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REF: Engine Control - Sub-01B

DIY - Programming Interface

Here are two programming interface projects based on the same circuit.

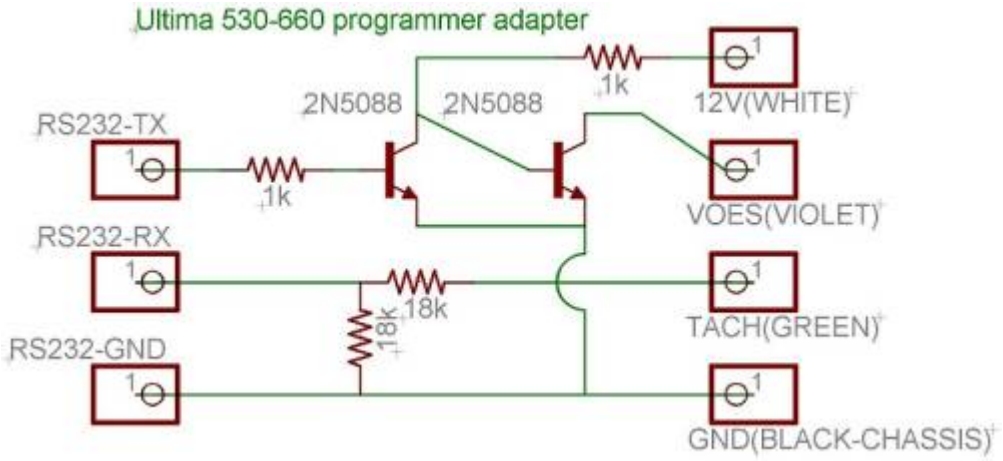
Originally Posted by Jtrapass (Post#20)
https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/74147-ultima-electronic-ignition#post1703764

27 September 2009

Ultima Programmer Project

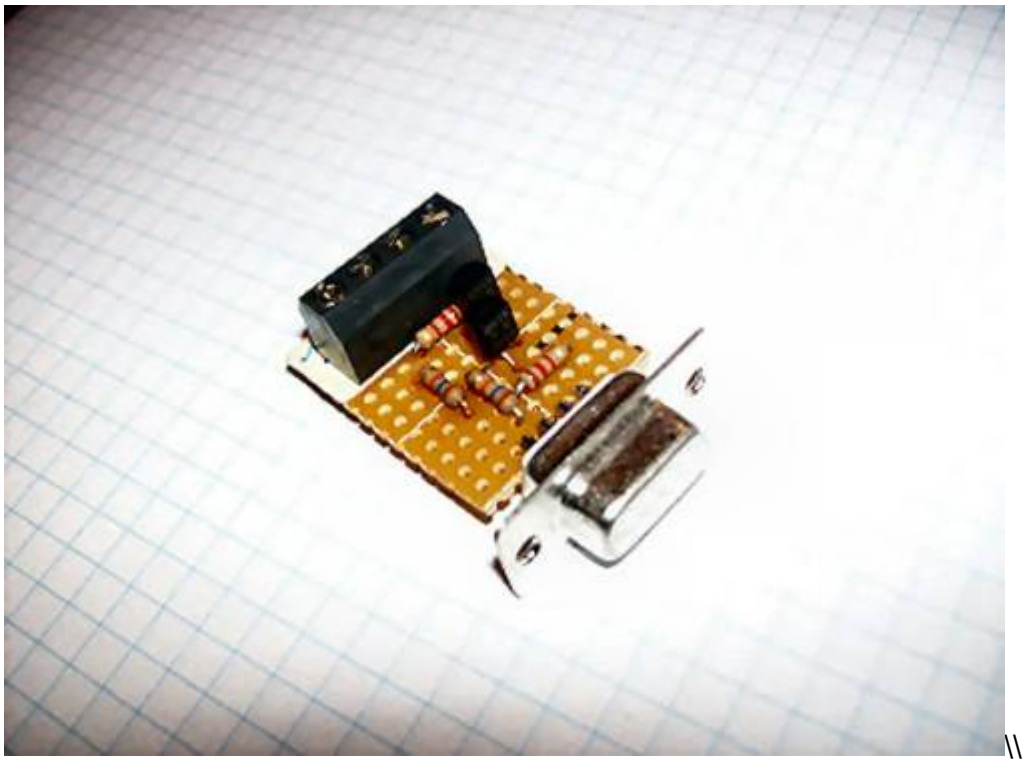
First, here's my disclaimer:
I have no interest in making more of these and marketing them. Dyna/Ultima is doing that fine. I made one for myself, and I'm satisfied with that. I also take no responsibility for damage to your computer or your bike if you try this and it doesn't work. if you're not comfortable building circuits, get help from somebody (not me) who is.

Schematic of this circuit:



Most of the parts should be available at any electronics store. I actually ended up using a 2N3904 instead of the transistor I listed above. Any reasonable NPN BJT should work fine. And for the resisters, they don't need to be exact, either. Anything close should be fine. You also don't need a pull up resister on that final output that connects to voes line because the voes port on the programmer has its own built in pull up resister of 1k. But you can add one if it gives you a warm and fuzzy or makes your circuit easier to test before clipping it on your bike.

It should end up looking like this:



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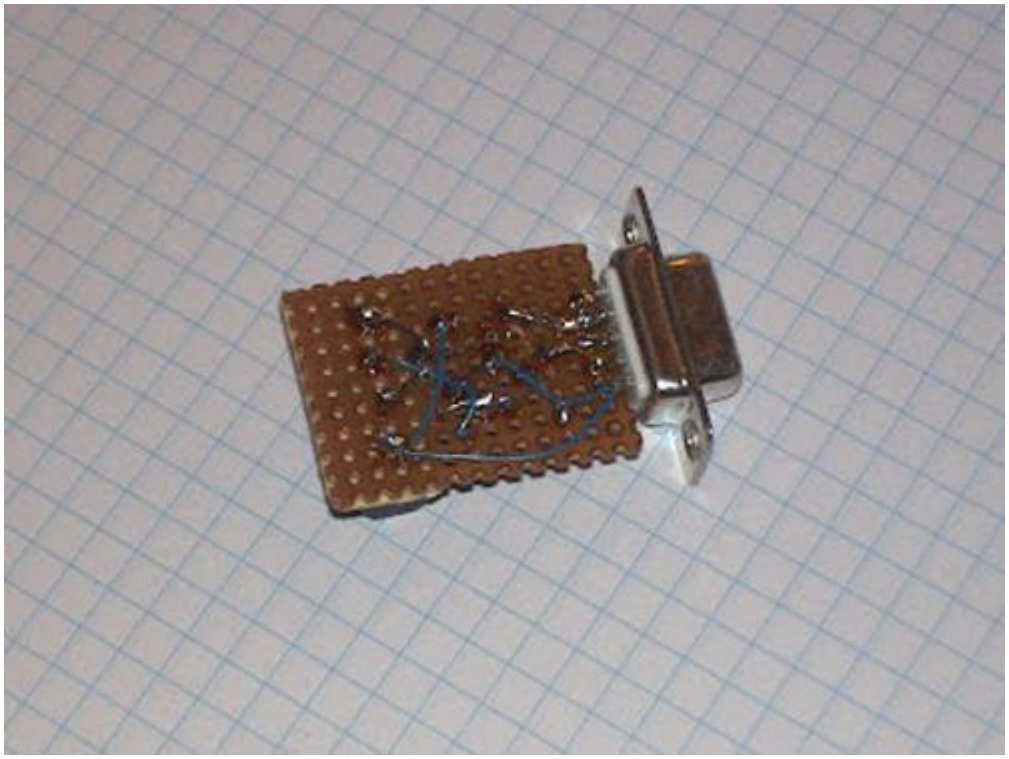
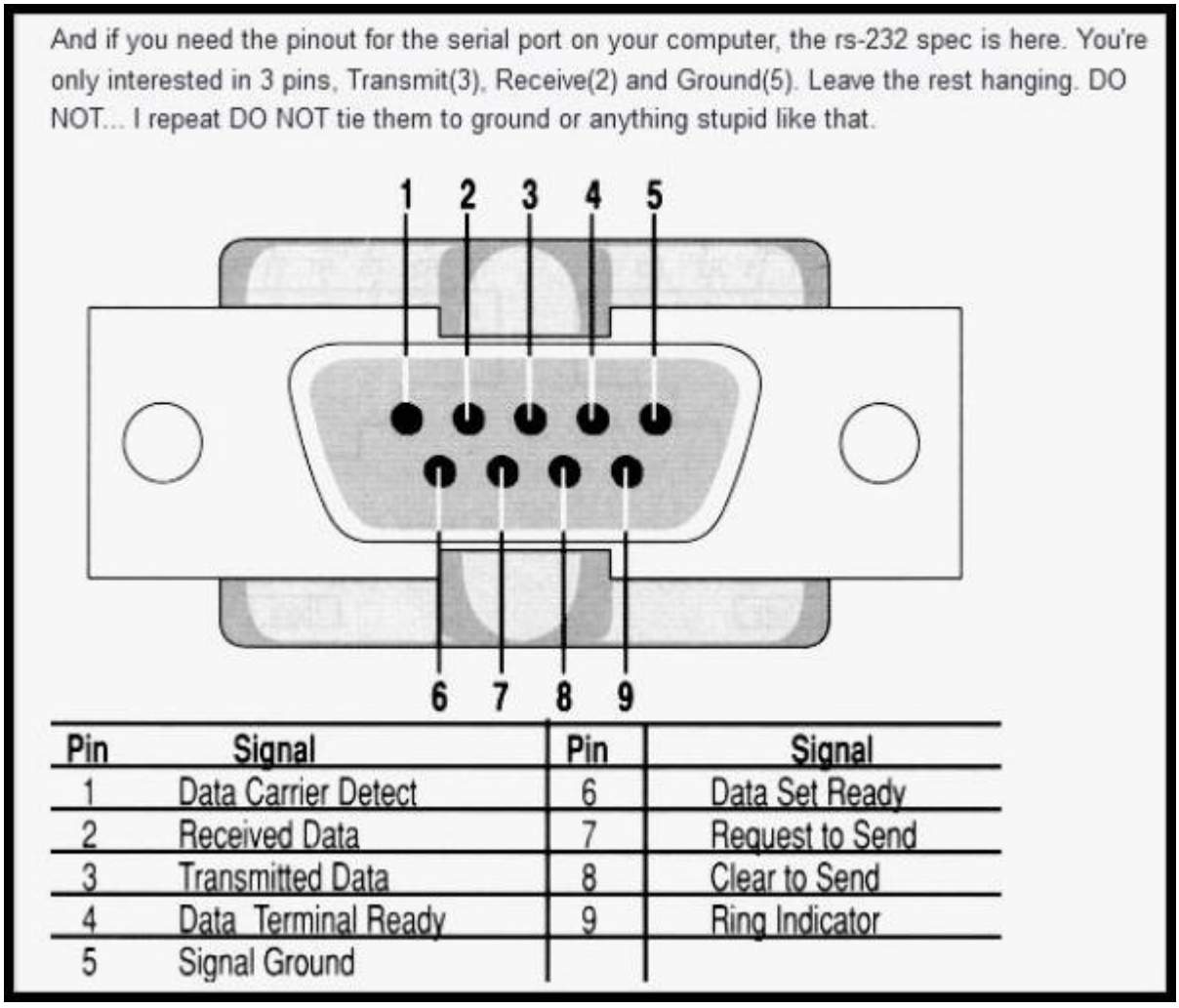




Download the hd curvemaker software and manuals here: http://www.dynaonline.com/skins/downloads/

Happy hacking. :)

Here is the second implementation of the same circuit.

Post#144 by billeuze
https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/74147-ultima-electronic-ignition#post1703764

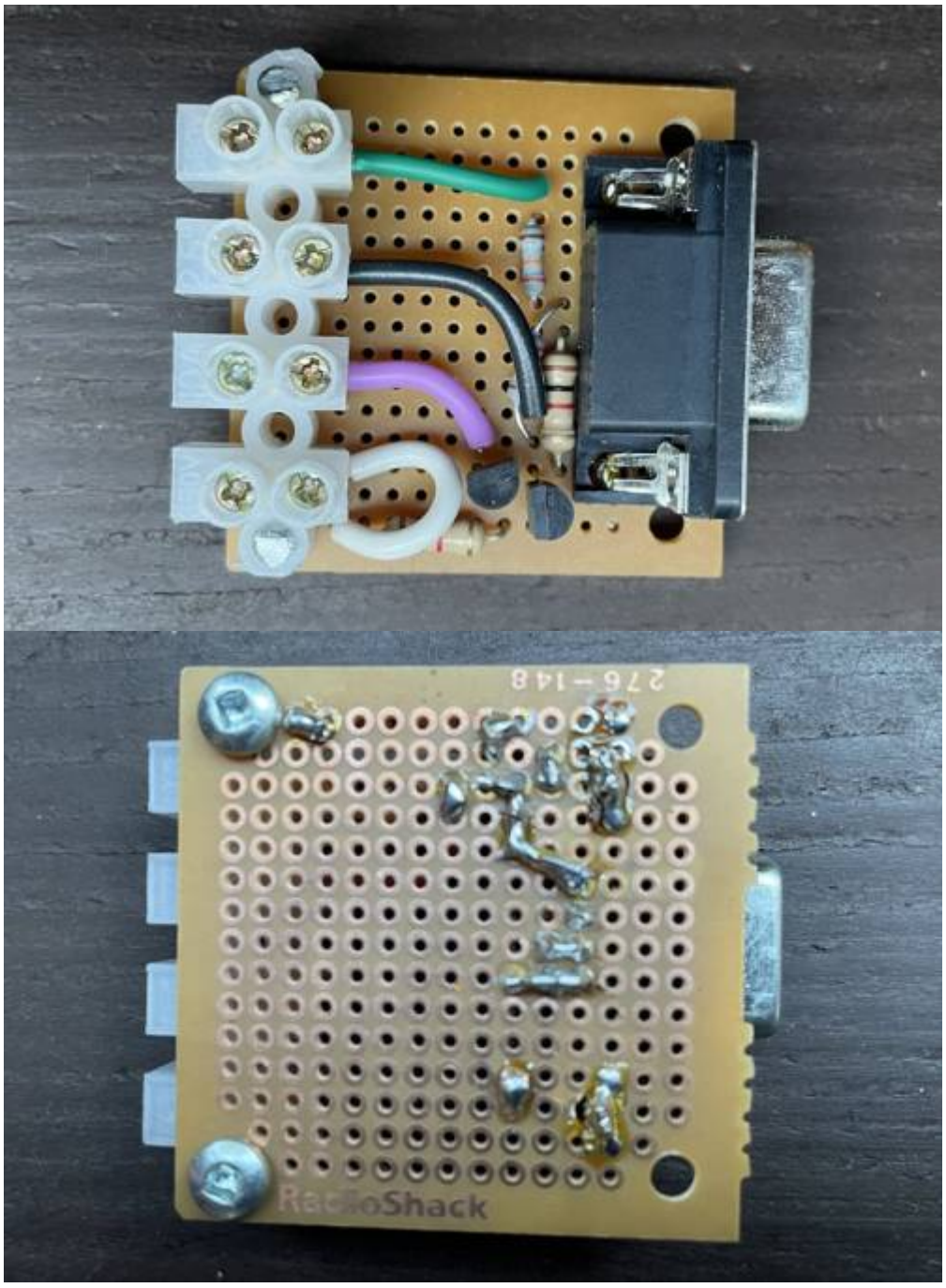
22 September 2024

Ultima Programmer Project

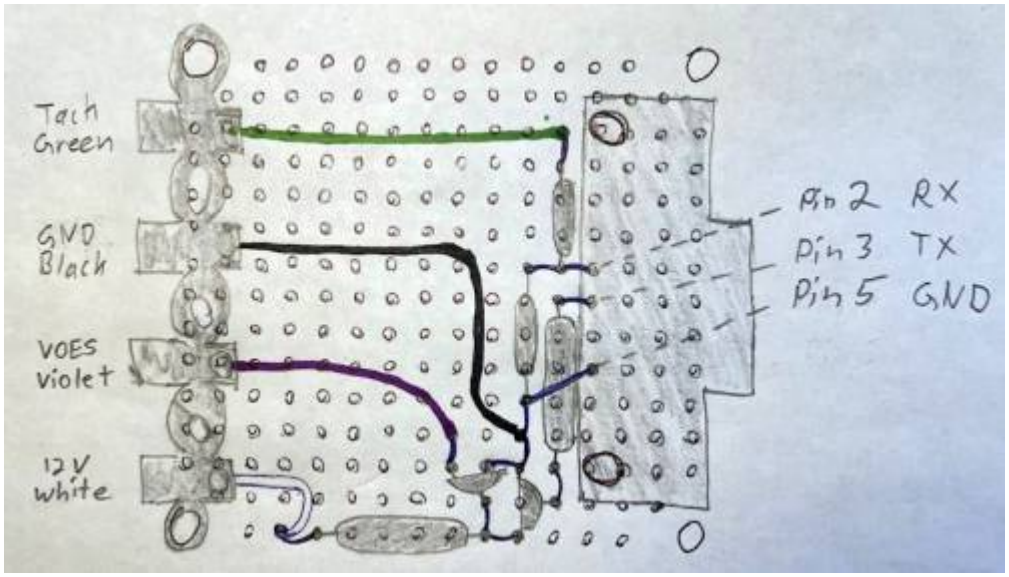
Yet again reviving this old thread. I finally got around to building the circuit Jtrapass shared in post#20 of this thread. And it works so, posting my results here:

This simple circuit replaces the $100 cable you can buy from Dynatech to program the Ultima ignition (or

the Dyna 2000i). Here is my version:



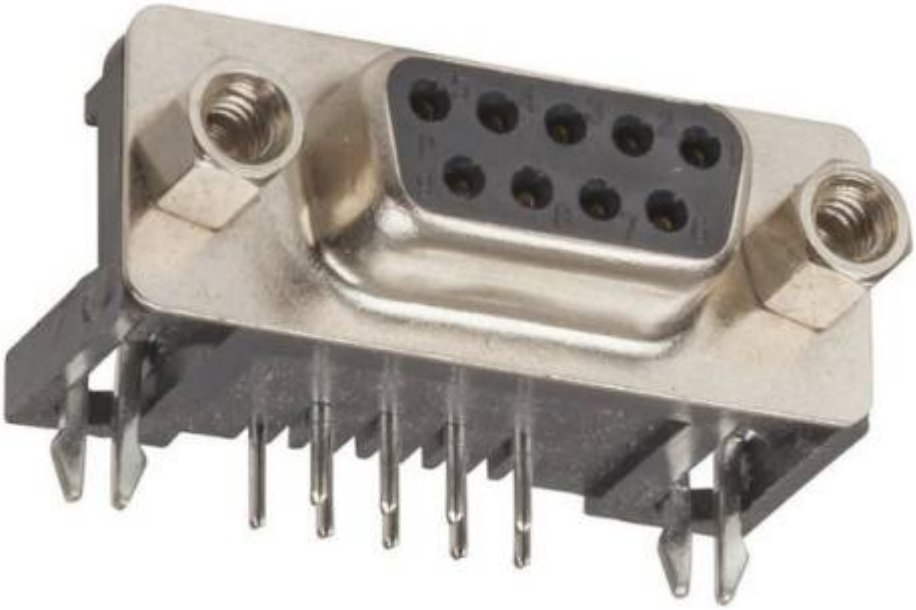
If anyone wants to make the same, here is a hand drawing of the layout. It is arranged so no jumper wires are needed on the underside. All components that need connections are placed with adjacent pins so they can just use a solder bridge between them. In the below drawing the blue pen lines are solder bridges between component pins.



Actually, as you can see the above is not exactly the same as what I built. This is how I would do it if starting over. I started soldering parts and then found some things awkward (like inserting the black wire between resisters) so the above drawing is a bit better than what I actually did.

Like jtrapas who originally posted the schematic, I used 2N3904 transisters (its what was available at the local electronics store) rather than the 2n5088 in the schematic.

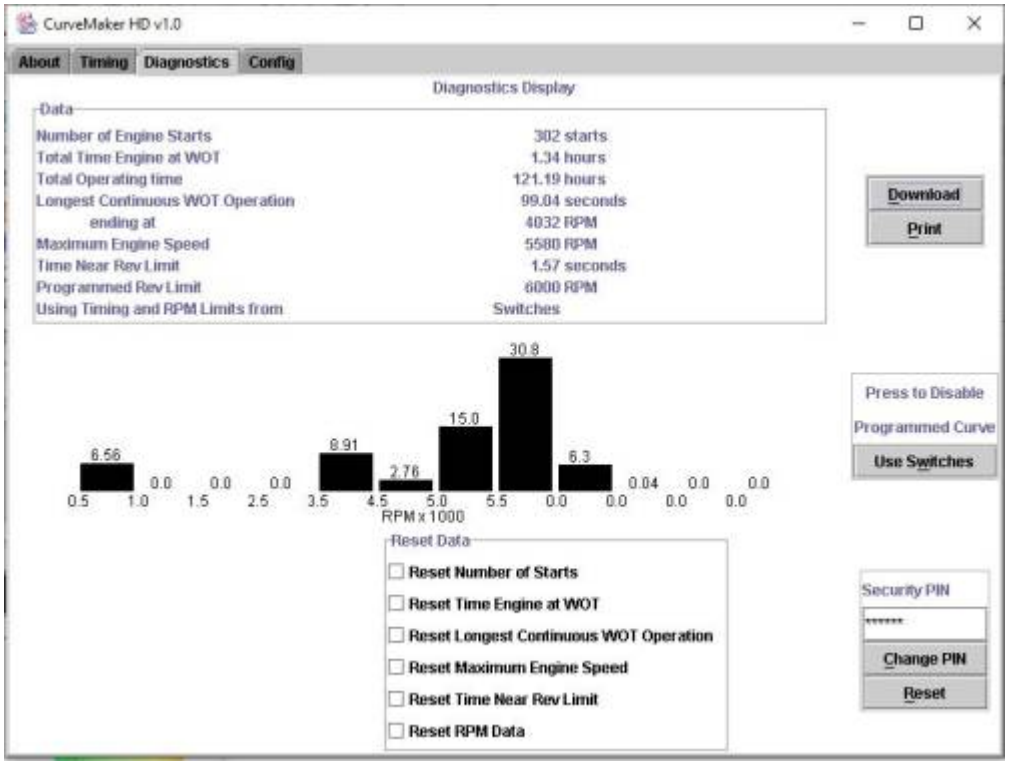
The db9 connector is one of these:



The pins don't all line up the same as the PC board that I used so I broke off pins 1, and 6-9 which aren't used anyway.

Currently my engine is out on the bench and I'm not ready to program it.
But I did hook up the adapter to test:

Without attempting to uploading a curve, it seems to work because I was able to download the diagnostics statistics from the ignition.
These numbers where all “0” before I clicked “Download”:



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