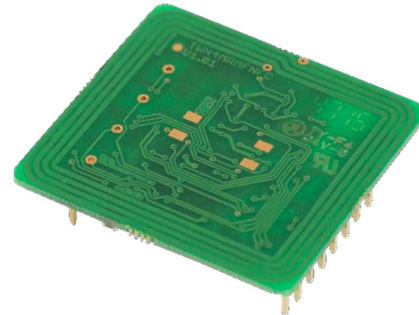


T4 MULTITECH HF MINI

COMPACT PROGRAMMABLE RFID/NFC READER/WRITER



T4 MultiTech HF Mini
Top view



T4 MultiTech HF Mini
Bottom view

ASE's T4 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 T4 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.

Special features:

- + powerful SDK for writing apps which are executed directly on the reader
- + firmware update in the field possible
- + direct chip-commands support
- + operating voltage: 3.15 V – 5.5 V DC
- + compact design (33 x 30 x 11 mm)
- + integrated antenna
- + 4 GPIOs
- + industrial operating temperature: -25 °C to +80 °C
- + pin compatible upgrade from Mini Reader T3MR-F
- + firmware based on versatile T4 technology
- + supports quick (re)configuration over network and over wireless interface with T4 CONFIG Card
- + T4 Upgrade Card for I option available on request
- + 3D construction data (STEP) available on request

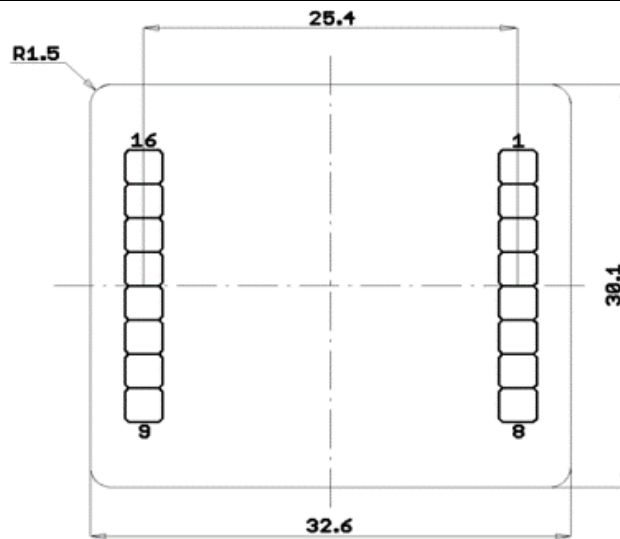


TECHNICAL DATA

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: 110 mA typically										
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	Host: USB Full speed (12 Mbit/s), Serial TTL: up to 115.200 baud; Air: up to 848 kbit/s										
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01										
MTBF	500,000 hours										
WEIGHT	Approx. 4 g										
SUPPORTED TRANSPONDERS (STANDARD)	<p><u>ISO14443A:</u> LEGIC Advant¹⁾, MIFARE Classic EV¹²⁾, MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1, MIFARE DESFire EV2²⁾, MIFARE Plus S, X, MIFARE Pro X³⁾, MIFARE Smart MX³⁾, MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1, NTAG2xx, PayPass³⁾, SLE44R35, SLE66Rxx (my-d move)³⁾, Topaz</p> <p><u>ISO14443B:</u> Calypso³⁾, Calypso Innovatron protocol³⁾, CEPAS³⁾, HID iCLASS¹⁾, Moneo³⁾, Pico Pass⁴⁾, SRI4K, SRIX4K, SRI512, SRT512</p> <p><u>ISO18092 ECMA-340:</u> NFC Forum Tag 1-5, NFC Peer-to-Peer, Sony FeliCa⁵⁾, NFC Active and passive communication mode</p> <p><u>ISO15693:</u> EM4x33³⁾, EM4x35³⁾, HID iCLASS¹⁾, HID iCLASS SE/SR¹⁾, ICODE SLI, LEGIC Advant¹⁾, M24LR16/64, SRF55Vxx (my-d vicinity)³⁾, Tag-it, PicoPass⁴⁾</p>										
SUPPORTED TRANSPONDERS (VERSION I)	Requires external TWN4 SIO Card, All Standard Transponders, HID iCLASS, HID iCLASS SE/SR/SEOS (CSN and Facility Code/PAC) ⁶⁾ , HID iCLASS Elite & SE Elite										
OS SUPPORT	Windows XP, Vista, 7 (32-/64-bit), 8, 8.1, 10, Linux, MAC OS X ⁷⁾										
PERIPHERAL INTERFACES	USB, TTL serial (logic level 3.3 V, CMOS, 5 V tolerant), SPI ⁷⁾ , 4 GPIOs, Clock/Data, Wiegand										
CERTIFICATION NAME	TWN4 Mini Reader MIFARE NFC										
CERTIFICATION(S)	CE/RED, RoHS-II compliant										
ORDER CODE(S)	<table> <tr> <td>T4MK-F, including T4MR-F</td> <td>Development Board</td> </tr> <tr> <td>T4MR-F</td> <td>OEM Board (TTL serial)</td> </tr> <tr> <td>T4MR-F-U</td> <td>OEM Board (USB)</td> </tr> <tr> <td>T4MR-F-I</td> <td>OEM Board (TTL serial) Version I</td> </tr> <tr> <td>T4MR-F-UCCID</td> <td>OEM Board (USB CCID) Version I</td> </tr> </table>	T4MK-F, including T4MR-F	Development Board	T4MR-F	OEM Board (TTL serial)	T4MR-F-U	OEM Board (USB)	T4MR-F-I	OEM Board (TTL serial) Version I	T4MR-F-UCCID	OEM Board (USB CCID) Version I
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¹⁾UID only ²⁾r/w enhanced security features on request ³⁾r/w in direct chip command mode ⁴⁾UID only, read/write on request ⁵⁾UID + r/w public area ⁶⁾UID + PAC (CSN & Facility Code), r/w on request ⁷⁾On request

DRAWING



Top view

Pin spacing 2.54 mm

PINNING

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