

# ***HeartOn A16 Event Review Software***

## ***User Guide***

### **EU representative**

**EC REP OBELIS S.A**

Bd. Général Wahis, 53, 1030 Brussels, Belgium

### **Manufacturer**

 **Mediana Co., Ltd.**

132, Donghwagongdan-ro,  
Munmak-eup, Wonju-si, Gangwon-do, Korea

Tel: (82) 2 542 3375 (82) 33 742 5400

Fax: (82) 2 542 7447 (82) 33 742 5483

**Part Number: A7661-0**

**Revised Date: 2019-11**

**Copyright © 2019 All rights reserved.**



**Table of Contents**

<b>1. Overview.....</b>	<b>1</b>
<b>A. Configuration .....</b>	<b>1</b>
<b>B. The files saved in the AED (AED data file) .....</b>	<b>3</b>
<b>C. The files saved in the HeartOn A16 Event Review Software (AED file) .....</b>	<b>3</b>
<b>2. Installing HeartOn A16 Event Review Software .....</b>	<b>4</b>
<b>3. Using the HeartOn A16 Event Review Software and structure .....</b>	<b>5</b>
<b>A. Language Setup .....</b>	<b>5</b>
<b>B. Loading the ‘MIF’ file.....</b>	<b>5</b>
<b>C. Loading the AED file .....</b>	<b>9</b>
<b>D. Loading the Directory .....</b>	<b>12</b>
<b>E. Event tree .....</b>	<b>14</b>
<b>F. General .....</b>	<b>16</b>
<b>G. Entire ECG .....</b>	<b>18</b>
<b>H. Enlarged ECG.....</b>	<b>19</b>
<b>I. Incident Log &amp; Print.....</b>	<b>25</b>

## Figures

Figure 1. Configuration .....	1
Figure 2. AED data file .....	3
Figure 3. AED file .....	3
Figure 4. Starting installation .....	4
Figure 5. Selecting the 'Open' menu .....	5
Figure 6. Selecting the type of file .....	5
Figure 7. Selecting the MIF file .....	6
Figure 8. Selecting the directory to save the AED file .....	7
Figure 9. Notice window for erasing MIF file .....	7
Figure 10. Completion of the MIF file loading .....	8
Figure 11. Selecting the 'Open' menu .....	9
Figure 12. Selecting the type of file .....	9
Figure 13. Selecting AED file .....	10
Figure 14. Completion of the AED file loading .....	11
Figure 15. Selecting the 'Open' menu .....	12
Figure 16. Selecting the type of file .....	12
Figure 17. Selecting directory .....	13
Figure 18. Directory navigation button .....	13
Figure 19. Event tree window .....	14
Figure 20. Case menu window .....	14
Figure 21. Adding the annotation – Event tree .....	15
Figure 22. Editing or deleting the annotation – Event tree .....	15
Figure 23. General window .....	16
Figure 24. Entire ECG window .....	18
Figure 25. Data scroll .....	18
Figure 26. Enlarged ECG window .....	19
Figure 27. CPR Folding option button .....	19
<b>Figure 28. Enlarged ECG CPR FeedBack window .....</b>	<b>20</b>
Figure 29. Play/Stop button .....	20
<b>Figure 30. Audio record file playing window .....</b>	<b>20</b>
Figure 31. Display setting button .....	21
Figure 32. Display setting of the enlarged ECG .....	22
Figure 33. Setting the enlarged ECG menu .....	23
Figure 34. Adding the annotation – Enlarged ECG .....	23
Figure 35. Basic enlarged ECG display .....	24
Figure 36. CPR display of enlarged ECG .....	24
Figure 37. Segment display of the enlarged ECG .....	24
Figure 38. Combination display for CPR & Segment of the enlarged ECG .....	25

*Figure 39. Incident log menu..... 25*

*Figure 40. Incident log window..... 26*

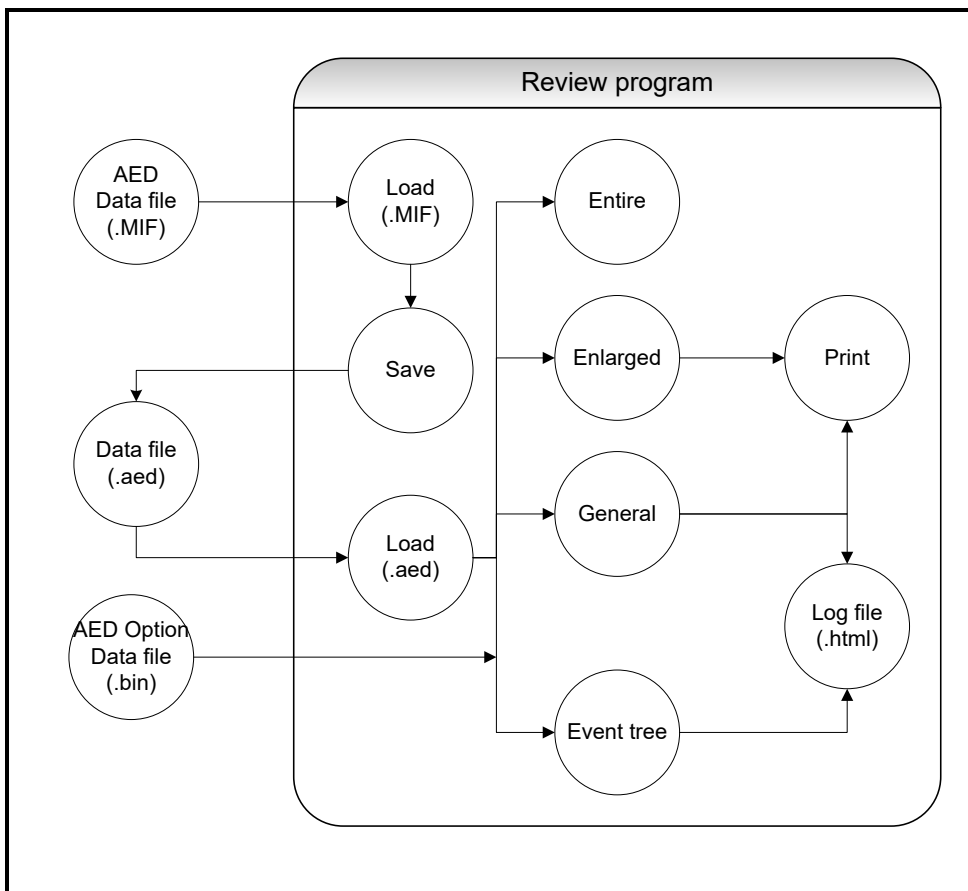
*Figure 41. Printing ..... 27*

This page is intentionally left blank.



# 1. Overview

## A. Configuration



**Figure 1. Configuration**

The descriptions for each component and data flow diagram are provided to explain for composition of the HeartOn A16 Event Review Software.

### i. Component

- (1) AED data file(.MIF)  
The five files saved in SD-card including vital signs information of patient and operating condition of the AED.
- (2) Data file(.aed)  
The file saved in Computer with additional information from the data file of the AED.
- (3) AED Option Data file (.bin)  
The two files saved in SD-card including the record using AED option.
- (4) Load(.MIF)  
The component loading the data file of the AED to display on the HeartOn A16 Event Review Software.
- (5) Save  
The component saving the data file from the AED with additional information.
- (6) Load(.aed)  
The component loading the file only for the HeartOn A16 Event Review Software.
- (7) Entire  
The component to show the entire ECG wave flow.

- (8) Enlarged  
The component to show the ECG wave and the detailed information for each event.
- (9) (9) General  
The component to show information according to each case and to input any additional information.
- (10) (10) Event tree  
The component to show events for cases arranged by the date or unit ID.
- (11) Print  
The component to print the screen shown in the enlarged.
- (12) Log file(.html)  
The component to show the report on the web browser.

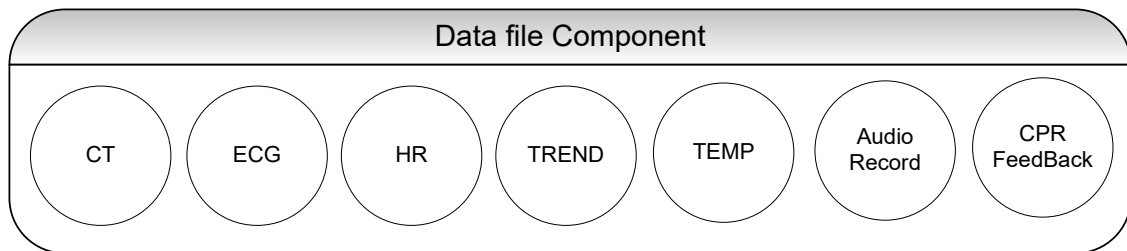
### ii. Data flow(by function)

The HeartOn A16 Event Review Software consists of four major functions.

- (1) Load  
The HeartOn A16 Event Review Software has two methods to load the data file. The first method is to load seven files saved in the AED according to applicable protocols. These files include each data (CT data, ECG data, HR data, Trend data, Temp data, Audio Record data and CPR FeedBack data). Second method is to load the data from the file (.aed) only for the HeartOn A16 Event Review Software according to the applicable protocol. The file only for the HeartOn A16 Event Review Software includes all the five data saved in the AED and additional data as well.
- (2) Store  
The HeartOn A16 Event Review Software saves the five files saved in the AED and additional data as its exclusive file format. When the additional data is changed, it is saved again as the file only for the HeartOn A16 Event Review Software.
- (3) View  
The HeartOn A16 Event Review Software provides four types of display. Open the saved file and send the data to each display, then arrange the data according to display properties.  
The first display is the tree view that shows several cases and these cases are arranged by its date or unit ID. The memo can be added by the annotation function.  
The second display is the general view which the basic data and information for user or patient can be added in.  
The third display is the entire ECG that shows entire ECG data flow for 2 minutes and 30 seconds.  
The fourth display is the enlarged ECG that shows ECG data and the event log at an interval of 2, 6 or 8 seconds. These data can be optionally printed. When AED has AED Option Data file, wave file and CPR FeedBack Data can be checked.
- (4) Print  
The ECG data and the event log selected in the enlarged ECG can be printed. Additionally, the display based on the web browser is provided to print the event log and data added on the HeartOn A16 Event Review Software only.



**B. The files saved in the AED (AED data file)**

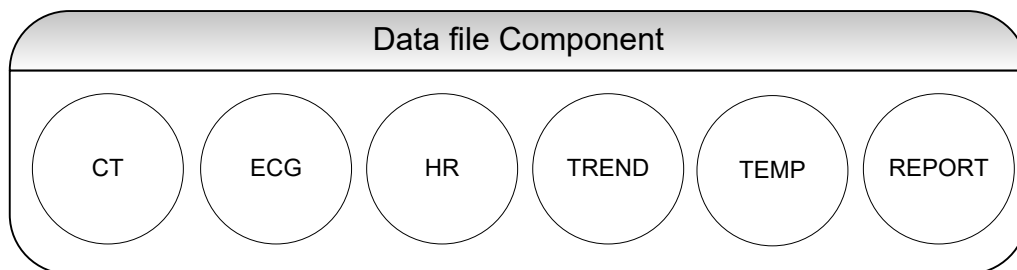


**Figure 2. AED data file**

The data saved in SD card of the AED consists of seven files. The extension of the basic data – CT, ECG, HR, TREND and TEMP – is '.MIF' and the extension of the optional data – Audio Record, CPR FeedBack – is '.bin'.

- i. **CT**  
It includes basic information (Software version and etc.) of the AED.
- ii. **ECG**  
It includes ECG data.
- iii. **HR**  
It includes Heart Rate data measured during the ECG analysis.
- iv. **TREND**  
It includes events related to Pad, Shock and Body Impedance.
- v. **TEMP**  
It includes Temperature data around AED.
- vi. **Audio Record (Option)**  
It includes sound recorded in the vicinity of the AED.
- vii. **CPR FeedBack (Option)**  
It includes CPR FeedBack information.

**C. The files saved in the HeartOn A16 Event Review Software (AED file)**



**Figure 3. AED file**

The reviewer data file includes the AED data file and additional data from the HeartOn A16 Event Review Software, and the file extension is '.aed'. The additional data appears in the report which includes the AED data file as well.

- i. **AED data**  
It includes the loading time from SD card for the file and the serial number of the unit.
- ii. **Add Information**  
It includes the information about the user and patient of AED and each case.

## 2. Installing HeartOn A16 Event Review Software

HeartOn A16 Event Review Software can be installed by double clicking the 'AED\_Review\_Setup' file.

NOTE: Please contact the main office for more details regarding 'AED\_Review\_Setup' file.

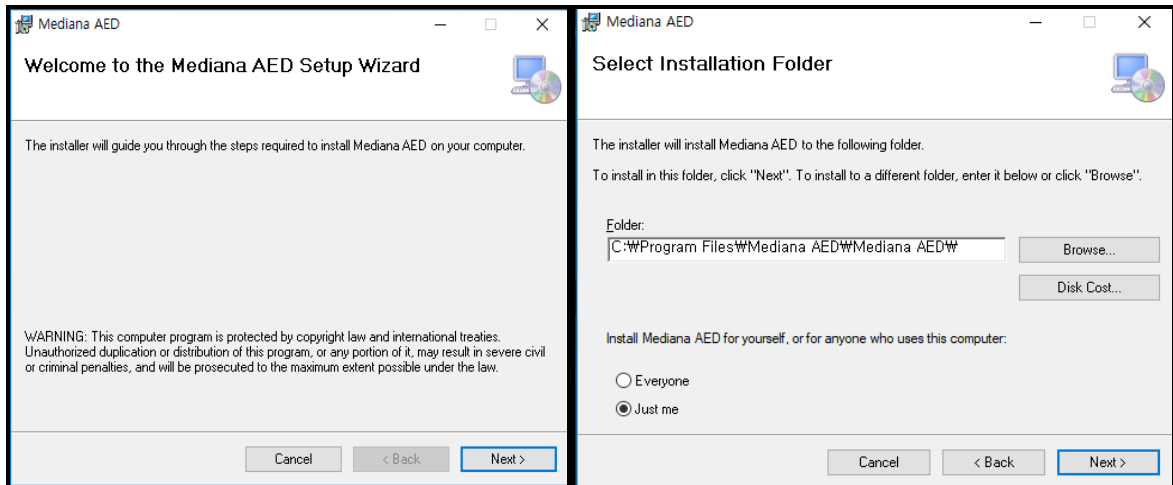


Figure 4. Starting installation

### 3. Using the HeartOn A16 Event Review Software and structure

#### A. Language Setup

Place the Language Pack in the path where the executable file is located, and the type of language can be set.

NOTE: Please contact the main office for more details about Language Pack.

#### B. Loading the 'MIF' file

Select the 'Open' menu to open the MIF file.

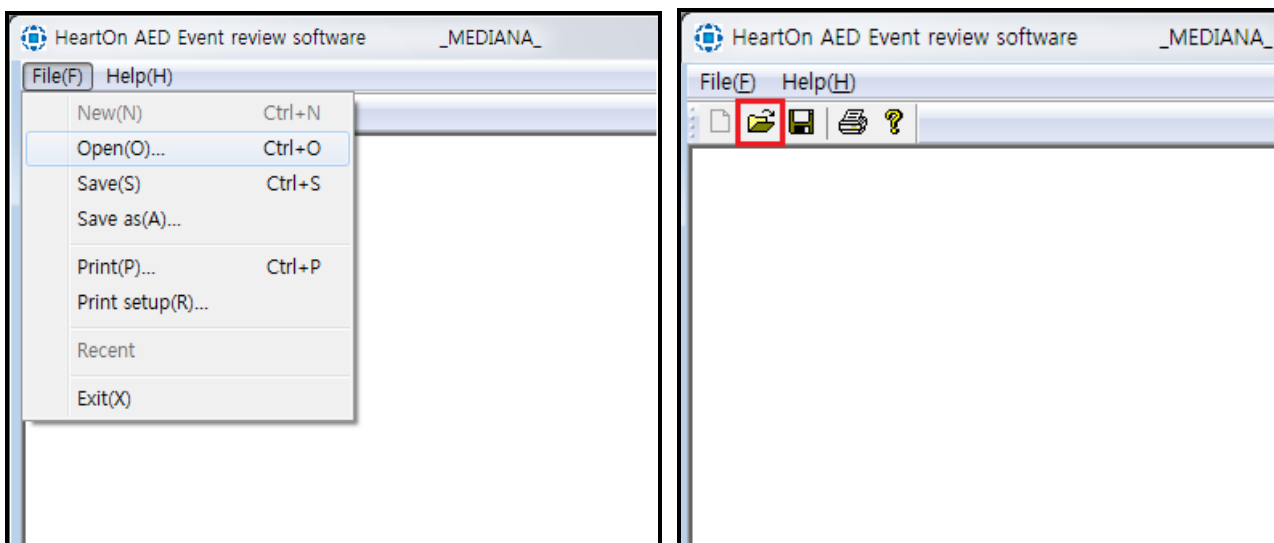


Figure 5. Selecting the 'Open' menu

When the 'Open' menu is selected, the below window appears.

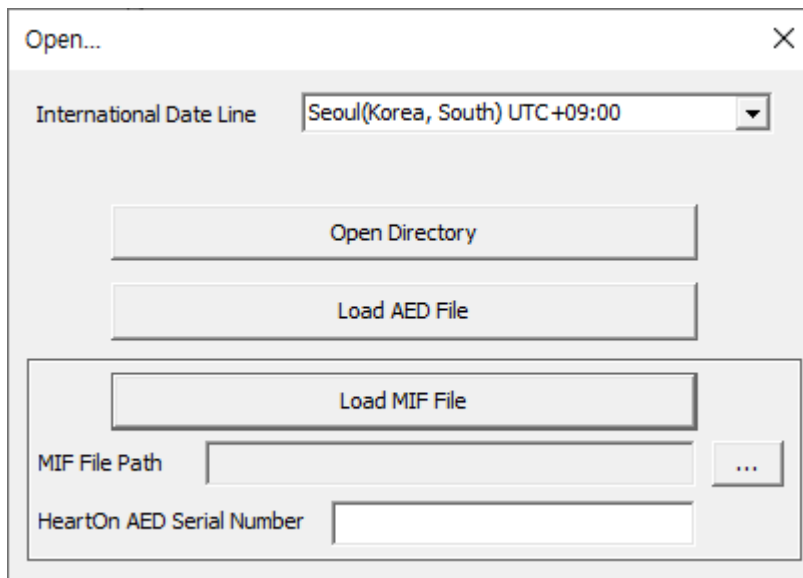


Figure 6. Selecting the type of file

**i. Set International Date Line**

When setting the time zone, the time of data loaded from the AED can be set to match the current local time.

Set the time zone by selecting International Date Line. The International Date Line contains the time zone for 178 worldwide cities. The time zone is shown in the following format:

City name(Country name) UTC +/- HH:MM

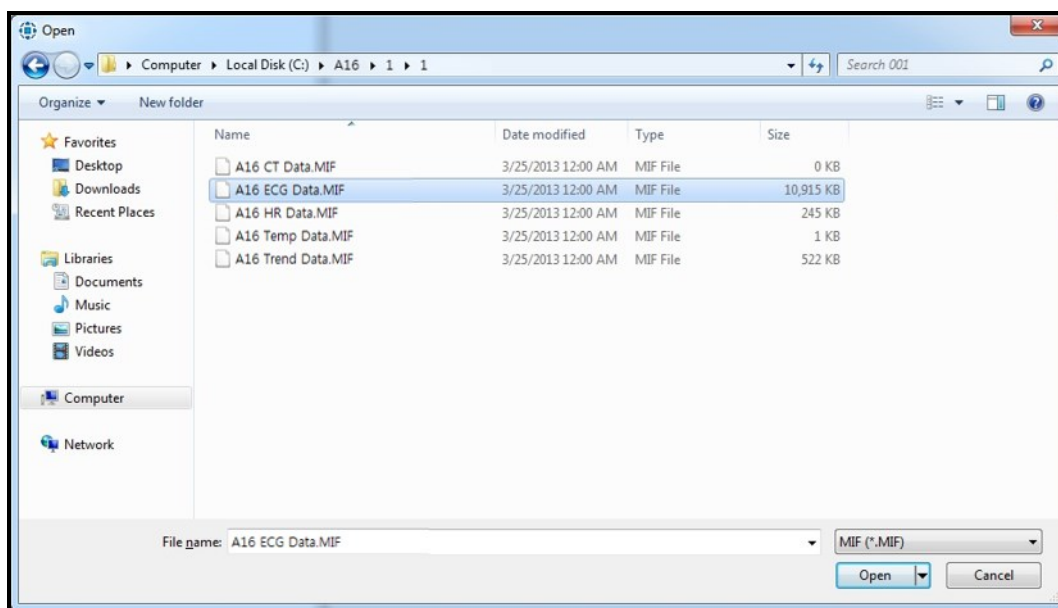
**ii. Load MIF File**

Click MIF file path to load MIF file.

Enter the serial number indicated on the bottom of the AED into HeartOn AED Serial number box to identify the AED.

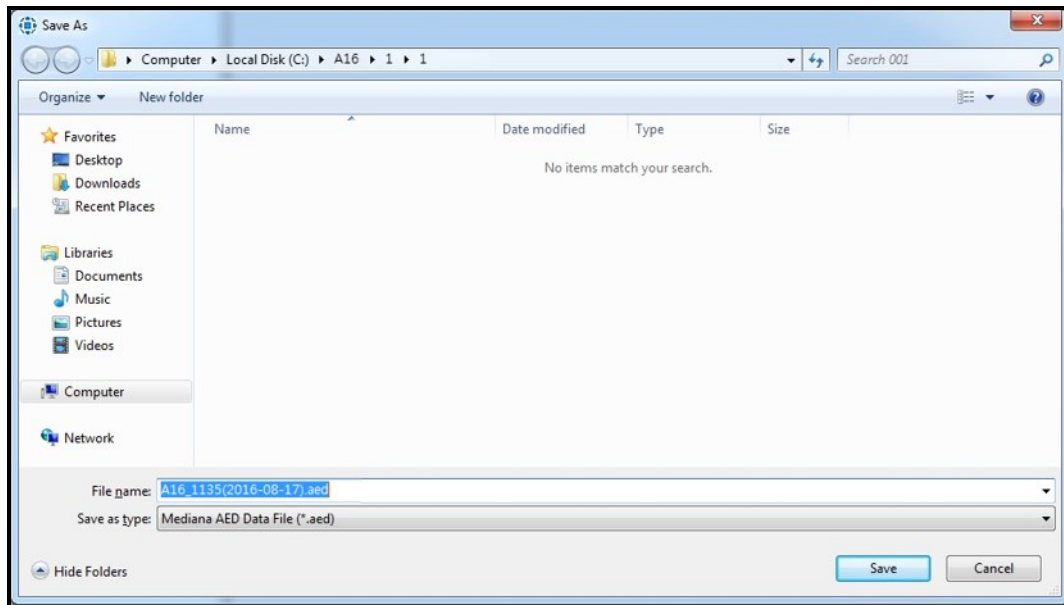
NOTE: The MIF File Path is to load the MIF file saved in SD card of the AED. Connect the SD card to the computer and move to the default directory. Then the 'A16' directory appears as shown in the below. The folders are created whenever AED is used and the relevant data are saved in each folder. The folder name mounts from 001. The five MIF files explained above exist in each folder. One file may be selected.

Select the MIF file, enter the serial number and click the 'Load MIF File' button to progress.



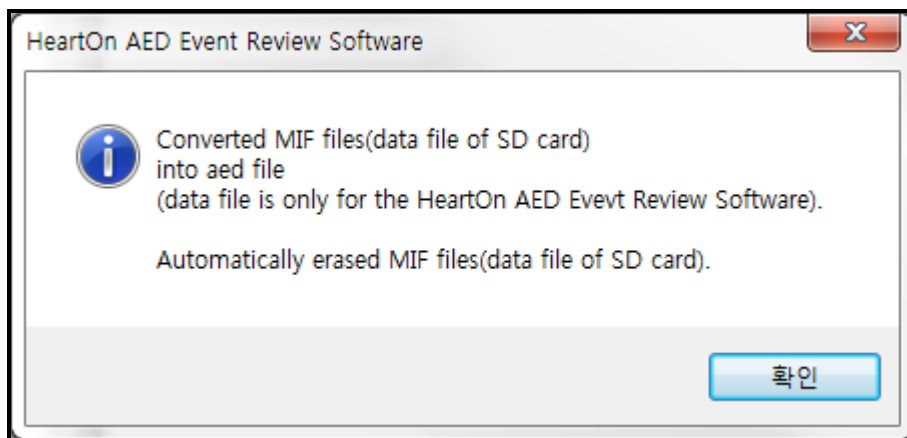
**Figure 7. Selecting the MIF file**

When the 'Load MIF File' is selected the window appears as shown in Figure 7. The path and file name may set in the below window to save the MIF file saved in the AED as AED file only for the HeartOn A16 Event Review Software. The name is auto-defined or user-defined. When the setting is completed, click 'Save' button to progress.



**Figure 8. Selecting the directory to save the AED file**

When the saving procedure is completed, the MIF files are automatically deleted from the SD card. The notice window appears as shown in Figure 9.



**Figure 9. Notice window for erasing MIF file**

The below window appears to show all data when all procedures are completed.

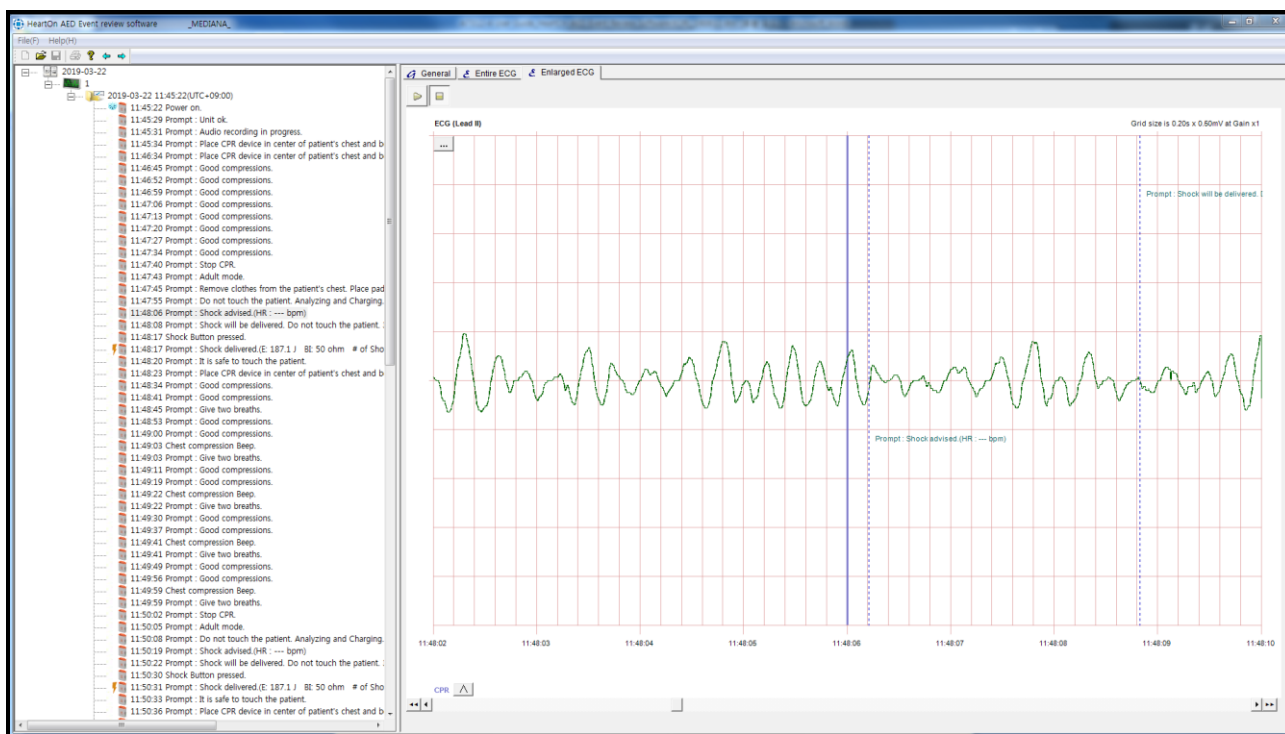


Figure 10. Completion of the MIF file loading

### C. Loading the AED file

Select the 'Open' menu to open the AED file.

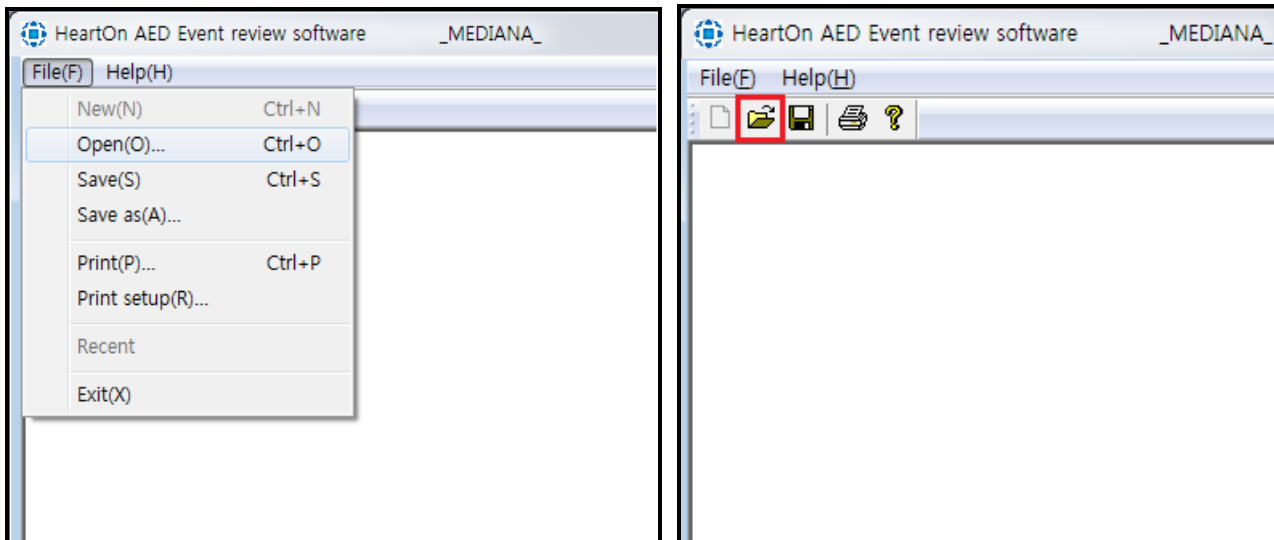


Figure 11. Selecting the 'Open' menu

NOTE: The AED file ('.aed') only for HeartOn A16 Event Review Software is to be directly converted from MIF file saved in the AED via HeartOn A16 Event Review Software. Therefore, it needs the file management after saving all of '.aed' file. Note that it is impossible to restore the data when the '.aed' file is erased.

The below window appears when the 'Open' menu is selected.

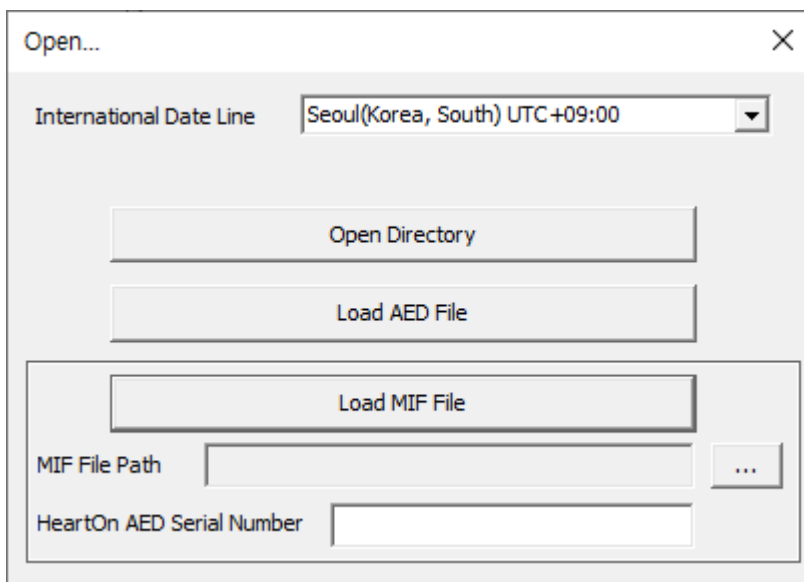


Figure 12. Selecting the type of file

**i. Set International Date Line**

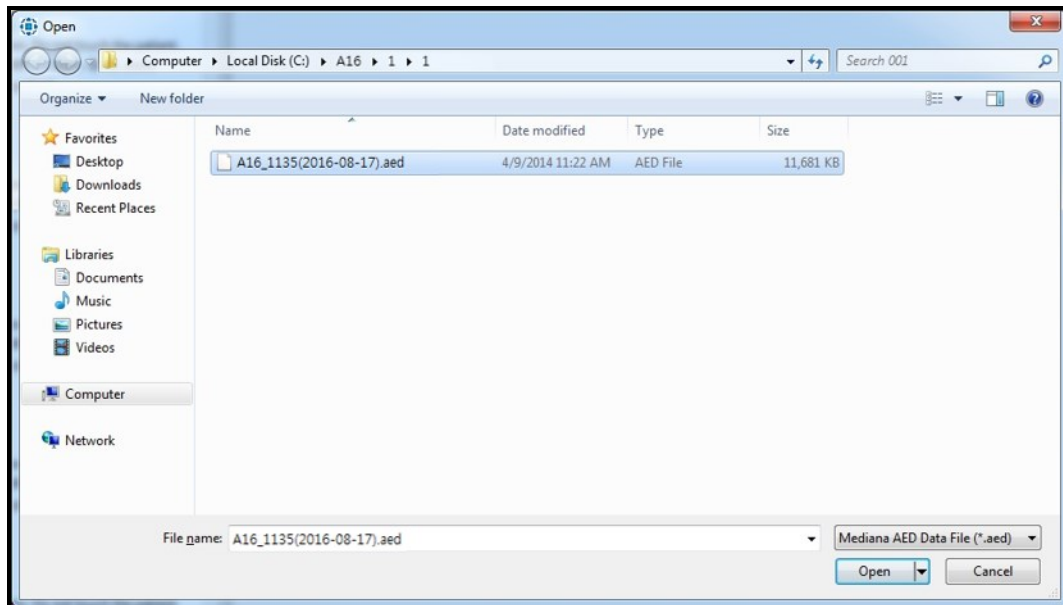
Set the time zone by selecting International Date Line. The International Data Line contains the time zone for 178 worldwide cities. The time zone is shown in the following format:

City name(Country name) UTC +/- HH:MM

When setting the time zone, the time of AED data is set to match the current local time.

**ii. Load AED File**

The below window appears to select the AED file when the 'Load AED File' button is selected.



**Figure 13. Selecting AED file**



# HeartOn A16 Event Review Software

The below window appears to show all data when all procedures are completed.

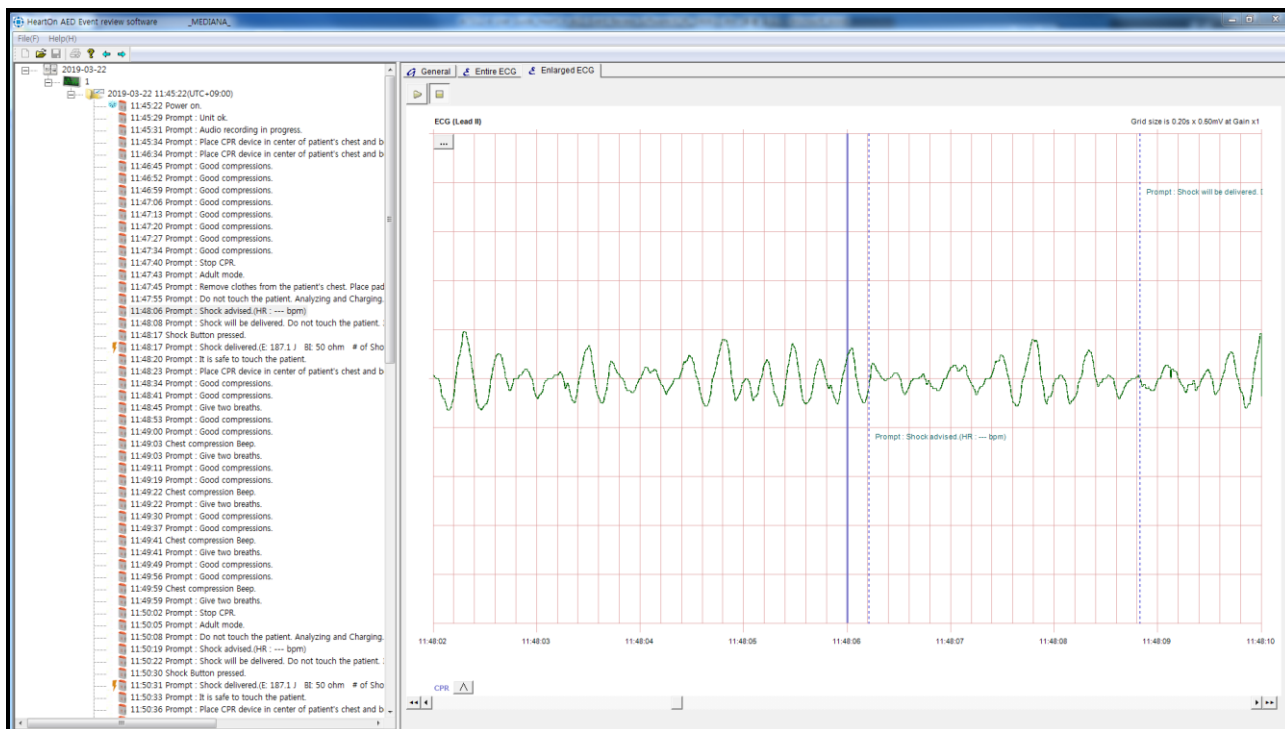


Figure 14. Completion of the AED file loading

### D. Loading the Directory

When there are masses of files, all the files can be loaded using this function instead of loading them one by one.

Select the 'Open' menu to open the AED file.

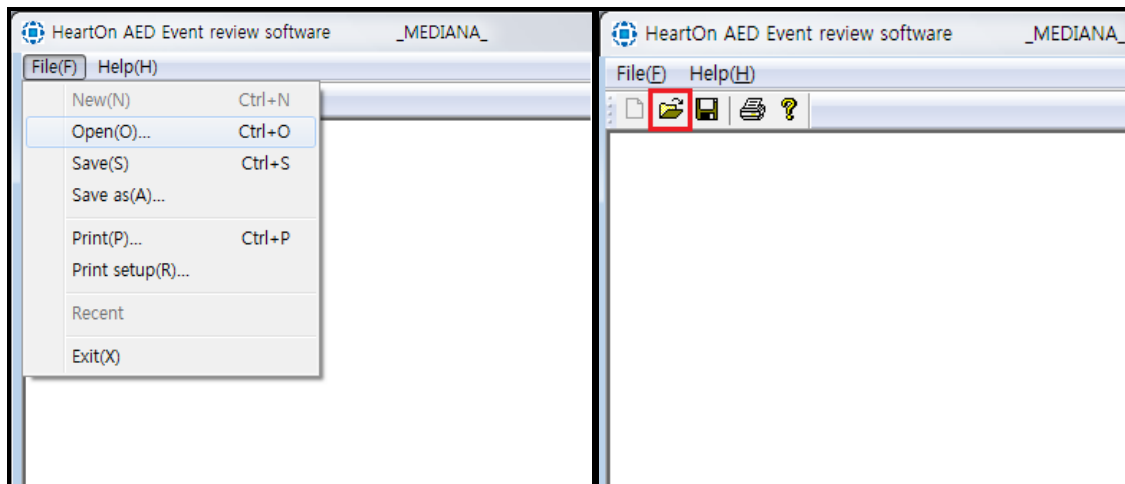


Figure 15. Selecting the 'Open' menu

The below window appears when the 'Open' menu is selected.

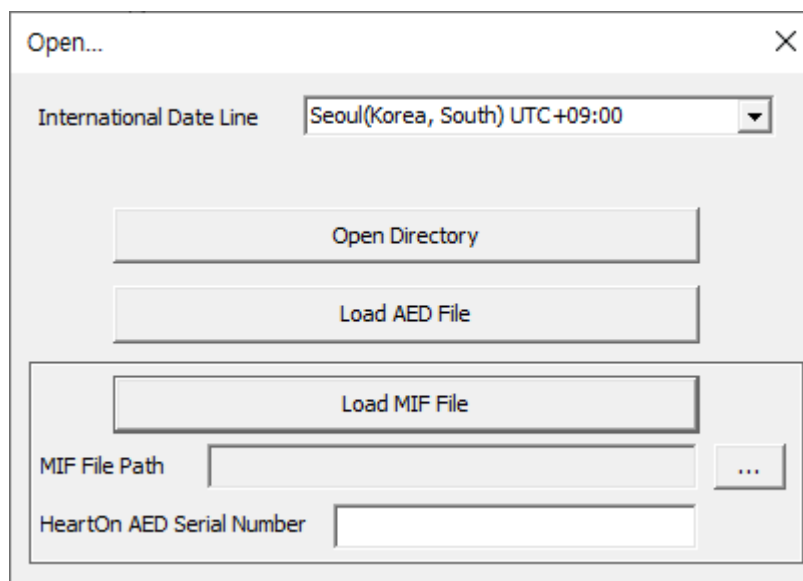


Figure 16. Selecting the type of file

#### i. Set International Date Line

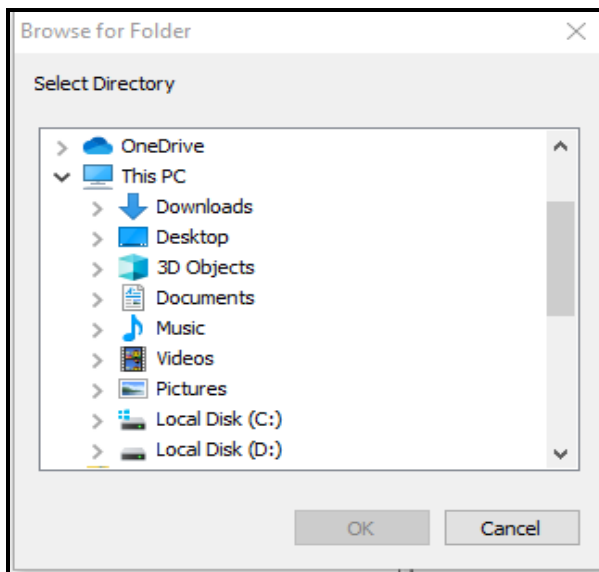
Set the time zone by selecting International Date Line. The International Data Line contains the time zone for 178 worldwide cities. The time zone is shown in the following format:

City name(Country name) UTC +/- HH:MM

When setting the time zone, the time of MIF, AED data is set to match the current local time.

**ii. Open Directory**

The below window appears to select the directory when the 'Open Directory' button is selected.



**Figure 17. Selecting directory**

In the Event tree on the left side of the screen, up to 1000 cases are displayed at once. User can navigate the directory by using 'Directory Navigation' button in the Figure 18.



**Figure 18. Directory navigation button**

E. Event tree

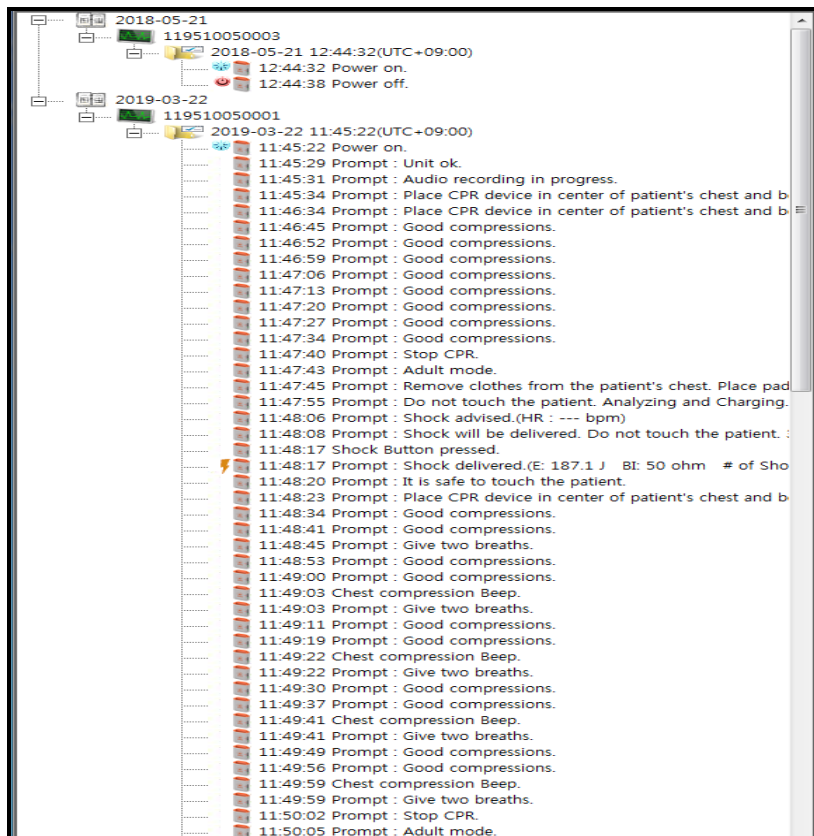


Figure 19. Event tree window

The event tree is to show the event data saved in the AED. One or more AED file(s) can be opened on the event tree and the events are opened or hidden with a case unit.

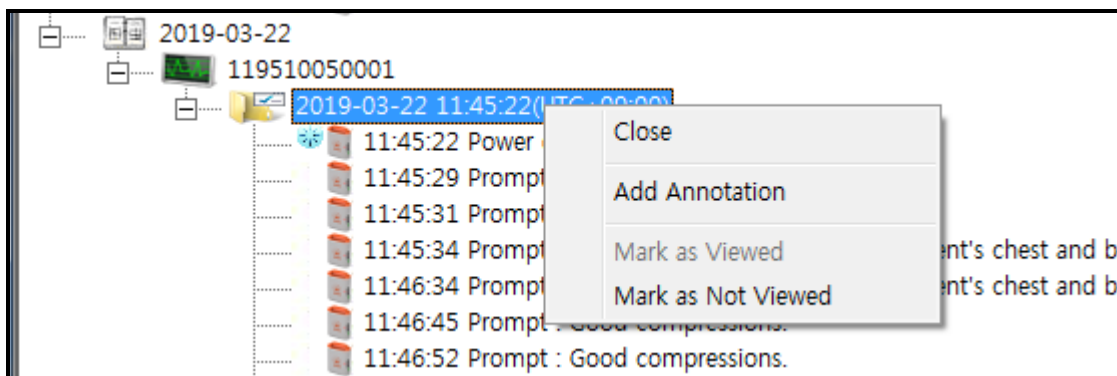
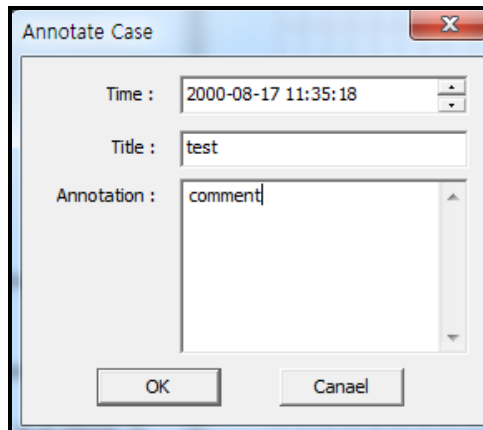


Figure 20. Case menu window

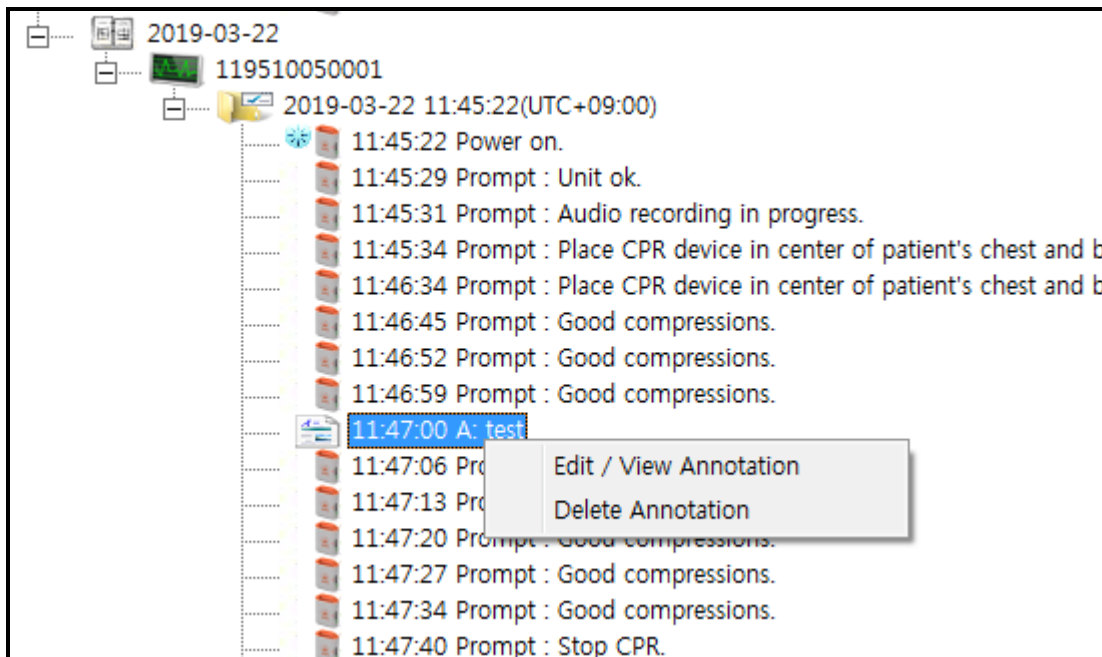
The menu for each case is available by right-clicking.

- Close: It is used to close the case.
- Add Annotation: It is used to add the annotation for the specified time.



**Figure 21. Adding the annotation – Event tree**

The added annotation can be edited or deleted by right-clicking it.



**Figure 22. Editing or deleting the annotation – Event tree**

- Mark as (Not) viewed: It is used to mark that each case is viewed or not.

Symbols	Description
	Case is viewed(Marked)
	Case is not viewed(Not Marked)

F. General

Figure 23. General window

The General window is to save the additional data generated by using the AED.

It consists of three major functions.

- Case: It is used to display the selected case information.
- Automated external defibrillator: It is used to display the AED information.
  - Power on time : Displays the time of the currently loaded AED equipment data.
  - Adjusted power on time : The time of the equipment data is changed to the time set by the user.

Before Adjusted power on time	After Adjusted power on time
-------------------------------	------------------------------

<p>2018-04-02 17:24:18(UTC+09:00)</p> <ul style="list-style-type: none"><li>17:24:18 Power on.</li><li>17:24:24 Prompt : Unit ok.</li><li>17:24:25 Prompt : Adult mode.</li><li>17:24:32 Prompt : Analyzing heart rhythm. Do not touch the patient.</li><li>17:24:32 Prompt : Charging. Do not touch the patient.</li><li>17:24:41 Prompt : Shock advised.(HR : --- bpm)</li><li>17:24:44 Prompt : Press the red flashing button now. Deliver shock no</li><li>17:24:47 Shock Button pressed.</li><li>17:24:47 Prompt : Shock delivered.(E: 189.0 J BI: 50 ohm # of Sho</li><li>17:24:50 Prompt : It is safe to touch the patient.</li><li>17:24:53 Prompt : Begin CPR.</li></ul>	<p>2021-03-03 15:36:10(UTC+09:00) Adjust Time</p> <ul style="list-style-type: none"><li>15:36:10 Power on.</li><li>15:36:16 Prompt : Unit ok.</li><li>15:36:17 Prompt : Adult mode.</li><li>15:36:24 Prompt : Analyzing heart rhythm. Do not touch the patient.</li><li>15:36:24 Prompt : Charging. Do not touch the patient.</li><li>15:36:33 Prompt : Shock advised.(HR : --- bpm)</li><li>15:36:36 Prompt : Press the red flashing button now. Deliver shock no</li><li>15:36:39 Shock Button pressed.</li><li>15:36:39 Prompt : Shock delivered.(E: 189.0 J BI: 50 ohm # of Sho</li><li>15:36:42 Prompt : It is safe to touch the patient.</li><li>15:36:45 Prompt : Begin CPR.</li></ul>
---	---

- Adjusted power on time is applicable to only one case.
- Data cannot be saved with the time changed with the adjusted power on time.

- Patient: It is used to display the patient information.

If necessary, you can input data into the blank spaces of the General window and save them. These data are available later.

G. Entire ECG

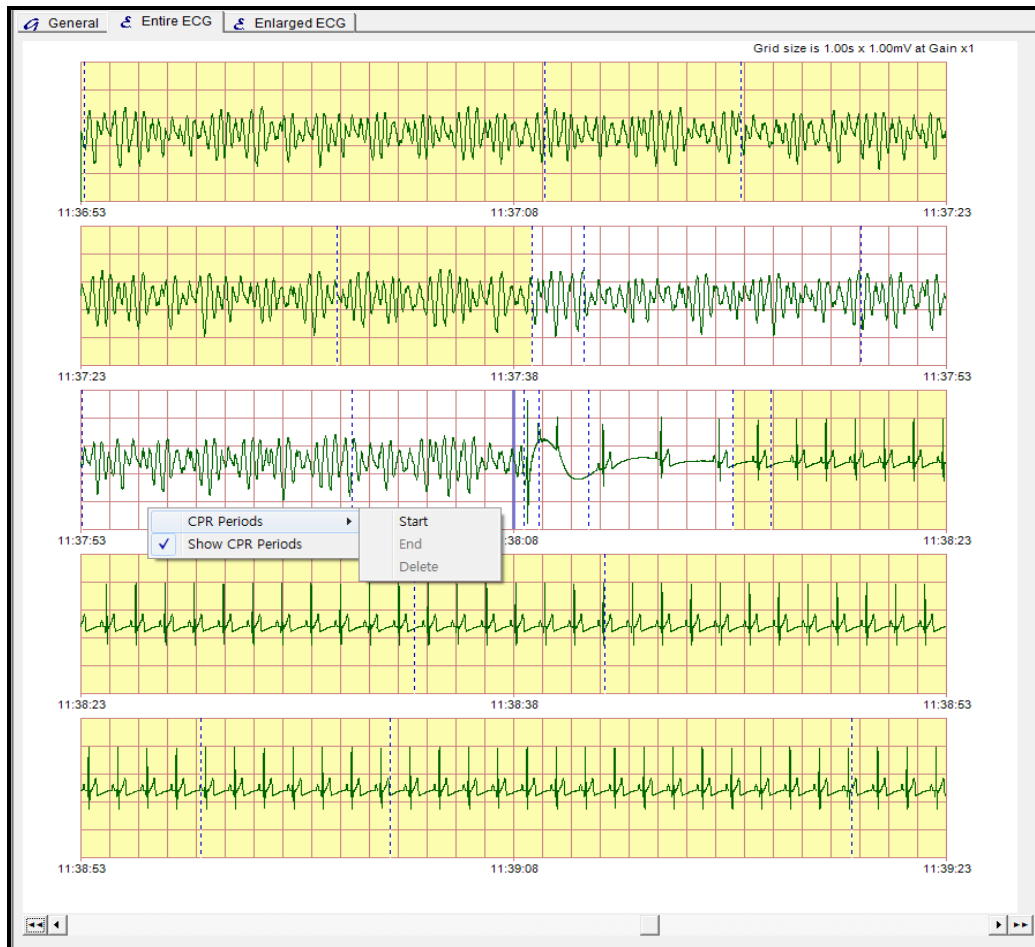


Figure 24. Entire ECG window

The Entire ECG window is to view the entire ECG data flow saved in the AED. The ECG data during 2 minutes and 30 seconds are displayed with the interval 30 seconds and the event points are marked on the display. The CPR periods can be set and indicated.

The setting menu for CPR periods is available by right-clicking the specified point. The CPR periods can be set, deleted, displayed or hidden via this menu.

NOTE: The CPR periods can be operated on the HeartOn A16 Event Review Software but they cannot be saved. The initial CPR periods are specified by the AED.

Use the below scroll bar to show data on the desired point.

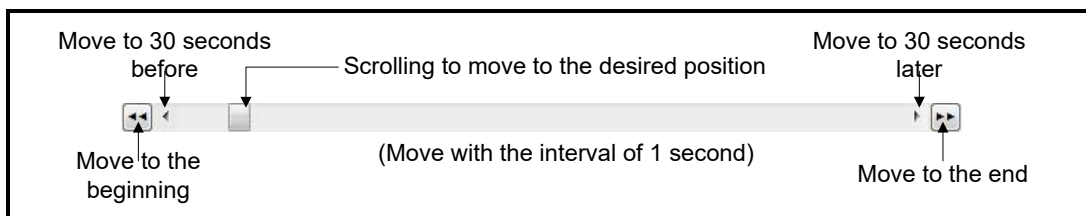


Figure 25. Data scroll



### H. Enlarged ECG



Figure 26. Enlarged ECG window

The enlarged ECG window is to view the ECG data and event data of the AED enlarged with the time unit.

'CPR Folding option' button is displayed on the bottom side of the screen when CPR FeedBack option is included. User can select whether to display the CPR FeedBack data by pressing 'CPR Folding Option'.



Figure 27. CPR Folding option button



Figure 28. Enlarged ECG CPR FeedBack window

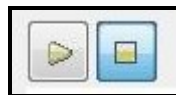


Figure 29. Play/Stop button

It plays or stops all procedures by pressing 'Play' or 'Stop' buttons located at the top of the window. Audio Record file can be played when there is Audio Record file.

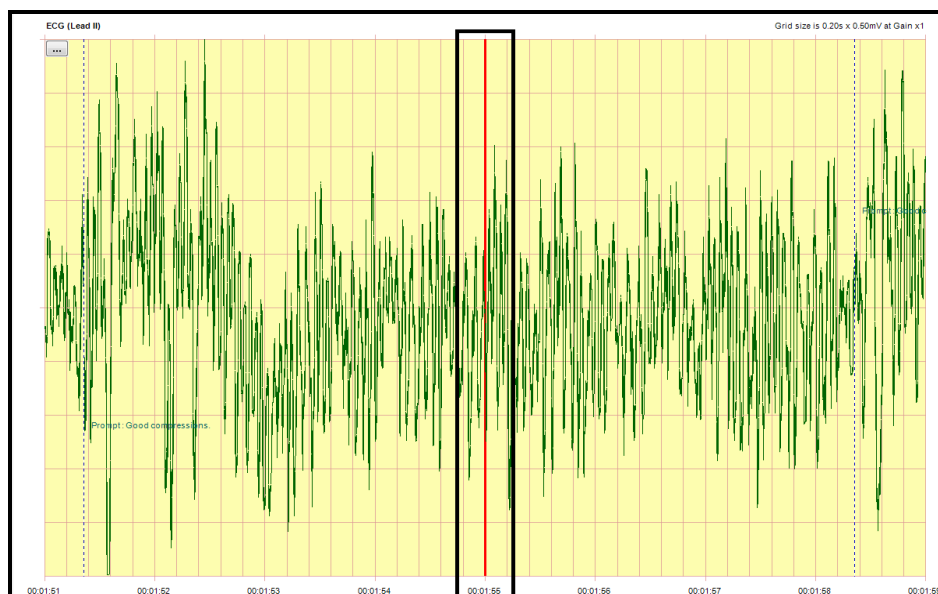
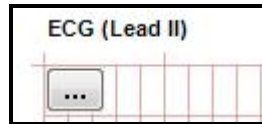


Figure 30. Audio record file playing window

Blue bar in the middle of the screen change its color to red when play the Audio Record file.



**Figure 31. Display setting button**

The display setting button is located under the 'Play' and 'Stop' button.

The display setting button is used to set three menus below.

- Display 6sec View: It is used to display the 6 seconds view of enlarged ECG. (The default of enlarged ECG display is the 8 seconds view.)
- Display Large View: It is used to display the 2 seconds view of enlarged ECG.
- Display Event Text: It is used to display or hide the event text. The default setting is to display the event text.

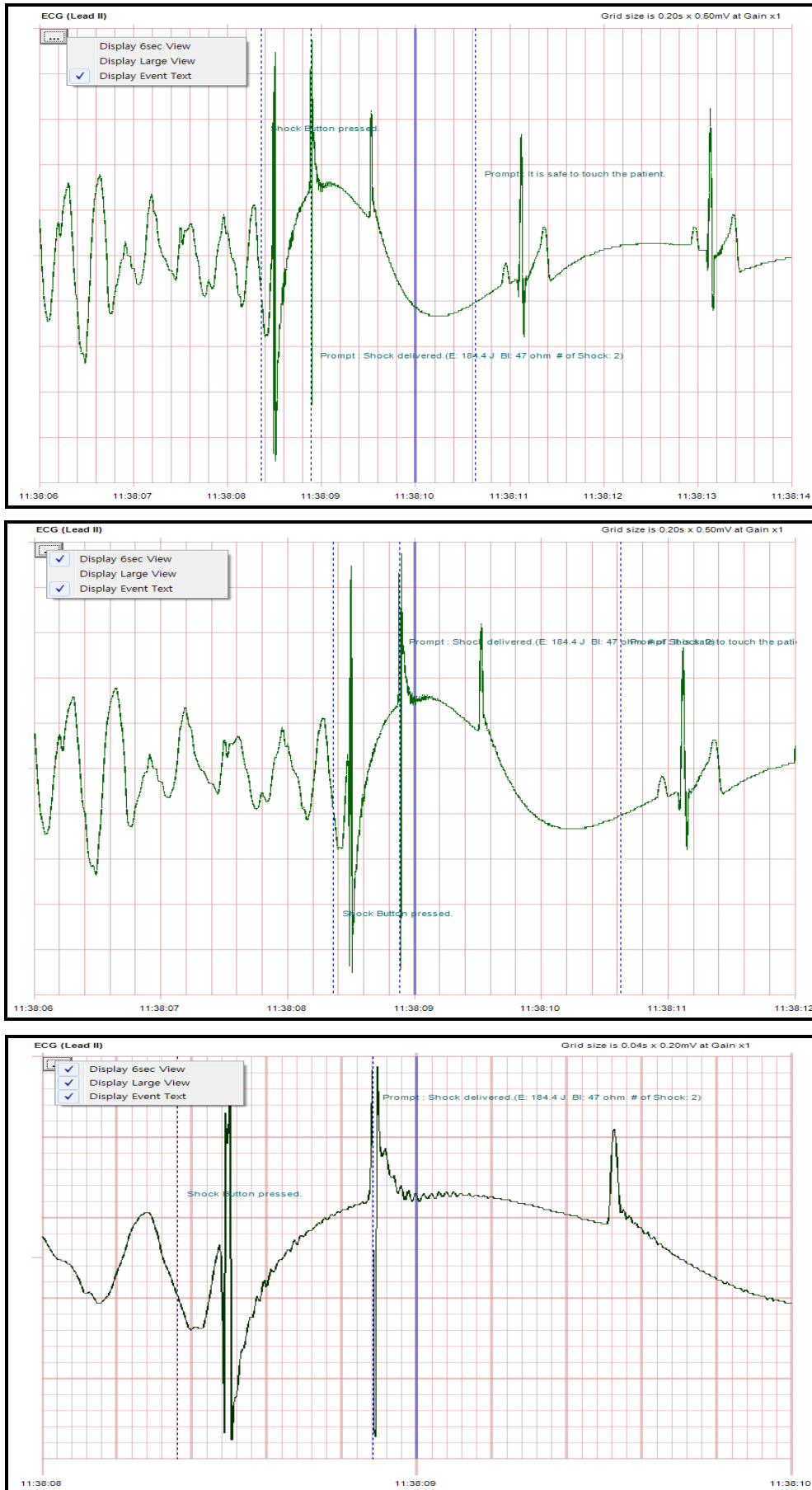
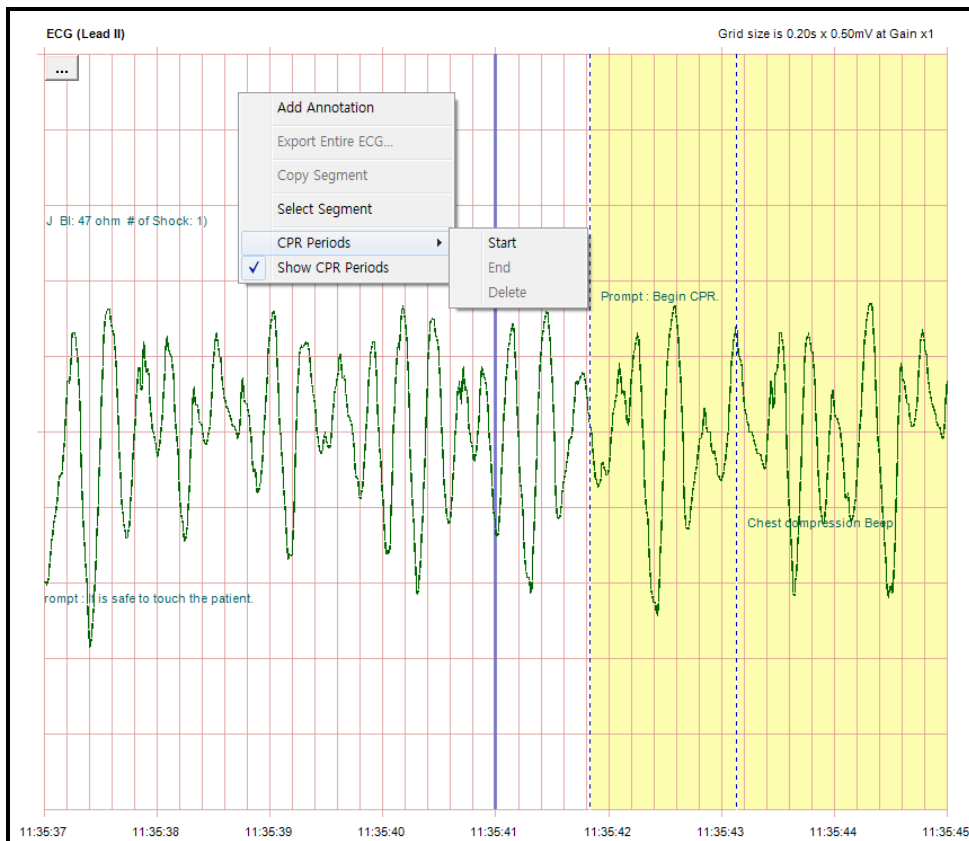


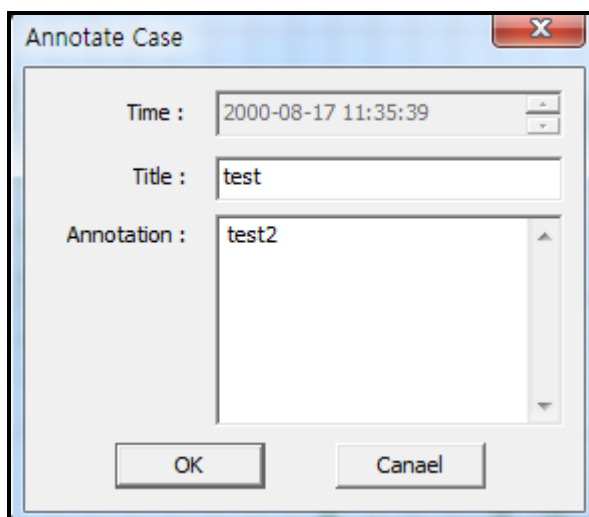
Figure 32. Display setting of the enlarged ECG

The display setting menu is available by right-clicking the enlarged ECG display.



**Figure 33. Setting the enlarged ECG menu**

- Add Annotation: It is used to add the annotation for the specified time. (The specified time is not selectable unlike event tree.)



**Figure 34. Adding the annotation – Enlarged ECG**

- Select Segment: It is a part of entire AED data. It can be set or deleted like the CPR periods but not be saved. It is used to print the ECG wave form.

- CPR Periods: It is used to select the CPR period.
- Show CPR Periods: It is used to display the CPR periods.

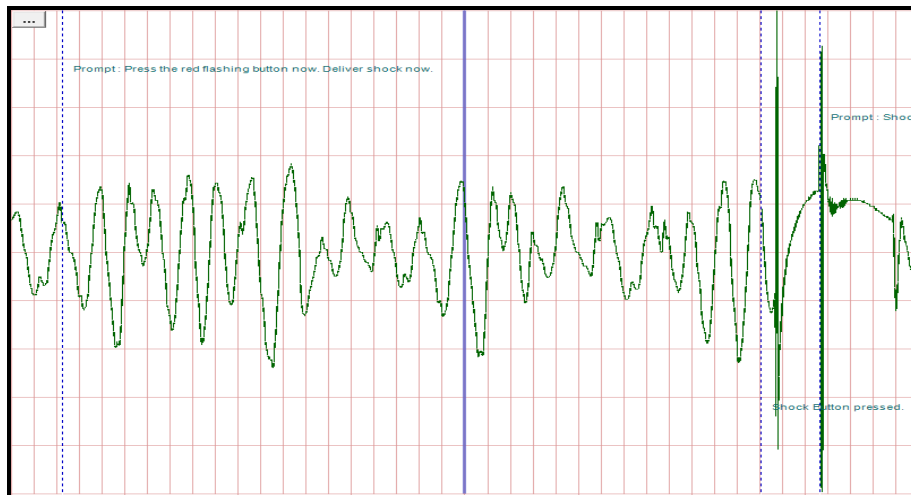


Figure 35. Basic enlarged ECG display

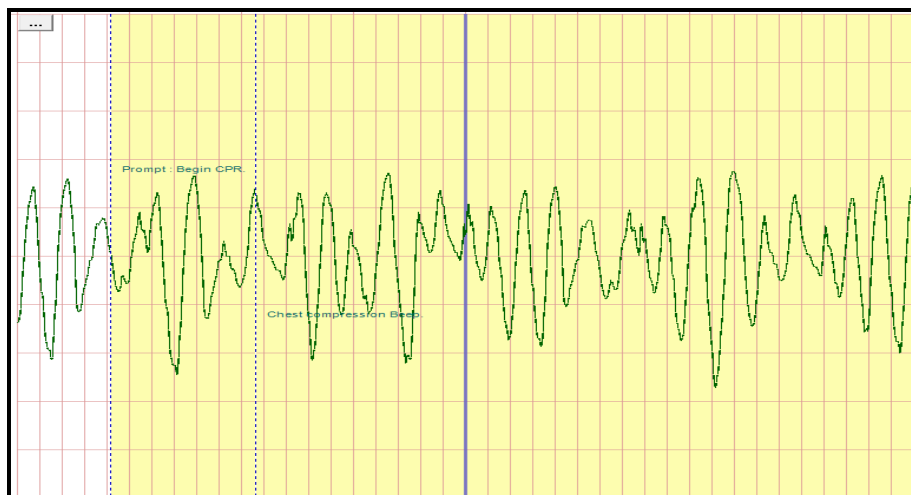


Figure 36. CPR display of enlarged ECG

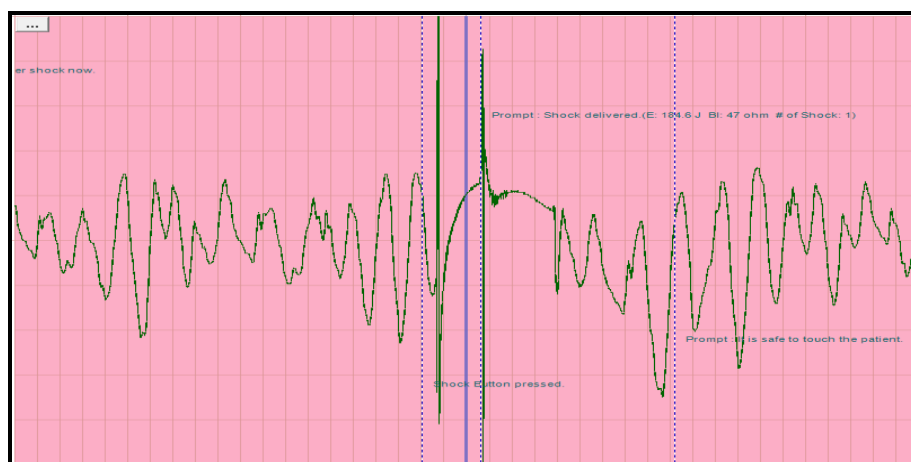


Figure 37. Segment display of the enlarged ECG

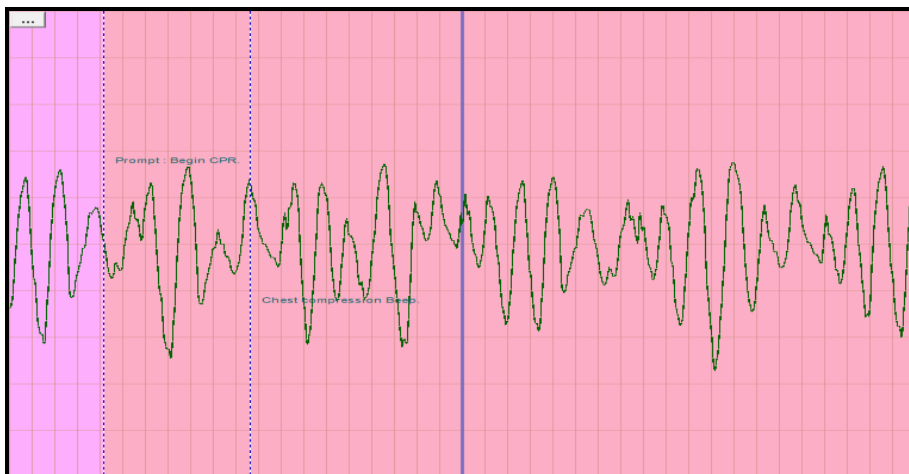


Figure 38. Combination display for CPR & Segment of the enlarged ECG

## I. Incident Log & Print

### i. Incident Log

The incident log is to view the all data of the specified case except for ECG waveform on the web browser. It supports all functions – save, print, or etc. - provided based on the web browser.

NOTE: If the incident log data is not saved when displayed on Internet Explorer, it is available only via the HeartOn A16 Event Review Software.

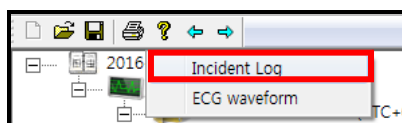


Figure 39. Incident log menu

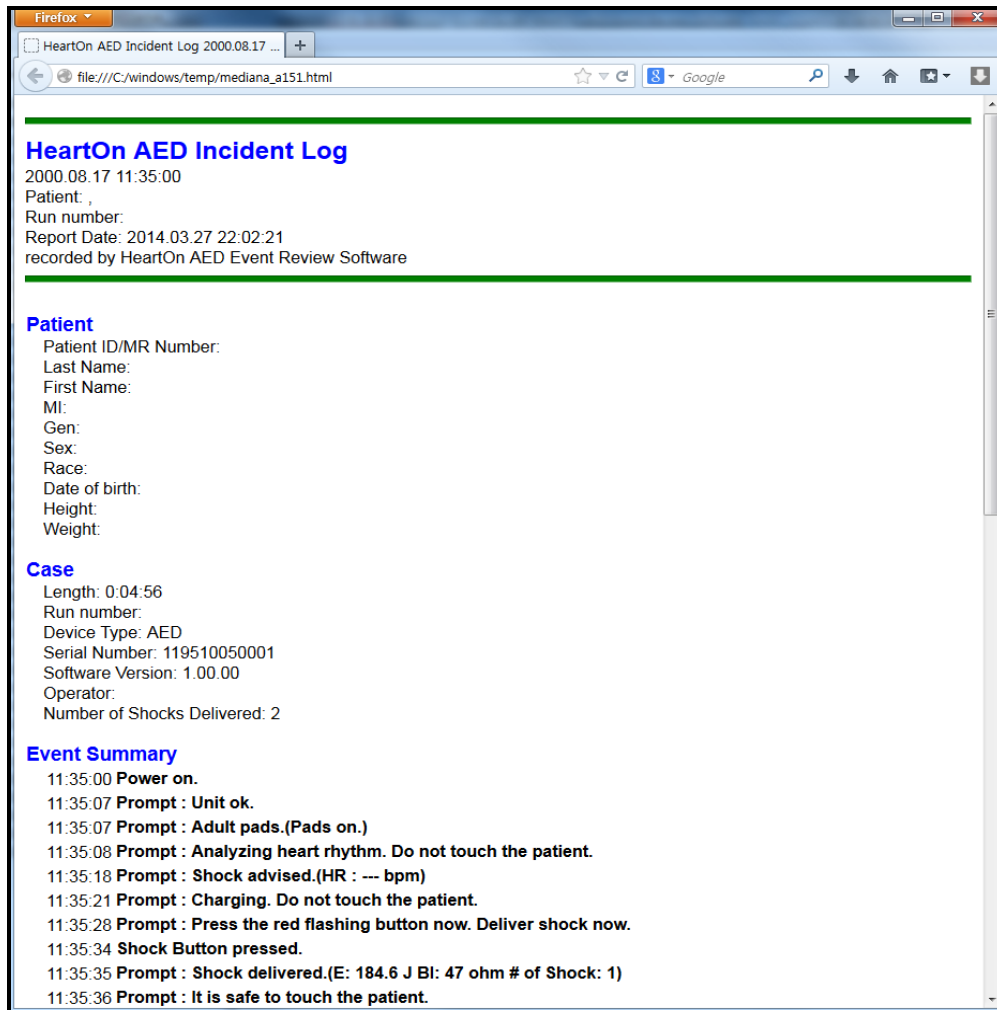


Figure 40. Incident log window



ii. Print

The print function provides only for the segment selected from the enlarged ECG. The segment is printed out with interval of 10 seconds, and it includes the ECG data and event data.

NOTE: The printing resolution should be set to 600dpi. If the resolution is not proper, it would cause the abnormal printing.

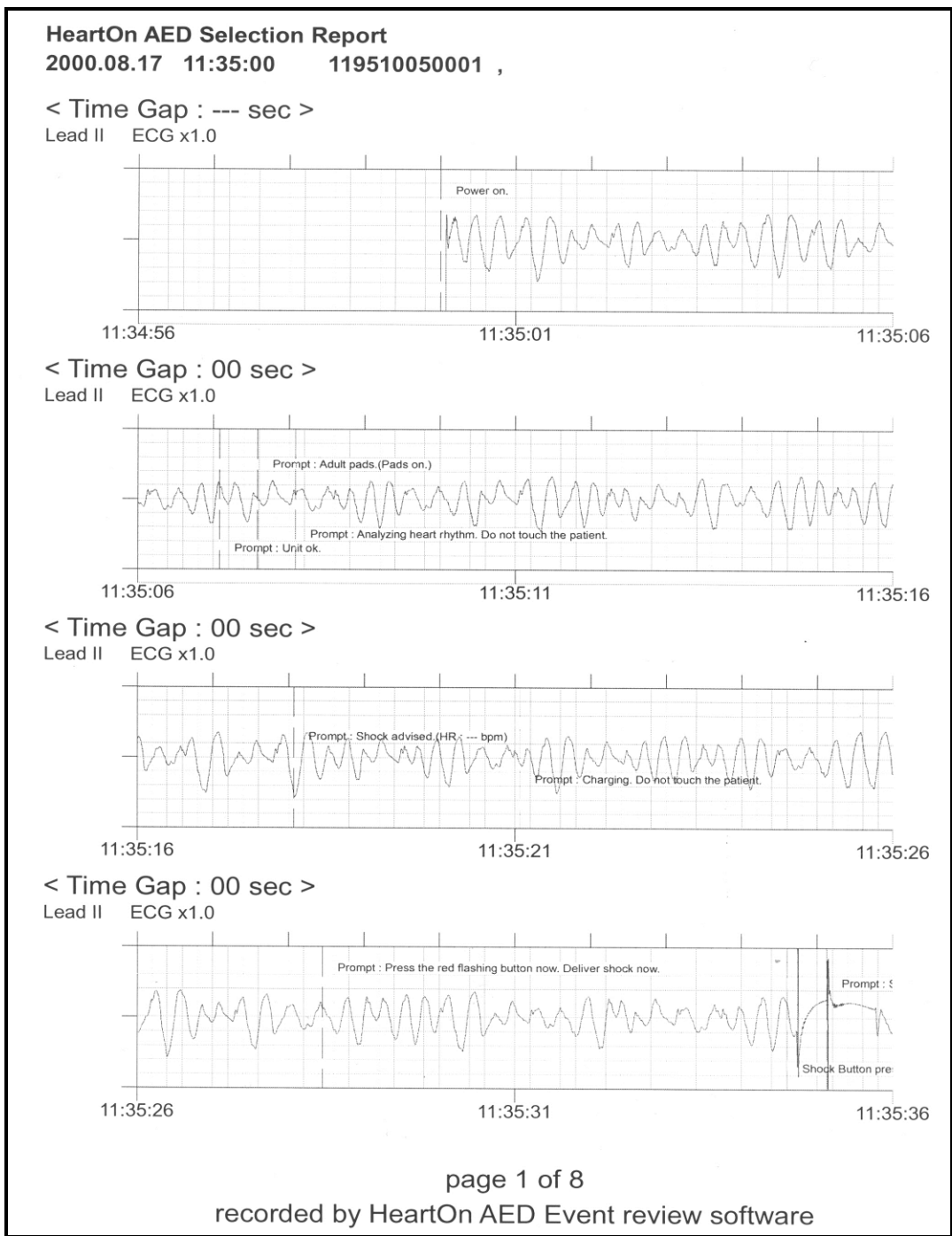


Figure 41. Printing