

开放 团结 激情 忠诚

IPS420产品使用手册

IPS420 USER MANUAL



上海杉德金卡信息系统科技有限公司
Shanghai SAND Information Technology System Co., Ltd.



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安全指引 Safety Guide

- ◆ 请在使用本产品前仔细阅读本手册，不要执行本手册中没有明确说明的操作。未经授权的操作会导致错误或意外。制造商对因错误操作而导致的任何问题均不承担责任。
- ◆ Please read this manual carefully before using this product, do not perform any operation not clearly stated by this manual. Unauthorized operation will lead to a mistake or accident. The manufacturer assumes no responsibility for any problems caused by improper operation.
- ◆ 在室内外温差较大的情况下，为防止设备内部结露，在室温下放置12小时以上再打开包装箱。
- ◆ In case of large difference in temperature, to prevent condensation of device, please place the device indoor for 12 hours before open the box.
- ◆ 应选择一个凉爽、干燥的平台地方安放，避免阳光直射、过热、多尘或潮湿的环境。
- ◆ Device should be placed at a cool, dry platform, away from direct sunlight, heat, dusty or humid environment.
- ◆ 存放或安装的地点附近不允许有各种有害气体、易燃或易爆物品及有腐蚀性的化学物品，并且应无强烈的机械震动、冲击和强磁场作用。
- ◆ Stored or installed does not allow harmful gases, flammable or explosive materials, and corrosive chemicals nearby, and no strong mechanical vibration, shock and strong magnetic field.
- ◆ 在不使用时，应关闭电源，并用包装保护。
- ◆ When device not in use, turn off the power and protection packaging.
- ◆ 在清洁时，不要使用液体的清洁剂，以免溅入设备内。
- ◆ When cleaning, do not use liquid detergent, in order to avoid splashing into the equipment.
- ◆ 当设备发生故障后，应立即关闭电源，并与服务商联系，请专业人员进行维修。请勿自行拆开检查或维修，以免造成进一步的损坏。
- ◆ When the device fails, in order to avoid further damage, turn off the power supply, and call service providers. Do not disassemble or maintain without the help of professional.



简介 Introduction

- ◆ IPS420是杉德金卡公司专门为移动支付应用开发的一款便携式金融支付终端产品。
- ◆ IPS420 is an EFT-POS designed by SAND for mobile payment.
- ◆ 本机磁条卡部分符合GB/T 15120 ISO 7811标准；接触式IC卡部分符合GB/T 16649、ISO 7816和EMV2000标准；非接触式IC卡部分符合DB31/239.2-2000、ISO/IEC 14443 TYPEA、以及上海模式协议标准，其中TYPEB可选。
- ◆ Magnetic stripe card accord with GB/T 15120 ISO 7811; Contact IC card accord with GB/T 16649、ISO 7816 and EMV2000; Contactless IC card accord with DB31/239.2-2000、ISO/IEC 14443 TYPEA and Shanghai protocol standard,TYPEB optional.
- ◆ 本机提供多种接入方式，标配GPRS，可选CDMA以及3G模块。
- ◆ Offers various communication mode ,GPRS,CDMA and 3G module is optional.
- ◆ 本机标配GPS模块，定位精准。
- ◆ GPS module Positioning accuracy.
- ◆ 本机人机界面友好，提供21键键盘，方便用户输入各种信息，且每个键的功能均可通过程序进行重定义。同时，本机提供320×240TFT LCD显示屏，用于显示各种操作信息和状态。
- ◆ User friendly , 21 keys keyboard, user input all kinds of information easily, and every key could be redefine by application. Meanwhile , this terminal has a 320X240 TFT LCD screen, show all the operation information and status.

IPS420外型小巧美观，便于携带，并可根据客户需要选择GPRS或CDMA等方式与后台进行数据通信。非常适合用于餐厅、出租车、物流等一些以移动性和临时性为特点的应用场合。

The shape of IPS420 is small and artistic , easy to carry , and client could choose GPRS to have data change. Fit for restaurant 、 taxi 、 logistics etc. which are in mobile and temporary situation.



1 设备与功能介绍 Device and function introduction

1.1 IPS420 外观及硬件构成 View and hardware

1.1.1 外观 View





1.1.2 TFT LCD 液晶显示屏

320x240 TFT LCD 液晶显示器，具有背光功能。

320X240 TFT LCD, back light.



说明：显示屏给用户提供人机交互界面，为用户提供诸如功能菜单、提示信息、操作结果等信息指示。

Note: Screen provides user a human-computer interaction interface, provides function menu , tooltip and result of operation.

1.1.3 键盘 Keyboard

键盘如下图所示 Keyboard as following picture



说明：包括 10 个数字键、00 快捷数字键、走纸键、取消键、清除键、确认键、电源键、摄像键以及 4 个功能键（F1~F4），总共提供了 21 个操作按键。

Note: Include 10 number key, 00 key、Feed、 Cancel 、 Clear 、 Enter 、 Power、 camera and 4 function key (F1~F4), 21 operation key in all.



1.1.4 磁条卡刷卡区域 Magnetic card reading area




说明：磁条卡的磁条一侧边沿靠内侧，且磁条面朝向 LCD 显示屏进行刷卡操作。

Note: When swiping Magnetic stripe card , the magnetic strip should at the side of LCD screen.

1.1.5 射频卡阅读区域 RF card reading area



说明：带有 “” 标识的射频卡阅读区域，被受理的卡片将被放在该区域内执行相应操作。

Note: Put the card on “” area to do the relevant operation.

1.1.6 接触式 IC 卡读写区域 Contact IC card reading area

接触式 IC 卡插口如下图所示 Contact IC card slot as following picture



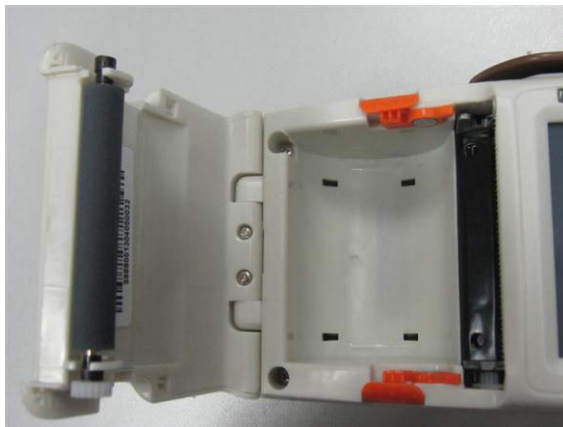


说明：接触式 IC 卡触点向上插入插口到底，则可执行相应卡操作。

Note: Contact IC card insert to the IC slot , and exec relevant operation.

1.1.7 热敏打印机功能区域 Thermal printer function area

热敏打印机功能区域如下图所示 Thermal printer function area as following picture



说明：热敏打印机提供热敏纸单据打印功能，该功能区域主要由纸仓、切纸刀和热敏打印机几部分组成。

Note: Thermal printer provide printing function , this function area constituted with paper storage , scudding knife and thermal printer.

1.1.8 主机锂电池功能区域 Li-ion battery function area

主机锂电池功能区域如下图所示 Li-ion battery function area as following picture



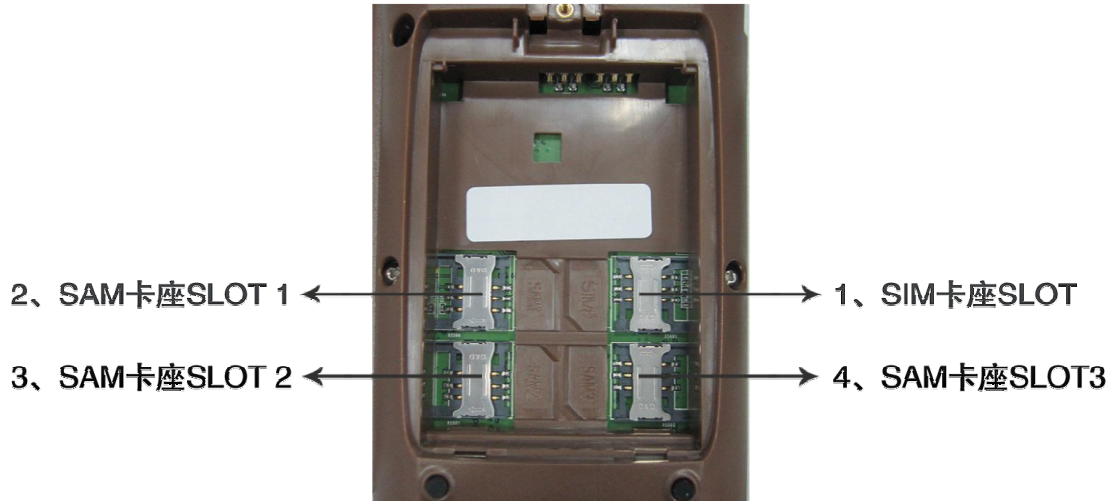
说明：主机锂电池在未使用外接电源适配器的情况下，为主机工作提供电源，使 POS 终端移动应用成为可能。

Note: Li-ion battery provide power when terminal work without power adapter, make the POS terminal to be mobile.



1.1.9 SIM 和 SAM 卡接口功能区域 SIM and SAM card function area

SIM 和 SAM 卡接口功能区域如下图所示 SIM and SAM card function area as following picture



说明：通信 SIM 卡座 1 个 (位置 1，见上图)，此处可插 GSM 的 SIM 卡或 CDMA 的 UIM 卡。
SAM 卡座 3 个 (位置 2/3/4，见上图)，SAM 卡的定义可根据用户需要设定。

Note: 1 Communication SIM card slot (Position 1) , could insert GSM SIM card or CDMA UIM card . 3 SAM card slots (Position 2/3/4) , SAM card could be redefined by user.

1.1.10 接口区域 Port area

电源接口、通讯接口以及 TF 卡槽如下图所示 Power port , communication port and TF card slot as following picture





1.1.11 条码扫描器区域如下图所示 Barcode scanner area as following picture



1.1.12 摄像头区域如下图所示 Camera area as following picture



1.2 功能介绍 Function introduction

1.2.1 磁条卡操作功能 Magnetic stripe card operation function

通过正确的正向或反向刷卡操作，IPS420 终端产品可提供对符合 GB/T 15120 或 ISO 7811 标准的银行卡、银联卡以及各种外币卡等磁条卡信息的读取功能。通过采用先进的硬解码技术，保证了读卡的准确和高速。

By means of correct forward direction and reverse direction swiping card operation , IPS420 terminal could read card information which accord with GB/T 15120 or ISO 7811.

Use advanced hardware decoder technology to ensure the speed and accuracy of card reading.

1.2.2 接触式 IC 卡操作功能 Contact IC card function operation

通过正确的接触式 IC 卡插卡操作，IPS420 终端产品可提供对符合 GB/T 16649、ISO 7816 以及 EMV2000 标准的各类接触式 IC 卡进行规范的读写操作，这其中包括了 MEMORY 卡和 CPU 卡。



By means of correct operation of contact IC card , IPS420 terminal could provide read and write operation of GB/T 16649, ISO7816 and EMV2000 cards , include MEMORY card and CPU card.

1.2.3 SIM/SAM 卡操作功能 SIM/SAM card function operation

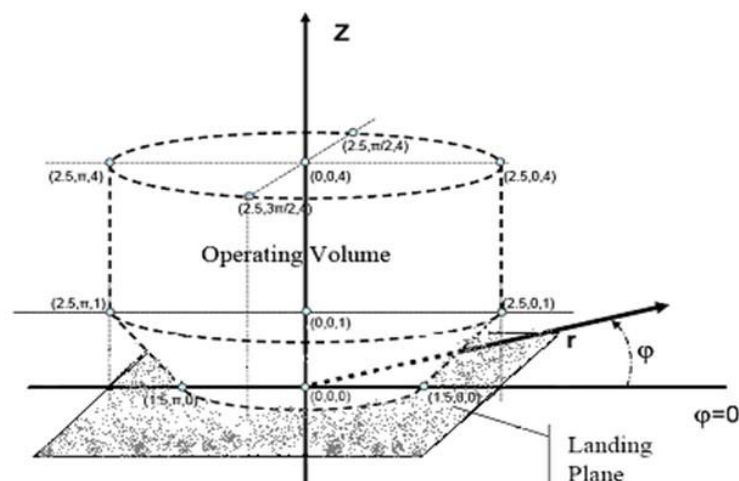
通过 IPS420 终端产品提供的 1 个 SIM 卡槽和 3 个 SAM 卡槽，可提供对移动或联通手机 SIM 卡的信息读取操作，以及对符合 GB/T 16649、ISO 7816 以及 EMV2000 标准的各类接触式 SAM 卡进行规范的读写操作。

By means of 1 SIM card slot and 3 SAM card slot , IPS420 terminal could provide all kinds of telecom card operation , also support GB/T 16649, ISO7816 and EMV2000 SAM cards.

1.2.4 非接触式 IC 卡操作功能 Contactless IC card function operation

IPS420 终端产品具有读取和/或改写非接触式 IC 卡芯片中数据的功能，正常操作距离在 3cm 范围内。天线操作的区域范围可见下图示意的三维范围。

IPS420 is a terminal product with the function of reading & writing data of contactless IC card chip. The normal operating distance is within 3cm. The operating range of antenna, please see the below three-dimensional diagram.



1.2.5 热敏单据打印功能 Thermal printing function

IPS420 终端产品自带二级国标字库，可通过高速热敏打印机打印宽度为 58mm 的交易单据。其中支持的打印字符格式包括：ASCII57、ASCII816、ASCII612、ASCII1224、GB2312 以及点阵图形打印。

IPS420 is a terminal product with two GB font. The width of thermal printing paper is 58mm. It



can support printing character format including ASCII57、ASCII816、ASCII612、ASCII1224、GB2312 and dot matrix graphic printing.

1.2.6 TFT LCD 显示功能 TFT LCD display function

IPS420 终端产品自带二级国标字库，可通过 TFT LCD 显示屏提供对包括 ASCII57、ASCII816、ASCII612、ASCII1224、GB2312 以及图形等的显示输出功能。

IPS420 is a terminal product with two GB font, through TFT LCD display screen, which can provide the display output function of ASCII57、ASCII816、ASCII612、ASCII1224、GB2312 and graphics, and so on.

1.2.7 键盘输入功能 Keyboard output function

IPS420 终端产品的 21 键键盘设计可提供包括 0~9 数字键、00 快捷数字键、走纸键、取消键、清除键、确认键、电源键、摄像键以及 4 个功能键（F1~F4）的输入功能。

The 21 key keyboard design of IPS420 available include 0~9 numeric keys、00 shortcut numeric key、feed key、cancel key、enter key、power key、camera key and four function keys(F1~F4).

1.2.8 数据通讯功能 Data communication function

IPS420 终端产品提供 RS232 串口和 USB 通讯功能以及 GPRS 无线通讯功能。

IPS420 terminal provide RS232 and USB communication function and GPRS wireless communication function.

RS232 串口一方面通过与 PC 机串口连接实现 IPS420 终端产品的程序下装和升级功能，同时也可以外接具有 RS232 标准串行接口的外部设备，方便串口外设扩展。

On the one hand RS232 connect with the serial port of PC to perform the applications download and update, on the other hand RS232 can connect other external equipment with RS232 standard serial interface, so that serial port peripheral expansion.

USB 一方面可以通过与 PC 机 USB 接口连接实现 IPS420 终端产品的程序下装和升级功能，同时也可以作为 HOST 接口连接 U 盘等设备。

On the one hand USB connect with USB port of PC to perform the applications download and update, on the other hand USB can be as a host interface to connect U-disk etc.

另外，IPS420 终端产品自带的 GSM/GPRS（CDMA）模块为各类移动应用提供无线数据通讯功能。



Besides, the built-in GSM/GPRS (CDMA) module of IPS420 provide wireless data communication function to the various mobile applications.

1.3 性能指标 Performance index

- ◆ 嵌入式 32 位 ARM9 RISC 微处理器，运行频率可达 532MHz;
- ◆ Embedded 32 bit ARM9 microprocessor RISC, the operating frequency can reach 532MHz;
- ◆ 1G bit mDDR Memory (应用程序及系统程序运行区);
- ◆ 1G bit mDDR Memory (the operational area of application and system program);
- ◆ 2G bit NAND FLASH Memory (系统及应用数据区);
- ◆ 2G bit NAND FLASH Memory (system&application data area);
- ◆ 带电池保护的日历时钟;
- ◆ Calendar clock with battery protection;
- ◆ 键盘: 10 个数字、字母键, 1 个电源键, 10 个功能键, 且每个键的功能均可由程序进行定义;
- ◆ Keyboard: 10 numbers、letter key、1 power key、10 function keys, and the function of each key can defined by the program;
- ◆ LCD 显示: 320×240TFT LCD, 带 LED 背光;
- ◆ LCD display: 320×240TFT LCD, with LED backlight;
- ◆ 打印机: 高速热敏打印机, 自带二级国标字库, 打印宽度 58mm;
- ◆ Printer: High speed thermal printer, with two GB font, Printing Width 58mm;
- ◆ 磁条卡阅读: 标配 1/2/3 磁道读卡功能, 符合 GB/T 15120、ISO 7811 标准;
- ◆ Magnetic card: standard 1/2/3 track, comply with GB/T 15120、ISO7811 standard;
- ◆ IC 卡读写: 符合 GB/T 16649、ISO 7816、EMV2000 标准 (支持 T=0、T=1), 支持 4 个 (1 个大卡、3 个小卡) 读卡头, 同时可支持各种 MEMORY 卡;
- ◆ IC card: comply with GB/T 16649、ISO7816、EMV2000 standard(support T=0、T=1), support 4 (1 SIM Card, 3 SAM Card) card socket , as well support various memory card;
- ◆ 射频卡读写: 可读取符合 DB31/239.2-2000 和 ISO 14443 标准的公交卡或相关射频卡;
- ◆ RF card: read Bus Card or relevant RF card comply with DB31/239.2-2000 and ISO14443 standard;
- ◆ 串行接口: 1 个 RS232 串口, 波特率最高为 115200bps, 通讯方式可编程;



- ◆ Serial interface: 1 RS232, Baud rate is highest for 115200bps, communication can be programmed;
- ◆ USB 接口: 1 个 USB OTG 接口;
- ◆ USB interface: 1 USB OTG interface;
- ◆ 条码扫描器: 支持一维和二维条码;
- ◆ Barcode scanner: Support 1D&2D barcode;
- ◆ 摄像头: 200W 像素, 带闪光灯;
- ◆ Camera: 200W pixel, with flash;
- ◆ GPS: 快速精确定位;
- ◆ GPS: Fast and accurate positioning;
- ◆ 无线通讯: 支持 GSM/GPRS、CDMA (可选);
- ◆ Wireless communication: Support GSM/GPRS、CDMA (optional);
- ◆ 电源适配器: 输入: AC 110V-240V 50HZ 1A; 输出: DC 9V 4A;
- ◆ Power Adapter: Input: AC 110V-240V 50HZ 1A; Output: DC 9V 4A;
- ◆ 主机锂电池: 7.4V 2000mAh, 充电时间为 3 个小时, 在开启系统待机模式功能的条件下, 整机待机时间长达 48 小时;
- ◆ Lithium Battery: 7.4V 2000mAh, 3 hours charging time, 48 hours standby time;



2 用户操作指南 User Manual

2.1 安装 Install

2.1.1 环境要求 Environmental requirements

要求安装平台稳固、平坦，要求环境通风，温度适宜，避免高温、潮湿、腐蚀性气体，避免阳光直射。具体如下表要求：

Require the solid and flat installation platform, ventilation environment, suitable temperature, avoid high temperature, humidity, corrosive gases, and direct sunlight. The following table requirements :

气候条件 climatic conditions	设备参数 parameters
储存温度 storage temperature	-20~+55℃
储存湿度 storage humidity	20%~93%
工作温度 working temperature	5℃~40℃
工作湿度 working humidity	20%~90%
大气压力 atmospheric pressure	86kPa~106kPa

2.1.2 电源要求 Power requirement

使用 IPS420 整机包装中提供的专用 DC 9V 4A 电源适配器，或者专用 7.4V 2000mAh 锂电池，避免使用其他任何相同电压和容量等级的供电电源。

Please use the specialized DC9V 4A power adapter packed with IPS420 terminal, or specialized 7.4V 2000mAh lithium battery, avoid using any of the other power supply voltage and capacity of the same grade.

2.1.3 安装步骤 Installation steps

2.1.3.1 准备并清理好安装平台，将水、饮料及其它危险物品移去。

Please prepare and clean up the installation platform, remove water, beverages and other dangerous items.

2.1.3.2 若室内外温差较大，为防止机器内部结露，在室温下放置 12 小时以上再打开包装箱。

If the temperature difference between the indoor and outdoor is larger, in order to prevent the machine internal condensation, place at room temperature for 12 hours and then open the package box.

2.1.3.3 清点包装内物品，准备好各个部件。

Check off the inventory of goods in the package, make ready each parts.

2.1.3.4 将包装内电源适配器输入端接入市电 220V 电源，输出端插入 IPS420 电源接口，或者



将包装内锂电池板装入 IPS420 背面的电池仓并确认就位。

The power adapter input end access 220V power, the output end is inserted into the IPS420 power supply interface, or place the lithium battery in the package into the battery compartment of IPS420 back and confirm its place.

2.1.3.5 长按电源键 3 秒以上直至设备开机显示，之后设备进入系统自检，直至屏幕显示应用界面，则说明设备初始化正常并进入正常工作状态。

Long press power key for 3 seconds until the equipment on display, then the equipment enter the self-test system, until the screen display application interface, the device initialization is normal, and enter the normal working state.

2.2 使用和操作 Use and Operation

IPS420 终端产品使用简单，只需在正确上电初始化并进入正常工作状态后，按照相应菜单提示操作即能完成相关功能。

IPS420 terminal is easy to use, only need to enter the initialization and the normal working state, in accordance with the corresponding menu prompt operation can complete the correlation function.

2.2.1 显示和按键操作 Display and keyboard operation

IPS420 终端产品将根据安装的应用程序不同而显示相应的功能菜单项，用户只需根据菜单提示进行按键操作即能完成相应交易、查询或配置功能。

IPS420 terminal will display corresponding the menu item according to the different application installed, the user only according to the menu button operation can complete the corresponding transaction, inquiry or configuration function.



2.2.2 磁条卡操作 Magnetic card Operation

刷卡时应保持磁条卡的磁条一侧边沿靠内侧，且磁条面朝向 TFT LCD 显示屏进行操作.注意刷卡时应尽量保持卡片水平运动并使之贴紧刷卡槽底部。

Magnetic card should be kept on the inside of the side edge of it , and magnetic surface facing to the TFT LCD screen operate. Pay attention to magnetic card should be kept horizontal



movement and make it to paste the bottom of card slot tightly.



2.2.3 接触式 IC 卡操作 Contact IC card operation

插卡操作时应保持接触式 IC 卡金属触点向上，并确保已插到底部。

Keep metal contact of IC card upward , and ensure it has been inserted in the end.



2.2.4 接触式 SIM/SAM 卡操作 Contact SIM/SAM card operation

插入 SIM/SAM 卡片，然后合插到底。

Insert SIM/SAM card, then insert them in the end.



2.2.5 非接触式 IC 卡操作 Contactless IC card operation

将可识别的非接触式 IC 卡片放在读卡区域内，设备就可以完成卡自动识别功能，并进入相应的应用功能区，然后操作员可根据屏幕提示完成相应交易操作。

The identified contactless IC card will be put on the card reading area, terminal can complete the automatic identification function of card, and enter the application of the corresponding functional areas, then the operator can follow the on-screen instructions to complete the corresponding transaction operation.



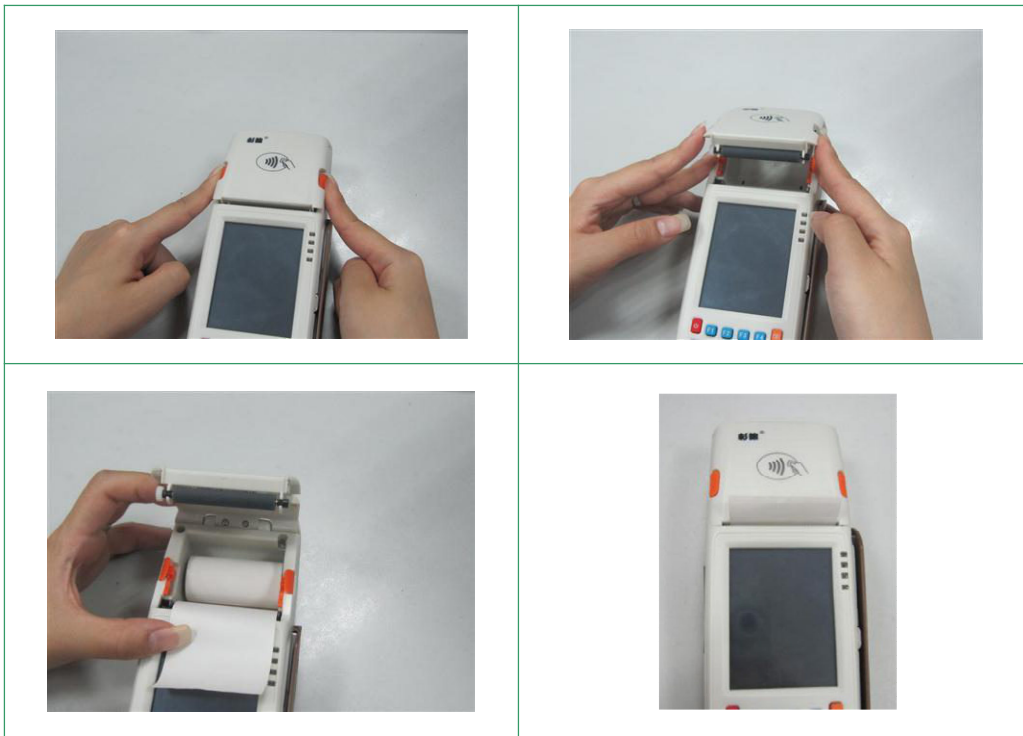
2.2.6 热敏打印机打印操作 Thermal printer operation

在正确安装好热敏打印纸卷的情况下，打印操作将会根据应用程序的控制自动进行，无需人为干预。其中热敏打印纸卷的安装操作应遵循如下步骤：打开纸仓盖 → 装入热敏打印纸卷 → 抽出一段打印纸，合上纸仓盖并确保已压紧打印纸。

In the correct installation of thermal printing paper case, printing operation will work automatically according to the control of the application, without human intervention. Installation of



thermal printing paper as follow: open the paper cover → put into thermal printing paper → pull out the section of printing paper, close the paper cover and ensure to press printing paper.



2.2.7 主机锂电池安装操作 Installation of lithium battery operation

将主机锂电池具有金属触点的一端朝上，首先使用螺丝刀打开电池仓盖板，取下盖板，将电池标贴一面朝外，把电池上端放入电池仓内，电池上端的两个定位卡头插入主机电池仓上端的对应卡位中，然后把锂电池放入电池仓内，盖上电池盖板，用螺丝刀把螺丝拧紧就完成了安装操作。

The end of a lithium battery with metal contacts at the top, first, using a screwdriver to open the battery compartment cover, remove the cover, the battery label on the outside, put the battery into the battery compartment at the top, the two positioning sockets at the upper end of the battery are inserted into the slots, and then put the lithium battery into the battery compartment, close battery cover, screw with a screwdriver to tighten the installation to complete operation.





3 维修和保养 Repair and maintenance

3.1 维修事项 Repair items

3.1.1 如果遇到长按电源键无法开机的情况，请先检查电源或电池安装是否有问题。

If a long press power key can not boot, please check the power supply or battery installation.

3.1.2 如果电源或电池安装没有问题，如果有条件更换相同电源，判断损坏部分。

If the power supply or battery is no problem in installation, replace the same power to judge the damaged parts.

3.1.3 如果开机后自检正常，但在进入应用主界面时显示“无打印纸”，请检查纸仓中是否已放入打印纸卷，并已抽出一段打印纸由纸仓盖压纸轮压紧。

After booting, if self-test is normal, but it shows "no printing paper" when entering the application of the main interface, please check whether the printing paper has been put in, then draw a section printing paper.

3.1.4 如果开机后自检正常并进入应用主界面，但显示没有信号，请先检查电池仓中 GPRS SIM 卡座中是否已插入正确的通讯 SIM 卡片。

After booting, if self-test is normal and enter the main interface of application, but showed "no signal", please check the GPRS SIM card in the battery compartment if it is the correct SIM communication card.

3.1.5 如果确认所有安装无误，但开机后自检不通过，或者通过了自检但进入应用主界面后出现异常，或者已确认有损坏件，请取下电源适配器和锂电池，联系厂商进行维修处理，切勿私自拆开本产品。

If all the installation is correct, but after booting, self-test is failed, or self-test is passed but entering the application of the main interface is abnormal, or check the damaged parts, please remove the power adapter and lithium battery, contact the manufacturer for repair processing, do not disassemble the product personally.

3.2 保养事项 Maintenance items

3.2.1 避免在高温或阳光下暴晒，存储-20℃~55℃，使用温度范围 5℃~40℃。

Avoid the high temperature or under the sun, storage at-20℃~55℃, the temperature range is 5℃~40℃.

3.2.2 避免在潮湿、有腐蚀性的环境中使用，严禁进水。

Avoid using in the wet and corrosive environments. Forbid strictly the water.

3.2.3 轻拿轻放，使用时应放在不易跌落的环境中使用，防止摔坏。

Please handle product with care, prevent breaking.



3.2.4 当机器外表脏污时，可用软布擦拭，禁止使用化学品试剂。

Cleaning the product, cleaning agent and chemicals etc are forbidden to use, please clean with a cloth of soft fabric.

3.2.5 使用过程中如有遇到问题不能正常工作，请致电厂家咨询或报修，以免延误使用。

During using, if the product is not working properly, please contact the factory to consult or repair, so as not to affect the use.

4 装箱清单 Packing List

装箱清单 Packing list:	数量 Quantity	单位 Unit
IPS420EFT POS 主机 Terminal	1	台 pc
9V 4A 电源适配器（带电源线） Power Adapter	1	只 pc
7.4V 2000mAh 锂电池 Lithium battery	1	块 pc
说明书 Manual	1	份 copy
合格证 Qualification Certificate	1	份 copy
保修卡 Warranty Certificate	1	份 copy



FCC STATEMENT

1. 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.
 - (2) This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Body-worn Operation

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 1.5 cm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.

€2200

上海杉德金卡信息系统科技有限公司
Shanghai Sand Information Technology System Co., Ltd.
上海徐汇区田林路487号宝石园22号楼
No.22 Gems Park, No.487 Tianlin Road, Shanghai, China.
电话 Tel: 021-24016333
传真 Fax: 021-33675001
邮编 Zip code: 200233
Website: <http://www.sand.com.cn>

