

# U350 Demo Application Instructions

## Product picture

U350 LoRa Sensor



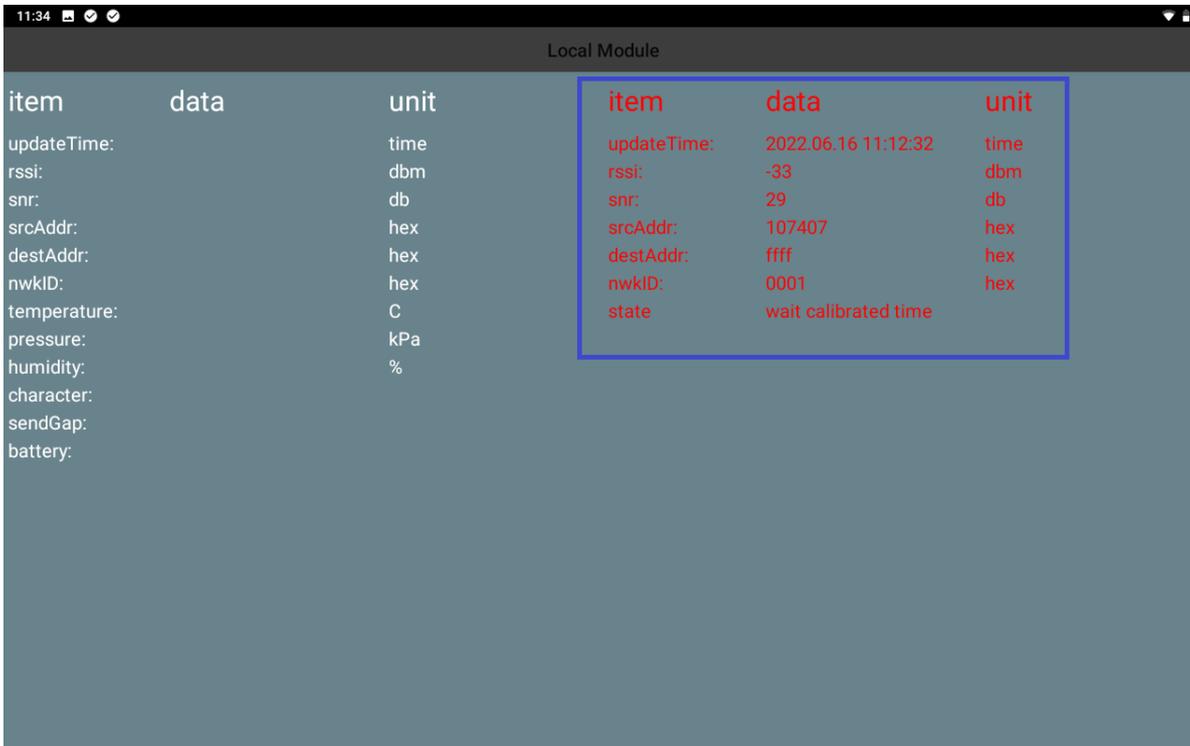
MDT Device



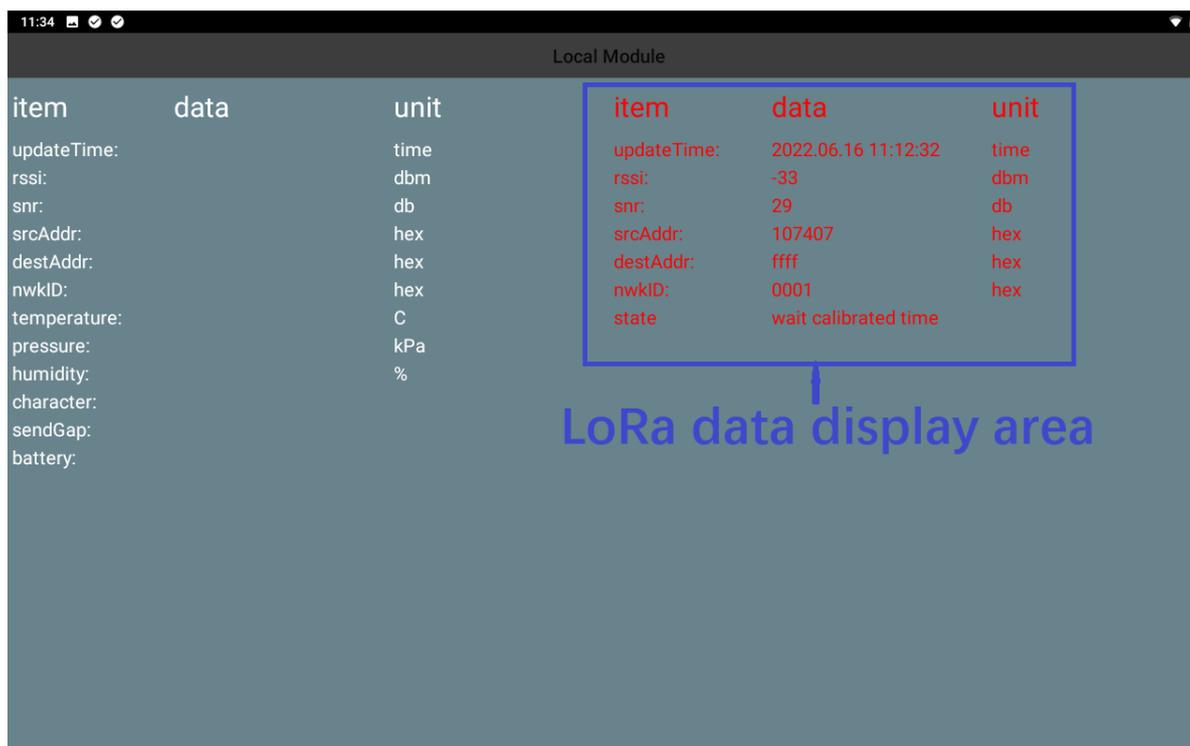
## Set time

- 1.U350 Power on
- 2.Install the LoRa sensor demo App on the MDT device.
- 3.Open the demo app, and the data from the U350 LoRa will be displayed.

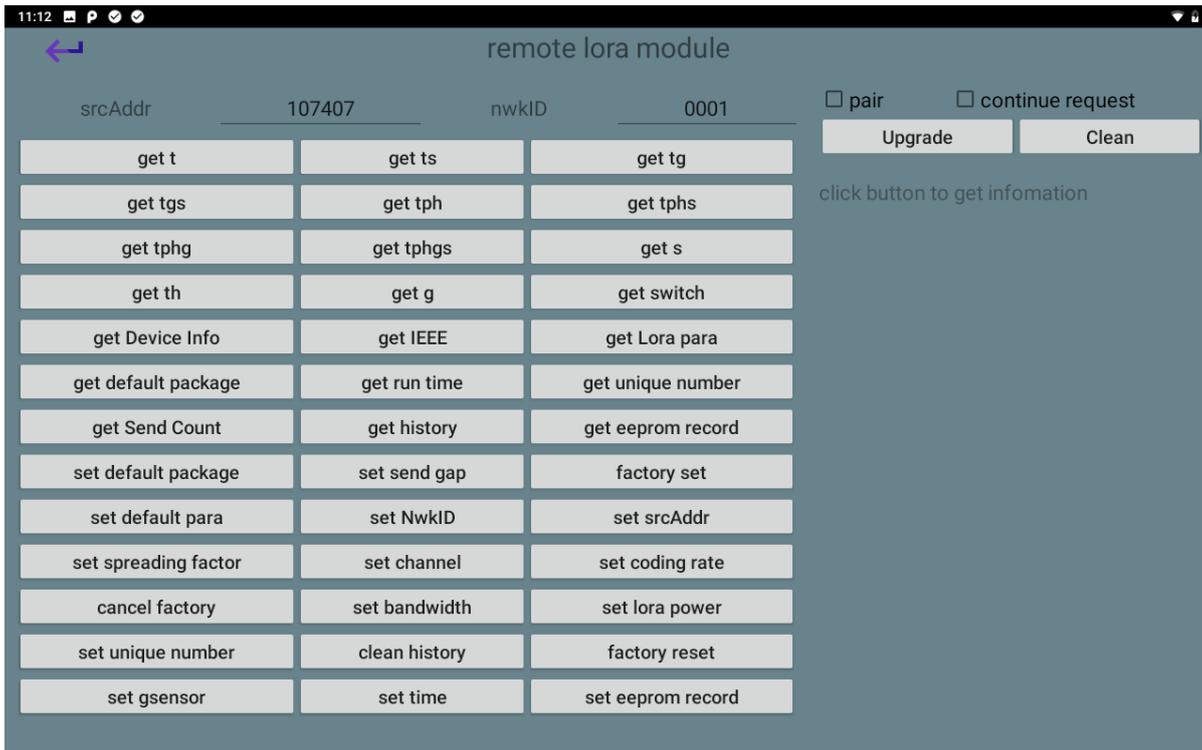
(Displayed in red font means that the time of U350 and MDT is not synchronized and needs to be calibrated.)



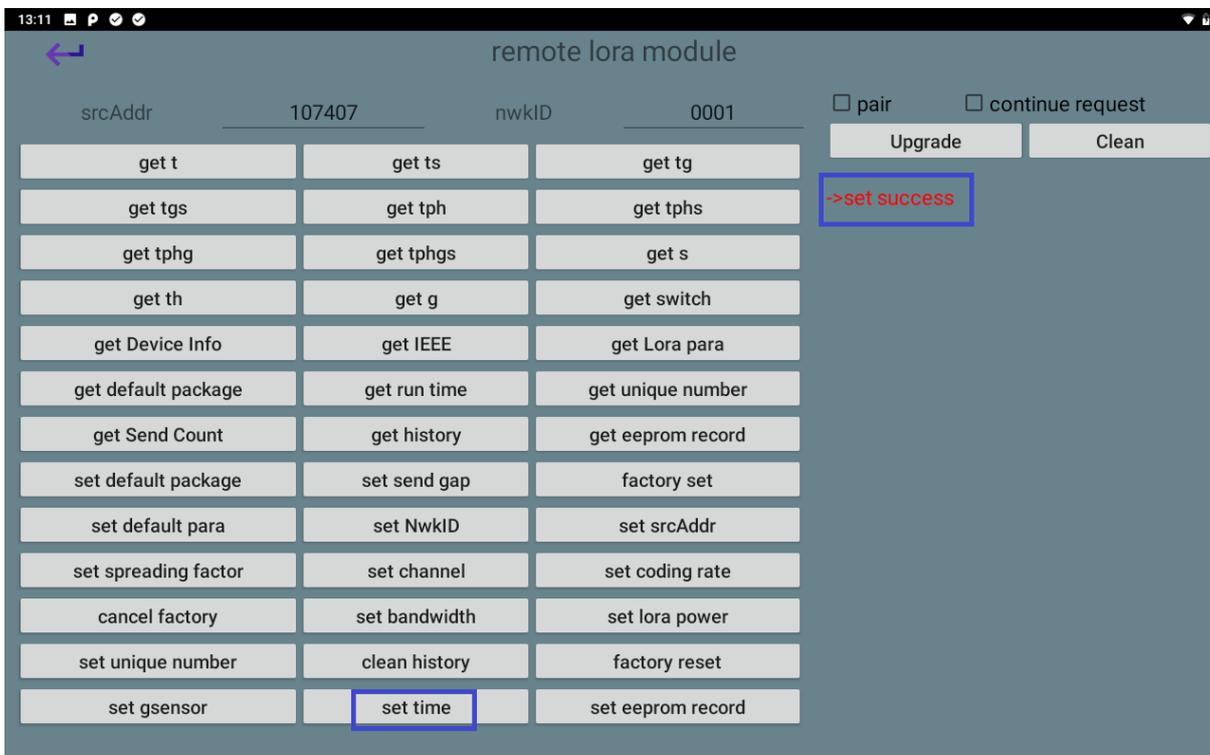
Click on the data display area to enter the settings interface.



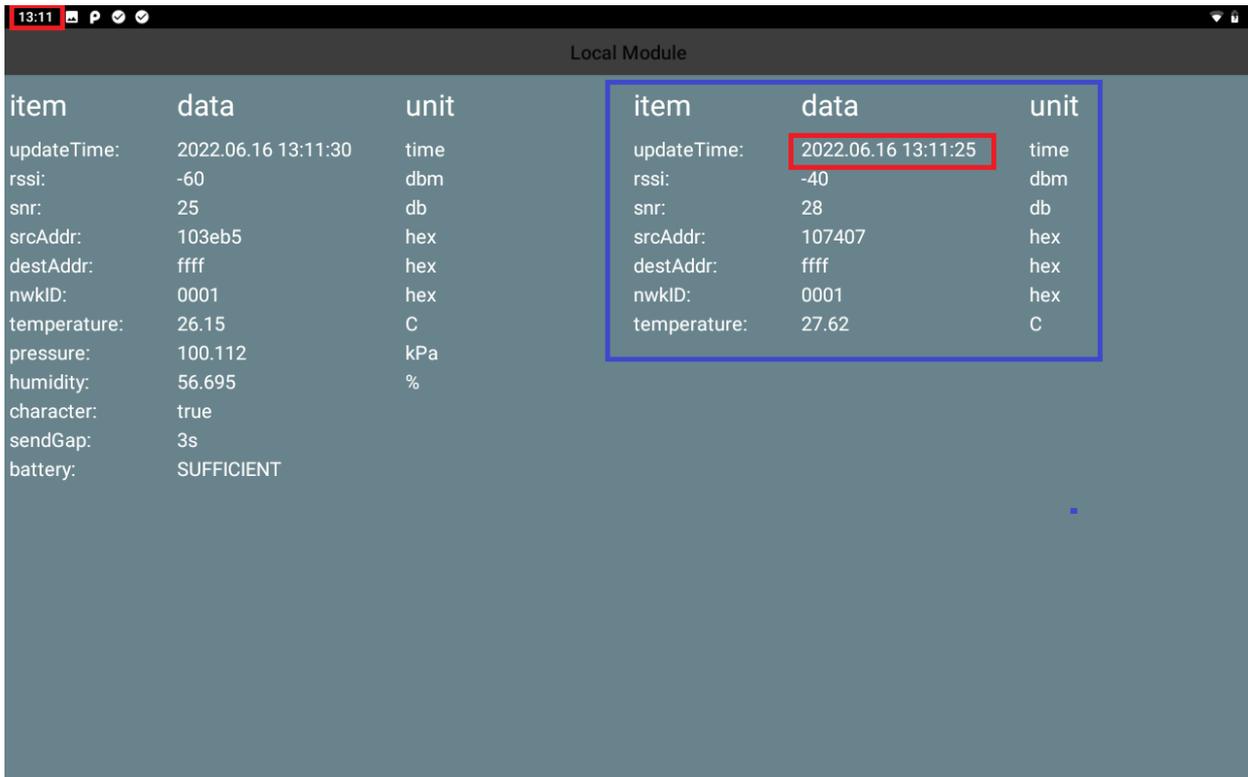
LoRa Settings interface



Press the set time button to calibrate the U350 time.



If the time is set successfully, close the demo application and open it again. The font of the Lora data is displayed in white and the time is synchronized with the MDT device.



### Terminology and definition

rssI	Signal strength, negative value, the higher the value the better the signal (included in the receiver package)	
snr	Signal-to-noise ratio, the degree of interference of the external environment in the current environment, the larger the value, the better the signal (included in the received packet)	
srcAddr	Lora module communication address to identify different modules	
destAddr	Device address to send to, broadcast address when destAddr is 0xffff	
nwkId	Network ID, devices on the same network can communicate.	
<b>Value</b>	<b>Union</b>	<b>Range</b>
temperature	°C	-40~85
pressure	kPa	300~1100hPa
humidity	%	0~100
rssI	dBm	0~-135
snr	dB	0~0xff

### LoRa settings

#### Getting data

When you press the get xx button, you can check the temperature, pressure, humidity, history data, etc.

“t” indicates temperature

“p” indicates pressure

“h” indicates humidity

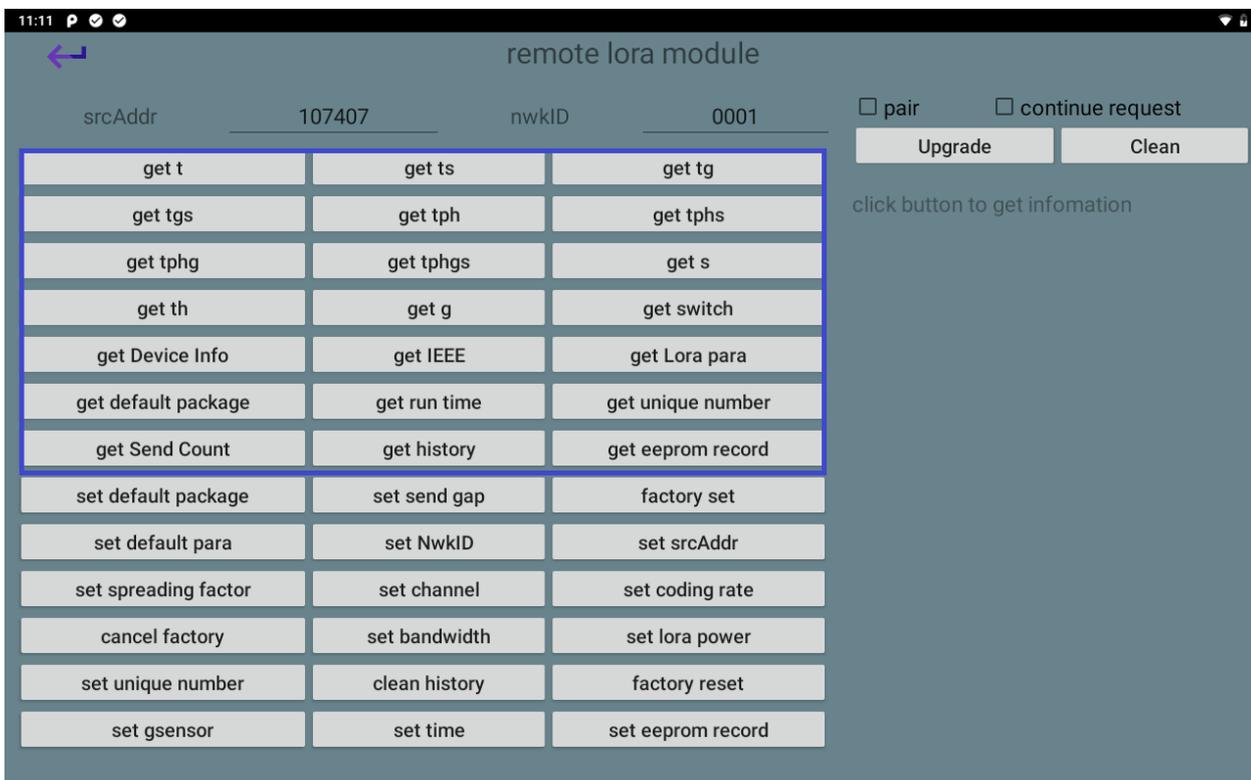
“g” indicates gravity sensor data

“s” indicates the status word, include character, send gap and battery information

t	Read temperature
t, s	Read temperature, status word
t, g	Read temperature, g-sensor
t, g, s	Read temperature, g-sensor, status word
t, p, h	Read temperature, pressure, humidity
t, p, s	Read temperature, pressure, humidity, status word
t, p, h, g	Read temperature, pressure, humidity, g-sensor
t, p, h, g, s	Read temperature, pressure, humidity, g-sensor, status word
s	Read status word
t, h	Read temperature, humidity
g	Read g-sensor data

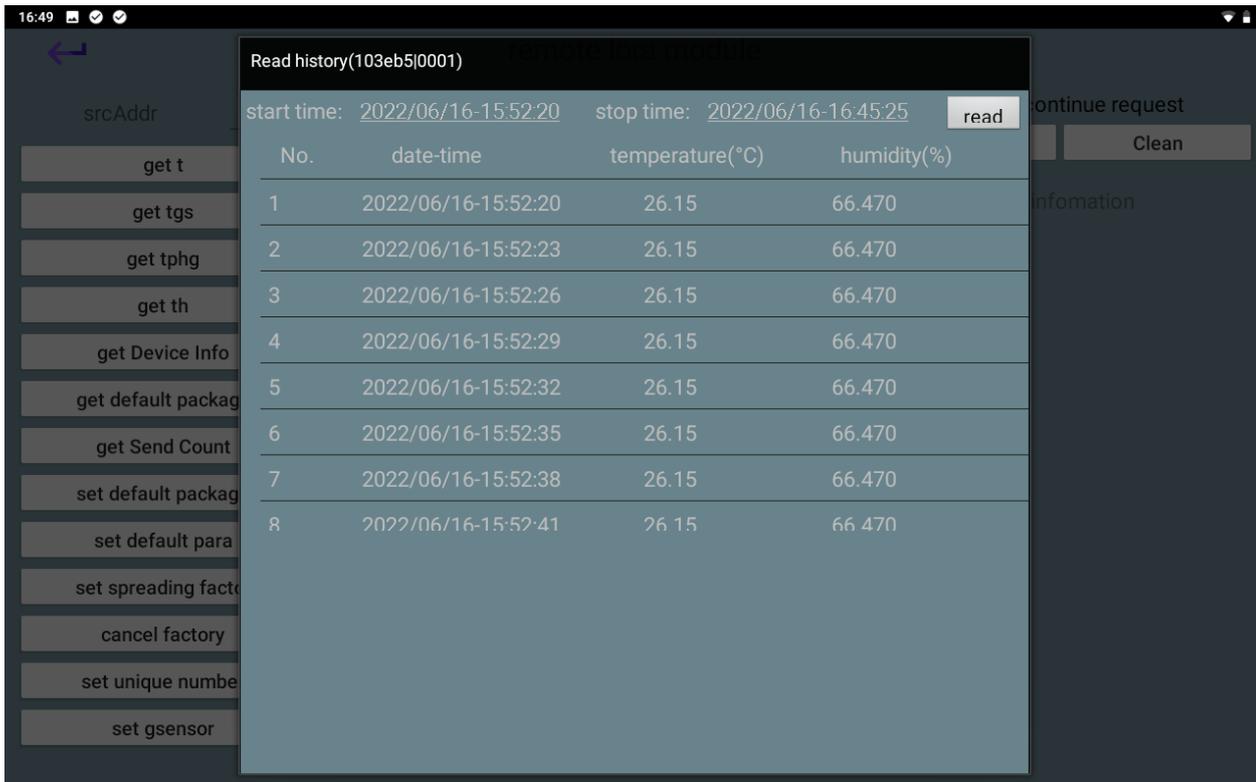
P.S. The more data you get, the more the U350 battery power consumes, so to save the battery power, you can press the different options button to get the data you want.

get switch	When the U350 acts as a switch, it can get the switch status
get device info	Get the device name and firmware version
get IEEE	Get the device unique ID
get Lora para	Get lora power, coding rate, spreading factor, channel, bandwidth
get default package	Get default package (e.g. TPHS, TPH, ect.)
get run time	Get the run time of the U350
get unique number	Get the unique number of the U350
get send count	Get the number of times LoRa data is sent.
get history	Get the temperature and humidity records
get eeprom record	Get the history record status (ON or OFF)



## Get history

Pressing the get history key to read the temperature and humidity records



Read history(103eb5f0001)

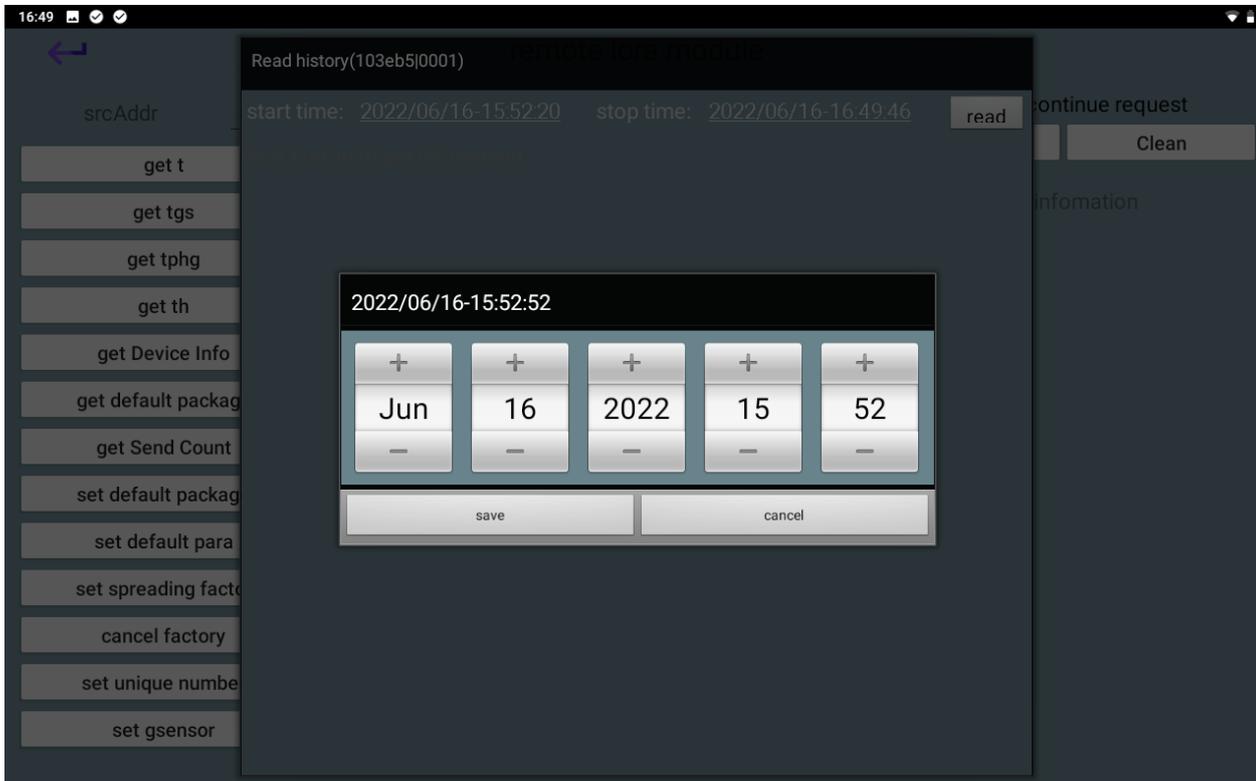
start time: 2022/06/16-15:52:20 stop time: 2022/06/16-16:45:25 read

No.	date-time	temperature(°C)	humidity(%)
1	2022/06/16-15:52:20	26.15	66.470
2	2022/06/16-15:52:23	26.15	66.470
3	2022/06/16-15:52:26	26.15	66.470
4	2022/06/16-15:52:29	26.15	66.470
5	2022/06/16-15:52:32	26.15	66.470
6	2022/06/16-15:52:35	26.15	66.470
7	2022/06/16-15:52:38	26.15	66.470
8	2022/06/16-15:52:41	26.15	66.470

Navigation menu on the left: srcAddr, get t, get tgs, get tphg, get th, get Device Info, get default packag, get Send Count, set default packag, set default para, set spreading fact, cancel factory, set unique numbe, set gsensor.

Buttons on the right: continue request, Clean, information.

You can set the start time and stop time of the records



Read history(103eb5f0001)

start time: 2022/06/16-15:52:20 stop time: 2022/06/16-16:49:46 read

2022/06/16-15:52:52

+	+	+	+	+
Jun	16	2022	15	52
-	-	-	-	-

save cancel

Navigation menu on the left: srcAddr, get t, get tgs, get tphg, get th, get Device Info, get default packag, get Send Count, set default packag, set default para, set spreading fact, cancel factory, set unique numbe, set gsensor.

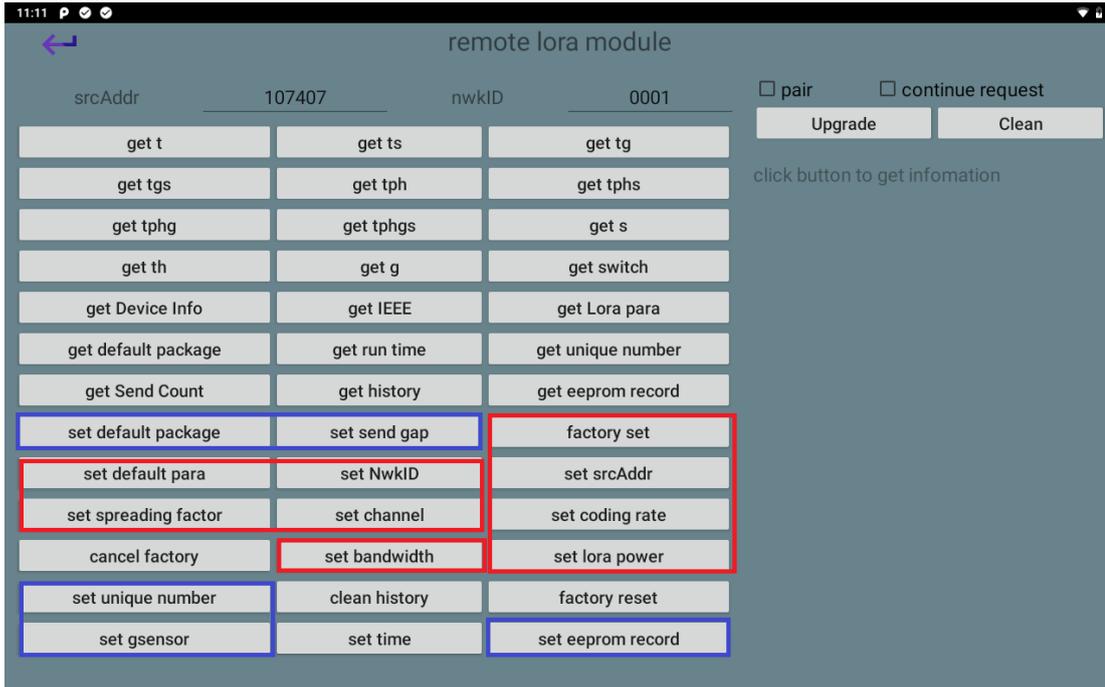
Buttons on the right: continue request, Clean, information.

## Setting data

When you press set xx button, you can set the send gap, default package, unique number, g-sensor, etc.

Set default package	Set the items to display on the application (e.g. T, TGS, TPH, TPHS, switch, etc.)
Set send gap	Set the sending interval of lora data (e.g. 10s, 30s... 600s, etc.)
Set unique number	Set the unique number of the U350 if needed.
Set gsensor	Set the state on and off when the U350 device acts as a switch.
Set eeprom record	Choose whether to turn history logging on or off.

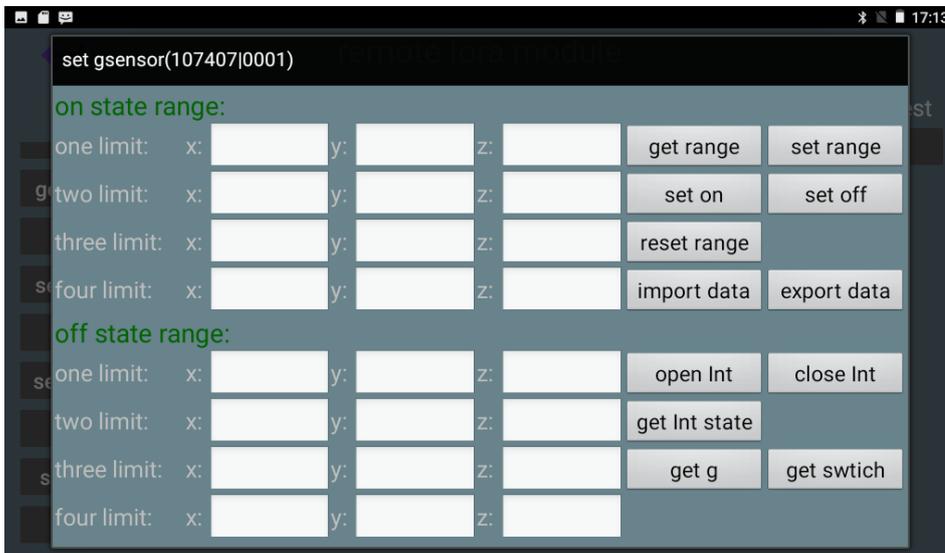
P.S. Please don't set these options (NwkID, srcAddr, lorapower, channel, coding-rate, bandwidth, spreading factor) because it will change the U350 LoRa parameters, which will cause the MDT device not to receive U350 data.



## Set G-sensor

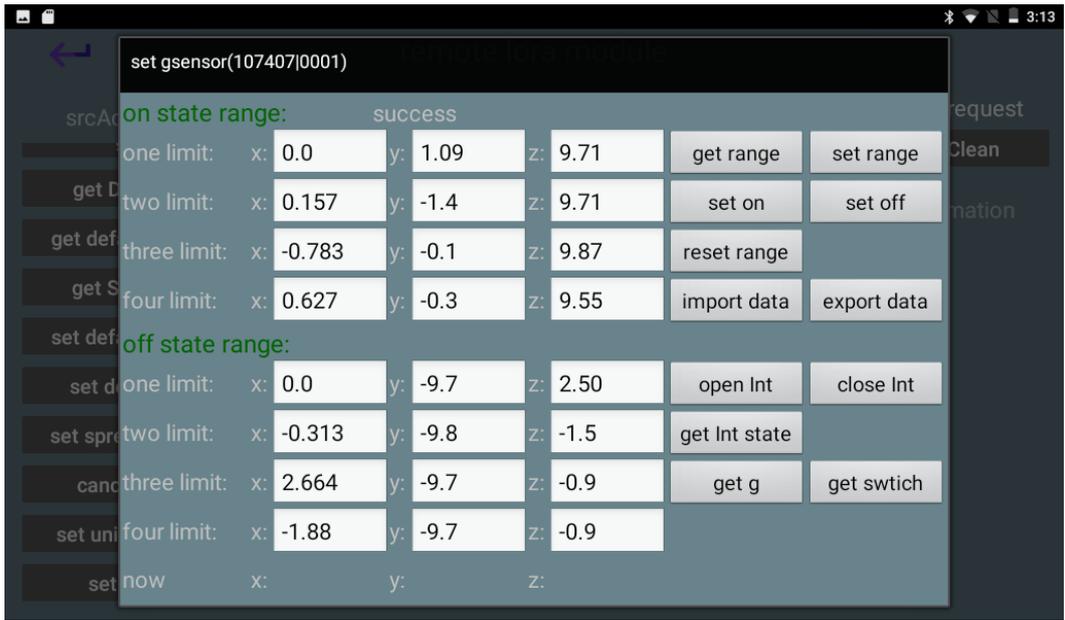
The U350 device acts as a switch and you can follow the video to set the direction on or off.

Set the state range's video link: <https://drive.google.com/file/d/1YbnXiYirbhuC4t6yFE8X0lke87bg3LB/view?usp=sharing>



You can press the export data button to export the range data to MDT device, and press the import data button, and then

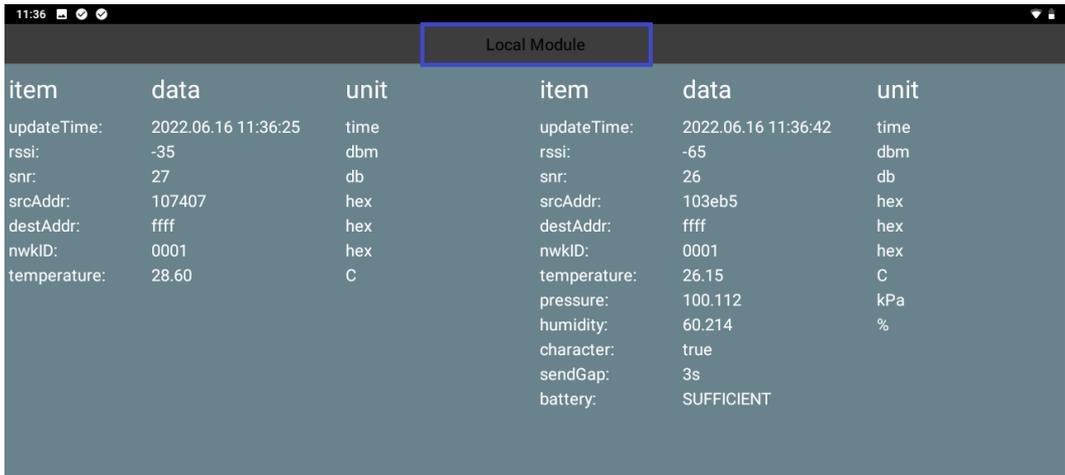
press the set range button to import it to another U350 device.



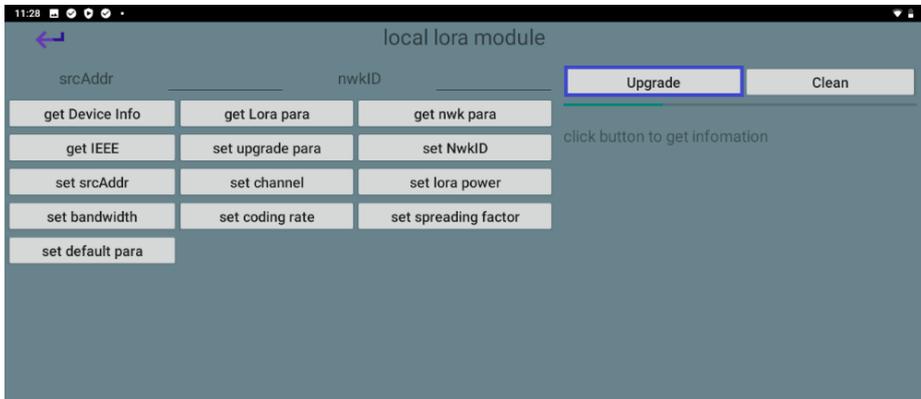
### Upgrade Local LoRa module firmware

Please put the "lora\_module.bin" file into the storage root directory of the MDT device.

Press the Local Module button to enter the upgrade interface.



Press Upgrade button to update the local LoRa module firmware of the MDT device.



After the upgrade is successful, press the Get Device Info button to check the firmware version of the local lora module.



## Upgrade U350 LoRa firmware

Please put these two bin files (u350first.bin and u350second.bin) into the MDT device internal storage root directory, and press the Upgrade button to update the U350 LoRa firmware.



Press the Get Device Info button to check the firmware version of the U350

