

Q. *Whatever became of all the preamps that used to be available for scanners? (Frank Heath, Carpinteria, CA)*

A. Scanners improved in sensitivity, and the scanner accessory market in general has slimmed. I recall years ago during one of my annual meetings with the chief engineer for Bearcat, asking him why they didn't offer preamps for scanners. "Preamps?" he asked. "What they need are attenuators!"

Because the scanner market is a competitive consumer item, there are cost-saving compromises in design. One of these is narrow dynamic range – the ability of a receiver to respond to weak and strong signals without signal distortion (overload). Wideband preamps aggravate that problem by amplifying a wide swath of spectrum, including very strong signals which then tend to cause overload problems like desensitization and image/intermod products.

That said, there are legitimate applications for preamps when long transmission lines are being used, but then the preamp really should be remotely located right at the antenna to overcome transmission line losses, not at the scanner.

If a low-noise, modest-gain preamp is employed for frequency ranges where the receiver/scanner is lacking in sensitivity, strong signals can be blocked by narrow-frequency notch filters.

Q. *Can I use the discone antenna for CB? (Thomas H. Fal-lone, email)*

A. Not the standard 25-1000+ MHz scanner models with the whip on top. The impedance falls dramatically below the 50 MHz range used for the vertical element, and the CB band is at 27 MHz; the VSWR is so high that it causes most CB radios to shut down with their protection circuitry.

Q. *What are the dish antennas used for on many rural service stations? (J.J.O., NC)*

A. Rather than tying up phone lines, these Ku band links are mostly used for processing credit cards. They can also be used for other house-keeping purposes like inventory control.

Q. *Our local police department has video cameras with sound in*

their patrol cars. What frequency ranges would they use for wireless mikes?

A. I'm unaware of any wireless mikes made specifically for law enforcement (other than bugs), although Motorola's MOTOMESH® integrated video/audio surveillance package operates in the 4940-4990 MHz spectrum. If the patrolman is wearing a commercial wireless mike, it would most likely be in the 72, 88, 170-216, 450-467, 902-928 or 944-952 MHz range.

Q. *I am hearing music from CD players on my FM radio on 87.9, 88.1 and 88.3 MHz from wireless something. It will occasionally skip several songs, then stop on one to play. What am I getting and what kind of range does it have? (Jim, email)*

A. You are hearing short-range, portable, wireless MP3 players that transmit recorded digital music to a nearby FM stereo system. You can plug a USB memory stick or even a CD player into many of them.

They can sometimes be heard from adjacent vehicles on the road, or from nearby businesses or residences. Because some of these transmitters use illegal power levels and cause interference to the reception of licensed broadcasters, the FCC is currently clamping down on manufacturers to reduce power and, thus, range to a few feet.

Q. *I have two clothesline poles in the middle of my yard, 25 feet apart and 6-1/2 feet high. Can I use this for a shortwave dipole and run the feedline underground through PVC pipe? Should I use a preamp to boost the signals for my shortwave portable? (Greg Smith, email)*

A. This low an antenna will work; the disadvantage is that ground reflections will favor signals arriving from overhead rather than from the horizon which is preferable. Nonetheless, it will certainly receive plenty of signals if you have no alternative for higher elevation.

Most coax has a moisture-proof vinyl jacket and can be buried unprotected, but certainly the PVC pipe will provide additional protection from moisture – and squirrels!

But don't use the preamp unless virtually all signals are very weak; portables are infamous for being easily overloaded by strong signals, producing phantom signals everywhere you tune!

Q. *I have an ICOM R-75 receiver and I'm interested in listening to 3-5 MHz tropical broadcasters, but I'm in an area with considerable electrical noise and reception with a 75-ft wire antenna is very poor. Is it the weather or my antenna? (Robert Steckbeck, Manheim, PA)*

A. The R75 is a fine receiver, so the problem in reception is band conditions, choice of antennas, or electrical interference. The bottom line is that we want to capture the greatest amount of signal with the least amount of noise.

During summer months, tropical DX is difficult to receive due to the number of thunderstorms in the northern hemisphere, but you still need to give attention to an appropriate antenna. First, the broadside of the antenna should face the signal; in other words, since the tropics are south of you, you would run the axis of the wire east to west. If you are feeding the end of the wire with coax, the shield must be grounded to the receiver, but it can float unconnected at the antenna wire.

With the receiver on but no signal is present, is the S meter showing near zero, or is it up scale with background noise (more than S1 or 2)? If noise is present, you may need to take corrective action. Ideally, the antenna wire should be as far from the building as practical, and nowhere near electrical lines; if the lines are unavoidable, the antenna wire should be at right angles, not parallel to them.

Many low-frequency DXers use loop antennas; this allows a choice of facing the direction which minimizes noise or maximizes signal, whichever works.

A sloper might help as well; it's a center-fed dipole mounted in the vertical plane, with the bottom wire a foot or two off the ground, but closer to the signal than the top, so the dipole makes about a 45 degree angle with the earth.

Finally, you may need a noise canceller between the antenna and the receiver; they can be adjusted to null out nearby electrical noise.

Questions or tips sent to Ask Bob, c/o MT are printed in this column as space permits. Mail your questions along with a self-addressed stamped envelope in care of MT, or e-mail to bobgrove@monitoringtimes.com. (Please include your name and address.)