Atid
All that Identification

AT870A

Guide forcustomer

ATID Co., Ltd

Disclaimer

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Before using manual for AT870A

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There are some differences between user guide and actual function of device.
User guide can be adjusted by ATID CO.LTD without consent of user discretionally.

User guide is written for users who want to use and maintain the AT870A. Please read and understand these instruction prior to operating this unit.

Safety information

Your safety is extremely important. Read and follow all warnings and cautions in this document before you handle and operate ATID equipment. If you do not follow the safety warnings and cautions, you might be seriously injured, and the equipment and data also might be damaged.

■ WARNIING

A warning requires you must pay attention to the operating procedure practice, condition, and statement strictly, or might be injured seriously.

◆ CAUTION

A caution alerts you that you must be observe strictly when you operating procedure, practicing, configuring, for preventing from damage and destruction of equipment, and loss of data.

● NOTICE

A notice provide you the information which you must needs while you using AT870A .

Caution when using AT870A

Please aware of the manual contents in advance before you handle and operate your AT870N and other ATID Products.

How to use the battery correctly

- In case that you dropped the main body or battery in water, please do not put into the stove or heater for drying. Just keep it in natural drying or contact purchase place.
- Please note that the battery terminal doesn't have to be contacted to metallic object.
- If you do not use the battery for a long time, please keep it at room temperature after charging.
- Operating time of battery can be shorter than usual in accordance with loss of battery and use time. In this case, please contact us.
- You have to use provided adaptor when charging the device.
- Turn off the device properly then detach or replace the battery.

Caution when using AT870A

- User careless or products repair would damage the stored data. Manufacturer is not responsible for this damage, so please do back-up the important data separately.
- If you have a problem on product, do not try to repair or disassemble it by yourself, please contact our customer service center.
- Do not use your product at the specific places such as hospital, plane and so on where electromagnetic wave or the risk may occur.
- Please note that using the device in environment of high temperature and humidity for long hours can make a malfunction of device. =
- Please do not use other material instead of provided stylus pen, otherwise it might be damaged or not worked properly.
- Please be careful not to touch the saw tooth of metallic paper cutter at the entrance section of printer in order not to get injured.
- In case of that noise, smoke and odor occur at the device while using product, please disconnect the charger with device and off the power immediately, then please contact our customer service center.
- If you have any other questions on use of device, please contact our customer service center.

Product Composition

AT870A is based upon Android 4.2. As the state of the art product, it is equipped with barcode scanner, RFID Tag reader, MODEM, Camera and so on and it can be applied to Industry, Enterprise, Logistics and so on, can be used extensively in many fields due to this kind of various functions

Product composition

Open the packing box and confirm the items as below.

1. AT870A main

2. Power Adapter and AC cable

3. Standard battery

4. USB sync cable

5. Protect film

6. Hand strap

7. Stylus Pen

* Please contact our customer service in defect of product composition and need to be changed.

Name of each part

Camera (option)

1D/2D Scanner
(option)

EXT connector

Camera flash
(option)

Earphone jack

Charger jack

Sync Cable
Connector

Phone receiver

WLAN LED
(option)

UHF

Charge LED

Touch Screen

Volume button

Scan button

Keypad

Reset button

Microphone

Gun handle
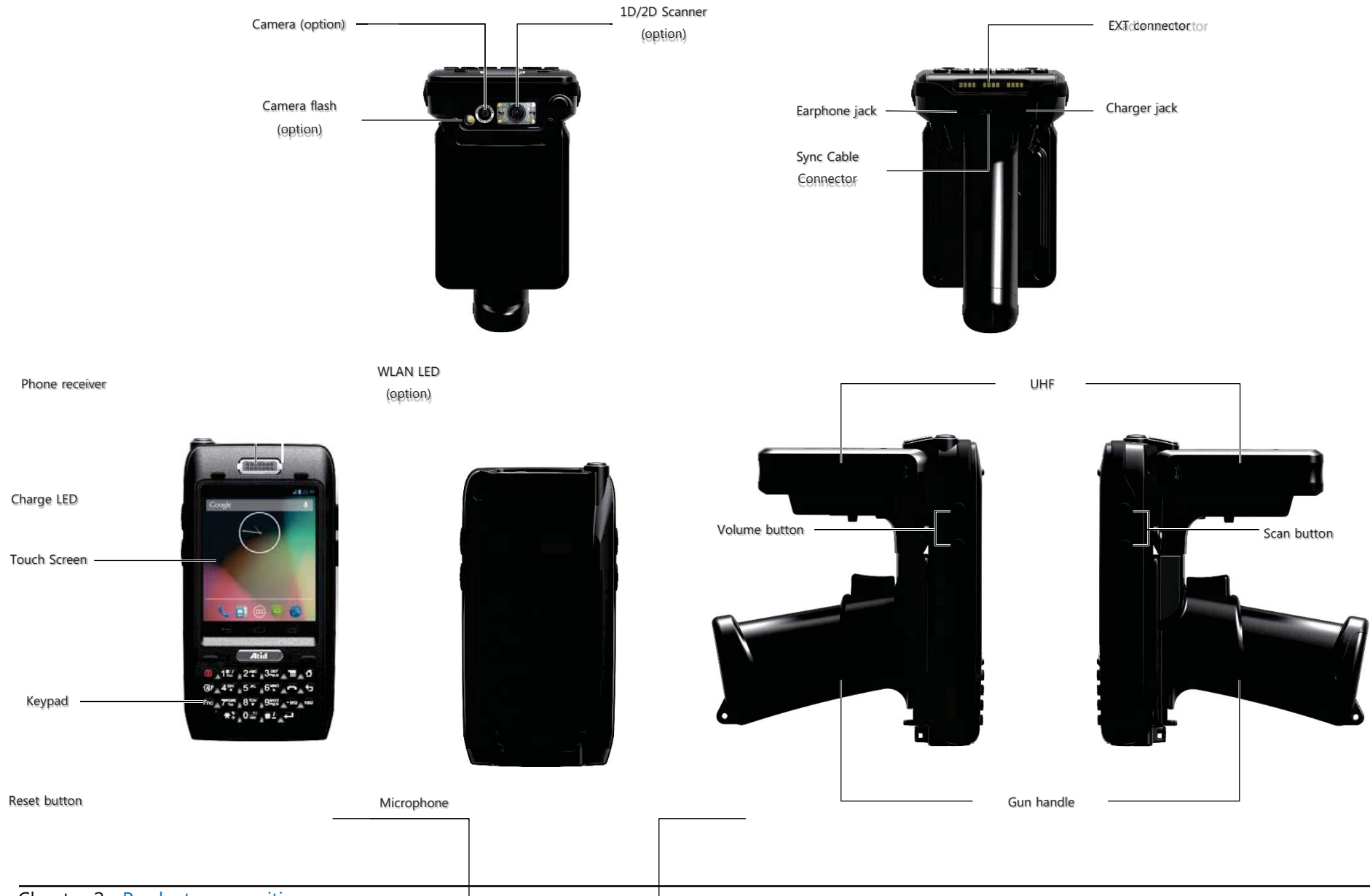
Function of each part

NAME	FUNCTION
1D/2D Scanner (option)	Please be careful not to get the damage or the foreign substances at the Window emitted the laser beam ◆**Warning** Do not look at the laser beam directly.
UHF Connecting port	It is connector to equip the UHF 900Mhz tag reader module.
Reset button	It is used for hard reset.
Microphone	It is used for telephone conversation.
WLAN LED (option)	It displays whether the wireless WLAN power gets supply.
Battery latch	You can attach and detach by moving it from side to side.
battery	It attaches on body for receiving power.
Scan button (F7, F8)	You can scan the barcode or RFID tag by this buttons.
Speaker	It is equipped for playing sound and various sound effects internally.
Sync cable connector	It makes device transmit and receive the data with computer in connection with USB sync cable.
Earphone jack	It is used for connecting the earphone with device.
Charger LED	It will be changed with red color in charging state / with green color in full.
Adapter jack	Please do connect it with provided adapter when charging the device.
Camera flash (option)	It functions in case of using camera.
Camera (option)	It makes image capture and save.
EXT connector	It is used as a port for charging the battery or connecting the body with computer.
Keypad	It makes device implement the program and input the key value by using input key.
Touch screen	You can implement and terminate the program to touch the screen by using stylus pen.
Hand strap hole	Please attach hand strap and stylus pen with device for your convenience when using it for a long time.

Basic function

A battery supplies the power to the system and RAM which could keep the data.

Battery: 3.7V 2,970 mA Lithium – Ion

Attaching and detaching the battery

▶ Battery detachment

These image as below has shown the bottom of device

Please slide the battery latch to the right (Direction to UNLOCK), and then lift the battery to detach the battery after grapping the gap of battery on the bottom.

Battery latch

Both sides of the
gap for detachment

▶ Battery attachment

Please put the top of the battery into the above gap of device and then, push the bottom of battery into the below gap of device and then, slide the lever to right (Direction to LOCK).

Above gap for attachment/
top of battery

Charging battery

You have to charge it through dedicated adapter which is provided when you bought.

Red light is lit on LED when it starts to charge. It will be changed into green light in case of full charging.

▶ Connecting adapter

1. Plug the adapter cable to 220V socket.
2. Connect adapter DC cable with "Power Connecting Jack"
3. LED will be changed when the red light is lit on the LED

◆ Caution:
   You must use provided adapter with device. Otherwise your device might be damaged.

Low power mode (Sleep mode)

In case that there is window screen as below or you don`t use the system in the status of running other program, the device is able to enter the low-power mode (sleep mode).

▶ Setting low power mode (sleep mode) by Power ON/OFF button

Power off (setting sleep mode):
   Press the power button when screen is on, then screen goes off and (sleep mode) will begin.

Power on (releasing sleep mode)
   Press the power button when screen is off, then screen appears and low (sleep mode) will finish.

● NOTE:
   If there was a tiny battery gauge remained despite of power-off, the data of RAM will be saved, and these programs will be recovered in case of power-on. If both battery and backup battery are in the discharge state, the RAM data will disappear, and the system will be re-starting if the power is charged again.

▶ Automatic Power OFF

The device will be automatically entered to low power mode (Sleep mode) if user does not use it for the designated time. User can change the designated time at the control panel and power as below. If user sets proper time-out, the device can be protected from the situation of power-on without user and battery can be prolonged.

[Menu] -> [Application] -> [Settings] -> [Display] –> [Sleep mode]
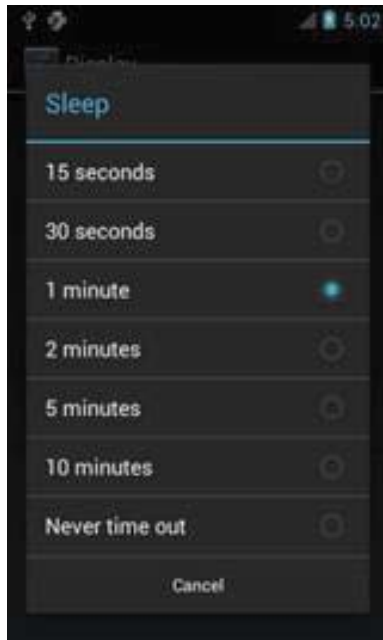
Enters to the Sleep mode by double-clicking Display
Screen appears by pressing power button after Automatic Power OFF.

▶ Turn off the device in case of discharging the battery

If the system cannot be used by electric discharge, it will be automatically entered into low-power mode (sleep mode). In this case, user have to charge the battery or connect the adaptor with the adaptor connecting jack of main body, then press the <Power> button to turn on the system since it won`t be turned on despite of pressing the <POWER> button.
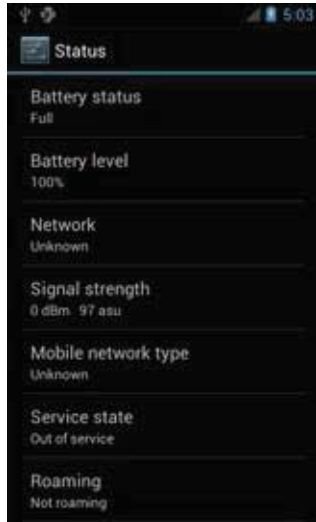
Checking battery gauge

●   NOTE:

    Using time for battery will be influenced by way of use, surrounding environment. In general, you can use the device from 6 hours to 12 hours after 2,970 mA battery is fully charged.

▶ Checking the Gauge Remained

[Menu] -> [Application] -> [Settings] -> [About phone] –> [Status]

▶ Caution for low battery

If the system is unavailable for low-battery, caution screen for lack of battery will be came out. In this situation, please turn off the device by pushing <POWER> button and then charge as soon as possible.

.

Changing the battery

You need to purchase a new battery if existing battery got damaged or reached to its life.

■   CAUTION

    Please discard the expired battery at the designated location.

Please do restart the system when the application doesn`t work properly or system receives no response.

Hard reset

In need of Hard reset

Hard reset which is called cold reset can be used for initializing the hardware completely. Registry value, copied file and installed program can be remained originally even though user uses the hard reset, but please note that time/date will be initialized. Therefore, please do reset the time if user uses the hard rest.

[Process of hard reset]

Please press the power button and reset button with stylus pen simultaneously and then, unhand those buttons.

[Result of Hard Reset]

- Systems will be restarted

- OS will be restarted

Below image shows the back side of device when separating the battery from device
There are 1EA SIM Card Slot, 3EA SAM Card Slot and 1EA Micro SD Card Slot.

Micro SD card slot
· SIM card slot
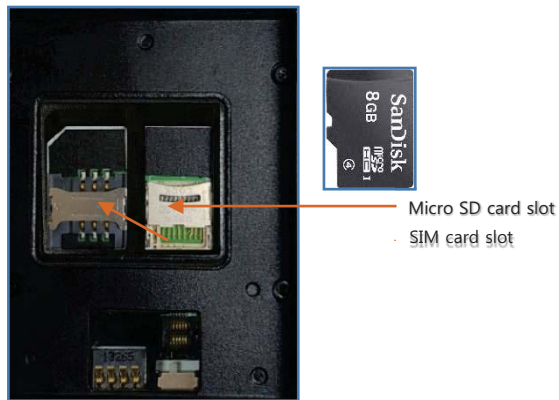
Attaching Micro SD card
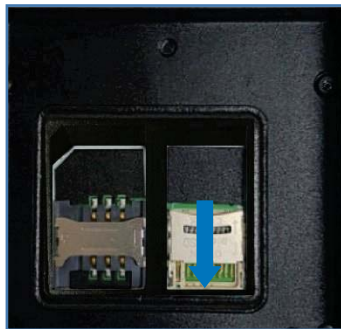
Do unlock the Micro SD card by
sliding the card slot cover right side.

Lift the slot cover.

Put the SD memory on the slot and
then, shut the cover up.
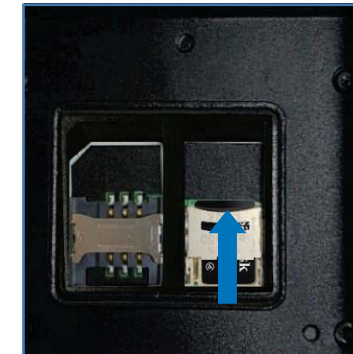
Do lock the slot cover by sliding it to
left side and then, turn on the device
after equipping the battery.

When the SD memory is selected from the File Manager after installing Micro SD memory card, it is shown as below.

Attaching SIM card

Below is the screenshot after installing the SIM card.

Place and insert the SIM card so that it fits the slot shape.

Set screen brightness

Brightness of the screen affects the power consumption the most, so it is recommended to be set as required by the user.

[Setting the screen brightness]

[Menu] -> [Application] -> [Settings] -> [Display] -> [Brightness]

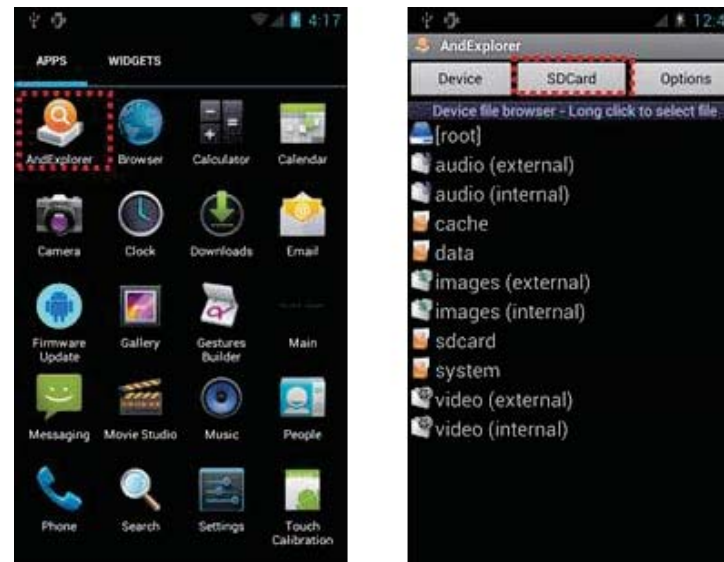Brightness : adjust the screen brightness
Wallpaper : choose the wallpaper
Auto-rotate screen : set the auto-rotate screen function
Sleep mode : adjust the time period to enter into sleep mode
Font size : adjust the font size of PDA

Adjusting screen

After using the device for a while or long time, you may adjust screen through 'Touch Calibration' if not being pressed the right place with one pointed by stylus pen.

Adjusting touch screen

[Menu] -> [Application] -> [Touch Calibration]

Press the middle of target with stylus pen of 5 times.

Set sound volume

The volume is set to 80% when it is dispatched. The user can set the different features of sound settings from [Menu] -> [Application] -> [Settings] -> [Sound].
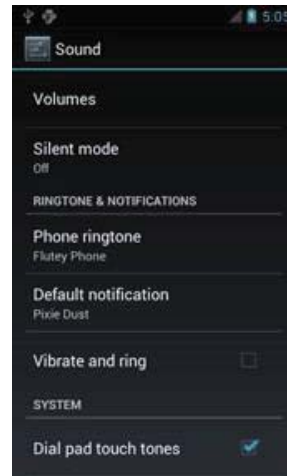
Keypad is an input method editor that inputs numbers or alphabetic characters easily.

Use keypad

To change the current input language, follow the steps below.

[Menu] -> [Application] -> [Settings] -> [Language & input]

Or change the select input method.
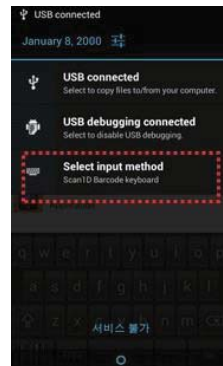
Keypad button execution

Describe the Keypad Function.

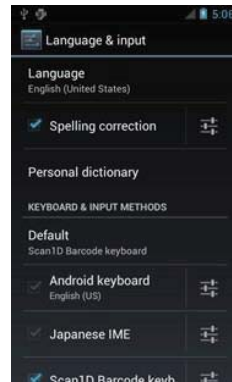| Keypad	Description
power	Enters to sleep mode for short press and Power ON or reboot for long press (2 seconds)
Ξ	Menu Key (Android. view. Menu) can be used by importing
home	Move to home button
back	Use for going back to previous state
call	Move to call section
sidekey - right	Control volume, has a value of KEYCODE_SOFT_RIGHT and KEYCODE_SOFT_LEFT key event
sidekey - left	
BKS	erase one letter
KDB	Shows SW keyboard screen
alphabet/numberic	Description
1 <-> ALP	Switch number to alphabet and alphabet to number
numberic	Type numbers
alphabet	Type alphabet and symbols
FNC + button	Description
ESC	Cancel the selected order, program action and status
3, 9	Page UP/DOWN key
2,4,6,8	UP, DOWN, LEFT, RIGHT sdie key
7	Tap key
*, 0, #	+, 000, - key

Use of Stylus

User is able to use stylus pen that has same function with computer mouse and it can be used in connection with hand strap hole located on back bottom side of PDA.

Use of Stylus
- Setting Direction of Screen Display.
- Selection of letter on the soft keypad.
- Selection of button, field and tap at the applied program and dialog box.

◆ **CAUTION:**
There is a danger of getting damaged if you use any other sharp objects except for provided stylus pen since it is very sensitive one

Installing, copying, moving, deleting programs is available by connecting computer and device for synchronization.

Connecting PC and device

Install the program below, then connect the device

Name : PdaNetA325x64.exe(for Win7)

Link : http://download.cnet.com/PdaNet-for-Android-64-bit-Windows-Installer/3001-2155_4-75167583.html?spi=b919c0d7061a55cea7228ccdad091cec

Firmware upgrading

Run the application, Update for upgrading AT870A.

For firmware image update, please contact the manufacturer or supplier for instructions.

Use of optional module

This chapter describes various option modules which use with AT911N. Please refer to description on necessary option modules and use them.

Option module for AT870A

According to the purpose of use, AT870A device provides the options as below. User has to check below option modules before buying the device since its specifications are outside of basic AT870A.

Various optional modules for AT870A

1) Barcode scanner
   -. 1D Laser Barcode Scanner
   -. 2D Imager Barcode Scanner
2) Wireless LAN – 801.11 a/ b/g/n
3) Bluetooth
4) UHF 900MHz RFID – Gen 2 Full Function
                ISO18000 6C (Only Tag UID Reader)
5) GPS Module
6) Phone
7) Camera

The barcode scanner which can recognize 1D, 2D barcode can be installed on this device.

Read 1D or 2D barcode

[Menu] -> [Application] -> [ATID Barcode]

ATID Barcode demo

Setting barcode emulator

Can input the read barcode values (Notes, Internet Explorer…) where the cursors are located.

Sets the barcode value input method, scan button, scan sound etc. using Barcode Emulator program.

When opening the Barcode Emulator, if other Barcode programs are being run, please close the program first to run the Barcode Emulator.

[Menu] -> [Application] -> [Settings] -> [Language & input]
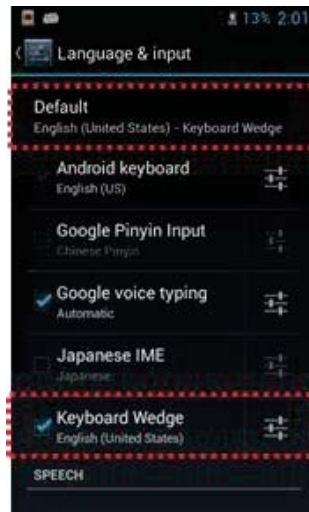
1) Emulator execution

Cursor is on the screen and user can use this program when barcode soft keyboard is created.

Read barcode value by using SCAN Key and Side key.

Barcode scanning

1. Remove protection film on barcode scanner
2. Run the scanning application
3. Place beam in the middle of the barcode to read
   - Adjust distance fits to the barcode
   - Scanning stops automatically after 5 seconds from getting out of readable distance

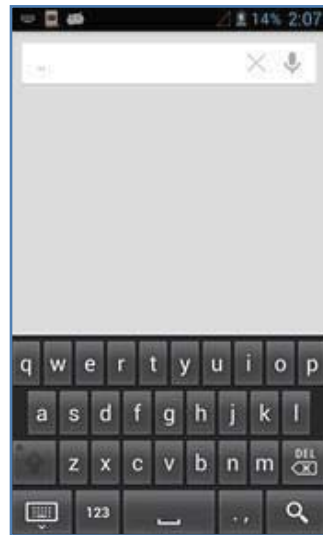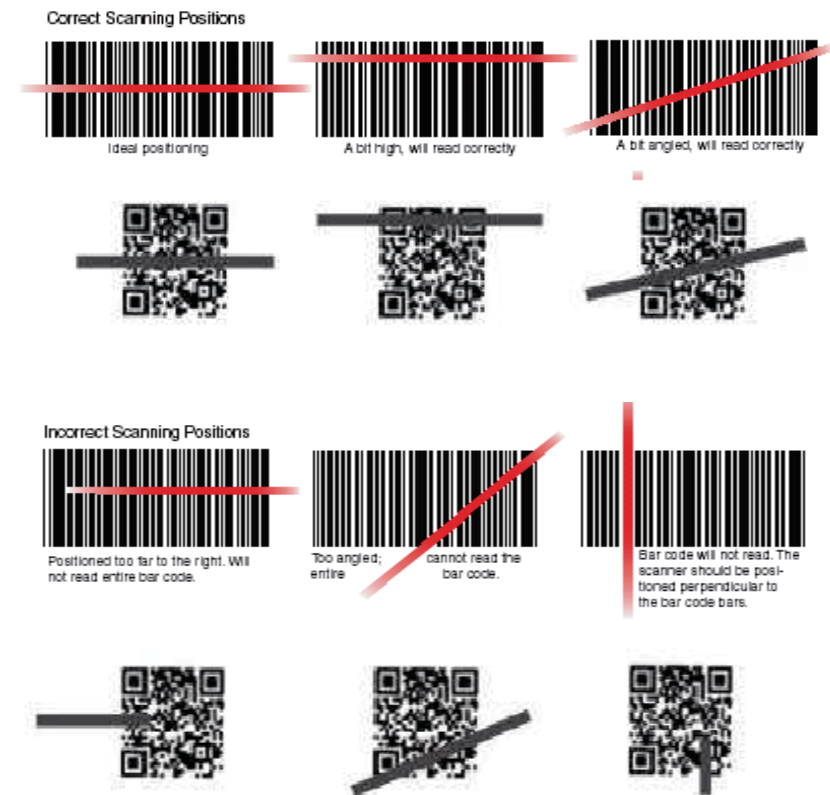[Correct barcode reading]

1. The small barcode should be closer to the device. This device is read at the distances of 40~300mm. If the reading not working well, please adjust angle or distance.
2. Laser beam appears as a dark red line when shined to barcode label.

Correct Scanning Positions

Ideal positioning | A bit high, will read correctly | A bit angled, will read correctly

Incorrect Scanning Positions

Positioned too far to the right. Will not read entire bar code. | Too angled; cannot read the entire bar code. | Bar code will not read. The scanner should be positioned perpendicular to the bar code bars.

[Incorrect barcode reading]

1. Laser beam should cross the barcode.
2. If only part of the barcode is shined by the laser beam, it won't be recognized.

Chapter 4. Optional module

AT870A enable to explain wireless communication including APN since it can communicate through 802.11 a/b/g/n radio. AT870A supports the TCP/IP network protocol and AT870A directly uses the TCP/IP and host computer at this protocol.

WiFi connection and termination

[Menu] -> [Application] -> [Settings] -> [Wi-Fi]

This document consist of contents applied of 'BCM4329 COMBO' module in AT870A.

Bluetooth connection and termination

[Menu] -> [Application] -> [Settings] -> [Bluetooth]

1. Bluetooth
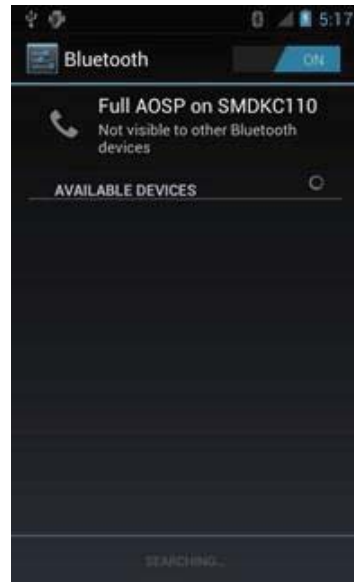
AT870A can install the GPS system as an option, and GPS Module will be installed on top of AT870A into Built-in shape

GPS demo program execution

[Menu] -> [Application] -> [GPS Test]

GPS Test Execution

GPS Test Screen

Confirm GPS reception Data:
1. **Check if GPS reception is normally worked in the open place**
2. **Actual GPS Data can be different with surrounding environment (Around 3 ~ 10 Minutes)**
   Device can receive the GPS Data easily, after its GPS data is the one that was received in the past

AT870A is installed with 5.0 mega pixel and brightness, resolution revision, screen capture and so on can be adjusted by user.

Use of camera
[Menu] -> [Application] -> [Camera]

Camera execution.

Camera screen

UHF 900Mhz RFID program

[Menu] -> [Application] -> [Settings] -> [ATUHF Demo]

ATUHF Demo execution

ATUHF Demo screen

Appendix

Specifications

Physical Characteristic and Operating Environment	
Appearance	148mm(L)X76mm(W)X26(30.5)mm(H)
Weight	250g(without Battery)
Operating Temperature	-10℃ ~ 60℃
Storage Temperature	-30℃ ~ 70℃
Humidity	5% to 95% Non-condensing
Drop	1.5m drop to concrete
Product Specification	
Process	Dual-Core 1.0GHz
Operating System	Android 4.2 (Jelly Bean)
Memory	ROM 8GB / RAM 1GB
Display	3.5" VGA with Backlight, TFT LCD, 480*640 Pixel, 262K Color
	Capacitive Touch Screen
Audio	Speaker, Earphone Jack, Microphone
Communication Port	USB 2.0 high speed host/client & serial (RS-232) via gender cable
Expansion Slot	User accessible Micro SDHC card slot (up to 32GB)
Keypad	alpha/numeric keypad
Notification	LED, Vibrator and Mono speaker

Power System	
Battery	Lithium ion 3.7V Above 2,970mAH(rechargeable)
Power Adapter	Input AC100~240V
	Output DC5V 3A
Network Characteristic	
WAN	GSM/GPRS/EDGE/WCDMA/HSPA+
LAN	IEEE 802.11 a/b/g/n* Compliant
PAN	Bluetooth 2.1 +EDR
GPS	GPS + Glonass with internal Antenna
Antenna	Embedded LAN & WAN & PAN
Data Collection Processor	
Scanner	1D Laser, 2D Imager Scanner
Camera	5.0M Pixel & LED Flash
UHF 900MHz Tag Reader	
Frequency	CE 865MHz ~ 868MHz FCC 902MHz ~ 928MHz
Reading Range	0m ~ 5m (According to Tag & Environment)
Writing Range	0m ~ 0.5m (According to Tag & Environment)
Antenna Gain	2dbi(Standard)
Speed(bps)	62.5 kbps
RF Output	1W (MAX)
Protocol	EPC Gen2 ISO 18000 6C
Multi Reading	Anti-collision

FCC RF Exposure Information and Statement

This device meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. The SAR limit of USA (FCC) is 1.6 W/kg averaged. Device types: Industrial PDA (FCC ID: VUJAT870A) has also been tested against this SAR limit. SAR information on this and other pad can be viewed on‑line at http://www.fcc.gov/oet/ea/fccid/. Please use the device FCC ID number for search. This device was tested simulation typical 20mm to body for RFID mode, and 0 mm for other mode. To maintain compliance with FCC RF exposure requirements, use accessories should maintain a separation distance between the user's bodies mentioned above.

FCC Warning

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 1: 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.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.