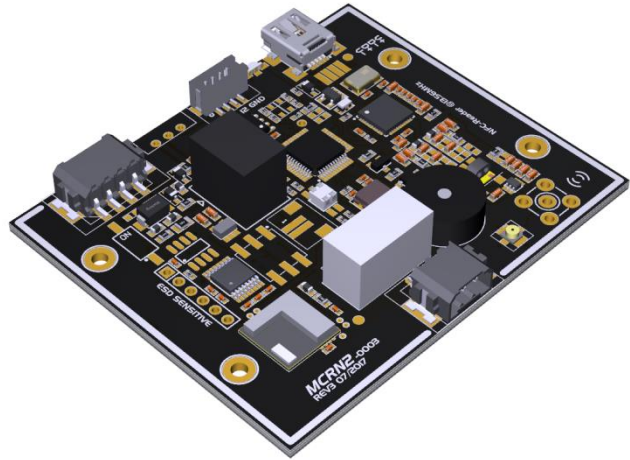


MCRN2 RFID/NFC Card Reader Module

MCRN2 R 1.1

Key Features

Frequency	13.56 MHz
Interface	USB 2.0, RS232/RS485, BLE
Standards	ISO14443A/B, ISO15693
Supported Transponders	MIFARE® Classic MIFARE® Ultralight MIFARE® DESFire NTAG ICODE®
Antennas	Internal & External
Relay	Yes (2A/60V)
Power Supply	+8V to +28V DC or USB Bus



1 DESCRIPTION

The MCRN2 is an advanced NFC-Module and an optimal solution for companies searching after a professional solution. The design and interface possibilities could be individually customized and adjusted to the needs in the application. A powerful internal antenna can read tags up to 80mm distance.

2 ELECTRICAL

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
VIN	Input Voltage	+7	-	+28	V
IIN	Input Current (VIN=+12V)	-	50	200	mA
VR	Maximum Reverse Voltage	-	+60	-	V
TA	Ambient Temperature Range	-30	-	+85	°C
VTVS	TVS Clamping Voltage	-	38.9	-	V
IPEAK	TVS Peak Pulse Current	-	10.3	-	A
PDISS	TVS Power Dissipation	-	-	400	W
RS485-VOD	Differential Output (RL=54Ω)	+1.5	+2	+3.3	V
RS485-A/B	Input Voltages	-8V	-	+13	V
RS485-A/B	Output Voltages	-	+3.3	-	V
RS232 Receiver	Input Voltages	-30	-	+30	V
RS232 Transmitter	Output Voltages	±5	±5.2	-	V
ESD Performance					
RS485-A/B	IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact)				
RS232	IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact)				
USB	ESD Protection for 2 high-speed I/O channels and VDD IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact)				
IEC 61000-4-4 (EFT) 40A (5/50ns), IEC 61000-4-5 (Lightning) 12A (8/20μs)					

3 PROTECTIVE FEATURES

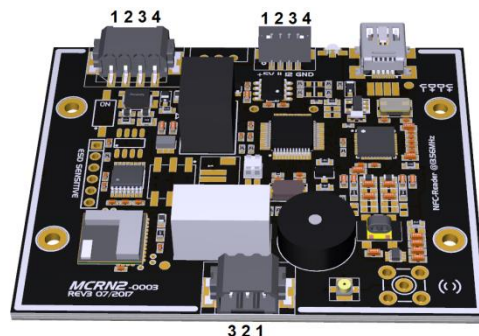
- Reverse polarity protection
- Overvoltage transient protection
- Thermal shutdown
- Current limiting
- ESD protection
- Short circuit protection

4 CONNECTOR PINOUT

Main Connector	RS232 Mode	RS485 Mode
1	GND - Ground	GND - Ground
2	RX Input	B
3	TX Output	A
	+VIN (+8 to +28 VDC)	+VIN (+8 to +28 VDC)

Relay Connector	Description
1	NO – Normally Open
2	COM – Common
3	NC – Normally Closed

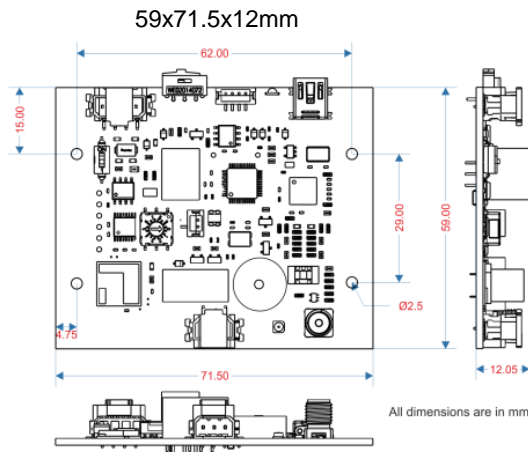
IO Connector	LED Mode	Output Mode	IIC Mode
1	+5VDC	+5VDC	+5VDC
2	LED1 cathode input	Output1	SCL - Clock
3	LED2 cathode input	Output2	SDA - Data
4	GND - Ground	GND - Ground	GND - Ground



5 USB INTERFACE SPECIFICATION

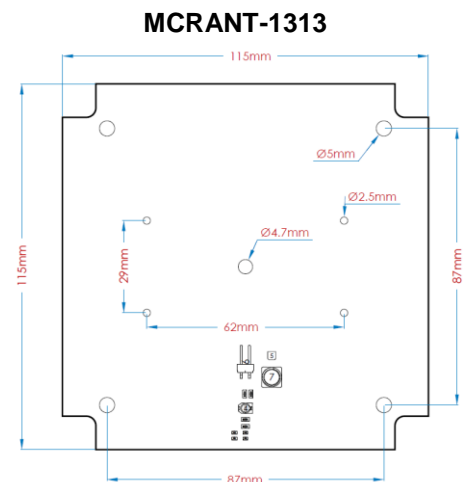
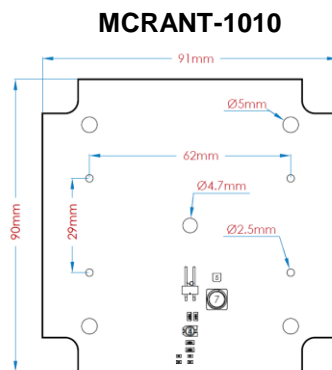
Interface Class	HID (Human Interface Device)
Speed	Full (12 Mbit/s)
Product ID	81B1h
Vendor ID	1FC9h
Device Descriptor	MT-MCRN
Endpoint0 00h	00h Control endpoint
Endpoint1 IN	81h interrupt endpoint to retrieve data
Endpoint1 OUT	01h interrupt endpoint to send data
Packet size	Fixed to 64 bytes (non used bytes set to 00h) Multiple packets in case of bigger frames

6 DIMENSIONS



Antennas

Different external 50 Ohm antennas with coaxial cable.



7 FEATURES

- USB 2.0 Full-Speed interface
- RS232/485/TTL up to 230K Baud
- Rotary switch for network addressing and switchable 120 Ohm termination resistance
- Bluetooth® Smart Interface (BLE 4.1)
- Tri-color RGB LED indicator
- Full NFC support
- Integrated and external antennas
- 1 x Relay 2A/60V
- 2 x GPIO
- Buzzer and optional Real Time Clock
- 8MBit external flash memory
- Bootloader for firmware update
- Power over USB
- +8V to +28V DC power supply (optional +5V version)
- 50mA @ +12V current consumption
- -30 to +85 °C ambient Temperature

8 ORDERING CODES

ARTICLE NR:	USB	RS232	RS485	BLE	RELAY	Int. ANT	Ext. ANT
MCRN2-U000	X					X	
MCRN2-U100	X			X		X	
MCRN2-1110	X		X			X	
MCRN2-1100	X	X				X	
MCRN2-1000	X	X		X	X	X	X

