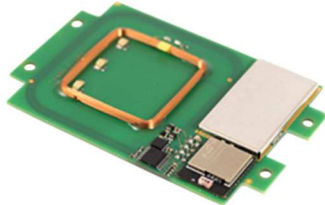# TWN4 MULTITECH 2 BLE

RFID READER/WRITER FOR LF, HF, NFC, BLE

TWN4 MultiTech 2 BLE
PCB top view

Desktop version
(inlay customizable)

Elatec's TWN4 family of transponder readers and writers allows users to read and write to almost any 125 kHz, 134.2 kHz and 13.56 MHz tags and/or labels. It supports all major transponders from various suppliers like ATMEL, EM, ST, NXP, TI, HID etc. and ISO standards like ISO14443A/B (T=CL), ISO15693, ISO18092 / ECMA-340 (NFC).

The TWN4 MultiTech 2 BLE reader has integrated RFID (LF & HF) and Bluetooth Low Energy (BLE), which is supported by mobile phones with Android version 4.3 or greater, iOS 8.0 or greater and PCs with Windows (new Bluetooth hardware integrated). The app on the reader communicates with the BLE module with easy commands and has direct enhancement to the GATT structure, which gives you the flexibility to write your custom apps.

Special features:

+ powerful SDK for writing apps which are executed directly on the reader
+ firmware update in the field possible
+ onboard 18 kB flash storage, e.g. for storing user accessible non-volatile data
+ direct chip-commands support
+ two onboard SAM sockets (Secure Access Module)
+ CCID and PC/SC 2.01
+ 4 GPIOs
+ Bluetooth V4.1, upgradeable to V4.2, API, flexible GATT structure up to 8 connections simultaneous, AES128 supported
+ supports quick (re)configuration over network and over wireless interface with TWN4 CONFIG Card
+ TWN4 Upgrade Card for P and PI options available on request
+ 3D construction data (STEP) available on request

TECHNICAL DATA

FREQUENCY	125 kHz/134.2 kHz (LF) / 13.56 MHz (HF) / 2.4 GHz (BLE)
ANTENNA	Integrated
HOUSING	Material: ABS UL94-V0, color: black or white
DIMENSIONS (L X W X H)	Desktop Reader: 88 mm x 56 mm x 18 mm / 3.5 inch x 2.2 inch x 0.7 inch OEM Board: 76 mm x 49 mm x 9 mm / 3.0 inch x 1.9 inch x 0.4 inch
POWER SUPPLY	4.3 V - 5.5 V via USB; via generic interface (X2) 3.3 V +/- 5%; RS-232 requires 5 V external power supply
CURRENT CONSUMPTION	RF field on: 120 mA typically + 16 mA (BT) / Sleep: 500 µA typ. / Cyclic Operation: TBD
TEMPERATURE RANGE	Desktop, Operating: -25 °C up to +70 °C (-13 °F up to +158 °F) Desktop, Storage: -45 °C up to +75 °C (-49 °F up to +167 °F) PCB, Operating: -25 °C up to +80 °C (-13 °F up to +176 °F) PCB, Storage: -45 °C up to +85 °C (-49 °F up to +185 °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 BT: up to several meters/feet (configurable, up to +8 dBm power)
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01
BLUETOOTH LOW ENERGY	Bluetooth V4.1, software upgradable to V4.2; easy to integrate in reader App with commands, optional BGAPI protocol; Standards as GAP, SM, L2CAP, ATT; predefined GATT structure; up to 8 connections; AES128 support
MTBF	500,000 hours
WEIGHT	PCB approx. 13 g / 0.46 oz (no cable) Desktop approx. 118 g / 4.17 oz (with cable)
SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ	ISO14443A: LEGIC Advant[1], MIFARE Classic EV1[2], MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1, MIFARE DESFire EV2[2], MIFARE DESFire Light[3], MIFARE Plus S, X, MIFARE Pro X[4], MIFARE Smart MX[4], MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1, NTAG2xx, PayPass[4], SLE44R35, SLE66Rxx (my-d move)[4], Topaz ISO14443B: Calypso[4], Calypso Innovatron protocol[4], CEPAS[4], HID iCLASS[1], Moneo[4], Pico Pass[5], SRI4K, SRIX4K, SRI512, SRT512 ISO18092 ECMA-340: NFC Forum Tag 1-5, NFC Peer-to-Peer, Sony FeliCa[6], NFC Active and passive communication mode ISO15693: EM4x33[4], EM4x35[4], HID iCLASS[1], HID iCLASS SE/SR[1], ICODE SLI, LEGIC Advant[1], M24LR16/64, MB89R118/119, SRF55Vxx (my-d vicinity)[4], Tag-it, PicoPass[5]
SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ[7], 134.2 KHZ	AWID, Cardax, CASI-RUSCO, Deister[8], EM4100, 4102, 4200[9], EM4050, 4150, 4450, 4550, EM4305[10], FDX-B[10], EM4105[10], HITAG 1[11], HITAG 2[11], HITAG S[11], ICT[10], IDTECK, Isonas[10], Keri, Miro, Nedap[8], PAC[10], Pyramid, Q5, T5557, T5567, T5577, TIRIS/HDX[10], TITAN (EM4050), UNIQUE, ZODIAC
SUPPORTED TRANSPONDERS (OPTION P)	All Standard Transponders, Cotag, G-Prox[8], HID DuoProx II, HID ISO Prox II, HID Micro Prox, HID ProxKey III, HID Prox, HID Prox II, Indala, ioProx, Nexwatch
SUPPORTED TRANSPONDERS (OPTION PI)	Requires TWN4 SIO Card, All Standard Transponders, All Option P Transponders, HID iCLASS, HID iCLASS SE/SR/Elite, HID iCLASS SEOS (CSN & Facility Code/PAC)[12]
OS SUPPORT	Windows XP, Vista, Embedded CE[10], 7 (32-/64-bit), 8, 8.1, 10, Linux, Android[10], iOS[10], MAC OS X[10]
PERIPHERAL INTERFACES	USB, RS-232, TTL serial (logic level 3.3 V, CMOS, 5 V tolerant), I²C, 4 GPIOs, Clock/Data, Wiegand, Bluetooth Low Energy (BLE)

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 BLE
CERTIFICATION(S)	ACMA, CE/RED, FCC Single Modular Approval, IC, REACH and RoHS-III compliant and many more
ORDER CODE(S)	T4BO-F7 OEM Board T4BT-FB2BEL7 USB Black T4BT-FB2WEL7 USB White T4BT-FR2BEL7 RS-232 Black T4BT-FR2WEL7 RS-232 White T4BO-F7-P OEM Board Option P T4BT-FB2BEL7-P USB Option P Black T4BT-FB2WEL7-P USB Option P White T4BT-FR2BEL7-P RS-232 Option P Black T4BT-FR2WEL7-P RS-232 Option P White T4BO-F7-PI OEM Board Option PI T4BT-FB2BEL7-PI USB Option PI Black T4BT-FB2WEL7-PI USB Option PI White T4BT-FR2BEL7-PI RS-232 Option PI Black T4BT-FR2WEL7-PI RS-232 Option PI White

[1]UID only [2]r/w enhanced security features on request [3]In preparation [4]r/w in direct chip command mode [5]UID only, read/write on request [6]UID + r/w public area [7]125 kHz are in Russia permanent disabled. The activation is only possible by the acquisition of a license [8]Hash value only [9]Only emulation of 4100, 4102 [10]On request [11]Without encryption [12] 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-EU3: Power Supply (EU) PWA-US3: Power Supply (US) PWA-UK3: Power Supply (UK) PWA-AU3: Power Supply (AU) PWA-JP3: Power Supply (JP)
CABLES	CAB-B2: USB cable type A 200 cm / 78.74 inch CAB-B3: USB cable type A 12 cm / 4.72 inch CAB-B4: USB cable type A 45 cm / 17.72 inch CAB-B7: USB cable type A 120 cm / 47.24 inch CAB-M1: USB cable mini 12 cm / 4.72 inch CAB-M2: USB cable mini 25 cm / 9.84 inch CAB-R2: RS-232 cable 200 cm / 78.74 inch