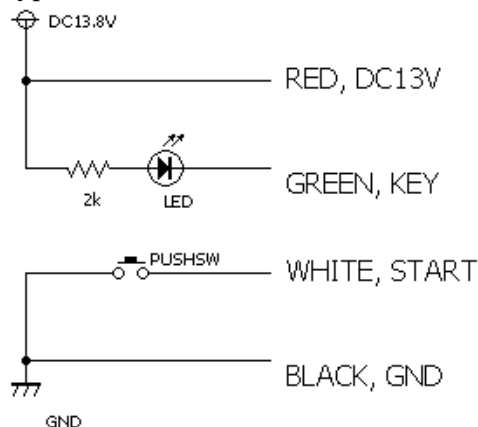# AH-4 Automatic Universal Controller (Interface)

⊞ Background

In July 2005, I put LW antenna using ATU ICOM AH-4 on my apartment's veranda. And for controlling this ATU, I was required to make a universal controller (interface), because my rig is YAESU FT-847M not ICOM.

There are some introducing pages about universal controller (interface) of AH-4 on the web. I show the typical one.
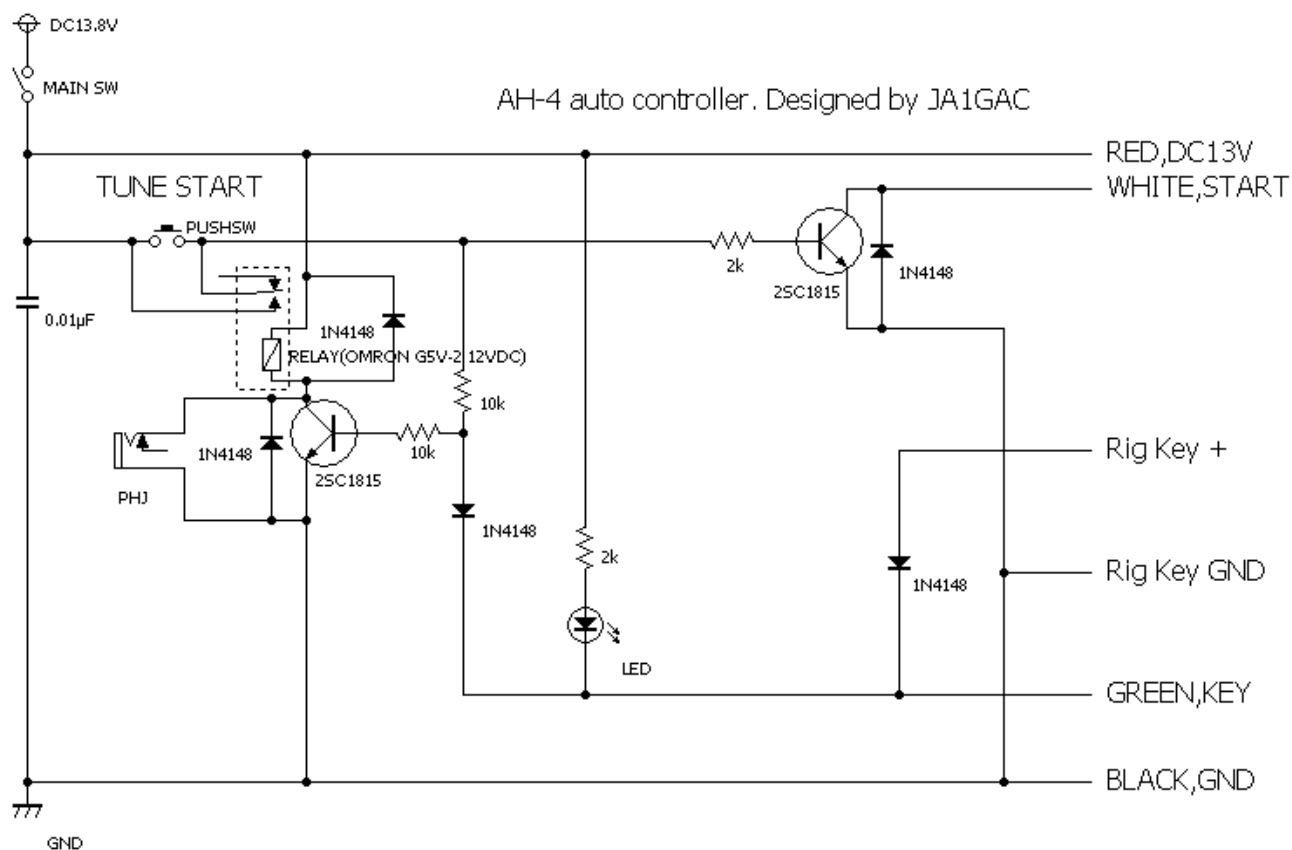

These conventional controllers are very easy to make. But for operation, following manual processes are required.

l Set the mode of rig to CW, and set the output power to the range from 5 to 15W.
l Transmit carrier.
l About 0.5s after, push the start switch and keep until the LED lights up.
l After the LED goes off, stop transmitting carrier.

These manual processes are bothersome, so I designed the circuit for automatic tuning.

⊞ Circuit

By using this circuit, tuning is achieved by pushing the start switch once shortly. And the radiation power from antenna is suppressed to only 0.3W specified by AH-4 because the transmission of carrier is started at the request of AH-4. So, you don't need to worry about affecting to other stations working in band.

Circuit is simple (using two transistors), so making is relatively easy.

RED, WHITE, GREEN and BLACK show the color of cords these are included in control cable of AH-4.

Jack is for remote control (tuning is started by short). You can eliminate this jack, if you don't have a plan of remote control.

✚ Usage

Every time when you use AH-4, keep the MAIN SW on.

l   Set the mode of rig to CW, and set the output power to the range from 5 to 15W.

l   Push the start switch once shortly.

When the LED goes off, tuning has been achieved.

Please be careful with the sound of transmitting carrier during tuning. If some error is occurred, carriers are transmitted twice during tuning. If you hear the CW sound twice, please check the output power or antenna.

The movie of tuning is here.

l   First, when carrier was transmitted, the SWR meter showed high SWR (>5).

l   Start switch was pushed and tuning was achieved.

l   Finally, when carrier was transmitted, the SWR meter showed about 1.0.

I am waiting your impression, etc.

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Top