

OEM MANUAL
PACT (Contact/Contact-less)
Physical access control terminal



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1.0 Product Specification

1.1 Overview

The term PACT is the acronym for **Physical Access Control Terminal**. The PAT1241 has three user interfaces, the Contact, the contactless Smart Card and the Pin-pad and is intended for indoor use. Apart from this there is the Access granted/denied indication LED and Buzzer. The PAT1241 is based on the PACT STCII-B ASIC and is designed for indoor operation. The contact less interface is managed by the Mifare controller. This product has two communication channels, the RS 485 channel and Wiegand/Magnetic stripe channel for communication with the Control Panel. For security purposes, a SAM is embedded as a crypto processor and key storage device.

1.2 Product Features

- User Interfaces
 1. Contact Smart Card
 2. Contact less Smart Card
 3. Pin-pad
 4. Activity LED's one for contact, one for contact less and one for pin-pad
 5. Access granted/denied indicator
 6. Buzzer.

- Power

The device is powered by the control panel, **12V** DC with a range from 9 to 16V.

- RS485 communication channel
 1. Install options for 2 wire / 4 wire mode
 2. DIP Switch configurable address selection and termination.

- Wiegand interface

- Magstripe Interface

2.0 Hardware Specification

2.1 Power Supply

+12V DC is taken from the input to the control panel and regulated to +5V DC and +3.3V DC on the PAT13X1 PCBs.

Connect the Shield pin of the reader to the base-plate and the shield of the cable to the base-plate.

Current Consumption is 110 -250 mA@12V for Device full operation.

2.2 Clock Frequency

- STC-II chip internally running @22.117 MHz for RS485 operation, derived from an external 12 MHz crystal
- ICC clock @4-12MHz
- Contactless reader's Transmitter antenna and receiver circuit works @13.56MHz using MIFARE RC531 chip

2.3 Contact interface details

- ISO7816-1/3
- Protocol: T=0, T=1
- 5V card (ISO7816 Class A and AB)
- Communication speed: up to 344,086 bps
- Frequency 4MHz as a minimum (up to 12MHz)
- **Class A or AB cards ONLY; No support for B only cards.**

2.4 Contactless Reader

- ISO14443 A and B (13.56MHz)
- ISO14443 part 1 thru 4
- Protocol: T=CL
- **Communication speed: 106Kbps as a minimum (maximum 424Kbps)**
- **Operating distance: min 2 cms for CAC card**

2.5 User Interface

2.5.1 Keypad

- 3 x 4: 0-9, Clear, Enter – standard telephone layout
- Audible feedback with different sounds for 0-9, Enter and Clear
- Use for PIN entry (Contactless)

2.5.2 LEDs

- 1 Red – Access denied (can be managed thru Wiegand)
- 1 Green – Access granted (can be managed thru Wiegand)
- 1 LED per type of interface
 - 1 for Contactless
 - 1 for Contact
 - 1 for PIN

The application will manage these LEDs. SCM will only supply APIs to manage them (on, off, blinking with frequency)

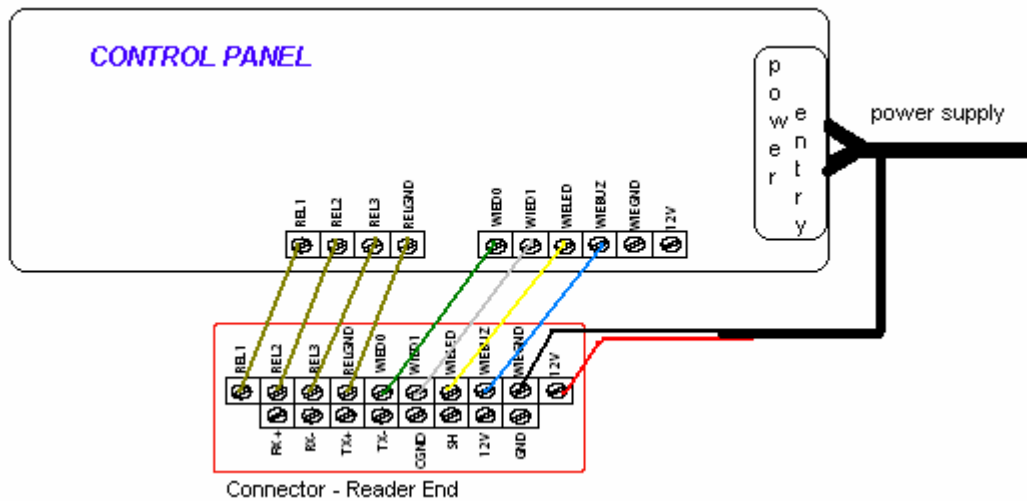
2.5.3 Buzzer

- User feedback (beep) with different sounds.

2.5.4 Installation

Fix the base-plate on the wall and then mount the reader with a switch for tamper evidence in between . Wires required for connection to the alarm needs to be connected to the switch, prior to mounting the reader.

Connect the D0, D1, LED, BUZZER, RELAY lines from the reader to the control panel.



Shown below is the bottom portion of the reader.





2.5.5 Cable Specifications

Cable to be used between the Reader and the Control Panel should be **22 (7/30) AWG**

3.0 Software Specifications

3.1 Contact Card Parameters

Some important smart card parameters, supported smart card types, maximum operable smart card frequencies, operating voltages etc., are detailed in the tables below.

ICC Parameters	Value/Description
Class A Smart Cards	Supported
Class AB Smart Cards	Supported
ISO-7816 compliant	Yes
Smart card operating frequency	4MHz
Maximum supported card baud-rate	344,086 bauds

3.2 PICC Parameters

Some important PICC parameters, supported contact-less card types, maximum operable PICC frequencies, operating voltages etc., are detailed in the tables below.

ICC Parameters	Value/Description
Type A T=CL PICC	Supported
Type B T=CL PICC	Supported
ISO-14443 compliant	Yes
PICC operating frequency	13.56MHz
Maximum supported card baud-rate	424Kbps

3.3 DFU Utility

DFU utilities/drivers for dynamic Device Firmware Upgrade (DFU) are shipped with the device for RS232 interface. DFU utilities/drivers are capable of performing a DFU under the following operating systems.

Operating System	Support
WIN98	Yes
WINME	Yes
WIN2000	Yes
WINXP	Yes

4.0 Regulatory Compliance

This section describes the product's compliance with U.S. and international safety and electromagnetic compatibility (EMC) regulations.

4.1 Safety Regulations

Below Table mention the safety regulations the product complies with when correctly installed in a compatible host system.

Regulation	Title
UL 60950	US Safety of Information Technology Equipment
EN 60950:2000	The Standard for Safety of Information Technology Equipment including Electrical Business Equipment. (European Union)

4.2 EMC Regulations

Regulation	Title
FCC (Class B)	Title 47 of the Code of Federal Regulations, Parts 2 and 15, Subpart C, Radio Frequency Devices. (USA)

5.2.1 FCC Compliance Statement (USA)

Product Type: Contact / contactless smart card reader.

Product Name: PACT-STC II

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 Sub part C of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the receiver.

Connect the equipment to a different electrical branch circuit from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications to the equipment not expressly approved by SCM could void the user's authority to operate the equipment.

5.3 Product Ecology Statements

The following information is provided to address worldwide product ecology concerns and regulations.

5.3.1 Disposal Considerations

This product contains the following materials that may be regulated upon disposal: lead solder on the printed wiring board assembly.

5.3.2 Recycling Considerations

SCM encourages its customers to recycle its products and their components (e.g., batteries, circuit boards, plastic enclosures, etc.) whenever possible. In the U.S., a list of recyclers in your area can be found at: <http://www.eiae.org/>

In the absence of a viable recycling option, products and their components must be disposed of in accordance with all applicable local environmental regulations.

5.4 Product Certification Markings

Below Table lists the product certification markings.

Description	Marking
UL file number for PACT-STC II XXXXXXXXXX	
FCC ID for intentional radiator Class B equipment.	FCC ID MBP PAT 1300 - 1241