

# 1 Operational description

The SCIBA2 reader is an inexpensive, compact radio frequency communications electronic interface unit. Bi-directional RF communication to contactless smart cards, serial communication to application controller and rich set of macro commands make it the keystone in contactless smart card systems. The SCIBA2 can be integrated into existing systems. Using USB interface between reader and Host, the SCIBA2 allows bi-directional, communication between the Host and passive, contactless smart card.

Optional RS232 or RS485 Host communication link is also available.

The SCIBA2 reader serves as a smart interface unit between the application controller and:

1. ISO 14443 Type B Contactless smart cards.
2. ISO 14443 Type A Contactless smart cards.
3. Mifare Contactless smart cards
4. Optional ICODE contactless smart cards
5. Up to four Secured Applications Modules (SAM)

At the Host's command, the SCIBA2 generates and modulates a 13.56 MHz carrier signal for the transmission of power, commands and data to an in-range smart card. The SCIBA2 detects the, signal encoded by the card automatically choosing the modulation technique required by the card. Read and write operations have equal data rates and range. By utilizing a matched antenna, the SCIBA2 communication technology is unique in allowing for a **remote antenna** configuration (up to 33 meters).

## **Secured Transactions**

Secured Purse to Purse transactions can be achieved between card and "on board" SAM Secured Applications Module.

## **Digital IO**

The SCIBA2 optionally supports up to 8 Digital Inputs & 16 Digital Outputs via onboard connectors.

## **Operating Voltage**

The SCIBA2 can operate from 7.0 to 15VDC

## **Antennas**

The SCIBA-2 is supplied with a standard antennas with which the system was EMC certified.



## 2 Technical specifications

- Power input from 7.0 to 15VDC.
- Operating temperature range -20° to 70°C (-4° to 158°F).
- Up to two antenna RF channels.
- 13.56 MHz transmission frequency conforming to ISO 14443 standard.
- ISO 14443 Type A/B and Mifare cards support.
- Bi-directional radio frequency interface between Host and Contactless Smart Cards
- USB (or optional RS232/485) Communications interface to Host computer.
- Flexible, software configurable microcomputer-based design.
- Integrated, sophisticated Smart Card Operating System on board.
- High security encryption system (DES/RSA) in the board's Operating System (with SAM option on-board).
- Signal penetrates virtually any non-conductive material - no contact or line-of-sight required.
- Unique passive “electronics free” remote antenna for added security and easy physical integration.
- Up to two serial COM ports.
- Up to four EMV2000 compliant “on-board” SAMs.
- Indicator Leds for Power ON, good USB link and five programmable leds. (Two of these leds are usually used as transmit indicators for the two RF channels)
- Up to 8 optional Digital Inputs & 16 Digital Outputs
- Compliance with FCC Section 15 and I-ETS 300 330 emission limit requirements.
- In system programming of reader firmware to 128KB flash memory via standard Host communication link.
- Optional open collector output (100mA max) for operation of external relay or buzzer.
- Embedded watchdog timer and full reset on brownout.
- There are no connections with exposed plant leads. All lines are indoor only.



### 3 System configuration

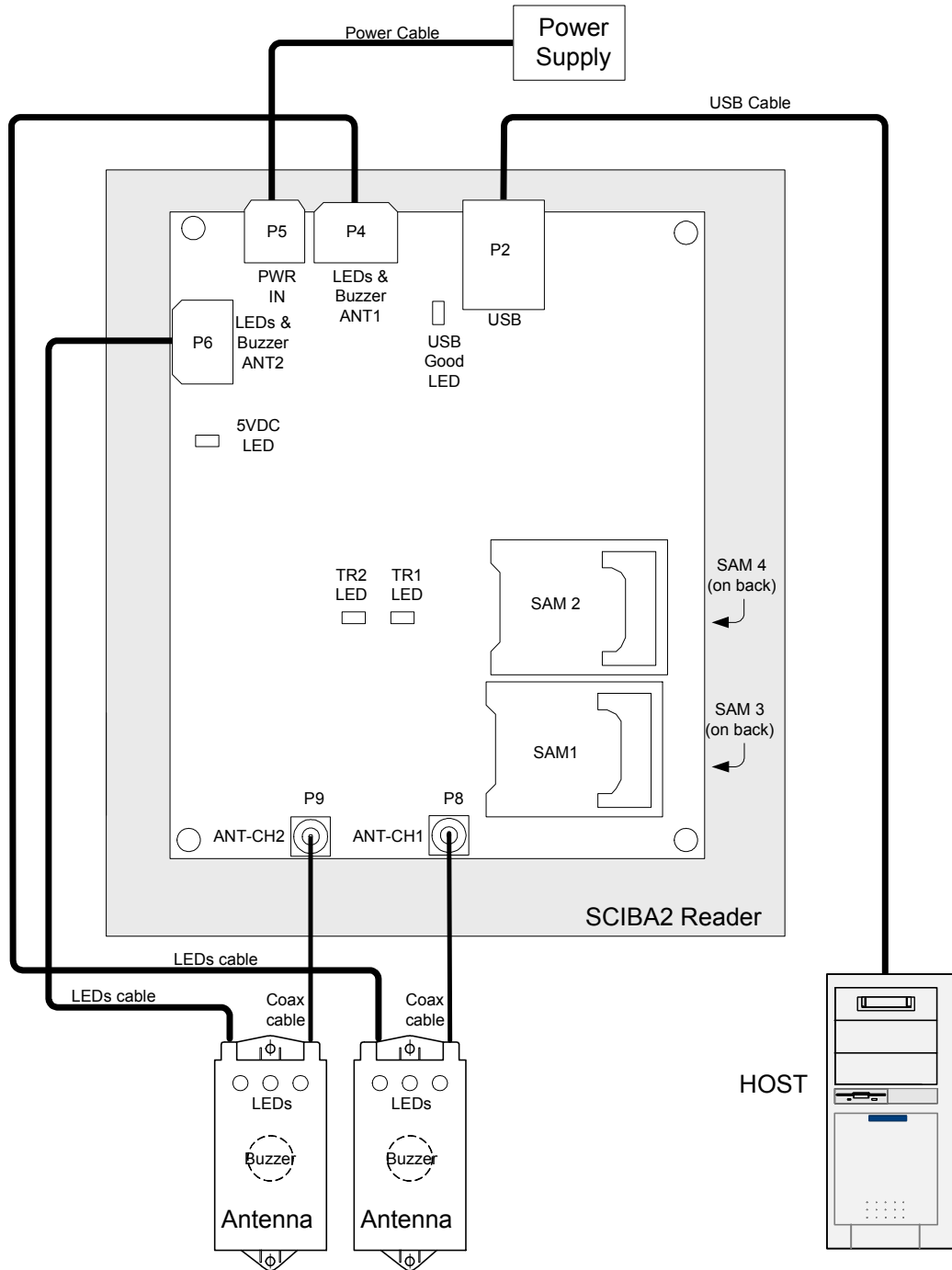


Figure 3-1: SCIBA2 System Configuration

