

## Embedded Module HF **M900**



### PRODUCT DESCRIPTION

The iDTRONIC HF | NFC Embedded Module 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 HF | NFC Embedded Module M900 features one external antenna port. iDTRONIC Professional RFID offers a wide choice of antennas suitable for any purpose. It achieves reading ranges of up to 10 cm (depending on type of transponder).

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

The HF | NFC Embedded Module M900 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.

### APPLICATIONS

- Embedded Engineering
- Handhelds | Terminals
- Ticketing Systems
- Payment Systems
- Access Control
- Healthcare

### FEATURES

- Adopts ARM MCU Solution
- Designed for SMD Assembly
- 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)

## 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	Soldering Pads
Interface	TTL, 3.3 V output levels, the input is not 5 V tolerant
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.**

DESFIRE

ISO 18000-3

HF

MIFARE

### GENERAL SPECIFICATIONS

Dimensions	25 × 16.5 × 2.8 mm
Weight	3 g
Power Supply	3.3 Vdc
Power Consumption	< 100 mA, standby current < 1 mA (low power mode)
Operating Frequency	13.56 MHz
Reading Distance	depending on external antenna*
RT FX Speed	up to 848 kBd
Reader IC	NXP CLRC663
Interface	TTL
Antenna	external*
Baudrate	9600 ... 115200 bit/s



## AVAILABLE VERSIONS

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

	DESFire	ISO 18000-3	HF	MIFARE
<b>SUPPORTED STANDARDS   TAGS</b>				
ISO 14443A and compatible	Read/Write: MIFARE® Classic Mini / 1K /4K, MIFARE Ultralight®, MIFARE Ultralight® C, MIFARE Ultralight® Nano, MIFARE® DESFire®EV1, MIFARE® DESFire® Light, MIFARE® Smart MX, MIFARE® Plus S / X, MIFARE® Pro X, NTAG 21x, NTAG 424  Read UID only: Read UID only of all other ISO14443A RFID tags	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	Read/Write: MIFARE® Classic 1K / 4K, MIFARE Ultralight®, MIFARE Ultralight® C, NTAG 21x  Read UID only: Read UID only of all other ISO14443A RFID tags	Read/Write: MIFARE® Classic 1K / 4K, MIFARE Ultralight®, MIFARE Ultralight® C, NTAG 21x  Read UID only: Read UID only of all other ISO14443A RFID tags
ISO 14443B and compatible	SRI4K, SRIX4K, 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	–	–

## ORDER CODES

VERSIONS	ORDER CODES
<b>DESFire</b>	
HF   NFC Embedded Module M900 - TTL	OEM-DES-M900-TTL
<b>ISO 18000-3</b>	
HF   NFC Embedded Module M900 - TTL	OEM-DES-M900-TTL-18/3
<b>HF</b>	
HF   NFC Embedded Module M900 - TTL	OEM-HF-M900-TTL
<b>MIFARE</b>	
HF   NFC Embedded Module M900 - TTL	OEM-MF-M900-TTL
<b>TAPE &amp; REEL</b>	
HF   NFC Embedded Module M900 - Tape & Reel	On Request - MOQ 500 Units



## TAPE & REEL OPTION

