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TINKER ELECTRONIC Lite Dash

Specifications

- 5V reference for PIN 1
- Resistance inputs for PIN 2 and PIN 3
- ANALOG INPUT 1 and ANALOG INPUT 2 for PIN 8 and PIN 7, respectively
- CAN H for PIN 9 and CAN L for PIN 10
- Ground for PIN 11, PIN 18, and PIN 19
- Switched 12V for PIN 20

Product Usage Instructions

Main Layouts:

All 4 main pages contain buttons that redirect to other pages:

1. Button 1: Switches page
2. Button 2: Extended data pages
3. Button 3: Dedicated EGT page
4. Button 4: Various settings page
5. You can change parameters on any page.

Switches Page:

This page allows you to customize switch settings.

Extended Data Pages:

Access additional data related to your system.

EGT Page:

Dedicated page for monitoring Exhaust Gas Temperature (EGT).

Main Settings:

1. Brightness Slider adjustment
2. Select Speed Source between EC and GPS

Switch Settings:

1. Rename switches displayed on the switch page
2. Toggle On/Off for manual control or rule-based operation
3. Select a parameter to tie the output to
4. Select an argument for the rule
5. Set a value for the argument
6. Adjust the automatic on/off setting, including hysteresis

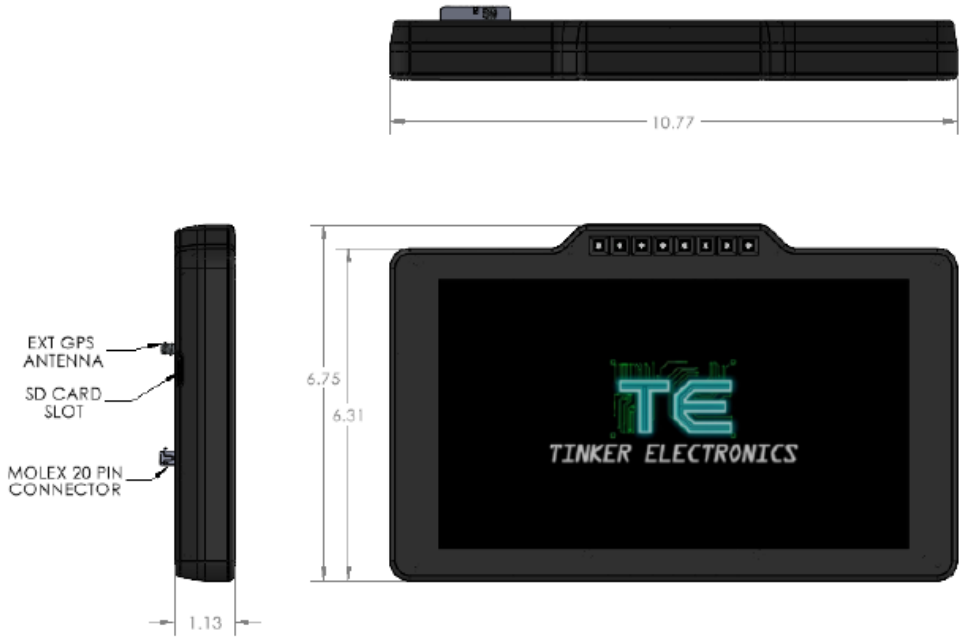
Input Settings:

1. Access sensor calculator
2. Rename analog inputs
3. Configure min and max values for analog inputs
4. Toggle between input settings pages
5. Enable turn signal inputs for Input 1 and Input 2

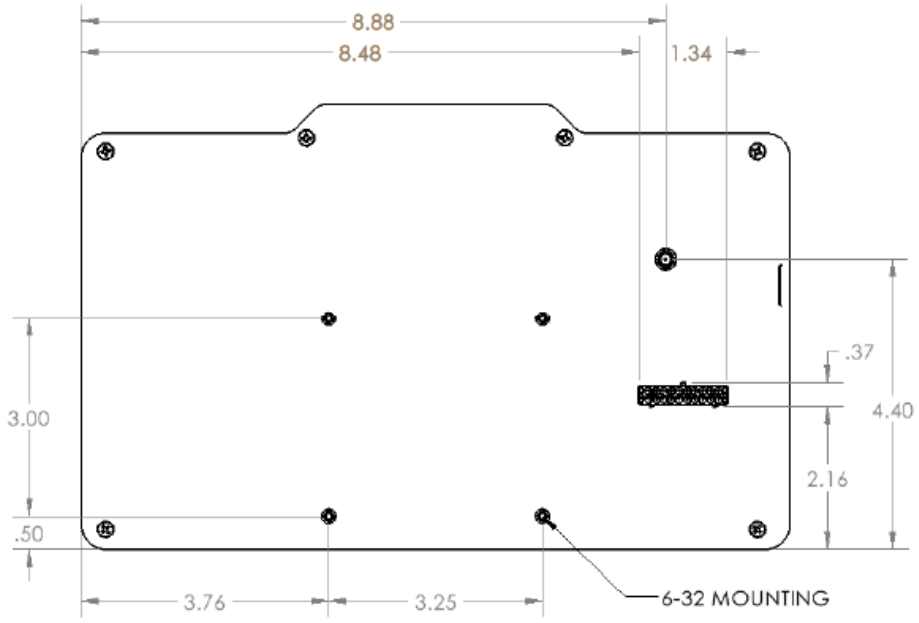
Parameter Config:

1. Select the parameter to display in a specific position
2. Enable/Disable limit warning for the parameter
3. Set the argument for the limit rule
4. Set a value for the limit rule
5. Commit parameter changes

TINKER ELECTRONICS LITE DASH MANUAL



10" LITE TOP SHIFT



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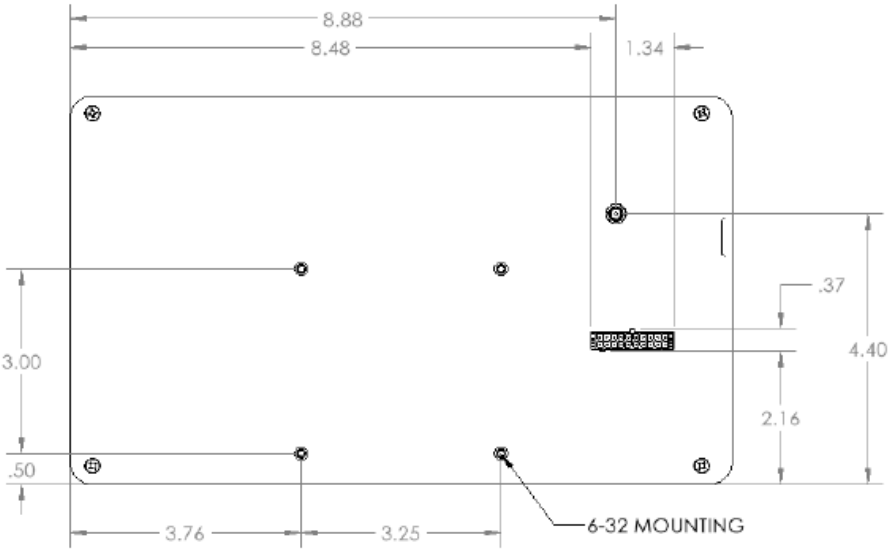

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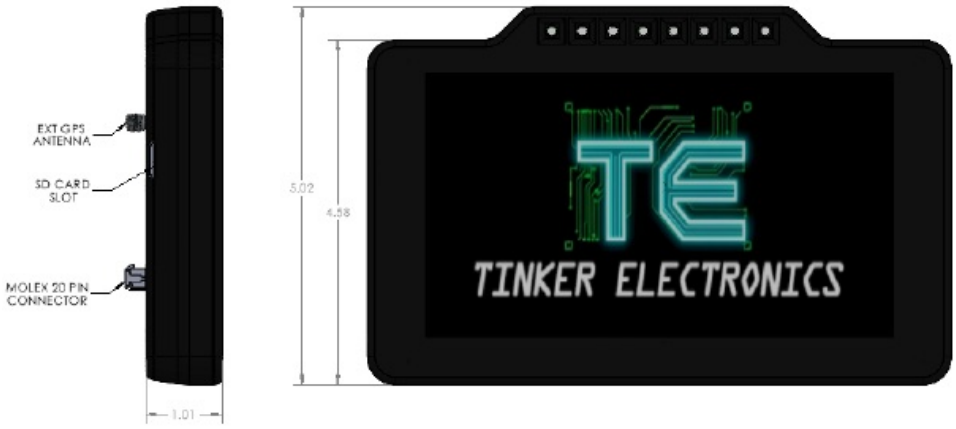

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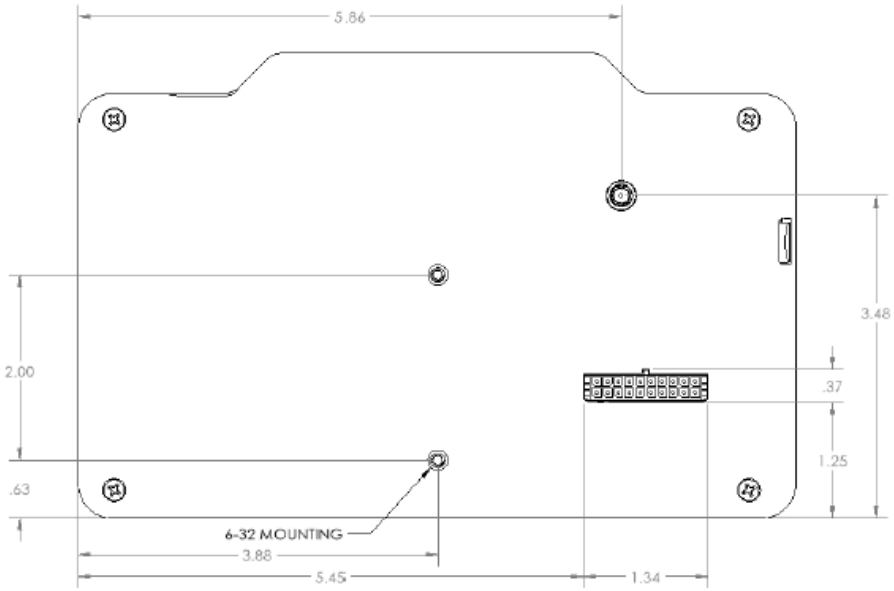

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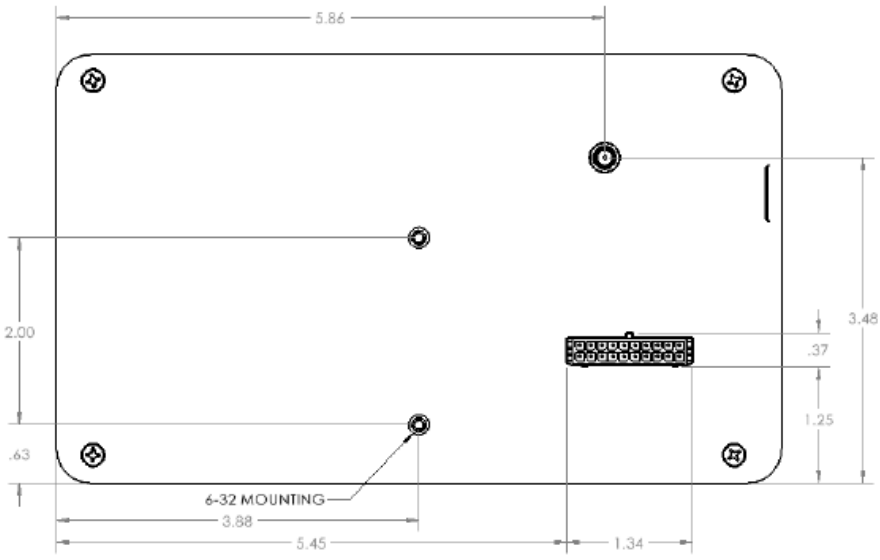

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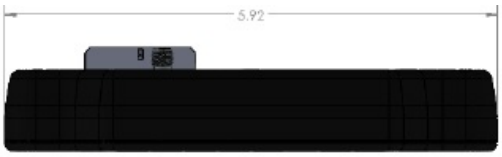
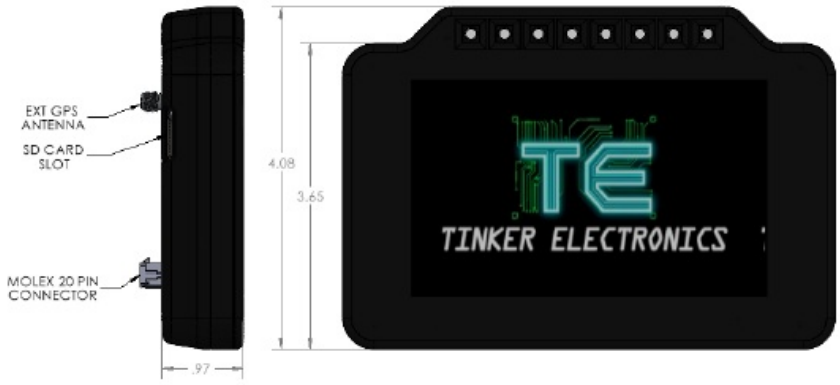
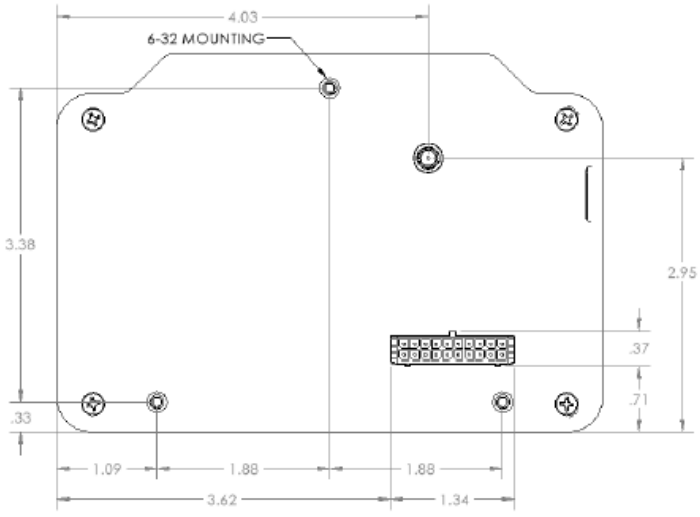




5" LITE



5" LITE

WIRING INFO

- Resistance pins are to go to the sending unit and are configured within the settings.
- Analog sensors are powered with a 5V wire and grounded with open ground pins. Configured via analog settings.
- CAN wires, depending on the ECU, will have to be pinned into the ECU connector.
- DO NOT EXCEED 5V ON THE ANALOG INPUTS.
- DO NOT CONNECT 12V TO 5V WIRE OR CAN LINES.
- * = End user supplied wire.
- If driving relays with outputs, the relay coil should get switched 12V on the coil from the same source as the dash.

PIN	FUNCTION	COLOR	NOTES
1	5V	*	5v Reference
2	RESISTANCE INPUT 1	*	
3	RESISTANCE INPUT 2	*	
4	N/C	N/C	
5	N/C	N/C	
6	N/C	N/C	
7	ANALOG INPUT 2	*	5v Max
8	ANALOG INPUT 1	*	5v Max
9	CAN H	YELLOW	
10	CAN L	WHITE	
11	GROUND	*	
12	N/C	N/C	
13	SWITCH 4 OUTPUT	*	SWITCHED GROUND (250ma)
14	SWITCH 3 OUTPUT	*	SWITCHED GROUND(250ma)
15	SWITCH 2 OUTPUT	*	SWITCHED GROUND(250ma)
16	SWITCH 1 OUTPUT	*	SWITCHED GROUND(250ma)
17	N/C	N/C	
18	GROUND	*	
19	GROUND	BLACK	
20	SWITCHED 12V	RED	

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- * = End user supplied wire.
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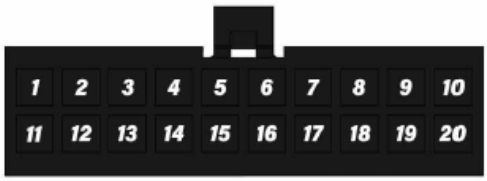
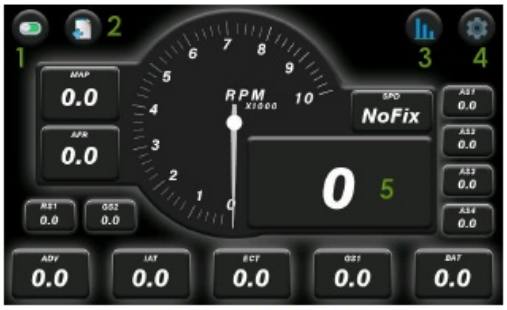
NOTE: Looking into wire end of connector



MAIN LAYOUTS

ALL 4 OF THE MAIN PAGES CONTAIN 3 OR 4 BUTTONS AND EACH REDIRECTS TO ANOTHER PAGE.

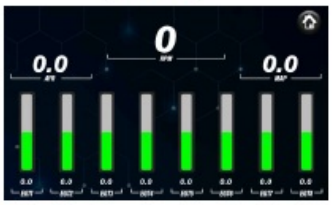
1. Button 1 will take you to the switches page.
2. Button 2 will take you to the extended data pages.
3. Button 3 will take you to the dedicated EGT page.
4. Button 4 will take you to all the various settings.
5. You can select any parameter to change it.



EXTENDED DATA PAGES

SWITCHES PAGE

EGT PAGE



MAIN SETTINGS

1. Brightness slider.
2. Speed source to choose between ECU-driven or GPS (if equipped). This uses speed from ecu if ecu source is selected.
3. Layout selector.
4. Button to take you to the switch settings.
5. Button to take you to the various input settings.
6. Button to take you to GPS Settings.
7. Button to take you to the shift light settings page.
8. Button to take you to the Dash Update page.
9. Button to reset the dash settings. Holding down will start the on screen counter and if released after 5 seconds a reset will begin.
10. Save button to commit all changes to be used on startup.
11. Current Firmware and UI version.

SWITCH SETTINGS

1. Each of these buttons allows you to change the name of the switch that is shown on the switch page.
2. On/Off toggle to let you choose whether you want the output to be manual on/off or tied to a parameter and rule.
3. Drop down to let you choose a parameter to tie the output to.
4. Drop down to choose the argument.
5. Set the value for the argument.
6. Setting to choose how you want the automatic on/off act. Setting the hysteresis adds a gap between the on/off points.

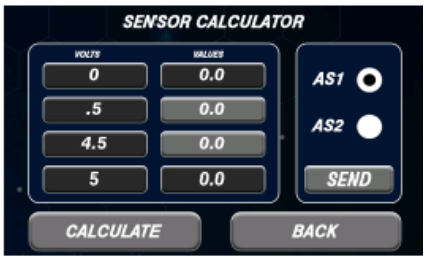
Note that the switches on the switch page will override the logic.

INPUT SETTINGS

1. Button to take you to the sensor calculator
2. Name the column for each analog input. Selecting one of the name boxes will take you to the name selection screen, where you can choose a new name for the input.
3. 0v value column for each input.
4. 5V value column for each input.
5. Toggle between input settings pages.

6. Allow inputs and 2 to be used as turn signal inputs. See reference schematic.

- The input settings button loads to the analog inputs.
- Each box is a button that will take you to an entry screen for either numbers or text.
- Sensor calculator can be used for .5v-4.5v sensors.
- Sensor calculator requires you to enter the .5v value and the 4.5V value into the light gray boxes.
- The calculate button will calculate the 00V and 5V5 values.
- Send will send the calculated values to the selected analog input on the analog input page.



1. Select the desired name from the list of commonly used input names.
2. Cancel name selection.
3. The save button commits the naming.

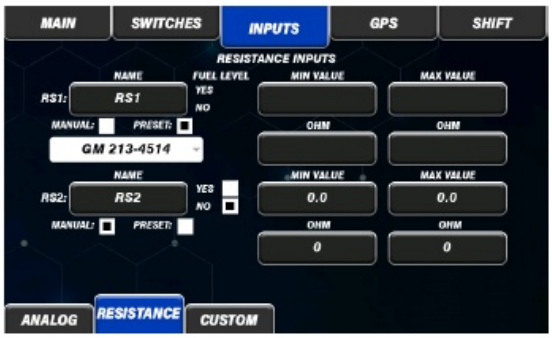
Name changes go into effect on all main pages as well as limit pages. For example, if the AS1 (analog sensor 1) name is changed to “OIL”, it will appear as “OIL” everywhere used.

1. Select to enter values in front of the decimal point.
2. Select to enter values behind the decimal point.

- All number input buttons will take you to the value entry page.
- CL will set the value back to 0.00.
- +/- will toggle the value from positive to negative.
- Cancel will not commit values and return to the page where the value was selected.
- Save will commit the value and return to the page where the value was selected.

- Like the analog input page, the resistance inputs are also nameable.
- The inputs are configured to the sending unit and its values.
- For example, a 10-95Ω fuel sending unit will be configured as:
  - MIN OHM = 10
  - MAX OHM = 95
  - MIN VAL = 0
  - MAX VAL = 100
- This can also be configured in other ways to work with various sensors and sending units.
- You can choose the preset checkbox to select from the supported sending units.
- The Custom Input page is strictly for naming the custom ECU inputs that are coming over from the ECU.

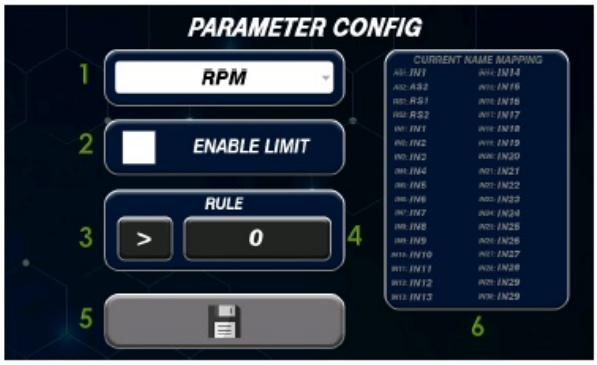
- For example, if custom input 1 on the ECU is set up for fuel pressure, you can rename that value on screen to “FPR” or something of the like.

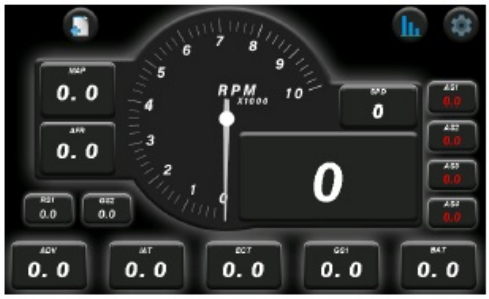


PARAMETER CONFIG

1. Drop down to choose what parameter is shown in the selected position.
2. Enable/Disable the limit warning for the selected parameter. When will it change the parameter to red when the rules are satisfied.
3. r for the limit rule.
4. Value for the limit rule.
5. Commit parameter changes.
6. Easily view custom inputs that have names assigned to more easily select the data desired.

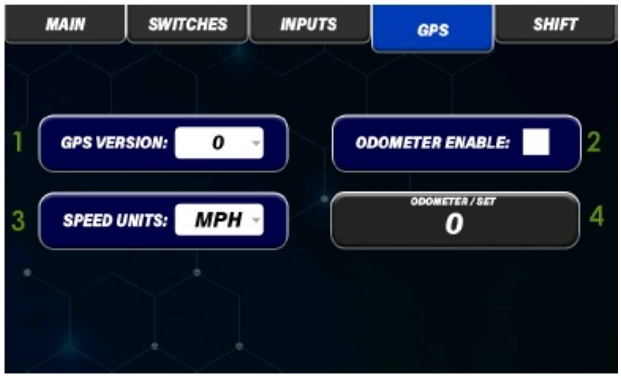
Example showing the triggered analog input parameters.





GPS SETTINGS

1. GPS Version setting.
2. Odometer enabled for GPS 0. Enabling this will add the odometer value to each default layout.
3. Speed and distance units.
4. Set The dodometervalue. You will set this to set othe dometer, and it will continue counting from that point as the dash is used. You can use this to correct or set miles at any time.
5. The speed on the main layouts will read “404” as it is searching for satellites.



SHIFT LIGHT SETTINGS

1. Set each individual LED color.
2. RPM setting to activate the shift light.
3. Progressive interval will set the RPM gap between each LED when the style is progressive.
4. LED brightness setting.
5. Color Preset. This will change all LED colors to the preset color.
6. Static or progressive options. Static activates all the LEDS at once while progressive starts a LED sweep at a lower value depending on interval and works its way to fully lit and eventually flashing.

7. This will enable a warning LED when any of the limit settings are triggered.

CAN OUTPUT

ID HEX(DEC)	STD/EXT	BYTE 0	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
0x672 (1650)	Standard	AS1		AS2		AS3		AS4	
0x673 (1651)	Standard	AS5		RS1		RS1		MPH	Level Slider
0x674 (1652)	Standard	CAN Switch 1	CAN Switch 2	CAN Switch 3	CAN Switch 4	CAN Switch 5			

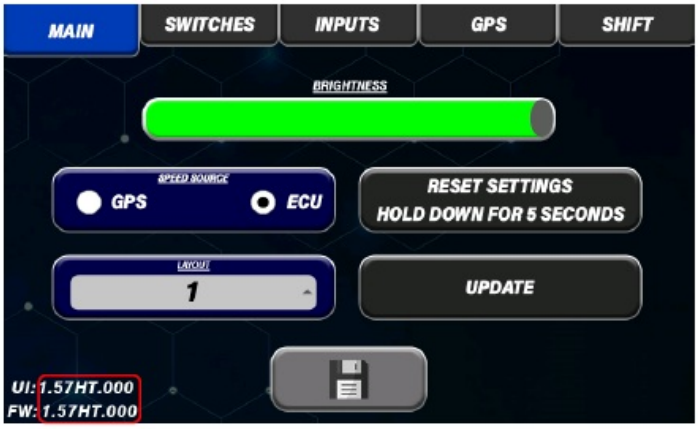
DATA	TYPE	OFFSET	MULTIPLY	DIVIDE
AS1 - AS5	16 bit Signed	0	0.1	0
RS1 -RS2	16 bit Signed	0	0.1	0
MPH	8 bit Unsigned	0	1	0
Level Slider	8 bit Unsigned	0	1	0
CAN SW1 - SW5	8 bit Unsigned	0	1	0

UPDATING THE DASH

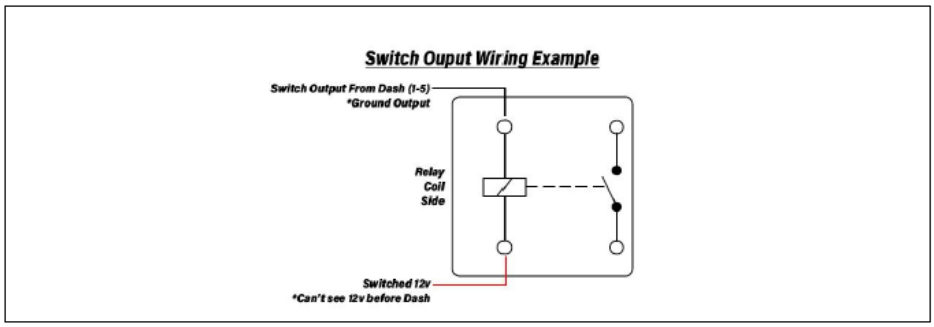
Firmware/Interface Update

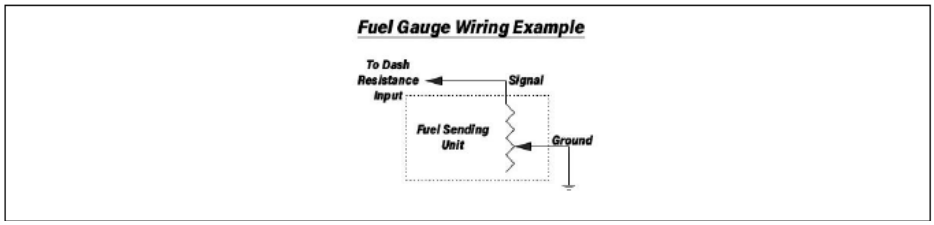
1. The update process requires a Micro SD card less than 32 GB and formatted as FAT32
2. Download the appropriate update zip file from the website and extract the contents of the zip file. DOWNLOADS LINK
3. The SD card should be empty and copy the correct .tft file to the SD card at the root of the SD card. The file name ends with the size of the dash (_5 for 5”, _7 for 7”, _10 for 10”).
4. Once the file is on the SD ca, rename the file to “update.tft”.
5. Copy “update.bin” from the download zip file to the SD card.
6. You should now have two update files on the SD card named correctly.
7. Insert the SD card in the SD card slot at the back of the dash.
8. Power the dash on, go into the settings, select update, and select firmware update.
9. The dash will go through its routine and then reboot, which will conclude the firmware update.
10. Once back on return to the update page of the dashboard and select Interface Update.
11. The screen will go white and start updating.

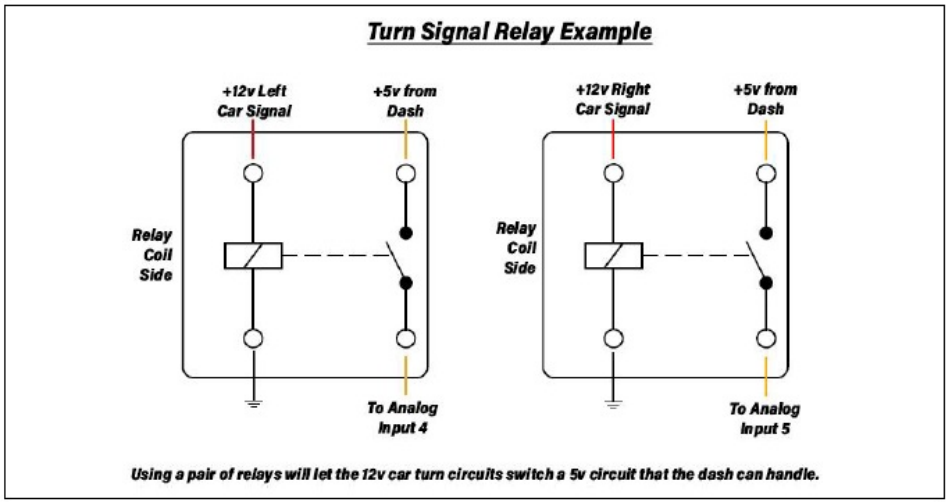
12. Once complete, turn off the dash and remove the SD card.
13. Power the dash back on and check for the new UI/FW number in the settings, indicating the update was completed. Example of FW and UI numbers on the next page.



WIRING EXAMPLES



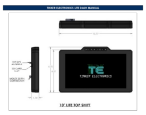




FAQs

- **Q: Can I use the analog inputs as turn signal inputs?**
  A: Yes, you can enable turn signal inputs for Input 1 and Input 2 in the Input Settings section.
- **Q: How do I adjust the brightness of the display?**
  A: You can adjust the brightness using the Brightness Slider in the Main Settings section.

Documents / Resources

	TINKER ELECTRONIC Lite Dash [pdf] Instruction Manual Lite Dash, Lite, Dash
	TINKER ELECTRONIC Lite Dash [pdf] Instruction Manual Lite Dash, Lite, Dash

References

- User Manual

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Dash, Lite, Lite Dash, TINKER ELECTRONIC

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