

Optimizer® Dualband Antennas

Polarization: Dual $\pm 45^\circ$

Electrical Downtilt: Variable

Horizontal beamwidth: 65°

Tilt range: 10°

Applications

These new dual band GSM 900 / DCS 1800 and Cellular 800 / PCS 1900 and GSM 900 / DCS 1800 - UMTS variable tilt antennas are cross polarized with a 65° horizontal beamwidth for use in the following systems:

Low Band

Cellular 800 (824-849, 869-894 MHz) for APXCV-PV series

GSM 900 (872-915, 917-960MHz) for APXGV-DWV series

High Band

DCS1800 (1710-1785, 1805-1880MHz) for APXGV-DV series

PCS (1850-1910, 1930-1990MHz) for APXCV-PV series

UMTS (1920-1980, 2110-2170MHz) for APXG*-DW* series

These antennas have enhanced performance with excellent tilt range, gain, sidelobe suppression, VSWR and front to back ratio.

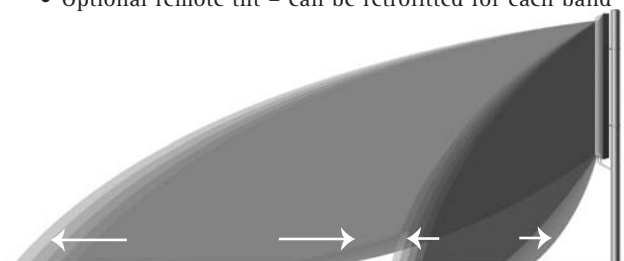
These antennas provide an easy upgrade path for the addition of 3G/UMTS as high band and low band can be optimized separately. Antennas are available in two gain options 14/17 and 16/18 dBi.

Covered by a fiberglass radome, these antennas feature an independent continuously adjustable electrical downtilt for each band. Four 7-16 connectors are mounted at the bottom (two 7-16 connectors for duplexed model).

All antennas are designed for use with our APM40 global mount as well as the APM70- 3C cluster kit.

Features & Benefits

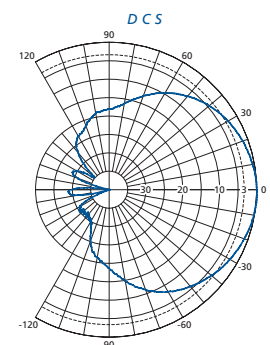
- Side by side construction allows independent adjustable tilt control of each antenna array
- High gain on both bands
- High suppression of all upper sidelobes
- At least 30 dB isolation between polarizations
- At least 30 dB isolation between bands
- Stable horizontal and vertical beamwidths
- Broadband design for high band
- Low wind load
- Optional remote tilt – can be retrofitted for each band



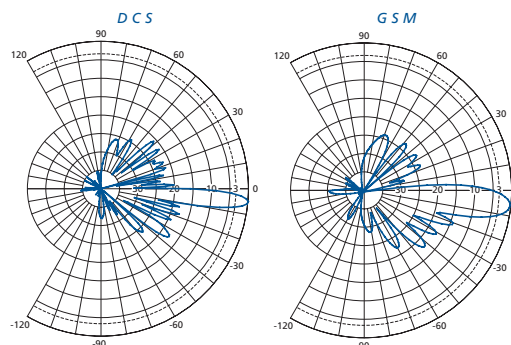
A different electrical tilt is independently adjustable for low band and high band allowing a tight control of both coverage footprints.



APXGV-DV* & APXGV-DWV* Series
APXCV-PV*



Horizontal Pattern



Vertical Pattern Vertical Pattern

APXGV-DV* & APXGV-DWV* Series

870-2170 MHz

Optimizer® Dualband Antennas

APX13GV-15DV-C

Horizontal Beamwidth, deg 65

Gain, dBi 13.9, 16.5

Electrical Downtilt, deg 0-10, 0-10

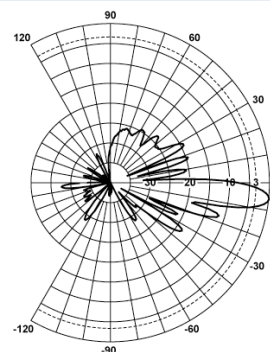
Diplexed Version

ELECTRICAL SPECIFICATIONS

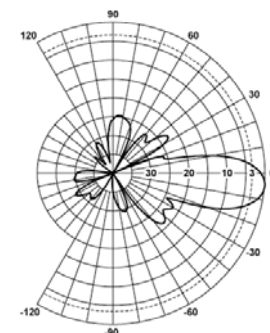
Frequency Range, MHz	870-960	1710-1880
Horizontal Beamwidth, deg	65	65
Vertical Beamwidth, deg	14.7	7.0
Gain, dBi (dBd)	13.9 (11.8)	16.5 (14.4)
1st Upper Sidelobe Suppression, dB	> 20	> 18 (typically > 20)
Upper Sidelobe Suppression, dB	> 16@T0	> 15@T5 > 14@T10
Front-To-Back Ratio, dB	> 25	> 25
VSWR	< 1.5:1	< 1.5:1
Isolation between Ports, dB	> 30	> 30
Isolation Between Bands, dB	> 30	> 30
Maximum Power Input, W	250	200
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc		>160 (DCS)
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1549 x 330 x 130 (53 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.78 (8.23)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	780 (175)
Front Thrust @ Rated Wind, N (lbf)	780 (175)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	21 (46.2)
Packing Dimensions - HxWxD, m (ft)	1.7 x .4 x .26 (5.61 x 1.3 x 0.85)
Packing Dimensions, HxWxD, mm (in)	1720 x 400 x 260 (62.55 x 15.7 x 10.2)



Vertical Pattern-DCS



Vertical Pattern-GSM

APX13GV-15DVB-C

Horizontal Beamwidth, deg 65

Gain, dBi 14.4, 17.0

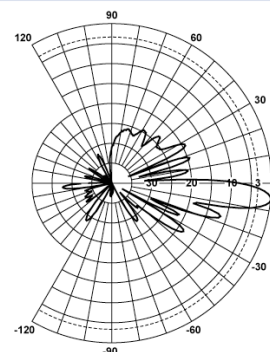
Electrical Downtilt, deg 0-10, 0-10

ELECTRICAL SPECIFICATIONS

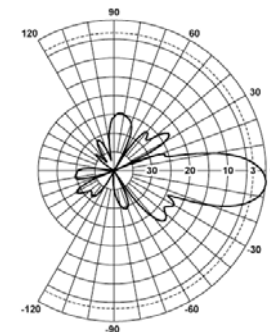
Frequency Range, MHz	870-960	1710-1880
Horizontal Beamwidth, deg	65	65
Vertical Beamwidth, deg	14.7	7.0
Gain, dBi (dBd)	14.4 (12.3)	17.0 (14.9)
1st Upper Sidelobe Suppression, dB	> 20	> 18 (typically > 20)
Upper Sidelobe Suppression, dB	> 18@T0	> 17@T5 > 15.5@T10
Front-To-Back Ratio, dB	> 25	> 25
VSWR	< 1.5:1	< 1.5:1
Isolation between Ports, dB	> 30	> 30
Isolation Between Bands, dB	> 30	> 30
Maximum Power Input, W	500	300
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc		>160 (DCS)
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1349 x 330 x 130 (53 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.54 (5.7)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	663 (149)
Front Thrust @ Rated Wind, N (lbf)	663 (149)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	18.0 (39.6)
Packing Dimensions - HxWxD, m (ft)	1.5 x .26 x .20 (4.9 x 1.3 x 0.85)
Packing Dimensions, HxWxD, mm (in)	1520 x 400 x 260 (59.8 x 15.7 x 10.2)



Vertical Pattern-DCS



Vertical Pattern-GSM

Optimizer® Dualband Antennas

APX13GV-15DWV-C

Horizontal Beamwidth, deg 65

Gain, dBi 13.9, 16.7

Electrical Downtilt, deg 0-10, 2-10

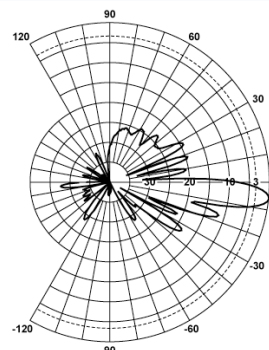
Diplexed Version

ELECTRICAL SPECIFICATIONS

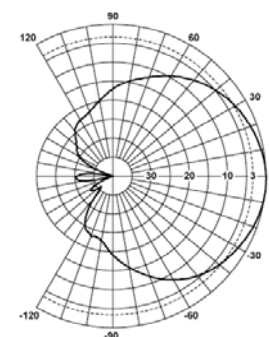
Frequency Range, MHz	870-960	1710-1900	1900-2170
Horizontal Beamwidth, deg	65	64	60
Vertical Beamwidth, deg	14.7	7	6.8
Gain, dBi	13.9 (11.8)	16.7 (14.6)	16.7 (14.6)
1st Upper Sidelobe Suppression, dB	> 17.5 first GSM DCS > 17UMTS (typically > 20)		
Upper Sidelobe Suppression, dB	> 16 GSM DCS > 16 UMTS (typically > 20)		
Front-To-Back Ratio, dB	> 25		
VSWR	< 1.5:1		
Isolation between Ports, dB	> 30		
Isolation Between Bands, dB	> 30		
Maximum Power Input, W	250	200	200
Polarization	Dual pol +/-45°		
3rd Order IMP @ 2 x 38 dBm, dBc	>160		
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)		
7th Order IMP @ 2x46 dBm, dBc	> 170		

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1549 x 330 x 130 (53 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.78 (8.23)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	780 (175)
Front Thrust @ Rated Wind, N (lbf)	780 (175)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	21 (46.2)
Packing Dimensions - HxWxD, m (ft)	1.7 x .4 x .26 (5.61 x 1.3 x 0.85)
Packing Dimensions, HxWxD, mm (in)	1720 x 400 x 260 (62.55 x 15.7 x 10.2)



Vertical Pattern-DCS



Horizontal Pattern

APX13GV-15DWVB-C

Horizontal Beamwidth, deg 65

Gain, dBi 14.4, 17.0

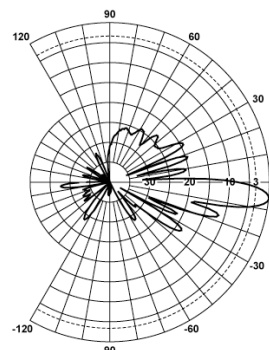
Electrical Downtilt, deg 0-10, 2-10

ELECTRICAL SPECIFICATIONS

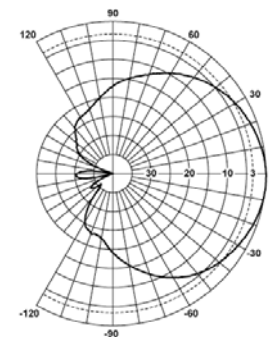
Frequency Range, MHz	870-960	1710-1900	1900-2170
Horizontal Beamwidth, deg	65	64	60
Vertical Beamwidth, deg	14.7	7	6.8
Gain, dBi (dBd)	14.4 (12.3)	17.0 (14.9)	17.0 (14.9)
1st Upper Sidelobe Suppression, dB	> 17.5 first GSM DCS > 17UMTS (typically > 20)		
Upper Sidelobe Suppression, dB	> 16 GSM DCS > 16 UMTS (typically > 20)		
Front-To-Back Ratio, dB	> 25		
VSWR	< 1.5:1		
Isolation between Ports, dB	> 30		
Isolation Between Bands, dB	> GSM - DCS >30	GSM - UMTS >27	GSM - UMTS >27
Maximum Power Input, W	500	300	300
Polarization	Dual pol +/-45°		
3rd Order IMP @ 2 x 38 dBm, dBc	>160		
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)		
7th Order IMP @ 2x46 dBm, dBc	> 170		

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1349 x 330 x 130 (53 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.54 (5.7)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	663 (149)
Front Thrust @ Rated Wind, N (lbf)	663 (149)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	18.0 (39.6)
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 400 x 260 (59.8 x 15.7 x 10.2)



Vertical Pattern-DCS



Horizontal Pattern

Optimizer® Dualband Antennas

APX15GV-15DV-C

Horizontal Beamwidth, deg 65

Gain, dBi 15.9 , 17.5

Electrical Downtilt, deg 0-10 , 0-10

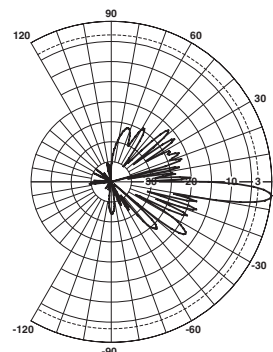
Diplexed Version

ELECTRICAL SPECIFICATIONS

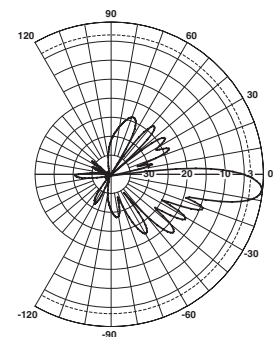
Frequency Range, MHz	870-960	1710-1880
Horizontal Beamwidth, deg	65	66
Vertical Beamwidth, deg	9	5
Gain, dBi (dBd)	15.9 (13.8)	17.5 (15.4)
1st Upper Sidelobe Suppression, dB	> 18 (typically > 20)	
Upper Sidelobe Suppression, dB	> 17 all other (typically > 20)	
Front-To-Back Ratio, dB	> 25	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Isolation Between Bands, dB	> 30	
Maximum Power Input, W	250	200
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	>160 (DCS)	
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2280 x 330 x 130 (53 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.99 (9.4)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1220 (274)
Front Thrust @ Rated Wind, N (lbf)	1220 (274)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	31.0 (68.2)
Packing Dimensions - HxWxD, m (ft)	2.4 x .40 x .26 (7.92 x 1.3 x 0.85)
Packing Dimensions, HxWxD, mm (in)	2450 x 400 x 260 (89.1 x 15.7 x 10.2)



Vertical Pattern-DCS



Vertical Pattern-GSM

APX15GV-15DVB-C

Horizontal Beamwidth, deg 65

Gain, dBi 16.0 , 18.0

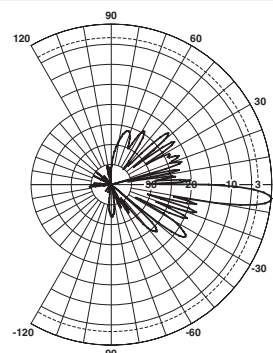
Electrical Downtilt, deg 0-10 , 0-10

ELECTRICAL SPECIFICATIONS

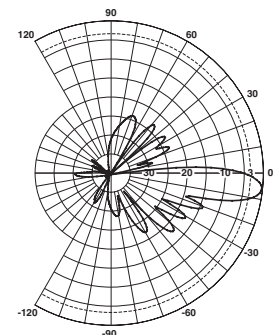
Frequency Range, MHz	870-960	1710-1880
Horizontal Beamwidth, deg	65	66
Vertical Beamwidth, deg	9	5
Gain, dBi (dBd)	16.0 (13.9)	18.0 (16.0)
1st Upper Sidelobe Suppression, dB	> 18 first (typically > 20)	
Upper Sidelobe Suppression, dB	> 17 all other (typically > 20)	
Front-To-Back Ratio, dB	> 25	
VSWR	< 1.5:1	
Isolation between Ports, dB	> 30	
Isolation Between Bands, dB	> 30	
Maximum Power Input, W	500	300
Polarization	Dual pol +/-45°	
3rd Order IMP @ 2 x 38 dBm, dBc	>160 (DCS)	
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)	

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2080 x 330 x 130 (53 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.89 (9.4)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1095 (246)
Front Thrust @ Rated Wind, N (lbf)	1095 (246)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	28.0 (61.6)
Packing Dimensions - HxWxD, m (ft)	2.2 x .40 x .26 (7.3x 1.3 x 0.85)
Packing Dimensions, HxWxD, mm (in)	2250 x 400 x 260 (88.5 x 15.7 x 10.2)



Vertical Pattern-DCS



Vertical Pattern-GSM



APXGV-DV* & APXGV-DWV* Series

870-2170 MHz

Optimizer® Dualband Antennas

APX15GV-15DWV-C

Horizontal Beamwidth, deg 65

Gain, dBi 15.5, 17.7

Electrical Downtilt, deg 0-10, 2-10, 2-10

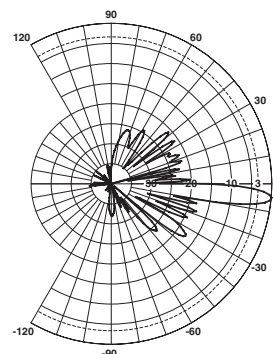
Diplexed Version

ELECTRICAL SPECIFICATIONS

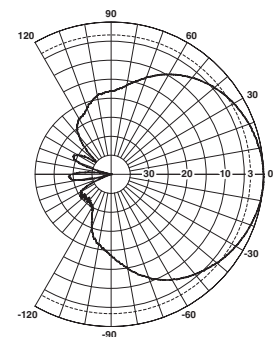
Frequency Range, MHz	870-960	1710-1900	1900-2170
Horizontal Beamwidth, deg	65	64	60
Vertical Beamwidth, deg	9	5	5
Gain, dBi (dBd)	15.5 (13.4)	17.7 (15.6)	17.7 (15.6)
1st Upper Sidelobe Suppression, dB	> 18 first GSM DCS > 17UMTS (typically > 20)		
Upper Sidelobe Suppression, dB	> 16 GSM DCS > 15.5 UMTS (typically > 20)		
Front-To-Back Ratio, dB	> 25		
VSWR	< 1.5:1		
Isolation between Ports, dB	> 30		
Isolation Between Bands, dB	> 30		
Maximum Power Input, W	250	200	200
Polarization	Dual pol +/-45°		
3rd Order IMP @ 2 x 38 dBm, dBc	>160 (DCS)		
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)		
7th Order IMP @ 2x46 dBm, dBc	> 170		

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2280 x 330 x 130 (81.8 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.99 (9.4)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1220 (274)
Front Thrust @ Rated Wind, N (lbf)	1220 (274)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	31.0 (68.2)
Packing Dimensions - HxWxD, m (ft)	2.4 x .40 x .26 (7.92 x 1.3 x 0.85)
Packing Dimensions, HxWxD, mm (in)	2450 x 400 x 260 (89.1 x 15.7 x 10.2)



Vertical Pattern-DCS



Horizontal Pattern

APX15GV-15DWVB-C

Horizontal Beamwidth, deg 65

Gain, dBi 16.0, 18.5

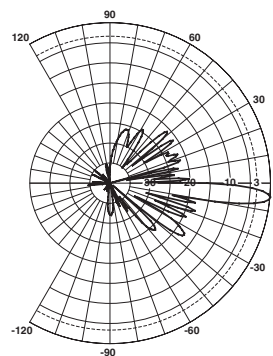
Electrical Downtilt, deg 0-10, 2-10, 2-10

ELECTRICAL SPECIFICATIONS

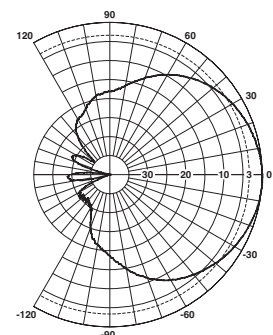
Frequency Range, MHz	870-960	1710-1900	1900-2170
Horizontal Beamwidth, deg	65	64	60
Vertical Beamwidth, deg	9	5	5
Gain, dBi (dBd)	16.0 (13.9)	18.3 (16.3)	18.5 (16.5)
1st Upper Sidelobe Suppression, dB	> 18 first GSM DCS > 17UMTS (typically > 20)		
Upper Sidelobe Suppression, dB	> 16 GSM DCS > 15.5 UMTS (typically > 20)		
Front-To-Back Ratio, dB	> 25		
VSWR	< 1.5:1		
Isolation between Ports, dB	> 30		
Isolation Between Bands, dB	> GSM - DCS >30	GSM - UMTS>27	DCS - UMTS >30
Maximum Power Input, W	500		300
Polarization	Dual pol +/-45°		
3rd Order IMP @ 2 x 38 dBm, dBc	>160 (DCS)		
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (GSM)		
7th Order IMP @ 2x46 dBm, dBc	> 170		

MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2080 x 330 x 130 (81.8 x 13 x 5.12)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.89 (9.4)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	1095 (246)
Front Thrust @ Rated Wind, N (lbf)	1095 (246)
Reflector Material	Aluminum
Radiating Element Material	Brass
Radome Material	Fiberglass
Radome Color	Light Grey RAL7035
Weight w/o Mtg Hardware, kg (lb)	28.0 (61.6)
Packing Dimensions - HxWxD, m (ft)	2.2 x .40 x .26 (7.3x 1.3 x 0.85)
Packing Dimensions, HxWxD, mm (in)	2250 x 400 x 260 (88.5 x 15.7 x 10.2)



Vertical Pattern-DCS



Horizontal Pattern

BASE STATION
ANTENNAS

2