Volunteer Kittiing –New Experiences and Troubleshooting - Part 2
Rich Fowler, K8MEG

The kits from 4SQRP are not difficult, but often offer opportunity for beginners, and the somewhat seasoned builder, to pay attention to details. I can relate to having pride and confidence in my ability to assemble a kit. In my haste, I have installed IC upside down, diodes reversed, had cold solder joints, solder bridges, etc.

Sending kits to hundreds of builders, you probably could imagine how many different scenarios you could run into. I was pleasantly surprised how rewarding it is to be a kitter. To come alongside a fellow builder and help them achieve success is a joy! This article will tell about some the experiences I have had. Hopefully you can relate and smile like I did!

The accuracy of the QRPO is 2%. To obtain that accuracy 1% resistors are used determining the value by 4 color bands. Many of us remember reading resistor value for the first 3 bands. This is the rule for 5% resistors or 10% resistors (only found in some of our personal stock drawers). Some emails were about missing resistors and miscolored resistors based on reading color codes and measurements. The best way to determine component values is to measure!

With the power requirements being low, resistor sizes are smaller. One source of resistors sent 1/4W resistors that look like 1/8W resistors. Just about all components are small with print that needs magnification to read. If the component bags are not emptied into a cookie pan or other container, the potential for a component to fall on the floor and be lost is greater. Request for missing parts is granted because we all have been there.

I remember a time when I emptied a tube of ICs to have a bunch fall on

the floor. Stepping on one and having it imbedded in my shoe. One of my received emails was from a fellow who dropped an IC and in the process of looking for it he stepped on it and crushed it. Good thing he wasn't bare footed. He requested a replacement. I sent him one, but I asked why he didn't straighten out the pins and use the old one. He threw in the wastebasket and his wife emptied it into the trash container so I was too late.

Of course many of us have installed an IC with a bent leg tucked under the IC that we didn't notice until after we had soldered it in. No big deal! No need to remove the IC, just push a resistor lead through the hole and solder it to the IC pin. Take care as to not overheat the IC pin as it could cause the inner connection to the substrate to be undone.

Several kit builders have had trouble calibrating the QRPO. Most of the time, I recommended touching up their solder joints. I always get the response about having looked for bad solder connections and found none. Again, I suggest that they reheat all solder joints with some fresh solder. Miracles happen as a result.

Maybe you have never installed an IC upside down, but some kit builders have, including me. The question becomes how do I remove the IC without damaging the PCB? Whatever technique you try to save the IC offers the potential for damaging the PCB. Destroy the IC by cutting the legs away at the body of the IC. Heat each pin and pull out from the top. Use a solder sucker and solder wick to clean the holes.

All kits have indicators of things not working. Most have power sources that can be measured and outputs of some sort. Observation is the starting point. Measure and look for correct component values and the proper place. Sometimes it is obvious, but many times it is not. Most schematics do not have voltage measurements except for power and maybe the output. Output is anything like audio or voltage or power.

The usual procedure is to trace forward using the schematic. Some test equipment may be necessary such as a scope and/or meter. It might take some guessing as the technical level might be above where we are, but it will take us to the next level.

There is one thing that has always been my encourager. “Someone has done this before, I can do this!” If you need help, ask for it. Many kits are made available for your learning experience. Try not to blame the club, designer or kitter when something doesn't go right. Take the challenge and stick with it until the end! Building kits and making them work is very rewarding! Having a role as helper is great fun.