



# Pyxis

## User Guide



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Your safety is extremely important. Read and follow all warnings and cautions in this document before handling and operating RFID equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

**Note:** Notes either provide extra information about a topic or contain special instructions for handling a condition or set of circumstances.



## FCC statements

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

# I. Introduction



## 1.1 Introduction

The PYXIS is an Android based Portable RFID Reader with a variety of features such as wireless communication, data acquisition, wireless transmission, data processing and UHF scanning etc. It is configured with Android OS and it possesses high reliability and expandability. With a set of advanced data acquisition options, the PYXIS can be used in various industries which require precise data capture capability. In addition, the PYXIS offers a variety of options that can be selected readily to accommodate other applications as well.

The PYXIS is highly rugged, compact, durable and is rated to IP65 for waterproof and dustproof capability. The PYXIS is well suited for the outdoors applications such as Transponder Commissioning & Testing, Portable Vehicle Identification, Portable Toll Tag Verification, Electronic Tolling (Queue-Busting), Asset Management, Inventory Management, etc. Wherever your application locations may be, the PYXIS provides reliable connectivity with systems to assure effective and efficient operations.

## 1.2 CAUTION READ THIS BEFORE USING BATTERY

- Do not leave unused batteries in the device for an extended period of time. If the device/batteries have not been used for a period of over 6 months, check to be sure that the battery and its charging function is working properly. If it is not working or charging properly, the battery should be disposed properly in accordance with local laws and regulations on disposal of batteries and electronics.
- Check battery charging status at regular intervals.
- The Lithium Polymer battery can be recharged for approximately 300 to 500 times. (One full battery charge period means completely charged and completely discharged.)
- Even though a Lithium Polymer battery may not be in use, it will continue to discharge slowly. Therefore, the battery charging status should be checked frequently.
- Check and record the information of any new unused and non-fully charged battery. Depending on the product configuration and application program being used, the operating time of the battery may vary.
- When the battery capacity drops below 80%, its charging time may be increased.
- Please be sure to follow the storage instructions in this document. If a battery is stored improperly or unused for an extended period, the battery may lose its ability to hold a charge. If this occurs, consider it as a damaged battery. Do not attempt to continue to recharge it or to use it. Replace it immediately with a new battery and properly dispose of the damaged battery.
- The battery should be stored at temperatures between 5 °C and 20 °C (41 °F and 68 °F).

## 1.3 Charger

The charger input voltage is AC 100V ~ 240V and output voltage is DC 5V 2A, 9V 2A, 12V 1.5A

## 1.4 Notes

1. Using an incorrect type of battery is dangerous and may cause fire or an explosion. Please dispose the used battery according to instructions.
2. The Reader Device and its battery should only be connected to a USB Interface, Type-C, version 2.0 or higher. Using other types of USB power is not recommended and will void the unit's warranty.
3. The operating temperature range for this product and accessories is -20°C to 70°C.
4. **CAUTION:** Risk of explosion if battery is replaced by an incorrect type. Dispose of any used batteries according to the instructions.

## 2. Appearance and Buttons



Please be familiar with the interfaces and buttons of the PYXIS before use.

- Power on: Press and hold the power button until the screen of the PYXIS lights up.
- Power off: Press and hold the power button until the PYXIS option menu appears, then click Power off.

※ Press and hold the power button until the screen of the PYXIS is off to force restart.

### 3. Battery Instructions



The PYXIS comes with the battery ready for immediate use.

To maintain a longer battery life, please recharge the battery in time before the power level drops too low. A prolong period of low power may shorten the life of the battery.

1. The battery of the PYXIS is polymer and non-removable. Only use the charger designated by the manufacturer and do not disassemble or replace the adapter.
2. The battery should be recharged in time when it runs out of power and should not be stored for a long period of time under empty or full charge condition. It is better to store it at about 50% charge level.
3. When you get you're the PYXIS for the first time, the battery may be charged to 50%. Please fully charge it using the power adapter provided in the package.

※ The PYXIS may become hot while charging.

# 4. Connection



## 5.1 Connecting the device to a computer

The PYXIS can be connected to a computer using its USB cable. Once connected, touch and click "USB for file transfer" by pulling down the notification bar, and select the following options:

1. "Charge this device", which allows charging.
2. "Transfer files", which opens the shared storage space and SD card of the PYXIS.
3. "Transfer photos (PTP)" provides a function to transfer image files.

※ Follow all instructions to disconnect the PYXIS and its cable carefully before removing from the computer to avoid any possible loss of data.

## 5.2 Find and connect to a WLAN

The PYXIS can access the Internet using WLAN or a network as its default connection settings.

1. Click Settings - Network & Internet - Wi-Fi and enable WLAN.
2. Select the WLAN you want to connect to from the searchable list. If the security feature is enabled on the WLAN network, you will need to enter the network password to use the network service. If you are not using the wireless network, it is recommended to turn off this function prior to using the device.

## 5. Barcode Scanner



The PYXIS can scan barcodes through its embedded scanning function in APPCenter, or other custom developed scanning programs.

※ ATTENTION: If the scanning beam does not light up, please check whether the scanning function is set to OFF. If it is set to OFF, please go to Settings - Scan Settings - SCAN SETTING - enable / disable the scanner and click the side button to turn it on.

\*NOTE: For more information about APPCenter, please refer to "Pyxis APPCenter User Guide"

## 6. Handle Interactive Function

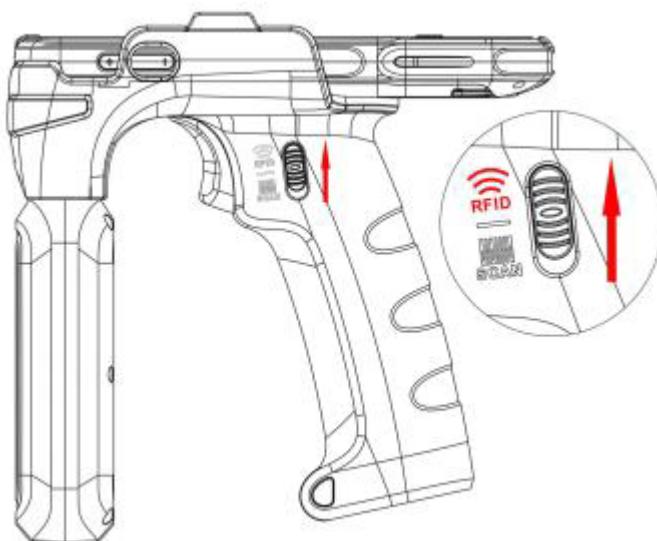


### 6.1 RFID Mode

Be sure that the Yellow Toggle Switch is in the “RFID” position. Click on the APPcenter to enter the RFID function interface. Press the yellow pistol-grip trigger to initiate reading of tags within range of the reader.

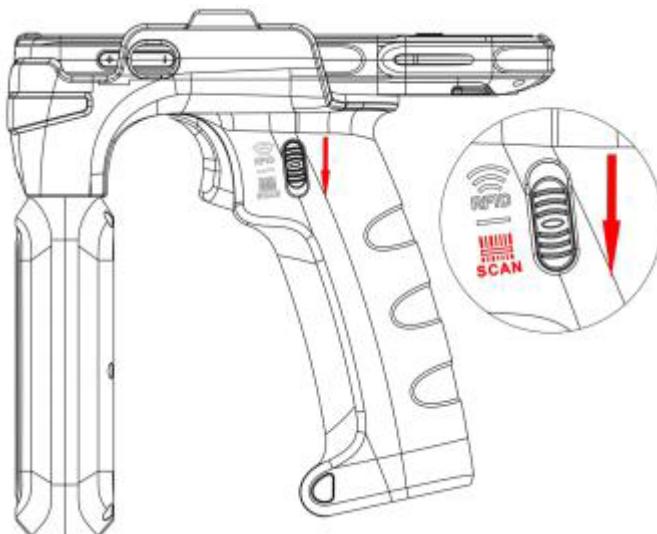
#### RFID Indicator Interaction Description:

1. After Starting the APPcenter, enter the UHF function, the RFID front-end blue indicator light should be on.
2. After Exiting the APPcenter, the RFID front-end blue indicator should turn off.



### 6.2 Scanning mode

Move the Yellow RFID/SCAN Toggle Switch to the Barcode Scan position.  
Press yellow pistol-grip trigger button to start barcode scanning.



\*NOTE: For more information about APPCenter, please refer to “Pyxis\_APPCenter\_UG”

# 7. Precautions



1. Do not leave the USB port cover open or it may lead to water ingress into the PYXIS.
2. Do not overflow the memory of the PYXIS, otherwise it may cause the system not to perform or perform abnormally.
3. Please turn off the scanner when barcode scanner is not in use and do not turn it on permanently.
4. Do not look directly at the scanning light beam while scanning to avoid accidental injury.
5. Keep the back camera lens clean.
6. Avoid abrasion or scratching of the lens with any hard and or rough objects.
7. When connecting the PYXIS to a device, please connect the USB cable to the PYXIS first; then go ahead and connect the USB port on the PC.

# 8. Safety Warning



To protect yourself and the others and to protect the PYXIS from damage, please read all the following information before operating the PYXIS.

## 8.1 Medical equipment

In medical and healthcare setting environments where the use of wireless devices is expressly prohibited, follow the site's regulations on usage of this type of a device.

Some hearing aids may be subject to radio frequency interference from the PYXIS. If you use hearing aids, contact the manufacturer for information about radio interference to ensure the safe use of your hearing aids.

## 8.2 Flammable and explosive areas

Do not use the PYXIS at gas stations (service stations) or near flammable liquids, gases or chemicals.

Do not store or transport the PYXIS and its accessories in the same box with the flammable liquids, gases, or explosive materials.

## 8.3 Traffic safety

Do not place the PYXIS on top of the airbag of a car or in an area that can be reached when the airbag is deployed. The PYXIS could be subjected to strong external forces should the airbag expands or ruptures, which could cause serious injury to the occupants in the car.

Wireless devices may interfere with aircraft's flight systems. Where the use of wireless devices is prohibited on an aircraft, be sure to turn off the PYXIS and follow any regulatory rules.

## 8.4 Operating environment

Do not charge or use the PYXIS in dusty, damp, dirty areas, or near magnetic fields as this may cause a malfunction of its internal circuit.

Do not use the PYXIS during thunderstorms to avoid lightning strikes or other injuries.

Turn off the PYXIS in places where there are explicit or graphic instructions prohibiting the use of wireless devices.

When charging the PYXIS, keep the ambient temperature between 0°C and 45°C; while the device is powered solely by the battery, use it may be used at an ambient temperature between -10°C and 50°C.

## 8.5 Environmental protection

Please comply with all local ordinances regarding the disposal of packaging materials, batteries, equipment and their accessories. Please, support recycling operations where it is available.

## 8.6 Original accessories

Use only original accessories provided by the device manufacturer, such as USB cable and power adapter, do not use non-original accessories.

## 8.7 Proper maintenance and use of the PYXIS

Keep the PYXIS in dry environment. Do not let the device, battery or charger come into contact with water or fire. Do Not operate the PYXIS or charger with wet hands to avoid short-circuiting the device, malfunctions caused by corrosion or electric shock.

Do not let the PYXIS, its battery and charger to strong shocks or vibrations, which may cause the device, battery, and charger to malfunction, catch fire or explode.

Do not place the PYXIS, its battery, and charger in areas where the temperature is too high or too low, as this may cause the device, battery, and charger to malfunction, catch fire, or explode.

Do not place the battery in an area that is too hot or too cold, as this may reduce the capacity/life of the battery and affect battery safety. The performance of the battery is particularly limited when the temperature falls below 0°C.

Do not place sharp metal objects such as pins or other sharp metal objects near the handset of the unit. The magnetism of the handset of the unit will attract these objects and may cause injury while using the unit.

Turn the unit off before cleaning and maintenance. If the charger is still connected at this time, unplug the charger from the power outlet and disconnect the charger from the device to avoid electric shock or short circuiting of the battery or charger.

Do not clean the device or its accessories with strong chemicals, cleaning agents or strong detergents.

Do not disassemble the device and its accessories. Doing so will void the warranty.

## 9. OS updates



The operating system only supports officially provided system updates, if the user swipes a third-party ROM system or modifies the system files by any cracking method, it may lead to system instability which may pose security risks or dangers. The user shall be responsible for any consequences of installing non-supported OS.

# 10. Specific Absorption Rate (SAR) Information



## FCC Caution

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Specific Absorption Rate (SAR) information

### FCC RF Exposure Information and Statement

The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types PYXIS Portable RFID Reader(FCC ID: 2AA7KPYXIS-HRD23004) has also been tested against this SAR limit. The highest SAR value reported under this standard during product certification for use at the body is 1.465W/kg. This device was tested for typical body-worn operations with the back of the device kept 0mm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain a 0mm separation distance between the user's body and the back of the device. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

## II. Common Troubleshooting



Failure Symptom	Possible cause
Cannot turn on	It is possible the battery is used up. Please recharge and start again.
Cannot connect to an Access Point	If "Authentication problem" is displayed, then the WLAN password is incorrect.
Poor signal	Check the signal strength indicator mark on the display, a grid of 4 for this signal indicates a strong signal and a grid of 2 or less indicates a weak signal.
No sound	The volume setting maybe too low or it is off. Adjust the volume.
Unable to charge	<ol style="list-style-type: none"><li>1. If the ambient temperature is too high/low, the device should be placed in the room temperature environment</li><li>2. May be caused by over discharging the battery. You need to wait for a few minutes (usually less than 5 minutes).</li></ol>
No photos could be taken	<ol style="list-style-type: none"><li>1. Prompt "camera fault", close the scanner, the camera cannot be turned on while using the scanner.</li><li>2. Prompt "Not enough storage space", please clear the memory or switch storage location.</li></ol>
RFID module does not work	<ol style="list-style-type: none"><li>1. Confirm whether the RFID module is powered on normally: start the APPcenter to enter the UHF function interface. Check if the RFID blue light is on.</li><li>2. Check to ensure the function toggle switch is in the RFID position.</li></ol>

## **WARRANTY**

STAR Systems warrants all Hardware Products against defects in materials and workmanship under normal use and service for one (1) year from the original purchase date (the "Warranty"). Batteries included in a reader or package are warranted for six (6) months. Any Extended Warranties must be noted on the original invoice. If covered by the Warranty, STAR Systems will repair or replace the product, at its sole discretion, and return it to Customer.

## **EXCLUSIONS**

The Warranty shall not apply in cases of damage caused by abuse, mishandling, acts of God, vandalism, over-voltage, accidents, electrostatic discharge or electrical issues, improper installation or use, unsuitable environments, using the product for unintended purposes, unauthorized modification of the product, modification of the printed circuit board by parties other than STAR Systems, damage that is caused during shipping for warranty service, or to product returned with a broken warranty security seal. In these cases, STAR Systems will provide a repair or replacement estimate before performing any work.

## **RMA PROCEDURE**

Prior to returning a product for RMA, Customer must contact STAR Systems Customer Care at [cust.care@star-int.net](mailto:cust.care@star-int.net) for a case number and return instructions. Failure to obtain a case number or to adhere to the provided return instructions may lead to delays or refusal of the returned Product, with return shipping at the Customer's expense. The Product should be properly packaged and protected, preferably in the original carton and protective packaging materials. For products under Warranty, Customer is responsible for the shipping cost to STAR Systems' designated repair location, while STAR Systems covers the return shipping using its standard shipment method. Customers seeking expedited shipping options will be responsible for any additional associated costs. For out-of-warranty products, Customer is responsible for the shipping costs to and from STAR Systems' designated repair location.

## **DISCLAIMER OF WARRANTIES**

Other than set forth above, STAR systems hereby disclaims all warranties, expressed or implied, including without limitation, the warranties of merchantability, fitness for a particular purpose and noninfringement.

## **LIMITATION OF LIABILITY**

In no event will STAR Systems be liable for any consequential, indirect, exemplary, special, or punitive damages, whether arising out of contract, tort, negligence, strict liability or otherwise. In no event will star systems international total cumulative, aggregate liability, whether arising out of contract, tort, negligence, strict liability, or otherwise, exceed the price actually paid by customer for the product from which the claim arises.

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*This warranty gives Customer specific legal rights, and Customer may also have other rights that may vary from local jurisdiction. If Customer has questions concerning the product or warranty, contact the dealer from which it was purchased. Customer may also contact STAR Systems at the following address and ask for warranty assistance*

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# About Us

Founded in 2013, STAR Systems International is a global leader in Automatic Vehicle Identification (AVI) Technologies. Our primary focus is to deliver best-in-class transponders, readers, and professional consulting services for Smart City Initiatives. Our expertise lies in a wide range of applications, including Electronic Tolling (ETC), Congestion/Road Use Charging, Electronic Vehicle Registration (EVR), Express/HOT Lane, Fleet Management, Parking, and Secure Access Control.

At STAR Systems, we are driven by a customer-centric approach. Our goal is to ensure the success of our customers by leveraging our technical expertise and implementation experience. Guided by three core principles - Outstanding People, Innovative Products, and Service Excellence - we strive to advance Smart City Technologies and contribute to the long-term growth of the AVI industry.

## STAR Systems International Companies

STAR Systems International Pte. Ltd. (Singapore)  
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