

# Product Datasheet OEM Reader Board Aircoil R/W

Article No : TLB – 1x



The TECTUS TLB-1x series of OEM read /write reader boards for ASK transponders are what you need, if multi-tag communication, size and price are important.

With its multiple interface options like RS232, RS485, USB and TTL, the TLB - 10 series offers highest flexibility to cover multiple applications. Different firmware versions offers best adoption of the TLB-1x to your applications.

Due to its integrated antenna and voltage regulator, the compact reader board is perfectly suited for a stress less design-in. Two programmable LED indicators and I/O's are on board available.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                  |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------|
| Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 125 /134 kHz +/- 3kHz (at RT)                                                    |                 |
| Antenna                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | antenna on board, external antenna (L=191μH, R < 5Ω) can be added in toggle mode |                 |
| Read Distance                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Short Range (proximity)                                                          |                 |
| Housing                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PCB, no housing                                                                  |                 |
| Dimensions                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 65 x 55 x 10 mm (2.56 x 2.16 x 0,39 in)                                          |                 |
| Power Supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 9..12VDC or 5 VDC                                                                |                 |
| Typ. Supply Current                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Antenna on: 75mA, antenna off 15mA @5VDC (interface active)                      |                 |
| Operating Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -20°C to +65°C (-4F to +149F)                                                    |                 |
| Interfaces                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | RS232 (V24), USB, RS485 (V24) and TTL                                            |                 |
| Standard firmware                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Read only :                                                                      | Read & Write    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UNIQUE (EM4x02)                                                                  | Q5, T5557       |
| Firmware features                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ISO 11784 /5, (FDX-B),EM4x05                                                     | HITAG 1         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | HITAG-S-32                                                                       | HITAG-S-256 /2K |
| Other reader firmware, based on ASK modes for FDX-A, EM4x25, EM4x70, EM4x50, EM4x66, ATMEL T555x are customized available upon request. (see page 3)                                                                                                                                                                                                                                                                                                                         |                                                                                  |                 |
| <ul style="list-style-type: none"> <li>• software loader for later firmware updates via serial interface</li> <li>• forth-interpreter, programmable offline functionality in forth</li> <li>• Command-interpreter, including all diagnostic and I/O functions</li> <li>• -SM ; secure mode, AES crypto mode for HITAG-1, HITAG-S 256 /2K</li> <li>• -AM ; ISO11784/5 (FDX-B &amp; HDX)</li> <li>• -QX ; possibility to read different FDX-A modes (ASK, PSK, FSK)</li> </ul> |                                                                                  |                 |
| The different firmware modules can be optional mixed in order to offer a maximum of customization flexibility. Custom tailored firmware can be designed upon request.                                                                                                                                                                                                                                                                                                        |                                                                                  |                 |

## Features

- Ready to use reader board by connecting power and communication interface
- On board amplifiers for higher performance compare to TLM-10
- on board demodulator to increase sensitivity compare TLM-10
- Synchronization of multiple readers via SYNC
- 3 / (2) free configurable I/O port, (RS485 with only 2 IO's)
- No quartz or external clock needed
- 5V input and 9..12VDC
- Offline functionality macro programmable by the customer
- Application specific firmware versions (ASF) available
- Full customized firmware possible on volume demand
- Signal amplitude measurement to measure the signal strength of the tag
- Command timing at the air interface is adjustable by parameters
- External antenna can be easy added and toggled with the internal one,
- 2 LED's are already board mounted and can be controlled via the IO's
- Low power consumption

## Specials

Reader boards with ASK, FSK or PSK demodulators can be offered on volume demand, as well as multi demodulator reader boards (ASK + PSK + FSK)

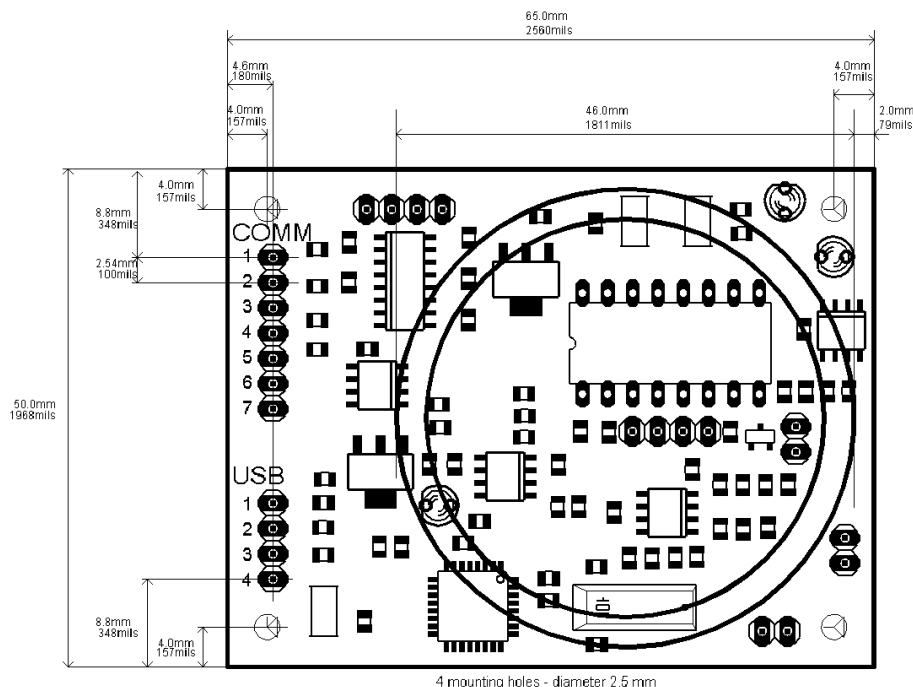
## Technical Certificates

CE /ISO9001 manufactured

## Inputs / Outputs

3 digital I/O's, (RS485 with 2 I/O's), 2LED's on board

## Board shape



## Order No

TLB – 11.aa = RS232 (V24)  
TLB – 12.aa = USB

TLB – 13.aa = RS485 (V24)  
TLB – 14.aa = TTL

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|                                               | cm | fu | un | zo | hi | ht | q5 | qx | Jan 05 | sm |
|-----------------------------------------------|----|----|----|----|----|----|----|----|--------|----|
| command interpreter                           | X  |    |    |    |    |    |    |    |        |    |
| forth interpreter                             |    | X  |    |    |    |    |    |    |        |    |
| EM H4100; UNIQUE (RO)                         |    |    | X  |    |    |    |    |    |        |    |
| ISO11784/5 FDX-B;<br>EM4006; ZOODIAC (RO)     |    |    |    | X  |    |    |    |    |        |    |
| HITAG-1; HITAG-S-32, 256,<br>2K (RW)          |    |    |    |    | X  |    |    |    |        |    |
| HITAG-2, R(W)                                 |    |    |    |    |    |    |    |    |        |    |
| e5557, Q5 (ASK , RW)                          |    |    |    |    |    |    | X  |    |        |    |
| e5557, Q5 ASK, PSK, FSK<br>(RW)               |    |    |    |    |    |    |    | X  |        |    |
| EM 4x50, TITAN (RW)                           |    |    |    |    |    |    |    |    |        |    |
| HITAG-S with AES Crypto<br>(secure Mode) (RW) |    |    |    |    |    |    |    |    |        | X  |
| tlb-1x-nl.cm.hi+q5+zo+un+pr                   | X  |    | X  | X  | X  |    |    |    |        |    |
| tlb-1x-nl.cm.hi+qx+q5+pr                      | X  |    |    |    | X  |    |    | X  |        |    |
| tlb-1x-nl.cm.hi+qx+un+pr                      | X  |    | X  |    | X  |    |    | X  |        |    |
| tlb-1x-nl.cm.hi+qx+zo+un+pr                   | X  |    | X  | X  | X  |    |    | X  |        |    |
| tlb-1x-nl.cm.qx+q5+zo+un+pr                   | X  |    | X  | X  |    |    | X  |    |        |    |
| tlb-1x-nl.cm.tx+zo+qx+pr                      | X  |    |    | X  |    |    |    | X  |        |    |
| tlb-1x-nl.cm.hi+sm                            | X  |    |    |    | X  |    |    |    |        | X  |
| tlb-1x-nl.cm.hi+ht                            | X  |    |    |    | X  | X  |    |    |        |    |
| tlb-1x-nl.fu.hi+un                            |    | X  | X  |    | X  |    |    |    |        |    |
| tlb-1x-nl.fu.hi+zo                            |    | X  |    | X  | X  |    |    |    |        |    |
| tlb-1x-nl.fu.q5+zo+un                         |    | X  | X  | X  |    |    | X  |    |        |    |
| tlb-1x-nl.fu.qx                               |    | X  |    |    |    |    |    | X  |        |    |