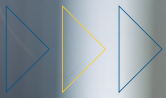


# BlueWiz Dual Mode Bluetooth v5.3

Optimized Link Layer, Digital PHY, Comprehensive  
Stacks and Profiles.



## Introduction

BlueWiz is LTIMindtree’s Dual 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.

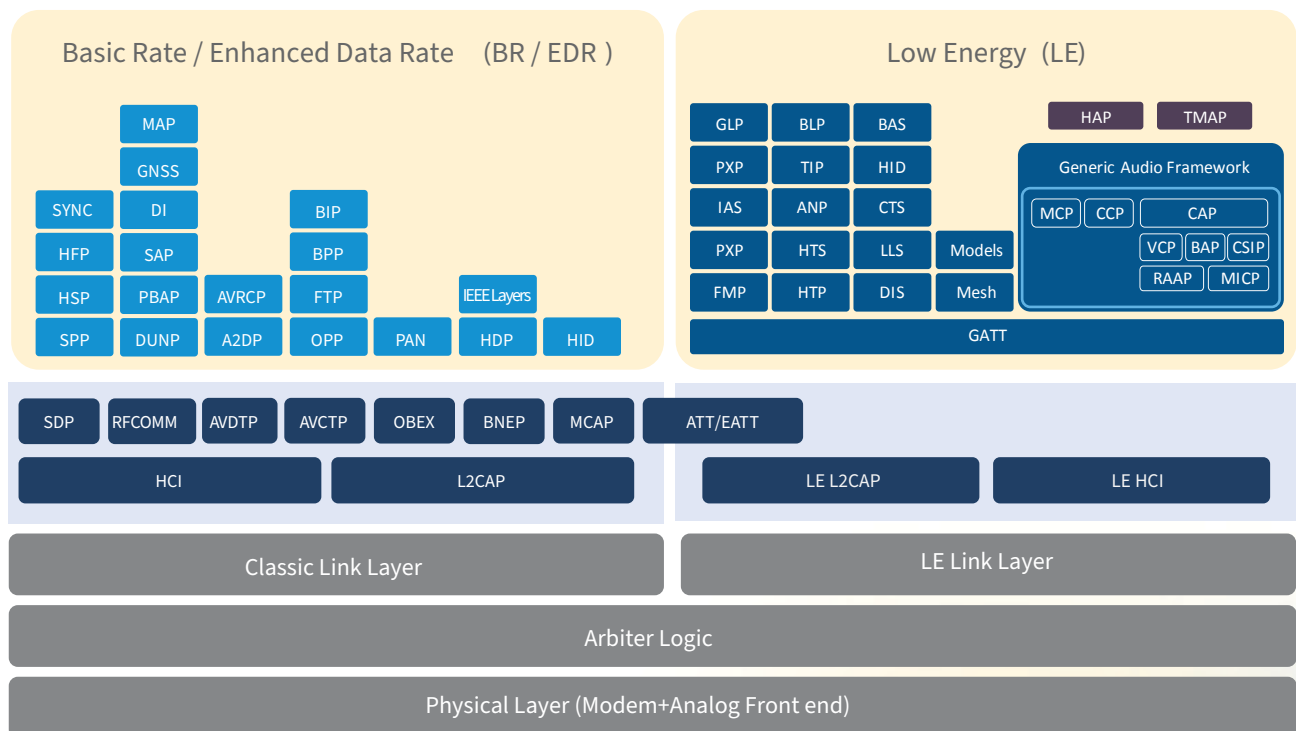
As an IP provider, LTIMindtree is one of the few companies that is committed to Bluetooth technology.

The BlueWiz IP comprises the following modules.

- Dual Mode Controller
- Digital Modem
- Stack and Profiles

## BlueWiz Bluetooth 5.3 - Product Features

BlueWiz IP has two component IPs – BlueWiz – Controller and BlueWiz-SP (Stack and Profiles).



## BlueWiz Controller - Key Features

- Firmware optimized for low code and data foot-print
- Hardware accelerator for time critical function, encryption engines and interface to modem
- Firmware to manage links and interface to host layer
- Registers for configuration, control and status
- Interrupt from hardware to request service
- FIFO for data exchange
- OS, MCU and transport abstraction layers for easy portability

## BlueWiz Modem- Key Features

- Supports Polar or IQ Modulator based RF Platforms
- Zero-IF / Low-IF Transmitter
- Zero-IF / Low-IF Receiver
- Real / Complex Receiver Inputs
- Sampling Rate of 16 MHz
- 8 Bit DAC Data Interface (Customizable)
- 10 Bit ADC Data interface (Customizable)
- Configurable AGC ( Optional)
- SPI (Serial Peripheral Interface) Programming Interface for RF registers
- Transmit Power Amplifier Control

## BlueWiz 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

## Key Benefits of Partnering with LTIMindtree

### Reduced development risk

- Robust, interoperable, and optimized implementation
- Leverages over 21 years of experience in helping product companies engineer low footprint and low power applications

### Faster time-to-market

- Total Dual 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 Dual 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

## BlueWiz Deliverables

### Hardware

- Synthesizable Verilog RTL
- Behavioral models
- Module test bench and test case

### Software

- HCI/LM/LC/LL firmware source code in C
- Transport drivers (UART, USB)
- Platform drivers for development platform
- OSAL for MINT OS/FreeRTOS

### Development Tools/Platforms

- BlueWiz FPGA platform
- Flash download utility
- HCI Commander – HCI application

### Documents

- BlueWiz architecture document
- BlueWiz verification document
- SoC integration approach note
- User manuals for development tools

# Get in Touch

## Wireless IP and Services Division

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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/>