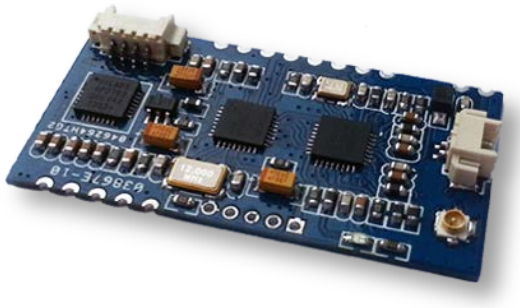
PROFESSIONAL RFID



OEM-MF M890-USB
13.56 MHz OEM RFID Module
Installation Manual

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1 Introduction

1.1 Overview

The MF Version of iDTRONIC's embedded HF Module M890 has been designed to support ISO 14443A and MIFARE family tags. Its compact format makes it useable for many different applications.

The Module M890 offers the possibility to connect an external antenna. A wide choice of suitable antennas is available from iDTRONIC. Reading distances of up to 7 cm can be achieved with this MF Module (depending on type of transponder).

For low power applications (for example mobile or standalone devices), a 3.3 V version of the M890 is also available. Interface options include a TTL and USB version.

The M890 embedded MF Module comes with a full SDK and MS Windows based application SW.

1.2 Key Features

- DC 5V power supply, DC 3.3V output with 50 mA current capability
- Virtual USB communication port
- Available with External LED & Buzzer
- Supports hardware Power-down function
- R/W ISO14443A Mifare Classic card, Mifare Ultralight
- R/W NTAG203, NTAG205,NTAG213,NTAG215,NTAG216 NFC tags
- R/W ISO14443-4 Contactless CPU cards
- Reads UID of all ISO14443A Standard cards

1.3 Typical Application

- Identification
- Payment
- Ticketing
- Access Control
- Mobile Terminals

1.4 Available Standard Antennas

Antenna Size (PCB Size)	Reading Distance (depending on tag type)	Order Code
20 × 30 mm	Up to 4 cm	OEM-HF-M8-A910-UFL
20 × 40 mm	Up to 5 cm	OEM-HF-M8-A911-UFL
35 × 50 mm	Up to 6 cm	OEM-HF-M8-A912-UFL
49 × 55 mm	Up to 7 cm	OEM-HF-M8-A916-UFL
54 × 86 mm	Up to 10 cm	OEM-HF-M8-A915-UFL
60 × 80 mm	Up to 11 cm	OEM-HF-M8-A914-UFL
80 × 80 mm	Up to 11 cm	OEM-HF-M8-A913-UFL

These antennas have U.FL connection that fits to the antenna connector on the PCB.

2 Installation

2.1 Electrical Installation

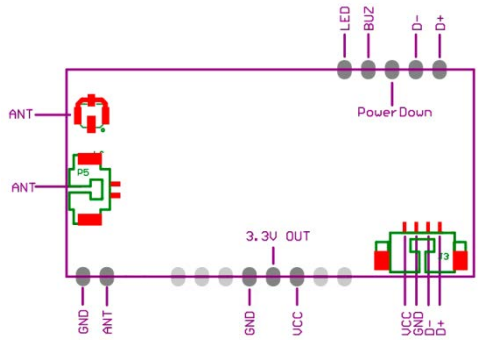

Figure 1 Pinout OEM-MF-M890-USB

Pin Definition

Name	IO Type	Description
Vcc	Power supply	5 Vdc (red)
GND	Power supply	GND (black)
D+	Data transfer	USB D+ (green)
D–	Data transfer	USB D– (white)
LED	Output	External LED control signal 1, driver circuit needed
BUZ	Output	External buzzer control signal, driver circuit needed
ANT	Output	External Antenna
3.3V OUT	Output	3.3V power voltage output with 50 mA current capability
Power Down	Input	Hardware power-down, default with internal pull-up resistor, when it is low-level, module power down
RFU	—	Reserved for future used—DO NOT CONNECT!

3 Technical Specifications

Mechanical Specifications

Dimensions:	43.5 × 22 × 4.5 mm (without cabling, OEM-MF-M890-USB)

Electrical Specifications

Power Supply:	5 Vdc (±5 % regulated)
Power Consumption:	< 45 mA
Antenna:	external, U.FL connectors
Interface:	Virtual com port via USB (Silabs CP 2102 chip series)
Baudrate	9.600…115.200 bps (configurable, default 9600bps)
Signals:	1 LED, 1 buzzer (external)

Supported Standards / Tags

Read and Write of ISO 14443A type RFID transponders:

- Mifare One S50,Mifare S70, Mifare Ultralight, NTAG203/205/213/215
- Contactless CPU card

Read UID of all other ISO14443A series

Environmental Conditions

Operating Temperature:	–10 °C … +70 °C
Storage Temperature:	–20 °C … + 80 °C
Humidity:	5 % to 95 %

Table of Figures