

IntelliPIN

PINPad With Magnetic Stripe Reader Installation and Operation Manual

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MAGTEK[®]

REGISTERED TO ISO 9001:2000

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REVISIONS

Rev Number	Date	Notes
1	18 Apr 97	Initial Release
2	30 Sep 97	Title Change from <i>IntelliPIN Plus PINPad With MSR and Offset Generation Installation and Operation Manual</i> to <i>IntelliPIN PLUS PINPad with Magnetic Stripe Reader Installation and Operation Manual</i> . Complete update to reflect firmware revisions (C and D) and other changes to reflect product description (added 25 pages).
3	9 Jul 98	Changed Fig 1-1, Rearranged Sections 3 through Appendix B. Updated Flow Diagrams in Appendix A. To Setup, Section 3, added Verify Offset and Show/Don't Show Modes. Added Shutdown Timeout.
4	6 Aug 99	Sec 1, added ISO Standards to Specs; Sec 2, added MICR Aux port cabling, editorial; Sec 3, added Template Card P/Ns, editorial; Sec 5, editorial; Sec 6, editorial; Appendix A, editorial; Appendix B, added glossary items.
5	11 May 00	Changed all IntelliPIN Plus references to IntelliPIN. Editorial changes throughout. Section 2: added device configuration table. Section 3. added "change password" Interactive Mode. Added parity description to Communications – RS-232. Section 5. added description of Activation Card. Appendix A. added "Send EOT on Clear".
6	21 Aug 01	Front Matter, Agency Approvals: Updated CE and UL/CUL approvals. Section 5, Verify Customer and Verify Offset: added note for 2-trk operation; Computer Messages: added note for remote PC operation.
7	04 Sep 02	Sec 1: added new Configuration title with 8 additional parts, changed old configuration to Major Components, Sec 2: added power adaptors in Hardware Installation; Changed Figs 2-1, 2-2, 2-4 ; added Figs 2-3 and 2-6; added P/N and cable length to USB Interface;
8	22 Oct 02	Added USB to various descriptions.

REVISIONS (Continued)

Rev Number	Date	Notes
9	05 Dec 02	Sec 1: Added Software Drivers Required. Sec 2: added USB Driver Installation, corrected weight in specs.
10	13 Mar 03	Replaced some fonts so manual would print on all printers.
11	18 Apr 03	Front Matter: added ISO line to logo, added new warranty statement.
12	17 Sep 03	Editorial throughout. Sec 1: Changed configuration table to show only standard configurations, added P/N 99510013 to Software Accessories table, Specification table: added ANS X9.8 and ANS X9.24, Part 1 to Standards.
13	20 May 05	Section 2, Installation and Maintenance, Hardware Installation: added note stating interface cables and docks are not interchangeable.

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CE STANDARDS

Testing for compliance to CE requirements was performed by an independent laboratory. The unit under test was found compliant to Class A.

UL/CSA

This product is recognized per Underwriter Laboratories and Canadian Underwriter Laboratories 1950.

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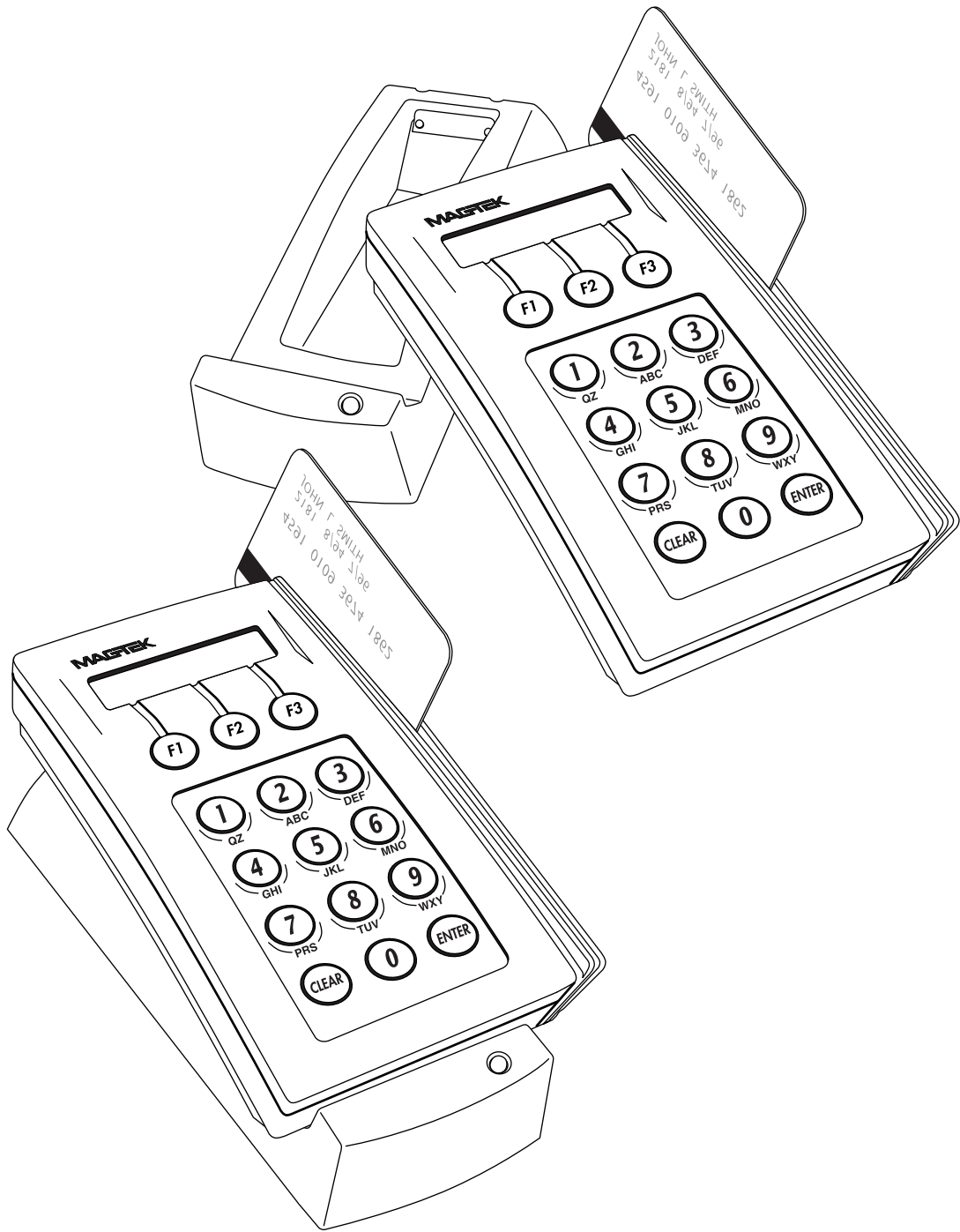


Figure 1-1. IntelliPIN – Portable and Nonportable

SECTION 1. FEATURES AND SPECIFICATIONS

The IntelliPIN[®] is a PINPad and a dock used for PIN selection and PIN verification of magnetic striped cards. The PINPad contains a 15-button pad, an LCD (See Appendix B for a glossary of terms), a 3-track magnetic stripe reader, and the associated electronics. The unit is available in a portable or nonportable configuration. In the portable configuration the PINPad is hand held or sits in the dock. The dock is connected to wall power, communicates with a computer, and charges the battery in the PINPad. The dock also contains a power LED, an interface connector for a PC, and the associated electronics.

When fixed, or nonportable, the PINPad contains the same features as the portable version but is permanently attached to the dock. Nonportable units may be used at teller terminals or in other applications where detachment is not required. In the portable configuration, communication between PINPad and dock is via infrared transmitters and receivers but takes place only when the PINPad is positioned in the dock. For the nonportable version, communication is through wires.

Both the portable and nonportable versions have four varieties each: an RS-232 interface, a USB interface, a Keyboard Wedge interface, and a standalone option. The RS-232, USB, and the Wedge versions can be interactive with a PC. The standalone option allows PIN selection or verification without any interaction with a computer.

In the off-line operation, the offset/verify modes may be selected, PANs may be entered, and FIT and BIN tables may be loaded and reviewed. In the interactive mode of operation, the customer enters data into the IntelliPIN in response to prompts on the LCD, and the operator selects the type of transaction from the PC. These transactions may include new accounts, teller window applications, checking, savings, mortgages, or any other option where there is interaction between the customer or operator. The customer enters data into the PINPad for transmittal from the dock to the PC.

The standalone and interactive interfaces are illustrated in Section 2, Installation and Maintenance.

CONFIGURATIONS

Table 1-1 lists part numbers, descriptions and cables for the standard configurations. Refer to the MagTek web site for options and other models.

Table 1-1. Configurations

Part Number	Description	Cable
30015119	IntelliPIN Portable RS-232	9-pin Cable
30015120	IntelliPIN Nonportable RS-232	9-pin Cable
30015121	IntelliPIN Portable Wedge	Keyboard Interface Cable
30015122	IntelliPIN Nonportable Wedge	Keyboard Interface Cable
30015123	IntelliPIN Portable Standalone	Power Cable
30015124	IntelliPIN Nonportable Standalone	Power Cable
30015125	IntelliPIN Portable RS-232	MICR Plus Cable
30015126	IntelliPIN Nonportable RS-232	MICR Plus Cable
30015160	IntelliPIN Portable USB	Includes USB Cable
30015161	IntelliPIN Nonportable USB	Includes USB Cable

SOFTWARE DRIVERS REQUIRED

The USB driver files are available in two forms:

- On a CD (p/n 30035077)
- From the MagTek web site (www.magtek.com) (p/n 99510038).

Refer to the USB Driver Installation below for information on installing the USB drivers.

SOFTWARE ACCESSORIES

Part numbers and titles for associated software are listed in Table 1-2

Table 1-2. Software Accessories

Part Number	Description
30037369	Software Key and FIT Loader
30037385	MagTek Device Drivers for Windows (CD)
99510013	MagTek Device Drivers for Windows (web)

FEATURES

In addition to portable and nonportable versions, standalone and interactive operations, and the interface configurations previously mentioned, the following features are also included:

Physical and Electronic Security

When the PINPad is removed from the dock or power to the dock is disconnected for a selected time period, the unit is placed in a nonoperative **Shut Down** Mode. Reactivation of the IntelliPIN requires power to be applied and, in the standalone mode, an Activate Card or password or both.

If the unit is opened, the CPU is notified to clear all of RAM and the battery is disconnected from the RAM so that all keys are permanently erased. The critical circuits in the unit are potted to prevent access for tapping leads for information.

Stored Information – Standalone Mode

Because of the security features, an Activate Card or a password or both may be used to initiate daily use of the IntelliPIN so keys will not have to be injected each day.

These methods of activation are:

- Enter a 4-digit password chosen by the institution (default is 7638)
- Swipe an Activate or Program Card (without the password)
- Swipe an Activate or Program Card and enter the 4-digit password

Up to 12 six-digit BINs and associated FITs can be stored. The FITs, including the PIN verification keys, are stored in the IntelliPIN to support offset/PVV calculation or verification. Once the FIT is loaded, it will remain in the IntelliPIN until changed, or until the BIN is specifically removed, or the unit clears its keys (such as when a new software version is loaded or the tamper switches are activated).

Setup

For setup, the Master Key (which is called Security Key in the MCAT) can be injected into the IntelliPIN by the following means:

At MagTek during final assembly

- Through a PC serial port using the Master/Session key commands defined for the IntelliPIN
- From a PC at a customer's secure location using the Key/FIT loader software produced by MagTek
- With a transfer card generated on the customer's MCAT

The unit is set up in the factory with the normal operational parameters, such as communication and timeout values. These parameters are specified by the customer and listed on the sales order. If a change is needed for any of these parameters, refer to Section 3, "Setup".

Defaults

The default settings such as communication parameters, timeouts and trivial PIN, are usually preset at the factory. In the event these must be changed, refer to Section 3, Setup.

Sleep Mode

If the unit is inactive longer than 1 minute, it goes into a “sleep mode” to preserve the battery. In this mode, PINPad scanning slows down, so the first key must be pressed longer than usual to revive the unit.

Liquid Crystal Display

The Liquid Crystal (LCD) display is a 2-line by 16-character display that shows status, messages, and information on the magnetic stripe.

Function Buttons (Soft Keys)

The three function buttons, or soft keys, below the LCD are used for menu operation during system setup and for activating menus during normal operation. The soft keys allow the use of display-based prompts.

10-Pin Numeric Pad

The numeric pad is for entries such as PINs, PANs, and other information as requested by the program. In addition to the numeric entries, there is an ENTER button and a CLEAR button.

Trivial PIN Check

When the trivial PIN check is enabled during setup, the program does not accept certain PIN number combinations as sequences such as “1, 2, 3, 4,” and identical numbers, such as “2, 2, 2, 2.”

Double PIN Entry – Interactive (On Line) Mode

When the double PIN check is enabled during setup, the program will enable the customer to enter the PIN twice as a security measure.

HiCo and LoCo Card Reading

The IntelliPIN reads both High Coercivity and Low Coercivity magnetic stripe cards.

RELATED DOCUMENTS

- *IntelliPIN Programming Reference Manual, Part Number 99875047*
- *Key and Fit Loader For IntelliPIN, Software Installation and Operation Manual, Part Number 99875098*
- *MagTek Device Drivers For Windows, Programming Reference Manual, Part Number 99875125*

MAJOR COMPONENTS

The major components of the IntelliPIN are shown in Figure 1-2.

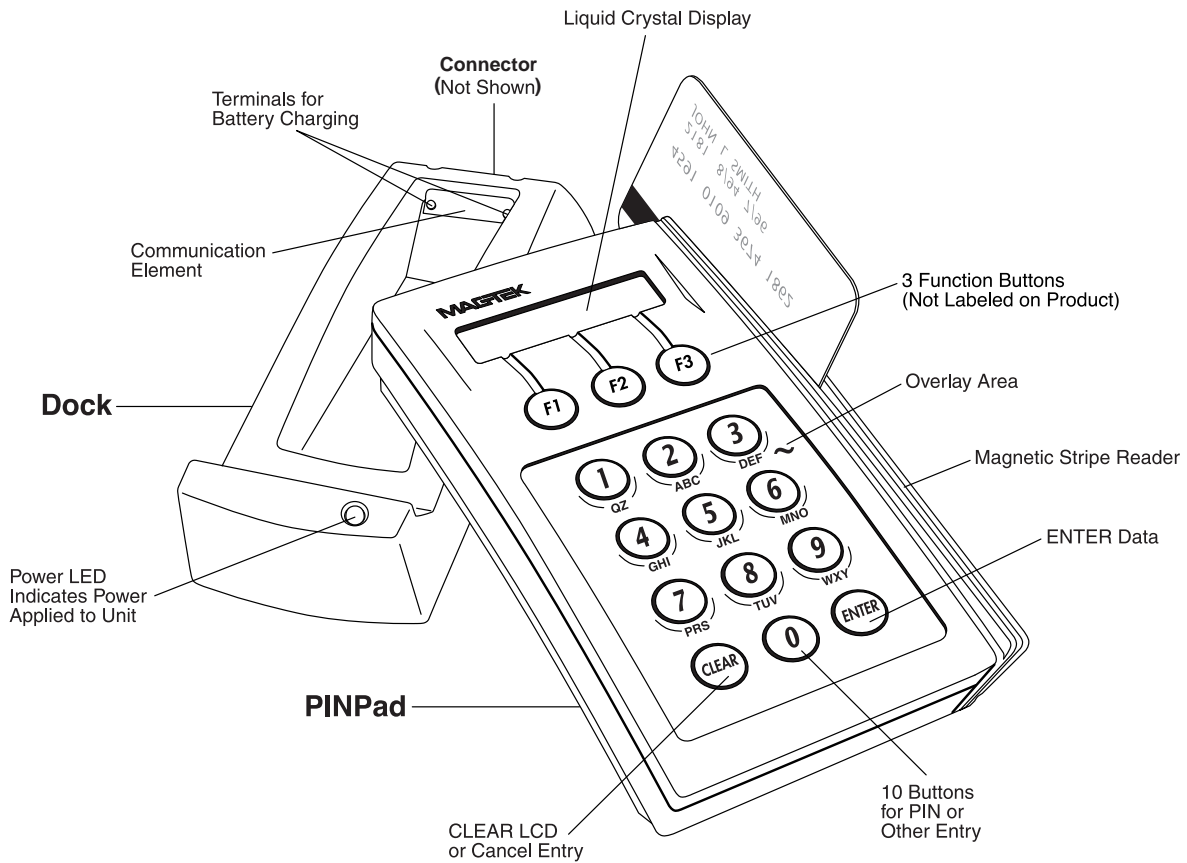


Figure 1-2. Major Components

SPECIFICATIONS

The Specifications are listed in Table 1-3.

Table 1-3. Specifications

Hardware	Description
Display	2x16 Dot Matrix Liquid Crystal "Supertwist" Display
Card Reader	Three Tracks Bidirectional
PINPad	12 Keys Telephone Style; 3 soft keys
Input Power	12VDC @ 300mA DC Adapter (unregulated)
Power Consumption	100 mA (while charging)
Batteries Nickel-Cadmium (Operating PINPad)	6 V rechargeable; 5 Cells of 300 mAHr, continuously charging at 30mA, requires 14 to 16 hours from empty to full; Normal Operating Life 2 years minimum (MagTek P/N 30017901)
Lithium (Backup RAM)	3 V; Normal Operating Life 10 years
Interface Cables	RS-232: P/N 30019301, 25-pin, 5' P/N 30019304, 9-pin, 8' Keyboard Wedge: P/N 30019305 Standalone: P/N 30019307 MICR Plus: P/N 30019308 USB: P/N 30019311 For all cables: The power jack accepts a PG-06 Plug (5.5 x 2.5 mm) with the center connection providing +12 Volts and the outer sleeve at ground.
Standards	ANS X9.8, Banking - Personal Identification Number management and security - Part 1: PIN protection principles and techniques ANS X9.24, Part 1: Retail Financial Services Symmetric Key Management Part 1: Using Symmetric Techniques ISO 9564-1 and -2, PIN Management and Security
Communication	
Baud Rate and Parity	Programmable, default 9600 Baud, Even Parity for RS-232
Interface Signals	RS-232; Keypad Wedge; USB
Physical	
Key Pad	
Height	2.0 inches (50.8 mm)
Width	4.0 inches (101.6 mm)
Depth	6.5 inches (165.1 mm)
Weight	0.87 lbs (394 gr)
Dock	
Height	1.75 inches (44.45 mm)
Width	2.75 inch (69.85 mm)
Depth	6.875 inch (174.6 mm)
Weight	0.38 lbs (172 gr)

Section 1. Features and Specifications

Key Pad and Dock	
Height	3.25 inches (82.6 mm)
Width	4.0 inches (101.6 mm)
Depth	7.0 inches (177.8 mm)
Weight	Nonportable: 1.09 lbs (493 gr) Portable: 1.25 lbs (567 gr)
Environmental	
Temperature	60°F to 90°F, (15°C to 32°C), Operating; 32°F to 122°F, (0°C to 50°C), Non-operating.
Relative Humidity	15% to 90%, Operating; 10% to 100% Non-operating; Both ranges non-condensing.
Altitude	0 - 10,000 Ft., (0 - 3048 M), Operating; 0 - 50,000 Ft., (0 - 15,243 M), Non-operating.
MTBF	Electronics: 30,000 hours MSR Head: 1,000,000 passes

SECTION 2. INSTALLATION AND MAINTENANCE

The installation consists of hardware connection and program information.

HARDWARE INSTALLATION

The four interfaces, the RS-232, the Keyboard Wedge, the USB, and the standalone are shown and described below. Part numbers for the power adaptors are as follows: 64300063 for 120 V; 64300070 for 220 V. Both power adaptors are used in the following configurations, shown below: RS-232 Interface, Keyboard Wedge Interface, USB Interface, and Standalone. Also shown are the MICR Plus Auxiliary RS-232 Port and the RS-232 Printer.

Note

Interface cables and docks are interface specific, and therefore, not interchangeable.

RS-232 Interface

The RS-232 interface cabling is shown in Figure 2-1. The cable (P/N 30019304) is about 8 feet in length. The pin positions on the receptacle shown below may be facing another direction, depending upon the computer. The 9-to-25-pin adaptor part number is 78200018 (if required).

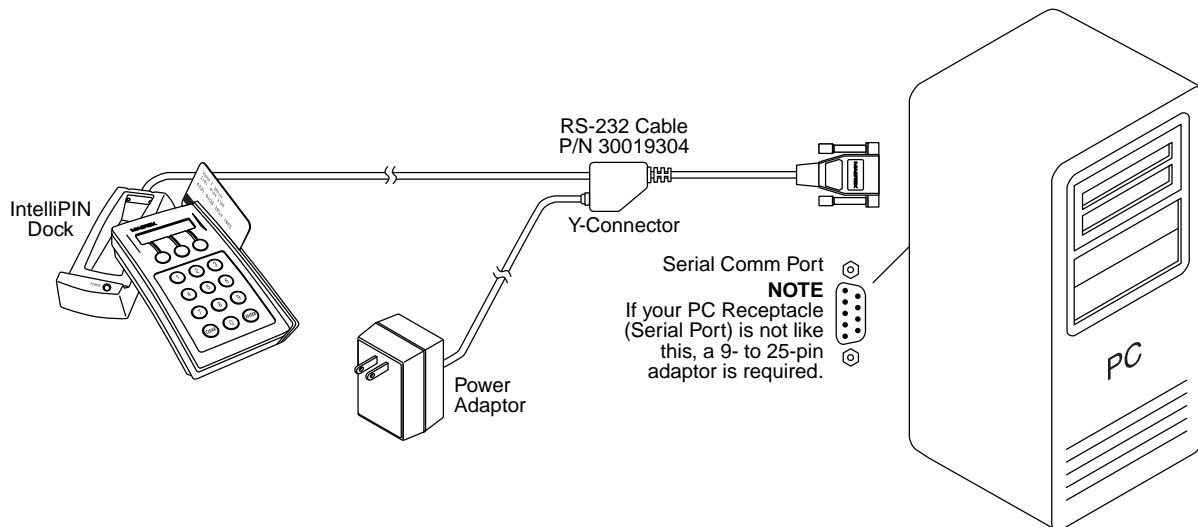


Figure 2-1. RS-232 Interface

The cable connections for the PC connector are as follows:

DE-9F	Signal (Related to PC)	Direction from IntelliPIN
1	–	–
2	RXD	OUT
3	TXD	IN
4	DTR	IN
5	GND	–
6	DSR	OUT
7	RTS	IN
8	CTS	OUT
9	–	–

Keyboard Wedge Interface

The Wedge interface is shown in Figure 2-2. The dock cable (P/N 30019305) is about 6 feet in length and provides an interface to an AT-style keyboard. The pin positions on the receptacle shown below may be facing another direction, depending upon the computer. The 5-to-6-pin adaptor part numbers are 78200021 and 78200026 (if required).

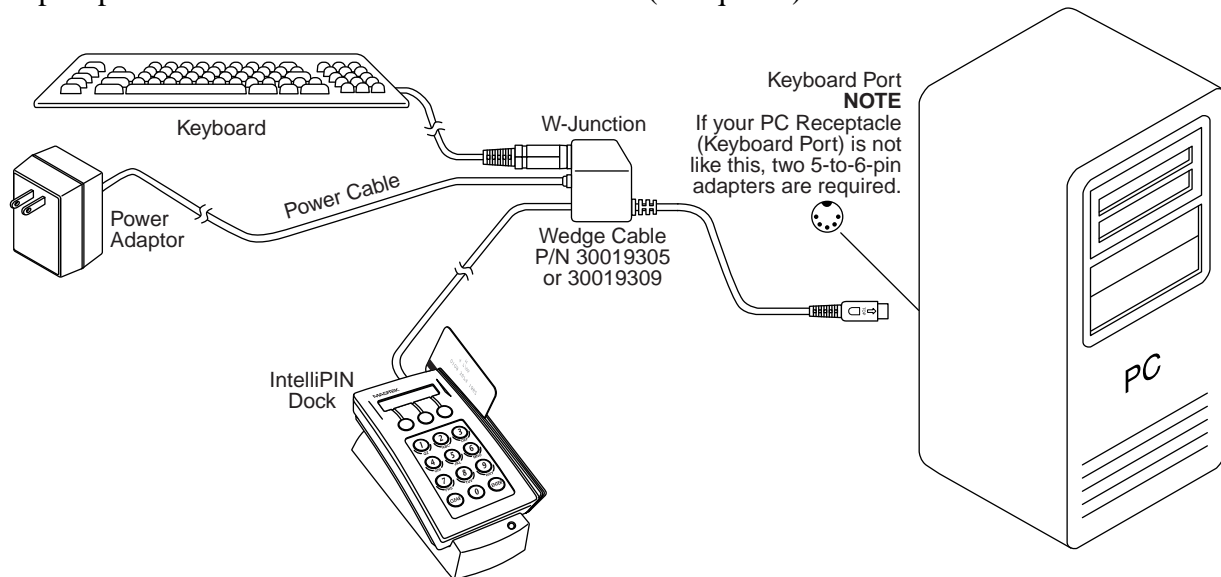


Figure 2-2. Keyboard Wedge Interface

USB Interface

The USB interface is shown in Figure 2-3. The cable is P/N 30019311 and is about 6' long.

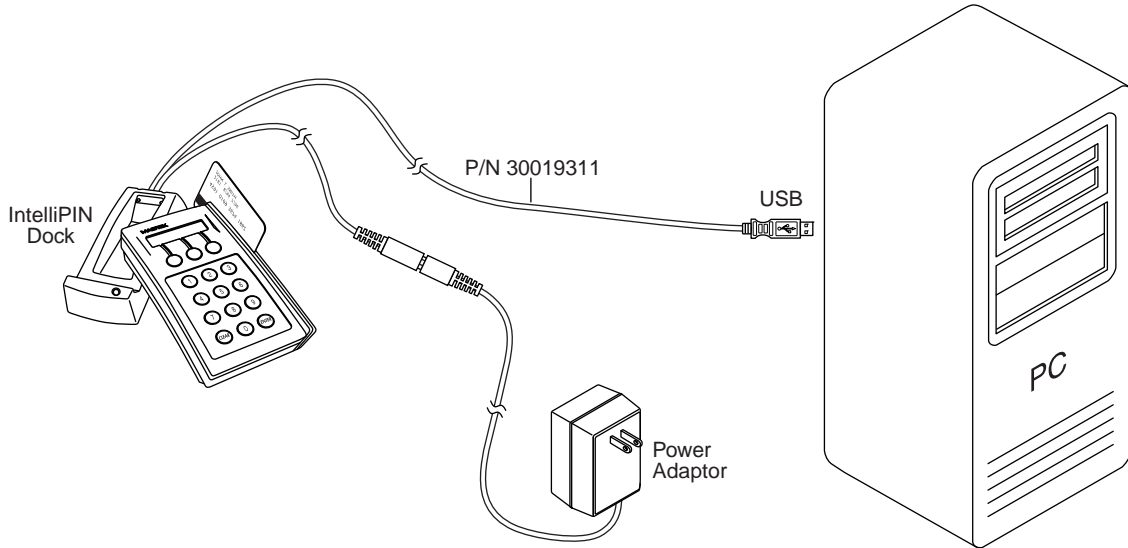


Figure 2-3. USB Interface

Standalone Setup

The Standalone interface is shown in Figure 2-4. The Cable Part Number is 30019307.

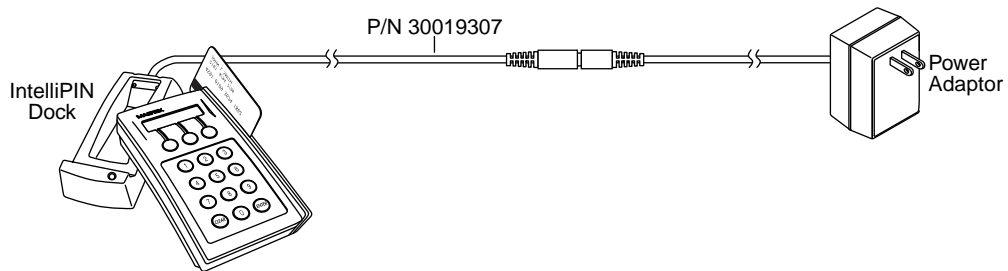


Figure 2-4. Standalone

MICR Plus Setup

The IntelliPIN may also be attached to an RS-232 auxiliary port on a MagTek MICR Plus as shown in Figure 2-5. In this configuration the two devices need to be configured as follows:

Setting	IntelliPIN	MICR Plus
Baud	9600 (typical)	9600 (typical)
Parity	Even (typical)	Even (typical)
Bits	7	7
Header	Yes	–
Invalid Command Response	–	No Reply/Header Required
Format Code	–	3800 (for banking demo)
Data Header	–	Yes
Comm Mode	–	7

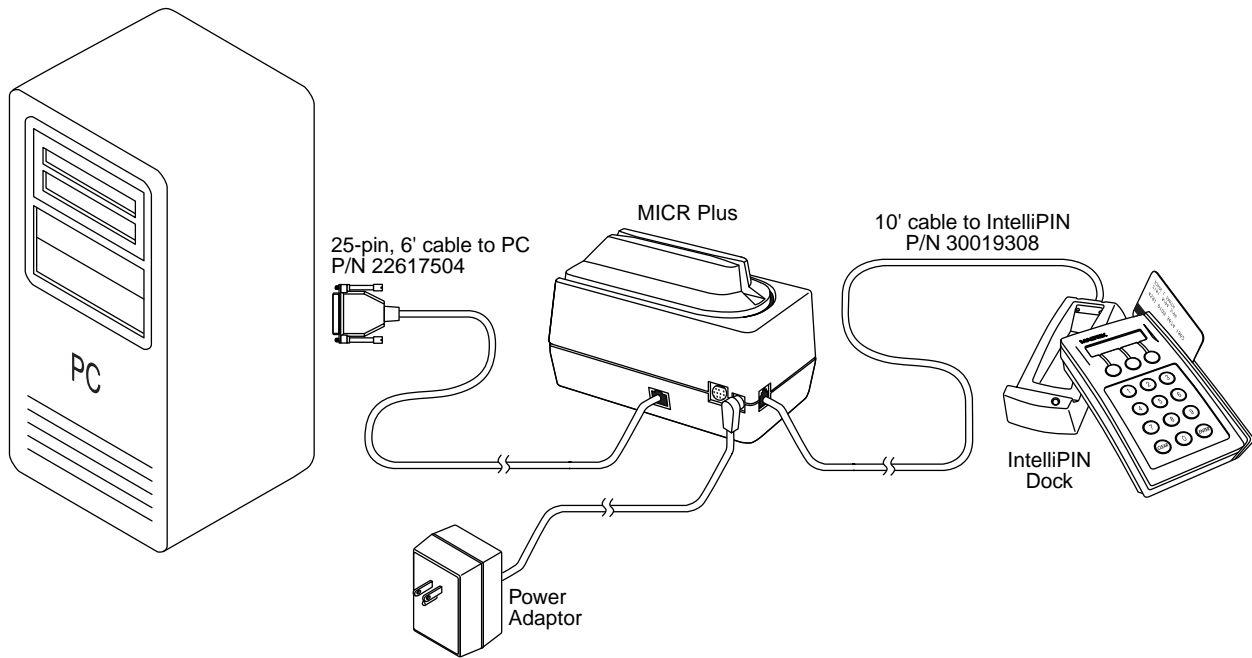


Figure 2-5. MICR Plus Auxiliary RS-232 Port

Printer Connection

In order to print each IntelliPIN transaction, connect the cables as shown in Figure 2-6. Then set the communication parameters on the IntelliPIN to match the settings on the printer.

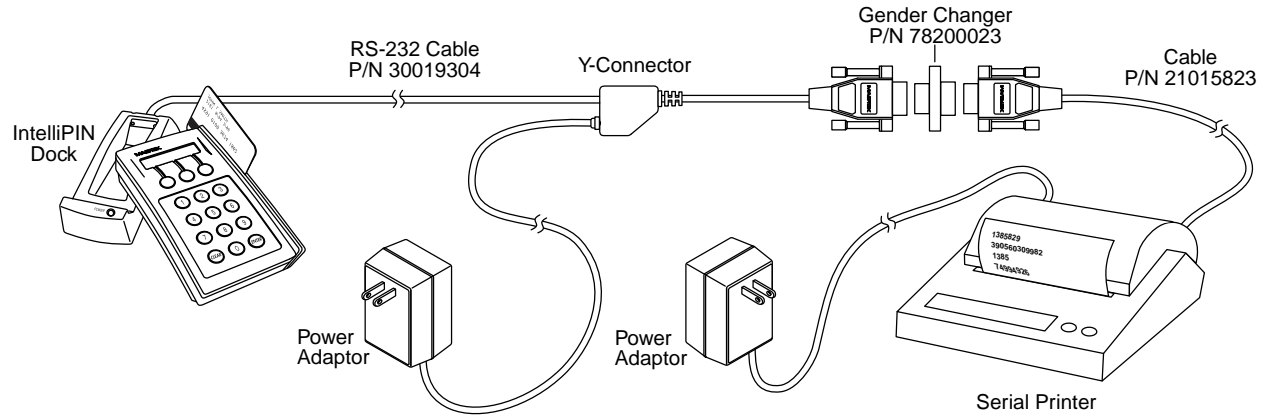
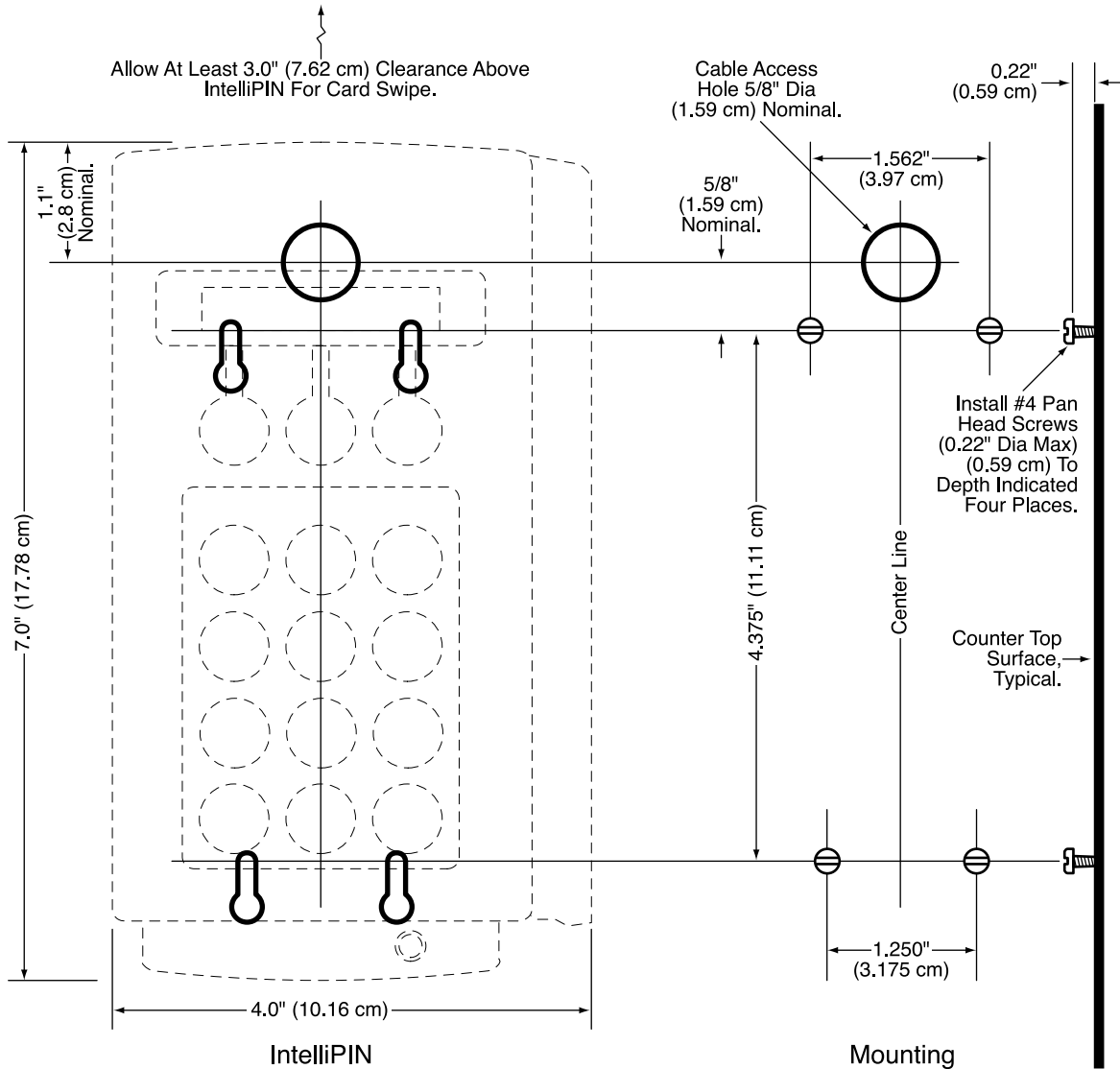


Figure 2-6. RS-232 Printer Interface

Mounting Dimensions

The mounting dimensions are shown in Figure 2-7. This drawing is not to scale. The dark outlines show the holes and positions for a template.



Drawing Not To Scale

Notes:

1. Dotted lines represent IntelliPIN outline when positioned on mounting hardware.
2. Nominal dimensions indicated are for positioning the cable access hole through the countertop. All other dimensions are XXX= +/- 0.005; XX= +/- 0.02 in inches.

Figure 2-7. Mounting Dimensions and Cable Access Hole

USB DRIVER INSTALLATION

When using the USB version of the IntelliPIN, you must install the appropriate files on your computer. The USB devices will only operate on computers with Windows 98/ME/2000/XP operating systems.

The USB driver files are available in two forms:

- On a CD (p/n 30035077)
- From the MagTek web site (www.magtek.com) (p/n 99510038). (The files on the web site are provided in a self-extracting zip file. Run the application and unzip the files to a temporary folder on your local disk drive.)

If you have the CD or after you have extracted all the files, proceed with installation steps below. These steps will only have to be performed the first time you attach the device.

- 1) After the USB cable and the power adapter have been connected to the device and to the PC, Windows will indicate that it found new hardware and will show the IntelliPIN device has been attached.
- 2) You will then be prompted to use the USB Wizard to install the device driver and other appropriate files.
- 3) When prompted, ask the Wizard to search for a suitable device driver.
- 4) If you have the MagTek USB drivers on a CD, specify the CD drive as the location of the driver. If you used the web installation, you may use the **Browse** button to specify the location to where the files were extracted.
- 5) After you locate the requested INF file, click **Open**.
- 6) After all of the files have been installed, click **Finish**.

After the files have been installed, any application program can communicate with the IntelliPIN just as if it is attached to a regular RS-232 COM port. If your application can automatically detect the available COM ports, the newly installed USB device will be shown as one of the available COM ports (e.g., COM5).

If your application does not support COM port selection, you can determine the COM port number by using the device manager. This can be done by right-clicking on the **My Computer** icon on the desktop; then select **Properties**. In Windows 98/ME, click the **Device Manager** tab; in Windows 2000/XP, click the **Hardware** tab, then **Device Properties**. When the Device Manager window opens, click on the plus sign next to **Ports (COM & LPT)**. The new device will be shown in the list with its COM port identified.

MAINTENANCE

Battery - Portable Model Only

When the unit is first received, it will require about 16 hours to fully charge the battery. After a full charge, the unit will operate for about 8 hours without requiring a charge. When the unit goes off (the display is blank), it will hold a charge for about ten days. Since the rechargeable battery is only used for operation of the unit, its state does not affect the retention of setup parameters and FIT information.

The Nickel-Cadmium (NiCad) battery pack that powers the PINPad can be replaced by removing a single Phillips screw next to the communications elements at the rear of the PINPad (See Figure 2-8). After the unit is opened, unplug the connector from the pack and remove and discard the pack as described below. Replace with Part Number 30017901 only.

Warning

*There is danger of explosion if battery is incorrectly replaced.
Replace the battery only with the same or equivalent type
recommended by MagTek. Discard used batteries according to the
instructions below.*

The NiCad Battery is expected to last at least 2 years but its life will depend on usage. Replace and discard the battery as follows:

Keep appropriate records as required by local and Federal law. Recycle the batteries as required. Discard batteries in the appropriate station for toxic waste.

The Lithium battery is on the PCB in the unit. The life is 10 years. If the battery fails return the unit to MagTek for PCB replacement.

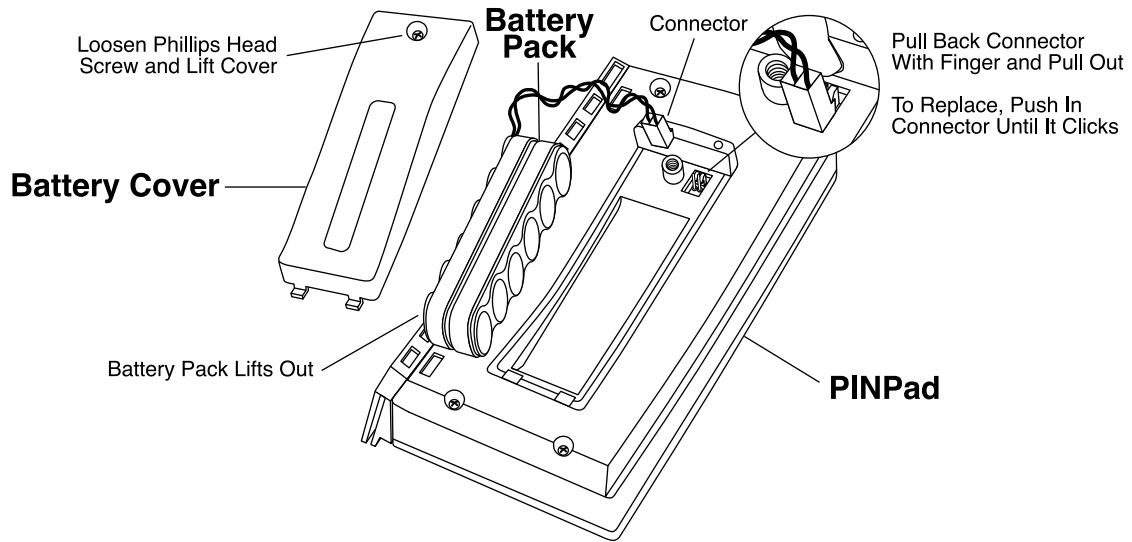


Figure 2-8. Battery Pack Replacement – PINPad Rear View

SECTION 3. SETUP

Setup is performed after Installation (Section 2) and before BIN and FIT loading (Section 4). These sections prepare the system for the operation modes of Standalone Operation (Section 5) or the Interactive Operation (Section 6). In the Standalone Mode the unit may be set up with Program Cards which are generated on an MCAT, or the unit may be set up from a PC with the Key and FIT Loader Software. (See *Key and FIT Loader for IntelliPIN, Software Installation and Operation Manual*, Part Number 99875098). In the Interactive Mode the unit is controlled by commands from a PC (See *IntelliPIN Programming Reference Manual*, Part Number 99875047). Refer to Appendix A for flow diagrams showing the steps required to modify certain parameter settings.

The Setup Mode can be used to modify the following conditions:

- Operate Mode: Interactive, PIN with Card, PIN without Card, Verify Customer, PIN & Verify, Verify Offset
- Communications Mode: Baud Rate, Parity, CTS/DSR, or Keyboard Wedge Interface
- Card Reader Tracks: Select tracks to be read
- PIN Options: Double PIN checks: Trivial PIN checks, PIN Block, PIN Length
- Power Timeout: Disables the unit after PINPad is out of Dock for a specified time period
- Key Parity Check: Checks each byte from each key to ensure correct parity (Interactive Mode only)
- Change Password: Permits customer to select new password
- Operation Timeout: Limits the time the unit waits for operator response to prompts (Standalone Mode only)
- Shut Down Timeout: Permits customer to select number of hours for daily time-out (Standalone Mode only)

MASTER KEY LOADING

A Master Key is required to secure the transmission of other keys to the unit. The Master Key is usually loaded at the factory. If the Master Key has not been loaded or has been corrupted and the unit is in the Standalone Mode, the following will be displayed on the LCD:

Transfer Card Needed

Some institutions may create their own Transfer Cards on an MCAT. If a Transfer Card is not available, contact MagTek.

INTERACTIVE MODE SETUP

The Interactive Mode requires the PC, or Host, to interactively control the functions of the IntelliPIN. In this mode the IntelliPIN cannot initiate any operation without a command from the PC.

To set up the unit for the Interactive (PC) mode using the PINPad, perform the following steps:

1. Press the F1 function key (first button on the left below the LCD), and *immediately* press the 5 numeric key. (This may take a few practice tries as *immediately* means less than a second.) The display will be:

Enter Password

If the password is not entered within 30 seconds, or if **Clear** is pressed, the display will revert back to the idle state.

2. Enter the password and press the **<Enter>** key. The default password is 7638 (SOFT).

Note

If the password has been changed, the new password must be entered at this point.

If the password is entered correctly, the next display to appear will be:

Set Operate Mode

Next Edit Exit

3. The function buttons shown above are from left to right F1, F2, and F3. If **Next** is selected (F1), each setup option will be displayed sequentially. If **Edit** is selected (F2), the Parameters within each setup option will be selected. If **Exit** is selected (F3), the display will revert to the idle state.

If **Set Operate Mode** is not displayed, press **Next** until it is displayed.

4. With **Set Operate Mode** displayed, press **Edit**, then **Sel** until the following appears:

```
Mode:Interactive
Sel  Acpt  Skip
  ○    ○    ○
```

5. Press **Acpt** and the display will return to **Set Operate Mode**, and the Interactive mode is selected.
6. The next display will be:

```
Insert Hdr:No
Sel  Acpt  Skip
```

The default is **No**. A header is inserted when the MagTek MICR Plus is used with the IntelliPin. Press **Acpt** after **Yes** or **No** is selected.

7. Press **Next** continually to cycle through the menu. The Setup menu for the Interactive Mode is as follows:

```
Set Operate Mode
Communications
Card Reader Trks
PIN Options
Power Timeout
Key Parity Check
Change Password
```

These menus are described below.

Note

To return the program to the idle state, press the Exit button (F3) when the display shows any of the above modes.

STANDALONE MODE SETUP

Perform steps 1, 2, and 3 in the Interactive Mode Setup above, then perform the following steps:

1. With **Set Operate Mode** selected, press **Edit** then **Sel** to cycle through the menus. The display will include the Interactive mode, described above, and the five Standalone Modes, which are as follows:

Mode:PIN w/Card
Mode:PIN w/oCard
Mode:Verify Cust
Mode:PIN&Verify
Mode:Verify Ofst

Only one mode may be selected. Descriptions of these modes are as follows:

Mode:PIN w/Card

PIN with Card: The customer swipes a card, presses F2 (Continue) then enters a PIN twice. An offset is generated.

Mode:PIN w/oCard

PIN without Card: The PAN can be entered via the keypad, or with a Template Card, or with a Customer Card. The PIN is entered twice and an offset is generated.

Mode:Verify Cust

Verify Offset on Card: After a card is swiped, the customer enters a PIN one time. The offset, which is generated by a PIN, is compared with the offset on the card. An authorization code is generated.

Mode:PIN&Verify

Verify and Offset: By using F2 the user can select either "PIN w/oCard" or "Verify Cust" functions.

Mode:Verify Ofst

Verify No Offset: Offset is NOT on the card. The card is swiped and the PIN is entered once. The offset, which is generated by the PIN, is transmitted to PC. The Host verifies the offset from a database.

2. When any of these modes is used, the display will offer options of Transmit (abbreviated Xmit) Data and methods of activation. If, for example, when in **Mode:PIN w/Card** (the default mode) and **Acpt** is pressed, one of two displays will appear. The first is

XmitData:w/PAN
Sel Acpt Skip

This option (the default) allows selection of the PAN or all track data to be sent to the PC. In the above example, the PAN, followed by the offset, and the count are sent to the PC. The other display for Transmit Data is as follows:

```
XmitData:w/Trks
Sel  Acpt  Skip
○    ○    ○
```

In this example, all track data for whatever tracks have been enabled, followed by the offset, and the count are sent to the PC.

Select the format required, and press **Acpt**.

3. When one of the formats is accepted, the following displays will appear:

```
Actvat:Card Only
Sel  Acpt  Skip
○    ○    ○
```

This option specifies how the unit is activated. In the above example, a Program or Activate Card will activate the unit. **Card Only** is the default. Another option is as follows:

```
Actvat:Card+Pswd
Sel  Acpt  Skip
○    ○    ○
```

This option requires a Program or Activate Card (with a card number, if required) followed by a password to activate the unit. A third option is as follows:

```
Actvat:Pswd Only
Sel  Acpt  Skip
○    ○    ○
```

With this option, no Activate cards are required.

4. After one of these options is selected, the next display will be:

```
Offset:Show
Sel  Acpt  Skip
○    ○    ○
```


When Show is selected, the Offset will appear on the LCD. When the alternative, **Dont Show**, is selected, asterisks will appear on the screen, ********. The Offset is still sent to the PC when **Dont Show** is selected.

The unit is activated by pressing F3 and entering the password. The display will be:

```
Unit is
Shut Down  Pswd
○          ○          ○
```

Press Pswd (F3) and the display will request the password to be entered.

5. Select the Activate method required and press **Acpt**, and the unit will return to **Set Operate Mode**.
6. Press **Next** continually to cycle through the menu to modify any other parameters. The Standalone Setup menu is as follows:

```
Set Operate Mode
Communications
Card Reader Trks
PIN Options
Power Timeout
Change Password
Operat. Timeout
Shut Down Timeout
```

Note

To return the program to the idle state, press the Exit button (F3) when the display shows any of the above modes.

Press **Next** until the **Communications** mode appears.

COMMUNICATIONS – RS-232 AND USB ONLY

When **Communications** is selected the following display will appear:

```
Communications
Next  Edit  Exit
○     ○     ○
```

Press **Edit** (F2) and the following will appear:

Baud: 9600
Sel Acpt Skip

- The default value is 9600 baud. To change this value, press **Sel** until the required value appears. The baud rates that will appear sequentially as **Sel** is pressed are: **300, 600, 1200, 2400, 4800, and 9600.**

Note

It should not be necessary to reduce the communication rate unless problems are encountered.

- When the required baud rate appears, press **Acpt**. The program will accept the value and display the next option:

Parity: EVEN
Sel Acpt Skip

- The default is **Even**. To change the parity, press **Sel** until the required parity appears. The options shown will be: **ODD, SPACE/0, MARK/1, and EVEN**. All parity settings use 7-bit characters. To conform to 8-bit, no parity, set the parity to **SPACE/0**. The number of stop bits is fixed at 1; it is not adjustable.

- When the required parity appears, press **Acpt**. The program will accept the parity and display the next option:

CTS/DSR: Ignore
Sel Acpt Skip

- The CTS/DSR default is **Ignore**. The alternative is **Use**. To change this option, press **Sel** until **Use** appears. This option might be enabled in cases where the PC might not be ready to accept data at any time. The PC would control the flow of data to the PC.

- When the selection is made, press **Acpt**. The program will return to **Communications**.

COMMUNICATIONS – KEYBOARD WEDGE ONLY

The Character Rate and Scan Code Selection are for the Keyboard Wedge only.

When **Communications** is selected the following display will appear:

```

Communications
Next  Edit  Exit
  ○    ○    ○

```

Character Rate

The first choice for the Wedge setup is the number of characters per second (CPS). The initial display will show the current value and allow changing to any legal value:

```

Char Rate:  80 CPS
Sel  Acpt  Skip

```

The character rate is 80 (default) characters per second. Pressing **sel** will cycle through the following selections:

```

20   30   40   80

```

Pressing **Acpt** will keep the displayed choice and move on to the Scan Code Selection. Pressing **skip** will keep the original value *regardless* of the displayed choice and move on to the Scan Code Selection.

Scan Code Selection

The next choice for the Wedge setup is the Scan Code Selection. The initial display will show the current value and allow changing to any legal value.

```

Scan Code:  AUTO
Sel  Acpt  Skip
  ○    ○    ○

```

The Scan Code default is AUTO. Pressing **sel** will cycle through the choices:

```

Auto      Set 1      Set 2

```

When **Acpt** is pressed, **AUTO** will automatically select the scan codes to use at power up. When **Set 1** is accepted, IBM PS2/25 and PS2/30 scan codes will be selected. When **Set 2** is

accepted, AT and PS2/50 scan codes will be selected. Usually **AUTO** will suffice; however, if there are communication problems, it may be necessary to select one of the settings specifically.

Acknowledge/Nonacknowledge

The next selection for the Wedge interface is:

ACK/NAK:Enabled **OR** **ACK/NAK:Disabled**
Sel **Acpt** **Skip** **Sel** **Acpt** **Skip**

The default is **Enabled**. When disabled, this option eliminates the usual ACKnowledge (or sometimes NAK) that is sent after each message has been received. The feature allows the application program to accept only the response message and not be burdened with processing the ACK/NAK. The drawback is that the application will not be notified in cases of incorrect or incomplete messages.

CARD READER TRACKS

When **Card Reader Trks** is selected, the following display will appear:

```
Card Reader Trks
Next Edit Exit
○ ○ ○
```

1. Press **Edit** (F2) and a display similar to the following will appear:

```
Enab Tracks: 12-
Acpt Skip
○ ○ ○
```

2. The default is Tracks 1, 2 enabled and Track 3 disabled. To add or delete any track number, press the number on the PINPad, and the Track number will toggle on or off. For example, to add Track 3 above, simply press “3”. The result will be **Enab Tracks: 123**. If Track 1 is to be deleted, press 1 on the PINPad, and the result will be **Enab Tracks: -23**. In the Standalone Mode, this option is only useful when all track data is sent to the PC. If only the PAN is to be transmitted, this option has no effect.
3. Press **Acpt** and the program will return to **Card Reader Trks**.
4. Press **Next** to select **PIN Options**.

PIN Options

When **PIN Options** is selected, the following display will appear:

```
PIN Options
Next Edit Exit

○ ○ ○
```

1. In the Interactive Mode only, press **Edit** (F2) and the following will appear:

```
Dbl PIN:Enable
Next Edit Exit

○ ○ ○
```

2. The double PIN default is **Enable**. The alternative is **Disable**. To change this option, press **Sel** until **Enable** appears. If enable is selected, the program will require the customer to enter the PIN twice as a security measure. Disable requires only one entry. In the Standalone mode, double entry of PINs is always required when an offset is being generated. Only a single entry is required in the verify modes.
3. When the selection is made, press **Acpt**. The program will display the following:

```
Triv PIN:Disable
Sel Acpt Skip

○ ○ ○
```

Note

In the Standalone Mode, the trivial PIN selection affects only PIN w/card and PIN w/o card modes and does not affect PIN verification operations.

4. The trivial PIN default is **Disable**. The alternative is **Enable**. To change this option, press **Sel** until **Enable** appears. If enable is selected, the program will not accept certain pin number combinations as sequences, such as “1, 2, 3, 4” and identical numbers, such as “2, 2, 2, 2.”
5. When the selection is made, press **Acpt**. The program will display the following:

PIN Blk:ANSI 9.8
Sel Acpt Skip

Note

The PIN Block Format Selection is used in the Interactive mode only and not in the Standalone mode.

6. The PIN block default is ANSI 9.8. The alternative is IBM 3624. These are PIN Block Formats and are described in *IntelliPIN Programming Reference Manual*. To change this option, press **Sel** until **Enable** appears. If enable is selected, the program will accept the IBM format.
7. When the selection is made, press **Acpt**. The program will display the following:

PIN Length: 04
Acpt Skip

Note

The PIN Length Selection is used in the Interactive mode only and not in the Standalone mode. In the Standalone mode, PIN length is specified by the FIT information.

The PIN length is entered from the PINPad. PIN length is from 4 to 12 digits. The default is 04. When digits are entered, a backspace key appears above the F1 Function key:

PIN Length: 04
Bksp Acpt Skip

The backspace (F1) can be pressed twice to remove the 04 in the example above. If a number less than 4 or greater than 12 is entered and **Acpt** is pressed, the following display will appear:

Enter 4 to 12 (ANSI)
(Press any key)

or

Enter 1 to 16 (IBM)
(Press any key)

8. If the IBM 3624 Pin Block has been selected, the next display will be similar to the following:

Pad Char: 00 (0)
Acpt Skip

The default value is 0. When CLEAR and any keys are pressed, for example 07, the display will be similar to the following:

Pad Char: 07- (7)
Bksp Acpt Skip

The Backspace appears and the number can be changed for padding the character length. The number in parenthesis is the hex value.

9. When the selection is made, press **Acpt**. The program will return to **PIN Options**.
10. Press **Next** to select **Power Timeout**.

POWER TIMEOUT

The Power Timeout sets the amount of time the unit can be out of the dock without power before turning itself off. If the PINpad is removed from the dock or power is removed from the dock for this programmed time, the unit shuts off. The maximum timeout is 255 minutes. The minimum is 5 minutes. The purpose of this Timeout is twofold: 1) to extend battery life by reducing the number of discharge cycles and 2) to minimize the chances of unauthorized usage. The unit will be disabled before the battery is completely discharged. When the unit is placed in the dock, it will turn itself on and begin charging its battery. When the unit is placed back in the dock, it must be activated again.

Note

This option has no effect on the nonportable units; it only affects the battery-operated versions.

When **Power Timeout** is selected, the following display will appear:

```
Power Timeout
Next Edit Exit
```

1. Press Edit (F2) and a display similar to the following will appear:

```
PwrTime: 015 Min
Acpt Skip
```

2. Press any numeric key and a backspace key appears above the F1 Function key:

```
Pwr Time: 015 Min
Bksp Acpt Skip
```

The backspace (F1) can be pressed twice to remove the 15 (which is the default) in the example above, and new number can be entered.

3. When the selection is made, press **Acpt**. The program will return to **Power Timeout**.
4. Press Next to advance to the next selection.

KEY PARITY CHECK – INTERACTIVE MODE ONLY

The first display will be:

```
Key Parity Check
Next Edit Exit
```

Note

Key Parity Check is automatically enabled in the Standalone Mode. If for some reason the Keys being used have incorrect parity, it will be necessary to temporarily enter the Interactive Mode to change the Key Parity Check option. After the change, return to the appropriate Standalone Mode.

1. Select **Edit** and the next display will be:

KeyParity:Check
Sel Acpt Skip

2. When the Key Parity Check (the default) is accepted, each byte of each key from the PC must have odd parity. This is a check of the integrity of the keys and helps to verify that keys are being decrypted under the proper key encryption keys.

When **Sel** is pressed, the alternative is displayed:

KeyParity:Ignore
Sel Acpt Skip

When **Ignore** is accepted, Key Parity will not be checked.

3. Press **Next** to advance to the next selection.

CHANGE PASSWORD

To enter the Customer or Setup modes, a 4-digit password is required. This option permits the customer to change the password. If the password is incorrectly entered 5 times in a row, the function is disabled until a Program Card or Activate Card is successfully read.

When Change Password is selected, the following display will appear:

Change Password
Next Edit Exit

1. Press **Edit** (F2) and the following will appear:

New Password

To keep the previous password, and not change the password, press **CLEAR**.

IntelliPIN

2. Enter the 4-digit password, for example 2580, and press <Enter>.

3. The next display will be:

```
ReEnter Password
----
```

4. Enter the example, 2580 followed by <Enter>. If the same digits are entered, the display will be:

```
New Password
accepted
```

If the digits were not entered correctly, the display will be:

```
Passwords
do not match
```

The display will then return to:

```
New Password
----
```

The program will repeat this sequence until the two passwords match.

When the password is accepted, the display will return to **Change password**.

Press **Next** to advance to the next selection, or **Exit** to return to the Idle Mode.

OPERATION TIMEOUT – STANDALONE MODE ONLY

The Operation Timeout limits the time the unit will wait for the operator to respond to certain prompts. The timeout process begins when a prompt appears. At the conclusion of the timeout, without any response, the display reverts to the previous prompt.

When Operation Timeout is selected, the following display will appear:

```
Operat. Timeout
Next Edit Exit
```

1. Press **Edit** (F2) and the following will appear:

```
Op.Time: 030 sec
Acpt  Skip
```


2. Press any numeric key and a backspace key appears above the F1 Function key:

```
Op.Time: 030 sec
Bksp  Acpt  Skip
```


Press any numeric key(s) to change the 30 (the default value) in the example above. (The program will add the leading 0's.) Use the backspace key to further change the value. The valid range is from 15 to 255 seconds.

3. When the selection is made, press **Acpt**. The program will return to **Operat. Time Out**.
4. Press **Next** to advance to the next selection.

SHUT DOWN TIMEOUT – STANDALONE MODE ONLY

The Shut Down Timeout is the number of hours the unit is active before it shuts down. This mode may be used to close out the unit at the end of the day. If, for example, the time selected is 8 hours, the unit will shut down 8 hours after the unit is activated. However, the unit will not shut down in the middle of a transaction. The first display will be:

```
Shut Down TimeOut
Next  Edit  Exit
```


1. Select **Edit** and the next display will be:

```
Auto Shut Off?:Y
Sel   Acpt  Skip
```


2. If the shutdown is to be enabled, press **Acpt** when the **Y** is showing. If the shutdown is to be disabled, press **Sel**, and when **N** appears, press **Acpt**.

IntelliPIN

3. The next display will be similar to the following:

```
ShutOff in:03hrs
  Acpt  Skip
```



4. Press the appropriate numbers on the IntelliPIN to change the ShutDown TimeOut; for example, if the shutoff time should be 7 hours, press 07. After the time is selected, press **Acpt**.

Press Exit to return to the Idle mode.

SECTION 4. BIN AND FIT LOAD AND REVIEW

After the unit has been set up, FITs and their associated BINs are loaded from Program Cards or by FIT loading software from a PC. This section describes the loading and review of BINs and FITs with the Standalone option only. The unit can read up to 12 BINs on 3 or more Program Cards. Program Cards are generated on an MCAT.

BIN AND FIT LOAD

Load the BINs as follows:

1. The unit must be in **Shut Down** Mode. If it is not, press F3, then F1.

To load the BIN and FIT information from Program Cards, the user must know the 4-digit card number of each card if one has been defined.

2. Swipe the first Program Card. The display will be:

Card Number :

3. Enter the card number.

If the number is not entered within the operation timeout limit, the unit will return to **Shut Down** mode.

When the number is entered, the display will be:

Card Number :

Press ENTER to enter the card number.

The display may also be:

**Bad card number or
user aborted**

If the Master Key in this IntelliPIN is different from the key that was in the MCAT used to create the Program Card, the display will show **Invalid Program Card**. This can be corrected by creating a Transfer Card on the MCAT and swiping it through the IntelliPIN when the unit is in the Shut Down Mode. This will copy the Master Key from the MCAT into the IntelliPIN.

4. If a BIN has *not* previously been entered and is *not* being changed, the display will be similar to the following:

**Added FIT#01
B:123456**

The program will then display other BINs that were on the same card. After each card is read, the display will be:

**Read next card
or press *Done***



5. Swipe the next card or press F3 (Done). If a card is swiped, BINs will be added and the same message as above will appear.

If F3 (Done) is pressed and the unit is set for the Verify Mode, the following will appear:

**Enter -----
Date: MMDDYYYY**

An example for entering the date of April 1, 2000, is 04012000 followed by ENTER.

6. When all 12 BINs have been loaded, or F3 (Done) is pressed, or a timeout occurs, the display will go to the customer mode (if a password is not required):

**Please Swipe
Your Card**

The unit is then ready for customer operation.

BIN AND FIT REVIEW

BINs can be checked, deleted, added, or modified. To add or modify, return to the **Shut Down** Mode (by pressing F3, then F1) and simply run a Program Card with the BIN(s) to be added or modified. To check and delete BINs, perform the following:

1. When the unit is in **Shut Down** Mode, press F1 and immediately key 3. (This may take a few practice tries as *immediately* means less than a second.) A display similar to the following will appear:

#01 des B:112233
FIT# Field Exit

The **01** is the FIT sequence number. The **des** indicates the FIT uses the offset algorithm for Data Encryption Standard. In place of **des** another code may appear such as **pvv**, an algorithm for a VISA-generated Pin Verification Value. Another is **db1** for a Diebold-generated offset. The **B:112233** indicates the 1 to 6 digits of the BIN.

2. Press F1 to cycle through all the FITs in memory. There are 12 sequence numbers. If fewer than 12 FITs are loaded, the unused FITs will appear as:

#12 Not loaded
FIT# Exit

Continue to press F1 until the required BIN appears.

Note

To delete a BIN, press F1 until the BIN appears on the LCD. Then press CLEAR. The BIN will be deleted, and the next BIN in sequence will have the FIT number of the deleted BIN.

3. When a particular FIT is shown, press F2 (**Field**). The display will change to:

#01 Val Len:03
FIT# Field Exit

Val Len is the number of digits of the Validation Length.

4. Press F2 again. The next display will be similar to:

#01 Val Pad: 2
FIT# Field Exit

The Validation Length must be a total of 16 digits. Validation Pad is the value inserted to extend the validation input to 16 digits.

5. Press F2 again. The next display will be similar to:

```
#01 Val Dspl:02  
FIT# Field Exit
```

Validation Displacement is the number of characters from the field separator.

6. Press F2 again. The next display will be similar to:

```
#01 Ofst Len:04  
FIT# Field Exit
```

Offset Length is the number of digits in the offset.

7. Press F2 again. The next display will be similar to:

```
#01 Ofst Dsp:04  
FIT# Field Exit
```

The Offset Displacement is the number of characters from the Field Separator or the End Sentinel.

8. Press F2 again and the program will return to:

```
#01 des B:112233  
FIT# Field Exit
```

9. To terminate the FIT Review operation, press F3 (**Exit**).

SECTION 5. STANDALONE OPERATION

The unit is ready for Standalone Operation after hardware installation is complete (Section 2), the Setup Operation is complete (Section 3), and the BIN and FIT tables have been loaded and reviewed (Section 4). Flow diagrams for all operations are shown in Appendix A.

ACTIVATE CARDS

There are two types of Activate Cards: the 9's card and the 0's card. The 9's card has six digits of 9's in the BIN field. It is a generic card that is not required to match the initialize card. Any user may activate the unit with a 9's card (Part Number 96500059).

The 0's card must be generated on an MCAT that has the same Master Key as the IntelliPIN. If a 0's card is used to activate an IntelliPIN, that IntelliPIN can no longer be activated by a 9's card.

To prepare a secure Activate Card of all 0's on the MCAT, begin the process as if a Program Card is being generated. Enter six 0's into the BIN field. The remaining parameters must be entered to fill up the card, but the values are not used by the IntelliPIN. Only the first BIN needs to be entered.

The Standalone Operation Mode is entered by one of the following methods:

- Card Only
- Card and Password
- Password Only

ACTIVATE WITH CARD ONLY

For the example below, the IntelliPIN is set up as follows:

```
Set Operate Mode
  Mode:PIN w/Card
  XmitData:w/Trks
  Actvat:Card Only
  Offset:Show
```

The LCD will show the following:

```
Unit is
Shut Down
```

IntelliPIN

Swipe the Activate or Program Card, and if a card number has been assigned, the following will appear:

Card Number :

Enter the card number.

If a card number has not been assigned, or when the card number is entered, the following will appear when the Activate Card is swiped:

Activate card
was read

When a Program Card is swiped, a message similar to the following may appear:

Added FIT #11
BIN: 112233

If a BIN or FIT is changed, Swipe the new Program Card with the new BIN or FIT. The display will be similar to the following:

Updated FIT #11
BIN: 112233

If there are no changes to the FITs, the unit will go directly to the Customer Mode. When the following or a similar message appears, the unit is ready for Customer Operation.

Please swipe
your card

ACTIVATE WITH CARD AND PASSWORD

For the example below, the IntelliPIN is set up as follows:

Set Operate Mode
Mode:PIN w/Card
XmitData:w/Trks
Actvat:Card+Pswd
Offset:Show

The LCD will show the following:

Unit is
Shut Down

Swipe the Activate or Program Card, and if a card number has been assigned, the following will appear:

```
Card Number :  
-----
```

Enter the card number.

If a card number has not been assigned, or when the card number is entered, the following will appear when the Activate Card is swiped:

```
Activate card  
was read
```

If a Program Card is swiped and no FITs are being added or changed, the unit will go directly to password entry. The next display will be:

```
Enter Password  
-----
```

Enter the password. The default password is **7638** <Enter>. When the following or a similar message appears, the unit is ready for customer operation.

```
Please swipe  
your card
```

ACTIVATE WITH PASSWORD ONLY

For the example below, the IntelliPIN is set up as follows:

```
Set Operate Mode  
Mode:PIN w/Card  
XmitData:w/Trks  
Actvat:Pswd Only  
Offset:Show
```

The LCD will show the following:

```
Unit is  
Shut Down Pswd
```

Press **F3** and the following will appear:

Enter Password

Enter the password. The default password is **7638** <Enter>.

When the following or a similar message appears, the unit is ready for customer operation.

**Please swipe
your card**

ACTIVATE IN VERIFY MODE

If the Password is entered correctly and the Verify Customer mode is selected, the date entry will appear followed by the Swipe entry:

Enter -----

Date: MMDDYYYY

When the date is entered, such as 07042000, the following will appear:

**Please swipe
your card**

When this message appears, the unit is initialized.

The unit is ready for Standalone Operation. If a password is not required, the unit may also be made ready when:

- In the FIT Loading mode (see Section 4) after at least one FIT has been loaded, press **F3** when the following message appears:

**Read next card
or press *Done***

- Let the **Read next card** prompt timeout.
- Load all 12 BINs into memory.

SELECT OFFSET/VERIFY MODES

The default mode for customer operation is **PIN & Verify**. In this mode, a PIN is entered and an offset is generated or verified. This mode is a combination of **PIN w/o card** and **Verify Cust.** The selection of **Offset** or **Verify** can be activated by pressing F2 (see below). The default is **Offset**.

To enter the **Offset** or **Verify** modes, the unit must be in the **PIN&Verify** mode (see Section 3 for setup). To select the **Verify** Mode, perform the following:

1. Instead of swiping the card or entering the PAN when the **Please swipe your card** prompt appears, press F2 and the following appears:

```
Select Mode:
Offset      Verify
```

2. Press F3 to select **Verify**, and the following appears briefly:

```
Verify Customer
```

Then, if the date has not already been entered:

```
Enter -----
Date: MMDDYYYY
```

3. Enter the date then press ENTER. An example for entering the date of July 4, 2000, is 07042000. For the next display see the PAN entries below.

Selecting the **Offset** Mode is similar, except F1 is pressed and the date is not entered.

PAN ENTRY

The following message appears when in the modes **PIN w/card** or **Verify Customer**:

```
Please swipe
your card
```

The following message appears when either **PIN&Verify** or **PIN w/ocard** is selected:

**Key enter PAN
or swipe a card**

Swipe a customer card, a Template Card, or press a digit to key in the PAN. The key entry will be:

**Enter PAN:-----
-----**

A Template Card may be used to reduce the number of manually entered digits. The first part of the PAN, if it is the same on all cards, may be entered from a Template Card to save time and avoid errors. See Section 3 under Template Cards.

During manual entry, if MOD-10 is enabled for a particular BIN, the IntelliPIN will either append the MOD-10 character or validate it. If it detects that the MOD-10 check is incorrect, the unit will show **Check-digit Error**.

After the PAN is entered, the program will proceed to the next step, or if the BIN associated with the PAN was not loaded, the following message will appear:

**Not Recognized
Invalid BIN**

Or if key entry is not allowed for this BIN:

**Key Entry not
allowed**

Refer to Section 4 for loading BINs.

OFFSET GENERATION

In these examples, the **PIN&Verify** mode is used although the examples also apply to **PIN w/oCard**. To select a PIN perform the following steps:

The first prompt is

**Key enter PAN
or swipe a card**

Swipe a Customer Card. If the card is not a customer card, the display will be:

**Cannot use a
system card**

Or

**Cannot use a
Driver License**

Ensure a Customer Card is used.

- 2. When the card is swiped, information from Track 2 will appear. The following is an example:

**3456789012345678
Continue -->**



- 3. The arrow indicates there is more data to the right. Press F3 once, and the following appears:

**4567890123456789
<-- Continue -->**



- 4. Press F1 or F3 to cycle through all the information on Track 2. The following is an example of information that may appear on the card:

3456789012345678=001212044175400000

The PAN consists of the digits to the left of the “=” sign (the BIN is the first one to six digits).

If **Offset:Dont Show** is selected, the information on Track 2 will be similar to the following:

3456789012345678=*****

- 5. Press F2 (**Continue**) to continue and the following display appears:

**Please enter PIN
then press ENTER**

If the BIN associated with this card was not loaded, the following message will appear:

**Not Recognized
Invalid BIN**

Refer to Section 4 for loading BINs.

6. Have the customer enter a PIN and press ENTER. The display is:

The next display is:

**Please re-enter
the PIN**

This last message appears only in the **offset** mode.

If the PINs do not match, the following will appear:

**PINs don't match
Please re-enter**

7. Enter the PIN for the second time, press ENTER, and the following will appear:

**Offset = 1647
Count = 000053**

The count indicates the number of transactions and can be used for audit control. See Transaction Counter Operation below.

If **Dont Show** is selected, instead of the Offset and Count, the following will appear:

Thank you

The offset should be copied to an appropriate place consistent with the institution's requirements for security.

VERIFY CUSTOMER

When in the Verify mode, the date must be entered since it is used as part of the authorization algorithm. Whenever the unit enters the customer mode, the date will be requested.

In this mode, the Offset on the card (from Track 2) is compared with the Offset generated from the customer's PIN. If both agree, the transaction can be approved.

Note

Only track 2 is used in this operation. Errors on other tracks are ignored.

Verify the card as follows:

1. The first prompt is

**Please swipe
your card**

2. After the card is read, the following display appears:

**Please enter PIN
then press ENTER**

If the BIN associated with this card was not loaded, the following message will appear:

**Not recognized
Invalid BIN**

Refer to Section 4 for loading BINs.

3. Have the customer enter a PIN and press ENTER. The display is:

This display is followed by:

**Auth # = 1647 Or, if Dont Show is selected, Thank you
Count = 000054**

If the PIN is incorrect, the following will be shown:

**PIN incorrect...
Press CLEAR**

4. Press **CLEAR** to return to **Swipe** mode.

VERIFY OFFSET

This mode is used if the Offset is not encoded on the card. After the customer enters a PIN, the IntelliPIN generates and transmits the Offset to the PC.

Note

Only track 2 is used in this operation. Errors on other tracks are ignored.

Verify the Offset as follows:

1. The first prompt is

**Please swipe
your card**

Swipe a Customer Card. If the BIN associated with the card was not loaded, the following message will appear:

**Not recognized
Invalid BIN**

Refer to Section 4 for loading BINs.

2. After the appropriate BINs are loaded and a Customer Card is swiped, the following display will appear:

**Please enter PIN
then press ENTER**

One of the following displays will appear:

Offset = 1647 Or, if **Dont Show** was selected, **Thank you**
Count = 000054

TRANSACTION COUNTER OPERATION

Each Offset/PVV generation or verification increments an internal Transaction Counter. This value is included with each activity report both on the display and to the PC. The value of the counter can be obtained, while in the Shut Down Mode or at the Customer prompt, by pressing the **ENTER** Key. The Transaction Counter provides a sort of audit trail to monitor usage of the IntelliPIN.

COMPUTER MESSAGES

When the IntelliPIN is connected to a PC, data from each transaction will be transmitted to the computer. In the offset generation mode, the offset will be included; in the verify mode, the authorization code will be sent. For nonportable units or if the portable unit is in the dock, the PAN or track data followed by a carriage return will be transmitted as soon as the data is

available. If the portable unit has been removed from the dock, the transaction information will be saved in the unit until it is placed back in the dock or until **CLEAR** is pushed at the conclusion of the transaction. Only the most recent transaction is stored.

Even if the unit does not recognize the BIN, the PAN or track data will be transmitted but it will be followed by “INVALID BIN<CR>” (<CR> represents the carriage return character), and the display will show **Not recognized Invalid BIN**. If the PAN is too short for the specified algorithm, the display will show **PAN too short Press any key** and the PAN along with “BAD PAN<CR>” will be transmitted to the computer.

Immediately after the customer has entered the PIN for the second time in the offset generation mode, the offset or PVV digits followed by a carriage return and the six-digit count followed by a carriage return will be transmitted. If **CLEAR** is pushed prior to completing PIN entry, “ABORT<CR>” will be sent.

In the PIN verify mode if the correct PIN is entered, the unit will transmit “AUTH=” followed by the four-digit authorization code then by a carriage return. If the PIN is incorrect, the display will show **PIN incorrect... Press CLEAR** and the unit will transmit “REJECT<CR>”. The reject message will be sent up to two times. If the PIN is incorrectly entered a third time, the display will show **PIN incorrect...Failed to verify** and “FAILED<CR>” will be transmitted to the PC.

These computer messages can be used by the financial institution to eliminate the need for an operator or teller to transcribe the information that is generated during each transaction. If a computer interface is not necessary, an RS-232 Printer can be connected to the IntelliPIN and the information can be printed for a permanent record of the transactions.

For remote operation from a PC, refer to the *IntelliPin Programming Reference Manual*, Part Number 99875047.

VERIFY CUSTOMER MODE OUTPUT

The following describes the data transmitted to the Host when a Verify Offset operation is performed. In the example below, the IntelliPIN is set up to send the PAN data to the PC. The IntelliPIN may also be set up to return selected card tracks.

Note

All data lines end in a single carriage return represented here by <CR>

A card is swiped and the PAN data is sent:
For example, **0123456789123456<CR>**

IntelliPIN

If the PAN is valid (that is, a FIT table with the card's PAN is found and the PAN is the correct length), either the PAN or selected card tracks (as defined by the IntelliPIN setup) is transmitted. If the length of the PAN is less than the validation length as defined in the FIT for this BIN, then the following message is returned:

BAD PAN<CR>

Next, the correct PIN is entered. The IntelliPIN returns the authorization number (see below) and the transaction counter value.

For example, **AUTH=1028<CR>**
000027<CR>

If the PIN is valid, the IntelliPIN creates and returns the authorization number and transaction count, and returns to the Idle Mode (because the transaction is complete).

If the user entered the incorrect PIN, the IntelliPIN will transmit the following message:

REJECT<CR>

If the user pressed the **CLEAR** key to quit the PIN entry, the IntelliPIN will transmit the following message:

ABORT<CR>

If the user then enters the correct PIN, the authorization number and transaction count will be transmitted:

For example, **AUTH=1028<CR>**
000027<CR>

If the user enters the wrong PIN a second time, another rejection message will be sent.

On the third wrong PIN, the IntelliPIN will send the following message:

FAILED<CR>

and will return to the Idle Mode.

AUTHORIZATION CODE GENERATION

The Authorization Code is the sum of the first four digits of the entered date (MMDDYYYY) and the last four digits of the PAN (including checksum). A MOD 10000 is done on this number and the results are right justified and padded with zeros to four digits:

For example, date	=	<u>1234</u> 5678	⇒	“1234”
PAN	=	2345645 <u>6789</u>	⇒	“6789”
		sum	⇒	“8023”

This example does not overflow 10,000, but if it did, keep subtracting 10,000 from the sum until it is less than 10,000 and greater than zero.

VERIFY OFFSET MODE OUTPUT

This mode is used in applications that do not include the offset on the magnetic card. In this example, the IntelliPIN is set to send the track data from the card to the PC.

After the card is swiped, tracks 1 and 2 will be sent:

For example: %B123...^NAME^99121010000...?;123...=991210100000...?<CR>

After the track data has been transmitted, the customer is prompted to enter the PIN. After the PIN has been entered and the ENTER key pushed, the offset will be sent to the PC. For example:

6605<CR>

The offset is followed immediately by the transaction counter:

00028<CR>

While the IntelliPIN computes the offset, it cannot determine if it is correct since the offset field on the card is blank. In this mode, the PC must route the PAN and/or track data along with the offset to the card processor so the transaction can be authorized.

DISABLE CUSTOMER MODE

At the end of the day, it is suggested that the unit be placed in a nonoperative (shut down) mode to prevent unauthorized operation. This can be accomplished by pressing F3 and answering **Yes** to **Shut Down?**.

The unit can also be set to shut down automatically after a preset number of hours (See Shut Down Timeout, Section 3), or if the portable unit is removed from the dock for a predetermined time (See Power TimeOut, Section 3). Once in the **Shut Down** Mode, a Program or Activate Card, or a password will be required to enter the customer mode again.

SECTION 6. INTERACTIVE OPERATION

The Interactive Operation is a series of actions between the PC and the IntelliPIN. The customer enters data into the IntelliPIN in response to prompts on the LCD, and the operator selects the type of transaction from the PC. These transactions may include new accounts, teller window applications, checking, savings, mortgages or any other option where there is interaction between the customer and the operator. After data is entered into the IntelliPIN PINPad by the customer, the PINPad, if portable, is returned to the Dock for transmitting the data to the PC. Refer to Appendix A for flow diagrams.

All messages in this section are on the LCD; there are no PC messages shown here.

Note

Most of the messages shown below are default messages and may have been changed by the PC application program. The prompts on the LCD depend on the requirements of the institution. Refer to appropriate personnel if there are any questions about the prompts or any part of the operation.

To modify these messages, refer to *IntelliPIN Programming Reference Manual*, part number 99875047. There are three states of the unit during customer operation: Idle, Card Reading, and PIN Entry.

IDLE

When power is applied to the unit, the opening prompt is as follows:

Welcome

When this message is shown, the IntelliPIN is inactive for transactions between the IntelliPIN and the PC. However, the unit may be activated for the setup mode (see Section 3). The operator activates the unit for transactions from the PC. This may occur when the operator selects the type of transaction. There is no default prompt for the card reading mode, but the message may be similar to the following:

**Please Swipe
Your Card**

CARD READING

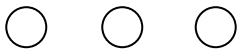
When the appropriate prompt appears, swipe the card with the magnetic stripe down and toward the center of the IntelliPIN as indicated by the symbol on the unit. If the unit is portable, the PINPad may be removed from dock to make it easier to swipe the card. If the read is successful, the unit emits a single beep. If the card is *not* swiped successfully, the unit emits a double beep and the following will appear:

**Bad reading
Swipe again?**

This display alternates with the following:

Please select

Yes No



There are three function keys below prompts similar to this. Press the key directly below the required response. In this display select the function key on the left (F1) for **Yes** or the key on the right (F3) for **No**.

If **No** is selected, the default display is:

**PIN Pad is
processing**

The PC program will determine the next prompt. If **Yes** is selected, the message **Please Swipe Your Card** will appear again.

PIN ENTRY

At some time during the transaction, the LCD will prompt for a PIN entry. When this occurs, a message similar to the following is displayed:

**Please Enter PIN
then press Enter**

This message may alternate with the following message if the two are part of a transaction:

**Total
\$XXXX**

After the customer enters a PIN, the ENTER key must be pressed. The customer should be instructed to enter a minimum number of digits (for example, 4) as required by the financial institution. If the double PIN entry option is enabled, the PIN must be entered a second time for confirmation. This message is:

**Please re-enter
the PIN**

The customer should be instructed to enter the same digits again followed by ENTER. If the first and second PIN entries do not match, the following message will appear:

**First, Second PIN
do not match**

After this message is displayed for 2 seconds, the original PIN entry message will appear.

Another entry that returns the display to the original PIN entry message is as follows:

**Illegal PIN was
entered**

This message appears when one or more of the following conditions exist:

- Length of the PIN entered is less than minimum number of digits.
- Length of the PIN entered exceeds the maximum set during setup.
- Trivial PIN pattern is entered while the trivial PIN check is enabled.

This message is displayed for 2 seconds. See Section 3 for setup details.

If the PIN entry is to be aborted, the CLEAR key must be pressed during PIN entry. The message is as follows:

Cancel requested

When the IntelliPIN needs to transmit information to the PC and the PINPad is not in the dock, the following message will be displayed:

**Please connect
PIN Pad to dock**


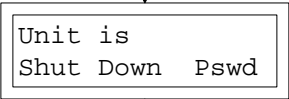
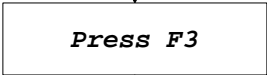

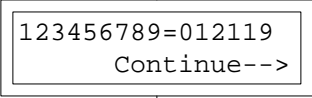
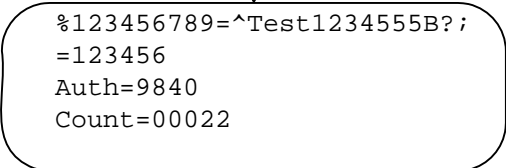
Whenever the IntelliPIN receives an acknowledge from the PC, the following message will be displayed:

**PIN Pad is
processing**

This message is displayed until the PC sends a replacement message to complete the transaction.

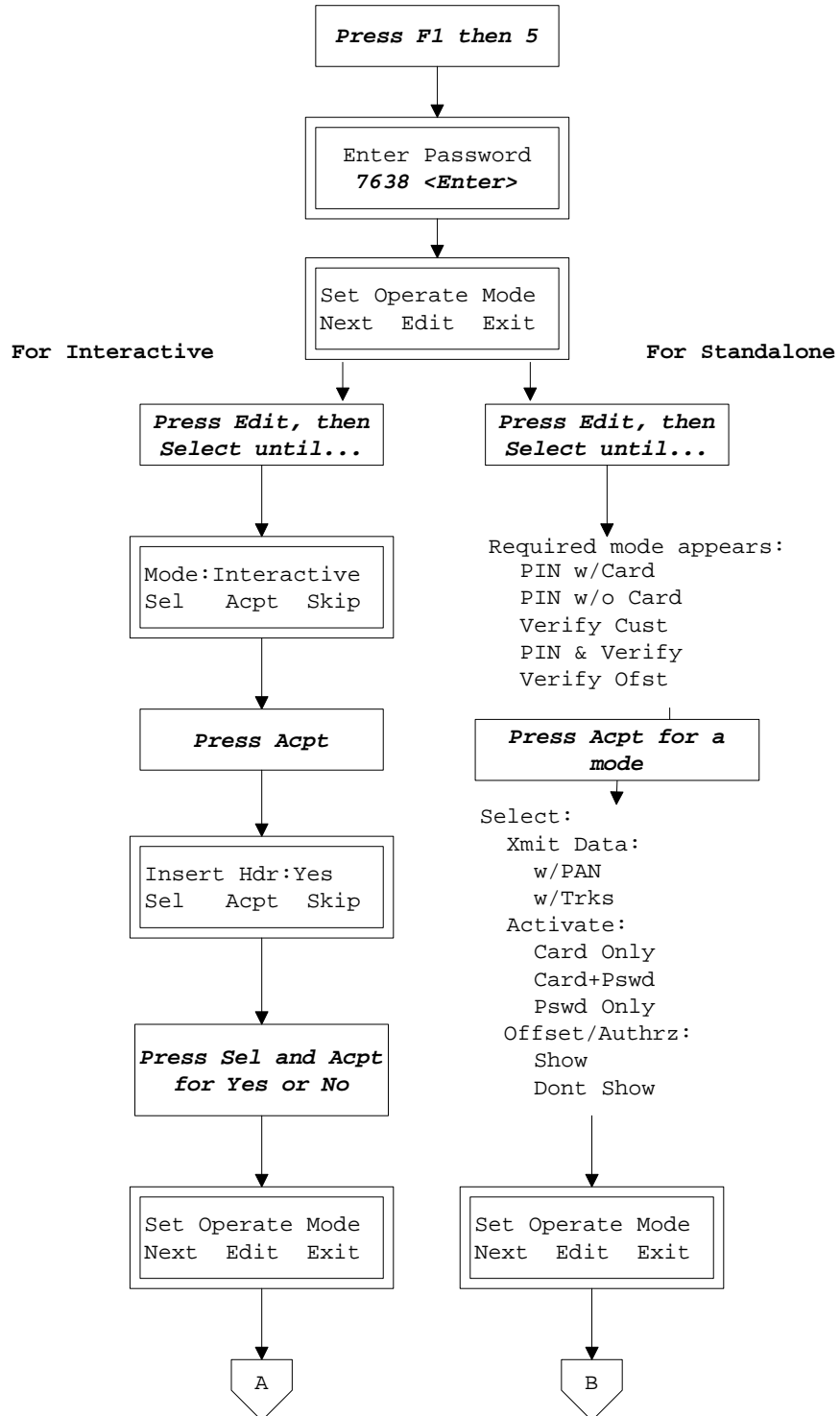
APPENDIX A. FLOW DIAGRAMS

The flow diagrams in this section illustrate the sequential modes of Setup, BIN and FIT loading, Activate, and Customer Operation. The symbols used in the flow diagrams are as follows:

Symbol	Description
	<p>This symbol indicates the activity is from or to another page. The letter is a marker that ties the two pages together.</p>
	<p>The double box indicates this is a Display on the LCD. The typeface shown indicates status or action required.</p>
	<p>The line between the boxes indicates the direction of activity, which flows down unless otherwise indicated.</p>
	<p>The <i>bold italic</i> typeface in a single box indicates Operator Action is required.</p>
	<p>The normal type in this LCD specifies Operator Action, and the <i>bold italic</i> type indicates the action taken.</p>
	<p>The typeface and text indicate this is an LCD, and the arrow (-->) indicates which button to press for further information.</p>
	<p>The round corners on the box indicate this is the display on the computer screen. Auth indicates the authorization number, and the Count is the transaction count.</p>

SETUP

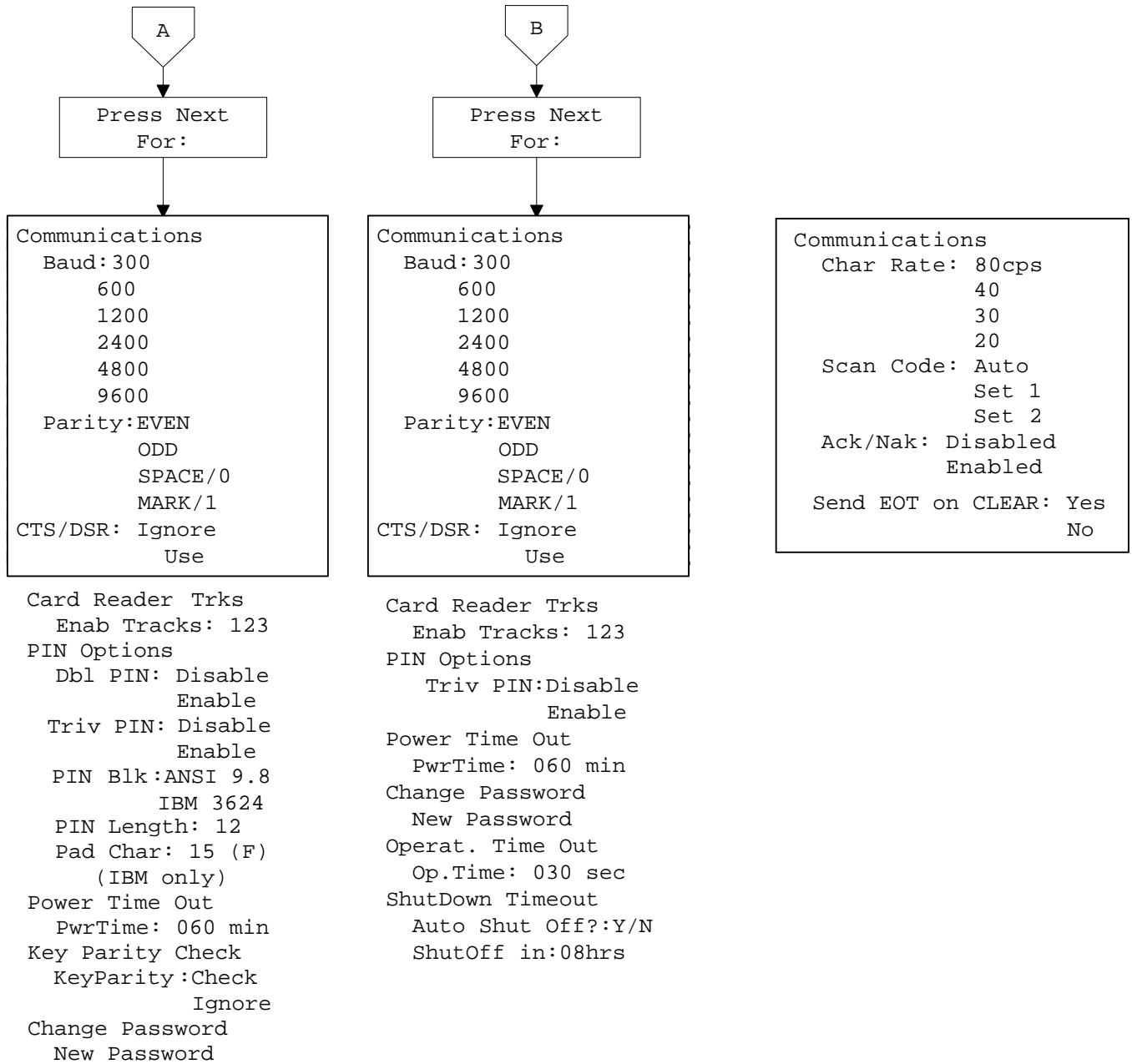
To enter the Setup Mode, ensure the unit is in the Idle mode and proceed as follows:



**RS-232/USB
Interactive**

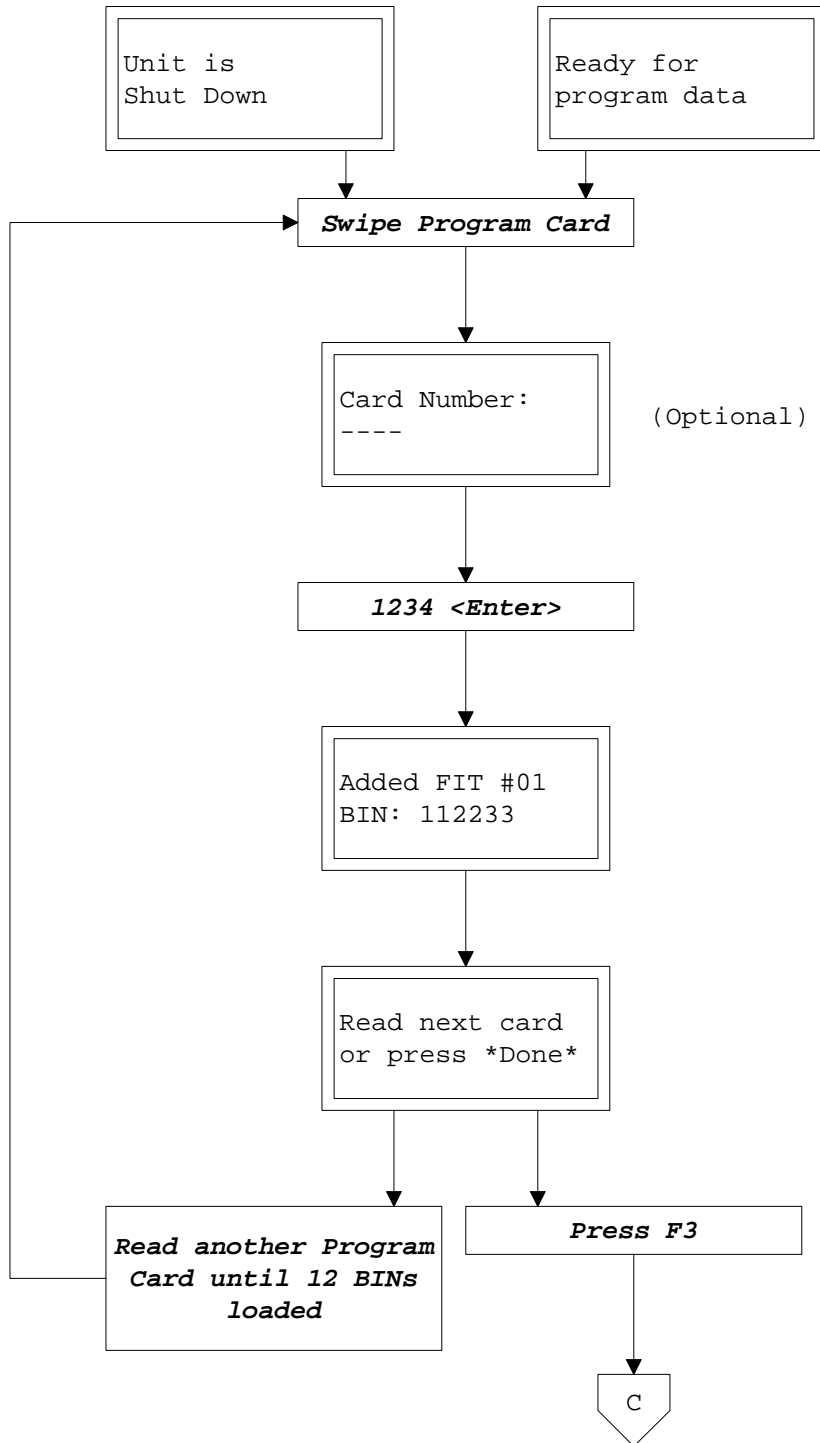
**RS-232
Standalone**

**Keyboard Wedge
Communication
Differences**



BIN AND FIT LOAD – STANDALONE MODE ONLY

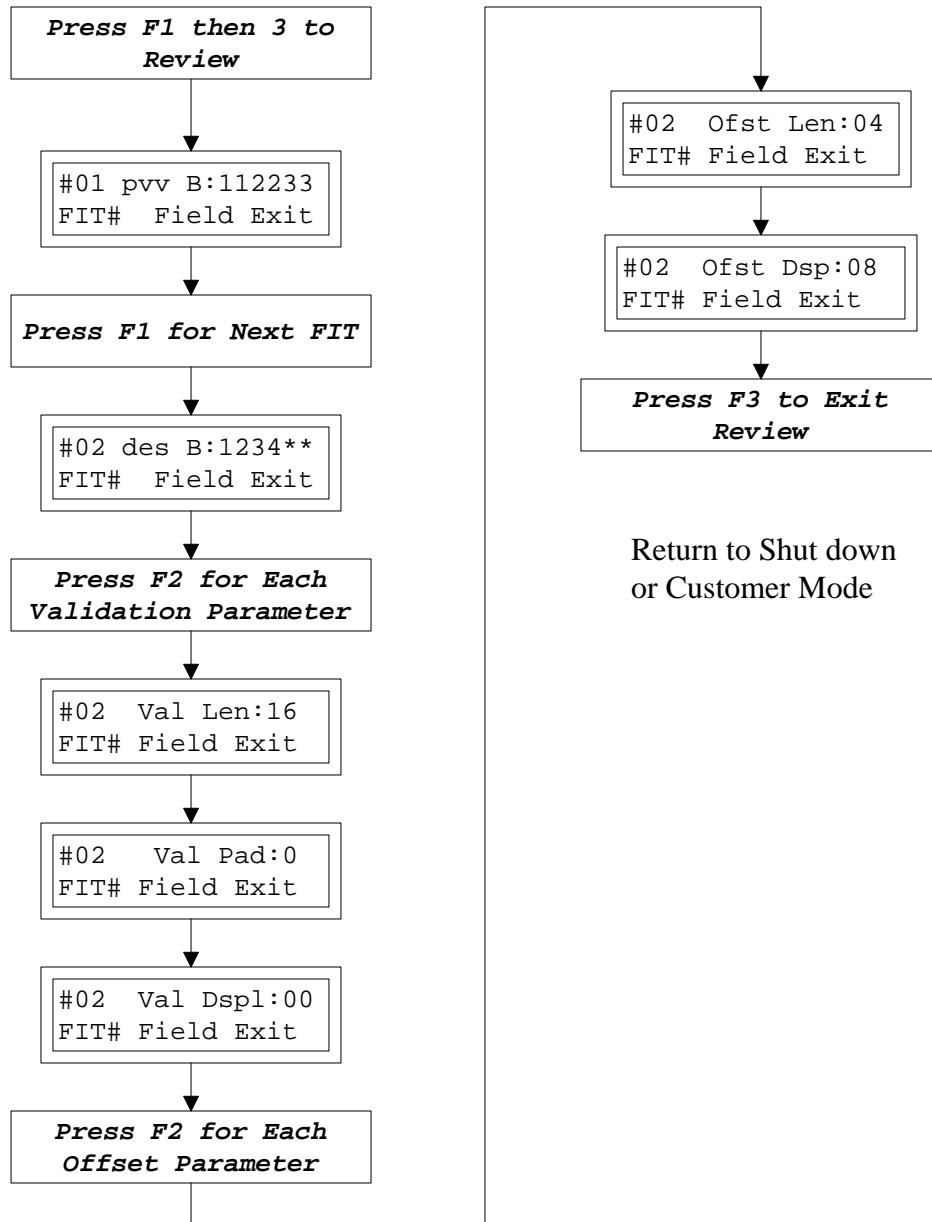
To load or change BIN or FIT information, begin in the Idle Mode.



Go to Selected Customer Operation

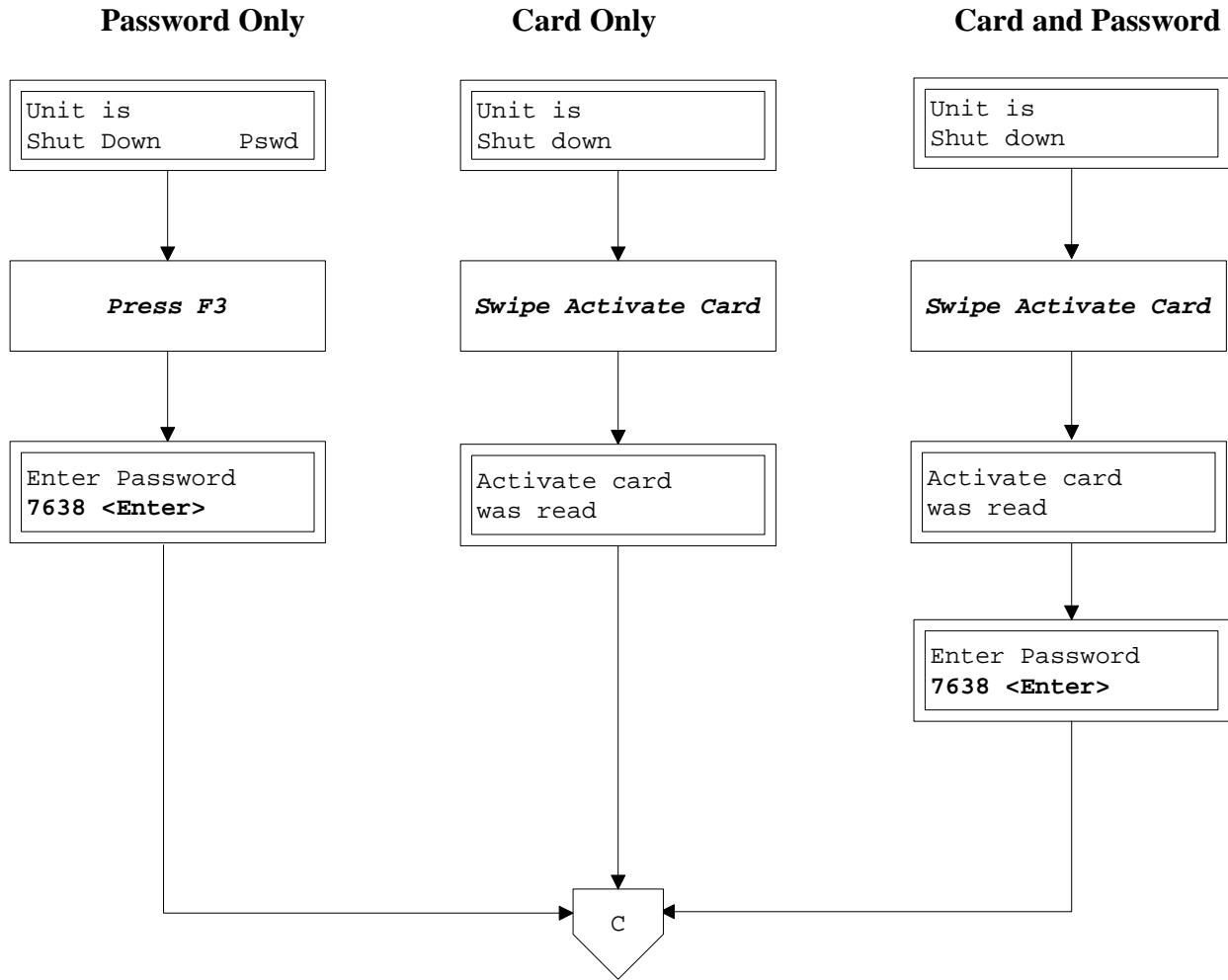
BIN AND FIT REVIEW – STANDALONE MODE ONLY

To review BIN and FIT information, begin in either Customer or Shut Down Mode.



ACTIVATE

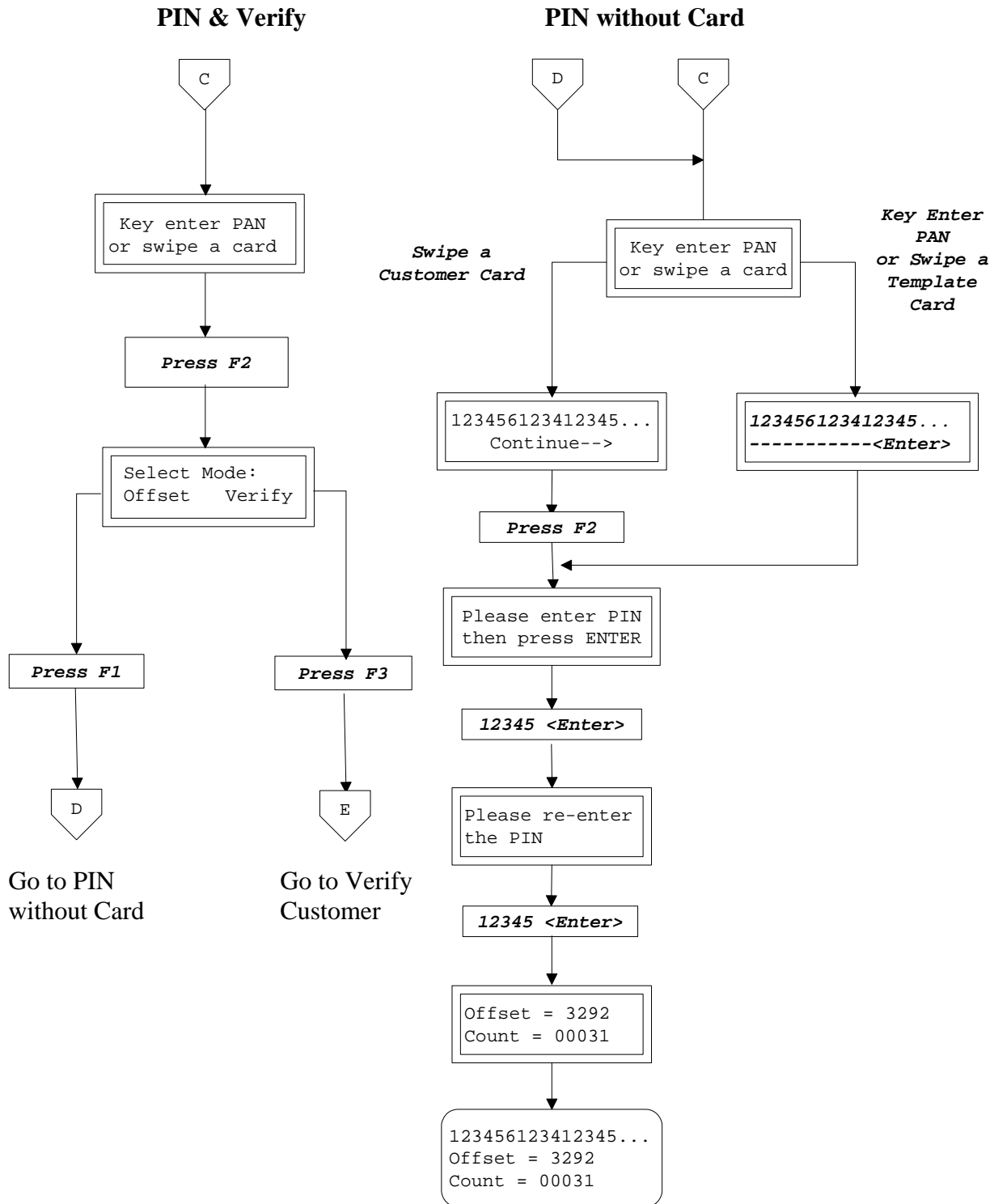
There are three paths to activate the unit. They are as follows:



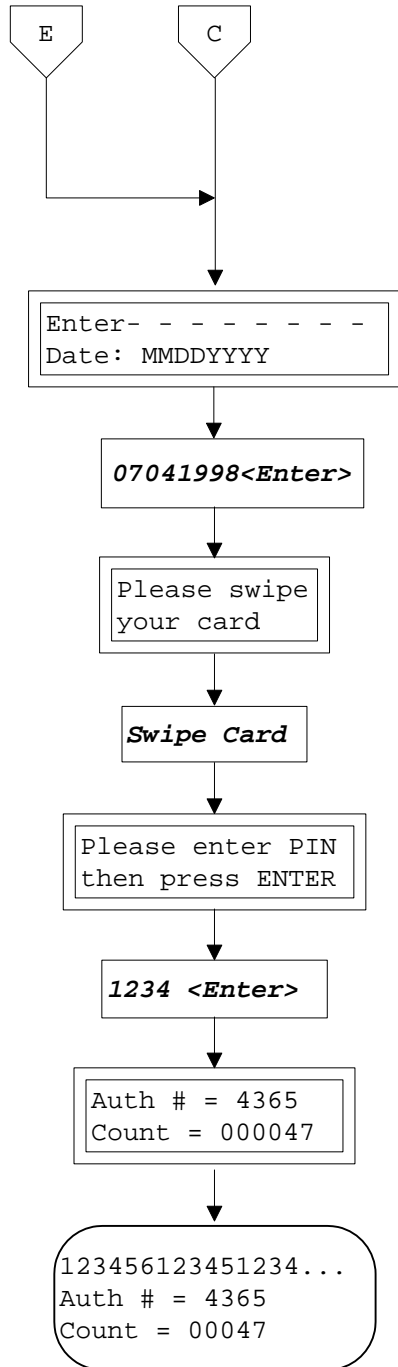
Go to Selected Customer Operation

CUSTOMER OPERATION

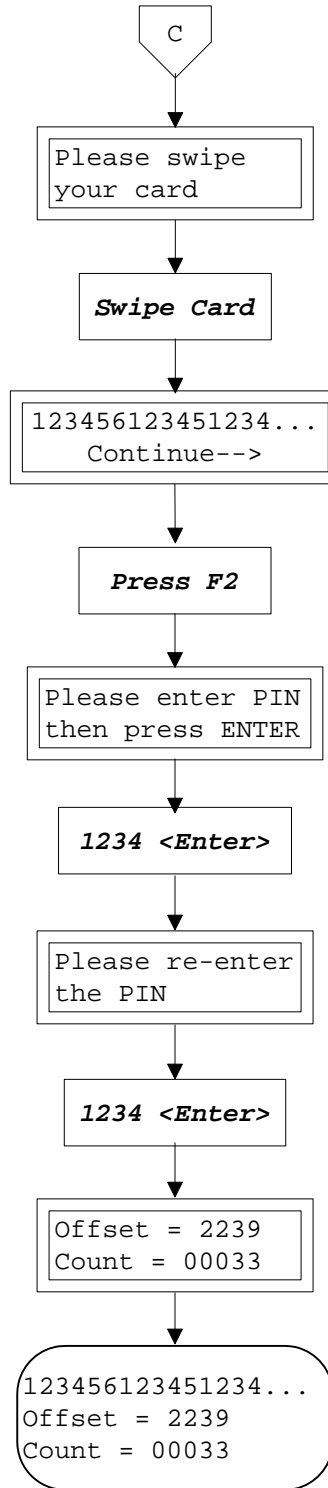
The Customer Operation is selected from the Set Operate Mode for the following five modes:



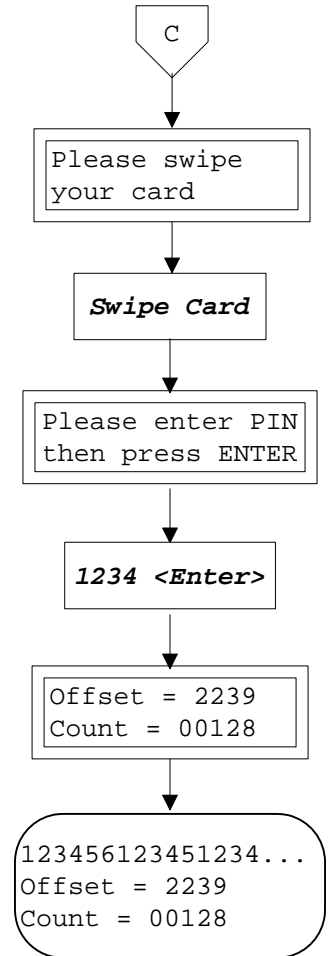
Verify Customer



PIN with Card



Verify Offset



APPENDIX B. GLOSSARY

Activate Card	A special Program Card for opening the IntelliPIN for daily use. This card is the same as a Program Card except the BIN is 000000. All other information on the card is ignored. This form of activate Card must be generated on an MCAT using the same Master Key as the IntelliPIN. For non-MCAT users an Activate Card with a BIN of all 9's can be used to activate any IntelliPIN (as long as the Activate Card with all 0's has not been used). This Activate Card (P/N 96500059) is generated by MagTek.
Algorithm	A process used for security reasons to change plain, readable text into unreadable encrypted text. The encryption algorithm is used to calculate the PIN offset or PVV.
BIN	Bank Identification Number; 1 to 6 digits; first digits of PAN.
CPU	Central Processing Unit
Customer Card	Usually a bank, debit, or ATM card that a financial institution issues to customers.
Customer Mode	Condition that allows a Customer Card to be read and a PIN to be entered.
DES	Data Encryption Standard. An algorithm developed in the 1970s by the IBM Corporation, since adopted by the US government and ANSI (the American National Standards Institute) as the encryption standard for financial institutions.
End Sentinel	A character used in laying out track data. It indicates the end of the data.
Field Separator	A character used in laying out the track data. It indicates a separation between fields of data.
FIT	Financial Institution Table. The FIT contains the BIN and other details regarding the generation of offset.
HiCo	High coercivity or high energy on the magnetic stripe. HiCo cards are more difficult to erase, whereas LoCo cards can be erased by a small magnet.
ILSK	Institution Loaded Security Key. This is a Security Key that the financial institution loads into its IntelliPIN, rather than the Security Key installed by MagTek (MLSK).

IntelliPIN

LCD	The Liquid Crystal Display is a 2-line by 16-character display that shows status, messages, and information on the magnetic stripe.
LED	The Light Emitting Diode is used for the power indicator on the dock.
LoCo	Low coercivity or low energy on the magnetic stripe. LoCo cards can be erased by a small magnet, but HiCo cards are less susceptible to accidental erasure.
MCAT	MagTek Card Activating Terminal. Creates Program Cards used with the IntelliPIN.
MLSK	MagTek Loaded Security Key.
MSR	Magnetic Stripe Reader. When a card with a magnetic stripe is swiped on the IntelliPIN, the MSR reads the card for displaying the data on the LCD or transmits the data to the PC or both.
Offset	The PIN is encrypted through an algorithm into an offset, which cannot be deciphered to reveal the actual PIN.
PAN	Primary Account Number. It is the account or card number, which also includes the BIN. The PAN includes all the data between the Start Sentinel and the first Field Separator. The PAN length is usually from 13 to 19 digits.
PIN	Personal Identification Number. Customer's number used with a card.
Program Card	A card used to load data into the IntelliPIN. The card contains BINs, Offset information, and other information relevant to the institution. This card can be generated on an MCAT.
PVV	PIN Verification Values are encoded on the customer cards so that PINs can be verified at the ATM network switch or transmitted to the host for verification. The PVV is used by VISA to authenticate the user of a card.
RAM	Random Access Memory
Shut Down Mode	Not in the Customer Mode. The unit is ready for a Program Card.
System Card	Magnetic stripe card used to define the operation of the system, such as Program Card, Activate Card, and Transfer Card.

Template Card	A Template Card may be used to reduce the number of manually entered digits when a PAN is to be key entered. The first part of the PAN, if it is the same on all cards, may be entered from a Template Card to save time and avoid errors. Template Cards can be created on an MCAT.
Transfer Card	A card generated on the MCAT used to transfer the Master key into the IntelliPIN. The Master key of both the MCAT and the IntelliPIN must be the same in order for the Program Cards to operate. This card can be generated on an MCAT.
USB	Universal Serial Bus

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