706: Computer Control and Soundcard Interface

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Icom 706MkIIG Computer Control and Soundcard Interface

Interfacing the radio to your PC has too many "way-cool" advantages. Computer-enhanced radio control and programming, automated logging, and a multitude of digital soundcard modes. See my [Getting Started in PC Soundcard Digital Modes](#) page.

The 706 has the usual 1/8th″ CI-V remote control jack. To connect to a computer, you must purchase the Icon interface for $140, and a soundcard interface for $100 - OR <u>NOT</u>! This circuit will cost perhaps $25 (with case and cables and plugs) and does all these neat things:

1. CI-V to RS-232 data interface for radio computer control
2. RTS to PTT switching
3. DTR to CW Key switching
4. Audio to/from computer soundcard (not shown in schematic)

Notes:

1. No one but you are responsible for mistakes/damage! This circuit, if improperly built or connected, could damage your radio and/or your computer! Work carefully! Double-check everything! All I can say is, mine works fine — no guarantee yours will.
2. Chop a 6-foot serial (RS-232) cable in half and use it for connections. Ring out and document the appropriate RS-232 pins to wire colors. Attach wires to PCB. This saves having to solder the RS-232 plug.
3. See page 6 of instruction manual. Use the 13-pin DIN plug that comes with the radio.
4. Get a Radio Shack 6-foot patch cord with stereo 1/8th″ mini-jack on both ends. Cut in half and use for audio lines from PCB to computer soundcard. This saves having to solder the 1/8th″ plugs. Tie both channels together or leave ring floating.
5. Get a 2x3x5 plastic box. Dremel-grind mouse holes along top edge, three per end, for cables. Put cable ties on cables. Pinch them into mouse holes with lid. This is much easier than running cables through drilled holes (they will always be twisted, Murphy, 100% of the time, before you get done).
6. Make a cable with a 1/8th″ mono jack for the CI-V connection.
7. Make a cable with a ¼th″ mono jack for the CW-KEY connection.
8. Dress all shielded cables at PCB connections with heat-shrink (avoid a lot of shorts)
9. Dress both cable bundles with black plastic spiral-wrap (R/S has it).
10. If you run QRO and/or a lot of RF in the shack, you'll probably need isolation transformers, and perhaps ferrite chokes, in the audio lines. Try chokes first.

You'll end up with something line this:

Computer side cables:

5 conductors to RS-232 9-pin plug:
Pin 2 - DRX
Pin 3 - DTX
Pin 5 - Gnd
Pin 7 - RTS
Pin 4 - DTR

1 audio line to soundcard line-in. From ACC #12 Lt Blue

1 audio line from soundcard speaker out To ACC #11 Pink, via 50k PCB pot

A black box (with PCB inside) in the middle of a 6-foot assembly
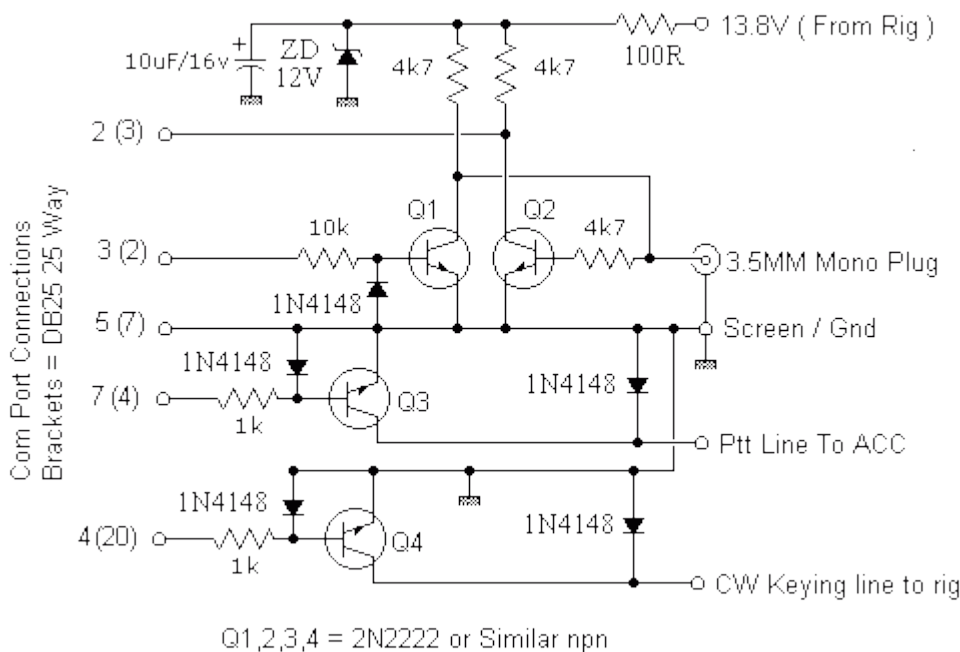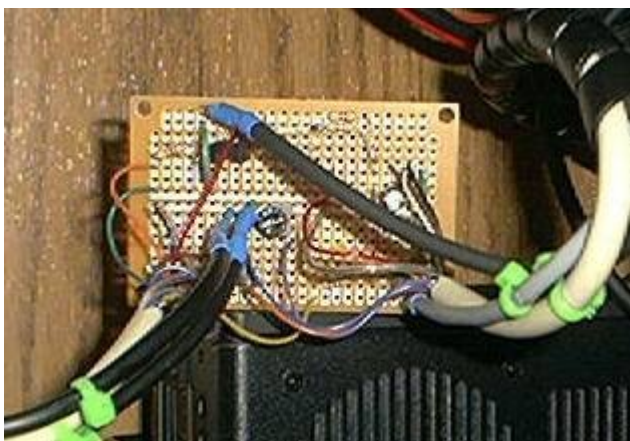
Radio side cables:

5 conductors to 13-pin ACC plug:
Ground to pin 2 (red)
PTT to pin 3 (orange)
13.8 to pin 8 (gray)
MOD-in to pin 11 (pink)
AF-out to pin 12 (light blue)

2 conductors to 1/8th" CI-V plug

2 conductors to ¼" KEY plug

CI-V Interface with PTT and CW Keying, by G3VFP - Own Risk. Audio Lines not shown - see below. Building this circuit will save you over $150.
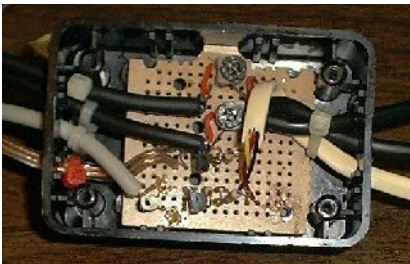

My second interface includes CI-V, PTT, KEY, and Soundcard.
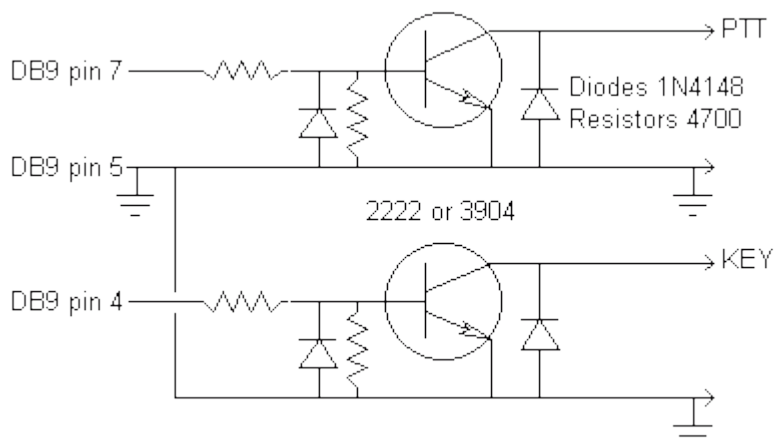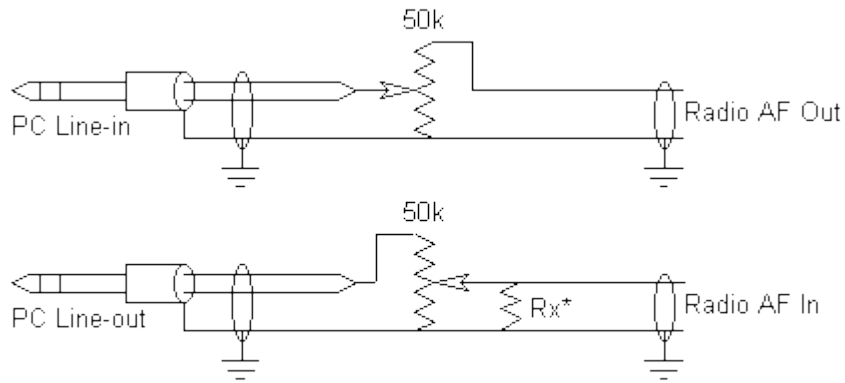
If you don't want CI-V interface, use this simple, non-isolated schematic in shacks with low RF density.

* Rx should probably be 600 ohms to match mic input of radio.

My first interface - does not include CI-V.