

Optimizer® Broadband Antennas

Polarization: Dual $\pm 45^\circ$

Broadband

Electrical Downtilt: Adjustable

Tilt range 10°

Horizontal beamwidth: 65° or 90°

Applications

This innovative range of broadband variable tilt antennas are cross-polarized available in 65° or 90° degree horizontal beamwidths for use in the following systems:

- Trunking / SMR (806-824, 851-869MHz)
- Cellular (824-849, 869-896 MHz)
- GSM 900 / ETACS (872-915, 917-960MHz)
- Trunking (896-901, 935-940MHz)

These high performance antennas have excellent upper sidelobe suppression, VSWR and front to back ratio. The antennas are available in a variety of gain options varying from 15.2 to 18.2dBi covered by an UV resistant fiberglass radome. Having continuously adjustable electrical downtilt over the range of 0° to 10° . These antennas have two 7-16 connectors mounted at the bottom and are designed for use with our new APM40 Global Mount system / APM70-3C cluster kit.

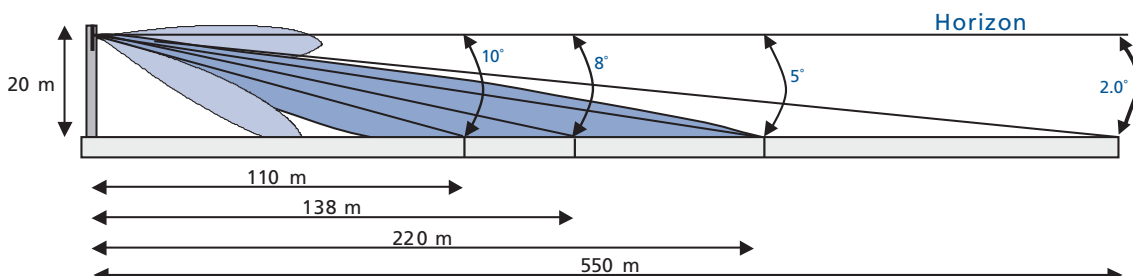
As with all our variable tilt antenna range they can be upgraded using our OPTIMIZER RT® system for remote tilt control.

Features & Benefits

- Constant performance across frequency band for all tilt values
- At least 30 dB isolation between polarization's
- High gain
- Stable horizontal and vertical beamwidths
- Excellent upper sidelobe suppression
- Very low beam squint
- Effective polarization diversity ensured by high cross polar discrimination
- Broadband design
- Low wind load
- Optional remote tilt – can be retrofitted

Performance Optimization Techniques

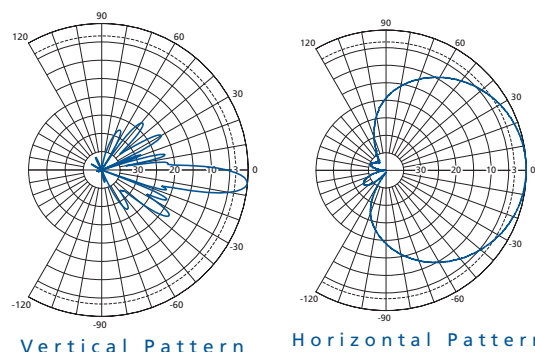
Fighting co-channel interferences is key to improving network performances. A tight control of the coverage by adjusting downtilt to the optimum value helps reducing co-channel interferences.



Effect of adjustable antenna downtilt on tight coverage control



APXV86-90* Series



Optimizer® Broadband Antennas

APXV86-906513L-C

Horizontal Beamwidth, deg 65

Gain, dBi 14.7

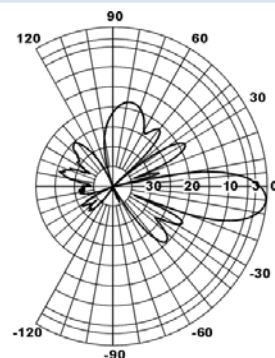
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

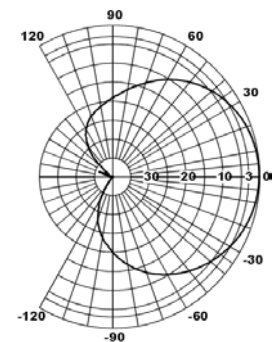
Frequency Range, MHz	806-870	870-960
Horizontal Beamwidth, deg	67	63
Vertical Beamwidth, deg	16	15
Gain, dBi (dBd)	14.4 (12.3)	15 (12.9)
1st Upper Sidelobe Suppression, dB	> 18	> 18
Front-To-Back Ratio, dB	> 25	> 18
VSWR	< 1.5:1	< 1.4:1
Isolation between Ports, dB	> 30	> 30
Maximum Power Input, W	500	500
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 43 dBm, dBc	> 150	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1350 x 330 x 130 (53.15 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.45 (4.81)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	685 (154)
Front Thrust @ Rated Wind, N (lbf)	685 (154)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	14 (30.8)
Packing Dimensions - HxWxD, m (ft)	1.5 x 0.4 x 0.25 (4.95 x 1.32 x 0.83)
Packing Dimensions, HxWxD, mm (in)	1520 x 400 x 250 (59.84 x 15.75 x 9.84)



Vertical Pattern



Horizontal Pattern

APXV86-906513T-C

Horizontal Beamwidth, deg 65

Gain, dBi 14.7

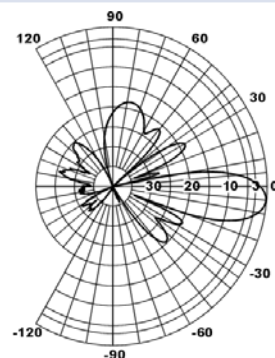
Electrical Downtilt, deg 4-14

ELECTRICAL SPECIFICATIONS

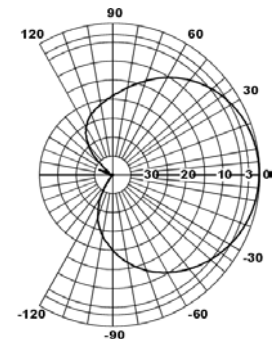
Frequency Range, MHz	806-870	870-960
Horizontal Beamwidth, deg	67	63
Vertical Beamwidth, deg	16	15
Gain, dBi (dBd)	14.4 (12.3)	14.8 (12.7)
1st Upper Sidelobe Suppression, dB	> 16	> 18
Front-To-Back Ratio, dB	> 25	> 18
VSWR	< 1.3:1	< 1.3:1
Isolation between Ports, dB	> 30	> 30
Maximum Power Input, W	500	500
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 43 dBm, dBc	> 150	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1350 x 330 x 130 (53.15 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.45 (4.81)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	685 (154)
Front Thrust @ Rated Wind, N (lbf)	685 (154)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	14 (30.8)
Packing Dimensions - HxWxD, m (ft)	1.5 x 0.4 x 0.25 (4.95 x 1.32 x 0.83)
Packing Dimensions, HxWxD, mm (in)	1520 x 400 x 250 (59.84 x 15.75 x 9.84)



Vertical Pattern



Horizontal Pattern

Optimizer® Broadband Antennas

APXV86-906515-C

Horizontal Beamwidth, deg 65

Gain, dBi 16.7

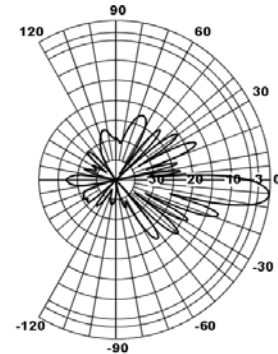
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

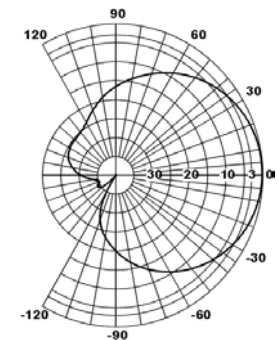
Frequency Range, MHz	806-870	870-960
Horizontal Beamwidth, deg	65	
Vertical Beamwidth, deg	10	9
Gain, dBi (dBd)	16.1 (14.0)	16.7 (14.6)
1st Upper Sidelobe Suppression, dB	> 17 (typ >20)	
Front-To-Back Ratio, dB	> 25	> 30
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	500	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 43 dBm, dBc	> 150	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2080 x 330 x 130 (82 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.7 (7.53)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1050 (236)
Front Thrust @ Rated Wind, N (lbf)	1050 (236)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	18.5 (40.7)
Packing Dimensions - HxWxD, m (ft)	2.3 x 0.4 x 0.25 (7.6 x 1.32 x 0.83)
Packing Dimensions, HxWxD, mm (in)	2255 x 400 x 250 (88.8 x 15.8 x 9.8)



Vertical Pattern



Horizontal Pattern

APXV86-906516-C

Horizontal Beamwidth, deg 65

Gain, dBi 17.5

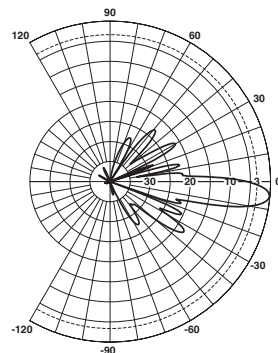
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

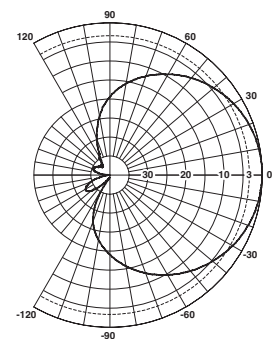
Frequency Range, MHz	806-870	870-960
Horizontal Beamwidth, deg	66	63
Vertical Beamwidth, deg	8	7
Gain, dBi (dBd)	16.5 (14.3)	17.5 (15.3)
Upper Sidelobe Suppression, dB	>18 all (Typically >20)	
Front-To-Back Ratio, dB	> 26	
VSWR	< 1.4:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	500	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 43 dBm, dBc	> 150	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2600 x 330 x 130 (101 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	1.16 (12.11)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1430 (321)
Front Thrust @ Rated Wind, N (lbf)	1430 (321)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	27 (59.4)
Packing Dimensions - HxWxD, m (ft)	2.77 x .40 x .26 (9.08 x 1.31 x 0.85)
Packing Dimensions, HxWxD, mm (in)	2770 x 400 x 260 (109 x 15.75 x 10.2)



Vertical Pattern



Horizontal Pattern

Optimizer® Broadband Antennas

APXV86-909014-C

Horizontal Beamwidth, deg 88

Gain, dBi 15

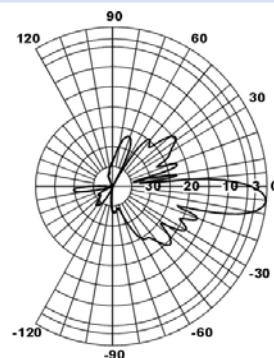
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

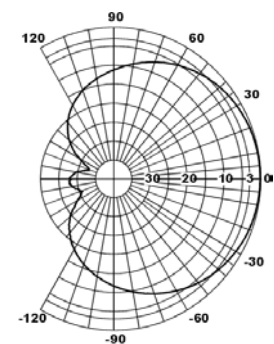
Frequency Range, MHz	806-870	870-960
Horizontal Beamwidth, deg	88	
Vertical Beamwidth, deg	9.5	
Gain, dBi (dBd)	15.0 (12.9)	
1st Upper Sidelobe Suppression, dB	> 18	
Front-To-Back Ratio, dB	> 25	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	500	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 43 dBm, dBc	> 150	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2080 x 330 x 130 (81.89 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.7 (7.53)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1050 (236)
Front Thrust @ Rated Wind, N (lbf)	1050 (236)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	18.5 (40.7)
Packing Dimensions - HxWxD, m (ft)	2.3 x 0.4 x 0.25 (7.6 x 1.32 x 0.83)
Packing Dimensions, HxWxD, mm (in)	2255 x 400 x 250 (88.8 x 15.8 x 9.8)



Vertical Pattern



Horizontal Pattern