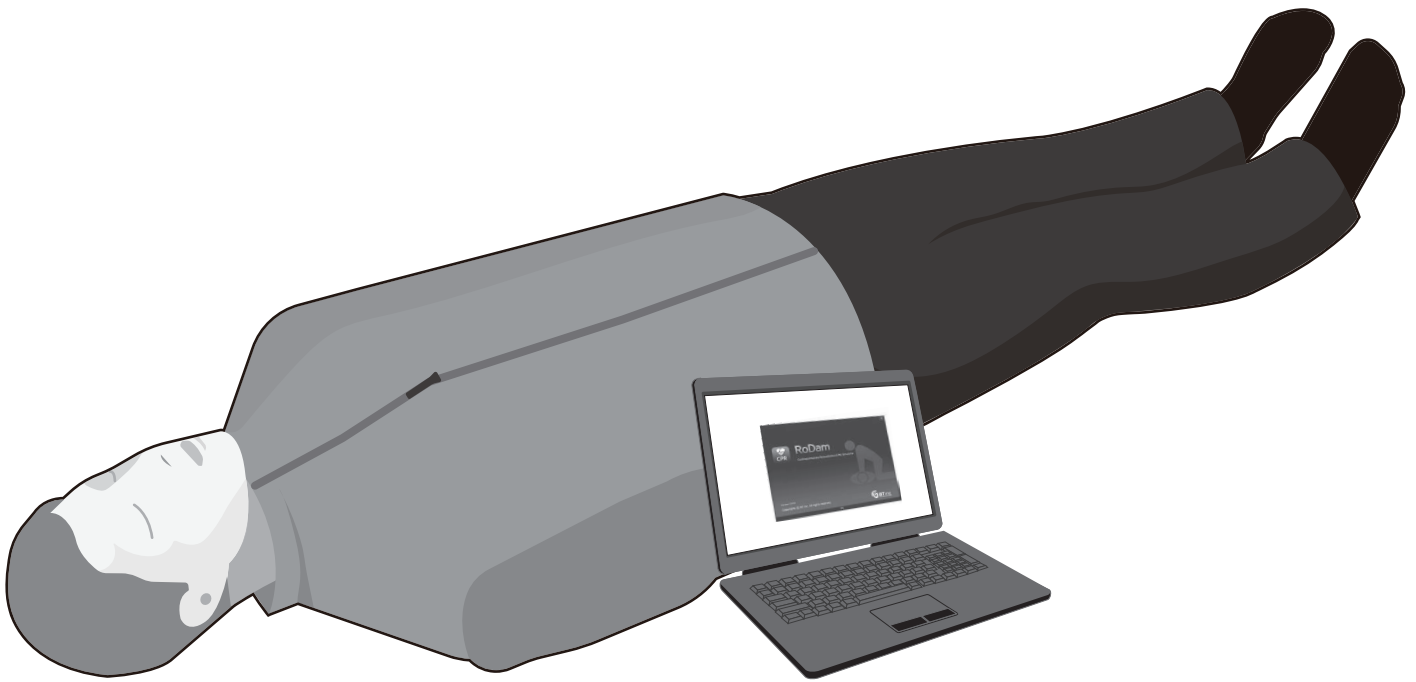


BT-CPEA+

# Advanced CPR Simulator

## USER GUIDE




User Guide



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## Product Information

Product Name	Advanced CPR Simulator
Model Name	BT-CPEA+
Manufacturer	BT Inc.
Country of Origin	Republic of Korea
Certification	 (Contains FCC ID : S7A-IW05)

## Product Specification

Dimensions	1680 X 500 X 210mm
Weight	18 kg
Power Converter	Input AC100-240~, 50/60Hz, 0.4A Output DC 12V, 1.5A
Battery	8EA of R20 (D, 1.5V)

## Customer Service

Website	<a href="http://www.btinc.co.kr">www.btinc.co.kr</a>
Address	A-313, Samsung Techno-valley, 140, Tongil-ro, Deogyang-Gu, Goyang-Si, Gyeonggi-do, 10594, Republic of Korea
Telephone	+82-2-2038-2903
E-mail	<a href="mailto:bt@btinc.co.kr">bt@btinc.co.kr</a>



## Cautions for battery disposal

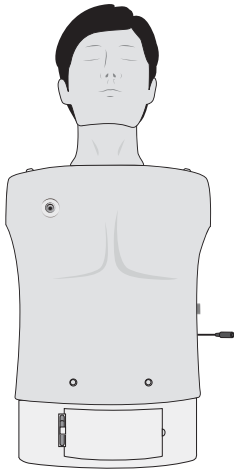
- \* Please follow the regulations of corresponding area for the disposal of used batteries.

# Cautions

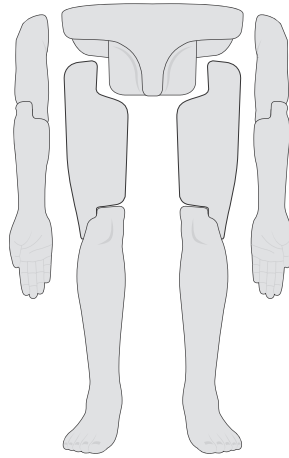
Please read it carefully to ensure correct usage and user's safety through understanding of the product.

- ① Use only components provided or approved by BT Inc.
- ② Do not use the product for other purposes described in this manual.
- ③ If you disassemble or modify the product without any permission by BT Inc, you cannot get the warranty. Also, making imitated or altered products for commercial purposes are prohibited by law.
- ④ During the usage, please contact us after any electricity power off when the product is overheated or smelled something burning
- ⑤ Keep the product away from water or moisture. If the product gets wet, do not turn it on.
- ⑥ Do not use the product near strong magnetic fields or high voltage power lines.  
The product might malfunction due to the electromagnetic waves.
- ⑦ Do not use the product under a weather of lightning. It can cause the product malfunction and increases the risk of electric shock
- ⑧ Do not use the product with temperatures below 0°C or above 40°C  
(Operation temperature : 0°C ~ 40°C, Storage temperature : -10°C ~ 50°C)
- ⑨ Do not keep the product near hot places such as heaters. Deterioration of product or internal damage might occur
- ⑩ Never clean the product with chemical substances such as solvent, benzene or thinner, as these may Cause ignition or cause the surface deterioration.
- ⑪ BT Inc. can change or adjust the product specification without any notice in order to improve the product.

# Components



Manikin (Upper Body)



Arms/Legs/Pelvis  
(1 Pair Each)



Laptop(Optional)

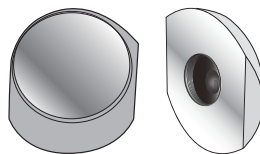
OR



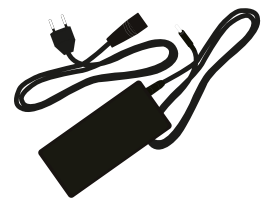
Tablet PC(Optional)



Clothing Jacket/Pants



Defibrillator Electrode Cover (2EA)



Power adapter

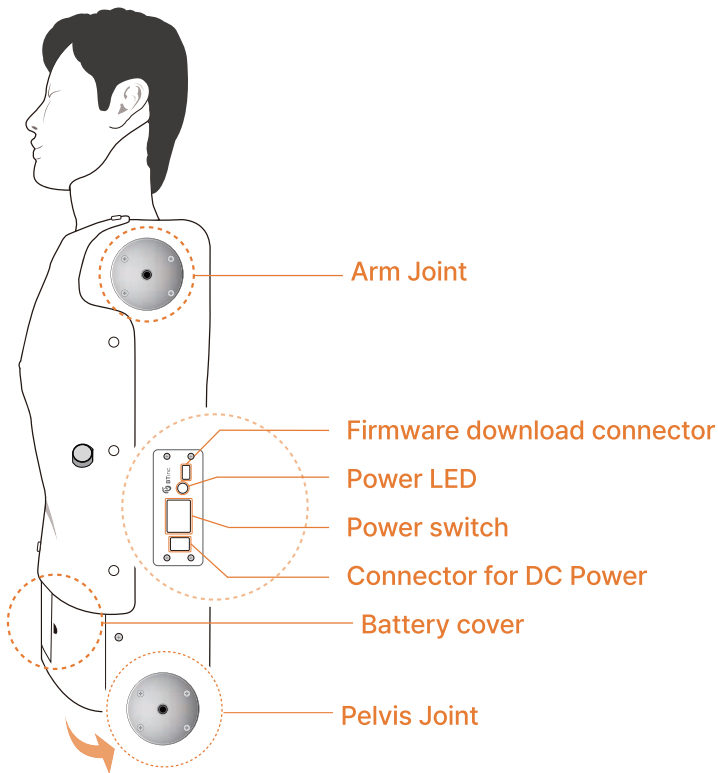
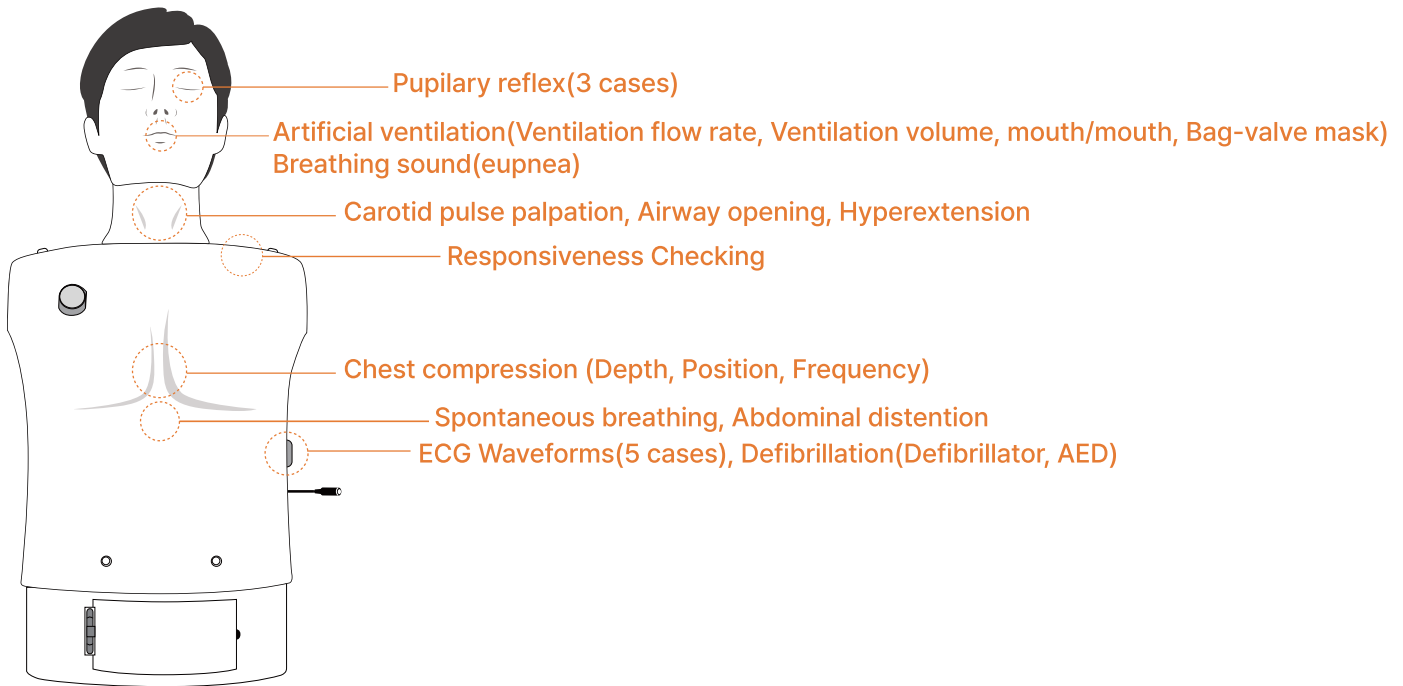
\* etc. - Storage bag, Battery holder, Arms/Legs Connecting bolts(6EA)

## Consumables

- Defibrillator Electrode Cover
- Lung bag
- Skin(Head, Face, Neck, Body)

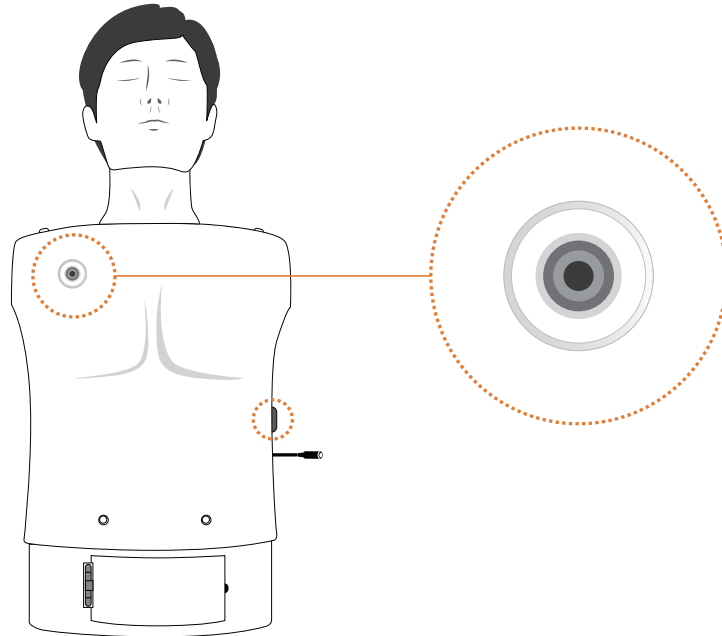
- Lifetime of the consumables may differ depending on the skill level of the users.

# Features and Functions

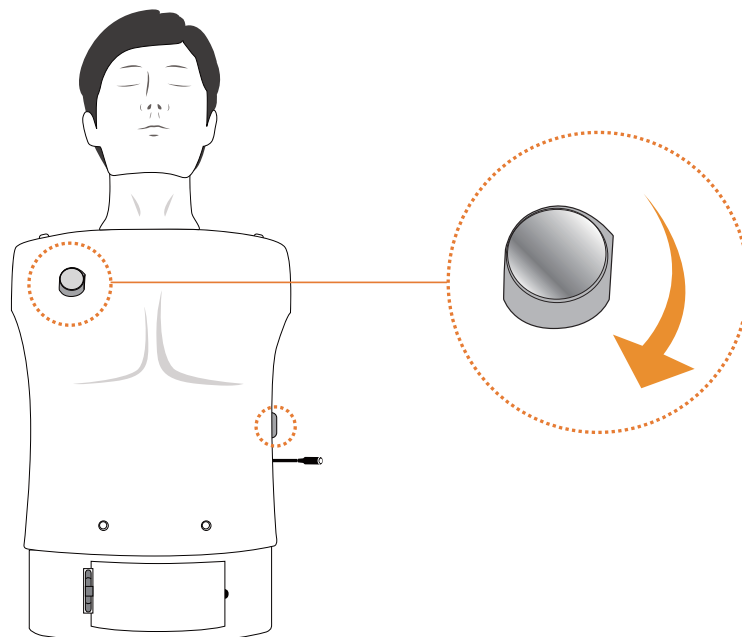


# Hardware

## (1) Electrode cover installation



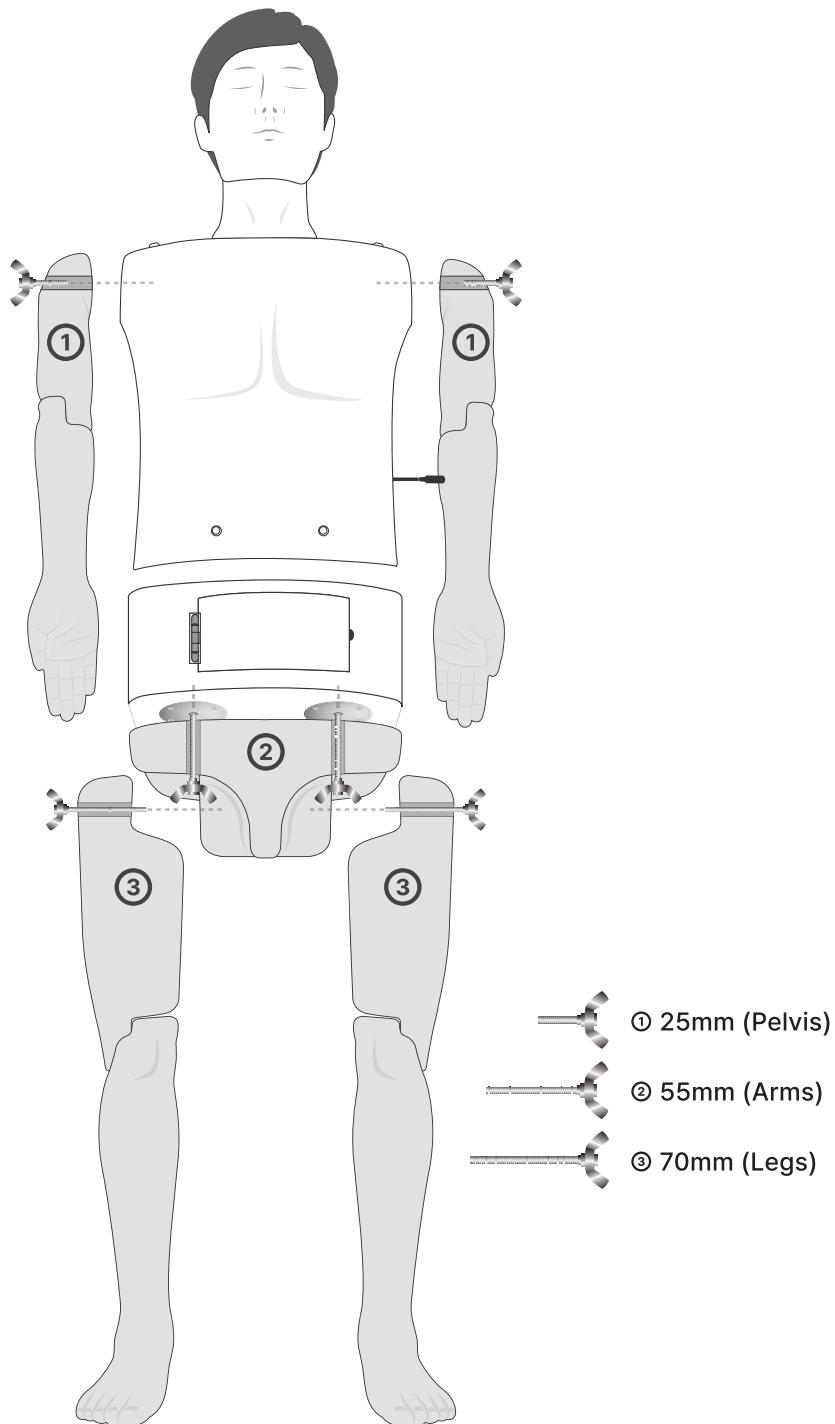
- ECG/AED electrode connectors are located to the connectors at RA(Right Arm) & LL(Left Leg) position.



- Attach the electrode cover on the threaded connectors and turn it clockwise to install.
- Turn it counterclockwise to uninstall.

**Caution :** Attach the AED pads after installing the electrode covers or sparks may ignite during the defibrillation.

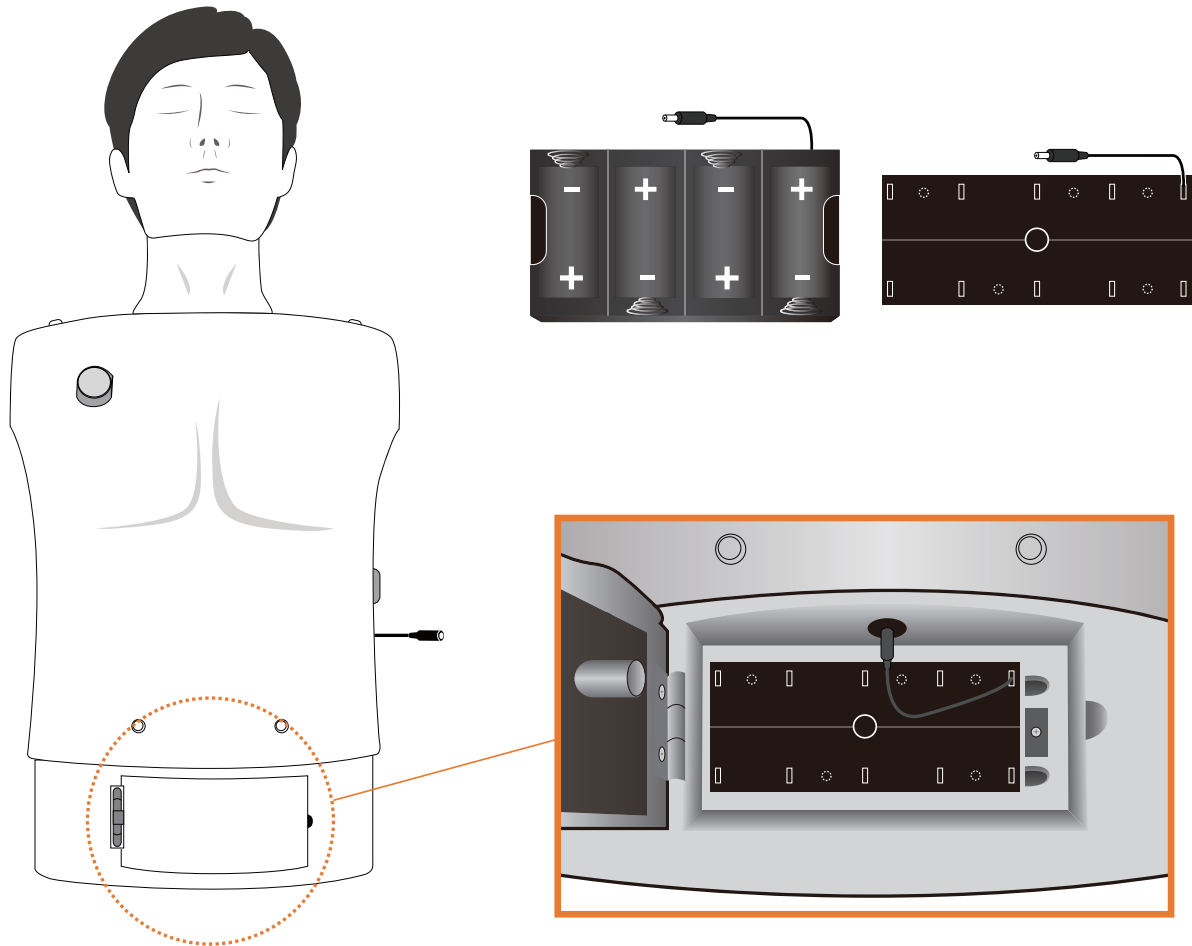
## (2) Connection Arms and Legs and Pelvis



- Place each arms, legs, and pelvis parts at the joint and assemble these by screwing bolts with hands.

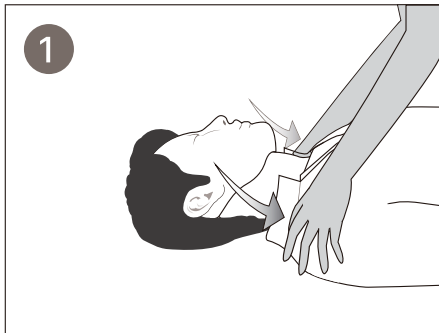


### (3) Insert and Replace the batteries

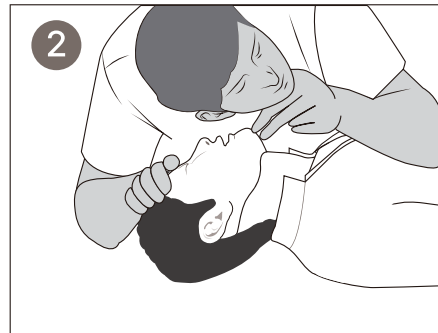


- Open the battery cover and pull out the battery holder.
- Insert 4 batteries to each side (total 8 batteries) after checking the polarity of the batteries.
- Insert the battery holder with batteries into the trench as the figure above and connect DC plug.

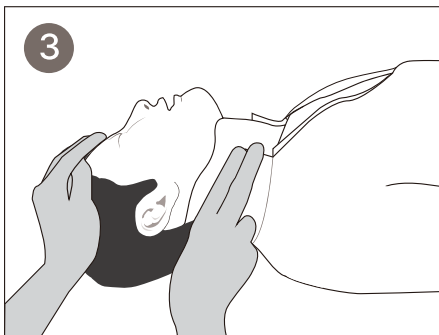
(4) Functions of the manikin



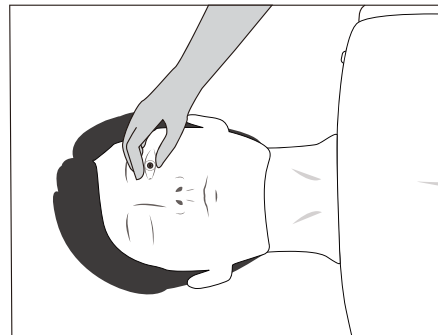
Checking Responsiveness



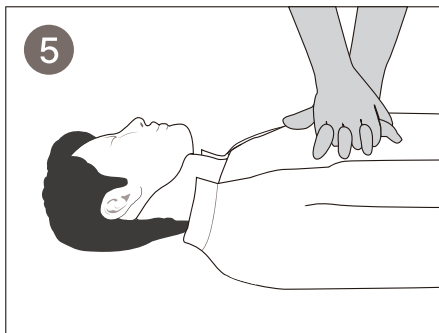
Checking Breathing



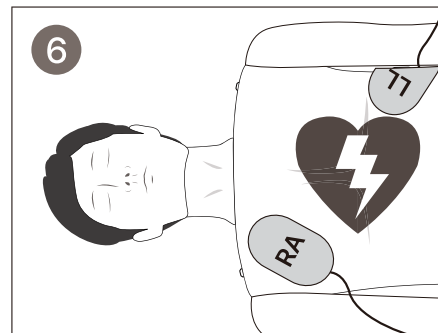
Checking Pulse



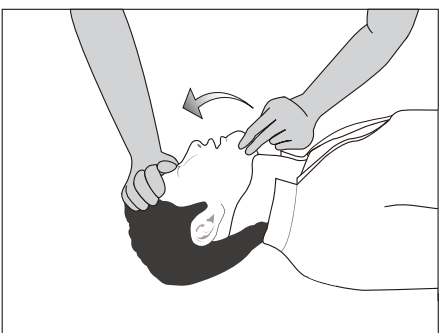
Checking Pupil



Chest Compression



Defibrillation (Electric Shock)



Opening Airway



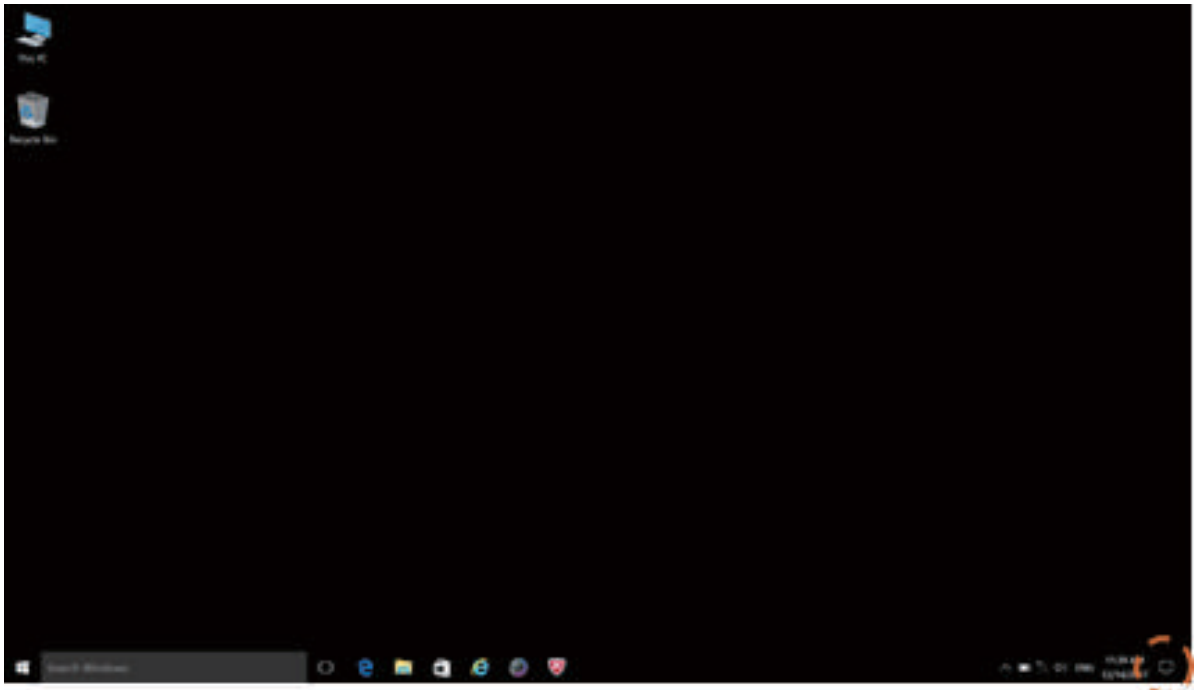
Artificial Ventilation

# Software

## (1) PC System Setting and Network, Bluetooth check

Please turn-off the screen saver and sleep mode of computer.

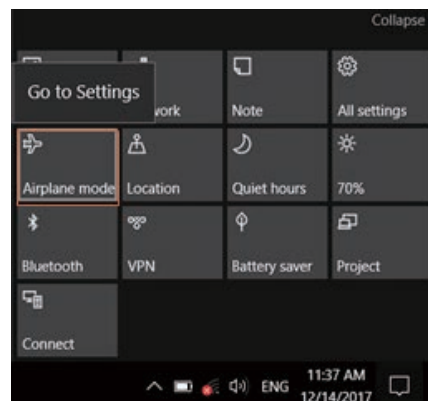
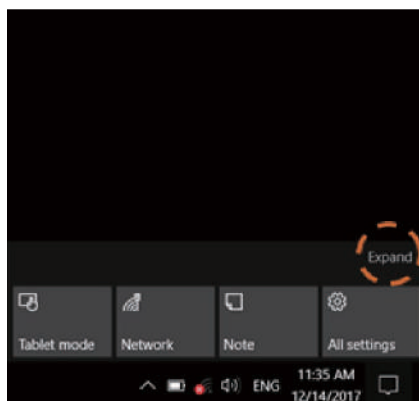
① Click [Action center] at the bottom of main screen.



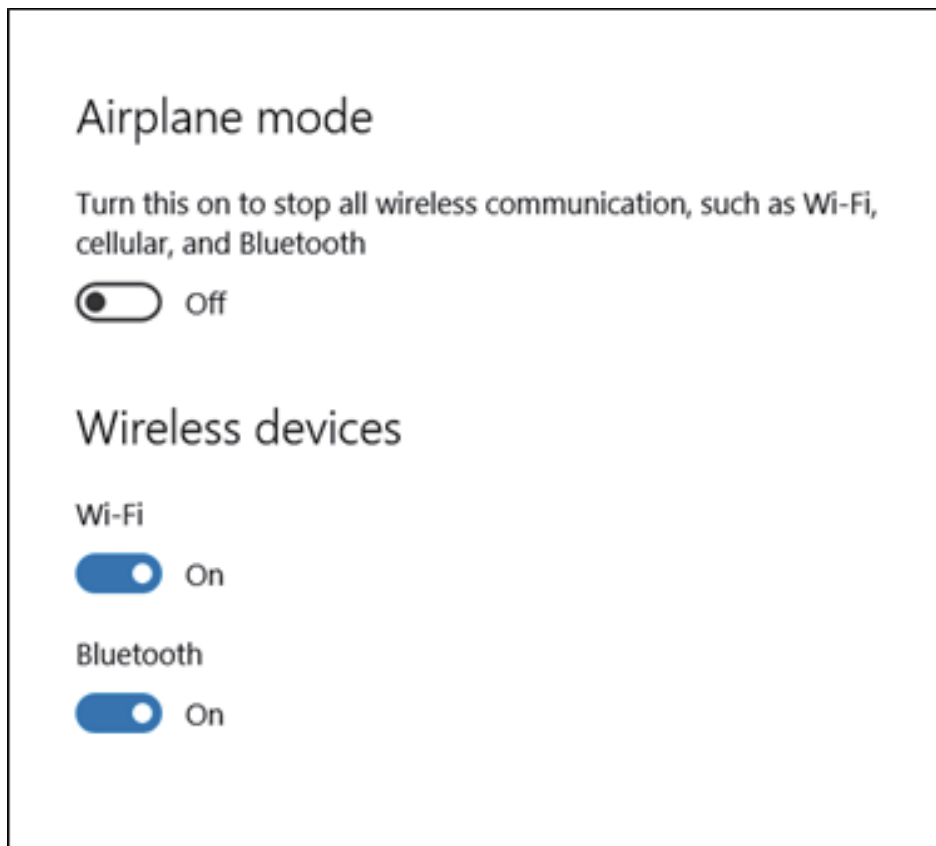
< Main screen >

Action center

② Click [Expand].



Action center > Expand > Airplane mode > 'Right click' > Go to Setting



© Click [Airplane mode] and see settings is [Bluetooth ON], [Wi-Fi ON], [Airplane mode OFF].

If not, please set things refer to this.

© After setting, go to main screen by using shortcut key, [Windows icon  + D].

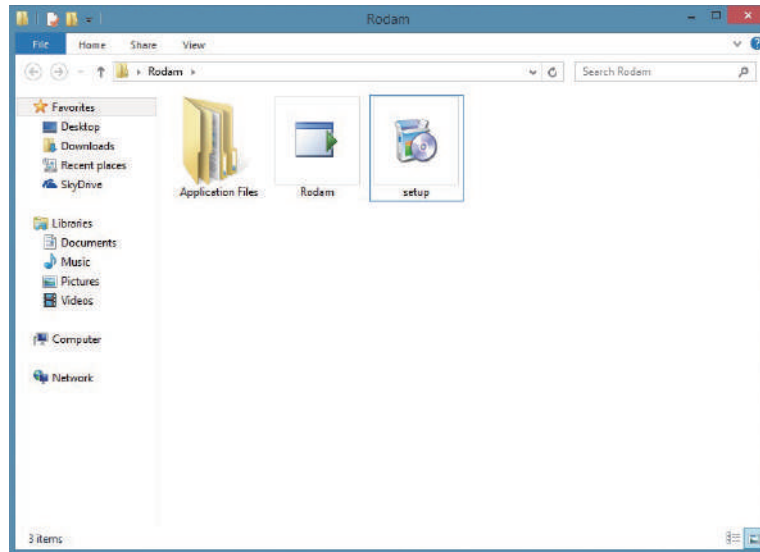
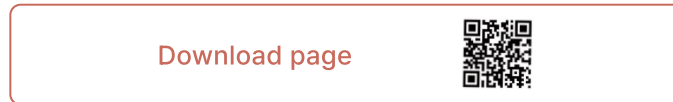
\* Windows8, 8.1

[Windows icon  + C], go to Search → Network → Airplane mode.

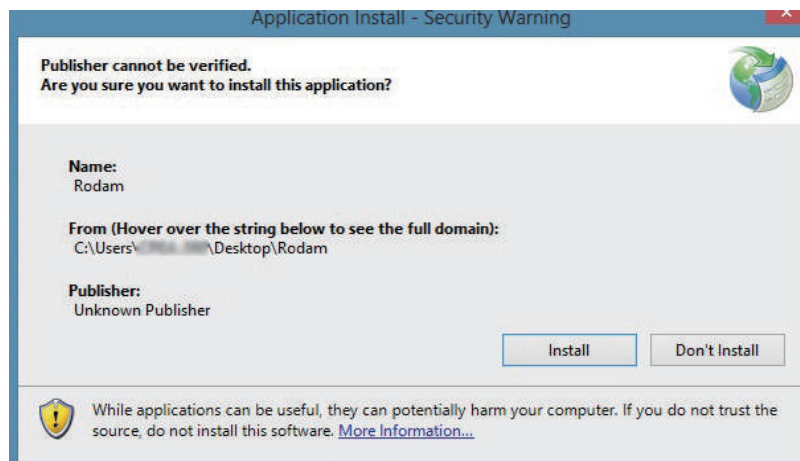
Make sure settings is [Bluetooth ON], [Wi-Fi ON], [Airplane mode OFF].

## (2) Installation and Updating

Users can download S/W from BT webpage.(<http://www.btinc.co.kr>)



Ⓞ Double-click 'setup' file and start installation.



Ⓞ Click 'Install' and proceed installation. S/W will be opened when installation is done.

\* Installation is based on Windows 10 and setting procedure may be different from Windows version.

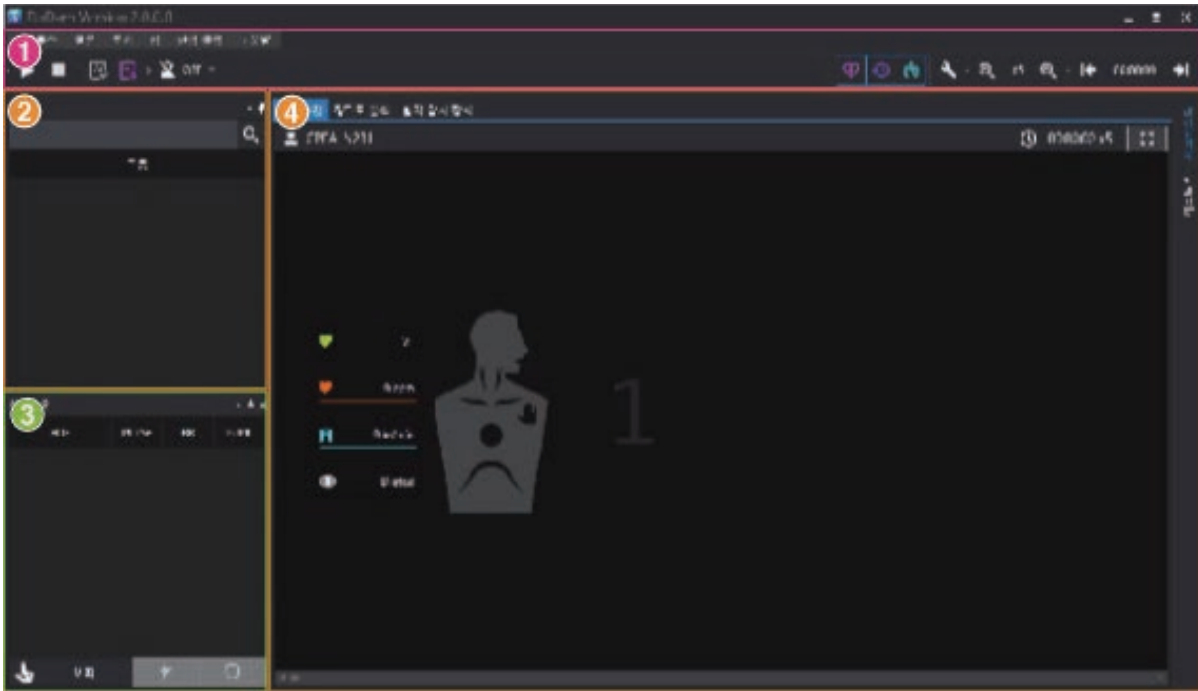
\* In case of Windows 7, 8, 8.1, internet connection might be needed to install NET Framework.

### (3) Screen layout

RoDam program main screen will appear as below.

This figure explains the layout of initial screen.

There may be difference of layout depended on user settings.



Users can customize the size of template.

- ① Menu : Bluetooth, Settings, View, Windows, Help menus are offered.
- ② Trainee : User can search the trainee's information at the list and drag&drop the trainee's information to the selected manikin in order to load and start training.
  - \* To disconnect, double-click the trainee's information at the list of trainee.
- ③ Scenarios : The status of manikin is changed with an action of defibrillation.
- ④ (1) Training Screen : Multiple screen will be generated based on the number of connected manikins and it is possible to check chest compression, ventilation and history log.  
In case of multi training, 'view all menu' and 'view individual menu' is provided so that trainers can monitor easily.
- (2) Accuracy analysis : User can check the detailed information about compression & respiration with graphic charts.
- (3) Patient monitor : Users can check the vital sign of patient.
- (4) History : Automated check list, Check list made by user can be effected to the score.
- (5) Checklist : The checklist which is designed by users will be displayed.

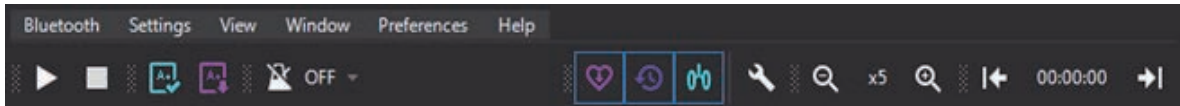
Checking and unchecking the list are possible during practice or after practice.














#### (4) Menu and icons

User can check the Icons on the top of the RoDam(BT-CPEA) program.












In this user manual, 'Bluetooth', 'Settings', 'View', 'Window', 'Preference', 'Help' will be introduced.

##### Menu(Practice icon)



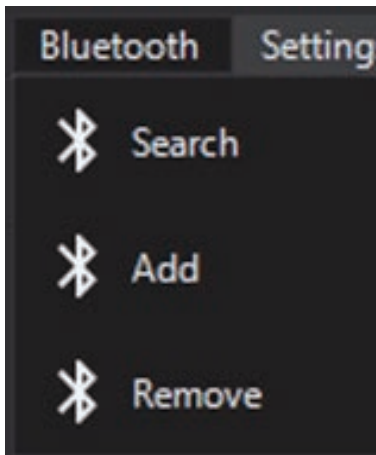
Icons			
	Start training		Show chest compression graph
	End training		Show history
	View result		Show ventilation graph
	View previous result		Graph option
	Metronome		Zoom out graph
			Zoom in graph
			Move graph to left
			Move graph to right

##### ※Additional icons

- ①  Previous result >  Statistics >  Export statistics into Excel format  
 Item selector for display
- ②  Result >  Trainee information >  Set size of logo,  Original size of logo  
 Open logo
- ③ Right upper side of screen >  Full screen  
 Previous screen

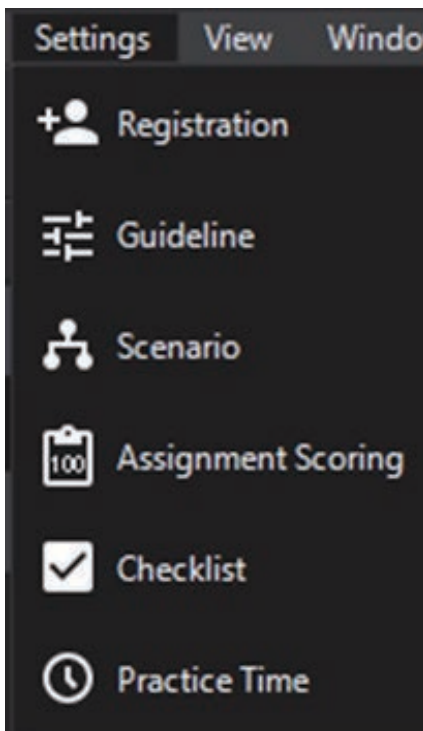
Users can customize screens according to various training patterns.







### Bluetooth Icon



Search	Search for available manikins
Add	Add appropriate manikins
Remove	Disconnect manikins

### Setting Icon



	Register trainee/Select a folder to save result
	Guideline setting (Chest compression, ventilation, etc)
	Make scenario
	Setting evaluation score (Chest compression, ventilation)
	Checklist items and score setting
	Training time

### \*Additional Icon

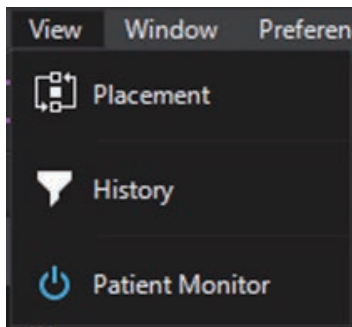
①  Registration >  Folder to save result




Please set "Settings" before training

- Maximum 7 manikins can be connected to 1 laptop by Bluetooth.(CPEA, CPTA).
- The latest setting will be stored automatically for next training.



## View Icon

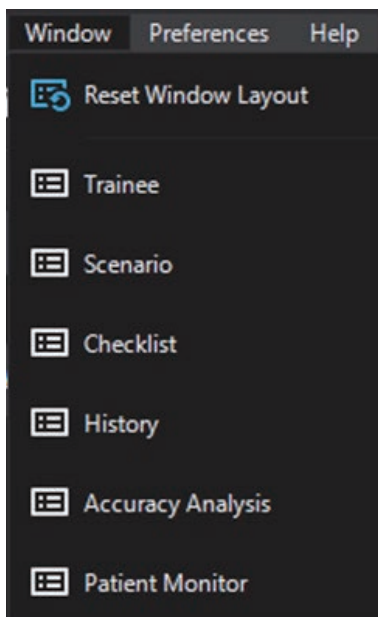









-  Manikin layout settings for multi-training
-  ON/OFF Automated/manual check list
-  Show Patient monitor

Users can customize screens according to various training patterns.

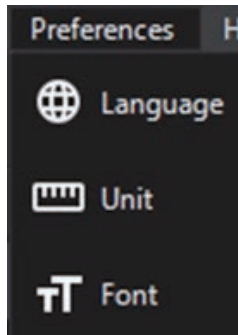
- The layout of main screen can be customized before, during and after training.
- The latest setting will be stored automatically for next training.
- At 'Previous result' menu, screen layout setting of 'View' menu is partly available.

## Window Icon

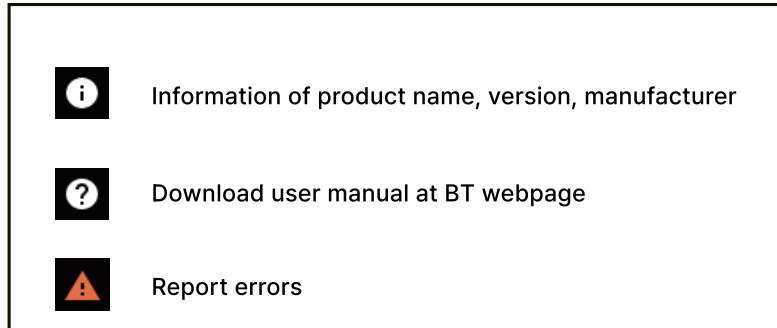
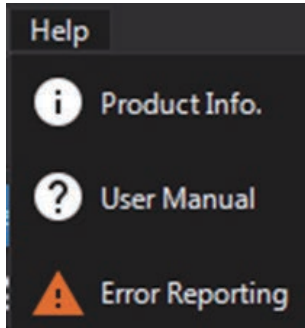


-  Reset window layout  
(Reset to the initial setting)
-  Show 'Trainee' layout
-  Show 'Scenario' layout
-  Show 'Checklist' layout
-  Show 'History' layout
-  Show 'Accuracy Analysis' layout
-  Show 'Patient Monitor' layout

## Preference Icon



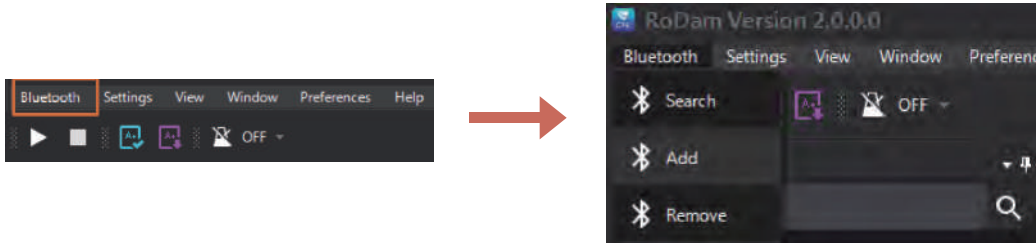
## Help Icon



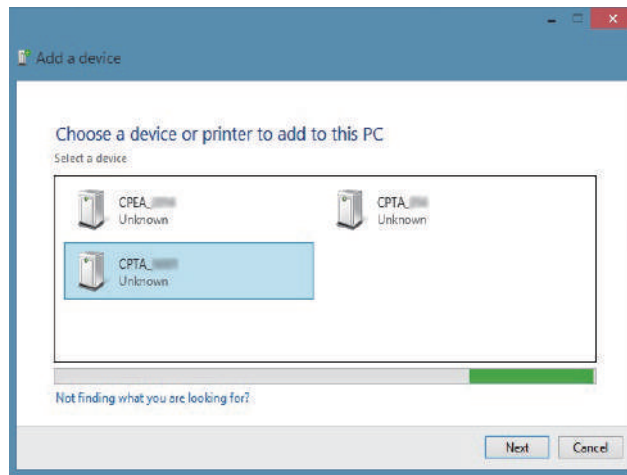
(5) Let's Start > Add device

Available manikin will be appeared on the screen after searching for manikin.

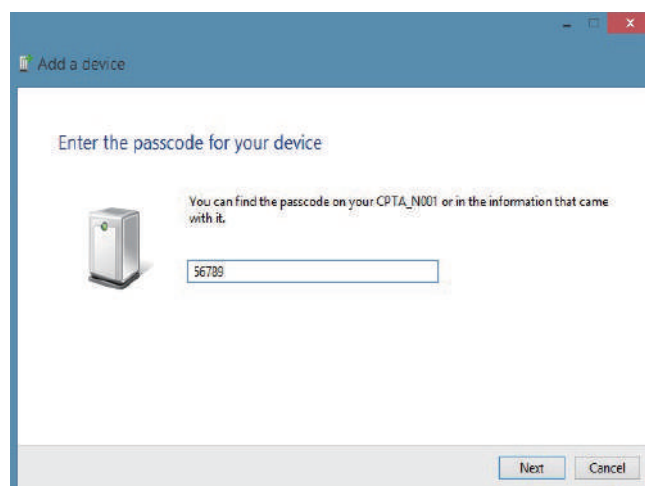
Manikin has to be connected to power to do all procedures.



① Choose a device to add by selecting 'Bluetooth > Add' at the top of screen



\*Please refer to a label at the side of manikin to check the name of device.



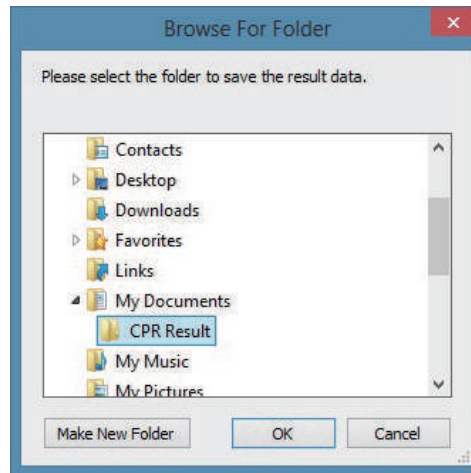
② When the device is appeared on the screen, pair manikin and computer by typing pin code.

- Pin Code : 56789

③ To apply modification, please restart program by selecting 'Bluetooth > Add' menu.

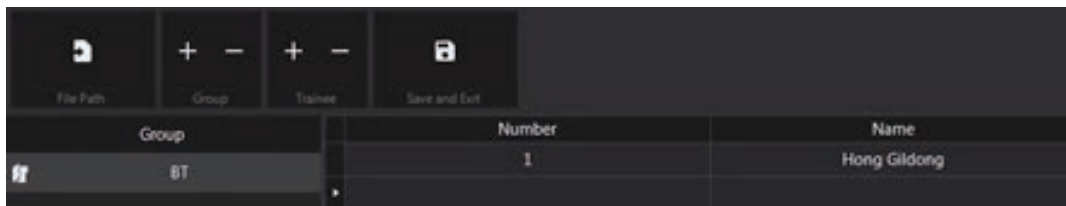
Users can find the device id connected after restarting S/W.

## >File route setting and Trainee registration



### ① Set file path for result files

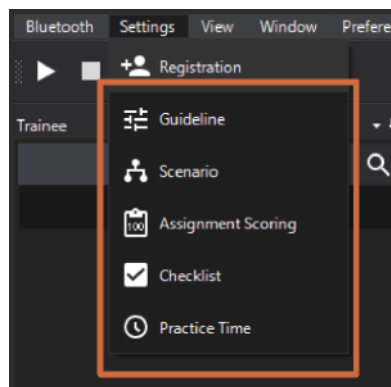
- Select a folder that result files will be saved at 'Settings>Registration>File path' menu.
- The name of folder will be automatically set as 'CPR Result'.



### ② Register group and trainee

- After creating a 'Group', save 'Trainee information' after typing it.
- 'Remark' is not a mandatory but it will displayed at the result screen if it is typed.

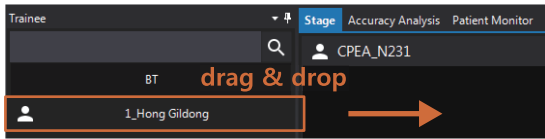
## >Environment Setting



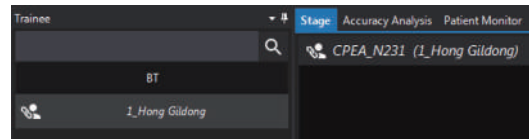
### ① Guideline, Scenario, Assignment scoring, Checklist, Practice time can be customized according to the trainer's own curriculum

- The setting values are readily reflected to the training, after you change the settings.

## >Trainee information matching



< Before matching >

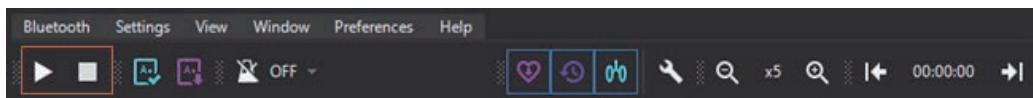


< After matching >

### ① Match the registered trainee information with the manikin

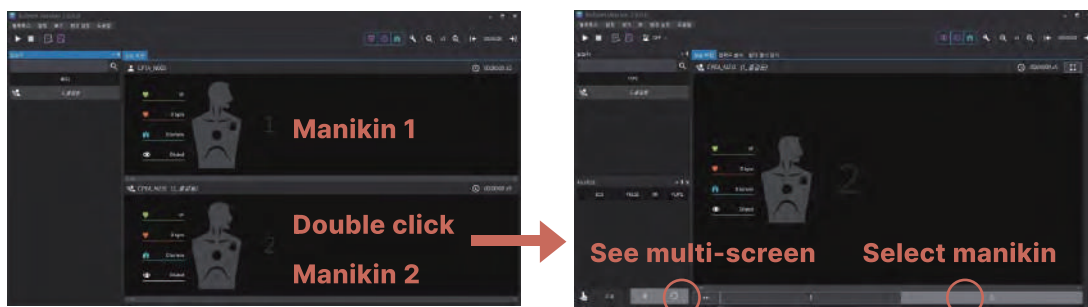
- Drag & Drop the registered trainee information to the manikin at the windows and start the practice.
- How to release matching : By double clicking the trainees info from the list will release and unload the trainee from the manikin.
- It is possible to find the previous information by clicking the trainee's name from the trainee list.
- It is possible to matching the trainee's information regardless before, after and during the training in real-time

## >Practice



### ① Start practice

- Training can be operated by using 'Start', 'Pause', 'End' icons at the top of the screen.

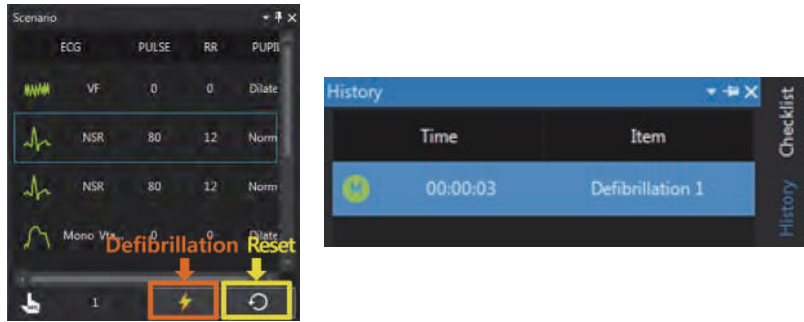


< Multi-screen with 2 manikins >

< Full screen >

- The layout of screen can be set by 'View > Replacement' menu.
- Full screen mode : Double-click the screen of related manikin to see it as a full screen.

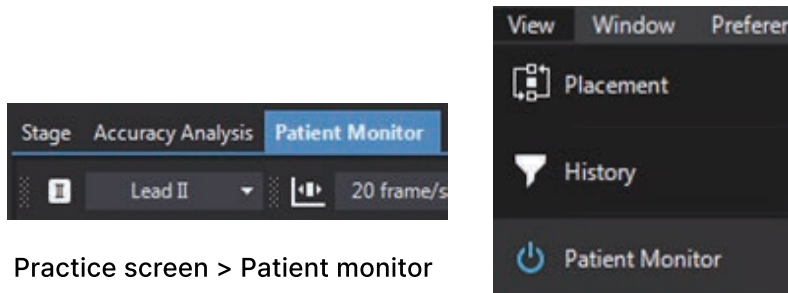
>Scenario



⊙ Defibrillation

- 'Scenario' is activated when full screen mode, it is possible to do defibrillation by clicking 'Defibrillation' icon
- When defibrillation, the number and the time of defibrillation will be applied to 'Scenarios' and 'History'.
- Scenario will return to the initial state when 'Reset' icon is clicked.

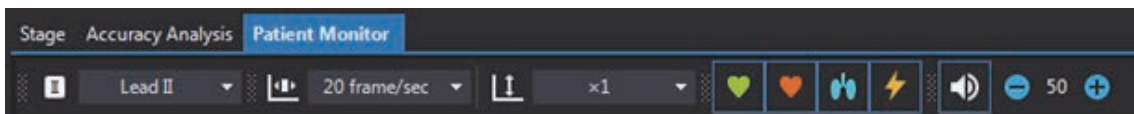
>Patient monitor



Practice screen > Patient monitor

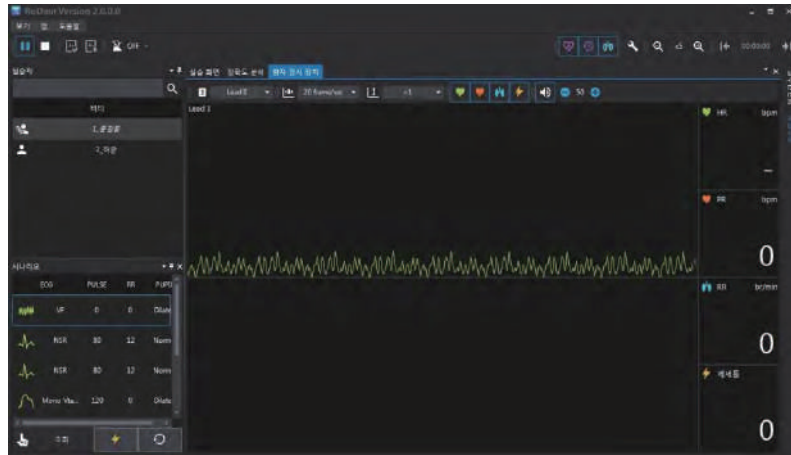
View > ON/OFF Patient Monitor

⊙ Patient monitor icon

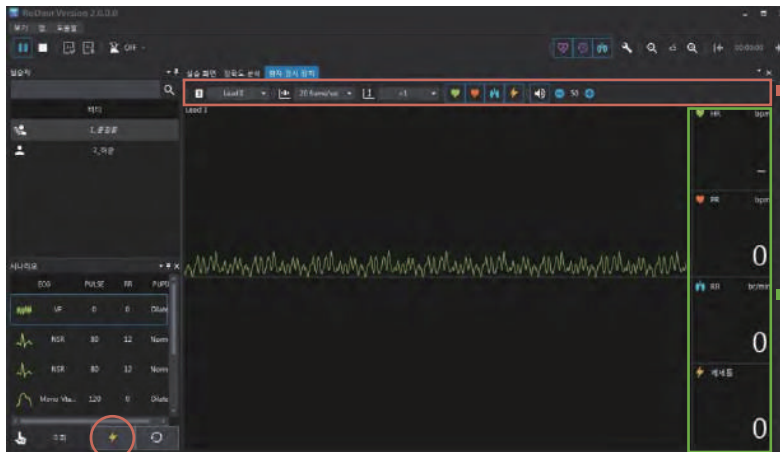


ICONS	
	Select ECG Lead I, II, III
	On/Off ECG wave
	Select frame rate of ECG
	On/Off Pulse rate
	Select y-axis scale for ECG wave
	On/Off Respiration rate
	On/Off Number of Defibrillation
	Select volume for HR

Ⓣ Active patient monitor



< Patient monitor screen >

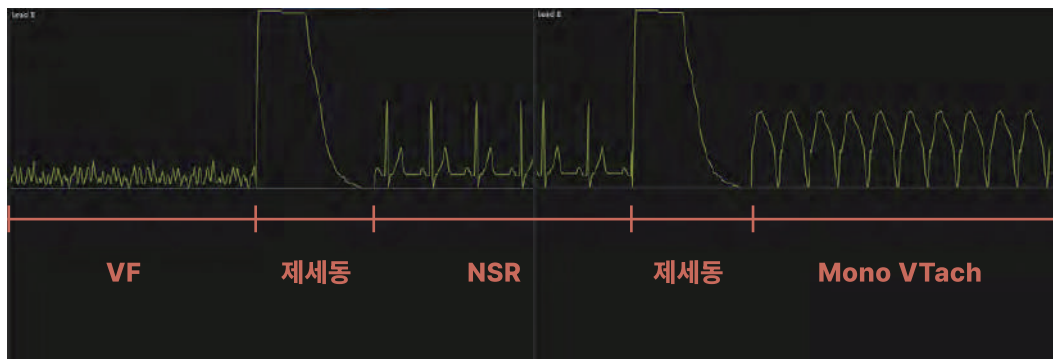


Settings for patient monitor

ECG, PR, RR, Defib information will be reflected according to the scenario

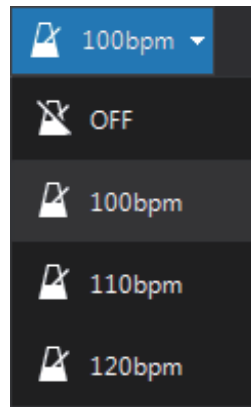
**Defibrillation** < When Defibrillation >

Ⓣ Analyze wave form



- Patient status in scenario is changed according to defibrillation.

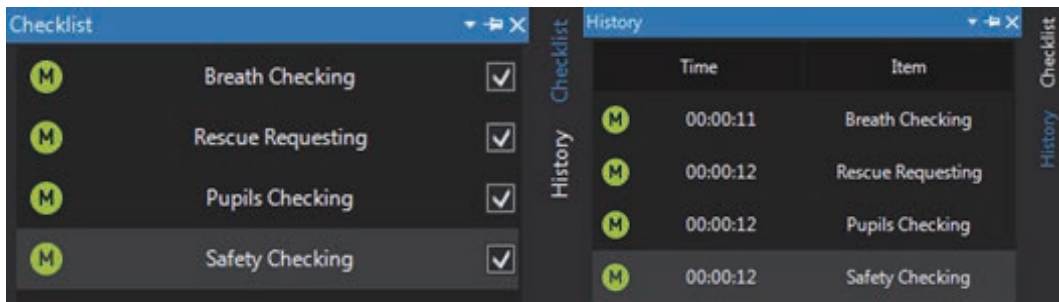
## >Metronome



### ① Set metronome

- Metronome setting is available in full screen mode.
- Trainee can practice chest compression with metronome sound from manikin.

## >Checklist

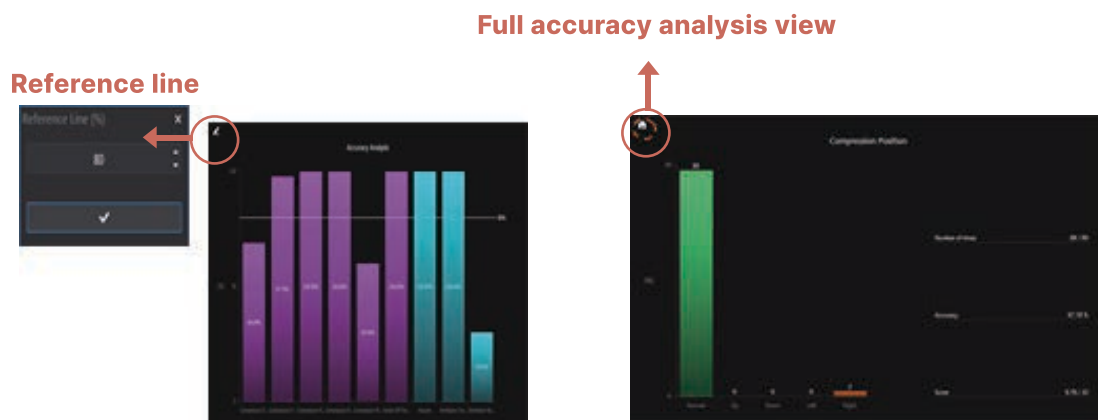


### ① Check items on the list

- 'Checklist' is activated in the full screen mode. When items are checked, it will be reflected to the 'History' and 'Scenario' data.



## >Accuracy Analysis

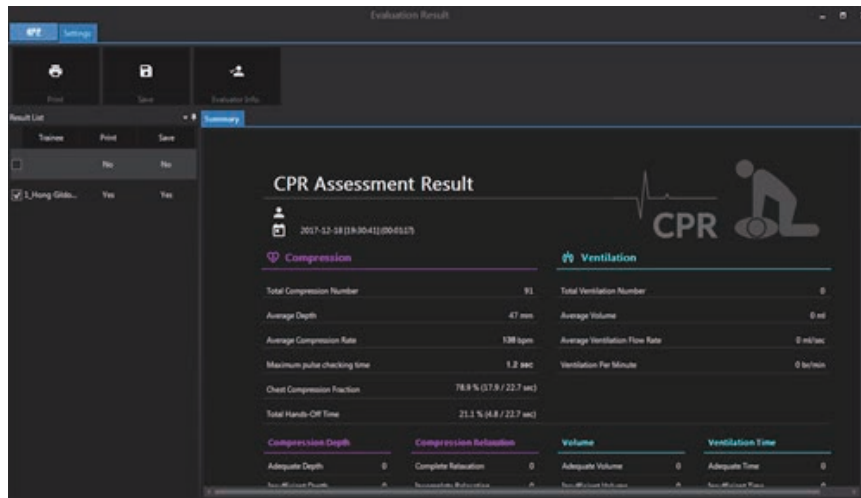


① Check status of training with an analyzed chart

- Compression & respiration can be checked by a chart and more detailed information can be given by double clicking the bar chart.

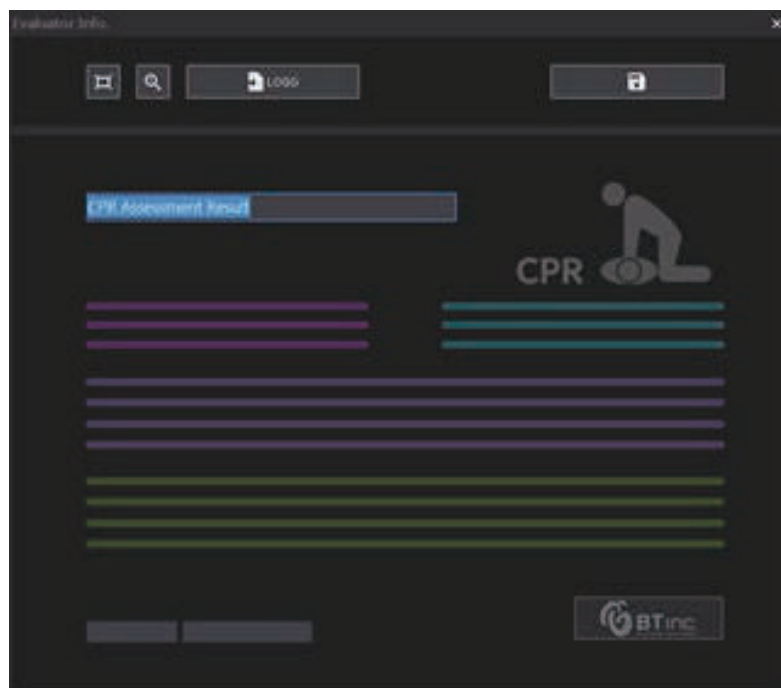
- User can change the cut-off line by changing the Base line at the top left side of 'Full accuracy analysis' windows.

## (6) View Results > Evaluation result



### ① Check, print, save Evaluation result

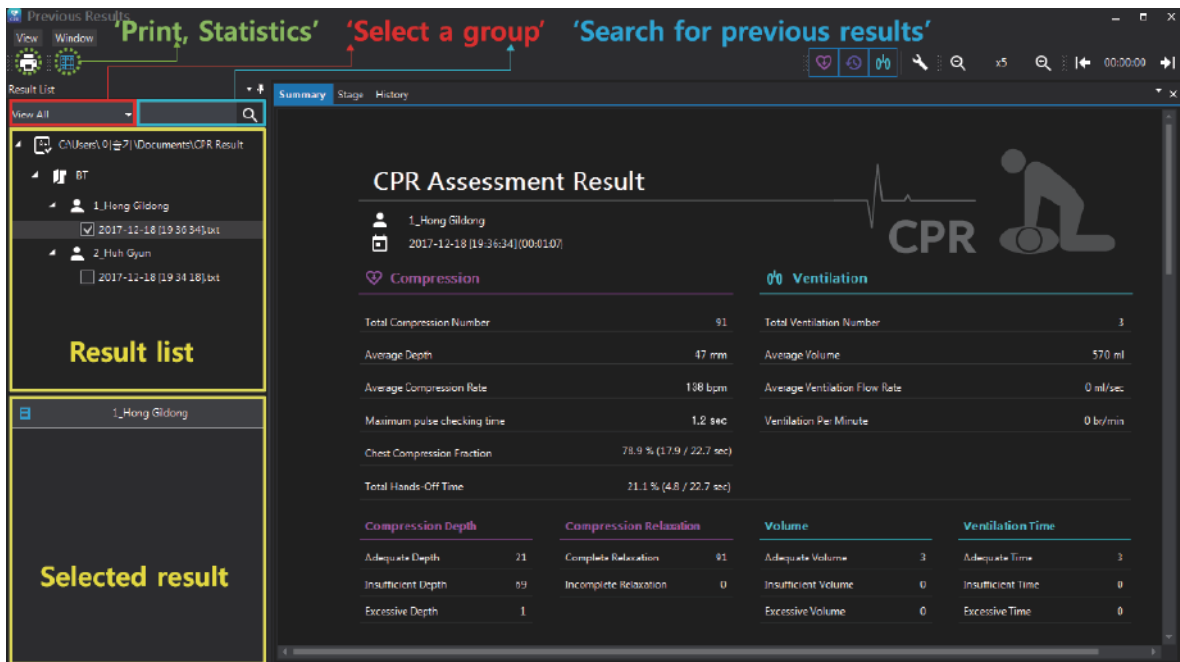
- After training, user can check the result at 'Result'.
- User can print & save the result at the 'Result list' which they want at the 'Result list'.
- If the trainee information is not matched with the manikin it is not possible to save the data.



### ① Set evaluator information

- Before print and save the result data, user can set the evaluator's information to be reflected in the result data.
- 640×180 pixels is recommended for logo image.

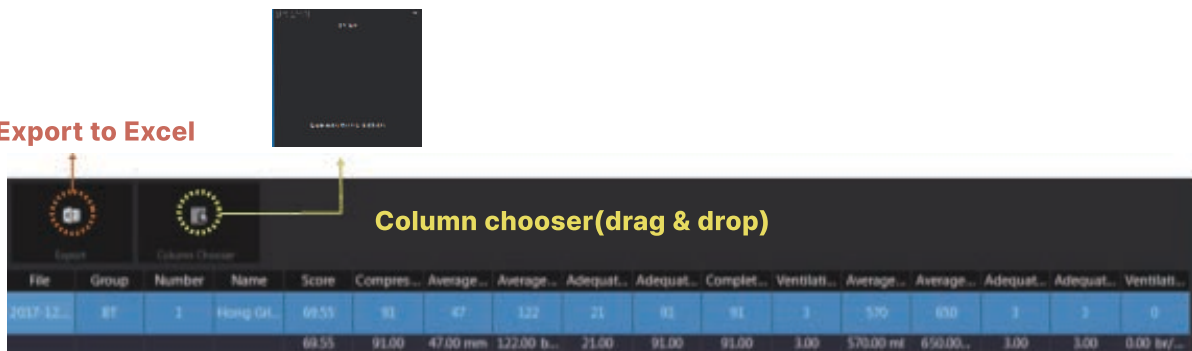
>Previous result



① Analysis and print the saved previous training data

- 'Previous result' can be checked at 'Training screen > Previous results' menu.
- Selecting a group or searching for a previous results are possible at result list.
- Saved previous result is saved at 'File route' > 'Group' > 'Trainee info' > 'Previous result info.' (Training date & Time)
- Selected 'Previous result' will be shown on right side of the screen and when you click 'Previous result info', the screen will be changed to desired result screen.


Export to Excel




① Check and print the statistics of result

- User can check the statistics of multiple training data at the 'Previous results > Statistics'.
- User can change the order of displayed data through drag & drop the each items.
- The item can be added or deleted through item drag & drop at the top of the item selector.
- User can forward the statistics data to excel file when they click the 'Export' button.


- Convenient functions

①  Register trainee information


- It is convenient edit since it is possible to 'copy/paste' 'trainee information'.
- Users can set a file path for result files.

②  Set scenario

- Pulse rate, respiration rate and pupil reaction is changes according to ECG rhythm and some items can be adjusted separately.

③  Set checklist

- Setting with negative number is available to subtract points.

④  Delete previous result

- To delete the data, place the mouse cursor on the name of the item on the list and 'Right-click the mouse > delete'

BT-CPEA+

# Advanced CPR Simulator

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