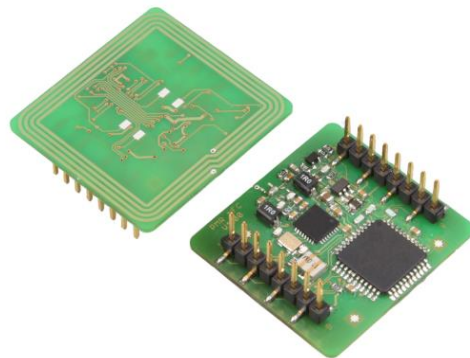


TWN4 MULTITECH HF MINI READER*

13.56MHz Contactless Reader/Writer

*Previously known as TWN4 Mini Reader MIFARE NFC





Elatec's TWN4 MultiTech HF Mini Reader is designed for integration into machines, handheld computers or any other human interface devices such as displays, panels, etc. The focus has especially been set on size, flexibility and price. Thanks to its compact dimensions, integration directly on a PC board is possible.

The TWN4 Simple Protocol enables quick software development cycles. All host communication is done via USB or asynchronous serial CMOS/TTL interface. The module offers positions for placement of two LEDs that can be controlled by software.

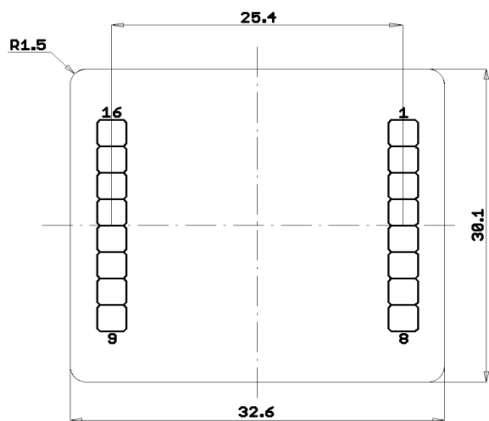
An external Secure Access Module (SAM) is supported for enhanced security and cryptographic performance. This enables the application to perform secure transactions.

Key Features:

- 3.15 – 5.5 V DC
- Powerful SDK for writing Apps which are executed directly on the reader
- Infield Upgradeable
- Direct chip-commands support
- Onboard 18kB flash storage
- Compact design (33x30x11mm)
- Integrated antenna
- USB, Serial (logical level 3.3V, CMOS 5V tolerant), SPI², Clock/Data³, Wiegand³, 1-Wire²)
- Firmware based on versatile TWN4 technology
- 4 GPIOs
- Supports connection of ISO7816 compatible SAM cards
- Industrial operating temperature: -25°C to +80°C
- Pin Compatible Upgrade from Mini Reader T3MR-F
- Step Model Data on request

Technical Data			
Frequency	13.56 MHz		
Housing	None		
Dimensions (L x W x H)	32.6mm x 30.1mm x 11.2mm / 1.28inch x 1.19inch x 0.44inch		
Power Supply	3.15 – 5.5 V DC		
Current Consumption	RF field on: typically 110mA		
Temperature Range	Operating: -25°C up to +80°C (-13°F up to +176°F) Storage: -40°C up to +85°C (-40°F up to +185°F)		
Read-/Write Distance	Up to 7cm / 2.75inch depending on tag and environment		
HOST Interface	USB, serial (logical level 3.3V, CMOS 5V tolerant), SPI ²⁾ , Clock/Data ³⁾ , Wiegand ³⁾ , 1-Wire ²⁾		
OS Support	Windows XP, Vista, Embedded CE ²⁾ , 7(32-/64-bit), 8, 8.1, 10, Linux, Android, iOS ²⁾ , MAC OS X ²⁾		
Transmission Speed	HOST: USB: Full speed (12Mbit)	AIR: up to 848Kbit/s	
Modes of Operation	<ul style="list-style-type: none"> USB keyboard emulation – USB virtual COM port – Transparent (direct chip-commands support) CCID and PC/SC 2.01¹⁾ 		
Relative Humidity	5% to 95% non-condensing		
Antenna	Integrated		
Supported Transponders	Standard <ul style="list-style-type: none"> 13.56MHz / ISO14443A: MIFARE Classic, Classic 1k & 4k EV1⁷⁾, Mini, DESFire EV1, Plus S&X, Pro X⁸⁾, SmartMX⁸⁾, Ultralight, Ultralight EV1⁷⁾, Ultralight C, SLE44R35, SLE66Rxx (my-d move), LEGIC Advant⁵⁾, PayPass⁸⁾, NTAG2XX⁷⁾ 13.56MHz / ISO14443B: Calypso⁸⁾ incl. Innovatron radio protocol 14443-B⁶⁾, CEPAS⁸⁾, HID iCLASS⁵⁾, Moneo⁸⁾, PicoPass⁸⁾, SRI512, SRT512, SRI4K, SRX4K 13.56MHz / ISO15693: EM4x33⁸⁾, EM4x35⁸⁾, HID iCLASS⁵⁾, ICODE SLI, LEGIC Advant⁵⁾, M24LR16/64, Tag-it, SRF55Vxx (my-d vicinity)⁸⁾, PicoPass⁸⁾ 13.56MHz / ISO18092 / NFC: NFCIP-1: Active and passive communication mode, Peer-to-Peer, NFC Forum Tag Type 1-4, Sony FeliCa⁹⁾ Version I¹⁰⁾ Standard + HID iCLASS, HID iCLASS SE/SR/SEOS (CSN and Facility Code/PAC) ⁶⁾		
Certifications	CE, WEEE, RoHS-II compliant		
MTBF	500,000 hours		
Weight	Approx. 4g		
	TWN4 MultiTech HF Mini Reader	Option USB	Development Board TWN4 MultiTech HF Mini Reader
Order Code	Standard T4MR-F Version I T4MR-F-I 	T4MR-F-U T4MR-F-UI	T4MK-F, including T4MR-F 

¹⁾In Preparation ²⁾On Request Only ³⁾External Interface Required ⁵⁾UID Only ⁶⁾UID Only, read/write On Request ⁷⁾r/w enhanced security features on request ⁸⁾r/w in direct chip command mode ⁹⁾UID + r/w public area ¹⁰⁾Version I requires external TWN4 SIO Card

Drawing (Component Side)		Pinning		
 <p>Pin spacing 2.54mm</p>		Pin	Name	Description
		1	RESET	Hard reset (input, low active, logic level, internally pulled-up)
		2	PWRDWN	Turn off voltage regulator (input, low active, logic level, internally pulled-up)
		3	GND	Ground (USB black wire)
		4	VCC	Power supply input (3.15 – 5.5V, USB red wire)
		5	RXD/USB+	UART RXD/USB Data+ (USB green wire)
		6	TXD/USB-	UART TXD/USB Data- (USB white wire)
		7	Res.	Reserved for future use (SCK from SPI host interface).
		8	Res.	Reserved for future use (SS- from SPI host interface).
		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		

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