Solder Monkey's TQS Conversion Notes

Edited and added to by KBird. March 2018 (FLCS Also at End)

1. What I ended up with the following as a pinout for the TQS conversion. This is a minimally invasive mod.
2. As with many thrustmaster products, every switch comes back to a single return line. (common or row wire)
3. **You don't need diodes with a single row and multiple columns**. (ie a 1x3 or 1x6 Button matrix)

Now that I'm looking at my notes months later, I could have done better, some Colours are missing below...

On your colored ribbon cable: ****NOT LISTED IN ORDER PER CABLE ** but per TQS Button Order T1-T14**

No record ----- White Eraser Nub Push Button T1 (Eraser eliminated for X-Fighter POV HAT)

Yellow ----- Radio Up T2 (*added by KB)

Orange ----- Radio Down T3 (*added by KB)

Red ----- Radio Right T4 (*added by KB)

Brown ----- Radio Left T5

Black ----- Push In Switch on Pot T6 *** To Column with Next Wire (or Direct to Pin)

Black/White ----- Push In Switch on Pot T6 (Striped Wire) ***Row with Wire Above (or Direct to Pin)

White ----- DogFight Down T7

Red 2 ----- DogFight Down T8

Orange 2 ----- SpeedBrake Down T9

Brown 2 ----- SpeedBrake Up T10

No record ---- T11-14 are the 4 Directions of the Eraser Nub ie T11-Left ,T12-Right ,T13- Up ,T14-Down

Gray ----- Axis for RNG Pot (with Push Button Switch)

Purple ----- Axis for ANT Pot (with Center Detent)

Blue ----- Ground

Green ----- Nubby switch near eraser (*added by KB I used for 5v+ PWR to Handle)

Yellow 2 ----- Row or Column for all switches

Plus Add a single wire at +5v into the handle to PWR your Pots.

(*Kbird: I used the Green Nubby wire, to power the RNG and ANT Pots as the Nubby was eliminated when 1 replaced the Eraserhead with the X-Fighter POV HAT)

FLCS or F22 Pro Conversion Notes.

you've got a five wire ribbon cable coming out of the stick handle:

Green ----- Ground

Yellow ----- MISO

Orange ----- SPI SCK

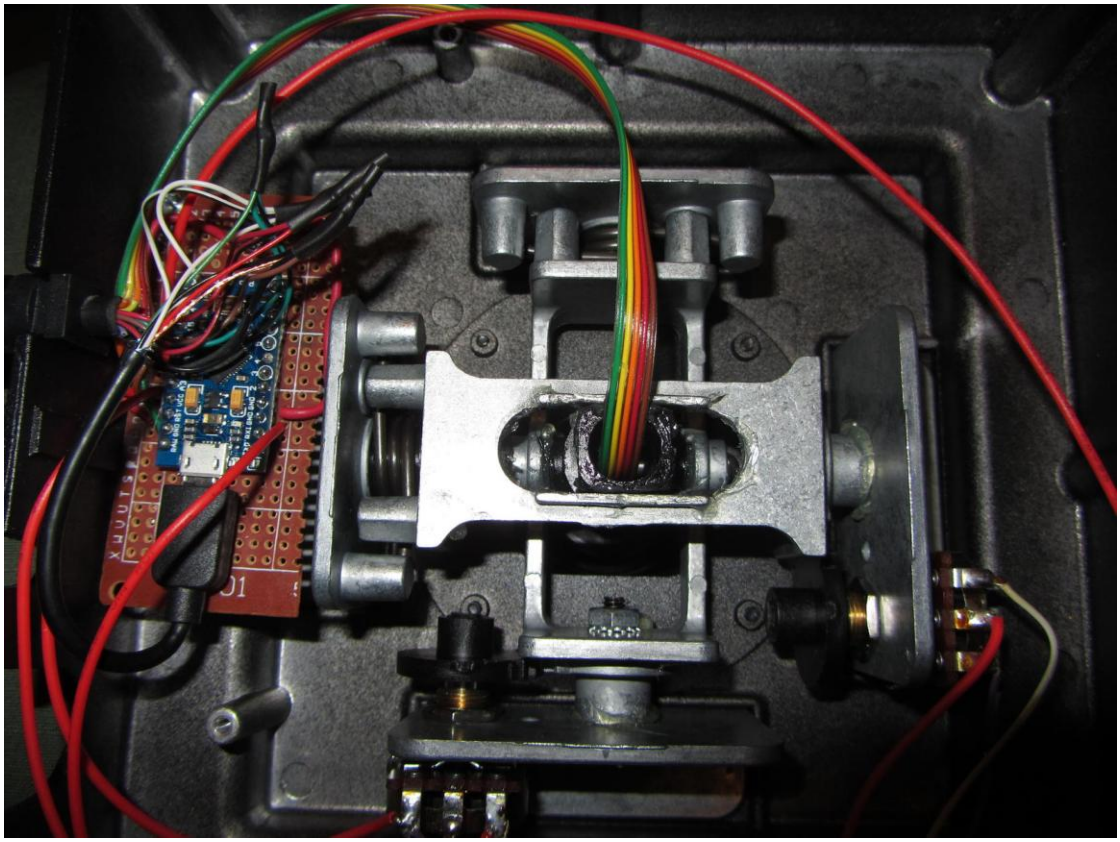
Red ----- CS (Your Axis)

Brown ----- VCC or +5v

Literally, it takes longer to build the mounting boards for the arduino than to solder the connections for the 22 switches on the FLCS (thank you shift registers and Mega_Mozg!)

Here is the bottom of an F-22 Pro - you only need to open the four screws at the base, remove the old circuit board and you're good to go. No need to open the stick.

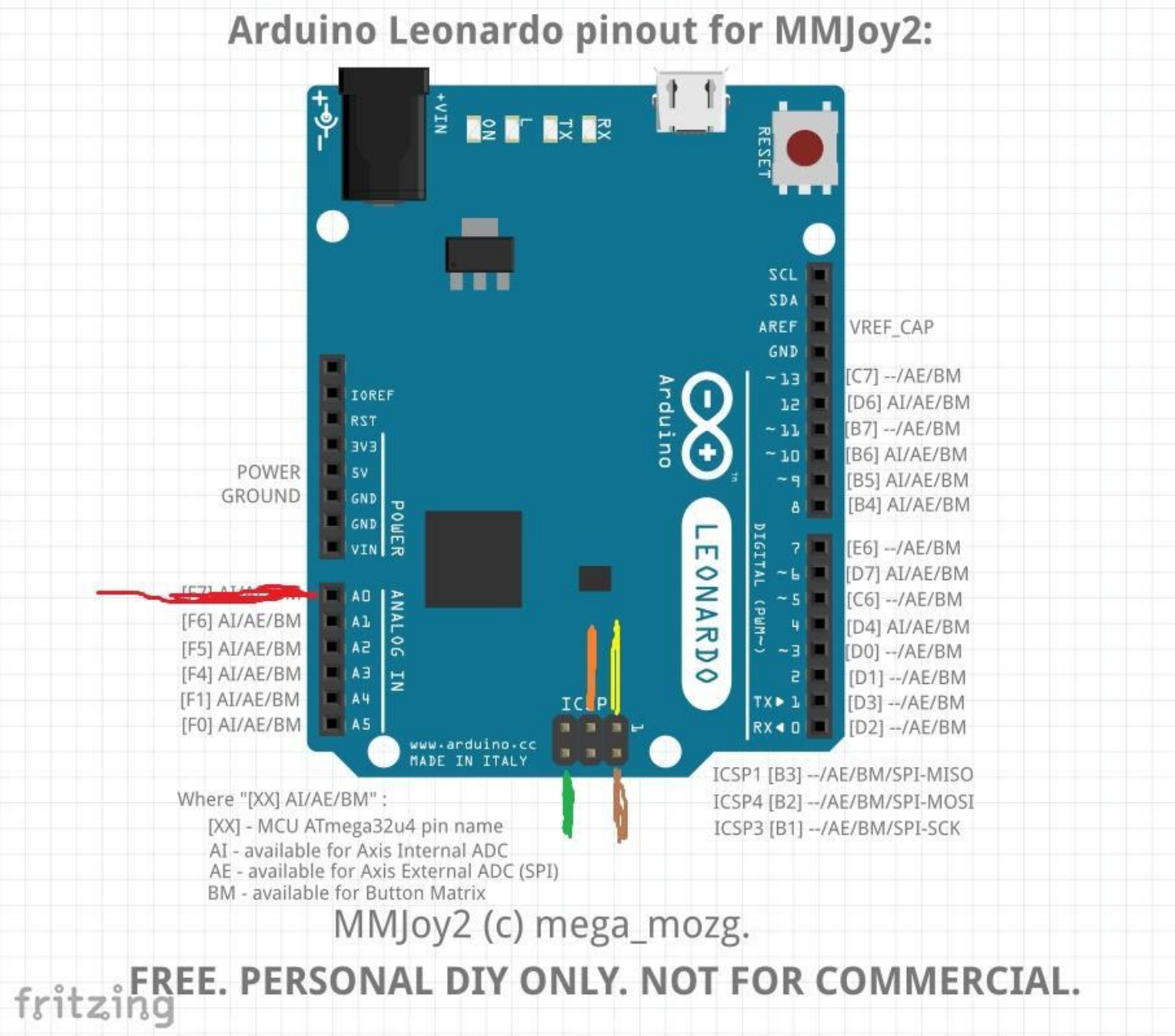
You can see the five wires and the arduino on the left.



To hook to your Leonardo you'll need to do something like the image below....

I didn't do anything with your Axis. Basically, they will go into two AI pins on the board and the pots get Ground on one side and +5v on the other. Hooking the Grounds and 5V parts of the pot is fine - less wiring. Just make sure that the middle pins go to separate wires and board pins.

From there, set that F7 pin as your shift register input. Set the shift register to 3 in the software and you should be able to see all 22 buttons once you upload and allow the device to reboot.



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