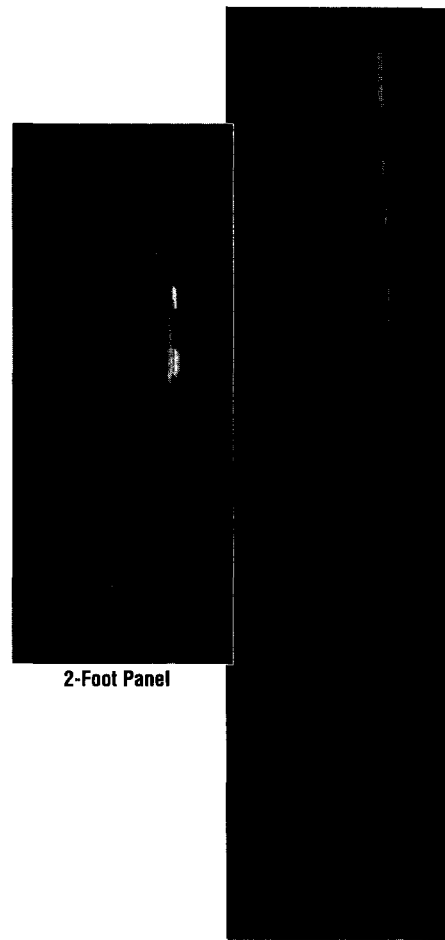


Available in 1, 2, 3, 4, 5, and 6 foot lengths, the 8-20 dBd gain panel antenna is engineered to offer maximum interchanagability without requiring extensive reclassification or zoning changes.

- **Max Fill™** – First lower null is <12 dB down from maximum to improve close-in coverage. Max Fill versions are identified with an “F” in the model sequence.
- **Reduced Interference** – Upper side lobe suppression on higher gain models reduces co-channel interference.
- **Beamtilt** – Optional electrical downtilt is available on selected models.
- **Sturdy Construction** – Reflectors are made of passivated aluminum, radiators of brass, radomes of tough UV resistant PVC, and mounting hardware of galvanized steel.
- **Trouble Free** – Every antenna is tested for return loss compliance and the absence of intermodulation generators. Antenna designs have passed the IEC 68-2 series of environmental tests, including cold soak, heat soak, salt mist, mechanical vibrations and temperature shock.
- **Lightning Resistant** – All metal parts are grounded.
- **Mounts** – Clamps are included for up to 4" (101.6 mm) OD pipe mounting.
- **Terminations** – 7/16 DIN on bottom is standard. Back mounting is available.

Ordering Information – See table for model numbers and specifications to meet your requirements. Add -KL to model numbers for 1710-1880 MHz or -M for 1850-1990 MHz.

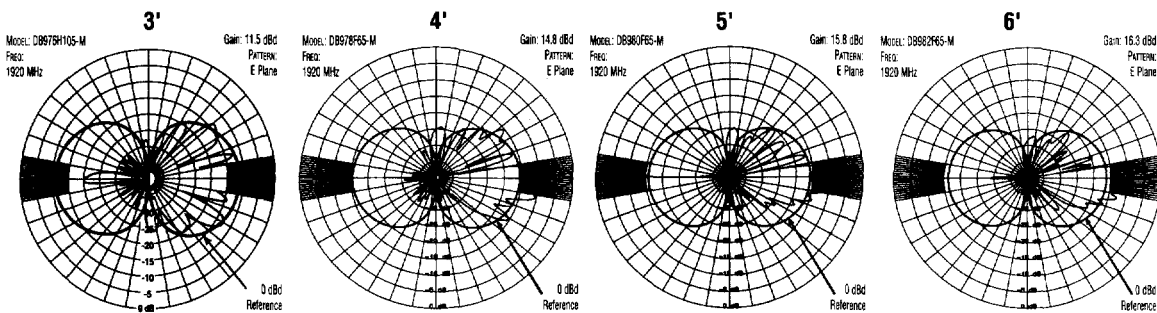
Mounting: DB390 or DB390-3 Pipe Mount Kit (included)
DB5098 or DB5098-3 Downtilt Bracket (optional)



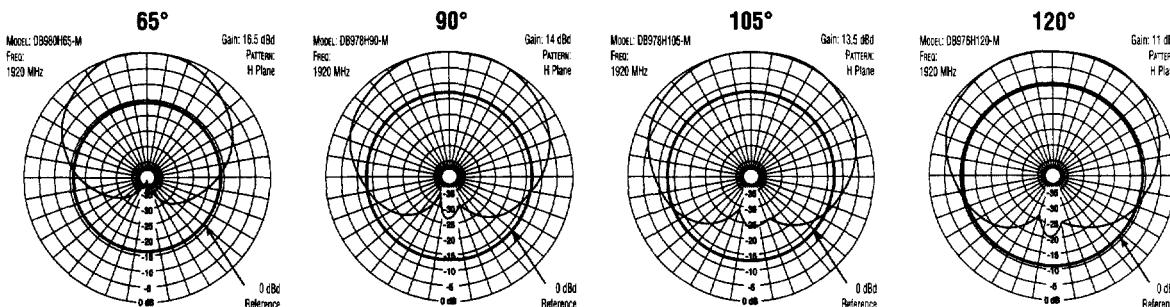
2-Foot Panel

5-Foot Panel

Typical Antenna Vertical Patterns



Typical Antenna Horizontal Patterns





1710 - 1990 MHz

Panel Antennas

DB970/DB980 Series 8 - 20 dBd Gain

Testing Specifications
 (IEC 68-2 Series)

Cold Soak	16 hours at -40°C
Heat Soak	16 hours at +70°C
Salt Mist	96 hours in a 5% salt environment at 35°C
Temperature Shock	10 cycles of 30 minutes each at -40°C and +70°C
Rain Test	Driving rain for 30 minutes to each of 4 faces at 65° angle
Humidity	Ten 24 hour cycles with extremes of 25° to 40°C with 90% humidity
Vibration	20 cycles of 10 to 150 Hz on each of three axes. Dwell tested at resonance frequency for 1.5 hours on each axis.

Standard Specifications

	KL	M
Frequency Range (MHz)	1710 - 1880	1850 - 1990
Application	DCS	PCS
VSWR	1.4:1	
Polarization	Vertical	
Front-to-Back Ratio	25 dB, typical	
Max. Input Power	250 Watts	
Lightning Protection	All metal parts grounded	
Connector Options	E: 7/16 DIN, N: Type N-Female	
Other configurations available. Please call Customer Service or your Sales Representative		

1 foot (305 mm)				
Model Number	DB972H65	DB972H90	DB972H105	DB972H120
Gain: dBd (dBi)	10.5 (12.6)	9 (11.1)	8.5 (10.6)	8 (10.1)
Horizontal Beamwidth	65°	90°	105°	120°
Vertical Beamwidth	30°	30°	30°	30°
Electrical Downtilt Options	0°	0°	0°	0°
Length: in. (mm)	12 (305)	12 (305)	12 (305)	12 (305)
Width: in. (mm)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)
Depth: in. (mm)	3 (76)	3 (76)	3 (76)	3 (76)
Weight: lbs. (Kg)	1.8 (0.8)	1.8 (0.8)	1.8 (0.8)	1.8 (0.8)
Frontal Wind Area: ft ² (m ²)	.5 (0.05)	.5 (0.05)	.5 (0.05)	.5 (0.05)
Frontal Wind Load (at 100mph)	20 lbf (89N) 8.9 kp	20 lbf (89N) 8.9 kp	20 lbf (89N) 8.9 kp	20 lbf (89N) 8.9 kp
2 foot (610mm)				
Model Number	DB974H65	DB974H90	DB974H105	DB974H120
Gain: dBd (dBi)	12.5 (14.6)	11 (13.1)	10.5 (12.6)	10 (12.1)
Horizontal Beamwidth	65°	90°	105°	120°
Vertical Beamwidth	14°	14°	14°	14°
Electrical Downtilt Options	0°, 6°	0°, 6°	0°	0°, 9°
Length: in. (mm)	24 (610)	24 (610)	24 (610)	24 (610)
Width: in. (mm)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)
Depth: in. (mm)	3 (76)	3 (76)	3 (76)	3 (76)
Weight: lbs. (Kg)	3.5 (1.6)	3.5 (1.6)	3.5 (1.6)	3.5 (1.6)
Frontal Wind Area: ft ² (m ²)	1.1 (0.10)	1.1 (0.10)	1.1 (0.10)	1.1 (0.10)
Frontal Wind Load (at 100mph)	44 lbf (196N) 19.8 kp	44 lbf (196N) 19.8 kp	44 lbf (196N) 19.8 kp	44 lbf (196N) 19.8 kp
3 foot (914 mm)				
Model Number	DB976H65	DB976H90	DB976H105	DB976H120
Gain: dBd (dBi)	13.5 (15.6)	12.5 (14.6)	11.5 (13.6)	11 (13.1)
Horizontal Beamwidth	65°	90°	105°	120°
Vertical Beamwidth	9°	9°	9°	9°
Electrical Downtilt Options	0°, 5°, 7°, 9°	0°, 2°, 5°, 7°, 9°	0°, 5°	0°, 5°
Length: in. (mm)	36 (914)	36 (914)	36 (914)	36 (914)
Width: in. (mm)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)
Depth: in. (mm)	3 (76)	3 (76)	3 (76)	3 (76)
Weight: lbs. (Kg)	5 (2.3)	5 (2.3)	5 (2.3)	5 (2.3)
Frontal Wind Area: ft ² (m ²)	1.6 (0.15)	1.6 (0.15)	1.6 (0.15)	1.6 (0.15)
Frontal Wind Load (at 100mph)	64 lbf (285N) 28.8 kp	64 lbf (285N) 28.8 kp	64 lbf (285N) 28.8 kp	64 lbf (285N) 28.8 kp



Standard Specifications	KL	M
Frequency Range (MHz)	1710 - 1880	1850 - 1990
Application	DCS	PCS
VSWR	1.4:1	
Polarization	Vertical	
Front-to-Back Ratio	25 dB, typical	
Max. Input Power	250 Watts	
Lightning Protection	All metal parts grounded	
Connector Options	E: 7/16 DIN, N: Type N-Female	
Other configurations available. Please call Customer Service or your Sales Representative		

4 foot (1219 mm)	MaxFill®	MaxGain®	MaxFill®	MaxGain®
Model Number	DB978F30	DB978G30	DB978F65	DB978G65
Gain: dBd (dBi)	17.8 (19.9)	18.5 (20.6)	14.8 (16.9)	15.5 (17.6)
Horizontal Beamwidth	30°	30°	65°	65°
Vertical Beamwidth	8°	7.5°	8°	7.5°
Electrical Downtilt Options	0°, 2°	0°	0°, 2°	0°
Length: in. (mm)	48 (1219)	48 (1219)	48 (1219)	48 (1219)
Width: in. (mm)	13 (330)	13 (330)	6.3 (160)	6.3 (160)
Depth: in. (mm)	6.3 (160)	6.3 (160)	3 (76)	3 (76)
Weight: lbs. (Kg)	17.5 (7.9)	17.5 (7.9)	7 (3.2)	7 (3.2)
Frontal Wind Area: ft² (m²)	4.3 (0.40)	4.3 (0.40)	2.1 (0.20)	2.1 (0.20)
Frontal Wind Load (at 100mph)	172 lbf (765N) 77.3 kp	172 lbf (765N) 77.3 kp	84 lbf (374N) 37.7 kp	84 lbf (374N) 37.7 kp
5 foot (1524mm)	MaxFill®	MaxGain®	MaxFill®	MaxGain®
Model Number	DB980F30	DB980G30	DB980F65	DB980G65
Gain: dBd (dBi)	18.8 (20.9)	19.5 (21.6)	15.8 (17.9)	16.8 (18.9)
Horizontal Beamwidth	30°	30°	65°	65°
Vertical Beamwidth	6.0°	5.5°	6.0°	5.5°
Electrical Downtilt Options	0°	0°	0°, 2°, 4°, 6°	0°, 2°
Length: in. (mm)	60 (1524)	60 (1524)	60 (1524)	60 (1524)
Width: in. (mm)	13 (330)	13 (330)	6.3 (160)	6.3 (160)
Depth: in. (mm)	6.3 (160)	6.3 (160)	3 (76)	3 (76)
Weight: lbs. (Kg)	22 (10)	22 (10)	8.5 (3.9)	8.5 (3.9)
Frontal Wind Area: ft² (m²)	5.4 (0.50)	5.4 (0.50)	2.6 (0.24)	2.6 (0.24)
Frontal Wind Load (at 100mph)	216 lbf (961N) 97.0 kp	216 lbf (961N) 97.0 kp	104 lbf (463N) 46.7 kp	104 lbf (463N) 46.7 kp
6 foot (1829mm)	MaxFill®	MaxGain®	MaxFill®	MaxGain®
Model Number	DB982F30	DB982G30	DB982F65	DB982G65
Gain: dBd (dBi)	19.5 (21.6)	20 (22.1)	16.3 (18.4)	17.3 (19.4)
Horizontal Beamwidth	30°	30°	65°	65°
Vertical Beamwidth	5.5°	4.5°	5.5°	4.5°
Electrical Downtilt Options	0°, 2°	0°, 2°	0°, 2°	0°, 2°
Length: in. (mm)	72 (1829)	72 (1829)	72 (1829)	72 (1829)
Width: in. (mm)	13 (330)	13 (330)	6.3 (160)	6.3 (160)
Depth: in. (mm)	6.3 (160)	6.3 (160)	3 (76)	3 (76)
Weight: lbs. (Kg)	25.5 (11.6)	25.5 (11.6)	10 (4.5)	10 (4.5)
Frontal Wind Area: ft² (m²)	6.5 (0.60)	6.5 (0.60)	3.2 (0.30)	3.2 (0.30)
Frontal Wind Load (at 100mph)	260 lbf (1156N) 116.8 kp	260 lbf (1156N) 116.8 kp	128 lbf (569N) 57.5 kp	128 lbf (569N) 57.5 kpf



1710 - 1990 MHz

Panel Antennas

DB970/DB980 Series

Antennas

DIRECTIONAL PANEL

Standard Specifications	KL	M
Frequency Range (MHz)	1710 - 1880	1850 - 1990
Application	DCS	PCS
VSWR	1.4:1	
Polarization	Vertical	
Front-to-Back Ratio	25 dB, typical	
Max. Input Power	250 Watts	
Lightning Protection	All metal parts grounded	
Connector Options	E: 7/16 DIN, N: Type N-Female	
Other configurations available. Please call Customer Service or your Sales Representative		

4 foot (1219 mm)					
	MaxFill®	MaxGain®	MaxFill®	MaxGain®	
Model Number	DB978F90	DB978G90	DB978F105	DB978G105	DB978H120
Gain: dBd (dBi)	13.3 (15.4)	14.7 (16.8)	12.8 (14.9)	14.2 (16.3)	13 (15.1)
Horizontal Beamwidth	90°	90°	105°	105°	120°
Vertical Beamwidth	8°	7.5°	8°	7.5°	7.5°
Electrical Downtilt Options	0°, 2°	0°, 2°	0°, 2°	0°	0°, 5°
Length: in. (mm)	48 (1219)	48 (1219)	48 (1219)	48 (1219)	48 (1219)
Width: in. (mm)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)
Depth: in. (mm)	3 (76)	3 (76)	3 (76)	3 (76)	3 (76)
Weight: lbs. (Kg)	7 (3.2)	7 (3.2)	7 (3.2)	7 (3.2)	7 (3.2)
Frontal Wind Area: ft² (m²)	2.1 (0.20)	2.1 (0.20)	2.1 (0.20)	2.1 (0.20)	2.1 (0.20)
Frontal Wind Load (at 100mph)	84 lbf (374N) 37.7 kp	84 lbf (374N) 37.7 kp	84 lbf (374N) 37.7 kp	84 lbf (374N) 37.7 kp	84 lbf (374N) 37.7 kp
5 foot (1524mm)					
	MaxFill®	MaxGain®	MaxFill®	MaxGain®	
Model Number	DB980F90	DB980G90	DB980F105	DB980G105	DB980H120
Gain: dBd (dBi)	14.3 (16.4)	15.7 (17.8)	13.8 (15.9)	14.5 (16.6)	14 (16.1)
Horizontal Beamwidth	90°	90°	105°	105°	120°
Vertical Beamwidth	6.0°	5.5°	6.0°	5.5°	5.5°
Electrical Downtilt Options	0°, 2°, 4°	0°, 2°	0°, 2°, 4°	0°	0°, 2°, 4°
Length: in. (mm)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)
Width: in. (mm)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)
Depth: in. (mm)	3 (76)	3 (76)	3 (76)	3 (76)	3 (76)
Weight: lbs. (Kg)	8.5 (3.9)	8.5 (3.9)	8.5 (3.9)	8.5 (3.9)	8.5 (3.9)
Frontal Wind Area: ft² (m²)	2.6 (0.24)	2.6 (0.24)	2.6 (0.24)	2.6 (0.24)	2.6 (0.24)
Frontal Wind Load (at 100mph)	104 lbf (463N) 46.7 kp	104 lbf (463N) 46.7 kp	104 lbf (463N) 46.7 kp	104 lbf (463N) 46.7 kp	104 lbf (463N) 46.7 kp
6 foot (1829mm)					
	MaxFill®	MaxGain®	MaxFill®	MaxGain®	
Model Number	DB982F90	DB982G90	DB982F105	DB982G105	DB982H120
Gain: dBd (dBi)	14.8 (16.9)	16 (18.1)	14.3 (16.4)	15.5 (17.6)	15 (17.1)
Horizontal Beamwidth	90°	90°	105°	105°	120°
Vertical Beamwidth	5.5°	4.5°	5.5°	4.5°	4.5°
Electrical Downtilt Options	0°, 2°	0°, 2°	0°, 2°	0°, 2°	0°, 2°
Length: in. (mm)	72 (1829)	72 (1829)	72 (1829)	72 (1829)	72 (1829)
Width: in. (mm)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)	6.3 (160)
Depth: in. (mm)	3 (76)	3 (76)	3 (76)	3 (76)	3 (76)
Weight: lbs. (Kg)	10 (4.5)	10 (4.5)	10 (4.5)	10 (4.5)	10 (4.5)
Frontal Wind Area: ft² (m²)	3.2 (0.30)	3.2 (0.30)	3.2 (0.30)	3.2 (0.30)	3.2 (0.30)
Frontal Wind Load (at 100mph)	128 lbf (569N) 57.5 kp	128 lbf (569N) 57.5 kp	128 lbf (569N) 57.5 kp	128 lbf (569N) 57.5 kp	128 lbf (569N) 57.5 kp