



Simple Approach to Saving Lives



**HeartPlus**  
Automated External Defibrillator



# Product Introduction



**Informative Cover**  
Even before defibrillator is turned on, a quick glance gives first responder a general idea of what must be done.



**Step-by step Guide**  
Status LED light provides real-time, visual representation of each step to guide first responder through entire resuscitation process.

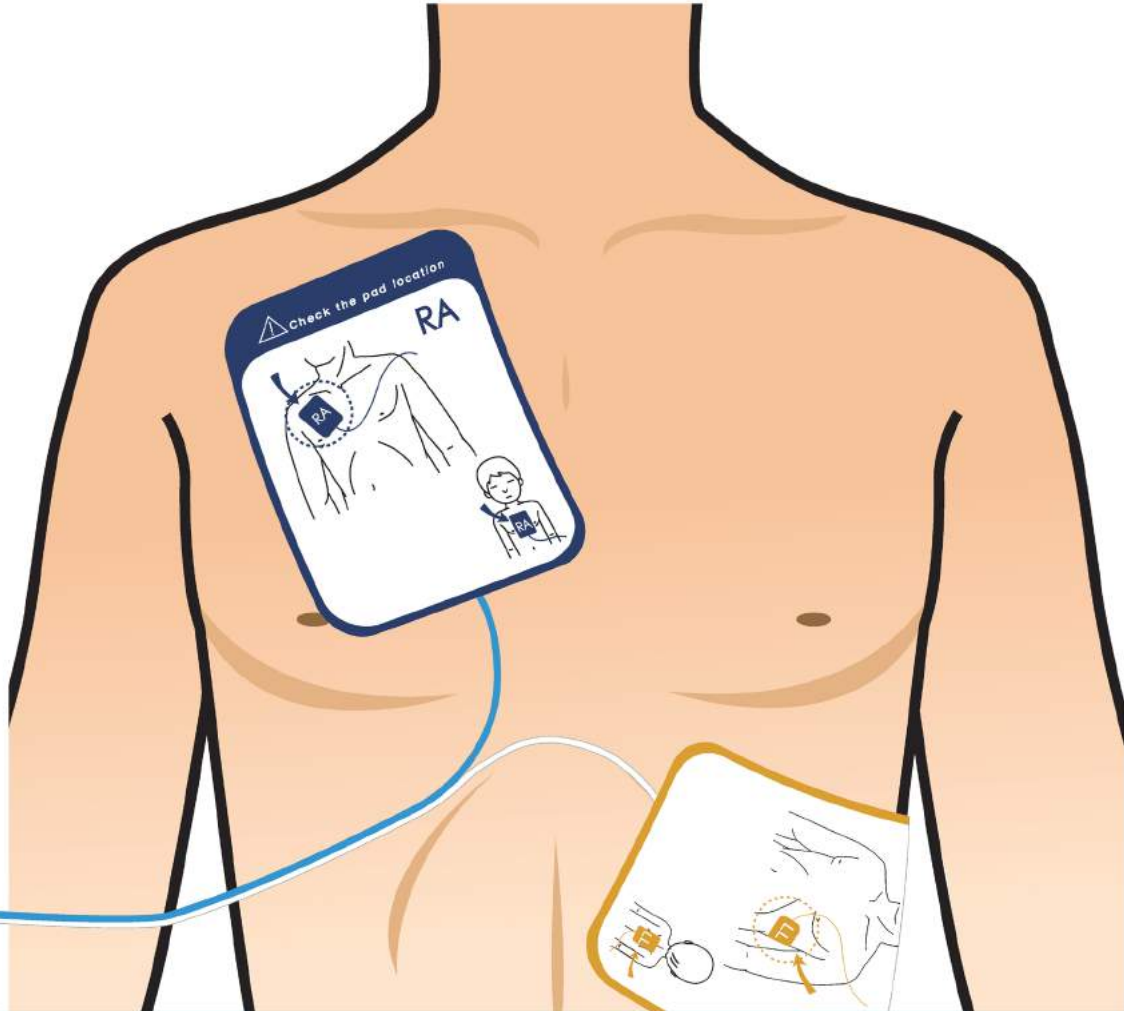


**Cartridge**  
All-in-one type of cartridge that is linked in pad an battery.



**USB**  
Upon installation of NT-MPR software, administrator is able to manage data such as self-diagnostics history, ECG recording, and other operation data.

# How to use



## Survival chain in OHCA (Out-of-Hospital Cardiac Arrest)



01 Recognition and vitalization of emergency response system



02 Immediate high quality cardiopulmonary resuscitation



03 Prompt defibrillation



04 Basic or advanced emergency medical service



05 Advanced life-support and following-up management





## Heart Plus for Training

(automated external defibrillator for training)



### Heart Plus for Training

- Audio instruction and orders
- 17 scenarios for various situations
- Audio and instructional messages
- 1 remote control controlling up to 99 devices
- Low maintenance
- Detachable Pad
- Including a charging battery and AC adapter



### User Friendly Remote Control

- Play/Pause
- Execute another scenario by an order sent to device
- Remote control of multiple instructors within 10m
- Able to quit Heart Plus Trainer when the instruction is finished

# Product Specifications

Defibrillator	
<b>Defibrillator Series</b>	HeartPlus™ NT-180
<b>Set Configuration</b>	Defibrillator, battery pack, sealed electrode pads, HeartPlus™ User Guide, Protective Carrying Case, "NT-MPR" CD-ROM USB cable
<b>Waveform</b>	Truncated Exponential Biphasic
<b>Energy</b>	180J (adult, impedance 50Ω) 50J (pediatric, impedance 50Ω)
<b>Shock Charge Time</b>	Less than 13 seconds
<b>Shock Method</b>	Manual button (flashes when ready)
<b>Mode Conversion</b>	Adult/Child separate power buttons Child Mode delivers 50J Pediatric shock for patients weighing less than 25kg, approximately 12 months to 8 years old

Physical	
<b>Dimensions</b>	7.1cm (H) x29.3cm (W) x29.1cm (D)
<b>Weight</b>	1.9kg (including battery pack and electrode pad)

Environmental	
<b>Water resistance</b>	IPX2 based on IEC 60529
<b>Temperature</b>	Operating : 0°C to 40°C Storage : -20°C to 60°C
<b>Humidity (operating/storage)</b>	10% to 95% Relative Humidity, Non-Condensing
<b>Altitude (operating/storage)</b>	0 to 2000 meters
<b>Drop test</b>	1M

ECG	
<b>ECG Record</b>	LEAD II
<b>Analysis Overview</b>	Patient evaluated to determine whether ECG rhythm represents shockable or non-shockable state. Shockable rhythms are ventricular fibrillation (VF) and ventricular tachycardia (VT).
<b>Analysis time</b>	Less than 11 seconds (Read: 5 seconds ± 2 seconds, Analyze: within 4 seconds)

Audio/ Visual instruction	
After device is powered on, step-by-step voice instructions guide first responder through resuscitation procedure, which includes pads placement, hands offtimes (analysis and shock process), and CPR instructions.	
CPR instruction prompts user to commence cardiopulmonary resuscitation, while flashing metronome light sets pace at 100 compressions per minute for 30 compressions with brief pause for 2 mouth-to-mouth breaths (5 repetitions), in accordance with American Heart Association 2010 guidelines.	

Data	
<b>Stored Contents</b>	ECG recordings, operation information (whether shock delivered or not), ambient noise, self-diagnostics history
<b>Memory capacity</b>	ECG: 1,000 instances of 5 seconds recordings Ambient Noise: Total 60 minutes (4 instances of 15 minute cycles) <b>Self-Test: Times &amp; results of 3,000 events</b>
<b>Storage type</b>	internal memory
<b>Access/search</b>	"NT-MPR" App (for PC) via USB connection

self-diagnostics Test	
Daily self-diagnostics tests ensure that circuits for measuring patient impedance, control circuit internal discharge of electric energy, and control circuit for charge/discharge of electric energy are functioning properly.	
A voice prompt stating "Equipment check is needed" continuously in the event self-diagnostics check fails.	
Upon completion of daily self-diagnostics test, results are automatically stored within device's internal memory.	

Battery Check	
When battery reserve is at acceptable level to provide sufficient electric charges and there are no problems with circuitry detected during self check, there Status LEDs above the power button blink in order from left to right during self check.	
All three Status LEDs blink at the same time continuously with low or critical battery voice prompts when battery is at low or critical levels (low: shock possible, critical: shock not possible).	
<b>Battery Status Audible Warnings</b>	<b>Low:</b> Voice prompt states "Battery's voltage is low, check battery" <b>Critical:</b> Voice prompt states "Change cartridge"

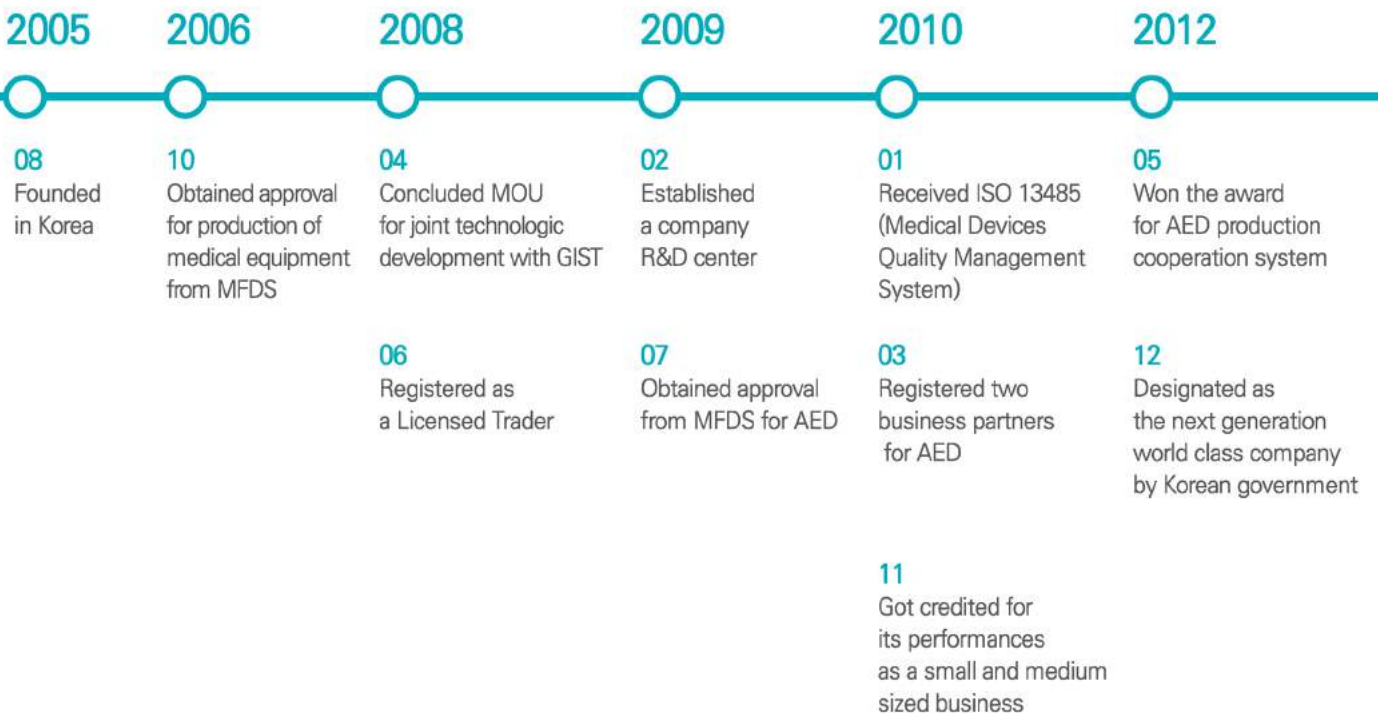
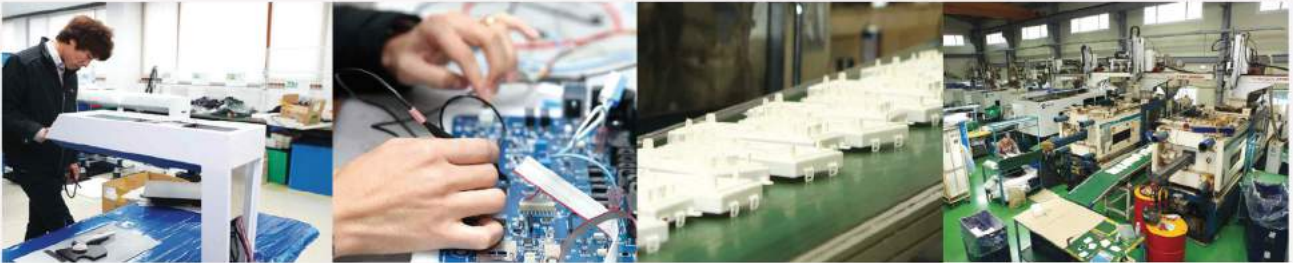
Electrode pad	
<b>ShelfLife</b>	Two (2) years, for one-time use only
<b>Conductive Gel</b>	PE Foam, Hydrogel
<b>Conductive Element</b>	AgCl (Silver Chloride)
<b>Cable Length</b>	2.1 meters (±1%)
<b>Applicable Ages</b>	All ages (12 months & older)
<b>Sealing</b>	Airtight
<b>Size</b>	125mm x 95mm
<b>Pad Placement</b>	Anterior-lateral (visual details on pads)

Battery Cartridge	
<b>Type</b>	Non-rechargeable lithium (LiMnO2)
<b>Capacity</b>	180 shocks @ 25°C ,130 shocks @ 0°C
<b>Voltage</b>	DC 21V& DC V / 1,400mAH
<b>Standby Mode Life</b>	Recommended five (5) years @ 25°C
<b>Dimensions</b>	3.3cm (H) x 15.0cm (W) x 11.0cm (D)



NANOOMTECH is a company that manufactures medical equipment practicing the respect for life. Workers in NANOOMTECH struggle to make it an outstanding medical company and fulfill its social responsibility under the company slogan 'let's become a global no.1 company by pursuing safety, technology, and quality, producing trusted products, and contributing to the customers' value creation'.

NANOOMTECH believes our product can save a life, and therefore resolves to provide customers with products of the greatest quality that have no defects and ensure a safe use by thorough and prompt customer service. Furthermore, NANOOMTECH will always stay humble like the first time, not being arrogant with mere success. NANOOMTECH also will aim for its foundation philosophy, vision and values constantly to become a trusted company fulfilling its social responsibility, and further, will put the best effort for creating value of customers and stockholders.





# Mission & Vision

NANOOMTECH is a promising export company located in Gwangju. Through the constant effort of researchers in company laboratory and investment into R&D sector, especially in the industry of medical instruments, NANOOMTECH and GIST developed AED and launched its localized form. NANOOMTECH obtained six patents related to AED, and now is a company which aims to enter a global market, constantly obtains foreign certifications, and opens new global market every year.

Company which is always sharing  
NANOOMTECH



2013



**03**  
Obtained certification for observance of regulation in Mexico

**04**  
Obtained NIA approval

2014



**01**  
Received CE 0120, ISO 13485:2012, EN ISO 13485:2012 approvals

**09**  
Achievement "Production site of digitalized project" BMC certified (telegraphic medical institution) equipment

**12**  
JFDA approval (Heart<sup>+</sup>ResQ) Designation of ReHeart as Excellent Product (PPS)

2015



**09**  
TFDA approval (ReHeart) GMP Taiwan

2016



**01**  
Obtained F1 certificate in Singapore

**06**  
Listed on KONEX

**08**  
Established a joint-stock company in China

2017



**01**  
Obtained a certification in Indonesia

**01**  
Obtained a certification in Colombia

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