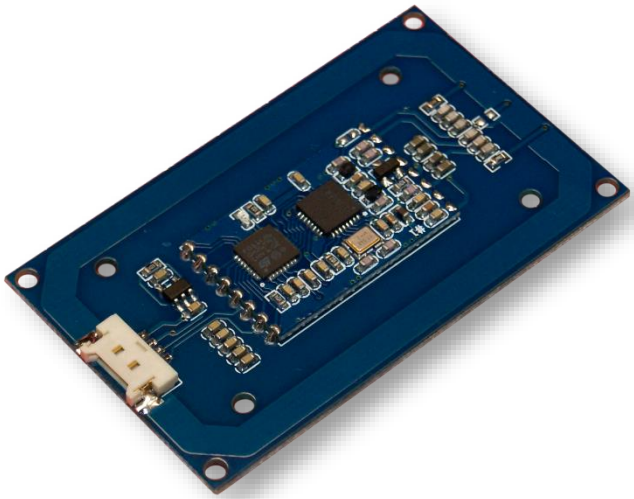
iDTRONIC
PROFESSIONAL RFID



OEM-DES-R835-TTL, OEM-DES-R835-USB
13.56 MHz OEM RFID Reader Module
Hardware Description

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Contents

1 Introduction

1.1 1.1 Reference Documents

Command Protocol and API Description:	OEM-DES devices Communication Protocol_x.yy_EN.pdf
Manual of Test/Demo Software:	OEM-DES devices Test Software Manual_x.y_EN.pdf

1.2 Overview

The OEM-DES-R835 series reader is a Multiple-protocol read/write module based on 13.56 MHz frequency and compliant with ISO14443A/B, ISO15693 and MIFARE DESFire standards. It can operate MIFARE Classic Mini, 1K, 4K, MIFARE Light, MIFARE Ultralight, MIFARE Pro data to be read and written, and reads UID only of other kinds of ISO14443A series cards.

Embedded Reader OEM-DES-R835 can be set to auto-request mode which needs no command sent to after power-on. If only the card approaches to it, it will send the card number via UART automatically.
Important Note: If you need this feature to be non-volatile, please request this expressively when ordering

This MIFARE module has the characteristic of easy use, high reliability, multi ports and small in size, which enables users to integrate it with all kinds of current popular IC card technologies quickly and conveniently.

1.3 Key Features

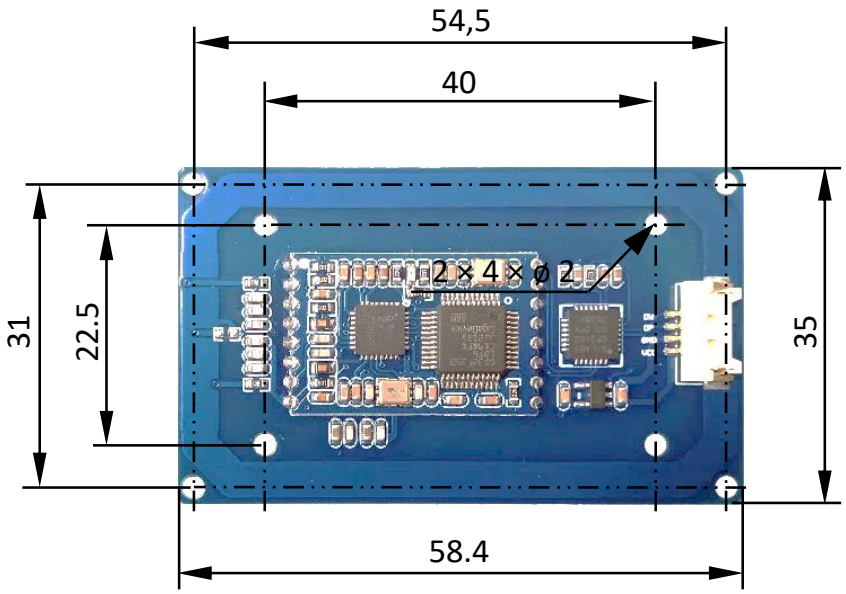
- High data integrity
- Easy using and high data transfer
- Compact in size & comprehensive interface
- Auto request mode and transferring data by UART automatically

1.4 Typical Application

- Portable device
- Time attendance
- Automatic fare collection
- Loyalty membership management
- PC power management
- Logical access management
- Smart gaming device

2 Installation

2.1 Mechanics of the Module



The Thickness is < 5 mm.

Figure 1 Dimensional Drawing of Embedded Module

2.2 Electrical Pinout OEM-DES-R835-TTL

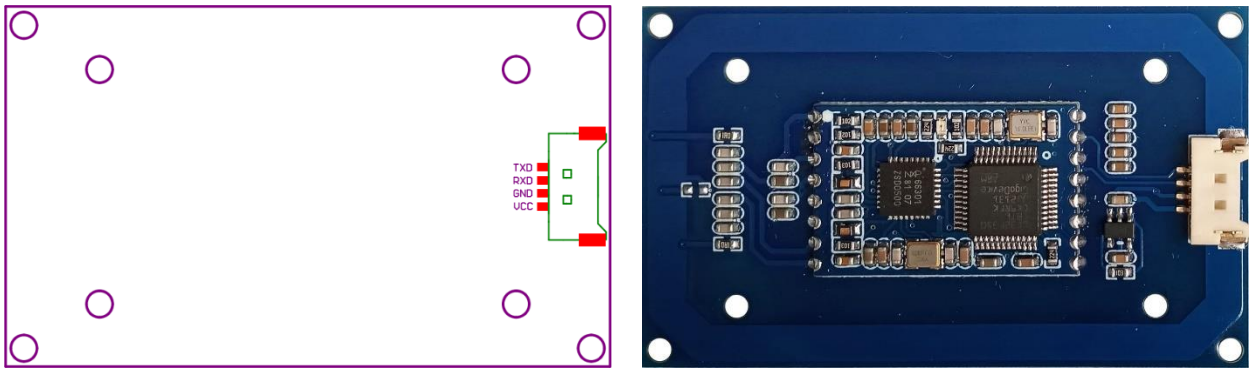


Figure 2 Pinout

OEM-DES-R835-TTL, Connector on right side (interface, 4 pins)

Name	Description
TXD	Transmit Data (Green)
RXD	Receive Data (Yellow)
GND	Power Supply GND (Black)
+3.3…5 Vdc	Power Supply Vcc (Red)

2.3 Electrical Pinout OEM-DES-R835-USB

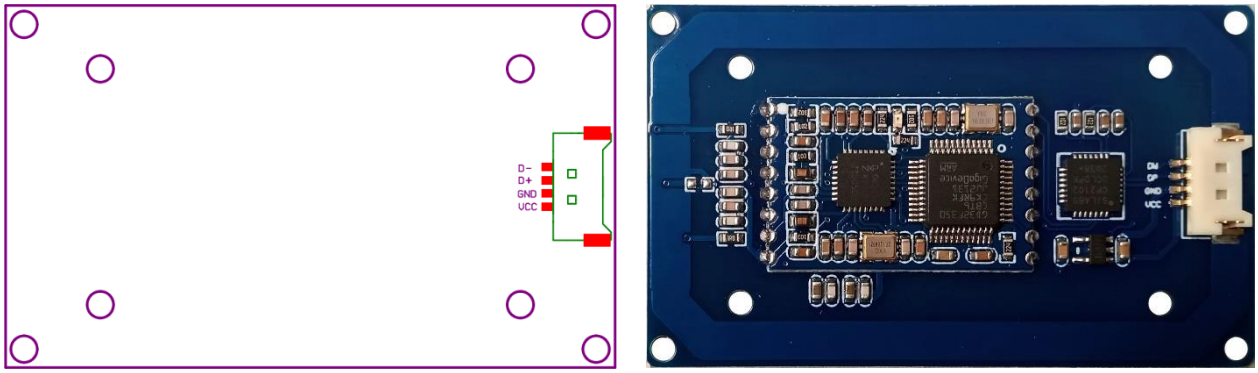


Figure 3 Pinout

OEM-DES-R835-USB, Connector on right side (interface, 4 pins)

Name	Description
D–	USB Data– (Green)
D+	USB Data+ (Yellow)
GND	Power Supply GND (Black)
+5 Vdc	Power Supply Vcc (Red)

2.4 Electrical Pinout OEM-DES-R835-PC/SC

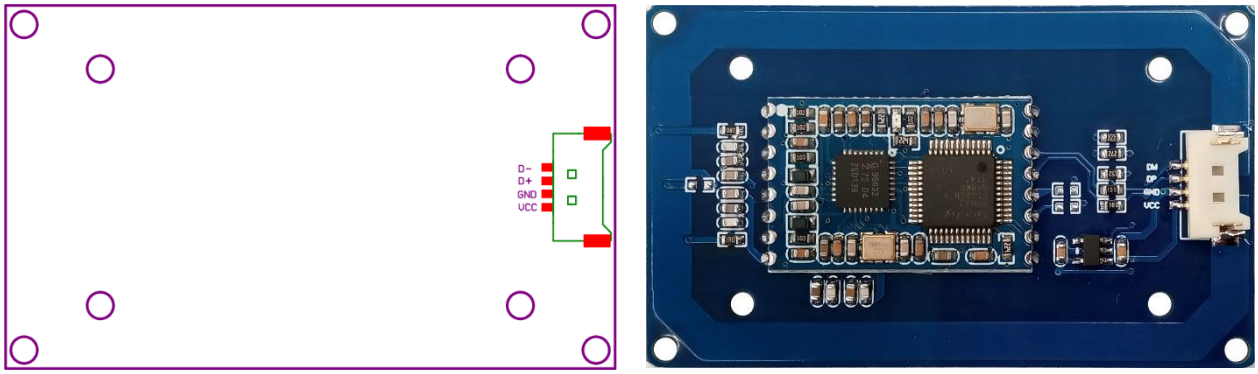


Figure 3 Pinout

OEM-DES-R835-PC/SC, Connector on right side (interface, 4 pins)

Name	Description
D–	USB Data– (Green)
D+	USB Data+ (Yellow)
GND	Power Supply GND (Black)
+5 Vdc	Power Supply Vcc (Red)

3 Technical Data

Electrical Specifications	
Power Supply	3.3…5 Vdc
Power Consumption	< 100 mA, standby current < 1 mA (low power mode)
Operating Frequency	13.56 MHz
Baudrate	9600…115200 bps, default: 1152000 bps
Antenna	internal
Reader IC	CL 663
RF TX Speed	up to 848 kBd

Interface TTL	the input is not 5 Volt tolerant! Limit the voltage at the RxD pin to 3.3 V maximum.
Unterface USB	Silicon Labs CP2102
Connector	Molex low-profile connector series PanelMate, 53780 PCB connector, 51146 cable connector

Mechanical Specifications	
Dimensions	58 × 34.5 × 4,5 mm
Weight	8 g
Material	FR4, blue

Environmental Conditions	
Operating Temperature	-20 °C … +80 °C
Storage Temperature	-40 °C … +85 °C
Humidity	up to 95 %, non condensing
MTBF	200‘000 h

Supported Standards / Tags	
ISO 14443 A and compatible	Read/write: MIFARE® Classic Mini / 1K /4K, MIFARE Ultralight®, MIFARE Ultralight® C, MIFARE® DESFire®EV1, MIFARE® Smart MX, MIFARE® Plus S / X, MIFARE® Pro X, NTAG 21x Read UID only: Read UID only of all other ISO14443A RFID tags
ISO 14443 B and compatible	SRI4K, SRIX4K, AT88RF020, 66CL160S, SR176
ISO 15693 and compatible	EM4135, EM4043, EM4x33, EM4x35, I-Code SLI / SLIX, M24LR16/64, TI Tag-it HF-I, SRF55Vxx (my-d vicinity)

Applicable Standards	
EMC	EN 301489-1:2012-04 (v1.9.21) EN 301489-3:2013-12 (V1.6.1)
Radio Regulation	EN 300330-1:2015-08 (V1.8.1) EN 300330-2:2015-08 (V1.6.1)
Safety	EN 60950-1:2014-08 EN 62369-1:2010-03 EN 50364:2010-11
RoHS 2	EC Guideline 2011/65/EU and amendment 2015/863 EN 50581:2012 (valid till 2024-07-07) EN 63000:2018
REACH	EU Guideline 1907/2006, updated by 2018/2005/EU
Certificates	FCC, CE

SDK Information	
Supported Languages	Binary command protocol, VS2005 C++
Demo Software	Windows

Other functions and details to be continued and upgraded.