



HEART  GUARDIAN

Technology for Life

CE

Organismo Notificaro n. 0476

*AED Life Mode
AED Trainer
Accessories
Safety container*

Technology for Life  **RADIAN**

RADIAN History

Technology for Life



Technology for Life

2005~2010



Measuring Sensor & equipment



2011~2013



Research and development
(Lab / AED Development)



2014~2015

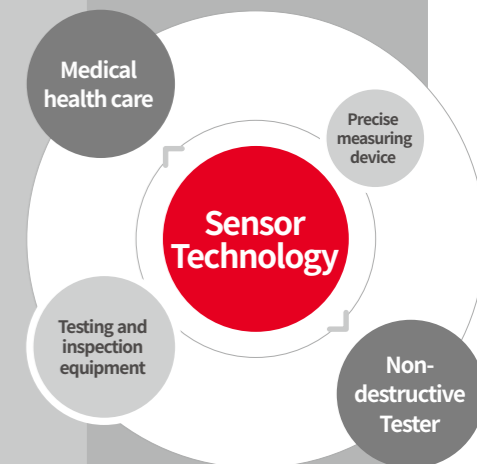


Strengthening core business

2016~



Medical health care specialist based on Sensor Technology





Survival Loop is with us here



AHA(American Heart Association) emphasizes 5 steps for improving the chances of survival and recovery for victims of heart attack.

Being a part of such the Survival Chain. AED now serves as an indispensable mean of saving lives. Many of North America and Europe countries are expending mandatory AED installation. Korea joins the trend, upon amendments of the governing Act to secure more AED sites

Anyone can save a life with an AED

Life is more precious than anything

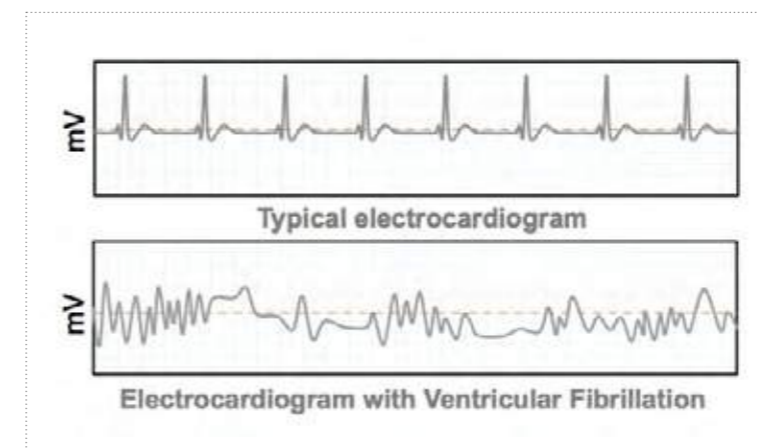
For over 10 years, Radian has accomplished countless know-how focusing on the safety and quality management through our high-edge sensor technologies. With all those, we are newly opening up a new horizon for the medical/health care business.

AED is our first step



Sudden Cardiac Arrest

Involves failure in cardiac contraction for circulatory failure.¹⁾ Tissues are no longer supplied with Blood and, upon extensive cardiac arrest, cells are necrotized, leading to systemic paralysis and death.

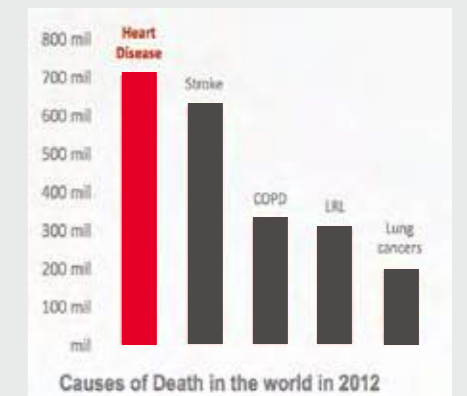


Over 75% of sudden cardiac arrests are occurred by the ventricular fibrillations, AED performs number of precise electric shocks on the victim`s body for recovering the normal cardiac function.

1) Jameson, J. N. St C.; Dennis L. Kasper; Harrison, Tinsley Randolph; Braunwald, Eugene; Fauci, Anthony S.; Hauser, Stephen L; Longo, Dan L. (2005). Harrison's principles of internal medicine. New York: McGraw-Hill Medical Publishing Division

2) WHO, 10 top causes of death in 2012, <http://www.who.int/mediacentre/factsheets/fs310/en>

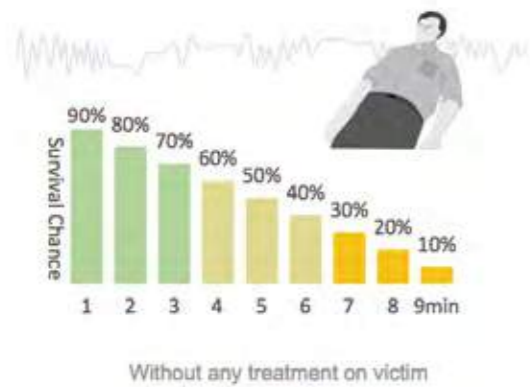
Heart disease is the top leading cause of death in the world



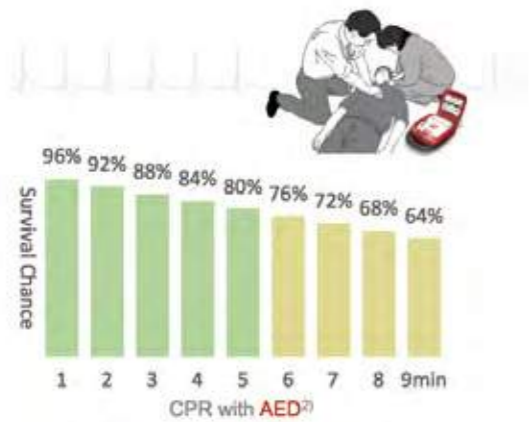
According to The World Health Organization report for 2012²⁾ about the death causes research, indicated the heart disease is being the most dangerous threat for human being that is actually causing the most deaths. More deaths of heart disease than of AIDS and all cancers combines.



With AED, The survival chance Increases about 500%



According to the AHA's 2010 Guidelines¹⁾, if there is no treatment for a collapsed victim by heart attack, the chance of survival decreases about 10% per every minutes.

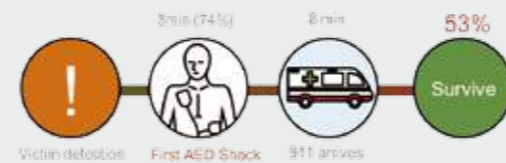


However, if any bystander performs CPR and AED immediately, in this case, the chance of survival significantly increases, and the drop rates are only 3% to 4% per minute.

1) 2010 AHA Guidelines for CPR and ECC. Circulation, 2010;122:S706.
2) N Engl J Med. 2000;343(17):1206-9



Casino security officers were instructed in the use of AED. The locations where the AEDs were stored in the casinos were chosen to make possible a target interval of three minutes or less from collapse to the first defibrillation. The defibrillations performed first, followed by manual cardiopulmonary resuscitation. AEDs were used for 105 patients whose initial cardiac rhythm was ventricular fibrillation. The result was as below.



**CPR within one minute,
First AED Shock within three minutes
= 53% of Survival Rate**

Rapid defibrillation by nonmedical personnel using an automated external defibrillator can improve survival after out-of-hospital cardiac arrest due to ventricular fibrillation. Intervals of no more than three minutes from collapse to defibrillation are necessary to achieve the highest survival rates²⁾.

HR-501

AED(Automated External Defibrillators)



Organismo Notificaro n. 0476



AED(Automated External Defibrillators)

helps recover the normal cardiac function upon acute heart disease, such as acute cardiac arrest, by cardiac function analysis and, if necessary, electroshock.

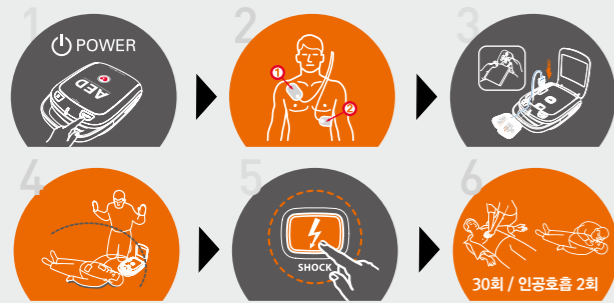
Heart Guardian, as an AED,

provides precise analysis of victim's body and configures the exact amount of shocks, promising the safety and quicker responses.



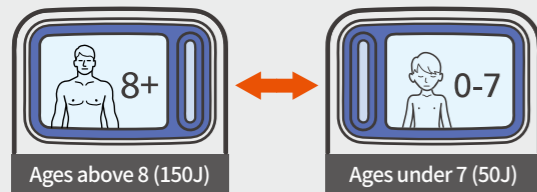


Easy to use and accessible by all without special training



- ✓ As soon as uncovering AED, there will be an audio-guidance for every phase of operation
- ✓ In case where not audio LED indicator guides you for accurate
- ✓ From analysis to charging, services are all-Automated
- ✓ All you need to do is to pads at the right place and press a button to work

Compatible with both Adults and kids



- ✓ AED pads is compatible among any ages and gender, simply by setting up one button
- ✓ Heart Guardian provides the precise amount of shock energy depends on the patient's boy size and condition into two levels.

Heart Guardian offers data extraction with the embedded memory



- ✓ AED offers “defibrillation blackbox” by memorizing the operational history.
- ✓ Once recorded, data can be transferred out and analyzed by way of Bluetooth-enabled AED.

HR-501

AED(Automated External Defibrillators)



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Prompt and Accurate Analysis of ECG

Heart Guardian offers ECG (Electrocardiography) analysis in just 8.5 seconds.

ECG Analysis function offers detecting irregular cardiac wave with 97.8% confidence and immediately commences electric charging upon detect.

Embedded shock timing table based on the patient's impedance levels enables the most accurate charging time and shock timing analysis.1)

BiMos High-voltage Switching Circuit

Heart Guardian provides the precise amounts of shock energy depends on the patent's boy size and condition into two levels.

RADIAN's “BiMos High-voltage Switching Circuit technology” enables the sudden high voltage(above 2,000V) generation within 8 seconds. By using any kind of common battery types. This is especially useful technology for AED requiring an urgent defibrillation for the heart attack victims.



HR-501 Life Mode

HR-501T AED Trainer



Composition



Carrier



Padss for Adults/Kids



Primary Li-Mn Battery



User Manual

Composition



Carrier



Padss for Adults/Kids



Primary Ni-Mh Battery



User Manual

HR-505 Pre-Connector Type

HR-507 LCD Type





HEART GUARDIAN Specification, 2017

HEART GUARDIAN Accessories



	HR-501	HR-501T	HR-503	HR-505	HR-507
Product Type	Low-output CPR Machine (Folded)	Low-output CPR Machine (for Training)	Low-output CPR Machine (Integrated)	Low-output CPR Machine (Integrated)	Low-output CPR Machine (LED Display)
ECG Analysis	8.5 Sec.		8.5 Sec.	8.5 Sec.	8.5 Sec.
Hi- Cap Charging	8 Sec.		8 Sec.	8 Sec.	8 Sec.
Shock Output	50~150 J offered		50~200 J offered	50~200 J offered	50J ~ 200J Offered
Data Storage	100 th (ECG storage)		100 th (ECG storage)	100 th (ECG storage)	100 th. (ECG Storage number)
Data Transfer Protocol	Bluetooth 2.0			Bluetooth 2.0	
Control Buttons	Power, Shock, Adult/kids		Power, Analysis, Shock		
Battery Type	Li-Mn(12V DC 4.2A)	NI-MH(9.6V DC 2A)	Li-Mn(12V DC 4.2A)	Li-Mn(12V DC 4.2A)	Li-Mn(12V DC 4.2A)
Shock Frequency	200, at least		200, at least	200, at least	200, at least
Pads Type	Electrode Pads, disposable and adhesive	Electrode Pads, disposable and adhesive	Electrode Pads, Disposable and adhesive	Electrode Pads, Disposable and adhesive	Electrode Pads, Disposable and adhesive
Dimension	230(W) x 320(L) x 85(H)mm	230(W) x 320(L) x 85(H)mm	230(W) x 320(L) x 85(H)mm	230(W) x 320(L) x 85(H)mm	230(W) x 320(L) x 105(H)mm
Weight	1.9kg	1kg	2.3kg	2.3kg	N/A
Warranty*	5 Yrs.(2 Yrs. for Pads/ 4 Yrs. for Batteries)		5 Yrs.(2 Yrs. for Pads/ 4 Yrs. for Batteries)	5 Yrs.(2 Yrs. for Pads/ 4 Yrs. for Batteries)	5 Yrs.(2 Yrs. for Pads/ 4 Yrs. for Batteries)
Paid Repair Service	10 Yrs	10 Yrs	10 Yrs.	10 Yrs.	10 Yrs.
Special Functions			4 Languages capable Standard/ Professional Volume controllable	4 Languages capable Standard/ Professional Volume controllable	10 Languages capable Standard/ Professional Volume controllable

* The above HR-505, HR-507 technical specification would be modified as its upgrade

AED Pads



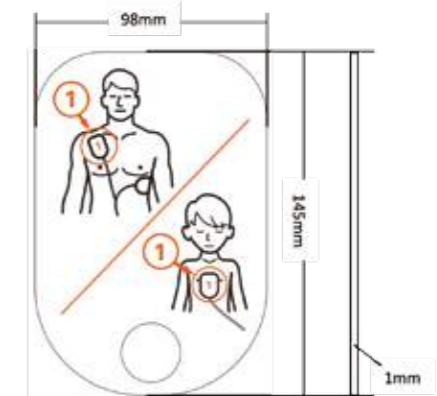
P-303 Standard Type

- Adults/Kids Compatible, 1 pair
- Size: 145(H) X 98(W) X 1(T)mm
- Polyolefin foam
- Adhesive: 180-129A
- **HR-501 only**



P-301T for Training

- Adults/Kids Compatible, 1 pair
- Size: 145(H) X 98(W) X 1(T)mm
- Polyolefin foam
- Adhesive: 180-129A
- **HR-501T only**



AED Container

HR-51A1, HR-51B1 AED Container Stand Type Wall Mounted Type

Specifications

- Stand Type, Wall-mounted. Anti-theft Feature.
- Dimension (Exterior)
- Stand Type : 1,365(H) X 380(W) X 190(T)mm
- Wall-mounted : 420(H) X 380(W) X 190(T)mm





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RADIANT Corp.

#1609-1611 Halla-Sigma Valley, 53,
Gasan Digital 2-ro, Geumcheon-gu, Seoul, Korea, 08588
T. +82-2-6343-6400 E. info@radian.co.kr
www.radian.co.kr

