHE42-71</td><td>2</td><td>470 - 490</td></tr>
<tr><td>PHE42-72</td><td>2</td><td>490 - 520</td></tr>
<tr><td>PHE42-99</td><td>2</td><td>300 - 600 (Specify)</td><td colspan="2">Suitable (with custom antennas outside normal bands) but not recommended as cable length is excessive. Specify frequency.</td><td>Ideal where frequency is outside normal bands. Specify frequency.</td><td>20%</td></tr>
<tr><td>PHE44-65</td><td>4</td><td>400 - 420</td><td colspan="2" rowspan="4">Suitable but not recommended as cable length is excessive.</td><td rowspan="4">Ideal for this application</td><td rowspan="4">Full band as shown</td></tr>
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<tr><td>PHE44-99</td><td>4</td><td>300 - 600 (Specify)</td><td colspan="2">Suitable (with custom antennas outside normal bands) but not recommended as cable length is excessive. Specify frequency.</td><td>Ideal where frequency is outside normal bands. Specify frequency.</td><td>20%</td></tr>
<tr><td>PHE82-81</td><td>2</td><td>820 - 900</td><td rowspan="2">Not suitable. SMD8 dipoles are not suited for phasing.</td><td rowspan="2">Suitable but not recommended as cable length is excessive.</td><td rowspan="2">Suitable for 9 and 15 element yagis only</td><td rowspan="2">Full band as shown</td></tr>
<tr><td>PHE82-82</td><td>2</td><td>850 - 930</td></tr>
<tr><td>PHE82-99</td><td>2</td><td>600 - 999 (Specify)</td><td colspan="2" rowspan="2">Suitable (with custom antennas outside normal bands) but not recommended as cable length is excessive. Specify frequency.</td><td rowspan="2">Ideal where frequency is outside normal bands. Specify frequency.</td><td rowspan="2">20%</td></tr>
<tr><td>PHE84-99</td><td>4</td><td>600 - 999 (Specify)</td></tr>
</table>

Vertical Collinear Antennas

2.4-2.5 GHz

COL2402
COL2406
COL2408
COL2410

COL2408

These antennas meet the exacting performance criteria for spread spectrum operation, including those of the IEEE802.11 wireless standard. This range of rugged, collinear antennas offers an omni pattern, with gains ranging from 2 to 10dBi, enabling optimum network configuration.

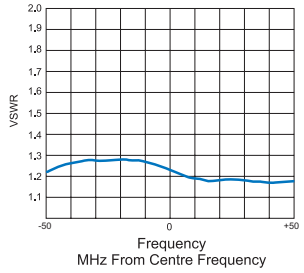
The patented PCB based design delivers superior pattern stability across the entire band avoiding inherent pattern tilting common in more traditional collinear designs.

Their UV stable white fibreglass housings make them the ideal choice in a wide range of industrial spread spectrum applications.

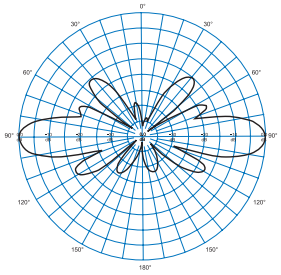
- Tightly controlled radiation patterns for optimum coverage
- Rugged construction meets all installation requirements
- Small inobtrusive design
- PCB design for optimum RF pattern stability
- Also available in mobile configurations with spring base

USA Patent No. 690940382
Australia Patent App. No. 2003255049 / EU Patent App. No. 03023406.6 / China Patent App. No. 200310100548.5

Typical VSWR response (COL2408)



COL2408 - E Plane



Electrical

Model Number	COL2402	COL2406	COL2408	COL2410
Nominal Gain *dBi*	2	6	8	10
Frequency *MHz*	2400 - 2500			
Tuned Bandwidth *MHz*	100			
VSWR (Return Loss)	<1.5:1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	81°	22.2°	16.5°	8°
Horizontal Beamwidth	360°			
Input Power *W*	25			

Mechanical

Model Number	COL2402	COL2406	COL2408	COL2410
Construction	White fibreglass collinear antenna with stud mount base			White fibreglass collinear antenna with stainless steel mounting tube
Length *mm*	170	340	430	1095
Weight *kg*	0.15	0.17	0.2	0.25
Suggested Clamps	1 x MM2 bracket supplied			Mast mount 2 x stainless steel hose clamps supplied
Cable and Connector	300mm of 9006 and N-Female connector			

Vertical Collinear Antennas

5.7-5.8 GHz

COL5806
COL5808
COL5810

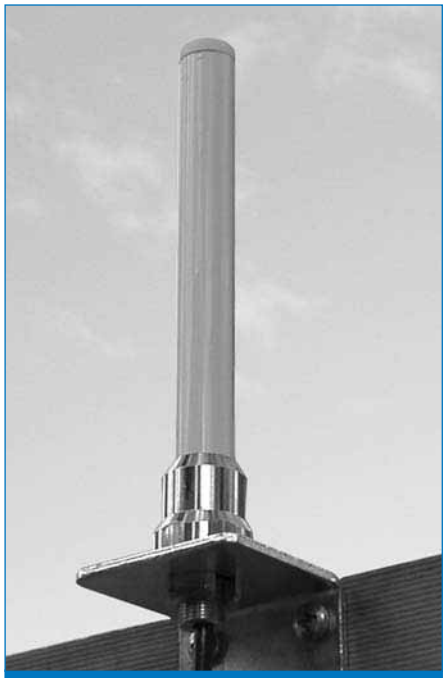
These antennas offer a rugged omnidirectional solution for many varied applications in the unlicensed 5.8GHz spectrum including fixed wireless, wireless video, 802.11a and rural telephony. With gains ranging from 6 to 10dBi these collinears deliver maximum range and versatility for the network designer.

The patented PCB based design offers superior pattern stability across the entire band avoiding inherent pattern tilting common in more traditional collinear designs.

Their UV stable white fibreglass housings make them the ideal choice for indoor or outdoor requirements.

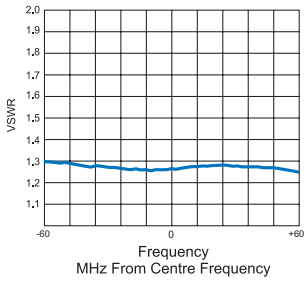
- Tightly controlled radiation patterns for optimum coverage
- Rugged construction meets all installation requirements
- Small inobtrusive design
- PCB design for optimum RF pattern stability

USA Patent No. 690940382
Australia Patent App. No. 2003255049 / EU Patent App. No. 03023406.6 / China Patent App. No. 200310100548.5

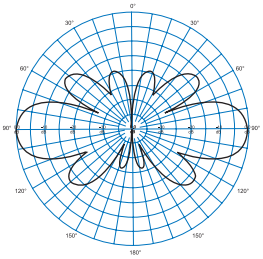


COL5806

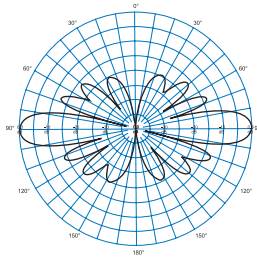
Typical VSWR response (COL5808)



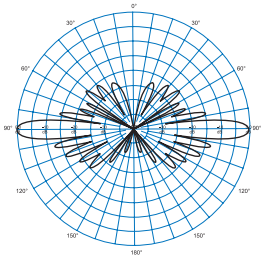
COL5806 - E Plane



COL5808 - E Plane



COL5810 - E Plane



Electrical

Model Number	COL5806	COL5808	COL5810
Nominal Gain *dBi*	6	8	10
Frequency *MHz*	5725 - 5850		
Tuned Bandwidth *MHz*	Entire band		
VSWR (Return Loss)	<1.5:1		
Nominal Impedance Ω	50		
Vertical Beamwidth	23°	14°	8°
Horizontal Beamwidth	360°		
Input Power *W*	5		

Mechanical

Model Number	COL5806	COL5808	COL5810
Construction	Flexible PCB radiator in white fibreglass radome fitted to bright chrome ferrule.		
Length *mm*	155	235	395
Weight *kg*	0.12	0.13	0.15
Suggested Clamps	1 x MM2 bracket		
Cable and Connector	300mm of 9142 and an N-Female		

Halo Omnidirectional Antennas

2.4-2.5 GHz
5.7-5.9 GHz

ISM-2403-C
ISM-2403-V
ISM-5803-C
ISM-5803-V

ISM-2403-C

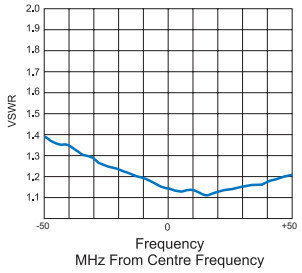
The RFI "Halo" antennas offer a stylish, low profile design required by today's more aesthetically demanding environments such as stylish office space and retail outlets where 802.11 technology is finding itself more readily deployed.

This style of antenna lends itself perfectly to mounting on a ceiling tile in public arenas and internet kiosks. Whilst not appearing to be an antenna it offers deceptively high performance. Applications such as WiFi hotspots are well served by this discrete design.

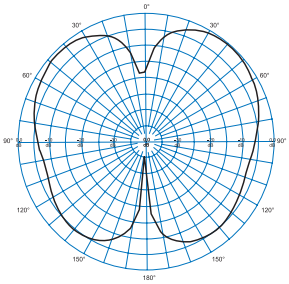
These antennas support a radiation pattern that is very low in vertical beamwidth and offer 3.5dBi gain to the horizon, assisting in coverage of a greater floor space such as found in an office application. No longer do you inject RF into the floor, it is fed more efficiently to farther regions of the desired coverage area.

The "Halo" series is available in it's standard format (ISM-XX03-C) for ceiling mounting and also with a sealing gasket for vehicle mounting (ISM-XX03-V).

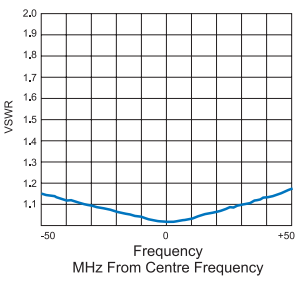
Typical VSWR response (ISM2403)



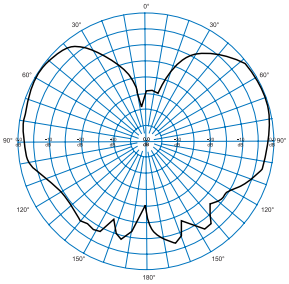
ISM2403 - E Plane



Typical VSWR response (ISM5803)



ISM5803 - E Plane



Electrical

Model No	ISM-2403-C	ISM-2403-V	ISM-5803-C	ISM-5803-V
Nominal Gain *dBi*	3.5		3	
Frequency *MHz*	2400 - 2500		5725 - 5875	
Tuned Bandwidth	Full			
VSWR (Return Loss)	<1.5:1 (14dB)			
Nominal Impedance Ω	50			
Vertical Beamwidth	57° @ 45° elevation		33° @ 50° elevation	
Input Power *W*	25			

Mechanical

Model No	ISM-2403-C	ISM-2403-V	ISM-5803-C	ISM-5803-V
Construction	White ABS radome on aluminium base			
Dimensions *mm* *L x W x D*	100 x 100 x 25			
Weight *kg*	0.05			
Termination	N Female with 400mm 9142 cable tail			
Suggested Mounting	Ceiling mount. 2 x studs with wing nuts (supplied)	Vehicle mount. 4 x screws with gasket (supplied)	Ceiling mount. 2 x studs with wing nuts (supplied)	Vehicle mount. 4 x screws with gasket (supplied)