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Bluetooth SDK 2.7 Release Notes

Overview

This release is an update to Bluetooth SDK 2.6. Bluetooth SDK 2.7 is targeted for the CYW20706, CYW20719B2, CYW20721B2, CYW20735B1, CYW20835B1, CYW20819, CYW20820, CYW89820 and the CYW43012 Wi-Fi/BT Combo (for embedded Bluetooth development only). ModusToolbox™ with the Bluetooth SDK software library provides a complete development environment to allow you to quickly create Bluetooth-enabled IoT solutions like smart watches, medical devices, or home automation platforms. This document describes the features and known limitations for Bluetooth SDK 2.7.

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What's Changed

This section provides a high-level overview about what changed from Bluetooth SDK 2.6 to Bluetooth SDK 2.7.

- Added support for CYW20835B1 and CYW920835REF-RCU-01
- Added ble_rcu code example for CYW20835B1
- Added support for the dual_mode_keyboard code example on CYW920819EVB-02, CYW920820EVB-02, and CYW920735Q60EVB-01
- Removed the ble_keyboard code example from the SDK
- Included the audio record code example in the audio application group for CYW20721B2
- Updated the watch code example to support the Audio gateway functionality for CYW20719B2, and CYW20721B2
- Added support for the following CYW20721-based modules (with code examples in the ble application group): CYBT-413061-02, CYBT-423060-02, and CYBT-483062-02.
- Updated CYW20721 firmware to reduce the RAM usage for headset_wass, headset_wass_aac, and headset_wass_ama applications
- Optimized the RAM usage on CYW43012 by allowing the user configuration of the max number of BLE connections and user configuration of max number of BLE allow list devices

What's Included

Bluetooth SDK

Bluetooth SDK is targeted for CYW20706, CYW20719B2, CYW20721B2, CYW20735B1, CYW20835B1, CYW20819A1, CYW20820A1, CYW89820, and CYW43012C0 with ModusToolbox 2.1. This SDK includes the following:

- Bluetooth firmware
- Platform and board support packages
- Utilities including BtSpy trace, Manufacturing Bluetooth Test tool, Client Control, and Mesh Client control
- Peer apps for OTA and Mesh
- A rich set of WICED™ connectivity APIs that allow for simplified programming of BT/BLE connectivity
- Various sample applications demonstrate how to use the BT/BLE APIs
- More complex code examples that use various APIs and middleware to create a more complete solution

Design Impact

Updating from Bluetooth SDK 2.6

Bluetooth SDK 2.7 code examples can be acquired from the Cypress GitHub repo.

Note: If you must keep a previous version of Bluetooth SDK 2.x, create a new workspace and wiced_btstack project to pull in Bluetooth SDK 2.7 and avoid overwriting previous versions.

Do the following in the initial setup of Bluetooth SDK 2.7 with ModusToolbox 2.1:

1. In the IDE, click the **New Application** link in the Quick Panel (or, use **File > New > ModusToolbox Application**).
2. In Project Creator, click **WICED Bluetooth BSPs**.
3. Pick your board for Bluetooth SDK.
4. Select **wiced-btstack**. This project contains the SDK, and is used by all Bluetooth SDK applications. You will need to create this project just once in the working directory.

Note: Do not change the name of this project. All Bluetooth SDK apps use this project name in application makefiles.

5. Click **Create**. This step can take up to 15 minutes but only needs to be done once.
6. Click **Close**.
7. After the wiced_btstack project is created, click the **New Application** link.
8. In the Project Creator, select the evaluation board and application that you want to use from the Bluetooth SDK.

Supported Boards

This release supports the following boards:

Board	MCU	Connectivity
CYW920819EVB-02	CYW20819	CYW20819
CYW920819REF-KB-01	CYW20819	CYW20819
CYBT-213043-MESH	CYW20819	CYW20819
CYBT-213043-EVAL	CYW20819	CYW20819
CYW920820EVB-02	CYW20820	CYW20820
CYW920835REF-RCU-01	CYW20835	CYW20835
CYW920735Q60EVB-01	CYW20735	CYW20735
CYW920721B2EVK-02	CYW20721B2	CYW20721B2
CYW920721B2EVK-03	CYW20721B2	CYW20721B2
CYBT-413061-EVAL	CYBT-413061-02	CYW20721B2
CYBT-423060-EVAL	CYBT-423060-02	CYW20721B2
CYBT-483062-EVAL	CYBT-483062-02	CYW20721B2
CYW920719B2Q40EVB-01	CYW20719B2	CYW20719B2
CYBT-423054-EVAL	CYBT-423054-02	CYW20719B2
CYBT-413055-EVAL	CYBT-413055-02	CYW20719B2
CYBT-483056-EVAL	CYBT-483056-02	CYW20719B2
CYW920706WCDEVAL	CYW20706	CYW20706
CYBT-353027-EVAL	CYBT-353027-02	CYW20706
CYBT-343026-EVAL	CYBT-343026-02	CYW20706
CYW989820EVB-01	CYW89820	CYW89820
CYW9M2BASE-43012BT	CYW43012	CYW43012

Known Issue Fixes

This section lists the known issues from the Bluetooth SDK 2.6 release that were fixed in this release.

Platform/BT Firmware/Application	Fix
[CYW920721B2EVK-02] BT speaker pro AMA	Updated the code example such that music streaming does not go to pause state when asking Alexa for the weather on iOS.
[CYW920721B2EVK-03] Headset wass aac	Updated the code example to avoid glitches when BLE is connected from src2 during audio streaming from src1.
[CYW20819EVB-02] Low power	Updated the code to make sure that HID-OFF trace messages are being printed.
[CYW920820EVB-01] Ble_keyboard/ble_mouse/ble_remote/spp_multiport	Fixed an issue to ensure that the correct chip name is being reported.

Known Issues/Limitations

This section lists the known issues/limitations of this release:

Documentation

Problem	Workaround
Various documents included with the release may contain incomplete information or may not contain up to date screen captures or information.	New versions of documents, including these release notes, may be available online at: www.cypress.com/modustoolbox

Platform

Limitation	Workaround
ModusToolbox 2.1 supports Arm® GCC, Arm compiler v6 and IAR toolchain. The Bluetooth SDK only supports Arm GCC.	None.
CYW920820EVB-02 has limited availability.	Contact Cypress sales to request access.
CYW920835REF-RCU-01 has limited availability.	Contact Cypress sales to request access.
CYW920721B2EVK-02 and CYW920721B2EVK-03 have limited availability. Note that these platforms will be replaced with updated equivalents in the next Bluetooth SDK release.	Contact Cypress sales to request access.
CYW920719B2Q40EVB-01 has limited availability.	Contact Cypress sales to request access.
CYW989820EVB-01 has limited availability.	Contact Cypress sales to request access.
CYW9M2BASE-43012BT has limited availability.	Contact Cypress sales to request access.
The Headset code example for CYW9M2BASE-43012BT was tested only by developers due to limited access to Cypress offices dictated by COVID-19 restrictions.	None. Increased test coverage is planned for future releases.
iAP2 code examples are not included by default in Bluetooth SDK 2.7.	Get the MFi license and contact Cypress sales to request access to the additional code example
Limited testing of homekit_lightbulb code example for CYW20819/20820	None. Increased test coverage is planned for future releases.
PEPS code examples for the CYW89820 are not included by default in Bluetooth SDK 2.7.	Contact Cypress sales to request access to the additional code examples available for CYW89820.

Bluetooth SDK

Problem	Workaround
[CYW920706WCDEVAL] BLE Mesh conformance: Expected value and received value do not match for LC server PTS test cases	This is a Profile Tuning Suite (PTS) issue. A newer version of PTS should fix the issue.
[CYW920719B2Q40EVB-01] BLE Mesh conformance: Command receive failed (timeout) in MESH/NODE/RLY/BV-02-C	This is a PTS issue. A newer version of PTS should fix the issue.
[CYW920721B2EVK-01] MAP: There is no provision in client control UI to download e-mails	There are no plans to implement this feature.
[CYW920721B2EVK-01] MAP: Contact number/name is not displayed for Unsaved contacts. This is an UI display issue; the trace shows the operation is working fine.	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920721B2EVK-02] Headset_wass: Glitches are heard on PRI and no audio on SEC during audio streaming when OTA upgrade through OTA SPP app is running.	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920721B2EVK-02] Headset_wass: Glitch is heard on headset when BLE connection from source2 during audio streaming from source 1	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920721B2EVK-02] Headset_wass: No voice prompt is working from the time SEC is reset during headset re-connection from PRI	This issue is targeted to be addressed in a future Bluetooth SDK release.

Problem	Workaround
[CYW920721B2EVK-02] Headset_wass: Discoverability reduces to zero when DUT is disconnected before pairing mode is allowed to zero.	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920721B2EVK-02] Headset_wass: Able to start audio streaming from src2 during an incoming active voice call on src1	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920721B2EVK-02] BT Speaker Pro AMA: Need to put DUT in discoverable mode to perform LE reconnection	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920721B2EVK-03] Headset_pro_aac: Held voice call on src2 does not return to active state after declining an incoming voice call on src1	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920721B2EVK-03] Headset_wass_aac: Media volume sync is disabled after re-connection from the source during audio streaming	This issue is targeted to be addressed in a future Bluetooth SDK release.
[CYW920735Q60EVB-01] The board requires recovery reset before download.	Reset recovery can be used as a work around. This issue is targeted to be addressed in the next Bluetooth SDK release.
[CYW920819EVB-02] Watch: Current spikes of 200uA on J15 (VDDIO)	This issue is targeted to be resolved in a future Bluetooth SDK release.
[CYW920820EVB-02] The Spi_master functionality does not work after changing the pin configuration through the device configurator	Device configurator should be used only for reserving pins and not assigning functionality. This issue will not be fixed.
[CYW920820EVB-02] The Spi_slave functionality does not work after changing the pin configuration through the device configurator.	Device configurator should be used only for reserving pins and not assigning functionality. This issue will not be fixed.
[CYW920820EVB-02] homekit_lightbulb: Characteristics datatype is displayed as "unknown"	This issue will be addressed in a future Bluetooth SDK release.
[CYBT-213043-EVAL] MC receives bad packets when HCI tracing is enabled due to low baud rate and buffer settings with Linux.	This issue can be worked around by decreasing the logging on the UART for Linux. This issue will not be fixed.
[CYBT-213043-EVAL] Lecoc: Intermittently observed bad packets	This issue is due to Cy Serial bridge software. This issue will not be fixed.
[CYBT-213043-MESH, CYW920820EVB-02] Unable to do OTA upgrade for apps which do not have the Proxy feature enabled (dimmer, on_off_switch)	This issue will be addressed in a future BT SDK release.
[CYBT-213043-MESH] BLE MMDL Conformance: Did not receive all of the expected messages (expected message 2 of 2 at address 0xC001).	This is a PTS issue. A newer version of PTS should fix the issue.
[CYW920835REF-RCU-01] BLE_rcu: Voice remote button isn't working as expected	This issue will be addressed in the BT SDK 2.8 release.
[CYW9M2BASE-43012BT] BR/EDR. During a BR/EDR simple pairing process, if the link disconnects in the middle of the pairing without getting a SP failure or success LMP response, the SP state machine is not reset on link disconnection.	This issue will be addressed in the BT SDK 2.8 release. As a workaround, call sp_reset when pairing failure happens.
[CYW9M2BASE-43012BT] Advertisement. At boot, 3 different advertising addresses are received from the DUT.	This issue will be addressed in the BT SDK 2.8 release.
[CYW9M2BASE-43012BT] Advertisement. Advertisement says enabled but does not get re-enabled.	This issue will be addressed in the BT SDK 2.8 release.
When using the ANS application, the UI does not allow generating all possible alerts simultaneously.	This is a current UI limitation; the application can handle generating alerts. The UI can generate individual alerts.
Update any API documentation that uses the bd_addr as input to reflect the endianness required.	This documentation issue will be addressed in a future Bluetooth SDK release.
Update the wiced_bt_dev API documentation to reflect it is intended for BLE only (wiced_bt_dev_add_device_to_address_resoluion_db api).	This documentation issue will be addressed in a future Bluetooth SDK release.

Problem	Workaround
When <app_name> Debug_KitProg3 or <app_name>Debug_JLink* from Quick Panel options are used to start debugging with MiniProg4 or J-Link in a WICED project, program execution does not halt on any breakpoints.	This will be addressed in a future Bluetooth SDK release.
J-Link attach configuration doesn't keep execution halted on breakpoints after debug termination.	This will be addressed in a future Bluetooth SDK release.

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<http://www.cypress.com/documentation/software-and-drivers/free-and-open-source-software-download-page>

Further Reading

See ModusToolbox documents (including but not limited to the following):

- ModusToolbox Installation Guide
- Bluetooth API Documentation
- ModusToolbox IDE Quick Start Guide
- ModusToolbox IDE User Guide
- ModusToolbox Configurator Guides (for each Configurator)

Other documentation includes (but is not limited to):

- Device Datasheets
- Application Notes
- Training

Contact your Cypress representative as needed.

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