



Wireless Drive-by Reading System

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I . Hardware of the System

- Pad (nexus9, android OS with SpireCap APP)
- Wireless Transmitter SC-TR:
It can be charged by power supply box or car charger.
- Power Supply Box (For wireless transmitter)
- wMBUS Water Meter (280W-R)

1. APP on Pad:

- Pad, nexus9 android OS
- SpireCap APP with following features:
 - HOME page: Load the meter collecting task list (excel file)
 - LIST page: Bluetooth connects wireless transmitter, sends meter reading task to transmitter automatically or manually
 - MAP page: Check the geographical location
 - REPORT page: Check meter reading data, and upload these data to the server by various ways
 - SET page: Setup system parameters, such as the upper limit of vehicle speed, task push method, alarm ringing and etc.
 - ABOUT US page: Company info



When the route of meter reading is set, the drive-by meter reading APP will automatically send meter reading task to the wireless transmitter. The APP collects meter data when the vehicle is near the location of meters to be read. The task status box on the APP will turn yellow to green. In case the automatic meter collection is failed, one can switch to manually meter collection .

2. Wireless Transmitter

- Wireless transmitter SC-TR comes with either 433MHz or 868MHz
- Either powered by car charger or a battery power box
- Receive push task and load task
- Decode the collected data from meters and upload data to Pad through Bluetooth port
- After the completion of uploading the data to Pad, the task will be deleted upon the request from Pad



- During data collection, all data package are saved locally. Meanwhile, the ongoing task will also be temporary saved. This will prevent missing tasks when wireless transmitter is abnormally reset.

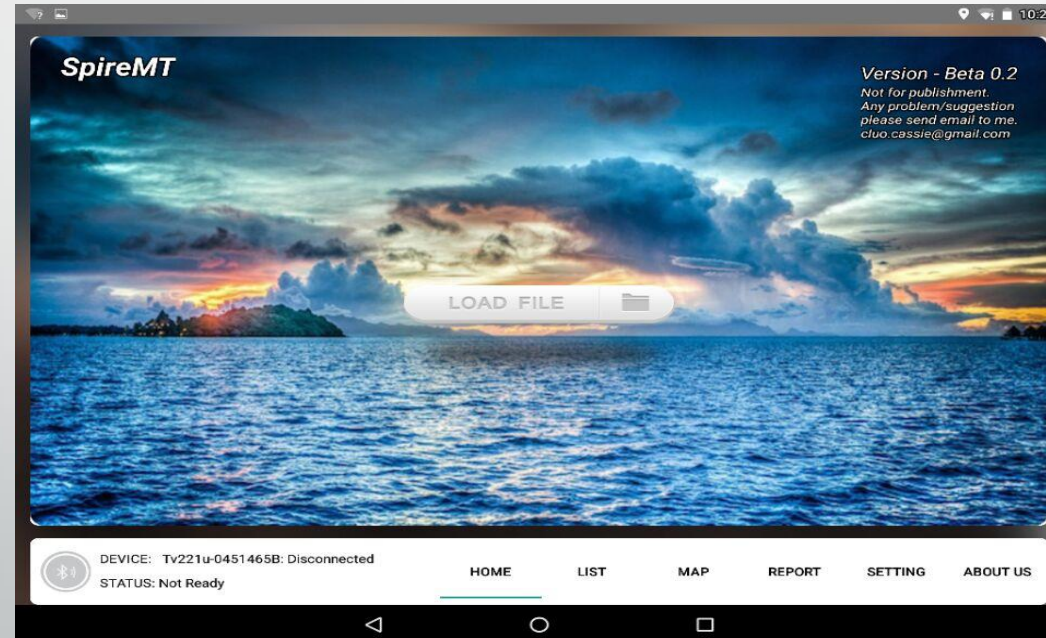
3. wMBUS Water Meter

- Ultrasonic water meter with wireless MBus interface module.
- EN13757 wMBus open protocol
- 433MHz or 868MHz
- Broadcast data every 14s
- Battery powered for more than 10 years



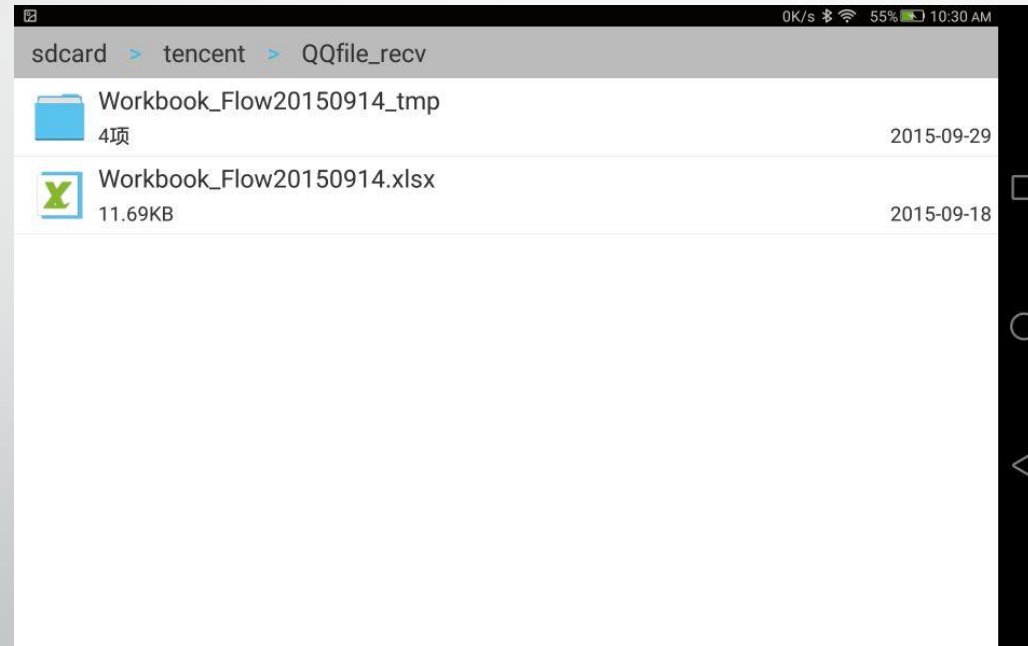
II . Meter Reading

- 1. Log in: open the APP and log in as following:

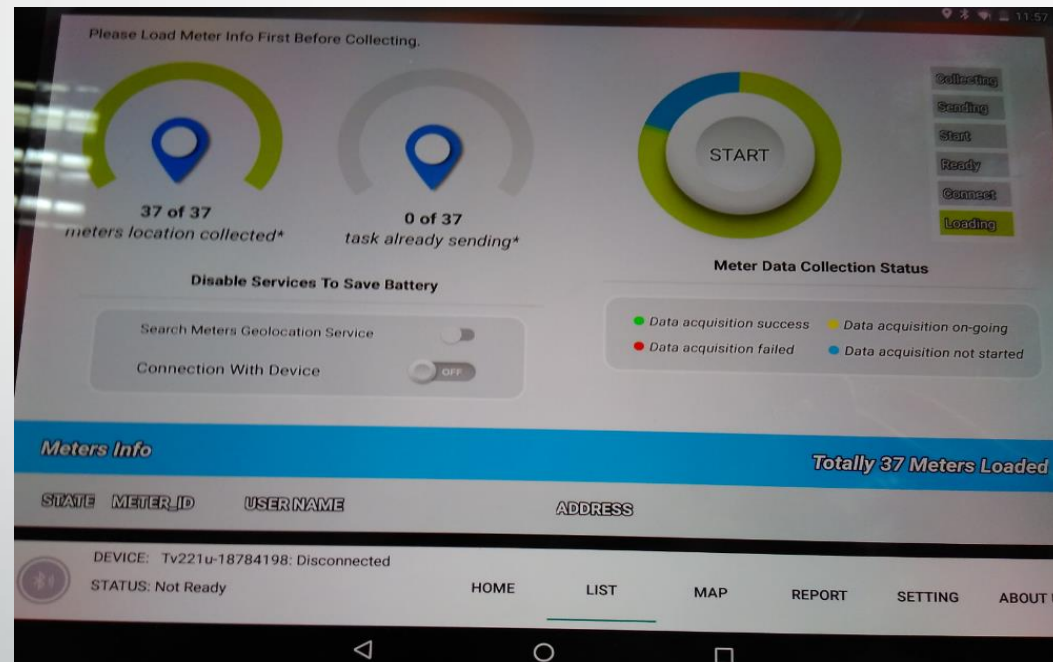


- 2. load meter collecting task file:

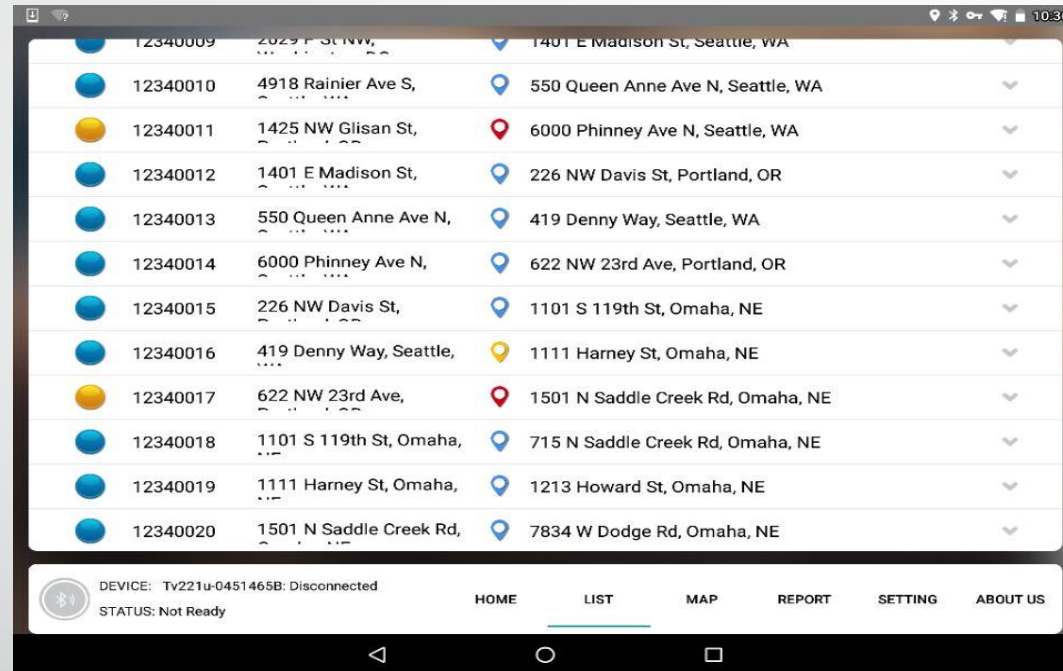
Click the blue box in screen "LOAD FILE" , find and load the information file as following:



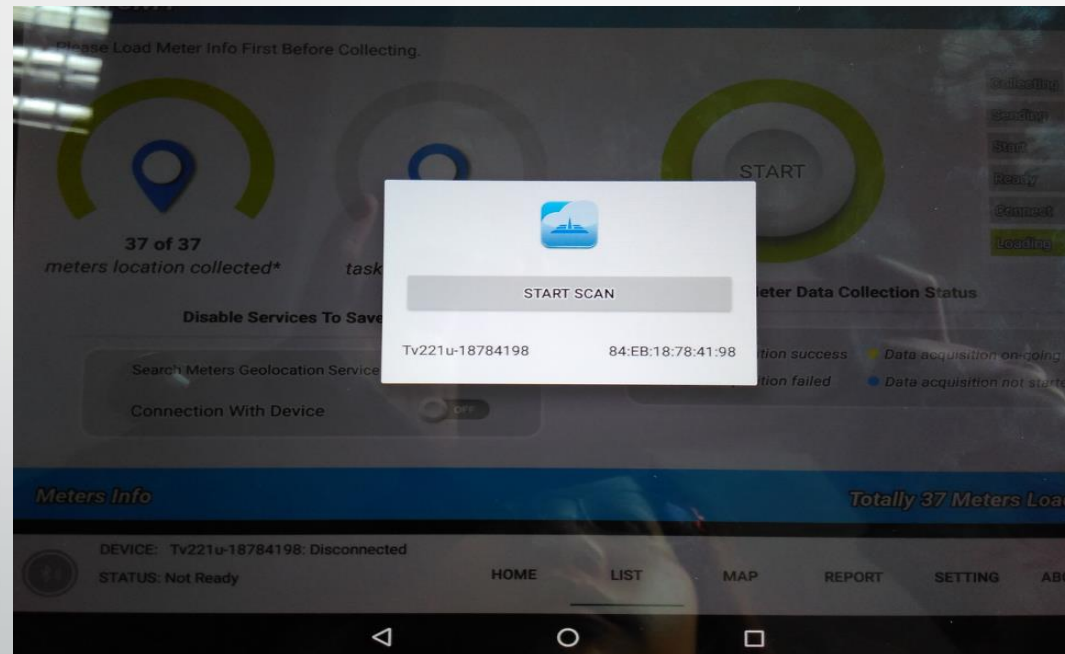
If loading file successfully, the APP will switch to the following window page .
The status shown on this page will be "LOADING".



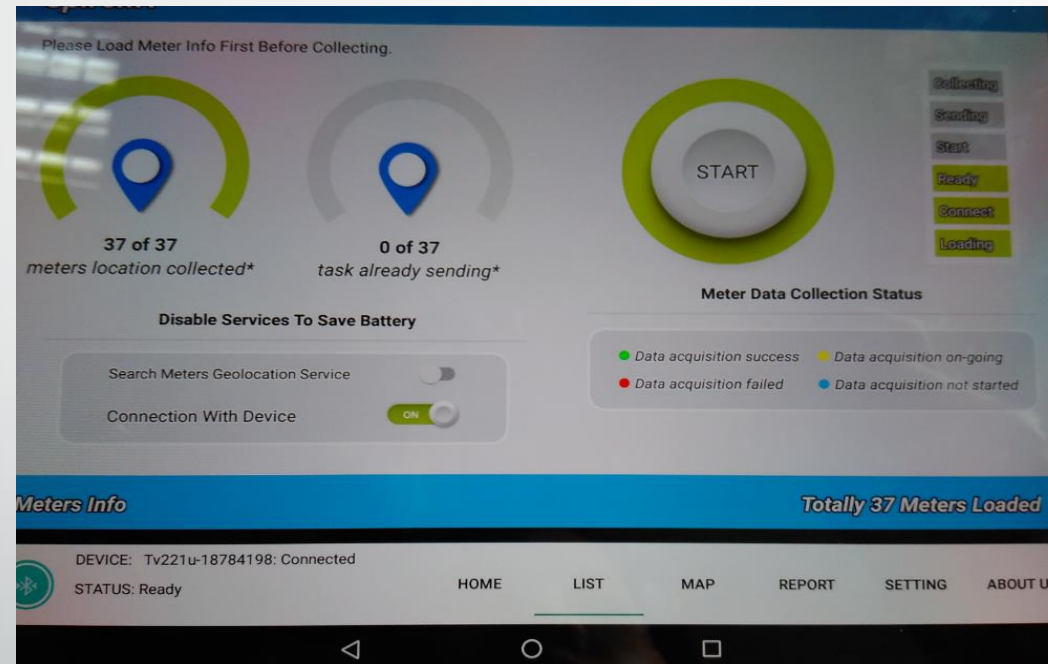
- 3. Locate: load completed task and locate it in the background.



- 4. Bluetooth Connection: Click the icon “Start” button to search Bluetooth devices. Select the right wireless transmitter device to connect the Pad to the wireless transmitter.



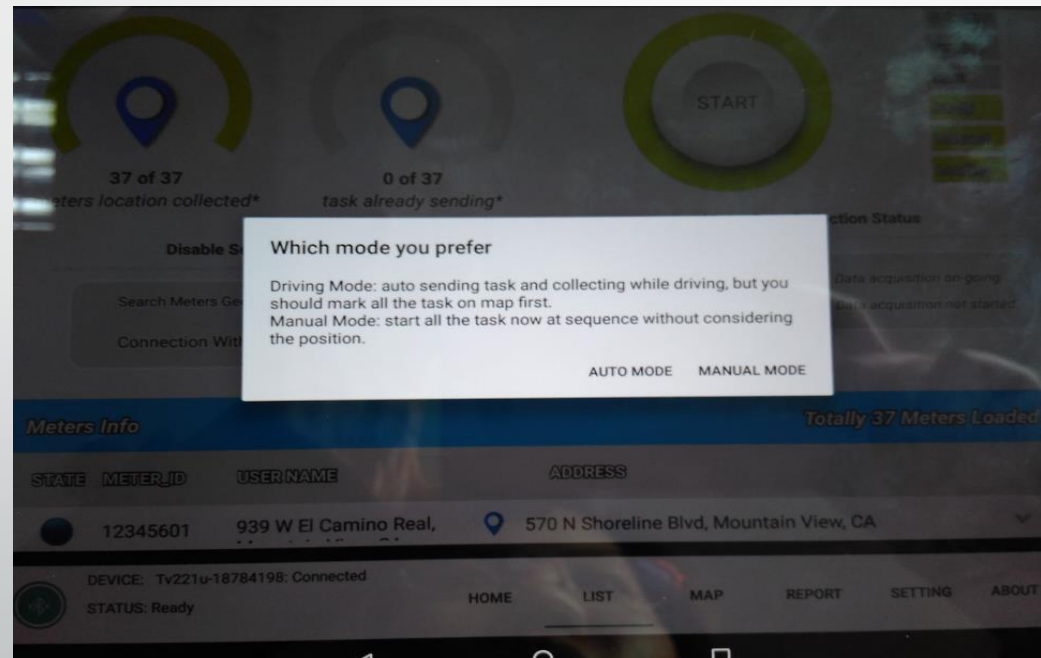
After successful connecting to the wireless transmitter through Bluetooth, the APP will show “Ready” in its status flag.



- 5. Choose Execution Mode

Manual Mode: push the current meter reading task file to the wireless transmitter.

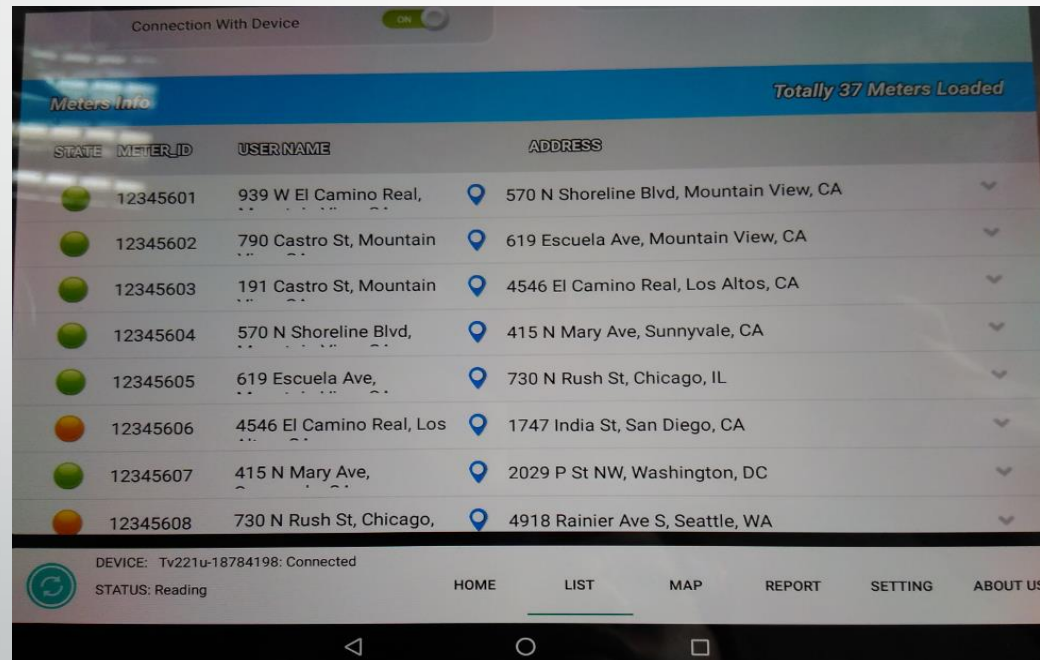
Automatic Mode: push the meter reading task files automatically in proper order based on RSSI Radius Scanning Method.



Manual Mode: push the current meter reading task file.

When the icon in front of the meter ID is blue, it means the APP has not sent meter reading command to wireless transmitter yet. When this icon turns to yellow, it means the APP has send the meter reading task successfully. When this icon turns green, it means the APP has collected data from wireless transmitter successfully.

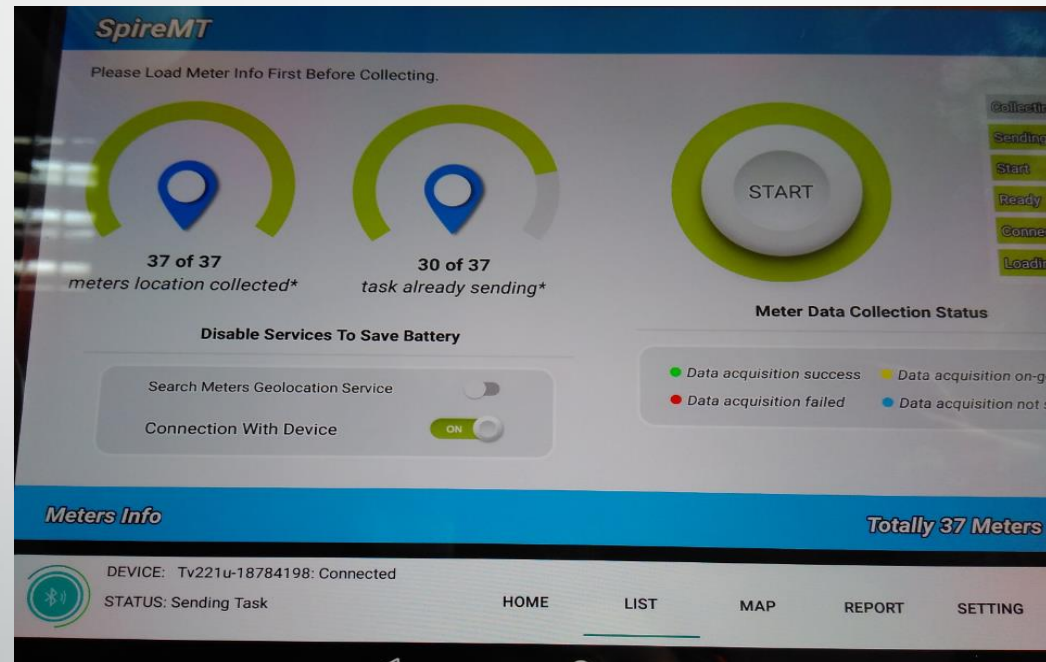
Notice: the upper limit of the tasks is 500.



Automatic Mode: Automatically send meter reading task which meets the RSSI radius scanning method.

Jump to Map Interface, drive by planned route and then read meters.

Note: The upper limit is 500 tasks at one time, but the total tasks can be infinite.



6. Map Interface: Manually plan the route based on the location of meters



Shows water meters' locations with marks.

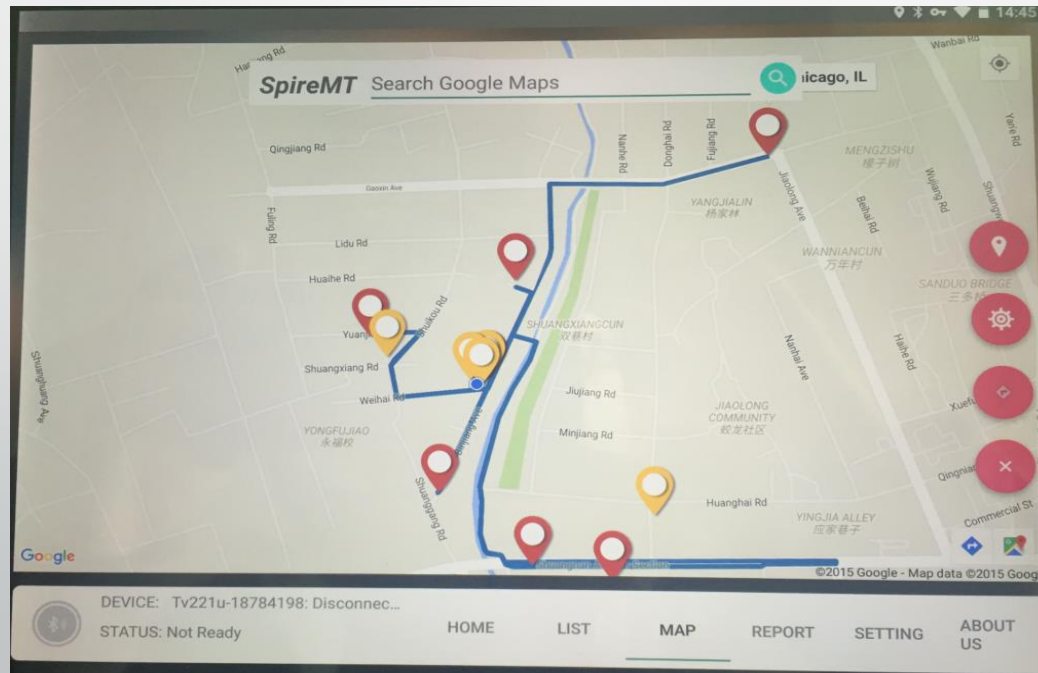


Set up location points (The upper limit is 6 points. If need 6-26 points, it requires to pay service fee to Google company)

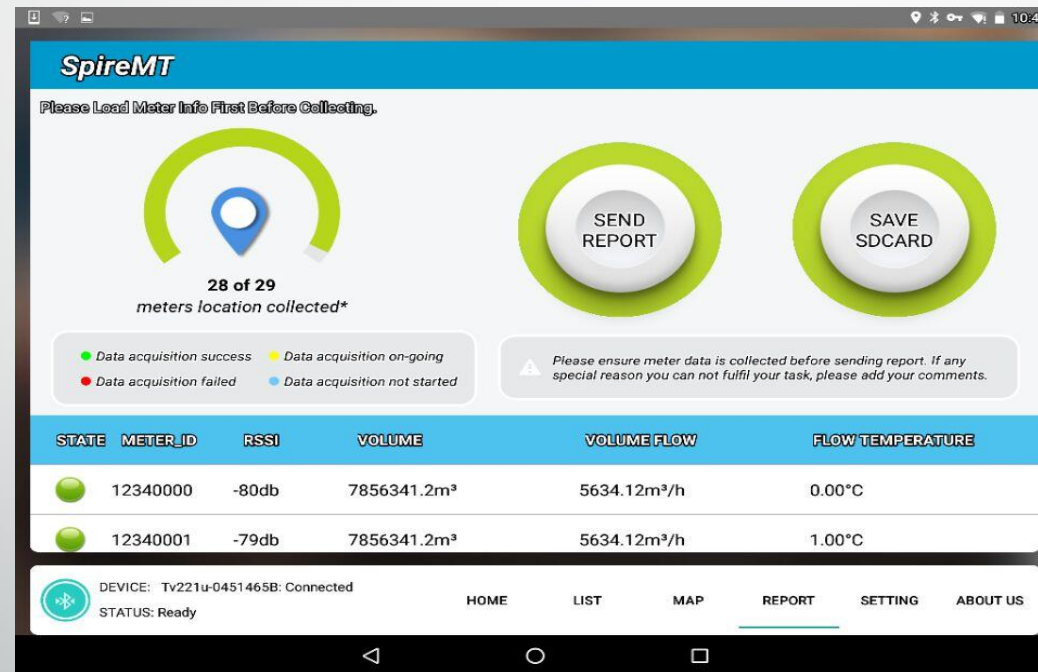


Generate navigation route (In the background, automatically save the navigation route which can be used next time)

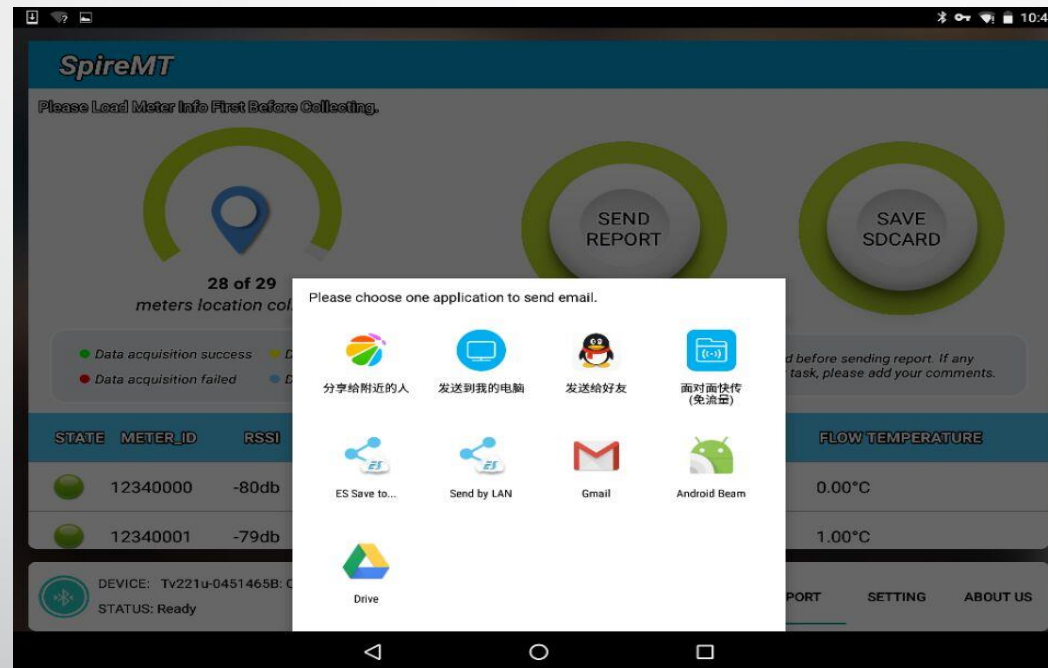
Drive-by operator can read meters by the planned navigation route.



- 7. Report Check: Check the meter reading data and status. As shown in the following picture, the signal strength, flow rate, temperature and other parameters can be displayed.



- 8. Data Upload: Click “send report” after reading meters to upload data to the service center through various ways.





Thank you!