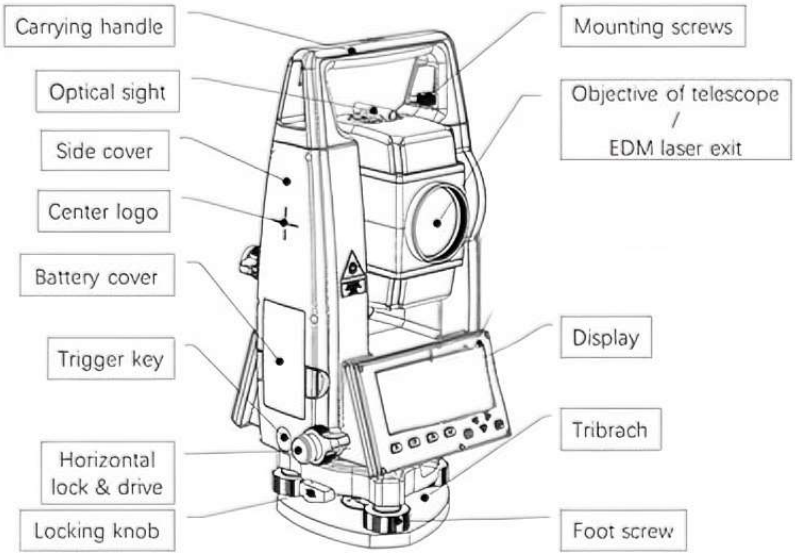
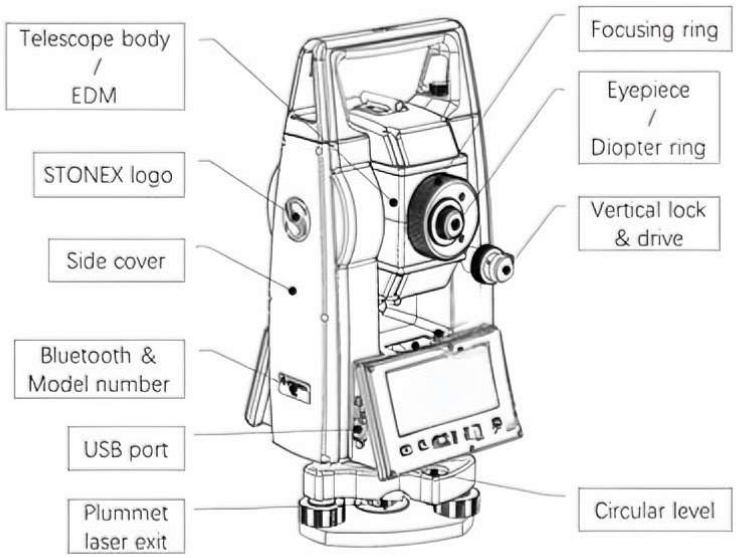
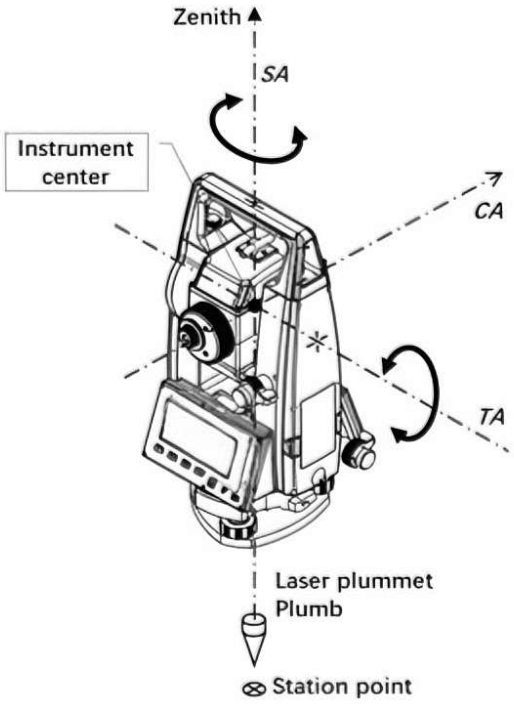
R40 User Manual

- **Nomenclature**







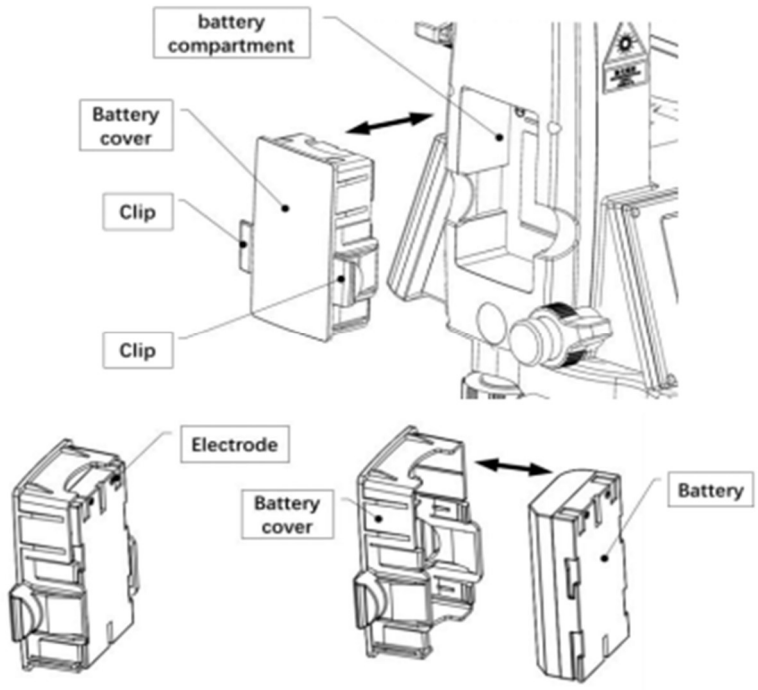
Technical terms/ Abbreviations	**Descripition**
Telescope	Dptical telescope for observation and aiming, also the collimated part of the Electronic Distance Meter(EDM).
Collimation Axis/CA	Line from the reticle to the centre of the objective, as well as telescope axis and EDM laser axis.
Standing Axis / SA	Vertical rotation axis of the instrument.
Tilting Axis / TA	Horizontal rotation axis of the telescope.
Instrument Center (Zero Point)	The intersecting point of CA, SA and TA, as well as the zero point of EDM.
Zenith	The top point of the direction which gravity is through the Instrument Center, aswell as Plumb Line and plummet laser axis.
Zenith Angle / ZA	The angle between CA and Zenith.
Vertical Angle / VA	The angle between CA and horizontal line.

Kit components

Open the transport case, remove instrument and check for completeness:

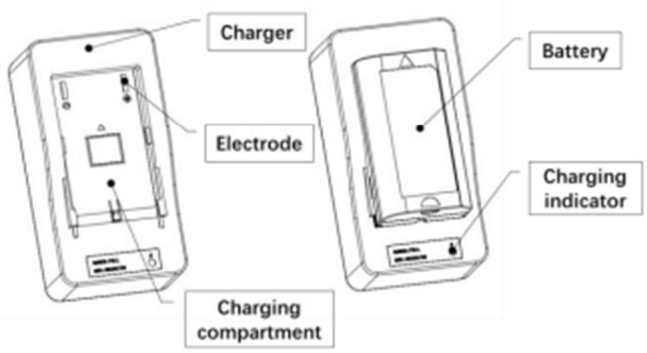
1. Total station
2. Tribrach
3. Battery charger (LC-001)
4. Cable of the charger
5. Battery (LB-001) × 2
6. Objective lens hood
7. Tape
8. Carrying strap x2
9. Rain cover
10. Reflective tape/RP30 × 4
11. Reflective tape/RP60
12. Tools kit
13. USB stick with user manual
14. Silica gel
15. Certification

Battery and Charger



1. With the power off, pinch the clips on either side of the battery cover inward with your thumb and forefinger to unlock it, then gently pull the battery cover outward.
2. Remove the battery from the battery cover.
3. Make sure the battery electrodes are facing outwards and the electrodes are on top and place the new battery into the battery cover. You will hear a clicking sound when the battery is fully inserted.
4. Make sure that the battery is facing inward, and the electrodes are on top, gently push the battery cover inside the battery compartment of the side cover, and hear a click sound to indicate that the placement is in place, at this time the battery cover should be flush with the side cover.

NOTE: Please use the charger and battery from STONEX. Store, use and charge at the specified temperature conditions, taking care to avoid contact with liquids.



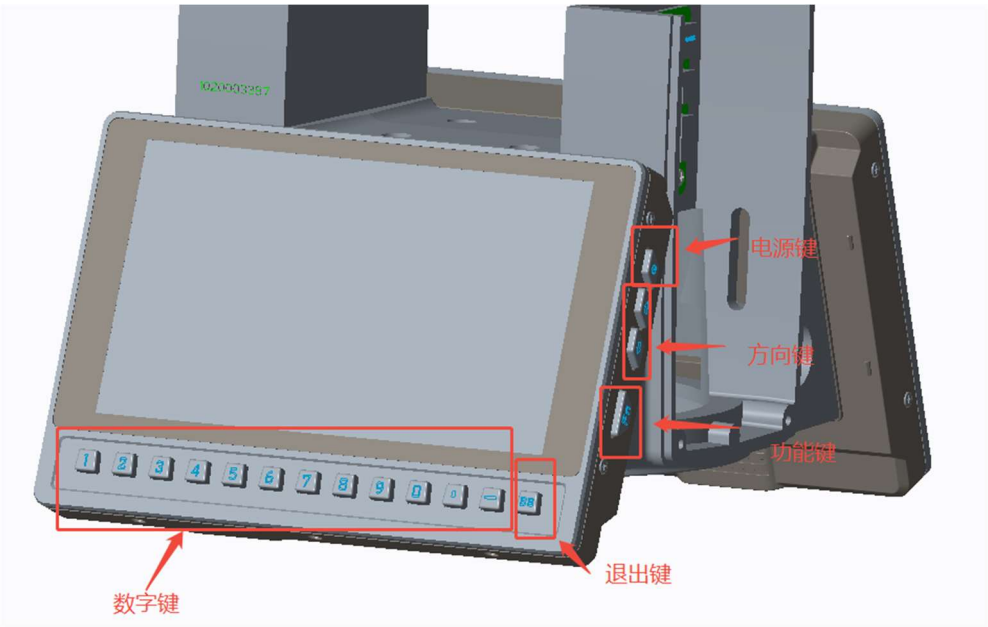
Charging

1. Remove the charger and cable from the transport case, insert the C8 plug into the charger's corresponding socket for proper connection.
2. Insert the plug of other end properly into a qualified socket with 220V AC, at this time the charging indicator will show green, waiting for charging.
3. With the battery electrodes facing down, push the arrow forward to align with the charger compartment until the battery is stable and settled.
4. If the battery is not fully charged, the charger will begin charging the battery and the charger indicator will now appear red and will turn green again when the battery charge is complete.
5. When charging is complete, pull the battery back to remove it, and then you can install it or use it as a backup battery.

NOTE: Batteries must be charged before first use. For new batteries or batteries that have been stored for a long time (e.g. more than 3 months), a complete charge/discharge

operation can effectively improve battery performance.
It is normal for the temperature of the battery and charger to rise during the charging process. If the temperature is too high, the charger will automatically suspend charging the battery.
Battery operating temperature range: -10℃ to +50℃. Low temperature will shorten the operating time of the battery, and too high temperature will shorten the life of the battery.
Remove the battery and unplug the charger after each battery charge. Keep the battery and charger in a safe place.

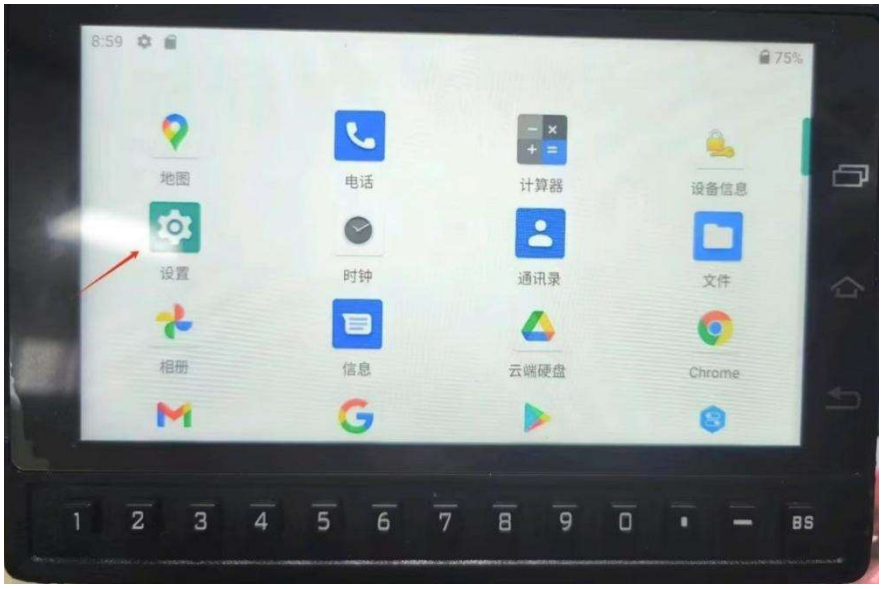
● Screen Description



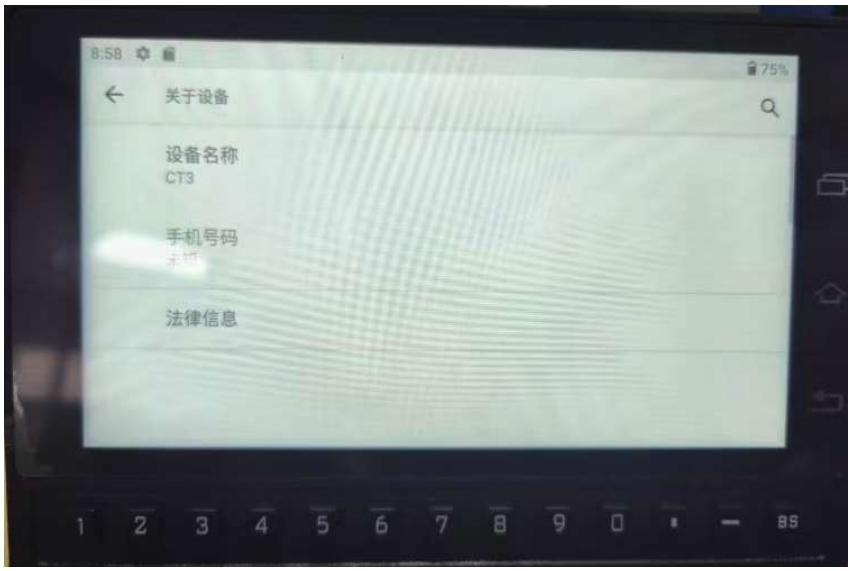
Keyboard Classification Zones:
Numeric Keys (12 keys: numeric/alphabetic/symbol input)
Power Key(1 key: for device power on/off)
Navigation Keys (2 keys: Up/Down directional controls)
Function Key (FN)
Backspace Key (BS)

● Display Interface & Main Menu

1. System Information Interface
Displays instrument details, system status, and version information.
From the “Home Screen”, “swipe up” to access “Settings”, then select “About Device” to view the device name and system version.



2. System Configuration
Navigate to Settings > System to:
-Reset time and date.
-Update the system version.


8:58
75%
关于设备
设备名称
CT3
手机号码
法律信息
1 2 3 4 5 6 7 8 9 0 BS


8:59
75%
关于设备
开机累计时长
04:30
自定义版本
alps-mp-r0.mp1-V8.152_mikimobile.r0mp1.k61v1.64.bsp_P1
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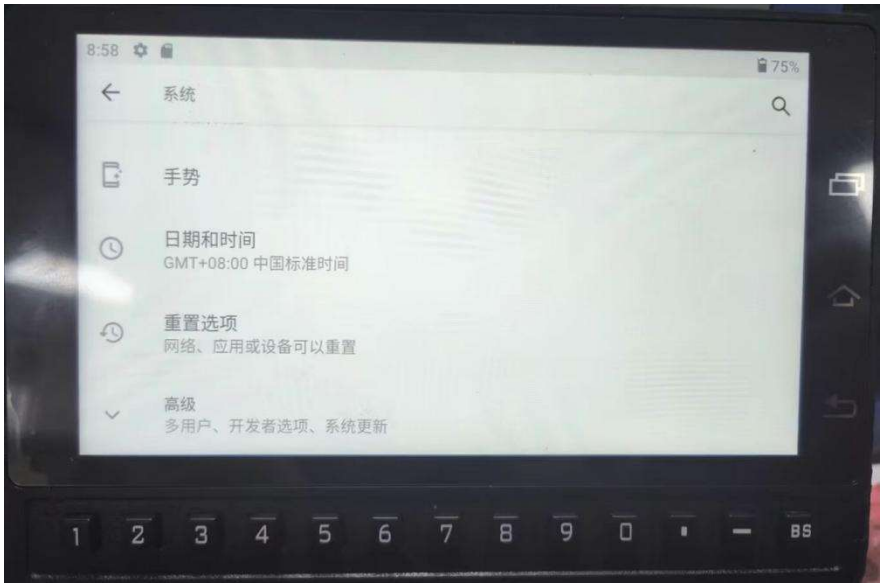
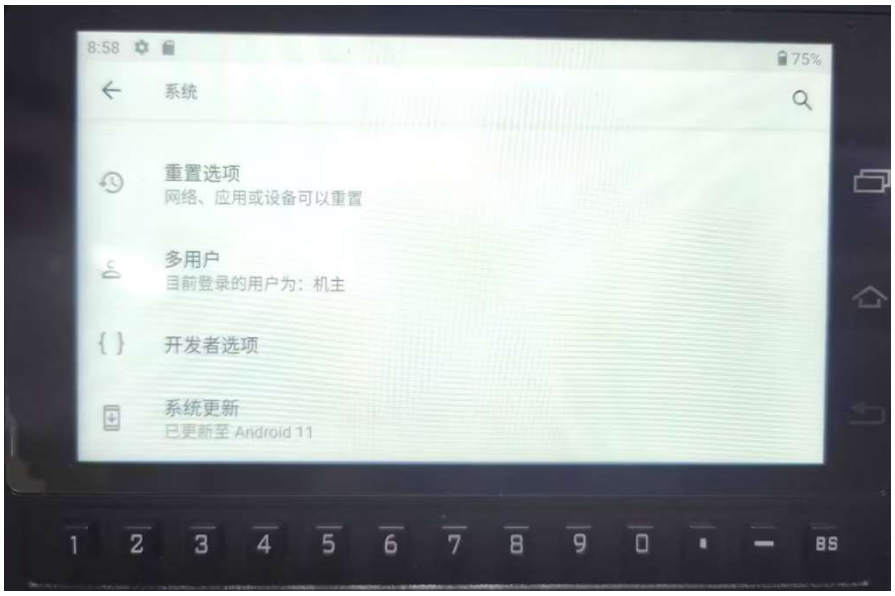
1 2 3 4 5 6 7 8 9 0 BS

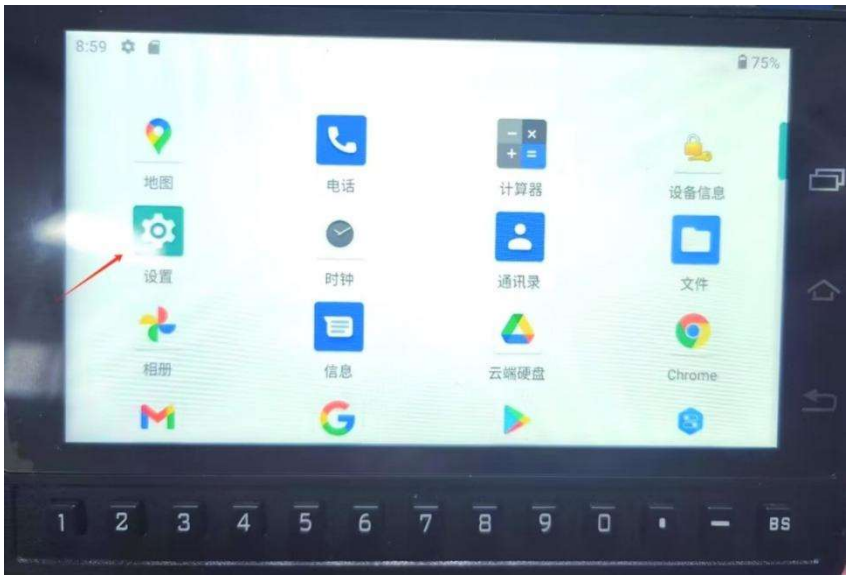

8:58
75%
系统
手势
日期和时间
GMT+08:00 中国标准时间
重置选项
网络、应用或设备可以重置
高级
多用户、开发者选项、系统更新
1 2 3 4 5 6 7 8 9 0 BS

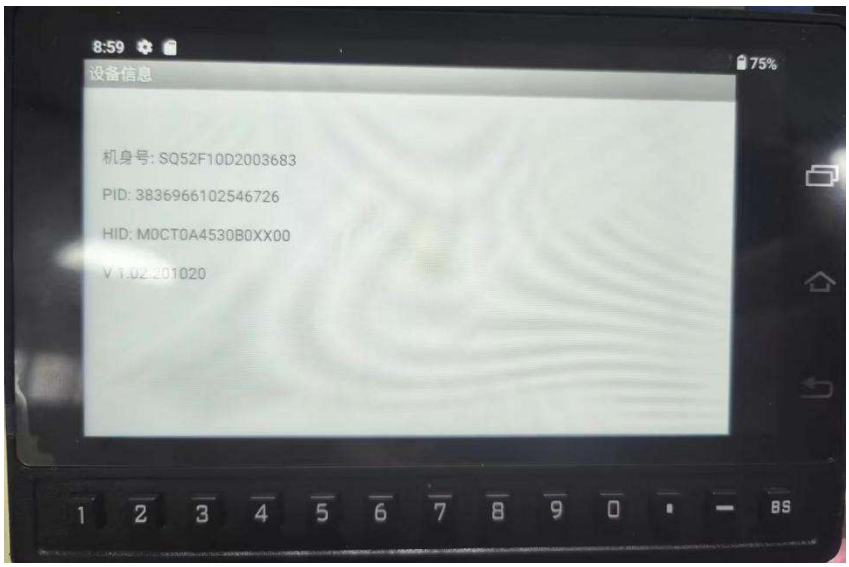


3. Device Information

On the “Home Screen”, “swipe up” and tap “Device Information” to view:

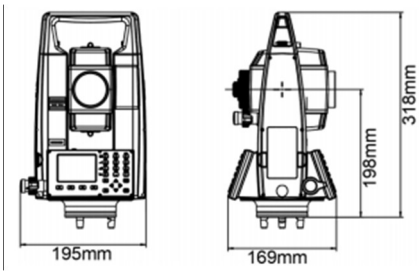
- Instrument serial number
- PID (Product Identification Code)
- HID (Hardware Identification Code)





- **Technical Data**

Telescope	Type: Reflactor Image: Upright Magnification: 30x Obj. aperture: ϕ 44 mm Min. Focus: 1.7 m (5.6 ft) Field of view: 1°30’ (1.66 gon) 2.6m @100m Resolution: 2.8″ Tube length: 160mm Reticle illumination : 4 levels
Laser plummet	Type: Visible red Location: In standing axis of instrument Class: 2 Carrier wave: 635nm Accuracy: ± 1,5 mm @ 1,5 m Laser spot: 2,5 mm @ 1,5 m Max output: 0.7-1.0 mW
Level sensitivity	Circular level: 8‘/2mm Plate level: 30”/2mm
Weight	Instrument: 4.75kg Tribrach: 0.70kg Internal battery: 0.111kg Case with instrument: 9.10kg

Dimensions	Instrument: Carrying case (HxWxL): 390x240x490mm 
Power	Battery type: Li-Ion Voltage/Capacity: 7.4V / 2600mAh Operating time5 (angle measurement) 22 hours Oper. time5 (angle+dist. meas. every 30 s) 19.5 hours Battery charger: 100/240V, charging time 3h
Environmental conditions	Operating temperature: -20° C to +50° C Storage temperature: -30° C to +60° C Operating humidity: 95% Waterproof/Dustproof: IP54 Onboard sensors: Pressure/Temperature Pressure correction: 500 hPa to 1500 hPa
Angle measurement	Accuracy :2” Standard deviation :0.6 mgon1 Reading system :Absolute encoder, continuous Display resolution (selectable): Unit Options ° ’ “ 1″ /5″ /10″ ° 0.0001/0.0005/0.001 gon 0.0001g/0.0005g/0.001g mil 0.01mil/0.05mil/0.1mil

● Care and Transport

1.Storage

Storage of the Instrument

The instrument is a precision instrument. In order to ensure the function and accuracy, when not in use for a long period of time, the instrument needs to be stored in a dry place without direct sunlight and within a certain temperature range.

About the temperature range refer to *Technical Data*.

Especially in hot weather when instruments need to be stored in transport vehicles such as cars, it is important to be aware of the limits of the temperature range.

Storage of the batteries

• The allowable temperature for storing batteries is -30 °C to +55 °C. The recommended temperature range for storing batteries is -20°C to +30°C in a dry environment.

• Within the recommended storage temperature range, batteries full charged can be stored alone for one year.

• The batteries should be removed from the instrument or charger before storing.

• The battery must be fully recharged again before use after long-term storage.

Always keep batteries away from wet conditions. Wet or waterlogged batteries must be completely dried and checked for proper appearance and voltage before storage and use.

2.Transport

Field Manual Transport

• Place the instrument in its original transport case. Carry it properly by hand or use the original carrying strap.

• Alternatively, by keeping the robust mounting and upward, the instrument can be carried with the tripod's legs splayed across on the shoulder.

Collisions and drops of instruments are avoided wherever possible to ensure the safety of persons and instrument.

Transportation by Transport (car, train, ship, plane, etc.)

When transporting, the transport case must be used. Place the instrument in the case and fasten it securely so that the body of the instrument is not subjected to violent shocks and vibrations.

When instruments are transported during hot or cold seasons, it is important to note the temperature range restrictions. After long distance transport, the instrument needs to be checked and calibrated according to the operating instructions before the instrument can be used.

Battery Transport

National and international regulations and guidelines must be followed when transporting batteries. Or contact your local shipping company for related information before shipping.

3. Cleaning and Drying

Surface of Objective and Eyepiece

• Do not touch the optical surfaces with your hands or other hard objects at any time.
• Blow the dust off the lens and prisms before cleaning.
• For cleaning use only a clean soft lens wiping cloth, lens paper, cotton swabs etc. If necessary, use pure water or pure alcohol to moisten them.

Do not use other liquids as they may damage the instrument parts。

Fogging of Glass Surface

If the temperature of the lens is lower than the ambient temperature, then it will tend to fog up. Generally, do not wipe, it can be left for a period of time, so that it slowly adapts to the surrounding temperature, the fog will generally disappear on its own.

Drying the Instrument

If the instrument or accessory has been slightly exposed to moisture or water, it can be left in a dry environment at a temperature not exceeding 40 °C for a period of time. After complete drying, the surface should be cleaned.

Cables，Plugs and Charger

Keep clean and dry at all times. When not in use, can wipe with a clean, dry cloth. Do not use water or wiping tools with water to clean electrical accessories.

FCC Warning

15.19 Labeling requirements.

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.

15.21 Information to user.

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

15.105 Information to the user.

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.

FCC RF Radiation Exposure Statement:

This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.