

TWN4 PALON COMPACT LEGIC PCB

COMPACT OEM RFID READER/WRITER SUPPORTING LF, HF, NFC AND BLE



TWN4 Palon Compact LEGIC is a versatile OEM PCB for integration into third-party products and devices. It supports enhanced interfaces, especially RS-485. The new compact PCB module inherits all advantages and integrated tool support of the ELATEC TWN4 family. Although it is a general-purpose device, it is optimized for time attendance and access control.

TWN4 Palon is a multi-technology reader/writer family supporting almost all 125 kHz and 13.56 MHz contactless technologies, including NFC.

On-board antennas for HF and LF allow excellent contactless performance. An integrated Bluetooth® Low Energy (BLE) module supports a broad range of mobile ID and authentication solutions as well.

Special features:

- + Optimized PCB design for OEM integration
- + On-board LF and HF antennas
- + One on-board SAM socket (Secure Access Module)
- + Interfaces: RS-485, RS-232 and Wiegand or Clock/Data. OSDP protocol optionally, USB
- + Supports quick (re)configuration over network and over wireless interface with TWN4 CONFIG Card
- + Direct chip-commands support
- + Integrated BLE module 2.4 GHz for data communication and authentication, BLE v4.2, upgradable
- + Firmware update in the field possible
- + Powerful SDK for writing apps which are executed directly on the reader
- + On-board 18 kB flash storage, e.g. for storing user accessible non-volatile data
- + TWN4 Upgrade Card for P option available on request
- + 3D construction data (STEP) available on request



Elevator



EV Chargers



Access



Shop POS

Fitness
Equipment

Ticket POS



PC Log-on

Document
Management

Driver ID



Vending



Parking



Gaming



Locker Locks

Time
AttendanceIndustrial
PC

TECHNICAL DATA

FREQUENCY	125 kHz (LF) / 13.56 MHz (HF) / 2.4 GHz (BLE)
ANTENNA	Integrated
DIMENSIONS (L X W X H)	PCB Board, twin stack: 40.7 mm x 43.9 mm x 29.4 mm / 1.6 inch x 1.8 inch x 1.2 inch
POWER SUPPLY	9.0 V - 30 V via connector X1; 4.3 V - 5.5 V via micro USB Limited power source according to IEC 60950-1 or PS2 classified IEC 62368-1, short-circuit current < 8 A
CURRENT CONSUMPTION	Operating: typ. 160 mA @12 V; Idle: typ. 50 mA @12 V; Peak typ. 250 mA @12 V
TEMPERATURE RANGE	Operating: -25 °C up to +80 °C (-13 °F up to +176 °F) Storage: -40 °C up to +85 °C (-40 °F up to +185 °F)
RELATIVE HUMIDITY	5% to 95% non-condensing
READ- / WRITE DISTANCE	Up to 100 mm / 4 inch, depending on OEM environment and transponder
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01
BLUETOOTH LOW ENERGY	Bluetooth v4.2, software upgradable; standards as GAP, SM, L2CAP, ATT; predefined GATT structure; AES128 supported
MTBF	500,000 hours
WEIGHT	Approx. 25 g / 0.88 oz
SABOTAGE DETECTION	Infrared tamper detector, front facing
WIRE CONNECTOR	PCB terminal block, 8 positions, push-in spring connection for wires 0.2 to 0.5 mm ² / AWG 24 to 20, tool-free cable wiring
DIP SWITCH	8 position DIP switch for RS-485: addressing, speed settings, line termination
SIGNALING	5 RGB LEDs, each individually programmable using the on-board Intelligent Peripheral Controller (IPE), for enhanced dynamic light concepts; acoustic loudspeaker
SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ	<p><u>ISO14443A:</u> LEGIC Advant, MIFARE Classic EV1¹⁾, MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1, MIFARE DESFire EV2²⁾, MIFARE DESFire Light²⁾, MIFARE Plus S, X, MIFARE Pro X³⁾, MIFARE Smart MX³⁾, MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1¹⁾, NTAG2xx, PayPass³⁾, SLE44R35³⁾, SLE66Rxx (my-d move)³⁾</p> <p><u>ISO18092 ECMA-340:</u> NFC Forum Tag 1-5⁴⁾, Sony FeliCa⁵⁾, NFC Active and passive communication mode, Passive peer-to-peer mode - initiator, NFC Tag 2, 3, 4</p> <p><u>ISO14443B:</u> Calypso³⁾, CEPAS³⁾, HID iCLASS⁶⁾, Moneo³⁾, Pico Pass⁶⁾</p> <p><u>ISO15693:</u> EM4x33³⁾, EM4x35³⁾, HID iCLASS⁶⁾, HID iCLASS SE/SR⁶⁾, ICODE SLI, LEGIC Advant, M24LR16/64, SRF55Vxx (my-d vicinity)³⁾, Tag-it, PicoPass⁶⁾</p> <p><u>LEGIC Prime:</u> LEGIC Prime</p>
SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ ⁷⁾	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, 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
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, RS485, OSDP ¹⁰⁾ , RS232 (RX/TX) ¹⁰⁾ , Output 5V: Wiegand (D0/D1), or Clock/Data

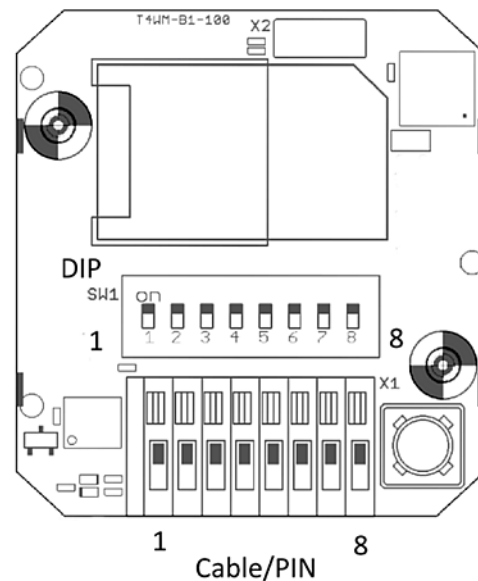
¹⁾r/w enhanced security features on request ²⁾In preparation ³⁾r/w in direct chip command mode ⁴⁾NFC Forum Tag 1 not supported ⁵⁾UID + r/w public area ⁶⁾UID only ⁷⁾125 kHz technology requires a Russian local test and import license from the ministry of Trade and Industry (MINPROMTORG). This license has to be in place before Elatec can accept any order to be shipped to Russia ⁸⁾Hash value only ⁹⁾Only emulation of 4100, 4102 ¹⁰⁾On request ¹¹⁾Without encryption

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, Host RS-485: up to 38,400 baud
EXTENSION SLOT	One SAM socket for ID-000 cards or modules
CERTIFICATION NAME	TWN4 Palon Compact LEGIC
CERTIFICATION(S)	CE/RED, EAC, FCC, IC, REACH and RoHS-III compliant, and many more
ORDER CODE(S)	T4W2-B01C7 OEM Board T4W2-B01C7-P OEM Board Option P

CONNECTOR ASSIGNMENT

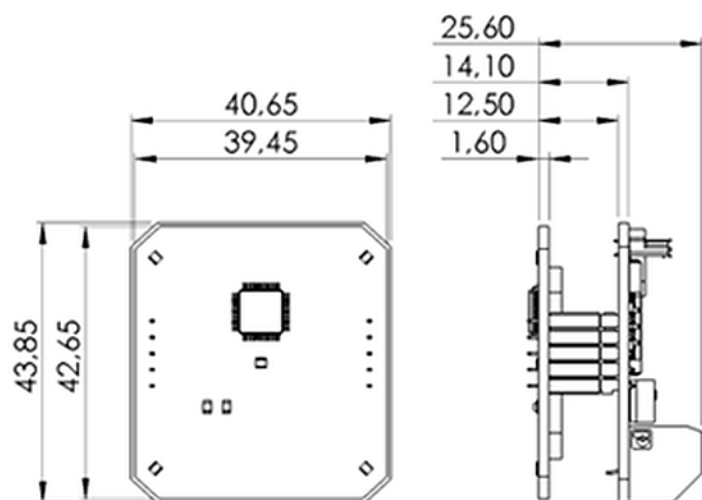
DIP	ASSIGNMENT
1	RS-485 address 0 LSB
2	RS-485 address 1
3	RS-485 address 2
4	RS-485 address 3 MSB
5	RS-485 BIAS on/off
6	RS-485 speed 0
7	RS-485 speed 1
8	RS-485 termination 120 Ohm on/off

PIN	ASSIGNMENT
1	RS-232 RX
2	RS-232 TX
3	RS-485 A
4	RS-485 B
5	TTL Wiegand D0 or DATA
6	TTL Wiegand D1 or CLOCK
7	VIN 9 – 30 Volt
8	GND



Drawing / rear view PCB

Firmware may change the assignment of the DIP switch. Please refer to the TWN4 Palon manual.
For RS-232, Wiegand, Clock/Data the DIP switch is not used.



Drawing / front and side view PCB
(All measures in mm)

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