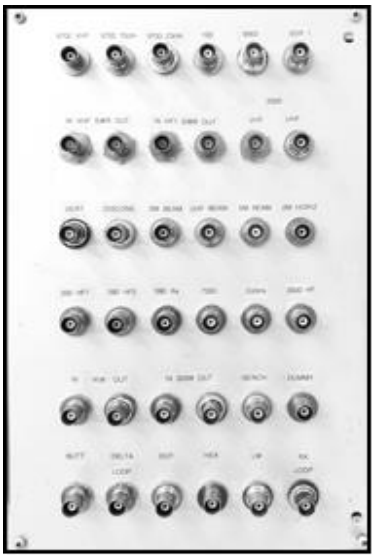
"Too Many Radios, Too Many Antennas". WHO SAID THAT???

Nope! No such thing. However, it does present a challenge when you want to listen to different ones on different antennas at the same time. Most hams invest in expensive switches to be able to connect a number of radios to various antennas. Often, they will use a series of switches such as the popular Alpha Delta ones. These are great switches with maximum isolation and often short all the signal connections to ground except for the one being used. They also have lightning arrestors built in. Or one big switch like the MFJ-4726 which allows you to connect any one of six antennas to any one of six transceivers or other devices. These are great to use, and many hams employ them for their extensive stations.



What happens, though, if you want to use more than one transceiver at a time? Let's say you want one on 80M and another on 15M? Some hams simply use one transceiver on one antenna and the second radio on another. The antenna and transceiver would be permanently connected to each other. Swapping them out with switches could be done, but when you have more combinations to do, it would become cumbersome and expensive and complicated not to mention hard on connectors if you constantly changed them from one to another. The wear and tear and chance of damaging something would increase dramatically if you were changing what was connected to each piece of equipment frequently.

Another issue is with connectors that are commonly used on radios these days. If those connections are not tight then issues can arise due to the amount of leakage from a PL-259 to a SO-239 which can sometime damage other devices connected to the same switch. If all your connections are in back of your radio, then that just exaggerates the problem.

While in the Navy I learned that the only solution to this dilemma was to use a patch panel. As the amount of equipment and antennas at my station grew, I found that I often wanted to listen to two radios or more at a time and in order to do that, the most efficient and reliable way was to make a patch panel and use jumpers to connect any antenna to any radio that I wanted. Or any number of them at a time.

Now this can be problematic too because there is always the danger of blowing the front end on one or the other of these radios due to overload and the high voltages produced when transmitting on an antenna too close to the receiving antenna. This takes discipline and a complete understanding of what you are doing. Using a patch panel allows you to positively

recognize what is connected to what in a glance and helps avert these disasters before they happen. If you tried the same thing with switches the chance of making a mistake is multiplied.

Now there is nothing I enjoy more than being able to go to a flea market. (I have probably mentioned that before.) Finding things that you can use for homebrew equipment amongst the treasures that people are selling is always a joy. In this case I found a box of surplus BNC to BNC bulkhead adapters for a reasonable price. There just happened to be 36 of them in the box so I scooped them and brought them home. By this time my overall shack equipment was starting to get a bit, shall we say, complicated, so this was going to solve the problem. And solve it, it did.

After running a speed bit 36 times with the drill press through an 8 x 12.5" piece of 16-gauge anodized aluminum sheet making ½" holes, I installed the adapters in 6 x 6 rows making sure there was a good ground connection to the panel which is attached to the station ground as well. A box of ½" star washers did the job of biting into the aluminum and making a good connection as I cinched up the nut on the back of each connector. It is important to note that the anodizing on the face of the aluminum is an insulator, so you need to make sure you use the star washers to make a good connection.

This provided me with room for not only all the antennas I have for both VHF/UHF and HF but also room for SWR meters for VHF/UHF and HF and room for a dummy load, a connection to a SDR and two antenna tuners plus a line to my electronics bench across the room.

Of course, it's time consuming to make cables for each radio connection and also to the antenna window panel where everything comes into the shack above the operating desk. But that is where the investment into an excellent crimping tool for coaxial connectors comes into play and good quality coax. They are available on Amazon or at B&E Electronics in Calgary. Using a cut length of cable and connectors from PL-259 to BNC is easy and after they're all installed, they dress up nicely and all terminate at the back of the panel in whichever arrangement you want to use. The final part of it is to make up short jumpers with BNC connectors on each end and you now have a versatile patch panel that is low loss and allows you to interconnect to anything you want

I have had this panel in operation for nearly five years and have only had one failure that I remember and that was something easily taken care of with some Deoxit cleaner and some Q-Tips. The thing I especially like about this arrangement is that I can change antennas in a moment and if I want to test my antennas or feedline with the Rig Expert or NanoVNA, I simply connect it to the antenna on the panel and take my reading. It's also useful for tuning up if I

don’t want to bug other hams on the air. Simply connect the Rig Expert to the input of the antenna tuner and the output to the antenna you want to use and tune it for maximum smoke. You then can be assured that the 50-ohm output of your rig will match the input to the antenna tuner. It’s fast and doesn’t end up labeling you as a LID for tuning up on frequency.

Speaking of labels, of course it’s important to identify your cables properly and to do the same thing on your new patch panel. I use a Brother Labeller that prints what I want on a clear piece of celluloid tape which is adhesive on one side. Easy as can be especially if you need to change something or get a new piece of gear. Check out Amazon or Staples for all the options available for wire labels too. They are inexpensive and easy to use and are permanent. Save yourself a huge headache when you need to find something in the melee behind the rigs.

Having a patch panel isn’t for everyone but for those of us that have gathered a lot of gear and want the versatility of being able to use more than one rig at a time or being able to switch antennas in a moment, a patch panel does nicely. For a few bucks and some sweat equity, you have another great home brew solution. Of course, you can buy patch panels out there that can cost you hundreds of dollars or more, but I kind of like mine because, well it’s mine, and I made it.

73

Tom VE6ARG