LineLogix
TCU 3.x 4.x (Propeller) Firmware Update
Rev F, 11Mar2024
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1. Overview

This document describes how to update the firmware of a GlueLogix TCU realtime control board. It applies to all TCU boards based on the Propeller microprocessor; i.e., all TCU revisions 3.x and 4.x including V4P2 (Propeller1 and Propeller2 chips).
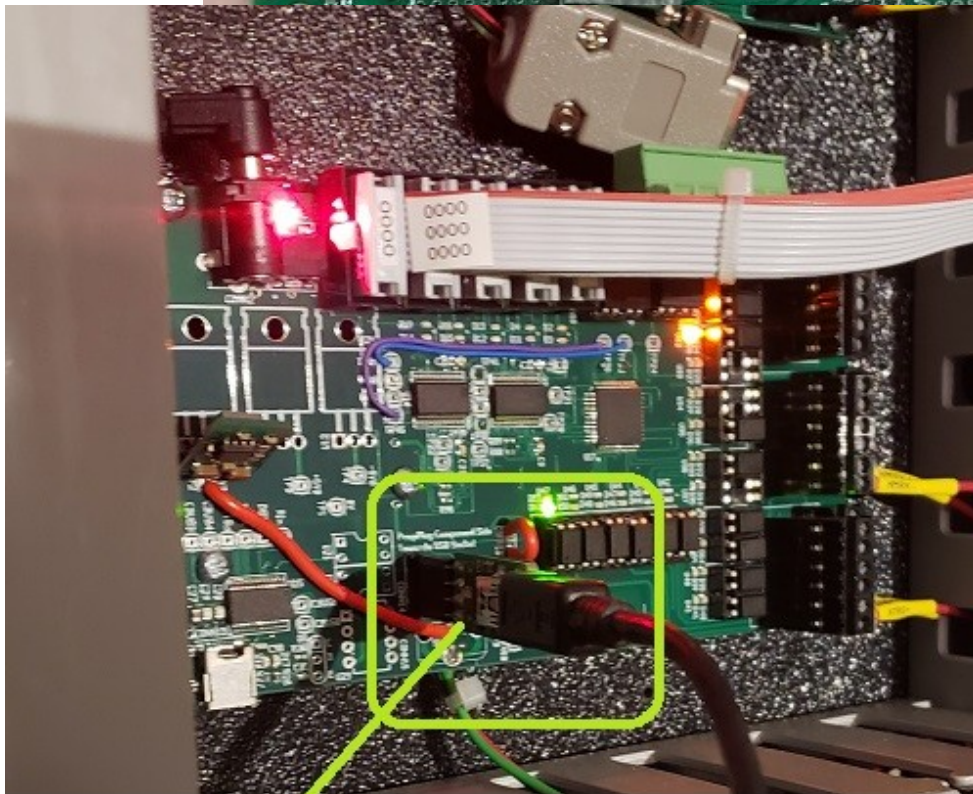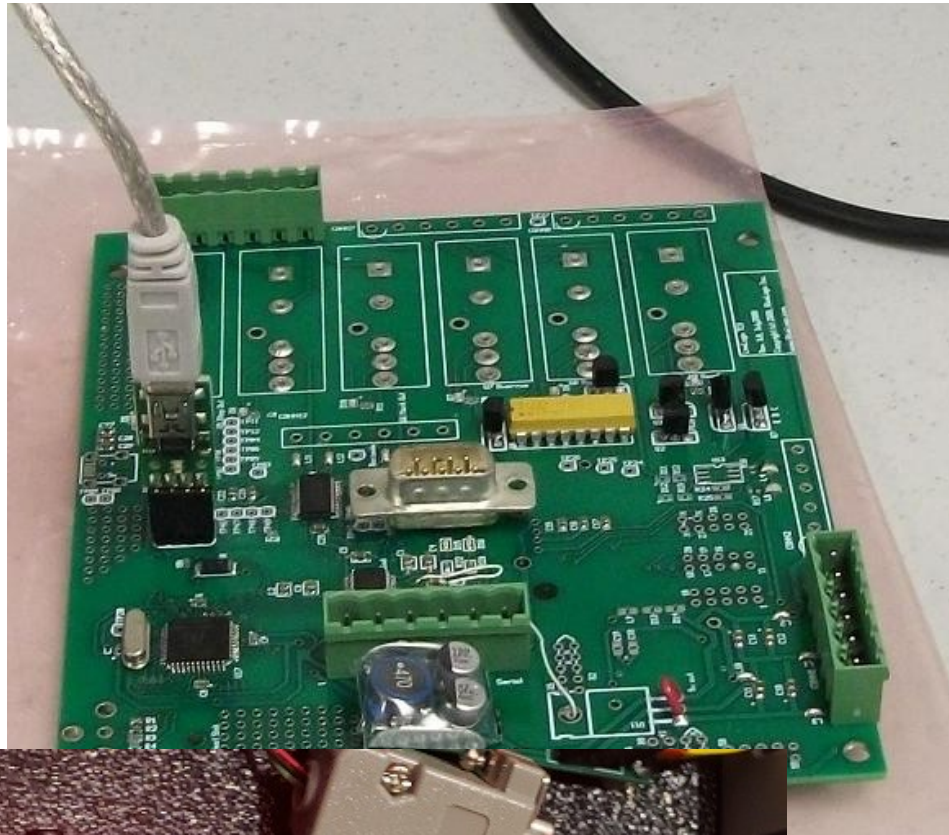
1.1. Revision History

- Rev A, 19Mar2010: Original
- Rev B, 27Apr2011: Updated batch file name and screen shot.
- Rev C, 31Dec2015: Added Pullup Header section
- Rev D, 04Jan2023: Added TCU V4
- Rev E, 07Mar2023: Documented the ZIP password
- Rev F, 11Mar2024: Added I/O Box connection photo

2. Procedure

1. On the PC, unzip your software release package to a new folder on the desktop, or other suitable location. If a password is required, use `gluelogix` (lower case).

2. Remove power from the TCU, reader and all peripherals.

3. Have a grounded surface close enough to touch. If working near a press or other source of large static charges, procure and test a grounded wrist strap.

4. Make sure adequate lighting is available, and that you have a secure physical approach to the TCU.

5. Gain physical access to the TCU by opening the enclosure.

6. Touch a nearby grounded surface or don your antistatic wrist strap.

7. Carefully install the programming connector as shown. TcuV3 (top photo): The component side must be towards the microprocessor. TcuV4 (bottom photo): The component side must be towards the USB circuit.

8. Connect the USB to your Windows PC.

9. If your system asks for drivers, run the driver installer included with your release package, or allow the system to search the Internet for drivers. The USB

programming connector uses a USB to serial chip by FTDI, for which drivers are normally provided in Windows distributions.

TCU V3

TCU V4

Component Side

I/O Box

Component
Side Down

10. Restore power to the TCU.

11. Run `load_code.bat` in the folder to which you unzipped your release package.

12. **Caution:** ALWAYS remove power from the TCU before taking off the programming connector.

13. Remove power from the TCU.

14. Remove the programming connector.

15. Power up the TCU.

16. If a LineLogixPC update was included in your release package, install it now.

17. Start LineLogixPC.

18. Select a supervisor user name and job that accesses the TCU.

19. Check the TCU firmware version using the menu bar.

20. If the TCU shows the correct version, close the TCU enclosure.

21. Run your calibration roll (see the LineLogix system manual) to check system operation before restoring the system to production status.

3. Pullup Header

Some high noise environments require a Pullup Header on the TCU programming connector during normal operation. When so equipped, the large end of the header may be installed in any orientation as long as all four pins are plugged in. The small end of the header must be plugged into a spare 3V source on the TCU board. The power connection for the Grayhill (centermost of the three inboard pin sockets) are the most useful plug points.