

Introduction

The IGS DemoBoard application can be used for demonstration or testing the Ingics BLE gateway (iGS01/iGS02/iGS03) using direct TCP connection (M2M) or using MQTT protocol with a broker. The DemoBoard includes the parser of Ingics BLE beacon payload for users to understand the beacon information.

Installation

This application is an open-source project in MIT license. You can find the source code and release packages at <https://github.com/ingics/ingics-blegw-demoboard>.

Use Binary Release

Linux

The application will be released in AppImage (<https://appimage.org/>) format for Linux, you can simply execute the file from console or desktop GUI. The application will be tested on Ubuntu 18.04.

Windows

The application will be released as a portable app file (without installer) for Windows. The application will be tested on Windows 10.

Source Code

If you want to modify the source code and build the application on your own. You can follow this instruction.

1. Install NodeJS on your development system
2. Install Quasar-framework CLI (<https://quasar.dev/quasar-cli/installation>)
`# npm install -g quasar`
3. Checkout the source code.
`# git clone https://github.com/ingics/ingics-blegw-demoboard`
4. NPM install packages
`# npm install`
5. Run application in development mode
`# quasar dev -m electron`

6. Build application package

```
# quasar build -m electron
```

The executable file will be placed in the 'dict' folder.

Usage

Setup with M2M Mode

For using M2M mode, please make sure the iGS03 IP address is accessible from DemoBoard (PC). Whatever using iGS03 as WiFi AP, connected to extra WiFi AP or using LTE.

1. iGS03 Configuration

Setup in application page

- Mode: M2M server
- Port: 8483 (can be any port number you want)

The screenshot shows a configuration form with two fields. The first field is labeled 'Mode' and has a dropdown menu with 'M2M (TCP Server)' selected. The second field is labeled 'Port' and has the value '8483' entered. Both fields are separated by horizontal lines.

2. Add a new gateway in DemoBoard

- Mode: M2M
- Name: string used to display on DemoBoard UI
- Host: the IP address of iGS03
- Port: 8483 (the port number setup in iGS03)

Add Gateway

Protocol
M2M

Name
IGS03M_33_44

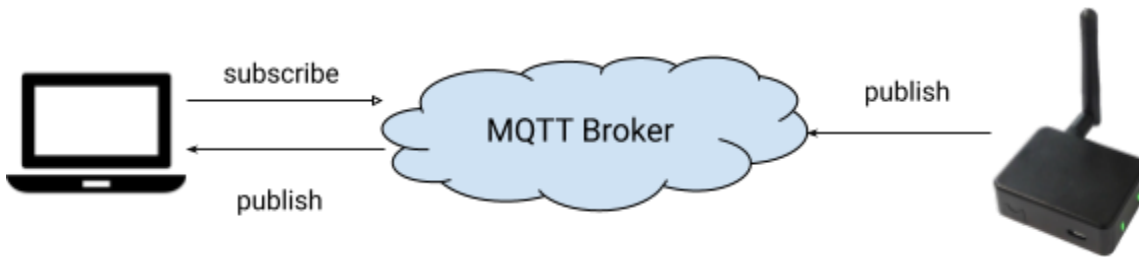
Host
192.168.1.130

Port
8483

CANCEL SAVE

Setup with MQTT Mode

You can set up an MQTT broker or use a public broker like test.mosquitto.org to test the iGS03 MQTT function. Below is a step by step example for use test.mosquitto.org.



1. Network Configuration

To use an open broker, just need to make sure the iGS03 and PC can access the internet with the correct DNS setting. Or, if you want to use an internal MQTT broker, please make sure the broker is accessible from iGS03 and DemoBoard (PC).

2. iGS03 Configuration

Setup in application tab

- Mode: MQTT client
- Host: test.mosquitto.org
- Port: 1883
- Publish Topic: `mytest/IGS03M_3B_04` (any topic string you want for identify this gateway)

Application Settings



Mode

MQTT Client

Target Host/IP

test.mosquitto.org

Port

1883

MQTT over TLS (MQTTS)

Publish Topic

mytest/IGS03M_3B_04

3. Add a new gateway in the DemoBoard

- Protocol: MQTT
- Name: string used to display on DemoBoard UI
- Host: test.mosquitto.org
- Port: 1883
- Topic: mytest/IGS03M_3B_04 (same as the Publish Topic setup in iGS03)

Add Gateway

Protocol
MQTT

Name
IGS03M_3B_04

Host
test.mosquitto.org

Port
1883

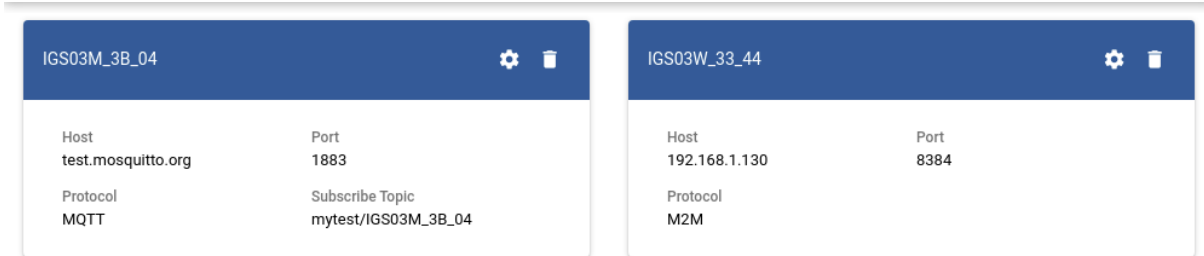
Subscribe Topic
mytest/IGS03M_3B_04

CANCEL SAVE

Active the Gateway Connection

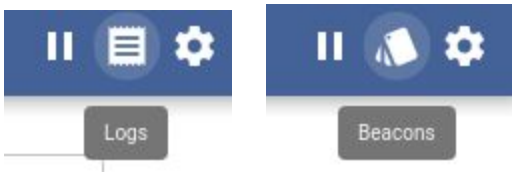
Gateway Card

After adding the gateway in DemoBoard, your gateway setting will be displayed as gateway cards on UI. You can click the gateway card to activate the gateway connection for browsing the logs or beacons.



Log Browser

After activating the gateway, you will enter the log browser. Or you can click the button in the title bar to switch the UI between Log Browser and Beacon Browser pages.

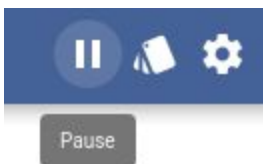


All messages published/sent by iGS03 will be displayed here. But for saving memory usage, the DemoBoard only keeps the last 100 messages received.

Logs

04/27/2020 9:20:42 AM	\$GPRP,0081F9860116,C82B96AE3B04,-53 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB96700010116D6
04/27/2020 9:20:42 AM	\$GPRP,0081F986683B,C82B96AE3B04,-55 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB9670001683BD6
04/27/2020 9:20:42 AM	\$GPRP,0081F9866838,C82B96AE3B04,-55 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB9670001683BD6
04/27/2020 9:20:42 AM	\$GPRP,0081F986436A,C82B96AE3B04,-52 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB9670001436AD6
04/27/2020 9:20:42 AM	\$GPRP,0081F986014D,C82B96AE3B04,-45 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB9670001014DD6
04/27/2020 9:20:42 AM	\$GPRP,0081F9864964,C82B96AE3B04,-52 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB96700014964D6
04/27/2020 9:20:42 AM	\$GPRP,0081F9860359,C82B96AE3B04,-54 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB96700010359D6
04/27/2020 9:20:42 AM	\$GPRP,0081F98660EE,C82B96AE3B04,-55 0201061AFF4C000215B9A5D27D56CC4E3AAB511F2153BCB967000160EED6
04/27/2020 9:20:42 AM	\$GPRP,0081F985FD87,C82B96AE3B04,-54 02010612FF0D0083BC370100AAAAFFFF000019040000

If there are too many logs sent from iGS03, you can use the PAUSE button to freeze the log browser. Then you can take your time to check the logs received.











Beacon Browser

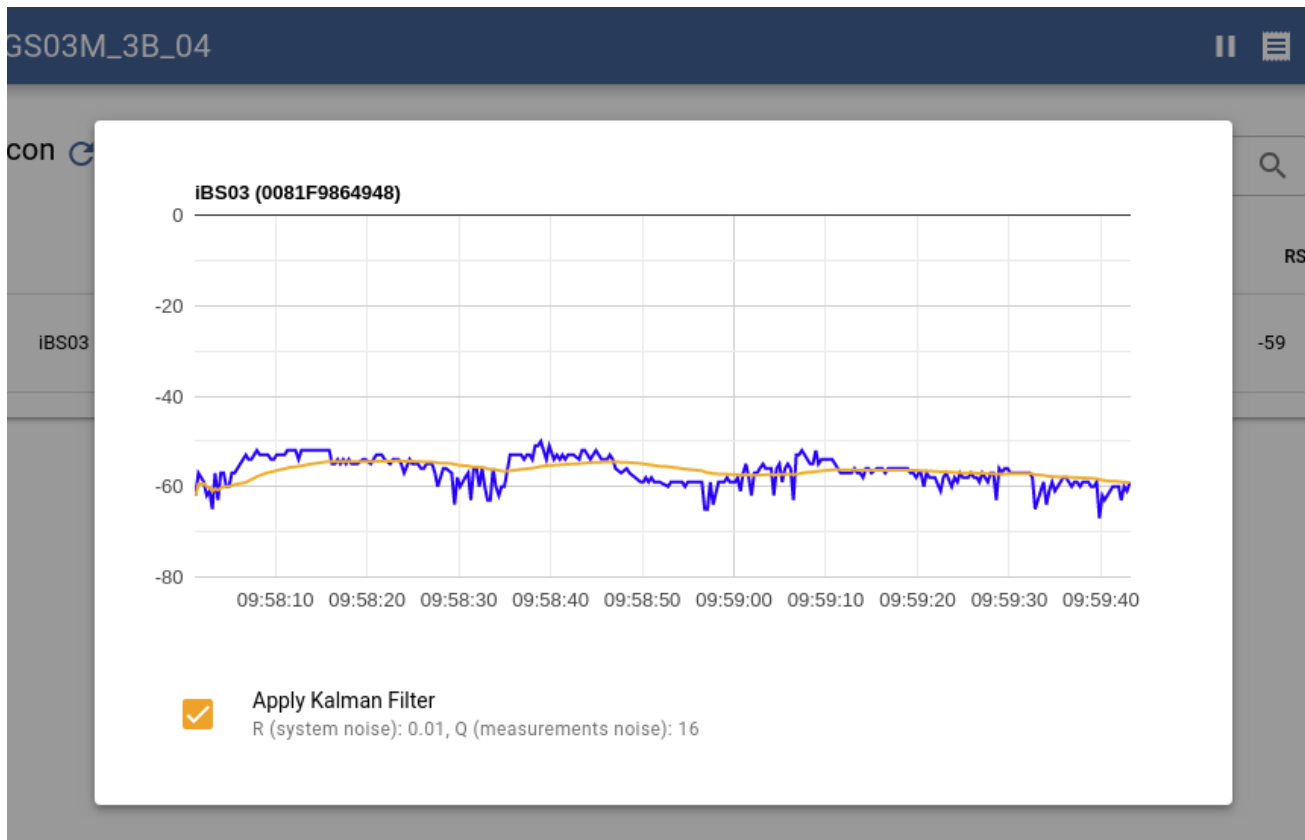
In Beacon Browser, you can see all BLE beacons which have been sawed by the iGS03 (since the gateway be activated). You can click on the beacon to expand the detail parsed result.

Beacon



	MAC	Last Update	RSSI
 IBS03	0081F9864948	05/21/2020 10:12:23 AM	-53 
 IBS03G	F0F8F2CAD554	05/21/2020 10:12:22 AM	-69 
Advertisement: 02010612FF0D0083BC290100AAAAFFFF000016020000 Flags: 0x6 Company: Ingics Type: IBS03G Battery: 2.97V Events: 0x0 Manufacture Data: 0D0083BC290100AAAAFFFF000016020000			
 IBS01	EB16C902201C	05/21/2020 10:12:20 AM	-86 
 IBS01	E65B843EFFD5	05/21/2020 10:11:40 AM	-90 

To open the RSSI chart, click on the 'line_chart' icon next to the RSSI value. It will keep 300 RSSI records at most to display the RSSI history. You can also enable the Kalman Filter to see the possible result after applying Kalman Filter (the APP use parameters for static system, means assume the beacon did not change location).



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If there are too many beacons, you can use the search function to find the beacons you aim to. It is a free text input used to match the beacon's MAC address or detailed message.



Or, you can use the RSSI threshold to filter the beacons.



Revision History

DATE	REVISION	CHANGES
April 29, 2020	1	Initial release
May 21, 2020	1a	Add rssi chart and update beacon browser screenshot