

# ANTENNA GUIDE

This guide is intended to provide information and instructions regarding antenna installation and antenna tuning.



## INSTALLATION

- For best performance, mount the antenna on a metal or aluminium roof in the center. The  $\frac{1}{2}$  wave NGP (No Ground Plane) antennas do not require a ground plane (meaning, metal surface) but it is always best to have enough metal surface area over 2'x 2' area.
- Mount NMO connector to a  $\frac{3}{8}$ " hole in roof or roll bar top. Be sure to scrape away any paint on the underside so the NMO mount gets a good metal contact. Route the coax cable away from ignition boxes, coils, HID ballasts, amps, headset cables, and other components that carry power or emit RF interference.
- **IMPORTANT!** If there is any excess coax cable after installation DO NOT COIL THE CABLE! Coiling coax cable will cause transmit problems and limit radio range. Ideally, the coax should be cut to exact length and re-crimped with connectors. However, if that option is not available, route the cable further around the car.

We have several videos online that offers detailed information about cutting coax, proper antenna installation and tuning.

search for these titles for additional information:

- Mobile Radio Antenna Tuning, Trimming, and Connector Installation
- How to Install a UHF Connector
- Clever Coax Cable Connectors

## ANTENNA OPTIONS:



### ANTENNA MOUNT

Rugged Radios offers optional roll bar antenna mounts which allow you to mount your antenna to any vehicle with 1", 1-1/2", 1-3/4", or 2" tubing.



### ANTENNA SWITCH

Easily switch your coax antenna connection to a second backup antenna.

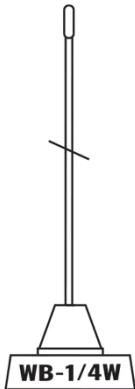
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Most antennas are pre-tuned (cut to length) to perform at a specified frequency range. If the length of your antenna does not match the frequency range you need as shown below, a new whip may be required. Refer to the charts below to cut your antenna. Always cut longer than you need to allow for fine tuning.

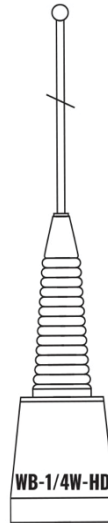
## WB-1/4W

F (MHz)	Length
118	24-11/16"
122	24-1/16"
126	23-5/16"
130	22-9/16"
134	21-7/8"
138	21-7/16"
142	20-9/16"
146	20"
150	19-7/16"
154	18-3/4"
158	18-7/16"
162	17-15/16"
166	17-9/16"
170	17-1/16"
174	16-11/16"
200	14-5/8"
210	13-7/8"
220	13-1/8"
230	12-5/16"
240	12-1/16"
250	11-1/2"
260	10-15/16"
270	10-1/4"
280	10-1/16"
290	9-1/2"



## WB-1/4W

F (MHz)	Length
300	9-3/8"
310	9-1/16"
320	8-15/16"
330	8-3/4"
340	8-1/4"
350	8-1/8"
360	7-15/16"
370	7-11/16"
380	7-1/2"
390	7-5/16"
400	7-1/8"
410	6-15/16"
420	6-3/4"
430	6-9/16"
440	6-5/16"
450	6-1/8"
460	6-1/16"
470	5-15/16"
480	5-3/4"
490	5-9/16"
500	5-1/2"
510	5-5/16"
520	5-1/8"



## WB-1/4W-HD

F (MHz)	Length
132	18-7/16"
137	18-1/16"
142	17-1/16"
147	15-15/16"
152	15-1/4"
157	14-11/16"
162	14-3/16"
167	13-3/4"
172	13-5/16"
177	12-11/16"
182	12-3/8"
187	11-7/8"
192	11-5/16"
197	10-3/4"
202	10-3/4"
207	10-3/4"
212	9-7/8"
217	9-7/8"
222	9-7/8"
227	9-7/8"
232	8-3/4"
237	8-3/4"
242	8-3/4"
247	7-15/16"
252	7-15/16"
257	7-15/16"
262	7-1/4"
267	7-1/4"
272	7-1/4"
277	7-1/4"
282	7-1/4"

## WB-1/4W-HD

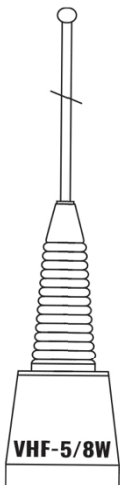
F (MHz)	Length
287	6-7/16"
292	6-7/16"
297	6-7/16"
302	6-7/16"
307	6-7/16"
312	5-9/16"
317	5-9/16"
322	5-9/16"
327	5-9/16"
332	5-9/16"
337	5-9/16"
342	4-13/16"
347	4-13/16"
352	4-13/16"
357	4-13/16"
362	4-13/16"
367	4-3/16"
372	4-3/16"
377	4-3/16"
382	4-3/16"
387	4-3/16"
392	3-3/4"
397	3-3/4"
402	3-3/4"
407	3-3/4"
412	3-3/4"
417	3-3/4"
422	3-3/4"
427	3-1/4"
432	3-1/4"
437	3-1/4"

## WB-1/4W-HD

F (MHz)	Length
442	3-1/4"
447	3-1/4"
452	3-1/4"
457	2-7/16"
462	2-7/16"
467	2-7/16"
472	2-7/16"
477	2-7/16"
482	2-7/16"
487	2-7/16"
492	1-3/4"
497	1-3/4"
502	1-3/4"
507	1-3/4"
512	1-3/4"
517	1-3/4"
522	1-3/4"
525	1-3/4"

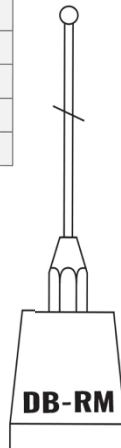
## VHF-5/8W

F (MHz)	Length
136	51-13/16"
142	50-1/2"
146	49-11/16"
151	48-1/4"
156	47-1/2"
161	46-6/8"
166	45-11/16"
171	44-7/8"
174	43-1/4"



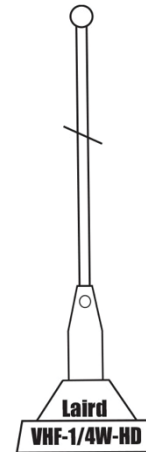
## DB-RM

F (MHz)	Length
151	29-1/2"
155	28-1/4"
160	26-3/4"
165	25-1/4"
170	23-5/16"
175	22-1/16"
180	21-1/4"
185	20-3/16"
190	19-5/16"
195	18-9/16"
200	17-9/16"
205	17-1/16"
210	16-1/8"
215	15-9/16"
220	14-11/16"
225	14-1/16"
235	13-3/8"
245	12-7/16"
255	11-3/8"
265	10-3/4"
275	10-1/8"
285	9-1/2"
295	9-1/2"
305	9-1/16"
315	8-13/16"



## DB-RM

F (MHz)	Length
325	9-9/16"
335	7-15/16"
345	7-11/16"
350	7-11/16"
360	7-1/16"
370	6-1/2"
380	6-1/2"
390	5-3/4"
400	5-3/4"
410	5-9/16"
420	5-1/16"
430	5-1/16"
440	4-5/8"
450	4-5/8"
460	4-5/16"
470	3-15/16"



## VHF-1/4W-HD

F (MHz)	Length
118	23-1/4"
120	22-7/8"
122	22-1/4"
124	21-1/2"
126	21-1/8"
128	21"
130	20-5/8"
132	20-3/8"
145	18-1/8"
150	17-5/8"
155	17"
160	16-1/2"
165	16"
170	15-1/2"
175	15"
220	11-7/8"
225	11-5/8"
405	6"
412	5-7/8"
420	5-13/16"
430	5-11/16"
440	5-1/2"
450	5-3/8"
460	5-3/16"