

TWN4 MULTITECH 2 LEGIC LF HF

(SM-4200/4500 FRONTEND)

MULTI-FREQUENCY RFID READER FOR LF, HF AND NFC



TWN4 MultiTech 2 LEGIC LF HF
(exemplary illustration)

The contactless RFID readers and modules of the ELATEC TWN4 MultiTech 2 LEGIC family are a direct enhancement of the TWN4 MultiTech LEGIC readers with the same form factors (PCB modules and desktop readers with housing). During the development of the TWN4 MultiTech 2 LEGIC family, special emphasis has been placed on optimizing the HF performance (13.56 MHz). Compared to the predecessor TWN4 MultiTech LEGIC, the read range could be increased by more than 50% for LEGIC transponders and even doubled for some HF transponders.

TWN4 MultiTech 2 LEGIC LF HF key features 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
- + Optimized HF read performance
- + 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
- + Support of segment initialization function (LEGIC SM-4500 frontend only)



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																																																
CURRENT CONSUMPTION	RF field on: 140 mA typically																																																
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. 120 g / 4.23 oz (with cable)																																																
OS SUPPORT	Windows 7 (32-/64-bit) and higher versions, Linux, Android ¹⁾ , iOS ¹⁾ , MAC OS X ¹⁾																																																
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 LEGIC LF HF																																																
CERTIFICATION(S)	CE/RED, FCC, IC, UL listed, REACH and RoHS-III compliant, and many more ²⁾																																																
ORDER CODE(S)	<p>Readers with LEGIC SM-4200</p> <table> <tr> <td>T4BT-BB2BEL6</td> <td>standard reader, USB cable, black housing</td> </tr> <tr> <td>T4BT-BB2WEL6</td> <td>standard reader, USB cable, white housing</td> </tr> <tr> <td>T4BT-BR2BEL6</td> <td>standard reader, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-BR2WEL6</td> <td>standard reader, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-BB2BEL6-P</td> <td>reader with P option, USB cable, black housing</td> </tr> <tr> <td>T4BT-BB2WEL6-P</td> <td>reader with P option, USB cable, white housing</td> </tr> <tr> <td>T4BT-BR2BEL6-P</td> <td>reader with P option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-BR2WEL6-P</td> <td>reader with P option, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-BB2BEL6-PI</td> <td>reader with PI option, USB cable, black housing</td> </tr> <tr> <td>T4BT-BB2WEL6-PI</td> <td>reader with PI option, USB cable, white housing</td> </tr> <tr> <td>T4BT-BR2BEL6-PI</td> <td>reader with PI option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-BR2WEL6-PI</td> <td>reader with PI option, RS-232 cable, white housing</td> </tr> </table> <p>Readers with LEGIC SM-4500</p> <table> <tr> <td>T4BT-BB2BEL6-5</td> <td>standard reader, USB cable, black housing</td> </tr> <tr> <td>T4BT-BB2WEL6-5</td> <td>standard reader, USB cable, white housing</td> </tr> <tr> <td>T4BT-BR2BEL6-5</td> <td>standard reader, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-BR2WEL6-5</td> <td>standard reader, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-BB2BEL6-5P</td> <td>reader with P option, USB cable, black housing</td> </tr> <tr> <td>T4BT-BB2WEL6-5P</td> <td>reader with P option, USB cable, white housing</td> </tr> <tr> <td>T4BT-BR2BEL6-5P</td> <td>reader with P option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-BR2WEL6-5P</td> <td>reader with P option, RS-232 cable, white housing</td> </tr> <tr> <td>T4BT-BB2BEL6-5PI</td> <td>reader with PI option, USB cable, black housing</td> </tr> <tr> <td>T4BT-BB2WEL6-5PI</td> <td>reader with PI option, USB cable, white housing</td> </tr> <tr> <td>T4BT-BR2BEL6-5PI</td> <td>reader with PI option, RS-232 cable, black housing</td> </tr> <tr> <td>T4BT-BR2WEL6-5PI</td> <td>reader with PI option, RS-232 cable, white housing</td> </tr> </table>	T4BT-BB2BEL6	standard reader, USB cable, black housing	T4BT-BB2WEL6	standard reader, USB cable, white housing	T4BT-BR2BEL6	standard reader, RS-232 cable, black housing	T4BT-BR2WEL6	standard reader, RS-232 cable, white housing	T4BT-BB2BEL6-P	reader with P option, USB cable, black housing	T4BT-BB2WEL6-P	reader with P option, USB cable, white housing	T4BT-BR2BEL6-P	reader with P option, RS-232 cable, black housing	T4BT-BR2WEL6-P	reader with P option, RS-232 cable, white housing	T4BT-BB2BEL6-PI	reader with PI option, USB cable, black housing	T4BT-BB2WEL6-PI	reader with PI option, USB cable, white housing	T4BT-BR2BEL6-PI	reader with PI option, RS-232 cable, black housing	T4BT-BR2WEL6-PI	reader with PI option, RS-232 cable, white housing	T4BT-BB2BEL6-5	standard reader, USB cable, black housing	T4BT-BB2WEL6-5	standard reader, USB cable, white housing	T4BT-BR2BEL6-5	standard reader, RS-232 cable, black housing	T4BT-BR2WEL6-5	standard reader, RS-232 cable, white housing	T4BT-BB2BEL6-5P	reader with P option, USB cable, black housing	T4BT-BB2WEL6-5P	reader with P option, USB cable, white housing	T4BT-BR2BEL6-5P	reader with P option, RS-232 cable, black housing	T4BT-BR2WEL6-5P	reader with P option, RS-232 cable, white housing	T4BT-BB2BEL6-5PI	reader with PI option, USB cable, black housing	T4BT-BB2WEL6-5PI	reader with PI option, USB cable, white housing	T4BT-BR2BEL6-5PI	reader with PI option, RS-232 cable, black housing	T4BT-BR2WEL6-5PI	reader with PI option, RS-232 cable, white housing
T4BT-BB2BEL6	standard reader, USB cable, black housing																																																
T4BT-BB2WEL6	standard reader, USB cable, white housing																																																
T4BT-BR2BEL6	standard reader, RS-232 cable, black housing																																																
T4BT-BR2WEL6	standard reader, RS-232 cable, white housing																																																
T4BT-BB2BEL6-P	reader with P option, USB cable, black housing																																																
T4BT-BB2WEL6-P	reader with P option, USB cable, white housing																																																
T4BT-BR2BEL6-P	reader with P option, RS-232 cable, black housing																																																
T4BT-BR2WEL6-P	reader with P option, RS-232 cable, white housing																																																
T4BT-BB2BEL6-PI	reader with PI option, USB cable, black housing																																																
T4BT-BB2WEL6-PI	reader with PI option, USB cable, white housing																																																
T4BT-BR2BEL6-PI	reader with PI option, RS-232 cable, black housing																																																
T4BT-BR2WEL6-PI	reader with PI option, RS-232 cable, white housing																																																
T4BT-BB2BEL6-5	standard reader, USB cable, black housing																																																
T4BT-BB2WEL6-5	standard reader, USB cable, white housing																																																
T4BT-BR2BEL6-5	standard reader, RS-232 cable, black housing																																																
T4BT-BR2WEL6-5	standard reader, RS-232 cable, white housing																																																
T4BT-BB2BEL6-5P	reader with P option, USB cable, black housing																																																
T4BT-BB2WEL6-5P	reader with P option, USB cable, white housing																																																
T4BT-BR2BEL6-5P	reader with P option, RS-232 cable, black housing																																																
T4BT-BR2WEL6-5P	reader with P option, RS-232 cable, white housing																																																
T4BT-BB2BEL6-5PI	reader with PI option, USB cable, black housing																																																
T4BT-BB2WEL6-5PI	reader with PI option, USB cable, white housing																																																
T4BT-BR2BEL6-5PI	reader with PI option, RS-232 cable, black housing																																																
T4BT-BR2WEL6-5PI	reader with PI option, RS-232 cable, white housing																																																

SUPPORTED TRANSPONDERS³⁾

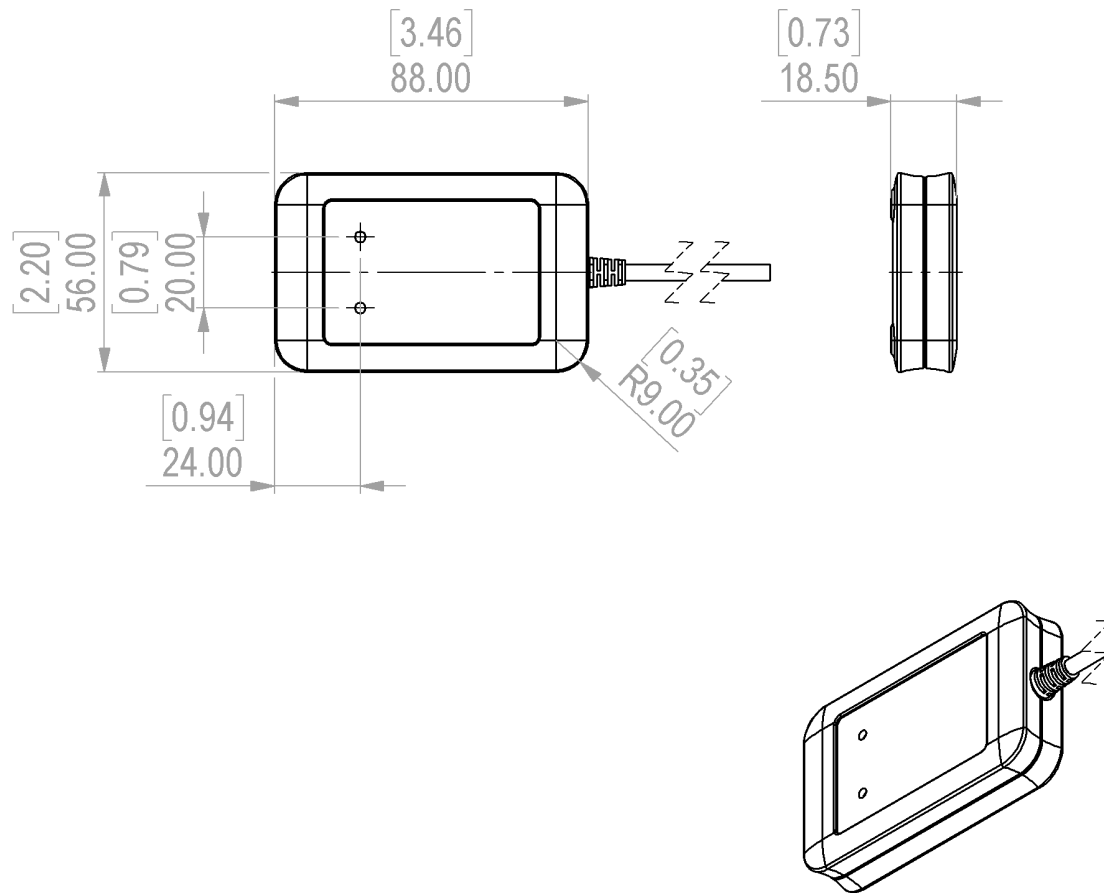
SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ	<p><u>ISO 14443A:</u> LEGIC Advant, NTAG2xx, MIFARE Classic, MIFARE Classic EV1⁵⁾, MIFARE DESFire EV1, MIFARE DESFire EV2⁶⁾, MIFARE DESFire EV3⁶⁾, MIFARE DESFire Light¹⁾, MIFARE Mini, MIFARE Plus S, MIFARE Plus X, MIFARE Smart MX⁷⁾, MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1⁵⁾, SLE44R35⁷⁾, SLE66Rxx (my-d move)⁷⁾</p> <p><u>ISO 14443B:</u> Calypso⁷⁾, CEPAS⁷⁾, Pico Pass⁴⁾</p> <p><u>ISO 15693:</u> EM4x33⁷⁾, EM4x35⁷⁾, ICODE SLI, LEGIC Advant, M24LR16/64, PicoPass⁴⁾, SRF55Vxx (my-d vicinity)⁷⁾, Tag-it</p> <p><u>ISO 18092 / ECMA-340:</u> NFC Forum Tag 1-5⁸⁾, Sony FeliCa⁹⁾</p> <p><u>LEGIC Prime:</u> LEGIC Prime</p> <p><u>LEAF Identity:</u> LEAF¹⁰⁾</p>
SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ ¹¹⁾	<p>AWID, Cardax¹²⁾, CASI-RUSCO, Deister¹²⁾, EM4050, EM4100, EM4102, EM4150, EM4200¹³⁾, EM4305, EM4450, EM4550, HITAG 1¹⁴⁾, HITAG 2¹⁴⁾, HITAG S¹⁴⁾, ICT¹⁾, IDTECK, ISONAS, Keri, Miro, Nedap¹²⁾, Pyramid, Q5, T5557, T5567, T5577, TITAN (EM4050), UltraProx, UNIQUE, ZODIAC</p>
SUPPORTED TRANSPONDERS (P OPTION)	<p>All standard transponders, G-Prox¹²⁾, 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) ¹⁵⁾	<p>All standard transponders, all P option transponders, Calypso Innovatron protocol⁷⁾, CTS, HID MIFARE DESFire SE, HID MIFARE Classic SE, HID SEOS, HID iCLASS Legacy/SR/SE, MB89R118/119, NFC Forum Tag 1-5, Pico Pass¹⁶⁾, SRI4K, SRI512, SRIX4K, SRT512, Topaz</p>

¹⁾On request ²⁾More information on request ³⁾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. ⁴⁾UID only ⁵⁾r/w enhanced security features on request ⁶⁾Supported as part of the EV1 downward compatibility ⁷⁾r/w in direct chip command mode ⁸⁾NFC Forum Tag 1 not supported ⁹⁾UID + r/w public area ¹⁰⁾AV2 only, requires one free SAM slot for MIFARE SAM AV2 card ¹¹⁾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. ¹²⁾Hash value only ¹³⁾Only emulation of 4100, 4102 ¹⁴⁾Without encryption ¹⁵⁾Requires one free SAM slot for HID iCLASS SE processor ¹⁶⁾UID only, r/w on request

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.