

BlueLitE Bluetooth low energy 5.3

Optimized and Silicon-proven Link Layer,
Digital PHY and Comprehensive Stack & Profiles



Introduction

BlueLitE is LTIMindtree’s Single Mode Bluetooth Semiconductor IP, which supports v5.x Bluetooth specification. LTIMindtree has invested over 500 person-years in Bluetooth technology since 2000. We have implemented several Bluetooth specifications and certified them. As an IP provider, LTIMindtree is one of the few companies that is committed to Bluetooth technology. BlueLitE IP is proven in Silicon for all the modules –

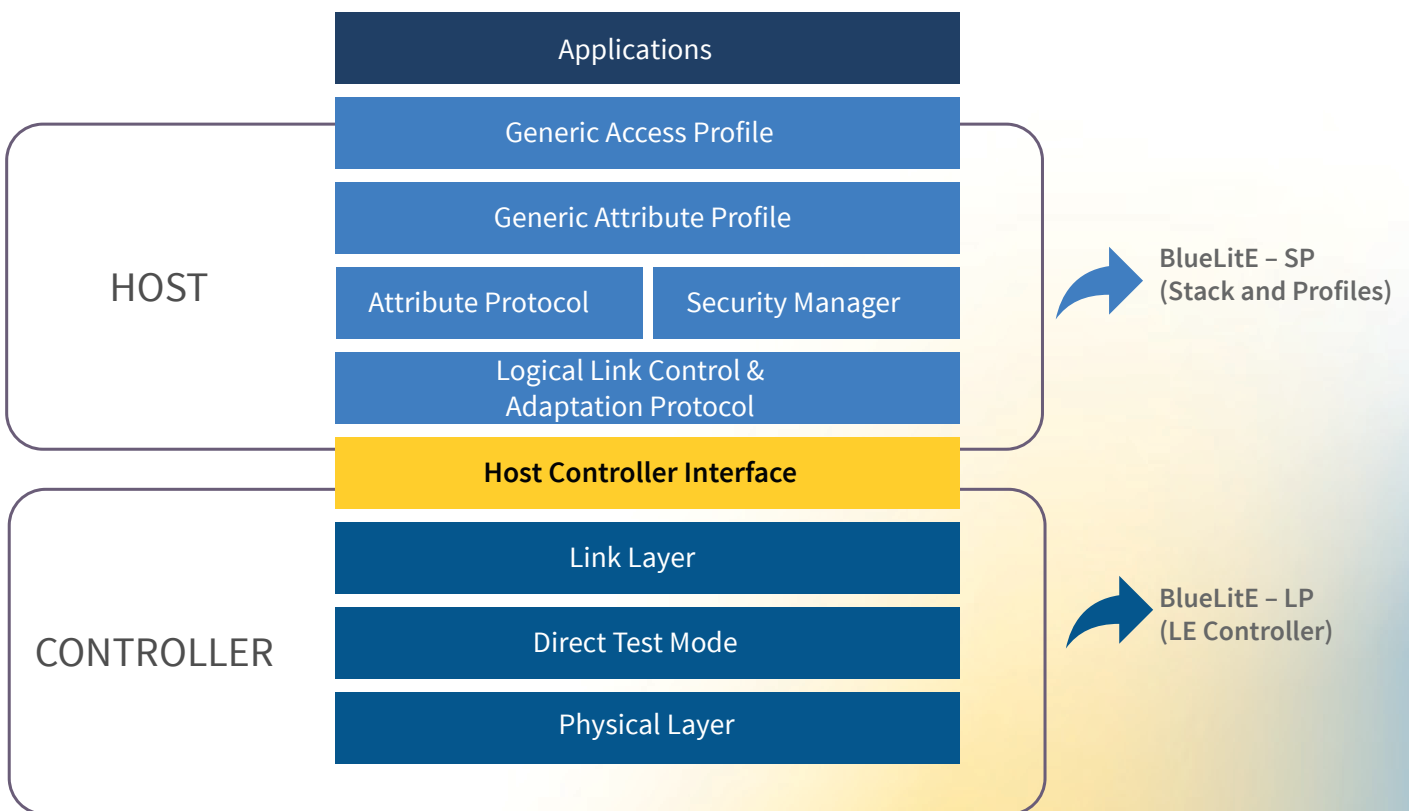
- Link Layer Controller
- Digital PHY
- Stack and Profiles

We have licensed our IP to more than 20+ customers with 35+ design wins which includes few of the top ten semiconductor companies in the world.

BlueLitE Bluetooth 5.3 - Product Features

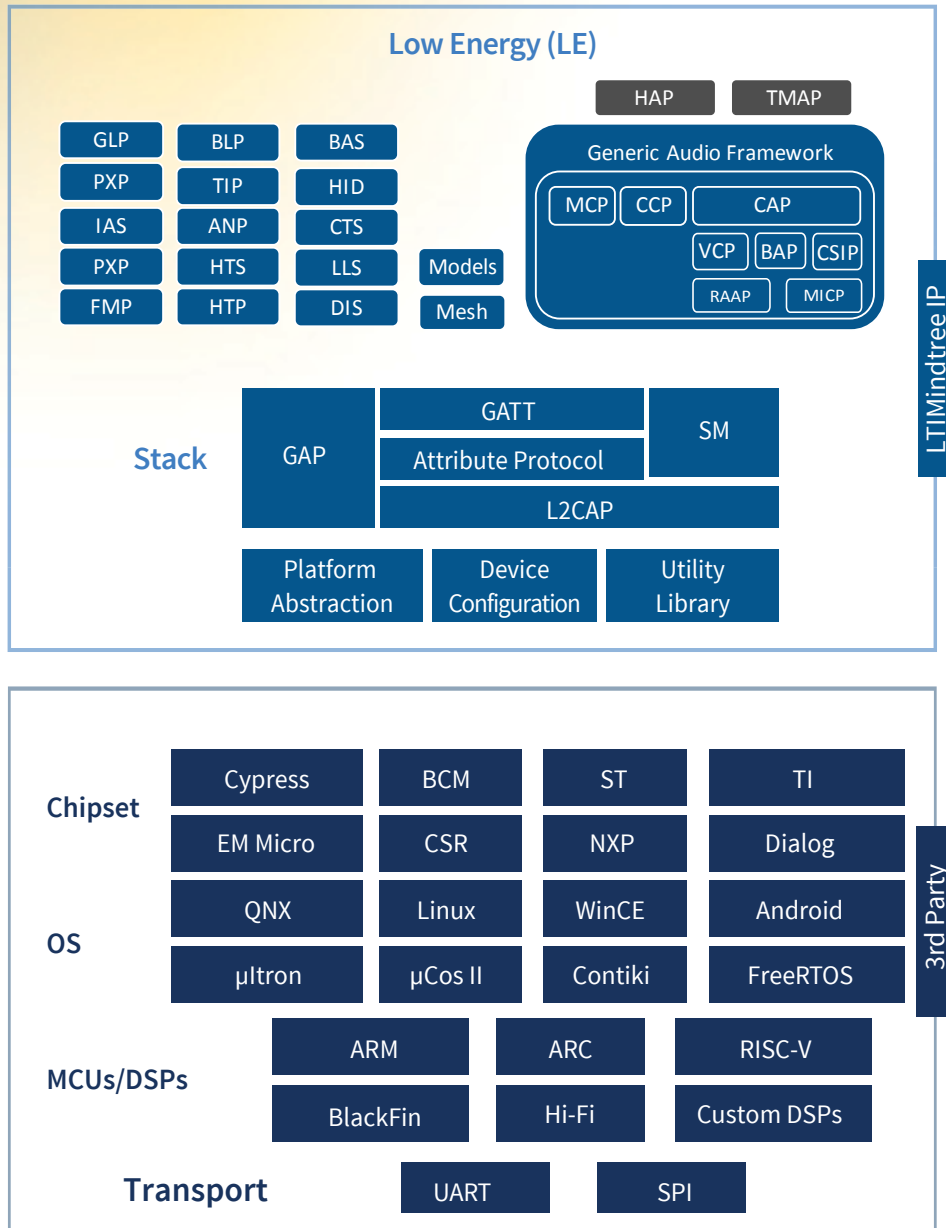
BlueLitE IP has two component IPs - BlueLitE Link Layer, BlueLitE-SP (Stack and Profiles)

Bluetooth low energy – Component IPs



Note: Profiles along with their versions explained in Annexure

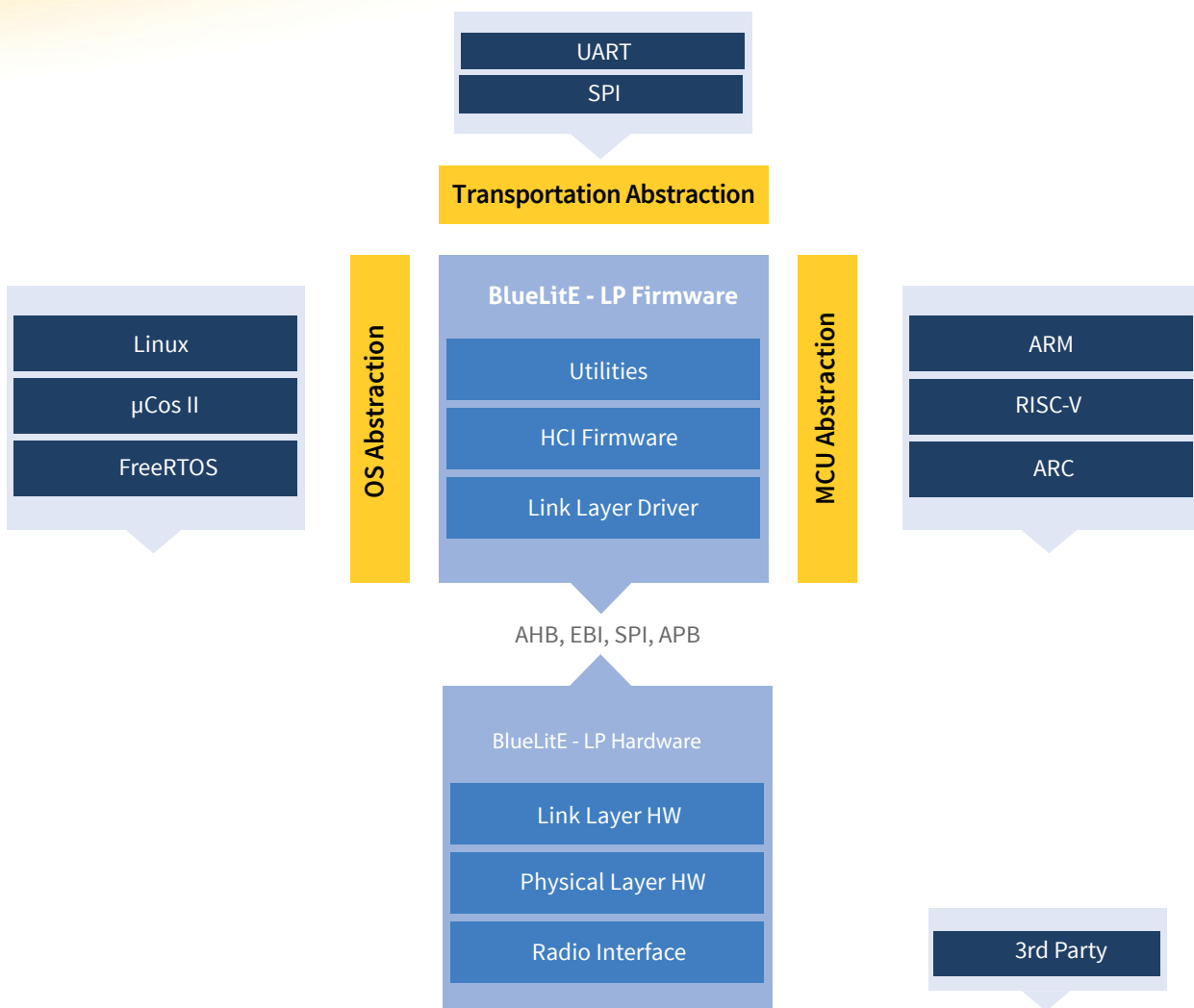
BlueLitE Stack and Profiles



Key Features

- Implements Dual mode stack, profiles, and Generic Audio Framework
- Supports all mandatory and optional features
- Architected for low memory footprint.
- Portable across 8/16/32-bit microcontrollers application development framework for all implemented profiles.
- Clean abstraction layers for OS, MCU and transport for easy integration onto required platforms.
- Modular configurable architecture
 - ▶ Feature/compilation flags for core Stack and Profiles
 - ▶ Runtime/compile time tunable parameters
- Testability support in design

BlueLitE Controller and Digital PHY



BlueLitE Link Layer is a firmware-hardware co-design. Time-critical functions are handled in the hardware and protocol logics are implemented in firmware. Physical Layer (PHY) is implemented in hardware, performs the GFSK modulation, demodulation, AGC and RSSI measurements.

Key Features of BlueLitE Link Layer

- High degree of configurability based on target application.
- Built-in power management module for ultra-low power consumption
- Flexible interfaces for easy integration with third party modem/RF
- Supports all mandatory and optional features.
- Supports all device states and roles.
- Architected for very low power and low memory footprint.

Key Features of BlueLitE Digital PHY

- High performance modem with optimized gate count
- Configurable architecture based on RF front end
- Zero-IF Transmitter / (Zero-IF-Low-IF) Receiver
- Real (Low-IF) / Complex Receiver Inputs
- ADC/DAC sampling rate 16 Mbps
- 8 ~ 12 Bit ADC / DAC Data Interface
- Fully Configurable AGC block to control LNA, Mixer and VGA modules in RF
- Core Operating Frequency @ ADC/DAC Sampling Rates
- SPI (Serial Peripheral Interface) Programming Interface

Key Benefits of Partnering with LTIMindtree

Reduced development risk

- Robust, interoperable, and optimized implementation
- Leverages over 20+ years of experience in helping product companies engineer low footprint and low power applications

Faster time-to-market

- Total Single Mode Bluetooth comprising Controller, Modem, Stack and Profile
- Highly customizable for product-specific optimization and differentiation

Reduced product costs

- Optimized use of resources for low footprint, gate count and MIPS
- Bluetooth-specific power management for ultra-low power consumption

Competitive differentiation

- One-stop-shop for total solution in Single Mode Bluetooth
- Flexible support in various stages of development and productization cycle
- Helps customers win business by adding new profiles, feature licensing and providing support in selling

Bluetooth LE Key Features supported by LTIMindtree

5.3 Features

- AdvDataInfo in Periodic Advertising
- LE Enhanced Connection Update
- LE Channel Classification

5.2 Features

- Generic Audio Framework
- Connected Isochronous Stream (CIS)
- Broadcast Isochronous Stream (BIS)
- Isochronous Adaptation Layer (ISOAL)

5.1 Features

- DF-AoA/AoD
- GATT Caching
- Periodic Adv Sync transfer/ Control length extension
- Minor Functional Enhancements #1

5.0 Features

- 2 Mbps PHY Support
- Advertising length extension
- Long range feature
- Channel selection #2

Contact us at:

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About LTIMindtree

LTIMindtree is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 82,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree — a Larsen & Toubro Group company — combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale. For more information, please visit <https://www.ltimindtree.com/>