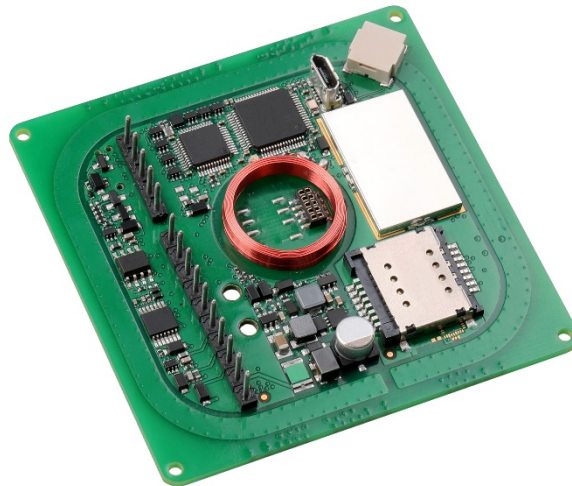


TWN4 PALON SQUARE M

MULTI-TECHNOLOGY RFID READER/WRITER MODULE FOR LF, HF AND NFC



TWN4 Palon Square M
PCB component side (exemplary illustration)

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

TWN4 Palon Square M 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.

Special features:

- + Optimized PCB design for OEM integration
- + On-board LF and HF antennas
- + On-board SAM socket (Secure Access Module), up to two slots ID-000 size
- + Interfaces: RS-485 (OSDP protocol optional), Wiegand, Clock/Data, USB, I²C optional
- + Direct chip-commands support
- + Firmware update in the field possible
- + Tamper detection input
- + On-board MEMS gyro sensor
- + 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
- + 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
- + Version with BLE support in preparation



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) |
| ANTENNA(S) | Integrated |
| DIMENSIONS (L X W X H) | 73 mm x 73 mm x 25.4 mm / 2.87 inch x 2.87 inch x 1.0 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 the safety norms listed in the respective declaration of conformity, short-circuit current < 8 A |
| CURRENT CONSUMPTION | Operating: typ. 180 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 |
| MTBF | 500,000 hours |
| WEIGHT | Approx. 25 g / 0.88 oz, depending on product derivate |
| SABOTAGE DETECTION | Tamper detection input On-board MEMS gyro sensor |
| WIRE CONNECTOR | Connector X1 1x10 pin header, RS-485 Connector X2 1x5 pin header for auxiliary ports/signals Connector X4 2x5 for I ² C and extended ports |
| SIGNALING | One center RGB LED, on reverse side of PCB (optional: up to 5 LEDs for OEM designs); acoustic loudspeaker |
| SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ | <u>ISO14443A:</u> LEGIC Advant ¹⁾ , MIFARE Classic EV1 ²⁾ , MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1, MIFARE DESFire EV2 ³⁾ , MIFARE DESFire Light ⁴⁾ , MIFARE Plus S, X, MIFARE Pro X ⁵⁾ , MIFARE Smart MX ⁵⁾ , MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1 ²⁾ , NTAG2xx, SLE44R35 ⁵⁾ , SLE66Rxx (my-d move) ⁵⁾ , Topaz <u>ISO18092 ECMA-340:</u> NFC Forum Tag 1-5, NFC Peer-to-Peer, Sony FeliCa ⁶⁾ , NFC Active and passive communication mode <u>ISO14443B:</u> Calypso ⁵⁾ , Calypso Innovatron protocol ⁵⁾ , CEPAS ⁵⁾ , HID iCLASS ¹⁾ , Moneo ⁵⁾ , Pico Pass ⁷⁾ , SRI4K, SRIX4K, SRI512, SRT512 <u>ISO15693:</u> EM4x33 ⁵⁾ , EM4x35 ⁵⁾ , HID iCLASS ¹⁾ , HID iCLASS SE/SR ¹⁾ , ICODE SLI, LEGIC Advant ¹⁾ , M24LR16/64, MB89R118/119, SRF55Vxx (my-d vicinity) ⁵⁾ , Tag-it, PicoPass ⁷⁾ |
| SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ ⁸⁾ | AWID, Cardax, CASI-RUSCO, Deister ⁹⁾ , EM4100, 4102, 4200 ¹⁰⁾ , EM4050, 4150, 4450, 4550, EM4305 ¹¹⁾ , FDX-B ¹²⁾ , EM4105 ¹²⁾ , UltraProx ¹²⁾ , HITAG 1 ¹³⁾ , HITAG 2 ¹³⁾ , HITAG S ¹³⁾ , ICT ⁴⁾ , IDTECK, Isonas, Keri, Miro, Nedap ⁹⁾ , PAC ⁴⁾ , Pyramid, Q5, T5557, T5567, T5577, TIRIS/HDX ¹²⁾ , TITAN (EM4050), UNIQUE, ZODIAC |
| SUPPORTED TRANSPONDERS (OPTION P) | All Standard Transponders, Cotag, G-Prox ⁹⁾ , 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 (Facility Code/PAC) ¹⁴⁾ |
| OS SUPPORT | Windows 7 (32-/64-bit), 8, 8.1, 10, Linux, Android ⁴⁾ , iOS ⁴⁾ , MAC OS X ⁴⁾ |
| PERIPHERAL INTERFACES | USB, RS-485, I ² C ⁴⁾ , 3 GPIOs, Clock/Data, Wiegand, OSDP ⁴⁾ , 1 tamper detection input |
| TRANSMISSION SPEED | HF Air: up to 848 kbit/s, USB Full speed (12 Mbit/s), Host RS-485: up to 38,400 baud, I ² C 100 kbit/s |
| EXTENSION SLOT | Two SAM slots for ID-000 cards (duplex), For Option PI, plug-in of ELATEC SIO card also consumes one slot. |
| RS-485 CONFIGURATION | RS-485 address configuration and speed settings by Upgrade Card or AppBlaster tool or ex-fab preset; if required, RS-485 termination resistors to be provisioned off-board, externally |

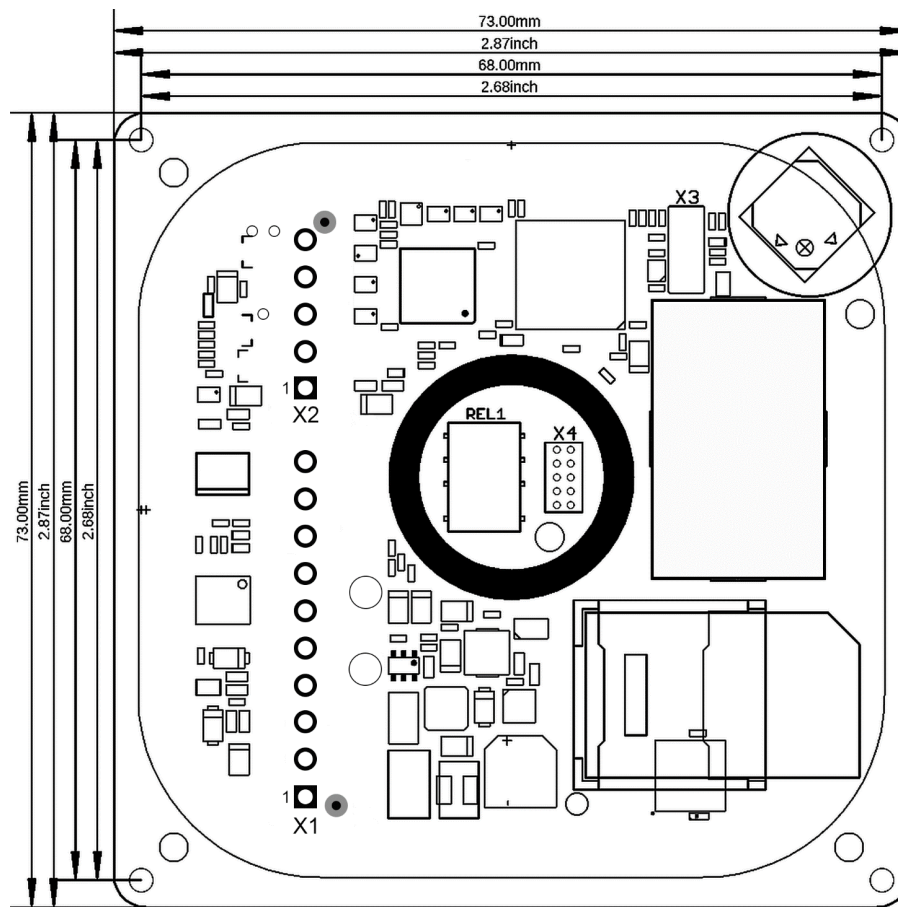
| | | |
|----------------------------|---|---|
| ENVIRONMENT | Special TWN4 Palon Square M versions for potting or coating on request | |
| CERTIFICATION NAME | TWN4 Palon Square M | |
| CERTIFICATION(S) | CE/RED, REACH and RoHS-III compliant | |
| IMMUNITY AGAINST EM FIELDS | 10 V/m according to EN 61000-6-2 | |
| ORDER CODE(S) | T4WQ-F1F26 | OEM board with LF/HF, with MEMS sensor |
| | T4WQ-F1F26-P | OEM board with LF/HF, with MEMS sensor, Option P |
| | T4WQ-F1F26-PI | OEM board with LF/HF, with MEMS sensor, Option PI |
| | Customer-specific TWN4 Palon Square M derivatives and configurations on request | |

¹UID only ²r/w enhanced security features on request ³EV2/EV3 supported as part of the EV1 downward compatibility ⁴On request ⁵r/w in direct chip command mode ⁶UID + r/w public area ⁷UID only, read/write on request ⁸125 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 ⁹Hash value only ¹⁰Only emulation of 4100, 4102 ¹¹From FW V4.05 ¹²134.2 kHz only ¹³Without encryption ¹⁴UID + PAC (Facility Code), r/w on request

ACCESSORIES

| | | |
|------------|----------|---|
| CONNECTORS | CON-0001 | Spring contact with 2 cable guides, 10-pole |
| | CON-0002 | Spring contact with 2 cable guides, 5-pole |
| | CON-0003 | Pluggable connection clamp, 10-pole |
| | CON-0004 | Pluggable connection clamp, 5-pole |

CONNECTOR ASSIGNMENT



ASSIGNMENT

| | X1 PIN | X2 PIN | X4 PIN |
|----|--------------------------|----------------------------|-------------------------------|
| 1 | GND | Relay N.C. Normally Closed | VOUT +5V |
| 2 | VIN 9 – 30 Volt | Relay N.O. Normally Open | GND |
| 3 | Reserved, do not connect | Relay Common | I ² C SDA |
| 4 | Wiegand D0 or DATA, TTL | TAMPER IN, TTL, RFU | I ² C SCL |
| 5 | Wiegand D1 or CLOCK, TTL | GND | OUT, TTL, RFU |
| 6 | IN1, TTL, RFU | | IN, TTL, RFU |
| 7 | IN2, TTL, RFU | | GND |
| 8 | IN3, TTL, RFU | | GND |
| 9 | RS-485 A | | N.C. reserved, do not connect |
| 10 | RS-485 B | | N.C. reserved, do not connect |

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