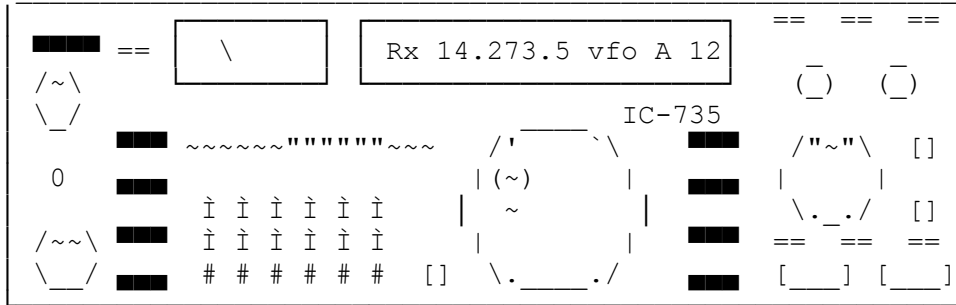


PSK31 interface isolation

By G8MNY

(Updated Nov 09)

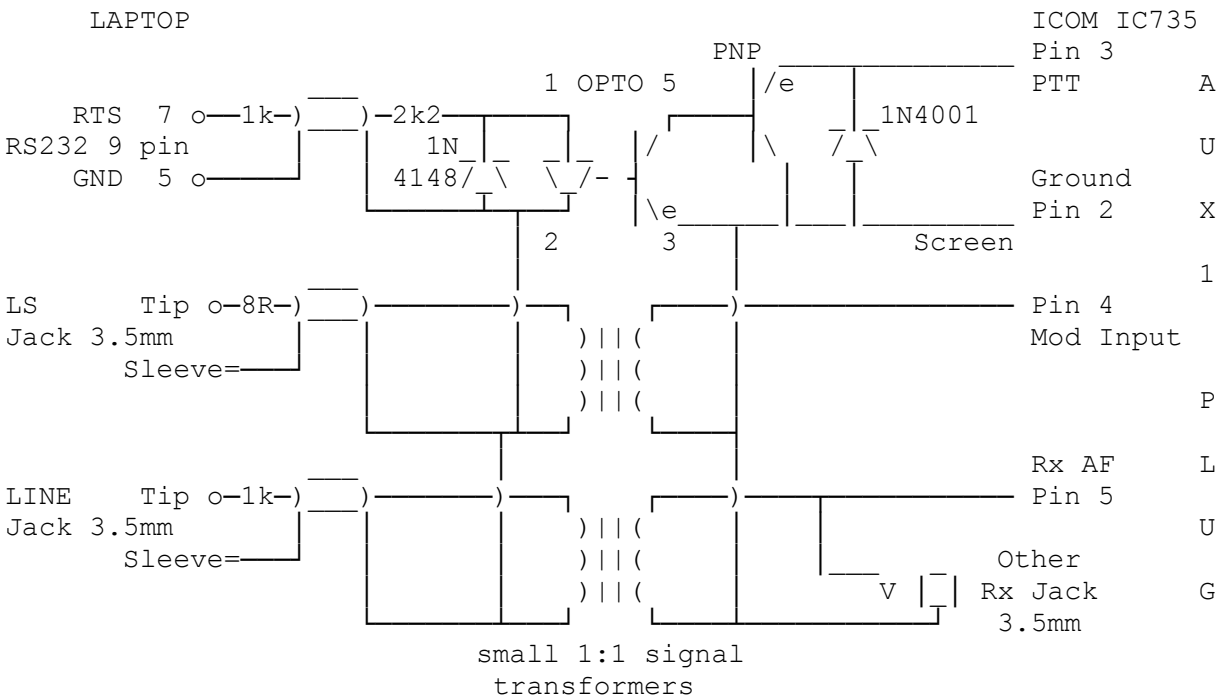
(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)



Having just got going on this mode with an IBM Laptop & ICOM IC735. I was concerned about damaging either with a direct connection!
 This applies to all modes like RTTY SSTV AMTOR etc, where a PC/RIG is connected to anything with medium to high current supply with a different earth or has RF currents!

So I have made an isolated barrier TO PROTECT THE LAPTOP's SOUND CARD FROM R.F.I. & getting ZAPPED & also the Rig from the Laptop's RF QRM. As well as doing that it also STOPS any HUM LOOPS & DAMAGING DC PATHS the can also burn out RIG's MIC/LS & the PC interfaces!

For this rig it gave a nice 1 plug solution...



Of course for other Rigs with different pinouts etc. refer to handbooks.

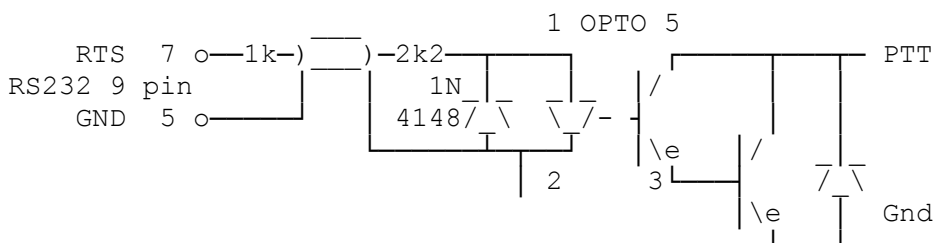
TRANSFORMERS

They need to be low capacitance primary to secondary & could be from scrap modems/answering machines etc. about 10mm cube in size. A 1:1 ratio is not that important as long as the Z presented does not attenuate the signal, & it is flat enough over the comms AF. If the transformer has tapings, these could be used to set the best signal level. On LS line drive, levels must be use not to saturate the transformers.

TX PTT

The RS232 port is initially protected by a series 1k in the plug to reduce the chance of zapping the laptop's RS232 port. (P.S. U will only do this once!)

The use of a PNP to follow the opto coupler increases the PTT current ability (so it could easily drive 50mA rigs) as well as keeping down the RS232 load current. If you can't find a PNP then use a NPN like this..



But the Opto & NPN may be less RF immune in this arrangement.

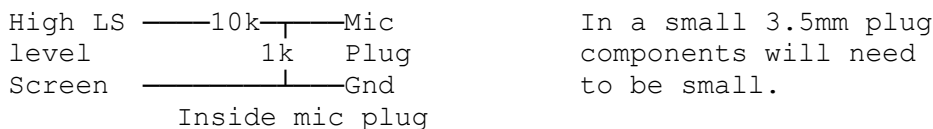
There are many types of opto isolators most should work OK once the pin outs are found.

SERIES Rs

A good idea but not essential is to copy the series R in the plug at the PC end if you can as this does stop some RF & excessive LS currents if the leads get shorted etc.

MIC SOCKET

If you using a mic socket (rather than line) for the input either on the laptop or the rig, you will need an attenuator ideally in the mic plug so that RF+hum pickup are attenuated to.



BOXING UP

The whole lot is mounted on stripboard, & housed in a small plastic box making sure the 2 sets of leads are kept away from each other.

IN USE

With a local aerial, this simple isolation significantly reduces the QRM compared to a direct connection.

With a small nearby SW PLL SSB Rx with a small whip aerial it produces a good demonstration of the mode & waterfall display to analyse signals.

Steve, G1KQH @ GB7COV writes...

As well as using a similar circuit, I also use a Plug in USB Sound Card which you can get NEW on ebay for a couple of quid each. Which again helps to save the PCs internal guts from blowing!

Why don't U send an interesting bul?

73 de John G8MNY @ GB7CIP