



- Omni or directional radiation pattern
- Economic design for single station operation
- Single line or split feed
- Designed for -10dB IBOC signals
- Single input per panel
- Fine matcher included
- Optional radomes
- Available in arrays of 1 to 12 layers
- Input: 3-1/8 50 ohm EIA
- Multi-station options available

The DCPJ Cross Dipole FM Panel Antennas are designed to provide circularly polarized transmission for single station operation at an economical cost where optimum circularity of pattern or controlled directional characteristics are the prime requisites. The antenna is designed for face mounting, three panels per layer, around a triangular tower structure. Single or multi-layer operation is used, depending on the gain desired.

Feed System

The feed system is simple, comprised of a single 3-1/8" input with power dividers feeding each panel. The feed system is fully pressurized. Elements are at DC ground for lightning protection.

Radome Protection

For situations where ice formation is common the elements can be equipped with optional radomes.

Gains and Power Rating

RMS gains from 0.46 (-3.37dB) to 6.6 (8.2dB) are available.

Options

Electrical beam tilt and null fill are available.

Accommodates Split-Feed System

The DCPJ antenna is designed to operate with a single 3-1/8" array input however, the array may be configured to operate with two transmission lines between the array and the transmitter. In the event of failure of some array component, the inoperable half can be switched out of service and operation continued from the other half of the array at reduced ERP until the outage is corrected. Appropriate switching arrangements in the transmitter room will feed either or both portions.

Pattern Circularity

On towers of triangular cross section up to 7-1/2 foot face width, the anticipated circularity is:

Horizontally Polarized Component: +/-2 dB average

Vertically Polarized Component: +/-2.5 dB average

On towers of triangular cross section with an 8 to 10 foot face width, the anticipated circularity is:

Horizontally Polarized Component: +/-2 dB average

Vertically Polarized Component: +/-3 dB average

Tower member configuration does influence circularity. Optional scaled pattern measurements taking into account the actual tower configuration provide more precise data.

Input VSWR

At the input to the antenna feed system the VSWR is 1.1:1 or better across the station channel bandwidth with field adjustment of the variable transformer provided.

Windloads

The antenna is designed to withstand winds of 110 mph. Under those conditions the windload on a layer of panels is shown in the table below. The values were calculated as follows: Windload = Frontal Windload + (2 (Frontal Windload)(cos 60 degrees). Therefore the tabulated values do not include the effect of the tower or assume any shielding of one panel by another panel.

Electrical Specifications

Antenna	# of Layers	Gain/Polarization	Gain/Polarization (dBd)	Power Rating (kW)
DCP-J1	1	0.46	-3.37	10
DCP-J2	2	1	0	20
DCP-J3	3	1.5	1.76	30
DCP-J4	4	2.1	3.22	40
DCP-J5	5	2.7	4.31	45
DCP-J6	6	3.3	5.19	45
DCP-J8	8	4.4	6.43	45
DCP-J10	10	5.5	7.4	45
DCP-J12	12	6.6	8.2	45

Mechanical Specifications

Antenna	# of Layers	Weight (lbs)	Windload (lbs)	Projected Area (ft ²)
DCP-J1	1	925	850	17
DCP-J2	2	1700	1700	34
DCP-J3	3	2475	2550	51
DCP-J4	4	3365	3400	68
DCP-J5	5	4250	4250	85
DCP-J6	6	5180	5100	102
DCP-J8	8	6875	6800	170
DCP-J10	10	8620	8500	170
DCP-J12	12	10350	10200	204