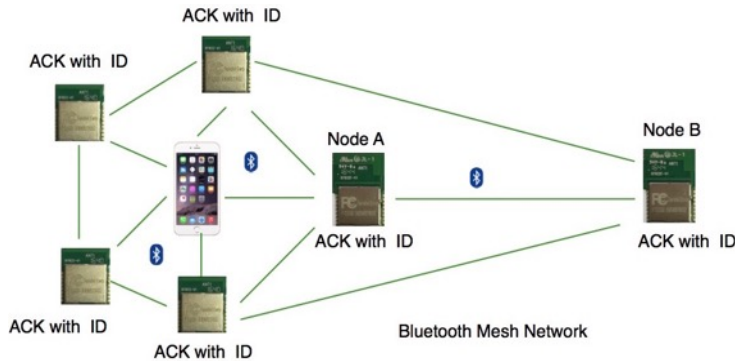


## Mesh Network Firmware

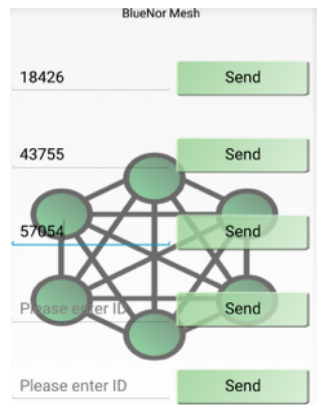
nRF52 evaluation board is pre-loaded with mesh network testing firmware. It can be used to test Bluetooth ranges and mesh network protocol stacks.



Up to 65536 nodes are supported in a mesh network. Each node can be addressed and controlled by the controller, a smart phone in this demo.

## Procedures to Send Message in Mesh Network

1. Search for and download [BlueNor Mesh](#) from Google Play or Apple APP store.
2. Powering up only one evaluation board to find 5-digit ID for the node.



57054ack4

3. Open [BlueNor Mesh](#) and touch **Scan**.
4. Write down the 5-digit node ID number. In this example, **57054**.
5. Touch to select the BLE device, in this example **rbc\_mesh #57054**.
6. Powering up all nodes. They are connected automatically.
7. Enter the node ID number **57054** and press **Send**.
8. When node **57054** receives this command, it toggles LED indicator ON/OFF, and sends an ACK message to the smartphone.

9. When smartphone receives the ACK message, it displays the node ID number and ACK sequence number. In this example, **57054ack4** is the 4th ACK message received from node **57054**.

## Bluetooth Range with a Smartphone

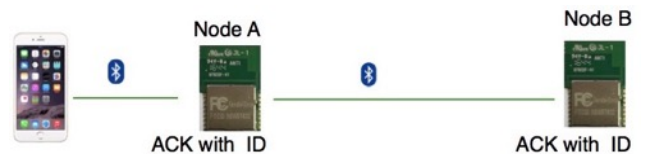
To measure Bluetooth line of sight range with a smartphone,

1. Follow **Procedures to Send Message in Mesh Network**.
2. Test for the maximum range to receive ACK message from the node.



## Bluetooth Range between two Modules

It is easier to measure long Bluetooth range (>150



meters) using mesh network with 2 nodes. It should not be used to measure short range modules because the smartphone (a Class 1 device) can be connected to both nodes.

1. Smartphone can be connected to node A only.
2. Follow **Procedures to Send Message in Mesh Network**.
3. Test for the maximum range to receive an ACK from node B.

## Long Range nRF52 Modules

Mesh firmware can be used to measure Bluetooth line of sight range with a phone and between a pair of the following long range modules.



1. BT832F
2. BT832X
3. BT840F

## Short Range nRF52 Modules

Mesh firmware can be used to measure range between a smartphone and one of the following modules:

1. BT832
2. BC832