

SKYPROBES™

**The long-range antenna specialists for Handheld Radios,
FCC Part 15 & other RF devices.**

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Application Note: Why you should buy aftermarket antennas for your handhelds

Commercial Handheld or Portable radios for use by state and federal Forestry departments, Firefighters, Park Rangers, large area fire and ambulance departments and many other state and federal government agencies, depend upon reliable long distance communications. In many instances handheld radios are a lifeline for back up support of all kinds.

Handheld radios take a lot of abuse and are just a tool like a shovel or a truck, but can have its function improved dramatically and easily unlike any other tool.

The average handheld radio is supplied with a short antenna commonly called a "rubber duck". It is small and flexible and has negative gain. "Negative gain" means it actually loses signal power on receive and transmit and therefore reduces your range.

This antenna is probably the least costly antenna that can be supplied with your portable radio. At the radio manufacturers plant the cost a "rubber duck" antenna is probably \$1.00 to \$2.00!

By replacing this antenna with a real antenna with gain and other important characteristics, you can extend your range by 30 to 50% and much more depending upon the choice of aftermarket antenna.

The "rubber duck" antenna, by virtue of its design, is not an efficient antenna or an antenna with gain. As you can see in the drawing on the next page it shows no gain across its range.

While a wideband antenna such as the SKYPROBES™ SSP58F is + 11 dB over the rubber duck and a bandwidth of 6 Mhz bandwidth with gain. The SSP58F type of broadband antenna will allow wider range of operating frequencies with longer distances than a "rubber duck" antenna is capable of providing.

The antenna that comes with your handheld, because of its design is not an efficient antenna. It will only radiate or transmit only about 20% of the power supplied to it. See our technical notes for a more detailed evaluation of this efficiency that comes from its basic "radiation resistance" characteristic.

What this means is that your handheld, if it is a 5 watt unit, has only 1 watt coming out of the antenna.

Obviously, this loss of power will limit your range. By use of an efficient antenna design more power will be transmitted and your range will be extended. This antenna design, like the SKYPROBES™

SSP58F, will have substantially more gain. Though the chart is not calibrated, the gain difference from a "rubber duck" to a high efficiency high gain antenna like the SSP58F is + 11dB.

These features, of 4 times more transmitted power due to antenna efficiency and + 11 dB of gain, have translated into 50 to 70 mile range reports in the open range versus 3 to 4 miles for a "rubber duck" antenna.

As one user has told us "It's like having a base station in your hand".

Your easiest and best way of getting more reliable and longer range for your handhelds is a high efficiency high gain antenna like the SKYPROBES™ line of antennas.

Please call us at 602-293-6844 for any questions or help you need in choosing your SKYPROBES™ antenna, email us at skyprobes1964@yahoo.com

