

**USER MANUAL**  
**PART No: YRCRR12**

**YRS-ASF120001**

Version : 1.0

## Revision History

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1.0	2012/02/10	New Product Manual

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1. 本产品的使用方法等请参见产品说明书。本产品的技术参数如下：

- 使用频率为：13.553–13.567MHz
- 所发射的电场强度在距设备 10 米处不得超过 42dB  $\mu$  A/m (采用准峰值检波)；
- 频率容限： $\leq 100 \times 10^{-6}$
- 杂散辐射：对于 13.553–13.567MHz 频段设备，频段两端偏移 140kHz 频率范围的限值为 9dB  $\mu$  A/m (10 米处，准峰值)
- 杂散辐射等其他技术指标请参照 2005/423 号文件

2. 使用者不得擅自更改发射频率、加大发射功率(包括额外加装射频功率放大器)，不得擅自外接天线或改用其它发射天线；

3. 使用时应注意不得对各种合法的无线电通信业务产生有害干扰；一旦发现有干扰现象时，应立即停止使用，并采取措施消除干扰后方可继续使用；

4. 本产品为微功率无线电设备，能够承受各种无线电业务的干扰或工业、科学及医疗应用设备的辐射干扰；

5. 本产品不得在飞机和机场附近使用。

#### 【参考和訳】

1. 本製品の使用方法等については、製品説明書を参照してください。本製品の技術指標は下記の通りです：

- 使用周波数: 13.553–13.567 MHz
- 電解強度は設備距離 10mにおいて 42 dB<sub>u</sub>A/m を超えてはならない(ピーク値検波を採用)
- 周波数許容極限:  $\leq 100 \times 10^{-6}$
- スピアスエミッション: 13.553–13.567MHz で動作する機器は、周波数幅の両端にてバンドオフセットを 140kHz とし、リミットは 9dB<sub>u</sub>A/m(測定距離 10m, 準尖頭値)とする。
- スピアスエミッション等その他の技術指標については 2005/423 号文書を参照

2. ユーザーは勝手に周波数を変更したり、送信出力(追加された無線周波数アンプを含む)を大きくしたりしてはならない。また、勝手にアンテナを取付けたり、その他の発信アンテナに変えてはならない。

3. 使用の際、各種合法的無線通信業務に対し、有害な妨害を発生させてはならない。妨害現象を発見した場合は、即刻使用を停止すること。妨害除去の措置をとて初めて継続使用が可能となる

4. 本製品は微弱無線設備であり、各種無線業務の妨害もしくは工業、科学、医療応用設備の輻射妨害を受容しなければならない。

5. 本製品は飛行機と飛行場付近で使用してはならない。

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 CAUTION**

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

Note: 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.

## 1 Attentions for usage of products

### 1-1 Attentions for usage

- Please be careful of dropping, giving impact and moisture
- Please do not place it in a place where there is major changes in temperature, places with dust, and places with strong magnetic fields
- Please avoid solvent or other chemicals.
- Please do not inflict strong strength.
- Please use the product in an environment where there are no static electricity and wearing static controlled clothes.

### 1-2 Attentions for constructions of products

- When constructing, please install so that it will not influence when twisted.
- Please install the antenna, where it is far from metal objects.
- The Reader/Writer and antenna are specified and cataloged as communication or transmitting products/devices that read and write through induction, by Japanese law. Remodeling these products is prohibited by law. Also remodeled products will not be accepted for repairs or maintenance.
- The Reader/Writer (which will be listed as R/W from below) must be used with its exclusive antenna and cable.
- We recommend that, when using multiple R/W, each antenna should be placed separately, at least 4times in diameter of the antenna, so that electric waves do not interfere with each other.

### 1-3 Attentions for safety

- This product is a communication equipment which uses the frequency of 13.56MHz, which is ISM and for general use. For this reason, it may interfere by the way it is used and the place of use. To make the influence smaller, please confirm mutually before usage. Also, it may affect radio astronomy and medical equipment so please be careful when using in this environment.
- This product uses radio frequency and may affect the human body. Please be careful not to be inside the magnetic field for more than 1 minute continually.

When the product is moving, please do not directly touch the board (module, antenna)

## 2 Applications

This manual is for Reader/Writer YRCRR12.

## 3 Product Summary

Reader/Writer 【YRCRR12】 receives commands from the main system, and will access to a tag and also activate 2 antennas.

### «Usage»

Usage for automatically collating the terminal post and application of the metal molds using a RFID RW and a tag when exchanging the metal molds on the cutting machine, which is right now done by barcodes.

- RW and the antenna is placed on the side of the cutting machine.
- The tag is placed on the metal mold.

## 4 Composition

- Module board : YRMCRR11【HF RW Module for SWS】
- Antenna board : YAR05【HF ANT for SWS】
- Antenna cable : YHR04【HF ANT Cable for SWS】
- Module case : exclusive case
- Antenna case : exclusive case
- AC adaptor : exclusive AC adaptor

## 5 Function

### 5-1 Communication with tag

YRCRR12 can write and read the memory data inside the ISO/IEC15693 tag.

YRCRR12 can communicate by sending a command to the tag.

For the command for YRCRR12, please refer to the command specifications.

### 5-2 Channel selection function

YRCRR12 can connect 2ch antenna.

Activating which antenna to use is done by command, and will communicate with the tag on the chosen antenna.

This can not activate several channels at once.

### 5-3 LED

YRCRR12 has a built in LED (red/green) and can be used to show the status.

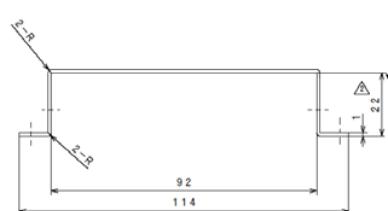
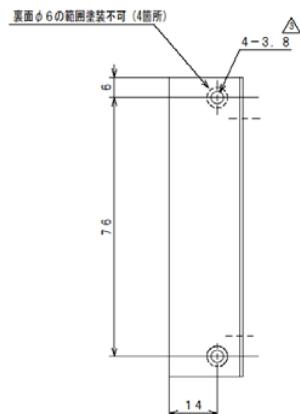
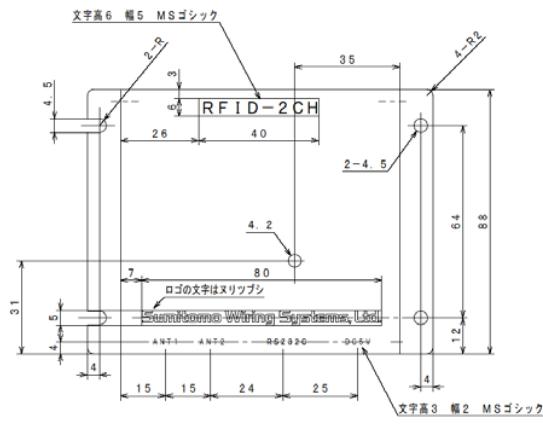
When turning on the power, the LED turns red.

Each LED can be controlled (ON/OFF) by using a command.

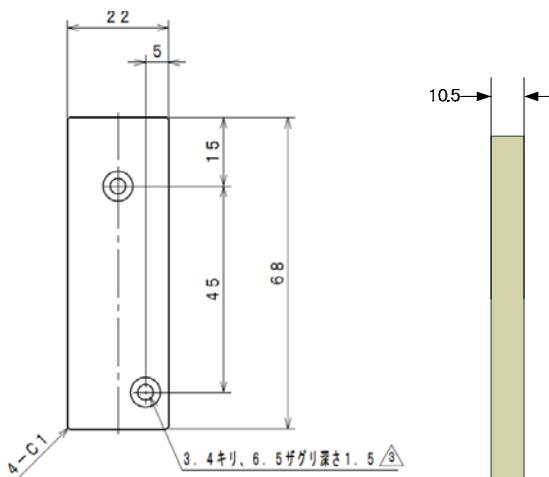
## 6 Outline specifications

## 6-1 Outline measurements

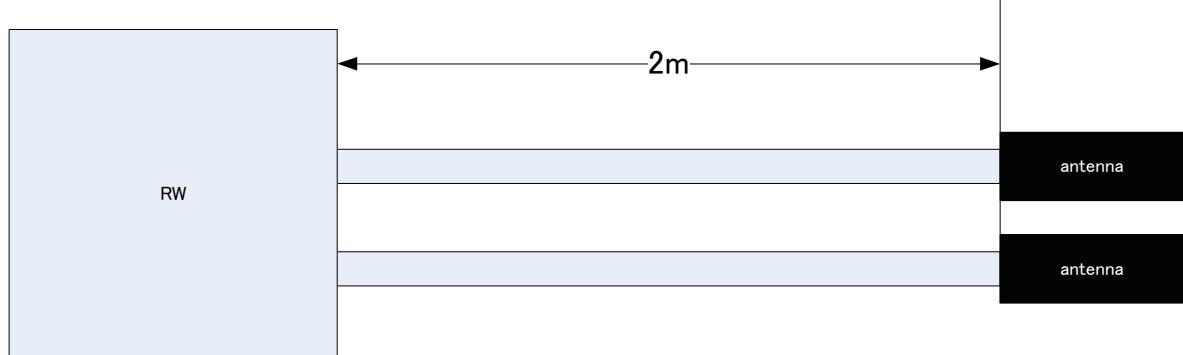
### ● (module case)



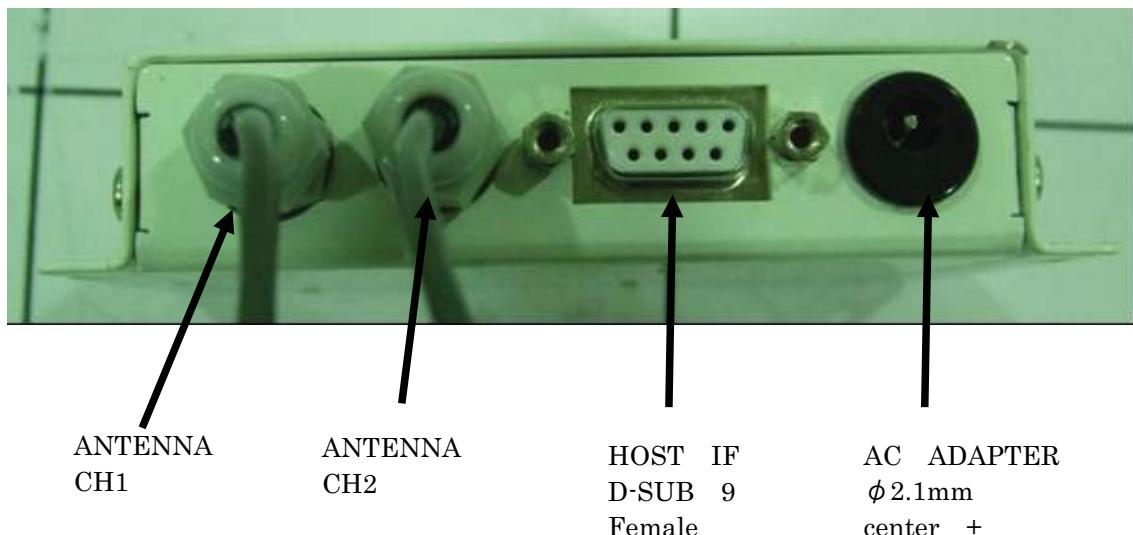
● (antenna case)



- antenna cable



## 6-2 Connector specifications



## 7 General Specifications

### 7-1 Environment conditions

Item	Specifications	Remarks
Operating environment	temperature:0~50°C humidity:20~80%	No condensation
Storage environment	<b>temperature:-20~60°C</b> humidity:10~90%	No condensation

### 7-2 Equipment specifications

Item	Specifications	Remarks
Power supply voltage	DC5V ±0.25V	
Energy consumption	Max under 150mA	Maximum electricity current during communication
Static electric resistant ※1	Contact 2KV airborne 4KV	Based on IEC61000-4

### 7-3 RF specifications

Item	Specifications
Radio frequency	13.56MHz
Transmitting output	100mW 以下
Corresponding protocol	ISO/IEC15693
Modulation method	ASK 10%
Encoding method	Pulse Position
Data rate	~26Kbps

### 7-4 Antenna specifications

Item	Specifications
Antenna type	Loop antenna
Part No.【product name】	YAR05【HF ANT for SWS】
Frequency range	13.56MHz(±100ppm)
Connector	Null (non-removal)
Antenna gain	-49dBi

## 8 Maintenance

### 8-1 Warranty period

The warranty period (without charge) is 1 year from the date of shipment. But for the reasons below, there will be a charge although it may be within the warranty period.

- product without a serial number or a serial number can't be confirmed.
- Usage other than that is written on the manual or mishandling of the product.
- malfunction caused by major negligence by the customer
- malfunction caused by the usage under condition against the stated environment
- malfunction caused by remodeling, connection/installation with other equipment, Without permission
- malfunction caused by earthquakes, floods and other natural disasters.
- malfunction caused by software/system created by the customer.

Also, our company is not liable to any damage caused by defect and malfunction of this product.。

### 8-2 Transfer method

For maintenance and repair after delivery will be done after the product is sent back to us.

### 8-3 Maintenance Period

The period will be 5 years after the end of sales for the standard product. Although it may be during the maintenance period, because of the difficulty of obtaining the supplies, separate consultation will be made for alternative materials and maintenance.