

DATASHEET

RFID Module ST835



The HF | NFC Embedded Reader ST835 series is a high performance and low-cost reader series for the integration into vending machines, healthcare, medicine or identification products. 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. 5 different configurations are available which support the common RFID standards such as ISO14443A/B (T=CL), ISO15693, ISO18092 / ECMA-340 (NFC) and ISO 18000-3.

Thanks to its integrated antenna, the HF | NFC Embedded Reader ST835 achieves reading ranges of up to 8 cm (depending on type of transponder).

Its TTL based interface allows an easy and fast integration into existing electronics or a fast paced new development of high end identification applications. Optionally, it is available with an PC/SC interface for payment solutions and RS485 MODBUS.

Smart Technologies' 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:

- Identification Products
- Vending machines
- Mobile application
- Healthcare
- Payment

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ELECTRICAL SPECIFICATIONS	
Power Supply	3.3 – 5 Vdc
Current Consumption	< 150 mA, standby current < 1 mA (low power mode)
Operating Frequency	13.56 MHz
Reading Distance	up to 8 cm*
Antenna	Integrated, 55 x 30 mm
Baudrate	9600 ... 115200 bit/s
Antenna Connector	U.FL
Interfaces	- RS485 - MODBUS - TTL, 3.3 V output levels, input is not 5 V - PC/SC
Connector	Molex PicoBlade 53261 (PCB) 51021 (cable)

* Reading distance depends on tag type and orientation.

MECHANICAL SPECIFICATIONS	
Material	FR-4,
Mounting Option	Screwing

ENVIRONMENTAL CONDITIONS	
Operating Temperature	-20 °C to +80 °C
Storage Temperature	-40 °C to +85 °C
Humidity	up to 95 %, non condensing

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

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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/EU, updated by 2017/2102/EU EN 50581:2012 (valid till 2024-07-07) EN 63000:2018
REACH	EU Guideline 1907/2006, updated by 2020/171/EU
Certificates	FCC, CE, IC**

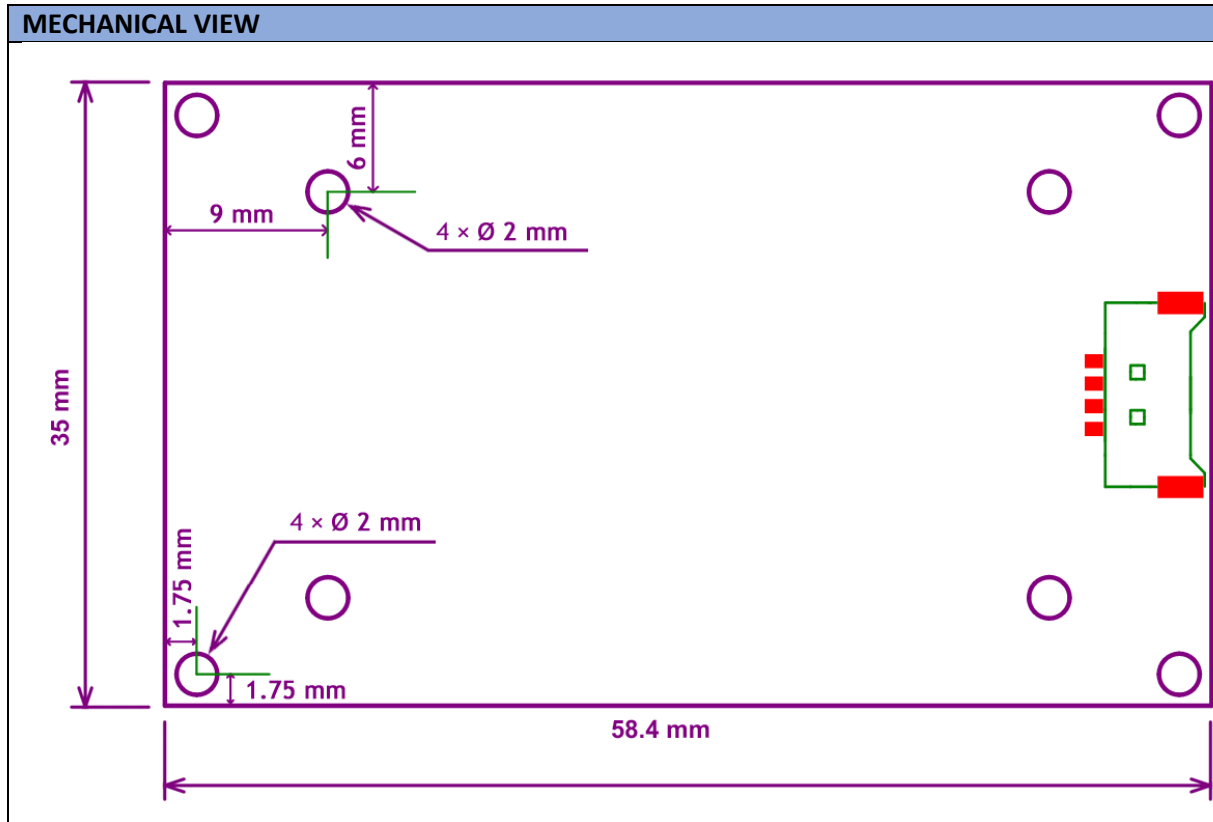
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AVAILABLE VERSIONS					
	DESFIRE	ISO18000-3	PSAM	HF	MIFARE
Dimensions	58.4 x 35 x 4.7 mm				
Weight	8 g				
Power Supply	3.3 – 5Vdc	3.3 Vdc	3.3 – 5Vdc	3.3 – 5Vdc	3.3 – 5Vdc
Power Consumption	< 100 mA, standby current < 1 mA (low power mode)				
Operating Frequency	13.56 MHz				
Reading Distance	up to 8 cm*				
RT FX Speed	up to 848 kBd				
Reader IC	NXP CLRC663				NXP CV520
Interface	TTL, PC/SC, RS485 MODBUS	TTL			
Antenna	integrated, nominal (size: 55 x 30 mm)				
Baudrate	9600 ... 115200 bit/s				
Connector	Molex PicoBlade 53261 (PCB) 51021 (cable)				
SUPPORTED STANDARDS TAGS					
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/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/Write: MIFARE® Classic 1K /4K, MIFARE Ultralight®, MIFARE Ultralight® C, MIFARE ® DESFire®EV1, MIFARE® Smart MX, MIFARE® Plus S / X, MIFARE® Pro X, NTAG 21x	Read/Write: MIFARE® Classic 1K /4K, MIFARE Ultralight®, MIFARE Ultralight® C, NTAG 21x	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 UID only of all other ISO14443A RFID tags	Read UID only: Read UID only of all other ISO14443A RFID tags	Read UID only: Read UID only of all other ISO14443A RFID tags	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/DNA, M24LR16/64, TI Tag-it HF-I, SRF55Vxx (my-d vicinity)				-
ISO 7816	-	-	PSAM T=1	-	-
ISO 18000-3M3 and compatible	-	I-Code ILT-M	-	-	-

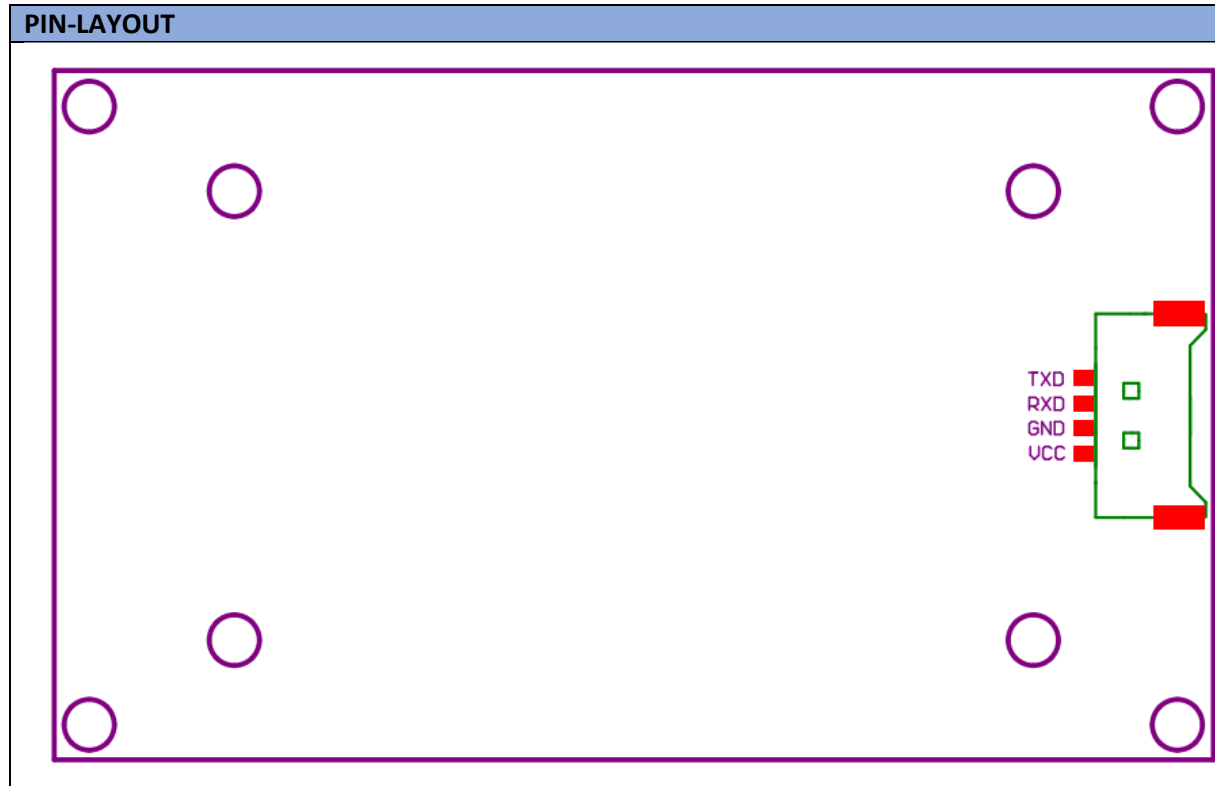
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CONNECTIONS			
PIN	SIGNAL	IO TYPE	DESCRIPTION
1	TxD – up to 3.3V	Output	UART TxD (yellow)
2	RxD – up to 3.3V	Input	UART RxD (green)
3	GND	PWR	Power Supply GND (black)
4	+5 V / +3.3V	PWR	Power supply +5 or 3.3 VDR (red)

ACCESSORIES	
HF NFC Embedded Reader ST835 - Connecting Cable M8	
HF NFC Embedded Reader ST835 - Converter TTL USB 5 V	
HF NFC Embedded Reader ST835 – Connecting Cable USB 1,5 m	
HF NFC Embedded Reader ST835 – Connecting Cable USB 15 mm	

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