ERF-HR4132A-F

Reference Manual

FOR
TIRIS PROXIMITY TAG
CID/Data Read/Write Controller

VERSION: 1.00

HEART TECH ENTERPRISE CO., LTD.

2022/05/13 Edited

Introduction :

Thank you for purchasing the ERF-HR4132A-F CIDRW System.
Please observe the following points when operating the ERF-HR4132A-F:
• Please read and understand the content of this manual before using the system.
• After reading this manual, store it in a handy location for easy reference whenever necessary.

FITTINGS

- Core : King-Core KCF-65-B x 1

Precautions in using the product :

READ AND UNDERSTAND THIS DOCUMENT

Please read and understand this document before using the products. Please consult your HEART TECH representative if you have any questions or comments.

WARRANTY

HEART TECH's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by HEART TECH.

HEART TECH MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NONINFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. HEART DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

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HEART TECH SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall responsibility of HEART TECH for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL HEART BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS HEART'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

SUITABILITY FOR USE

THE PRODUCTS CONTAINED IN THIS DOCUMENT ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES. Please refer to separate catalogs for HEART TECH 's safety rated products.

HEART TECH shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the product.

At the customer's request, HEART TECH will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

• Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.

• Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.

• Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE HEART PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PERFORMANCE DATA

Performance data given in this document is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of HEART TECH's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the HEART TECH Warranty and Limitations of Liability.

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.
It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the product may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your HEART TECH representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

PROGRAMMABLE PRODUCTS

HEART TECH shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

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FCC WARNINGS

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference and followed, read and understood by all persons working with the device (especially the safety information)
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, in accordance with 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 instruction manual,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 - this can be determined by turning the equipment off and on -the user is encouraged to try to correct the interference using one or more of the following measures:

- Reposition or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.

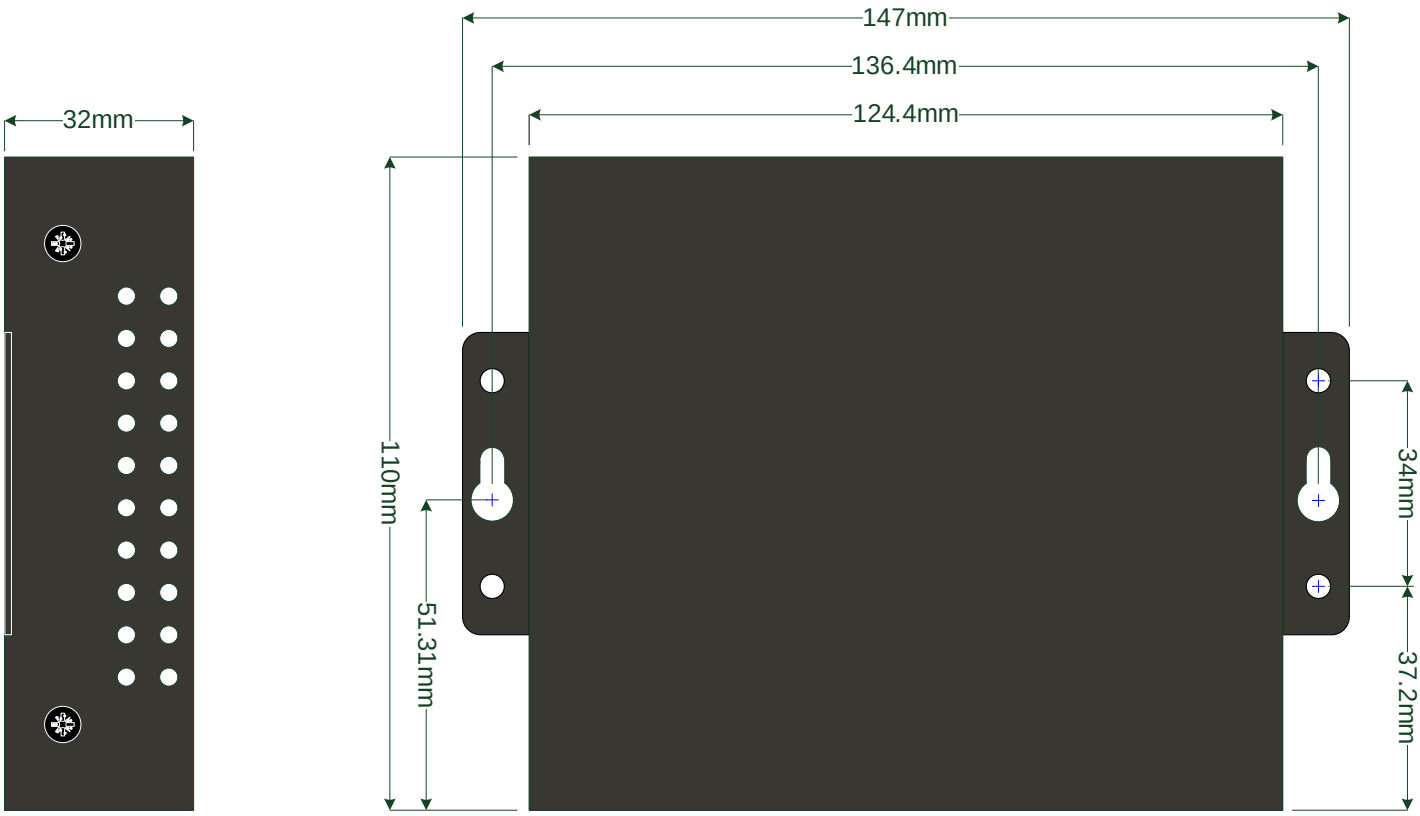
- Connect the equipment to an outlet to a circuit other than the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

FCC ID : 2AB67-ERF-HR4132A-F
Compliance with :
FCC Code of Fedral Requlations,Part 15 Subpart C, Section §15.205
FCC Code of Fedral Requlations,Part 15 Subpart C, Section §15.209

WARNING

Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority to operate the equipment.

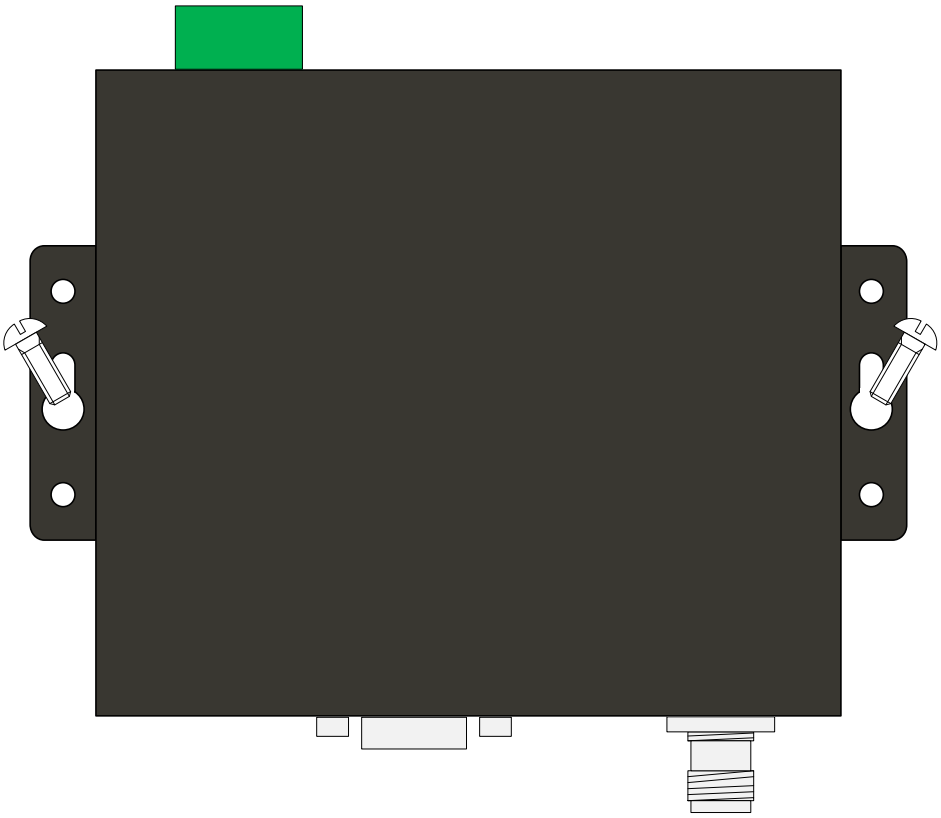
Dimensions :



Installation :

CID/Data Read/Write Controller

Mount the CIDRW Controller with the two M3 - M4 screws .

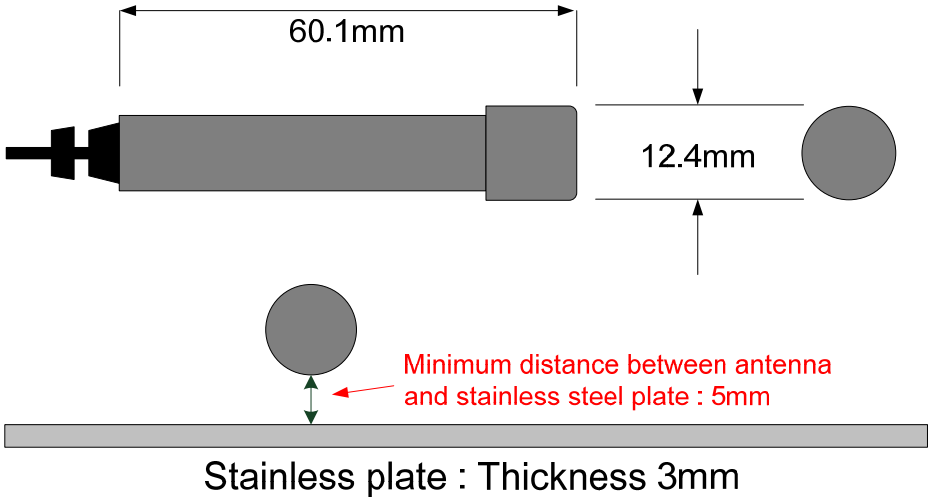


Note：

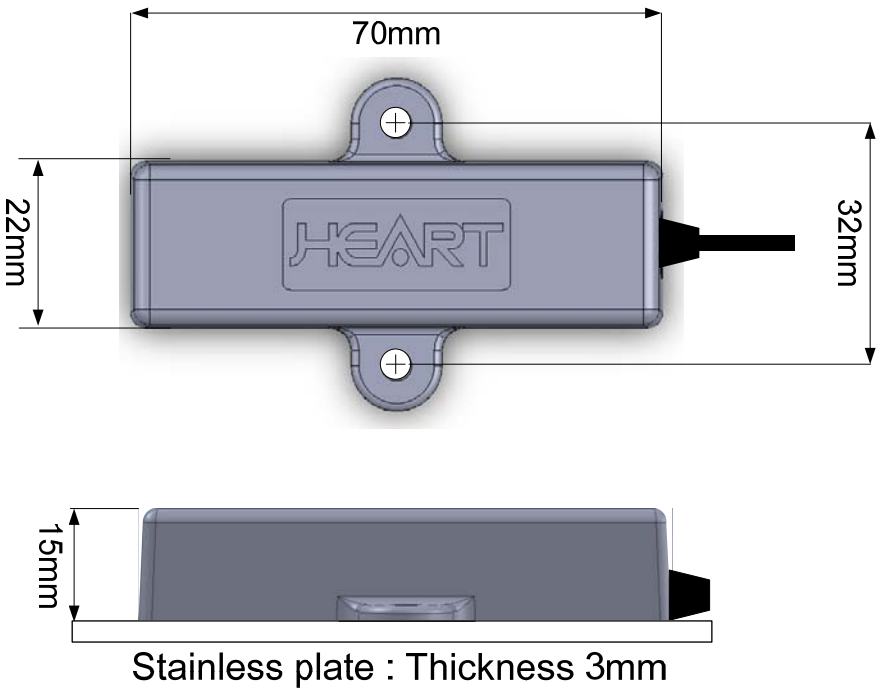
- Tighten the M3 - M4 screws with a torque not exceeding 1.2 N·m.
- Do not apply organic solvents used with screw locking agents at the locations where the screws are inserted.

Antenna

Stick antenna

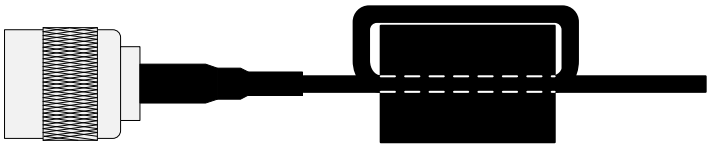


Rectangular antenna



Note：Mount with the two M4 plastic screws .

Champ Core Installation Instructions

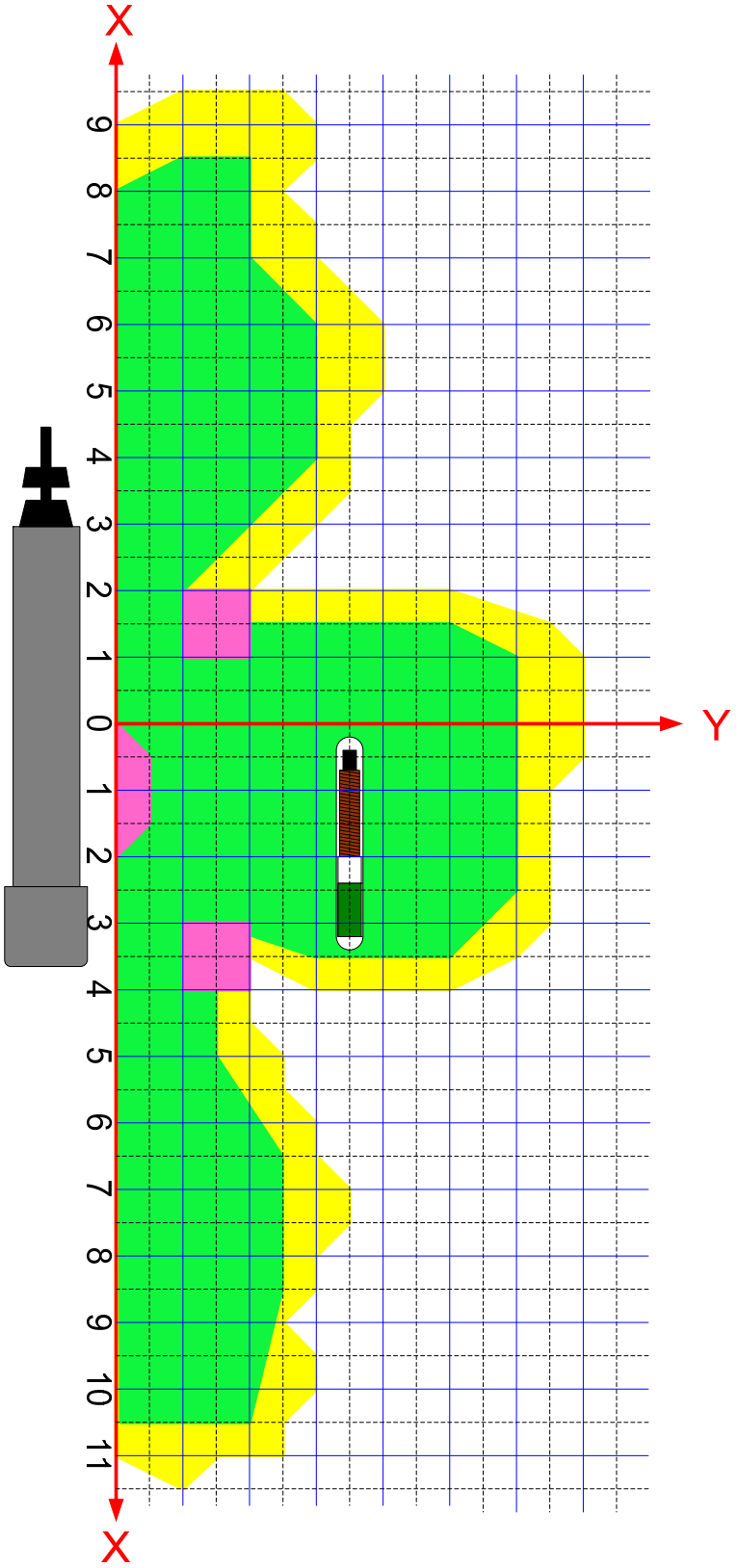


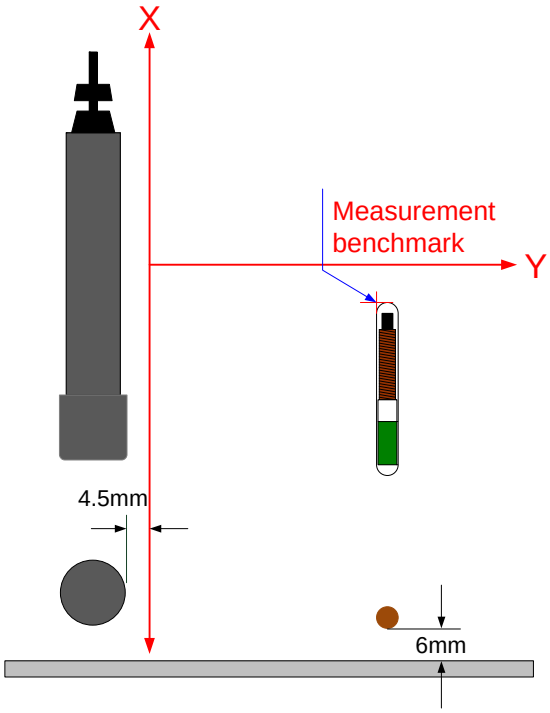
Core : KCF-65-B

Transmission Area (information only):

- Antenna : Stick antenna
- Tag : TEXAS INSTRUMENTS 32mm Glass Transponder part number RI-TRP-DR2B

The transmission area diagram going through the center of the antenna and indicated on a flat surface vertical to the antenna surface is as indicated below.



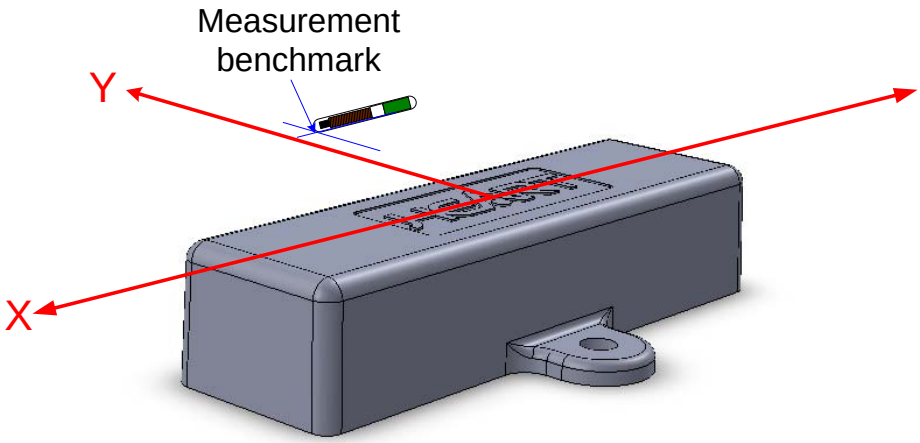


Legend :

- Normal area
- Recommended area
- Unrecommended area

- Antenna : Rectangular antenna
- Tag : TEXAS INSTRUMENTS 32mm Glass Transponder part number RI-TRP-DR2B

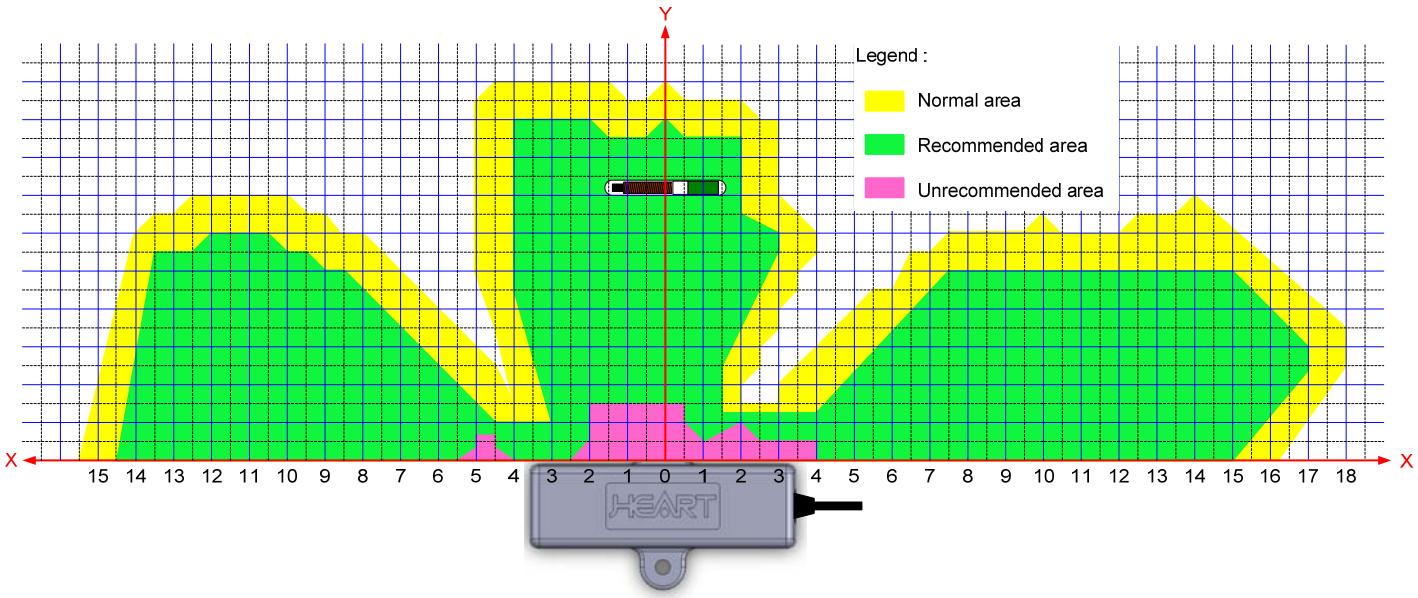
The transmission area diagram going through the center of the antenna and indicated on a flat surface vertical to the antenna surface is as indicated below.



Measurement schematic

Stainless plate : Thickness 3mm

Stainless plate : Thickness 3mm

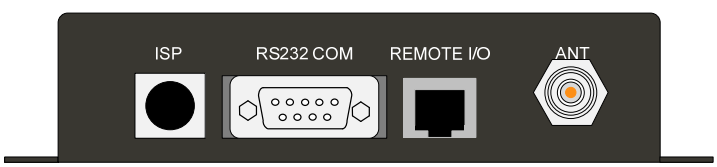


General specifications:

Characteristic	Specification	Comment
Supply Voltage Range	DC 10 ~ 30V	Supplied from the power terminals
Current consumption @12VDC	Average 50mA ; Peak 160mA	Approx. 2A max, with rush current
Transmitting Radio Frequency	Typical 134.2KHz	FSK
Transponder Type	TIRIS Tag	Single & Multi page Transponder
Operating ambient temperature	-10 ~ +70℃	No freezing
Operating ambient humidity	10 ~ 85%RH	No dew condensation
Storage ambient temperature	-20 ~ +85℃	No freezing
Storage ambient humidity	5 ~ 95%RH	No dew condensation
Communication interface	RS-232C	9600 bps (fixed), E.8.1 (fixed)
Weight	450g MAX.	No freezing
Dimensions	147 × 110 × 32 mm	Except for protrusions on connectors
Mounting system	Secured with four M4 screws.	Use the enclosed washers.

Communication interface specification:

Characteristic	Specification				
Connector specification	9-pin D-SUB female type connector plug, with 4-40 UNC lock screws				
Communication standard	RS-232C				
Synchronization	Asynchronous mode, start-stop synchronization				
Communications control standard	PLC/ASC-II protocol for ERF-HR4132A-F CID Read/Write controller only				
Baud rate (fixed)	9600 bps				
Character format (fixed)	Start bit	Data bit	Parity bit	Stop bit	Total
	1	8	Even	1	11
Error control	FCS (Frame Check Sequence) & Even parity				
Total cable length	15 m Max.				



Remote I/O port pin arrangement:

The Remote I/O Target type: **Hand Reader** and **Controller I/O Panel**

Pin No.	Signal name	Symbol		Direction		Comment
		Hand Reader	Controller I/O Panel			
1	Power Supply to Remote I/O Target	VCC (DC5V)		----		
2	Red or Right Status LED	Red-LED	Right-LED	Output		
3	Green or Left Status LED	Green-LED	Left-LED	Output		
4	Buzzer or Right-Button	Buzzer	Right-Button	Output	Input	
5	Push-Button or Left-Button	Push-Button	Left-Button	Input		
6	Common Ground	GND		----		
7	Antenna Coil	Ant coil 1	----	----		
8		Ant coil 2	----	----		

■ Hand Reader Operation Brief Description:

(1) When the Push-Button of the Hand Reader was press by operator, the Red-LED of the Hand Reader is turned on and the Hand Reader begins to access the TIRIS Tag.

(2) While Hand Reader is accessing the TIRIS Tag, the Red-LED is turned on until the CID/data is accessed successfully or failure and the CID/data or message is transmitted to the host system completed or the access time over 1 second or the CID Read/Write controller receives a new command from Host system, the Red-LED will be turned off.

(3) When the CID/data is accessed successfully, the Green-LED is turned on. If the CID/data is accessed failure or the CID Read/Write controller request ready to send but the Host has no response over 500 ms, the Red-LED and Buzzer is turned on and off short beep for 3 times.

■ Controller I/O Panel Operation Brief Description:

(1) When the Left-Button or Right-Button of the Controller I/O panel was press by operator, the Left-LED and Right-LED of Controller I/O panel is turned on and the CID Read/Write controller begins to access the TIRIS Tag.

(2) When the CID Read/Write controller receives accessing RFID Tag command from the Host system, the Left-LED and Right-LED of Controller I/O panel is turned on together and the CID Read/Write controller begins to access the TIRIS Tag.

(3) The Left-LED and Right-LED status will not change during the CID Read/Write controller is accessing the TIRIS Tag. When the CID/data is accessed successfully and the CID/data is transmitted to the host

system completed or the CID Read/Write controller receives a new command from Host system, the Left-LED and Right-LED will be turned off. However the feedback time span of the LED turn on should not be less than 1 second.

(4) When the CID/data is accessed successfully, the CID Read/Write controller begins to request the Host system for ready to send CID/data, the Left-LED and Right-LED is turned on 500 ms and off 500 ms until the CID/data is transmitted to the Host system completed.

RESET Switch specifications:

The CID Read/Write controller RESET Switch must be press to reset system when the CID Read/Write controller is crash or other factor to result in system to stop working.

ANTENNA Coil specifications:

(1) The CID Read/Write controller antenna coil Inductance = 500~520uH @ 134.2KHz and Wire diameter = 0.2 ~ 0.5mm recommended.

(2) The antenna is designed for a free air application. When mounting the CID Read/Write controller's antenna, make sure that the communication surface of antenna head is not below the top surface of sheet metal top panel (mounting bracket). Otherwise, the effective communication distance will decrease.

DIP Switch settings specifications:

SW No.	Name	Description	
1 ~ 5	Target address Setting	Target address -- 00 to 31	
6	Target address Status	**ON**	The Target address in the frame structure field must match the DIP-SW No.1 to No.5 setting, otherwise controller return an error.
		OFF	The controller accepts any number in the frame structure field when DIP-SW No.1 to No.5 set to 00, otherwise controller return an error.
7	Test mode	**ON**	The controller automatic read tag RFID repeatedly.
		OFF	Normal operation.
8	Beeper status	**ON**	The beeper is enabled when a correct Stream Function executed.
		OFF	The beeper is disabled.