

EMBEDDED HF RFID READER M900 SERIES

APPLICATIONS

- Embedded Engineering
- Handhelds / Terminals
- Ticketing Systems
- Payment Systems
- Access Control
- Health Care

FEATURES

- Adopts ARM MCU Solution
- SMD Assembly Possible
- 3.3 V Power Supply
- TTL Interface
- Tiny Size

RFID OPTIONS

- ISO 14443 A/B
- ISO 15693
- ISO 18000-3
- ISO 18092 | ECMA-340 (NFC)

PRODUCT DESCRIPTION

The iDTRONIC embedded RFID reader M900 series is a high performance reader series. Thanks to its tiny size the single-face layout makes it the perfect RFID Reader for SMD Production.

With its cutting edge microcontroller and latest HF transceiver technology, the reader series allows users to read and write almost any 13.56 MHz transponders. 4 different configurations are available which support the common RFID standards such as ISO 14443A/B (T=CL), ISO 15693, ISO 18000-3 and ISO 18092 / ECMA-340 (NFC).

The embedded RFID reader M900 series features one external antenna port. iDTRONIC Professional RFID offers a wide choice of antennas suitable for any purpose. reading ranges of up to 10 cm (depending on type of transponder).

The Module M900 has a TTL interface. In low power mode, the M900 consumes less than 1 mA.

The M900 module can be delivered on a Tape & Reel roll for SMD mass production.

iDTRONIC's hardware comes with a useful SDK for the development of controller, Linux or Windows based applications. Beside the documentation, command protocols and source codes, the SDK includes a Windows based demo application with full functionality over all supported HF RFID standards.

HEALTH CARE

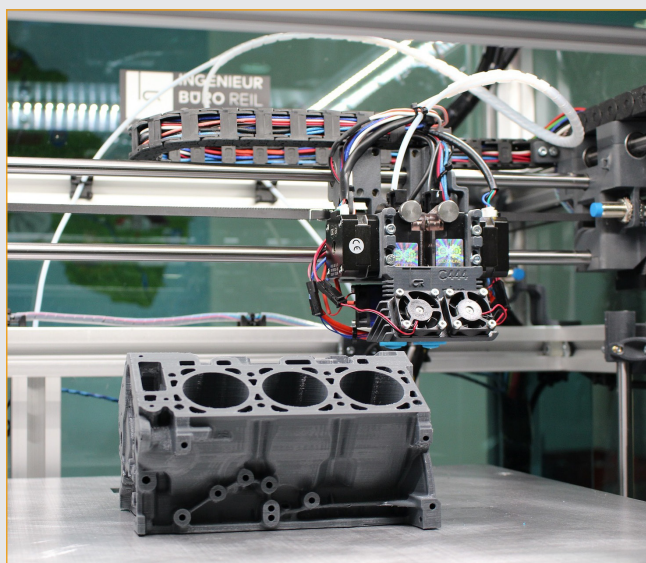


Inside the hospital room there are medical devices which are vital for the patient. These include ventilators, infusions or ECG devices. By integrating RFID readers, a wide variety of functionality may be implemented which help to increase patient safety and bring about a faster recovery.



These include, for example, automatic identification and authentication of consumables. On the other hand, it is possible to monitor which employee is operating the medical devices. Hierarchies may also be introduced for individual employees in order to avoid incorrect operation of the devices by medical personnel. The small embedded module may be easily and quickly integrated into a range of medical devices.

EMBEDDING ENGINEERING



The Tape & Reel is suitable for automation processes within SMD productions. SMD component assembly systems are robotic machines that are used to place surface-mounted components (SMDs) on a printed circuit board (PCB).

They are used to quickly and accurately place a wide range of electronic components such as capacitors, resistors, integrated circuits on printed circuit boards used in computers, consumer electronics, industrial, medical, automotive, military and telecommunications equipment.

TECHNICAL DATA

ELECTRICAL SPECIFICATIONS

Power Supply	µC: 3.3 V, RFID IC: 3.3 ~ 5 Vdc
Power Consumption	< 100 mA, standby current < 1 mA (low power mode)
Operating Frequency	13.56 MHz
Reading Distance	up to 10 cm*
Antenna	external*
Baudrate	9600 ... 115200 bit/s
Antenna Connector	U.FL
Interface	TTL, 3.3 V output levels, the input is not 5 V tolerant
Connector	Molex PicoBlade 53261 (PCB) 51021 (cable)
PCB Connections	Soldering Pads (Suitable for SMD Production)
Outputs	1 Buzzer, 2 LEDs, 3 Special, max 25 mA on each single output, max 80 mA in total.

MECHANICAL SPECIFICATIONS

Material	FR-4, Blue
Mounting Option	Soldering

ENVIRONMENTAL CONDITIONS

Operating Temperature	-20 °C ... +80 °C
Storage Temperature	-40 °C ... +85 °C
Humidity	up to 95 %, non condensing
MTBF	200'000 h

SDK INFORMATION

Supported OS	Windows 7, 8, 8.1, 10
Supported Languages	C++, Binary command protocol
Demo Software	Windows

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
RED	2014/53/EU
RoHS 2	2011/65/EU
REACH	1907/2006
Certificates	FCC, CE, IC**

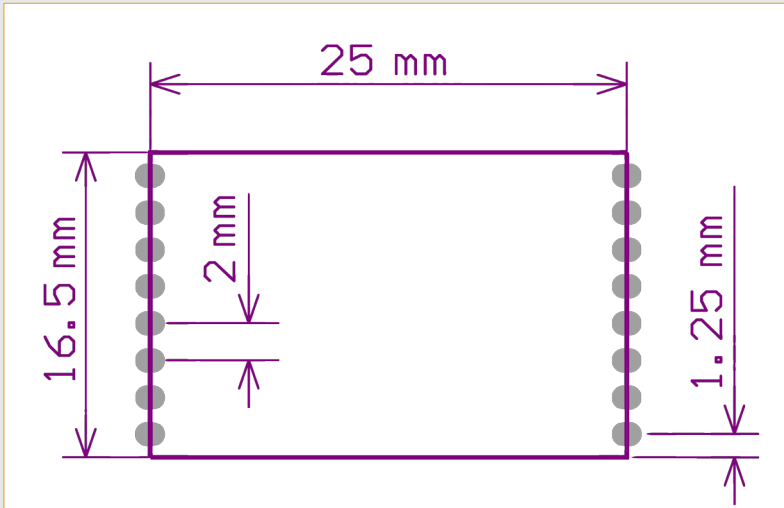
*READING DISTANCE DEPENDS ON TAG, ANTENNA AND ENVIRONMENTAL CONDITIONS.

AVAILABLE VERSIONS

*READING DISTANCE DEPENDS ON TAG, ANTENNA AND ENVIRONMENTAL CONDITIONS.

	DESFIRE	ISO 18000-3	HF	MIFARE
GENERAL SPECIFICATIONS				
Dimensions	25 × 16.5 × 2.8 mm	25 × 16.5 × 2.8 mm	25 × 16.5 × 2.8 mm	25 × 16.5 × 2.8 mm
Weight	3 g	3 g	3 g	3 g
Power Supply	3.3 Vdc	3.3 Vdc	3.3 Vdc	3.3 Vdc
Power Consumption	< 100 mA, standby current < 1 mA (low power mode)	< 100 mA, standby current < 1 mA (low power mode)	< 100 mA, standby current < 1 mA (low power mode)	< 100 mA, standby current < 1 mA (low power mode)
Operating Frequency	13.56 MHz	13.56 MHz	13.56 MHz	13.56 MHz
Reading Distance	depending on external antenna*	depending on external antenna*	depending on external antenna*	depending on external antenna*
RT FX Speed	up to 848 kBd	up to 848 kBd	up to 848 kBd	up to 848 kBd
Reader IC	NXP CLRC663	NXP CLRC663	NXP CLRC663	NXP CV520
Interface	TTL	TTL	TTL	TTL
Antenna	external*	external*	external*	external*
Baudrate	9600 ... 115200 bit/s	9600 ... 115200 bit/s	9600 ... 115200 bit/s	9600 ... 115200 bit/s
Connector	Molex PicoBlade 53261 (PCB) 51021 (cable)	Molex PicoBlade 53261 (PCB) 51021 (cable)	Molex PicoBlade 53261 (PCB) 51021 (cable)	Molex PicoBlade 53261 (PCB) 51021 (cable)
SUPPORTED STANDARDS TAGS				
ISO 14443A and compatible	<p>Read/Write: MIFARE® Classic Mini / 1K /4K, MIFARE Ultra-light®, MIFARE Ultra-light® C, MIFARE Ultra-light® Nano, MIFARE® DESFire®EV1, MIFARE® DESFire® Light, MIFARE® Smart MX, MIFARE® Plus S / X, MIFARE® Pro X, NTAG 21x, NTAG 424</p> <p>Read UID only: Read UID only of all other ISO14443A RFID tags</p>	<p>Read/Write: MIFARE® Classic Mini / 1K /4K, MIFARE Ultra-light®, MIFARE Ultra-light® C, MIFARE® DESFire®EV1, MIFARE® Smart MX, MIFARE® Plus S / X, MIFARE® Pro X, NTAG 21x</p> <p>Read UID only of all other ISO14443A RFID tags</p>	<p>Read/Write: MIFARE® Classic 1K / 4K, MIFARE Ultralight®, MIFARE Ultralight® C, NTAG 21x</p> <p>Read UID only: Read UID only of all other ISO14443A RFID tags</p>	<p>Read/Write: MIFARE® Classic 1K / 4K, MIFARE Ultralight®, MIFARE Ultralight® C, NTAG 21x</p> <p>Read UID only: Read UID only of all other ISO14443A RFID tags</p>
ISO 14443 B and compatible	SRI4K, SR1X4K, AT88RF020, 66CL160S, SR176	SRI4K, SR1X4K, AT88RF020, 66CL160S, SR176	SRI4K, SR1X4K, AT88RF020, 66CL160S, SR176	–
ISO 15693 and compatible	EM4135, EM4043, EM4x33, EM4x35, I-Code SLI/SLIX/DNA, M24LR16/64, TI Tag-it HF-I, SRF55Vxx (my-d vicinity)	EM4135, EM4043, EM4x33, EM4x35, I-Code SLI / SLIX, M24LR16/64, TI Tag-it HF-I, SRF55Vxx (my-d vicinity)	EM4135, EM4043, EM4x33, EM4x35, I-Code SLI / SLIX, M24LR16/64, TI Tag-it HF-I, SRF55Vxx (my-d vicinity)	–
ISO 18000-3M3 and compatible	–	I-Code ILT-M	–	–

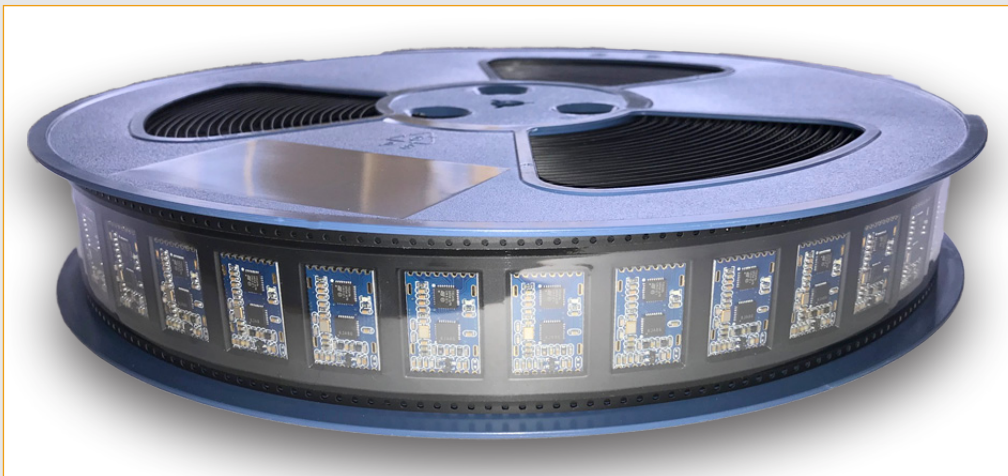
MECHANICAL VIEW



PIN LAYOUT

1	GND	RXD	16
2	RST	TXD	15
3	VDD	I01	14
4	TVDD	I02	14
5	GND	I03	12
6	RFRX	I04	11
7	RFTX1	I05	10
8	RFTX2	I06	9

TAPE & REEL



CONNECTIONS

PIN	SIGNAL	IO TYPE	DESCRIPTION
1	GND	PWR	GND
2	RST	Input	Low power reset
3	VCC	PWR	DC 3.3 V
4	TVDD	PWR	Power for RF, DC 3.3 ~ 5 V
5	ANT-	PWR	GND
6	RFU	Input	RFU
7	ANT +	Output	Antenna output
8	RFU	Output	RFU
9	IO6	Output	A group of IO used for control full color RGB Light
10	IO5	Output	
11	IO4	Output	
12	IO3	Output	
13	IO2	Output	
14	IO1	Output	External Buzzer
15	TXD	Output	UART TX (TTL Level)
16	RXD	Input	UART RX (TTL Level)

ORDER CODES

VERSION	ORDER CODE
DESFIRE	
OEM DESFire Reader TTL	OEM-DES-M900-TTL
ISO 18000-3	
OEM ISO 18000-3 Reader TTL	OEM-DES-M900-TTL-18/3
HF	
OEM HF Reader TTL	OEM-HF-M900-TTL
MIFARE	
OEM MIFARE Reader TTL	OEM-MF-M900-TTL
TAPE & REEL	
Tape & Reel	On Request - MOQ 500 Units

iDTRONIC GmbH
 Ludwig-Reichling-Straße 4
 67059 Ludwigshafen
 GERMANY

Phone +49 (0) 621 66 90 09 4-0
 Fax +49 (0) 621 66 90 09 4-9
 E-Mail: info@idtronic-rfid.com
 Web: idtronic-rfid.com

For further information & prices, please contact info@idtronic-rfid.com

Subject to alteration without prior notice
 ©2020 iDTRONIC GmbH