

Using PAX External Devices

This document coincides with UTG release 3070 and is intended for vendors and developers using PAX external devices that support EMV with their POS/PMS systems. Device settings and configurations are discussed in this document. To use EMV devices with Shift4, a Universal Transaction Gateway® (UTG®) is required. It may be necessary to adjust external devices, such as PIN pads, when configuring the UTG.

PAX Devices Overview

PAX A80 PIN Pad Devices Overview

The PAX A80 devices offer keypad and multiple card reader functionalities.

The PAX A80 devices support EMV chip & PIN, EMV chip, and magstripe transactions, as well as contactless NFC and mobile wallet. These devices also support P2PE and BIN management. The PAX A80 device can be connected to UTG via Ethernet or WiFi.

During installation and configuration, the keypad special keys function as follows:

- Use the touchscreen to navigate.
- Enter: Select highlighted item.
- Cancel or Clear: Previous screen.
- Any button enables backlight.

PAX A80



PAX A930 PIN Pad Device Overview

The PAX A930 offers keypad and multiple card reader functionalities.

The PAX A930 supports EMV chip & PIN, EMV chip, and magstripe transactions, as well as contactless NFC and mobile wallet. It also supports P2PE and BIN management. This device can be connected to UTG via WiFi only.

PAX A930



PAX SP30 PIN Pad Device Overview

The PAX SP30 offers keypad and multiple card reader functionalities.

The SP30 supports EMV chip & PIN, EMV chip, and magstripe transactions, as well as contactless NFC and mobile wallet. It also supports P2PE and BIN management. This device can be connected to UTG via Ethernet.

PAX SP30



PAX S300 PIN Pad Devices Overview

The PAX S300 devices offer keypad and multiple card reader functionalities.

The PAX S300 devices support EMV chip & PIN, EMV chip, and magstripe transactions, as well as contactless NFC and mobile wallet. These devices also support P2PE and BIN management. This device can be connected to UTG via Ethernet.

PAX S300



Locating the PAX Device Serial Number

The serial number on a PAX device can be located on the device. The serial number will be needed by the Administrator to configure the EMV devices in PAXSTORE. The location may vary with different PAX models. The example below is a PAX A80.

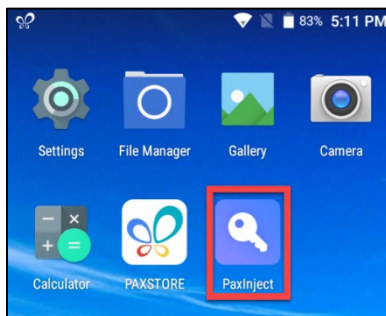


Verifying Encryption Keys on PAX Android Devices (A930/A80)

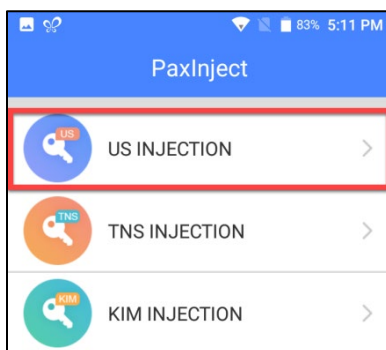
To verify encryption keys, use PaxInject. There is a Production Key and a Test Key that can be loaded onto the device. You will need to verify that you have the correct key loaded onto the terminals.

To verify the correct key injection, complete the following steps:

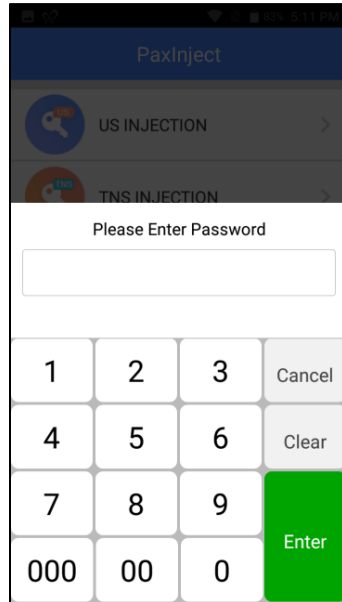
1. From the home screen, click on the **PaxInject** application.



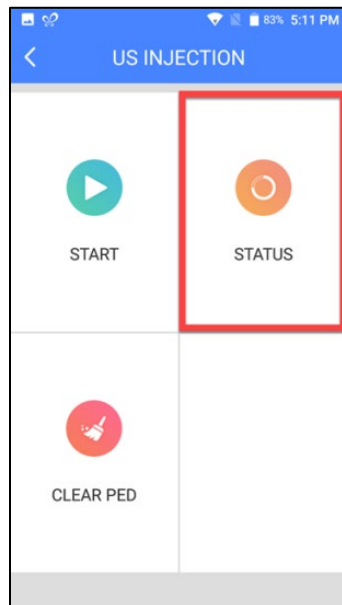
2. Select **US Injection**.



3. Enter the Password: 729465328

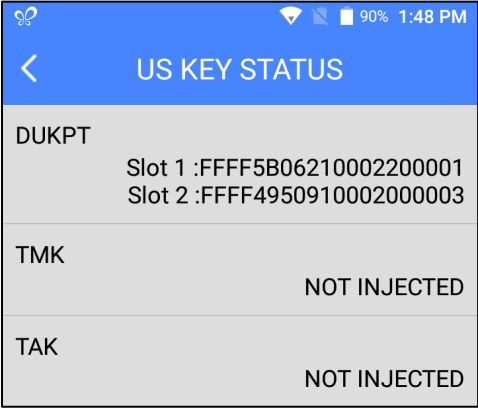


4. Click on **Status**.



- You will see two slots that have been injected with keys. If these are empty, you will need to notify deployment to inject keys.

Test Key



US KEY STATUS	
DUKPT	Slot 1 :FFFF5B06210002200001 Slot 2 :FFFF4950910002000003
TMK	NOT INJECTED
TAK	NOT INJECTED

Verifying Encryption Keys on PAX S-Line Devices (SP30/S300)

To verify the P2PE key is injection, complete the following steps:

1. Enter the Main Menu.
2. Press **5. System Settings**.
3. Press **6. Key Injection**.
4. Enter the password: today's date in MMDDYYYY format.
5. Press **1. US Key Injection**.
6. Press **3. Status**.

Rebooting the Device

To reboot the PAX devices, simply power them off and then on.

Configuring PAX Devices to Communicate Via Direct TCP/IP



Note: USB/RS232 is not currently supported.

Adding Your Device to the PAXSTORE

1. Log in to the PAXSTORE – <https://auth.paxstore.us/passport/login>.
2. Navigate to the Marketplace.
3. Go to **Terminal Management** and select the appropriate Reseller/Merchant where you want the terminal to reside, and then click on **Terminal List**.
4. Click **Add Terminal** to add a new terminal.

The screenshot shows the PAXSTORE interface. On the left, the 'Terminal Management' menu is highlighted. The main content area shows the 'Terminal List' for the merchant 'Las Vegas Development Lab'. A table lists various terminals with columns for Terminal Name, SN, TID, Model, Reseller, Merchant, Created Time, and Status & Action. A '+ TERMINAL' button is visible in the top right corner of the table area.

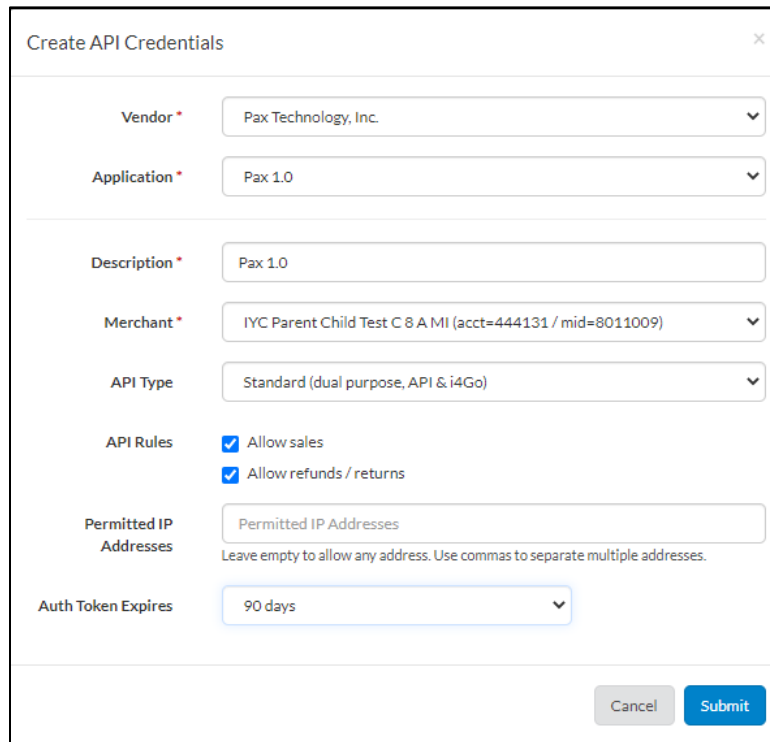
Terminal Name	SN	TID	Model	Reseller	Merchant	Created Time	Status & Action
Donata_1170303362	1170303362	FSOYZD9	PAX - A930	Shift4	Las Vegas Development Lab	2021-01-29 15:37	Online(34min)
Sihijus_1170173212	1170173212	OM2SL7SA	PAX - A930	Shift4	Las Vegas Development Lab	2021-01-26 18:43	Online(2H)
Vlacielar_1170176178	1170176178	OPOCK2	PAX - A930	Shift4	Las Vegas Development Lab	2021-01-26 18:24	Offline(30)
Jonas_Edgewater	3A484428	QKIE9QU6	PAX - SP30s	Shift4	Las Vegas Development Lab	2020-09-10 16:33	Unknown
Jogalie_Edgewater	3A484467	I4SSOPBY	PAX - SP30s	Shift4	Las Vegas Development Lab	2020-09-10 16:28	Unknown
Jan_1170173215	1170173215	CP175WCT	PAX - A930	Shift4	Las Vegas Development Lab	2020-06-29 18:08	Online(33min)
John_A930	1170173297	61F6D4UR	PAX - A930	Shift4	Las Vegas Development Lab	2020-03-23 22:45	Offline(8M)
Jessica_A930	1170173275	9WZD16WC	PAX - A930	Shift4	Las Vegas Development Lab	2020-03-23 20:54	Offline(4M)
Ron A930	1170173214	LOWUHCZ3	PAX - A930	Shift4	Las Vegas Development Lab	2020-03-23 17:23	Offline(3M)
A930-8679-Jason	1170178679	6195CKI	PAX - A930	Shift4	Las Vegas Development Lab	2020-02-10 22:02	Offline(40)
A930-8668-Konstantin	1170178688	KOZQ7333	PAX - A930	Shift4	Las Vegas Development Lab	2019-12-09 21:57	Offline(4M)
A920-LV-APN-1-Dev	0820252145	BGV1HN7I	PAX - A920	Shift4	Las Vegas Development Lab	2019-03-25 17:50	Offline(7Y)

5. Enter the following information:
 - Terminal name
 - Serial number
 - Manufacturer
 - Model
 - Merchant
 - Activate Terminal
 - **Later:** Selecting Later will set the terminal to inactivate and can be activated at a later time.
 - **Immediately:** Selecting immediately will activate the terminal as soon as you click **Save**.
6. **Save** the configuration. Make sure your device is added to the list.

Creating an Auth Token for a PAX Device

1. Sign in to Lighthouse Transaction Manager (LTM) for the serial number that you are going to use.
2. From the menu, select **Settings > API Settings**.
3. Click **Add API**.
4. Fill in the following fields:
 - **Vendor:** Pax Technology, Inc.
 - **Application:** Pax 1.0
 - **Merchant:** Select the desired merchant.
 - **API Type:** It is recommended that you select Standard (dual purpose, API & i4Go) unless otherwise instructed.
 - **API Rules:** Select the desired API rules.
 - **Permitted IP Addresses:** (*If applicable*) In the Permitted IP Addresses field, add a comma-separated list of permitted addresses. This feature is only for server-to-server connections to Lighthouse Transaction Manager. If requests come from an IP address not listed, the following error will be displayed: IP ADDRESS RESTRICTIONS IN EFFECT.

- **Auth Token Expires:** From the Auth Token Expires list, select the amount of time before the Auth Token will expire. For security, the best selection is the shortest time possible.



The image shows a 'Create API Credentials' form with the following fields and options:

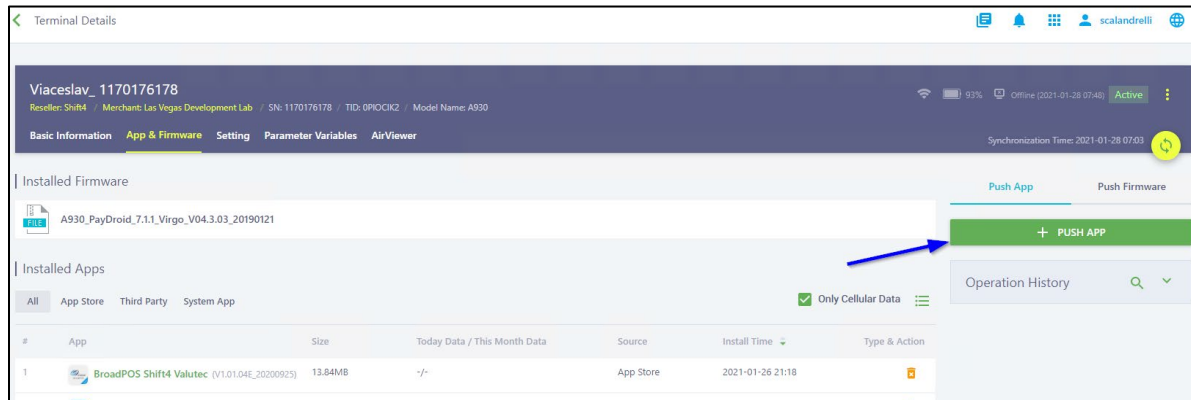
- Vendor ***: Pax Technology, Inc. (dropdown)
- Application ***: Pax 1.0 (dropdown)
- Description ***: Pax 1.0 (text input)
- Merchant ***: IYC Parent Child Test C 8 A MI (acct=444131 / mid=8011009) (dropdown)
- API Type**: Standard (dual purpose, API & i4Go) (dropdown)
- API Rules**:
 - ☒ Allow sales
 - ☒ Allow refunds / returns
- Permitted IP Addresses**: Permitted IP Addresses (text input)
Leave empty to allow any address. Use commas to separate multiple addresses.
- Auth Token Expires**: 90 days (dropdown)

At the bottom right are 'Cancel' and 'Submit' buttons.

5. Click **Submit**.
6. Copy and save the Auth Token that is displayed. You will need it later.

Pushing the BroadPOS App to Your Device

1. Navigate to **Terminal Management** and select your device.
2. Go to **App & Firmware** and click **Push App**.



3. Click **Push Templates**.
4. Select **Shift4 Integration** and your device template. (For example, A930 CE.)
5. Select the **Shift4** tab in the Push Task configuration view.
6. Go to the **Communication** tab and verify DHCP is set to **Disable**, and set or verify the following fields:
 - Local IP
 - Netmask
 - Gateway IP
 - DNS IP
 - Ping URL
7. Change the Primary Auth URL to the environment you are processing under:
 - Dev: wh-utgapi.s4-test.com
 - UAT: utgapi.shift4test.com
 - Production: utg.shift4api.net
8. Change the Auth Token to your Auth token.

9. Go to the **MISC** tab and set **ECR-Terminal Integration Mode** to **External POS**.

Edit Parameter

Please fill in the form of the parameter file. System will use the parameter values in the last success push history by default, or you can click [HERE](#) to reset the values to the default values in the parameter template.

INDUSTRY EDC RECEIPT TIP **MISC** SHIFT4 VALUTEC TEXT GIFT COMMUNICATION CARD TYPE BIN FILE

EMV BROADPOS

GENERAL SETTINGS

ECR-Terminal Integration Mode	Menu Timeout(100ms)
External POS	300
System Password	No Paper Mode
	Auto Check
Demo Mode	Enter Account Menu Timeout(100ms)
Disabled	300
Host Response Timeout(100ms)	Idle Image File

10. Go to the **COMMUNICATION** tab and set the **Communication Type** to Ethernet and the **Port** to 10009.

The screenshot shows the 'Edit Parameter' form with the 'COMMUNICATION' tab selected. The form is divided into two main sections: 'GENERAL' and 'SEMI-INTEGRATION ONLY'.

GENERAL Section:

- Primary Comm. Type:** Ethernet
- Backup Comm. Type:** Ethernet
- Maximum Tries(1-9):** 1
- Connect Timeout(100ms):** 300
- Receive Timeout(100ms):** 450
- Ping URL:** www.google.com
- Ping Timeout(ms):** 500

SEMI-INTEGRATION ONLY Section:

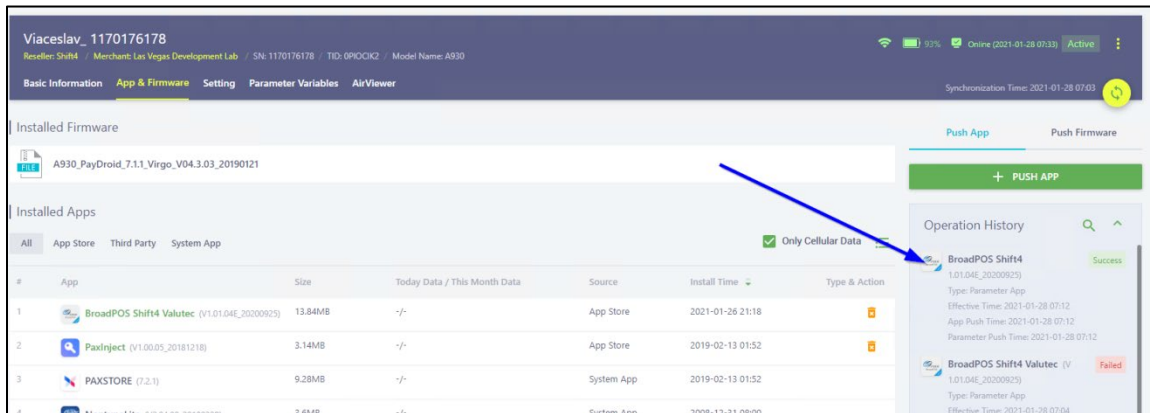
COMMUNICATION BETWEEN ECR/POS AND PAX TERMINAL

- Limit Length:** 512
- Port:** 10009
- Communication Type:** Ethernet
- UART Baudrate:** 9600 bps

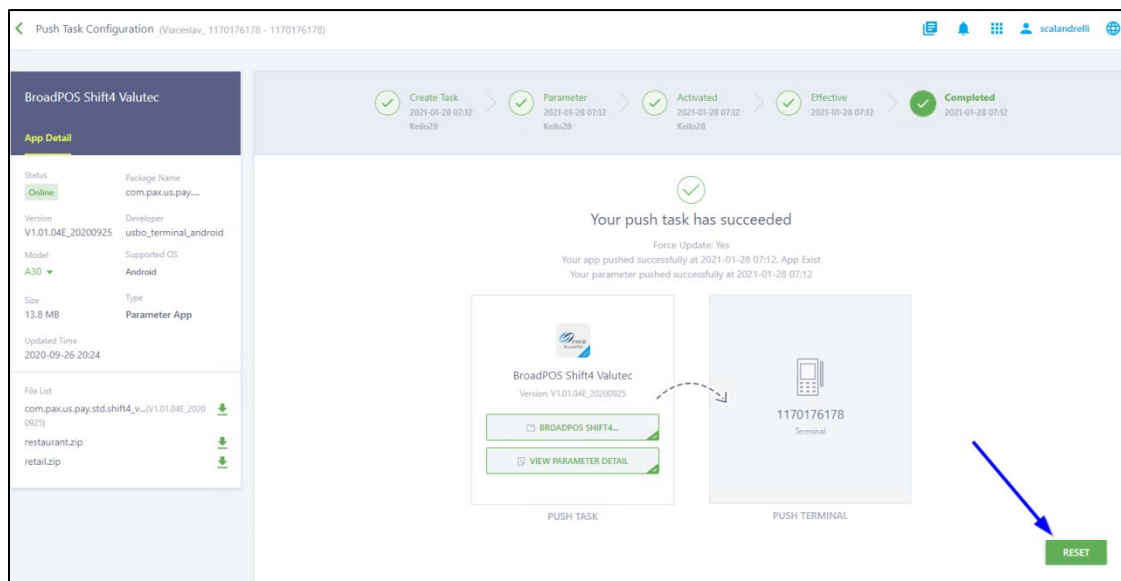
11. Select the **Shift4** tab in the Push Task configuration view.
12. Change the Primary Auth URL to the environment you are processing under:
- Dev: wh-utgapi.s4-test.com
 - UAT: utgapi.shift4test.com
 - Production: utg.shift4api.net
13. **Save** the configuration.
14. Click **Next**.
15. Click **Activate** to activate the push task. Wait until the push task is successfully finished.

Updating the BroadPOS App Configuration

1. Go to **Terminal Management** and select your device.
2. Go to **App & Firmware** and click **BroadPOS Shift4** under Operation History.



3. Click **RESET**.



- Click the **SHIFT4** tab and edit the information that you want to update, for example the Auth Token.

The screenshot shows the 'Push Task Configuration' window for a user named 'Viaceslav, 1170176178'. The interface is divided into a left sidebar and a main content area.

Left Sidebar:

- Online:** com.pax.us.pay...
- Version:** V1.01.04E_20200925
- Developer:** usbo_terminal_android
- Model:** A30
- Supported OS:** Android
- Size:** 13.8 MB
- Type:** Parameter App
- Updated Time:** 2020-09-26 20:24
- File List:**
 - com.pax.us.pay.std.shift4_v...(V1.01.04E_2020-0925)
 - restaurant.zip
 - retail.zip

Main Content Area:

- restaurant.zip** (selected)
- Edit Parameter:** Please fill in the form of the parameter file. System will use the parameter values in the last success push history by default, or you can click [HERE](#) to reset the values to the default values in the parameter template.
- Navigation Tabs:** INDUSTRY, EDC, RECEIPT, TIP, MISC, **SHIFT4** (selected), VALUTEC TEXT GIFT, COMMUNICATION, CARD TYPE, BIN FILE, EMV, BROADPOS.
- HOST FEATURES:**
 - Capture Type: Host Based
 - Auto Batch Mode: Auto Clear Database
 - Auto Clear Database Time(h:mm): 0100
 - Start Auto Batch Time(h:mm): 0100
 - End Auto Batch Time(h:mm): 0200
 - Auto Batch Interval Time(min): 15
- MERCHANT PARAMETERS:**
 - Auth Token: DF73097B-CA7F-C135-9EBA0E3AF03F4862
 - Get Invoice Delay Time(1s): 3
 - Partial Approve Flag: ON
 - P2PE Mode: ON

- Click **NEXT**.
- Verify that the **Push Immediately** option is set, and then click **Activate**. Wait until push task is successfully finished.

PAX A80, S300, and SP30 Configuration

Add Your Device to the PAXSTORE

- Follow the steps in the [Adding Your Device to the PAXSTORE](#) section.

Connect Your Device

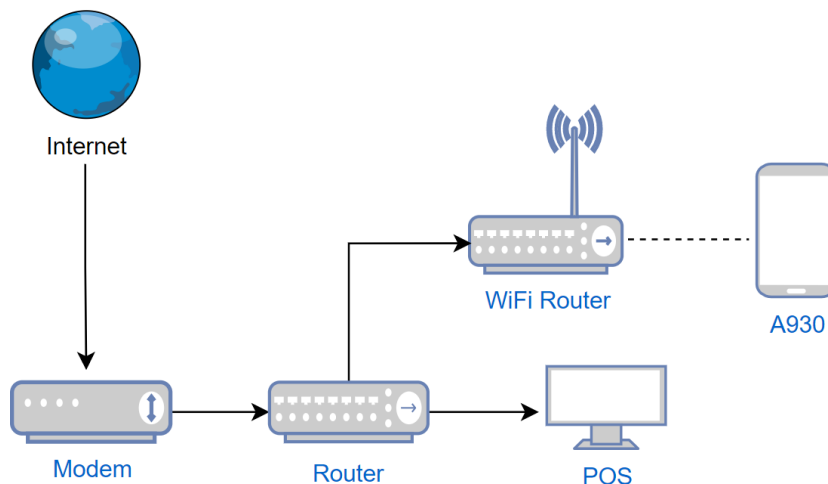
- Connect the device via the Ethernet cable in one of the following ways:
 - Connect the device directly to your router's Ethernet port.
 - Connect the device to your computer.



Note: Connecting to the router should be simpler, although the setup might be less comfortable to use.

A930/A80 WiFi Connection

Below is an example with the A930 device.



Setting Up the Device

- Power on the device.
- The boot process should go through the set up and device activation phase.
- If the initialization process is successful, applications can now be pushed from the PAXSTORE.

PAX Device File Download

A80/A930

Nothing is required to be downloaded at the terminal. The files are pushed from the PAXSTORE.

SP30 File Download

1. Press the **F** and **1** buttons at the same time to bring up the settings screen.
2. Enter the password (MMDDYYYY).
3. Press **5** for System Settings.
4. Press **7** for App Management.
5. Enter the password (MMDDYYYY).
6. Press **2** for App Update.

S300 File Download

1. Select the **FUNC** key from the Ready Screen.
2. Enter the password (MMDDYYYY).
3. Tap the down arrow on the screen, then press **1** for System Settings.
4. Tap the down arrow on the screen, then press **3** for App Management.
5. Enter the password (MMDDYYYY).
6. Press **2** for App Update.

Pushing BroadPOS to the Device

1. Complete steps 1-4 in the [Pushing the BroadPOS App to Your Device](#) section (i.e., select the applicable template).
2. Go to the **Communication** tab and set DHCP to **Disable**. Then, set the following fields:
 - Local IP
 - Netmask
 - Gateway IP
 - DNS IP
 - Ping URL
3. On the same tab, in **Communication between ECR/POS and PAX terminal** section, set **Communication Type** to **Ethernet**.
4. On the **BroadPOS** tab, scroll down to **Timezone** and select the appropriate option.
5. Click **Next** and **Activate**.
6. You should see the Push task in progress.
7. Restart the device. (Unplug the power and reconnect.)

UTG TuneUp and PAXSTORE Configuration for Different Communication Types

Direct TCP/IP

PAXSTORE Configuration

- Log in to the PAXSTORE and navigate to PAX settings using the steps described in the [Updating the BroadPOS App Configuration](#) section.
- Open the **Communication** tab and scroll to the **Semi-Integration** section.
- Set Communication Type to **Ethernet**.
- Set protocol type to **TCP/IP**.
- Set port to **10009**, or the port number that is relevant to your application.
- **Save** your settings and **push app**.

UTG Configuration

- Go to **UTG TuneUp > Devices** and select your PAX device configuration.
- Set the Connection to **Direct TCP/IP**.
- Set the Address to your PAX device's BroadPOS IP address.
- Set the Port to your PAX device BroadPOS port (the same as is set in PAXSTORE).
- **Save** your configuration. Now, your UTG should be ready to process transactions through PAX via Direct TCP/IP.

Replacing Inoperable PIN Pads

Two solutions are available when a PIN pad becomes inoperable during the business day. The first solution requires having a replacement PIN pad device available; the second requires preparing the system with an alternate configuration that does not use a PIN pad, and then switching the system to the alternate configuration if the PIN pad stops operating.

A Replacement PIN Pad Is Available

The easiest and fastest method of resolving PIN pad operation issues during the business day is to install a replacement PIN pad. The replacement PIN pad should be the same PIN pad model as the original PIN pad and should be preset for your location.



Note: If the replacement PIN pad is not preset for your location, contact the Shift4 Customer Support team for further instructions.

To replace a dead PIN pad with a replacement PIN pad, complete the following steps:

1. Disconnect the dead PIN pad from the POS.
2. Connect the replacement PIN pad to the POS.
3. Verify the PIN pad's initialization process starts.
4. Verify PIN pad displays the idle sequence after the initialization process finishes.



Requirement: Contact the Shift4 Customer Support team if the PIN pad does not display the idle sequence.
