



**Delta1 Series**  
**EXPOSED FOLDED** VHF UHF  
**DIPOLE 2-Bay Array**  
**195-245 MHz**

**Electromagnetics**  
*"Quality is everything."*

**JAG-220-2-1/2-SM**



- Civil aviation applications
- Land mobile networks
- Public security and safety
- Transportation networks



Electrical Specifications		Mechanical Specifications		Environmental	
Model	JAG-220-2-1/2-SM	Model	JAG-220-2-1/2-SM	Model	JAG-220-2-1/2-SM
Frequency Range (MHz)	195 – 245	Height	inches (mm) 65 (1,651)	Survival Wind Velocity With no Ice	mph (km/h) 135 (217)
Bandwidth @ 1.5:1 VSWR or Better (MHz)	50	Width	inches (mm) 36 (914.4)	Survival Wind Velocity With Ice	mph (km/h) 100 (161)
Polarization	Vertical	Depth	inches (mm) 4.25 (108)		
Radiation Pattern	Bi-directional (Elliptical)	Weight	lb (kg) 22 (9.97)	Maximum Allowable Radial Ice Buildup	inches (mm) 0.5 (12.7)
Nominal Gain (dBd)	3 – 3.7	Support Mast Outside Diameter Inches (mm)	2.375 (60.3)	Equivalent Flat Plate Area	ft^2 (m^2) 2.1 (0.2)
Nominal Horizontal 3dB Beamwidth (Deg)	205 – 215	Support Mast Allowable Clamping Space Inches (mm)	15 (381)	Lateral thrust (100mph) 0 Radial Ice Buildup	lbs (N) 77 (342.5)
Nominal Vertical 3dB Beamwidth (Deg)	33 – 35	Mounting Information	No clamps supplied (See JAG clamps page for suitable clamps)	Torsional moment (100mph) 0 Radial Ice Buildup	ft-lbs (Nm) 83 (112.1)
Maximum Average Power (Watts)	200	Pigtail (ft) & RF Connector	1 – 1.5 & 'N' Male	Bending moment (100mph) 0 Radial Ice Buildup	ft-lbs (Nm) 247 (333.5)
Lightning Protection	DC Ground				

JAG-220-2-1/2-SM Product Specification Sheet.

Specifications are subject to change without notice. As a result, all information contained in the present datasheet is subject to confirmation at time of ordering.

Dated: February-20-2011

Issue: 1

Made in Canada

Rev022011.0

Page 1/4



RF EMI Engineering Technology  
 26-1750 Creek Way  
 Burlington, Ontario  
 L7L 7E2 Canada

Email: [info@jagelectromagnetics.com](mailto:info@jagelectromagnetics.com)  
 Web: [www.jagelectromagnetics.com](http://www.jagelectromagnetics.com)  
 Tel (905)-635-7437  
 Fax (905)-332-8093



Copyright © JAG Electromagnetics

JAG's dedication to continuous  
 Research & Development will result in  
 product improvements as they  
 evolve.



Delta1 Series

EXPOSED FOLDED VHF UHF

DIPOLE 2-Bay Array

195-245 MHz

Electromagnetics

"Quality is everything."

JAG-220-2-1/2-SM

Features

- 5-year factory warranty (See page 3)
- Broadband (50 MHz)
- Suitable for multi-frequency systems
- Medium gain applications
- Soldered internal joints
- DC Grounded
- Stainless steel hardware
- Small for easy transport and installation
- Fits in standard Otis Elevators
- Stock for re-use or re-sale
- Low PIM
- Operation in harsh environments
- Optional lightning rod spike
- Optional downtilt versions
- Optional inverted mountable model
- Side or tower top mountable
- Optional coatings
- Ideal for monitoring stations

Description

The JAG-220-2-1/2-SM is a 2-bay version of the JAG-220-1-1/2, incorporating all the features of the basic model into a medium gain antenna needed in certain system applications. The JAG-220-2-1/2-SM is supplied with either quarter-wave (JAG-220-2-1/4-SM) or half-wave (JAG-220-2-1/2-SM) dipole-to-mast spacing. Site-specific mounting hardware is required with these antennas. Please consult JAG for suitable clamps.

The JAG-220-2-1/2-SM offers a short mast design (only 5.5-feet in length) to facilitate easy transport, rooftop access, and installation resulting in a cost effective antenna for urban sites.

Being an antenna from the Delta1 Series means the phasing harness is contained within the mast. This provides the added benefit of a protected harness compared to a situation where only an external harness antenna could traditionally be used (determined by antenna size and site accessibility).

Therefore, the JAG-220-2-1/2-SM gives you both maximum protection for the precision phasing harness and the small size needed to negotiate some sites.

The JAG-220-2-1/2-SM, with its rugged construction and ease of installation, is ideal for leased or rented system use. Its bandwidth also makes it perfect to stock for re-use or re-sale.

JAG-220-2-1/2-SM at a glance



Expert TIG welding



Natural rubber plugs



Heavy-duty dipole fixture



Optional lightning rod

\*Site-specific mounting hardware is necessary with these antennas. Please consult JAG to determine suitable clamps for your application.

JAG-220-2-1/2-SM Product Specification Sheet.

Specifications are subject to change without notice. As a result, all information contained in the present datasheet is subject to confirmation at time of ordering.

Dated: February-20-2011

Issue: 1

Made in Canada

Rev022011.0

Page 2/4



RF EMI Engineering Technology  
26-1750 Creek Way  
Burlington, Ontario  
L7L 7E2 Canada

Email: [info@jagelectromagnetics.com](mailto:info@jagelectromagnetics.com)  
Web: [www.jagelectromagnetics.com](http://www.jagelectromagnetics.com)  
Tel (905)-635-7437  
Fax (905)-332-8093



Copyright © JAG Electromagnetics

JAG's dedication to continuous Research & Development will result in product improvements as they evolve.



Delta1 Series

EXPOSED FOLDED VHF UHF

DIPOLE 2-Bay Array

195-245 MHz

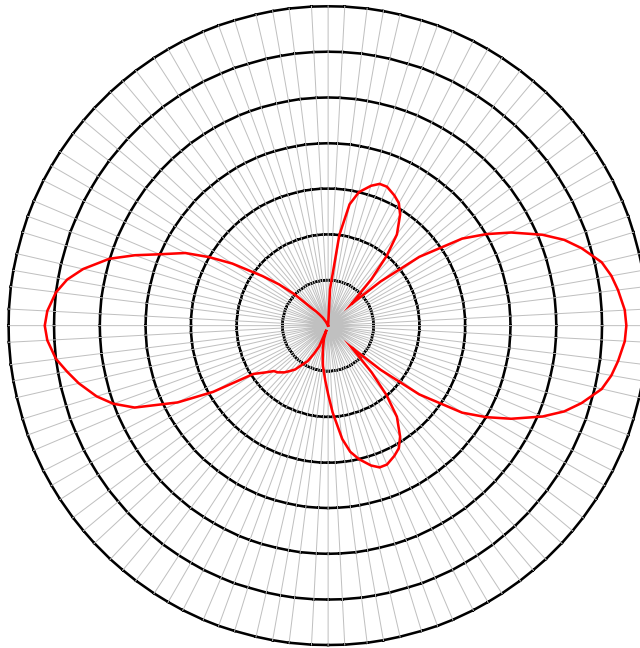
Electromagnetics

"Quality is everything."

JAG-220-2-1/2-SM



Vertical Radiation Pattern For Vertical Polarization



Elevation

— Half Wavelength Spacing

\* This is a general representation of the Delta1 Series JAG-220-2-1/2-SM antenna radiation pattern. For the latest detailed pattern contact JAG Applications Engineering.

WARRANTY

JAG Electromagnetics warrants all its products against defects in material or workmanship and is only applicable if failure results from these factors within five years from the purchase date by the user. Jag Electromagnetics will be responsible for the supply, at no charge, of new or rebuilt replacements in exchange for defective parts for the duration of the warranty. This warranty does not extend to any JAG products that have been subject to misuse, neglect, accident, improper installation or application. In addition, this warranty does not extend to products that have been repaired or substantially altered outside our manufacturing plant.

JAG Electromagnetics will not be liable for any incidental or consequential damages due to failure of a JAG product under this warranty or any implied warranty. JAG is in no event liable for consequential damages or other costs of any kind as a result of the use of the products manufactured by JAG. No envoy is sanctioned to presume for JAG any other legal responsibility in connection with JAG products. JAG Electromagnetics is not accountable for replacement of any product damaged by lightning.

JAG-220-2-1/2-SM Product Specification Sheet.

Specifications are subject to change without notice. As a result, all information contained in the present datasheet is subject to confirmation at time of ordering.

Dated: February-20-2011

Issue: 1

Made in Canada

Rev022011.0

Page 3/4



RF EMI Engineering Technology
26-1750 Creek Way
Burlington, Ontario
L7L 7E2 Canada

Email: info@jagelectromagnetics.com
Web: www.jagelectromagnetics.com
Tel (905)-635-7437
Fax (905)-332-8093



Copyright © JAG Electromagnetics

JAG's dedication to continuous
Research & Development will result
in product improvements as they
evolve.



Delta1 Series

EXPOSED FOLDED VHF UHF

DIPOLE 2-Bay Array

195-245 MHz

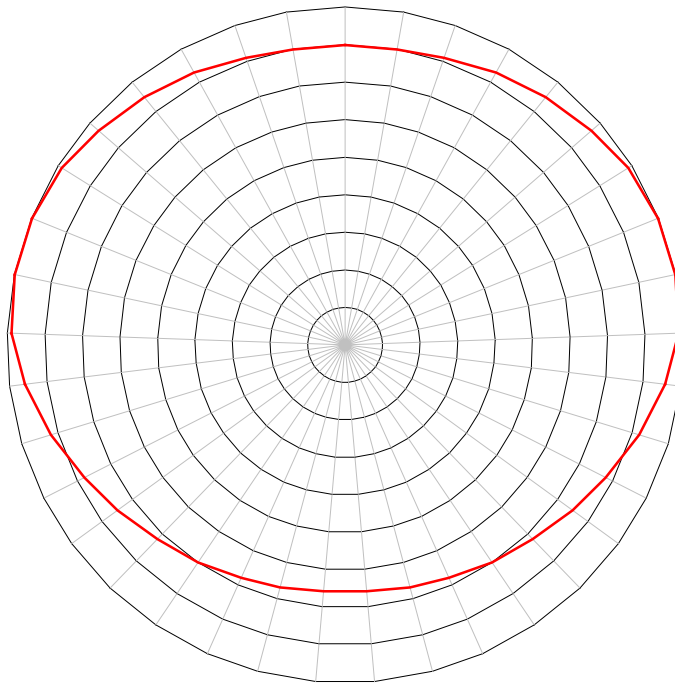
Electromagnetics

"Quality is everything."

JAG-220-2-1/2-SM



Horizontal Pattern For Vertical Polarization



Azimuth

— Half Wave Spacing

\* This is a general representation of the Delta1 Series JAG-220-2-1/2-SM antenna radiation pattern. For the latest detailed pattern contact JAG Applications Engineering.

Toronto:

JAG Electromagnetics
26-1750 Creek Way
Burlington, ON, L7L 7E2
Canada
Tel (905)-635-7437
Fax (905)-332-8093
Email: info@jagelectromagnetics.com

Saskatoon:

JAG Electromagnetics
30065-1624 33rd St. W
Saskatoon, SK, S7L 7M6
Canada
Tel (905)-635-7437
Fax (905)-332-8093
Email: info@jagelectromagnetics.com

Published by JAG and printed in Canada. This document cannot be printed or duplicated other than for its intended purpose as a JAG product selection guide without the written consent of JAG Electromagnetics.

JAG-220-2-1/2-SM Product Specification Sheet.

Specifications are subject to change without notice. As a result, all information contained in the present datasheet is subject to confirmation at time of ordering.

Dated: February-20-2011

Issue: 1

Made in Canada

Rev022011.0

Page 4/4



RF EMI Engineering Technology
26-1750 Creek Way
Burlington, Ontario
L7L 7E2 Canada

Email: info@jagelectromagnetics.com
Web: www.jagelectromagnetics.com
Tel (905)-635-7437
Fax (905)-332-8093



Copyright © JAG Electromagnetics

JAG's dedication to continuous Research & Development will result in product improvements as they evolve.