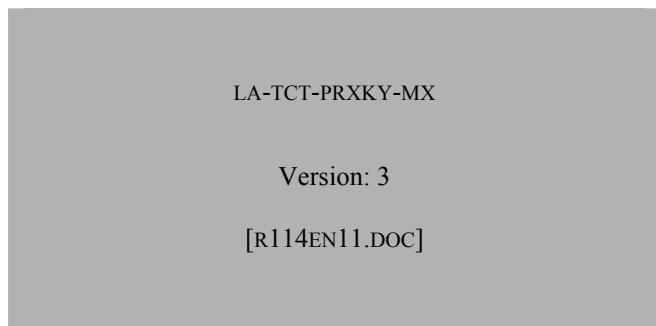


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CONCEPT

Author : Ernst Lemm  
IOLAN bv

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## 2. Regarding this document

This document is confidential.

### 2.1. Objective

This document describes the module LA-TCT-PRXKY-Mx with test software for CE and FCC tests.

It will also serve as test documentation for production.

### 2.2. Copyright

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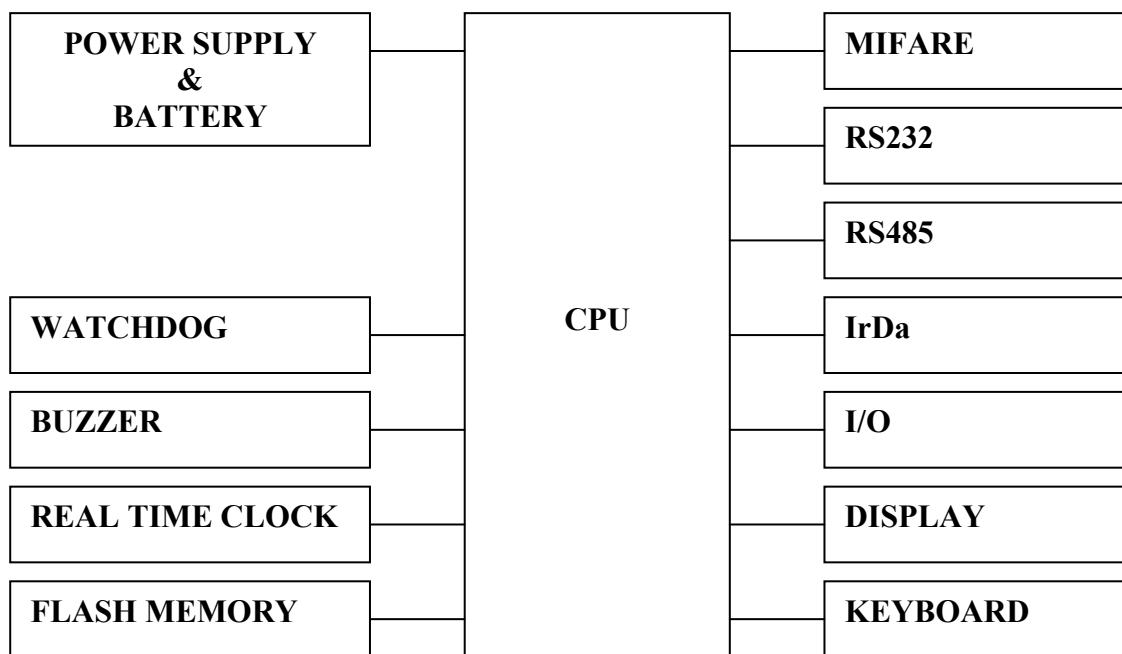
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### 3. Hardware description

#### 3.1. Interfaces

The module is fixed or mobile. The hardware as well as the software is very flexible.

The block diagram:



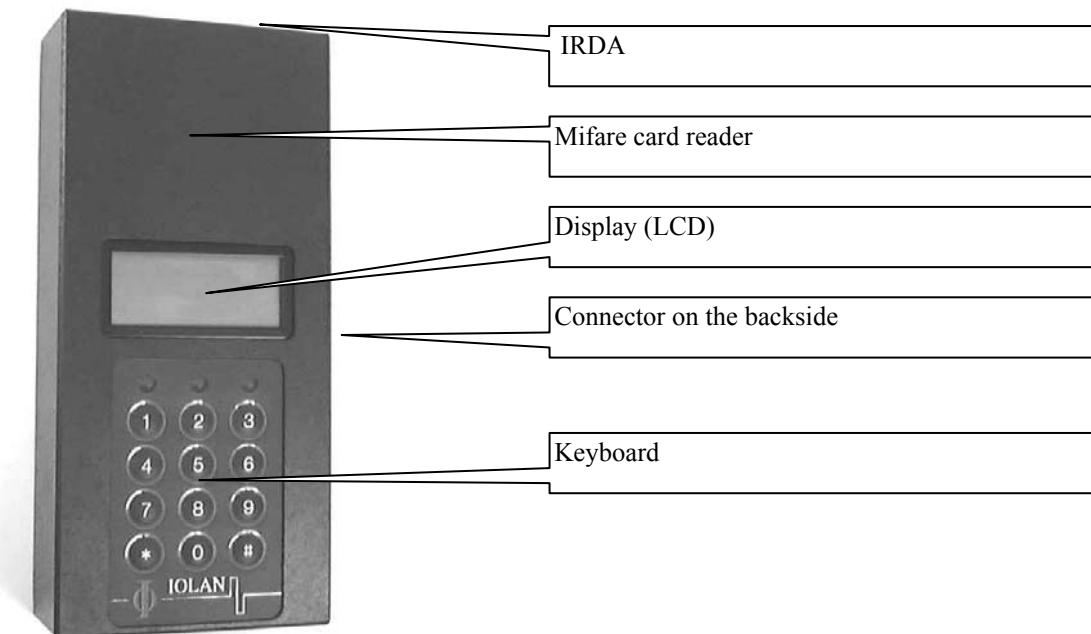
- Mifare© card reader.
- Real-time clock
- Internal battery.
- External power supply possible.
- Keyboard, 12 keys
- Small buzzer
- Graphic display (LCD)
- Two pluggable connectors.
- IRDA interface
- RS485 interface
- RS232 interface
- 1 Digital input, 1 Digitale output 0,5Amp 24Volt.
- Microprocessor, flash memory.

Remarks for CE and FCC approval:

- The Mifare © card reader part is, in terms of the FCC, an 'intentional low power transmitter' at 13.56MHz. Frequency deviation and emission of RF energy is important. In the past, another card reader has been approved, with an 100% equal Mifare system. This FCC ID is OCQLA-XXWPRXKYY-MX.
- Due to the presence of RS485 and RS232 the maximum cable length is 1,2km. The maximum baud rate is 115kb. This is important for immunity and emission. The interfaces are universal. No specific external devices are specified.
- For CE, the keyboard, interfaces and display are points for attention regarding ESD immunity.

### 3.2. Module and connectors

The module is connected to a flat mounting block. This mounting block is also called 'docking station'. The left photo displays the module without back plate (battery is visible) and the docking station. The docking station is 100% passive and made of synthetic material. The order number of the docking station is LA-RSX-RSOMZ-F.



## 4. Applications

### 4.1. The important applications

The main purpose is to handle remote smart cards. The smartcard technology of Philips named Mifare © is used. Some applications with smart cards are access control, identification, ticketing, etc.

### 4.2. Application environment

The module has to be used in dry environments such as offices and light industrial places.

The module is suitable for mobile applications. A specific adapter is available to charge the internal battery and enable communication with other equipment.

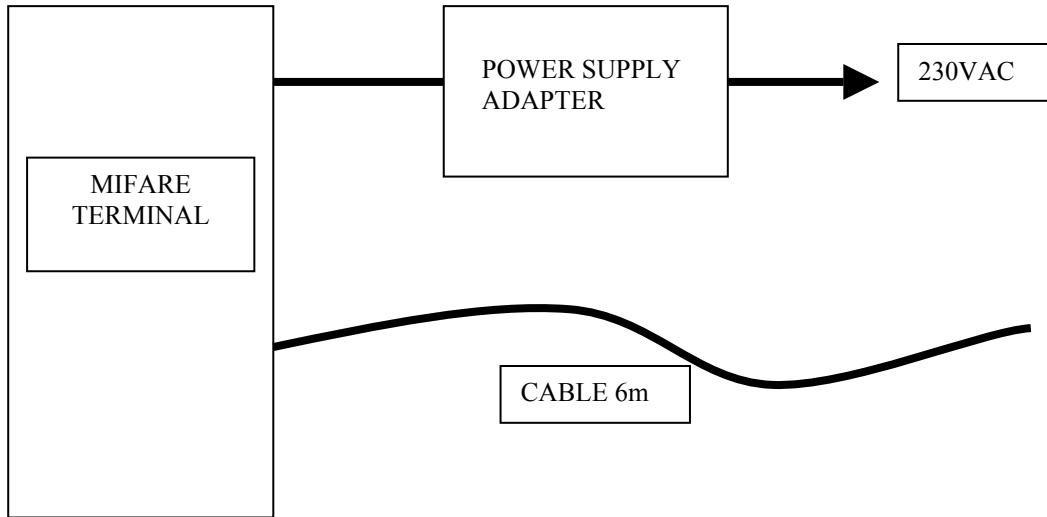
The module can be connected to a classic power supply (for example art. EC170007) or to an external power supply.

The digital input is meant for detection of external switches, the digital output can be used to operate lamps, electrical locks or other low voltage (<30V) equipment.

A special docking station, which is 100% passive, is available. It is important that the same FCC admission is applied to this docking station (accessory).

## 5. User manual test set

To perform the test, a test program will be started in the module. The test results are visible on the display.



How to operate:

- Power up with the '#' key.
- The '#' key has an 'enter' function.
- The '\*' key has an 'escape' function.
- The '0' key has an 'next' function (browse menu options).
- The test program contains a menu structure. The main menu consists of SERVICE and SWITCH OFF. The SERVICE consists of LANGUAGE, VOLTAGES, PINCODE, POWER-OFF TIME, LCD CONTRAST, ADJUST CLOCK and STORE PARAMETERS. The description of this menu is not part of this manual.

The test consists of the next items:

- Presented Mifare cards are displayed on the LCD.
- Pressing the keys produces a sound.
- Serial communication is visible on the LCD. The cable must be connected. The cable contains loop backs on the right side in the block diagram. The RS232, RS485 and I/O is tested through the loop backs.
- The IrDa is not used.
- Date and time are shown on the display.
- After switching off the external power supply adapter, the module continues functioning until the internal battery is exhausted.

Remaining:

- The emission measurement for the FCC are to be used in the CE construction file.
- Possibly, the module as well as the passive docking station needs an FCC id.

## 6. Technical data

| <b>Power</b>                       |   |
|------------------------------------|---|
| Power supply and recharging        | <ul style="list-style-type: none"> <li>Internal battery. 4 hours operational</li> <li>230VAC with power supply and cable</li> <li>12VDC...24VDC ±5%</li> </ul>  |
| <b>Inputs and outputs</b>          |   |
| keyboard                           | 12 keys   |
| display                            | graphic, maximum of 4x16 characters   |
| Mifare card reader                 | reader for Mifare cards, typical 15mm reading distance  |
| Interface                          | 3 wire, RS232 interface with multidrop capability (max. 4 modules parallel)<br>2 wire, RS485<br>IRDA infra red communication<br>1 Digital input<br>1 Digital output 0,5 Amp 24Volt  |
| <b>Mechanical data card reader</b> |   |
| Housing material                   | Synthetic material, black, aluminium backside   |
| Dimensions                         | 157x73x30mm (hxwxh)   |
| Environmental                      | IP40. The module is not waterproof.   |
| Temperature                        | Storage temperature range 0...50 ° Celsius,<br>Operating temperature range 0...40 ° Celsius   |
| <b>Internal Software</b>           |   |
| Version                            | Version name: R1140v001r00  |
| <b>Installation</b>                |   |
| Connector                          | 10 terminals over 2 connectors  |
| Mounting                           | 2 x M3 screw. Optional on mounting box  |
| Mounting / user environment        | Inside / office environment   |
| <b>Ordering information :</b>      |   |
| Id of module                       | LA-TCT-PRXKY-MX   |
| Ordernumber of the module:         | LA 14 06 01 (hardware) +<br>DS 03 xx xx (software)  |
| <b>Explanations</b>                |   |
| FCC id in preparation              | PYS LATCTPRXKYM  IN PREPARATION!<br>PYS LARSXRSOMZ-F  IN PREPARATION! |
| Environment warning                | The electronics of the module contains components with special characteristics. Do not throw it away. Dispose of it properly, like batteries.   |

## 7. Document version-info

| Version | Date                          | Name | Modification info   |
|---------|-------------------------------|------|---|
| 1       | thursday 18th, oktober 2001   | EL   | <ul style="list-style-type: none"> <li>1<sup>e</sup> version</li> </ul> |
| 2       | wednesday 28th, november 2001 | KT   | <ul style="list-style-type: none"> <li>test set</li> </ul>              |
| 3       | Monday 2nd, december 2001     | KT   | <ul style="list-style-type: none"> <li>translated</li> </ul>            |
|         |                               |      | •   |

END