



Please note that Cypress is an Infineon Technologies Company.

The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

Continuity of document content

The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

Continuity of ordering part numbers

Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.



Bluetooth SDK Version: 2.6

Abstract

ModusToolbox™ with the Bluetooth SDK provides a complete development environment to allow one to quickly create an IoT solution utilizing Cypress' world-class Bluetooth/BLE connectivity technologies. This document also provides the details of many supported features and modes, and limitations associated with supported hardware development platforms.

Contents

ModusToolbox™ and BT SDK Development Environment..... 1
Supported Platforms..... 2
WICED™ APIs 2
Functional Support 2
 Core Bluetooth/BLE Technologies 2
 Features, Profiles, and Protocols 3
Technical Support..... 10
Learning Resources 10
Software Licensing 10

ModusToolbox™ and BT SDK Development Environment

ModusToolbox with the Bluetooth SDK is a software development environment allowing rapid application development of Bluetooth-enabled IoT solutions. Cypress provides a steady release cadence for the Bluetooth SDK enabling new features, fixes, and improvements. Cypress tests and supports these releases and their features with the platforms defined in this document to provide easy migration from one version to the next. If customers choose to create solutions, platforms, or both that are not defined in this document, they 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 BT/BLE connectivity
- Various sample applications that serve as examples of how to utilize the BT/BLE APIs
- More complex code examples that utilize various APIs and middleware to create a more complete solution

Supported Platforms

The Bluetooth SDK includes support for several Cypress kits and platforms. The platforms listed in [Table 1](#) are tested with the Bluetooth SDK 2.6 release. For support on platforms not listed, please contact Cypress for details on the relevant release appropriate for your project.

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
CYW920735Q60EVB-01	CYW20735	CYW20735	None	320 KB
CYW920721B2EVK-02	CYW20721	CYW20721	1 MB	448 KB
CYW920721B2EVK-03	CYW20721	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
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

Table 1. List of Platforms Tested During Bluetooth SDK 2.6 Release

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 many of the settings for the types of connections that the developer is trying to create. The result is that 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 stays synchronized.

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 the functionality offered.

Core Bluetooth/BLE Technologies

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
- Bluetooth Low Energy (BLE)

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

Chipset	Bluetooth SIG Spec	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
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

Table 2. List of Bluetooth Specification Support by Chipset and Support Features

Because of 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 2.6 release. The below table lists those limitations.

Chipset	Platforms	Features that aren't supported in Bluetooth SDK 2.6
CYW20721B2	<ul style="list-style-type: none"> • CYW920721B2EVK-02 • CYW920721B2EVK-03 	<ul style="list-style-type: none"> • Programmable key-scan matrix interface • HID-OFF low power mode • PDM • MIPI DBI-C display interface • Dual/Quad SPI
CYW20719B2	CYW920719B2Q40EVB-01	<ul style="list-style-type: none"> • Programmable key-scan matrix interface • HID-OFF low power mode • PDM • MIPI DBI-C display interface • Dual/Quad SPI
CYW20819 CYW20820	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 	<ul style="list-style-type: none"> • Programmable key-scan matrix interface • I²C2 Master/slave interface • PDM • Dual/Quad SPI

Features, Profiles, and Protocols

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

Bluetooth/BLE Features/Code Examples

Table 3 lists the features/code examples (organized by application group) that are actively supported in Bluetooth SDK 2.6.

Application Group	Feature/Code Example	Description	Board
BLE Mesh	BLE Mesh Demo Examples	dimmer: CE of a simple dimmer based on the Level Client model.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-MESH • CYBT-213043-EVAL • CYW920820EVB-02
		on off switch: CE of an on/off switch.	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-MESH • CYW920820EVB-02
		sensor temperature: Temperature sensor CE showing implementation of the BLE Mesh Sensor Server model	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-MESH • CYW920820EVB-02
		switch smart: CE of a motion sensor combined with ON/OFF button functionality.	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYWBT-213043-MESH • CYBT-213043-EVAL • CYW920820EVB-02 • CYW920719B2Q40EVB-01 • CYW920721B2EVK-02 • CYW920721B2EVK-03

Application Group	Feature/ Code Example	Description	Board
	BLE Mesh Snip Examples	Sample apps based on SIG Mesh models (Client and Server, power on/off, level, battery, light control, transition location, property, time, scene, scheduler, provision, sensor, etc.)	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-MESH • CYBT-213043-EVAL • CYW920820EVB-02 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920719B2Q40EVB-01 • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920735Q60EVB-01
BLE	hello_client	Hello client CE shows an implementation of a BLE vendor-specific GATT Client profile.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • 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	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL, • CYBT-423054-EVAL • CYBT-483056-EVAL • CYW920735Q60EVB-01
	beacon	Beacon CE demonstrates implementation of Apple iBeacon and Google Eddystone	<ul style="list-style-type: none"> • CYW920819EVB-02, • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • 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.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL • CYBT-423054-EVAL • CYBT-483056-EVAL

Application Group	Feature/ Code Example	Description	Board
	anc and ans	Sample apps for Alert Notification profile (ANC: Client and ANS: Service)	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL • CYBT-423054-EVAL • CYBT-483056-EVAL • CYW920735Q60EVB-01 • CYW9M2BASE-43012BT
	bas and bac	Sample apps for Battery Service profile (BAS - Service, BAC - Client)	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL • CYBT-423054-EVAL • CYBT-483056-EVAL • CYW920735Q60EVB-01
	hrs and hrc	Sample apps for Heart Rate profile (HRC - Client, HRS - Service)	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW920706WCDEVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL • CYBT-423054-EVAL, • CYBT-483056_EVAL • CYW920735Q60EVB-01
	le coc	Sample application for BLE connection-oriented channel	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL • CYBT-423054-EVAL • CYBT-483056-EVAL
	find me	Sample application for BLE FindMe Service	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL • CYBT-423054-EVAL • CYBT-483056-EVAL

Application Group	Feature/ Code Example	Description	Board
Audio	watch	CE demonstrating 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.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920706WCDEVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYW9M2BASE-43012BT
	audio gateway	CE demonstrates 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	<ul style="list-style-type: none"> • CYW920706WCDEVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01
	bt speaker	CE of a BT speaker device including A2DP sink (SBC decoding), AVRCP, Hands-Free Profile (HFP), and Google Fast Pair support.	<ul style="list-style-type: none"> • CYW920721B2EVK-02
	headset	CE of a BT headset device including A2DP sink (SBC decoding), AVRCP, HFP, and Google Fast Pair support.	<ul style="list-style-type: none"> • CYW920721B2EVK-02
	headset	CE of a BT headset device including A2DP sink (SBC decoding), AVRCP, and HFP	<ul style="list-style-type: none"> • CYW9M2BASE-43012BT
	headset	CYW20706 CE for headset device that combines A2DP sink (SBC decoding) and AVRCP controller and AVRCP target	<ul style="list-style-type: none"> • CYW920706WCDEVAL
	a2dp sink	CE of a BT A2DP sink (SBC decoding) device.	<ul style="list-style-type: none"> • CYW920706WCDEVAL • CYW920721B2EVK-02 • CYW9M2BASE-43012BT
hands-free	CE of a BT handsfree device. Use the Client Control application to send various commands.	<ul style="list-style-type: none"> • CYW920706WCDEVAL • CYW920721B2EVK-02 • CYW9M2BASE-43012BT 	
HID	dual_mode_keyboard	CE of a CYW20819 dual-mode reference keyboard solution using the CYW20819 in a 112-pin module	<ul style="list-style-type: none"> • CYW920819REF-KB-01
	ble_keyboard	CE of a turnkey BLE keyboard solution using on-chip keyscan HW component, based on HID over GATT profile (HOGP)	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920735Q60EVB-01
	ble_mouse	CE of a BLE mouse solution based on HID over GATT profile (HOGP)	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920735Q60EVB-01
	ble_remote	CE of a BLE remote control solution based on HID over GATT profile (HOGP).	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920735Q60EVB-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.	<ul style="list-style-type: none"> • 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 4 BLE connections.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01
	spp	Sample app that uses Serial Port Profile (SPP) library to establish, terminate, send and receive SPP data over BR/EDR. Application supports a single SPP connection.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02

Application Group	Feature/ Code Example	Description	Board
			<ul style="list-style-type: none"> • 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).	<ul style="list-style-type: none"> • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01
HAL	ADC	App demonstrates how to configure and use ADC to measure DC voltage on DC input channels.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYW920721B2EVK-02 • CYW920719B2Q40EVB-01 • CYW920735Q60EVB-01
	PUART	App demonstrates how to use PUART APIs to read data over WICED	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYW920735Q60EVB-01
	uart_raw_mode	App demonstrates how to use the HCI UART in raw data mode	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920721B2EVK-02 • CYW920719B2Q40EVB-01
	uart_spi_bridge	App implements the SPI master and acts as UART-SPI Bridge	<ul style="list-style-type: none"> • CYW920706WCDEVAL
	PWM	App demonstrates how to configure and use PWM in WICED eval boards.	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYW920735Q60EVB-01
	I2C Master	Demonstrates how to use the I2C interface to send and receive data	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW989820EVB-01 • CYW920719B2Q40EVB-01 • CYW920735Q60EVB-01
	Low power	Demonstrates low-power modes	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02

Application Group	Feature/ Code Example	Description	Board
OTA	ota_firmware_upgrade	Demonstrates BLE-based over-the-air firmware upgrade functionality	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYBT-213043-EVAL • CYW920820EVB-02 • CYW989820EVB-01 • CYW920706WCDEVAL • CYBT-343026-EVAL • CYBT-353027-EVAL • CYW920721B2EVK-02 • CYW920721B2EVK-03 • CYW920719B2Q40EVB-01 • CYBT-413055-EVAL • CYBT-423054-EVAL • CYBT-483056-EVAL • CYW920735Q60EVB-01 • CYW9M2BASE-43012BT

Table 3. List of Actively Supported BT/BLE Profiles/Features

Bluetooth SDK Pro Packages

In addition to the code examples that are available in the Bluetooth SDK, Cypress has optional set of packages that add extra features to the Bluetooth SDK. These are typically more complex applications or require special licensing. The Pro CE are not available on GitHub repos. Contact Cypress Sales to request.

Table 4 provide a list of code examples that are available with Bluetooth SDK Pro packages.

Application Group	Feature/ Code Example	Description	Supported Platforms
audio pro	bt_speaker_pro_aac	CE of a BT speaker device including A2DP sink (SBC and AAC decoding), AVRCP, HFP, and Google Fast Pair support	<ul style="list-style-type: none"> • CYW920721B2EVK-02 • CYW920721B2EVK-03
	bt_speaker_pro_ama	CE of a BT speaker device including A2DP sink (SBC and AAC decoding), AVRCP, HFP, and button-initiated Alexa Mobile Accessory (AMA) support	<ul style="list-style-type: none"> • CYW920721B2EVK-02 • CYW920721B2EVK-03
	headset_pro_aac	CE of a BT headset device including A2DP sink (SBC and AAC decoding), AVRCP, HFP, and Google Fast Pair support.	<ul style="list-style-type: none"> • CYW920721B2EVK-02 • CYW920721B2EVK-03
	headset_pro_ama	CE of a BT headset device including A2DP sink (SBC and AAC decoding), AVRCP, HFP, and button-initiated AMA support.	<ul style="list-style-type: none"> • CYW920721B2EVK-02 • CYW920721B2EVK-03
	headset_wass	CE of an untethered BT earbud solution demonstrating Cypress Wireless Audio Stereo Sync (WASS), A2DP sink (SBC decoding), AVRCP, HFP, and Google Fast Pair support.	<ul style="list-style-type: none"> • CYW920721B2EVK-02 • CYW920721B2EVK-03
	headset_wass_ama	CE of an untethered BT earbud solution demonstrating Cypress Wireless Audio Stereo Sync (WASS), A2DP sink (SBC decoding), AVRCP, HFP, Google Fast Pair support, and button initiated AMA support	<ul style="list-style-type: none"> • CYW920721B2EVK-02
	headset_wass_aac	CE of an untethered BT earbud solution demonstrating Cypress Wireless Audio Stereo Sync (WASS), A2DP sink	<ul style="list-style-type: none"> • CYW920721B2EVK-02 • CYW920721B2EVK-03

Application Group	Feature/ Code Example	Description	Supported Platforms
		(SBC and AAC decoding), AVRCP, HFP, and Google Fast Pair support.	
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.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02
pro-iap2	iap2	Sample app demonstrating the use of the iAP2 protocol to communicate with an iOS device using the BT iAP2 library	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • CYW920819EVB-02 • CYW920820EVB-02 • CYW920721B2EVK-02
pro-peps	Hub	Sample app demonstrating BLE Passive Entry Passive Start (PEPS) Hub that connects with the car key	<ul style="list-style-type: none"> • CYW989820EVB-01
	key	Sample app demonstrating PEPS key usage to send localization packet (to be tracked)	<ul style="list-style-type: none"> • CYW989820EVB-01
	Sensor	Sample app demonstrating PEPS sensor used for BLE localization (to track the key)	<ul style="list-style-type: none"> • CYW989820EVB-01

Table 4. List of Bluetooth SDK Pro Code Examples

Technical Support

Cypress Developer Community also hosts Forums 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 Cypress engineers to assist you with issues that you encounter while using WICED Studio with platforms and features listed in this document. For quick access, here are the links to the Bluetooth forums:

<https://community.cypress.com/community/wiced-studio-blueooth/wiced-studio-bluetooth-forums>

If you need support beyond what is listed in this document, you can contact of our partners. List of our partners is available at <https://community.cypress.com/community/partners>.

Learning Resources

Cypress offers a wealth of learning resources as summarized in Table 5.

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

Table 5. Learning Resources

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.

Software Licensing

Express Logic ThreadX object files and headers are licensed by Cypress from Express Logic, Inc and provided to Bluetooth SDK users royalty-free.

Cypress Semiconductor
An Infineon Technologies Company
198 Champion Ct.
San Jose, CA 95134-1709 USA
www.cypress.com
www.infineon.com

© Cypress Semiconductor Corporation, 2020. This document is the property of Cypress Semiconductor Corporation and its subsidiaries ("Cypress"). This document, including any software or firmware included or referenced in this document ("Software"), is owned by Cypress under the intellectual property laws and treaties of the United States and other countries worldwide. Cypress reserves all rights under such laws and treaties and does not, except as specifically stated in this paragraph, grant any license under its patents, copyrights, trademarks, or other intellectual property rights. If the Software is not accompanied by a license agreement and you do not otherwise have a written agreement with Cypress governing the use of the Software, then Cypress hereby grants you a personal, non-exclusive, nontransferable license (without the right to sublicense) (1) under its copyright rights in the Software (a) for Software provided in source code form, to modify and reproduce the Software solely for use with Cypress hardware products, only internally within your organization, and (b) to distribute the Software in binary code form externally to end users (either directly or indirectly through resellers and distributors), solely for use on Cypress hardware product units, and (2) under those claims of Cypress's patents that are infringed by the Software (as provided by Cypress, unmodified) to make, use, distribute, and import the Software solely for use with Cypress hardware products. Any other use, reproduction, modification, translation, or compilation of the Software is prohibited.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS DOCUMENT OR ANY SOFTWARE OR ACCOMPANYING HARDWARE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. No computing device can be absolutely secure. Therefore, despite security measures implemented in Cypress hardware or software products, Cypress shall have no liability arising out of any security breach, such as unauthorized access to or use of a Cypress product. CYPRESS DOES NOT REPRESENT, WARRANT, OR GUARANTEE THAT CYPRESS PRODUCTS, OR SYSTEMS CREATED USING CYPRESS PRODUCTS, WILL BE FREE FROM CORRUPTION, ATTACK, VIRUSES, INTERFERENCE, HACKING, DATA LOSS OR THEFT, OR OTHER SECURITY INTRUSION (collectively, "Security Breach"). Cypress disclaims any liability relating to any Security Breach, and you shall and hereby do release Cypress from any claim, damage, or other liability arising from any Security Breach. In addition, the products described in these materials may contain design defects or errors known as errata which may cause the product to deviate from published specifications. To the extent permitted by applicable law, Cypress reserves the right to make changes to this document without further notice. Cypress does not assume any liability arising out of the application or use of any product or circuit described in this document. Any information provided in this document, including any sample design information or programming code, is provided only for reference purposes. It is the responsibility of the user of this document to properly design, program, and test the functionality and safety of any application made of this information and any resulting product. "High-Risk Device" means any device or system whose failure could cause personal injury, death, or property damage. Examples of High-Risk Devices are weapons, nuclear installations, surgical implants, and other medical devices. "Critical Component" means any component of a High-Risk Device whose failure to perform can be reasonably expected to cause, directly or indirectly, the failure of the High-Risk Device, or to affect its safety or effectiveness. Cypress is not liable, in whole or in part, and you shall and hereby do release Cypress from any claim, damage, or other liability arising from any use of a Cypress product as a Critical Component in a High-Risk Device. You shall indemnify and hold Cypress, its directors, officers, employees, agents, affiliates, distributors, and assigns harmless from and against all claims, costs, damages, and expenses, arising out of any claim, including claims for product liability, personal injury or death, or property damage arising from any use of a Cypress product as a Critical Component in a High-Risk Device. Cypress products are not intended or authorized for use as a Critical Component in any High-Risk Device except to the limited extent that (i) Cypress's published data sheet for the product explicitly states Cypress has qualified the product for use in a specific High-Risk Device, or (ii) Cypress has given you advance written authorization to use the product as a Critical Component in the specific High-Risk Device and you have signed a separate indemnification agreement.

Cypress, the Cypress logo, Spansion, the Spansion logo, and combinations thereof, WICED, PSoC, CapSense, EZ-USB, F-RAM, and Traveo are trademarks or registered trademarks of Cypress in the United States and other countries. For a more complete list of Cypress trademarks, visit cypress.com. Other names and brands may be claimed as property of their respective owners.