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between the real and
the digital world.

Bluetooth Low Energy Mesh Solution Demo

Infineon's virtual show 2020



What is Bluetooth Mesh?

Adopted in July 2017

- › Standalone profile specifications, together with "Models" and "Properties"
- › Not a part of the Bluetooth Core Specification

First-generation BLE-connected smart home products

- › The first-generation of smart home products were limited to 1:1 or 1:n direct communication

Evolution of BLE Mesh (n:n)

- › Extends the range by relaying messages from one node to another
- › Full stack-up to the application layer makes products from various vendors interoperable
- › Can communicate with a smartphone without the need of a bridge/hub

True Mesh-enabled home automation

- › Enables a true n:n Mesh-connected network that links all nodes in a Smart Home
- › Offers long battery life for products that leverage the mesh low-power feature



Need for Bluetooth Mesh

Other Mesh solutions require costly hubs when connecting to a smartphone

Bluetooth Mesh provides

- › Native support in mobile phones & tablets
- › Consumer friendly solutions
- › No single point of failure
- › Simple and reliable P-2-P and P-2-MP connectivity
- › Direct control of devices through mobile apps

Extending the range of a typical BLE device can sacrifice low power

- › Bluetooth Mesh is scalable up to 32K nodes with unique unicast addresses
- › Max TTL is 127 hops

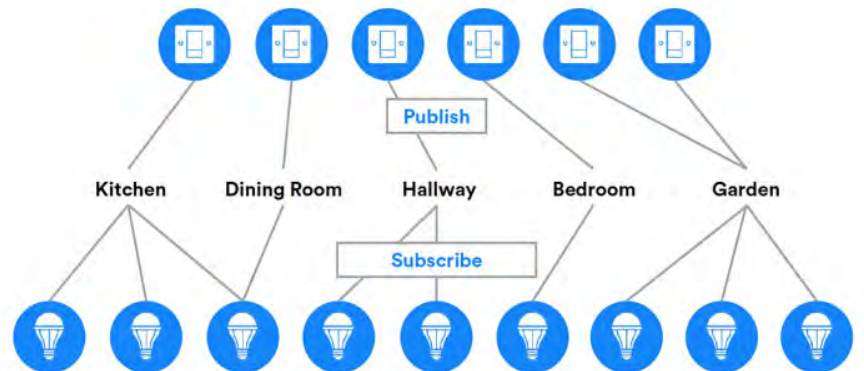


Figure 4 - Publish/Subscribe

Bluetooth Mesh Qualified Products double every 6 months

Bluetooth Mesh Solution Map

Silicon

- › CYW20735, CYW20719/21, CYW20819/20 Bluetooth SoCs
- › PSoC6 + CYW43012 for gateway
- › Full portfolio of pre-certified module solutions to reduce time to market

Software/Features

- › Full featured BLE Mesh stack
- › Proven, interoperable, and field-tested mesh stack/library
- › BLE Mesh Mobile App for iOS and Android with source code included

Partner Ecosystem

- › Bluetooth SIG Mesh 1.0 certified
- › Apple HomeKit support on selected silicon

Development Platforms

- › Mesh Eval kit with sensors, LED, PIR and buttons included
- › ModusToolbox™ with Bluetooth SDK
 - BLE mesh code examples to reduce TTM

Infineon Bluetooth Mesh Evaluation Kit (CYBT-213043-MESH)

Kit includes

- › 4x CYBT-213043-Mesh evaluation node boards
- › 4x USB cables

Each mesh node board showcases

- › CYW20819-based certified module, CYBT-213043-02
- › RGB LED and user button
- › Sensors – Ambient light sensor, Thermistor, PIR motion sensor
- › Current measurement header
- › On-board programmer

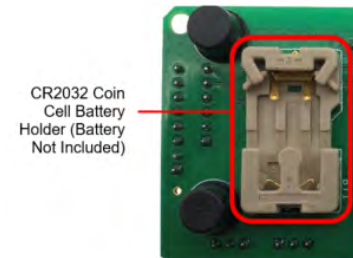
Provides great out of the box user experience

- › Several code examples are provided in SDK and on GitHub that are developed for this kit
- › Infineon iOS, Android or Windows helper mesh applications can be used to provision these boards, create and control mesh network quickly and easily

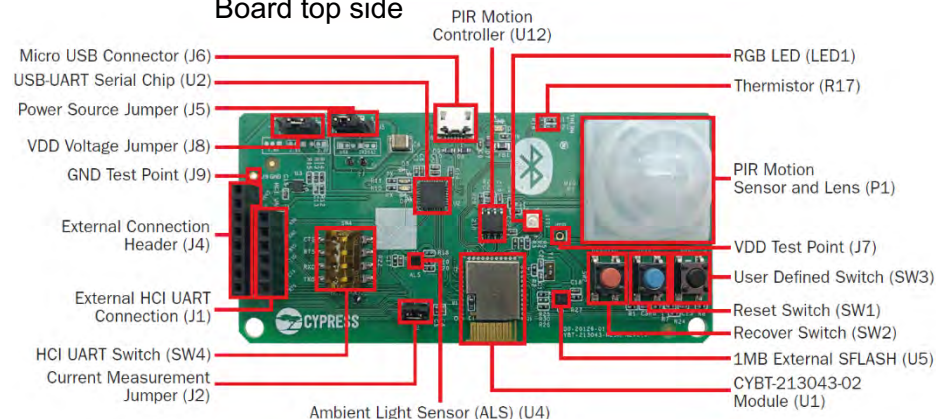
Four boards in the kit



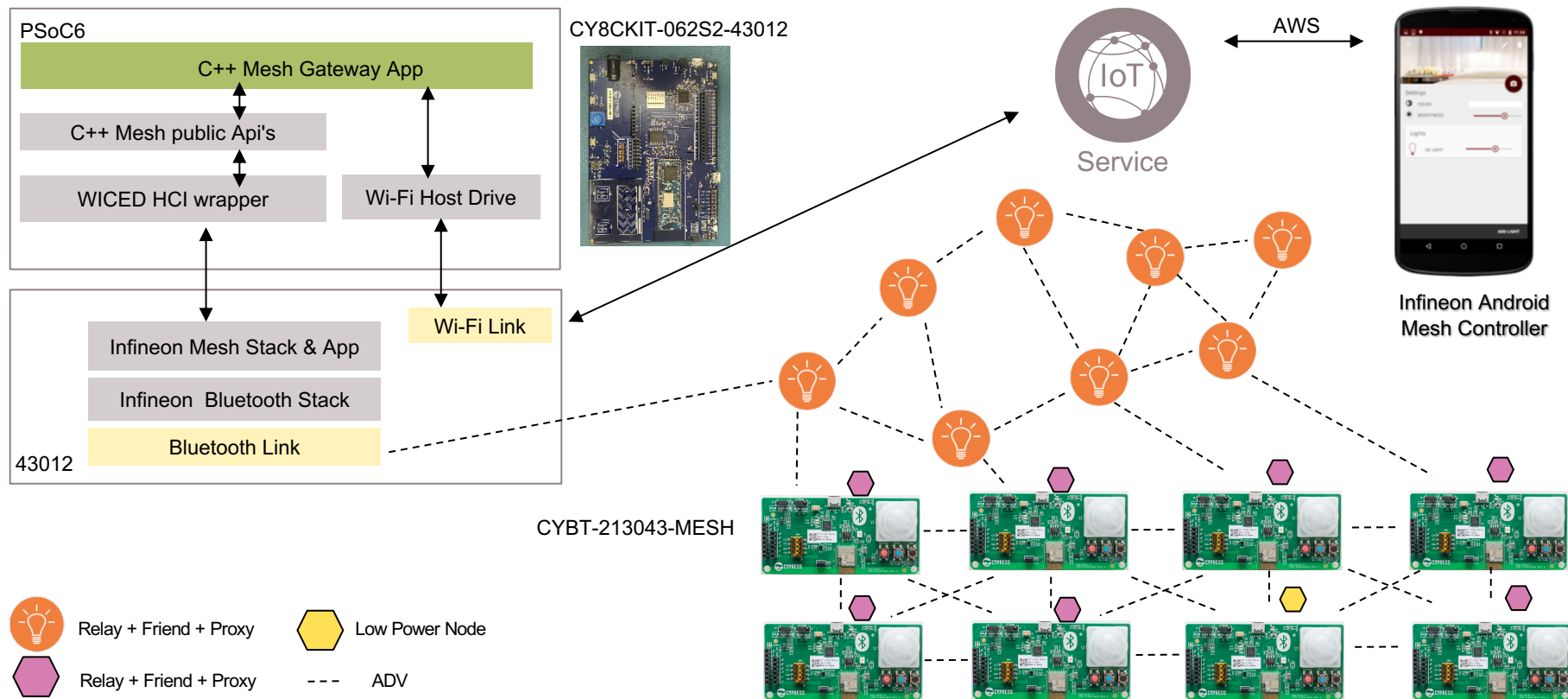
Board bottom side



Board top side



Bluetooth Mesh Solution Demo





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