

Product Brief

Preliminary

Description

The LRM70 module with LoRa and BLE capabilities, supports long range Mesh networks, from a surface mount PCB module.

This module integrates MCU, BLE, and LoRa into a single module, with simple to use AT command interface. Mesh networking data is sent over a network of long range bearers (LoRa) and connect to a proxy device such as PC, tablet, or mobile phone.

Customized firmware for peripheral device interaction, power optimization, security, and other proprietary features may be supported and can be ordered pre-loaded and configured.

Software

BLE Stack

- Bluetooth v5.1 BLE
- ATT/GATT LE layers
- BLE Mesh, Relay, Proxy, and Friend nodes.
- Authentication and encryption

LoRa Software

- Mesh over LoRa media bearer
- LoRa protocol stack

General Features

- On module LoRa Protocol Stack
- Bluetooth v5.1
- Range 10 km
- FCC/IC/CE & Bluetooth qualified

RF Features

- Long range transceiver, 433Mhz or 868Mhz bands
- Bluetooth 2.4Ghz transceiver
- RX sensitivity up to -146 dBm
- TX power up to 22 dBm
- FSK/GFSK LoRa modulations: 0.3 to 37.5 kbps

MCU Features

- 1M bytes RAM, 2M byte Flash memory
- UART/I2S/I2C/SPI
- 12 GPIO
- Analog ADC and DAC audio

Firmware Features

- LoRa and Bluetooth Low Energy protocols
- Mesh support for both LoRa and BLE networks (LoRa Mesh)
- Firmware upgrade over UART

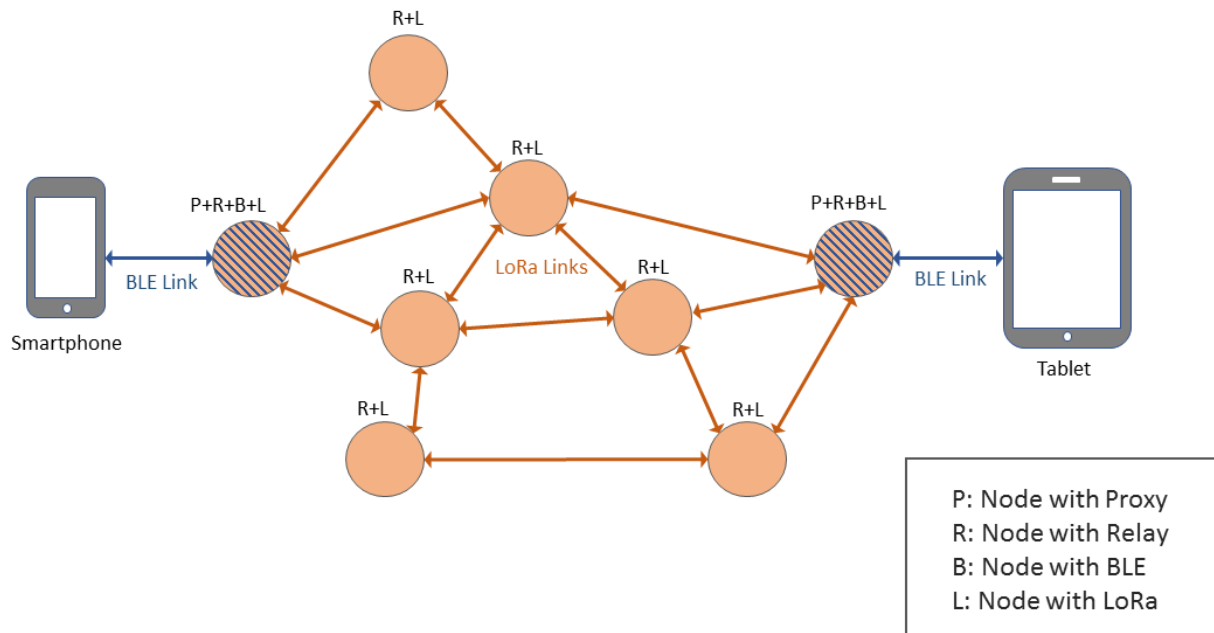
Applications

- Remote metering
- Building automation
- Smart city
- Internet of Things (IoT)

Software Architecture

AT Serial Command Set	
Mesh	LE Profiles & Mesh
LoRa Protocol Stack	ATT/GATT LE
LoRa Radio	Bluetooth Radio
GPIO/Serial/Audio/Flash	

Network Example



- Proxy Nodes communicate over BLE to standard BLE enabled devices
- Relay Nodes utilize LoRa connectivity to send data over long distances