

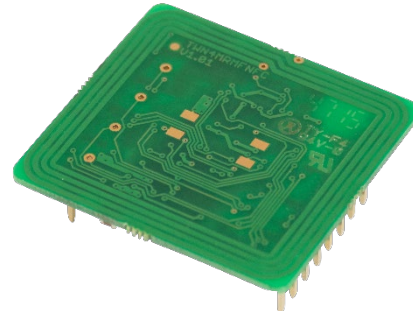
# TWN3

## MINI READER MIFARE NFC

### COMPACT PROGRAMMABLE HF RFID READER/WRITER



TWN3 Mini Reader MIFARE NFC  
top view\*



TWN3 Mini Reader MIFARE NFC  
bottom view\*

\*The product images are illustrative only and might differ from the actual product.

Elatec's TWN3 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: 3.20 V – 5.5 V DC
- + Low power (< 2  $\mu$ A)
- + Supports connection of external ISO 7816 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



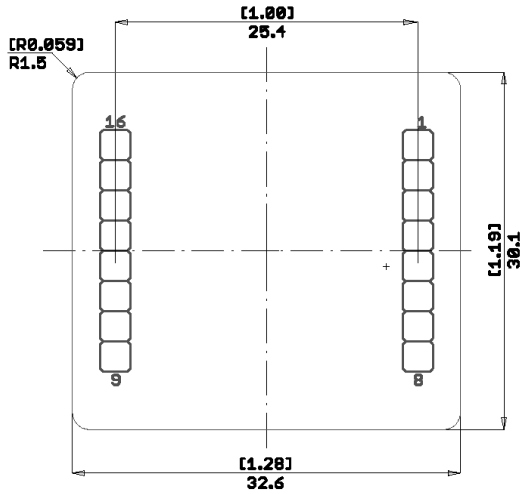
Industrial  
PC

## 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	3.20 V - 5.5 V DC Limited power source according to IEC 60950-1 or PS2 classified IEC 62368-1, short-circuit current < 8 A
CURRENT CONSUMPTION	RF field on: 80 mA typically, RF field off: 10 mA, Power Down: < 2 µA
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
MTBF	500,000 hours
SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ	<u>ISO14443A:</u> LEGIC Advant <sup>1)</sup> , MIFARE Classic EV1 <sup>2)</sup> , MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1 <sup>1)</sup> , MIFARE DESFire EV2 <sup>1)</sup> , MIFARE DESFire Light <sup>1)</sup> , MIFARE Plus S, X, MIFARE Pro X <sup>1)</sup> , MIFARE Smart MX <sup>1)</sup> , MIFARE Ultralight, MIFARE Ultralight C <sup>1)</sup> , MIFARE Ultralight EV1 <sup>2)</sup> , NTAG2xx <sup>2)</sup> , PayPass <sup>1)</sup> , SLE44R35 <sup>1)</sup> , SLE66Rxx (my-d move) <sup>1)</sup> <u>ISO14443B:</u> Calypso <sup>1)</sup> , CEPAS <sup>1)</sup> , HID iCLASS <sup>1)</sup> , Moneo <sup>1)</sup> , Pico Pass <sup>1)</sup> , SRI4K, SRIX4K, SRI512, SRT512 <u>ISO18092 ECMA-340:</u> NFC Forum Tag 1-5 <sup>3)</sup> , Sony FeliCa <sup>1)</sup>
OS SUPPORT	Windows XP, Vista, Embedded CE <sup>4)</sup> , 7 (32-/64-bit), 8, 8.1, 10, Linux, Android <sup>4)</sup> , iOS <sup>4)</sup> , MAC OS X <sup>4)</sup>
PERIPHERAL INTERFACES	TTL serial (logic level 3.3 V, CMOS, 5 V tolerant), SPI, 4 GPIOs
TRANSMISSION SPEED	9600 baud, 8N1 (default) – up to 115200 baud
CERTIFICATION NAME	TWN3 Mini Reader MIFARE NFC
CERTIFICATION(S)	CE/RED, REACH and RoHS-III compliant
ORDER CODE(S)	T3MR-FC1 OEM Board T3MK-F, including T3MR-FC1 and CAB-U9 Development Board

<sup>1)</sup>UID only <sup>2)</sup>r/w enhanced security features on request <sup>3)</sup>NFC Forum Tag 1 & 5 not supported <sup>4)</sup>On request

## DRAWING (COMPONENT SIDE)



All dimensions in mm [inch]

## PINNING

Pin	Name	Description
1	RESET	Asynchronous reset
2	PWRDWN	Hard power down
3	GND	Ground
4	VCC	3.3 – 5 V
5	RXD/MOSI	UART/SPI receiver input
6	TXD/MISO	UART/SPI transmitter input
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

Pin spacing 2.54 mm

### ELATEC GmbH

Zeppelinstr. 1  
82178 Puchheim • Germany  
P +49 89 552 9961 0 • F +49 89 552 9961 129  
E-Mail: info-rfid@elatec.com  
Website: elatec.com

### ELATEC Inc.

4203 SW High Meadows Ave  
Palm City • FL 34990 • USA  
P +1 772 210 2263 • F +1 772 382 3749  
E-Mail: americas-info@elatec.com  
Website: elatec.com

### ELATEC Technology (Shenzhen) LLC

No. 716 Industrial Bank Tower  
Futian District • Shenzhen • China  
P/F +86 755 2394 6014  
E-Mail: apac-info@elatec.com  
Website: elatec.com

ELATEC reserves the right to change any information or data in this document without prior notice. ELATEC declines all responsibility for the use of this product with any other specification but the one mentioned above. Any additional requirement for a specific customer application has to be validated by the customer himself at his own responsibility. Where application information is given, it is only advisory and does not form part of the specification. Disclaimer: All names used in this document are registered trademarks of their respective owners.