



S920 Reference Guide

V1.0

3-6-2020

Preface

S920 Reference Guide

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If there is a problem while installing, registering or operating this product, please make sure to review the documentation. If unable to resolve the issue, please contact PAX.

PAX support operates 24 hours a day, 7 days a week. The level of access to this Service is by the support plan arrangements made between PAX and the Organization. Please consult this support plan for further information about entitlements, including the hours when telephone support is available.

TECHNICAL SUPPORT CONTACT INFORMATION

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Revision History

Date	Version	Description
3-6-2020	V1.0	Initial Release

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1. Introduction

The S920 mobile terminal is lightweight, versatile, and designed for the hospitality and restaurant industries. The S920 offers portability and ease of use for both merchant staff and customers. The S920 boasts a high resolution large color touch screen and delivers faster and easier transactions with exceptional coverage and performance.



1.1 Purpose

This reference guide provides information about:

- Installation
- Physical and wireless connectivity
- Answers to frequently asked questions
- Troubleshooting

1.2 Intended Audience

- Point of Sale clerks who interact with the S920
- Software engineers who develop and maintain the payment application designs for the payment card industry
- Sales Executives and Support who sell and support the device
- Independent Sales Organizations who sell terminals and conduct end user terminal training

1.3 Acronyms and Terms

Acronym	Definition
DHCP	Dynamic Host Configuration Protocol -- A network management protocol used on IP networks. The DHCP server dynamically assigns an IP address and other network configuration parameters to each device on the network.
ECR	Electronic Cash Register
LKI	Local Key Injection
Micro SD	Removable flash memory card used to store information
NFC	Near Field Communication — A form of contactless communication between devices.
OS	Operating System
POI	Point-of-Interaction
POS	Point of Sale or Point of Service
PSAM	Purchase Security Application Module — Small security module which is placed in payment terminals and looks like a SIM card for a cell phone.
SIM Card	Subscriber Identity Module Card — A smart card that stores data GSM cellular network subscribers.
TF	TransFlash — MicroSD memory cards were originally named TransFlash, T-Flash, or TF cards. TF and MicroSD cards are functionally identical so both types of cards can operate in devices made for the other.
WAN	Wide Area Network — Cellular phone data networks run on a WAN. It covers a broad area and many devices in that area.
Wi-Fi	A trademarked term used to describe the wireless networking technology that allows computers and other devices to communicate over a wireless signal. Based on IEEE802.11 standards.
WLAN	Wireless Local Area Network — Any wireless local area network, no matter what technology is used. Wi-Fi is one type of WLAN.

2. Packaging

This section covers the S920 packaging information. All accessories listed are Standard. See the *S920 Ordering Guide* for more information on all available accessories, including part numbers.

Please Note: Product images shown may be different than actual product received.

Before removing the terminals from the box, note the S920 part number and serial number are affixed to labels on the outside of the box. Retain the original box and inserts in case the unit needs to be returned to PAX for service.

2.1 Overpack Carton

- Overpack dimensions: 16 in x 13 in x 14 in
- Overpack shipping weight per box: 27 lbs
- How many S920 boxes can fit into an overpack box: 20
- How many S920 overpack boxes fit onto a pallet: 40

Retain the original overpack carton in case units need to be returned to PAX for service.

Please Note: Part number and serial number labels for each of the terminals packed into the overpack carton are affixed to the side of this box.

Before removing the terminals from the box, note the S920 part number and serial number are affixed to labels on the outside of the box. Retain the original box and inserts in case the unit needs to be returned to PAX for service.

2.2 Box Dimensions

S920 box dimensions and shipping information:

- S920 box dimensions: 8 in x 7 in x 3 in
- S920 box weight: 2 lbs

Before removing the terminals from the box, **note** the S920 part number and serial number are affixed to labels on the outside of the box. Retain the original box and inserts in case the unit needs to be returned to PAX for service.

Please Note: Part number and serial number labels for the S920 terminal are also affixed to the underside of each terminal.



2.3 Cardboard Inserts

Cardboard inserts inside the terminal box protect the S920 during shipping. In addition, the terminal is enclosed in a plastic wrapper.

Inserts inside the S920 box house the terminal, USB to Micro USB cable, AC power adapter, and thermal paper.



2.4 Box Contents

Contents	Qty.
S920 Mobile Terminal	1
USB to Micro USB Cable	1
AC Power Adapter	1
Thermal Paper	1

3. Part Number, Serial Number, and IMEI Info

3.1 PN Package Info

The S920 part number can be found on the underside of the terminal beneath the printer paper lid. The part number can also be found on the front flap of the S920 terminal box.



3.2 Terminal SN Location

The serial number for the S920 can be found on the underside of the terminal beneath the printer paper lid. The serial number can also be found on the front flap of the S920 terminal box.



3.3 IMEI Number Location

IMEI (International Mobile Equipment Identity) is a unique number for identifying a device on a mobile network. This number has 15 digits and is assigned to every GSM device.

1. Power on the S920 Mobile Terminal
2. Once the Starting Prolin OS screen displays, Press **[2]** rapidly and continuously. The S920 **[MAIN MENU]** will open.
3. Select **[Terminal Info]**. The **[System Info]** screen will open.
4. Scroll down until the **[IMEI Number]** displays on screen.

4. Functional Information

This section covers the various features and functions of the S920 mobile terminal.

4.1 Technical Details and Specifications

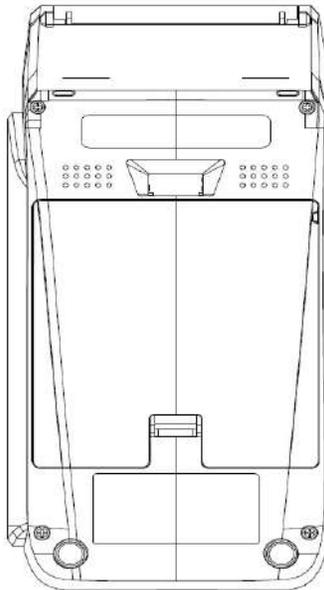
The technical details and specs for the S920 mobile terminal are listed in the following table.

Feature	Description
OS	Prolin, Linux Based
Memory	256MB Flash 128MB DDRSDRAM
Button	10 numeric & letter keys, 5 dedicated function keys
CPU	32-bit ARM 11
Magnetic Reader	Track 1/2/3, bi-directional
Smart Card Reader	MEV L1 & L2 certified
Contactless	(optional) MasterCard PayPass & Visa payWave, American Express ExpressPay, Discover DPAS, InteracFlash, ISO/IEC 14443 Type / VB, Mifare®, Felicia, NFC
Audio	Speaker
Communications	4G (CatM, for ATT & Verizon) Single Band Wi-Fi Bluetooth 4.0
Physical	L x w x H (mm): 150 x 78 x 46 or 16.3 x 78 x 55 Weight (g): 330
Cable	1 x USB Cable
Operating Environment	Temperature: 0° C – 50° C (32° F – 122° F) Humidity: 10% – 93% relative humidity, non-condensing
Storage Environment	Temperature: -20° C – 70° C (4° F– 158° F) Humidity: 10% – 93% (non-condensing)

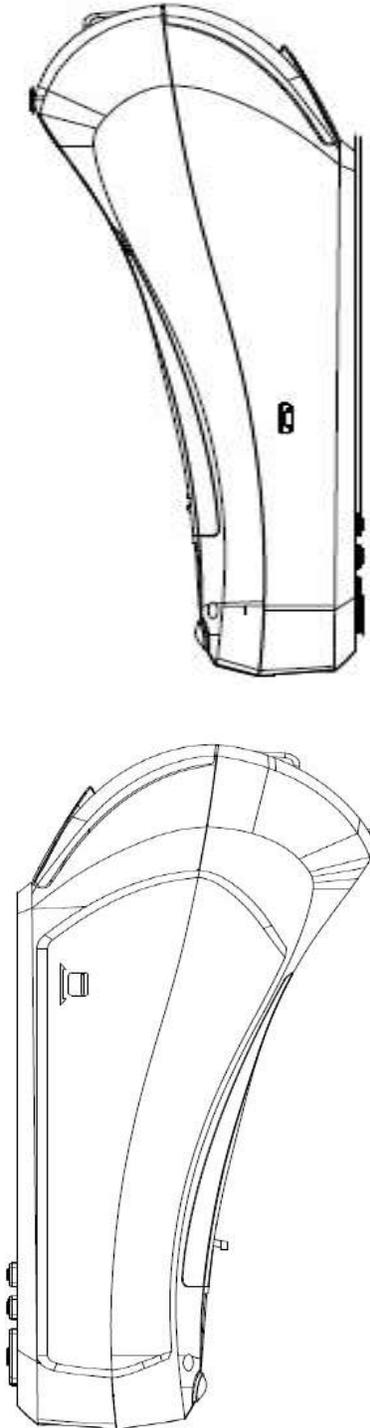
4.2 Front View



4.3 Back View



4.4 Side Views



5. AC Power Connection

The S920 mobile terminal has a USB port on the left side of the terminal. This port is used with the USB to Micro USB cable and AC power adapter to charge the terminal.

6. Terminal Location

Position the terminal on a countertop, desktop, or tabletop. Keep the terminal away from direct sunlight, excessive dust, moisture and heat. Avoid locating the terminal near electrical devices that might introduce interference such as microwave ovens and blow dryers.

7. Basic Operation Instructions

The basic operations of the S920 mobile terminal are described below.

7.1 Power ON/Power OFF

Power ON: Press and hold the power button until the screen display lights up and the terminal successfully turns on.

Power OFF: Press and hold the power button until the terminal powers off. The screen display will go dark as the terminal powers off.



7.2 Replace Paper Roll

This section covers installing a roll of thermal paper.

1. Carefully open the paper lid.



2. Install the thermal paper roll with the paper coming out from the top of the roll.



3. Pull about 6 in of paper from the roll.

4. Close the paper lid until it snaps into place.



7.3 Cleaning the Device

This section covers the proper cleaning instructions for the S920 mobile terminal.

1. Do not immerse the device in water or liquid.
2. Do not spray water or cleaner into EMV Card Reader or ports.
3. To clean the screen, apply distilled water or mild glass cleaner onto a soft, lint-free cloth and gently wipe the terminal screen.
4. To clean the terminal, apply distilled water or plastic-safe cleaner onto a soft, lint-free cloth and gently wipe terminal.

Warning: Do not use an industrial strength or abrasive cleaner as it may damage or scratch the screen.

8. Battery Info

The S920 includes a Li-ion battery 2600mAh 3.7V.

8.1 Battery Power Indicator

The Battery Icon at the top of the screen indicates the current battery level.



8.2 Charging

To charge the S920 battery, plug the AC power adapter with the Micro USB cable attached into an outlet then insert the Micro USB into the port on the left side of the S920.

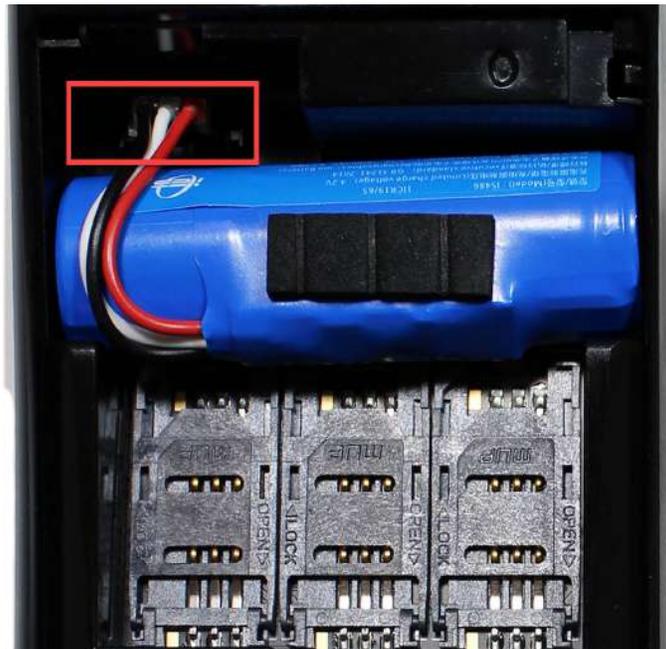
Alternatively, the Micro USB cable (without the AC power adapter) can be inserted into a USB port on a computer or laptop then inserted into the port on the left side of the S920.

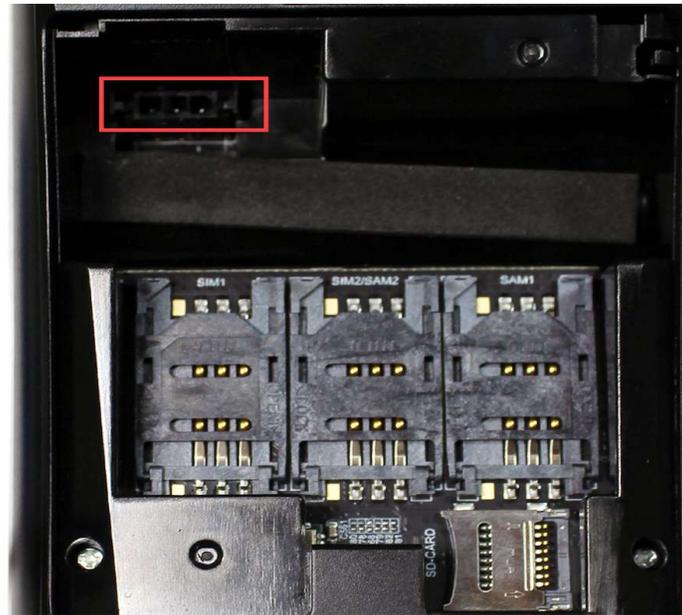
8.3 Remove and Install Battery

1. Carefully position the S920 to access the bottom of the terminal.
2. Lift the tab on the back cover to remove the cover.



3. Locate the battery and carefully pull the battery power connector out of the socket





4. To install a battery, locate the battery power connector. Position the connector against the terminal side connector
5. Carefully insert the battery connector into the terminal side connector. Lay the battery down into the battery cavity
6. Place the battery cover back onto the terminal with the top side first and then snap the bottom closed

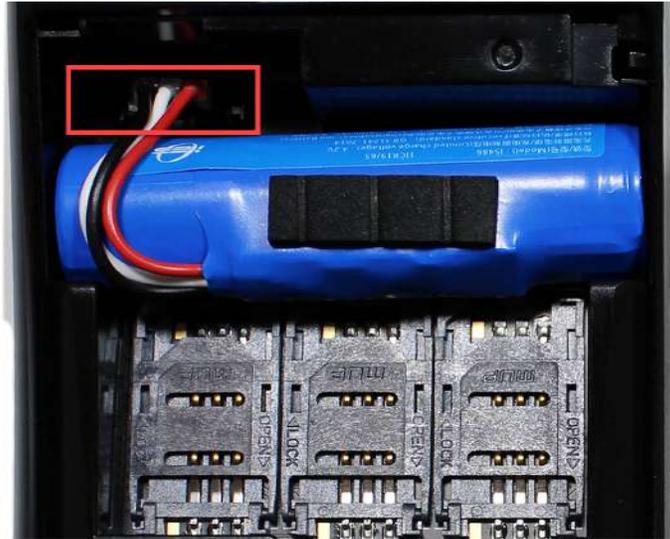
9. SIM, SAM, and/or Micro SD Card Installation

Warning: Power off the S920 and remove all power before installing to S920 or Micro SD card.

1. Carefully position the S920 to access the bottom of the terminal.
2. Lift the tab on the back cover to remove the cover.

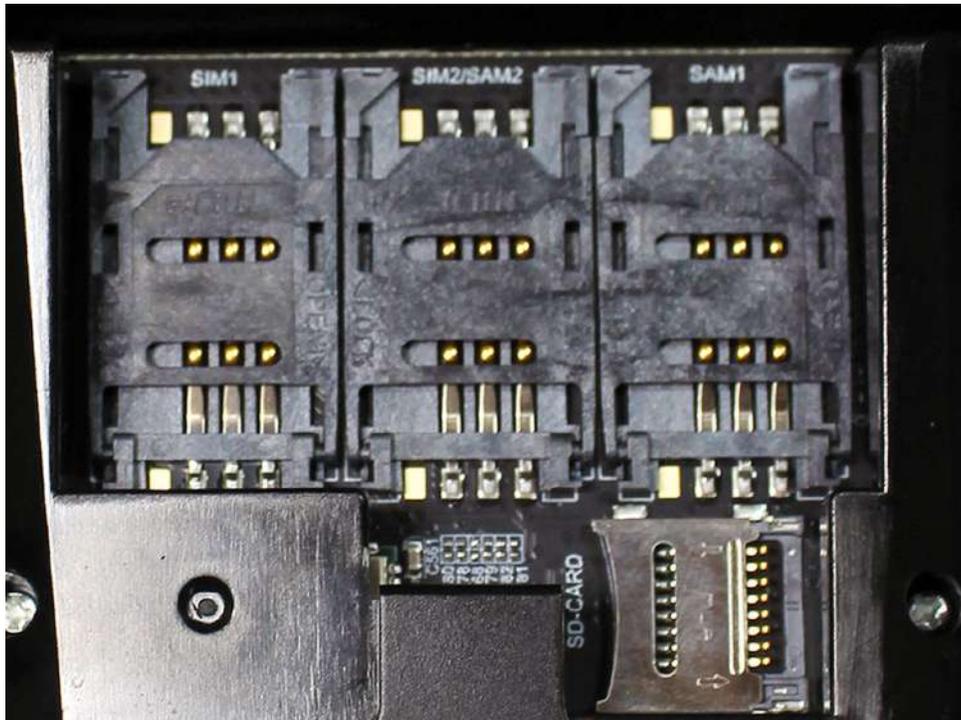


3. Locate the battery and carefully pull the battery power connector out of the socket.

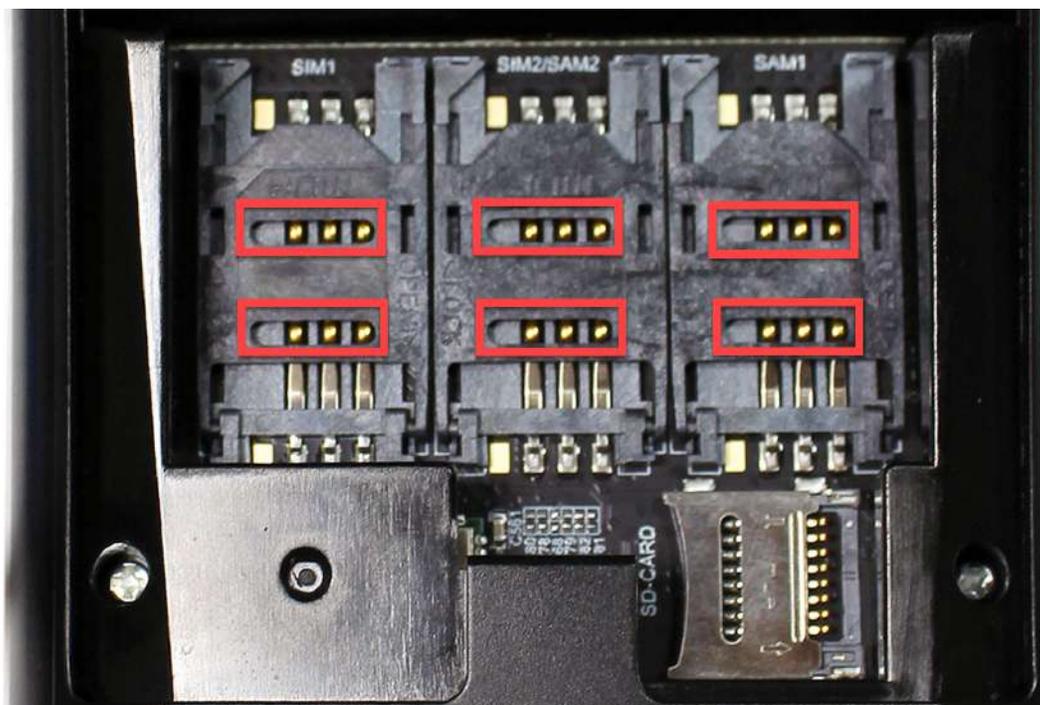


4. The S920 mobile terminal supports the following slots:

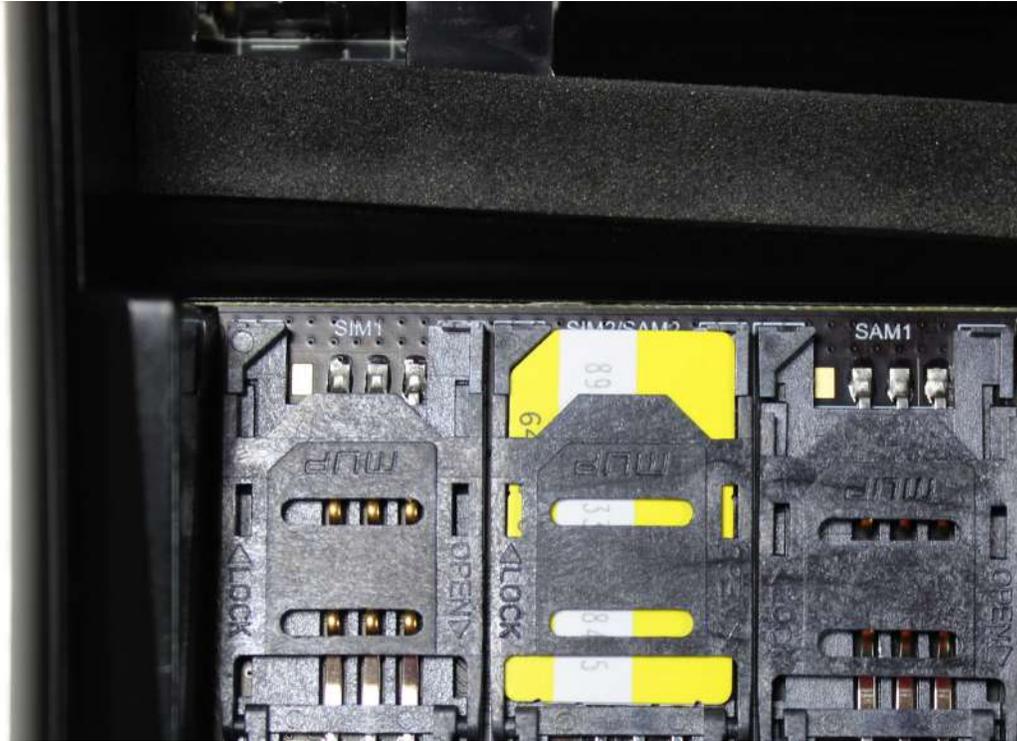
- SIM1
- SIM2/SAM2 (**Note:** This slot is used as a SAM slot only for S920s sent to the US region.)
- SAM1
- SD Card



5. To install the card into a slot, unlock the card cover by inserting a fingernail into the grip slot on the card slot cover. Carefully slide backward approximately 1/32" then carefully lift the card slot cover upwards and outwards.



6. Insert the SAM cards with the notched corner aligned with the notch in the card slot. The MicroSD card will insert with the contacts facing down matching the contacts in the card slot.



7. After the card is correctly inserted, carefully close the card slot cover and then lock the cover by sliding the cover approximately 1/32" upwards.
8. Reinstall the battery and the battery cover.

10. Card Readers

This section covers the card readers on the S920 mobile terminal.

10.1 Magnetic Stripe Reader

To use the Magnetic Stripe Reader, use a quick and steady movement to swipe the Magnetic Stripe Card through the reader on the right side of the S920 mobile terminal. The S920 Magnetic Stripe Reader is bidirectional so cards can be swiped top to bottom or bottom to top. For best results the magnetic stripe of the card should be facing the terminal.



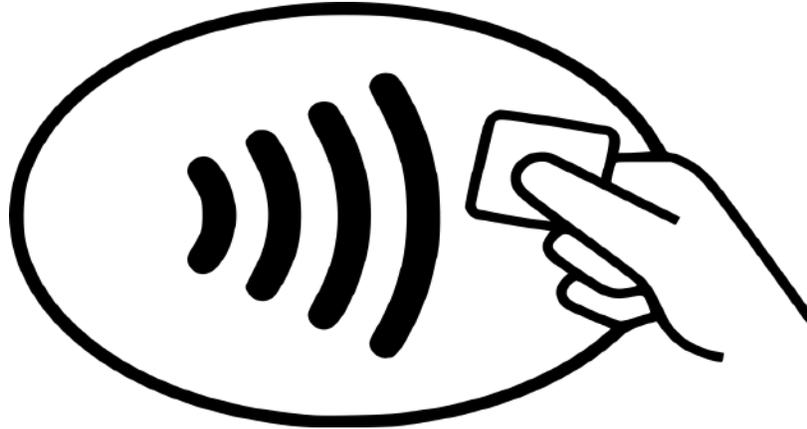
10.2 EMV Card Reader

To use the EMV Card Reader, insert the EMV Card with the front of the card facing up, chip side up, and chip end facing toward the card slot. Slide the card into the card slot located on the bottom of the S920. Leave the card inserted until the terminal provides a message to remove the card.



10.3 NFC/Contactless Card Reader

To use NFC Contactless tap the NFC/Contactless Card when prompted by the EMVCo Contactless Symbol.¹



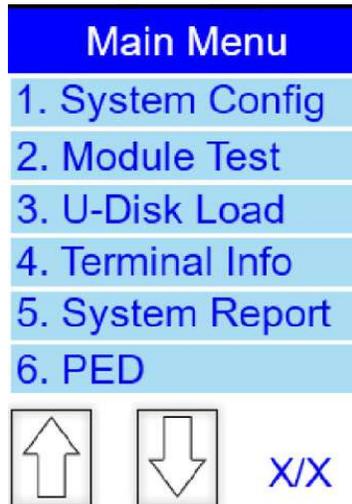
11. Setup Communications

For the terminal to communicate with the host, other devices, or to download applications the terminal communication method must be configured in advance. This section includes step-by-step instructions for Wireless and Wi-Fi setup.

11.1 Wireless

To setup Wireless (Cellular) Communication on the S920:

1. Power on the S920. While the device boots up, repeatedly press the [2] button until the **[Main Menu]** screen displays. Then press **[System Config]**.



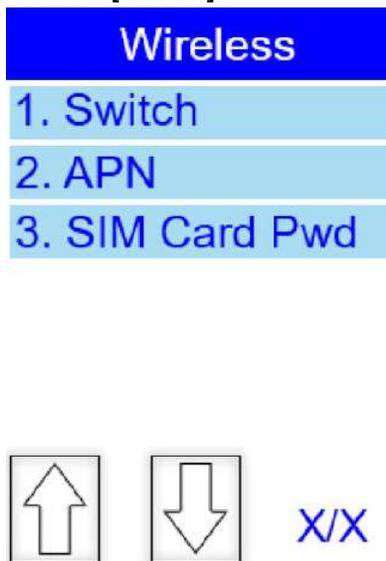
2. Use the keypad to enter the password **123456**.

1. "The Contactless Symbol is a trademark owned by and used with permission of EMVCo, LLC."

3. From the **[System Config]** screen select **[Wireless]**.



4. From the **[Wireless]** screen select **[Switch]**.



5. From the **[Mobile Network]** screen use the keypad to press **[Enter]** (green button) to Open.

Mobile Network

Current: Close

Enter to Open

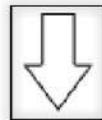
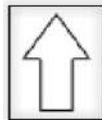
6. From the **[Wireless]** screen select **[APN]** and enter the applicable APN for the wireless carrier.

Wireless

1. Switch

2. APN

3. SIM Card Pwd



X/X

7. The device will prompt for the **[APN User Name]** and an **[APN Password]**. If this information is not available, press the **[Enter]** button on the keypad to bypass these prompts.

APNUsername

OldAPNUsername:

[username]

NewAPNUsername:

APNPassword

OldAPNPassword:

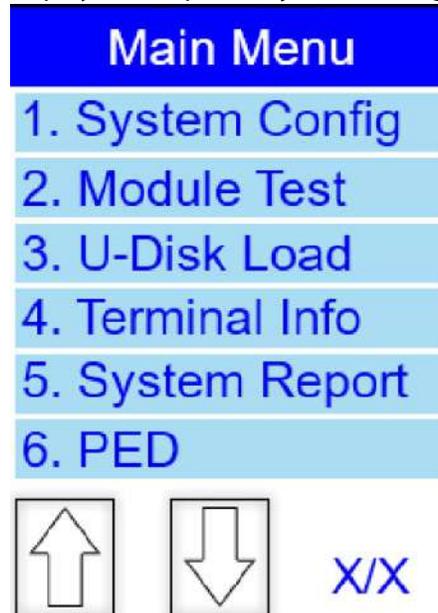
[username]

NewAPNPassword:

11.2 Wi-Fi

To setup Wi-Fi Communication on the S920:

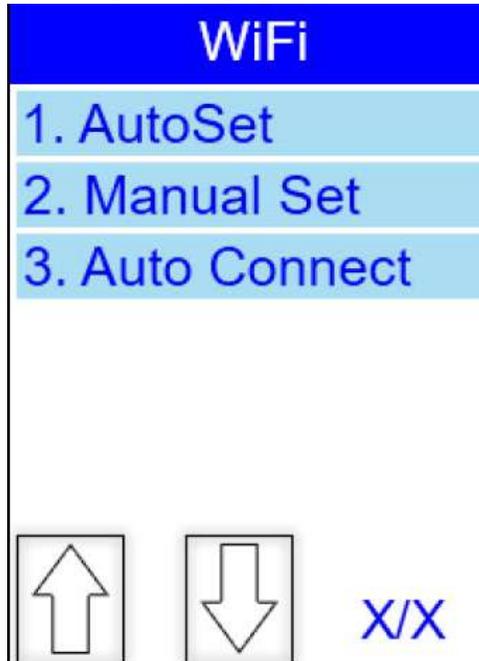
1. Power on the S920. While the device boots up, repeatedly press the [2] button until the **[Main Menu]** screen displays. Then press **[System Config]**.



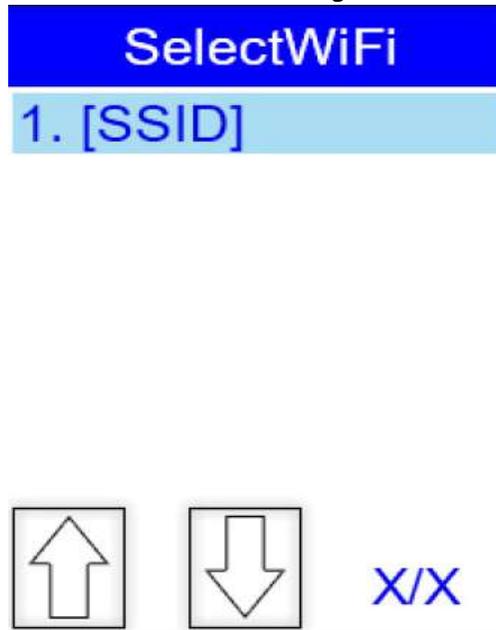
2. Use the keypad to enter the password **123456**.
3. From the **[System Config]** screen select **[WiFi]**.



4. From the [WiFi] screen select [AutoSet].



5. The terminal will search for discoverable Wi-Fi signals. Select the desired [Wi-Fi].



6. Enter the Wi-Fi **[password]**.

[SSID]

Enter Password:

7. Select **[DHCP]** if the IP changes or **[Static]** if the IP always stays the same.

Note:

- If the user selects **[DHCP]**, the terminal acquires the IP address and displays the IP information.
- If the user selects **[Static]**, enter the IP address, netmask address, gateway address, and DNS server address. The input format is XXX.XXX.XXX.XXX. The terminal displays the IP information.

8. **[IP Config]** screen displays with the applicable information.

9. Press the **[X]** button on the keypad multiple times to return to the **[WiFi]** screen.

10. From the **[WiFi]** screen select Auto Connect then select **[Open]**.

11. Press the **[X]** button on the keypad until the device displays *QUIT TM*.

12. Select **[Yes-Enter]**.

13. Terminal connects to Wi-Fi.

12. Frequently Asked Questions

Q: What should I do if my terminal does not start?

A: First check to see if the battery is still charged. Attempting to power on the device while the battery is empty will cause a prompt to appear on screen, indicating that the battery power is too low. If plugging the device into the power adapter does not cause a battery charging icon to appear on screen, check the power adapter to see if it is operating normally. If the battery is charged but the terminal still refuses to power on, contact an agent from your local vendor.

Q: Why is the battery not fully charging?

A: The rechargeable battery has systems in place to prevent wear and tear and to help preserve its maximum capacity. In addition, operating the terminal while it is being charged will cause the battery to rise in temperature, resulting in damage to the battery and a decline in its maximum capacity. It is highly recommended that the device is put into sleep mode when not in immediate use and that it is not used while the battery is charging.

Q: What are signs that the battery has aged or has been damaged?

A: If the total charge of the battery powers the device for approximately half the length of time it originally did or if the battery does not charge or becomes hot while charging, contact an agent from your local vendor to replace the battery. If the battery shows signs of swelling or the insulation has visible breaches or cracks, immediately cease operation of the device and contact an agent from your local vendor to replace the battery.

Q: Why is the screen so bright/dim?

A: The brightness of the screen can be adjusted. The level of illumination provided by the backlight can be changed in the device settings.

Q: What should I do if the smart card reader is not working?

A: First check to see if the smart card has been inserted fully and oriented properly. The proper use of the smart card reader is outlined in the reference guide. Also check the metallic contacts on the smart card for signs of corrosion or other damage and attempt to use another card to determine whether the problem is a defective card. Then check the card reader to see if there is foreign matter clogging the card reader slot. The card reader can be cleaned with standard cleaning cards to prevent buildup of dirt and debris. If none of the above steps resolve the problem, contact an agent from your local vendor to repair the device.

Q: What should I do if there is a transaction error when using a smart card?

A: If a smart card is properly read by the card reader, but the device indicates that there is a transaction error or that the card is not supported, attempt to use another card for the transaction instead or consult the service provider that issued that card to resolve the problem. Before attempting to use a smart card, make sure that the contactless card module is not operating simultaneously and that the device is not near any object producing a strong electromagnetic field. Those conditions may interfere with the device when it attempts to read the smart card.

Q: What should I do if the contactless card reader is not working?

A: First check to see if the card or device being used has contactless functionality. If it does, then make sure that the card or device is placed and oriented properly. The proper use of the contactless card reader is outlined in the reference guide. Avoid placing the device near metallic objects or closer than 20 cm to another device with a contactless card reader. Attempt to read another contactless card to determine whether the problem is a defective card. If the previous solutions did not work, manually enter the card information to process the transaction and confirm that the device has malfunctioned. If none of the above steps resolve the problem, contact an agent from your local vendor to repair the device.

Q: What should I do if the magnetic strip reader is not working?

A: First check to see if the magnetic strip card has been oriented and read properly. The proper use of the magnetic strip card reader is outlined in the reference guide. Attempt to use another card for the transaction to determine whether the problem is a defective card. If the previous solutions did not work, manually enter the card information to process the transaction and confirm that the device has malfunctioned. If none of the above steps resolve the problem, contact an agent from your local vendor to repair the device.

Q: What should I do if there is a transaction error when using a magnetic strip card?

A: If a magnetic strip card is properly read by the card reader but the device indicates that there is a transaction error or that the card is not supported, attempt to use the IC card reader for the transaction or consult the service provider that issued that card to resolve the problem. Before attempting to use a magnetic strip card, make sure that the contactless card module is not operating simultaneously and that the device is not near any object producing a strong electromagnetic field. Those conditions may interfere with the device with the device when it attempts to read the magnetic strip card.

Q: What should I do if the buttons/touchscreen is unresponsive or begins lagging?

A: First confirm that the surface of the screen is free from liquids. If there is a protective plastic film over the screen, remove that before attempting to use the device. Check to see if any metallic objects are touching the buttons/screen and if there is a source of magnetic waves near the device. Remove any metallic objects that are near device and keep the device away from any sources of magnetic waves before attempting to use the device again.

Q: What should I do if the USB port is not working?

A: First confirm that there are no foreign objects present in the USB port and that the USB cable is fully plugged into the port. Make sure that the cable used follows USB specifications. Attempt to use another cable if possible. Check to see if the USB drivers are present and up to date.

Q: What should I do if there are errors while using the USB port?

A: Use the USB cable packaged with the payment terminal instead of a third party cable. Do not use a USB hub. Directly attach the cable to the device being linked.

Q: What should I do if there are errors while using the Bluetooth module?

A: First confirm the Bluetooth module on the payment terminal and any device you are attempting to pair is turned on. Check to see whether the linked device is in range and that there are no objects with the same name. Finally confirm that the password you are using is correct. If none of those solutions work, attempt to repair after the restarting the Bluetooth module.

Q: What should I do if there are errors while using the Wi-Fi module?

A: First confirm that the Wi-Fi module and the router is turned on and that the router is broadcasting a signal with sufficient strength. Then check that the network setting is compatible with the device you wish to use (the Payment uses DHCP). Make sure that the name and password of the network you are attempting to connect to are both correct. Check to see if the network you are attempting to connect to only accepts preset IP or MAC addresses; if so, add the Payment terminal to the list of devices allowed on the network. Users can determine if there is an error with that specific router or network by attempting to connect to another instead. If the device is connected to a network but there is no Internet access, check that the network is connected to the Internet. Finally, users can attempt to place the device closer to the router or restart the device and attempt to connect to the network again.

Q: What should I do if the device does not detect a SIM card?

A: First confirm that a SIM card has been installed into the terminal. Then check to see if the card is damaged or if the contacts are tarnished. If the contacts are dirty, clean them and check whether that resolves the problem. Lastly, check to see if the SIM card is properly installed in the device. Attempt to use another card to see if that resolves the problem.

Q: What should I do if the wireless connection times out?

A: First confirm that the SIM card has a sufficient balance of data/cash remaining. Then make sure that the setting and service provider of the SIM card matched that in the device settings. Lastly check whether your current location is supported by the service provider of the SIM card.

Q: What should I do if the wireless connection is too weak?

A: First check to see if there are any metallic objects or surfaces nearby; attempt to use the device away from metallic objects to see if the signal improves. If indoors or under cover, attempt to move to the edge of the enclosure or use the device near any available windows.

Q: What should I do if there are errors while using the wireless connection?

A: At high traffic locations or times, there are higher chances of communication errors occurring. Attempt to use the device at another location to determine if the error originated from the device itself.

Q: What should I do if there are errors while using the GPS module?

A: First check to see if the GPS module has been turned on. Then attempt to use the device away from obstructions such as tall buildings or tunnels. Finally, restart the module to see if it functions correctly.

Q: What should I do if there appears to be damage to the tamper proof label?

A: Damage to the tamper proof label may indicate damage to the device itself. Immediately return the device to the supplier. The device is safe to use only after it has been properly tested.

Q: What should I do if the device displays “no program” or “PED lock”?

A: Return the device to its supplier. The device is usable only after it has been serviced and reset.

PAX Customer Support

For questions or help with the terminal installation please contact your service provider or PAX customer support.

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