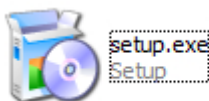


### Installation:-

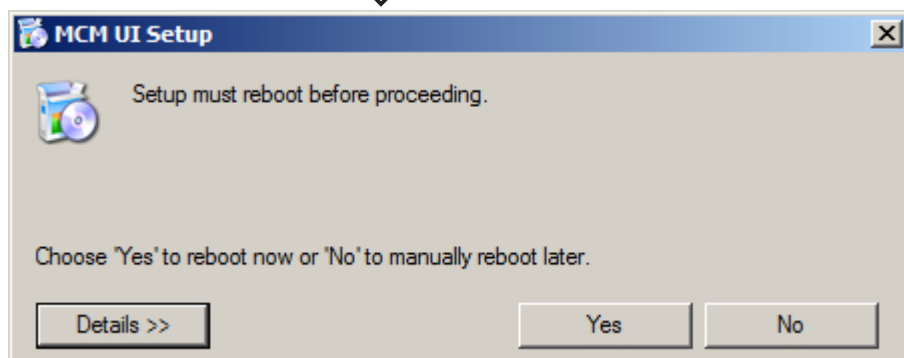
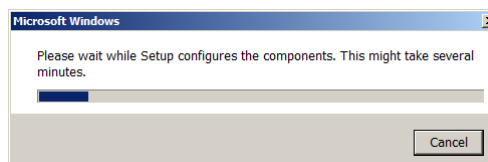
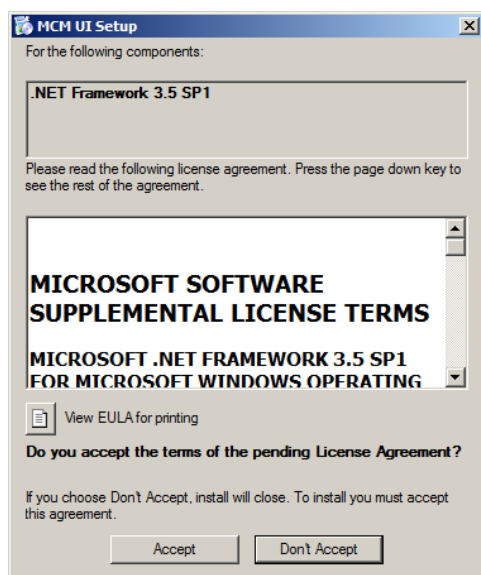
Please ensure that you have the latest updated GUI and download the GUIv.x.x.x.x.ZIP from our website. Extract the folder to a temporary location (These files can be deleted after installation)

Run **Setup.exe**



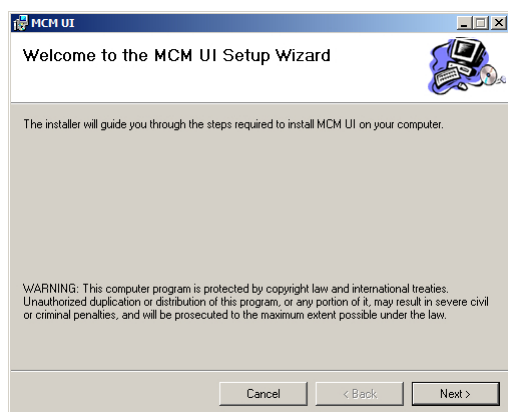
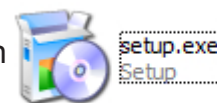
Follow the on screen prompts as follows:

If .NET Framework 2.0 or higher is not installed then the following screen will appear. IF .Net framework is installed please continue to **Step 2**.

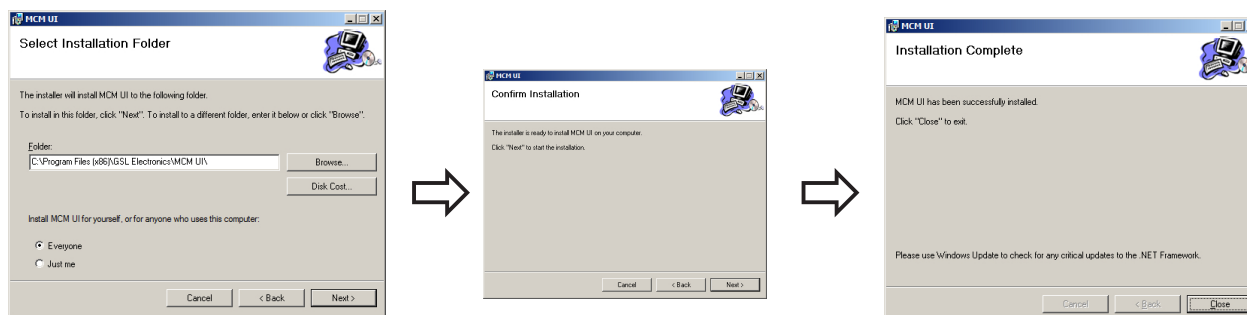


### Step 2:

After ReBoot, MCM-UI installation process should begin again automatically. If not please run again.



### Choose Installation Folder:



Installation Complete and MCM GUI Software is now ready to be used.

### Step 3:

Initialise MCM Hardware with PC System. For the first time connection you require the MCM to be connected to the working MPPT with a connection to either the battery or to a solar panel in sunlight. With the MCM powered via the MPPT, connect the supplied USB cable to the MCM and the PC. With the first time working with this system the following prompts will appear. Please follow the prompts as directed



Once hardware drivers have been installed and found by windows installation. The following two bubbles will appear:



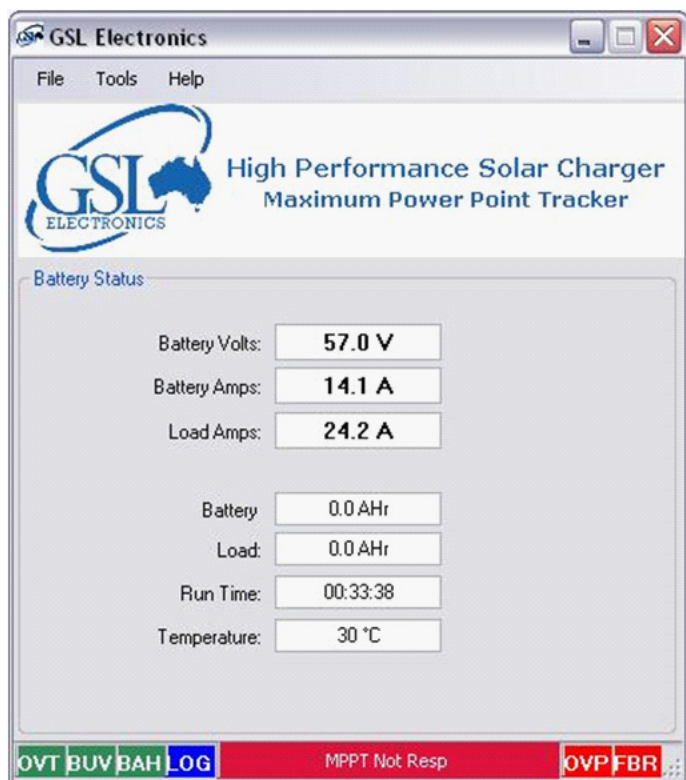
**NOTE:** If the Drivers cannot be found in the previous step. Please locate the drivers for the USB at <http://www.ftdichip.com/Drivers/VCP.htm> . Install the driver manually as directed.

## Standard Connection:

- 1) Ensure that the MCM is running and connected to the MPPT.
- 2) Ensure that the computer is isolated from the same ground plane as your MPPT. If this is not the case then a optional USB isolation device will need to be purchased.
- 3) Attach USB cable to the PC and to the MCM
- 4) Start the MCM GUI software supplied.
- 5) Select Tools->Comm Port if an error message appears or is there is a red flag labled "MPPT Not Resp" at the bottom of the GUI main page. Select the Comm Port that has been added to your computer by the MCM. (If you are unable to identify the port check "Device Manager" on your computer and establish in the Comm & LPT port list that the USB Serial Comm# exists (# is a numerical value).
- 6) Now communications should be established with the MCM all voltages and currents should be displayed on the Main window.

## **Section 1 - MCM GUI Functions List**

### Main Screen:



**Battery Volts:** This is the voltage as seen by the unit across the battery.

*Note: voltages displayed may differ to those measured due to length and size of cabling connected to the fly leads.*

**Battery Amps:** Displays the current amount of Amperage that is being drawn by the battery.

**Load Amps:** Displays the current amount of Amperage being drawn on the remote load control circuit (Blue wire).

*Note: this current should be taken into consideration when determining total load on the unit. This current will need to be added to the battery current to give you a total current draw on the MPPT.*

**Battery:** Shows the running Amp Hours going into the battery. This displays a net of the total charge. If load is being drawn is greater than that of the charge coming form the panels then the net rate would be in -BAH, and the counter will decrease.

When the charge rate is greater than the load being drawn then the net would be in +BAH and the value will increase. This will give you an indication of how much charge is going to the batteries and how much is being taken away. To reset this value please refer to Part i of Section 1 of the manual.

**Load:** Shows the running Amp Hours that is being draw from the remote load control circuitry. This will show how much load is being drawn by your system. To reset this value please refer to Part i in Section 1 in your manual.

**Runtime:** Shows in hours the amount of time that the unit has been active with a MCM connected. Value will reset when power is removed from the system/mcm. This will mean either a disconnection of the MCM or the disconnection of both the batteries and panels. The value can also be manually reset, please refer to section XX

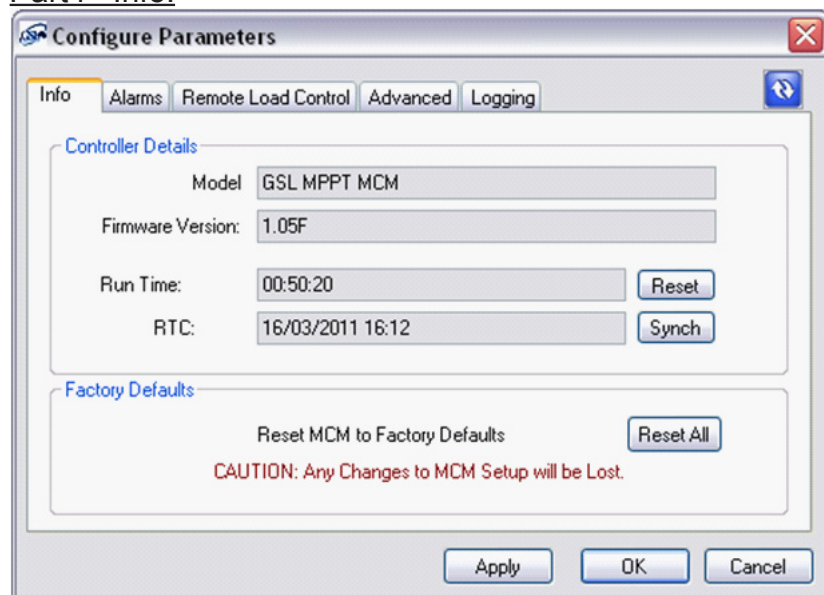
**Temperature:** Displays the current temperature of the MPPT.

**Status Bar:** running at the bottom of the screen is a visual status bar of the operation of the unit. It shows the condition of the three alarms as well as indication of logging, a disconnection notification, and an flag for when the OVP(Output Voltage Programming) as well as the FBR(Flat Battery Recovery) is engaged.

**OVT** , **BUV** and **BAH** can all be custom set in the “MPPT Settings...” menu.  
Usage of the **OVP** and **FBR** can also be found in Section 2 Part ii and Section 2 Part iv respectively.

## Section 2 - Configuring Parameters:

### Part i - Info:



#### Controller details:

In this portion of the window you will find all the information that pertains to the MCM.

**Model:** lists the MCM attachment

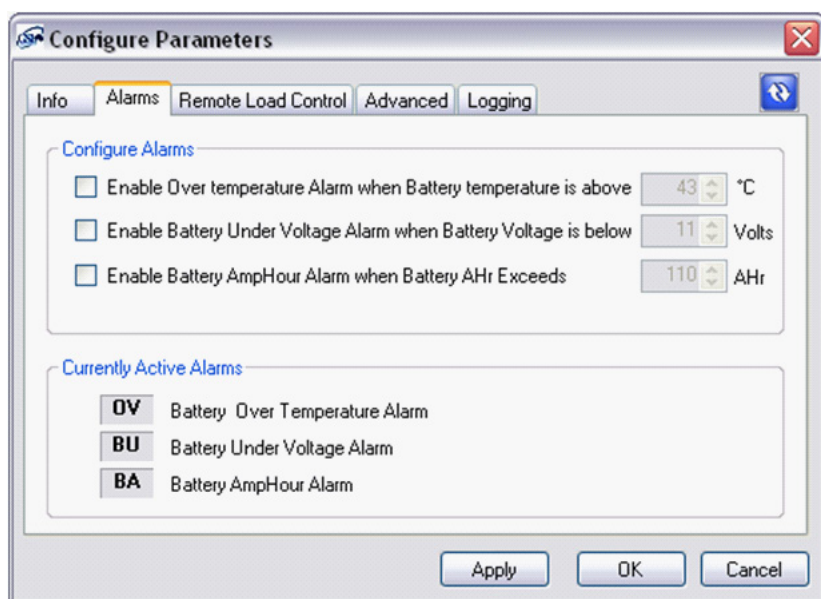
**Firmware Revision:** pertains to the which revision of firmware is contained on your MCM. This is useful information for when contacting us with any problems.

**Run Time:** This displays the time in which the system has been operating. This counter starts when the MCM is connected to a working system.

It will remain counting until both battery power and or solar power has been disconnected from the unit. This timer can be reset by pressing the reset button located next to the timer output.

**Factory Defaults:** Pressing the “Reset All” returns the MCM and MPPT to their factory default settings (not including Chemistry Selection). This will return all alarms off and reset the Remote Load Controller back to the control of the MPPT which will act as a LVD. All timers and the BAH and LAH will be reset.

## Part ii - Alarms:



The GUI combined with the MCM gives the user 3 alarms that are user-definable. This will cause the MCM to sound a continuous beep user when the MPPT goes over the user-definable threshold. To stop the alarm Press any of the three buttons on the front of the MCM. This will arrest the sound, yet it will still be in a alarmed state. these are:

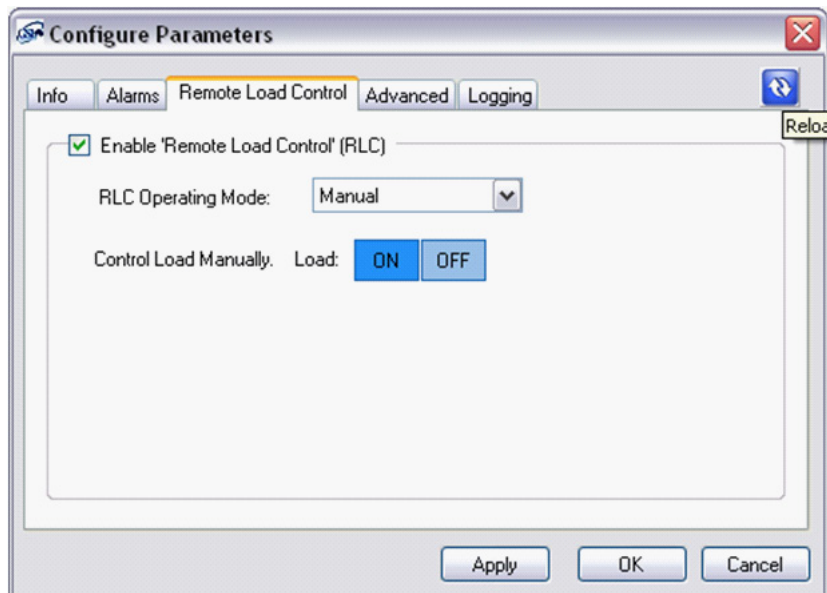
**Over Temperature Alarm** – This alerts the user when the MPPT goes above the user-defined temperature (30°C to 75°C range. 43°C default)

**Battery Under Voltage Alarm**- This will alert the user when the Battery voltage drops below a user-definable Voltage (10V-50V range. 11V default)

**Battery Amp Hour Alarm** – This will alert the user when the Battery is being drained excessively with out charge. In normal use the AH counter displays the total AH going to and from the battery. It adds -BAH when the unit is Discharging and +BAH when it is Charging. So when the display is less than zero is displayed the net charge to the batteries is less than the net load. (-50 to -1000AH range. -50 Default).



Part iii - Remote Load Control:



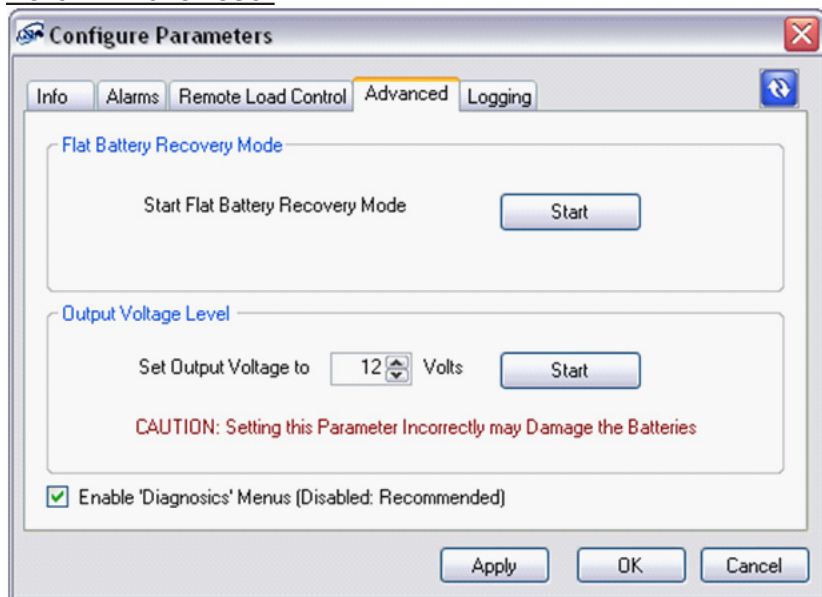
With the MCM attached to the MPPT, there are three user-definable modes that can be set-up for the remote load control.

**Manual-** This setting gives you direct control of the load switch being On or Off.

**Low Voltage Disconnect (LVD)-** With this enabled when the Battery falls below a user-definable threshold(8.0Volts to 53.0V), the load will disconnect. This is also the default setting when no MCM is attached to the MPPT (the voltage at which the default setting disconnects cannot be altered though).

**Dusk to Dawn-** This turns on the Load switch for a user-definable period of time(1 Hour to 16Hours) at dusk(or when the light on the panel cannot supply more voltage than that of the battery). After this time the Load switch will disengage and will not reset until the following evening.

#### Part iv - Advanced:



This tab contains all the advanced features of the MPPT combined with the MCM. Setting the output level has to have the MCM connected to the computer to keep it enabled. As soon as there is any loss of communications to the MPPT will return to factory default settings as a safety precaution.

#### **Flat Battery Recovery Mode (FBR):**

This mode attempts the recovery of a flat battery. It will gradually over time increase the voltage until it reaches a safe voltage to begin charging. Then it begins a full charge cycle as per normal and switches off the FBR mode. There is also an notification on the main window that the FBR is engaged ( as pictured the red flag labled FBR will illuminate when active)

#### **Output Voltage Level (OVP):**

*Note: Output voltage can only go as high as the input voltage supplied from the panels.*

**Caution: Miss-use or using this parameter incorrectly whilst connected to your batteries can cause damage to the batteries.**

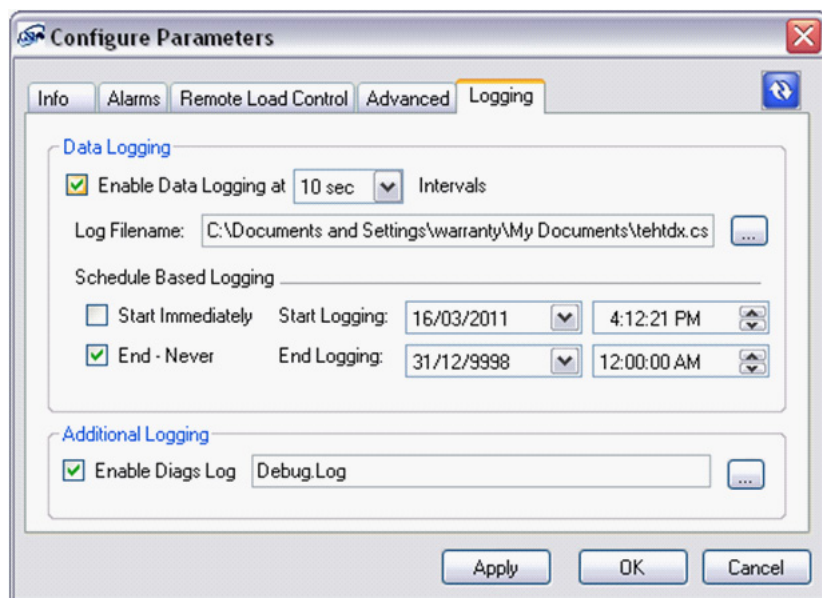
With this setting you have the ability to set the output voltage of the MPPT to the limit of the input voltage of the panels. (0.0V to 70V)

Due to the safety issue of outputting a uncontrolled higher voltage, at any time when connection is lost from the MCM the voltage of the MPPT will return to normal and be again controlled by the charge sequence. This also has it's own flag on the main window

#### **Enable 'Diagnostics' Menus:**

Please follow our recommendation to leave this disabled. There all settings and adjustments that are contained with in the menu are available through the GUI and are only for advanced users or for servicing. If entered any changes made are at your own risk.

## Part v - Logging:



### Data Logging:

*Note: Data Logging can only be done whilst the MPPT and MCM are connected to a PC running the GUI software.*

This tab enables you to log all data that is available to the MCM into a comma separated values file (CSV) for input into your choice of spreadsheet programs.

Datalogging can be set up to start and end at a specific period or continuous.

To use the data logging feature, first tick the box to enable data logging and select a time between 1second to 60minutes to log.

Then choose a file name and location of where you would like to save the file.

Choose between a starting and finishing time for the logging. For continuous logging choose the End-Never check box. And for the logging to start immediately after pressing Apply or OK choose the Start Immediately check box.

### Additional Logging:

This feature is not required by the user and is for diagnostic purposes by service agents.

*Please do not enable this function unless asked to by a GSL Representative.*