

Ham 91H – ASV Maker – Update
Dr. Marc & Rosemary © 230311

1. The Digital-Radio Maker-Day at Dream Point Ranch was fabulous. With over 20 in attendance, there was a flurry of activity.
2. We are looking forward to more nodes on the Party-Line Net on Monday evening. I think about a dozen are working now.
3. Not everyone finished, not everyone had all needed info, and we make new discoveries every time we have a build. Then there are reminders that some miss.
4. The complete instructions are on the website at <https://www.evergreencg.org/index.php/hamvoip/>.
5. Build the hardware.
 - a. Amazingly, only two mics had the same color wiring.
 - b. When you cut off the mic connector, make the remainder long enough you can see the wires.
 - c. Look on the connector pin numbers to identify the wire color, rather than take the mic apart.
 - d. Correlate those colors to the instructions Ham 91D.
6. Download and initialize a micro SD card. Plug it in the Pi.
7. For initial set-up and configuration of a node, a wired Ethernet connection is required.
 - a. When powered up, the node will state the IP address. Use this for a Putty connection.
 - b. Go through the set-up process shown on the website.
 - c. Then make the connection to AllStarLink.org to affirm your node is operating.
8. Raspberry Pi model 3A+ is the least expensive at this time, but it has a couple of limitations requiring a work around.
 - a. No hardwired Ethernet is available, so the initial microSD card configuration must be done on a Model 2B+, Model 3B+ or Model 4. Then the card can be moved back to the node Raspberry Pi Model 3A+.
 - b. A single USB port is available. This is used by the radio interface card. If a second connection is needed to supply power to a computer speaker, get a simple USB splitter cable (\$7).
9. Once you get your node home, several things will happen.
 - a. When you turn on the node, after about 30 seconds or so, it will state your IP address. Write it down.
 - b. If it does not, you are not connected and you will need to hardwire your Ethernet connection.
 - c. You can operate hardwired or on WiFi., but initiation must be hardwired for the software to find the computer.
10. Reboot your node. Listen for the IP address. Write it down.
11. Following earlier web instructions, connect via Putty to the node.
 - a. After login, the Admin Menu screen will appear.
 - b. If you are planning to operate WiFi, scroll to 7- Configure the WiFi.
 - c. Unplug Ethernet, reboot again, listen for IP address. Write it down.
12. At this point, your node can call out but cannot receive calls.
 - a. It is necessary to configure your network router to allow port forward 4569 UDP to Raspberry Pi IP address
 - b. Article Ham 93A gives more details. It is fear of unknown more than reality that makes it seem scary.
13. A few software modifications are required for the COS / PTT LEDs to flicker properly.
 - a. Ham 94A & B have instructions.
14. The node has a hardware and software gain control. Different set-ups require changes. See Ham 91 F.
 - a. For an Alinco grade mic, set RxA = 500, TxA = 500, TxB= 0, TxDSP = 500, hardware Pot about 12:00.
 - b. For Alinco knockoff mic, set RxA = 600.
 - c. For Simplex node, set RxA = 200, TxA = 55, TxB= 0, TxDSP = 500, hardware Pot about 8:30 – 9:00.
 - d. If you switch between Simplex and Alinco, make the RxA, TxA, and pot adjustments.
 - e. Tweak as necessary.
15. These are reminder points. Details are in the articles.
16. Building anything is a character builder.
 - a. It illustrates how well we handle fear, frustration, and disappointment.
 - b. You get to redo, reconfigure, and retry. This is followed by rejoice.
 - c. You can do this. We know. We have watched too many be successful to accept that someone just cannot do it.
 - d. Evergreen has one of the most involved and active Maker groups in the region, perhaps larger.
 - e. Suck it up, Buttercup. Then giggle with delight at your own success.
17. Life is good. Enjoy!

| 8pin | Alinco | mic |
|------|--------|--------|
| 1 | mic | white |
| 2 | PTT | red |
| 3 | down | yellow |
| 4 | up | green |
| 5 | 5v | brown |
| 6 | rx | orange |
| 7 | mic E | shld |
| 8 | grnd | blue |

