MAIN MODULE INSTRUCTIONS

Overview:

The Main Module is the heart and brain of the DATAMAXX system. It serves as the communication hub, and has the largest capacity for sensors. The Main Module also has 5 CAN Bus ports that act as the communication medium to LCD, Analog, and EGT modules. This unit will store your custom calibration in itself so that every log file recorded will have the correct location of where each sensor is installed and what it is named. The main module alone only draws about 400mA and it is not necessary to place a fuse inline, but if desired should be 2 Amps or less. Please note that you can only place a single SD card in the DataMaxx system at a time, whether that be in the Main, LCD or Remote SD module is up to you.

Capabilities:

> 4 RPM Channels
> 4 Analog Channels
> 5 CAN Bus Connections
> 3 Switch inputs
> 2 Light outputs
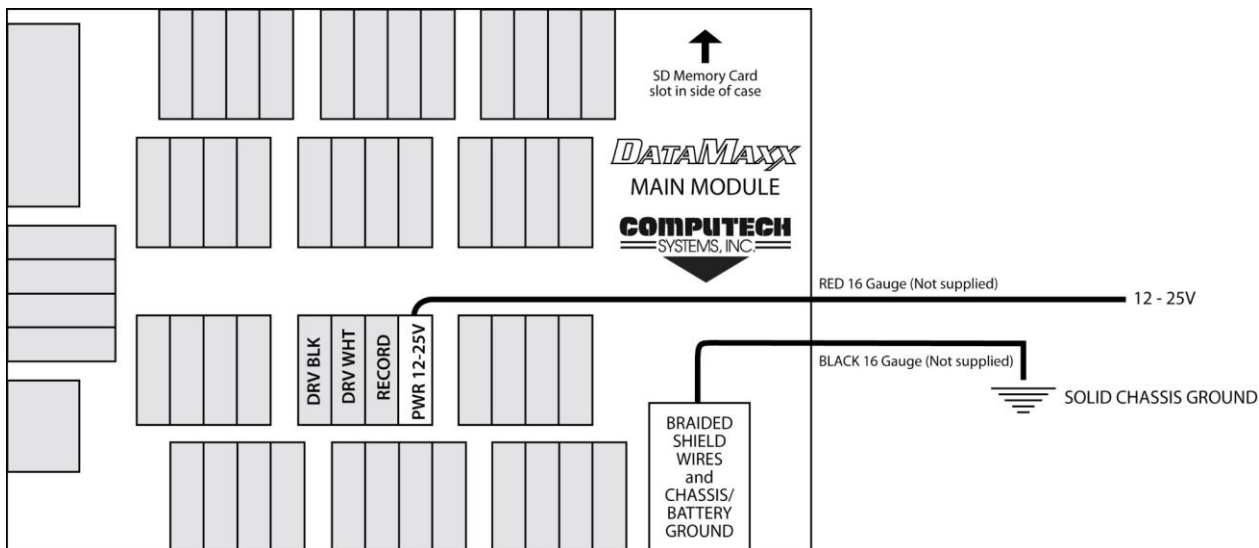> 1 SD Card slot

Installation:

The Main Module should not be mounted where it is exposed to rain, excessive engine exhaust, or transmission heat. If you are not using an LCD Dash unit then you will need to mount the Main Module where you can easily access the SD memory card slot. For more information on avoiding ignition interference, refer to "Avoiding RFI Noise" in the Additional Information section.

The Main Module is the only part of the system that receives a power connection and powers the rest of the system through this one power wire. The best Main Module power connection is the same place you power the majority of your electronics and tachometers. The next best connection is directly to the positive and negative terminals on your battery.

Connect the positive wire to the Main Module red color-coded terminal labeled "POWER 11-25V" (id #36), and connect the negative (ground) wire to one of the shield terminal screws.

For more information on correctly wiring your DATAMAXX, refer to the "Additional Information: Advanced Wiring Techniques".

After the system is completely installed, including the sensors and the wiring, you can move on to calibrating the entire system. To do so, it is recommended to go to the Initial Calibration of the Software section. Additionally, you can refer to each individual sensors calibration instructions.

Light Scheme:

Blinking Pattern for GREEN LED	Meaning
Green Light Blinking	**Normal.** System is operating correctly.
Green Light Pulsating	**Recording Normal**. Seeing a half blink in between the normal blinks means the light is pulsating and recording. Note that it will only pulsate if the SD card is located in the Main module. If the SD card is in the LCD, or Remote SD, it can record correctly, but the main module light will not pulsate.
Other Green Light Patterns	Refer to the Main Module Troubleshooting.

Blinking Pattern for RED LED	Meaning
No Red Blinks	**Normal**, the SD card is in the system and ready to record.
Two Red Blinks	**CAN Bus Error**. See Main Module Troubleshooting.
Three Red Blinks	**SD Card Missing**. This is a normal condition when there is not currently an SD card in the system.
Other Red Blink Patterns	Refer to the Main Module Troubleshooting.

Default Dip Switch Settings:

A: MAG PuP	OFF		E: A1 RTD	OFF
B: MAG GND	ON		F: A1 GND	ON
C: INP PuP	ON		G: A2 RTD	OFF
D: INP GND	ON		H: A2 GND	ON
			I: A3 RTD	OFF
			J: A3 GND	ON
			K: A4 RTD	OFF
			L: A4 GND	ON

Additional Information:

Recording: The Main Module has a dedicated terminal for a record switch. Connecting a switch to this terminal (id #35) will automatically enable recording without any additional configuration.

Wiring: When wiring the main module, strip back the insulation for each wire, place into appropriate terminal and screw terminal to tightly connect to the *DATAMAXX*. Be sure to connect all shield wires to one of the four ground / shield drain screws. For more information on wiring correctly, refer to the "How to Wire Correctly" in the Additional Information section.

Troubleshooting:

The first step in troubleshooting the main module is to place the SD card into the main module and turn the power on. At this point we want to look at the LED lights on the Main module to determine what is happening to the system.

- 1 Red Blink: Your SD card is most likely experiencing issues and needs to be re-formatted. Please see "Re-Formatting the SD Card" in the Additional Information section for instructions on how to do this. If after re-formatting it still gives you a single red blink, use the other SD card that was supplied with the system. The only SD cards that will work correctly with the system are ones supplied through Computech, or are the "QMemory" brand.

- 2 Red Blinks: You are getting a generic CAN Bus error. Please see "Diagnosing a CAN Bus Error" in the Troubleshooting section.

- 3 Red Blinks: This is a typical error message letting you know that there is no SD card in the system and it cannot record until there is one. If you do have an SD card in the Main

module and are getting this error message, please follow the troubleshooting instructions for '1 Red Blink" above.

- 4-7 Red Blinks: One of your expansion modules (LCD, Analog, EGT or Remote SD) are causing a traffic jam on the CAN Bus. Please see "Diagnosing a CAN Bus Error" in the Troubleshooting section.

- Green Light Blinking: The green light blinking is actually not an error, but an indication that the system is working and has power.

- Green Light Pulsating: This is a normal condition for when the SD card is in the main module and the system is currently recording. If your SD card is in another module (LCD or Remote SD) then the green light on the main module will not pulsate. It will only pulsate when the SD card is in the main and it is recording.

- No Green Light: The first step is to check with a volt meter to make sure that you have power at the power terminal in the main module. If you do have power over 12 volts, turn power off, and remove the 4 screws that hold the circuit board to the case. On the bottom of the circuit board, there is a power transistor that is black and silver and has three prongs that connect it to the board. Make sure that all of the leads are sufficiently attached to the board. If they are not, please call Computech Tech Support to arrange to have the power transistor replaced on your circuit board. If the power transistor appears to be intact, replace the 4 screws, then remove all of the wires from your main module except for power and ground. Power the system on again, and if it still does not show any green light, contact Computech Tech Support. If the green light turns on and blinks, turn power off to the main module and slowly begin reconnecting each sensor, powering up after each one in order to determine which one is causing the power failure.

- Green Light Always On: This is usually an indication that there is something wrong with the calibration. Please refer to "Factory Reset / Re-Calibration" in the Troubleshooting section.

- No Log files Found: If after recording a log file, you place the SD card in your computer, and select the SD button in the DataMaxx software, if you get a message stating "No log files found on this media." The first step is to determine if there is in fact a log file on the SD card. To do this, go to "Start", "Computer", and then your SD card. If there is a log file it should say DATAMX01 or a number similar. If there is not a log file on your card, please refer to either the "Record Switch" or "LCD Troubleshooting", in regards to recording a log file. If there is, you may simply need to run the SD card setup wizard again. To do this, select "Download", then run "SD Card Setup Wizard" and follow the instructions. When the wizard is complete, hit the SD button again and you should be able to correctly download your log file.

- Corrupted Log file: If when opening a run, you get a message stating that the log file is corrupted, you will need to reformat your SD card. To do so, please refer to "Re-Formatting the SD Card" in the Additional Information section. Now that we have fixed the card, it should work fine with the car off, but we still need to address what corrupted it in the first place. This corruption is almost always a direct result of excessive ignition noise although sometimes it can simply be a bad SD card. Even though it is a different problem, follow the "Getting Cut off Runs" instructions in the Troubleshooting section to make sure you are doing everything possible to combat and prevent excessive ignition noise. If the problem persists, replace your SD card, or call Computech Tech Support.

- Graph Shows Numbers Instead Of Names: If after opening your log file, your channel names to the left are showing a number instead of the name you are expecting, your log file and possibly even your DataMaxx calibration, has been corrupted. Refer to "Factory Reset / Re-Calibration" in the Troubleshooting section to solve the issue. If the problem persists, refer to "Getting Cut off Runs" in the Troubleshooting section to prevent excessive ignition noise.

- Cut off Recordings w/Car off: 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.

- Cut off Recordings w/Car on: 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 cutoff issue.