

USER MANUAL

Infinea® mPOS & mPOS Flat

For iPhone® SE & iPod Touch® 5th/6th Generation





Contact Information

Mobility Sales/ Technical Support Center

Infinite Peripherals, Inc.
1641 McGaw Avenue
Irvine, CA 92614

Toll-Free: (866) 278-7860
Office: (949) 222-0300
Fax: (949) 222-0375

Headquarters/ Main Warehouse

Infinite Peripherals, Inc.
2312 Touhy Avenue
Elk Grove Village, IL 60007

Toll-Free: (800) 278-7860
Office: (847) 818-1260
Fax: (847) 818-1287

Email: info@ipcprint.com
Website: ipcmobile.com

Legal Notice

“Made for iPhone” and “Made for iPod” means that an electronic accessory has been designed to connect specifically to the iPhone and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with an iPhone may affect wireless performance.

Compatible Devices

iPhone SE
iPod touch: 5th and 6th generation

Infinia mPOS Flat made for
Bluetooth® device with iOS, Android™ Windows®, Windows
Phone® 8, Windows Mobile

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Overview

The Infineon mPOS is a hand-held PIN pad with integrated smart and magnetic stripe card readers, offering advanced security and processing capabilities. In addition, the Infineon mPOS supports both symmetric encryption algorithms (DES, 3DES, and AES) and asymmetric encryption (RSA). Multiple keys are managed simultaneously through either Master Session- or DUKPT-based processes, and offers high performance smart card processing, as well as support for the new generation of 3-volt cards. The Infineon mPOS sleek and stylish ergonomic design offers power and performance in a smart card and MSR-integrated PIN pad device.

Features

(Optional) Barcode Scanner

2D high-speed imager

Magnetic Card Reader

Built-in 3-Track read head
Minimum 1.97 in/sec swipe speed
1 million swipes mean time between failures

Smart Card Reader

Support for synchronous and asynchronous smart cards

Bluetooth

BT version 3.0 power class 2 (optional)
BT version LE 4.2 (optional)

Battery

Rechargeable Li-ion Battery - 3.7 V/1300 mAh.

Connectors

mPOS: Lightning™ Connector
mPOS Flat: 10-pin female micro

Accessories

Visit our website, <https://ipcmobile.com> or contact your Infinite Peripherals account representative for additional information about our current and future product accessories.

Technical Data

Physical Dimensions

Processor

Maxim USIP Professional, version IC400C

Compatibility

mPOS:
iPhone SE
iPod Touch 5th and 6th generations

mPOS Flat:

Any Bluetooth device with iOS, Android™, Windows®, Windows Phone® 8, Windows Mobile

Dimensions (L x W x H)

mPOS: 145mm x 68 mm x 27 mm (5.7in x 2.7in x 1.1in)
mPOS Flat: 145mm x 68mm x 23mm (5.7in x 2.7in x 0.9in)

Weight

mPOS: 188g (6.63 oz.) without iOS device
mPOS: 182g (6.42 oz.) without iOS device



Connectivity

Connectivity

mPOS:

Apple Lightning™ connector

mPOS Flat:

BT version 3.0 power class 2 (optional)

BT version LE 4.2 (optional)

Barcode Scanner

Newland 2D high-speed imager and supports all major 1D/2D barcodes

Magnetic Card Reader

3-track bi-directional read head

ISO 7810, 7811, and 7813

Smart Card Reader

ISO ISO7816, EMV L1 Certified

Battery Life

Approximately 500 transactions per fully-charged battery

Port

mPOS:

micro USB charge/sync

mPOS Flat:

micro USB

Buttons

Scan only

Battery Capacity

Rechargeable Li-ion 3.7V, 1330mAh

NFC Payment Applications/Contactless Card Reader

AMEX ExpressPay MagStripe and EMV

Discover ZIP and D-PAS

MasterCard PayPass Magstripe and M/Chip

VISA PayWave MSD and qVSDC

Encryption/Key Management

3DES, RSA 2048-bit, AES 128/256 DUKPT, Master/Session, MAC

LEDs/audio

4 LEDs for transactions/status and electromagnetic buzzer

Memory

mPOS:

128KB of SRAM

256KB of Loackable Flash Memory

128KB of ROM

mPOS Flat:

128KB of SRAM

256KB of Loackable Flash Memory

128KB of ROM

32KB FRAM (optional)

Application Memory

8MB applicable accessible flash

Display

LCD, Monochrome, 128 x 32 pixels

Bluetooth

Bluetooth 2.0 (SPP) and 3.0 (SPP/IAP), Class 2 Compatible

Certifications

FCC/CE, Apple MFi, PCI PTS 5x SRED, EMV L1, EMV L2, EMV L1 Contactless

Environment

Temperature

Operation: -10°C to +40°C (14°F to +104°F)

Storage:

mPOS: 20°C to +50°C (-4°F to +122°F)

mPOS Flat: -15°C to +50°C (5°F to +122°F)

Relative Humidity

Operation and Storage: 5% to 90%



Before Using Your Infinea mPOS

- Remove the unit and any included accessories from the shipping carton and verify contents against your packing list.
- Retain all packing materials, invoice, and bill of lading.
These may be required to return the unit for servicing later, or to process a claim with the carrier.
- Carefully inspect the packaging and contents for any signs of damage.
- If there are signs of damage, do not attempt to use the unit. Notify your account executive or contact Infinite Peripherals.
<https://ipcmobile.com/devices>
- Ensure the battery is fully charged prior to initial use.

Infinea mPOS (1) or Infinea mPOS Flat (1)



USB cable (1)



Note:
Box contents and part numbers vary based on your order configuration.

Getting Started

The Infinea mPOS allows you to scan barcodes and pass that data into compatible iOS applications. In addition, this form-fitted solution offers the IP66 rating for protection against dust and moisture.

The following helps you get the Infinea mPOS ready for use:

What to do	Section
Connect the Infinea mPOS with your iOS device	Connect Infinea mPOS with your iOS Device
Charge your unit before first use to ensure long battery life	Charge Your Infinea mPOS
Install software on your iOS device for barcode scanning and smart card reading	Develop Infinea mPOS Apps



Product Description

The front panel of the Infinea mPOS:



Back panel of the Infinea mPOS

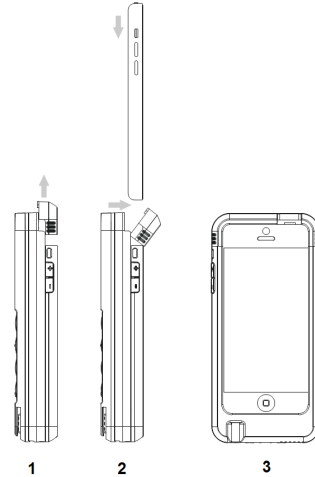




Assemble the Infinea mPOS

These steps are for the Infinea mPOS. The flat model does not require assembly with an iOS device.

1. Slide the top section of the back cover up, and then tilt it backwards to open.
2. Insert the iOS device with the screen facing away from the Infinea mPOS keypad.
3. Tilt the back cover up, and then slide it down until it seats correctly and close it.



Turn on the Infinea mPOS

To turn on the Infinea mPOS, tap the Power button on the top, right corner of the keypad. The name and version of the Secure Boot Loader and firmware appear.

Keypad and Menu Navigation

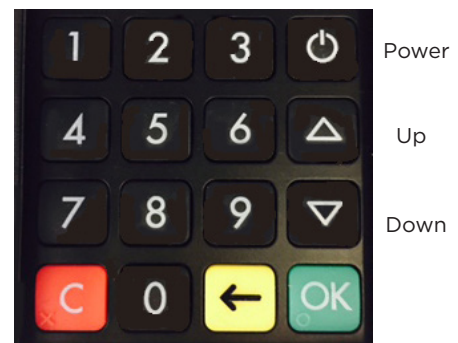
The buttons on the keypads access specific functions and allow you to navigate through the menu options and screens.

Note:

The keypad is ADA-compliant which means the Clear, OK, backspace, and the number 5 keys have distinct, raised markings at the bottom left corner of each key.

Tap the appropriate button to perform the following:

1. Power to turn on the Infinea mPOS
2. System Mode to enter system mode from the Home page
3. Up to scroll up through the menu options
4. Downs to scroll down through the menu options
5. OK to select the active option
6. Clear to return to the previous option or exit service mode



Clear (Exit Screen) System Mode OK (Select)



Battery Charging

You can charge the Infinea mPOS and mPOS Flat with a micro USB adapter and USB cable or by using a charging station. The time to fully charge a depleted unit is approximately 3 hours.

Battery Status Display Indicators

During normal operations, the battery is constantly discharging. The Battery Low message appears when the battery level is too low to continue.

Charge the battery as soon as possible but no later than 25 days after the message first appears. Failure to charge within 25 days may lead to deactivation and deletion of your stored encryption keys. This requires you to return the Infinea mPOS to Infinite Peripherals. For help, see <https://ipcmobile.com/support>.

1 Line - battery level $\geq 3.6V$	
2 Lines - battery level $\geq 3.7V$	
3 Lines - battery level $\geq 3.8V$	
4 Lines - battery level $\geq 3.8V$	
5 Lines - battery level $\geq 4.0V$	
6 Lines - battery level $\geq 4.1V$	
Outside power from USB cable or power station - plug	
Battery charges from USB cable or power station - flash	
USB - connection with iPad	

Replace the Battery

The main battery can only be replaced by Infinite Peripherals. Attempting to disassemble a SRED-encrypted unit, renders it unusable and may void your warranty.

Minimize Deactivation

To minimize the potential for deactivation, follow all storage and operating temperature guidelines. Refer to Technical Specifications for details.

Long term storage can cause temporarily decreased battery capacity. In order to recover maximum performance, it may be necessary to go through several cycles of fully charging and discharging the battery.

When storing the device for longer than three months, the battery should be charged every three months at a minimum to prevent leakage, reduced performance, and potential deactivation.



Operational Modes

Configuration, system test, and status modes for the Infinea mPOS:

- System
- Service
- Application Download

Note:

Service and Application Download modes should only be accessed by Infinite Peripherals. Selecting specific keys or options in these modes may render the unit unusable and require reactivation of the Infinea mPOS.

System Mode Navigation

Turn on the Infinea mPOS, and then tap System Mode on the keyboard. The menu options available are:

- Info Version
- Info Hardware
- Settings
- Test Display
- Test Keyboard
- Test MSR
- Test SCR
- Test Font0
- Test Font1

Info Version

- TDEV SN displays the serial number of your unit
- USIP SN shows the USIP serial number
- USIP VER is the current USIP version
- ISBL VER is the current USIP boot loader version
- HAL VER is the current Hardware Abstraction Layer or Hardware Annotation Layer (HAL) version
- LOAD VER current Secure Boot Loader (SBL)
- FW VER current firmware version and name
- PINUTIL indicates the current library version
- PKFA VER displays the current version of the public key used for firmware authentication
- PKAA VER displays the current version of the public key used for application authentication
- PKKA VER displays the current version of the public key used for manufacturing key authentication





Info Hardware

- BATT shows the 1300mAh battery voltage
- VBUS is the external power supply when plugged in
- Charge indicates the battery is charging
- Blow identifies a low battery condition
- BLT identifies a Bluetooth connection



System Mode—Test Display

1. To adjust the contrast display, tap the Up or Down buttons to change the contrast on your screen. The current percentage displays in the center-bottom of the screen.
2. Tap the Clear button or C on the keyboard to exit.



Test Keyboard

1. To test your keyboard, tap any key on the keypad to confirm recognition with Infinea mPOS
2. Tap the Clear button or C on the keyboard to exit.





Test MSR

1. To test the magnetic strip reader, swipe an appropriate card face down, in either direction, through the MSR reader.
2. View the track information when a card is read successfully.
3. Tap the Clear button or C on the keyboard to exit.



Note:
Refer to the Magnetic Card Reader section for more information.

Test SCR

1. To test the smart card reader, insert a smart card in the card slot, and then select one of the following:
 - * Reset returns to Answer to Reset (ATR).
 - * Get Challenge returns a random number.
2. Tap the Clear button or C on the keyboard to exit.



Note:
Refer to the Smart Card Reader section for more information.



Test Font0 and Font1

- To test the fonts loaded on the Infineo mPOS, tap the Clear button to exit.



Pair with a Bluetooth Compatible Device

This procedure is for the Infineo mPOS Flat

1. Once the unit is charged, tap the Power button to turn it on.
2. Turn the Bluetooth option on in the compatible device's settings.
3. Tap System Mode on the Infineo mPOS Flat.
4. Tap the Down button to locate and then select Settings, and then tap OK.
5. Tap the Down button again to locate and then select Bluetooth, and then tap OK.
6. Tap the Down button again to locate and then select the Pairing menu, and tap OK.
7. Confirm the pairing process begins on the Bluetooth device.
8. Do **one** of the following:
 - Tap clear once to return to the previous screen
 - Tap continue to return to the Home screen





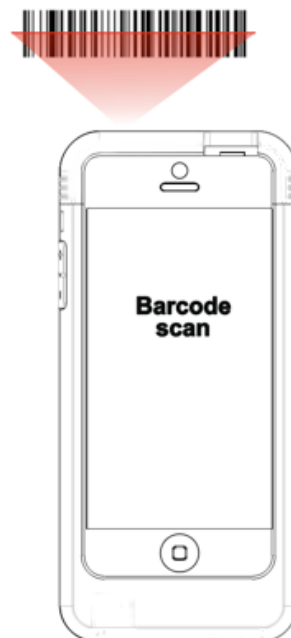
NFC LED Status Indicators

Status/Event	Description	Visual Indicator
Not ready	Reader is not turned on or power is not available	
Idle	First indicator blinks every five seconds. Reader powers on, but not ready to read a card.	
Ready to read	First indicator displays solid green. All required data available to the reader to initiate a NFC payment	
Card read successfully	NFC payment process is successfully complete. Card holder may remove card from the reader.	

Scan Barcodes

Scanning barcodes may vary based on the application on your iOS device. Verify the correct procedure with the Third-Party application provider before performing this procedure.

1. To scan a barcode, point the scanner end of the mPOS toward the barcode.
2. Press the Scan button until the data is read.





Accept NFC Payments

The Infinea mPOS built-in tag/card reader allows you to accept near-field communication (NFC) payments.

1. Place a NFC tag/card over the transmitter/receiver NFC label on the front of the unit.
2. Tap the reading NFC card button on the application. Data is sent from the unit to the iOS device.
3. Do not remove the card/tag from the transmitter until the transaction is complete as removing the card too quickly may void the transaction.

Note:

Refer to the status indicators table for an explanation for the NFC LED indicators.



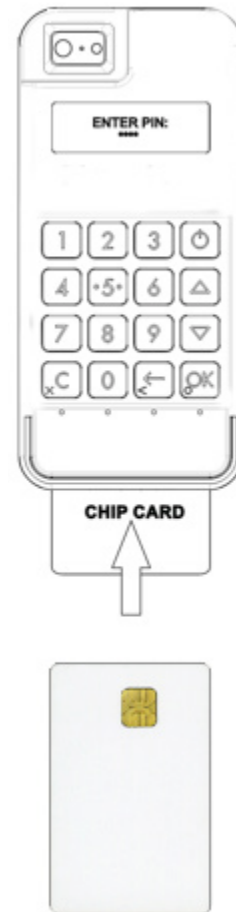
Read Smart Cards

Before using the smart card reader, verify the correct procedure with the Third-Party application developer.

1. Position the smart card with the gold contacts facing upward.
2. Insert the card into the ICC card reader slot in a smooth, continuous motion until it seats firmly.
3. Give the unit to the customer for PIN entry.
4. Remove the card once the display indicates the transaction is complete.

Note:

Do not remove the card from the smart card reader until the transaction is complete as this may void the transaction.





Read Magnetic Stripe Cards

Before using the MSR reader, verify the correct procedure with the Third-Party application developer.

1. Position the smart card with the stripe face down.
2. Insert the card into the MS card reader slot, and then swipe it through quickly.
3. Give the unit to the customer for PIN entry.

Note:

Advise the card holder to keep the Infinea mPOS close to themselves when entering the PIN code to prevent others from seeing the information.



Servicing the Infinea mPOS

The Infinea mPOS unit contains no user-serviceable parts.

Please contact your Infinite Peripherals account representative or refer to our website, <https://ipcmobile.com/devices/infinea-mPOS> before attempting to open the Infinea mPOS

Note:

Attempting to disassemble a SRED-encrypted unit renders it unusable and may impact your warranty.

SRED Information

Integrating the PCI PTS 5.x SRED certified Infinea mPOS into your solution requires proper maintenance. To ensure long and trouble free operation of the Infinea mPOS and to prevent the device from entering a tamper state includes:

- Maintaining proper battery charge.
- The shelf life from full charge to battery discharge may be several years, however it is important that battery levels be continually monitored because once the battery power is depleted or the battery is removed, the security system erases all sensitive data, requiring reactivation of the unit.
- Protect the unit from any potential physical damage such as opening the unit, cutting, drilling, dropping or any similar type of action.
- Use of approved chargers which supply sufficient charging current. Connecting an unapproved charger may lead to electrical damage and/or cause security sensor malfunction.

To prevent downtime, if security is disabled:

- Always place the Infinea mPOS on a charging station when not in use for extended periods
- Do not allow the battery to fully discharge
- Do not attempt to remove the battery from the unit

Note:

If the battery is fully depleted and in Tamper Detect mode, contact your Infinite Peripherals account representative for reactivation.



Troubleshooting

The following troubleshooting guidelines assist you in the successful installation and configuration of your Infinea mPOS Flat. If you have issues, verify your unit is turned on and sufficiently charged. After power and battery charge are both confirmed, review the appropriate sections for troubleshooting options. If problems persist, contact <https://ipcmobile.com/devices>.

Issue	Possible Cause	Resolution
Blank Display	Infinea mPOS is not powered on by the software	Verify power and proper charging Run Test Display to verify there is sufficient screen contrast
Keypad Not Responding	Unit not powered on or faulty keypad	Verify power and proper charging Run Test Keyboard option to verify keys are recognized when pressed Attempt the transaction using another device if available
No Connection to iOS device (Infinea mPOS Version Only)	iOS device is not connected to the Infinea mPOS	Verify power and proper charging Ensure iOS device is fully inserted with the unit and seted properly on the Lightning connector
Payments Not Accepted	Card cannot be read or unit is in Tampered State	Attempt the transaction with another unit or card

Magnetic Stripe Reader

Issue	Possible Cause	Resolution
No data is returned when card is swiped	Incorrect swipe method used	Swipe the card again following the instructions in Read Magetic Stripe Cards
Only partial data is returned when card is swiped	Faulty read head	Run a test transaction with another magnetic stripe card reader under the Test MSR menu option to determine if the card may be defective Process transaction manually using keypad Determine if the unit is defective by running another transaction using another unit
	Magnetic Stripe is unreadable	
	Secured head reader requires decryption of encrypted data	
	Unit is in a Tampered State	

NFC Reader

Issue	Possible Cause	Resolution
No data is returned during reading	Card not close enough to receiver/transmitter	Hold the card closer to the label to read the card again
Only partial data is returned during reading	Unreadable tag/card	Attempt the transaction with another unit, if available
	Faulty Reader	
	Software not decoding correctly	
Cannot read specific tag/card	Tag/card not compatible	Verify tag/card type is compatible/supported
	Type not supported	Attempt the transaction with another unit, if available
	Refer to the Technical Specification section for details	



Smart Card Reader

Issue	Possible Cause	Resolution
No data is returned when card is swiped	Card was not inserted correctly	Insert the smart card again
Only partial data is returned when card is swiped	Smart card is unreadable Unit is in a tampered state	Run a test transaction using a different smart card under the Test SCR option to determine if the card may be defective Attempt the transaction with another unit, if available

Barcode Scanner

Issue	Possible Cause	Resolution
Scanner not operating/ no data or partial data returned	Faulty scan engine Barcode is unreadable Software decoded incorrectly	Attempt the transaction with another unit, if available Return fault unit for servicing
Unable to perform multi-scanning	Multi-scan mode not enabled Software does not support multi-scans	Verify that device software version supports multi-scan Verify multi-scan mode is enabled
Audible beep is not heard when barcode is scanned	Sound mode not enabled	Verify Beep Upon Scan mode is enabled
Unable to scan specific barcodes	Barcode not enabled/supported	Ensure barcode type is enabled/supported on the unit

Develop Infinea mPOS Apps

Software is not provided with your Infinea mPOS. Please contact Infinite Peripherals for Third-Party software solutions. Integrating the Infinea mPOS into your iOS application requires the use of the Infinite Peripherals Universal SDK. The SDK incorporates an API specifically for developing applications to scan barcodes and other perform additional functionality with the Infinea mPOS Tab.

For additional details about the Infinite Peripheral Universal SDK, refer to the SDKs documentation. For the latest Infinite Peripheral Universal SDK, visit our developer portal, <https://developer.ipcmobile.com>.

Warranty

Infinite Peripherals does not warrant, and is not responsible for, any damage to the Infinea mPOS ("Product") or the assembled iOS device as a result of liquid or solid particle intrusion into the Product, or damaged caused by dropping the Product with the assembled iOS device. If a material or workmanship defect arises with regard to any Infinite Peripherals product, and a valid claim is received within the Warranty Period, Infinite Peripherals (at our sole discretion) will repair the Product using new or refurbished parts, or replace the Product with a new or refurbished Product.

For purposes of this limited warranty, "refurbished" means a product or part that has been substantially returned to its original specifications. In the event of a defect, these are your exclusive remedies.



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Product Returns and Servicing

Use the link in step 1 to create an account and gain access to our Knowledge Base and online support services. Through our online support center, you'll be able to download files, open a Support Ticket, manage your RMAs, view your account Profile and subscribe to Alerts.

To request a RMA

1. Create a user account in the RMA Support Portal at <http://ipcmobile.com/support/rma/>
2. Login to your user account, and then click Create RMA Request.
3. Read the instructions provided and complete the online request form.
4. Note the assigned RMA number and write it clearly on your shipping carton.
5. Ship your equipment back to us using the address provided.

Symbols

Symbol	Description
	Refer to the instructions before using this product
	Manufacturer
	Manufacture Date
	Caution
	Serial Number
	Part Number
	Waste Electrical and Electric Equipment
	Complies with part 15 of the FCC rules



Federal Communications Commissions

Federal Communications Commission (FCC) Statement

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)

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

Operation is subject to the following two conditions:

1. This device may not cause interference and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

FCC RF Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.