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Better Soldering, a Handy DX Tool and HDMI RFI Solutions

Soldering Iron Tips

The solder cup technique shown in Wayne's, WA4WZP, hint for preventing oxidation is indeed an interesting solution.[1] But for anyone serious about soldering, the first place to look is at the tool itself. An iron of 25 W or less is not suitable for serious soldering. Such irons warm up slowly, get too hot while on their stand and then too cool during heavy use.

Most irons used for serious soldering have heating elements rated about 90 W combined with a temperature sensing feedback circuit that cycles the element on and off to maintain the correct temperature. They heat about five times as fast, don't oxidize nearly as much (because they don't overheat) and can maintain their temperature while in use. Even though the power rating is much higher, they are actually safer for sensitive components, because the temperature is tightly controlled and they have the heating capacity to solder quickly before overheating sensitive devices.

Even among temperature controlled irons there are significant differences. The most important difference is the tip material. I have worked in a number of labs with a variety of temperature controlled irons. The cheap temperature controlled irons are constantly plagued with tip oxidation problems. The quality high ones use different plating on the tips that resists oxidizing. Combined with minimal regular cleaning, I have seen these tips function with no problems for a year or more of daily use, including extended idling periods. Also, beware of products that have a power control but no temperature sensor. They will not maintain a constant temperature.

The most popular irons in assembly houses are made by Metcal (**www.metcal.com**). Unfortunately, they are quite pricey, even for commercial use. A close second is the Loner series by Edsyn (**www.edsyn.com**), which are more affordable. Third place goes to the Weller/Unger products. These cover a range of prices from under $100 to $300 or more. Online auction sites are a good place for a hobbyist to look for any of these. While I don't personally have experience with them, Hakko products (**www.hakko.com**) may fit in this range somewhere as well.

There are a number of (mostly Asian import) products that are temperature controlled and frequently available for prices that look quite attractive compared to the above. Avoid them. In my experience, they have tips that oxidize quickly, leading to poor quality soldering ability only hours after being taken from their box. Between frequent tip replacement and lost time, they simply aren't worth the price. Spending $100 or more for a soldering iron may seem extravagant, but the difference in ease of use and quality of joints is night and day. Compared to our radios — well, they're pretty cheap. A good iron is essential for anyone who is serious about building electronics. *— 73, Wilton Helm, WT6C, 320 Old Y Rd, Golden, CO 80401-9563*, **wt6c@arrl.net**

DX Quick Check

Like many others when I hear, copy or see a cluster spot for an unusual prefix my first reaction is "Do I need that call for my DXCC?"

I load my logging program and search for the prefix or call. This is fine, but it is a slow and time consuming process. Thanks to the ARRL® DXCC Desk, I now have a fast method for checking whether I need a certain DX prefix.

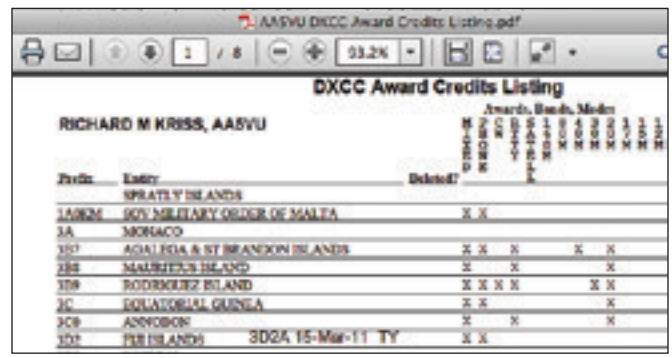

Figure 1 — Once scanned and saved to your computer, the DXCC Award Credits Listing matrix becomes a quick and easy to use tool to help you decide if a DX station belongs in your log. [Richard Kriss, AA5VU, photo]

With each new or update application the DXCC Desk returns the QSL cards with a paper copy of your DXCC Award Credit Slip and a DXCC Award Credits Listing matrix. The matrix is a really cool and useful tool for quickly checking a DX prefix.

Before we started using computers in the ham shack, many hams would keep a copy of the matrix on their desk to do a quick scan and check off new entities worked. Now most of us have very complicated logging programs that take time and keystrokes to do the same thing.

To speed things up, scan the hard copy of the matrix and save it as a PDF file on your computer. Place it on the desktop or in the dock for quick access. With the matrix in PDF format you can use the free *Apple OS X Preview* or *Adobe Reader* (for Mac or PC) applications to view the matrix for a quick visual check of your contact status for a DX prefix (see Figure 1). Both programs are very fast and will let you scroll or search by prefix or entity. I also have a freeware Mac utility that will let me annotate the PDF file to show items I have worked since my last update with the DXCC Desk. If there is no "X" in the matrix box, I need to work that prefix.

I keep a shortcut to the PDF matrix on my desktop and one mouse click pops up a detailed listing of my DXCC credits. Having a current DXCC Award Credits Listing matrix is one of the benefits of doing an annual DXCC update. I maintain my personal logging program, but the DXCC Award Credits Listing is a very useful tool for quick checks to see if I really need a particular DX station. *— 73, Richard Kriss, AA5VU, 904 Dartmoor Dr, Austin, TX 78746-5163*, **aa5vu@arrl.net**

Iambic Key Cover

I needed a cover for my MFJ-564B iambic paddle to prevent dust and moisture from accumulating on the contacts. I found a package of sticky-notes enclosed in a plastic box. The box had an open top and a slot in the front to make removing the notes easier. This was ideal, as the slot allowed access to the paddles (see Figure 2). The plastic box was almost exactly the size of the 4 × 4 inch iambic key base and had sufficient height to clear the key when placed over it. If you're concerned about dust getting on your paddle contacts, be on the lookout for a small plastic sticky-note box to help keep those contacts clean. — *73, Randy Miller, AA5OZ, 4122 Mary Ann St, Lake Charles, LA 70605-4102*, **randy500a@gmail.com**

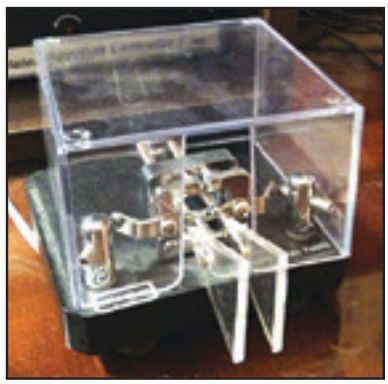

Figure 2 — A sticky-note box can serve as an inexpensive paddle cover. [Randy Miller, AA5OZ, photo]

Magnetic Panel Markers

To make band changing quicker I found magnetic refrigerator signs to be quite useful. Simply cut 1/16–1/32 inch wide strips and position them on the (steel) panel. If you use white material you can color code these markers to specific bands or modes using a felt tipped marker. Repositioning is simple and does not deface the panel. — *73, Roy Lehner, WA2SON, 5464 Oakwood Dr, North Tonawanda, NY 14120,* **wa2son@toast.net**

Current Measurement Adapter

Finding water on my basement floor led to the replacement of the float switch for the sump pump. The switch consisted of a molded wall plug, 10 feet of coated wire and a switch in a sealed bulb. The plug is a feed-through type with a male end that plugged into the outlet and a female end into which the load device (the sump pump) was plugged. The electrical schematic is shown in Figure 3. After installing a new float switch, I was left wondering what to do with the old plug. I came up with the idea of stripping off the outer coating to expose the inside two wires. I cut the wire down to about 3 feet, adding two banana jacks as shown in Figure 4, to plug into a current meter. The current draw of equipment connected to the output side of the plug can now be measured without breaking any wires to insert a meter. — *73, David Stein, KC9NVP, 6779 N Summit Dr, Byron, IL 61010-9382*, **kc9nvp@arrl.net**

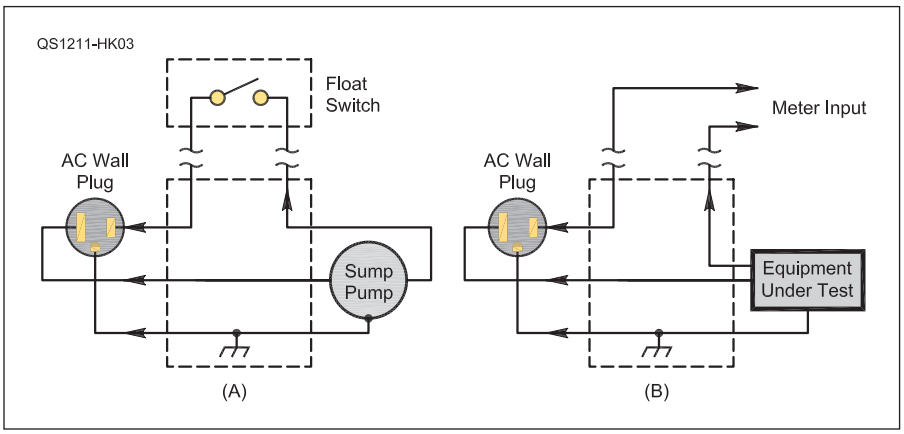

Figure 3 — The float switch is normally in series with one side of the adapter plug. Removing the switch allows a meter to be placed in series with whatever is plugged into the adapter. [David Stein, KC9NVP, photo]

Figure 4 — The completed current measuring adapter. [David Stein, KC9NVP, photo]

HDMI RFI

I have local cable service for my TV and Internet. The TV's digital video recorder (DVR) box started to lock up for no apparent reason. Nothing could be done except to unplug it and restart the unit.

Well, my first and only thought was a failure within the Motorola DVR unit. I simply called my provider who swapped it for a new unit. All went well for a week or so then the problem returned. I made another call and got another unit but the lock-up reoccurred. By this time I questioned whether or not it was the Motorola DVR.

One day after it happened again, it dawned on me that maybe I was causing the problem when I was on the air. To prove out the theory, I fired up the rig one band at a time and, sure enough, the DVR locked up every time I used 80 meters. The other bands seemed to have no adverse effect.

RFI was the obvious culprit. I attached a split-core ferrite-choke to the ac line cord to no effect. How about the remote speaker cables. Nothing. My next approach was to disconnect the HDMI cable between the box and TV. That was it! I tested it again with the amplifier on at 1 kW and there was still no problem. I wound the HDMI cable onto the split-core chokes, fired up 80 meters again and there was no lockup.

I wanted a more permanent fix so I searched eBay and found HDMI cables with ferrite chokes in each end at a reasonable price. I ordered two HDMI cables, which solved the problem.

Another plus was finding that USB cables with ferrite chokes installed are available. That took care of my computer interface problems. There are several sources offering these cables, which can be found by doing a quick Internet search. — *73, Dave Metzger, K8GVK, 895 Haslett Rd, Williamston, MI 48895-9313*, **k8gvk@arrl.netyou**

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