

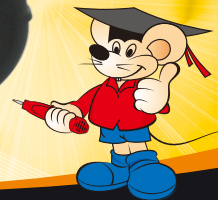
NF-188/NF-198

Your excellent helper in cable test!

GPS Land Measuring Instrument INSTRUCTION MANUAL



Your excellent helper in cable test!



VER: V4

Contents

Product Profile.....	1
Function Features.....	1
Major Parameters.....	2
Precautions.....	2
Product Structure.....	3
Operating Instructions.....	4
Troubleshooting.....	20
Diagram of Series Products.....	21

1.Product Profile

Thank you for selecting our GPS area and length measuring instrument. The instrument is an instrument measuring field area and length adopting advanced technologies such as GPS, embedded single chip and high accuracy method. It is applicable to measurement of area such as farmland, green land, forest, water area, beach, factories and mines. It can quickly measure area, distance and perimeter of any shape. It is measuring tool and main basis of departments such as agriculture, forestry, water conservancy, land management and tax as well as charging of agricultural machinery working.

2.Functional Features

- 1.Big color screen display of 3.7 inch, 320X240 dot matrix, more clear and intuitive.
- 2.It can measure area and length of any shape (containing mountainous land and slope).
- 3.It can measure length between any two points or any path (length and distance).
- 4.It can display measuring value, figure track and automatically calculate price after measurement.
- 5.Measuring methods include automatic and manual.
- 6.It can save and record 99 historical data and figure track. Historical record can be viewed, inquired and deleted at any time.
- 7.It can set area unit price, length unit price, conversion factor between acre and , as well as set automatic and manual measuring methods.
- 8.It is integrated with auxiliary function such as currency detection, lighting at night and background light.
- 9.It is equipped with 1pcs of 3.7V/2000mAh chargeable lithium batteries. Each battery can work for 8-10 hours continuously, which greatly saves using cost for user and guarantees requirement of working for long time.

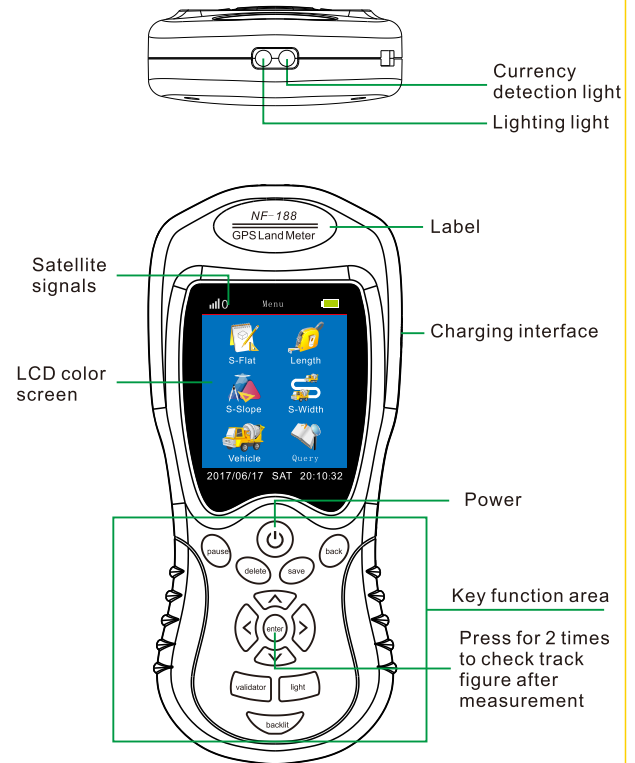
3. Major Parameters

1. To measure range of area: 0-99999999.99 m².
Display unit: acre/ m² /h m² /k m².
2. Measuring error of area: 1-2% (area below 0.5acre); ≤1% (area above 0.5 acre).
3. Measuring range of length: 0-99999999.99m.
Display unit: m/km.
4. Measuring error of length: 0.5-3m.
5. Operating power supply: 3.7V/2000mAh chargeable lithium battery.
6. Operating time: 8-10 hours; charging time: 4-5 hours.
7. Product dimension: 174X76X28mm.
8. Net weight of product: 149g (not containing battery).

4. Precautions


1. The instrument is applicable to measurement of outdoor open space, please do not conduct measurement near high object as possible (for example, a high building cluster).
2. Measure after the instruments receives more than 6 satellite signals.
3. It is not advised to measure the area below 0.05 arce.
4. In measurement, do not make intersection and overlapping.
5. When measuring small area, figure and block may be inconsistent after algorithm preset by program is optimized for number of points collected is small, which is normal.
6. It is better to measure after coordinate shown on screen is stable.

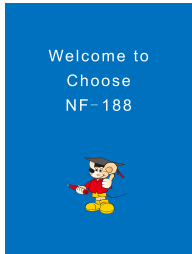
5. Product Structure



6. Operating Instructions

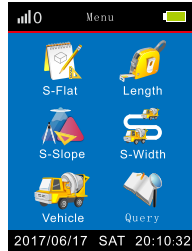
1. Starting up

Press power supply switch  long to enter home page as shown in the following picture.



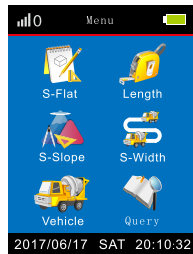
2. Main interface (NF-188)

The system automatically finishes home page and enters main interface, as below

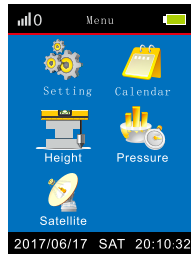


2. Main interface (NF-198)

The system automatically finishes home page and enters main interface 1 and main interface 2, as below:



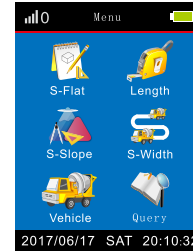
Main interface 1



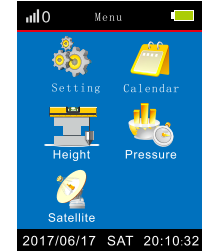
Main interface 2

3. Satellite searching

The system will automatically search satellites after entering the main interface. After about 1-3 minutes, measurement is available when quantity of satellites is over 6. NF-188 and NF-198 will show the following interfaces respectively:

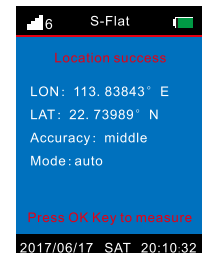
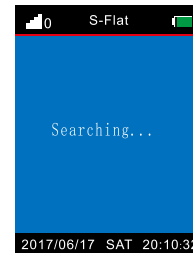


NF-188



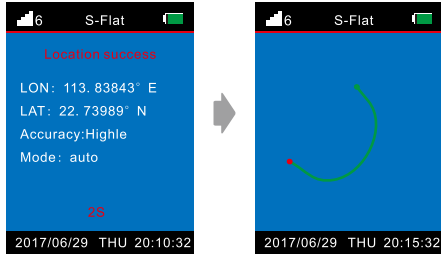
NF-198

If quantity of satellites cannot reach regulated value and positioning fails, press "enter" to display the following interface. Completion of satellite will show successful positioning interface, then press "enter" to measure.

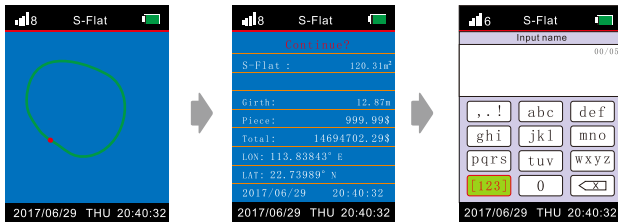


4. Automatic measurement of flat area (default)

When the device succeeds in positioning, select "S-Flat" in the main menu and press "enter" to enter area test interface, successful positioning interface will show as below, then press "enter" to start automatic measurement of area, and track picture as below will occur, which shows that it is measuring.



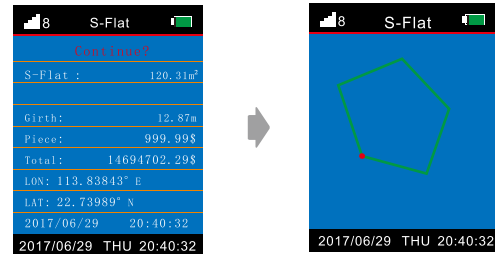
The user presses "enter" to finish measurement when walking for a circle around the measured block. The screen shows measurement result: , unit price, total price, longitude, latitude and date. Then, press "save" to name this record and press "back", finally press "save" to save the current measuring result and figure. Press "back" to return to measuring main interface, then conduct other operations, as below:



NF-198 can measure girth together with area.

5. Manual measurement of flat area

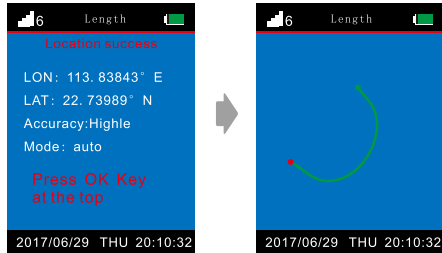
Select the manual mode in the "setting" of the main menu. Then, press "S-Flat" in the main menu, at the moment, the instrument will automatically save the first point as starting point. The user presses "save" to record the second and third points when reaching the next target point. The user presses "save" to record the last point when returning to the starting point. Next, press "enter" to show track figure after measurement. Press "save" to name this record and back to save the current measuring result and figure. Press "back" to return to the main measuring interface and conduct other operations, as below:



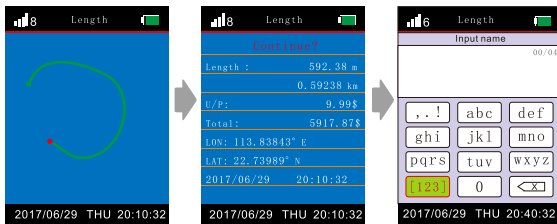
NF-198 can measure girth together with area.

6. Automatic measurement of land length (path length or distance)

When the device positions successfully, select "length" in the main menu, press "enter" to enter length test interface, the following picture showing successful positioning will occur, press "enter" to start automatic measurement of length, the track picture as below will occur, showing it is measuring.

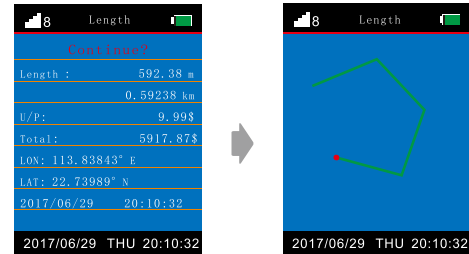


The user presses "enter" to finish measurement when walking for a circle around the measured block. The screen shows measurement result: m, km, unit price, total price, longitude, latitude and date. Then, press "save" to name this record and back to press "save" to save the current measuring result and figure. Press "back" to return to measuring main interface, then conduct other operations, as below:



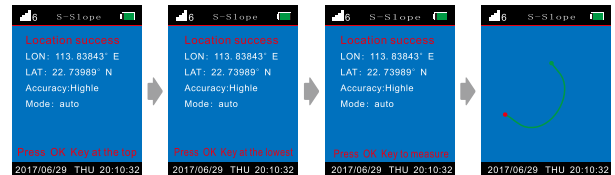
7. Manual measurement of land length (path length or area)

Select the manual mode in the "setting" of the main menu. Then, press "Length" in the menu. At the moment, the instrument will automatically save the first point as starting point. The user presses "save" to record the second and third points when reaching the next starting point. The user presses "save" to record the last point when returning to the starting point. Then, press "save" to name this record and back to press "save" to save the current measuring result and figure. Press "back" to return to the main measuring interface and conduct other operations, as below:

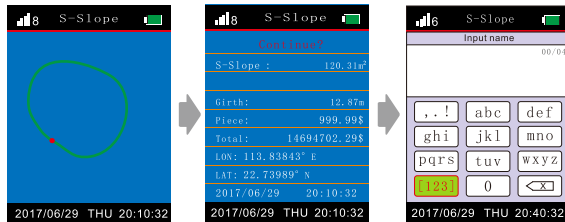


8. Automatic measurement of slope area (default)

After the device positions successfully, select "S-Slope" in the main menu, press "enter" to enter slope area test interface, make the pressure data stable and then it will show the interface of positioning successfully, according to prompt of device, stand on the highest place which needs to be measured area and press "enter"; stand on the lowest place and press "enter", finally press "enter" according to prompt of the device, to start automatic measurement of area, the tract picture as below will occur, showing it is measuring.



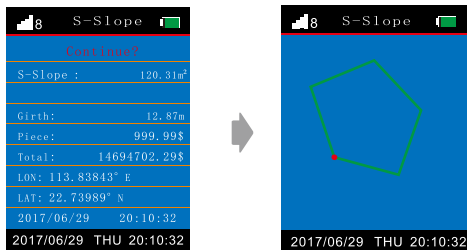
The user presses "enter" to finish measurement when walking for a circle around the measured block. The screen shows measurement result: , unit price, total price, longitude, latitude and date. Next, press "enter" to show track figure after measurement. Then, press "save" to save current measuring result and figure. Press "back" to return to measuring main interface, then conduct other operations, as below:



NF-198 can measure girth together with area.

9.Manual measurement of slope area

Select the manual mode in the "setting" of the main menu. Then, press "S-Slope" in the main menu. At the moment, the instrument will automatically save the first point as starting point. The user presses "save" to record the second and third points when reaching the next target point. The use presses "save" to record the last point when returning to the starting point. Then, press "enter" to show track figure after measurement. Press "save" to save current measuring result and figure. Press "back" to return to the main measuring interface and conduct other operations, as below:



NF-198 can measure girth together with area.

10.Save measuring data and track figure

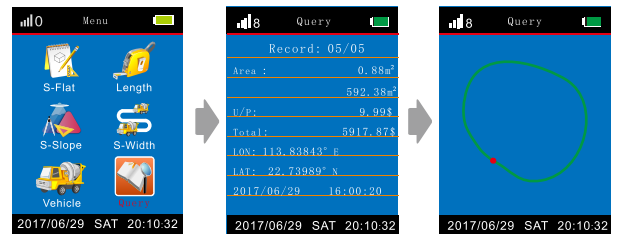
After each measurement, press "save" to save current measuring data and figure (at most 99 measuring results).

11.Pause measuring

Press "pause" to stop measuring for a while during measurement; press "pause" to continue measuring.

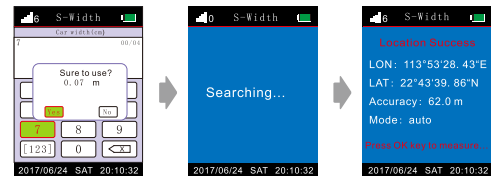
12.Inquire historical record

Select "Query" of the main menu, press "enter" to enter inquiry interface, to view measuring record. Press "enter" on the interface showing measuring results to show the page of track figures of the measuring results. Use ">" "<" to show historical records of different measurements, as below. Press "back" to return to main interface of measurement and conduct other operations, as below:



13.Automatic measurement of width area

Firstly select "S-Width" in the main menu, press "enter" to enter width area test interface. Then set the corresponding car width distance, press "save" to confirm this data and press "enter" to the next interface, it will show "Searching...". After the device positions successfully, press "enter" to start automatic measurement of width area, the track picture as below will occur, showing it is measuring.

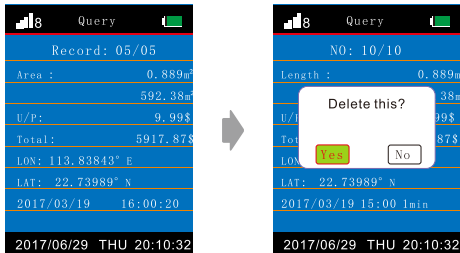


14.Delete historical data

Press "delete" to enter deletion interface, press " \wedge " " \vee " to move mouse to the record to be deleted, press "enter", it will show "Delete this?", then press " $\>$ " " \leftarrow " to switch to "YES" or "NO", the user can select it according their own demand, and then press "enter" to show "deleting" and "Delet success!", showing successful deletion, as below:

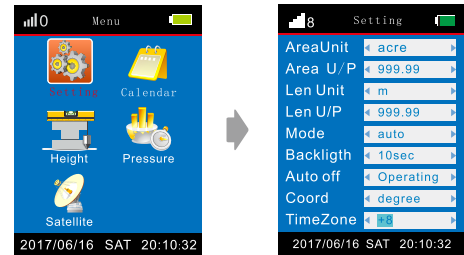


After entering history inquiry interface, press "delete" to show the interface whether to "delete this?", then press " $\>$ " " \leftarrow " to switch to "YES" or "NO", the user can select it according their own demand, and then press "enter" to show "deleting" and "Delet success!", showing successful deletion, as below:



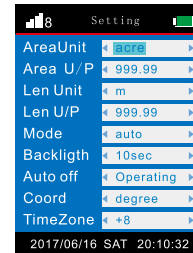
15.Setting function

Select the "setting" of the main menu. press "enter" to enter setting interface, to set various functions according to demands, as below:



15.1 Setting of area unit:

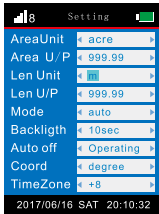
Take setting of the unit of area-mu as an example, after entering setting interface, press " \wedge " " \vee " to move the mouse to area unit, press "enter", the word color of area unit will become deep black, press " $\>$ " or " \leftarrow " to select area unit until the unit acre becomes deep black, showing setting of the unit mu is completed, as below:



After completion of unit setting, press "back" to return to the main menu. Setting of other area units such as m^2 , km^2 and hectare is the same as that of acre.

15.2 Setting of length unit

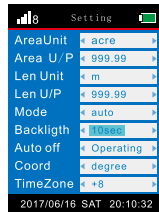
Taking setting of length unit as an example, after entering setting interface, press “^”“v” to move the mouse to length unit, press “enter”, the word color of length unit will become deep black, press “>” or “<” to select length unit until the unit m becomes deep black, showing setting of the unit m is completed, as below:



After completion of unit setting, press “back” to return to the main menu. Setting of km is the same as that of m.

15.3 Setting of backlight delay:

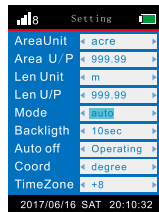
Setting of backlight delay is the same as that of measuring mode, including 4 delay shifts of lighting, 10s, 30s and 60s, as below:



15.4 Setting of measuring mode

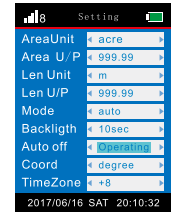
Taking automatic measuring mode as an example, after entering setting interface, press “^”“v” to move the mouse to measuring mode, press “enter”, the word color of measuring mode will become deep black, press “>” or “<” to select measuring mode until automatic word becomes deep black, showing setting of automatic measuring mode is completed, as below:

After the completion of automatic measuring mode, press “back” to return to the main menu. Setting of manual measuring mode is the same as that of automatic measuring mode.



15.5 Automatic shutdown setting:

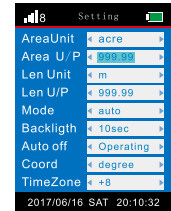
Automatic shutdown setting is the same as measuring mode, including 4 shutdown shifts of Operating, 10min, 20min and 30min, as below:



15.6 Setting of area price unit:

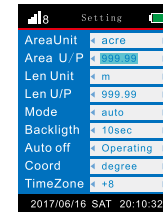
After entering setting interface, press “^”“v” to move the mouse to area U/P, press “enter”, the color of hundreds digit will become deep black, press “>”“<” to set number of hundred; press “^” or “v” to set ten, unit and the number behind decimal point. After setting of all numbers, press “enter” to complete setting of area unit, as below:

After setting area U/P, press “back” to return to the main menu.



15.7 Setting of coordinate display unit:

Take coordinate display unit as an example, after entering setting interface, press “^”“v” move the mouse to “Coord”, press “enter”, word color of coordinate display unit will become deep black, then press “>” or “<” to select coordinate unit until the unit becomes deep black, which means completion of setting of coordinate unit:



After setting unit, press “back” to return to the main menu. Setting of coordinate unit of ‘, ’ is the same as that of degree.

15.8 Setting of length unit price:

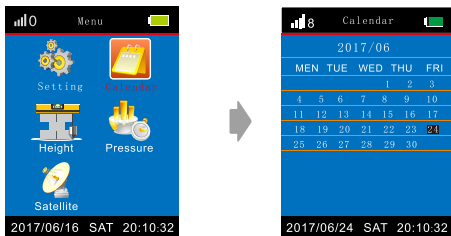
Setting of length unit price is the same as that of area unit price, which can refer to setting of area unit price.

15.9 Setting of Area unit price:

Setting of area unit price is also the same as that of length unit price, which can refer to setting of area unit price.

16.Function of perpetual calendar

After entering main interface of measurement, press “^” “v” or “>” “<”, to move the mouse to “calendar”, press “enter” to enter the interface of perpetual calendar to inquire perpetual calendar according to demand, as below:



Press “>” “<” to inquire months, and press “^” “v” to inquire specific date.

17.Function of lighting lamp

Touch “light” softly, to turn on lighting lamp, for operation in dark environment; touch “light” softly again to turn off lighting lamp.

18.Currency detection function

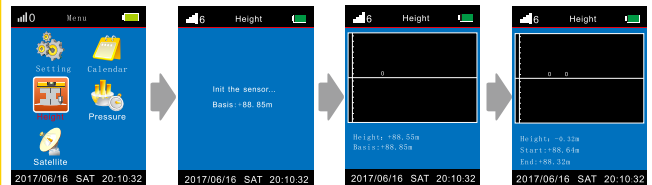
Press “cash”, the lamp is on, than you can detect currency.

19.Backlight function

Touch “backlit” softly, to set function of backlight. There are 6 shifts of backlight, which can be set according to demand.

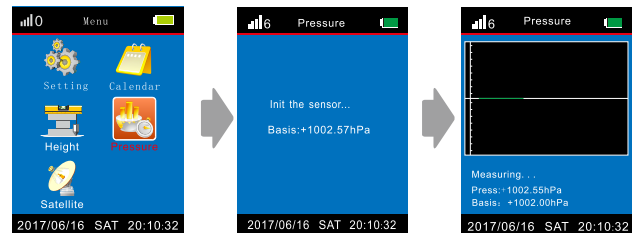
20.Height measurement (NF-198)

Select the “Height” in the main menu, press “enter” to enter height measurement interface, press “enter” to measure altitude of starting point, press “enter” to measure altitude of ending point, to calculate relative height automatically (relative height=altitude at target point-altitude at starting point). Then, press “back” to return to the main interface of measurement and conduct other operations, as below:



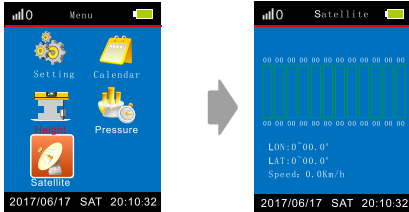
21.Measurement of barometric pressure (NF-198)

Select the “pressure” in the main menu. After data is stable, press “enter” to enter the measuring interface of barometric pressure, then press “enter” to measure barometric pressure. Press “back” to return to main interface of measurement and conduct other operations, as below:



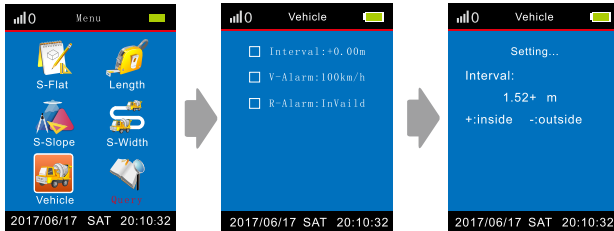
22.Satellite measurement (NF-198)

Select the "satellite" in the main menu, press "enter" to enter satellite measurement interface, and then press "enter" to view satellite state. Number of block is signal-to-noise ratio (0-50), wherein bigger value shows better signal; the number below shows number of visual satellites. If the number becomes deep black, it means that the satellite is successfully positioned, according to which the quantity of positioning satellites can be read. Then, press "back" to return to the main interface of measurement and conduct other operation, as below:



23.Vehicle-carrier measurement (NF-198)

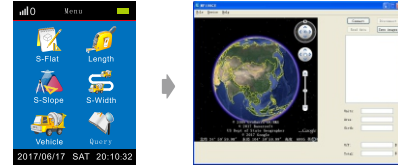
Select the "vehicle" in the main menu, press "enter" to enter vehicle-carrier measurement interface, press "^" or ">" to set. Set spacing according to requirements and press "enter". "+" shows the vehicle is in target range. "-" shows the vehicle is out of target range. After completion of vehicle-carrier setting, press "back" to return to the main interface of measurement and conduct other operations, as below:



Note 1: when use the manual testing mode, set the distance as "0"
 Note 2: before vehicle-carrier measuring mode, set the distance according to width of vehicle.

24.Function of data exporting and printing (NF-198)

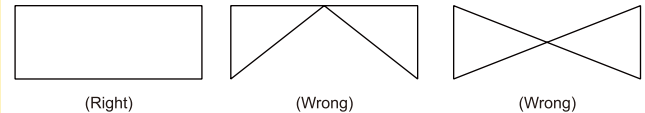
After starting up, use USB to connect the computer, wait for a while, after connecting, USB icon will be shown beside battery icon. Install corresponding software according to instructions in the computer (download software from official website www.gumite.com.cn), and then open software to guide data into google map according to instructions, to show corresponding track in the map, save the image to print corresponding track figure, as below:



25.MICRO on side (microphone joint) can be used for charging the battery.

After charging, cut off the power supply, disconnect the charging line, do not charge it for long.
 Precautions: please use DC5V 1A original or guaranteed charger, or there may be danger.

26.Correct & Wrong route sampling when measuring



27.Shutdown

Press power supply "⏻" long, to enter shutdown interface as below.



7. Troubleshooting

1. It cannot search satellites or searching time is too long

- 1.1 The instrument cannot be used indoor.
- 1.2 There shall be no high building around or sheltered.
- 1.3 Search satellites in the open air to determine whether it is fault of instrument.

2. Measuring result has big error

- 2.1 Start measuring after the quantity of satellites is over 6.
- 2.2 There shall be no high building around or sheltered.
- 2.3 Move slowly when passing a corner.
- 2.4 Path of movement shall have no intersection or repeat.
- 2.5 Measure after the values of longitude and latitude is stable.

3. Different measuring results

It is a normal phenomenon because:

- 3.1 Satellite signals are dynamic, having slight alteration .
- 3.2 Path of movement cannot be completely the same and coordinate points collected by the instrument are not completely the same, resulting different calculation results.

Series Product



NF-178
GPS Land meter



NF-188
GPS Land meter



NF-198
GPS Land meter