

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:

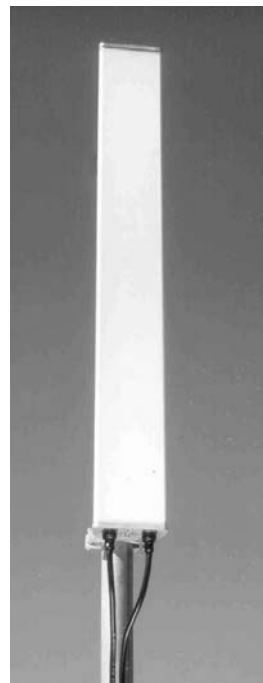
DCS1800 (1710-1785, 1805-1880MHz)

PCS (1850-1910, 1930-1990MHz)

UMTS (1920-1980, 2110-2170MHz)

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 14.7 to 19.2dBi covered by a UV resistant fiberglass radome. Having continuously adjustable electrical downtilt over the range of 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.

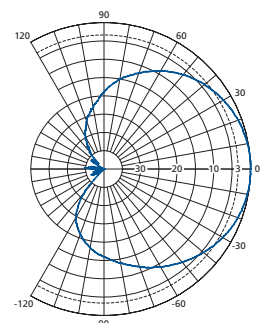
As with all our variable tilt antenna range they can be upgraded using our OPTIMIZER RT system for remote tilt control



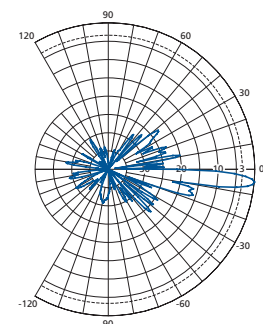
APXV18-20* Series

Features & Benefits

- Constant performance across frequency band for all tilt values
- High gain
- High suppression of all upper sidelobes (typically $<-20\text{dB}$)
- Includes null fill of the 1st and 2nd lower nulls
- At least 30 dB isolation between polarization's
- Stable horizontal and vertical beamwidths
- Slanted Dual Polarization allows air combining, thus saving 3dB in power budget
- Effective polarization diversity ensured by high cross polar discrimination
- Broadband design
- Low wind load
- Optional remote tilt – can be retrofitted



Horizontal Pattern



Vertical Pattern

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.

APXV18-20* Series

1710-2170 MHz

Optimizer® Broadband Antennas

APXV18-206513-C

Horizontal Beamwidth, deg 65

Gain, dBi 15.1

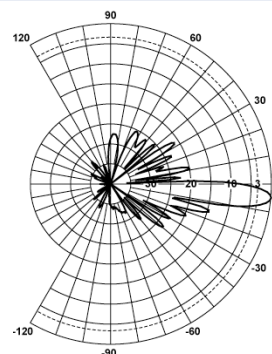
Electrical Downtilt, deg 2-12

ELECTRICAL SPECIFICATIONS

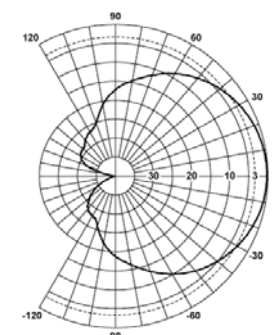
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	68	63
Vertical Beamwidth, deg	15.3	13.6
Gain, dBi (dBd)	14.7 (12.6)	15.1 (13.0)
1st Upper Sidelobe Suppression, dB	> 18 (typically > 20)	
Upper Sidelobe Suppression, dB	>18 all (Typically >20)	
Front-To-Back Ratio, dB	> 28	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc	> 170	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	700 x 175 x 80 (27.5 x 6.8 x 3.15)	
Survival Wind Speed, km/h (mph)	200 (125)	
Max Wind Loading Area, m² (ft²)	0.14 (1.47)	
Rated Wind Speed, km/h (mph)	160 (100)	
Maximum Thrust @ Rated Wind, N (lbf)	180 (40.45)	
Front Thrust @ Rated Wind, N (lbf)	180 (40.45)	
Reflector Material	Aluminum	
Radiating Element Material	Brass	
Radome Material	Fiberglass	
Radome Color	Light Grey RAL7035	
Weight w/o Mtg Hardware, kg (lb)	6 (13.2)	
Packing Dimensions - HxWxD, m (ft)	0.86 x .26 x .20 (2.81 x 0.85 x 0.65)	
Packing Dimensions, HxWxD, mm (in)	860 x 260 x 200 (33.8 x 10.2 x 7.8)	



Vertical Pattern



Horizontal Pattern

APXV18-206513T-C

Horizontal Beamwidth, deg 65

Gain, dBi 15.4

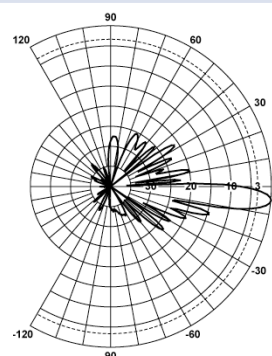
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

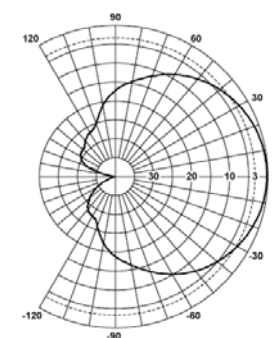
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	68	63
Vertical Beamwidth, deg	15.3	13.6
Gain, dBi (dBd)	14.9 (12.8)	15.4 (13.3)
1st Upper Sidelobe Suppression, dB	> 18	
Upper Sidelobe Suppression, dB	> 18	
Front-To-Back Ratio, dB	> 28	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc	> 170	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	700 x 175 x 80 (27.5 x 6.8 x 3.15)	
Survival Wind Speed, km/h (mph)	200 (125)	
Max Wind Loading Area, m² (ft²)	0.14 (1.47)	
Rated Wind Speed, km/h (mph)	160 (100)	
Maximum Thrust @ Rated Wind, N (lbf)	180 (40.45)	
Front Thrust @ Rated Wind, N (lbf)	180 (40.45)	
Reflector Material	Aluminum	
Radiating Element Material	Brass	
Radome Material	Fiberglass	
Radome Color	Light Grey RAL7035	
Weight w/o Mtg Hardware, kg (lb)	6 (13.2)	
Packing Dimensions - HxWxD, m (ft)	0.86 x .26 x .20 (2.81 x 0.85 x 0.65)	
Packing Dimensions, HxWxD, mm (in)	860 x 260 x 200 (33.8 x 10.2 x 7.8)	



Vertical Pattern



Horizontal Pattern



APXV18-20* Series

1710-2170 MHz

Optimizer® Broadband Antennas

APXV18-206516L-C

Horizontal Beamwidth, deg 65

Gain, dBi 18

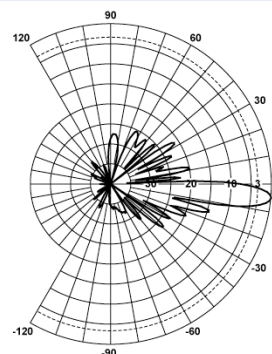
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

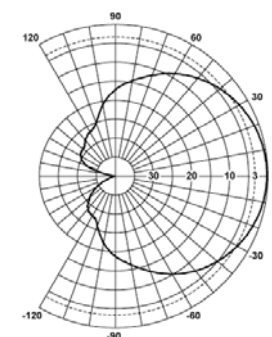
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	68	63
Vertical Beamwidth, deg	7	6.4
Gain, dBi (dBd)	17.6 (15.5)	18.0 (16.0)
Upper Sidelobe Suppression, dB	>17	>18 all (Typically >20)
Front-To-Back Ratio, dB	>28	>30
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc		> 170

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1349 x 175 x 80 (53.0 x 6.8 x 3.15)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.31 (3.3)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	380 (185)
Front Thrust @ Rated Wind, N (lbf)	380 (185)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	8.5 (18.7)
Packing Dimensions - HxWxD, m (ft)	1.5 x .26 x .20 (4.9 x 0.85 x 0.65)
Packing Dimensions, HxWxD, mm (in)	1520 x 260 x 200 (59.8 x 10.2 x 7.8)



Vertical Pattern



Horizontal Pattern

APXV18-206516T: Tilt range 4-14° upon request

APXV18-206517-C

Horizontal Beamwidth, deg 65

Gain, dBi 19

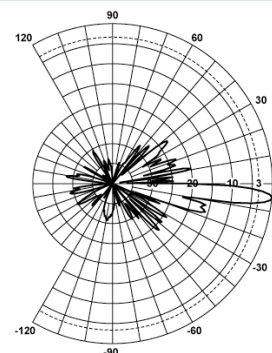
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

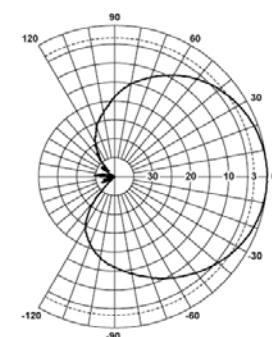
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	67	63
Vertical Beamwidth, deg	5.0	4.6
Gain, dBi (dBd)	18.8 (16.7)	19.0 (16.9)
Upper Sidelobe Suppression, dB	>17	>18 all (Typically >20)
Front-To-Back Ratio, dB	> 30	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc		> 170

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1850 x 175 x 80 (72.0 x 6.8 x 3.15)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.45 (4.7)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	558 (125)
Front Thrust @ Rated Wind, N (lbf)	558 (125)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	12 (26.4)
Packing Dimensions - HxWxD, m (ft)	2.0 x 0.26 x 0.2 (6.6 x 0.85 x 0.65)
Packing Dimensions, HxWxD, mm (in)	2021 x 260 x 200 (79.5 x 10.2 x 7.8)



Vertical Pattern



Horizontal Pattern

APXV18-20* Series

1710-2170 MHz

Optimizer® Broadband Antennas

APXV18-209014-C

Horizontal Beamwidth, deg 90

Gain, dBi 16.5

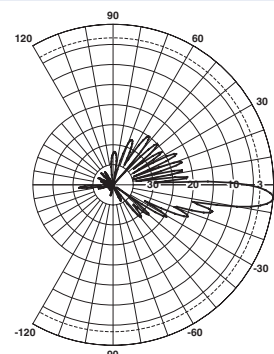
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

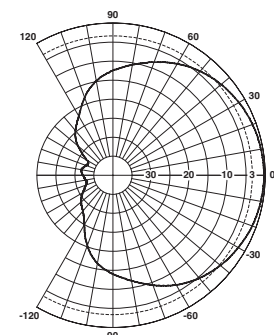
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	88	
Vertical Beamwidth, deg	7.0	6.4
Gain, dBi (dBd)	16.5 (14.4)	16.5 (14.4)
1st Upper Sidelobe Suppression, dB	> 19 first (typically > 22)	
Upper Sidelobe Suppression, dB	> 17 all other (typically > 20)	
Front-To-Back Ratio, dB	> 26	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc	> 170	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1349 x 175 x 80 (53.0 x 6.8 x 3.15)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.29 (3.0)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	380 (85)
Front Thrust @ Rated Wind, N (lbf)	380 (85)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	8.5 (18.7)
Packing Dimensions - HxWxD, m (ft)	1.5 x .26 x .20 (4.9 x 0.85 x 0.65)
Packing Dimensions, HxWxD, mm (in)	1520 x 260 x 200 (59.8 x 10.2 x 7.8)



Vertical Pattern



Horizontal Pattern

APXV18-209015-C

Horizontal Beamwidth, deg 90

Gain, dBi 17.7

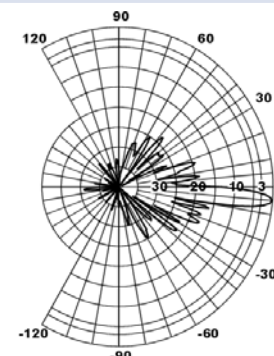
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

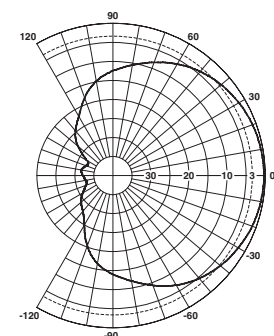
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	88	
Vertical Beamwidth, deg	5.1	4.5
Gain, dBi (dBd)	17.9 (15.8)	17.7 (15.7)
1st Upper Sidelobe Suppression, dB	>18 first (typically >22)	
Upper Sidelobe Suppression, dB	>18 all (Typically >20)	
Front-To-Back Ratio, dB	> 28	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc	> 170	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1850 x 175 x 80 (72.0 x 6.8 x 3.15)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.45 (4.7)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	558 (125)
Front Thrust @ Rated Wind, N (lbf)	558 (125)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	11.5 (25.3)
Packing Dimensions - HxWxD, m (ft)	2.0 x 0.26 x 0.2 (6.6 x 0.85 x 0.65)
Packing Dimensions, HxWxD, mm (in)	2021 x 260 x 200 (79.5 x 10.2 x 7.8)



Vertical Pattern



Horizontal Pattern