CAT

INTERFACE
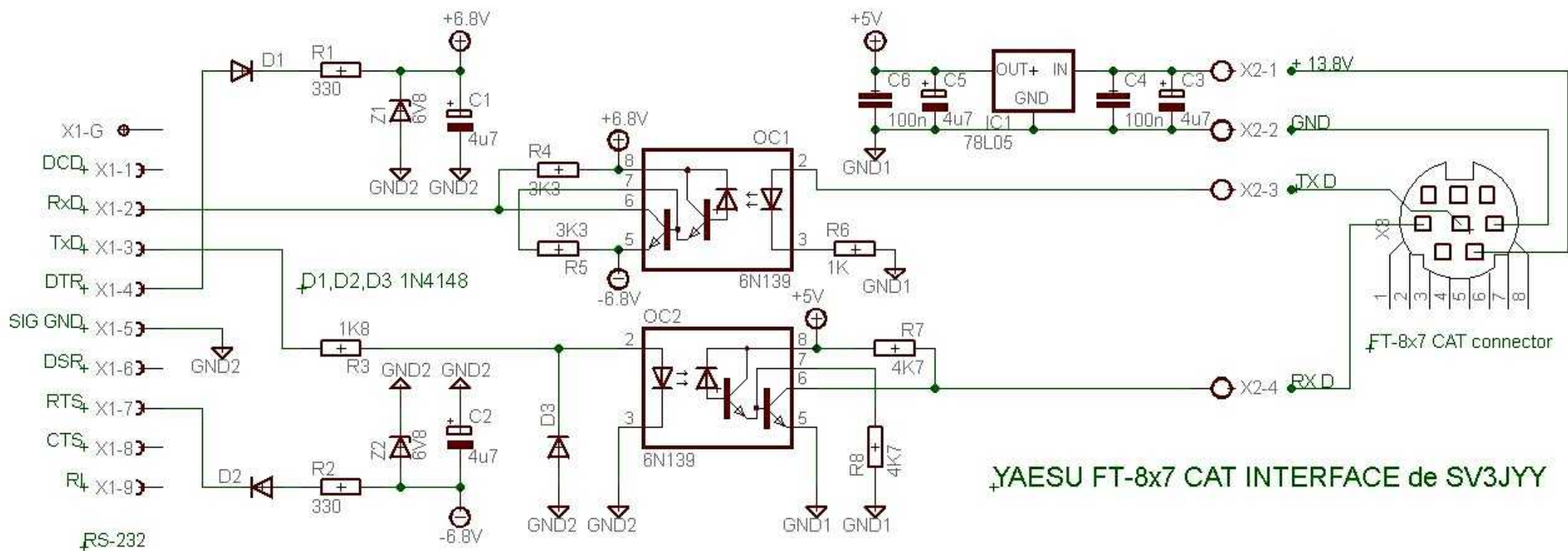## YAESU FT-8x7

SV3JYY

April 2010

v1.0

WARNINGS!

1. This is an advanced construction and should be made only by qualified electronic engineers. **I am not responsible for any damage of your equipment. Use this information at your own risk.**

2. You should be very careful with pin +13,8V of CAT connector. Though it is fused (3,15A) it is possible to damage your transceiver if shorten with TTL level pins TxD RxD or any other pin.

3. All rights are *not* reserved and you can copy freely.

4. This interface is tested only with YAESU FT-857. FT-817 and FT-897 shares the same circuits and pin outs. Probably it will work, but **I haven't tested yet**.

5. Please feedback to my email (my call sign at yahoo.com) a photo of your construction with a short description of your setup with your permission to publish it in this article.

YAESU FT-8x7 CAT INTERFACE de SV3JYY

DESCRIPTION

This circuit converts RS-232 levels to TTL maintaining galvanic isolation between your PC and your transceiver, protecting your hardware from high VSWR or QRN.

It does not need external power.

It works fine at maximum CAT (Baud) rate of 38400 bps.

It works with programs capable to raise **DTR logic level '1'** and hold **RTS logic level '0'** (like Ham Radio Deluxe, Super Control etc.) providing symmetrical power supply up to +/- 6.8V to OC1 with respect to GND2 (PC ground).

Symmetrical power supply increases reliability and compatibility.

OC2's 5V power supply with respect to GND1 (Transceiver ground) is provided through IC1 (78L05) and the CAT connector.
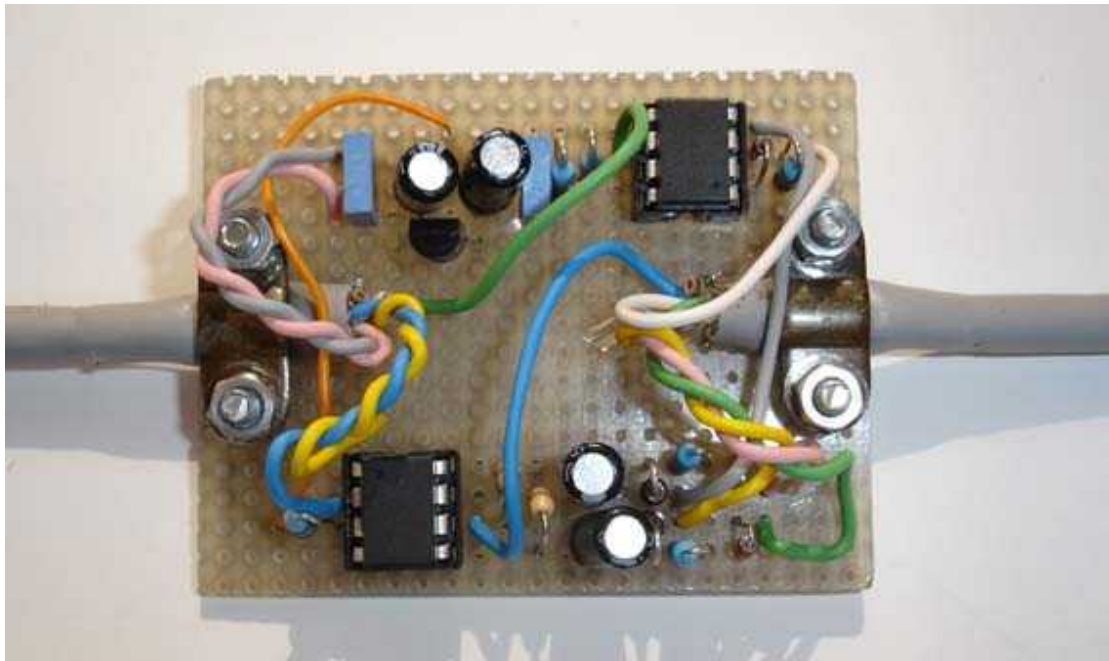
All parts are calculated for desktop use (Voltage between RTS pin7 and SIG GND pin5 about -10,5V without load).

It also works with USB to Serial converter made by Equip (Voltage between RTS pin7 and SIG GND pin5 about -6V without load) without modifications ☺.

If you have problems using this interface with laptops or USB to Serial converters try the following parts' value: R1=R2=100 Ohm, R3=1 KOhm, R4=R5=2.2 KOhm
Or try another laptop or converter ☹…

CONSTRUCTION

You can see the finished project at the following pictures. Keep TTL cable short. The RS-232 cable can be long enough to fit your installation.

The **8 pin mini din male connector** bought from FARNELL.
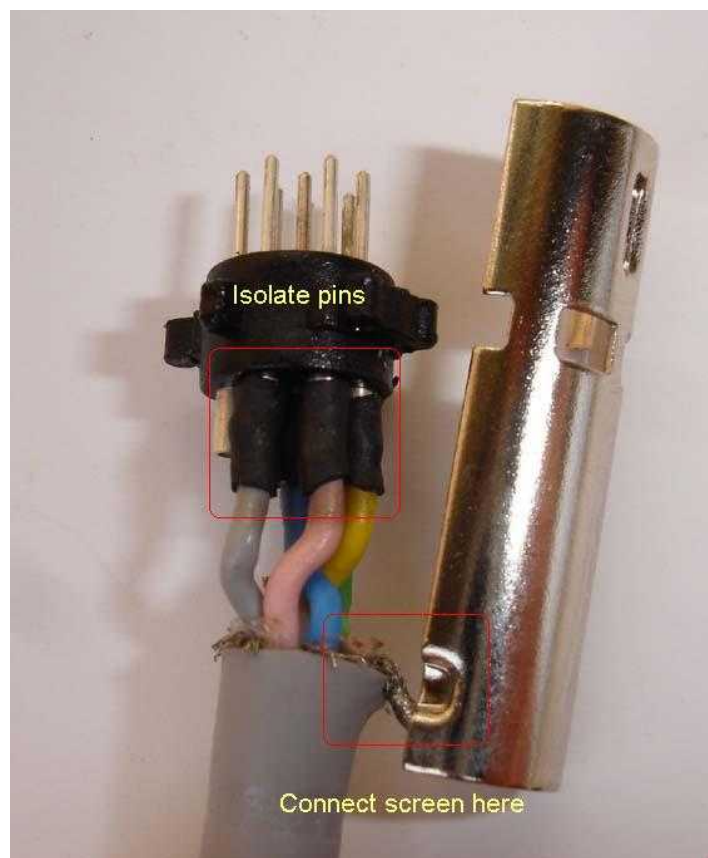
Order number:152210
Part number: 4850.181
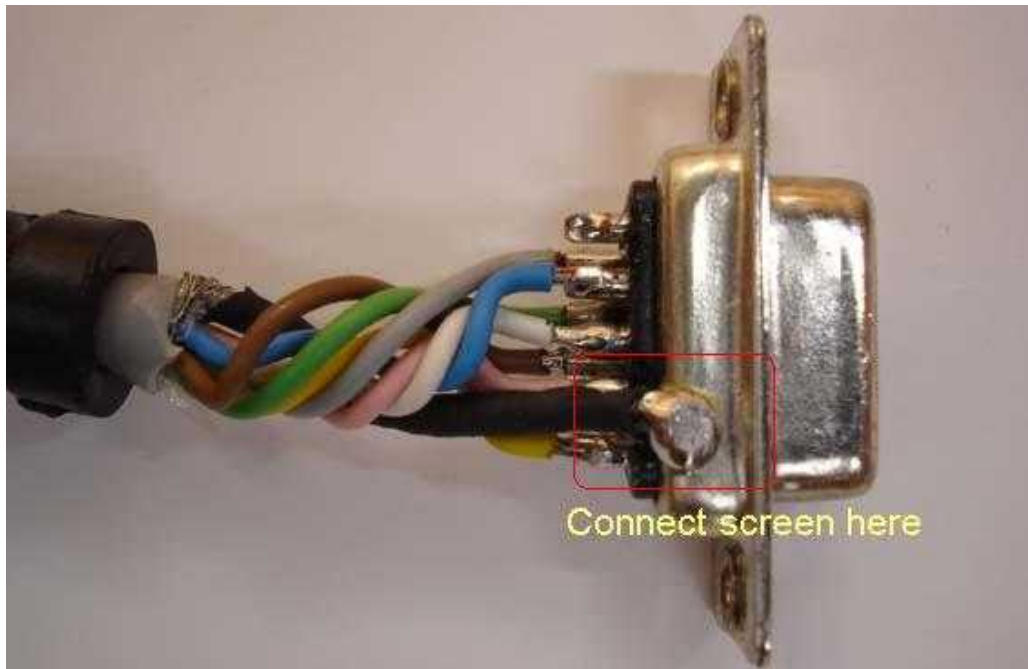Part description: PLUG, MINI DIN 8 POLE

You should modify this connector otherwise it won't fit Yaesu 's female CAT connector properly.
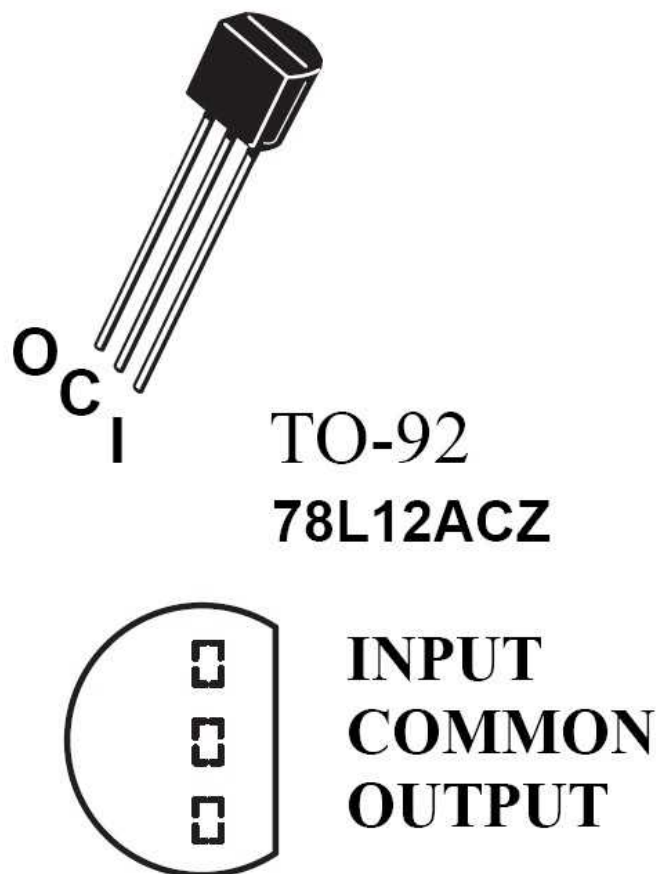

Soldering this connector is a real trouble… Do not use temperature over 250 C. **Be careful with +13.8V pin! Try to isolate it.**

Cables should be shielded connecting grounds to the screens at the one side only to avoid ground loops.

This is IC1 78L12 pin out.

TO-92

78L12ACZ

INPUT
COMMON
OUTPUT

SETTINGS

HRD connect window. Make sure that DTR is ON (checked) and RTS is OFF
(unchecked). Set speed at 38400.

Set transceiver's CAT rate *and* the available COM's rate at 38400 bps.
Set transceiver's CAT/LIN/TUN output connector at CAT.
Now you are ready to go…
Contrary to Murphy's Law… **IT IS WORKING!**

I hope you found this article useful.
Visit www.qrz.com/sv3jyy to download other homebrew stuff.
See you on the air!

73 de SV3JYY Aristarchos Kechagias