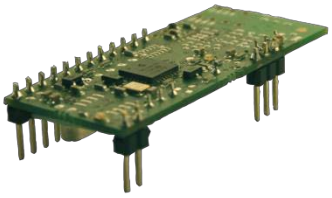
DATA SHEET

SCIEL CARD

High range active RFID reader – OEM Board

Reference: SCIOM26D



- **Compact** OEM RFID Reader for our active RFID Tags.
- **« Hand-Free »: automatic contactless reading system without any operation on our Active RFID Tags.**
- **Adjustable receiving range**
- **TTL Level UART** Serial Communication
- **ERM software:** configuration tool running on PC (format, speed, reading distance,…)
- **EMC: this product complies with the standard I-ETS 300-683 on the electromagnetic emissions.**

1 DESCRIPTION

The SCIEL CARD is our Active RFID 433MHz reader, in a compact OEM board version, for direct hardware integration into the customer's product motherboard.

2 TECHNICAL SPECIFICATIONS

Specifications	
Power Supply	5VDC
Max. current	15 mA
Frequency	433,92 MHz
Antenna's impedance	50 Ohms External Link
Reading Range	Adjustable by commands
Serial Interfaces	RS232 : RX TX GND (9600bds 8bit 1stop No parity)
Size	50 x 21 x 7.5 mm
Operating temperature	-40°C to +70°C

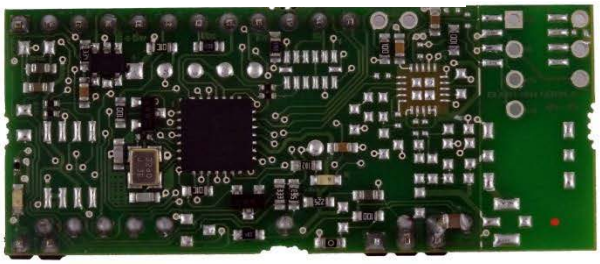
3 INTERFACES

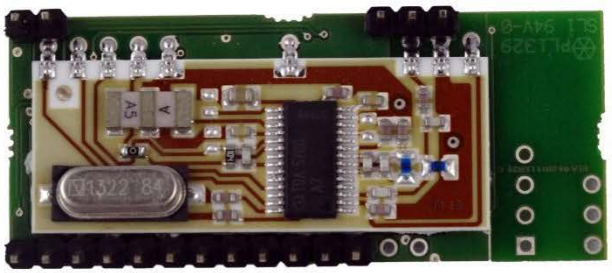
3.1 Pin Description

Pin-Out	PIN Description - DIL connector (2.54mm pitch)
1	NC or reserved for future use / Do not Connect
2	NC or reserved for future use / Do not Connect
3	NC or reserved for future use / Do not Connect
4	**+Vcc (5V ; needs L-C filter on mother board: 1µH – 470 nF)**
5	NC or reserved for future use / Do not Connect
6	**Open Output Collector – Relay Command**
7	**TTL UART RX Input 0/3.3V ; serial 47R protection (RB4)**
8	NC or reserved for future use / Do not Connect
9	**TTL UART TX Output 0/3.3V ; serial 47R protection (RB1)**
10	NC or reserved for future use / Do not Connect
11	**Ground**
12	NC or reserved for future use / Do not Connect
13	NC or reserved for future use / Do not Connect
14	NC or reserved for future use / Do not Connect
15	**Antenna Ground**
16	**50Ω Coaxial Antenna**
17	**Antenna Ground**

3.2 Pin Assignment

1 2 3 4 5 6 7 8 9 10 11 12





13 14 15 16 17

TOP VIEW **BOTTOM VIEW**

3.3 Power Supply Description

The external power supply of our SCIEL CARD must be at 5 VDC +/- 10%.
A L-C filter is required on the motherboard with the following characteristics : 1µF – 470nF.

3.4 UART TTL Serial Link Description

The serial link is based upon UART TTL signals, with RX and TX signals defined at 0VDC and 3.3 VDC.

Please refer to our Software Datasheet MCHD: READER COMMUNICATION PROTOCOL AND SETUP COMMAND LIST for UART configuration

3.5 Open Collector Output Description

When the output is activated, it is connected to the ground through a serial 10R protection.
The authorized max. current is 100mA.

Please refer to our Software Datasheet MCHD: READER COMMUNICATION PROTOCOL AND SETUP COMMAND LIST for Output drive

4 RADIO DESIGN

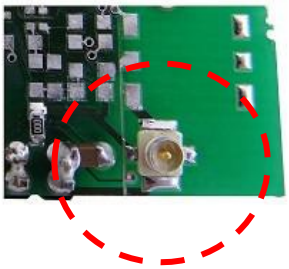
4.1 Frequency description

Our Active RFID reader works at the ISM radio frequency of 433,92 MHz +- 200 KHz.

4.2 External RFID Antenna spécifications

The external antenna which has to be connected to the integrator's motherboard has to be tuned at 433,92 MHz +- 200 KHz, with an impedance of 50Ω.

4.3 UFL connector Option



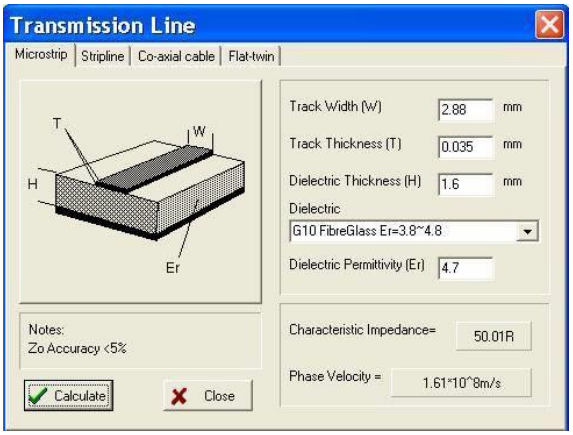
4.4 RF Design recommendations for motherboard

Our RF recommendations for the PCB layout design between the SCIEL CARD and the antenna connector placed on the mother board are :

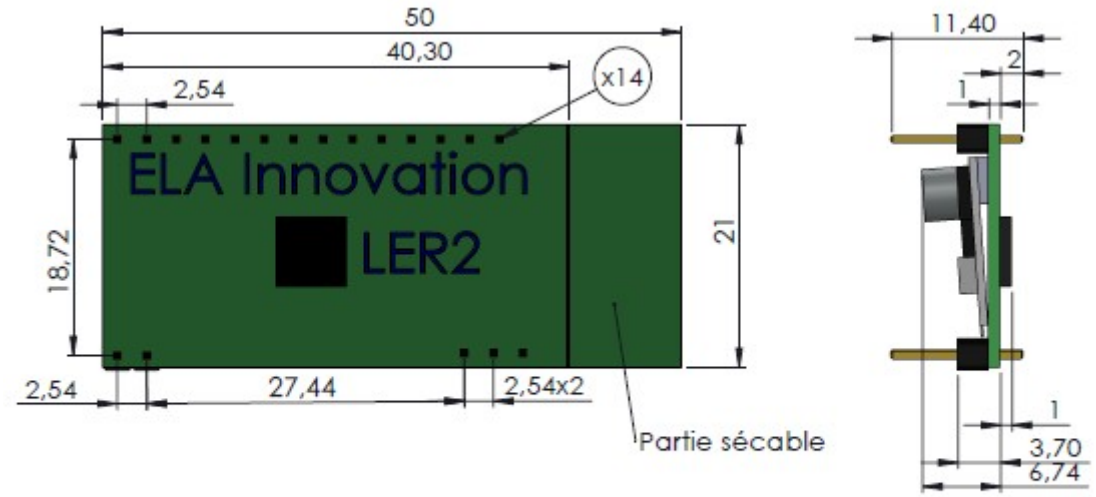
- For a 1.6mm PCB, copper thickness of 35µm with a width of 2.88mm (see picture below)
- For a 1mm PCB, copper thickness of 35µm with a width of 1.8mm.

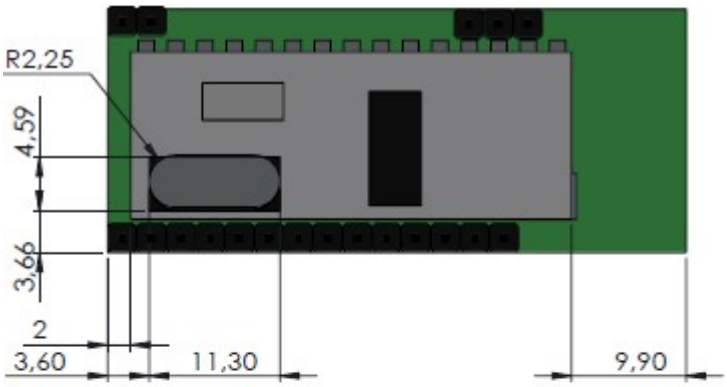
Please note that the ground plan is under the antenna's track (see picture below)

In the case that there is a ground plane on the top (in the same face as the antenna track's one), it has to be at more than 2 mm from the antenna's track.



5 MECHANICAL SPECIFICATIONS





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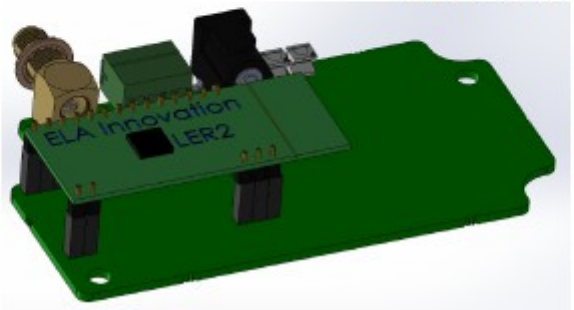

Example of SCIEL CARD mounting on motherboard PCB

6 READER OPERATING MODES

6.1 Configuration Command List

Please refer to our Software Datasheet MCHD: READER COMMUNICATION PROTOCOL AND SETUP COMMAND LIST.

Furthermore, our Terminal software ETER is available to communicate in a serial mode with our reader. This software is available in our DOWNLOAD area.

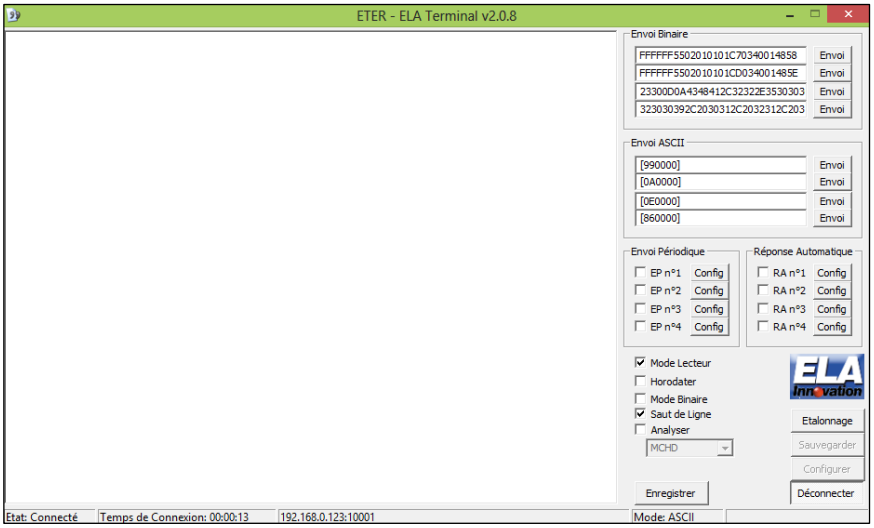

Image : ETER's main page

6.2 Configuration by software

Our configuration software tool, ERM, is available to configure our SCIEL READER R devices.

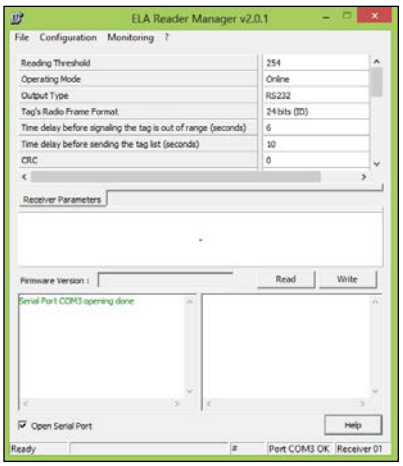

Image : ERM's main page

7 REFERENCES AND VERSIONS

Model	Reference P/N	Specifications
SCIEL CARD	SCIOM26D	5VDC 433.92MHz
SCIEL CARD with UFL connector option	SCIOM38B	5VDC 433.92MHz with the UFL connector option

8 STANDARDS

- EN 301 489 – 3: 2002 V1.4.1 ; EN 300 220 – 2007 : V2.1.2
- CE Mark
- RoHS Certified

9 Document version

Version	Date	Author	Changes
01A	30/06/14	WL	First UK document version
01B	03/07/14	WL	Added mechanical specifications
02A	22/11/16	LA	Reference updated SCIOM26D