

ModusToolbox™ run-time software release notes

ModusToolbox™ tools package version 3.2.0

About this document

Scope and purpose

With the ModusToolbox™ run-time software, you can rapidly develop applications for Infineon MCUs, as well as AIROC™ Wi-Fi and Bluetooth® devices.

This document lists the new and updated features included with this release of ModusToolbox™ run-time software. For details about these and other features and libraries, refer to the [ModusToolbox™ run-time software reference guide](#).

Document conventions

Convention	Explanation
Bold	Emphasizes heading levels, column headings, menus and sub-menus
<i>Italics</i>	Denotes file names and paths
Courier New	Denotes APIs, functions, interrupt handlers, events, data types, error handlers, file/folder names, directories, command line inputs, and code snippets
File > New	Indicates that a cascading sub-menu opens when you select a menu item

Reference documents

Refer to the following links for more information:

- [ModusToolbox™ run-time software reference guide](#)
- [ModusToolbox™ software page on GitHub](#)
- [Code examples on GitHub](#)
- [ModusToolbox™ community webpage](#)



Table of contents

Table of contents

- About this document..... 1**
- Table of contents..... 2**
- 1 What’s new/changed in this release..... 3**
 - 1.1 Features 3
 - 1.2 New libraries 3
 - 1.3 Updated libraries..... 3
 - 1.4 Updated BSPs 4
 - 1.5 New code examples 4
 - 1.6 Updated code examples 4
 - 1.7 New Application Notes and KBAs 6
 - 1.8 Updated Application Notes and KBAs 6
- 2 Known Issues..... 7**
- Revision history..... 8**

What's new/changed in this release

1 What's new/changed in this release

The following features and libraries have been added/changed since the previous release:

1.1 Features

- New safety test library for PSoC™ 6 and XMC7000 devices
- Improved CAPSENSE™ performance for PSoC™ 4000T
- For the CYW43022 device, the LPA library is updated with the following network offloads:
 - ARP offload: The ARP Offload part of the LPA is designed to improve the power consumption of device by reducing the time the Host needs to stay awake due to ARP broadcast traffic. This offload is by default enabled in the WLAN firmware.
 - Packet Filter: Packet filters allow the host processor to limit which types of packets get passed up to the host processor from the WLAN. This is useful to keep out unrequired packets from the network to reach the host.
 - TCP keepalive offload: TCP Keepalive maintains idle TCP connections by periodically passing packets between the client and server. With TCP keepalive offloaded to WLAN FW, when TCP keepalive requests arrives to device, WLAN FW respond to it without waking up the host by reducing the time the host needs to stay awake. This offload is by default enabled in the WLAN firmware.
 - DHCP Lease Time Renew offload: With DHCP Lease Time Renew offload, WLAN firmware will send DHCP Request to DHCP server periodically before lease expiry time to renew the IP address without waking up the host processor allowing the host to stay in sleep state for longer duration.
 - ICMP offload: ICMP offload, WLAN firmware will respond to the ICMP ECHO request by sending PING ECHO response packet to the peer without waking up the host processor allowing the host to stay in sleep state for longer duration.
 - Neighbor Discovery offload: WLAN firmware will respond to the Neighbor solicitation (IPv6) request by sending Neighbor Advertisement packet to the peer without waking up the host processor allowing the host to stay in sleep state for longer duration.
 - NULL Keepalive offload: NULL keepalive packets are 802.11/L2 packets which are sent at regular intervals in order to maintain the wireless association/connection. With NULL keep-alive offload, WLAN FW sends the NULL keep alive packets periodically at the user configured intervals.
 - NAT Keepalive offload: NAT Keepalive maintains the NAT tables in the routers by periodically sending tiny UDP packets between the client and server. With NAT keep-alive offload, WLAN FW sends keep alive packets periodically for configured interval.
 - Wake on Wireless LAN: Wake on wireless LAN(WOWL) allows host to be turned on or awakened when a WLAN FW receives a special network message from the AP called Magic Packet.
 - MQTT Keepalive offload: MQTT Keepalive maintains idle MQTT connections by periodically passing packets between the client and server. With MQTT keepalive offload, WLAN firmware will send MQTT keepalive requests to the broker and handles the MQTT keepalive response without waking up the host by reducing the time the host needs to stay awake.

1.2 New libraries

- [mtb-stl v1.0.0](#)

1.3 Updated libraries

- [mtb-pdl-cat1 v3.10.0](#)
- [cy-mbedtls-acceleration v1.6.0 and v2.3.0](#)

What's new/changed in this release

- cat1cm0p v1.5.0
- wifi-host-driver v3.1.0
- abstraction-rtos v1.7.6
- mtb-hal-cat1 v2.6.0
- mtb-template-cat1 v1.5.0
- wifi-connection-manager v3.3.1
- secure-sockets v3.5.0
- lpa v5.2.0
- mqtt v4.4.0
- command-console v5.2.1
- netxduo-network-interface-integration v1.2.0
- ota-update v4.1.0
- ota-bootloader-abstraction v1.1.0
- aws-iot-device-sdk-port v2.4.1
- wpa3-external-supPLICANT v1.2.1
- freertos v10.5.002
- http-server v3.0.1
- lwip-network-interface-integration v1.3.1

1.4 Updated BSPs

- TARGET_KIT_XMC72_EVK v2.1.0
- TARGET_KIT_XMC72_EVK_MUR_43439M2 v2.1.0
- TARGET_KIT_XMC71_EVK_LITE_V1 v2.1.0
- TARGET_KIT_XMC71_EVK_LITE_V2 v2.1.0

1.5 New code examples

- mtb-example-ce239718-safety-core-test v1.0.0
- mtb-example-ce239717-safety-uart-loopback-test v1.0.0
- mtb-example-ce239682-safety-communication-test v1.0.0
- mtb-example-psoc4-msclp-mptx-touchpad v1.0.0

1.6 Updated code examples

- mtb-example-mcuboot-basic v6.2.0 and v7.0.0
- mtb-example-ota-mqtt v6.1.0 and v7.0.0
- mtb-example-ota-https v5.5.0 and v6.0.0
- mtb-example-xmc7000-otw-firmware-upgrade v1.1.0 and v2.0.0
- mtb-example-psoc6-secure-blinkyled-freertos v3.1.0
- mtb-example-azure-iot v4.2.0
- mtb-example-wifi-mcuboot-rollback v4.1.0
- mtb-example-ml-gesture-classification v3.2.0

What's new/changed in this release

- mtb-example-psoc6-dual-cpu-ipc-sema v4.1.0
- mtb-example-psoc6-security v3.1.0
- mtb-example-wifi-mqtt-client v6.4.0
- mtb-example-psoc6-dfu-basic v3.1.0
- mtb-example-psoc6-csdidac v2.2.0
- mtb-example-psoc6-crypto-sha v3.2.0
- mtb-example-psoc6-crypto-aes v3.2.0
- mtb-example-psoc6-gpio-pins v2.1.0
- mtb-example-psoc6-mcwdt v3.2.0
- mtb-example-psoc6-capsense-buttons-slider-freertos v4.2.0
- mtb-example-psoc6-capsense-cm0p v2.2.0
- mtb-example-psoc6-dual-cpu-ipc-pipes v4.1.0
- mtb-example-psoc6-dual-cpu-ipc-sema v4.1.0
- mtb-example-wifi-https-server v4.4.0
- mtb-example-wifi-wlan-lowpower v4.3.0
- mtb-example-wifi-udp-server v4.2.0
- mtb-example-usb-device-cdc-echo v1.2.0
- mtb-example-psoc6-emulated-eeeprom v3.1.0
- mtb-example-psoc6-spi-master-dma v3.2.0
- mtb-example-psoc6-csdadc v3.2.0
- mtb-example-psoc6-qspi-xip v3.1.0
- mtb-example-xmc-flash-bmi v2.0.1
- mtb-example-usb-device-quad-uart-bridge v1.0.1
- mtb-example-smartio-ramping-led v3.3.0
- mtb-example-hal-rtc-periodic-wakeup v1.2.0
- mtb-example-psoc6-low-power-capsense-freertos v2.2.0
- mtb-example-psoc6-filesystem-littlefs-freertos v2.1.0
- mtb-example-hal-wdt v3.5.0
- mtb-example-btstack-freertos-capsense-buttons-slider v6.0.0
- mtb-example-pdl-xmc7000-evtgen-active-trigger-adc v2.1.0
- mtb-example-pdl-xmc7000-gpio-pins v2.0.0
- mtb-example-pdl-xmc7000-tcpwm-counter v2.0.0
- mtb-example-xmc7000-emulated-eeeprom v2.0.0
- mtb-example-pdl-xmc7000-spi-master-dma v2.1.0
- mtb-example-pdl-xmc7000-canfd v2.1.0
- mtb-example-pdl-xmc7000-mcwdt v2.1.0
- mtb-example-pdl-xmc7000-pwm-dual-compare-capture v2.1.0
- mtb-example-pdl-xmc7000-smartio-gpio v2.1.0
- mtb-example-pdl-xmc7000-uart-transmit-receive-dma v2.1.0
- mtb-example-xmc7000-oob-demo v2.1.0

- mtb-example-serial-flash-readwrite v3.4.0
- mtb-example-psoc4-msclp-capsense-demo v4.0.0
- mtb-example-psoc4-msclp-csd-button v3.0.0
- mtb-example-psoc4-msclp-capsense-low-power v4.0.0
- mtb-example-psoc4-msclp-liquid-tolerant-proximity v2.0.0
- mtb-example-psoc4-msclp-self-capacitance-touchpad v3.0.0
- mtb-example-psoc4-msclp-csx-touchpad v3.0.0
- mtb-example-psoc4-msclp-low-power-proximity-rgbled v2.0.0
- mtb-example-cy8cproto-040t-demo v2.0.0
- mtb-example-psoc4-msclp-low-power-csd-button v2.0.0
- mtb-example-psoc4-msclp-low-power-csd-slider v2.0.0
- mtb-example-psoc4-msclp-low-power-csd-proximity v2.0.0
- mtb-example-psoc4-msclp-low-power-csx-button v2.0.0
- mtb-example-psoc4-msclp-low-power-csx-slider v2.0.0
- mtb-example-psoc4-dfu-basic v2.0.0
- mtb-example-psoc4-dfu-host v2.0.0
- cce-mtb-psoc6-bt-a2dp-source v1.1.0

1.7 New Application Notes and KBAs

- AN239603: Getting started with PSoC™ 6 security

1.8 Updated Application Notes and KBAs

- AN228571: Getting started with PSoC™ 6 MCU on ModusToolbox™ software
- AN215656: PSoC™ 6 MCU dual-core system design
- AN221111: PSoC™ 6 MCU designing a custom secured system
- KBA237439: PSoC™ 6 MCU: Modifying the DFU basic code example
- KBA236435: Porting Wi-Fi and Bluetooth® LE applications to CM0+ core
- KBA230802: Placing the Wi-Fi Firmware Into External Flash in an AnyCloud Application
- KBA234967: PSoC™ 64: Provisioning and entrance exam procedures fail when VDDIO0 is 2.5 V
- "Secure Boot" SDK user guide
- Provisioning Guide for the Cypress CY8CKIT-064S0S2-4343W Kit

Known Issues

2 Known Issues

Problem: CYW43022 device low power offloads: ICMP Ping fails after some time. When packet filter is enabled with Filter Type = Port Filter

Workaround: None. Will be fixed in the next release.

Revision history

Revision history

Revision	Date	Description
**	2020-04-30	Initial Release.
*A	2020-05-18	Added BTSTACK issue. Added bluetooth-freertos btstack libraries.
*B	2020-06-29	Updated for version 1.1.
*C	2020-08-30	Removed sentence about BTSTACK supports Bluetooth BR/EDR and BLE core protocols.
*D	2020-09-30	Updated for version 1.2.
*E	2020-12-20	Updated for version 1.3.
*F	2021-05-11	Updated for version 1.4.
*G	2021-05-24	Updated for version 1.4.1.
*H	2021-10-06	Updated for version 1.5.
*I	2021-12-15	Updated for January 2022.
*J	2022-04-01	Updated for April 2022.
*K	2022-08-05	Updated for August 2022.
*L	2022-10-19	Updated for October 2022.
*M	2022-12-20	Updated for December 2022.
*N	2023-03-31	Updated for March 2023.
*O	2023-06-30	Updated for June 2023.
*P	2023-09-25	Updated for September 2023.
*Q	2023-12-13	Updated for December 2023.
*R	2024-03-25	Updated for March 2024.

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