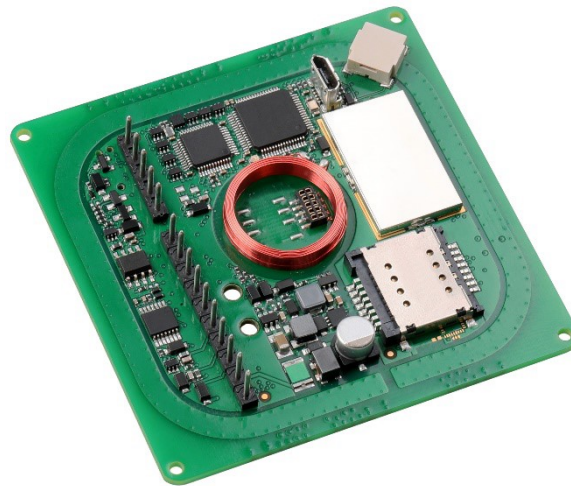


# TWN4 PALON SQUARE M

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



TWN4 Palon Square M  
PCB component side (prototype picture)

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, I<sup>2</sup>C 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  
Attendance



Industrial  
PC

## TECHNICAL DATA

FREQUENCY	125 kHz (LF) / 13.56 MHz (HF)
ANTENNA	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 IEC 60950-1 or PS2 classified IEC 62368-1, 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 <sup>2</sup> 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 <sup>1)</sup> , MIFARE Classic EV1 <sup>2)</sup> , MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1, MIFARE DESFire EV2 <sup>3)</sup> , MIFARE DESFire Light <sup>3)</sup> , MIFARE Plus S, X, MIFARE Pro X <sup>4)</sup> , MIFARE Smart MX <sup>4)</sup> , MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1 <sup>2)</sup> , NTAG2xx, PayPass <sup>4)</sup> , SLE44R35 <sup>4)</sup> , SLE66Rxx (my-d move) <sup>4)</sup> , Topaz <u>ISO14443B:</u> Calypso <sup>4)</sup> , Calypso Innovatron protocol <sup>4)</sup> , CEPAS <sup>4)</sup> , HID iCLASS <sup>1)</sup> , Moneo <sup>4)</sup> , Pico Pass <sup>5)</sup> , SRI4K, SRIX4K, SRI512, SRT512 <u>ISO18092 ECMA-340:</u> NFC Forum Tag 1-5, NFC Peer-to-Peer, Sony FeliCa <sup>6)</sup> , NFC Active and passive communication mode <u>ISO15693:</u> EM4x33 <sup>4)</sup> , EM4x35 <sup>4)</sup> , HID iCLASS <sup>1)</sup> , HID iCLASS SE/SR <sup>1)</sup> , ICODE SLI, LEGIC Advant <sup>1)</sup> , M24LR16/64, MB89R118/119, SRF55Vxx (my-d vicinity) <sup>4)</sup> , Tag-it, PicoPass <sup>5)</sup>
SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ <sup>7)</sup>	AWID, Cardax, CASI-RUSCO, Deister <sup>8)</sup> , EM4100, 4102, 4200 <sup>9)</sup> , EM4050, 4150, 4450, 4550, EM4305 <sup>10)</sup> , FDX-B <sup>10)</sup> , EM4105 <sup>10)</sup> , HITAG 1 <sup>11)</sup> , HITAG 2 <sup>11)</sup> , HITAG S <sup>11)</sup> , ICT <sup>10)</sup> , IDTECK, Isonas, Keri, Miro, Nedap <sup>8)</sup> , PAC <sup>10)</sup> , Pyramid, Q5, T5557, T5567, T5577, TIRIS/HDX <sup>10)</sup> , TITAN (EM4050), UNIQUE, ZODIAC
SUPPORTED TRANSPONDERS (OPTION P)	All Standard Transponders, Cotag, G-Prox <sup>8)</sup> , 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) <sup>12)</sup>
OS SUPPORT	Windows 7 (32-/64-bit), 8, 8.1, 10, Linux, Android <sup>10)</sup> , iOS <sup>10)</sup> , MAC OS X <sup>10)</sup>
PERIPHERAL INTERFACES	USB, RS485, I <sup>2</sup> C <sup>10)</sup> , 3 GPIOs, Clock/Data, Wiegand, OSDP <sup>10)</sup> , 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 <sup>2</sup> 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

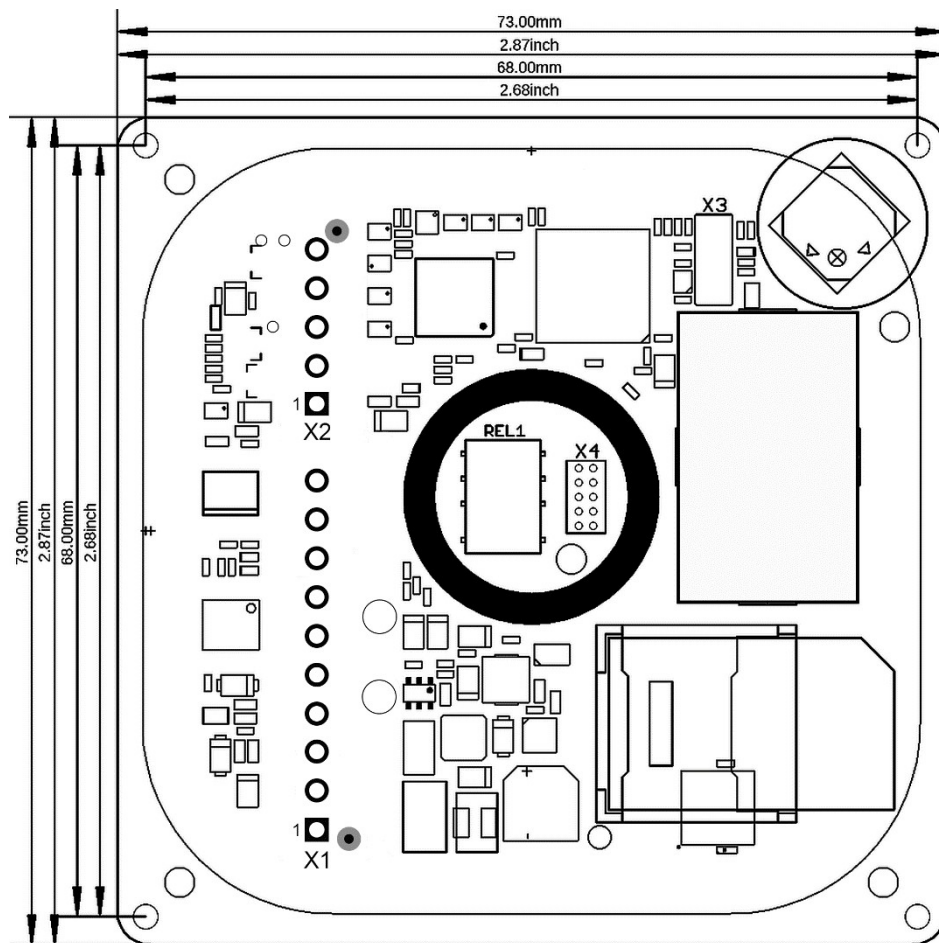
ENVIRONMENT	Special TWN4 Palon Square M versions for potting or coating on request	
CERTIFICATION NAME	TWN4 Palon Square M	
CERTIFICATION(S)	CE/RED, FCC <sup>13)</sup> , IC <sup>13)</sup> , REACH and RoHS-III compliant	
IMMUNITY AGAINST EM FIELDS	10 V/m according to EN 61000-6-2	
ORDER CODE(S)	T4WQ-F1F26	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	

<sup>1)</sup>UID only <sup>2)</sup>r/w enhanced security features on request <sup>3)</sup>In preparation <sup>4)</sup>r/w in direct chip command mode <sup>5)</sup>UID only, read/write on request <sup>6)</sup>UID + r/w public area <sup>7)</sup>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 <sup>8)</sup>Hash value only <sup>9)</sup>Only emulation of 4100, 4102 <sup>10)</sup>On request <sup>11)</sup>Without encryption <sup>12)</sup>UID + PAC (CSN & Facility Code), r/w on request <sup>13)</sup>Planned

## 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 <sup>2</sup> C SDA
4	Wiegand D0 or DATA, TTL	TAMPER IN, TTL, RFU	I <sup>2</sup> 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

#### 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

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