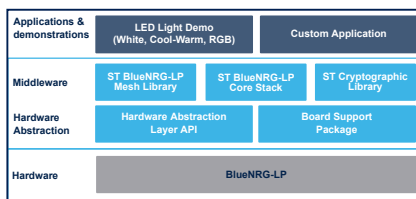
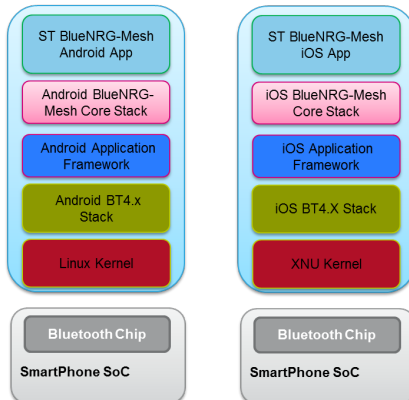


Mesh over Bluetooth low energy



 Android SDK

 iOS SDK



Features

- Mesh network with Bluetooth low energy (BLE) nodes enabling communication between a BLE device and a Smartphone
- Control and monitor applications involving short packets
- Advertising packets used for data communication using managed flooding method
- Multi-hop data transmission up to 126 hops
- Network node support up to 32,767 nodes
- Multiple communication scenario
 - Smartphone to node communication with unicast addressing
 - Smartphone to node communication with multicast (Group) addressing
 - Smartphone to node communication with broadcast addressing
 - Node to node communication
- Secure communication
 - Devices added to a network are provisioned using proven security algorithms using 256-bit elliptic curves
 - All messages in the network are encrypted with AES-128 CCM mode
 - Privacy through obfuscation
 - Protected against security attacks like Brute-force, Bit-Flipping, Eaves Dropping, Replay, Trashcan, Man in the middle and physical insecure device attacks
- Supported features
 - Publish-subscribe paradigm (up to 10 groups)
 - Node UUID configurable by user
 - Transport layer handling up to 384-byte packets
 - Provisioning and network layer based on Mesh profile v1.0.1
 - Heartbeat
 - Provisioned node database transfer among smartphones via e-mail and cloud applications
 - Multiple element per node support
 - Key refresh
 - Initialization vector update procedure
 - Whitelist and blacklist filtering
 - Provisioning over advertising (PB-ADV)
 - Output OOB, Input OOB, Public Key OOB Provisioning

Product summary	
Mesh over Bluetooth low energy	STSW-BNRGLP-Mesh
Evaluation platform based on BlueNRG-355MC system-on-chip	STEVAL-IDB011V1
Applications	BLE Connected Nodes Bluetooth Low Energy Smart Home Smart City

- Supported models
 - Configuration model
 - Health model
 - Generic model on-off, level example
 - Generic Power on-off server
 - Generic Transition time server
 - Lighting model example (Lightness, CTL, HSL)
 - Light Lc Server Models
 - Light Lc controller
 - Vendor model
 - Template for Time and Scene model
- Embedded SDK available
 - Demo Application source code for user application development
 - Mesh stack provided as precompiled/object library
 - Support for [BlueNRG-LP](#) product family
 - Ready examples for [STEVAL-IDB011V1](#)
- Android and iOS SDK available
 - Demo App source code available
 - Mesh implementation provided as library
 - Android App available on Google Play Store
 - iOS App available on iTunes
- Supported devices:
 - [BlueNRG-LP](#)
 - Embedded SDK is easily portable on other evaluation boards using BlueNRG family of products by modifying the board support package (BSP)
- BT SIG Mesh 1.0.1 Certification

Description

BlueNRG-Mesh is a software solution for connecting multiple BLE (Bluetooth low energy) devices in Mesh networks for Internet of Things (IoT) solutions. It enables true two-way communication between Bluetooth-enabled devices in powerful, secure, integrated and range-extending Mesh networks.

The solution is compatible with the ST [BlueNRG-LP](#) device.

Applications

- Smart home (lighting, HVAC, security and access control, healthcare)
- Asset tracking
- Assisted living
- Smart city (street lighting, general purpose messaging)

1 Licensing and other information

Developer-friendly license terms

The initial BlueNRG-Mesh is built over Motorola's Mesh Over Bluetooth Low Energy (MoBLE) technology.

The present solution involving both the Mesh library and applications is developed and maintained solely by STMicroelectronics.

Revision history

Table 1. Document revision history

Date	Version	Changes
26-Oct-2020	1	Initial release

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