LCD MODULE INSTRUCTIONS

Overview:

The LCD Module is an optional module that allows live data to be displayed right in your vehicles dash. It is completely customizable and shows 10 separate channels of data per page, with an unlimited combinations of information. The LCD has customizable warning and shift lights, playback features, maximum recall, record button and night/day mode. The screen is completely customizable using the DataMaxx software.

Capabilities:

> 10 Channels of Data per Page
> Customizable Warning and Shift Lights
> Variable Speed Playback
> Maximum Recall
> Night and Day mode
> SD card slot

Installation:

Your LCD Dash came with a hard stock drawing cut out that is to scale, which will allow you to drill the necessary holes with ease. The rubber shock absorbers that act as the mounting bolts should not be removed, and removal will void your warranty. After drilling the holes you can mount your LCD Dash, taking care to not over tighten the 4 nuts on the back of the shock absorbers. If you would like, you can use the Blue Loctite to ensure the nuts do not loosen up. If you do over tighten, you will break the shock absorber in half, and will have to have that component replaced before installing.

After installing the Main and LCD module, as well as all of your sensors, you can then run the LCD wire back to the Main module. When determining the path the LCD cable will take, you want to make sure that it does not come near any ignition components and is not crimped at a tight angle. Failure to do so may result in your LCD updating slowly or not communicating at all.

Once you have routed the LCD wire to the Main module, you are ready to terminate it. Since the LCD utilizes a CAN Bus cable, you can connect it to any one of the five CAN Bus ports inside the main module (it does not matter which one). You can refer to the back of the lid on the Main

module to determine which ports are actually CAN Bus ports. Strip each individual wire back just enough so that it will make a good connection, and make sure that the shield wire is connected to one of the four ground posts—ensuring any ignition noise picked up on the wire will drain to ground appropriately. Refer to the "How to Wire Correctly" topic in the Additional Information section for more tips on wiring.
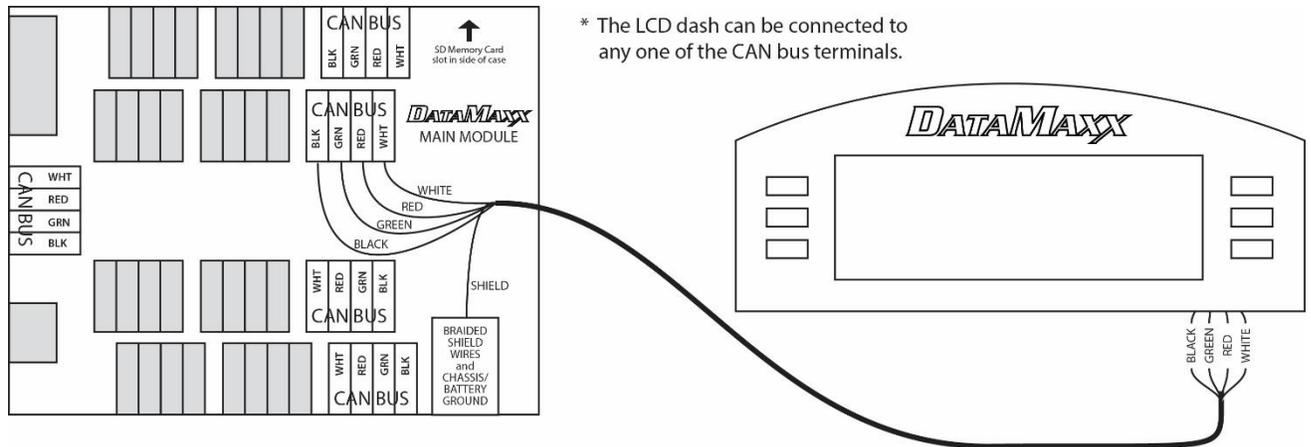
Additional Information:

Customizing: You have complete control over which channels are displayed in which position and making modifications to it is easily accomplished using the DataMaxx Software. The details of how to customize the LCD Dash are also described in detail in "Initial Calibration" in the Software section. You must go through the initial calibration at least once before customizing the LCD Dash.

Simply record a short 5 second test log file, or open up your most recent log file. Select Edit, Properties, and then select the Configure LCD Button. This will open a virtual version of your LCD Dash that you can easily modify. It is recommended to first go to "Page 4" and delete it, this will then take you to "Page 3", which you can delete as well. Page 2 consists of all 8 of your EGT sensors, so if you do not have the 8 EGT kit you can delete page 2 as well.

Now simply select each drop down menu and change it to display the sensor you would like to see in that area. Unless you are using this on a street car and need to see MPH, I would recommend leaving both of the center channels as "Engine".

Record: Press and release the "Record" button in order to start recording. The "Recording" icon will be displayed above-right of the round RPM graph. To stop recording, simply press and hold the button for 2-3 seconds, releasing after seeing the appropriate response on

the LCD. For more information on recording, refer to "Recording a Log file" in the Additional Information section.

Menu: In the menu there are options to toggle between day and night, set the clock, and modify the intensity of the back light, button, contrast, playback rate, and both yellow and red LED's.

Channels: The channels button will allow you to toggle through multiple pages that can be customized through the software, allowing an unlimited combination of information to be displayed. In the software, these are listed as "Pages", and hitting the "Channels" button on the LCD will toggle between your users defined Pages.

Max Recall: Hitting the Max button will display the maximum data from the last log file that was recorded to the SD card. If there are no runs on the card, then a log file not found message will be displayed. Occasionally, if the log file is long enough, you may need to hit the Max button a second time if the first time does not achieve the desired result.

Run #: Hitting the Run button allows you to toggle thru all the runs currently on your SD card. After finding the run you want, you can choose either "Max" or "Playback" to view the desired information. Keep in mind that each time you download a log file to the DataMaxx software the correct way (using the SD button), the log file is physically deleted off of the card and will not be able to be played back on the dash.

Playback: Hitting the Playback button allows you to play back the data from your SD card at half the speed (0.5X). To pause the screen during playback, simply press the "Playback" button, and press again to resume. If you would like to change the rate of playback, enter the menu options, display adjust, toggle to the Play Rate and adjust the speed. If you would like to play back a different run, toggle through the different runs using the "Runs" button and then press Playback.

Clock: You can manually set the clock through the menu option or use the software. When sending a configuration change to the *DATAMAXX*, if using an LCD, you will be prompted with a message asking if you would like to set the hardware clock. If you choose yes, your computers current time will be stamped on the SD card. You will then want to quickly insert the card into the *DATAMAXX*, turn on power, and allow the configuration to take place while also changing the clock. Remember that for every second you wait to get the SD card into the DataMaxx, after setting the clock, is a second that the SD card does not know has passed (e.g. if you wait 5 minutes, your LCD clock will be off by 5 minutes).

Troubleshooting:

If you are having an issue with your LCD, it is recommended that you start off troubleshooting the Main Module as it is the hub of the entire system and can cause issues with other modules. If there are no red lights on the Main module, or the troubleshooting indicates that the problem is the LCD, then follow the troubleshooting steps below.

- Time Is Incorrect: If your time is not reading correctly, you can set it either manually in the
  LCD or by using the software. To set the clock manually, turn off the DataMaxx and back on, hit Menu, Menu, Menu, Play, Menu. Using the arrows, change the year then hit menu, change the month and hit menu, change the hour and hit menu, and change the minutes and hit menu. At this point it should say Clock Set and you are done. To set the clock with the software, record a short 5 second log file, download the log file using the SD button in the software, select Edit, and then Properties. Select "Send Config to DataMaxx" and when it asks if you want the hardware clock say yes (be sure that your computer clock is correct). Follow the directions on the screen, and when you're done the clock will be set.

- Max / Playback Not Working: In order to see the Maximum or to Playback a log file, the run will have to be on the card still. This means that if you download the log file to your computer, the run is no longer on the card and you can no longer perform a Max or Playback on the LCD Dash. If there is a log file, and hitting either the Max or Play button does not give you the desired result, simply hit the button a second time and it should come up. In order to read either the Max or Playback, the LCD needs to first scan through the log file and can sometimes get hung up on this step—hitting the button a second time should rectify that.

- All Characters Showing: If you turn on the DataMaxx system and your LCD is showing all of the characters or all 8's, you simply need to adjust your contrast ratio. To do this, turn power off, then back on, hit Menu, Menu, Play, Menu, Menu, Menu then hold play down until you can again see the dash as it is supposed to.

- Screen Is Flashing: If the screen and data is flashing in and out or the message under the center gauge is flashing, the SD card most likely needs to be re-formatted. Removing the SD card from the system will most likely stop the flashing. At this point, follow the "Re-Formatting the SD Card" in the Additional Information section. If after re-formatting it exhibits the same issue, replace the SD card with another one provided by Computech.

- No SD Card Found: If upon placing the SD card into the dash, the message underneath still reads "SD Card Missing" then you most likely need to re-format the SD card. To do this, refer to "Re-Formatting the SD Card" in the Additional Information section. If after

re-formatting it exhibits the same issue, replace the SD card with another one provided by Computech.

- <u>Sensors Not Reading Correctly</u>: If your sensors are not reading the numbers you would expect on your LCD dash, the issue is most likely associated with the calibration. It is recommended to go that that specific sensor type troubleshooting section to properly diagnose.

- <u>Channel Names But No Numbers</u>: If you can see your custom channel names, but there are not any number readings associated with them, you most likely have a CAN Bus issue and are not getting the data correctly from the Main module to the LCD Dash. Please refer to "Diagnosing a CAN Bus Error" in the Troubleshooting section to determine the cause. If there seems to be nothing wrong with the CAN Bus system, please call Computech Tech Support.

- <u>Cut off Recordings w/Car off</u>: If you cannot record for extended periods of time without getting a single log file, there is most likely an issue with your SD card. Please refer to "Reformatting the SD Card" in the Additional Information section and try again. If the problem persists, try using your spare SD card.

- <u>Cut off Recordings w/Car on</u>: Please refer to "Getting Cut off Runs" in the Troubleshooting section.

DIAGNOSING A CAN BUS ERROR

The first step of diagnosing a CAN Bus error is to verify that you are in fact getting a CAN Bus error. To do this, simply insert the SD card in the main module with the power on and wait approximately 20 seconds. If you do not see any red lights then you do not have a CAN Bus error. If you see the red light blink in a pattern of either 2 red blinks or 4-7 red blinks then you do in fact have a CAN Bus error.

You can think of the CAN Bus as a large 10 lane highway with traffic moving in both directions. On rare occasion a module can "crash" and cause a pile up on the CAN Bus highway. When this happens it is hard to predict whether the crash will block all lanes and bring traffic to a stand-still, or if it will allow traffic to freely flow in all the other lanes except the one that crashed. Because of these differences, sometimes a CAN Bus failure can cause the entire system to shut down and other times it can cause just the affected module to shut down.

The real question is to determine which module has "crashed" on the CAN Bus. The best way to do this is to divide and conquer. Disconnect a module, then re-power the DataMaxx. If the error

goes away then you know that the unit you just disconnected was the one that crashed. Disconnect your modules in the following order (skip over ones you don't have).

- Remote SD Module

- Expansion Analog Module

- LCD Module

- EGT Module

If you find that removing one of the modules gets rid of the CAN Bus error, the next step is to reconnect the module into the system. The most common cause for a CAN Bus wire is faulty wiring, so the mere act of disconnecting and re-connecting the module in question will usually solve the issue. If when you re-connect the module, the CAN Bus error comes back, the next step is to send a factory reset and re-calibrate the system. To do this, please follow the "Factory Reset / Re-Calibration" instructions below. If the "Factory Reset / Re-Calibration" does not resolve the issue then the module that "crashed" will most likely need to be sent back for repair. Please call Computech Tech Support to arrange the repair.

FACTORY RESET / RE-CALIBRATION

Your DataMaxx system is custom calibrated based on your specific installation. Occasionally this calibration file can get corrupted and need to be reset. To perform a factory reset and re-calibration please follow the instructions below.

1. Open the DataMaxx software, and open a log file where everything was working well.
2. Select Edit, then Properties, then select the "Factory Reset" button.
3. After sending the "Factory Reset" to your card, power up the DataMaxx and place the SD card in.
4. Wait 2 minutes, remove the SD card, and place it back in your computer.
5. With the "Channel Properties" window still open on your good log file, hit the "Send Config to DataMaxx" button.
6. Place the SD card in the main module and wait 2 minutes.

At this point, you have performed a factory reset and re-calibrated the DataMaxx system.

GETTING CUT OFF RUNS

If your DataMaxx recording is cutting off in the middle of the run, you most likely have an ignition noise problem. The first step is to check to see if you are getting an error light on the Main module with the SD card in the Main module. If you are getting a red light, please refer to the "Main Module Troubleshooting' section to diagnose and resolve the issue.

The next step is to determine if the recording issue also applies to when the car is off. To do this, simply record a 5 minute recording (time it) and download the log file. If the 5 minute recording is cut off or downloads multiple log files, then the issue is most likely related to your SD card, please see "Reformatting the SD Card" in the Additional Information section. If you see that it recorded for the full 5 minutes then we know that the run cutoff issue is directly related to the environment that occurs when your engine is running. If this is the case, the answer is almost always excessive ignition noise.

The best way to combat ignition noise is to follow a couple general practices for avoiding RFI Noise.

Read and make any changes to your system that is detailed in the "Avoiding RFI Noise" in the Additional Information section. After you have taken all of the precautions to minimize your ignition noise, try recording going down the track again. If you still have an issue, you may be a candidate for a Remote SD Module, a box that was specifically designed to get the SD card as far away as possible from any potential ignition noise. Please call Computech Tech Support so that we can discuss your options in resolving your run cut off issue.