Quick Start Guide

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1 General Introduction

Built on Byson's proprietary RF technology, Byson RFID Readers are part of an innovative, highly reliable data collection solution. Working with Byson Tags, Byson Readers provide a complete RFID solution for real-time, end-to-end visibility of goods and critical assets moving through the supply chain and other industries.

The MD24-RW10 Reader is a fixed interrogator series collecting the location and status of specific items in transit — using either gated (pass by) or continuous tracking — from RFID tags and forwards this data to the any user specified host platforms. The Byson Readers provides a unique combination of features to effectively solve a full range of data collection requirements.

Using Byson Readers with Byson Tags brings businesses the opportunity to integrate real-time data collection into information systems, and helps to create more accurate, more reliable, more secure, and more immediate supply at low cost.

2 Characters

- Easy to use
- 2400-2483 MHz ISM band – FCC certified for unlicensed use
- Long-range, omni-directional communication enables effective monitoring of thousands of tagged items over 1 100 m line of sight radius – ideal for yards, terminals, and warehouses

3 Typical Applications

- Access Control System
- Asset Tracking
- Positioning、Identification、and Real-time Tracking System
- Logistics
- Automatic Vehicle Identification
- Fast Public Transportation System

4 Specifications

Title	Symbol	MIN	TYPICAL	MAX	UNIT
Power Supply	Vcc	4	6	9	V
Current（Tx）	Idd	14	21	25	mA
Current（Rx）	Idd	15	23	27	mA
Sensitivity	Sen	-80		-90	dBm
Air Data Rate	Dr	250		1000	Kbps
Modulation（GFSK）	Fsk		±156kHz		KHz
HIGH level input voltage	Vih	Vcc-0.6		3.6	V
Low level input voltage	Vil	-0.3		0.6	V
HIGH level output voltage	Voh	Vcc-0.6		Vcc	V
Low level output voltage	Vol	Vss		0.6	V
Fan out current	Iout			25	mA
Operating Temperature	Tc	-30	25	80	℃
Dimensions	Dim		155*100*65		mm

5 Product Photo

（Note：Outlook may vary based on customer requirements.）

5.1Host Communication

5.1.1 RS232

Host communication comes through the 9-pin female D-sub connector. RS-232 standards are supported as ordered from the factory or service center.

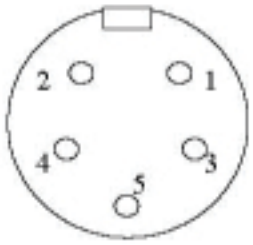
1. RS232; 9-pin, Sub D (female)
2. The default data rate is 19200 baud, with 8 data bits, no parity bit, and 1 stop bit.
3. The maximum RS-232 distance from the reader to the host, modem, or other physical controller interface is 50 feet (15.2 meters).

RS-232 Connections

Pin Number	Definition
2	TXD (Transmit Data) to the host
3	RXD (Receive Data) from the host
5	Ground
7	CTS (Clear to Send) from the host
8	RTS (Request to Send) to the host

5.1.2 RS485

485 Plug-Connector connection diagram:
(Facing the connector pins)



Connector Pin No.	Name	Description
1	VCC(+)	Connect to 6-9 V DC power supply +
2	GND(-)	Connect to 6-9 V DC power supply -
3	A（RS485）	RS485 A
4	B（RS485）	RS485 B
5	GND (Or Detection signal)	Connect to cable shielding layer (Or Tag detection signal. When Tag is detected, output voltage is low. Fan in current 100mA.)

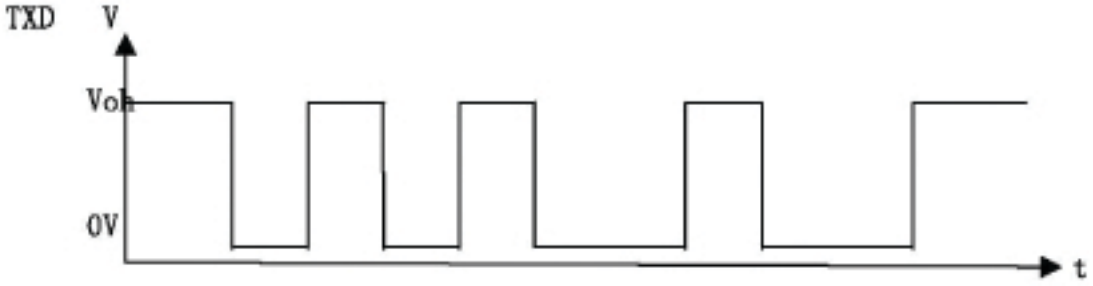
Note:

If use external antenna. Connect the antenna first before power on.
Connect to the proper power supply polarity or damage may occur.

6 Communication Output Voltage Level and Protocols

Below is output voltage level diagram for data 0x25h:

Transmission:



Receiving:

6.1 Communication Protocol

6.1.1 RS232 to Host Protocol

RS232 Configuration:

The default data rate is 19200 baud, with 8 data bits, no parity bit, and 1 stop bit.

RS232 Output format:

Frame Head: (hex) (1 byte)	Frame Data Byte (hex) (1 byte)	Tag UID (hex) (2 byte)

Valid data output for Tag UID 0xFFFF:

"03h 04h FFFFh"

Valid Tag UID:

0x0001h -- 0xFFFFh

Real data out example:

For Tag UID 0xFFFF, RS232 data out: "03 04 FF FF".

6.1.2 RS485 to Host Protocol

RS485 Configuration:

The default data rate is 19200 baud, with 8 data bits, no parity bit, and 1 stop bit.

RS485 Output format:

Frame Head: (hex) (1 byte)	Frame Data Byte (hex) (1 byte)	Tag UID (hex) (2 byte)	Reader ID (hex) (1 byte)

Valid data output for Tag UID 0xFFFF:

"03h 05h FFFF Reader ID(h)"

Valid Tag UID:

0x0001h -- 0xFFFFh

Valid Reader ID:

0x01h – 0xFFh

Note:

If Reader ID is: 0x**ADh**:

Real data out example for Tag UID 0xFFFF:

"03 05 FF FF AD".

7 Packing List

Name	Quantity	Unit
MD24-RW10	1	Set
485 Connector Plug	1	Pc
Communication Cable	(Optional)	m
RS485-RS232 Converter	(Optional)	Pc
Power Adaptor	(Optional)	Pc