

FSA Series



VHF Screened Dipole Array Antennas

148 - 174 MHz

The FSA Series arrays are based on the popular OA Series dipole array antennas. Supplied in "kit" form these antennas are delivered in flatpack packaging to minimise freight and warehousing issues and allow for simplified assembly at time of installation.

The FSA Series arrays have approximately 105 degrees horizontal beamwidth and offer 5 or 9dBd in gain. The use of the flat screen reflector boosts the front to back ratio considerably allowing for tailoring antenna patterns for frequency re-use in extended networks.

FSA Series Arrays feature the same solid construction as the standard array series. The folded dipoles utilise an internal phasing harness in PTFE based double screened coaxial cable with a polyethylene jacket. The screens themselves are also made of fully welded aluminum to assist in minimising PIM.

With all welded construction and superior internal harness construction the antennas provide not only excellent radiation characteristics but also defined, high levels of intermodulation and noise suppression. IM performance is -140dBc based on a two carrier test. The entire array rests at ground potential and offers the ultimate in lightning resistant antennas.

- Offset (cardioid) pattern with 105 Degree nominal Horizontal Beamwidth
- High front to back ratio to allow frequency re-use by tailoring coverage areas
- Hermetically sealed internal PTFE based phasing harness capable of 750W continuous operation.
- Shipped unassembled for ease of handling, easily assembled on site
- Direct DC grounded for lightning protection and reduction of precipitation static noise
- Industry leading dual sectioned antenna PIM ratings (-140dBc) providing low IM and low noise characteristics for optimum performance
- **The screen can be purchased to retrofit to an existing OA series array. See table below;**



| | | |
|----------------------------|--------------|--------------|
| Complete Array Part Number | FSA10-41-DIN | FSA20-41-DIN |
| Antenna Only Part Number | M-8648 | OA20-41-DIN |
| Screen Only Part Number | M-8568 | M-8566 |

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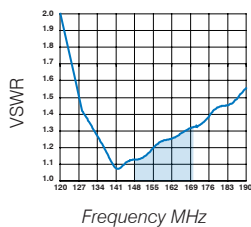
Electrical Specifications

| Model Number | FSA10-41-DIN | FSA20-41-DIN |
|---|------------------|--------------------|
| Nominal Gain <i>dBd</i> | 5 (7.1) | 7 (9.1) |
| Frequency <i>MHz</i> | 148 - 174 | 148 - 170 |
| Tuned Bandwidth <i>MHz</i> | 26 | 22 |
| VSWR | < 1.5 : 1 (14dB) | < 1.7 : 1 (11.7dB) |
| Nominal Impedance Ω | 50 | |
| Vertical Beamwidth ^o | 70 | 34 |
| Horizontal Beamwidth ^o | 106 | 108 |
| Front / Back ratio <i>dB</i> | 17 | 18 |
| Input Power <i>Watts</i> | 750 | |
| Passive IM 3rd order (2x20W) <i>dBc</i> | -140 | |

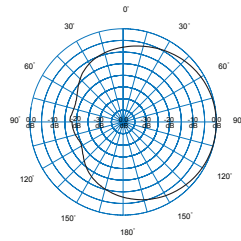
Mechanical Specifications

| Model Number | FSA10-41-DIN | FSA20-41-DIN | |
|--------------------------------------|--|--------------------------------------|--------------------------|
| Construction & Configuration | Welded aluminum, corrosion protection plating | | |
| Screen Length <i>inches</i> | 51 | 102 | |
| Screen Width <i>inches</i> | 41 | 41 | |
| Total Weight <i>lbs</i> | 32 | 137 | |
| Shipping Weight <i>lbs</i> | 42 | Screen = 56 + Array = 88 (Total=144) | |
| Shipping Dimensions <i>inches</i> | H | 12 | Screen = 10 Array = 21 |
| | W | 43 | Screen = 49 Array = 8 |
| | L | 55 | Screen = 110 Array = 146 |
| Termination | 7/16 DIN female on a 20" cable tail | | |
| Mounting Area <i>inches</i> | Clamps included to suit pole diameter 3.5 to 4.5 | | |
| Projected area <i>ft²</i> | No ice | 6.1 | 13.3 |
| | with ice | 9.9 | 22.0 |
| Lateral (Thrust) @ 100mph <i>lbs</i> | No ice | 152 | 329 |
| | with ice | 245 | 544 |
| Wind Gust Rating <i>mph</i> | No ice | >150 | >150 |
| | with ice | >150 | >150 |
| Torque @ 100mph <i>ft-lbs</i> | No ice | 15 | 36 |
| | with ice | 25 | 60 |

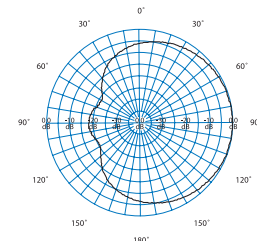
Typical VSWR Response (FSA20-41-DIN)



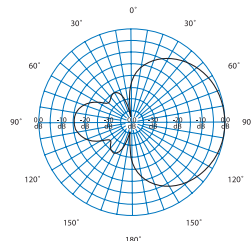
Typical H Plane (FSA10-41-DIN)



Typical H Plane (FSA20-41-DIN)



Typical E Plane (FSA10-41-DIN)



Typical E Plane (FSA20-41-DIN)

