

Simple Ways to Increase Communication Range of a Hand- Held Radio

Several simple tips to increase the communication range of a hand- held radio with help of anything near by.

Igor Lavrushov , UA6HJQ

Credit Line: <http://www.hamradio.cmw.ru/antenna/experiment.htm>



At the pictures you see a hand- held with its “rubber” antenna (100- mm long). The radio is received R4- repiter, which is located 130- km away.



At the pictures you see a hand- held with its “rubber” antenna plus counterpoise. The radio is received the same R4- repiter.

Compare the S- meters. From the noise level the repiter jump up to good level.

Now the hand- held used to a $\frac{1}{4}$ lambda antenna. I communicate with the same R4- repiter



The picture shows the radio without counterpoise.



The picture shows the radio with counterpoise.

Compare the difference. With the counterpoise I can communicate with the repiter.

	FREE e- magazine edited by hams for hams Devoted to Antennas and Amateur Radio www.antentop.org
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------



The radio is received the R4 repiter located 130- km away.

I held the radio by hand in glove, so, my body is isolated from the radio. I get strength by S- scale: 42.



Now my hand is touched metal parts of the radio. I get strength by S- scale: 53. With a 1/4 lambda antenna and my hand is touched metal parts of the radio I get 59!

Note: Some hand- held radios do not have outer metal parts. In this case counterpoise helps to increase the communication range.



Find All Books from
FREE **ANTENTOP** **Amateur Library**



In the mountains I have used instead a counterpoise a knife in length 300- mm. I got increasing in the level from 54 to 56.

Note: With a counterpoise the radio antenna has directivity. Therefore after connection a counterpoise to the radio you should turn the radio to find maximum of the reception.

For good operation it should be used a resonance counterpoise. The length for the counterpoise should be 480- 510-mm depending on used diameter of the wire. Counterpoise should be placed at 90 degree to antenna. Use only rigid wire. Counterpoise from a soft wire does not work properly.



Picture shows antenna "ALAN" (470- mm in length), counterpoise with "crocodile," hand- held radio, two- band counterpoise for 145/435- MGz for two- band hand- held.

The same experimenters were made with hand- held VX-3, VX- 800 and C- 568. The experimenters prove above writing.

73, ua6hjq