

# CPR-Band Training

User Manual



**CREDO**

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## Overview

- Manufacturer : CREDO CO., LTD
- Place of manufacture : #401, Medical Instrument venture center, 1, Yeonsedae-gil, Heung-eop-myeon, Wonju-si, Gangwon-do, Korea
- Product name : Cardiopulmonary resuscitation assistance product for training
- Model name : CREDO-CBT
- FCC ID : 2ANY8-CREDO-CBT
- KC ID : MSIP-CRM-CrD-CREDO-CBT
- Packing unit : Separately marked
- Purpose of use : Manual assistive device that provides information on depth and speed of chest compressions in real time during CPR training

This product is **'for training'** and **'do not use it to human body'**.

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## Summation

CPR-BAND Training is a small, lightweight educational device that uses rechargeable batteries and is worn on the wrist. This device is designed for trainer and trainee educated in using CPR and the CPR-BAND Training.

CPR-BAND provides real-time information about chest compression according to the latest CPR guideline. This device displays CPR feedback indicator for the chest compression depth. It guides chest compression rhythm through sound and indicates the total chest compression time and number of chest compressions.

CPR-BAND Training can send CPR records of multiple CPR-BAND Training with one Bluetooth-enabled Tablet PC, and you can check the information on mobile application. The application can receive information that is not displayed by CPR-BAND Training and can display a comprehensive CPR record, such as compression posture, compression depth average, compression rhythm average and chest compression graph.

Trainer can educate multiple trainees at the same time with the application, and can view reports by date and trainee respectively.

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## Items Included



Items included may vary in appearance and are subject to change.

Contact [www.credo-ltd.com](http://www.credo-ltd.com) for more information including latest product downloads, spare parts and accessories.

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## Appearance



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## Setup

### Battery Charging

- If the battery is low, the bottom orange LED will blink for 10 seconds at 1 second intervals and then it will turn off. At this time, the function does not work even if the button is pressed.
- Press the button for 3 seconds in any state to immediately power off.



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## Setup

### Battery Charging

- When connected to the charger, the LED lights up gradually.
- During charging, the CPR mode function does not operate when the button is pressed, and the power is off when the button is pressed for 3 seconds.
- If CPR-BAND Training is connected to the application while charging, the charging indication appears in the application. While charging, "Call command" and "Rename" are possible, but the functions of "Practice mode", "Evaluation mode", "Power off" can not be used. (Power off in application)
- If the cable is disconnected during charging or the charging is completed, the product will be turned off. When the user turns on the product, the battery amount is displayed for 1 second and then the product will be ready state.



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## Setup

### Installing the Application

For android users, search 'credo cpr band training' in Play store.  
For IOS users, search 'credo cpr band training' in App store.



Install the application.

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## Setup

### Sign up

When you run the application, the login screen appears. If you do not have an account, sign up and login.

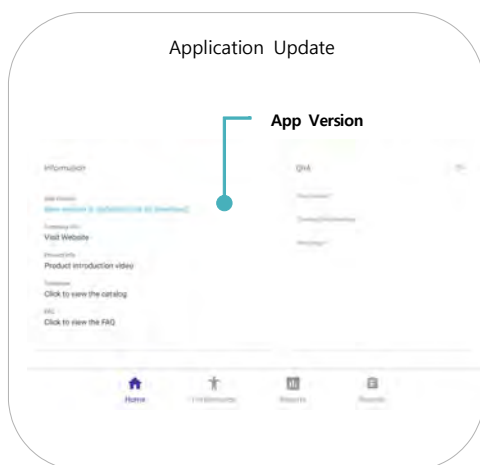


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## Setup

### Application Update

Update the version of the application. Please check regularly whether update is necessary.



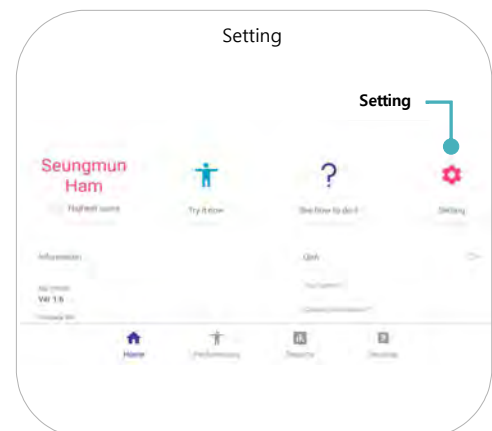
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## Setup

### Setting

The trainer can set the correct compression depth range and compression rhythm BPM( beats per minute) at [Main] → [Setting]. For more information, see "Compression Depth Guide" on page 21 and "Compression Rhythm Guide" on page 22. The setting can be initialized by 'reset'.

[Performance] → [Dev] → [reset]



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## Getting Started

### Wear and Posture

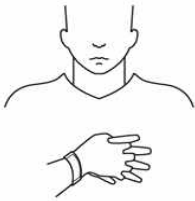
#### 1 Combining band ring



#### 2 Fixing the band



#### 3 Location of device



#### 4 CPR Posture



### Cautions

- The band must be worn properly on the user's wrist. Loosening may make the function inaccurate.
- Failure to observe the combining method may damage the band.

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## Getting Started

### Turn on CPR-BAND Training

- When the product is turned on by pressing the button while the power is off, all blue LEDs blink at intervals of 2 seconds. At this time, CPR-BAND Training is 'Single Ready' state that is not connected with the application.
- In 'Single Ready' state, press button to enter 'Single CPR mode.' In this case, LED and Buzzer feedback for CPR will work without connection to the application.
- In 'Single CPR mode', press button to return to 'Single Ready' state.
- In any state of CPR-BAND Training, if you press the button for 3 seconds, Orange LED turns on and the device turns off.

#### 1 Power on / Single Ready



#### 2 Power off



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## Getting Started

### Connecting CPR-BAND Training to Application

- To connect to the application, select CPR-BAND Training [Performance] → [Scan], and click [Done] to connect.
- Immediately after connection, the application and CPR-BAND Training are in the 'Ready' state and all blue LEDs remains turned on.

#### Scan



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## Getting Started

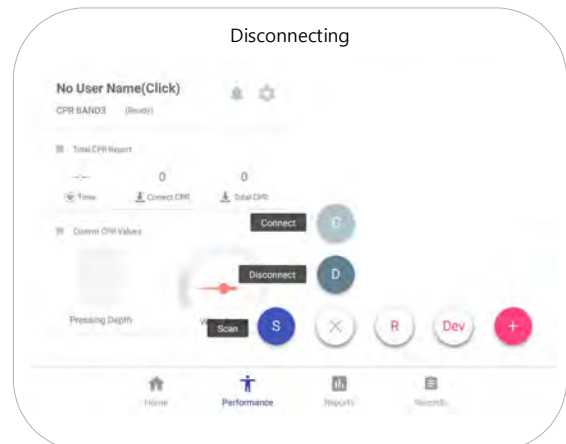
### Disconnecting CPR-BAND Training to Application

The application can be disconnected from CPR-BAND Training.

[Performance] → [C] → [Disconnect]

When disconnected, CPR-BAND Training returns to 'Single Ready' state.

#### Disconnecting

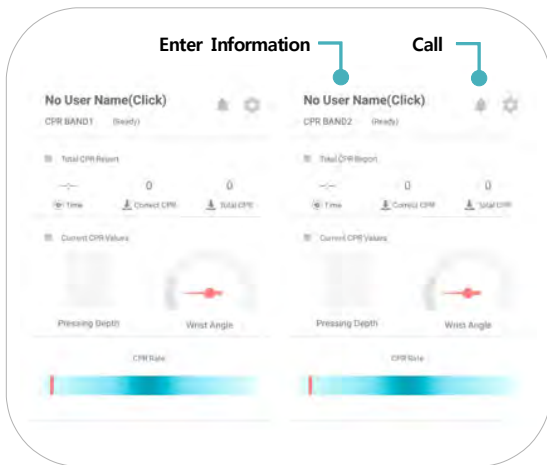


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## Getting Started

### Enter Trainee Information

Enter information such as the name of the trainee. The trainer can check the location of the trainee by [Call Device] of the application. In case of Call command, all the LEDs of the connected CPR-BAND Training are light up for 3 seconds and Buzzer goes off at the same time.

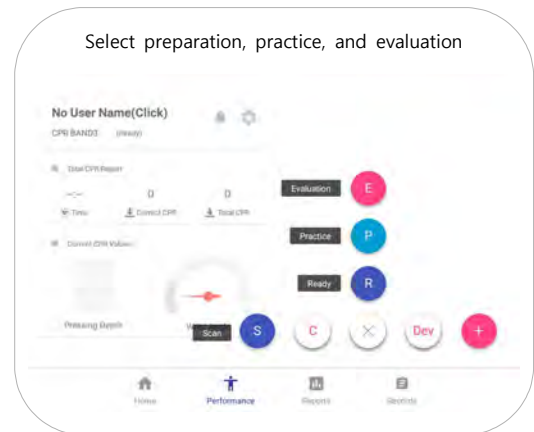


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## Getting Started

### Preparation, practice and evaluation

1. If the trainer wants to be ready, select [Ready].
  2. If the trainer wants to train and practice, select [Practice].
  3. If the trainer wants to evaluate, select [Evaluation].
- [Performance] → [R] → [Ready/Practice/Evaluation]



### Note

Make sure CPR-BAND Training is in "Ready mode" before entering either practice or evaluation mode. When CPR-BAND Training is charging, practice or evaluation mode can not be entered. If practice or evaluation mode does not work, check if CPR-BAND Training is charging.

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## Practice Mode

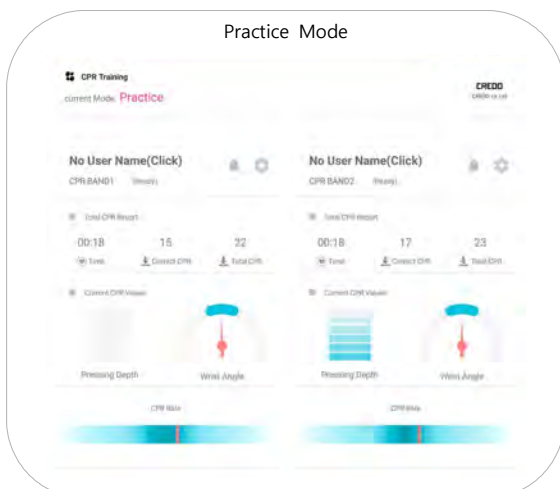
### Training and Practice

In practice mode, the application guides the compression rhythm. Trainees practice at the same time. CPR-BAND Training guides the compression depth through the LEDs.

Trainers can monitor and train CPR in real time. (Time, Total CPR, Correct CPR, Compression Depth, Rhythm, Wrist Angle)

Select [Ready] to stop the training and return to the Ready mode. If necessary, the trainer can simultaneously turn off CPR-BAND Training of the trainees through the application.

[Performance] → [Dev] → [Power off]



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## Practice Mode

### CPR-BAND Training – Compression Depth Guide



In practice mode, the LED lights up according to the change in range set by the trainer.

The setting range is divided into three equal parts, and the blue LED is additionally turned on one by one as it gets deeper. (Calculates to the first decimal place.)

For example, if the correct range is set from 4.5 cm to 6 cm

- 1) Level 1 (less than 4.5cm): lower orange LED lights up
- 2) Level 2 (4.5cm ~ 5cm): 1 Blue LED lights up
- 3) Level 3 (5cm ~ 5.5cm): 2 blue LEDs light up
- 4) Level 4 (5.5cm ~ 6cm): 3 blue LEDs light up
- 5) Level 5 (6cm or more): Upper orange LED and 3 blue LEDs light up

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**Practice Mode**

**Note**

The trainer can set the correct compression depth range in the application. The minimum value in the range is 3.5cm, and the maximum value is 7cm.

[Home] → [Setting] → [Correct compression depth range]



**Practice Mode**

**Compression Rhythm Guide**

In the practice mode, the compression rhythm guide is conducted through the application, and the buzzer does not go off in CPR-Band Training for the trainees.

Compression BPM( beats per minute) is 120, and the volume and BPM of the buzzer can be adjusted through the tablet.

**Note**

In Single CPR mode (not connected to the application), CPR-BAND Training guides compression rhythm through the built-in Buzzer.

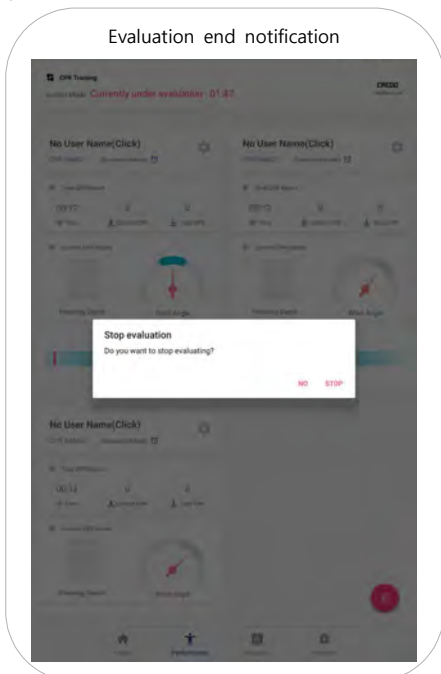


**Evaluation Mode**

**Evaluation**

In the evaluation mode, the LED and Buzzer functions do not work in the CPR-BAND Training of the trainees, and the evaluation takes 2 minutes.

If trainer presses the [+] button of the application during evaluation, a notification appears asking the trainer to close the evaluation.



**Evaluation Mode**

The [Reports] tab shows the most recent CPR history. To view past CPR reports, select the desired report from the [Records] tab.



## Evaluation Mode

### Application – Report



[Total Score] menu displays the comprehensive score for the number of compression, the compression rhythm, the compression depth, and the compression axis angle.

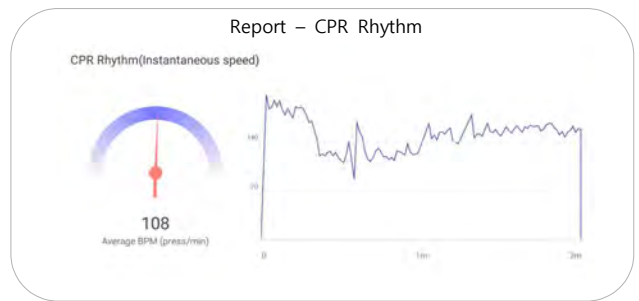


[CPR Count] menu displays the number of correct compression among the total number of compression.

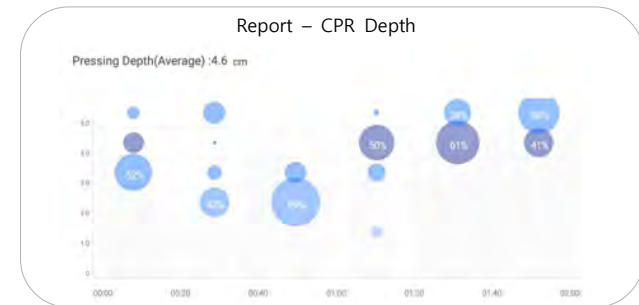
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## Evaluation Mode

### Application – Report



[CPR Rhythm] menu displays real-time compression rhythm and average compression rhythm.



[CPR Depth] menu displays real-time compression depth and average compression depth.

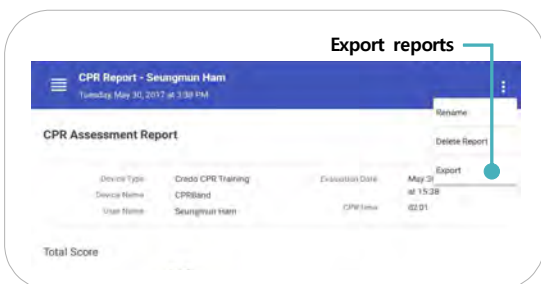
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## Evaluation Mode

### Application – Export reports

CPR evaluation reports can be converted to PDF files for e-mailing or printing.

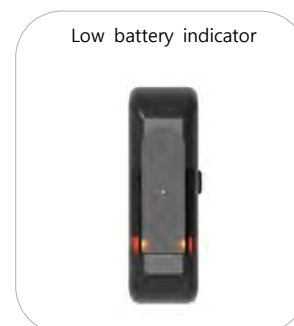
1. [Reports] → [Export] or
2. [Records] → Select the report → [Click to see detail] → [Export]



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## Battery Indicator

The CPR-BAND Training constantly monitors battery power. Check the battery status regularly (especially after not using it for a long time), by turning on the CPR-BAND Training. A low battery indicator shows that the battery needs to be charged before using it next time.



If the remaining battery power during use becomes too low to sustain further operation, the low-battery indicator is shown for 10 seconds and then the CPR-BAND turns itself off.

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## Maintenance

### After Each Use

After use, the CPR-BAND may be contaminated and should be handled appropriately.

1. Place the contaminated CPR-BAND in a plastic bag until it can be cleaned.
2. If it is visibly soiled, wipe the CPR-BAND with a soft cloth or paper towel to remove as much contamination as possible.
3. Clean the CPR-BAND as described under 'Cleaning after Manikin Training'.
4. Check the exterior of the CPR-BAND for signs of damage.  
Contact CREDO for replacement parts or service if needed.

### Cleaning after Manikin Training

If CPR-BAND Training is used in manikin training, it can be wiped with at least 70% ethanol-soaked alcohol.



### Warning

Do not immerse the CPR-BAND in running water or allow moisture to penetrate it. Do not sterilize the CPR-BAND

## Maintenance

### Storing the CPR-BAND Between Use

When not in use, keep the product free from damage.  
Make sure to charge the device before use.



### Caution

contact [www.credo-ltd.com](http://www.credo-ltd.com) if you have any problems during the warranty period.

## Specifications

### CPR accuracy

Category	Specification
Compression depth accuracy	Depth accuracy: $\pm 10\%$
Compression rhythm accuracy	120/min $\pm 3$ /min
Compression angle accuracy	Angle accuracy $0^\circ \pm 10\%$

### CPR-BAND Training: Module

Category	Specification
Dimensions	
Weight	
Batteries	Lithium Ion-polymer battery, DC 3.7 V, 100mAh
Operation Temperature	-10 ~ 50 °C
Transport and Storage Temperature	-10 ~ 50 °C
Operation Humidity	0 ~ 95 %
Transport and Storage Humidity	0 ~ 95 %
Operation, Transport and Storage Atmospheric Pressure	1.014 ~ 617 mbar
Electromagnetic Compatibility	Meets KC electrical safety certification
Frequency	2402 MHz ~ 2480 MHz
INPUT	5.0 V / 1.0 A

## Specifications

### CPR-BAND Training: Band












Category	Specification
Dimensions	
Weight	

### Environmental Considerations

Product	Information
CPR-BAND Training	The CPR-BAND Training contains electronic components. Dispose of it at an appropriate recycling facility in accordance with local regulations.



## Symbol Glossary

Symbol	Definition
	FCC Certification Mark
	CE Certification Mark
	KC Certification Mark
Manufacturer	Manufacturer
	Waste Electrical and Electronic Equipment (WEEE). Dispose of in accordance with your country's requirements.
S/N	Serial number
	Not made with natural rubber latex
	Warning / Caution
	Note
	Temperature limitations for transport/storage
	Consult User Manual
	Do not use to human body
	Bluetooth symbol

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## Regulatory Information



### Warnings

- Use the CPR-BAND Training only when you are with a CPR professional trainer.
- Do not practice CPR by using the CPR-BAND Training on human. It may be practiced with a training manikin or simply on a compliant surface.



### Cautions

- This device is designed to be used only with CREDO-approved accessories and may perform improperly if non-approved accessories are used. Do not attempt to modify the device in any possible ways.
- The CPR-BAND is not a serviceable device. If experiencing technical difficulties contact [www.credo-ltd.com](http://www.credo-ltd.com) for support.



### Note

Changes or modifications that have not been approved by CREDO could void the user's authority to operate this equipment.

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## Regulatory Information



### WEEE

This appliance is marked according to European directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE). By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The symbol on the product indicates that this appliance may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

Disposal must be carried out in accordance with local environmental regulations for waste disposal.

For more detailed information about treatment, recovery and recycling of this product, please contact your local city office, your household waste disposal service or the CREDO representative where you purchased the product.



The product is in compliance with the essential requirements of Council Directive 93/42/EEC as amended by Council Directive 2007/47/EC and Council Directive 1999/5/EC.

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## Regulatory Information

### Electromagnetic Conformity

Guidance and manufacturer's declaration: The CPR-BAND Training is intended for use in the electromagnetic environment specified in the tables below.

The user of the CPR-BAND Training should assure that it is used in such an environment.

### Electromagnetic Emissions

Emissions Test	Compliance	electromagnetic environment Guidance
RF CISPR 11	Group 1 Class	

### Electromagnetic Immunity

Immunity Test	IEC 60601 Test Level	Compliance Level	electromagnetic environment Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	±6kV contact ±8kV air		
Power Frequency (50/60/400Hz) Magnetic Field IEC 61000-4-8	3A/m		
Radiated RF IEC 61000-4-3	10V/m 80MHz~ 2.5GHz		

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## Regulatory Information

- The ISM (industrial and scientific) bands between 150kHz and 80MHz are 6.765MHz to 6.795MHz; 13.533MHz to 13.567MHz; 26.957MHz to 27.283MHz; and 40.660MHz to 40.700MHz.
- Field strength from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the CPR-BAND Training is used exceeds the applicable RF compliance level above, the CPR-BAND Training should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the CPR-BAND Training.

### Recommended separation distances between portable and mobile RF communication equipment and the CPR-BAND Training

- The CPR-BAND Training is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CPR-BAND Training can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CPR-BAND Training as recommended below, according to the maximum output power of the communications equipment.

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## Regulatory Information

### Electromagnetic wave emission

Rated maximum output power of transmitter [W]	Separation distance according to frequency of transmitter [m]		
	150kHz ~ 80MHz	80MHz ~ 800MHz d = 1.2√P	800MHz ~ 2.5 GHz d = 2.3√P
0.01	NA	0.12	0.23
0.1	NA	0.38	0.72
1	NA	1.2	2.3
10	NA	3.8	7.28
100	NA	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be determined using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.



### Notes

1. At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
2. The ISM (industrial and scientific) bands between 150kHz and 80MHz are 6.765MHz to 6.795MHz; 13.533MHz to 13.567MHz; 26.957MHz to 27.283MHz; and 40.660MHz to 40.700MHz.
3. An additional factor of 10/3 is used in calculating the recommended separation distance for transmitters in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range 80 MHz to 2.5 GHz to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into patient areas.
4. These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
5. Transmitters/antennas of this power-level are most likely mounted on an emergency vehicle chassis. The distances cited here are for open field. For an external antenna, the separation distance is most likely shorter.

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## Additional Information

### Warranty

The CREDO CPR-BAND has a one-year limited Warranty.

Refer to the CREDO Global Warranty for terms and conditions.

### About this edition

The information in this manual applies to the model CREDO-CBT.

This information is subject to change.

The CPR-BAND Training is protected by Korea and international registered patents. The design of CPR-BAND Training and its feedback symbols are protected by several jurisdictions under international design registration.

CPR-BAND Training is a trademark or registered trademark of

**CREDO**

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### FCC Warning Statement

#### FCC Part 15.19

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. FCC Part 15.21 Any changes or modifications (including the antennas) to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

### FCC Warning Statement

#### FCC Part 15.105(B)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void your authority to operate the equipment under FCC rules.

### FCC Radiation Exposure Statement

This equipment complies with FCC Radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 10cm between the radiator and your body.



MANUFACTURE : CREDO

MODEL : CREDO-CBT

POWER RATING : 5V,1A

#401, Medical instrument venture center, 1, Yeonsedae-gil,  
Heung-eop-myeon, Wonju-si, Gangwon-do (26493)

WWW.CREDO-LTD.COM

FCC ID : ZANY8-CREDO-CBT

KC ID : MSIP-CRM-CrD-CREDO-CBT

MADE IN KOREA

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