AIROC™ Bluetooth® SDK 4.2.0 release notes

About this document

Scope and purpose

This release is an update to AIROC™ Bluetooth® SDK 4.1.3.

AIROC™ Bluetooth® SDK 4.2.0 is targeted for the CYW20706, CYW20719B2, CYW20721B2, CYW20736, CYW20835B1, CYW20819, CYW20820, CYW20829, CYW30739, CYW89820, CYW43012 AIROC™ Wi-Fi & Bluetooth® combo chips (for embedded Bluetooth® development only), and CYW5557x AIROC™ Wi-Fi & Bluetooth® combo chips. ModusToolbox™ software with the Bluetooth® SDK software library provides a complete development environment to allow you to quickly create Bluetooth®-enabled IoT solutions such as smartwatches, medical devices, or home automation platforms. This document describes the features and known limitations of Bluetooth® SDK 4.2.0.

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1   What's changed

Bug Fixes

Move Call To Local Hold sub-procedure
BLE MESH CONFORMANCE: Old scene size is different from new scene size. Old scene size: 1, new scene size: 2
BLE MESH CONFORMANCE: Timeout. Did not receive packet.
BLE MESH CONFORMANCE: TC's MESH/NODE/CFG/NID failed with Timeout. Did not receive packet.
BLE MESH Host Apps: Unable to open the network in Mesh Client Control-Light Control Tab.
Build failed for iOS Mesh App
iOS MeshApp crashed while performing 'Get Sensor Data' on Temperature_Sensor app
BLE MESH Peer App: Win MeshClient crashes while opening the Network.
Aggregate feature for BLE Mesh
BLE Mesh: Mesh SAR Configuration
Bluetooth_apps Broadcast Sink: After establishing the broadcast sync, volume functionality has not yet enabled in UI
Add support in BT Spy to properly decode HCI_LE_Read_buffer_size [v2] command and response
Parsing error when read response with 0 len is sent
"Time stamp" and "Traces" are truncated when a saved btspy log opened on btspy tool using "File ==>Open Spy log".
Wrong length decoded while decoding BIG complete event
BTSpy crashes when large amount of data is traced
Improve btspy for the btsnoop
Call control app on Xavier platform : Call button is enabled even before connection between client & server.
CYW20721: Disconnection issue when CTKD enabled
CYW20829M2EVB-01 (LE ISOC Hello Sensor): Bad trace type: 27745 is observed on peripheral's spy log upon user button press.
CYW920721M2EVK-01 Watch (PANU): Watch app program failed when "PANU_SUPPORT=1" flag set in makefile
CYW955572BTEVK: adding an option for WICED_BT_TRACE routes to SCB uart
CYW955572BTEVK_01: BLE find_me app LEDs do not blink when gatt blink number is updated
CYW955572BTEVK-01: Error Message "Unexpected format of file C;/users/......._direct_load.hex" observed while building the application
CYW955572BTEVK-01 Unicast-Sink: Application build failed
CYW955572BTEVK-01 (Audio_Watch): Compilation got failed during build process and unable to flash DUT when SLEEP_SUPPORT ?= 1 is set in makefile
CYW955572BTEVK-01 (LE Audio/Unicast Sink): Bad codec configuration observed after clicking on Play button
license.txt, readme.md & version.xml files are not present in app folder directory for some pro apps.

What's changed

CYW955572BTEVK-01 (LE Audio/Unicast Sink): Crash is observed when tried to connect IFX unicast sink against Mindtree Source device.
Add RPA support to CYW43012C0 multi-advs
bcsulp_AES crashes
Broadcast sink - stand alone terminate stream is not happening.
Cater to MT 3.1 Tools update to GCC which removes indirect include of stdint.h and causes compile failures
Change the default value for random relay delay to 0-10ms
check all kits for device-configurator enabling all pins
Client control updates to deprecate protobuf for demo apps
COMPONENT_ folders should only contain letters, numbers, or underscores
CSP readmes do not render properly on GitLab/GitHub
DFU for QT Client Control
DFU for VS Client Control
DFU: Win MeshClient build failed after adding the DFU capabilities
DIRECT_LOAD=1 for CYW20835
Embedded provisioner resetting itself while pressing the user button
Enabling Caller name details in HFP
EPA PTS tests fail
Fix control lead check for KP3
Fix test_pro_public_1 pipeline failure for unicast sink app
GATT API doxygen organization is broken for 208XX
Get broadcast_id from CC instead of hardcoding in the app
Handle extended Adv with multiple uuid
iap2 build for 43012 platforms fails with public 4.1.3 supermanifest
Join Calls sub-procedure
Large Composition Data
Move AES related code from mesh_core_lib to mesh_app_lib
Provide API to set the default Link Supervision timeout in BR/EDR connection
Qmap list update for mapping broadcast_id key with broad_src info
Replace "20820A1" with $(CY_TARGET_DEVICE) in CYW920820M2EVB-01.mk
Request to print the selected device in LE discovery and BR/EDR discovery drop-down's in the Client-control
RFCOMM failure events not getting handled correctly in COMPONENT_handsfree_profile/profile_btstack libs
Unable to control the Light_smart using Switch_smart
Update audio homekit and peps pro apps structure so they can be imported to MT 3.0

What's changed

Update BSP dependencies manifest for 43012 and 55572 BSPs to use new 4.x CSPs
Update CAP UUID and add to the Db
Update Client Control
Update Unicast Sink to use LE Audio RPC library
Update unicast_source to support different audio stream configuration
Use continuous scan in all mesh apps
Watch app readme file needs to be updated.
WICED_TRANSPORT_SPI works abnormal

2 What's included

2.1 AIROC™ Bluetooth® SDK

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 connectivity APIs that allow for simplified programming of Bluetooth®/Bluetooth® LE connectivity
- Various sample applications that demonstrate how to use the Bluetooth®/Bluetooth® LE APIs
- More complex code examples that use various APIs and middleware to create a complete solution

2.2 Supported devices

The AIROC™ Bluetooth® SDK is targeted for the following devices with ModusToolbox™ software 2.4 and 3.0:

- AIROC™ CYW20706 Bluetooth® & Bluetooth® LE system on chip
- AIROC™ CYW20719B2 Bluetooth® & Bluetooth® LE system on chip
- AIROC™ CYW20721B2 Bluetooth® & Bluetooth® LE system on chip
- AIROC™ CYW20736 Bluetooth® LE system on chip
- AIROC™ CYW30739 Bluetooth® LE & 802.15.4 multi-protocol system on chip
- AIROC™ CYW20835 Bluetooth® LE system on chip
- AIROC™ CYW20819A1 Bluetooth® & Bluetooth® LE system on chip
- AIROC™ CYW20820A1 Bluetooth® & Bluetooth® LE system on chip
- AIROC™ CYW89820 Automotive Bluetooth® chip
- AIROC™ CYW43012C0 Wi-Fi & Bluetooth® combo chip (for embedded Bluetooth® development only)
- AIROC™ CYW5557x Wi-Fi & Bluetooth® combo chip (for embedded Bluetooth® development only)
- AIROC™ CYBLE-333074-02 Bluetooth® LE module
- AIROC™ CYBLE-343072-02 Bluetooth® LE module
- AIROC™ CYBT-213043-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-223058-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-243053-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-253059-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-263065-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-273063-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-333047-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-343026-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-353027-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-483056-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-413055-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-423054-02 Bluetooth® & Bluetooth® LE module

What's included

- AIROC™ CYBT-483062-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-413061-02 Bluetooth® & Bluetooth® LE module
- AIROC™ CYBT-423060-02 Bluetooth® & Bluetooth® LE module

3 Design impact

3.1 Updating from Bluetooth® SDK 4.1.3

AIROC™ Bluetooth® SDK 4.2.0 code examples can be acquired from the **Infineon GitHub repository**.

Note: *If you must keep a Bluetooth® SDK 4.x or an earlier version, create a new workspace project to pull in Bluetooth® SDK 4.2.0 and to avoid overwriting previous versions.*

Do the following in the initial setup of AIROC™ Bluetooth® SDK 4.2.0 with ModusToolbox™ software 3.0:

1. In the IDE, click the **New Application** link in the Quick Panel (or use **File** > **New** > **ModusToolbox™ Application**).
2. In **Project Creator**, click **AIROC™ Bluetooth® BSPs**.
3. Pick your board for Bluetooth® SDK.
4. Select a template application.
5. Click **Create** and wait for Project Creator to close.

4 Supported boards

Board	MCU	Connectivity
CYW920819EVB-02	CYW20819	CYW20819
CYW920819M2EVB-01	CYW20819	CYW20819
CYBT-213043-MESH	CYBT-213043-02	CYW20819
CYBT-213043-EVAL	CYBT-213043-02	CYW20819
CYBT-223058-EVAL	CYBT-223058-02	CYW20819
CYBT-263065-EVAL	CYBT-263065-02	CYW20819
CYBT-273063-EVAL	CYBT-273063-02	CYW20819
CYW920820M2EVB-01	CYW20820	CYW20820
CYW920820EVB-02	CYW20820	CYW20820
CYBT-243053-EVAL	CYBT-243053-02	CYW20820
CYBT-253059-EVAL	CYBT-253059-02	CYW20820
CYW920829M2EVB-01	CYW20829	CYW20829
CYW920835REF-RCU-01	CYW20835	CYW20835
CYW920835M2EVB-01	CYW20835	CYW20835
CYBLE-333074-EVAL-M2B	CYBLE-333074-02	CYW20835
CYBLE-343072-EVAL-M2B	CYBLE-343072-02	CYW20835
CYBLE-343072-MESH	CYBLE-343072-02	CYW20835
CYW930739M2EVB-01	CYW30739	CYW30739
CYW920736M2EVB-01	CYW20736	CYW20736
CYW920721M2EVK-01	CYW20721B2	CYW20721B2
CYW920721M2EVK-02	CYW20721B2	CYW20721B2
CYW920721M2EVB-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
CYBT-333047-EVAL	CYBT-333047-02	CYW20706
CYW989820EVB-01	CYW89820	CYW89820
CYW989820M2EVB-01	CYW89820	CYW89820
CYW943012BTEVK-01	CYW43012	CYW43012

Supported boards

Board	MCU	Connectivity
CYW9M2BASE-43012BT	CYW43012	CYW43012
CYW955572BTEVK-01	CYW55572	CYW55572

5 Known issues/limitations

Table 1   Documentation

Problem	Workaround
Various documents included with the release may contain incomplete information or may not have up-to-date screen captures or information.	New versions of documents, including these release notes, may be available **online**.

Table 2   Platform

Limitation	Workaround
ModusToolbox™ software 2.4, 3.0 supports Arm® GCC, Arm® compiler v6, and IAR toolchain. The Bluetooth® SDK supports only Arm® GCC.	None.
The following kits have limited availability: • CYW920819M2EVB-01 • CYW920820M2EVB-01 • CYW920829M2EVB-01 • CYW920835REF-RCU-01 • CYW920835M2EVB-01 • CYW930739M2EVB-01 • CYW920736M2EVB-01 • CYW920721M2EVK-01 • CYW920721M2EVK-02 • CYW920721M2EVB-03 • CYW989820M2EVB-01 • CYW943012BTEVK-01 • CYW9M2BASE-43012BT • CYW955572BTEVK-01 • CYBLE-333074-EVAL-M2B • CYBLE-343072-MESH	Contact Sales to request access.
CYW920820EVB-02 has limited availability. Note that support for this platform will be removed in a future Bluetooth® SDK release.	Contact sales to request access to the CYW920820M2EVB-01.
CYW989820EVB-01 has limited availability. Note that support for this platform will be removed in a future Bluetooth® SDK release.	Contact sales to request access to the CYW989820M2EVB-01
CYW920819EVB-02 has limited availability. Note that support for this platform will be removed in a future Bluetooth® SDK release and will be replaced by CYW920819M2EVB-01.	Contact sales to request access to the CYW920819M2EVB-01
iAP2 code examples are not included by default in Bluetooth® SDK 4.2.0	Get the MFi license and contact Sales to request access to the additional code example.

Known issues/limitations

Limitation	Workaround
PEPS code examples for the CYW89820 are not included by default in Bluetooth® SDK 4.2.0	Contact Sales to request access to the additional code examples available for CYW89820.

Known issues/limitations

Table 3 **Bluetooth® SDK**

Problem	Workaround
[CYW920835M2EVB-01] LE Mouse, LE Remote: When creating HID apps an extra BSP (CYW920735Q60EVB-01) is created.	This issue will be fixed when the LE Mouse and LE Remote applications are updated in a future release.
[CYW920721M2EVK-01] HAL_ADC: Incorrect voltage values are displayed when GPIO pin P0 is connected to 3.3V	This issue is targeted to be addressed in a future Bluetooth® SDK release.
[CYW920721M2EVK-02] Headset_wass: Glitches are heard on PRI and no audio on SEC during audio streaming when OTA upgrade through the OTA SPP app is running.	This issue is targeted to be addressed in a future Bluetooth® SDK release.
[CYW920721M2EVK-02] Headset_wass: No voice prompt is working when the time SEC is reset during headset reconnection from PRI.	This issue is targeted to be addressed in a future Bluetooth® SDK release.
[CYW920721M2EVK-02] Headset_wass: Discoverability reduces to zero when the DUT is disconnected before pairing mode is allowed to zero.	This issue is targeted to be addressed in a future Bluetooth® SDK release.
[CYW920721M2EVK-02] Speaker Pro AMA: Need to put the DUT in discoverable mode to perform LE reconnection	This issue is targeted to be addressed in a future Bluetooth® SDK release.
[CYW55572BTEVK-01] Handsfree: Echo can be observed with high mic gains on eval kit.	Customers should implement echo cancellation algorithms on the DSP audio hardware codec vendor of choice.
[CYW920736M2EVB-01] Downloads: Back-to-back download of applications is not supported.	After downloading an application to a device, the reset recovery operation must be performed on the device before a new application can be downloaded.
[CYW920819EVB-02] Watch: Current spikes of 200 µA on J15 (VDDIO)	This issue will not be fixed.
[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-MESH] Mesh snip light LC server is advertising as SmartLight	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 the low baud rate and buffer settings with Linux.	Decrease 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.

Known issues/limitations

Problem	Workaround
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.
[CYW955572BTEVK-01] Watch [AVRC CT]: Only Title of the track is being displayed on the track details window in AVRC CT tab after playing a song	This is a current limitation. Only title of the track is visible on client control.
[CYW955572BTEVK-01][Audio_Watch] Unable to reconnect Airpods Pro with DUT after disconnection.	This is a current limitation. Reconnection between Airpods Pro and DUT fails.
[CYW955572BTEVK-01][Audio_Watch] Unable to wake DUT from Sleep via CUSTOM Button or GPIO_Pin(wake_gpio).	This is a current limitation. Client Control does not list the tabs supported by the embedded application and is unable to perform operations like BR/EDR or LE Discovery.
[CYW920719B2Q40EVB-01] [Watch-SPI-Transport-Mode] Unable to stop A2DP SRC Sine wave streaming via SPI	This is a current limitation. On clicking "Stop Streaming" button, the Sine wave sampling streaming does not stop.
[CYW920706WCDEVAL] Headset: Call audio from third party phone to DUT is not audible in wired headset connected to DUT	This is a current limitation. Call audio spoken from third party phone is not audible at DUT (wired headset connected to DUT).
[CYW920706WCDEVAL] A2dp_Sink: During streaming audio from peer, minor glitch/ pop sound heard randomly	This is a current limitation. Some minor pop sound/ glitch is observed randomly in audio.
[CYW920706WCDEVAL, CYW920819M2EVB-01, CYW943012BTEVK-01 & CYW920835M2EVB-01] BT version in OTA logs differs from BSP description in project creator window	This is a current limitation. BT version is different in bsp description on project creator window and in OTA logs.
[CYW920719B2Q40EVB-01, CYW920819M2EVB-01, CYW920820M2EVB-01] After setting the Dimmable brightness 0 using Dimmer, unable to turn On/Off using peerapp untill it turn on again using dimmer	This is a current limitation. After setting the Dimmable brightness 0 using Dimmer, unable to turn On/Off using peerapp until it turn on again using dimmer.

6 Open source

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7 Further reading

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

- ModusToolbox™ software installation guide
- Bluetooth® API documentation
- Eclipse IDE for ModusToolbox™ software quick start guide
- Eclipse IDE for ModusToolbox™ software user guide
- ModusToolbox™ software configurator guides (for each configurator)

Other documentation includes (but is not limited to):

- Device datasheets
- Application notes
- Training

Contact your sales representative as needed.

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