

# SD-FM DIPOLE 87-194 MHz

VHF Base Station Antenna 87...194 MHz

## DESCRIPTION

Dipole base station antenna working on 87-194 MHz by cutting. Optimized for vertical polarization it can be also placed in horizontal polarization. The elements are fixed to the boom by a strong die-cast metal support to get the maximum strength. All connections are waterproof and it is supplied with UHF female connector. To improve the antenna gain please install it in stacked or bayed array.

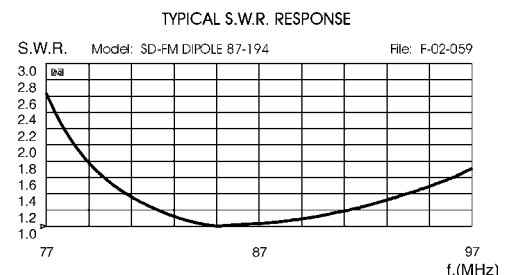
## TECHNICAL DATA

### Electrical Data

Type	Dipole
Frequency range	87 - 194 MHz tunable by cutting
Impedance	50 $\Omega$
Radiation (H-plane)	beamwidth @ -3 dB=240° (vertical polariz. only)
Radiation (E-plane)	beamwidth @ -3 dB = 80° (vertical polariz. only)
Front to back ratio	$\geq$ 4 dB (vertical polarization only)
Polarization	Linear Vertical or Horizontal
Gain	1.85 dBd - 4 dBi (vertical polarization only)
Bandwidth @ SWR 1.5	$\geq$ 14.5 @ 87 MHz (vertical polarization only)
SWR @ freq. res.	$\leq$ 1.2 @ 87 MHz (vertical polarization only)
Max Power (CW) @ 30°C	300 Watts
Connector	UHF-female

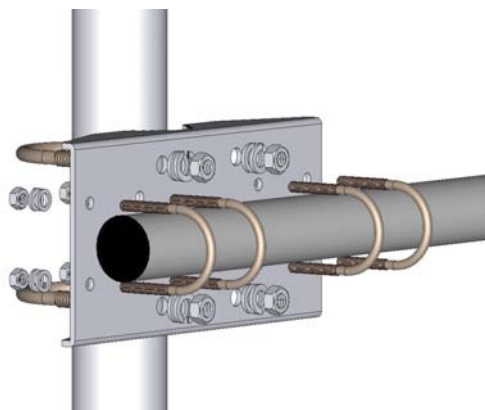
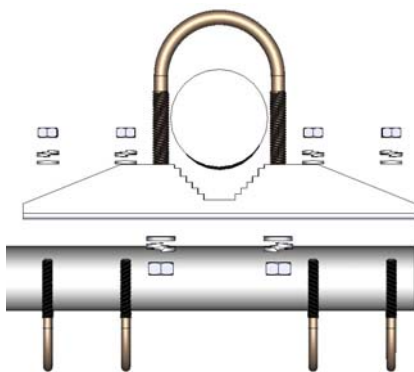
### Mechanical Data

Materials	Aluminum, Zamak, Zinc plated, Chromed Brass
Wind load / resistance	99 N @ 150 Km/h / 160Km/h
Wind surface	0.08 m <sup>2</sup>
Boom/elements diameter	33mm/16mm
Dimensions (approx.)	1030 x 1600 mm
Weigth (approx.)	1850 gr
Turning radius (approx.)	990 mm
Operating temperature	-40° C to +80° C
Mounting Mast	$\varnothing$ 35-52 mm



## MOUNTING INSTRUCTIONS

### Mounting Bracket



### SD bracket parts list

Q.ty	Description
1	SD/SY Steel bracket
2	M8x200 U-bolt
4	M8 Hexagonal nut
4	M8 Grower washer
4	M8 Flat Washer
4	M6x125 U-bolt
8	M6 Hexagonal nut
8	M6 Grower washer
8	M6 Flat washer
Materials Zinc Plated Steel	
Weight	865g
<b>Re-order code: SA088</b>	

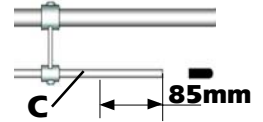
# MOUNTING INSTRUCTIONS



**ATTENTION!**  
Place the Gamma Match on upper side for vertical polarization

## Direction for tuning

- 1) Choose your working frequency.
- 2) Cut both tubes **A** at **L1** (PVC cap must not be mounted).
- 3) Assemble both tubes **A** and place element **B** at **L2**.
- 4) Place element **C** of the gamma match at **L3**.
  - working frequency **87...123 MHz**: proceed at point 5).
  - working frequency **123...194 MHz**: cut element **C** **85mm** from the side of PVC cap



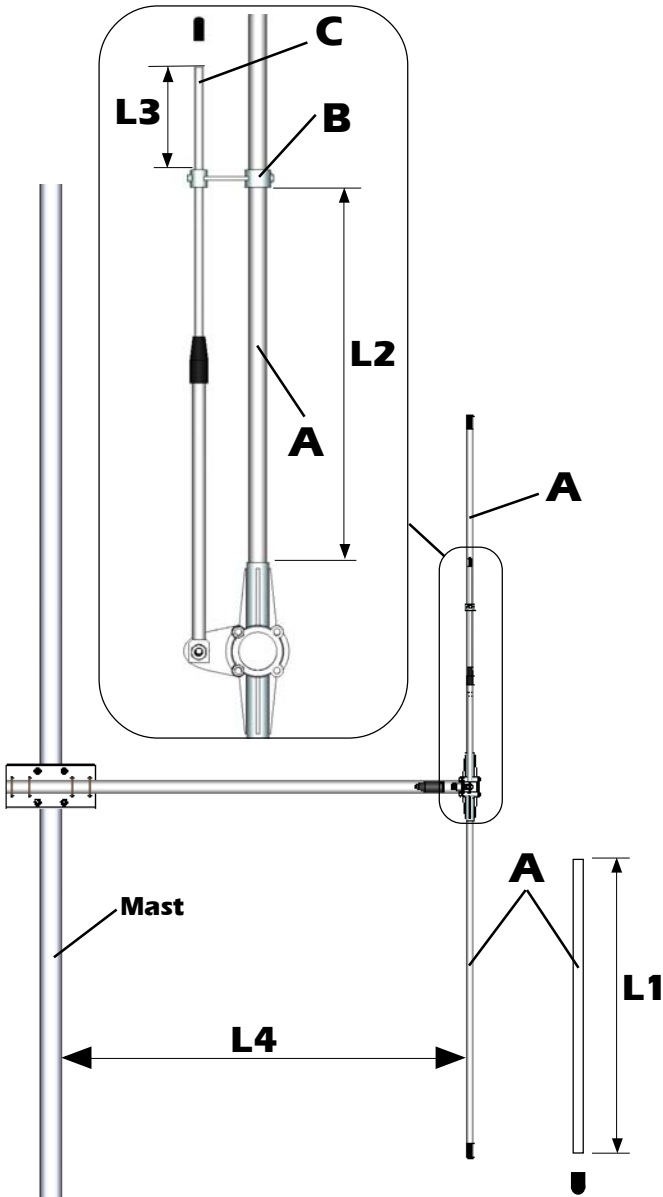
- 5) You can proceed by mounting your antenna on the mast in vertical or horizontal position.

- **Vertical** polarization: place your antenna at distance **L4** from the mast to get the best performance
- **Horizontal** polarization: distance **L4** is not required

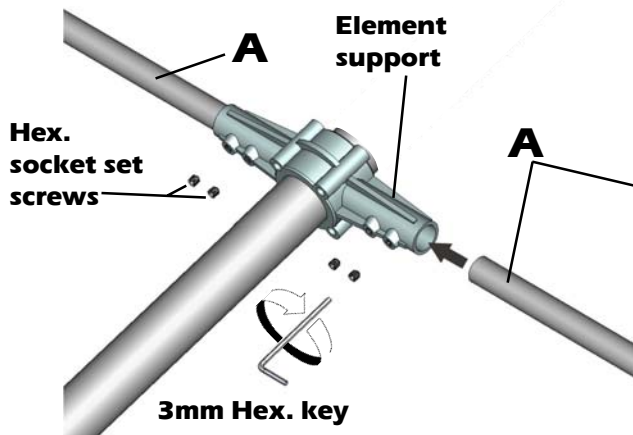
**Note:** It is recommended to use the above table just as a guide. For fine-tuning please use an SWR-Meter.

Freq. (MHz)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)
87	770	249	19	860
93	726	242	30	810
98	690	233	42	771
103	664	226	51	742
108	634	220	58	716
113	615	214	65	689
118	582	210	73	650
123	550	205	81	610
123	550	179	102	610
130	510	171	113	576
138	470	163	125	541
146	438	156	135	508
154	413	146	146	483
162	390	136	157	460
170	370	127	168	440
178	350	119	177	420
186	333	111	186	403
194	315	102	196	385

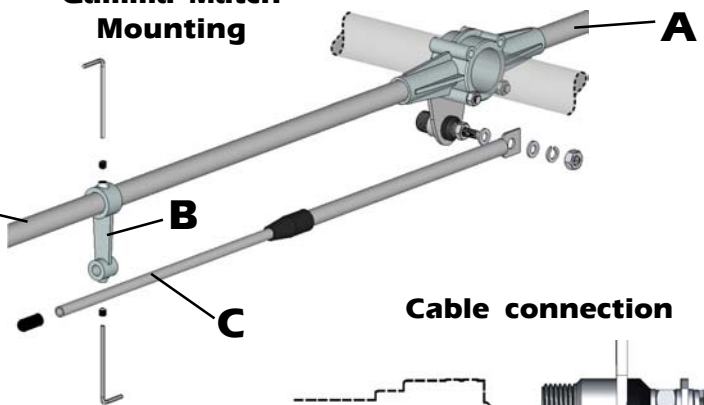
See "Direction for tuning" point 4



### Element Mounting



### Gamma Match Mounting



### Cable connection

