



**LCIE SUD EST**  
 Laboratoire de Moirans  
 Z.I. Centr'Alp  
 170, Rue de Chatagnon  
 38430 MOIRANS - FRANCE

## GENERAL INFORMATION

FCCID: XKB-SELF4000

### 1.1. Product description

ingenico  
GROUP



#### TECHNICAL DATASHEET

### Self/4000

**Product Reference:** PSR303114420

**Designation:** All-in-One self-service terminal mechanical keyboard

**Recommended use:** Payment Kiosks

| FEATURE                    |  |  |  |
|----------------------------|--|--|--|
| Platform                   | Crypto & Application processor<br>OS   | Cortex A5<br>TETRA   | <input type="checkbox"/><br><input type="checkbox"/>   |
| Memory                     | Internal<br>External   | 512 MB RAM / 512 MB Flash<br>MicroSD up to 32GB  | <input type="checkbox"/><br><input type="checkbox"/>   |
| SAM                        |  | 2 x SAM ID-000   | <input type="checkbox"/>   |
| Card reader(s)             | Contactless<br>Smart Card<br>Magstripe<br>Hybrid card reader (horizontal insertion)<br>Shutter | EMV Level 1 compliant / ISO 14443 A/B/B'<br>EMV Level 1 / 500k reads lifespan<br>ISO 1/2/3, 500k reads lifespan<br>With RGB backlit LEDs (anti-skimming)<br>To avoid insertion of non card inside the reader | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> |
| Display                    | Color  | 2.27" backlit, landscape mode (640x240)  | <input type="checkbox"/>   |
| Touchscreen                |  | Not available on this device   |  |
| Keypad                     | Mechanical   | 16 keys<br>Backlit key   | <input type="checkbox"/><br><input type="checkbox"/>   |
| Audio                      | Buzzer<br>Polyphonic sound (WAV files reader)  | Mono<br>Thru external loudspeaker (not provided)   | <input type="checkbox"/><br><input type="checkbox"/>   |
| Camera                     | In front of the device   | 2MP – fixed focal<br>Honeywell® library  | <input type="checkbox"/><br><input type="checkbox"/>   |
| Terminal connections       | USB<br>Serial<br>Sound<br>MDB  | 1 x USB Slave (USB-B connector)<br>2 x USB Host (USB-A connector)<br>2 x RS232 (RJ11 connector)<br>1 x 2 PIN connector for external loudspeaker<br>1x MDB Master + 1x MDB Slave                              | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>option                   |
| Connectivity               | Ethernet 10/100<br>Wireless (in slot #2)   | 1 x RJ 45<br>Bluetooth<br>4G (EU)<br>4G (US)<br>4G (AUS)<br>4G (JPN)   | <input type="checkbox"/><br>option<br>option<br>option<br>option<br>option   |
| Power supply               | External power supply<br>POWER BOX (in slot #1)<br>MDB BOX (in slot #1)                        | 9-16 V DC – 2 PIN connector<br>10-45V DC<br>10-45V DC  | <input type="checkbox"/><br>option<br>option   |
| Terminal size              | EVA standard<br>Overall W x H x D mm   | SDM EVA<br>85,2 x 107,2 x 109,6 mm   | <input type="checkbox"/><br><input type="checkbox"/>   |
| Terminal mounting          | From outside the kiosk<br>From inside the kiosk  | Without EVA mounting plate<br>With EVA mounting plate  | <input type="checkbox"/><br><input type="checkbox"/>   |
| Weight                     |  | 620 gr   |  |
| Environment                | Operating Temperature<br>Storage Temperature<br>Operating Humidity non condensing              | -20°C to +70°C<br>-20°C to +70°C<br>95% HR at +55°C  |  |
| Material                   | Plastic  | Compliant fire & smoke standard (EN 45 545-2)  |  |
| IP                         | Ingress protection   | IP 44  |  |
| IK                         | Shock protection   | IK 09  |  |
| Security                   |  | PCI PTS S.1 certified  |  |
| Accessories (provided)     |  | 2 PIN ↔ 6 PIN adaptor cable for standard PSU<br>EVA SDM mounting plate   | <input type="checkbox"/><br><input type="checkbox"/>   |
| Accessories (not provided) |  | USB cables, SERIAL cables...<br>PSU...   | option<br>option   |

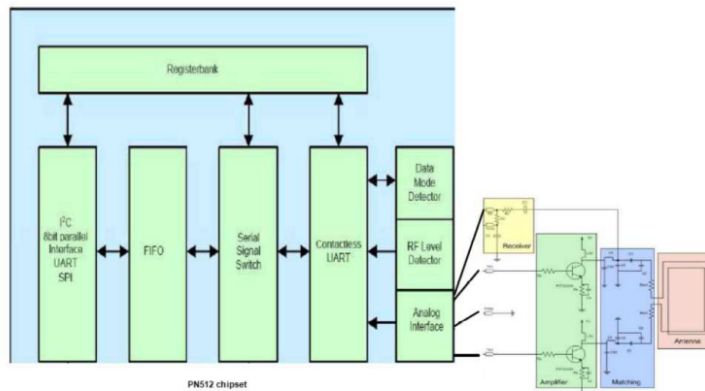


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#### Contactless functional description:

- Specifications: ISO14443
- Modulation: ASK (100%) TYPE A or ASK (10%) TYPE B
- Frequency band: 13.56MHz
- Loop antenna technology (printed on FPC circuit)
- Antenna gain : very inferior to 1

The Contactless link is used as a card reader. The ContactLess part is able to accept a reader/writer command according to ISO14443 card interface scheme. The operating frequency is 13.56MHz (main crystal input frequency 27.12MHz). The Contactless design is based on the NXP PN512 Chipset managed by the secure processor via SPI.



#### ContactLess antenna

##### Technology

The 13.56MHz antenna is designed on a Flexible circuit. It is a loop antenna type with 2 turns of track. The 13.56MHz resonant frequency is achieved by a RLC tuning circuit. L is the inductance of the loop antenna and R its resistance. The 13.56MHz RF technology operates by inductive coupling (magnetic field) between two antennas. The radiated power (Electric field) is very weak because there is not a real radiated element. That's why the 13.56MHz antenna gain is very low (compared with a dipole antenna at 13.56MHz) and difficult to measure. We will say that our 13.56 MHz antenna has a gain very inferior to 1. The antenna is not accessible by the user.



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#### **Conducted Power**

The Lane outputs a 13.56 MHz sinusoidal carrier at its antenna port. The peak antenna current and the peak antenna voltages are known. Based on these values, the conducted power output is calculated as shown below.

Power amplifier  
current = 0.214

A Power  
amplifier  
Voltage = 6V

Conducted power amplifier power:  $0.214 * 6 = 1.29 \text{ W}$

RF duty cycle = 12.1% (124ms OFF, 15ms ON. These timings are fixed in firmware)

Conducted power output to the antenna (with duty cycle) =  $1.29 \text{ W}$

\*  $0.121 = 155\text{mW}$  The Self has a tuning tolerance of +/- 5%. The

following table shows the typical/min/max values of the output power.

*Data sheet of equipment*



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**1.2. Tested System Details**

Equipment under test (EUT):  
**INGENICO Self/4000 CL**

**Serial Number: 193407313031143912221149**



Equipment Under Test

**Power supply:**

| Name    | Type  | Rating | Reference / Sn | Comments |
|---------|---|--------|----------------|----------|
| Supply1 | <input type="checkbox"/> AC <input checked="" type="checkbox"/> DC <input type="checkbox"/> Battery | 12     |                |          |

**Inputs/outputs - Cable:**

| Access | Type         | Length used (m) | Declared <3m             | Shielded                 | Under test               | Comments |
|--------|--------------|-----------------|--------------------------|--------------------------|--------------------------|----------|
| 2      | USB A        | -               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 1      | RJ45         | -               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 2      | RJ11         | -               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 1      | USB B        | -               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |          |
| 1      | Power Supply | -               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |          |

**Auxiliary equipment used during test:**

| Type   | Reference | Sn | Comments           |
|--------|-----------|----|--------------------|
| Laptop |           |    | Use to set the EUT |

**1.3. Test Methodology**

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 or/and ANSI C63.10, FCC Part 15 SubPart 15B and 15C.

Radiated testing was performed at an antenna to EUT distance of 10 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.



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### **1.4. Test facility**

Tests have been performed: **May 25, 2020 to May 29, 2020**

This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4 or/and ANSI C63.10.

This test facility has also been accredited by COFRAC (French accreditation authority for European Union test lab accreditation organization) according to NF EN ISO/IEC 17025, as compliant with test site criteria and competence in 47 CFR Part 15/ANSI C63.4 and EN55032/CISPR32 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.