Pyxis

User Guide

FCC ID:2AA7KPYXIS-HRD23000

Enabling **Smart** *Cities* ™

Contents

User Guide

Version 0.3.3

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This product is not designed, intended, authorized or warranted to be suitable for life support applications or any other life critical applications which could involve potential risk of death, personal injury, property damage, or environmental damage.

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 Compliance

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: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications
  or changes to this equipment. Such modifications or changes 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. During SAR testing, this device is set to transmit
at its highest certified power level in all tested frequency bands, and placed in positions that simulate RF exposure
in usage near the body with the separation of 10 mm. Although the SAR is determined at the highest certified power
level, the actual SAR level of the while operating can be well below the maximum value. This is because the device
is designed to operate at multiple power levels so as to use only the power required to reach the network.
In general, the closer you are to a wireless base station antenna, the lower the power output.

FCC Radiation Exposure Statement .
This device was tested for typical body.worn operations with the back of the handset kept 10mm from the body.
 To maintain compliance with FCC RF exposure requirements, use accessories that maintain a 10 mm separation
distance between the user's body and the back of the handset. 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.

RF Exposure Information(SAR)
The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue.
Device Types HRD23001F (FCC ID: 2AA7KPYXIS-HRD23000) has also been tested against this SAR limit.
The highest SAR value reported under this standard during product certification for use when properly worn on
the body is1.168 W/kg and for head is 0.24 W/kg

I. Introduction

1.1 Intro

PYXIS device is a smart mobile PDA that integrated with various 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 expansibility. With a set of advanced data acquisition options, PYXIS can be operated in various industries to acquire precise and abundant datum automatically. Meanwhile, the device can match the options with staffs accordingly. The corporation which deployed PYXIS will realize the deployment work is simple and maintenance work will be remarkably decreased.

PYXIS is highly rugged, compact and durable. With IP65 water and dustproof capability, the device has met IEC sealing standard. Therefore, it can be operated by staff such as Vehicle Administration, Inventory Management, Asset Management, Fleet Management etc. Wherever your staff locations are, PYXIS can remain its connectivity with the system to make sure business in high-effective operating.

PYXIS mobile data terminal adopted 4G LTE technology to realize multipath communication and calling function for fieldwork, data exchange efficiency has been enhanced simultaneously (Optional). Therefore, PYXIS will bring the largest investment return for enterprises.

1.2 CAUTION READ THIS BEFORE USING BATTERY

- Do not leave the battery unused for an extended period of time, whether it is in the device or not. If the battery has been used for over 6 months, it should be checked to assure the charging function is working properly or it should be disposed of correctly.
- The lifespan of a Li-ion battery is around 2 to 3 years, it can be recharged for approximately 300 to 500 times. (One full battery charge period means completely charged and completely discharged.)
- Even when a Li-ion battery is not in use, it will continue to discharge slowly. Therefore, the battery charging status should be checked frequently per recommended practices.
- Observe and record the information of any new unused and non-fully charged battery. Based on operating time of new battery and compare with a battery that has been used for long time. According to product configuration and application program, the operating time of battery would be different.
- Check battery charging status at regular intervals.
- When the battery capacity drops below about 80%, charging time may be increased.
- If a battery is stored or otherwise unused for an extended period, be sure to follow the storage instructions in this document. If you do not follow the instructions, and the battery has no charge remaining, consider it to be damaged. Do not attempt to recharge it or to use it. Replace it with a new battery.
- Store the battery at temperatures between 5 °C and 20 °C (41 °F and 68 °F).

1.3 Charger

The charger model is GME10D-050200FGu, output voltage/current is 5V DC/2A.

1.4   Notes

1. Using the incorrect type 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, version 2.0 or higher. Using other types of USB power is not recommended and will void your warranty.

3. The suitable temperature range for this product and accessories is 0-10°C to 50°C.

4. Caution risk of explosion if battery is replaced by an incorrect type. Dispose of any used batteries according to the instructions.

2. Components and Features

2.1 Components and Buttons

Pyxis has 4 side buttons, 4 main buttons and a trigger on handle, UHF scanning area, 2D scanning module (OPTIONAL), HD camera and flashlight locate on the top.

Function	Description
1. RGB LED	Monitor Display Device
2. Light Sensor, Distance Sensor	Light and distance detection
3. Front Camera	Photos and Videos record
4. UHF Scanning Module	Scanning RFID Tags
5. Menu	Display main menu
6. Home	Back to main screen
7. Back	Return to last step
8. Trigger	Start scanning or take photos
9. Scan button	Two Scanning buttons located on each side of the Pyxis
10. SIM/SD Card Slot	Install SIM card or SD card
11. Barcode Scanner	Scan 1D/2D barcode (OPTIONAL)
12. Top Camera, Flashlight	Photos and Videos record
13. Power button	Press to turn on/off device
14. Setup button	Custom function which can be defined by software

2.2 Device Specifications

Physical characteristics

Size	164.2mm*78.8mm*17mm
Weight	<654g (battery included)
Display	5.2 inch, IPS FHD 1920*1080P
Touch panel	4 main keyboards, 1 power button, 2 scan buttons, 1 multi-function button
Battery	Li-ion, rechargeable, 8000mAh
Expansion	Micro SD card, up to 32 GB
Expansion Slot	1 SIM, 1 SIM/Micro SD
Audio	speaker, 2 microphones, voice call
Camera	13MP autofocus camera with flashlight

Performance

CPU	Cortex-A53 1.45GHz Quadcore
OS	Android
RAM	2GB RAM
Communication Interface	USB2.0, Type-C, OTG
ROM	16GB
Max. expansion	Supports up to 32 GB Micro SD card

User environment

Operating temp.	-10℃ to 50℃
Storage Temp.	-40℃ to 70℃
Humidity	5%RH – 95%RH non-condensing
Sealing	IP65, IEC sealing standard
Drop specification	Multiple 1.8m/4.0ft drops to the concrete

Communication

WAN	**EU（Option）:** 2G: 850/900/1800/1900MHz 3G: 850/900/1900/2100MHz 4G: B1, B3, B5, B7, B8, B20, B40 **US（Option）:** 2G: 850/900/1800/1900MHz 3G: 850/900/1700/1900MHz 4G: B2, B4, B7, B12, B17 **CN（Option）:** 2G: 900/1800MHz 3G: 900/1900/2000/2100MHz 4G: B1, B3, B5, B38, B39, B40, B41
WLAN	IEEE802.11a/b/g/n, embedded antenna, 5 Gigabit WiFi (5G wifi isn't support hotspot) WiFi 2.4G; max. power 14.69 dBm WiFi 5G - Band1: max. power 14.69 dBm WiFi 5G - Band2: max. power 12.82 dBm WiFi 5G - Band3: max. power 13.08 dBm SRD5.8G; max. power 12.29 dBm
WPAN	Bluetooth 4.0; max. power 6.16 dBm

Data collection

Barcode scanning (Optional)	2D CMOS scanning engine (Honeywell N6603/Zebra SE4710)
RFID	NFC 13.56Mhz 62.57 dBµV/m (3m) -14.23dBµA/m (10m)

Developing Environment

SDK	STAR Systems software develop kit
Language	Java
Develop	Eclipse/Android Studio

2.3   Micro SD, SIM card

1. Take out the card slot using specified SIM card ejector.

2. Install SIM card/Micro SD in correct direction.
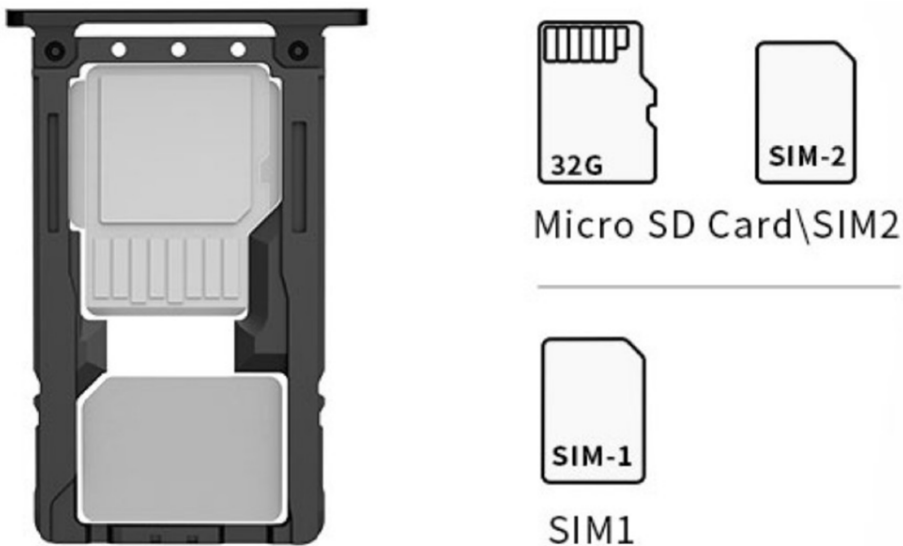
2.4   Battery Charging

By using a USB Type-C connector. Please, it is recommended to only use the original adaptor for charging the device.

Charging the battery with a power supply adapter not provided/approved by Star Systems may damage your device and/or void your warranty.

3. UHF RFID

Open App Center in the Applications.

Open "UHF" to read and write, kill and lock a UHF transponder/tag.
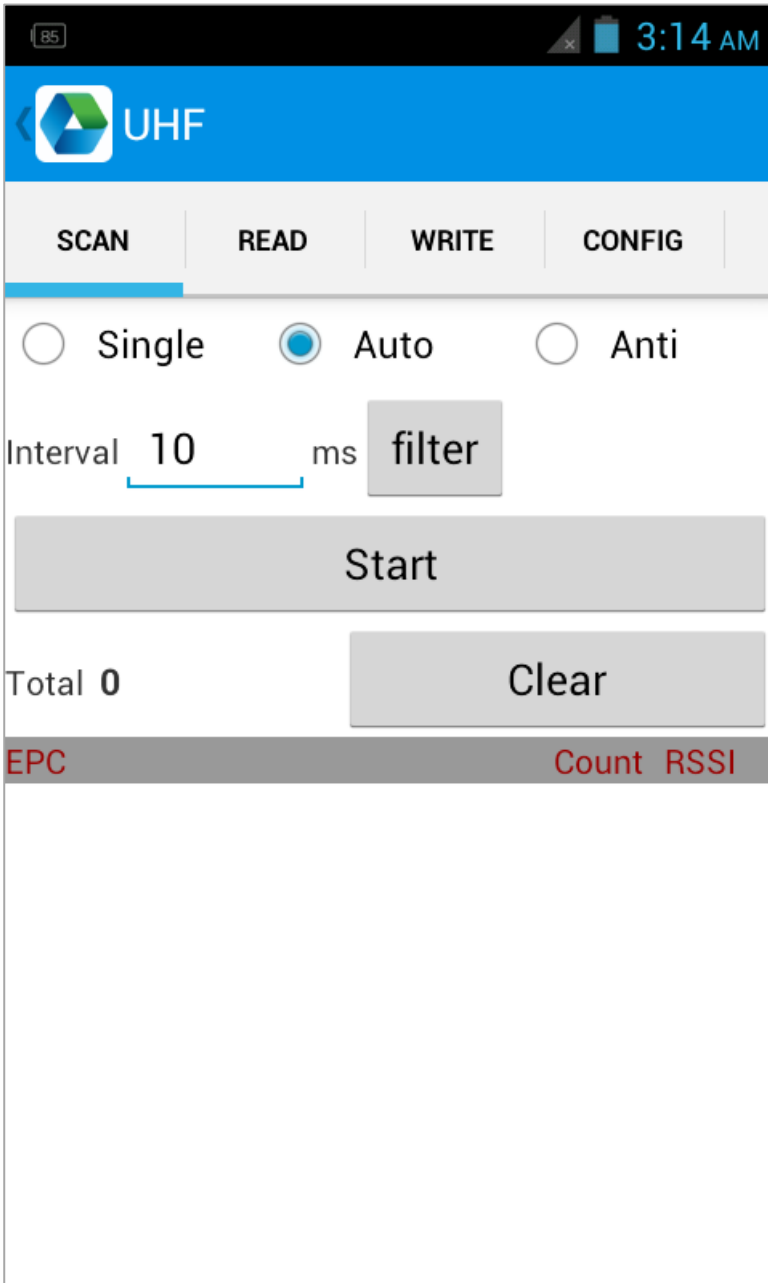
4. Other Features

4.1 PING tool

1. Open "PING" in App Center.
2. Setup PING parameters and select external/internal addresses.
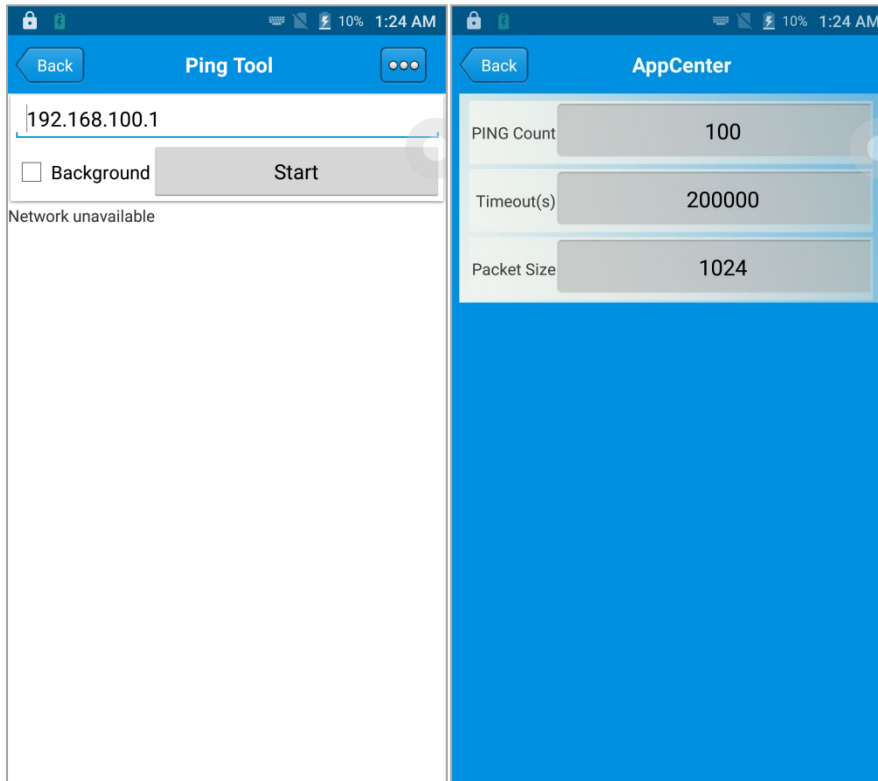
4.2 Bluetooth

1. Open "BT Printer" in App Center.
2. In the list of detected devices, click the device that you want to pair with.
3. Select printer and click "Print" to start printing contents.
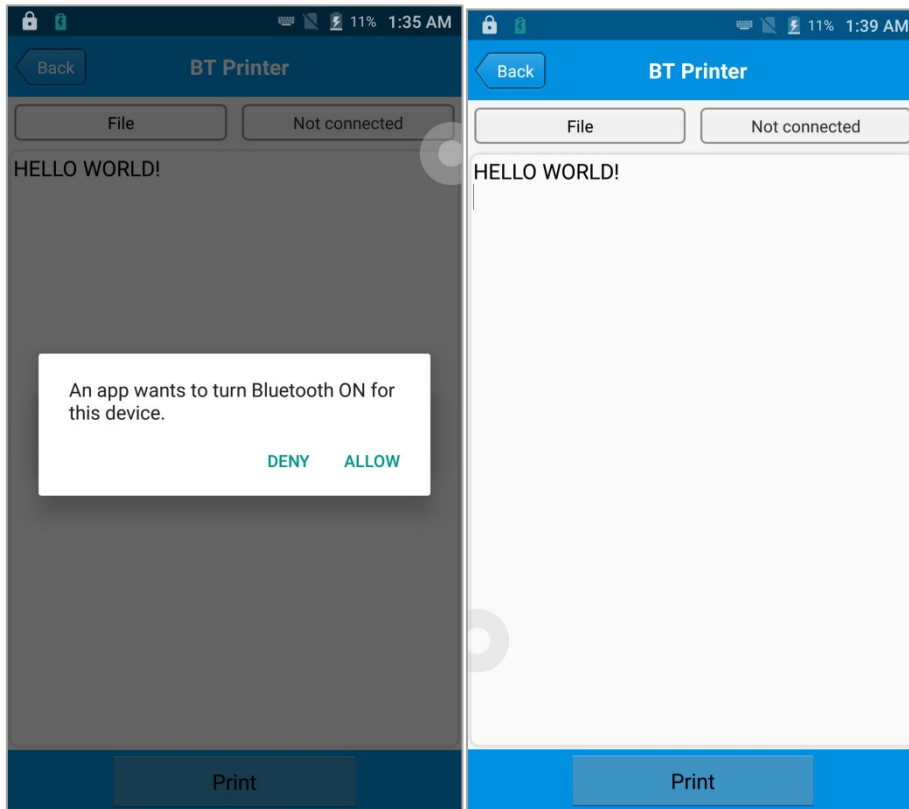
4.3 GPS

1. Click "GPS" in App Center to open GPS test.
2. Setup GPS parameters to access GPS information.
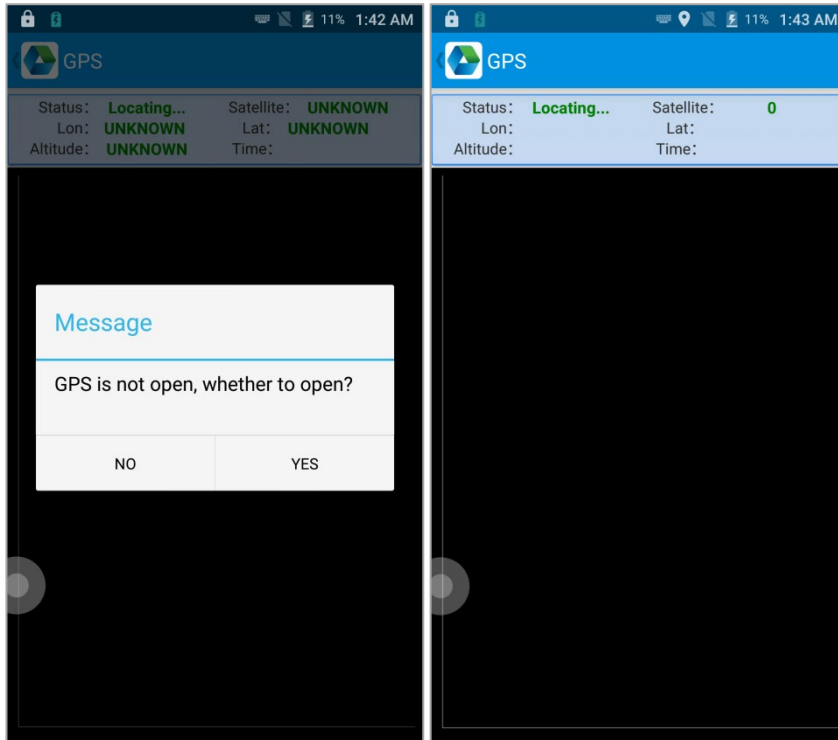
4.4 Volume setup

1. Click "Volume" in App Center.
2. Setup volume per user requirements.
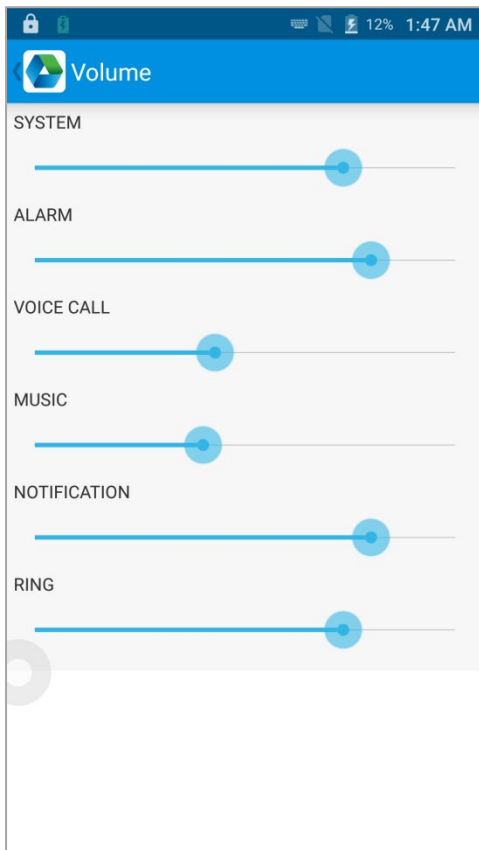
4.5   Sensor

1. Click "Sensor" in App Center.
2. Setup the sensor per user requirements.
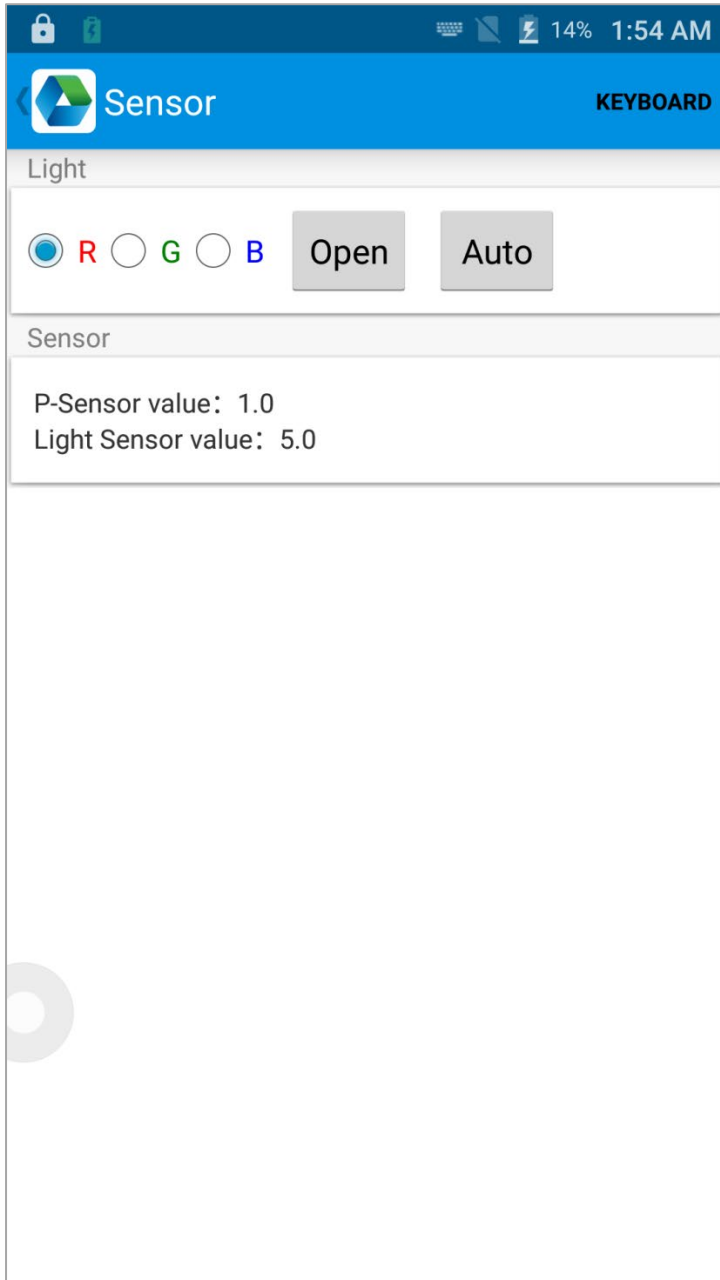
4.6 Keyboard

1. Click "Keyboard" in App Center.
2. Setup and test the main value of the device.
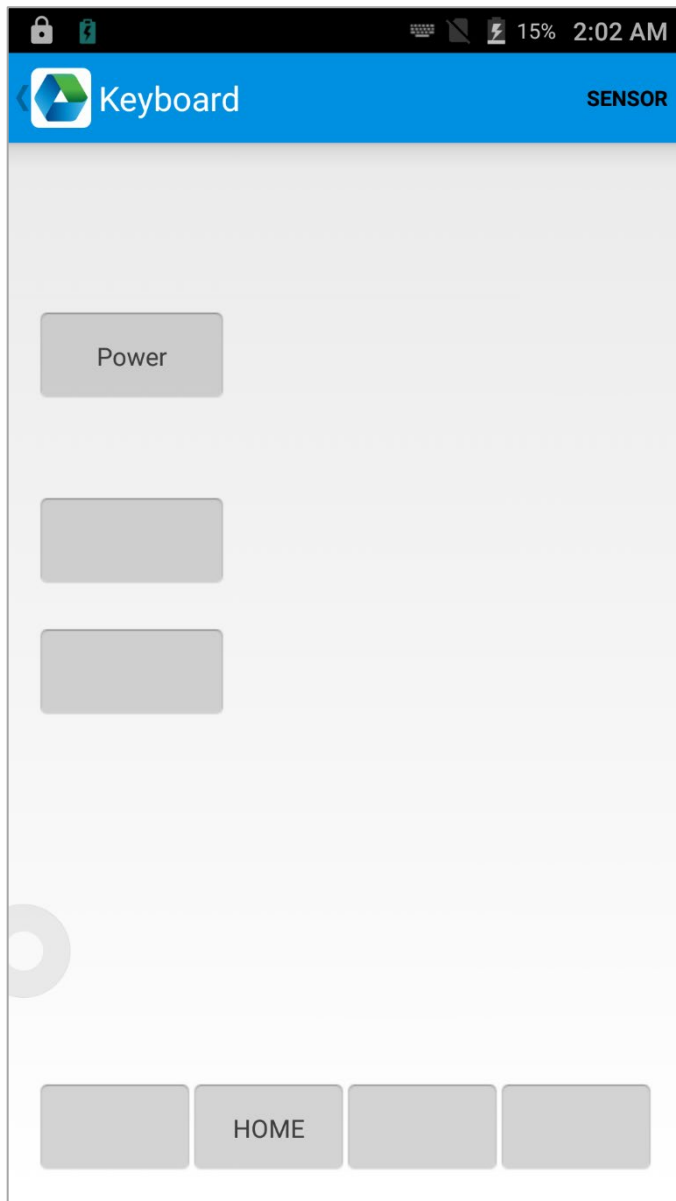
4.7   Network

1. Click "Network" in App Center.
2. Test WIFI/Mobile signal.
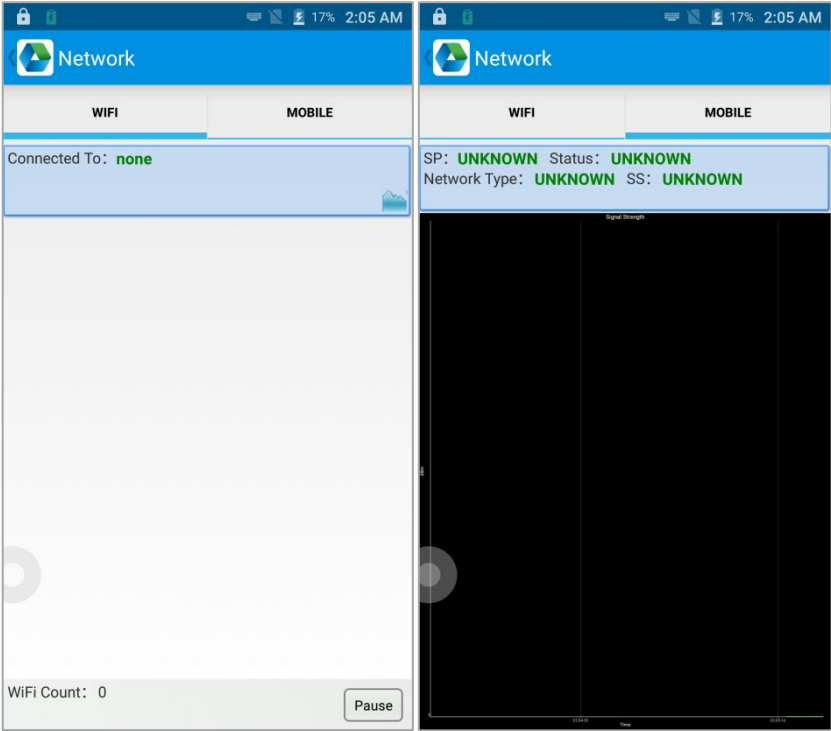
4.8 Keyboard emulator (optional)

The keyboard emulator can be used in multiple operating background and output formats directly. And it includes Prefix/Suffix/Enter/TAB.

Please check the Keyboard emulator manual for more details.
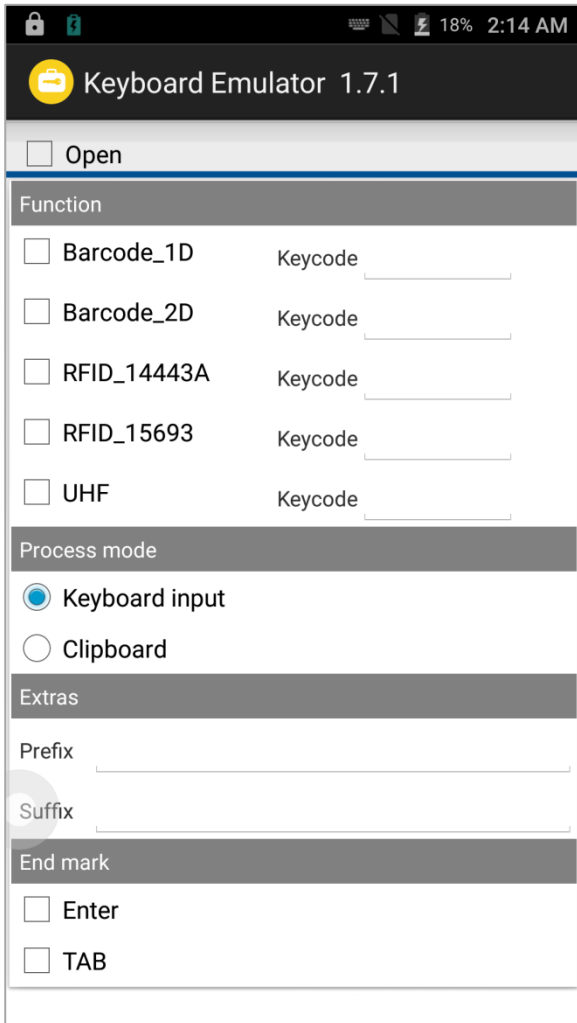
4.9   Call function

Calling numbers

1. Click icon .
2. Click desired number keys to input phone numbers.
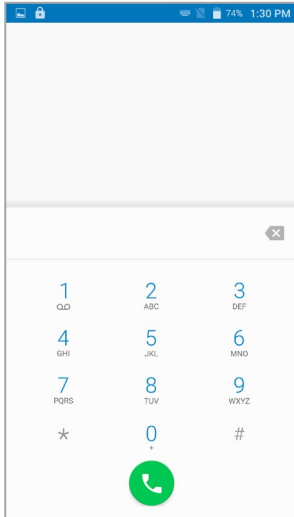
3. Click icon to call.
4. Click icon to end the call.

Contacts

1. Click icon to open contacts list.
2. Click icon to add new contacts.

SMS and MMS

1. Click to open message window.
2. Click to input message recipient and contents.
3. Click to send out messages.
4. Click to add attachments, pictures or videos.

5. Optional Features

5.1 Barcode Scanner (Optional)

1. In App Center, open 2D barcode scan test.
   (This function will show if your device has the appropriate Barcode Scan Engine.)

2. Press the "SCAN" button or click the scan key to start scanning. "Auto interval" can be adjusted by the user as desired.
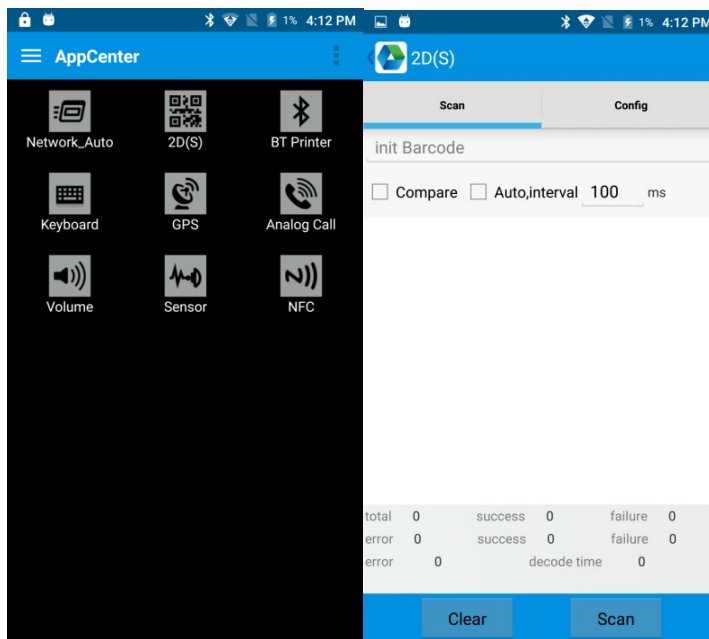
▨ Caution: Please scan codes in correct orientation otherwise the scanning may failed.

1D barcode:

2D code:

Max. radiant power: 0.6mW

Wavelength: 655nM

IEC 60825-1 (Ed.2.0).

21CFR 1040.10 and 1040.11 standard.

Restrictions:

AT	BE	BG	HR	CY	CZ	DK
EE	FI	FR	DE	GR	HU	IE
IT	LV	LT	LU	MT	NL	PL
PT	RO	SK	SI	ES	SE	UK

This device is restricted to indoor use where operated in the European Community using frequency in 5150MHz-5350MHz to reduce the potential for interference.

SAR Information

The SAR limit of Europe is 2.0 W/kg. Device types Pyxis has also been tested against this SAR limit. The highest SAR value reported under this standard during product certification for use at the ear is 0.219W/kg and when properly worn on the body is 1.216 W/kg. This device was tested for typical body-worn operations with the back of the handset kept 0.5cm from the body. To maintain compliance with RF exposure requirements, use accessories that maintain a 0.5cm separation distance between the user's body and the back of the handset. 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 RF exposure requirements and should be avoided.

Simplified EU declaration of conformity

Hereby, STAR Systems International Ltd. declares that the radio equipment type Pyxis is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:www.star-int.net

Warranty

WARRANTY

All Hardware Products sold by Star Systems International Limited (SSI) are warranted against defects in material and workmanship under normal use and service for one (1) year from the original date of purchase (the "Warranty"). Any Extended Warranties must be documented on the original invoice as a separate line item. For defects covered by this Warranty, SSI will repair the defect or replace the product, at its sole option and return the product to you.

EXCLUSIONS

If the defect was caused by any of the following, the Warranty shall not apply and an estimate for repair or replacement will be submitted for your approval prior to work being performed: abuse, mishandling, natural disaster, vandalism, accident, electrostatic discharge damage, failure to follow installation or operating instructions, failure to provide a suitable environment, unauthorized modification of the product modification of the printed circuit board by parties other than SSI, and damage that is caused during shipping for warranty service and any product that is returned with the security seal broken.

RMA PROCEDURE

For Warranty service, the Customer must comply with Star Systems International Return Materials Authorization ("RMA") policy, which is published on the Star Systems International website at www.star-int.net and may be updated from time to time. Prior to shipping a product to Star Systems International for warranty inspection, replacement or repair, an RMA number must be obtained from Star Systems International's RMA department at +852 3691 9925 or by email at support@star-int.net. RMA forms can be downloaded from the Star Systems International website or the Customer can receive the form by email by contacting the RMA department. One RMA form must be used for each RMA submission and the product should be shipped to the address below. For products covered by this Warranty, the Customers are responsible for payment of shipping costs to the Star Systems International repair center and Star Systems International will be responsible for the cost of returning the item. The standard return shipment is "Speed Post". Any other desired "expedited" or overnight shipping costs for warranty repairs will be the customer's responsibility.

DISCLAIMER OF WARRANTIES

Other than set forth above, SSI hereby disclaims all warranties, expressed or implied, including without limitation, the warranties of equipment warranty (rev 2-2017) merchantability, fitness for a particular purpose and noninfringement.

LIMITATION OF LIABILITY

In no event will SSI 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's total cumulative, aggregate liability, whether arising out of contract, tort, negligence, strict liability, or otherwise, exceed the price actually paid by the customer for the product from which the claim arises.

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

About Us

STAR Systems International is a market leader providing solutions including RFID transponders, readers and professional consulting services for Auto ID & Vehicle Identification Applications. STAR Systems leverages technical implementation expertise, training and support to ensure customer success. "Your Success Is Our Vision".

STAR Systems International's focus is providing best-in-class technologies for Smart City Initiatives including; Electronic Tolling (ETC), Electronic Vehicle Registration (EVR), Fleet Management, Parking and Secure Access Control applications. STAR Systems International's mission is to enable our partners and users to experience high-performance and reliable integrated solutions which are key elements of any modern Smart City initiatives.

For more information on STAR Systems International, please visit our website www.star-int.net