

WattPlot™

SumMATE

version 5.1.0

Analysis, Summarization, and
Viewing of Data Files from
MATE, MATE3, and AXS Port Devices
from OutBack Power Systems

USER'S GUIDE

Revised February, 2016

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What's New in Version 5.1.0?

WattPlot™ SumMATE has had regular enhancements and small bug fixes since its first release in 2013. The major improvements for the latest release series are listed below:

- SumMATE can now be run unlicensed as a tool to open and view data files from another WattPlot application. ([see page 6](#))
- New scrollable window to display More Information from Daily Summary window. ([see page 25](#))
- Added support for AXS Port device SD Card data files. ([see page 12](#))
- Added Charge Controller Absorb Time to Daily Summary window. ([see page 23](#))
- Replaced processing interruption due to data errors with cumulative error listing in Process MATE3 SD Card Data Files window. ([see page 21](#))
- Improved ability to process inconsistent data sometimes sent by Radian inverters and often found on MATE3 SD Cards. ([see page 21](#))



Getting Started

WattPlot™ SumMATE is part of the **WattPlot™ 5** suite of software tools for monitoring and controlling renewable energy devices such as inverters and charge controllers from OutBack Power Systems.

The **WattPlot™** SumMATE application is most commonly used to load, analyse, summarize, and backup logged data from a MATE3 SD memory card. However, it can also accept the following kinds of input:

- ✓ .CSV files from MATE3 Data logging - Excel format
- ✓ .CSV files from MATE3 Data logging - Compact format
- ✓ .CSV files from AXS Port Data logging
- ✓ .OBM files from WattPlot Raw Data Capture - Original MATE (Serial format)
- ✓ .OBM files from WattPlot Raw Data Capture - MATE3 (UDP/IP or USB formats)
- ✓ .CSV monthly summary files created by the WattPlot SumMATE or Monitor programs
- ✓ .EPD device data files created by the WattPlot Monitor program

SumMATE can generate the following kinds of output files:

- ✓ .CSV monthly summary files (1 file per device per month, 1 line per day)
- ✓ Copy of MATE3 or AXS Port .CSV files for backup purposes
- ✓ .CSV interval reports – spreadsheets of selected data at specified intervals

SumMATE can display data in the following presentation formats:

- ✓ Combination line and bar graph - by month by device
- ✓ Daily Summary - by system or by device
- ✓ Daily Pen-plot - by system or by device
- ✓ Ability to cross between formats and view value details at any time

This **Getting Started** section will guide you through the installation and configuration of the software. The **Using WattPlot SumMATE** section that follows provides more detailed information on each feature.

If you have any questions not answered in this document, or would like to send us feedback or suggestions, you can contact us at:

intallact

techsupport@WattPlot.com
<http://WattPlot.com>



System Requirements

In order to use any **WattPlot™** software, you will need at least the following two things:

- A computer running Microsoft Windows (XP or later), or equivalent emulation
- An OutBack MATE, MATE2, MATE3 or AXS Port monitoring device. The MATE and MATE2 monitoring devices are technologically equivalent. This User's Guide will usually just refer to these device types as a MATE. The MATE3 device, on the other hand, is very different, as is the AXS Port device:



MATE



MATE2



MATE3



AXS Port

SumMATE Program Installation

- STEP 1. From <http://WattPlot.com/download.htm>, download the SumMATE setup application, called SumMATESetup.msi.
- STEP 2. Save the downloaded file on your computer and run SumMATESetup.msi (a Windows Installer Package). The setup program will guide you through the installation process. We recommend installing the program (SumMATE.exe) in the default folder specified, which is Program Files\WattPlot. The installation process will also add a shortcut and other Resources to your Windows Start menu.
- STEP 3. To run the program, click on the WattPlot SumMATE entry of the Windows Start menu (under All Programs...WattPlot). When WattPlot SumMATE is first run, you may be asked to **Accept** the End User License Agreement, a copy of which is included in this manual.

The remaining steps may or may not be prompted for, depending on whether this is your first WattPlot software installation, or if SumMATE can use settings that you already have on file.

- STEP 4. If your computer is connected to the internet, then you will be prompted to enter your email settings. (See the [Email Settings](#) section.)
- STEP 5. You will then be prompted to enter a brief descriptive System Name for this installation:

Add New System

System Name: Anderson Home (No punctuation or special characters allowed)

Data Folder: C:\ProgramData\WattPlot\Anderson Home\ Browse...

Description: Network connection to Susan Anderson's system.

OK Exit



The System Name identifies this particular MATE connection and the OutBack system that it monitors. It will be included in any emails that WattPlot SumMATE sends out.

NOTE: System Names cannot be easily changed after they have been defined. Please contact WattPlot Support if a change is required.

The Data Folder specifies where WattPlot will store configuration and performance data. It is recommended that you accept the default. You can always change this location later.

If you are defining multiple systems or connection methods, you can use the Description field to help identify each configuration.

That's it! WattPlot SumMATE is now installed. Note that the program installs in unlicensed mode, which is pretty much limited to opening and viewing data files created by other WattPlot applications. The following functions require a license activation (see [Activation](#) below). The activation will be prompted for when any of the functions are first invoked.

Functions requiring an activation:

- Opening MATE3 or AXS Port data (CSV) files.
- Processing MATE3 or AXS Port SD Card files.
- Updating monthly summaries.
- Creating interval reports.

More information is available in the [Using the WattPlot SumMATE Program](#) section.

Release Announcements and other Special Notifications

Installations of WattPlot SumMATE that are connected to the internet will check for new releases of the software and other special notifications from WattPlot. You will be advised if a new version of SumMATE has been released into production when you first run the program.

You can adjust how often SumMATE checks for such notifications, using the dropdown menu at the bottom of the notification screen, or even turn them off all together. (See [Check for New Release](#).)

You can also request a manual check for a new release and other special notifications, using the [Check for New Release](#) entry of the File menu.



Email Settings

WattPlot SumMATE has a powerful built-in email capability. Email can be used to:

- Activate your software automatically.
- Send error messages to WattPlot’s technical support for fast resolution.

The Email Settings dialog box will be presented early in the installation process. You can also access it later from the **Email Settings** entry of the **Options** menu.

Local (From) Address

This is the email address that you normally send from. Emails sent by SumMATE will have this address as the ‘reply-to’. It will also be the address system event notifications will be sent to if no **Default 'TO' Addresses** are specified.

Default 'TO' Address(es)

You can specify one or more email addresses which will receive SumMATE’s system event notifications. If none are specified, the **Local (From) Address** will be used. All email addresses must be of the “account@domain.ext” format.

SMTP Login

The second section is where you specify your SMTP Server, Port number (if required), SSL Option, User Account, and Password. (The **Common Providers** menu has the settings for AOL, AT&T, Comcast, Gmail, Hotmail, Lycos, Outlook.com, Verizon, and Yahoo.) The server, user account, and password must be present in order to save the data on this screen. If you are not sure what these settings should be, you can often get them by looking at the settings in your regular e-mail program. If you read your mail on-line through a browser, those sites will often have instructions on how to send via SMTP as well.



Some common SMTP Host servers (such as “smtp.gmail.com”) are recognized by WattPlot and will have various other settings defaulted in for you.

Your SMTP Login password and other settings are stored securely in WattPlot’s local data folder in a file called `vbmail.dat`. WattPlot will only ever transmit data or settings specific to the WattPlot software. Login settings will never be transmitted.

Test

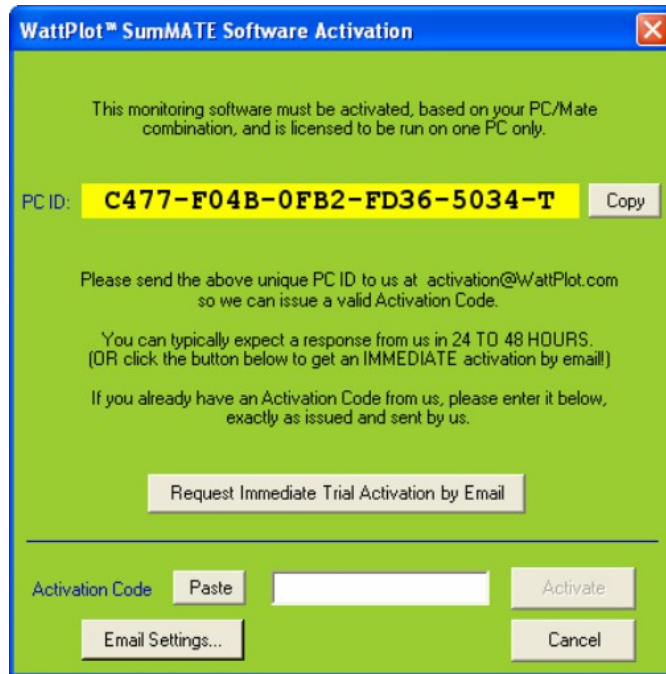
It is strongly recommended that you test your SMTP settings. You can test them by clicking the **Test** button. A test email message will be sent using the specified **Local (From) Address** as both the sender and recipient. If all of the settings are correct, you should see the test email message when you check your email at that address. Note that there may be a slight delay while the SMTP server processes the email.



Activation

If you want to go beyond viewing data files created by other WattPlot applications, you will need to activate your installation, which you can do from the File menu.

You will first be prompted for the serial number of your OutBack communications device. If you have a MATE, MATE3, or AXS Port, the serial number will be found on a sticker on the unit. (The sticker is internal for MATE2 units.) If you have a MATE or MATE2, you can get the unit to display the serial number by unplugging the **network** cable (leading to your Outback system) from your MATE and then plugging it back in. Serial numbers are also generally written on the box or in the documentation that you received with your Outback components.



The full serial number is required, including any leading letters. After the device serial number has been verified, the program will display a Unique PC ID for your computer and prompt for an Activation Code, as shown above.

If you have entered Email Settings, and your computer can access the internet, WattPlot SumMATE can automatically register your system and issue you with a trial Activation Code, as indicated by the large button labeled Request Immediate Trial Activation by Email. If SumMATE can request an activation but cannot issue an automatic one for any reason, then this button may be labeled Request Activation Code by Email, which means that we will have to issue an Activation Code manually (usually within 24-48 hours). If email is not possible for some reason, then no such button will be visible.

If WattPlot cannot automatically email your activation request, please take note of the unique PC ID that is displayed (which will be different from the one shown above) and then click Cancel. You will have to email that PC ID to us at **activation@WattPlot.com** so that we can get a valid Activation Code to you. You can typically expect a response with your Activation Code in **24 to 48 hours**.

When you receive your Activation Code, run the program again and enter the code at this prompt EXACTLY as you received it. (We suggest a copy-and-paste from our email directly into the activation screen input field.) Click Activate.

Note: If you are currently working with an evaluation copy of WattPlot, and have purchased a permanent license, you can recall this window to enter your new permanent Activation Code by selecting License Activation from the File menu.

IMPORTANT NOTICE

WattPlot Activation Codes are issued ONCE. If you later want to move this license to a different PC, you can do that yourself. (See [Moving your WattPlot™ License](#) section.)



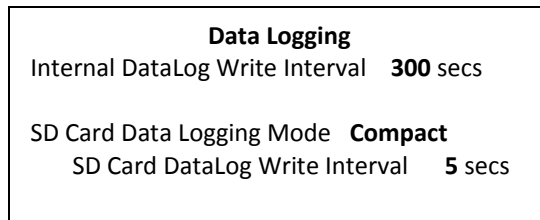
MATE3 and AXS Port Data Logging

Since WattPlot™ SumMATE is often used to summarize data logged on to a MATE3 or AXS Port SD memory card, we should do a quick overview of SD Card data logging.

The data logging capabilities of the OutBack MATE3 and AXS Port are very useful. The state of every OutBack device in your system can be logged, every second, to an SD memory card, inserted directly into the device. No other hardware is required. Unfortunately, there are some drawbacks: The data can only be accessed by physically removing the card, and the data is not very user-friendly. SumMATE makes the best of the first limitation (speedy processing for a fast SD Card swap), and turns that data into beautiful information!

The MATE3’s SD Card configuration screen is accessible through the following menus:

Main Menu – Settings Menu – MATE3 – Data Logging



The default mode is Disabled. We recommend that you enable SD Card Data Logging in Compact mode. (In fact, Compact mode is an implementation of our suggestion to OutBack for improved MATE3 capabilities. Excel mode takes about 25% more storage space.) In Compact mode, an average SD memory card (941 MB) has the capacity to store about 200 device-days at 1-second resolution. That means that if your OutBack renewable energy system has four devices, you could store about 50 days of data if your DataLog Write Interval is set to 1 second (system status captured every second). A system with eight devices and a DataLog Write interval of 5 seconds gives you about 125 days of storage. When WattPlot™ SumMATE is processing your MATE3 SD Card data, it can automatically move the files on to your PC as a backup, clearing all but the current day's files from the card.

The MATE3 offers DataLog Write intervals of 1, 2, 3, 4, 5, 6, 10, 15, 20, 30, or 60 seconds. If your DataLog Write interval is greater than 1 second, WattPlot™ SumMATE will ‘back-fill’ the values for each log into the preceding time gap. We generally recommend a Write Interval of between 1 and 6 seconds.



Using WattPlot™ SumMATE

Major Functions and Typical Usage

Once WattPlot SumMATE has been installed, configured, and activated, there are two categories of functionality: Loading Data and Viewing Information.

Loading Data

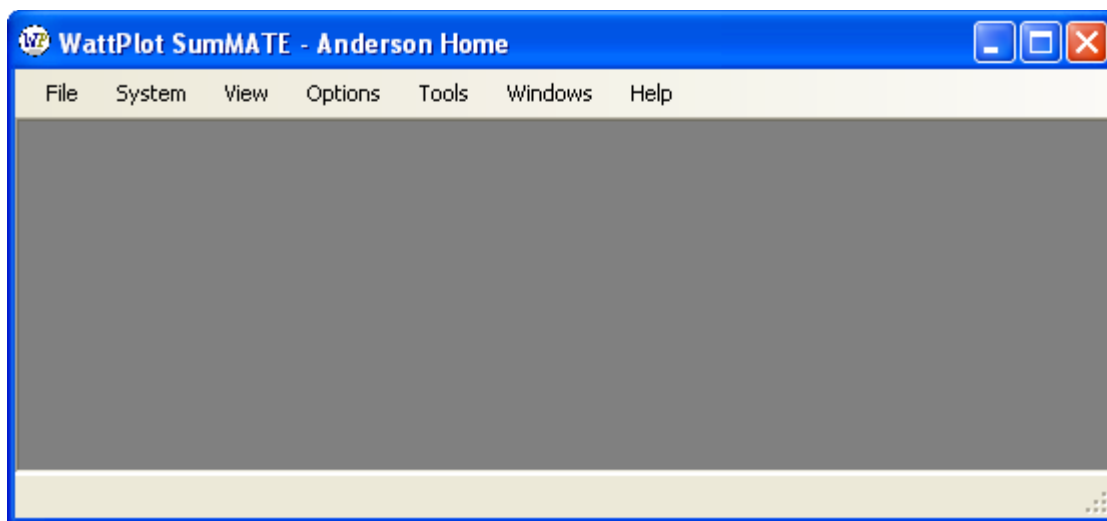
For MATE3 and AXS Port users, the most common function for loading data is to bring in it straight from the device’s SD memory card. See [Tools – Process MATE3 SD Card Data](#). You can also use the [Open function of the File menu](#) to open a wide variety of MATE data formats.

Viewing Information

The View menu offers different ways to access stored data, including [Daily System Summaries](#) and [Monthly Summaries by Device](#). All information views support further drilling-down, switching to plot views, and extracting data to spreadsheet reports.

Program Interface

The main program window first appears similar to this:



The primary functions of the application are accessed from the program menus.



Program Menus

File – Open

The File...Open function is used to open and display any kind of recognized MATE data input file. These include:

File name	Source and Content Description	Opened as
yymmddhh.CSV	MATE3 Data logging - Excel format <i>Not available in Unlicensed Mode</i>	Daily Summary
yymmddhh.CSV	MATE3 Data logging - Compact format <i>Not available in Unlicensed Mode</i>	Daily Summary
yymmddhh.CSV	AXS Port Data logging <i>Not available in Unlicensed Mode</i>	Daily Summary
yyyy-mm-dd_n.OBM	From any WattPlot Raw Data Capture function - Original MATE (Serial)	Daily Summary
yyyy-mm-dd_n.OBM	From any WattPlot Raw Data Capture function - MATE3 (UDP/IP or USB)	Daily Summary
Mmm-yyyy_dev PowerUsage.CSV	Monthly device summary files from WattPlot SumMATE or Monitor program	Monthly Summary
yyyy-mm-dd_dev.EPD	Daily device data from WattPlot Monitor program	Daily Summary
LogType.LOG	Operations logs from the WattPlot Monitor program, including Alert.log, General.log, Comm.log, and Maint.log.	Log Viewer

SumMATE remembers the most recent nine files opened, to allow fast recall from the File menu. You can also drag and drop files from the Windows Explorer on to the SumMATE main screen to open them.

If you have multiple systems defined, when you open a data file, SumMATE will analyse the full file path in order to guess which system the data pertains to. If the data doesn’t match the device signatures of the guessed system, you will be prompted to identify which system the data is from.

File – License Activation

When you first download and install WattPlot SumMATE, it will run with limited functionality. In order to get full functionality (initially on a trial basis), you may be issued a trial activation, good for about two weeks. If you decide to order a permanent activation, WattPlot will issue you with a permanent activation key, which must be entered from this menu option. Selecting Licence Activation will present you with the [Activation dialog box](#), where you may enter the activation key.

File – Move License to New PC

(Please see the section on [Moving Your WattPlot SumMATE License](#).)

File – Check for New Release

If SumMATE is running on a computer with internet access, you can ask it to automatically check for new releases of the program itself. This is similar to what it already does automatically when you first



run the program. All notifications will include a few notes about the program changes, and a link to read more details and to download the latest version. The frequency with which you will be informed of a new release is configurable using the drop-down menu at the bottom of the Special Notifications screen:

Selected Option	Effect
List all releases, checking every 10 days	When a new version of WattPlot SumMATE is released into production, the program will notify you no more often than every 10 days.
List all releases, checking every 24 days	When a new version of WattPlot SumMATE is released into production, the program will notify you no more often than every 24 days. <i>(Default setting.)</i>
List all releases, checking every 90 days	When a new version of WattPlot SumMATE is released into production, the program will notify you no more often than every 90 days.
Disable all release and special notifications	You will not be automatically notified of any new releases or special notifications. If you select this option, it is recommended that you do a manual check from the Options menu every 6 months.

Note that normally special notifications are one-time messages that only appear once (at program start up) and will not be repeated. However, if you use this menu option to check for new releases and special notifications, all current special notifications will be shown.

File – Exit

Closes all WattPlot SumMATE windows and exits the application.

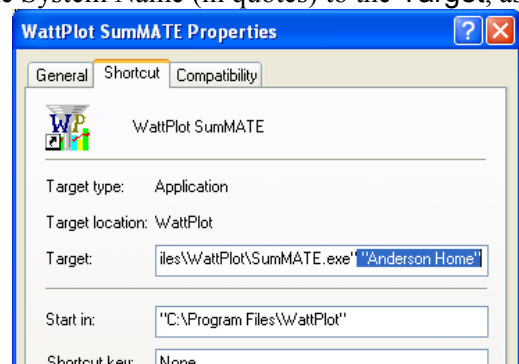
System – System Name

WattPlot SumMATE can work with data from several different MATEs. Each is defined by a separate System Name. The default system for this session is indicated by a check mark. If you are working with data from a different system, it is recommended that you change the default system by selecting the new one from this menu.

If you have multiple systems defined, WattPlot SumMATE will prompt you for which system’s data you want to work with when it is first run. You can create shortcuts specific to a pre-selected system which will bypass this prompt. To do so, create a new Windows shortcut for SumMATE, then go to the Properties window of the shortcut, and append a space and the System Name (in quotes) to the Target, as shown in the screen fragment at right. (Note that the full target is not shown – "C:\Program Files\WattPlot\SumMATE.exe".)

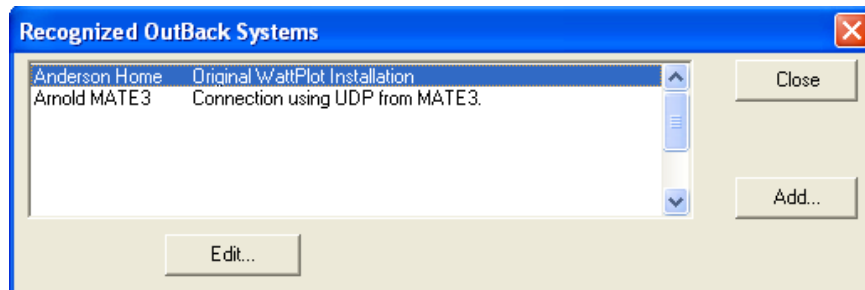
You may also wish to rename the shortcut so that you know which system it refers to.

System – Add/Edit/Remove System

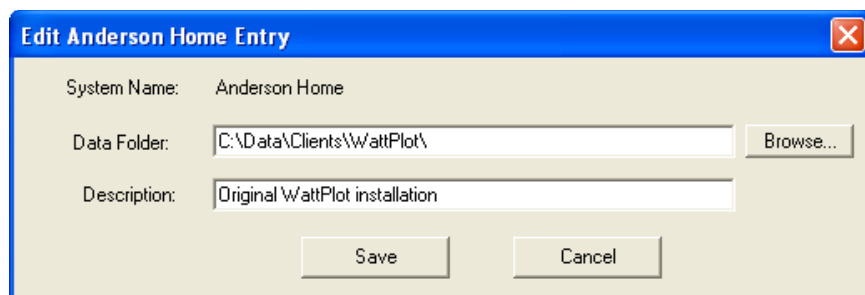




When WattPlot SumMATE is first installed and run, it will prompt you for the first System Name. For most installations, this is the only System Name that will ever be needed. If you work with data from multiple MATEs, you may wish to define more systems. Selecting this menu option will present you with a list of defined systems:



Choose the Add button to add a new system definition, or the Edit button to edit the selected system. The Add and Edit functions use the screen shown below:



System Name This is a brief descriptive name which identifies a particular MATE connection and the OutBack system that it monitors. It will be included in any emails that WattPlot SumMATE sends out. Note that System Names are set in the Add screen and are not editable in the Edit screen. To change the name, add a new system under the new name and remove the old one.

Data Folder This specifies where WattPlot will store configuration and performance data. It is recommended that you accept the default, unless you already have WattPlot data elsewhere, or you have a particular need to store data in a separate location. The folder will be created when you click the **Save** button, if it is not already present.

Description Use this free text field to give a more detailed description of the system.

Once a new system is added, it will be appended to the list under the WattPlot System menu.

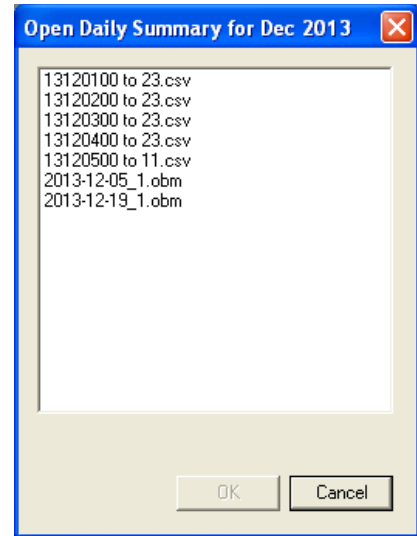
View – Daily Summary



Selecting this menu option will present a sub-menu of months that WattPlot has associated with system-wide data for the current system. This includes MATE3 or AXS Port Data Log files (named as `yyymmddhh.csv`) copied from the SD memory card (see [Process MATE3 SD Card Data](#)) and raw system data in `.OBM` files (captured by other WattPlot tools - see their MATE Data Source dialog box Advanced Settings). Selecting a month from the sub-menu will present you with a list of daily data files that WattPlot SumMATE can find in the designated data folder for the current system, as shown at right:

In this example, the “.csv” entries refer to groups of hourly SD card data log files for December 1 to 5, while the last two “.obm” files listed are raw MATE data for December 5th and 19th.

Selecting a specific daily file (or file set) and clicking OK will load that data into the [Daily Summary Window](#).



View – Monthly Summary

Selecting this menu option will present a sub-menu of devices that WattPlot has associated with the current system. Selecting a device from the sub-menu will present you with a list of monthly summary files that WattPlot SumMATE can find in the designated data folder for the current system. Finally, selecting a specific monthly summary will bring up the Monthly Summary window, as described in the [Monthly Power Summary](#) section.

View – Status Bar

Turns WattPlot SumMATE’s Status Bar display on or off.

Options – Email Settings

WattPlot SumMATE can use its built-in email functionality to activate your software, notify you of critical OutBack system events, and send error messages to WattPlot’s technical support for fast resolution. For details on configuring this functionality, see [Email Settings](#).

Options – Adjust Plot Scales

WattPlot allows you to specify the scale to be used on each pen-plot. To set the plot scales for a particular device or reporting set, click on the entry in the Plot Scales sub-menu of the Options menu, or right-click on the plot itself and select Adjust Plot Scales. The [Pen Plot Scales Dialog Box](#) will be presented.

Options – Compensate for Amperage Truncation



OutBack inverters (and the older MX-60 charge controller) truncate their reported amperages to the nearest whole number. This means that a reported value of 2 amps might really represent any value between 2.0 and 2.9 amps. WattPlot can compensate for this by using a more average value (2.5 amps) for its wattage calculations, etc. This adjustment will only be applied when the device’s operating mode makes such compensation meaningful. This menu entry will allow you to turn Truncation Compensation on or off.

The table below shows four examples of how truncation compensation adjustments are applied:

Device	FX-1	FX-2	FX-12 (set)	CC
Actual Volts (real world voltage)	119	121	120	30
Actual Amps (real world current)	3.0 - 3.9	1.0 - 1.9	4.0 - 5.9	7.0 - 7.9
MATE Reported Amps (truncated value)	3	1	n/a	7
Watts accumulated/plotted (with compensation OFF)	357	121	480	210
Adjusted/Calculated Amps	3.5	1.5	5.0	7.5
Watts accumulated/plotted (with compensation ON)	416.5	181.5	600	225
Actual Wattage (real world power)	357 - 475	121 - 241	478 - 716	210 - 239

Note that actual Amps and actual Wattages are a range. The truncated value reported by the MATE means that the real value could be anywhere in that range. With compensation turned OFF, only the lowest value in the range is used. With compensation turned ON, the middle value of the range is used.

Options – Select Spreadsheet Program

You can set the file path to the spreadsheet program (such as MS Excel) that SumMATE will use to open associated CSV (comma-separated value) files such as monthly power summaries and interval reports.

Tools – Process MATE3 SD Card Data *(only available in fully-licensed program)*

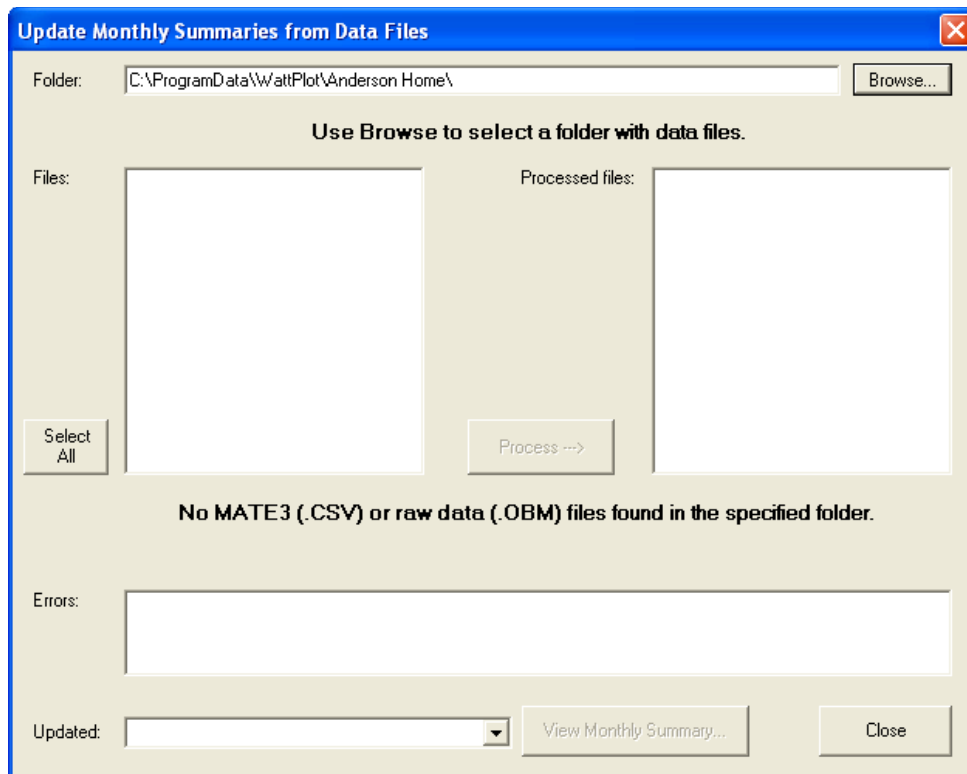
This menu option is SumMATE’s primary function for loading and processing MATE3 SD Card data. For a full description of the function, see the [Processing MATE3 SD Card Data section](#).

Tools – Update Monthly Summaries *(only available in fully-licensed program)*

A function to select specific MATE3 SD card Data Log files (.CSV) or raw MATE data files captured by a WattPlot Monitor program (.OBM), and update the corresponding monthly summary spreadsheets with their data.

Since the Process MATE3 SD Card Data function described above is a more direct way of summarizing those files, and the WattPlot Monitor program normally updates the summaries itself, this function is really a backup function for those processes, and **rarely needs to be run**. It can also be used to summarize data files received from another system.

The function begins with the Monthly Summary Update dialog box, as shown below:



Folder	The folder that the data files will be selected from. You can only process files from one folder at a time. Changing this folder, either directly or using the Browse button, will change the contents of the Files list on the left.
Browse	Enables you to select a new folder. Note that you are selecting a folder , not the data files themselves.
Files	List of MATE3 Data Log files (.CSV) or raw MATE data files (.OBM) found in the specified folder. Files must be selected (highlighted) by clicking on them in order to be processed. To select multiple files, hold down the Ctrl or Shift keys. Note that MATE3 Data Log files are generated by the hour. Selecting a single one-hour file will cause WattPlot SumMATE to search the same folder for all other hourly files that are for the same day and include them in the processing.
Process	Initiates the summarization of the data in all of the highlighted entries of the Files list.
Processed Files	List of all data files that have just been summarized.
Errors	List of any processing errors encountered.
Updated	List of all Monthly Summary files affected by the most recent processing.



View Monthly Summary Displays the Monthly Line/Bar Chart for the selected Updated file.

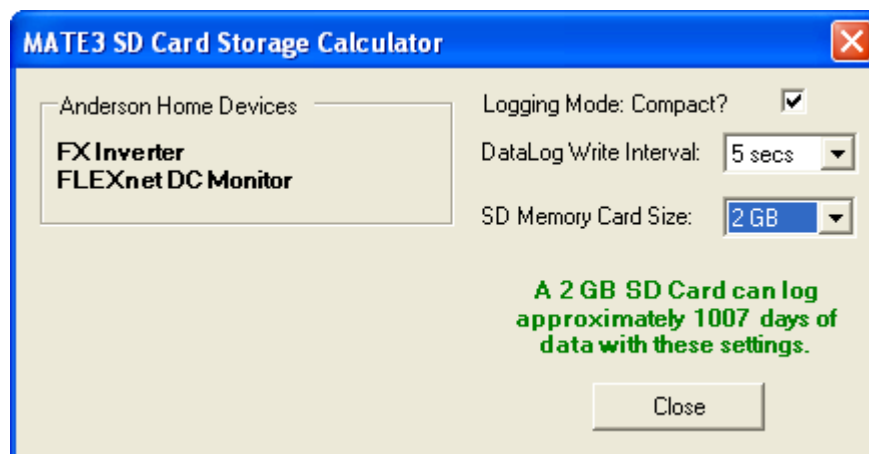
Close Closes the Update Monthly Summary dialog box.

Tools – Export Interval Data *(only available in fully-licensed program)*

Presents the **Interval Report Creation Dialog Box** corresponding to the currently active device. The currently active device is determined by the top-most Daily Summary or Pen-Plot window.

Tools – SD Card Storage Calculator *(only available in fully-licensed program)*

WattPlot SumMATE includes a handy tool to tell you how many days worth of data can be stored on your MATE3 SD memory card, based on the components that are in your system, the Data Logging settings you choose, and the size of the card:



If the program has access to the system definition, the components will be listed, as in the example above, Otherwise, you will be prompted to select the number of components being monitored by the MATE3.

Windows – Cascade

Arrange all child forms of the main SumMATE screen in overlapping descending order, running left to right.

Windows – Tile Vertically

Arrange all child forms of the main SumMATE screen in non-overlapping vertical tiles.

Windows – Tile Horizontally

Arrange all child forms of the main SumMATE screen in non-overlapping horizontal tiles.

Windows – Close All



Close all child windows of the main SumMATE screen.

Windows – Arrange Icons

Arrange the minimized child windows of the main SumMATE screen.

Help – Helpful Tips

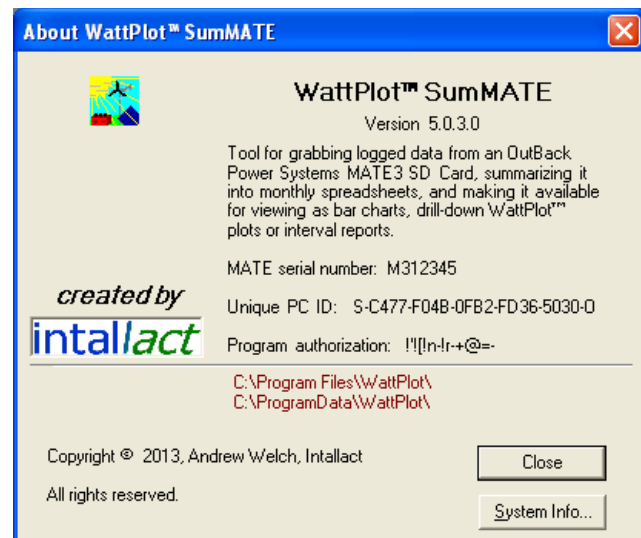
SumMATE has an option to display a different helpful tip about the program every time you start the application. Use this menu entry to turn the option on or off, and also to display the Help Tips window.

Help – SumMATE User’s Guide

This menu entry will call up this User’s Guide as a hyperlinked and searchable PDF file.

Help – About

WattPlot SumMATE’s About screen provides useful information such as the current program version number, the unique PC ID, etc., as shown at right. The two paths in red indicate where the program EXE file is running from and what the default data folder is for this system.



Help – WattPlot.com

This menu entry has a sub-menu with three options. Each one will take you directly to a different page of the WattPlot website: Frequently Asked Questions, Home Page, and Order Page (for purchasing licenses).

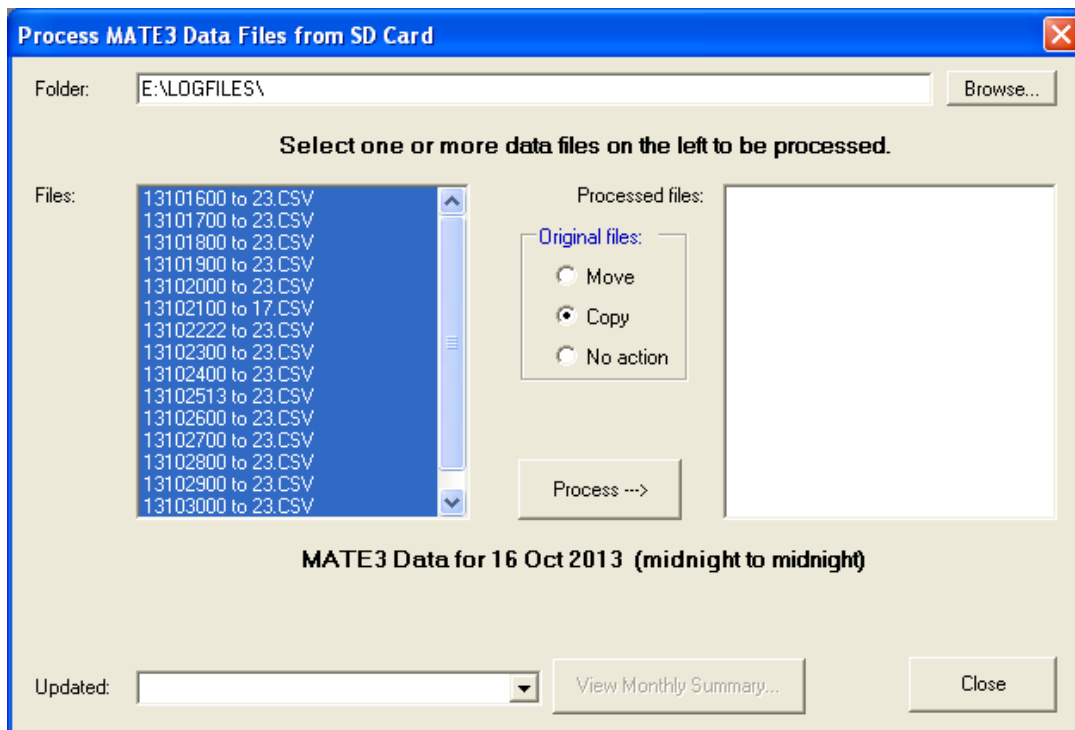


Processing MATE3 SD Card Data

The MATE3 and AXS Port devices have the capability of logging all system status data on an SD memory card inserted into the side of the device. A primary function of WattPlot SumMATE is the ability to load, analyse, summarize, and backup Data Log files from those SD memory cards with a single mouse click.

Here is the recommended sequence of events:

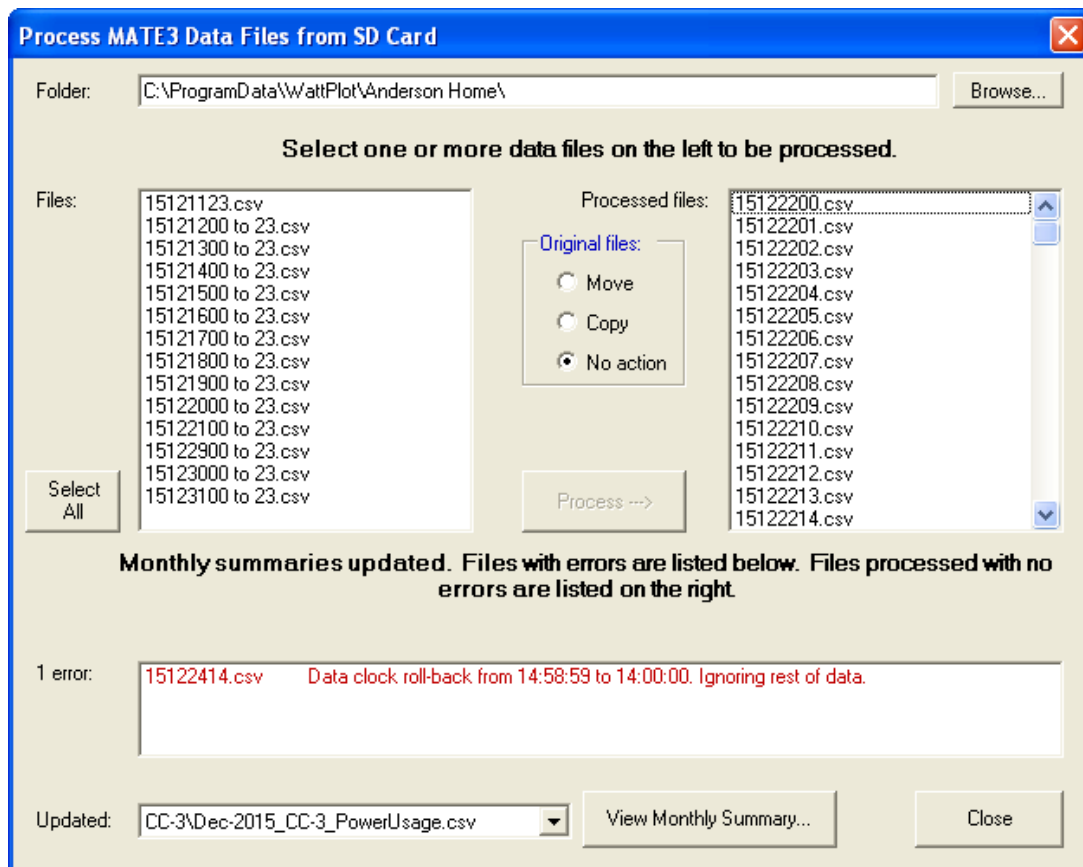
1. Remove the SD memory card from the MATE3 or AXS Port.
2. Insert it into the SD card slot of your computer running SumMATE.
3. Select Process MATE3 SD Card Data from the Tools menu.
4. The first time you use this function, you may have to use the **Browse** button to select the drive and/or folder containing the CSV files. (**Note** that you are selecting the **folder**, **not** the CSV files themselves.)
5. The Monthly Summary Update dialog box will appear, as shown below, with all of the unprocessed daily MATE3 data file ranges highlighted in the box on the left. Ranges for days already processed by this function will not be highlighted, except for the last day, which will be re-processed to collect any end-of-day data.



6. Confirm that the setting to **Move** or **Copy** original files after processing is what you want. (We recommend the **Move** option, which will back up your data files and remove all but the current day’s files from the SD Card.)



- Click the Process button. The dialog box will remove file ranges from the left as they are processed, and list the actual processed files on the right. Files with processing errors are shown below the other file lists.



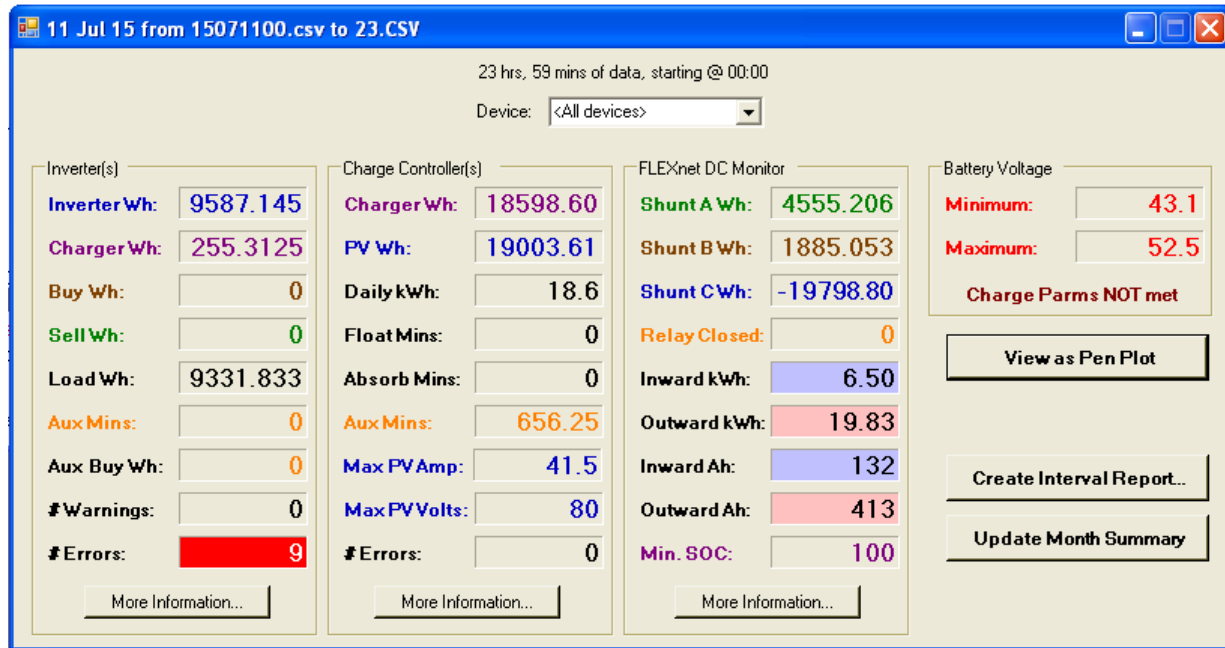
In the example given above, the file 15122414.csv had a Data clock roll-back error. This happens when the timestamps in the file generated by the OutBack device suddenly jump backwards. (In this case, data was given for every second from 14:00:00 to 14:58:59 and then the next line was for 14:00:00 again.) This appears to be quite a common bug in the MATE3 device (and probably the AXS Port). Please contact OutBack Technical Support for more information.

- Remove the SD card and return it to your MATE3 or AXS Port to resume the data logging.
- The drop-down list at the bottom left will list all of the monthly summary files updated by this process. Selecting one and clicking the View Monthly Summary button will open up the corresponding Monthly Summary Line/Bar Graph window behind this dialog box.
- Use the Close button to close the dialog box.



Daily Summary Window

The primary view of summarized data in WattPlot SumMATE is the Daily Summary window:



The data that it shows represents one day for either a specific device or all devices in a system. When the whole system is shown, the window may include up to four panels: A summary of all of the inverters, a summary of all of the charge controllers, a panel for a FLEXnet DC Monitor (if present), and a panel for the battery voltage.

The date and source of the data is indicated in the title bar of the window. Immediately below that is a description of how much time is represented by the data, and when data collection began (if known).

European users please note: *WattPlot supports international decimal formats. What will appear in this manual as “25.6” will be displayed as “25,6” etc., if your computer is setup for European decimal format.*

The Device drop-down box allows you to specify either the whole system view (as shown), or the daily summary of a specific device as detailed below:

Inverter Summary Panel

Inverter Wh Inverter Watt-Hours – the power produced by the inverter(s) and sent to the loads that day. Obtained by summing the Inverter current multiplied by the AC Out voltage.

Charger Wh Charger Watt-Hours – the power used to charge the batteries that day. Obtained by summing the Charger current multiplied by the AC In voltage.

Buy Wh Buy Watt-Hours – the power used from the grid or generator source that day. Obtained by summing the Buy current multiplied by the AC In voltage.



Sell Wh Sell Watt-Hours – the power ‘sold’ back on to the grid that day. Obtained by summing the Sell current multiplied by the AC Out voltage. (Only applicable to grid-tied inverters.)

Load Wh Load Watt-Hours – The calculated AC Load power for that day. (Inverter Wh – Charger Wh + Buy Wh – Sell Wh)

Aux Mins The number of minutes that any inverter Aux port was ON that day. This is often an indicator of generator run time.

Aux Buy Wh Displays the power ‘bought’ by the system when the Aux Port is ON. This is often an indicator of how much energy has been input from the generator.

Warnings Number of inverter warnings received that day. Details are available from the **More Information** button.

Errors Number of inverter errors received that day. Details are available from the **More Information** button.

More Information Choosing this button will display a dialog box with extra information such as which devices are included in the summary numbers, various minimum or maximum values (and what time they occurred), the times spent in each operating mode, as well as details on any warnings or errors. (See [More Information Dialog Box](#).)

Inverter(s)	
InverterWh:	9587.145
ChargerWh:	255.3125
Buy Wh:	0
Sell Wh:	0
Load Wh:	9331.833
Aux Mins:	0
Aux Buy Wh:	0
#Warnings:	0
#Errors:	9
More Information...	

Charge Controller Summary Panel

Charger Wh Charger Watt-Hours – the power going to charge the batteries that day. Obtained by summing the Charger Current multiplied by the Battery voltage.

PV Wh PV Panel Watt-Hours – the power produced by the PV panels that day. Obtained by summing the PV current multiplied by the PV voltage.

Daily kWh Daily Kilowatt-Hours – the power harvested by the charge controller(s) that day, as measured by the charge controller itself.

Float Mins The number of minutes that the charge controller was in Float mode that day. (For multiple devices, the charge controller with the most Float Time is shown.)

Absorb Mins The number of minutes that the charge controller was in Absorb mode that day.

Charge Controller(s)	
ChargerWh:	18598.60
PV Wh:	19003.61
Daily kWh:	18.6
Float Mins:	0
Absorb Mins:	0
Aux Mins:	656.25
Max PV Amp:	41.5
Max PV Volts:	80
#Errors:	0
More Information...	



- Aux Mins** The number of minutes that any charge controller Aux port was ON that day.
- Max PV Amp** The maximum DC current delivered by the PV array to the charge controller that day. Details are available from the **More Information** button.
- Max PV Volts** The maximum DC voltage measured at the charge controller input terminals that day. Details are available from the **More Information** button.
- # Errors** Number of charge controller errors received that day. Details are available from the **More Information** button.
- More Information** Choosing this button will display a dialog box with extra information such as which devices are included in the summary numbers, various minimum or maximum values (and what time they occurred), the times spent in each operating mode, as well as details on any errors. (See **More Information Dialog Box**.)

FLEXnet DC Monitor Summary Panel

- Shunt A Wh** Shunt A Watt-Hours – the power produced by the inverter and sent to the loads that day. Obtained by summing the Inverter current multiplied by the AC Out voltage.
- Shunt B Wh** Shunt B Watt-Hours – the power used to charge the batteries that day. Obtained by summing the Charger current multiplied by the AC In voltage.
- Shunt C Wh** Shunt C Watt-Hours – the power used from the grid or generator source that day. Obtained by summing the Buy current multiplied by the AC In voltage.



- Relay Closed** The number of minutes that the FnDC Aux relay was CLOSED that day.
- Inward kWh** Battery **input** kilowatt-hours, as summed by the FnDC from *all* shunts, since midnight (by the clock on the MATE). This represents the total power put **on** to the batteries for the day. Note that this value is only valid if the shunts are *not* in series! (See the OutBack FnDC manual for details on proper shunt placement.)
- Outward kWh** Battery **output** kilowatt-hours, as summed by the FnDC from *all* shunts, since midnight (by the clock on the MATE). This represents the total power taken **off** the batteries for the day. Note that this value is only valid if the shunts are *not* in series! (See the OutBack FnDC manual for details on proper shunt placement.)
- Inward Ah** Battery **input** amp-hours. (See details for Inward kWh above.)
- Outward Ah** Battery **output** amp-hours. (See details for Outward kWh above.)



Min. SOC Minimum State-of-Charge – The lowest State-of-Charge (as a percentage) recorded by WattPlot SumMATE for the battery since midnight (by the clock on the MATE).

More Information Choosing this button will display a dialog box with extra information such as various minimum or maximum values (and what time they occurred), number of days since the battery last met the charge parameters (**Days Since Full**), as defined in the FnDC (when shunt values were reset), as well as details on any warnings. (See [More Information Dialog Box](#).)

More Information Dialog Box



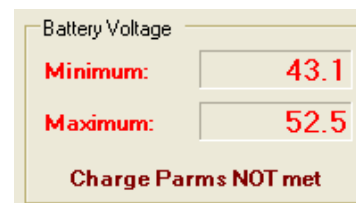
Minimums and maximums A summary of minimum and maximum values logged for the device on the given day. Specific values included will vary, based on the device type.

Notable events, warnings, and errors Any notable events will be listed, along with the time that they occurred.

Time spent in operating modes Inverters and charge controllers have different operating modes that they switch in and out of. The time spent in each mode will be summarized here.

Battery Voltage Summary Panel

Minimum Minimum Battery Voltage – the lowest battery voltage recorded for the day. This value comes from the FLEXnet DC Monitor (if present) or the first inverter or charge controller.



Maximum Maximum Battery Voltage – the highest battery voltage recorded for the day. This value comes from the FLEXnet DC Monitor (if present) or the first inverter or charge controller.



Charge Params Charge Parameters Met (or not) – This message is only applicable if there is a FLEXnet DC Monitor present in the system.

Other Daily Summary Buttons

View as Pen Plot Opens the **Pen-Plot Window** for the currently selected device.

Create Interval Report Presents the **Interval Report Creation Dialog Box** for the currently selected device (or all devices).

Update Monthly Summary Updates the Monthly Summary file for the currently selected device, with the data displayed. This is rarely necessary, since the Monthly Summary is usually updated when the data is first brought into WattPlot (either by the WattPlot Monitor program or the Process MATE3 SD Card Data functions).



Monthly Power Summary

The Monthly Power Summary records daily information used to track system performance by specific device and/or reporting set.

To view the summaries as bar charts and line graphs, open them from the device sub-menus under the Monthly Summary selection of WattPlot SumMATE’s View menu, (which can list up to 2 years-worth of monthly reports). Older logs can be opened using the Open function of the File menu.



The Monthly Power Summary graph can have a bar graph component (selected from the drop-down menu at bottom-left) and a line graph component (selected at bottom-right).

The white background indicates the number of hours that WattPlot has data for. If the entire column is white, then it has data for all 24 hours. In the example above, the small patch of gray at the top of day 21 shows that only 22.5 hours was available, while day 23 barely logged any time at all.

Hovering the mouse over a particular day will give you the precise values used in the graphs for that day. You can also double-click on any day to open up the detailed pen-plot window for that day.

The log files may also be directly opened by Microsoft Excel or any other spreadsheet program. Monthly Power Summaries are stored by month, with a spreadsheet row for each day of the month, and are stored in a component’s sub-folder of the Logs folder, using the date and component ID. For example:

```
C:\ProgramData\WattPlot\FX-0\Mar-2006_FX-0_PowerUsage.csv
```

NOTE that if a Monthly Power Summary is left open in the spreadsheet program, additional data cannot be written to it. In such cases, a new file (Mar-2006_FX-0_PowerUsageA.csv) will be created. WattPlot will attempt to merge this data back into the base filename at the next update opportunity.



On most systems (depending on the set-up and availability of other programs), an **Open Spreadsheet** button below the graphs will take you directly into viewing the summary under whatever your default spreadsheet application is:

Log Date	Run time Hrs	Inverter kWh	Charger kWh	Buy kWh	Sell kWh	Aux Hrs Cool Fan	Min Batt vDC	Max Batt vDC	Load kWh
01/03/2006	12.15	0	0.00007	0.22875	0	0	25.6	28.6	0.22868
02/03/2006	24	0	0.00012	0	0	0	25.6	26.4	0.00408
03/03/2006	18.05	0.00251	0.00008	0.00711	0	0	26.4	27.6	0.00954
05/03/2006	1.67	0	0	0.03401	0.00021	0	26.6	28.2	0.0338
06/03/2006	24	0.09467	0.00082	0.49512	0.55103	0	25.6	28.8	0.03794
07/03/2006	24	0.00081	0.00107	0.18864	0.00000	0	25.4	27.2	0.18838
08/03/2006	24	0.00000	0.00059	0	0	0	25.8	27.4	0.05343
09/03/2006	17.21	0.00119	0.00004	0	0	0	25.6	26.8	0.00115
10/03/2006	6.35	0	0	0	0	0	25.6	26	0.106
Totals	151.43	0.10338	0.00279	1.11365	0.55124	0			0.663

(Because of Excel defaults and CSV file conversion, the date field appears filled with “#”s when you first open a WattPlot Power Summary in Microsoft Excel. Just widen column A to see the dates.)

NOTE that European decimal formats (e.g. “25,6” vDC) are also supported.

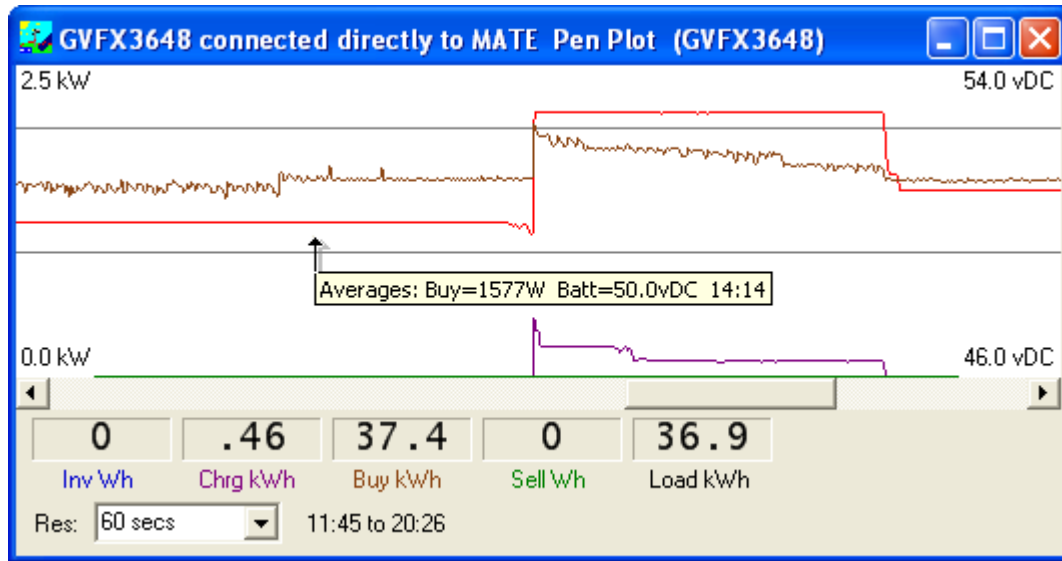
The column headings vary, based on the device being summarized (inverter, charge controller, or DC monitor), and most should be self-explanatory. Some specific columns are described below. Each spreadsheet column is totalled along the top (row 2).

Run Time (Hrs) Entries in this column show the amount of data time represented by the data shown.

Aux Hrs For FX Monthly Power Summaries, this column will log the amount of time that the AUX ON was activated. If the Aux Port usage (“Cool Fan” in the above example) is available (being set by other WattPlot tools), it will be displayed. Otherwise the a “???” will be shown.



Pen-Plot Windows



WattPlot’s signature display of daily device data is the Pen-plot window, showing the changes in MATE data values over time. These windows can be resized by height or width.

For an **Inverter** (or **Inverter set**) the plotted values (and their line colors) are:

Inverter Watts (blue)	Power produced by the inverter and sent to the loads. Obtained by multiplying the Inverter Current by the AC Out voltage.
Charger Watts (purple)	Power used to charge the batteries. Obtained by multiplying the Charger Current by the AC In voltage.
Buy Watts (brown)	Power used from the grid or generator source. Obtained by multiplying the Buy Current by the AC In voltage.
Sell Watts (green)	Power ‘sold’ back on to the grid. Obtained by multiplying the Sell Current by the AC Out voltage. (Only applicable to grid-tied inverters.)
Battery Voltage (red)	Actual battery bank voltage.

For a **Charge Controller** (or **Charge Controller set**) the plotted values (and their line colors) are:

Charger Watts (purple)	Power going to charge the batteries. Obtained by multiplying the Charger Current by the Battery Voltage.
PV Watts (brown)	Power produced by the PV panels. Obtained by multiplying the PV Current by the PV Voltage.
Battery Voltage (red)	Actual battery bank voltage.



For a **FLEXnet DC** the plotted values (and their line colors) are:

State of Charge (purple)	Percentage charged for the battery bank.
Shunt 1 Watts (blue)	Power passing through Shunt 1. Obtained by multiplying the Shunt 1 Current by the Battery Voltage.
Shunt 2 Watts (brown)	Power passing through Shunt 2. Obtained by multiplying the Shunt 2 Current by the Battery Voltage.
Shunt 3 Watts (green)	Power passing through Shunt 3. Obtained by multiplying the Shunt 3 Current by the Battery Voltage.
Battery Voltage (red)	Actual battery bank voltage.

Hovering the mouse over any part of the pen-plot that has data will bring up a tool tip, indicating the specific data values and approximate time associated with the values pointed to. Points that are *off-the-scale* will be indicated by “<” or “>” signs.

Plot Scales

The plot scales are defaulted, based on the model of the device represented, the nominal voltage of the battery bank, and by the number of components (if the plot is for a combined reporting set). You can adjust the plot scale in the **Pen Plot Scales** dialog box, accessible from the **Options** menu, or by right-clicking on the plot. See the [Pen Plot Scale Settings](#) section below.

The very top and very bottom of the plots are reserved for points that are off the scale. The short black lines across the top and bottom of the plot represent minutes (or hours in compressed view). The left-hand scale is Power in watts, while the right-hand scale is Battery Voltage in VDC. Hovering your mouse over the vertical scale labels will tell you how many watts or volts are represented by the horizontal gray lines.

Wattage Totals

The values at the bottom of each current pen-plot window show the accumulated Watt-Hours and how they were produced or used. This corresponds to the wattage totals in the Monthly Summary file. (See [Monthly Power Summary](#) section.) The Wattage totals are reset at midnight (or the next day).

Plot Resolution

Pen-Plots can be viewed at 1 data point (pixel) per second, 1 per minute (60 secs), or 1 per 3 minutes (180 secs), where compressed plots show the calculated average values. You can also zoom in on a particular value by double-clicking a point of the plot.

Plot Time Range

The data time reflected in the visible pen-plot window is indicated to the right of the Plot Resolution.

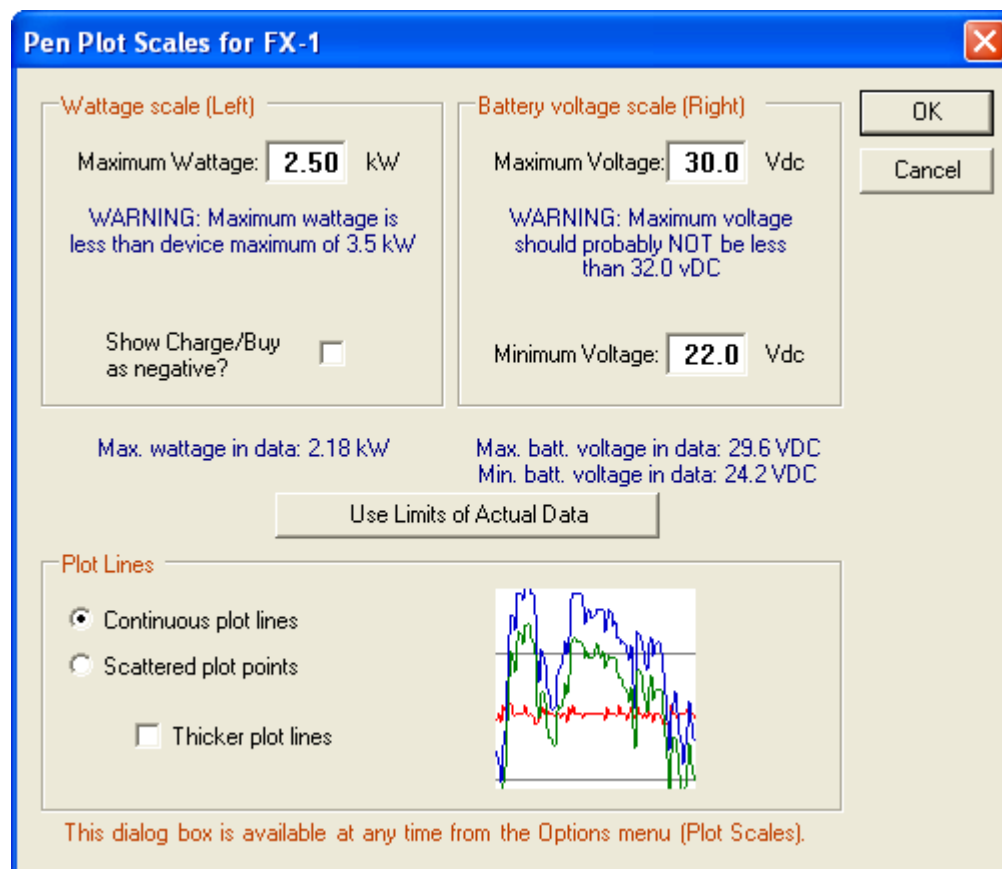


Pen-Plot Scale Settings

WattPlot allows you to specify the scale to be used on each pen-plot. We recommend that you work with the optimized default scales until you become familiar with what the program produces and can better determine how you might like to fine-tune your plots.

All plot windows are completely resizable, and remember their size parameters, by device, for when new plots are opened.

To set the plot scales for a particular device or reporting set, click on the entry in the **Plot Scales** sub-menu of the **Options** menu, or right-click on the plot itself and select **Adjust Plot Scales**. The Pen Plot Scales dialog box will be presented:



Maximum Wattage

Maximum wattage that will appear at the top of the pen-plot (in kilowatts). If the **Show Charge/Buy as negative** is checked (*FX inverters only*), then this will also be the negative limit at the bottom of the plot, otherwise, the bottom of the plot is 0.0 kW



If the wattage exceeds the plot maximum, then the point will be plotted one pixel above the top line, and the wattage will be given as “>maximum” when hovering the mouse over that point.

Show Charge/Buy as negative?

(*FX inverters only.*) Splits the pen-plot in half with a centered zero-line. Charging and Buying wattages will be plotted as negative values, while Inverting and Selling wattages will be plotted as positive values.

Maximum Voltage

Maximum battery voltage shown at the top of the pen-plot. Note that it is quite acceptable (and indeed desirable at times) to set this value much higher than what the batteries could actually hold, thereby keeping the battery plot values together and in the lower part of the pen-plot.

Minimum Voltage

Minimum battery voltage shown at the bottom of the pen-plot. Note that it is quite acceptable (and indeed desirable at times) to set this value much lower than what the batteries could actually survive at, thereby keeping the battery plot values together and in the upper part of the pen-plot.

Use Limits of Actual Data

WattPlot can calculate the optimal resolutions for the given device or reporting set, based on the actual data being plotted. (These values are shown in blue above the button.) Clicking this button will load those defaults. You can then fine-tune them to your preferences.

Continuous plot lines

Plot consist of continuous lines that bridge any gaps in data.

Scattered plot points

Plot points only appear where actual data was available.

Thicker plot lines

If checked, then plot lines appear as double thickness.

MATE Data Resolution

The resolution (precision) of the data provided by the MATE is actually determined by the OutBack component that is feeding data to the MATE. This can vary, based on a number of factors, as tabled below:

OutBack Component	Battery Bank	DC Voltage Resolution	DC Current Resolution	AC Volt. Res.
FX inverter (120V systems)	12V	0.1 VDC	1.0 amps	1.0 VAC
FX inverter (120V systems)	24V	0.2 VDC	1.0 amps	1.0 VAC
FX inverter (120V systems)	48V	0.4 VDC	1.0 amps	1.0 VAC
MX charge controller	-	1.0 VDC (PV) 0.1 VDC (Battery)	1.0 amps	-
FLEXmax 60/80 charge controller	-	1.0 VDC (PV) 0.1 VDC (Battery)	1.0 amps (PV) 0.1 amps (Charger)	-
FLEXnet DC monitor	-	0.1 VDC (Battery)	0.1 amps	-
FX-E inverter (230V systems)	12V	0.1 VDC	0.5 amps	2.0 VAC
FX-E inverter (230V systems)	24V	0.2 VDC	0.5 amps	2.0 VAC
FX-E inverter (230V systems)	48V	0.4 VDC	0.5 amps	2.0 VAC



Some examples of how the same data from a 48V system might look with different pen-plot scale settings are shown below:

Pen-Plot	Wattage Scale	Voltage Scale
	Maximum: 12.0 Show Negative: No Typical VAC: 120 Resolution = 100%	Maximum: 66.0 Minimum: 26.0 Resolution = 100%
	Maximum: 12.0 Show Negative: No Typical VAC: 120 Resolution = 100%	Maximum: 58.0 Minimum: 48.0 Resolution = 400% <i>Note gaps in red line</i>
	Maximum: 6.0 Show Negative: Yes Typical VAC: 120 Resolution = 100% <i>Note gray zero-line</i>	Maximum: 60.0 Minimum: 20.0 Resolution = 100%
	Maximum: 3.0 Show Negative: Yes Typical VAC: 120 Resolution = 200% <i>Note gaps in Watt lines</i>	Maximum: 60.0 Minimum: 20.0 Resolution = 100%

Plot Right-Click Functions (Scales, Data Exports, Time-of-Day)

Right-clicking anywhere on a pen-plot will present a pop-up menu of miscellaneous functions. An overview of the menu options follows.

Adjust Plot Scales...

Presents the Plot Scales dialog box, allowing you to temporarily change the plot scales. (See the [Pen-Plot Scale Settings](#) section earlier in this guide.)



Show Point's Raw Data	Shows the original values from the Mate that produced that point on the plot. (AC In and AC Out might be averages for points in surrounding area where all other values are the same).
Start Selection	Marks the beginning of a plot section to be selected. This will appear as a vertical yellow line on the plot.
End Selection	Marks the end of a plot section to be selected. This will appear as a vertical yellow line on the plot.
Save Selection As...	Specify a file name to export the selected plot data to. You can save the selected plot section in three forms: .CSV file – Generic spreadsheet compatible file of the original values from the Mate. (AC In and AC Out might be averages for points in surrounding area where all other values are the same). .EPD file – A new smaller WattPlot log containing just the selected pen-plot data (in the same proprietary compressed format). .TXT file – Raw text of the original values from the Mate. (AC In and AC Out might be averages for points in surrounding area where all other values are the same).
Clear Selection	Clears any start and end selection markers.
Zoom In	Switch plot to a higher resolution.
Zoom Out	Switch plot to a lower resolution.
Export Interval Data...	Presents the Interval Report Creation Dialog Box so that you can save the selected plot data as an interval report.
Jump to Time...	Prompts for a time-of-day (hh:mm) covered by the currently plot. The plot view will change to show the start of the specified minute with a yellow line. (This point will also become a defining point of a plot selection, as discussed above.)

Log Viewer

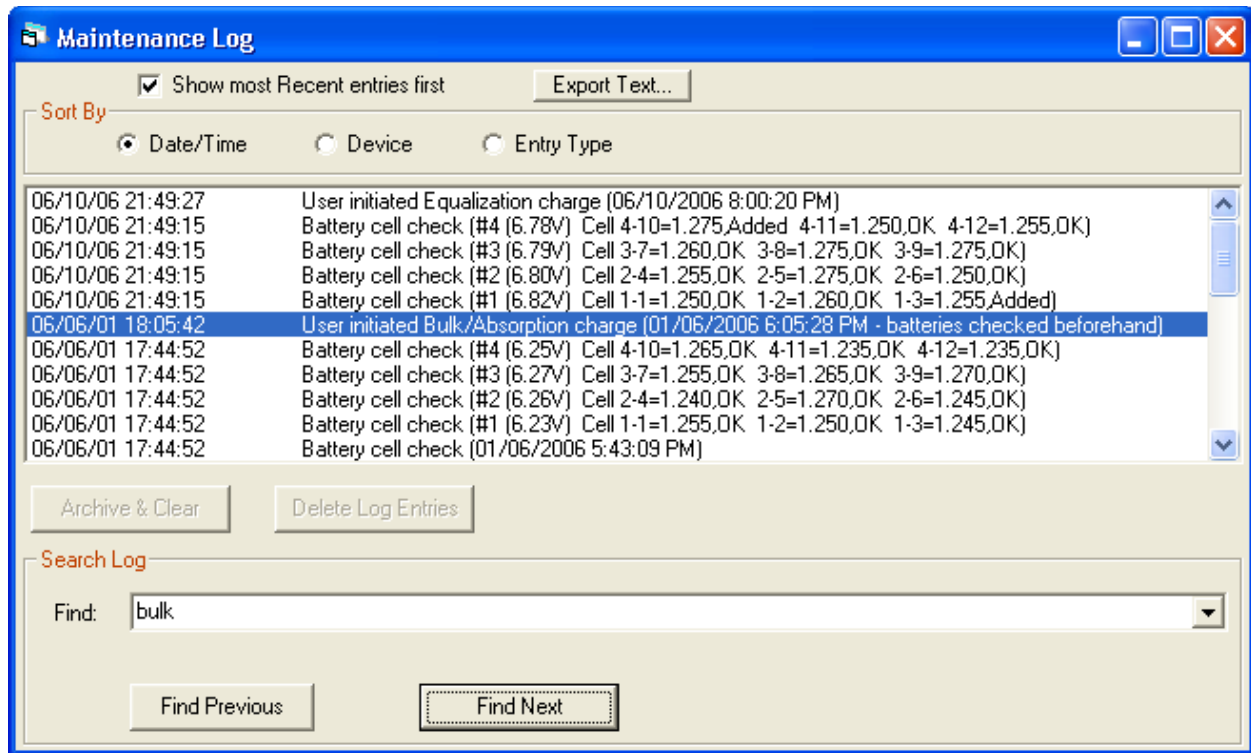
There are at least four kinds of operational logs that can be generated by the WattPlot Monitor program:

General Log	Records software activity (e.g. program stop/start), device mode changes, and commands sent to the MATE.
Alert Log	Records device errors and warnings.
Communication Log	Records MATE communication errors and other activity.



Maintenance Log Records maintenance information intended to be kept for the lifetime of the system. Entries can include bulk and equalization charges, battery maintenance details, and free text comments.

These logs are openable in WattPlot SumMATE from the File...Open menu entry as log windows:



Searching and Sorting Logs

All text log windows have a built-in search capability to find entries with specific text, accessible from the Show Search button. Also, any of the logs may be viewed sorted by date, device (component), or entry type. In each case, they may also be viewed with the most recent entries first or last.

Archived Logs

To view archived logs, use the File...Open menu entry and select the log file that you wish to view. Archived logs are stored in a log type’s sub-folder of the Logs folder, using the date and log type. For example:

```
C:\ProgramData\WattPlot\Anderson Home\Alert\2006-03-07_Alert.log
```

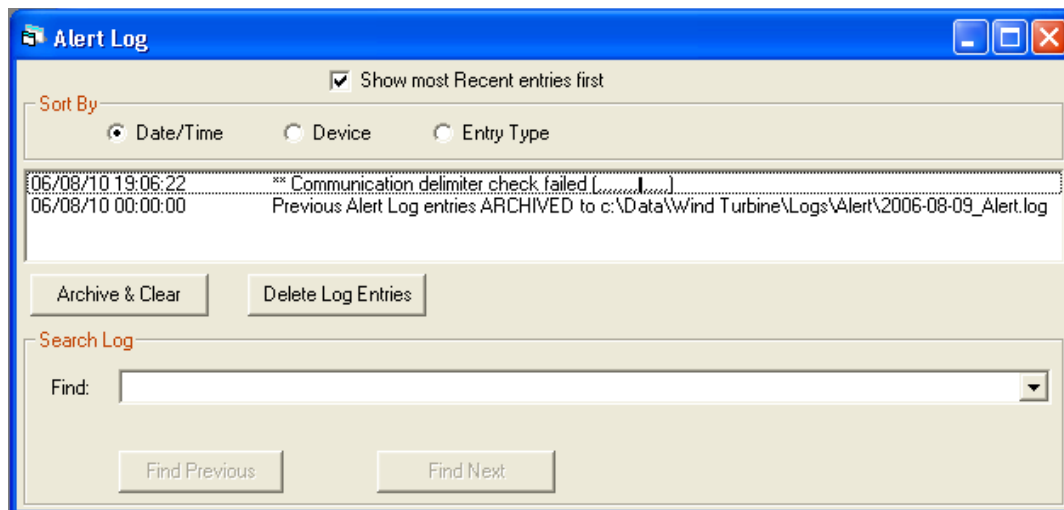
Exporting Log Contents to a Text File

The contents of any text log may be exported to a text file by clicking the Export Text... button, and specifying a text file. The text is exported with the same sorting as is shown in the current log display.



Archiving / Clearing Logs

To archive log entries into a separate log file, click the log's **Archive & Clear** button. The current file will be copied to an archive file, and then the currently file will be deleted and the displayed entries will be cleared.

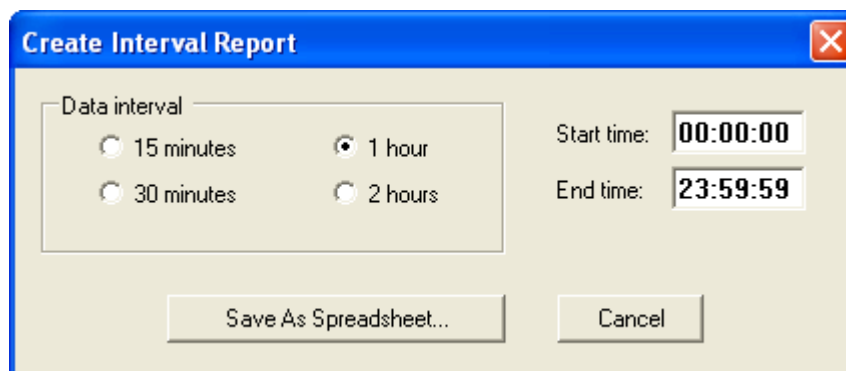


Clicking the **Delete Log Entries** button will **permanently delete** the entries from the current log file and clear the displayed entries.

Interval Reports

Interval reports summarize device performance over a specified time range, broken down into specified intervals. This would allow you to gather hourly wattage totals, for example. These report can be created by clicking the **Create Interval Report** button from the **Daily Summary Window**, or by right-clicking on a pen-plot (with or without a section of plot selected).

Interval reports are created from the following dialog box:





Licensing, Updates, and Upgrades

Once your one-time license fee payment is received and processed, you will be sent a permanent activation code by email. The WattPlot Monitor software will be licensed to run for a specific combination of PC and OutBack MATE/MATE3.

At this time, updates to any of the application programs may be downloaded free of charge, from <http://WattPlot.com/update.htm>, and do not require repeat licensing. If the program is running on a computer that has internet access, you will be informed of significant updates automatically, or you can have the program check on request using the **Manual Release Check** function.

Moving your WattPlot™ Monitor License

Your WattPlot Monitor program license is unique to the PC and hard drive that you installed it on. If you wish to move WattPlot to another computer or hard drive, you will need to remove the current license and get a new activation. In some situations, you can do this yourself, so long as you have configured WattPlot's **Email Settings** and your computer can access the internet. Otherwise, when you remove the license, WattPlot will issue you with a temporary license so that you may continue to use the product while waiting for the new activation from intallact.

Note that certain hardware changes to a computer can render a WattPlot license invalid. If WattPlot detects this condition, it will revert to a temporary license so that you may continue to use the product while waiting for a license update from intallact. If you know that you will be changing the hard drive where WattPlot is installed, we recommend doing a license move first, if possible, even if you have not yet installed WattPlot Monitor in the new location.

If you have to move your license back to the original location, this can also be done, but it typically requires us to process the new Activation Code and send it to you. Or you can simply order a new license if you will require more than one.

The WattPlot Licence Move function is initiated by selecting the **Move License to New PC** option, under the **File** menu. Note that this is a license *move*, not *copy*. WattPlot will no longer be licensed at the old location after the move. The following steps outline the recommended procedure for removing your current license and moving it to a new location. Please follow whichever steps are possible in your situation.

1. If applicable, fully install the WattPlot Monitor program on the new computer or hard drive, as described in the **SumMATE Program Installation** section at the start of this manual. [**Note** that the version of program running in the new location must be at least equal to or more recent than the version of the currently licensed copy.]
2. Run WattPlot Monitor in the new location in order to get the Unique PC ID. Write this down carefully.
3. Run WattPlot Monitor at the old location, where it is already licensed, and select the **Move License to New PC** option, under the **File** menu. A confirmation message will be displayed. Click the **Yes**



if you have the new Unique PC ID. Otherwise, click **NO** to complete the first step of removing the current license.

4. The **Activation Dialog Box** will be displayed. If you have the new PC ID, enter it now (including hyphens) in the yellow PC ID field, and then press the Enter key.
5. The main action button of the Activation Dialog Box will show the next possible step, based on your current situation. The button will have one of the following labels:

Receive New Activation Code by Email

You can move this license yourself. Your new activation code will be emailed to you automatically within minutes.

Request New Activation Code by Email

You can remove your current license and receive an immediate interim activation. Intallact will be given your new PC ID and will send you a new Activation Code (usually within 24-48 hours).

Proceed With License Move or Remove This Activation License

You can remove your current license and receive an immediate interim activation. When you have your new PC ID, you will have to email us at **activation@WattPlot.com** so that we can get a valid Activation Code to you. Note that we will also need to know your old PC ID and the License Removal Confirmation Code, as issued by this process.

6. You will probably want to copy the full contents of the WattPlot folder and any sub-folders to your new computer or hard drive, in order to retain all of your logged data and current system settings (most of which can be found in your `WPConfig.ini` and `SystemName config.ini` files).
7. When you receive your new Activation Code, go to the new installation of WattPlot Monitor and use the new Activation Code to activate your license, as described in the **Activation** section.



Problems, Feedback, & Suggestions

You will quickly learn that intallact is one of the most responsive developers around. We are driven by the comments and ideas from our users, and rapidly address problems or implement enhancements.

Questions

If you have questions about how to use any of the WattPlot suite of programs, or what they can do, your best resource is to start with the Frequently Asked Questions section of our web site. Go to:

<http://WattPlot.com/faq.htm>

If the question or answer you seek is not there, please refer to one of the other resources described below.

Solving or reporting problems

If you have a question or you encounter some other difficulty, you are encouraged to contact us by email. A screen shot is often useful, acquired by holding down the Ctrl and Alt keys and pressing the Print Scrn key. (You can then Paste the screen shot into an email or Word document, sent as an attachment.) We will work hard to get your issue resolved as soon as possible.

WARNING: Do NOT try to uninstall and reinstall the software. It won't help and you will likely corrupt your system and data files. Contact WattPlot support first.

Making suggestions

If there is anything in this User's Guide that you find unclear, missing, or incorrect, *please* let us know so that we can set the matter straight for you and future users.

If you have an idea about how we can improve our applications or you have a specific need, we would love to try and implement your idea. Send us an email!

intallact

techsupport@WattPlot.com

<http://WattPlot.com>



Appendix A - OutBack Warnings and Errors

The Outback MATE can detect a number of different warning and error conditions coming from inverters and charge controllers, which are passed on in the data stream. WattPlot SumMATE can notify you of these device errors or warnings by email, if you turn on that functionality. See [Notification Options](#).

FX warnings will not shutdown the inverter affected, but errors will. An error on the Master inverter will shut the OutBack system down.

This appendix describes some of the errors and warnings detected (**sorted alphabetically by message**), how they are noted, and what they mean.

Inverter Warnings

Warning	Trigger	Meaning/Response
AC Input Frequency High	AC Input frequency is above 66 Hz (55 Hz on export models)	The FX is approaching the upper limit of its frequency window and will drop the AC source if the frequency gets much higher.
AC Input Frequency Low	AC Input frequency is below 54 Hz (45 Hz on export models)	The FX is approaching the lower limit of its frequency window and will drop the AC source if the frequency gets much lower.
Buy Amps Exceeds Input Size	The AC Input current exceeds the rating allowed for that model of inverter.	The AC loads are drawing more current than the rating of the FX allows. Exceeding this current limit for an extended period of time could cause the FX to fail. Reduce the loads on the FX’s AC output to prevent damage.
Communication Error	An internal communication error has been detected between the Mate and the FX.	This warning may occur if the communication lines between the FX and the MATE have been severed. If this is the case, turn the FX “off” and then “on” through the DC disconnect. If this does not solve the problem, call OutBack for assistance.
Fan Failure	The fan mounted above the transformer inside the FX has stopped working or is not functioning properly.	This will eventually cause an Over Temperature inverter error if the cause of the fan failure is not fixed. Restart the FX and listen for the fan to verify a fan failure. The fan should run for about 15 seconds on start-up.
Input VAC High	AC source voltage exceeds the upper limit defined in the Mate’s ADV/FX/GRID menu. Default is 140 VAC (270 VAC on export models).	The AC source (grid or generator) input voltage is too high. If an AC source was just applied to the FX, the FX will not connect to that source until the voltage drops below the upper limit.
Input VAC Low	AC source voltage exceeds the lower limit defined in the Mate’s ADV/FX/GRID menu. Default is 108 VAC (208 VAC on export models).	The AC source (grid or generator) input voltage is too low. If an AC source was just applied to the FX, the FX will not connect to that source until the voltage rises above the lower limit. A power outage will often trigger this warning. NOTE: FX inverters occasionally detect an induced voltage on the AC Input terminals of up to 10 VAC, even if they are not connected to an AC source or the grid is down. WattPlot suppresses this warning at such voltage levels.
Temperature Sensor Failed	One of the temperature sensors internally located in the FX is not working correctly.	The FX needs to be checked by a qualified repair technician. Note that the AirTemp, FETtemp and CapTemp warnings listed in the Mate’s STATUS/FX/WARN menu can help with troubleshooting.

Inverter Errors

Error	Trigger	Meaning/Response
Backfeed	Another AC source of power was connected to the AC output of the FX.	Usually this is an installation issue. It often occurs when there is an X-240 transformer in the system that hasn't been installed properly. Also, check that there are no connections between the AC input and AC output circuitry.
High Battery	The battery voltage rose above the high battery voltage level (40.0 volts for a 24V FX) for 10 seconds.	The inverter will restart once the battery voltage drops below the high battery voltage level (40.0 volts for a 24V FX) for at least 1 second.
Low Battery	The battery voltage dropped below the Low Battery Cut-Out (LBCO) voltage set point for 5 minutes. (Default LBCO is 21.0 volts for a 24V FX.)	The inverter will restart once the battery voltage exceeds the Low Battery Cut-In (LBCI) voltage set point for 10 minutes. (Default LBCI is 25.0 volts for a 24V FX.)
Low VAC Output	The inverter was not able to maintain adequate AC output voltage to power the loads connected. AC output dropped below 105 VAC (200 VAC for export models).	This is typically caused by the AC loads demanding more power than the inverter is able to deliver.
Over Temperature	The FX reached its maximum allowed internal operating temperature.	This can be caused by powering large AC loads or charging for too long. It can also be caused by restricting the amount of air which is able to flow around the casting, or by operation in high temperature environments. The inverter will automatically reset and resume operation once it cools down.
Phase Loss	n/a	Phase Loss error detection has not yet been implemented by Outback, and is not operational at this time. Please inform intallact if this error is triggered on your system.
Shorted Output	The inverter immediately reached its maximum current and shut down.	This is usually caused by a short circuit condition on the AC output, but can also be caused by attempting to operate a load which far exceeded the inverter output capability.
Stacking Error	A problem has occurred with the communication cabling between stacked inverters, or the inverters are stacked incorrectly.	Check the stacking programming on the Mate. If this condition persists contact your dealer for servicing instructions.

WattPlot Program Errors

Error	Trigger	Meaning/Response
Activation Code Expired	User attempted to activate WattPlot with an expired activation code.	There are two kinds of activation codes from intallact : Evaluation and Permanent. An evaluation activation code is typically valid for about 15 days from the date it is sent to you , not the date that you first use it. If the code expired before you could use it, contact us at activation@WattPlot.com .
Authorization Failed	Invalid activation code or other licensing error.	There are a number of things that can trigger this error. Please send the exact text of the error message to us at activation@WattPlot.com .
Configuration Corrupted	An inconsistency in the WattPlot configuration file.	WattPlot keeps a lot of configuration information in a data file (solwind.ini) in its application folder. If WattPlot detects an inconsistency in this file, then this error will be generated. If you get this error, attach the file (solwind.ini) to an email & send it to us at techsupport@WattPlot.com .
Encountered invalid log data	Unexpected values in WattPlot’s own data files.	Data corruption error, indicating a data storage problem, inappropriate manual editing, or a program bug that we should know about. Please send data file to us at techsupport@WattPlot.com .
Installation Aborted (Licensing Error Code)	Internal error from a Windows function.	This is an internal licensing error related to Windows. Please contact us at activation@WattPlot.com if you get this error.
Installation Aborted (Unrecognized MATE Serial Number)	User entered an invalid MATE serial number.	For MATE/MATE2 devices: Be sure to include the “MA” and all leading zeroes when entering your MATE serial number. For MATE3 devices: Be sure to include the “M” when entering your MATE serial number.
Software Expired	Expiry date of temporary evaluation license has passed.	An evaluation activation code is typically valid for about 15 days from the date it is sent to you, not the date that you first use it. If you need an evaluation period extension, contact us at activation@WattPlot.com . You can get information about ordering a permanent WattPlot license at our web site: WattPlot.com/order.htm
Unrecoverable Error - Inform intallact	Internal programming error.	While we have attempted to anticipate every possible error condition, it is always possible that the WattPlot software will encounter an internal programming error. While these are more and more rare, they almost always indicate something that our developer must address immediately. This error is usually accompanied by extra information which, if emailed to us, will allow our programmer to quickly track down the cause of this error.