

Cluster Antenna Systems

Polarization: Dual $\pm 45^\circ$

Electrical Downtilt: Adjustable

Horizontal beamwidth: 65°

Azimuth Adjustment: $\pm 20^\circ$

Broadband

Tilt Range 10°

Applications

Environmental issues pose a dilemma to cellular network planners in many parts of the world. While more prominent antenna site locations often offer the best performance, they can also attract higher levels of opposition.

RFS has developed a range of environmentally friendly antenna systems to reduce the impact of cellular rollouts. The RFS range of cluster systems provides the industries most innovative tower top antenna mounting arrangements. This unique cluster mount fits all RFS high band FET & VET antennas. Available with a 65° degree horizontal beamwidth 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.

The clusters can be supplied either with fixed tilt antennas or adjustable tilt models as required.

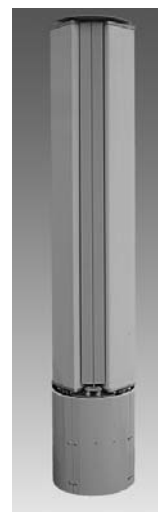
The variable tilt model has continuously adjustable electrical downtilt over the range of 0° to 10° . As with all our variable tilt antenna range they can be upgraded using our OPTIMIZER RT system for remote tilt control.



Attaching optional Optimizer RT remote tilt units



Individual azimuth panning for each antenna



UMTS Cluster with standard mounting interface module attached



UMTS cluster with optional TMA module attached (covers removed).

Features & Benefits

- Low profile for low visual impact
- At least 30 dB isolation between polarization's
- High gain
- High front to back ratio
- Stable horizontal and vertical beamwidths
- Excellent upper sidelobe suppression
- Very low beam squint over frequency band
- Effective polarization diversity ensured by high cross polar discrimination
- Broadband design
- Azimuth adjustable $\pm 20^\circ$ for each sector
- Optional remote tilt – can be retrofitted on each sector

ACXV18-20* & ACX* Series

1710-2170 MHz

Cluster Antenna Systems

ACXV18-206513

Horizontal Beamwidth, deg 65

Gain, dBi 15.1

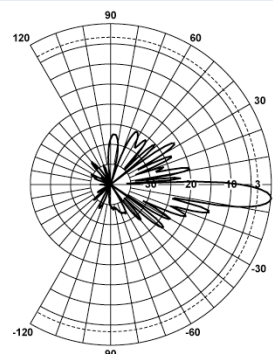
Electrical Downtilt, deg 2-12

ELECTRICAL SPECIFICATIONS

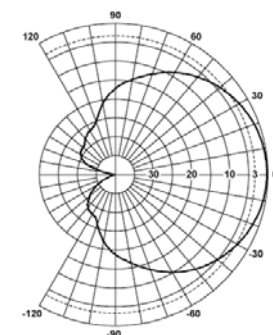
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	68	64
Vertical Beamwidth, deg	15.3	13.6
Gain, dBi (dBd)	14.7 (12.6)	15.1 (13.0)
Upper Sidelobe Suppression, dB	>18 all (Typically >20)	
Front-To-Back Ratio, dB	> 28	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc	> 170	

MECHANICAL SPECIFICATIONS

Cluster Dimensions - HxW, mm (in)	1218 x 376 (48.0 x 14.8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m ² (ft ²)	0.47 (5)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	537 (176)
Front Thrust @ Rated Wind, N (lbf)	537 (176)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/ Mtg Hardware, kg (lb)	60 (132)
Shipping Weight, kg (lb)	80 (176)
Packing Dimensions - HxWxD, m (ft)	1@1.1 x .46 x .53 (4.3 x 1.25 x 1.75); 3@0.86 x .26 x .20 (2.81 x 0.7 x 0.54); 1@1.12 x .48 x .55 (3.7 x 1.25 x 1.5)
Packing Dimensions, HxWxD, mm (in)	1@1100 x 460 x 530 (43.22 x 15 x 21); 3@860 x 260 x 200 (33.8 x 8.5 x 6.5); 1@1115 x 480 x 550 (43.8 x 15 x 18)



Vertical Pattern



Horizontal Pattern

ACXV18-206513T

Horizontal Beamwidth, deg 65

Gain, dBi 15.4

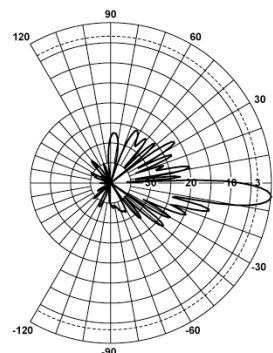
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

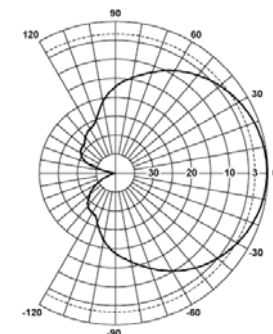
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	68	64
Vertical Beamwidth, deg	15.3	13.6
Gain, dBi (dBd)	14.9 (12.8)	15.4 (13.3)
Upper Sidelobe Suppression, dB	>18 all (Typically >20)	
Front-To-Back Ratio, dB	> 28	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc	> 170	

MECHANICAL SPECIFICATIONS

Cluster Dimensions - HxW, mm (in)	1218 x 376 (48.0 x 14.8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m ² (ft ²)	0.47 (5)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	537 (176)
Front Thrust @ Rated Wind, N (lbf)	537 (176)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/ Mtg Hardware, kg (lb)	60 (132)
Shipping Weight, kg (lb)	80 (176)
Packing Dimensions - HxWxD, m (ft)	1@1.1 x .46 x .53 (4.3 x 1.25 x 1.75); 3@0.86 x .26 x .20 (2.81 x 0.7 x 0.54); 1@1.12 x .48 x .55 (3.7 x 1.25 x 1.5)
Packing Dimensions, HxWxD, mm (in)	1@1100 x 460 x 530 (43.22 x 15 x 21); 3@860 x 260 x 200 (33.8 x 8.5 x 6.5); 1@1115 x 480 x 550 (43.8 x 15 x 18)



Vertical Pattern



Horizontal Pattern

Cluster Antenna Systems

ACXV18-206516L

Horizontal Beamwidth, deg 65

Gain, dBi 18

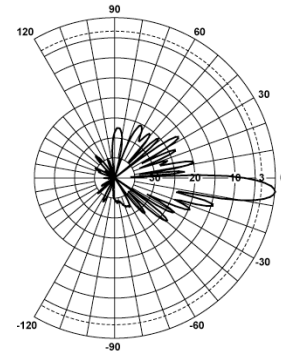
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

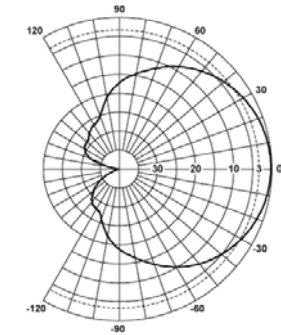
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	68	63
Vertical Beamwidth, deg	7	6.4
Gain, dBi (dBd)	17.6 (15.5)	18 (15.9)
Upper Sidelobe Suppression, dB	>17	>18 all (Typically >20)
Front-To-Back Ratio, dB	> 28	> 30
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input, W	300	
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	> 160	
7th Order IMP @ 2x46 dBm, dBc		> 170

MECHANICAL SPECIFICATIONS

Cluster Dimensions - HxW, mm (in)	1857 x 376 (73.1 x 14.8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.72 (7.7)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	819 (184)
Front Thrust @ Rated Wind, N (lbf)	819 (184)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/ Mtg Hardware, kg (lb)	72 (158.4)
Shipping Weight, kg (lb)	95 (209)
Packing Dimensions - HxWxD, m (ft)	1@2.4 x .46 x .53 (6.6 x 1.25 x 1.75); 3@1.46 x .26 x .20 (3.9 x 0.7 x 0.54); 1@1.15 x .48 x .55 (2.6 x 1.3 x 1.5)
Packing Dimensions, HxWxD, mm (in)	1@2400 x 460 x 530 (80 x 15 x 21); 3@1460 x 260 x 200 (47.9 x 8.5 x 6.5); 1@1150 x 480 x 550 (32 x 15 x 18)



Vertical Pattern



Horizontal Pattern

ACXV18-206517

Horizontal Beamwidth, deg 65

Gain, dBi 19

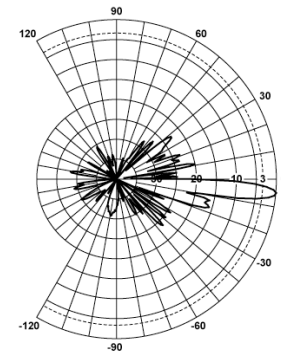
Electrical Downtilt, deg 0-10

ELECTRICAL SPECIFICATIONS

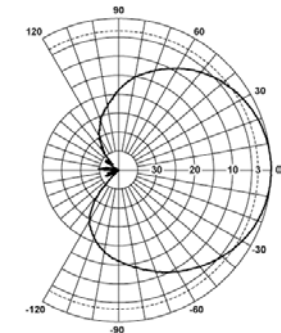
Frequency Range, MHz	1710-1900	1900-2170
Horizontal Beamwidth, deg	67	63
Vertical Beamwidth, deg	5.0	4.6
Gain, dBi (dBd)	18.8 (16.7)	19.0 (16.9)
Upper Sidelobe Suppression, dB	>17	>18 all (Typically >20)
Front-To-Back Ratio, dB	> 30	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Maximum Power Input,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

MECHANICAL SPECIFICATIONS

Cluster Dimensions - HxW, mm (in)	2332 x 376 (91.8 x 14.8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.89 (9.5)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1032 (234)
Front Thrust @ Rated Wind, N (lbf)	1032 (234)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/ Mtg Hardware, kg (lb)	90 (198)
Shipping Weight, kg (lb)	111 (244)
Packing Dimensions - HxWxD, m (ft)	1@2.4 x .46 x .53 (6.6 x 1.25 x 1.75); 3@1.9 x .26 x .20 (5.3 x 0.7 x 0.54); 1@1.15 x .48 x .55 (2.6 x 1.25 x 1.5)
Packing Dimensions, HxWxD, mm (in)	1@2400 x 460 x 530 (80 x 15 x 21); 3@1940 x 260 x 200 (64 x 8.5 x 6.5); 1@1150 x 480 x 550 (32 x 15 x 18)



Vertical Pattern



Horizontal Pattern

ACXV18-20* & ACX* Series

1710-2170 MHz

Cluster Antenna Systems

ACX16DWV-16DWVL

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

Survival Wind Speed, km/h (mph)	200 (125)
Rated Wind Speed, km/h (mph)	160 (100)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035

ACX17DWV-17DWV

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

Survival Wind Speed, km/h (mph)	200 (125)
Rated Wind Speed, km/h (mph)	160 (100)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035