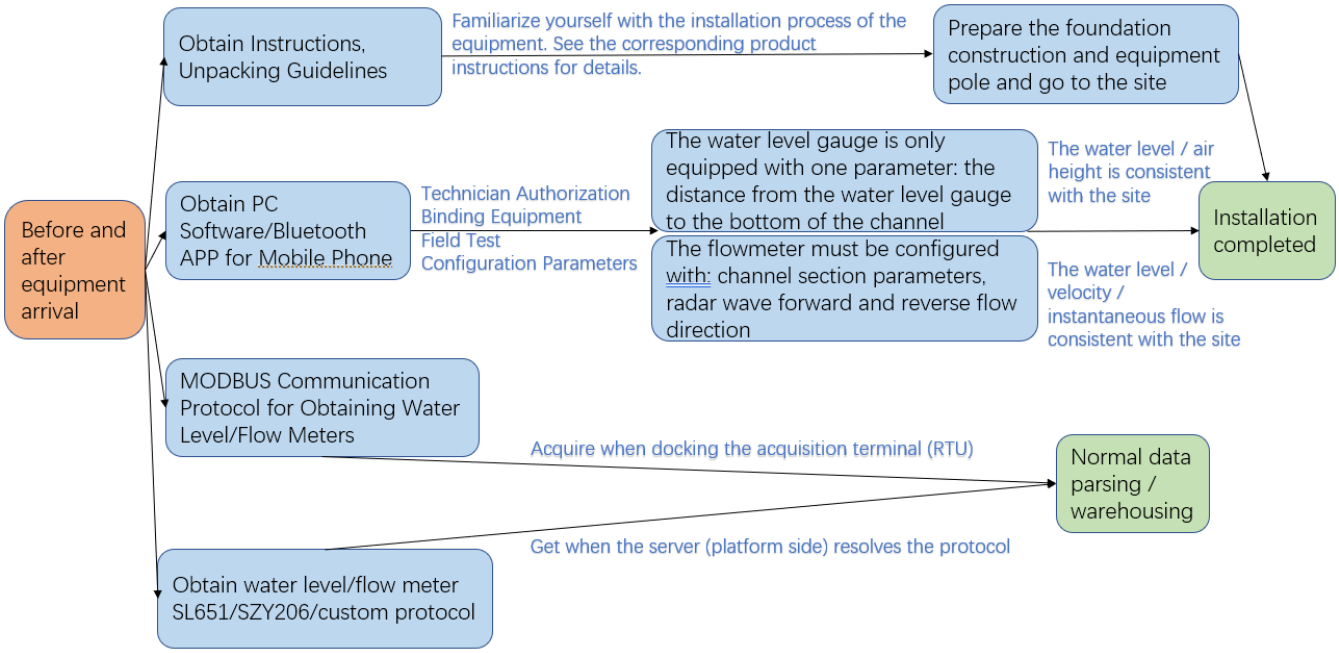
Unpacking guide for flowmeter

Debugging process of radar equipment



I. Precautions for on-site installation:

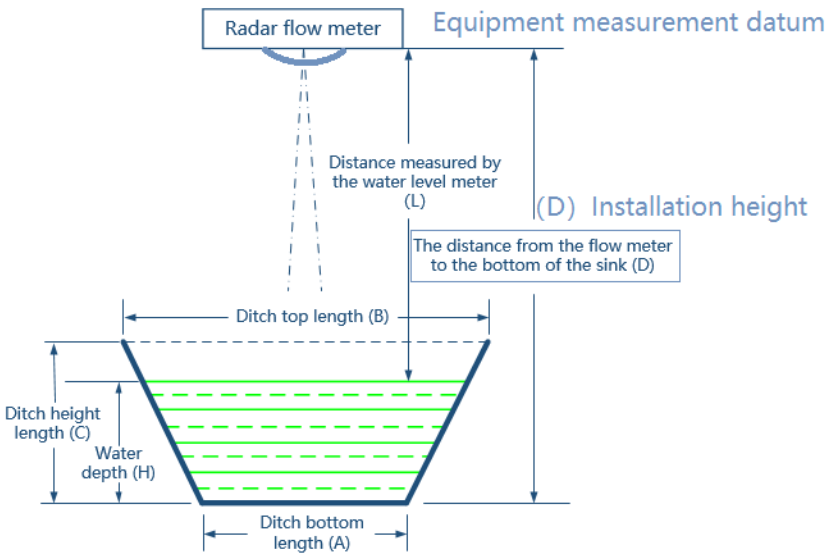
As shown in the installation example above, if it is a small channel, the detection surface of the equipment sensor should be facing the center of the channel, making the detection area of the Equipment > the slope on both sides of the channel as far as possible, so as to effectively measure;

If the equipment installation is inclined or the detection target is not a plane, that is, the radar wave detects the inclined plane on one side of the small channel, the air height of the equipment will always maintain the last correct measurement result without change;

When the installation height is 7m, the coverage diameter of flow rate sensor is 2.215m, and the coverage diameter of water level sensor is 0.98M. Refer to the manual for the coverage corresponding to other installation heights.

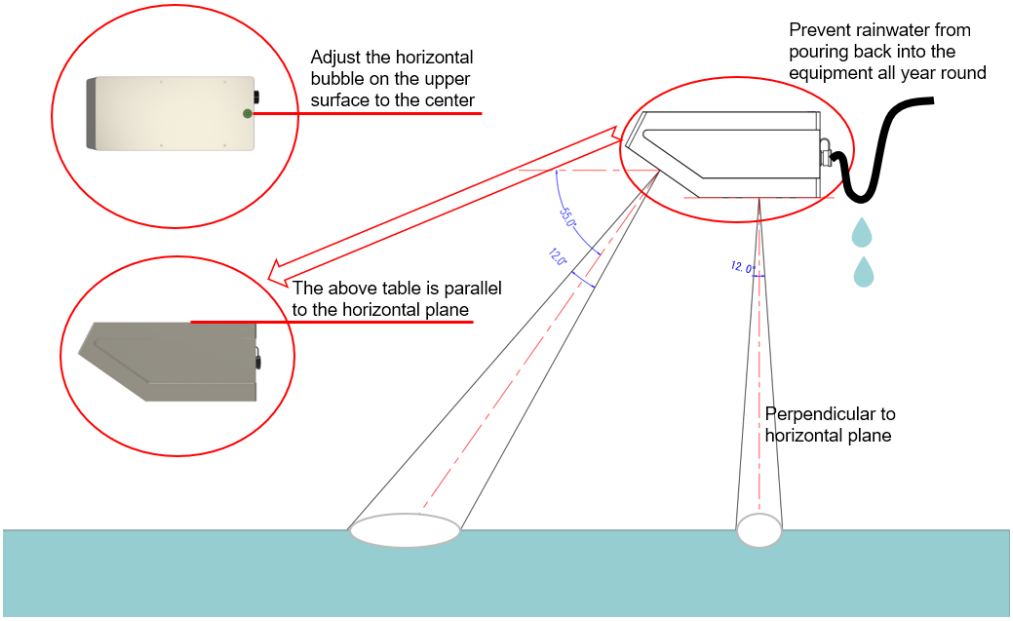
If the site is a large channel installation environment, it is necessary to ensure that at the lowest water level, the equipment detects a plane rather than stones and other sundries as much as possible. The measuring points that cannot avoid sundries also need to maintain an effective detection surface > sundries surface in order to have the correct air height value; Moreover, the measuring points shall be reasonably selected, and the foundation and support of the equipment shall be made to a reasonable length.

During installation, the distance between the lower surface of the equipment (especially the "lower plane" rather than the lower convex surface) and the bottom of the canal shall be measured:



Do not install too high or too low to avoid entering the radar blind area:

If the equipment with a mileage of 7m is installed in a blind area below 0.2m or about 7m, the measurement results will fluctuate more than usual.

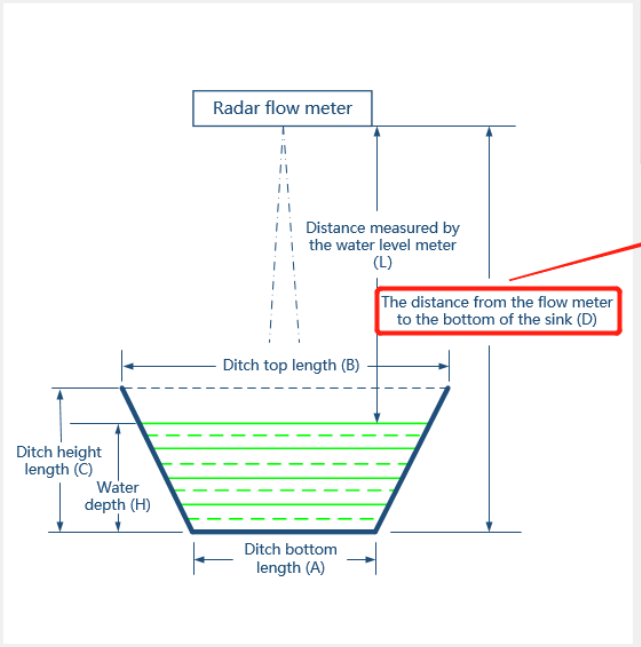


Only devices with Bluetooth communication function can use mobile phone app to configure parameters. Whether the device is equipped with Bluetooth can view the Bluetooth label of the device appearance. Devices with G or R can use mobile phone Bluetooth configuration:

Write the following four measured channel shape parameters A, B, C and D into the device through PC software or mobile phone Bluetooth app.

Note:

1. Bottom length of the trapezoidal sink A<=Top edge of the trapezoidal sink B; Water level gauge to the bottom of the sink D>=Distance measured by the water level meter L.And the installation height of office test is different from that of field equipment. The final installation height D shall be written into the actual value of field channel, otherwise the measurement results will have a large deviation
2. The default parameters of the noise threshold configuration of the velocity meter shall be tested first. If the on-site water flow velocity is very small at 0.1m/s, set the noise threshold of the velocity meter to the minimum 350 to see the flow velocity measurement effect of the PC software; If the parameter is set below 350, it will be disturbed by wind and other factors, and the flow velocity will fluctuate greatly.
3. The radar wave direction setting of the velocity meter should be consistent with the field water flow: the equipment inclines against the upstream water flow, and the radar wave direction is set automatically in two directions of water flow.
4. The PC software operation prompt is in the lower left corner of the interface.



Sink parameter setting

Sink shape: Round / Trapezoid / U type

Radius of the round sink R(m)	0
Bottom length of the trapezoidal sink A(m)	0
Top edge of the trapezoidal sink B(m)	0
Height of the trapezoidal sink C(m)	0
Water level gauge to the bottom of the sink D(m):	0

1 — Set

Channel characteristics

River type: Normal type — Set

Shore coefficient: 1 — Set

Measurement parameter setting

Velocity meter scale:	2	Set	Radar wave direction: 3	Reverse	Set
Velocity meter noise threshold:	600 2	Set	Water level noise threshold:	200	Set
Velocity meter filter times:	1 [1-50]	Set	Water level meter filter times:	5 [1-30]	Set
Horizontal angle:	0	Set	Rain mode:	Open	Set
Sleep time:	0 Minute	Set	Still water height:	0 m	Set

Advanced Settings

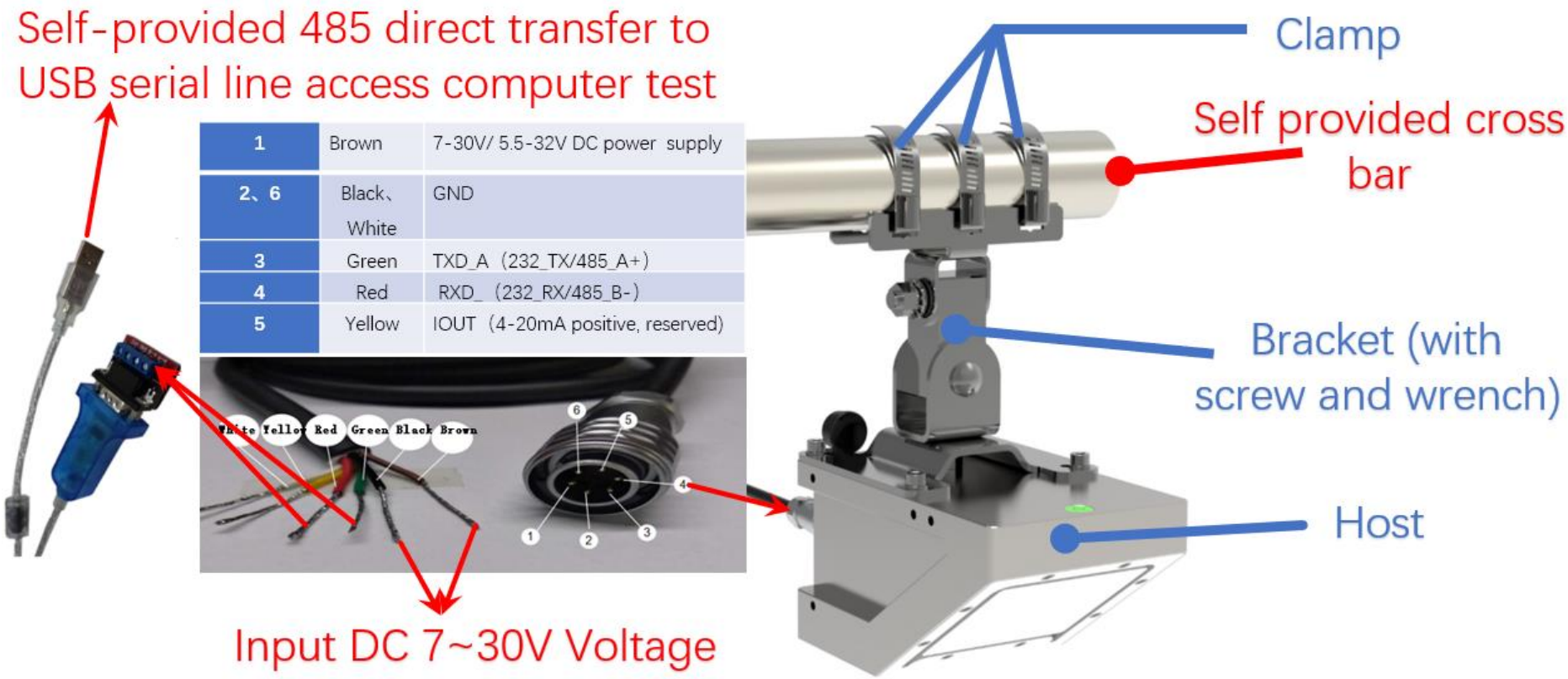
low speed detection sensitivity:	fourth	Set	Velocity measurement times:	100 [30-150]	Set
velocity stability factor:	10 [1-100]	Set	flow velocity changing rate:	0.30 [0.01-1]	Set

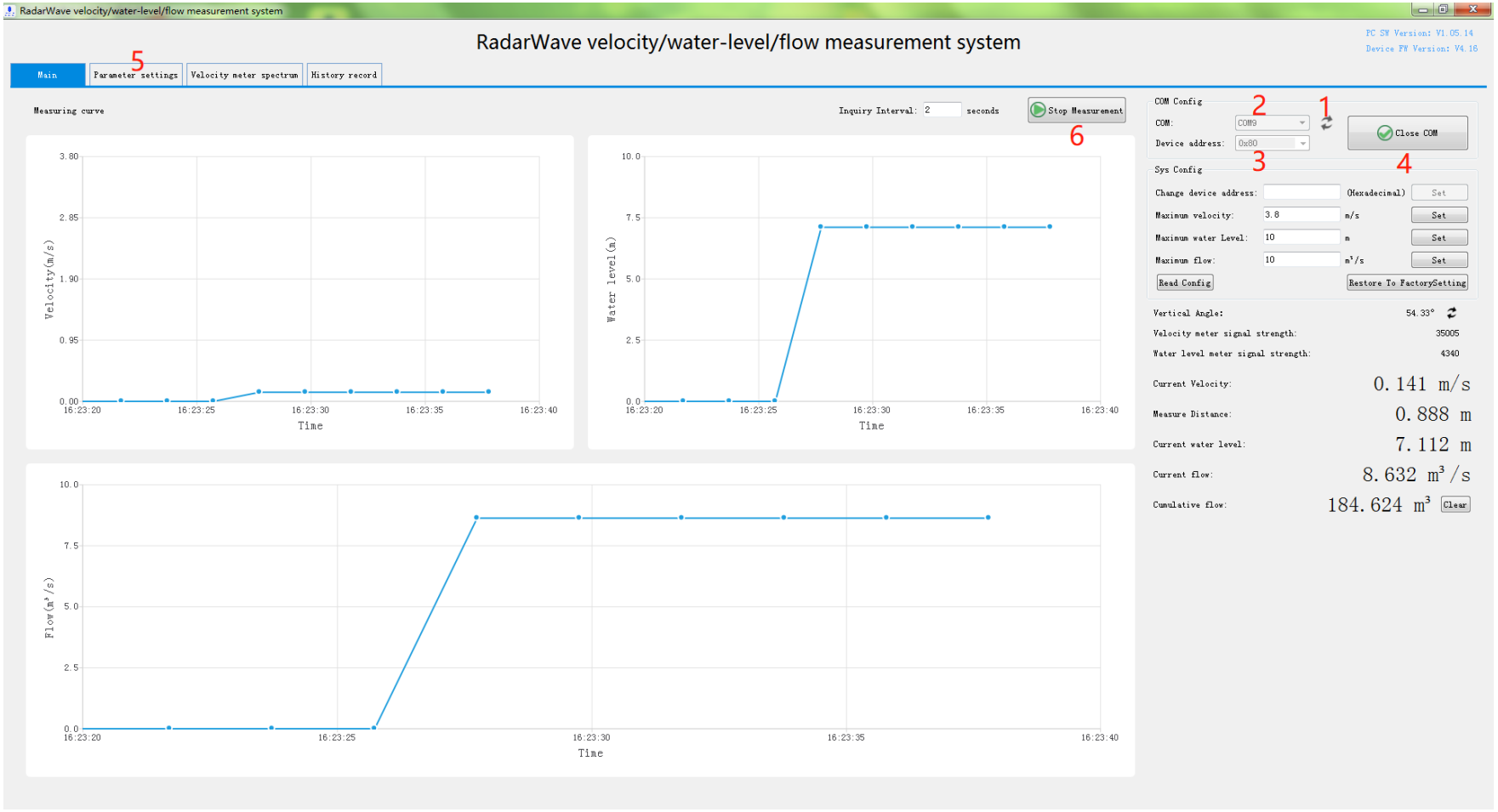
Read all parameters — Restore To FactorySetting

Read Success

II. Use the computer to configure the equipment (the equipment with built-in RTU can be configured with PC / mobile app as required)

The equipment wiring is as follows:





Step 5 is the write configuration parameter A~D described earlier.

In addition, the equipment inserted SIM card needs to record the Bluetooth name of the device. Items of several devices need to send back the detailed point list of device installation to the person in charge to know which device is installed where.

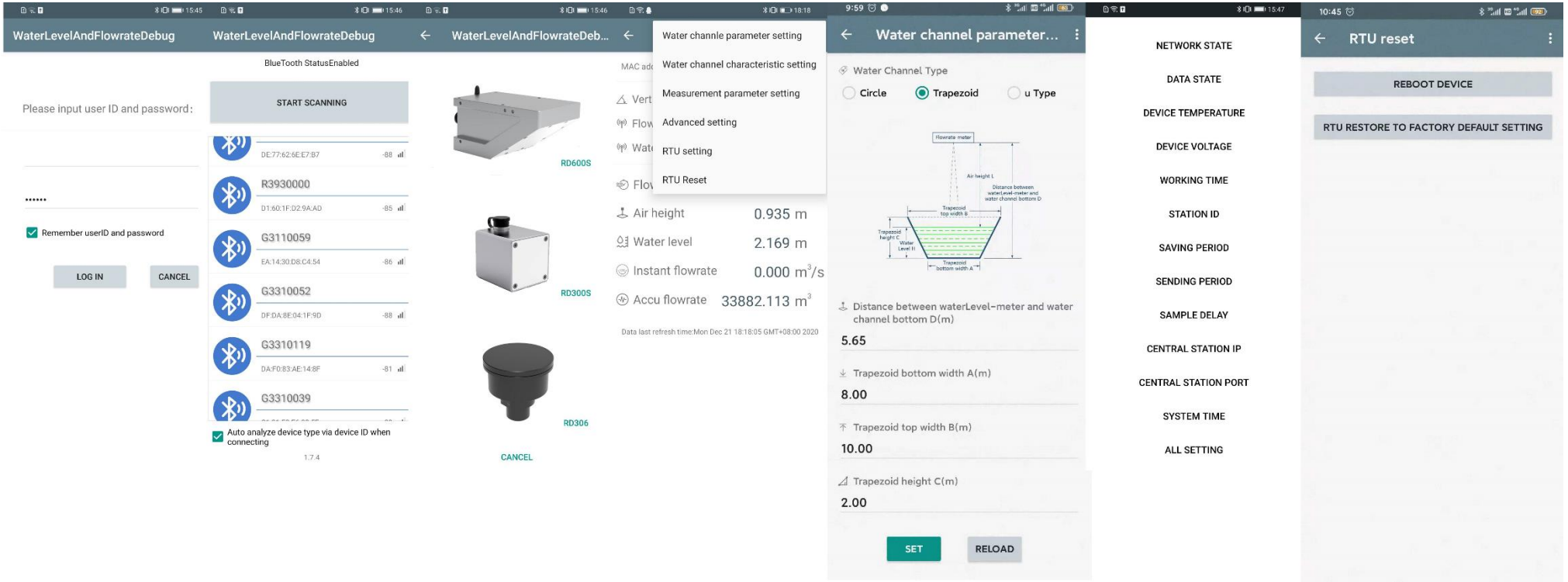
III. Use Bluetooth APP configuration device on cell phone

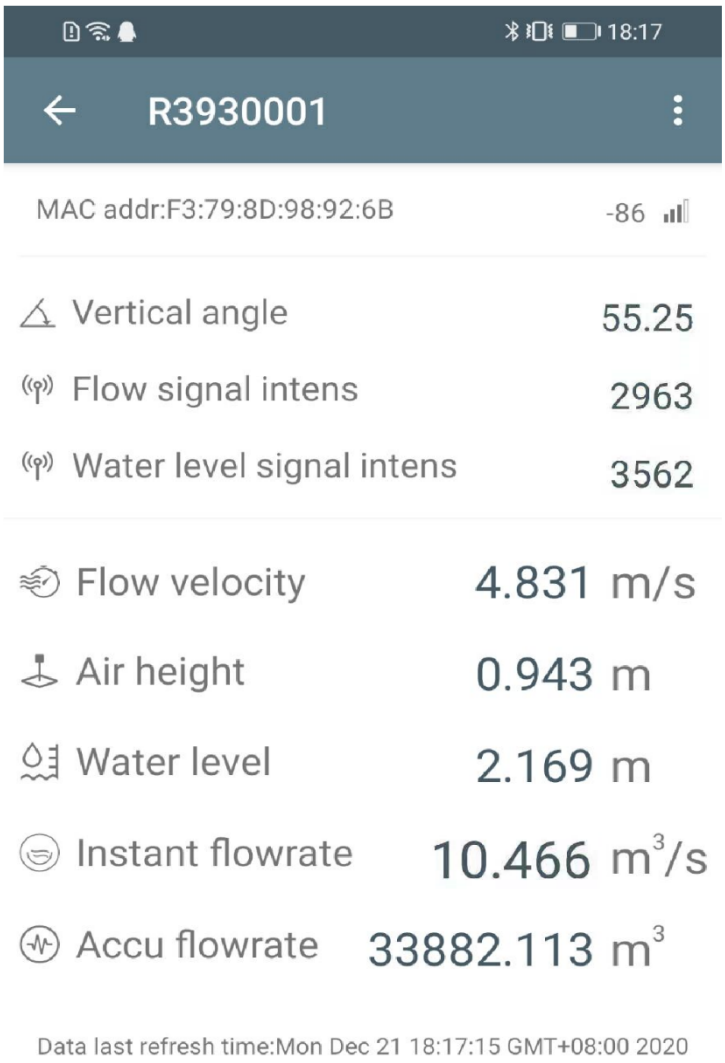
Radar equipment-related configurations can also be downloaded using online monitoring APP parameters by scanning the two-dimensional code below the browser

Turn on the Bluetooth and positioning functions of the cell phone itself and then on Debug APP for water level and flow rate, and application for login account secret from supplier;

Note:

If field personnel connect the device with Bluetooth APP, the wireless communication module will not be able to send a timer to the background at the same time. The wireless communication function will not be restored until the field exit from APP.


WaterLevelAndFlowrateDebug
Please input user ID and password:
Remember userID and password
LOG IN
CANCEL
WaterLevelAndFlowrateDebug
BlueTooth StatusEnabled
START SCANNING
R3930000
G3110059
G3310052
G3310119
G3310039
Auto analyze device type via device ID when connecting
1.7.4
WaterLevelAndFlowrateDeb...
RD600S
RD300S
RD306
CANCEL
Water channle parameter setting
Water channel characteristic setting
Measurement parameter setting
Advanced setting
RTU setting
RTU Reset
Air height 0.935 m
Water level 2.169 m
Instant flowrate 0.000 m³/s
Accu flowrate 33882.113 m³
Data last refresh time:Mon Dec 21 18:18:05 GMT+08:00 2020
Water channel parameter...
Water Channel Type
Circle
Trapezoid
u Type
Distance between waterLevel-meter and water channel bottom D(m)
5.65
Trapezoid bottom width A(m)
8.00
Trapezoid top width B(m)
10.00
Trapezoid height C(m)
2.00
SET
RELOAD
NETWORK STATE
DATA STATE
DEVICE TEMPERATURE
DEVICE VOLTAGE
WORKING TIME
STATION ID
SAVING PERIOD
SENDING PERIOD
SAMPLE DELAY
CENTRAL STATION IP
CENTRAL STATION PORT
SYSTEM TIME
ALL SETTING
RTU reset
REBOOT DEVICE
RTU RESTORE TO FACTORY DEFAULT SETTING



Note:

Vertical angle is the angle between the slope and the horizontal plane at which the flow rate is measured by the device, 55 degrees is the best angle.

When connecting devices with mobile phone APP Bluetooth, as close as possible to the device configuration parameters, inadvertently close to the parameters may fail to write. The effective distance of Bluetooth matching is about 10m and 15m in open environment.

IV. Sim card devices need to configure RTU sending parameters

RTU-related configurations require online monitoring of APP, which allows browsers to download two-dimensional codes from below:

1. Open Online Monitoring APP (Account Request from Supplier,Note that app is not internationalized).

2. Connect the equipment to be installed.

Open positioning and Bluetooth to the APP configuration page, select the device number to be installed and connect the device;

3. Configure data platform IP, port.

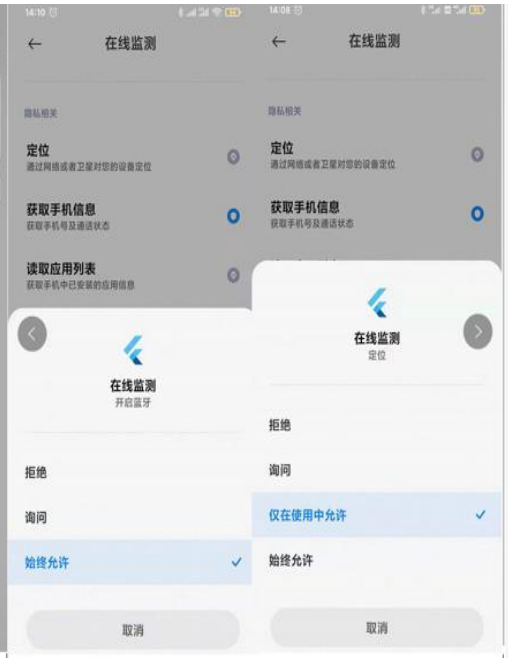
After the device is connected, go to the RTU configuration window, select the settings, and enter your IP address of the Data Receiving Platform in Address 2 of the central station*. *. *.*, Central Station Port 2 Input* (unknown inquirable person)

4. Configure sending frequency (can be configured via platform or on-site)

5. Radar equipment with batteries needs to "wake up" for reporting

6. Exit APP and let the person in charge or equipment supplier check to see if the measurement data is accurate. The equipment can be evacuated once the measurement results are accurate.

Turn on bluetooth and positioning, When you need query the lastest date sent by the device please turn on the mobile internet switch.



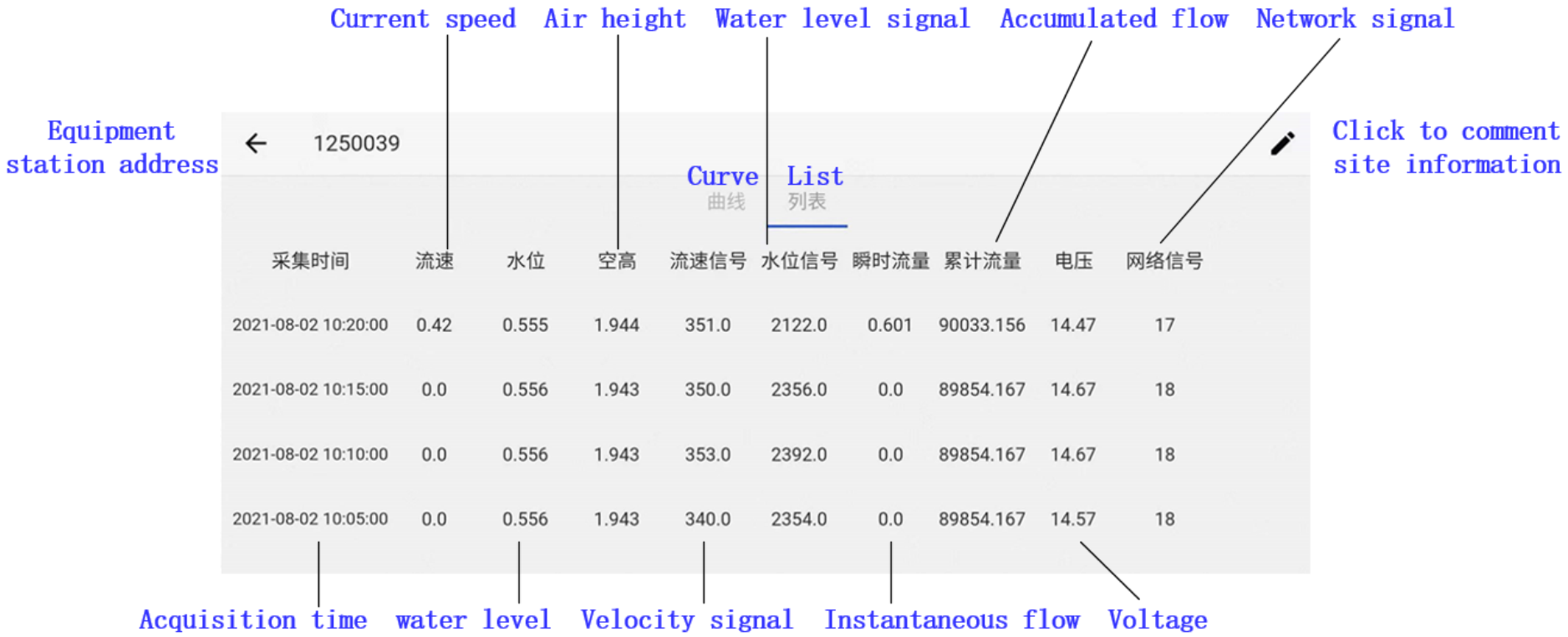
Allow APP to use bluetooth and positioning in privilege management.

Select the device station address you need to configure,The station address is on the nameplate of the equipment shell.

query
allocation
"...":Clear screen
RTU restart
Awaken
Dormancy

Signal intensity
Network status
Station address
Equipment temperature
Equipment voltage
Central station address
Central station port
Sampling delay
sending interval
save interval
radar measurement date
Inspection well parameters
Additional reporting parameters of inspection well
APN access point
APN user name
APN password
System time
System state
Current mode
Software version

The device date can only be seen when the central station address 1 and port 1 are reserved,The device date viewed on the monitoring interface using the network is as follows:


Current speed
Air height
Water level signal
Accumulated flow
Network signal
Equipment station address
1250039
Click to comment site information
Curve 曲线
List 列表
采集时间 流速 水位 空高 流速信号 水位信号 瞬时流量 累计流量 电压 网络信号
2021-08-02 10:20:00 0.42 0.555 1.944 351.0 2122.0 0.601 90033.156 14.47 17
2021-08-02 10:15:00 0.0 0.556 1.943 350.0 2356.0 0.0 89854.167 14.67 18
2021-08-02 10:10:00 0.0 0.556 1.943 353.0 2392.0 0.0 89854.167 14.67 18
2021-08-02 10:05:00 0.0 0.556 1.943 340.0 2354.0 0.0 89854.167 14.57 18
Acquisition time
water level
Velocity signal
Instantaneous flow
Voltage