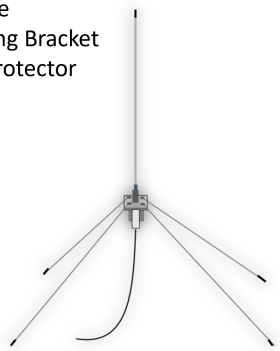
RURAL ELECTRIC

Antenna-CF

Heavy Duty Antenna Kit

Antenna Mast For VHF Aircraft 118-136 MHz
50’ cable
Mounting Bracket
Surge Protector



Features

Pre-tuned VHF ¼ Wave Ground Plane Base Antenna Kit

Includes: Pre-tuned stainless steel vertical whip, with heavy duty base, mounting bracket, surge protector and coax cable

- All Stainless/aluminum Construction

- Four stainless spring Steel ¼ wave ground radials. 3/32” in diameter.

- Mounting Bracket is fabricated from heavy duty aluminum and clamps to masks from 7/8” to 1.5” in diameter or can bolt to a flat surface.

- Heavy Duty weather proof construction to provide years of use.

- Intended use for outdoors.

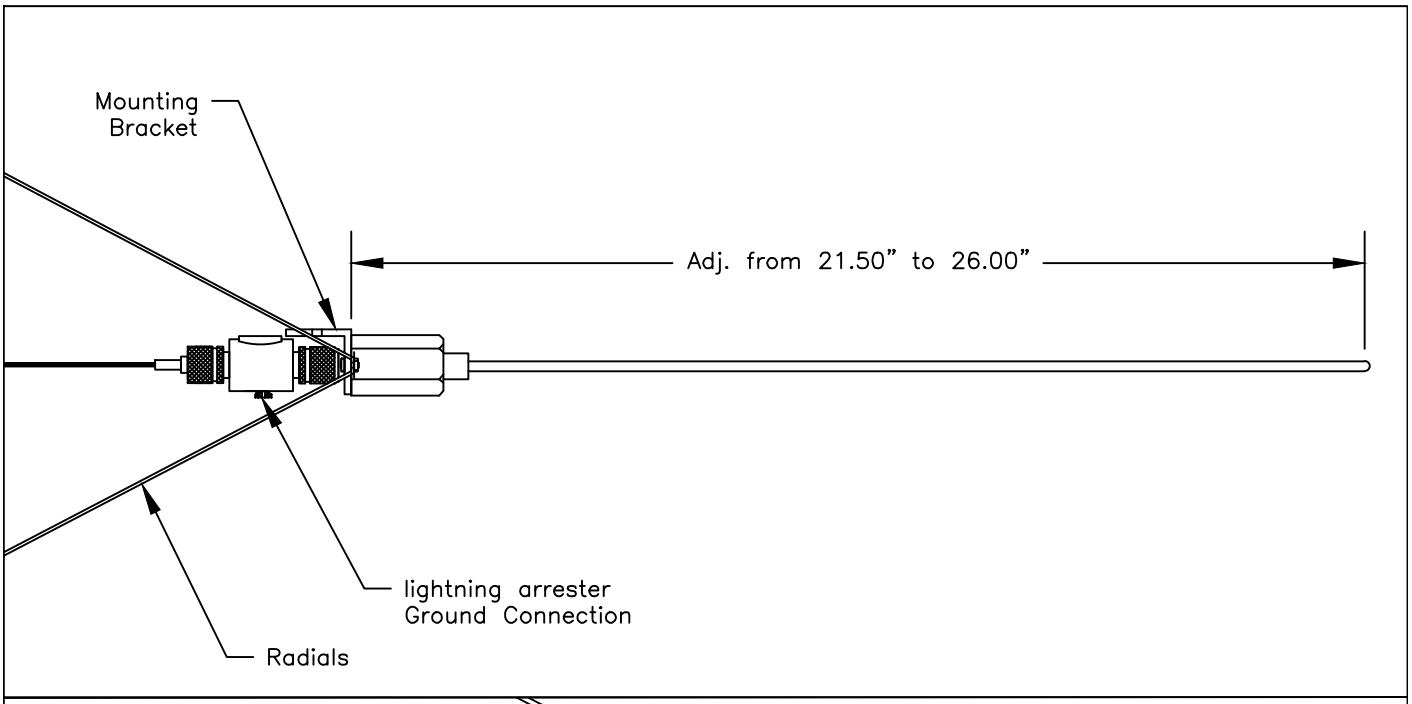
- VSWR: < 1.5 across 4 MHz

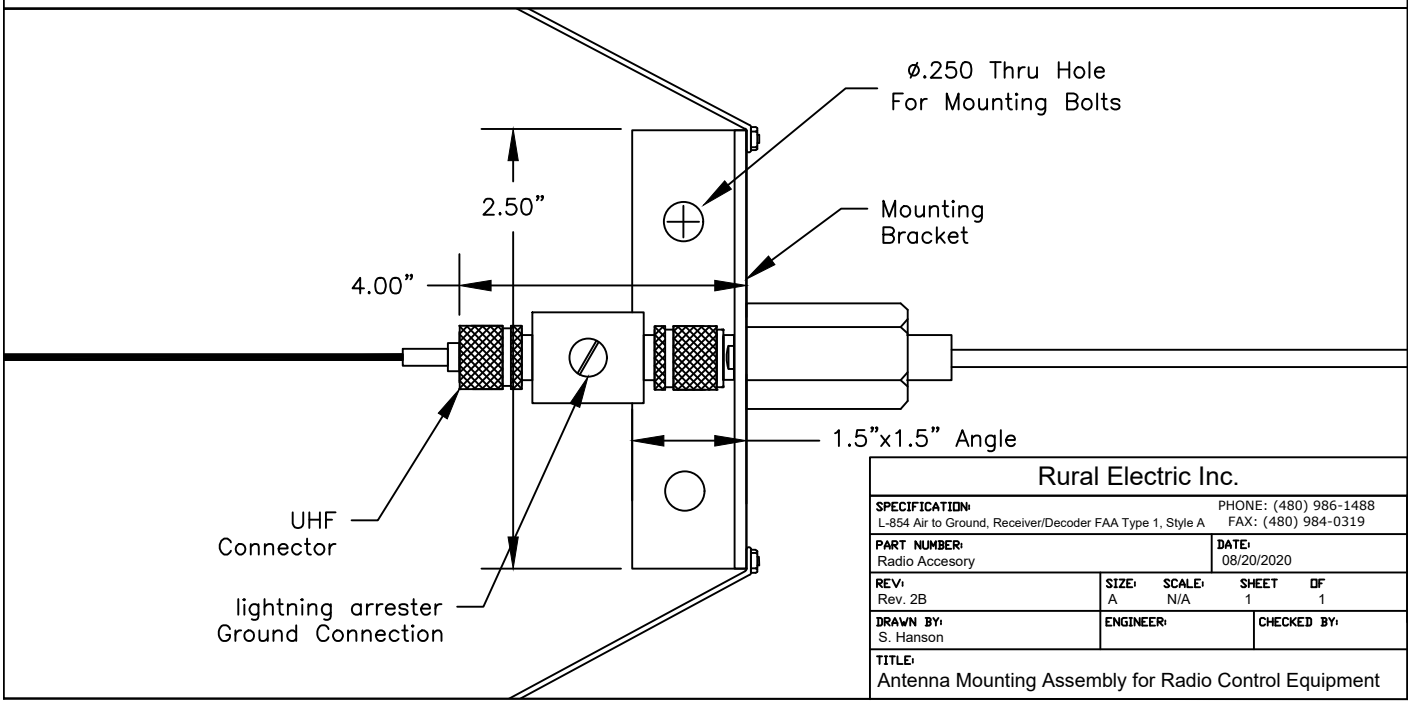
- Uses 50 ohm coax with PL-259 connector, 100 watt.

- Standard Lengths (25ft & 50ft)

  - Antenna-CF25
  - Antenna-CF50

ANY CUSTOM LENGTH COAX AVAILABLE
contact us for pricing Sales@RuralElectric.com





Rural Electric Inc.				
SPECIFICATION: L-854 Air to Ground, Receiver/Decoder FAA Type 1, Style A			PHONE: (480) 986-1488 FAX: (480) 984-0319	
PART NUMBER: Radio Accesory			DATE: 08/20/2020	
REV: Rev. 2B	SIZE: A	SCALE: N/A	SHEET 1	OF 1
DRAWN BY: S. Hanson	ENGINEER:		CHECKED BY:	
TITLE: Antenna Mounting Assembly for Radio Control Equipment				

TIMES MICROWAVE SYSTEMS

LMR®-240
Flexible Low Loss Communications Coax

Ideal for...

- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs (e.g. WLL, GPS, LMR, Mobile Antennas)
- Any application (e.g. WLL, GPS, LMR, WLAN, WISP, WiMax, SCADA, Mobile Antennas) requiring an easily routed, low loss RF cable

Part Description				Stock
Part Number	Application	Jacket	Color	Code
LMR-240	Outdoor	PE	Black	54021
LMR-240-DB	Outdoor/Watertight	PE	Black	54090
LMR-240-FR	Indoor/Outdoor Riser CMR	FRPE	Black	54029
LMR-240-FR-PVC	Indoor/Outdoor Riser CMR	FRPVC	Black	54214
LMR-240-PVC	General Purpose	PVC	Black	54140
LMR-240-PVC-W	General Purpose	PVC	White	54202
LMR-240-MA	Indoor & Mobile Antenna	PVC	Black	54046

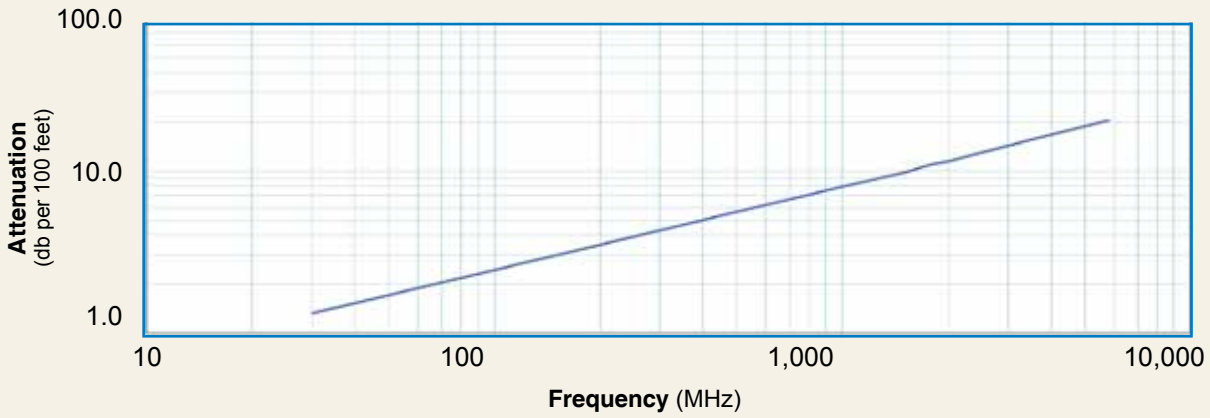
Environmental Specifications		
Performance Property	°F	°C
Installation Temperature Range	-40/+185	-40/+85
Storage Temperature Range	-94/+185	-70/+85
Operating Temperature Range	-40/+185	-40/+85

Mechanical Specifications			
Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	0.75	(19.1)
Bend Radius: repeated	in. (mm)	2.5	(63.5)
Bending Moment	ft-lb (N-m)	0.25	(0.34)
Weight	lb/ft (kg/m)	0.034	(0.05)
Tensile Strength	lb (kg)	80	(36.3)
Flat Plate Crush	lb/in. (kg/mm)	20	(0.36)

Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid BC	0.056	(1.42)
Dielectric	Foam PE	0.150	(3.81)
Outer Conductor	Aluminum Tape	0.155	(3.94)
Overall Braid	Tinned Copper	0.178	(4.52)
Jacket	(see table)	0.240	(6.10)

Electrical Specifications			
Performance Property	Units	US	(metric)
Velocity of Propagation	%	83	
Dielectric Constant	NA	1.42	
Time Delay	nS/ft (nS/m)	1.21	(3.97)
Impedance	ohms	50	
Capacitance	pF/ft (pF/m)	24.2	(79.4)
Inductance	uH/ft (uH/m)	0.060	(0.20)
Shielding Effectiveness	dB	>90	
DC Resistance			
Inner Conductor	ohms/1000ft (/km)	3.2	(10.5)
Outer Conductor	ohms/1000ft (/km)	3.89	(12.8)
Voltage Withstand	Volts DC	1500	
Jacket Spark	Volts RMS	5000	
Peak Power	kW	5.6	

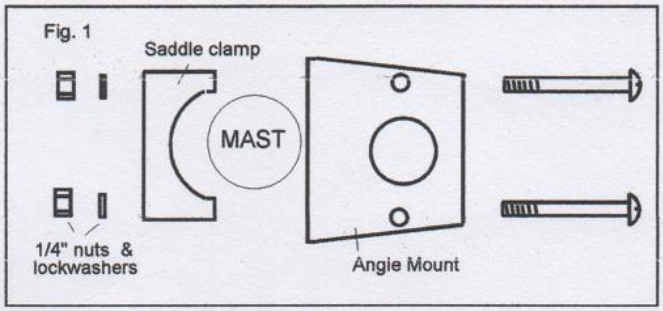
Attenuation vs. Frequency (typical)

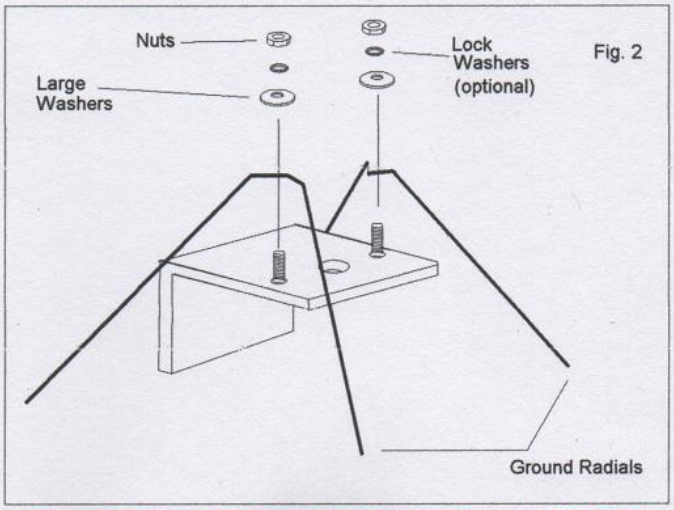


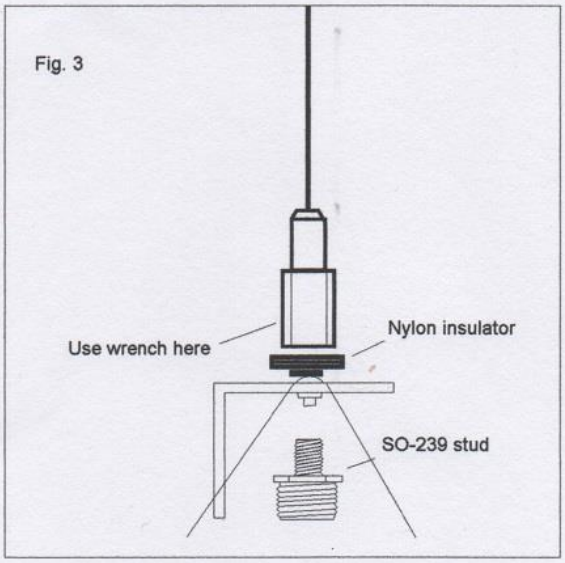
Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	5800	8000
Attenuation dB/100 ft	1.3	1.7	3.0	3.7	5.3	7.6	9.9	10.9	11.5	12.9	20.4	24.3
Attenuation dB/100 m	4.4	5.7	9.9	12.0	17.3	24.8	32.4	35.6	37.7	42.4	66.8	79.7
Avg. Power kW	1.49	1.15	0.66	0.54	0.38	0.26	0.20	0.18	0.17	0.15	0.10	0.08

Calculate Attenuation =
(0.242080) • $\sqrt{FMHz}$ + (0.000330) • FMHz (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)
Attenuation:
VSWR=1.0 ; Ambient = +25°C (77°F)
Power: VSWR=1.0; Ambient = +40°C; Inner Conductor = 100°C (212°F); Sea Level; dry air; atmospheric pressure; no solar loading

Ground Plane Antenna Instructions







CAUTION: ELECTROCUTION HAZARD.

Keep away from power lines at all times and take all necessary lightning precautions!

1. Select a safe and suitable location for your antenna. Attach the antenna mount to the mast as shown in Fig. 1 Tighten the bolts snugly but do not overtighten.

2. Attach the ground plane radials as shown above and tighten the 10-32 nuts securely.

3. Attach the vertical element to the mount as shown in Fig. 3. Attach 50 or 75 ohm coax cable to the SO-239 stud.

Universal Gas Tube Coaxial Surge Protectors

P8AX Series

P8AX09-U/MF

The P8AX series coaxial surge protectors have been designed to protect antennas, microwaves, broadband applications, two-way radios, cellular, GPS and CATV equipment against lightning surges and electrical transients. They are a first line of defense for your sensitive equipment.

The P8AX series employs a patented gas tube, are waterproof (IP65) and available with three grounding options:
M6 ground screw, bulkhead or optional mounting bracket.

High-Frequency Surge Protection

- 20kA transient amps protection (8/20µs)
- 5kA transient amps protection (10/350µs)
- DC Pass to +/-48V
- VSWR < 1.2
- Insertion Loss < 0.1dB
- Bi-directional, series installed
- Waterproof
- Removable GDT

- Tower Mounted Amplifiers (TMA)
- Global Positioning Systems (GPS)
- Antenna Systems
- Tower Top Electronics (TTE)
- Transmitters and Recievers
- WiFi
- Broadband Wireless
- WiMax Broadband wireless

Ordering information

P8AX __ - __ - ___

Gender Type
MF = Male/Bulkhead Female
FF = Female/Bulkhead Female

Max RF Power
09 = 25W
25 = 190W
50 = 780W

Connector Type
N, TNC, SMA, F, BNC, 7/16 (Din)

Rural Electric: P8AX09-U/MF

Characteristics

CITEL Part Number	P8AX09	P8AX25	P8AX50
Frequency Range	DC-5GHz	DC-5GHz	DC-5GHz
DC Turn-On (Breakdown)	90-130V	200-300V	400-600V
Technology	Gas Discharge Tube	Gas Discharge Tube	Gas Discharge Tube
Insertion Loss	≤0.1db	≤0.1db	≤0.1db
Return Loss	≥20db	≥20db	≥20db
VSWR	<1.2:1	<1.2:1	<1.2:1
Ipeak (8/20 µs)	20kA	20kA	20kA
Max Power	25W	190W	780W
Max current	10A	10A	10A
Impedance	50 omhs [1]	50 omhs [1]	50 omhs [1]
Connection Method	Series (bi-directional)	Series (bi-directional)	Series (bi-directional)
Connectors	N, TNC, SMA, F, BNC, 7/16	N, TNC, SMA, F, BNC, 7/16	N, TNC, SMA, F, BNC, 7/16
Grounding	M6 Screw, Bulkhead, Bracket	M6 Screw, Bulkhead, Bracket	M6 Screw, Bulkhead, Bracket
Enviromental Rating	IP65	IP65	IP65
Operating Temp	-50℃ to +85℃	-50℃ to +85℃	-50℃ to +85℃
Operating Altitude	13,000 ft (4,000m)	13,000 ft (4,000m)	13,000 ft (4,000m)
Relative Humidity	up to 5 to 95% non-condensing, up to 100%	up to 5 to 95% non-condensing, up to 100%	up to 5 to 95% non-condensing, up to 100%
Weight	4.4 oz	4.4 oz	4.4 oz

[1] Impedance for F-Type Connector is 75 Ohms.

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