HR4136-B1

Reference Manual

FOR
TIRIS PROXIMITY TAG
CID/Data Read/Write Controller With SECS I/II Protocol

VERSION: 1.04

HEART TECH ENTERPRISE CO., LTD.

Compilation：2022/03/30

Introduction:

Thank you for purchasing the HR4136-B1 CIDRW System.
Please observe the following points when operating the HR4136-B1:
• 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.

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.

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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.

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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.

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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:

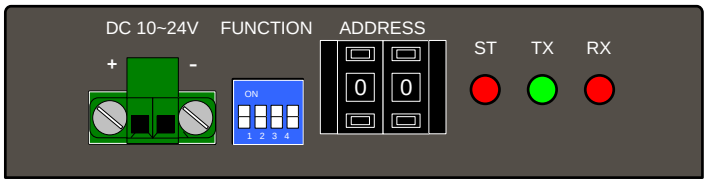
- Reposition or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet to a circuit other than the one to which the receiver is connected.

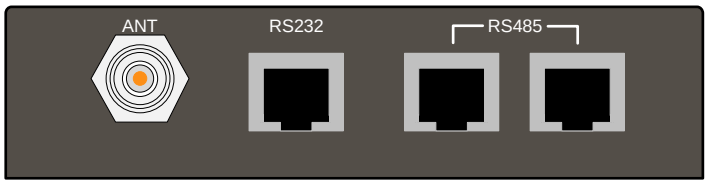
■ Consult the dealer or an experienced radio/TV technician for assistance.

FCC ID : 2AB67-HR4136-B1
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.

Connector Description:





DC 10 ~ 24V：DC Input
Function：Setup Baud Rate，Buzzer ON/OFF，Self-test ON/OFF
Address：Setup address 00 ~ 99
ST：Status LED
TX：Data transmit LED
RX：Data received LED
ANT：Antenna terminal block
RS232：RS232 commnuications port
RS485：RS485 communications port

Pin No.	RS232	RS485
4	Ground	R+ / D+
5	TXD	R- / D-
6	RXD	

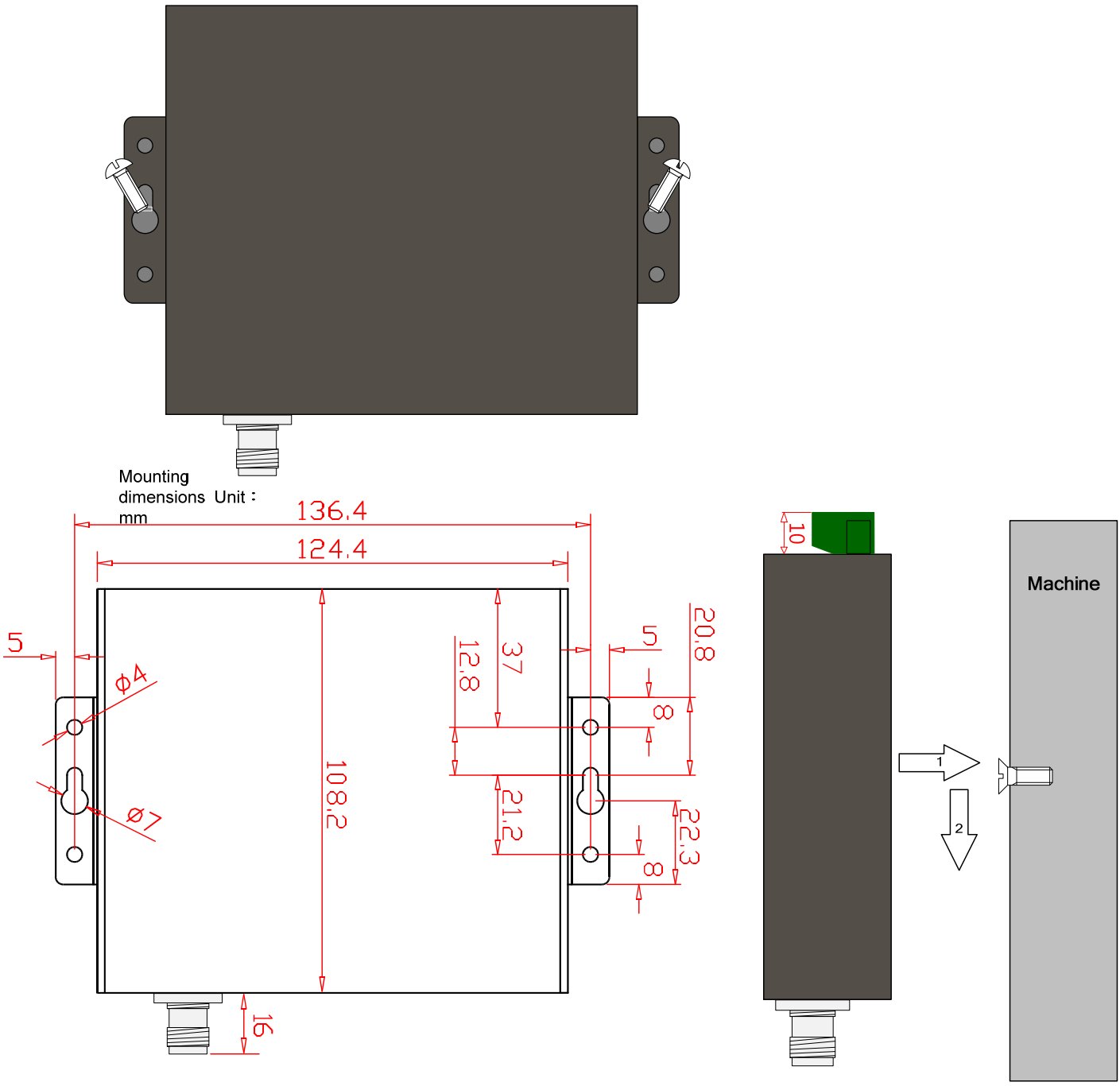
Baud Rate	Switch	
	1	2
4800	OFF	OFF
9600	ON	OFF
19200	OFF	ON
28800	ON	ON

Switch	3	4
Function	Buzzer	Self-test

Installation:

CIDRW Controller

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

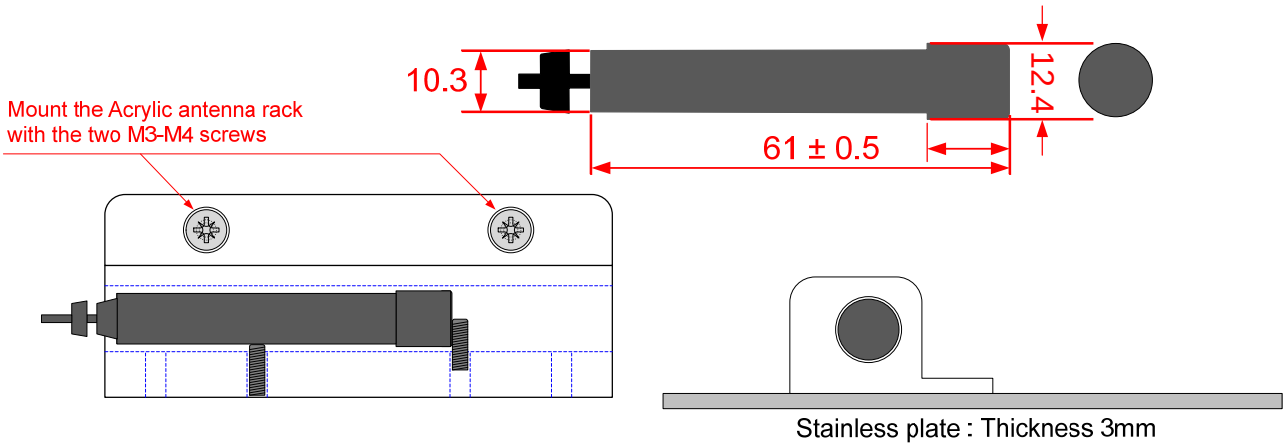


Note：

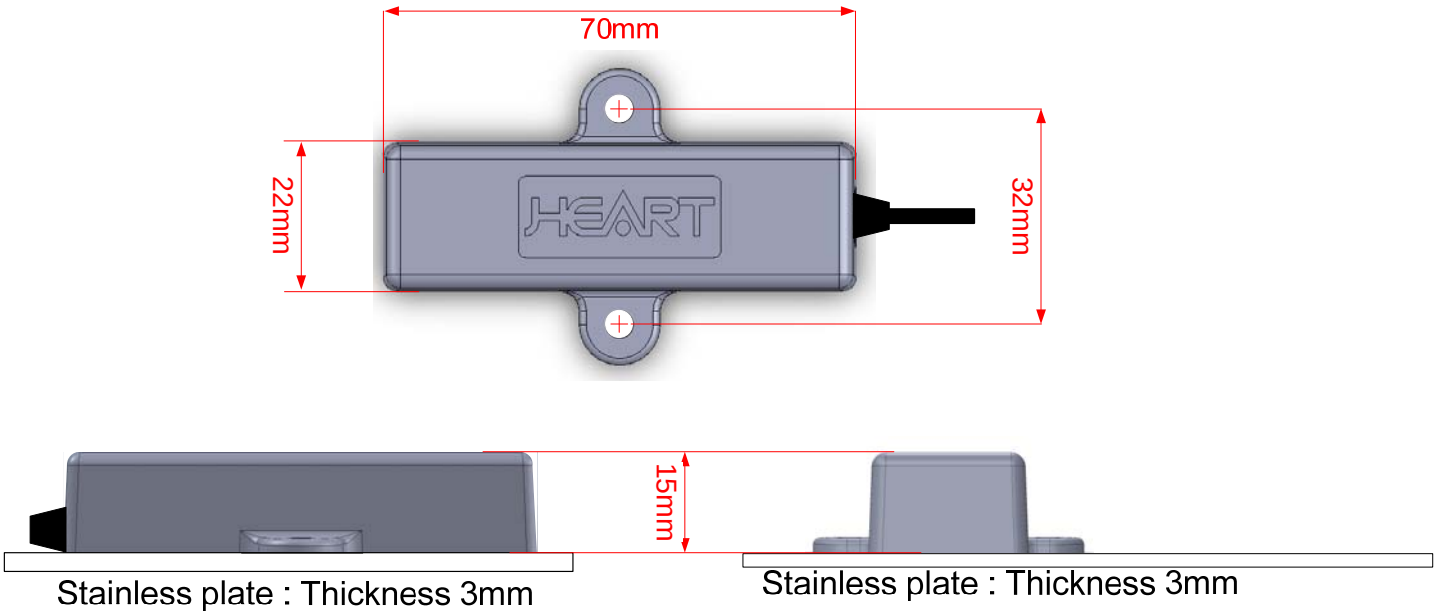
- Tighten the M3 - M4 screws with a torque not exceeding 1.2 Nm.
- Do not apply organic solvents used with screw locking agents at the locations where the screws are inserted.

Antenna

Stick antenna

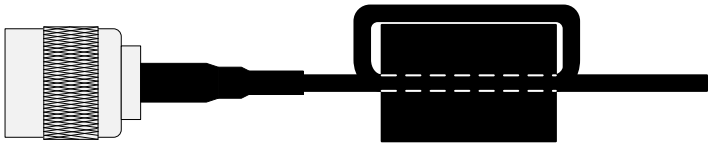


Rectangular antenna



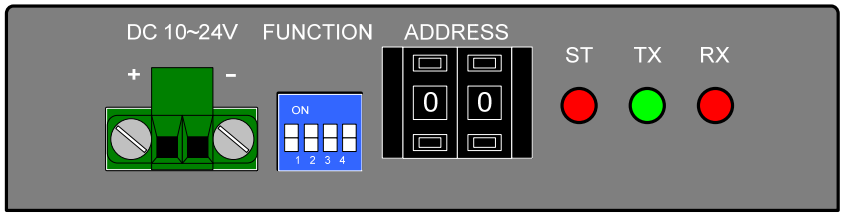
Note：Mount with the two M3 - M4 plastic screws .

Champ Core Installation Instructions

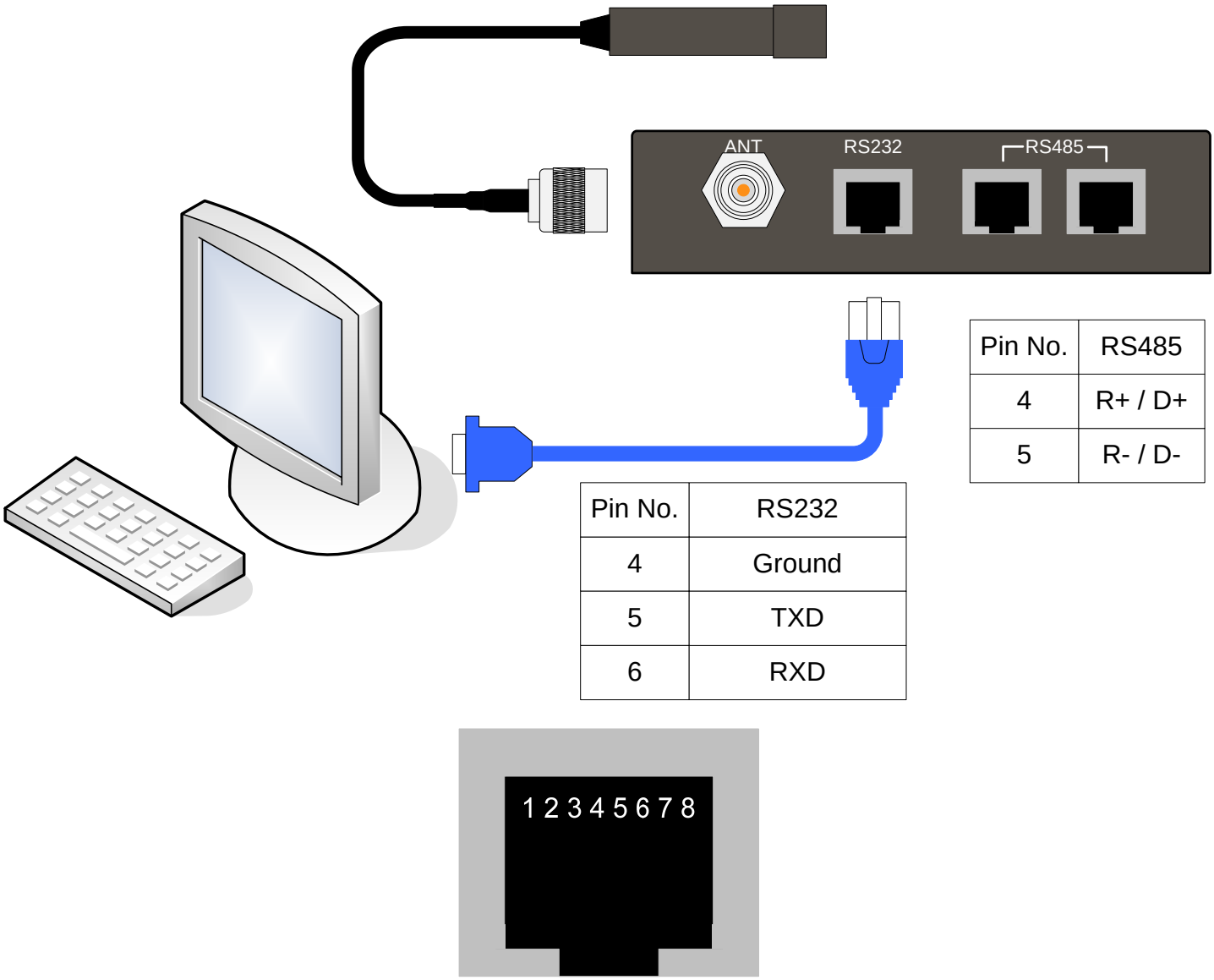


Core : KCF-65-B

Wiring Diagram:



Power IN : DC 12 ~ 24V

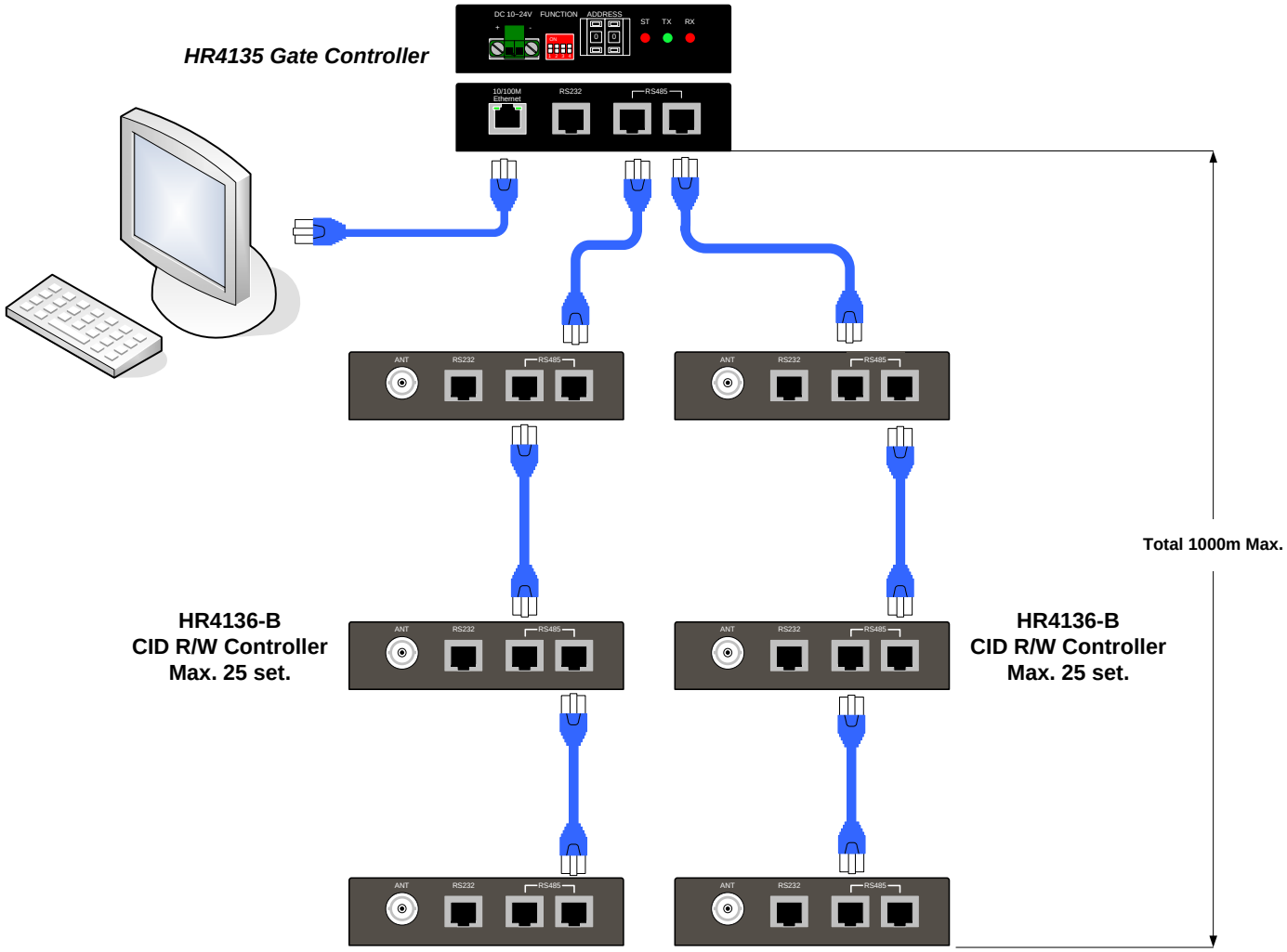


Pin No.	RS485
4	R+ / D+
5	R- / D-

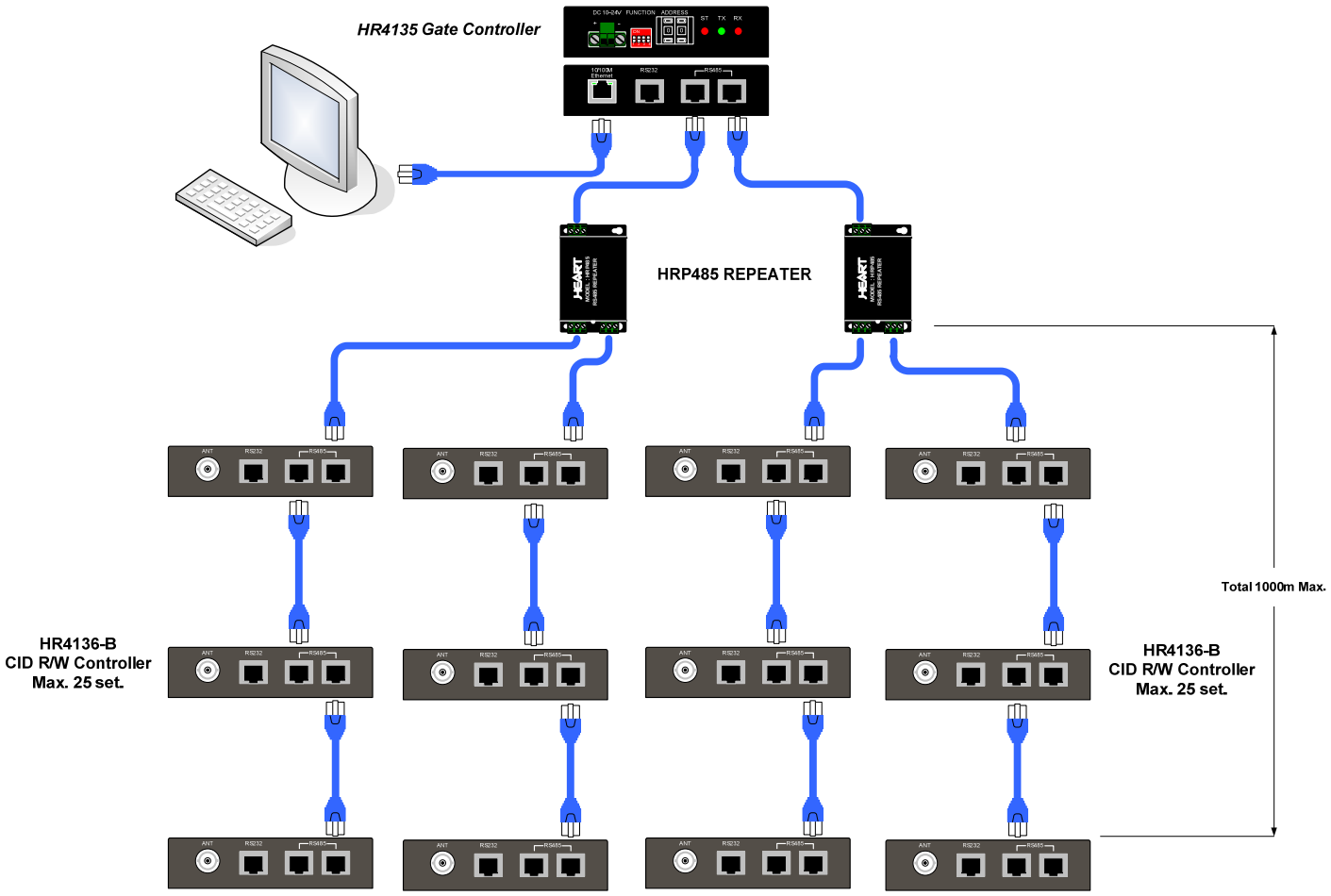
Pin No.	RS232
4	Ground
5	TXD
6	RXD

- Antenna cable length : 2M with RP-TNC connecter

Systems Architecture:



1. Each HR4135 gate controller has two RS485 communication ports. Each RS485 communications port Maximum connections of 32 sets HR4136-B1 CIDRW controller. Recommended maximum number of connections each RS485 communications port is not over 25 sets HR4136-B1 CIDRW controller.
2. RS485 maximum connection distance: from HRP485 Repeater to last one HR4136-B1 CIDRW Controller total 1000 m.

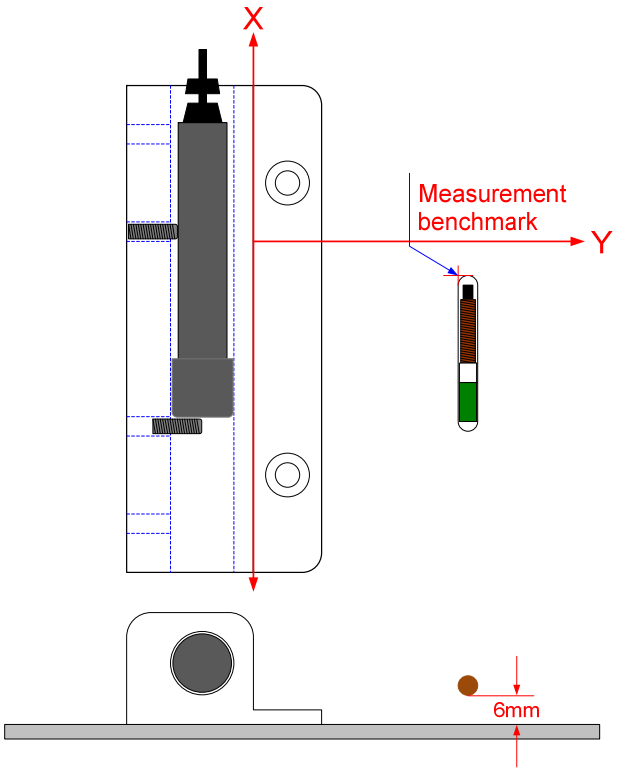


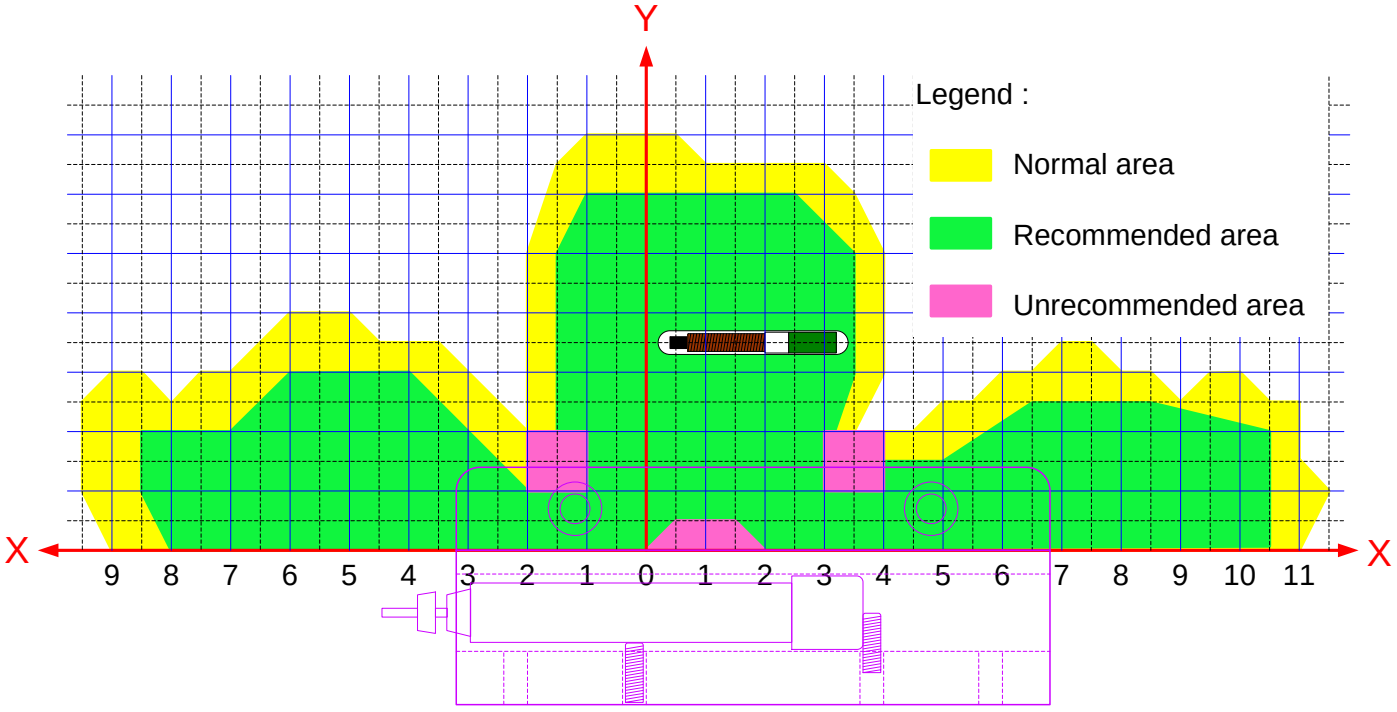
1. Use HRP485 Repeater can be connected up to 99 set HR4136-B1 CIDRW Controller.
2. RS485 the maximum connection distance: from HRP485 Repeater to last one HR4136-B1 CIDRW Controller total 1000 m.

Transmission Area (information only):

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

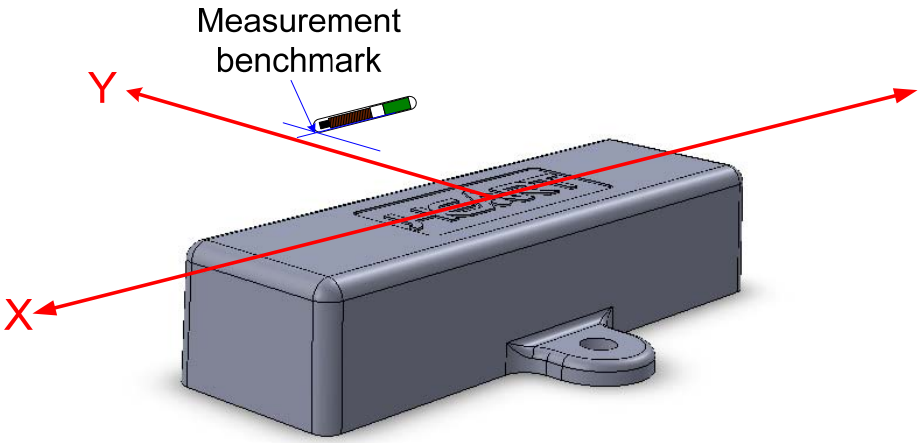
The transmission area diagram going through the center of the antenna and indicated on a flat surface vertical to the antenna surface is as indicated below.





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

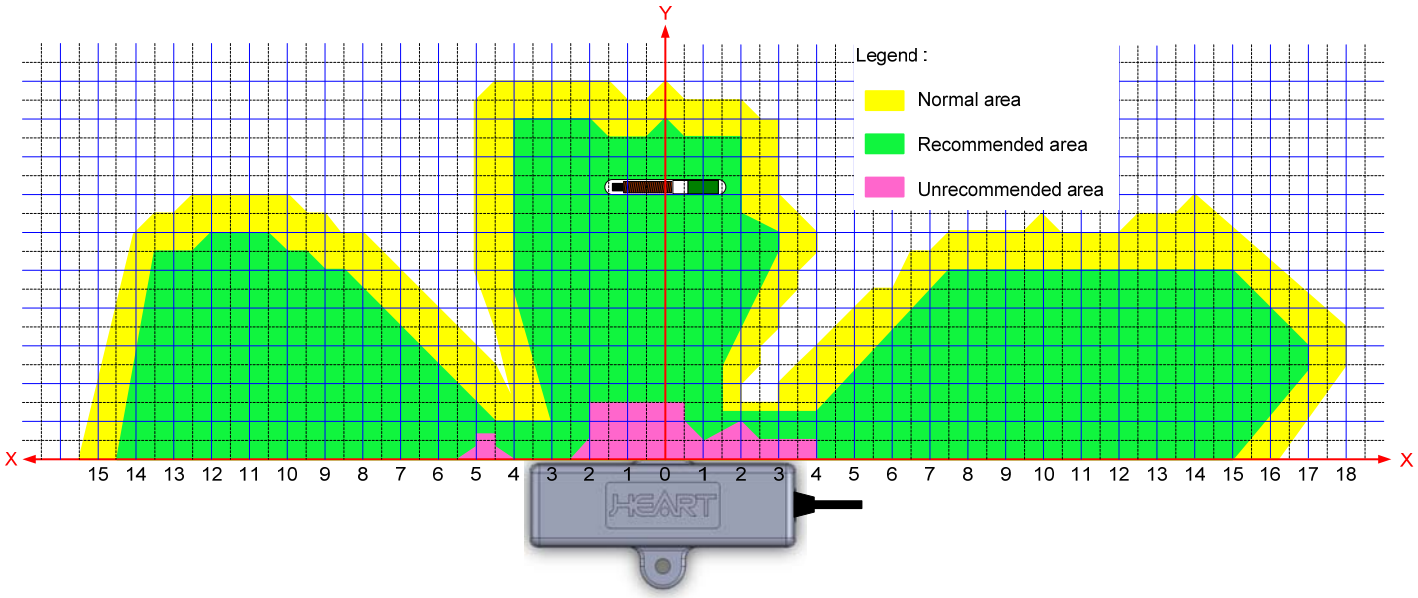
The transmission area diagram going through the center of the antenna and indicated on a flat surface vertical to the antenna surface is as indicated below.



Measurement schematic

Stainless plate : Thickness 3mm

Stainless plate : Thickness 3mm



General specifications:

Characteristic	Specification	Comment
Supply Voltage Range	DC 10 ~ 24V (+/-10%)	Supplied from the power terminals
Current consumption @12VDC	Average 60mA ; 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°C	No freezing
Operating ambient humidity	10 ~ 85%RH	No dew condensation
Storage ambient temperature	-20 ~ +85°C	No freezing
Storage ambient humidity	5 ~ 95%RH	No dew condensation
Communication interface	RS-232C or RS-485	9600 bps (Default), N.8.1 (fixed)
Weight	450g MAX.	No freezing
Dimensions	147 × 110 × 32 mm	Except for protrusions on connectors
Mounting system	Secured with two M3 screws.	Use the enclosed washers.

Communication interface specification:

<table>
<tr><th>Characteristic</th><th colspan="5">Specification</th></tr>
<tr><td>Connector specification</td><td colspan="5">RJ45 connector plug</td></tr>
<tr><td>Communication standard</td><td colspan="5">RS-232C or RS-485 only for used HR4135 Gate Controller</td></tr>
<tr><td>Synchronization</td><td colspan="5">Asynchronous mode, start-stop synchronization</td></tr>
<tr><td>Communications control standard</td><td colspan="5">SEMI/SECS protocol for HR4136-B1 CID Read/Write controller</td></tr>
<tr><td>Baud rate</td><td colspan="5">4800,9600,19200,28800 bps (Default 9600)</td></tr>
<tr><td rowspan="2">Character format (fixed)</td><td>Start bit</td><td>Data bit</td><td>Parity bit</td><td>Stop bit</td><td>Total</td></tr>
<tr><td>1</td><td>8</td><td>None</td><td>1</td><td>10</td></tr>
<tr><td>Error control</td><td colspan="5">FCS (Frame Check Sequence)</td></tr>
<tr><td>Total cable length</td><td colspan="5">RS-232C 15 m Max. ;
RS-485 : From HR4135 to last one HR4136-B1 Total 1000 m Max.</td></tr>
</table>

DIP Switch settings specifications:

<table>
<tr><th>SW No.</th><th>Name</th><th colspan="2">Description</th></tr>
<tr><td>1 ~ 2</td><td>Baud rate</td><td colspan="2"><table>
<tr><th>SW</th><th>4800</th><th>9600</th><th>19200</th><th>28800</th></tr>
<tr><td>1</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td></tr>
<tr><td>2</td><td>OFF</td><td>OFF</td><td>ON</td><td>ON</td></tr>
</table></td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Beeper status</td><td>ON</td><td>The beeper is enabled when a correct Stream Function executed.</td></tr>
<tr><td>OFF</td><td>The beeper is disabled.</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Test mode</td><td>ON</td><td>The controller automatic read tag RFID repeatedly.</td></tr>
<tr><td>OFF</td><td>Normal operation.</td></tr>
</table>