TWN4 PALON COMPACT

COMPACT OEM RFID READER/WRITER FOR LF, HF, NFC, BLE, WITH EXTENDED INTERFACES

TWN4 Palon Compact 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/134.2 kHz and 13.56 MHz contactless technologies, including NFC. RS-485, RS-232, Wiegand, Clock/Data and USB are standard interfaces. Optionally, OSDP protocol is supported. 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
+ Onboard LF and HF antennas
+ One onboard SAM socket (Secure Access Module)
+ Interfaces: RS-485, RS-232 and TTL (Wiegand, Clock/Data). OSDP protocol optionally
+ Micro USB port
+ 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, Bluetooth v4.2, upgradable
+ Firmware update in the field possible
+ Powerful SDK for writing apps which are executed directly on the reader
+ Onboard 18 kB flash storage, e.g. for storing user accessible non-volatile data
+ Supports quick centralized (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

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

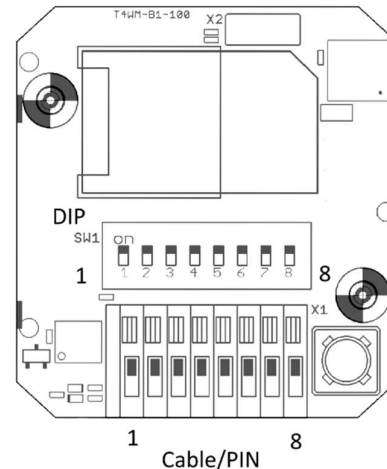|	
FREQUENCY	125 kHz/134.2 kHz (LF) / 13.56 MHz (HF) / 2.4 GHz (BLE)
ANTENNAS	Integrated
DIMENSIONS (L X W X H)	PCB board, twin stack: 40.7 mm x 43.9 mm x 29.4 mm / 1.6 inch x 1.8 inch x 1.2 inch
POWER SUPPLY	9.0 V - 30 V via connector X1; 4.3 V - 5.5 V via micro USB Limited power source according to IEC60950-1 or PS2 classified IEC62368-1, 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 transponder and OEM environment
TRANSMISSION SPEED	RS-485: up to 38,400 baud; RS-232 up to 115.200 baud; USB Full speed (12 Mbit/s); HF Air: up to 848 kbit/s, BT Air: up to 100 kbit/s
BLUETOOTH LOW ENERGY	Bluetooth v4.2, upgradable; standards as GAP, SM, L2CAP, ATT; predefined GATT structure; AES128 supported
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01
MTBF	500,000 hours
WEIGHT	25 g
WIRE CONNECTOR	PCB terminal block, 8 positions, push-in spring connection for wires 0.2 to 0.5 mm² / AWG 24 to 20, tool-free cable wiring
SABOTAGE DETECTION	Infrared tamper detector, front facing
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)	ISO14443A: LEGIC Advant[1], MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1, MIFARE DESFire EV2[2], MIFARE Plus S, X, MIFARE Pro X[3], MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1 / EV2, NTAG2xx, , SLE44R35, SLE66Rxx (my-d move)[4], Topaz ISO14443B: Calypso[3], Calypso Innovatron protocol[3], CEPAS[3], HID iCLASS[1], Moneo[3], Pico Pass[4], SRI4K, SRIX4K, SRI512, SRT512 ISO18092 ECMA-340: NFC Forum Tag 1-5, NFC Peer-to-Peer, Sony FeliCa[5], NFC Active and passive communication mode ISO15693: EM4x35[3], HID iCLASS[1], HID iCLASS SE/SR[1], ICODE SLI, LEGIC Advant[1], M24LR16/64, MB89R118/119, SRF55Vxx (my-d vicinity)[3], Tag-it, PicoPass[4] 125 kHz, 134.2 kHz: AWID, Cardax, CASI-RUSCO, Deister[6], EM4100, 4102, 4200[7], EM4050, 4150, 4450, 4550, EM4305[8], FDX-B, EM4105, HITAG 1[9], HITAG 2[9], HITAG S[9], ICT[8], IDTECK, Isonas[8], Keri, Miro, Nedap[6], PAC, Pyramid, Q5, T5557, T5567, T5577, TIRIS/HDX, TITAN (EM4050), UNIQUE, ZODIAC
SUPPORTED TRANSPONDERS (OPTION P)	All standard transponders, Cotag, G-Prox[5], 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 external TWN4 SIO Card, All Standard Transponders, All Version P Transponders, HID iCLASS[10], HID iCLASS SE/SR/SEOS(CSN and Facility Code/PAC)[10], HID iCLASS Elite & SE Elite

OS SUPPORT	Windows XP, Vista, Embedded CE[7], 7 (32-/64-bit), 8, 8.1, 10, Linux, Android[7], iOS[7], MAC OS X[7]
PERIPHERAL INTERFACES	USB, RS-485 (OSDP[7] protocol optionally), RS-232, TTL (protocols Wiegand, Clock/Data), Bluetooth Low Energy (BLE), Additional ferrite filter required for RS232 operation
EXTENSION SLOT	One SAM socket for ID-000 cards or modules
CERTIFICATION NAME	TWN4 Palon Compact
CERTIFICATION(S)	CE/RED, RoHS-II compliant, pending: FCC / IC – as T4WK-F7 kit with housing
ORDER CODE(S)	T4W2-F01C7 OEM board T4W2-F01C7-P OEM board Option P T4W2-F01C7-PI OEM board Option PI

t[1]r/w enhanced security features on request [2]r/w in direct chip command mode [3]UID only [4]UID + r/w public area [5]Hash value only [6]Only emulation of 4100, 4102 [7]On request [8]Without encryption
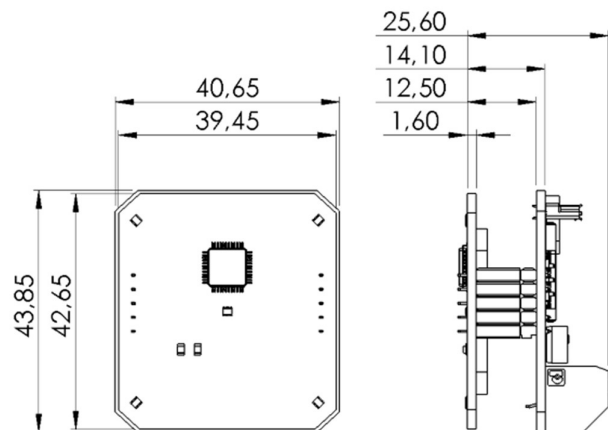
PIN	ASSIGNMENT
1	RS232_RX
2	RS232_TX
3	RS485_A
4	RS485_B
5	TTL D0 or DATA
6	TTL D1 or CLOCK
7	VIN 9 – 30 Volt
8	GND

DIP	ASSIGNMENT
1	RS485 address 0 LSB
2	RS485 address 1
3	RS485 address 2
4	RS485 address 3 MSB
5	BIAS on/off
6	RS485 speed 0
7	RS485 speed 1
8	RS485 termination 120 Ohm on/off

Drawing / rear view PCB

Assignment of DIP switch relates to version with RS-485. 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.

(Dimensions mm)   Drawing / front view PCB   side view

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