E-Rack System

Operation Manual Ver 1.0

Version MR E-Rack 5X3- BR-E-Rack-0001

Brillian Network & Automation Integrated System Co., Ltd.

Contents

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1   Brief introduction of equipment

Brillian Material Handling Solution(BMHS)
We provide a FAB semi-automatic material handling solution.   Through a material storage devices, integrating the BMHS system and database, product locations and determine the transmission route, optimal throughput and increase productivity.

eRack management collects all eRack status information, exchanges information on behalf of all eRacks and MES. Provides admin search queries, work order inquiries, statistical analysis, etc.

The eRack shelf can read the RFID tag on the foup by RFID antenna, transfer the carrierID data to the background for unified management, and then receive the foup information from the background to the operator.

Feature of Product
  · The BMHS system centrally monitoring shelfs of E-Rack.
  · Integrate MES and BMHS real time management systems to control all products in the factory.
  · Significantly improve productivity.
  · Flexible system's configuration and higher utilization rate.
  · Provide various statistical data to facilitate analysis and decision-making.
  · RFID Reader helps to confirm whether the products and sites are correct before assisting production, which greatly reduce errors.

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2　Description of safety rule of MR E-Rack System

    2.1　Instruction for use。

        2.1.1　This manual is only written for Purge System Module。

        2.1.2　Non-qualified or non-professional personnel are not allowed to operate or maintain the machine。

        2.1.3　"Operator" should read carefully the software operation in advance。

        2.1.4　"Maintainer", in addition to getting familiar with software operation, should read carefully the maintenance manual and circuit diagram。

        2.1.5　Before careful reading of operation manual or before thorough understanding of machine function, it is not allowed to operate the machine singly, and it needs an experienced guy standing beside for instruction。

    2.2　Instruction for transport

        When transporting or moving a machine, it is suggested to use a cart for the transport, please also wear steel shoes for personal safety. The cart should be able to carry a load of more than 100Kg
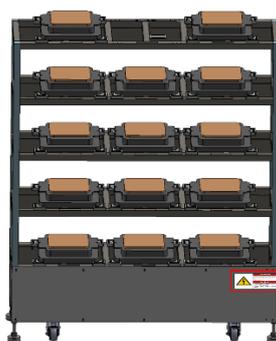
    2.3　For scarping of equipment or disposal of waste, please follow the local regulations

    2.4　Instruction for illuminance in the work area: Please follow the lighting environment provided by the plant of the client send.

    2.5　The machine is not suitable to work in explosive circumstances

    2.6　Before ex-factory, the level of noise should be less than 80dB (A).

    2.7　About "Warnings and Cautions"

⚠ CAUTION / ⚠ 警告	1. When power is supplied, non-professional personnel should not operate it to avoid electric shock hazard.
1)When breaker power is ON, please do not operate if you are not in-charge. 2)Always turn off the breaker before repair, checking the machine and maintenance. 1.電源供應中，非專責人員請勿操作，避免感電危害。 2.檢查、維修、保養前，請關閉電源。	2. Before checking, maintenance and repair, please turn off the power.

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3   Description of starting steps
    3.1   Turn on breaker power.
    3.2   Facility department is suggested to be AC 100~230V

4   Description of stopping steps
    4.1   Please use externally connected screen or remote control program to confirm all the ports Purge program are all in idle states.
    4.2   After log in into the program, please select Quit to end the program.
    4.3   Turn off breaker power.
    4.4   Install lock for breaker and lock it.
    4.5   Close the gas source switch at the facility end.

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5   Facility Requirement&SPEC

Product Name	E-Rack System
Model Type	BR-E-Rack-0001
Rating	100~230VAC, 50/60Hz, 1Φ+PE
Length X Width X Height(mm)	1192 X 355 X 1500
Weight	80kg
Breaker electric current	6A
Breaking capacity according to UL	10KA
Frequency	134.2KHz

6   FCC Rules

   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
Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Warning: Changes or modifications to this unit not expressly approved by the party responsible
for compliance could void the user authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
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.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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7   MR E-Rack 5X3

Module	Illustration
Front-1	
Front-2	

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8 MR E-Rack 5X3 Module

8.1 Front Illustration

8.2 Plate

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8.3   Electric control box

serial port

Terminal block

Reader controller

Power Supply
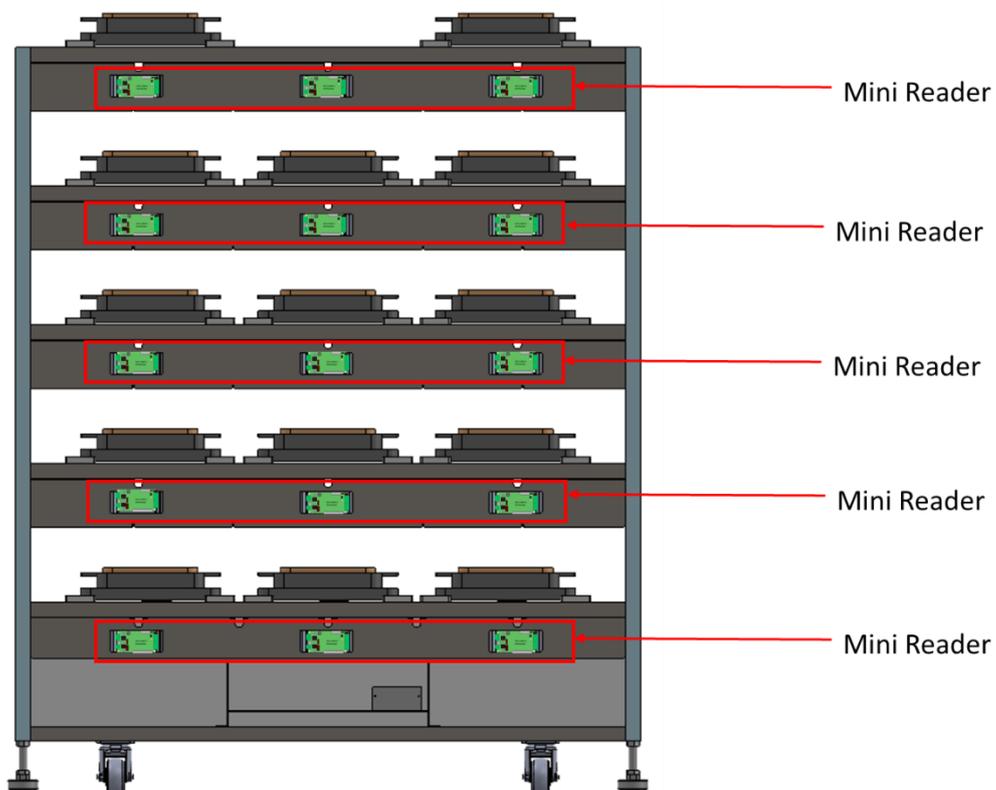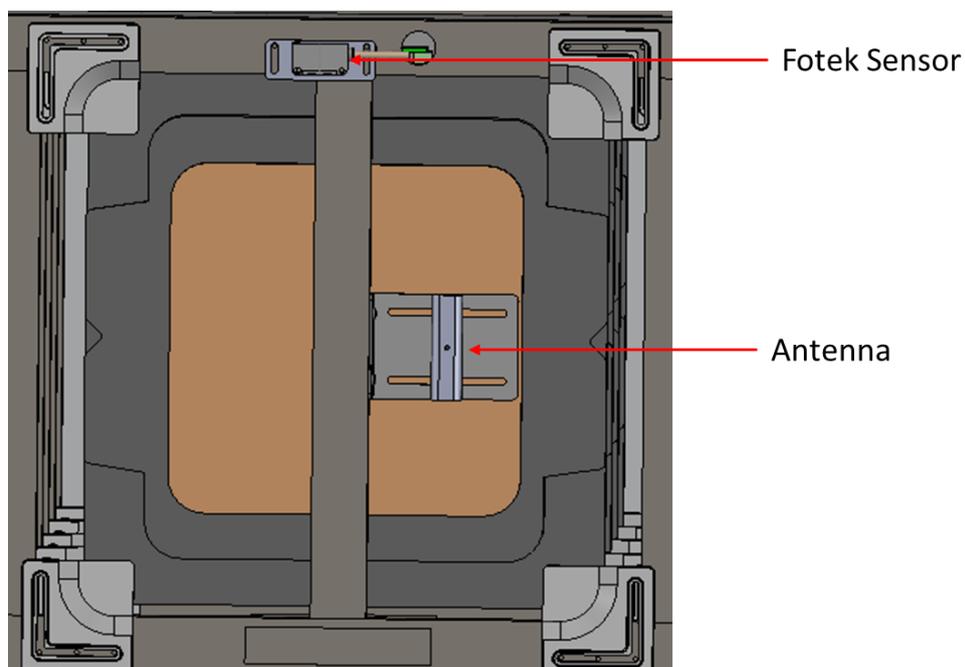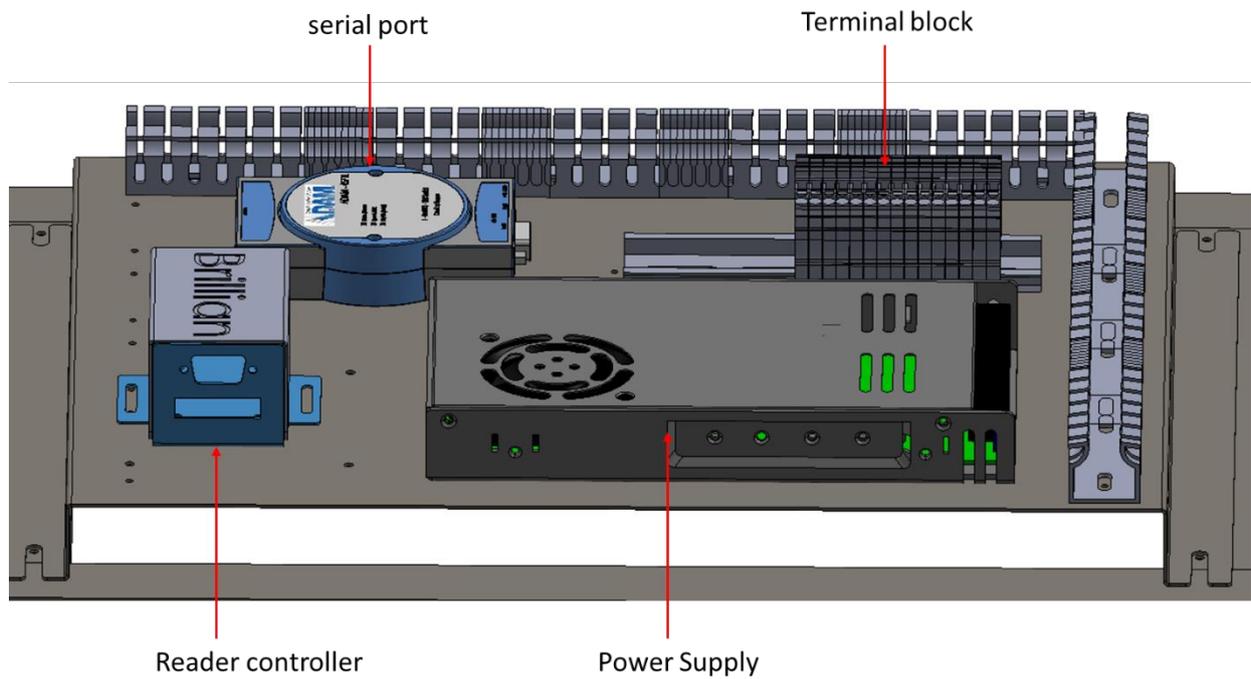
8.4   Communication Layout

RS485

RS485

RS485

RS485

Controller(gateway)

Equipment-1
RFID Function

Equipment-2
RFID Function

Equipment-3
RFID Function

Equipment-4
RFID Function

Equipment-15
RFID Function

RS232

serial port

RJ-45

Host

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8.5   RFID PCB

Fotek Sensor →

Antenna →

← Power

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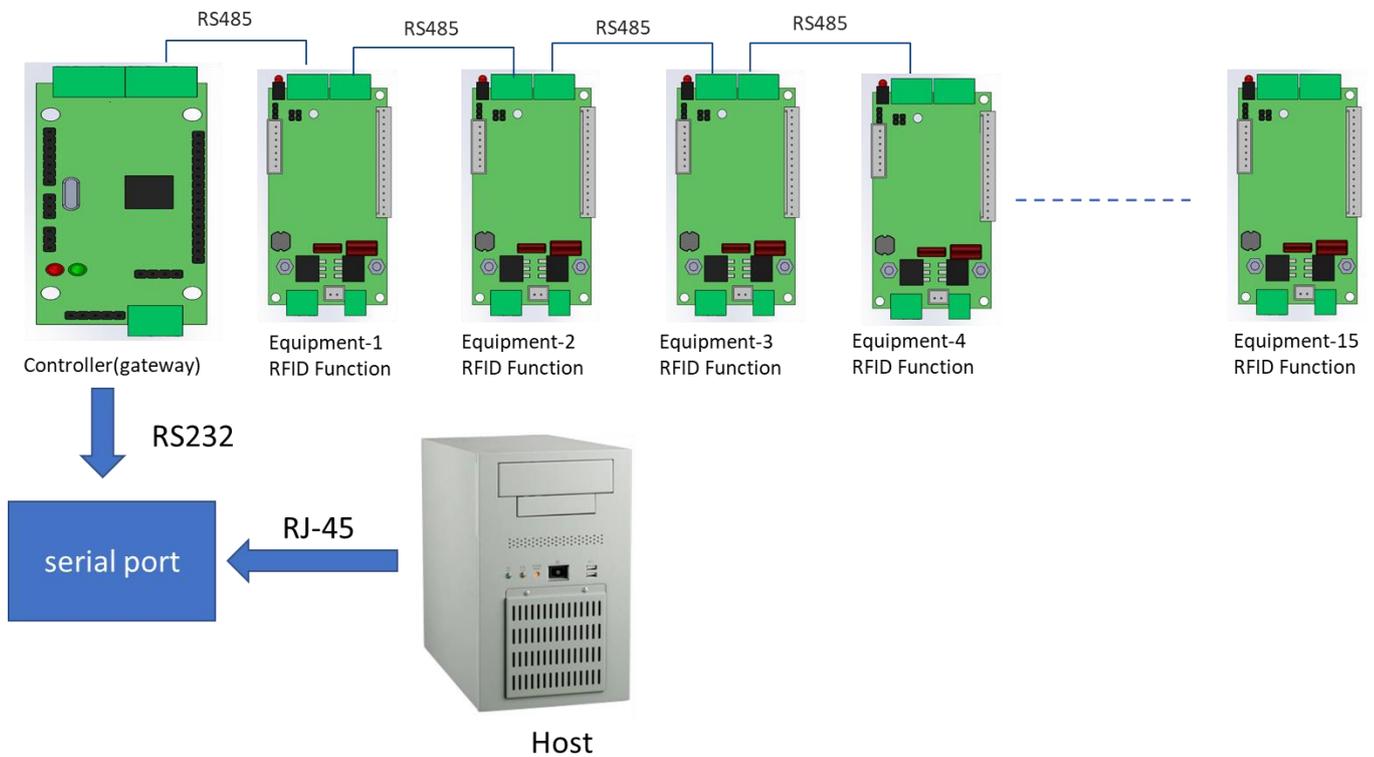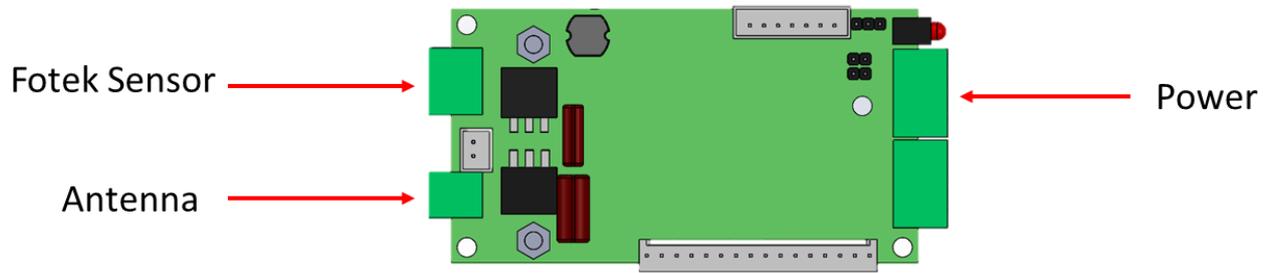
9   MR E-Rack 5X3 Hardware

9.1   Hardware Method

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                                                           ┌──────────────┐
                                                           │              │
                                                           │  serial port │
                                                           │              │
                                                           └──────────────┘

┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌────────┐   ┌──────────────┐   ┌──────────────┐
│              │   │   Breaker    │   │ Power Supply │   │        │   │    RFID      │   │              │
│ AC Power Cable│──│ B1H2C6(UL489)│──│ AC100~230V   │──│  FUSE  │──│  MF Reader   │──│   Antenna    │
│              │   │  Current 6A  │   │  To DC15V    │   │  10A   │   │   15 PCS     │   │ Fotek Sensor │
│              │   │              │   │              │   │        │   │              │   │              │
└──────────────┘   └──────────────┘   └──────────────┘   └────────┘   │ Frequency:134KHz│ └──────────────┘
                                                                       └──────────────┘

                                                           ┌──────────────┐
                                                           │              │
                                                           │   Gateway    │
                                                           │              │
                                                           └──────────────┘
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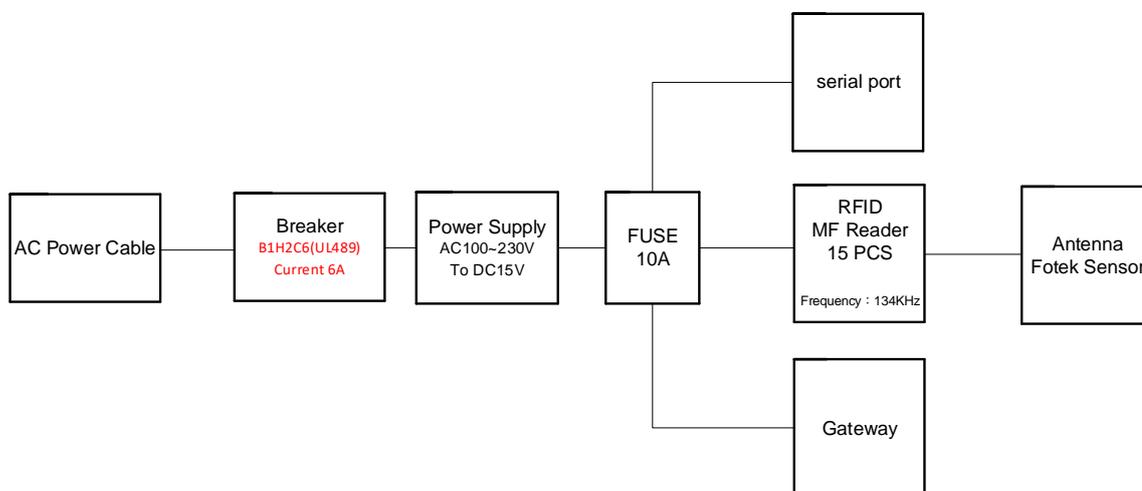
10   MR E-Rack 5X3 Operation Description

Put a POD fixed on the goods which you need to get goods information. The Transponder has a data record for the good During the Host computer sent a order message to the CIDRW through RS232 or HSMS The CIDRW

will sent back the goods information which read from the Transponder by radio frequency.

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11　Periodical Maintenance

11.1　E-Rack Maintenance Table

BR-E-Rack-0001　Maintenance Table					
Machine Tool：		☐ Three months	Date：	Operator：	
Item	Maintenance　Content	Cycle	Action	Result	Remark
Plate Clean					
1	Clean Plate	Three months	Use DI Water &Cleanroom wiper Clean Plate	☐OK　☐NG	
2	Reader Test	Three months	Put the POD on Plate use button Check Reader Function	☐OK　☐NG	
Remark：					

11.2　Cleaning Plate

11.2.1 Purpose：Cleaning Plate Particle

Material：NA

Manual tool：Cleanroom wiper、DI Water

Notice：Before action, please confirm whether the machine is down

PM Step：Cleanroom wiper cloth into the DI Water from inside to outside and from top to clean the Plate surface.

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