Using AED Manager

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About AED Manager

AED Manager assists Medical Directors, Automated External Defibrillator (AED) administrators, and emergency medical technicians with configuring Powerheart® G5 AEDs and reviewing rescue incidents of victims of sudden cardiac arrest.

With AED Manager, you can…	See page…
Select the RescueCoach™ audio and visual rescue prompts to match the coaching needs and language of a typical user*	8
Customise many aspects of a rescue protocol—for example, lengths and types of CPR, and shockable conditions*	8
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Note: *Any rescue setting should be designated only by authorised, trained medical personnel.

Overview of the AED Manager window
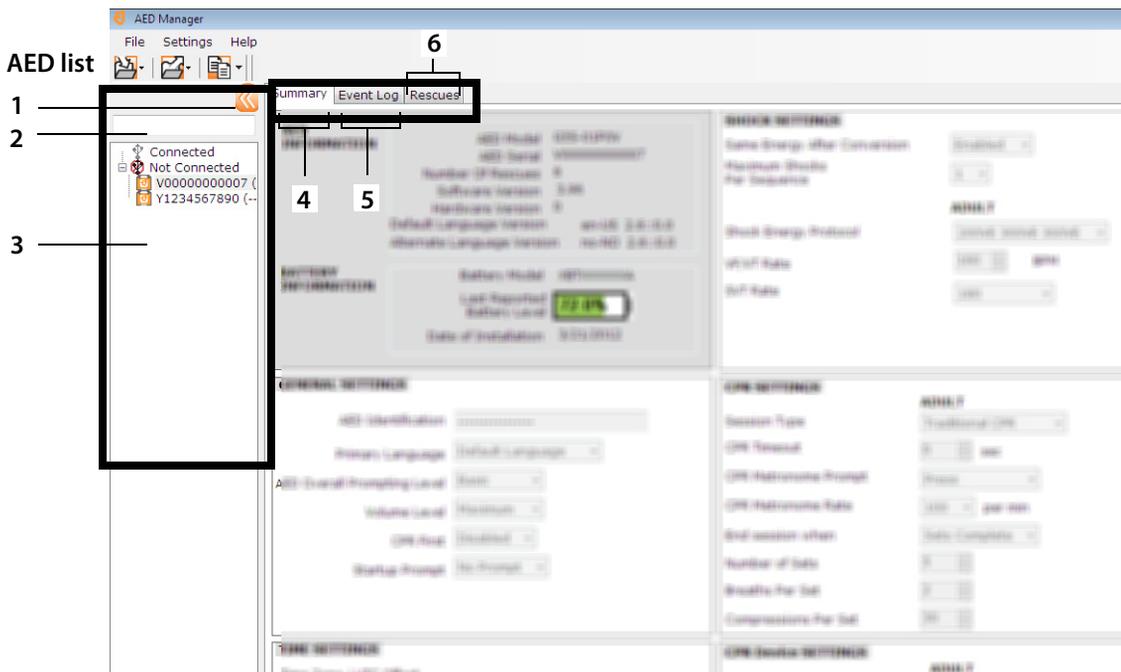
AED list

AED list

1   Click the arrow to hide or show the AED list.

2   Search box. Type the name or serial number of the AED to show in the list.

3   List of AEDs that have been or are currently connected to the computer. Select an AED to view information for it.

     •   Click **+** to show the list of connected or unconnected AEDs. When the list is expanded, click **-** to hide the list of AEDs.

AED configuration and information tabs

4   General information about the AED, including name, type, and battery status. Configure settings of the AED here.

5   View messages saved by the AED.

6   View recordings of rescue sessions.

Running AED Manager

AED Manager can be used on Windows XP®, Windows Vista®, and Windows 7®. You need to be logged into Windows as either an Administrator or a normal user. You cannot run AED Manager when logged in as a guest.

For the best performance, close all programs, especially those that use audio and video files, before using AED Manager.

To open AED Manager:

1. Double-click the **AED Manager** icon on the desktop.

2. When the splash screen appears, choose either **Administrator** or **Normal User**. You need to enter the password for **Administrator**.

   • **Administrator** allows you not only to view AED information, but change and update AED settings.

   Important: Administrator level access should be limited to those who have medical training and authority to make changes to rescue protocols or other therapy settings of an AED.

   • **Normal User** allows you only to view, export, and print AED information.

3. Click **Continue**.

Setting AED Manager application preferences

Select **Settings | Preferences**.

On the **General** panel, set these preferences:

◆ **Language**: The language in which to use AED Manager.

   Note: Restart AED Manager to have the language selection take effect.

◆ **Password**: If you started AED Manager as Administrator, you can click **Change Password** to update the Administrator password.

On the **Export** panel, select a folder to save exports of rescue data. To select a folder, click **Browse**, then navigate to the folder you want to use.

Transferring AED data to AED Manager

You can transfer rescue and event data with a USB flash drive from one or more AEDs or directly with a USB cable from an AED to *AED Manager*. You can also use flash drives to re-configure AEDs where they are kept instead of transporting the units to the computer.

WARNING! Electric Shock and Fire Hazard
Do not connect any telephones or unauthorised connectors to the socket on this equipment.

CAUTION! Possible loss of data.
Do not remove the flash drive or disconnect the AED while data is being transferred. Data may be lost or corrupted.

USB flash drive—

Note: For better reliability of the data transfer, use one of these brands of flash drive: Lexar JumpDrive, SanDisk Cruzer or HP.

1. Disconnect the defibrillation pads.

2. Attach the flash drive to the USB port.
    - The AED copies information to the flash drive.
    - When finished, the AED prompts to remove the flash drive.
3. Remove the flash drive.

4. Connect the pads to the AED and close the lid.
5. Copy the AED's rescue data from the flash drive to *AED Manager*.

To view the data:

◆ Plug the flash drive into a USB port on the computer. If a Windows Explorer window opens, close it.

Each AED that has data on the drive appears in the AED list under Not Connected. You can view, print and export the data as you would with a connected AED.

USB cable—

1. Disconnect the defibrillation pads.

2. Attach the USB cable to the USB port.

3. Connect the other end to the computer's USB port. If a Windows Explorer window opens, close it.

4. Start *AED Manager*.

   • The AED prompts, "Communications Mode".

   • The AED appears in the AED list and the data is copied into AED Manager's database.

5. Disconnect the USB cable

   After you disconnect the AED, its icon moves from **Connected** to **Not Connected** in the AED list.

6. Connect the pads.

Setting AED and rescue parameters

Important: You must have Administrator access to change rescue parameters. When starting AED Manager, log in as Administrator. If you are currently running as User, exit and restart.

To display the current configuration of an AED, click its icon or name in the AED list.

Under the **Summary** tab, you can customise many attributes of each AED in your inventory. The panels on the Summary window set different features of the AED:

General settings	Language and rescue prompting	page 8
Time settings	Date and time of the AED's clock	page 9
Shock settings	Thresholds for delivering therapy	page 9
CPR settings	CPR protocols for Adult and Paediatric therapy	page 11
CPR Device settings	Thresholds for CPR prompting when adult pads with CPR Device assistance are attached to the AED.	page 12

After you finish setting the parameters, click **Save Configuration** or the **Save to AED** toolbar icon. AED Manager sends the configuration to the connected AED.

To revert all configuration settings on all configuration tabs to their original values since the last save, click the **Undo All Changes** toolbar icon.

To revert the AED's settings to the values that it was shipped with, click **Restore Factory Defaults** and save.

General Settings: Set language and prompting

Use the **GENERAL SETTINGS** panel to set these preferences.

Preference	Description
AED Identification	The name of the AED as it appears in the AED list and on reports. A name can be up to 16 characters long. Use any of these characters: A-Z, a-z, 0-9, dash, space.
	If you manage more than one AED, choose a naming convention, such as one based on the location of the units.
Primary Language (For dual-language models only)	Choose the language the AED uses when its lid opens. The user can change to the other listed language during a rescue.
AED Overall Prompting Level	**Basic**, **Standard** or **Advanced**
	See the *Powerheart G5 User's Guide* for descriptions and the prompts used by each level.
Volume Level	**Low**—Use for an office or other quiet areas.
	Maximum—use for out of doors or noisy areas.
CPR First	The AED can begin a rescue either by analysing the patient's ECG or by instructing the rescuer to begin CPR.
	Enabled—The AED provides prompts for performing CPR first.
	Disabled—The AED analyses the patient's ECG first.
Startup Prompt	The AED provides an initial prompt when the lid is opened.
	No Prompt: The AED does not play a startup prompt.
	Otherwise choose one of these prompts:
	• **Call 911 (Call Triple Zero for Australia)**
	• **Call emergency services**

Time Settings: Set the clock

To set the AED's clock:

1. Select your time zone from the **Time Zone/UTC Offset** menu.

2. Click **Synchronise Date/Time**.

   The AED's time will be updated to the computer's time when you click **Save Configuration**.

Note: Times shown in AED Manager are not adjusted for Daylight Saving Time.

Shock Settings: Set rhythm detection thresholds

To set rhythm detection parameters, use the preferences in the **SHOCK SETTINGS** panel.

The AED can hold different protocols for adult and paediatric pads.

Preference	Description
Same Energy After Conversion	When enabled, the AED delivers the previous defibrillation energy the next time a shock is required if the patient's rhythm becomes non-shockable rhythm.
Maximum Shocks Per Sequence	The number of shocks that can be delivered before the AED enters CPR mode.
Shock Energy Protocol	Select the protocol for the energy delivered by a shock. If the AED has paediatric defibrillation pads attached, it uses the number in the Paediatric field.
VF/VT Rate	Minimum heart rate at which the AED detects ventricular fibrillation and determines the rhythm is shockable. If the AED has paediatric defibrillation pads attached, it uses the number in the Paediatric field.

Preference	Description
SVT rate	Adds discrimination for SVT (supraventricular tachycardia) to the shockable/non-shockable decision. If the AED has paediatric defibrillation pads attached, it uses the number in the Paediatric field.
	OFF (no monitoring for SVT):
	• Heart rates below the VF/VT rate are never shockable
	• Heart rates above the VF/VT rate are always shockable
	No Therapy (monitoring for SVT, but therapy delivery depends on the following):
	• Heart rates below the VF/VT rate are never shockable
	• Heart rates above the VF/VT rate are always classified as shockable or non-shockable based on their waveform morphologies
	160-300:
	• Heart rates below the VF/VT rate are never shockable
	• Heart rates above the set SVT rate are always shockable
	• Heart rates between the VF/VT rate and the set SVT rate are classified as shockable or non-shockable based on their waveform morphologies

CPR Settings: Set rescue parameters

The AED can provide different rescue protocols for adults and children (paediatric).

Preference	Description
Session Type	**Traditional CPR** (compressions and breaths) and **Compressions only** use the same settings. **Compressions only** uses CPR Timeout and the metronome settings only.
CPR Timeout	Length of time, in seconds, that each CPR session lasts. The countdown timer on the AED tracks the remaining time.
CPR Metronome Prompt	Marks the pace for the rescuer to match for chest compressions.
	Press—Spoken prompt of "press" given at the selected CPR Metronome rate.
	Ping—AED provides a mechanical metronome sound at the CPR Metronome rate.
	No Metronome—No sound
CPR Metronome Rate	The pace of the metronome prompt in beats per minute.
End session when	This preference determines the total time of a session.
	Sets complete—The CPR session ends when the number of CPR sets expires. Each set includes the number of compressions per set and number of breaths per set.
	Time expires—The session ends when the CPR timer reaches zero. The final set of compressions and breaths might be only partially complete.
Number of Sets	If using traditional CPR, the number of times the rescuer is prompted to perform the combination of compressions and breaths.
Breaths per set	Number of breaths to give before beginning another round of compressions.
Compressions per set	Number of chest compressions to give before providing breaths.

CPR Device Settings: Set CPR Device thresholds

To set the thresholds for CPR prompting for rescues that use the CPR Device, modify the preferences in the **CAD SETTINGS** panel.

Preference	Description
Compression rate (compressions/minute)	**Minimum**: If the rescuer performs compressions under this rate, the AED prompts, "Press faster".
	Maximum: If the rescuer performs compressions above this rate, the AED prompts, "Press slower".
Compression Depth (cm)	**Minimum**: If the rescuer does not reach this compression depth, the AED prompts, "Press harder and fully release".
	Maximum: If the rescuer presses to a depth greater than this, the AED prompts, "Press softer".

Reviewing a rescue

The **Summary** tab under the **Rescues** tab shows the time, number of defibrillation shocks given and the length of the rescue.

Rescue Center	Summary	AED Snapshot

Rescue Summary

Incident Info

Incident ID	6_187260_30980
Date/Time	11/18/2011 10:34:21 PM
Number of Shocks	0
Rescue Duration	848 seconds

View the **AED Snapshot** tab to see all the settings with which the AED was programmed at the time of the rescue. See *Setting AED and rescue parameters* on page 7 for descriptions of the settings.

Viewing the ECG waveform and rescue events

Click the **Waveform & Events** tab under the **Rescue Centre** tab.

The event list shows all AED operations the AED performs during the rescue.

The graph below the event list shows a recording of the patient's ECG and CPR Device-assisted CPR with rescue events.

◆ Select an item in the event list.

  The graph moves to the place in the rescue when the event occurred.

◆ Drag and release the mouse over the waveform to scroll backward and forward through time.

◆ Add notes to the waveform. Right-click on the chart where you want a note to appear. From the contextual menu, select **Add User Annotation**. In the **Create/Edit Event** dialogue box, type the name and comment then click **Save**.

◆ Use the player controls to replay the rescue in real time (one second of the rescue takes one second to play) and move forward and backward through the waveform and rescue.
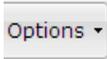
(⏮⏮)	Move back one page	Options ▾	Select which items to view: show CPR graph, show actual time in the event list, show user added events, show event markers
(⏮)	Move back one second	10 ▾ mm/mV	Set the vertical scale of the ECG graph (5 - 25 mm/mV)
(▶)	Play the recording	25 ▾ mm/sec	Set the horizontal scale of the ECG and CPR graphs (10 - 40 mm/second)
(■)	Stop the play back	2 ▾ mm/g	Set the vertical scale of the CPR graph (1- 3 mm/g; $g = m/sec^2$)
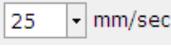
	Move forward one second		Click to open the waveform tab in a separate window. You can maximise this window to view the recording full screen.
	Move forward one page		Drag the pointer up to zoom in or down to zoom out. Click a magnifying glass to zoom one step at a time.
	Print the rescue waveform		Drag the position pointer left and right to view different parts of the rescue.

Viewing and updating incident information

Click the **Rescues** tab. Select the rescue to view. Click the **Incident** tab.

Use the Incident form to add demographic information about the patient and general information about the rescue.

The AED does not have to be connected to modify or save this information.

To complete the form:

1. Type or select the data from the drop-down menus to update or add.

2. When finished, click **Save to Database**.

Printing incident data and rescue waveforms

You can print the information displayed on the **Incident** and the **Waveform** tabs.

To print only the waveform:

◆ Click the **Print** icon under the **Rescues | Waveform & Events** tab on the icon bar.

To print the waveform, rescue events, and incident information:

1. Right-click on a rescue option in the rescue list.

2. Select **Print Rescue Report**.

3. Select the information to print.

4. Click **Print**.

Reviewing event messages

You can view details about AED events and errors in the **Event Log** tab.

The AED records the times different actions happen, such as system self-tests and its lid opening or closing.

1) **Event Log:** Lists all self-tests recorded by the AED.

2) **Current Errors:** Lists errors that are generated by the AED.

Administering your AEDs

With a connected AED, you can review self-tests, print its configuration, import and export AED data, and update its firmware.

Printing AED information

1. Select an AED from the AED list. It does not have to be connected.

2. Select **File | Generate Report | Print AED Report**.

Importing and exporting AED data

If you have a previously saved AED data file, you can load this file for viewing in AED Manager.

To import an AED data file:

1. Select **File | Import**.

2. Choose a file to import.

    The imported AED appears in the list of not-connected AEDs.

You can export the entire set of AED data to a compressed file format. This file can be used with other applications for further analysis.

To export AED data:

1. Select the AED to export from the connected or not connected list.

2. From the **File** menu, select **Export | Selected AED Data to a Single File**.

    All the rescues, including the ECG waveform and recorded rescue events, are saved to a single compressed file.

Configuring remote AEDs (Administrator level only)

You can update the configuration of AEDs at their locations instead of carrying them to the *AED Manager* computer. Using a single USB flash drive, you can configure your entire inventory of AEDs. Update each AED in-place by plugging the flash drive into an AED's USB port. When you plug in the flash drive, the AED copies the configuration parameters that you selected.

To update remote AEDs with a new configuration:

1. Select an AED from either the connected or the not-connected list. You can select any AED.

    Note: You must select an AED because its configuration is needed to prepare the flash drive.

2. Connect a USB flash drive to the computer.

3. Select **File | Prepare USB Flash Drive**.

4. In the USB Flash Drive preparation window that appears, select the flash drive.

    CAUTION! Formatting erases all data from the flash drive.

5. Click **Next** to format (prepare) the flash drive.

6. In the configuration window, choose the parameters you want.

    The panels in the configuration dialogue box are similar to those under the **Summary** tab.

7. Review the configuration.

    - Click **Save** if your changes are complete.

    After you click **Save**, AED Manager writes configuration files to the USB flash drive.

8. Remove the flash drive from the USB port.

Updating AED software (Administrator level only)

Periodically, there may be new software released for the AED.

To update the software:

1. Connect the AED to the computer. (Software cannot be updated with a flash drive).

2. Log in to *AED Manager* as Administrator.

   The AED appears under **Connected** in the AED list.

3. Select the AED.

4. Insert the update CD in the computer.

5. Select **File | Update AED Software**.

6. Click **Update**.

⚠ **Caution: Device made inoperable.**
Keep the AED connected while the firmware is loading. The AED can become inoperative if it is disconnected before the load completes.

When the update finishes, you see the message **Update complete**. It is now safe to disconnect the AED.

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