I have a lot more details..but this is the main stuff....If you want to you can put my call for reference and my email of gheath1@nycap.rr.com If you have any questions or comments please feel free to email me. The Schematic with the Isolation transformer, I got from Steve Ford. I emailed Steve Ford, WB8IMY and he said it was ok to use the schematic, just give the ARRL credit along with his name and call. It was from an ARRL Psk31 article last year.
His email address is sford@arrl.org
It would be great if you could put up the whole thing I wrote, but I understand it takes up space and space is $$. I did allot of messing around for 3 weeks to get this to work, and these were the mods I had to do. The rest did not work. Thanks for hanging in there with me and giving me encouragement. One of the optoisolator circuits is yours and that other fellows. I have not sent it to anyone..except to you, so you can understand my hookup.
Thanks. Greg Heath KB2QQM

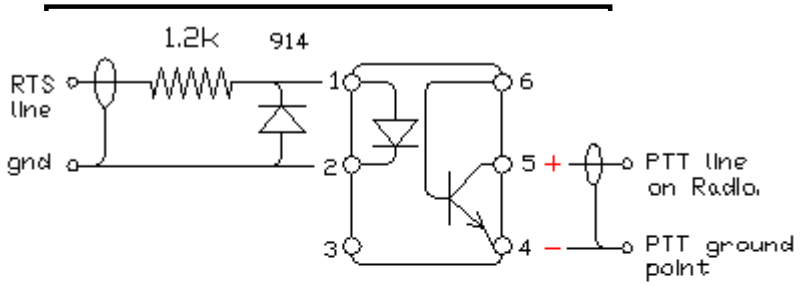
REF A: FT 840 accessory panel "AF OUT" -use a shielded Cable that fits the RCA type jack on the back of the radio.. Use a Radio Shack 274-378 stereo plug that has an RCA female on one end and a Stereo plug on the other
and plug it into your Sound Blaster 16 "Line-In" (if the run from the computer to the rig is a long one, or you
experience interference on transmit use a Radio Shack 1:1 Isolation Transformer somewhere in the line. Its part Number is 273-1374)

REF B: Use a Radio shack "Y adapter" # 42-2463. Before you plug it in. Cut ONE of the Stereo jacks off- right at the Jack connector, and solder on a "MONO JACK" on to the end of the wire. The white wire is the "Tip" and
the black wire is the "Ground".. You will not use the extra red wire, so cut it off. Once you have that accomplished, plug the "Y adapter" into the Soundcard "Line-Out". Into the stereo part of the "Y Adapter" you will plug in your stereo speakers. Into the Mono Jack you will plug in the wire that will lead to your "Mic" input on the front of the rig. You will have to build a Mic-input circuit that will help you with putting out a clean signal and that schematic is included above. On the Yaesu FT 840, Pin 8 is Audio, and Pin 7 is Ground. Pin 8 is located at the "Middle position" and Pin 7 is located at the "1 O'clock position. In the schematic for the circuit. The tip wire coming from the "Y adapter" is connected to one side of a 47k ohm variable resistor (potentiometer) and the other side of the
potentiometer is connected to the ground side. The middle of the potentiometer is connected to the 1:1 isolation transformers "white" wire. The Ground wire is connected to the ground side of the potentiometer and the
"Black" Transformer wire. The only other 2 wires are the Yellow and Red wires, located on the other side of the Isolation transformer. I connected the Yellow wire to the "#8 mic audio pin" and the "Red" wire to the "#7
ground pin" . I chose to house my circuit in a small box with a removable cover so I could adjust the potentiometer for the correct amount of mic gain. I used an 8 pin female mic jack to plug in to the rig...just like on the microphone.

REF C: Transmitter Keying: My computer may differ from yours, but heregoes. My computer came with a DB9 male plug. I went and got a Radio Shack DB9 female to DB9 Female RS232

serial port cable and cut one end off. The cable houses 9 wires (colorcoded) plus a braided ground cable. The "YELLOW WIRE=GROUND and is the #5 pin and the Braided wire are ground. I stripped the yellow wire and set it aside. I did not use the braided ground wire. The "ORANGE WIRE=#4 pin" and represents the 12 Volt line. Ok.... you might also notice that the "BLUE" wire also has 12V on it. DTR Keying via the Serial port are wires "yellow" and "orange". That's what I used. Keying
the rig with RTS is the "Blue" wire and "Yellow" wires. As of 01/21/2000 the Digipan program will not work for me with the DTR keying. A new program is due out soon that will fix that software problem. If you use the Second
Schematic above or you use the WM2U website, the schematic is the same..Just look for the "Optoisolator circuit". It works like a charm. I tried the other transistor schmatics and met with failure.. the Optoisolator circuit works and is easy to build. If you decide to build it on perf-board..use a 6 pin holder for it..as the IC is about $3. Its your
call. When you are done building the Optoisolator circuit, Pins 4 and 5 of the IC....Pin 4 connects to ground, and pin 5 connects to the RCA input on the PTT Accessory panel on the back of the FT-840.

REF D: Input. Use Mic jack on front of rig, because there is no mic input on the back of the rig...bummer.



Make sure your radio PTT line has a positive voltage on it and it requires a pull-down to ground to activate.

RTS line is pin 4 on DB25 & pin 7 on a DB9 connector.

Ground line is pin 7 on DB25 & pin 5 on a DB9 connector.

IC1 is a 4n29 Opto Isolator or equivalent from Digi-Key, Newark or Radio Shack. I used a TIL111.

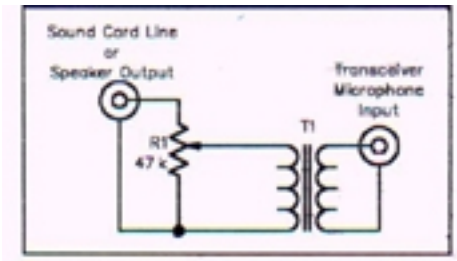


Figure 1—Use this attenuator circuit if you intend to feed the PSK31 transmit audio to your microphone jack. RadioShack part numbers are indicated below.
T1—1:1 isolation transformer (273-1374)
R1—47 kΩ trimmer potentiometer (271-283)