

# TWN4 MULTITECH 2

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



TWN4 MultiTech 2  
(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 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/13.56 MHz), NFC and BLE
- + 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) / 2.4 GHz (BLE)																																																
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																																																
CURRENT CONSUMPTION	RF field on: 120 mA typically + 16 mA (BT) / 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 BLE: up to several meters/feet																																																
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01																																																
BLUETOOTH LOW ENERGY	Bluetooth V4.1 (upgradable to V4.2) or V5.x, depending on BLE module generation <sup>2)</sup>																																																
MTBF	500,000 hours																																																
WEIGHT	Approx. 120 g / 4.23 oz (with cable)																																																
OS SUPPORT	Windows 7 (32-/64-bit) and higher versions, Linux, Android <sup>3)</sup> , iOS <sup>3)</sup> , MAC OS X <sup>3)</sup>																																																
PERIPHERAL INTERFACES	USB, RS-232, SAM slot(s) <sup>4)</sup>																																																
TRANSMISSION SPEED	Host: USB full speed (12 Mbit/s), RS-232: up to 115,200 baud, HF Air: up to 848 kbit/s, BT Air: up to 100 kbit/s																																																
CERTIFICATION NAME	TWN4 MultiTech 2																																																
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>5)</sup>																																																
ORDER CODE(S)	<p><b>Readers equipped with BLE module 1<sup>st</sup> Gen</b></p> <table> <tr> <td>T4BT-FB2BEL7</td> <td>standard reader, USB cable, black housing</td> </tr> <tr> <td>T4BT-FB2WEL7</td> <td>standard reader, USB cable, white housing</td> </tr> <tr> <td>T4BT-FR2BEL7</td> <td>standard reader, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-FR2WEL7</td> <td>standard reader, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-FB2BEL7-P</td> <td>reader with P option, USB cable, black housing</td> </tr> <tr> <td>T4BT-FB2WEL7-P</td> <td>reader with P option, USB cable, white housing</td> </tr> <tr> <td>T4BT-FR2BEL7-P</td> <td>reader with P option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-FR2WEL7-P</td> <td>reader with P option, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-FB2BEL7-PI</td> <td>reader with PI option, USB cable, black housing</td> </tr> <tr> <td>T4BT-FB2WEL7-PI</td> <td>reader with PI option, USB cable, white housing</td> </tr> <tr> <td>T4BT-FR2BEL7-PI</td> <td>reader with PI option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-FR2WEL7-PI</td> <td>reader with PI option, RS-232 cable, white housing</td> </tr> </table> <p><b>Readers equipped with BLE module 2<sup>nd</sup> Gen</b></p> <table> <tr> <td>T4BT-FB2BEL7-XB</td> <td>standard reader, USB cable, black housing</td> </tr> <tr> <td>T4BT-FB2WEL7-XB</td> <td>standard reader, USB cable, white housing</td> </tr> <tr> <td>T4BT-FR2BEL7-XB</td> <td>standard reader, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-FR2WEL7-XB</td> <td>standard reader, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-FB2BEL7-XBP</td> <td>reader with P option, USB cable, black housing</td> </tr> <tr> <td>T4BT-FB2WEL7-XBP</td> <td>reader with P option, USB cable, white housing</td> </tr> <tr> <td>T4BT-FR2BEL7-XBP</td> <td>reader with P option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-FR2WEL7-XBP</td> <td>reader with P option, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-FB2BEL7-XBPI</td> <td>reader with PI option, USB cable, black housing</td> </tr> <tr> <td>T4BT-FB2WEL7-XBPI</td> <td>reader with PI option, USB cable, white housing</td> </tr> <tr> <td>T4BT-FR2BEL7-XBPI</td> <td>reader with PI option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-FR2WEL7-XBPI</td> <td>reader with PI option, RS-232 cable, white housing</td> </tr> </table>	T4BT-FB2BEL7	standard reader, USB cable, black housing	T4BT-FB2WEL7	standard reader, USB cable, white housing	T4BT-FR2BEL7	standard reader, RS-232 cable, black housing	T4BT-FR2WEL7	standard reader, RS-232 cable, white housing	T4BT-FB2BEL7-P	reader with P option, USB cable, black housing	T4BT-FB2WEL7-P	reader with P option, USB cable, white housing	T4BT-FR2BEL7-P	reader with P option, RS-232 cable, black housing	T4BT-FR2WEL7-P	reader with P option, RS-232 cable, white housing	T4BT-FB2BEL7-PI	reader with PI option, USB cable, black housing	T4BT-FB2WEL7-PI	reader with PI option, USB cable, white housing	T4BT-FR2BEL7-PI	reader with PI option, RS-232 cable, black housing	T4BT-FR2WEL7-PI	reader with PI option, RS-232 cable, white housing	T4BT-FB2BEL7-XB	standard reader, USB cable, black housing	T4BT-FB2WEL7-XB	standard reader, USB cable, white housing	T4BT-FR2BEL7-XB	standard reader, RS-232 cable, black housing	T4BT-FR2WEL7-XB	standard reader, RS-232 cable, white housing	T4BT-FB2BEL7-XBP	reader with P option, USB cable, black housing	T4BT-FB2WEL7-XBP	reader with P option, USB cable, white housing	T4BT-FR2BEL7-XBP	reader with P option, RS-232 cable, black housing	T4BT-FR2WEL7-XBP	reader with P option, RS-232 cable, white housing	T4BT-FB2BEL7-XBPI	reader with PI option, USB cable, black housing	T4BT-FB2WEL7-XBPI	reader with PI option, USB cable, white housing	T4BT-FR2BEL7-XBPI	reader with PI option, RS-232 cable, black housing	T4BT-FR2WEL7-XBPI	reader with PI option, RS-232 cable, white housing
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## SUPPORTED TRANSPONDERS<sup>6)</sup>

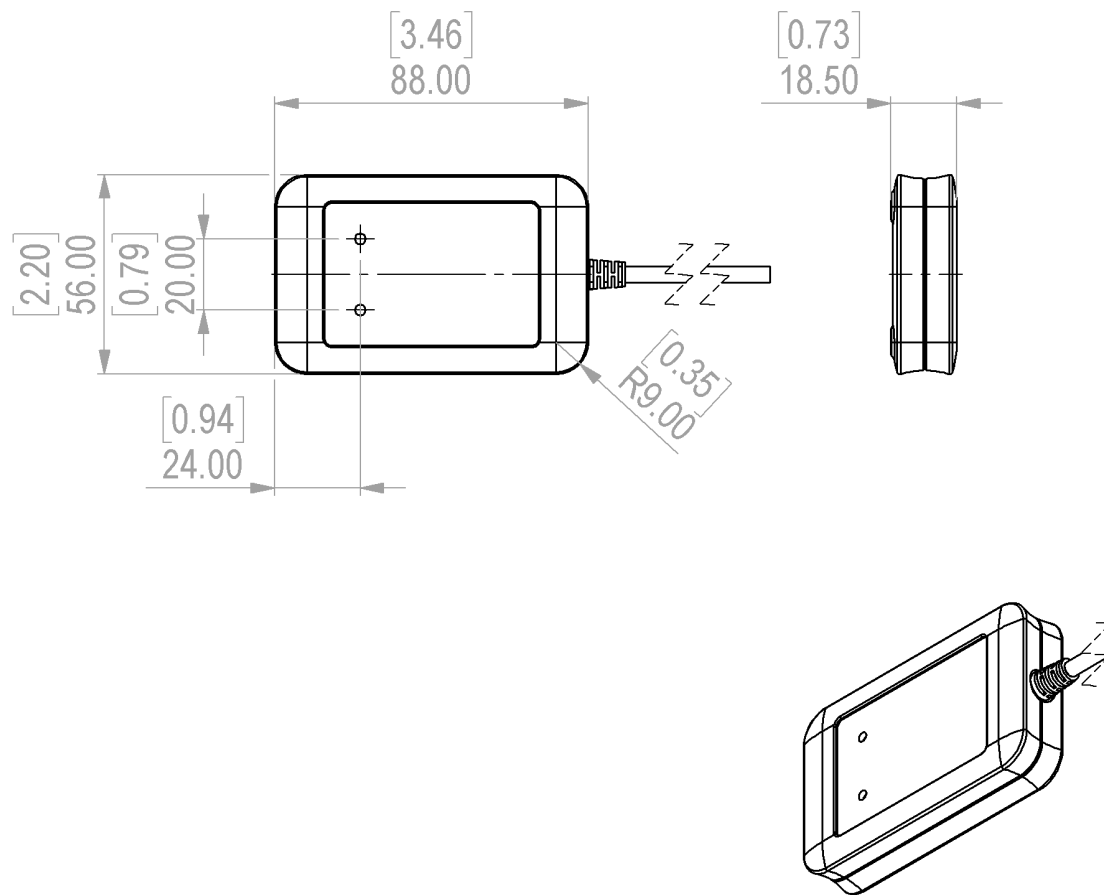
SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ	<p><u>ISO 14443A:</u> LEGIC Advant<sup>7)</sup>, NTAG2xx, MIFARE Classic, MIFARE Classic EV1<sup>9)</sup>, MIFARE DESFire EV1, MIFARE DESFire EV2<sup>9)</sup>, MIFARE DESFire EV3<sup>9)</sup>, MIFARE DESFire Light<sup>3)</sup>, MIFARE Mini, MIFARE Plus S, MIFARE Plus X, MIFARE Smart MX<sup>10)</sup>, MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1<sup>8)</sup>, SLE44R35<sup>10)</sup>, SLE66Rxx (my-d move)<sup>10)</sup>, Topaz</p> <p><u>ISO 14443B:</u> Calypso<sup>10)</sup>, Calypso Innovatron protocol<sup>10)</sup>, CEPAS<sup>10)</sup>, CTS, Pico Pass<sup>11)</sup>, SRI4K, SRI512, SRX4K, SRT512</p> <p><u>ISO 15693:</u> EM4x33<sup>10)</sup>, EM4x35<sup>10)</sup>, ICODE SLI, LEGIC Advant<sup>7)</sup>, M24LR16/64, MB89R118/119, PicoPass<sup>11)</sup>, SRF55Vxx (my-d vicinity)<sup>10)</sup>, Tag-it</p> <p><u>ISO 18092 / ECMA-340:</u> NFC Forum Tag 1-5, Sony FeliCa<sup>12)</sup></p> <p><u>LEAF Identity:</u> LEAF<sup>13)</sup></p>
SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ <sup>14)</sup>	<p>AWID, Cardax<sup>15)</sup>, CASI-RUSCO, Deister<sup>15)</sup>, EM4050, EM4100, EM4102, EM4150, EM4200<sup>16)</sup>, EM4305, EM4450, EM4550, HITAG 1<sup>17)</sup>, HITAG 2<sup>17)</sup>, HITAG S<sup>17)</sup>, ICT<sup>3)</sup>, IDTECK, ISONAS, Keri, Miro, Nedap<sup>15)</sup>, Pyramid, Q5, T5557, T5567, T5577, TITAN (EM4050), UltraProx, UNIQUE, ZODIAC</p>
SUPPORTED TRANSPONDERS (P OPTION)	<p>All standard transponders, G-Prox<sup>15)</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</p>
SUPPORTED TRANSPONDERS (PI OPTION) <sup>18)</sup>	<p>All standard transponders<sup>19)</sup>, all P option transponders, HID MIFARE DESFire SE, HID MIFARE Classic SE, HID SEOS, HID iCLASS Legacy/SR/SE</p>
SUPPORTED TRANSPONDERS (A OPTION)	<p>Apple ECP 2.0<sup>1)</sup></p>
SUPPORTED TRANSPONDERS (AV OPTION)	<p>Apple VAS<sup>1)</sup></p>

<sup>1)</sup>For Apple licensees only and eligible implementers. Please contact ELATEC for details. <sup>2)</sup>Depending on product variant <sup>3)</sup>On request <sup>4)</sup>Readers equipped with a BLE module of 1<sup>st</sup> generation contain two free SAM slots, whereas readers equipped with a BLE module of 2<sup>nd</sup> generation only have one free SAM slot. <sup>5)</sup>More information on request <sup>6)</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>7)</sup>UID only <sup>8)</sup>r/w enhanced security features on request <sup>9)</sup>Supported as part of the EV1 downward compatibility <sup>10)</sup>r/w in direct chip command mode <sup>11)</sup>UID only, r/w on request <sup>12)</sup>UID + r/w public area <sup>13)</sup>AV2 only, requires one free SAM slot for MIFARE SAM AV2 card <sup>14)</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>15)</sup>Hash value only <sup>16)</sup>Only emulation of 4100, 4102 <sup>17)</sup>Without encryption <sup>18)</sup>Requires one free SAM slot for HID iCLASS SE processor <sup>19)</sup>Readers equipped with a BLE module of 2<sup>nd</sup> generation have one free SAM slot only and cannot support LEAF and the PI option at the same time.

## 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]

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