

# MECEL BLUETOOTH® SDK

## Bluetooth Software Development Kit – BR/EDR + BLE



**Mecel Bluetooth Software Development Kit (SDK) supports the latest Bluetooth Specification 4.0 with the new Low Energy features. Bluetooth Low Energy (BLE) is the new ultra-low power Bluetooth wireless technology, which makes it possible for small devices powered with coin-cell batteries to be wirelessly connected. ■■■**

### BLUETOOTH LOW ENERGY

Bluetooth low energy is a new ultra-low power wireless technology aimed at new applications for wireless devices. The Bluetooth Specification 4.0 enables a wide range of new applications and small coin-cell powered devices to be used in the healthcare, fitness, security and home entertainment industries.

Bluetooth low energy wireless technology comes with two equally important implementation alternatives: single mode and dual mode. Single mode Bluetooth low energy is aimed for small devices like watches, sensors, etc. Dual mode is intended for devices that use both Classic Bluetooth (BR/EDR/HS) and Bluetooth Low Energy.

### MECEL BLUETOOTH SDK – LOW ENERGY

Mecel Bluetooth Software Development Kit (SDK) includes the core layers of Bluetooth BR/EDR and the Attribute protocol, (ATT), the Security Manager Protocol (SMP) and the Generic Attribute Profile (GATT) to support Dual-mode Bluetooth Low Energy.

Mecel Bluetooth SDK – BLE will support the following BLE profiles: Network Availability Profile, Personal User Interface Device Profile, Proximity Profile, Single Remote Control Profile and Time Service Profile.

These profiles will be available when the Bluetooth SIG has released the official specifications. Mecel Bluetooth SDK will be qualified against Bluetooth Specification 4.0 once the Bluetooth Specifications for Low Energy has been ratified

### ROBUST DESIGN

Developed in ANSI-C, Mecel Bluetooth SDK has a strong emphasis on resource efficiency and reliability, and is designed to be platform independent, hence making it ideal for small embedded systems.

To ensure a verifiable and maintainable design, the implementation has been strictly modularised according to the Bluetooth system core specification. The Mecel Bluetooth SDK provides full API-access to each of the protocol layers and versatile trace features enable monitoring of all messages passed through the stack.

### FULL DEBUG TRACE

With a compiler macro, the programmer can turn on the debug support that gives a trace of all messages passed between each layer of the stack as well as the signals between two peers.

The programmer has full control of the output of the trace with a set of flexible filters and a possibility to guide the output to a user defined media e.g a console window, a serial port or a file.

### PROFILE TEST TOOL - MECAPP

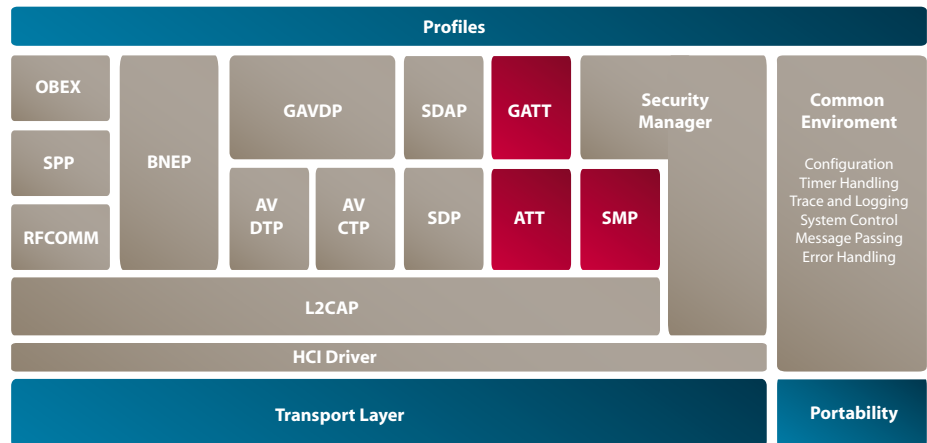
MecApp is a versatile Windows tool for Bluetooth profile testing. The application, based on Mecel Bluetooth SDK, is widely used amongst frontier product developers as testing tool.

MecApp now also supports the Bluetooth Specification 4.0 - Bluetooth Low Energy. Examples of profiles supported by MecApp: SPP, HFP1.5, PBAP, FTP, OPP, SAP, A2DP, AVRCP 1.4 and MAP.



## FEATURES

- Resource Efficient
- Flexible
- Easy to maintain
- Powerful API's
- Qualified by Bluetooth SIG
- Built-in debug support
- Comprehensive Documentation



## INCLUDED PROTOCOL PARTS

- HCI-driver
- L2CAP
- RFCOMM
- SDP
- Security Manager
- GAP
- SDAP
- SPP

## OPTIONAL PROTOCOLS

- OBEX
- TCS-bin
- BNEP
- AVDTP
- AVCTP
- SMP (BLE)
- ATT (BLE)
- GATT (BLE)

## OTHER SUPPORTED MODULES

- SBC-encoder / decoder

## AVAILABLE PROFILES

- HSP - Headset Profile
- DUN - Dial-up Networking Profile
- FAX - Fax Profile
- HFP - Hands-Free Profile 1.5
- PBAP - Phone Book Access Profile
- MAP - Message Access Profile
- OPP - Object Push Profile
- FTP - File Transfer Profile
- BIP - Basic Imaging Profile
- BPP - Basic Printing Profile
- SYNC - IrMC Synchronisation Profile
- GAVDP - Generic A/V Distribution Profile
- A2DP - Advanced Audio Distribution Profile
- AVRCP - A/V Remote Control Profile (1.3 / 1.4)
- HID - Human Interface Device Profile
- SAP - SIM Access Profile
- PAN - Personal Area Networking Profile

## SUPPORTED PLATFORMS

Platform specific code is encapsulated in the Portability Module which enables a quick and smooth integration into new products.

Mecel Bluetooth SDK has been ported to several different platforms:

**CPUS:** ARM7, ARM9, NECV850, TI DSP 54xx and 55xx family, SH2/SH3/SH4, 8051 (8-bit), TriCore, Infineon C166, PowerPC etc.

**OS/RTOS:** Windows, WinCE, Linux, Nucleus, VxWorks, QNX, OSE, uLtron, TI DPS/BIOS, etc.

## AT THE FOREFRONT OF AUTOMOTIVE TECHNOLOGY

Mecel is a systems and software development company with more than 25 years of experience in developing solutions for the automotive industry. We specialize in in-car communication technologies, user interface development and consumer device interaction. As engineering consultants, we are pioneering state-of-the-art technology to produce innovative and efficient solutions that provide our clients with a definite competitive edge. We are skilled in taking on the entire procedure from initial R&D work to development and testing of the final products. ■■■

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