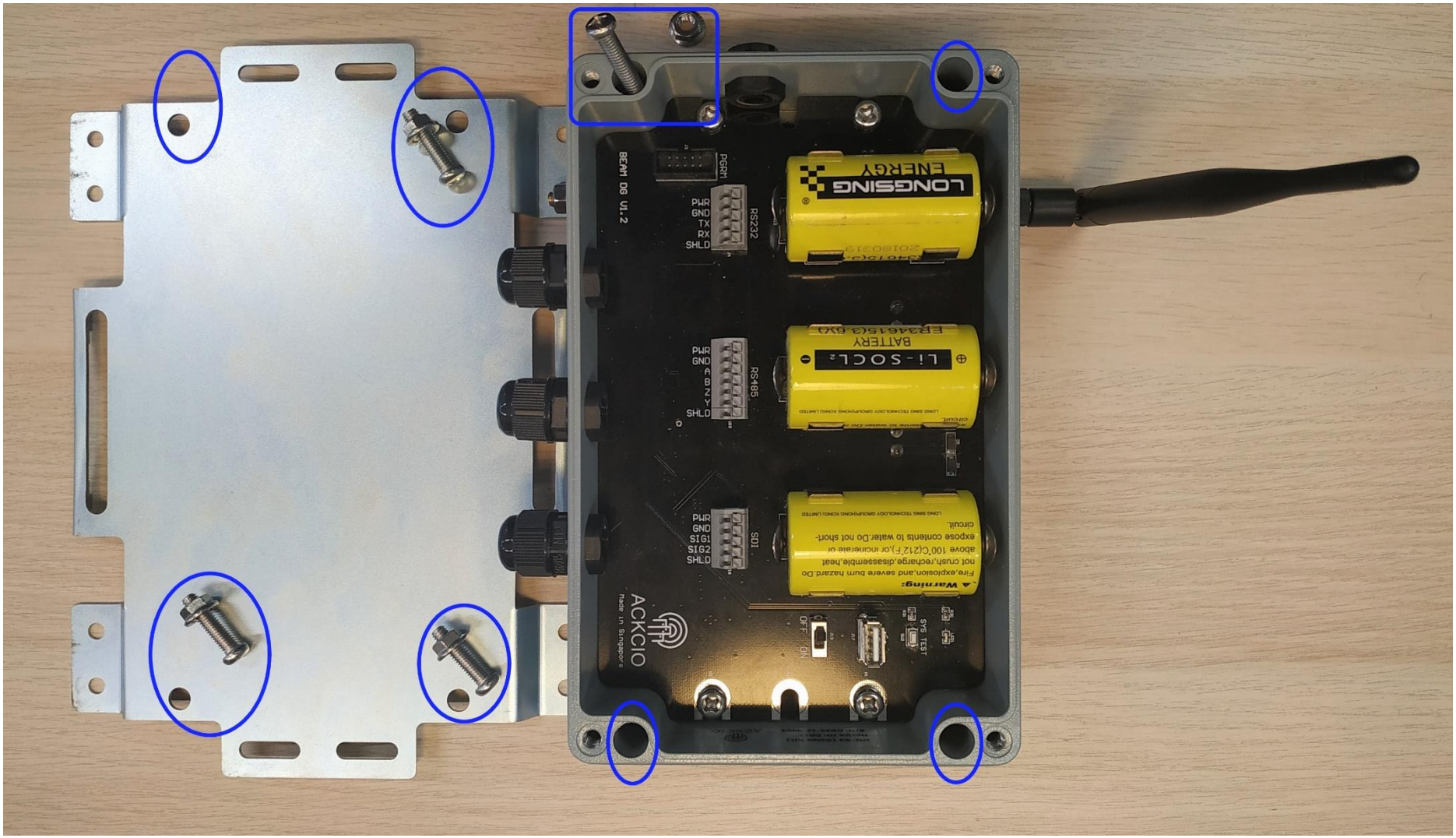
Setting up Digital Node (BEAM-DG)

This page provides information on setting up a Digital Node to work with the offline Ackcio Beam gateway.

Installation

The Nodes can be directly affixed to a flat surface using M6 screws. However, for more sophisticated mounting scenarios, we recommend using the node bracket. The node bracket can be used to easily mount the node on flat surfaces, on pipes using U-bolts or cable-ties, or in other complicated settings.

If you are using the bracket, first fix the node device to the bracket using M6 screws and nuts as shown below.


BEAM D6 V1.2
PGRM
PWR
GND
TX
RX
SHLD
RS232
PWR
GND
A
B
Z
Y
SHLD
RS485
PWR
GND
SIG1
SIG2
SHLD
SDI
LONGSING
ENERGY
BATTERY
Li-SOCL2
ACKCIO
Made in Singapore
OFF ON
SYS TEST

Use four screws and nuts to attach the node to the bracket

Connect the SMA antenna to the bulkhead. Once the mounting is complete, the node should look as follows.

Node Setup

1.Connect the node antenna to the antenna bulkhead. 2. Connect the sensor wires to the node while ensuring that the wires are plugged in correctly.

RS232 Port
PWR : Positive power input (e.g.+12V)
GND : Negative power input of sensor
TX : Transmit out (TX) output of sensor
RX : Receive input (RX) of sensor
SHLD : Shield wire of sensor

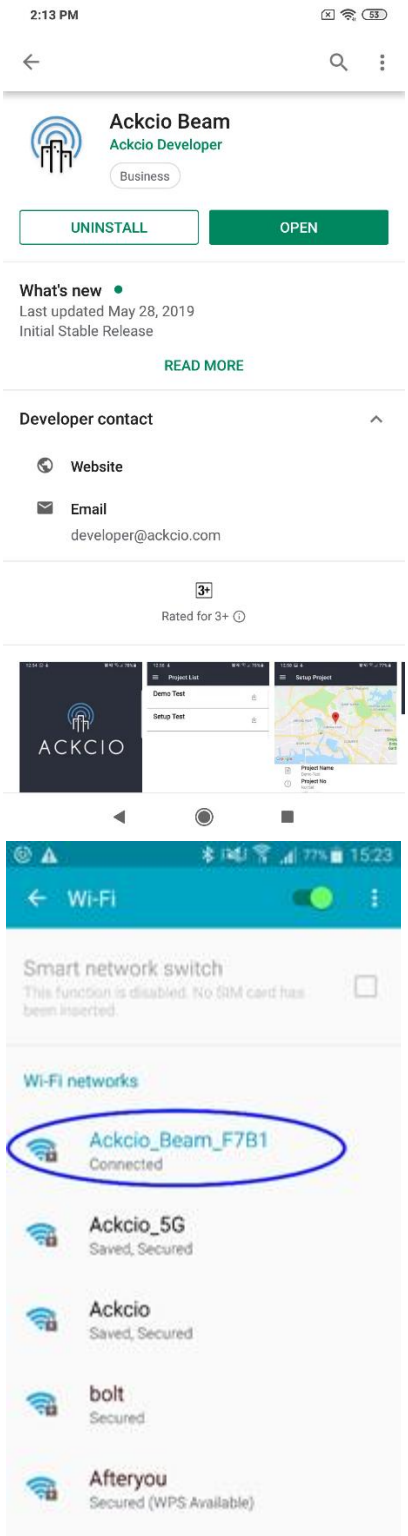
RS485 Port
PWR : Positive power input (e.g.+12V)
GND : Negative power input of sensor
SHLD: Shield wire of sensor
(a) Full Duplex Mode
A : A line of sensor chain
B : B line of sensor chain
(b) Half Duplex Mode
A+/Y : A+ line of sensor chain
B+/Y : B- line of sensor chain

SDI Port
PWR : Positive power input (e.g.+12V)
GND : Negative power input of sensor
SIG1 : SDI line of sensor chain
SIG2 : Switch type sensor output
SHLD: Shield wire of sensor

3. Switch off the Node and insert the battery while ensuring the polarity is followed correctly.

Configuring via the Ackcio Beam App

1.Download Ackcio Beam app at Google Playstore and connect to Gateway WiFi.



2. Plug in the USB end of the cable via an OTG adapter to your Android phone.

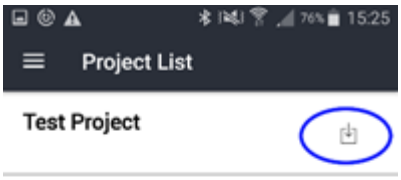
3. Important! Please make sure the Node is switch off before connecting to your Android phone. 4. Plugin micro USB end to the Node.

5. Switch on the Node.

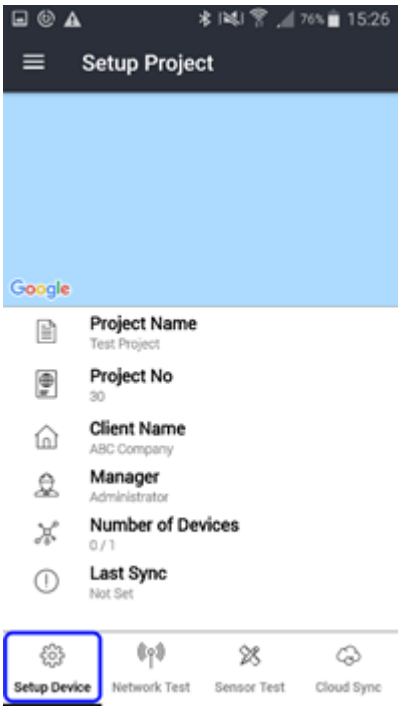
6. Open the Ackcio Beam app on the phone. On toggle button, "Cloud" option is for Ackcio Online Live version. "Gateway" option is for Offline version. Please choose "Gateway" to proceed with offline version. ***(Please note that you need to add the Node and create the project first before you commission the node. Please refer to Gateway Setup for details.)***

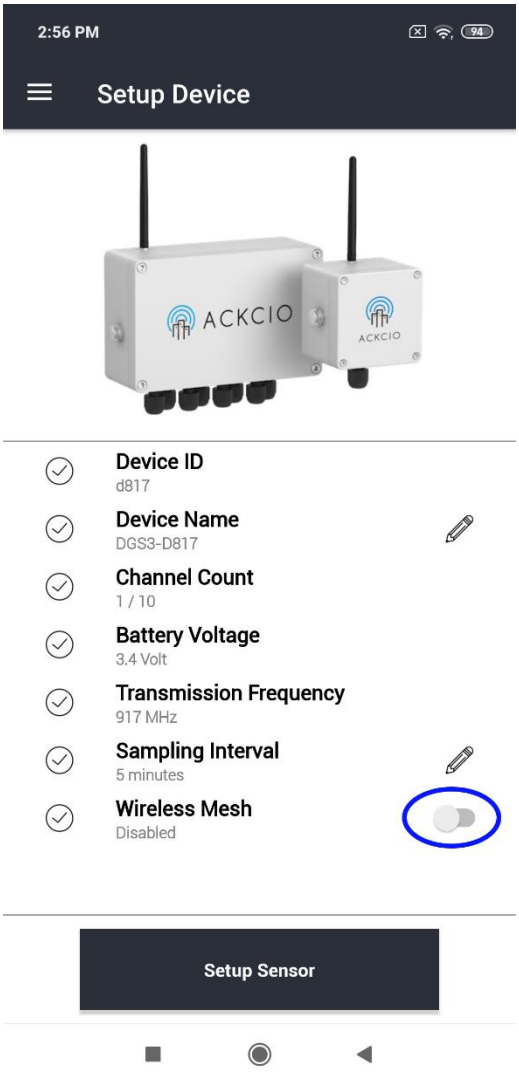
"Gateway" option to connect to Offline Gateway

(i) You will see the project which you have already created once you open your Ackcio app. Click the button to download the project and go in to the project, you will see the project details.

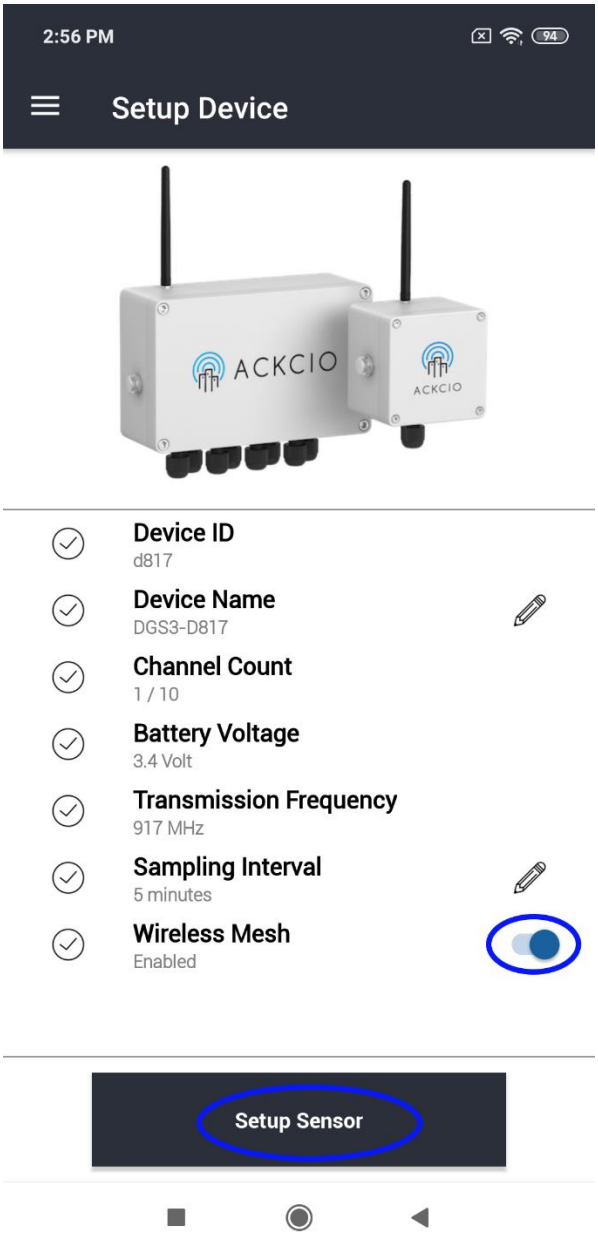


(ii) Press "**Reset**" button on the Node itself. Then click on “Setup Device” on the lower left menu on Ackcio app, the app will show connected node information. If the connection is unsuccessful, press "Reset" button on Node and connect again.



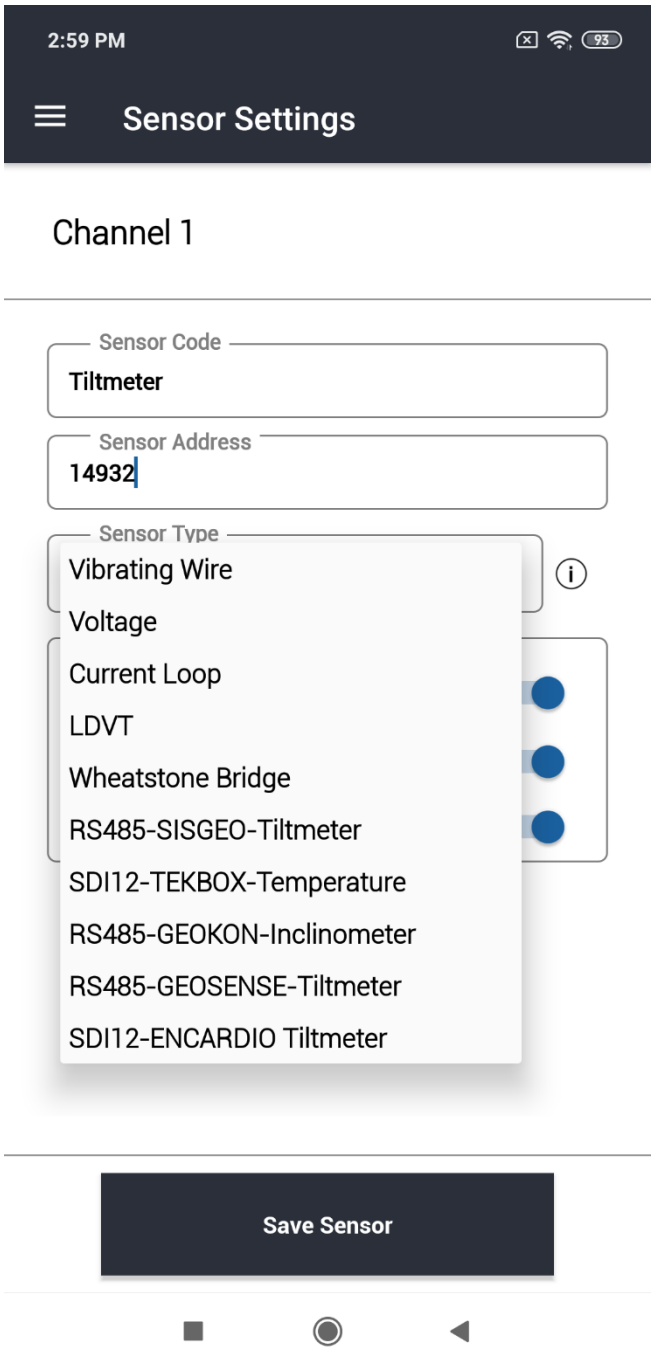


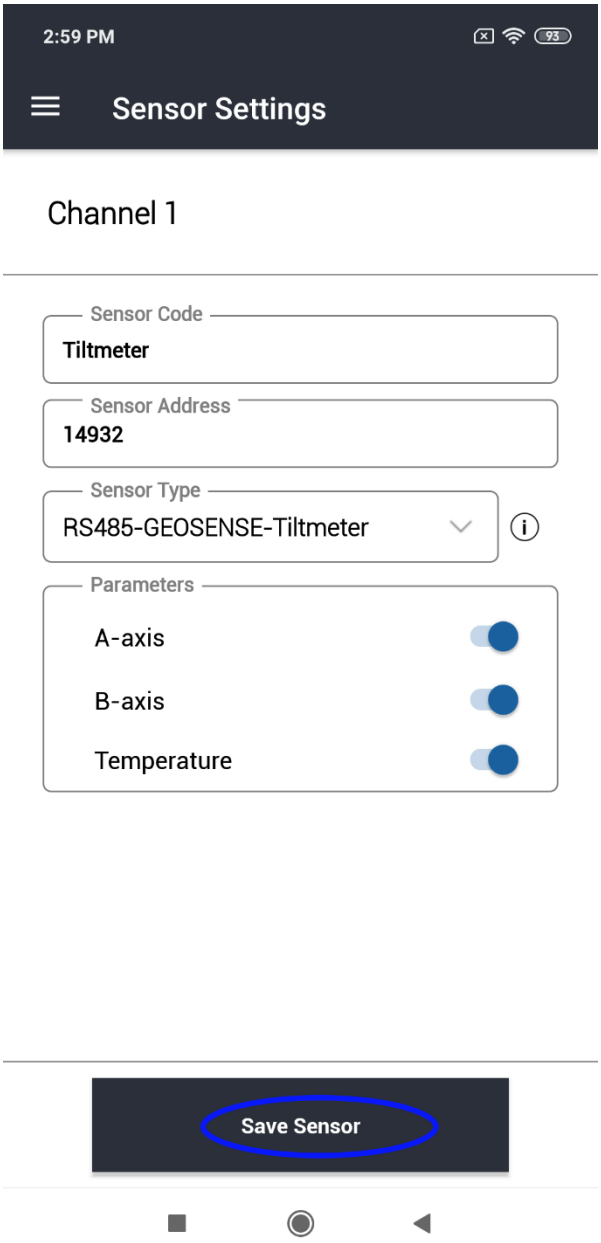
(iii) <Optional Step> If Wireless Mesh (Relay) function is to be deployed, click on "Wireless Mesh" toggle button to enable. Once done, click on “Setup Sensor”, you can now configure the sensor settings.


2:56 PM
94
Setup Device
ACKCIO
ACKCIO
Device ID
d817
Device Name
DGS3-D817
Channel Count
1 / 10
Battery Voltage
3.4 Volt
Transmission Frequency
917 MHz
Sampling Interval
5 minutes
Wireless Mesh
Enabled
Setup Sensor

(iv) You will see this page with the + sign button at the lower right area. Click that to configure the sensor.

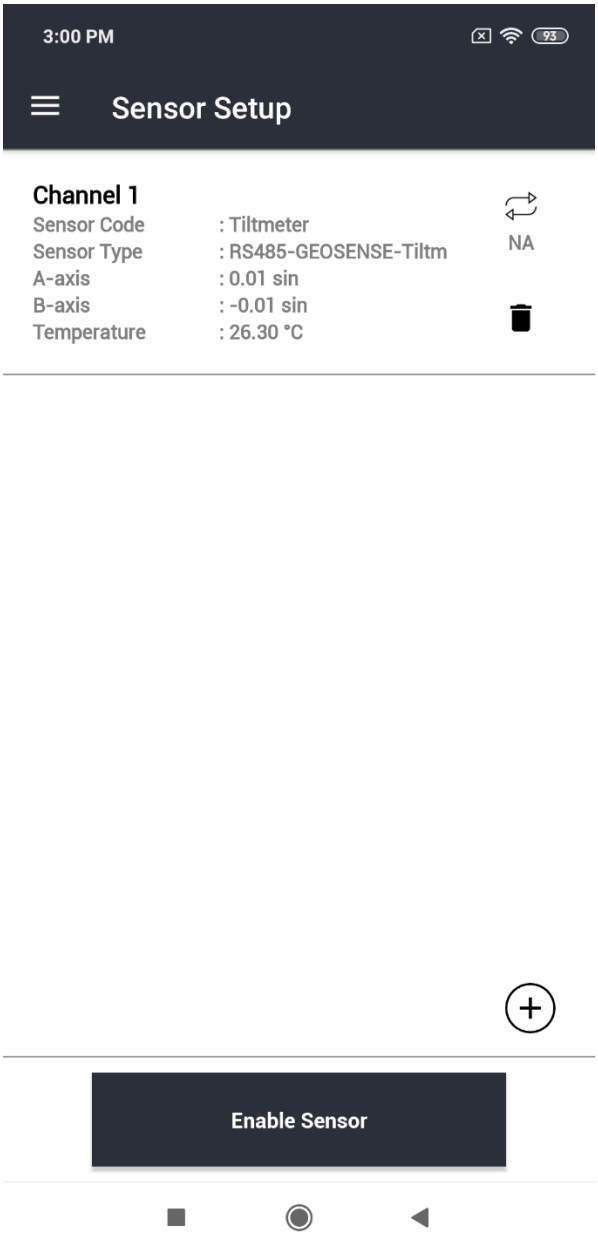
(v) You can input your sensor information. **Sensor Code**: Your desired sensor name. **Sensor Address**: Serial number of the sensor. **Sensor Type**: Select respective sensor type. **Parameters**: Turn on the parameters as connected to the Node.



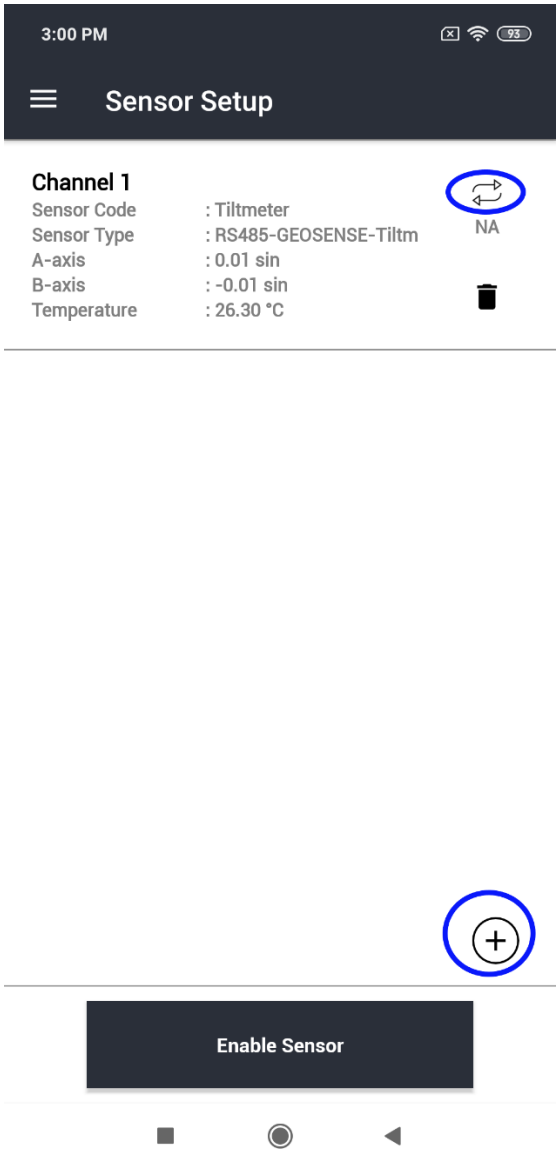


(vi) Click Save Sensor. The Node will now read the sensor that was just configured.

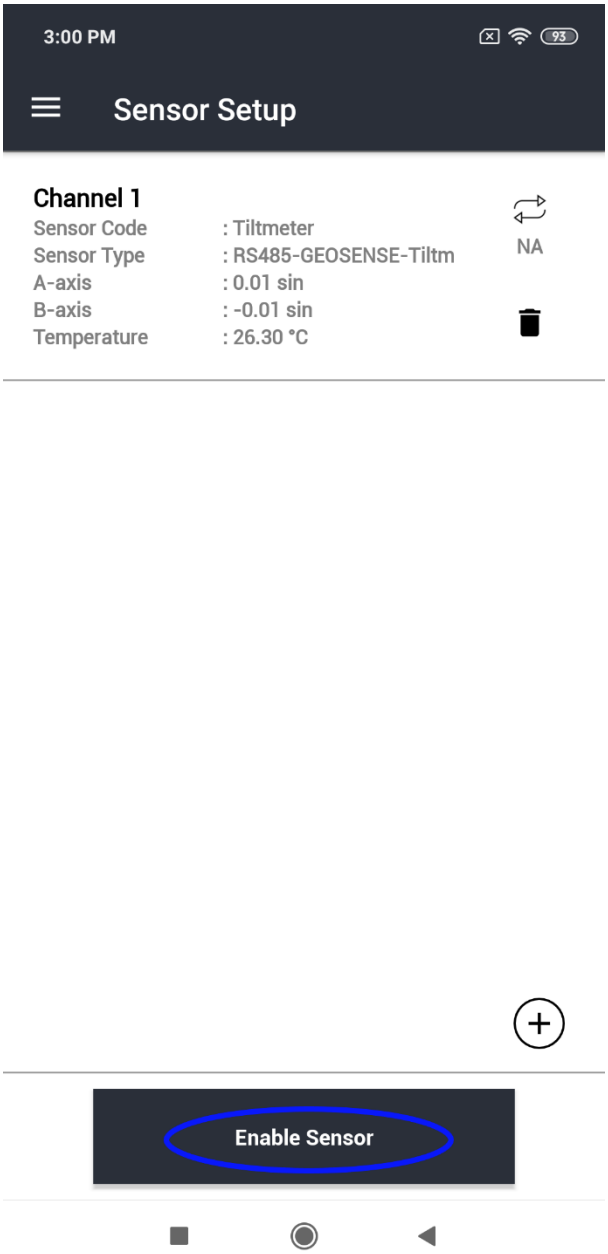
(vii) On next page, you will see the first reading.


3:00 PM
93
Sensor Setup
Channel 1
Sensor Code : Tiltmeter
Sensor Type : RS485-GEOSENSE-Tiltm
A-axis : 0.01 sin
B-axis : -0.01 sin
Temperature : 26.30 °C
NA
Enable Sensor

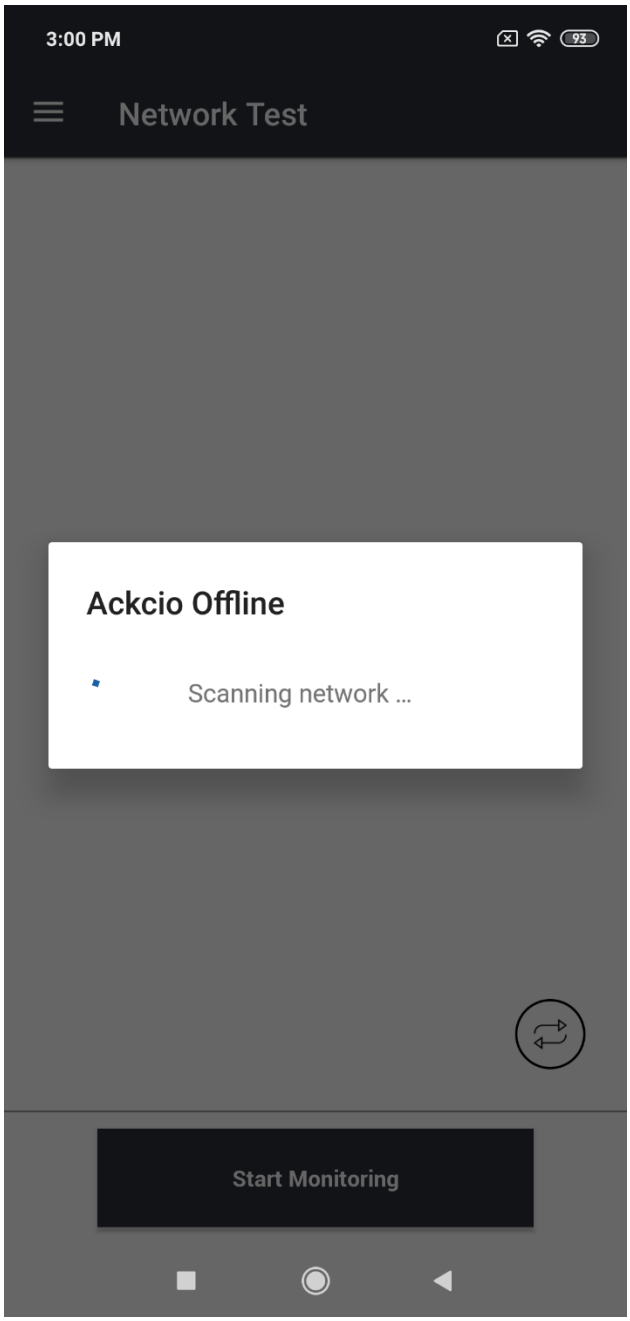
(viii) To get another reading, click on the arrow icon. Click on + icon to add more sensors.



(ix) Once all sensors are configured, click on “Enable Sensor” button.

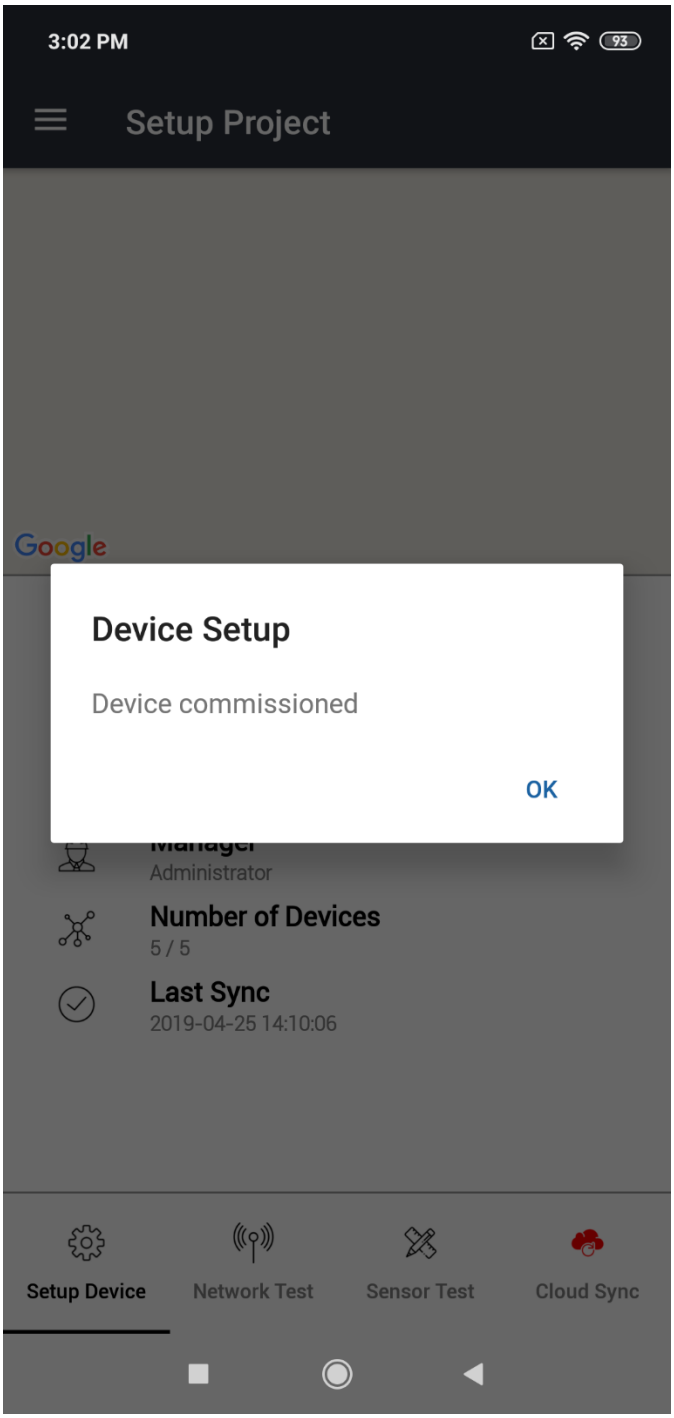


(x) It will then take you to next page “Scanning Network” which will scan the wireless signal strength (RSSI) between the Node and Gateway.

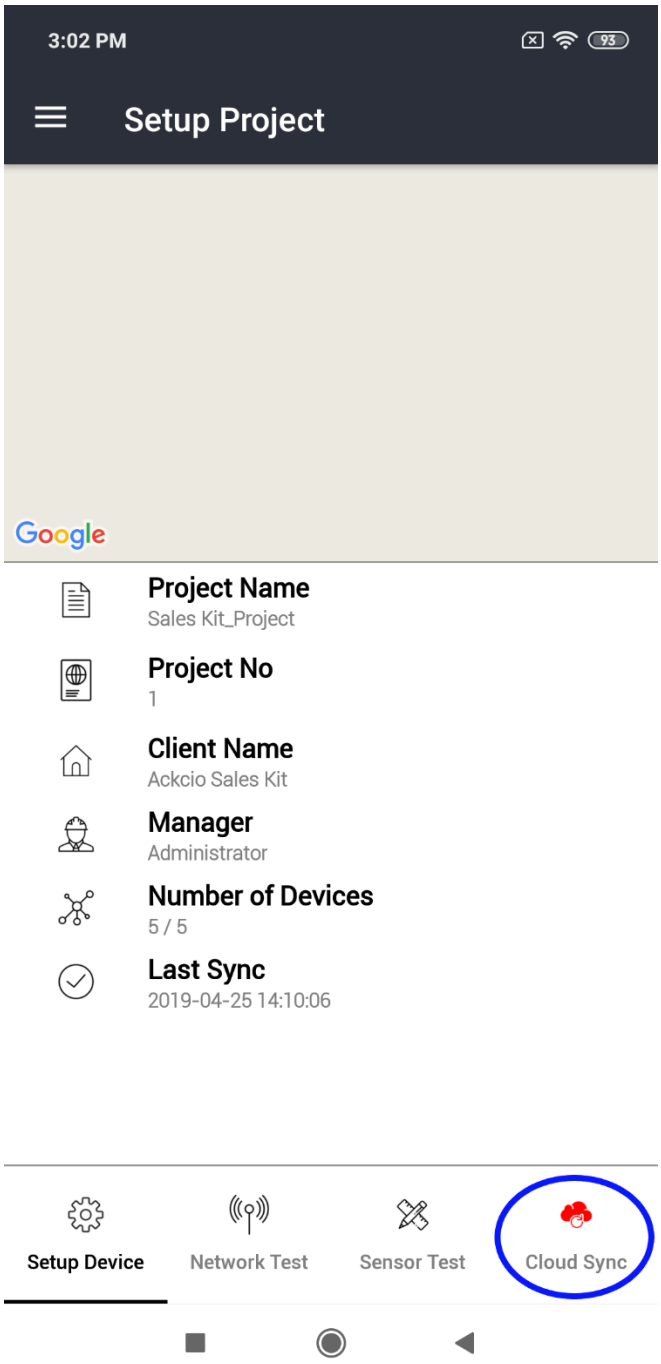


(xi) After you get the Network Test information, if you need to, you can perform another network test by pressing the button located at the lower right corner.

(xii) After that, click “Start Monitoring” button then the app will prompt “Device commissioned”. Click OK.



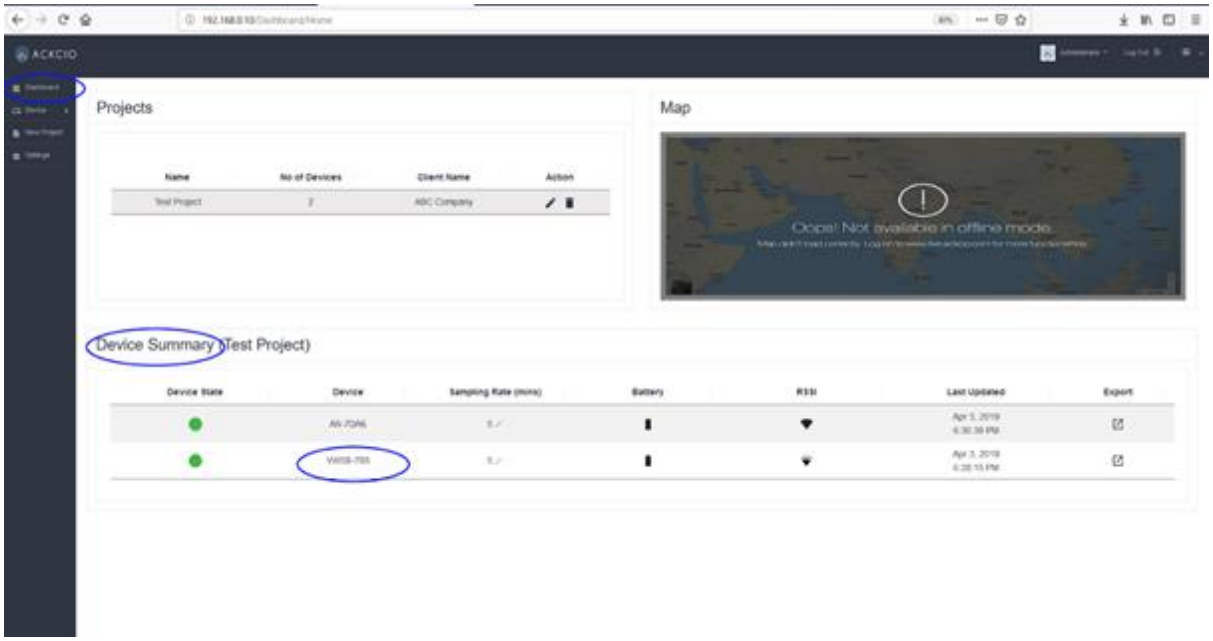
(xiii) ***Important!*** Next step, please press the Cloud Sync button at lower right area to send all the configuration information back to the gateway.



(xiv) If you would like to get the Node to immediately send a reading to the Gateway, please press the "SYS TEST" button on device physical circuit board.

(xv) For commissioning of additional Nodes, repeat the above steps.

(xvi) You can now go to the Gateway software dashboard on your computer and click on your project. You will now be able to see your commissioned devices under "Device Summary" Section.



FCC Caution:

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

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.

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2. This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment.

3.This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.