Bluetooth SDK 2.8

About this document

Scope and purpose

ModusToolbox® with the Bluetooth SDK provides a complete development environment that allows you to quickly create an IoT solution utilizing world-class Bluetooth/Bluetooth Low Energy (BLE) connectivity technologies. This document provides the details of various features, modes, and limitations associated with the supported hardware development platforms.

Intended audience

This document is intended for developers who are looking to create Bluetooth-enabled IoT solutions like beacons, trackers, smart watches, audio devices (headsets, speakers), hid devices (remotes, mice, keyboard), medical devices, and home automation platforms.

Table of contents

1 ModusToolbox and Bluetooth SDK Development Environment

ModusToolbox with the Bluetooth SDK is a software development environment allowing rapid application development of Bluetooth-enabled IoT solutions. A steady release cadence is provided for the Bluetooth SDK, enabling new features, fixes, and improvements. The releases and their features are tested on platforms, defined in this document, to provide easy migration from one version to the next. If you choose to create solutions, platforms, or both that are not defined in this document, you are responsible for testing and technical support of these platforms.

ModusToolbox with the Bluetooth SDK includes the following features and capabilities:

- A cross-platform installer supporting Windows, Linux, and macOS environments
- An Eclipse-based IDE with integrated programming and debugging support
- Build system infrastructure, configurators, and utilities
- Bluetooth firmware
- Platform and board support packages
- A rich set of WICED™ connectivity APIs that allow for simplified programming of Bluetooth/BLE connectivity
- Various sample applications that serve as examples on how to utilize the Bluetooth/BLE APIs
- More complex code examples that utilize various APIs and middleware to create a more complete solution

1.1 Supported Platforms

The Bluetooth SDK includes support for several kits and platforms. The platforms listed in **Table 1** are tested with the Bluetooth SDK 2.8 release. For support on platforms not listed, contact the Sales team for details on the release appropriate for your project.

Table 1 Platforms Tested during Bluetooth SDK 2.8 Release

Board	MCU	Connectivity	On-Chip Flash (OCF)	RAM
CYW920819EVB-02	CYW20819	CYW20819	256 KB	160 KB
CYW920819REF-KB-01	CYW20819	CYW20819	256 KB	160 KB
CYBT-213043-MESH	CBT-213043-02	CYW20819	256 KB	160 KB
CYBT-213043-EVAL	CBT-213043-02	CYW20819	256 KB	160 KB
CYW920820EVB-02	CYW20820	CYW20820	256 KB	160 KB
CYW920835REF-RCU-01	CYW20835	CYW20835	None	320 KB
CYW920735Q60EVB-01	CYW20735	CYW20735	None	320 KB
CYW920721B2EVK-02	CYW20721	CYW20721	1 MB	448 KB
CYW920721B2EVK-03	CYW20721	CYW20721	1 MB	448 KB
CYBT-413061-EVAL	CYBT-413061-02	CYW20721	1 MB	448 KB
CYBT-423060-EVAL	CYBT-423060-02	CYW20721	1 MB	448 KB
CYBT-483056-EVAL	CYBT-483056-02	CYW20721	1 MB	448 KB
CYW920719B2Q40EVB-01	CYW20719	CYW20719	1 MB	448 KB
CYBT-423054-EVAL	CYBT-423054-02	CYW20719	1 MB	448 KB
CYBT-413055-EVAL	CYBT-413055-02	CYW20719	1 MB	448 KB

ModusToolbox and Bluetooth SDK Development Environment

Board	MCU	Connectivity	On-Chip Flash (OCF)	RAM
CYBT-483056-EVAL	CYBT-483056-02	CYW20719	1 MB	448 KB
CYW989820EVB-01	CYW89820	CYW89820	256 KB	160 KB
CYW920706WCDEVAL	CYW20706	CYW20706	None	352 KB
CYBT-343026-EVAL	CYBT-343026-02	CYW20706	None	352 KB
CYBT-353027-EVAL	CYBT-353027-02	CYW20706	None	352 KB
CYW9M2BASE-43012BT	CYW43012	On-chip Bluetooth	None	324 KB

2 WICED APIs

WICED APIs are designed to reduce the number of steps needed to create connections over Bluetooth. Developers do not need to be experts in connectivity technologies, because the APIs will program most settings for the type of connections that the developers are trying to create. Hence, the functionality that often takes dozens of commands and domain-specific knowledge can be done with a few WICED APIs.

The Bluetooth SDK includes documentation for the APIs that are derived directly from the Bluetooth SDK source code. As new APIs are created or as existing APIs are augmented, the documentation remains synchronized.

2.1 Functional Support

The BT SDK provides functionalities in several different areas including:

- Core Bluetooth/BLE Technologies
- Bluetooth/BLE Protocols and Profiles
- Kit/Platform Support

This technical brief provides in-depth details on these functionalities.

2.1.1 Core Bluetooth/BLE Technologies

2.1.1.1 Bluetooth Standards

All Bluetooth/BLE cores and chipsets supported in the Bluetooth SDK support a base set of Bluetooth functionalities:

- BR and EDR data rates
- BLE

Additionally, each chip supports one of the several Bluetooth SIG specification revisions. The following are the major features supported in each specification:

- Bluetooth 4.2
  - LE Secure Connections
  - LE Privacy 1.2
  - Data Length Extension
- Bluetooth 5.0
  - 2 Mbps LE PHY data rate
  - Slot Availability Mask (SAM)
  - LE Channel Selection
  - High Duty Cycle Non-Connectable Advertisement

Note: *Chips or cores that support a later Bluetooth specification also include the supported features of previous specifications.*

Table 2 lists the supported Bluetooth/BLE chipsets and the Bluetooth SIG specification.

Table 2 Supported Chipsets, Bluetooth Specification, and Features

Chipset	Bluetooth SIG Specification	Specification Features
CYW20706A2	BT 5.0	4.2 Features: LE Secure Connections, Data Packet Length Extension (DPLE), LE Privacy 1.2
CYW20719B2	BT 5.1	5.0 Features: LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv
CYW20721B2	BT 5.1	5.0 Features: LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv
CYW20735B1	BT 5.0	LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv
CYW20819	BT 5.2	5.0 Features: LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv
CYW20820	BT 5.2	5.0 Features: LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv
CYW20835B1	BT 5.2	5.0 Features: LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv
CYW43012	BT 5.0	LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv
CYW89820	BT 5.0	LE 2 Mbps, SAM, LE Channel Selection #2, High Duty Cycle Non-Connectable Adv

Due to the differences in peripheral support, memory optimization, available GPIOs, and software development life-cycle, some features of the hardware may not be available in the Bluetooth SDK 2.8 release. **Table 3** lists those limitations.

Table 3 Features not Supported by Platform

Chipset	Platforms	Features not Supported in Bluetooth SDK 2.7
CYW20721B2	CYW920721B2EVK-02 CYW920721B2EVK-03	Programmable key-scan matrix interface HID-OFF low power mode PDM MIPI DBI-C display interface Dual/Quad SPI
CYW20719B2	CYW920719B2Q40EVB-01	Programmable key-scan matrix interface HID-OFF low power mode PDM MIPI DBI-C display interface Dual/Quad SPI
CYW20819 CYW20820	CYW920819EVB-02 CYW920820EVB-02	Programmable key-scan matrix interface I2C2 Master/slave interface PDM Dual/Quad SPI

2.2 Features, Profiles, and Protocols

In addition to the core Bluetooth/BLE functionality, the Bluetooth SDK provides a proven Bluetooth/BLE stack. Each profile and protocol provided within the code examples (CE) in the Bluetooth SDK are validated in the System Validation Test (SVT) labs. The CEs provide examples on how to use the Bluetooth protocols and APIs.

2.2.1 Bluetooth/BLE Features, Code Examples

Table 4 lists the features and CEs (organized by application area) that are actively supported in Bluetooth SDK 2.8.

Table 4 Actively Supported Bluetooth/BLE Profiles and Features

Application Area	Feature/ Code Example	Description	Board
BLE Mesh	BLE Mesh Demo Examples	Dimmer: CE of a simple dimmer based on the Level Client model.	CYW920819EVB-02 CYBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02 CYW920706WCDEVAL CYW920719B2Q40EVB-01 CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920735Q60EVB-01
		Light dimmable: CE of a dimmable light based on the BLE Mesh Light Lightness Server model.	CYW920819EVB-02 CYBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02 CYW920706WCDEVAL CYW920719B2Q40EVB-01 CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920735Q60EVB-01
		Light smart: CE of a smart light based on the Light Lightness and LC models.	CYW920819EVB-02 CYBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02 CYW920719B2Q40EVB-01 CYW920721B2EVK-02 CYW920721B2EVK-03
		Low power led: CE of a low-power LED system, includes Low Power Server and Friend node.	CYW920819EVB-02 CYBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02

Application Area	Feature/ Code Example	Description	Board
		ON OFF switch: CE of an ON/OFF switch.	CYW920819EVB-02 CYBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02 CYW920719B2Q40EVB-01 CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920735Q60EVB-01
		Sensor motion: Sensor Motion CE showing implementation of the BLE Mesh Sensor Server model.	CYW920819EVB-02 CYBT-213043-MESH CYW920820EVB-02
		Sensor temperature: Temperature sensor CE showing implementation of the BLE Mesh Sensor Server model.	CYW920819EVB-02 CYBT-213043-MESH CYW920820EVB-02
		Switch smart: CE of a motion sensor combined with ON/OFF button functionality.	CYW920819EVB-02 CYWBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02 CYW920719B2Q40EVB-01 CYW920721B2EVK-02 CYW920721B2EVK-03
		Embedded_provisioner: CE of a self-configured Mesh network that includes one node that acts as a Provisioner.	CYW920819EVB-02 CYWBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02 CYW920719B2Q40EVB-01 CYW920721B2EVK-02 CYW920721B2EVK-03
	BLE Mesh Snip Examples	Sample applications based on SIG Mesh models (Client and Server, power ON/OFF, level, battery, light control, transition location, property, time, scene, scheduler, provision, sensor, and so on).	CYW920819EVB-02 CYBT-213043-MESH CYBT-213043-EVAL CYW920820EVB-02 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920719B2Q40EVB-01 CYW920721B2EVK-02

Application Area	Feature/ Code Example	Description	Board
			CYW920721B2EVK-03 CYW920735Q60EVB-01
BLE	hello_client	Hello client CE shows an implementation of a BLE vendor-specific GATT Client profile.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL, CYBT-423054-EVAL CYBT-483056-EVAL CYW920735Q60EVB-01
	hello_sensor	Hello sensor CE shows an implementation of a BLE vendor-specific GATT device and service.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL, CYBT-423054-EVAL CYBT-483056-EVAL CYW920735Q60EVB-01
	beacon	Beacon CE demonstrates implementation of Apple iBeacon and Google Eddystone.	CYW920819EVB-02 CYBT-213043-EVAL

Application Area	Feature/ Code Example	Description	Board
			CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL CYBT-483056-EVAL CYW920735Q60EVB-01 CYW9M2BASE-43012BT
	env sensing temp	CE demonstrates the implementation of a simple BLE Environmental Sensing profile.	CYW920819EVB-02 CYW920820EVB-02 CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL CYBT-483056-EVAL
	anc and ans	Sample applications for Alert Notification profile (ANC: Client and ANS: Service).	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL CYBT-483056-EVAL

Application Area	Feature/ Code Example	Description	Board
			CYW920735Q60EVB-01 CYW9M2BASE-43012BT
	bas and bac	Sample applications for Battery Service profile (BAS - Service, BAC - Client).	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL CYBT-483056-EVAL CYW920735Q60EVB-01
	hrs and hrc	Sample applications for Heart Rate profile (HRC - Client, HRS - Service).	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW920706WCDEVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL, CYBT-483056_EVAL CYW920735Q60EVB-01
	le coc	Sample application for BLE connection-oriented channel.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920721B2EVK-02

Application Area	Feature/ Code Example	Description	Board
			CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL CYBT-483056-EVAL
	find me	Sample application for BLE FindMe Service.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL CYBT-483056-EVAL
Audio	watch	CE demonstrates BT Advanced Audio Distribution Profile (A2DP) source, Audio/Video Remote Control Profile (AVRCP) controller/target, Apple Media Service (AMS) and Apple Notification Center Service (ANCS), BT GATT, handling of the UART WICED protocol, Service Discovery Protocol (SDP) and GATT Descriptor/Attribute configuration. Note that the watch CE is limited to one BLE client connection.	CYW920819EVB-02 CYW920820EVB-02 CYW920706WCDEVAL
	watch	CE demonstrates BT Advanced Audio Distribution Profile (A2DP) source, Audio/Video Remote Control Profile (AVRCP) controller/target, Apple Media Service (AMS) and Apple Notification Center Service (ANCS), BT GATT, handling of the UART WICED protocol, Service Discovery Protocol (SDP), GATT	CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01 CYW9M2BASE-43012BT

Application Area	Feature/ Code Example	Description	Board
		Descriptor/Attribute configuration, and audio gateway profile or Hands-Free Profile (HFP). Note that the watch CE is limited to one BLE client connection.	
	audio gateway	CE demonstrates the use of Bluetooth Audio Gateway profile – Handsfree and Headset, handling of the UART WICED protocol, and setting of the local BT device address from the host MCU.	CYW920706WCDEVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01
	headset and speaker	CE of a BT headset and speaker device including A2DP sink (SBC and AAC decoding), AVRCP, Hands-Free Profile (HFP), and Google Fast Pair support.	CYW920721B2EVK-02
	headset and speaker	CE of a BT headset device including A2DP sink (SBC decoding), AVRCP, Hands-Free Profile (HFP), and Google Fast Pair support.	CYW9M2BASE-43012BT
	headset	CYW20706 CE for headset device that combines A2DP sink (SBC decoding) and AVRCP controller and AVRCP target.	CYW920706WCDEVAL
	a2dp sink	CE of a BT A2DP sink (SBC decoding) device.	CYW920706WCDEVAL CYW920721B2EVK-02 CYW9M2BASE-43012BT
	hands-free	CE of a BT handsfree device. Use the Client Control application to send various commands.	CYW920706WCDEVAL CYW920721B2EVK-02 CYW9M2BASE-43012BT
HID	dual_mode_keyboard	CE of a dual-mode keyboard using on-chip keyscan HW component. It can operate in both BR/EDR Bluetooth mode and LE, HID over GATT profile (HOGP). Note that OTA FW update is not supported with this CE on CYW20819/CYW20820 due to the size of on-chip flash.	CYW920735Q60EVB-01 CYW920819REF-KB-01
	ble_mouse	CE of a BLE mouse solution based on HID over GATT profile (HOGP).	CYW920735Q60EVB-01
	ble_remote	CE of a BLE remote control solution based on HID over GATT profile (HOGP).	CYW920735Q60EVB-01

Application Area	Feature/ Code Example	Description	Board
	ble_rcu	CE of a BLE reference remote control based on HID over GATT profile (HOGP).	CYW920835REF-RCU-01
RFCOMM	pbap client	CE of a Bluetooth Phone Book Access Profile (PBAP) client. It can connect to mobile phones that support PBAP server profile and download the phone book and call logs.	CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01
	map_client	Message Access Client application is designed to connect and access service on the Message Access Server device. It can be used to access SMS-MMS messages or emails received on the Message Access Server device such as a smartphone. Note that the MAP client is limited to four BLE connections.	CYW920819EVB-02 CYW920820EVB-02 CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01
	spp	Sample application that uses Serial Port Profile (SPP) library to establish, terminate, send, and receive SPP data over BR/EDR. Application supports a single SPP connection.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01 CYW920735Q60EVB-01 CYW9M2BASE-43012BT
	opp_server	CE of Object Push Profile (OPP) used to receive object files (vCard, Image, text, …) and send object files from the OPP client (mobile phone or PC).	CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01
HAL	ADC	Application demonstrates how to configure and use ADC to measure DC voltage on DC input channels.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW920706WCDEVAL

Application Area	Feature/ Code Example	Description	Board
			CYBT-343026-EVAL CYW920721B2EVK-02 CYW920719B2Q40EVB-01 CYW920735Q60EVB-01
	PUART	Application demonstrates how to use PUART APIs to read data over WICED.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01 CYW920735Q60EVB-01
	uart_raw_mode	Application demonstrates how to use the HCI UART in raw data mode.	CYW920819EVB-02 CYW920820EVB-02 CYW920721B2EVK-02 CYW920719B2Q40EVB-01
	uart_spi_bridge	Application implements the SPI master and acts as UART-SPI Bridge.	CYW920706WCDEVAL
	PWM	Application demonstrates how to configure and use PWM in WICED evaluation boards.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYW920735Q60EVB-01
	GPIO	Demonstrates the use of WICED GPIO APIs to configure GPIOs as input/output.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01 CYW920735Q60EVB-01

WICED APIs

Application Area	Feature/ Code Example	Description	Board
	I2C Master	Demonstrates how to use the I2C interface to send and receive data.	CYW920819EVB-02 CYW920820EVB-02 CYW989820EVB-01 CYW920719B2Q40EVB-01 CYW920735Q60EVB-01
	Low power	Demonstrates low-power modes.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02
OTA	ota_firmware_ upgrade	Demonstrates BLE-based over-the-air firmware upgrade functionality.	CYW920819EVB-02 CYBT-213043-MESH CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01 CYW920735Q60EVB-01
EMPTY	empty_wiced_bt	Empty starter application that is a starting point for adding new code and functionality.	CYW920819EVB-02 CYBT-213043-EVAL CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYBT-343026-EVAL CYBT-353027-EVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYBT-413061-EVAL CYBT-423060-EVAL CYBT-483062-EVAL CYW920719B2Q40EVB-01 CYBT-413055-EVAL CYBT-423054-EVAL CYBT-483056-EVAL CYW920735Q60EVB-01 CYW9M2BASE-43012BT

2.2.2 Bluetooth SDK Pro Packages

In addition to the code examples that are available in the Bluetooth SDK, there are optional sets of packages that add extra features to the Bluetooth SDK. These are typically more complex applications or require special licensing. The Pro CEs are not available on GitHub repositories. Contact the Sales team to request Pro CEs.

Table 5 provides a list of CEs that are available with Bluetooth SDK Pro packages.

Table 5 Bluetooth SDK Pro Code Examples

Application	Feature/ Code Example	Description	Supported Platforms
audio pro	headset_speaker_pro_ama	CE of a headset or BT speaker device including A2DP sink (SBC and AAC decoding), AVRCP, HFP, and button-initiated Alexa Mobile Accessory (AMA) support.	CYW920721B2EVK-02 CYW920721B2EVK-03
	watch_ama	CE demonstrates BT Advanced Audio Distribution Profile (A2DP) source, Audio/Video Remote Control Profile (AVRCP) controller/target, Apple Media Service (AMS) and Apple Notification Center Service (ANCS), BT GATT, handling of the UART WICED protocol, Service Discovery Protocol (SDP), GATT Descriptor/Attribute configuration, audio gateway profile or HFP, and button-initiated Alexa Mobile Accessory (AMA) support. Note that the watch ama CE is limited to one BLE client connection.	CYW920721B2EVK-02
	headset_wass_ama	CE of an untethered BT earbud solution demonstrating Wireless Audio Stereo Sync (WASS), A2DP sink (SBC decoding), AVRCP, HFP, Google Fast Pair support, and button-initiated AMA support.	CYW920721B2EVK-02
	headset_wass_aac	CE of an untethered BT earbud solution demonstrating Wireless Audio Stereo Sync (WASS), A2DP sink (SBC and AAC decoding), AVRCP, HFP, and Google Fast Pair support.	CYW920721B2EVK-02 CYW920721B2EVK-03

Application	Feature/ Code Example	Description	Supported Platforms
pro-homekit	homekit_lightbulb	CE for a HomeKit lightbulb accessory using the HomeKit library. The implementation is based on Apple's HomeKit Accessory Protocol Specification R15.	CYW920819EVB-02 CYW920820EVB-02
pro-iap2	iap2	Sample application demonstrating the use of the iAP2 protocol to communicate with an iOS device using the BT iAP2 library.	CYW920819EVB-02 CYW920820EVB-02 CYW989820EVB-01 CYW920706WCDEVAL CYW920721B2EVK-02 CYW920721B2EVK-03 CYW920719B2Q40EVB-01
	hci_iap2_spp	CE implements a pass-through serial application. The CE uses a standard SPP over RFCOMM if the peer supports it, or external accessory iAP2 protocol if the connection is established with an iOS device.	CYW920819EVB-02 CYW920820EVB-02 CYW920721B2EVK-02
pro-peps	Hub	Sample application demonstrating BLE Passive Entry Passive Start (PEPS) Hub that connects with the car key.	CYW989820EVB-01
	key	Sample application demonstrating PEPS key usage to send localization packet (to be tracked).	CYW989820EVB-01
	Sensor	Sample application demonstrating PEPS sensor used for BLE localization (to track the key).	CYW989820EVB-01

3 Technical Support

Forums are hosted for technical support. You can search the forum to find answer to your question. If you are unable to find the answer, you can post it on the forum. These Forums are manned by engineers to assist you with issues that you encounter while using the Bluetooth SDK with platforms and features listed in this document. Click **here** to access Bluetooth forums.

4 Learning Resources

Information	Source
Wireless Solutions and Product Offerings	**Wireless Product Offerings**
Location to buy Kits	**Kit Store**
Developer Community	**Community**
ModusToolbox	**ModusToolbox**
Bluetooth SDK, Application Notes, Support Blogs, and Help Articles	**Bluetooth Documentation**

To learn about new features, devices, and platform support since previous release and to find the list of any known issues and solutions, see the release notes provided with every Bluetooth SDK release.

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Revision history

Document version	Date of release	Description of changes
**	2020-10-05	Initial release

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