

Indoor Antennas? Yes!

For most new hams their introductory radio is usually a VHF/UHF handheld or mobile radio because they offer the greatest versatility. But operating a handheld radio from inside your house can prove difficult. Often times the solution to poor transmission and reception from inside a house or building is as easy as improving your antenna. You can dramatically increase in your ability to hear and be heard by taking a few inexpensive steps.

Handheld radios are best used outside. Their compact design and smaller antennas limit their effective range so their use inside a home or office can be compromised. Fortunately, these limitations can often be overcome with the use of a better antenna mounted on a wall, or suspended from the ceiling, or mounted inside an attic or other space. With VHF or UHF communications the best ways to improve range is to increase height and improve the antenna. Increasing power might help your transmission but it won't help your reception.

Hams are nothing if not experimenters. We're always looking for ways to improve our radio communication and anxious to test our results. Let's look a couple of scenarios where inside antennas might help:

1. Apartment or condominiums. Sure they offer convenience but often times they have restrictions against mounting outdoor antennas. Mounting a quarter wave ground plane antenna or even a roll up J-pole design antenna might be just what you need. Suspending the antenna with a hook from the ceiling might double your height while increasing your efficiency compared to that flexible rubber ducky that comes standard with most handhelds. You might be surprised with the improvement!

2. House or office with available attic space. Let's say you have a house but you don't have an outdoor antenna. Maybe your subdivision doesn't allow them or it's not easy to mount an antenna outdoors. If you can get into the attic you could suspend a quarter wave ground plane from the tallest point inside the attic. (We're assuming here that you don't have a metal roof!) If you do have a metal roof you'll probably need to place your antenna near a window or find a way to get your antenna outside in some fashion.

***** Harvey Babb, WB5MCT, adds this information: "If you have a metal roof, a mag mount will work wonders. Also, small mag mount antennas for handhelds are so tiny as to be nearly invisible from a distance."**

3. You have a great antenna outside the house but a storm or hurricane has taken out your outside antenna. Or, perhaps you're rightfully afraid of a lightning strike on your gigantic pole or tower outside. Having a backup antenna in a sheltered or protected space in the attic or inside your house would allow you to continue operating during a thunderstorm or hurricane.

Regardless of your circumstances you will need to assess your particular obstacles and consider the best options available to you. If you need some advice or even some help with an antenna system we have plenty of experienced hams that are ready and willing to assist. Give us a shout!

Stay safe. Stay healthy. Keep communicating.

Bob Whitaker, KI5PG
Ki5pg2889@sbcglobal.net

Additional Comments: Gary Garnett, WT0B,

Hi Bob,

I would like to add a paragraph point about the usefulness of have an extra mag mount antenna handy for indoor or emergency work. My preference is for fixed antennas you have described, but these fixed antennas are not plausible and procrastination has kept one from installing a fixed antenna, a mag mount which is likely to be less effective than the fixed antennas, the mag mount will still be better than a handheld antenna, and mag mounts can handle more power than most handheld antennas.

"Magnetic Mount Antennas are a compromise between handheld antennas and fixed base antennas. Mag mounts can be easily moved and placed which is very helpful in emergencies. Some quick mount places include atop a metal ironing board, mounted upside down on a metal heating/cooling vent duct in the ceiling, on top of a filing cabinet, refrigerator, freezer, washing machine, dryer, or any flat surface that has metal on top to provide somewhat of a ground plane. An old grating from a BBQ grill or similar metal plating can provide an effective ground plane and supporting structure for a magnetic mount. Mag mounts can be easily moved if there is a need to change locations or if a better location is found, and can be used by low powered handhelds as well as high powered mobile/base radios. AND you can still use the mag mount on your vehicle!"

Just my two cents.

- Gary

Another comment from Bob, KI5PG

If anyone needs antenna adapters for Baofeng radios I have a number of the reverse sma to tnc adapters, and tnc to SO-239 adapters so let me know if you need these for your radio. As Gary and Harvey both note, a mag mount antenna is a versatile accessory to have lying around as a spare. They're readily available on eBay or the net for around \$25.

Also, I have about a half dozen GE MVS 16 channel VHF radios which I would sell to club members for only \$40 each. They're programmed and ready to use for our local frequencies. They're good for both mobile use and base station use. If you need a power supply to complete your base station we can supply that, too.



Figure 1 - Bob KI5PG



Figure 2 Attic Antenna



Figure 3 Adapters



Figure 4 Attic Antenna 2



Figure 5 GE MVS Base Station Radio