

During the recent VHF Field Day there were some problems with signals from very loud 'local' stations making it difficult to resolve weak signals from others. Can anything be done to alleviate this in future?

Unfortunately, the strong signal performance of many amateur receivers is not particularly good with unwanted intermodulation products and poor signal blocking performance being the main issues. Few amateur radios are designed with VHF contest performance in mind and by sacrificing that rarely used last little bit of performance the manufacturers can make significant cost savings with less stringent designs. Don't blame them though as amateurs are notorious for expecting everything for unrealistic prices and a high-performance contest capable radio would only appeal to a very small market.

There are a few very good websites with in-depth analysis of vhf performance issues for anyone interested - have a look at <http://www.df9ic.de/tech/trxtest/trxtest.html> and <http://www.sm5bsz.com/dynrange/gavelstad/gav.htm> for starters.

However, while this may help you decide where to spend your money on your next radio it won't help with the club's present problem of how to get the best from the equipment we already have and a discussion was started at yesterday's meeting to try and find some answers.

A good place to start might be with some checks of the antenna system, ensuring that everything is in good order with antenna and feeder by visual checks and SWR readings should probably be followed by tuning in a few beacons. This will give an idea of the antenna's performance, some indication of the radiation pattern and the prevailing propagation.

When that loud signal appears try turning the beam until the unwanted signal is in a deep notch in the pattern where could attenuate the unwanted signal by 20dB or more. The wanted weaker signal will almost certainly still be in a better part of the pattern if not at the absolute peak. Many dBs of extra help are often available - until you have several strong locals in various directions of course.

Next, as you would in HF operation, cut down the front end gain of the receiver as far as possible while still being able to detect the weak signal. If the interfering signal is on the same frequency then you have a problem but if it is elsewhere in the band and causing intermodulation or blocking anything which reduces the front-end performance of your receiver will help.

Large signals close to the wanted frequency can often be reduced by choosing the appropriate IF filter if you have the choice. Normally the filter bandwidth will be around 2.7kHz but SSB can be resolved with filters as narrow as 1.9kHz in poor conditions. Not easy to listen to but better than nothing.

Turn down the RF Gain and use the attenuator - you will need more audio gain but you could have a workable station to show for your efforts. Use whatever devices the manufacturer has given you and see what you can dig out.

Headphones are a must for contest operation but be careful when you have wound up the audio to hear a weak station and then you return to tuning around for your next victim - If you tune across a strong signal you may well suddenly have audio loud enough to damage your hearing!!

Right folks, there are a few suggestions from me, now it is your turn! If you are aware of any useful tricks to help dig out weak signals from the unwelcome effects of the big 'uns then let's hear from you....

73, John G8OZH