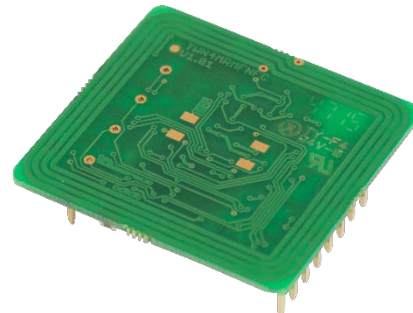


MINI READER MIFARE NFC

COMPACT PROGRAMMABLE HF RFID READER/WRITER



Mini Reader MIFARE NFC
Top view



Mini Reader MIFARE NFC
Bottom view

Elatec's Mini Reader MIFARE NFC is designed for integration into machines, handheld computers or any other device. The focus has especially been set on size, low power consumption, price and flexibility. Thanks to its compact dimensions, integration directly on a PC board is possible.

Outstanding features are: 4 user-configurable ports (to be configured as input or output), beeper support and an integrated high-performance antenna. The simple ASCII or Binary protocol enables quick software development cycles. All host communication is done via SPI or asynchronous serial TTL interface. The module offers positions for placement for two LEDs that can be controlled by software. An external Secure Access Module (SAM) is supported for enhanced security and cryptographic performance. This enables the application to perform secure transactions, e.g. payment terminals etc.

Special features:

- + firmware update in the field possible
- + direct chip-commands support
- + operating voltage: 3.15 V – 5.5 V DC
- + low power (< 2 μ A)
- + supports connection of external ISO7816 compatible SAM cards
- + compact design (33 x 30 x 11 mm)
- + integrated antenna
- + interfaces: Serial TTL or SPI
- + ASCII or Binary protocol
- + 4 GPIOs
- + industrial operating temperature: -25 °C to +80 °C
- + pin compatible downgrade from TWN4 MultiTech HF Mini Reader T4MR-F
- + 3D construction data (STEP) available on request



Elevator



EV Chargers



Access



Shop POS



Fitness
Equipment



Ticket POS



PC Log-on



Document
Management



Driver ID



Vending



Parking



Gaming



Locker Locks




Time
Attendance



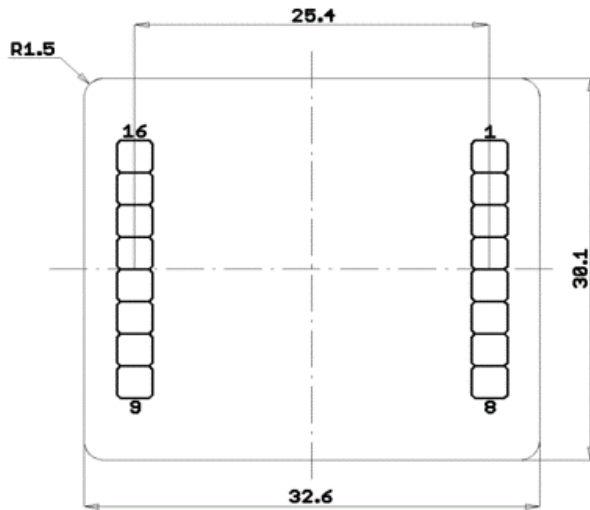
Industrial
PC

TECHNICAL DATA

FREQUENCY	13.56 MHz (HF)				
ANTENNA	Integrated				
DIMENSIONS (L X W X H)	32.6 mm x 30.1 mm x 11.2 mm / 1.28 inch x 1.19 inch x 0.44 inch				
POWER SUPPLY	3.15 V - 5.5 V DC				
CURRENT CONSUMPTION	RF field on: 80 mA typically, RF field off: 10 mA, Power Down: < 2 μ A				
TEMPERATURE RANGE	Operating: -25 °C up to +80 °C (-13 °F up to +176 °F) Storage: -45 °C up to +85 °C (-49 °F up to +185 °F)				
RELATIVE HUMIDITY	5% to 95% non-condensing				
READ- / WRITE DISTANCE	Up to 70 mm / 2.75 inch, depending on environment and transponder				
TRANSMISSION SPEED	9600 baud, 8N1 (default) – up to 115200 baud				
MTBF	500,000 hours				
SUPPORTED TRANSPONDERS (STANDARD)	<p><u>ISO14443A:</u> LEGIC Advant¹⁾, MIFARE Classic EV1²⁾, MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1³⁾, MIFARE DESFire EV2³⁾, MIFARE Plus S, X, MIFARE Pro X¹⁾, MIFARE Smart MX⁴⁾, MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1²⁾, NTAG2xx, PayPass⁴⁾, SLE44R35, SLE66Rxx (my-d move)⁴⁾</p> <p><u>ISO14443B:</u> Calypso⁴⁾, CEPAS⁴⁾, HID iCLASS¹⁾, Moneo⁴⁾, Pico Pass⁵⁾, SRI4K, SRIX4K, SRI512, SRT512</p> <p><u>ISO18092 ECMA-340:</u> NFC Forum Tag 1-5⁶⁾, Sony FeliCa¹⁾</p>				
PERIPHERAL INTERFACES	TTL serial (logic level 3.3 V, CMOS, 5 V tolerant), SPI, 4 GPIOs				
OS SUPPORT	Windows XP, Vista, Embedded CE ⁷⁾ , 7 (32-/64-bit), 8, 8.1, 10, Linux, Android ⁷⁾ , iOS ⁷⁾ , MAC OS X ⁷⁾				
CERTIFICATIONS	RoHS-II compliant, CE/RED				
ORDER CODE(S)	<table border="0"> <tr> <td>T3MR-FC1</td> <td>OEM Board</td> </tr> <tr> <td>T3MK-F, including T3MR-FC1 and CAB-U9</td> <td>Development Board</td> </tr> </table> 	T3MR-FC1	OEM Board	T3MK-F, including T3MR-FC1 and CAB-U9	Development Board
T3MR-FC1	OEM Board				
T3MK-F, including T3MR-FC1 and CAB-U9	Development Board				

¹⁾UID only ²⁾r/w enhanced security features on request ³⁾AES only ⁴⁾r/w in direct chip command mode ⁵⁾UID only, read/write on request ⁶⁾NFC Forum Tag 1 & 5 not supported ⁷⁾On request

DRAWING (COMPONENT SIDE)



Pin spacing 2.54 mm

PINNING

Pin	Name	Description
1	RESET	Asynchronous reset
2	PWRDWN	Hard power down
3	GND	Ground
4	VCC	3.3 – 5V
5	RXD/MOSI	UART/SPI receiver input
6	TXD/MISO	UART/SPI transmitter output
7	SCK	SPI serial clock input
8	SS	SPI slave select input
9	VSAM	3.0V regulated supply for SAM
10	SAM_IO	Bidirectional SAM I/O line
11	GPIO3	General purpose input/output 3
12	GPIO2	General purpose input/output 2
13	GPIO1	General purpose input/output 1
14	GPIO0	General purpose input/output 0
15	SAM_CLK	SAM clock output
16	SAM_RST	SAM reset output