

# TWN4 MULTITECH 2 LF HF

## MULTI-FREQUENCY RFID READER FOR LF, HF AND NFC



TWN4 MultiTech 2 LF HF  
(exemplary illustration)

The TWN4 MultiTech 2 family of contactless RFID readers and modules allows users to read and write to almost any LF and HF tags and labels. All products support NFC and, optionally, Bluetooth Low Energy (BLE). In addition, they are also compatible with the two most commonly used smartphone operating systems, Android and iOS, which gives the option to integrate them in mobile identification applications. The desktop readers are available as Plug & Play devices that can be easily customized (i.e. inlay and housing color), whereas the PCB modules offer a large amount of interfaces and a perfect form factor for an easy and quick integration in any host device. This broad range of product features makes the TWN4 MultiTech 2 family an excellent solution for almost every project.

Key features of the TWN4 MultiTech 2 LF HF desktop reader include a powerful SDK for writing apps that are executed directly on the reader, the possibility to upgrade the firmware in the field and a direct chip-commands support. Additionally, the reader can simultaneously read more than 60 RFID technologies from low (LF) and high frequency (HF) bands, including NFC. This gives the option to select as many of the technologies required instead of being forced to select just a few ones.

### Special features:

- + Possibility to read more than 60 RFID technologies
- + Supports two RFID frequencies: 125 kHz and 13.56 MHz
- + Supports Apple VAS and ECP 2.0<sup>1)</sup>
- + Powerful SDK for writing apps which are executed directly on the reader
- + Firmware update in the field possible
- + On-board 18 kB flash storage, e.g. for storing user accessible non-volatile data
- + Direct chip-commands support
- + CCID and PC/SC 2.01



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	125 kHz (LF) / 13.56 MHz (HF)																								
ANTENNA(S)	Integrated																								
HOUSING	Material: ABS UL94-V0 Color: black or white																								
DIMENSIONS (L X W X H)	Approx. 88.00 x 56.00 x 18.50 mm / 3.46 x 2.20 x 0.73 inch																								
POWER	USB: 4.3 V - 5.5 V RS-232: requires 5 V external power supply PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A																								
POWER OUTPUT	125 kHz: -10.01 dbμA/m at 10 meters 13.56 MHz: -2.25 dbμA/m at 10 meters																								
MODULATION	ASK / ASK																								
CURRENT CONSUMPTION	RF field on: 120 mA typically / Sleep: 500 μA typ.																								
TEMPERATURE RANGE	Operating: -25 °C up to +70 °C (-13 °F up to +158 °F) Storage: -40 °C up to +75 °C (-40 °F up to +167 °F)																								
RELATIVE HUMIDITY	5% to 95% non-condensing																								
READ/WRITE DISTANCE	LF and HF: up to 100 mm / 4 inch, depending on environment and transponder																								
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01																								
MTBF	500,000 hours																								
WEIGHT	Approx. 115 g / 4.06 oz (with cable)																								
OS SUPPORT	Windows 7 (32-/64-bit) and higher versions, Linux, Android <sup>2)</sup> , iOS <sup>2)</sup> , MAC OS X <sup>2)</sup>																								
PERIPHERAL INTERFACES	USB, RS-232, 2 SAM slots																								
TRANSMISSION SPEED	Host: USB full speed (12 Mbit/s), RS-232: up to 115,200 baud, HF Air: up to 848 kbit/s																								
CERTIFICATION NAME	TWN4 MultiTech 2 LF HF																								
CERTIFICATION(S)	CE/RED, FCC, IC, UL listed, REACH and RoHS-III compliant, Apple VAS and ECP 2.0 certified <sup>1)</sup> and many more <sup>3)</sup>																								
ORDER CODE(S)	<table border="0"> <tr> <td><b>T4BT-FB2BEL6</b></td> <td>Standard reader with USB cable, black</td> </tr> <tr> <td>T4BT-FB2WEL6</td> <td>Standard reader with USB cable, white</td> </tr> <tr> <td>T4BT-FR2BEL6</td> <td>Standard reader with RS-232 cable, black</td> </tr> <tr> <td>T4BT-FR2WEL6</td> <td>Standard reader with RS-232 cable, white</td> </tr> <tr> <td><b>T4BT-FB2BEL6-P</b></td> <td>Reader with USB cable and P option, black</td> </tr> <tr> <td>T4BT-FB2WEL6-P</td> <td>Reader with USB cable and P option, white</td> </tr> <tr> <td>T4BT-FR2BEL6-P</td> <td>Reader with RS-232 cable and P option, black</td> </tr> <tr> <td>T4BT-FR2WEL6-P</td> <td>Reader with RS-232 cable and P option, white</td> </tr> <tr> <td><b>T4BT-FB2BEL6-PI</b></td> <td>Reader with USB cable and PI option, black</td> </tr> <tr> <td>T4BT-FB2WEL6-PI</td> <td>Reader with USB cable and PI option, white</td> </tr> <tr> <td>T4BT-FR2BEL6-PI</td> <td>Reader with RS-232 cable and PI option, black</td> </tr> <tr> <td>T4BT-FR2WEL6-PI</td> <td>Reader with RS-232 cable and PI option, white</td> </tr> </table>	<b>T4BT-FB2BEL6</b>	Standard reader with USB cable, black	T4BT-FB2WEL6	Standard reader with USB cable, white	T4BT-FR2BEL6	Standard reader with RS-232 cable, black	T4BT-FR2WEL6	Standard reader with RS-232 cable, white	<b>T4BT-FB2BEL6-P</b>	Reader with USB cable and P option, black	T4BT-FB2WEL6-P	Reader with USB cable and P option, white	T4BT-FR2BEL6-P	Reader with RS-232 cable and P option, black	T4BT-FR2WEL6-P	Reader with RS-232 cable and P option, white	<b>T4BT-FB2BEL6-PI</b>	Reader with USB cable and PI option, black	T4BT-FB2WEL6-PI	Reader with USB cable and PI option, white	T4BT-FR2BEL6-PI	Reader with RS-232 cable and PI option, black	T4BT-FR2WEL6-PI	Reader with RS-232 cable and PI option, white
<b>T4BT-FB2BEL6</b>	Standard reader with USB cable, black																								
T4BT-FB2WEL6	Standard reader with USB cable, white																								
T4BT-FR2BEL6	Standard reader with RS-232 cable, black																								
T4BT-FR2WEL6	Standard reader with RS-232 cable, white																								
<b>T4BT-FB2BEL6-P</b>	Reader with USB cable and P option, black																								
T4BT-FB2WEL6-P	Reader with USB cable and P option, white																								
T4BT-FR2BEL6-P	Reader with RS-232 cable and P option, black																								
T4BT-FR2WEL6-P	Reader with RS-232 cable and P option, white																								
<b>T4BT-FB2BEL6-PI</b>	Reader with USB cable and PI option, black																								
T4BT-FB2WEL6-PI	Reader with USB cable and PI option, white																								
T4BT-FR2BEL6-PI	Reader with RS-232 cable and PI option, black																								
T4BT-FR2WEL6-PI	Reader with RS-232 cable and PI option, white																								

## SUPPORTED TRANSPONDERS<sup>4)</sup>

SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ	<p><u>ISO 14443A:</u> HID iCLASS DESFire<sup>5)</sup> HID iCLASS MIFARE Classic<sup>5)</sup> HID iCLASS SEOS<sup>5)</sup> LEGIC Advant<sup>5)</sup>, NTAG2xx, MIFARE Classic, MIFARE Classic EV1<sup>6)</sup>, MIFARE DESFire EV1, MIFARE DESFire EV2<sup>7)</sup>, MIFARE DESFire EV3<sup>7)</sup>, MIFARE DESFire Light<sup>2)</sup>, MIFARE Mini, MIFARE Plus S, MIFARE Plus X, MIFARE Smart MX<sup>8)</sup>, MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1<sup>6)</sup>, SLE44R35<sup>8)</sup>, SLE66Rxx (my-d move)<sup>8)</sup>, Topaz</p> <p><u>ISO 14443B:</u> Calypso<sup>8)</sup>, Calypso Innovatron protocol<sup>8)</sup>, CEPAS<sup>8)</sup>, CTS, HID iCLASS<sup>5)</sup>, Pico Pass<sup>9)</sup>, SRI4K, SRI512, SRIX4K, SRT512</p>
---	--

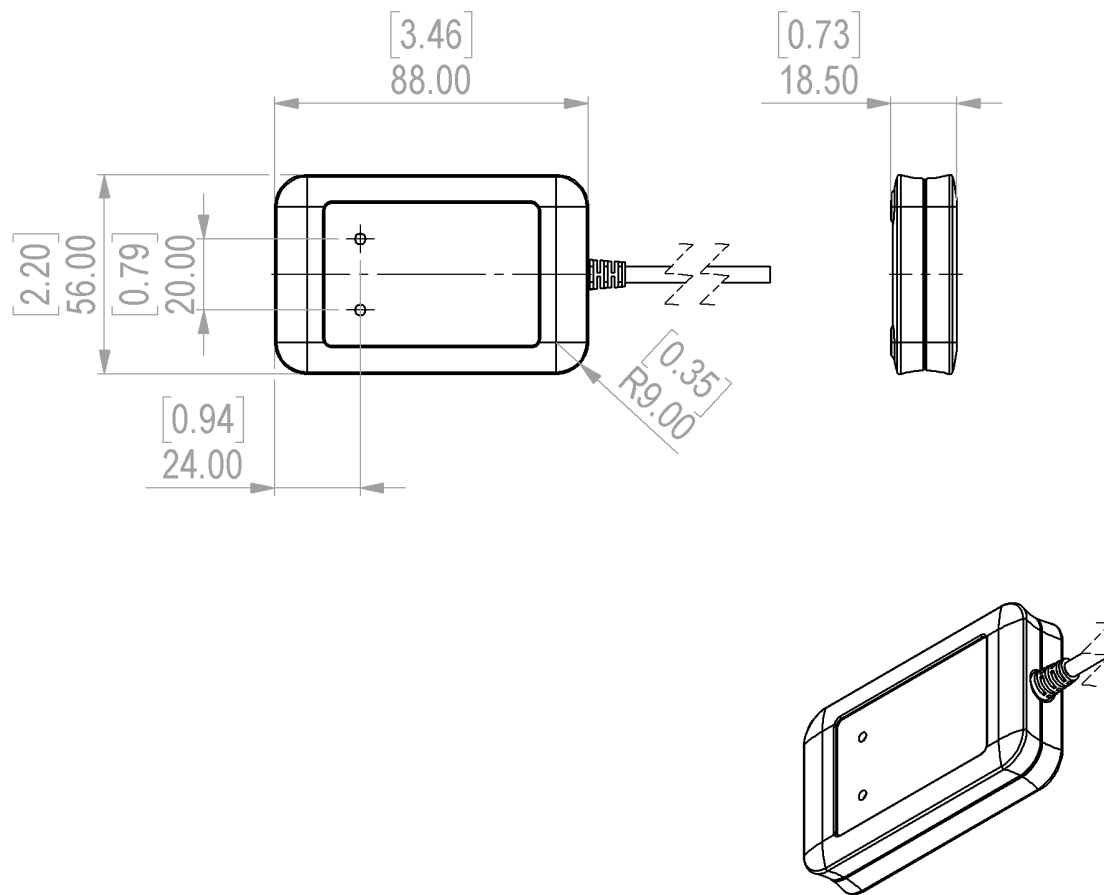
	<p><u>ISO 15693:</u> EM4x33<sup>8)</sup>, EM4x35<sup>8)</sup>, HID iCLASS<sup>5)</sup>, HID iCLASS Elite/SE/SR<sup>5)</sup>, ICODE SLI, LEGIC Advant<sup>5)</sup>, M24LR16/64, MB89R118/119, PicoPass<sup>9)</sup>, SRF55Vxx (my-d vicinity)<sup>8)</sup>, Tag-it</p> <p><u>ISO 18092 / ECMA-340:</u> NFC Forum Tag 1-5, Sony FeliCa<sup>10)</sup></p> <p><u>LEAF Identity:</u> LEAF<sup>11)</sup></p>
SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ <sup>12)</sup>	AWID, Cardax <sup>13)</sup> , CASI-RUSCO, Deister <sup>13)</sup> , EM4050, EM4100, EM4102, EM4150, EM4200 <sup>14)</sup> , EM4305, EM4450, EM4550, HITAG 1 <sup>15)</sup> , HITAG 2 <sup>15)</sup> , HITAG S <sup>15)</sup> , ICT <sup>2)</sup> , IDTECK, ISONAS, Keri, Miro, Nedap <sup>13)</sup> , Pyramid, Q5, T5557, T5567, T5577, TITAN (EM4050), UltraProx, UNIQUE, ZODIAC
SUPPORTED TRANSPONDERS (P OPTION)	All standard transponders, G-Prox <sup>13)</sup> , HID 1326 Prox II, HID 1336 DuoProx II, HID 1346 ProxKey III, HID 1386 ISO Prox II, HID 1391 Micro Prox, HID Prox, Indala, ioProx, Nexwatch
SUPPORTED TRANSPONDERS (PI OPTION) <sup>16)</sup>	All standard transponders, all P option transponders, HID iCLASS, HID iCLASS DESFire, HID iCLASS Elite, HID iCLASS MIFARE Classic, HID iCLASS SE/SEOS/SR
SUPPORTED TRANSPONDERS (A OPTION)	Apple ECP 2.0 <sup>1)</sup>
SUPPORTED TRANSPONDERS (AV OPTION)	Apple VAS <sup>1)</sup>

<sup>1)</sup>For Apple licensees only and eligible implementers. Please contact ELATEC for details. <sup>2)</sup>On request <sup>3)</sup>More information on request <sup>4)</sup>Unless otherwise agreed with ELATEC, the product is delivered with a standard firmware version that might be older than the latest firmware developed by ELATEC. This firmware version can be changed using the ELATEC AppBlaster tool. Please note that the information given in this document regarding the transponder technologies supported by the product is based on the latest firmware version. <sup>5)</sup>UID only <sup>6)</sup>r/w enhanced security features on request <sup>7)</sup>Supported as part of the EV1 downward compatibility <sup>8)</sup>r/w in direct chip command mode <sup>9)</sup>UID only, r/w on request <sup>10)</sup>UID + r/w public area <sup>11)</sup>AV2 only, requires one free SAM slot for MIFARE SAM AV2 card <sup>12)</sup>125 kHz technology requires a Russian local test and import license from the ministry of Trade and Industry (MINPROMTORC). This license has to be in place before ELATEC can accept any order to be shipped to Russia. <sup>13)</sup>Hash value only <sup>14)</sup>Only emulation of 4100, 4102 <sup>15)</sup>Without encryption <sup>16)</sup>Requires one free SAM slot for TWN4 SIO card

## ACCESSORIES

HOLDER(S)	HKSI-B	Snap-in holder, black
	HKSI-W	Snap-in holder, white
	HKBR-B	Bracket holder, black
	HKBR-W	Bracket holder, white
POWER SUPPLY	PWA-AUS4	Power supply (AUS)
	PWA-EU4	Power supply (EU)
	PWA-UK4	Power supply (UK)
	PWA-US4	Power supply (US)

## TECHNICAL DRAWINGS



All measures in mm [inch]

### 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 Systems GmbH

Schwieberdinger Str. 44  
71636 Ludwigsburg  
Germany  
P +49 7141 309736 0  
E-Mail: info-rfid@elatec.com  
Website: elatec.com

### ELATEC Inc.

1995 SW Martin Hwy  
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

918, Main Building, Tian An Cyber Times  
Tower, No. 6, Tairan Fourth Road, Tian 'an  
Community, Shatou Neighborhood  
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.