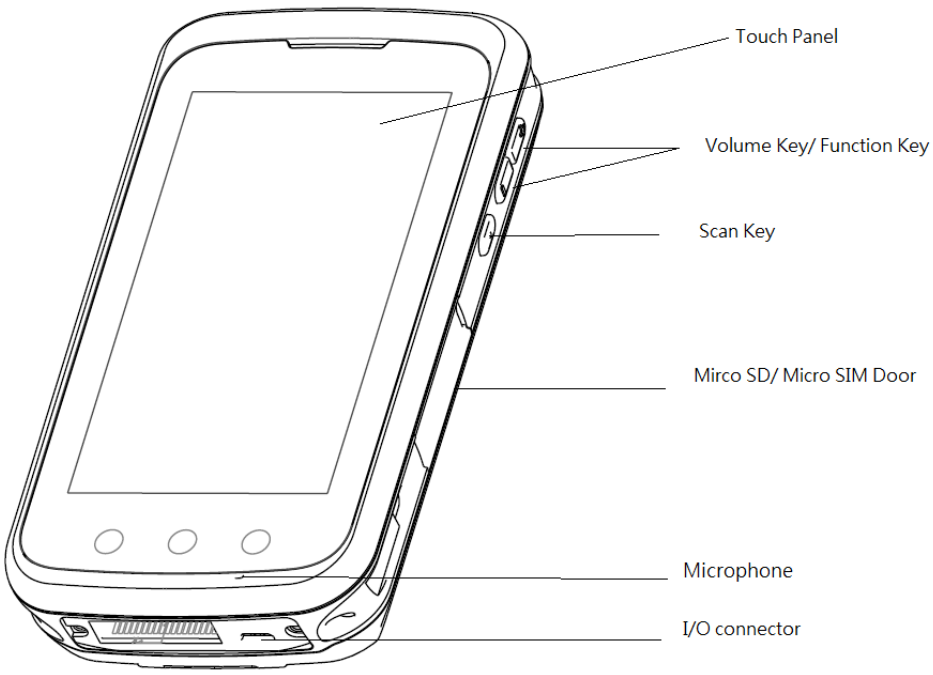
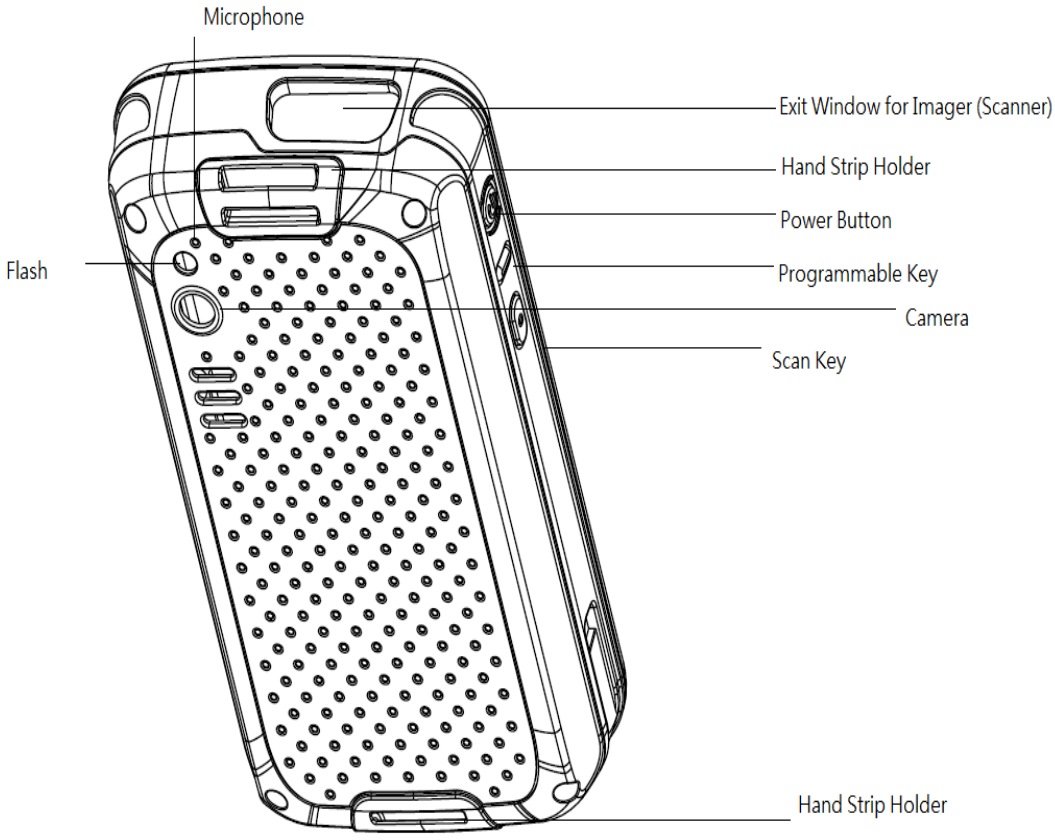
TN450A1

QUICK START & REGULATORY GUIDE

TURBONET

Product Features:





Product Specification:

Item	Description
System	
Processor	Qualcomm MSM8960 Dual Core 1.5GHz
Android OS	Android Jeally Bean 4.2.2
Memory	1GB LPDDR2 SDRAM
Storage	Internal 8GB eMMC Flash
(To be continued)	
Display, Camera and Scaning	
Display	Size: 4.5" Resolution: WVGA 720(W)*1280(H) Display Type: TFT, Transmissive Contrast ratio: 900 (Typ) Brightness: 400 nits (Typ) Backlight Type: LED Viewing Angle: 80/80/80/80 (typ), Full viewing (IPS)
Touch Panel	Capacitive Type, 5-point multiple touch, OGS Glass: Dragontail, Anti-explosion, Wet Finger touch, Strengthen Glass
Scanner	**Opticon MDI-3100-SR** 1D/2D Barcode Hardware decode, CMOS sensor (black and white) Light source: Red*2 (auxiliary), Green*1 (aiming) Effective pixel 752(H)x 480(V) dot Aiming distance: L=110+/-20mm(from front edge of camera module) Image capture speed: 60 fps Supported barcode types: UPC-A/E/E1/addon 2/5, EAN-13/addon 2/5, EAN-8/addon 2/5, Code 39, Tri-optic, Codebar, Industrial 2 of 5, Interleaved 2 to 5, S-code, Matrix 2 of 5, Chinese Post Matrix 2 of 5, Korean Postal Authority, Intelligent Mail, POSTNET, Japanese Postal, IATA, MSI/Plessey, Telepen, UK/ Plessey, Code 128/GSI 128, CODE 93, CODE 11, GS1 Databar, GS1 Databar Limited, GS1

	Databar Expanded, Codeablock F, DataMatrix ECC200, DataMatrix ECC000-140, Aztec Code, Aztec Runes, Chinese Sensible Code, QR Code, Micro QR Code, Maxi Code, PDF 417, Micro PDF417, GS1 DataBar Composite, UPC/EAN Composite.
Front Camera	No
Rear Camera	Sensor OmniVision MT9E013 Resolution: 8MP (3264H*2448V) Angle of view: 74.5°C Auto-Focus Type: VCM(Voice Coil Motor) Focus Range: 10cm~ Infinity Automatic Mode : AEC (Auto exposure Control), AGC (Auto Gain Control), AWB (Auto White Balance),
Communication and WLAN network	
Radio	Support Voice Call - LTE 3/7/8/20 (1800/2600/900/800MHz) - UMTS 1/3/5/8 (2100/1800/850/900MHz) - GSM 850/900/1800/1900
GPS	Qualcomm GPS One Gen8, AGPS, Glonass
Bluetooth	4.0 Class II EDR Profile: PAN, HSP, HID, FTP, DUN, A2DP, AVRCP and OPP profiles
WLAN	802.11 a/b/g/n Dual Band (2.4G/5G), Wi-Fi direct, Wi-Fi hotspot (2.4G)
NFC (Optional)	NXP PN547 NFC detect range: 0~4cm Card type: ISO/ICE 14443A/MIFARE; Jewel/Topaz tags; FeliCa cards; ISO/IEC 14443B; ISO/IEC 15693/ICODE
Power	
Battery Capacity	3450 mAh (3.7V)
Battery removable	Non-removable
Battery Charging Time	4.5 hours

Battery Life	10 hours[1]
Reset Function	Physical key under micro SD door
Charging method	(1) AC adaptor charging (via micro USB) (2) docking station charging (no sleeve charging) (3) battery cartridge
Wireless charger (Optional)	Qi (WPC V1.1) Compliant Power Supply
RTC	Yes
Peripheral	
Sensors	3-axis accelerometer Proximity sensor Ambient light sensor Magnetometer Gyroscope GPS
Indicator	2pcs (Indication of battery full, low battery, charging(including wireless charging) and BT)
Receiver	1pcs
Audio Jack	N/A
Vibrater	1pcs
Speaker	1pcs
Microphone	2pcs
I/O	
Extension port	On main board (internal). Please see pin define in Appendix 1 (P.13)
Micro USB	1pcs, OTG, software upgrade, battery charging
SD Card	Micro SD (SDHC can support up to 64GB)
SIM card	Micro Dual SIM sockets
Buttons	Power*1 Volume (up and down) Programmable key*3pcs (original scan key*2pcs, original P key*1pcs)

[1] Conditional and vary depending on different user scenario.

Mechanical and Environment	
Dimension	L 149.87 x W 80.24 x T 30.61 mm
Weight	345g
Ingress Protection	IP65
Drop	1.5M on poly wood, 6 drops
ESD	Air: ±8KV Contact: ±4KV
Operating Temperature (include LCM and battery)	0°C~ 45°C battery in charging mode -20°C+60°C battery in discharging mode
Storage Temperature	-20~+60°C
Accessories (in package)	
Adaptor Jack	1pcs, 5.35V/2A
Micro USB to USB Cable	1pcs, 100cm
Hand strap	1pcs

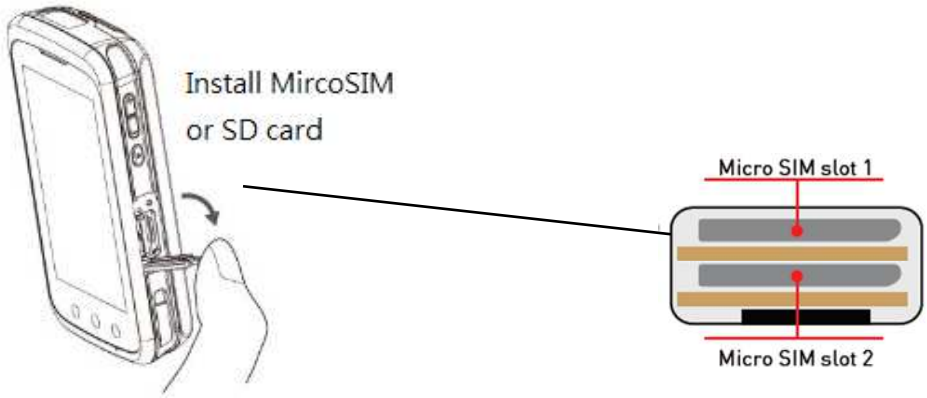
Micro SD / MicroSIM Card Installation

Open MicroSD/MicroSIM door, insert the Micro SD into slot.

Insert Micro SIM into SIM slot.

(**Note:** SIM 1 is set as default network connection; SIM switch: Go to “Settings” in Android system→ “SIM SWITCH”→ “Choose SIM”→ “SIM 2”)

Close the door after installation.

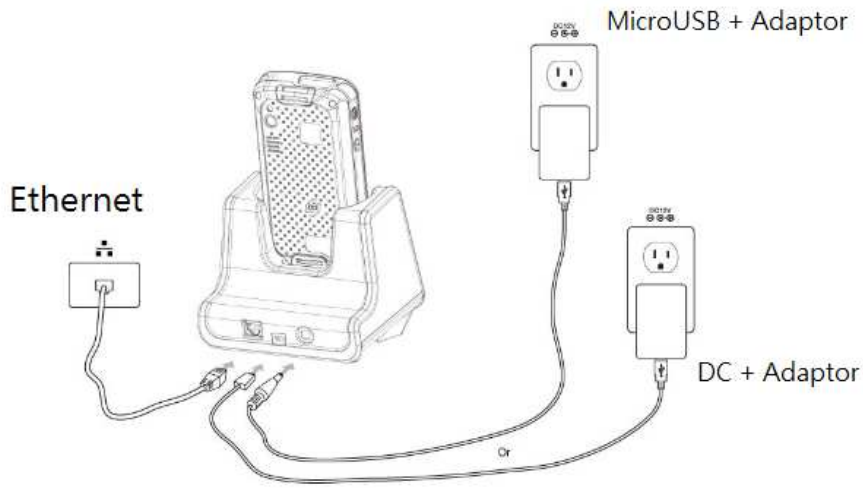


Getting Started

- Charge the battery

  Before using the TN450A1, charge the battery using one of the following accessories approved by TURBONET :

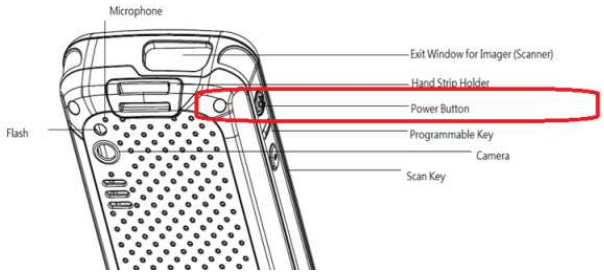
  - Micro USB cable through PC
  - Micro USB cable + Power Adaptor Jack
  - Cradle Charging + DC Power Cable + Power Adaptor Jack



Left LED blinks in red indicating low and risk battery and stating red indicating that the battery is charging. the LED becomes green when battery is fully charged, then.

- Power On TN450A1

  Press and release the power button



Note:

Device turns to the modes as below by pressing power button key.

Suspend Mode

Press and release the power button to place the TN450A1 in suspend mode. In suspend mode the device turns off the display and goes into a low power state to conserve battery power.

Power Off

To Power off the TN450A1, press and hold the button until the device option dialog box appears, choose "**Power off**". When the Power off dialog box appears, tap "**OK".**

Reset

Reset the TN450A1 if application stop responding. Press and hold the power button until the device options dialog box appears then touch Reset.

Hardware Reset

If the TN450A1 stop responding, perform a hardware reset by long press power button.

Data Capture

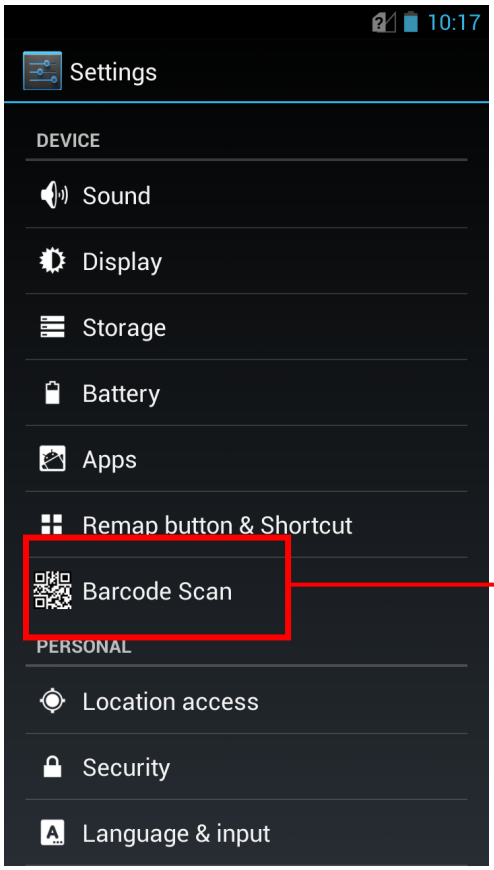
- Scan a Bar Code with Imager

1. Switch on the barcode

   Go to "**Settings**"→ find Barcode Scan→ Slide Barcode Scan to "**ON**"

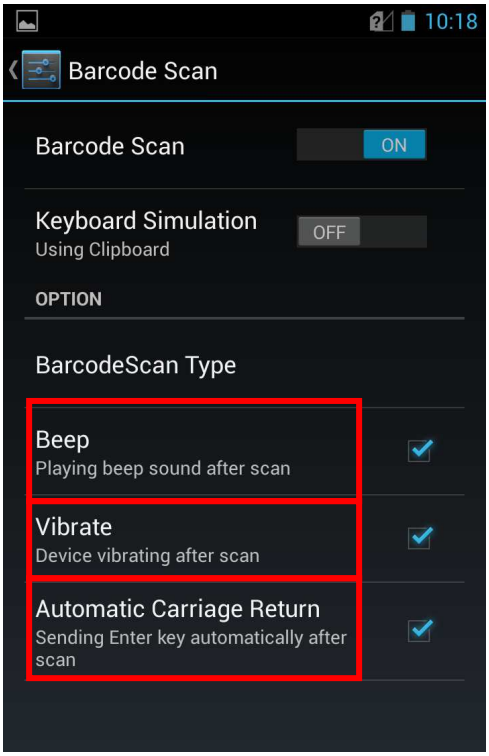
Setting

- Go to “**BarcodeScan**” Type: To choose Barcode type

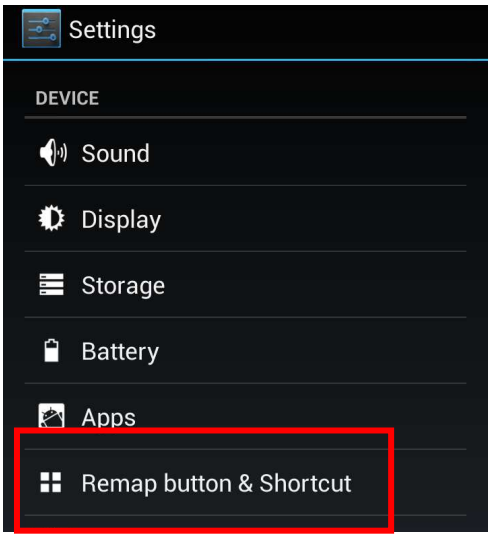


Barcode Scan

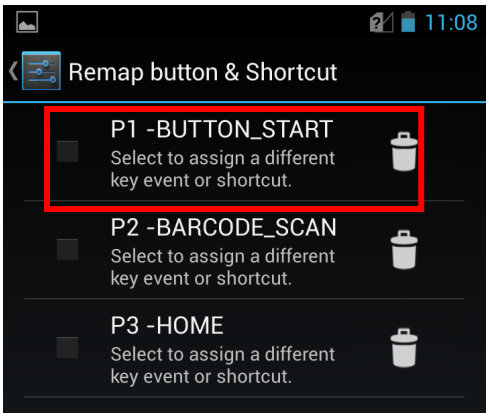
- Select “ **Beep**”: To have beep sound after scan
- Select” **Vibrate**”: Need device vibration after scan
- Select” **Automatic Carriage Return**”→ Require to send enter key automatically after scan



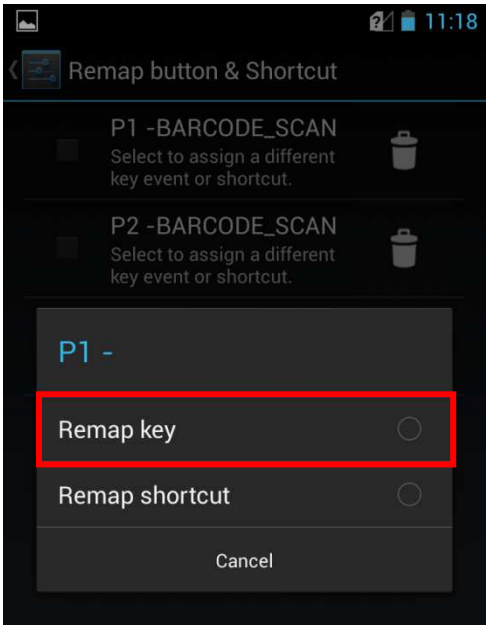
2. Launch a bar code reading application or use Data Wedge.
3. Point the exit window at the bar code
4. Press and hold the two side Scan button
   Left/Right Side Key Set-up:
   Go to “**Settings**”→ Select “**Remap button & Shortcut**”



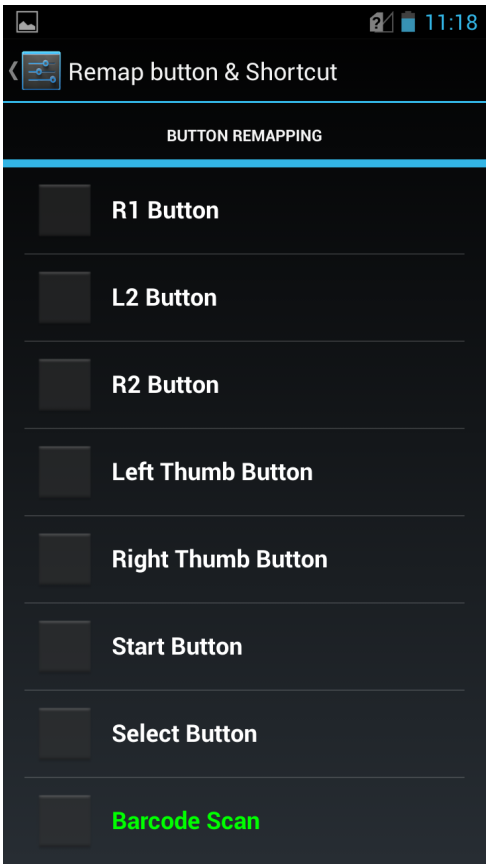
Select “**P1”**



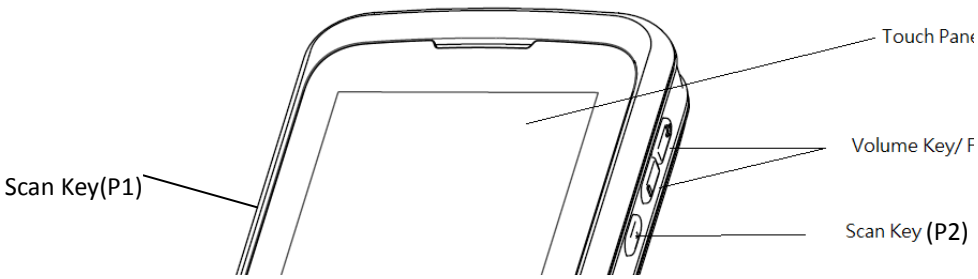
Select Remap Key→



Choose “**Barcode Scan**”



Select “**P2”**→Remap Key→ choose “Barcode Scan”



5. The red laser aiming pattern turn on to assist in aiming , scan ready when beep sounds.
6. Release the scan button.

- Scan a Bar Code with Camera

Using the rear camera to scan bar code.

1. Launch a bar code reading application or use Data Wedge.
2. Point the back of the TN450A1 at the bar code.
3. Press the scan button

Photo & Videos

Using the rear camera to take photos and capture video.

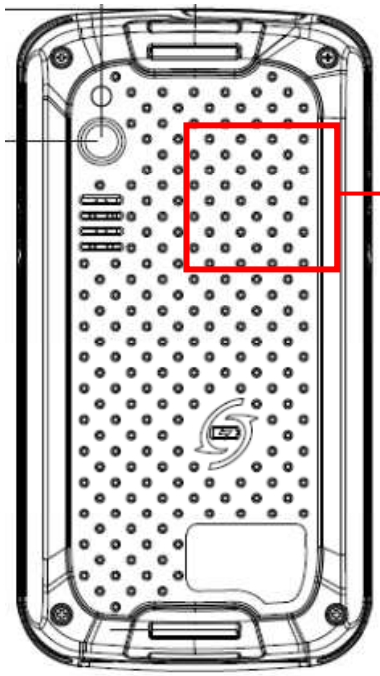
Note: Ensure device memory or extend Micro SD card is space is available.

GPS Information

- Acquiring satellite signals may take a few minutes.
- Without a clear view, acquisition takes longer and possible unable to catch the position quickly.
- Turn off GPS application if no use.

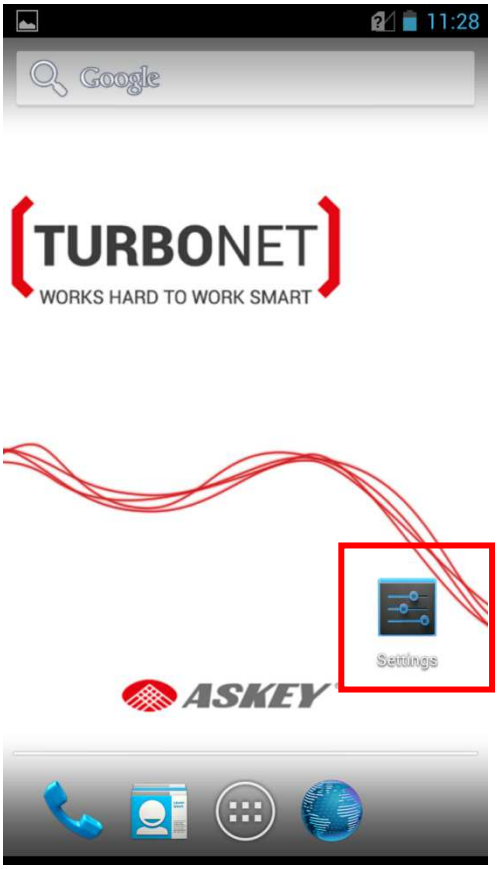
Near Field Communication (NFC) Feature

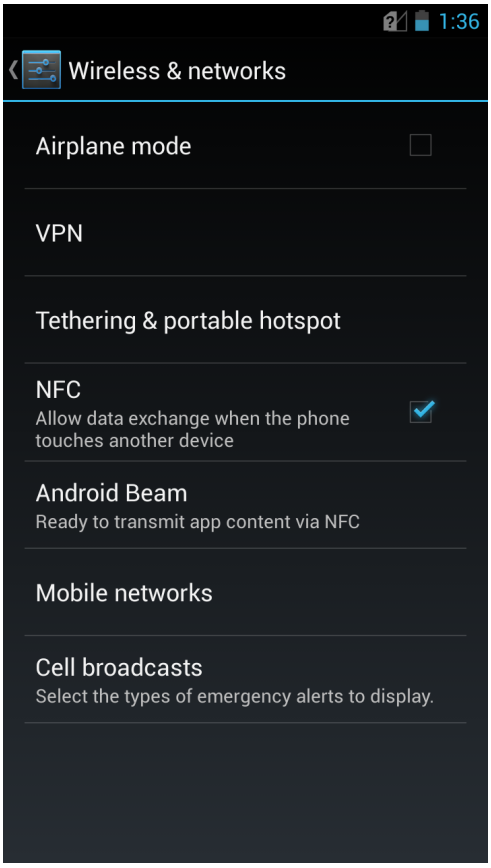
Allow Data exchange in short-range (less than 4cm) when the phone touches another device. The NFC areas, being of both a phone and other NFC compatible device (ex: tags, reader, phones and so on.), should be close to one another for communication.



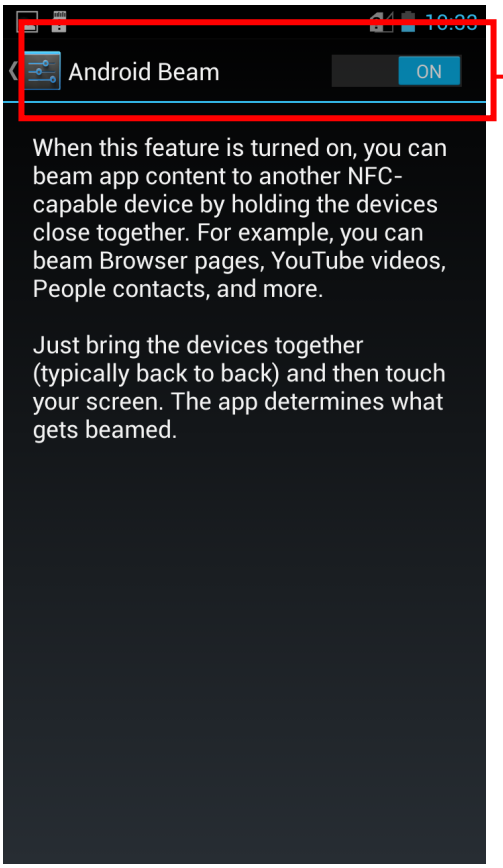
- Enable NFC Feature

Go to “**Settings**”→ Tick “**NFC**”





- Enable Android Beam



Slide to “ON”

Regulatory Information

- Caution: Only use TURBONET approved accessories.

Wireless Device Country Approval

Regulatory markings, subject to certification, are applied to the device signifying the radio(s) are approved for use in the European countries under CE coverage.
For 2.4GHz or 5GHz products : Europe includes Austria, Belgium, Bulgaria, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherland, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Caution: Operation of the device without regulatory approval is illegal.

Country Roaming
This device incorporates the international roaming feature which will ensure the product operates on the correct channels for the particular country of use.

Ad-Hoc Operation (5GHz Band)
Ad-Hoc operation is limited to Channels 36- 48 (5150 – 5250 MHz) . Use of this band is restricted to indoor use only, any other use will make the operation of this device illegal.

Federal Communication Commission Interference Statement

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.

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 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.

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Please delete this sentence after 6/2, 2014, if EUT follow NEW U-NII rule.
Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 10cm between the radiator & your body.

FOR COUNTRY CODE SELECTION USAGE (WLAN DEVICES)

Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in US must fixed to US operation channels only.

Warnings of Use Wireless Devices

Please observe warning notices with regard to the usage of wireless devices.

Potentially Hazardous Atmospheres – Vehicles Use

You are reminded of the need to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or

particles (such as grain, dust, or metal powders) and any other area where you would normally be advised to turn off your vehicle engine.

Safety in Aircraft

Turn off your wireless device whenever you are instructed to do so by airport or airline staff.

Safety in Hospitals

Wireless devices transmit radio frequency energy and may affect medical electrical equipment. Wireless devices should be switched off whenever you are requested to do so in hospitals, clinics or healthcare facilities. These requests are designed to prevent possible interference with sensitive medical equipment.

Safety Information – Europe

This device was tested for typical body-worn operation. Use only TURBONET tested and approved accessories to ensure EU compliance.

Laser Devices

Class 2 laser scanners use a lower power, visible light diode. As with any very bright light source, such as the sun , the user should avoid staring directly into the light beam. Momentary exposure to a class 2 laser is not known to be harmful.
Caution: Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Power Adaptor

- Use only a TN450A1 approved Power Adaptor with electrical ratings : Output 5VDC, min 2A, with a maximum ambient temperature of at least 45℃ .
- Use of alternative power adaptor will invalidate any approvals given to this device and maybe dangerous.

Battery Information

Use only a TURBONET approved batteries.
When batteries are stores over six (6) months, some irreversible deterioration in overall battery quality may occur. Store batteries at half of full charge in a dry, cool place, removed from the equipment to prevent loss of capacity , rusting of metallic parts and electrolyte leakage. When storing batteries for one year or longer, the charge level should be verified at least once a year and charged to half of full charge.

Batty Safety

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken where the device is charged in a non -commercial environment.
- Follow battery usage, storage, and charging guidelines found in the user guide.
- Improper battery use may result in a fire, explosion, or other hazard.
- To charge the device battery, the battery and charger temperature must be between 0℃~+50℃
- Do not use incompatible batteries and chargers. Use of an incompatible battery or charger may present a risk of fire, explosion, leakage, or the hazard.
- Do not disassemble or open, crush, bend or deform, puncture, or shred.
- Severe impact from dropping any battery-operated device on a hard surface could cause the battery to overheat.
- Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.
- Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.
- Do not leave or store the equipment in or near areas that might get very hot, such as in a parked vehicle or near a radiator or other heat source. Do not place battery into a microwave oven or dryer.
- Battery usage by children should be supervised.
- Please follow local regulations to promptly dispose of used re-chargeable batteries.
- Do not dispose of batteries in fire.
- Seek medical advice immediately if a battery has been swallowed. In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with large amounts of water and seek medical advice.

Marking and European Economic Area (EEA)

Frequency of Operation

The use of 2.4 GHz RLAN's, for use through the EEA, have the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400 - 2.4835 GHz
- France, outside usage is restricted to 2.4 - 2.454 GHz.

- Italy requires a user license for outside usage. Bluetooth® Wireless Technology for use through the EEA has the following restrictions:
- Maximum radiated transmit power of 100mW EIRP in the frequency range 2.400 -2.4835 GHz
- France, outside usage is restricted to 10mW EIRP
- Italy requires a user license for outside usage.