

ModusToolbox™ tools package release notes

ModusToolbox™ tools package version 3.1.0

About this document

Scope and purpose

This document describes the features and known limitations for the ModusToolbox™ software provided as part of the ModusToolbox™ tools package included with the installer.

ModusToolbox™ software is a set of tools that enable you to integrate our devices into your existing development methodology. ModusToolbox™ software consists of various libraries and middleware on GitHub, as well as an IDE and tools package installed on your computer. For more details about what is included with ModusToolbox™ software, refer to the [ModusToolbox™ tools package user guide](#). See also [What's included](#) in this document.

This ModusToolbox™ tools package is a complete release. It includes the latest features from all previous releases, including patches. This release does not replace any existing installed releases; it installs alongside them. If you have more than one release installed, refer to the [ModusToolbox™ tools package user guide](#), "Product versioning" section.

Reference documents

Refer to the following documents for more information as needed:

- [ModusToolbox™ tools package user guide](#)
- [ModusToolbox™ tools package installation guide](#)
- [Training material on GitHub](#)

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Primary changes

1 Primary changes

The overall tools package version 3.1.0 release includes the following updates and features:

1.1 Local content storage

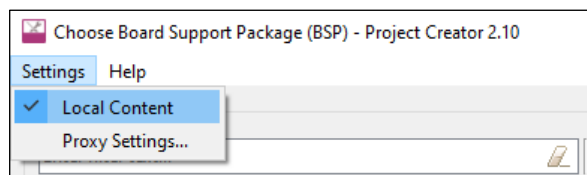
The new Local Content Storage (LCS) feature gives you the ability to create and update your own copy of the content available on GitHub. This allows you to work when an Internet connection is not available. Unlike our previous offline content bundle, where Infineon periodically created a snapshot of the entire database, the LCS Manager tool allows you decide how much of the content to use and when to update it.

The LCS Manager is a command line tool. It has a simple interface that is documented in the [user guide](#). You can also refer to the command-line help option.

```

folle...@ISCNR90T1JHZ ~/ModusToolbox/tools_3.1/lcs-manager-cli
$ ./lcs-manager-cli.exe --add-all
Running Git job 'git -C C:/Users/folle.../.modus.../lcs/git/6e170586c54cbc19c29e1374de
ce54f34f653fe0/20706a2.git fetch --recurse-submodules=no --tags --force origin 'refs/heads/
*:refs/heads/*' --quiet'.
Running Git job 'git -C C:/Users/folle.../.modus.../lcs/git/6e170586c54cbc19c29e1374de
ce54f34f653fe0/20719b2.git fetch --recurse-submodules=no --tags --force origin 'refs/heads/
*:refs/heads/*' --quiet'.
Running Git job 'git -C C:/Users/folle.../.modus.../lcs/git/6e170586c54cbc19c29e1374de
ce54f34f653fe0/20721b2.git fetch --recurse-submodules=no --tags --force origin 'refs/heads/
*:refs/heads/*' --quiet'.
Running Git job 'git -C C:/Users/folle.../.modus.../lcs/git/eab62c3498129169ee1e166780
3248325442a315/20736a1.git fetch --recurse-submodules=no --tags --force origin 'refs/heads/
*:refs/heads/*' --quiet'.
Successfully processed Git job 'git -C C:/Users/folle.../.modus.../lcs/git/6e170586c54
cbc19c29e1374dece54f34f653fe0/20706a2.git fetch --recurse-submodules=no --tags --force orig
in 'refs/heads/*:refs/heads/*' --quiet'
Running Git job 'git -C C:/Users/folle.../.modus.../lcs/git/6e170586c54cbc19c29e1374de
ce54f34f653fe0/20819a1.git fetch --recurse-submodules=no --tags --force origin 'refs/heads/
*:refs/heads/*' --quiet'.
Successfully processed Git job 'git -C C:/Users/folle.../.modus.../lcs/git/eab62c34981
29169ee1e1667803248325442a315/20736a1.git fetch --recurse-submodules=no --tags --force ori
    
```

Once you have created local content, you can switch to Local Content mode using the Project Creator, Library Manager, and BSP Assistant. Setting this mode in one tool automatically sets it for all of them.

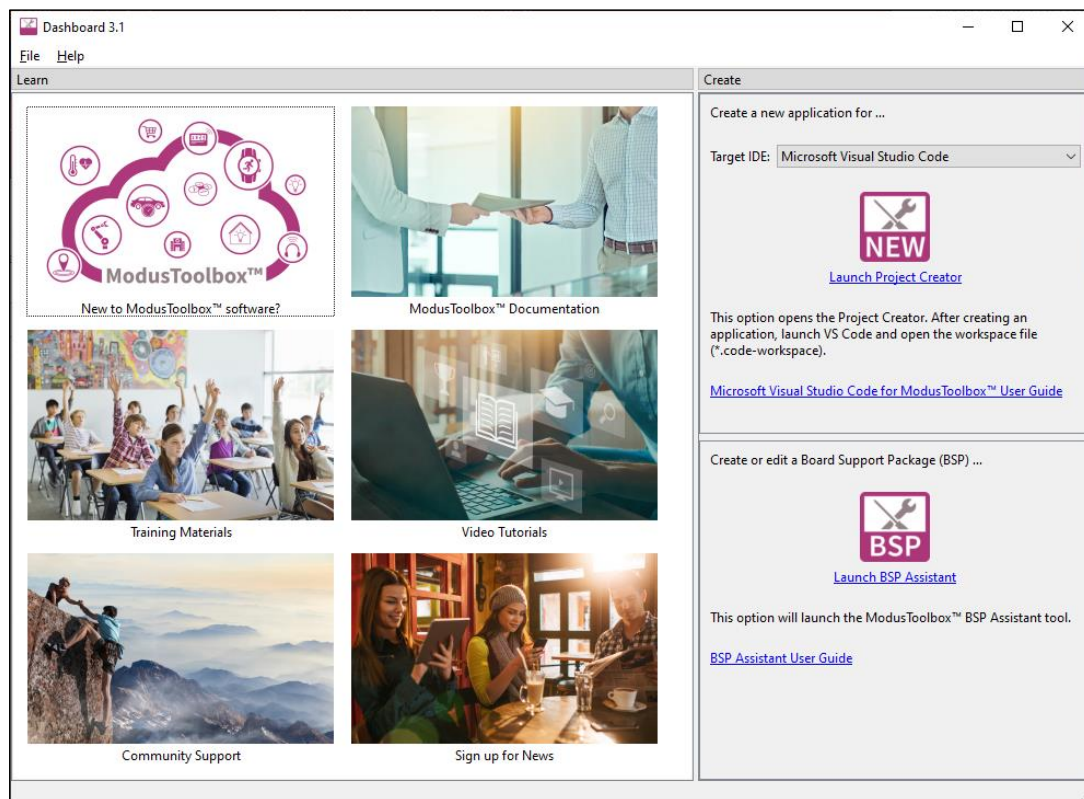


The old offline content bundle feature is deprecated, but you can still use it with previous releases of the ModusToolbox™ tool package. Refer to the community blog post for information about migrating from offline content bundle to Local Content Storage.

Primary changes

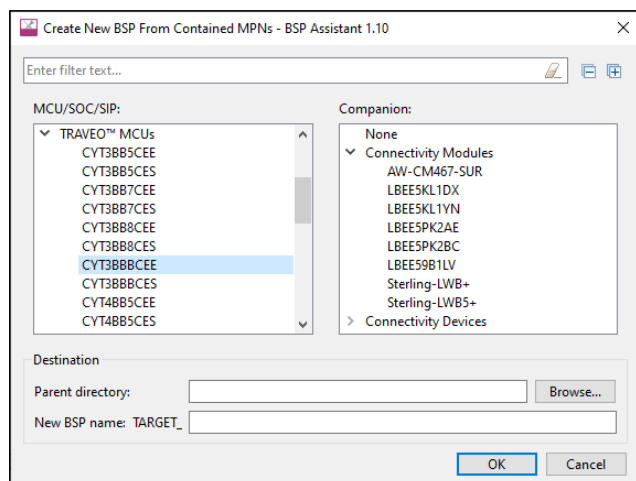
1.2 Dashboard

We've designed the ModusToolbox™ ecosystem to be flexible, so that you can use the various tools and libraries in your environment the way you want to develop. Our newest tool is the Dashboard. It provides a simple interface with easy access to documentation and training materials, while also giving you starting points to create a new ModusToolbox™ application and to create/edit a board support package (BSP).



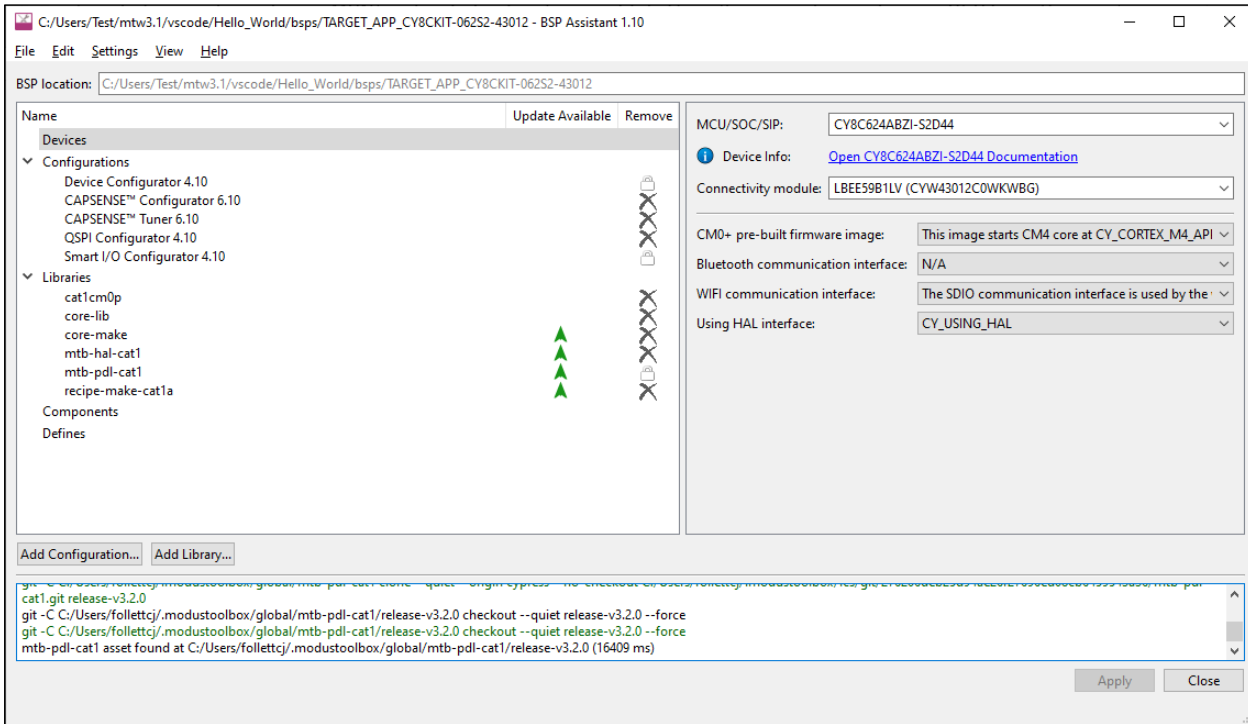
1.3 BSP Assistant chip flow

We've extended the BSP Assistant to support creating a BSP starting with a chip (marketing part number or MPN) instead of a development kit. This allows you to create your BSP from scratch with the devices you want, instead of modifying the BSP created from a kit that doesn't resemble your target hardware.



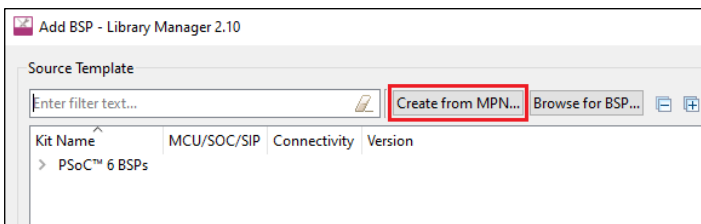
Primary changes

The BSP Assistant user interface has also been updated for easier navigation and to present more information. Refer to the [BSP Assistant user guide](#) for details.



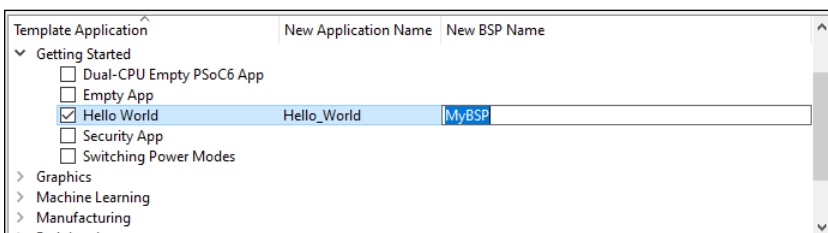
1.4 BSP Assistant integration with Library Manager and Project Creator

Another improvement for this release provides easy access to the BSP Assistant from the Library Manager and Project Creator. While using these tools to add a BSP, you can click the **Create from MPN...** button to launch the BSP Assistant and create a BSP on-the-fly based on devices you select.



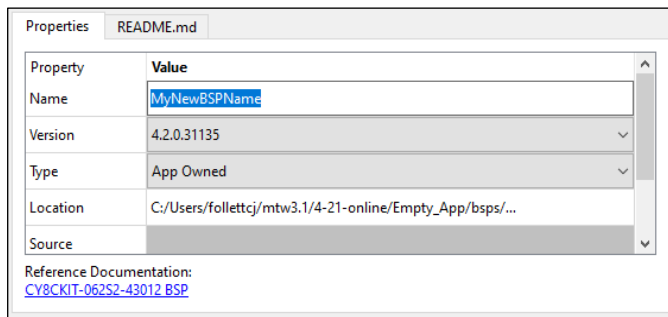
1.5 BSP naming/renaming

As we continue to update and refine the experience of creating BSPs, we're making it easier to change the BSP name. So, when you create an application, you can specify a name for the BSP instead of accepting the default:



Primary changes

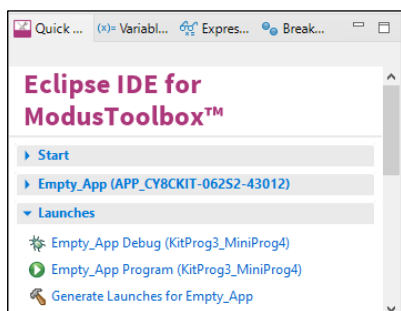
If you later want to change the name to something else, you can easily do it using the Library Manager:



1.6 Selectable programmer/debugger

We have improved the programming/debugging experience in a few ways:

First, we now only show the default programmer/debugger launch configurations in Eclipse and VS Code. That means if your BSP defaults to KitProg3, those are the configurations that will be shown. If the default is SEGGER J-Link, those configurations will be shown.



Next, we've added variables to allow you to specify an alternate programmer/debugger. For example, if the default is KitProg3 and you prefer to use the SEGGER J-Link probe, set the variable `BSP_PROGRAM_INTERFACE` to `JLink` in the application's Makefile or changing its value in the BSP file `bsp.mk`. You may also have to provide the path to the J-Link software by setting the make variable `MTB_JLINK_DIR`.

Finally, we've updated the `make program` and `make qprogram` commands to just work for the default or specified programmer/debugger.

1.7 ChipLoad and Bluetooth® utilities

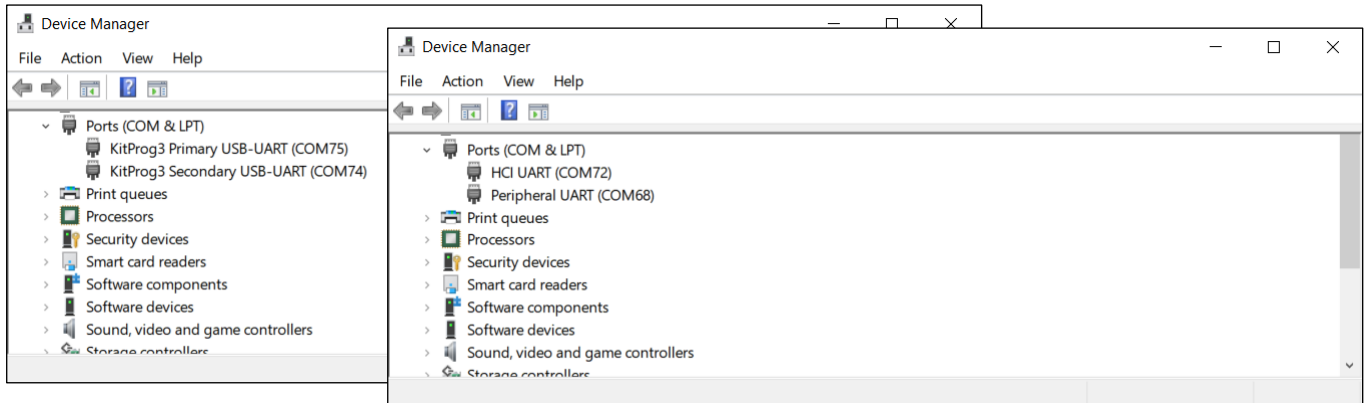
Devices built on the legacy Broadcom technology platform require a program called ChipLoad for programming, as well as a handful of build utilities for things like hex file conversion. In applications based on the BTSDK (Code Examples beginning "mtb-example-btsdk-"), these utilities are distributed with the Bluetooth® middleware, specifically `wiced_btstack`. This approach can lead to version control problems with the utilities, and so they are now distributed with the ModusToolbox™ tools package. Newer devices, such as CYW20829, use the BTSTACK software and applications for those devices (Code Examples beginning "mtb-example-btstack-"), and they will access the utilities from the tools package installation.

BTSDK-based applications remain supported and are unaffected by the change.

Primary changes

1.8 KitProg3 UART updated drivers and port renaming

The KitProg3 drivers have been updated to provide better port naming for connectivity devices (that is, Bluetooth® devices and combo devices in embedded mode). A new PID has been allocated to Bluetooth® device-based kits to differentiate them from MCU kits. In addition to the UART drivers, CyBridge library and KitProg3 FW have also been updated to handle the new PID.



Attention: *If you upgrade your kit to use KitProg3 version 2.50, tools from the ModusToolbox™ 3.0 tools package and earlier will not detect the kit any longer.*

1.9 Make <IDE> updates

As part of the ongoing effort to use C++ implementations for various "make" commands, we have included "make ewarm" for the IAR Embedded Workbench and "make uvision" for Keil µVision. These commands will only work for applications created using ModusToolbox™ 3.1 (and later) tools.

The older commands "make ewarm8" and "make uvision5" have been deprecated. They will still work for applications created with earlier versions of the tools, as well as newer versions.

1.10 Ubuntu 22.04 support

We now fully support and recommend Linux Ubuntu 22.04 ("Jammy Jellyfish") for use with ModusToolbox™ ecosystem. We still support installations on 18.04 and 20.04.

1.11 GNU C Compiler (GCC) v11

We've updated the GCC compiler included with tools package to version 11 to support features in newer devices coming soon to the ModusToolbox™ ecosystem. All new applications created and maintained with version 3.1 tools will be supported. For older applications, you may need to update your code. See the [Design Impact](#) section.

1.12 Improved control over build process

We've extended how you can control the build system with a new variable to suppress code generation by configurators during a build. Set this variable in the application *Makefile* to any non-empty value. For example:

```
SKIP_CODE_GEN=true
```

What's included

2 What's included

This release includes the following tools and versions:

| Tool Name | Current Release | Previous Release |
|--|--|--|
| AIROC™ tools | 5.0.0 | N/A |
| Bluetooth® Configurator | 2.80 | 2.70 |
| BSP Assistant | 1.10 | 1.0 |
| CAPSENSE™ Configurator & Tuner | 6.10 | 5.0 |
| CyBridge | 3.5.0 | 3.4.0 |
| cymcuelftool | 1.0 (no change) | 1.0 |
| ChipLoad | 1.6.1 | N/A |
| Dashboard | 3.1.0 | N/A |
| DetAndID | 5.0.0 | N/A |
| Device Configurator | 4.10 | 4.0 |
| Device Firmware Update (DFU) Host Tool | 2.0 | 1.60 |
| Eclipse IDE for ModusToolbox™ | 3.1.0 | 3.0 |
| EZ-PD™ Configurator | 1.21 | 1.20 |
| Firmware Loader (fw-loader) | 3.5.0 | 3.4.0 |
| GCC | 11.3 | 10.3.1 |
| GNU make Build System (tools-make) | 2.1 | 2.0 |
| JRE (OpenJDK) | 11.0 (no change) | 11.0 |
| KitProg3 | 2.50 | 2.40 |
| LCS Manager | 1.0 | N/A |
| Library Manager | 2.10 | 2.0 |
| LIN Configurator | 1.21 | 1.20 |
| MbtP | 5.0.0 | N/A |
| modus-shell | 1.4.0 (Windows) 1.3.1.69 (Linux/macOS) (no change) | 1.3.1.69 (all) |
| Core build infrastructure: <ul style="list-style-type: none"> • mtbgetlibs • mtbideexport • mtbquery • mtbsearch | 1.1.0 | 1.0.0 |
| OpenOCD (ModusToolbox™-specific) | 5.0.0 | 4.4.0 |
| Project Creator | 2.10 | 2.0 |
| Proxy Helper | 1.40 | 1.30 |
| Python (for Windows) <ul style="list-style-type: none"> • cysecuretools • pyocd | 3.8.10 (no change) <ul style="list-style-type: none"> • 4.2.0 • 0.27.3 (no change) | 3.8.10 <ul style="list-style-type: none"> • 4.1.0 • 0.27.3 |
| QSPI Configurator | 4.10 | 4.0 |
| Secure Policy Configurator | 1.40 | 1.30 |
| Segment LCD Configurator | 1.51 | 1.50 |
| Smart I/O Configurator | 4.10 | 4.0 |
| SRecord | 1.64 (no change) | 1.64 |
| USB Configurator | 2.51 | 2.50 |

What's included

2.1 Supported tool chains

The GCC Arm Embedded toolchain GCC 11 is installed with the ModusToolbox™ software. This toolchain has no use restrictions and does not require license activation (it is distributed under the terms of the GNU Public License).

Although not installed with ModusToolbox™ software, the build system also supports these tool chains for most applications and devices (see the application *README.md* file for applicable support):

- Arm compiler v6 or newer (Windows and Linux hosts)
- IAR Embedded Workbench v9 or newer (Windows only)

2.2 Supported boards

The boards available for use varies with different releases of BSPs and libraries on GitHub. You can see the current list of BSPs in the Project Creator tool using the default manifest URL:

| Kit Name | MCU/SOC/SIP | Connectivity |
|----------------------------|-------------------|------------------|
| > AIROC™ Bluetooth® BSPs | | |
| > AIROC™ Connectivity BSPs | | |
| CYW943907AEVAL1F | CYW43907KWBG | <none> |
| CYW954907AEVAL1F | CYW54907KWBG | <none> |
| > PMG1 BSPs | | |
| PMG1-CY7110 | CYPM1011-24LQXI | <none> |
| PMG1-CY7111 | CYPM1111-40LQXIT | <none> |
| PMG1-CY7112 | CYPM1211-40LQXIT | <none> |
| PMG1-CY7113 | CYPM1311-48LQXI | <none> |
| > PSoC™ 4 BSPs | | |
| CY8CKIT-041-41XX | CY8C4146AZI-S433 | <none> |
| CY8CKIT-041S-MAX | CY8C4149AZI-S598 | <none> |
| CY8CKIT-045S | CY8C4548AZI-S485 | <none> |
| CY8CKIT-145-40XX | CY8C4045AZI-S413 | <none> |
| CY8CKIT-149 | CY8C4147AZI-S475 | <none> |
| PSOC4-GENERIC | CY8C4548AZI-S485 | <none> |
| > PSoC™ 6 BSPs | | |
| CY8CEVAL-06252 | CY8C624ABZI-S2D44 | <none> |
| CY8CEVAL-06252-LAI-4373M2 | CY8C624ABZI-S2D44 | CYW4373EUBGT |
| CY8CEVAL-06252-MUR-43439M2 | CY8C624ABZI-S2D44 | CYW43439KUBG |
| CY8CKIT-062-BLE | CY8C6347BZI-BLD53 | <none> |
| CY8CKIT-06252-43012 | CY8C624ABZI-S2D44 | CYW43012COWKWBG |
| CY8CKIT-06254 | CY8C6244LQI-S4D92 | <none> |
| CY8CKIT-062-WIFI-BT | CY8C6247BZI-D54 | CYW4343WKUBG |
| CY8CKIT-064B052-4343W | CY8C644ABZI-S2D44 | CYW4343WKUBG |
| CY8CKIT-064S052-4343W | CY8C644ABZI-S2D44 | CYW4343WKUBG |
| CY8CPROTO-062-4343W | CY8C624ABZI-S2D44 | CYW4343WKUBG |
| CY8CPROTO-06253-4343W | CY8C6245LQI-S3D72 | CYW4343WKUBG |
| CY8CPROTO-063-BLE | CYBLE-416045-02 | <none> |
| CY8CPROTO-064B051-BLE | CY8C6447BZI-BLD53 | <none> |
| CY8CPROTO-064B053 | CY8C6445LQI-S3D42 | <none> |
| CY8CPROTO-06451-SB | CY8C6447BZI-D54 | <none> |
| CYBLE-416045-EVAL | CYBLE-416045-02 | <none> |
| CY8BSYSKIT-01 | CY8C624AFNI-S2D43 | CYW43012TCOKFFBH |
| CY8BSYSKIT-DEV-01 | CY8C624AFNI-S2D43 | CYW43012TCOKFFBH |
| CYW9P6251-43012EVB-01 | CY8C6247FDI-D52 | CYW43012TCOKKUBG |
| CYW9P6251-43438EVB-01 | CY8C6247BZI-D54 | CYW43438KUBG |
| PSOC6-GENERIC | CY8C6347BZI-BLD53 | <none> |
| > XMC™ BSPs | | |
| KIT_XMC14_BOIOT_001 | XMC1404-Q064x0200 | <none> |
| KIT_XMC47_RELAX_V1 | XMC4700-F144x2048 | <none> |
| XMC-GENERIC | XMC1404-Q064x0200 | <none> |

Note: Additional boards will be made available on an ongoing basis.

2.3 Open source

Portions of this software package are licensed under free and/or open source licenses such as the GNU General Public License. Such free and/or open source software is subject to the applicable license agreement and not our license agreement covering this software package. The applicable license agreements are available online:

<https://www.infineon.com/cms/en/design-support/software/free-and-open-source-software-foss/modustoolbox-foss-packages/>

Design impact

3 Design impact

This section includes issues and solutions for changes that may impact various designs.

3.1 GCC 11

As previously described, we've updated GCC to version 11 in the 3.1 tools package. As noted in the GCC release notes, version 11 introduces some new warnings and enhances some existing warnings. So, if you update an older ModusToolbox™ application to use version 3.1 tools (including GCC 11) you may encounter warnings about `-Warray-parameter`, `-Wstringop-overread`, or `-Wmaybe-uninitialized`.

In general, these warnings are safe to ignore. If you wish to fix/suppress them, you will need to update the application code as appropriate. Refer to Knowledge Base Article KBA237655 on the [Infineon community](#).

3.2 Final support of older OS

This is the final release that will support Windows 7, macOS Big Sur, and Ubuntu 18.04. These older OS have reached end of life, and they will not be supported in future releases of ModusToolbox™ software.

Known issues/limitations

4 Known issues/limitations

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

4.1 ModusToolbox™ issues from previous releases

This document contains only recent issues pertinent to ModusToolbox™ version 3.x. All issues noted in previous ModusToolbox™ version 2.x releases have been made available online here: [KBA236147](#).

4.2 Proxy

| Problem | Workaround |
|--|--|
| When trying to use any of the ModusToolbox™ tools, you may see an error message similar to the following about not able to connect to the Internet: <i>Unable to open file at [URL]</i> | This can happen if you are behind a firewall and do not have your proxy settings configured. You must set your HTTP_PROXY and HTTPS_PROXY environment variables, as appropriate for your site. In previous versions of the ModusToolbox™ tools package, these types of errors only affected the Library Manager and Project Creator. In version 3.x, these errors apply to all tools. |

4.3 BSP Code generation error

| Problem | Workaround |
|---|--|
| When generating code after adding one or more BSPs to a ModusToolbox™ 3.1 application, the system displays error messages similar to the following: <pre> ERROR:Generating code failed. Code generation errors: ERROR:- Errors exist in the project's configuration: ERROR:There may be an inconsistency between the *.modus file and the makefile target configuration device sets. ERROR:Current Devices: CY8C624ABZI-S2D44, Sterling-LWB+/CYW43439KUBG ERROR:Expected Devices: CY8C624ABZI-S2D44 make: *** [../mtb_shared/core-make/release- v3.2.0/make/core/search.mk:45: C:/c/Switching_Power_Modes/build/APP_CY8CE VAL-062S2-LAI- 43439M2/Debug/cyforcebuild.mk] Error 1 ERROR:"make eclipse" failed </pre> | This occurs when you have two or more BSPs with different MCUs and/or companion devices, and they have BSP names that begin with the exact same characters, such as: <ul style="list-style-type: none"> • MyBSP (CY8C6247BZI-D54 + LBEE5KL1DX) • MyBSP2 (CY8C6347BZI-BLD53 + None) To resolve this problem, open the Library Manager and either rename or remove the non-active BSP(s) with the same beginnings of names. This issue will be addressed in a future release. |

4.4 LCS Manager CLI

| Problem | Workaround |
|--|---|
| The LCS Manager CLI tool does not use the ModusToolbox™ proxy settings that other tools use. Depending on your system environment, the LCS Manager CLI tool might not be able to access and download data from external repositories (such as GitHub). | Ensure that your system can access the desired external repositories by setting up proxy information before using the LCS Manager CLI tool. If you need assistance, contact your IT department. |

Known issues/limitations

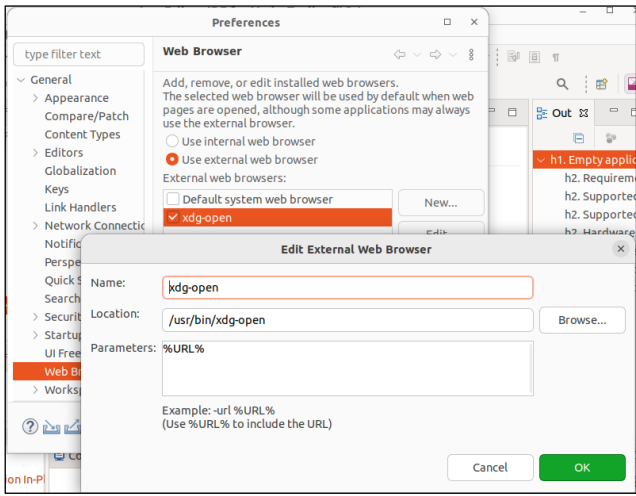
4.5 Crashes on Mac M1/M2

| Problem | Workaround |
|--|--|
| On Mac computers with ARM cores using Rosetta (M1/M2 processors), various ModusToolbox™ tools (library-manager, project-creator, device-configurator, Eclipse, etc.) consistently crash. | Reboot the computer. This issue seems to occur for a variety of software, not just ModusToolbox™ tools. Many users have reported that simply rebooting the computer resolves the issue. |

4.6 HTML on Ubuntu 22.04

| Problem | Workaround |
|---|---|
| On Ubuntu 22.04, sometimes HTML documentation links do not work anywhere. This issue can occur as documentation not opening at all or opening in the wrong program (e.g., Notepad, Office Writer, etc.) | Reset the default browser from the Ubuntu 22 Settings UI (Settings > Default Applications > Web). Changing this setting via the BROWSER environment variable, or the xdg-settings/xdg-mime commands does not work. |

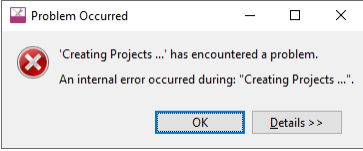
4.7 Eclipse IDE

| Problem | Workaround |
|---|--|
| On Ubuntu 22.04, when opening documentation from the Project Explorer (right-click Open with > Web Browser), the file does not open. | Update the Web Browser settings under Window > Preferences > General > Web Browser to add your chosen browser or xdg-open as appropriate:  |
| For certain applications (typically a factor of size), Eclipse may present a "Discover Compilation Database Settings" dialog displays, which can block the UI for several seconds/minutes. This is seen to happen often after a build of the project. | Right-click the project and select Properties > C/C++ General > Preprocessor Include Paths > Providers , and deselect the Compilation Database Parser check box. Note that this will cause IntelliSense to be disabled for that application. |

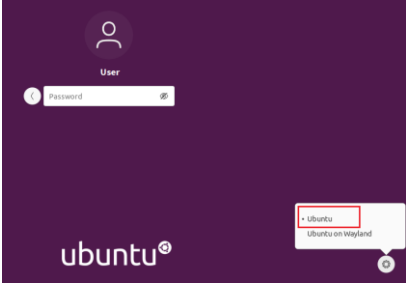
Known issues/limitations

| Problem | Workaround |
|--|---|
| <p>On Ubuntu 22.04, when running the Eclipse IDE for ModusToolbox™, the launcher window may be truncated.</p> <p>This happens because the version of Eclipse has not been updated.</p> | <p>Log out of Ubuntu, and then log in again using the Xorg option.</p>  |
| <p>On Windows 11, when selecting a project in the Eclipse Project Explorer, there is no Terminal included in the IDE.</p> | <p>None. This will be addressed in a future release. You can open an external Terminal manually.</p> |
| <p>When renaming a multi-core application in the Eclipse IDE, the core-processor subprojects become regular folders instead of project folders.</p> | <p>Right-click on each of the core process folders and select Import as Project. Each folder will become a project folder with the appropriate name.</p> <p>Note: After changing the folders to project folders, they retain the original application prefix name. You can rename them individually if you prefer.</p> <p>Note: The Eclipse IDE may display Indexer errors during the rename process. These errors usually go away when the rename process is complete.</p> |
| <p>After completing a build/clean for a multi-core application, the Eclipse IDE reports a C/C++ Indexer error message.</p> | <p>The error message doesn't impact functionality. Try restarting the Eclipse IDE to clear the message.</p> |
| <p>When using the Eclipse IDE on macOS, if you delete a multi-core application with several README.md files open in the editor/viewer, you may see the following error message: "Failed to create the part's controls."</p> | <p>None. This error message just means the markdown viewer is trying to read a file that has been deleted. This message doesn't impact functionality. Simply close the tab and proceed.</p> |
| <p>For BTSDK applications, various tools such as BTSpy and ClientControl are not available from the Eclipse IDE Quick Panel.</p> <p>This is due to the restructuring of the ModusToolbox™ version 3.0 build system and flow.</p> | <p>To open various tools, navigate to where they are located in the workspace and launch them manually. By default, all the tools are located under the <code>../mtb_shared</code> directory (relative to the code example directory). For example, BTSpy is located in the following path:</p> <pre>../mtb_shared/wiced_btSDK/tools/btSDK-utils</pre> <p>ClientControl is located in the following path:</p> <pre>../mtb_shared/wiced_btSDK/tools/btSDK-host-apps-bt-ble</pre> <p>Other tools are located in different subdirectories under <code>mtb_shared</code>.</p> <p>The BTSDK will be updated in a future release to move these tools into a pack so that they will be available in the Quick Panel again.</p> |

Known issues/limitations

| Problem | Workaround |
|--|--|
| <p>Exporting and importing a multi-core application with the Eclipse IDE doesn't work.</p> | <ol style="list-style-type: none"> When Exporting a multi-core application using the Eclipse IDE, include only the main application folder, and exclude the core project folders and the <i>mtb_shared</i> folder. If you exported the application as an archive, extract it, and then run Library Manager or <code>make getlibs</code>. In Eclipse, use the Import Existing Application In-Place option. <p>The Eclipse IDE for ModusToolbox™ user guide has been updated to include multi-core application instructions.</p> |
| <p>When importing an application in the Eclipse IDE using the Import Existing Application In-Place option, there may be an error: "An internal error occurred..."</p>  | <p>If possible, you should start with the Eclipse IDE to launch Project Creator and create an application. Using this flow, the process just works.</p> <p>In some cases, this error may occur because you're attempting to manually import an application in the same workspace/folder that already exists in Eclipse.</p> <p>To resolve this problem, use Import > General > Existing Projects into Workspace.</p> |
| <p>When using the Eclipse IDE on macOS, the context menu may show tools for the previously-selected project rather than the project that was right-clicked.</p> | <p>Left-click to select the project before right-clicking it to launch the context menu. This issue will be addressed in a future release.</p> |
| <p>If you make changes to the BSP using the BSP Assistant, such as the connectivity module, and then launch the Device Configurator from the Eclipse IDE Quick Panel, the Device Configurator may not recognize that the changes were made.</p> | <p>To fix this, close the Device Configurator, click Refresh Quick Panel in the Eclipse IDE, and then launch the Device Configurator again.</p> |

4.8 Visual Studio Code

| Problem | Workaround |
|--|--|
| <p>Various ModusToolbox™ GUI tools (Device Configurator, Library Manager, etc.) fail to start on Ubuntu when executed from the Terminal window in VS Code, with the following error:</p> <pre>Failed to load client buffer integration: "wayland-egl" Available client buffer integrations: () No shell integration named "xdg-shell" found No shell integration named "xdg-shell-v6" found No shell integration named "wl-shell" found No shell integration named "ivi-shell" found Loading shell integration failed. Attempted to load the following shells ("xdg-shell", "xdg-shell-v6", "wl-shell", "ivi-shell")</pre> | <p>Solution 1: Open an Ubuntu Terminal, navigate to the application directory, and use the applicable "make" command to open the GUI (e.g., <code>make library-manager</code>).</p> <p>Solution 2: Log out from the current Ubuntu session, and then log back in and make sure Ubuntu on Wayland is not selected on the login screen.</p>  <p>On newer versions of Ubuntu, the login screen will show "Ubuntu on Xorg".</p> |

Known issues/limitations

4.9 Library Manager/make getlibs

| Problem | Workaround |
|---|---|
| The Library Manager does not list the retarget-io library for the CY8CKIT-040T. | The retarget-io library is not available currently for this device. The retarget-io library depends on mtb-hal-cat2, which is not supported by the CY8CKIT-040T. |
| A .mtb file added as a direct dependency to the <i>deps</i> directory is overridden and removed during the <code>make getlibs</code> operation. | This problem occurs when you add a direct dependency using the 'latest-x.y' tag instead of a specific 'release-x.y.z' tag when the BSP or another library requires the same library as an indirect dependency. To ensure your direct dependency is kept, use the 'release-x.y.z' tag in your .mtb file. |

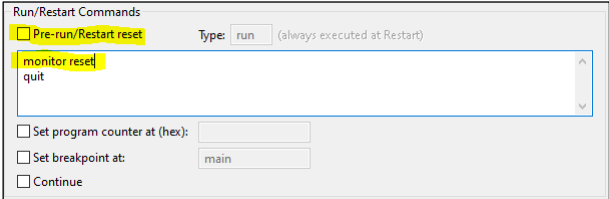
4.10 CySecureTools

| Problem | Workaround |
|---|---|
| Using the policy from CySecureTools 4.0.0 in the projects created by CySecureTools 4.1.0 causes an error during re-provisioning on PSoC64-2M devices: ERROR : SFB status: CY_FB_INVALID_IMG_JWT_SIGNATURE: Invalid image certificate signature. Check the log for details | <ol style="list-style-type: none"> Open the policy file. Navigate to the first section of boot_upgrade/firmware. Set <code>boot_auth</code> and <code>bootloader_keys</code> as follows: <pre> "boot_auth": [3], "bootloader_keys": [{ "kid": 3, "key": "../keys/cy_pub_key.json" }] </pre> |

4.11 Building/programming/debugging

| Problem | Workaround |
|--|--|
| Existing application opened in ModusToolbox™ version 3.1 reports "error: unknown type name 'uint8_t'" or similar compiler errors. This error is caused by the update to GCC 11. | Add '#include <stdint.h>' in all affected source files. This issue only applies to applications migrated to 3.1. It will not occur for new applications created with 3.1 tools. |
| When programming or debugging, you see the following error message: Error connecting DP: cannot read IDR This occurs if the debug port is disabled in the BSP for the specific project. | You can enable the debug port for the specific project, or safely ignore this message if the debug port is still disabled. |

Known issues/limitations

| Problem | Workaround |
|--|---|
| <p>When programming a PSoC™ 64 device, the following error displays: Error: timed out while waiting for target halted</p> | <p>There is no impact on functionality, programming is successful. To suppress the message:</p> <ol style="list-style-type: none"> 1. Open the "Program" launch configuration and navigate to the Startup tab. 2. In the Run/Restart Commands section, deselect the Pre-run/Restart reset check box. 3. Add the monitor reset command to the text field below the check box:  |
| <p>When calling <code>make program</code> with <code>-j</code> flag on the command line in multi-core applications, the programming processes get out of sync. This results in the <code>qprogram</code> starting before the build finishes. There is no error message reported. This issue does not exist when programming from Eclipse IDE or VSCode.</p> | <p>Since this issue only exists in a scenario in which the user calls <code>make program</code> with <code>-j</code> flag at the application level in multi-core applications, the current workaround is to run <code>make build -j</code> and then run <code>make qprogram</code>. This defect is being addressed in the next release.</p> |
| <p>In the Eclipse IDE, programming a device is skipped when the device was previously programmed.</p> | <p>This is expected behavior and there is no workaround. This was a change made to the launch configurations in Eclipse to support multi-core debugging.</p> |
| <p>If you change the MCU/SOC/SIP for the BSP using the BSP Assistant, the Register View may not be available while debugging using the Eclipse IDE or VS Code.</p> | <p>This is because the <code>svd</code> file path is not present in the launch configurations. To fix this, navigate to the application folder and run <code>make getlibs</code>. The, run <code>make eclipse</code> or <code>make vscode</code>, as applicable.</p> |
| <p>Debug doesn't work on AIROC™ CYW20829 devices with a J-Link probe in JTAG in Eclipse and VS Code IDEs.</p> | <p>Use the SWD interface.</p> |
| <p>The Attach launch config does not work for the secure lifecycle of AIROC™ CYW20829 devices.</p> | <p>Do not use the Attach launch config for secure lifecycle.</p> |
| <p>The CySecuretool does not work with PyOCD as the debugger on macOS M1 CPUs.</p> | <p>No workaround; we do not plan to support PyOCD.</p> |
| <p>When exporting ModusToolbox™ applications created for the TRAVEO™ T2G Body High MC devices to be used with the μVision and IAR IDEs, there are some limitations using the J-Link probe (including ETM traces, program, and debug via the CM7 core).</p> | <p>Use native Arm and IAR™ probes to work with TRAVEO™ T2G Body High MC devices.</p> |
| <p>There is an issue with reset for TRAVEO™ T2G Body High MC devices in the SEGGER tool. The Debug launch config does not work properly for CM7_0 and CM7_1 cores via the J-Link probe in Eclipse and VS Code IDEs.</p> | <p>To debug the code, use the Attach launch config.</p> |

Known issues/limitations

| Problem | Workaround |
|---|--|
| While using the Eclipse IDE on Windows for various program/debug operations, there's a plugin issue that prevents the debug port from shutting down. This could result in abnormal power consumption, the watchdog timer being blocked, or the inability to connect in JTAG mode after a successful connection in SWD mode. | Reset the device. For example, on the CY8CKIT-062S2-40312 kit, press the SW1/XRES button. |

4.12 BSP Assistant

| Problem | Workaround |
|--|---|
| If you edit an older BSP and change the UDB SDIO port using the updated BSP Assistant 1.10, you need to manually edit the config/cyreservedresources.list file. The older BSP Assistant tool warned of this change. The updated BSP Assistant tool makes this change for you, but only for BSPs created with the newer version of the tool. Not editing the config/cyreservedresources.list file will lead to indeterminant results. | Manually edit the config/cyreservedresources.list file as described, or use only the BSP Assistant version 1.0 tool to make changes to older BSPs. |
| On Windows, the BSP Assistant does not receive error messages from any configurator that outputs text (such as device-configurator-cli). This means that the BSP Assistant may indicate a failure, but not report any error messages from that configurator. | As an example, if the device-configurator-cli fails when changing devices, but no message explains why, go to c:/Users/<username>/AppData/Local/Temp/device-configurator-cli and find the most recently-created log file. |

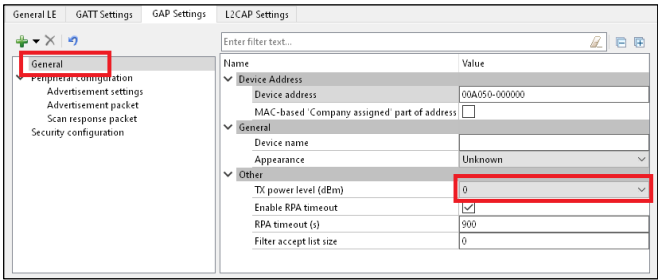
4.13 Device Configurator

| Problem | Workaround |
|---|--|
| In the Device Configurator, the analog routing line to the SAR is not highlighted when a connection is made in the editor for XMC7xxx devices. | None. This is a display-only issue. There is nothing wrong with the data. The issue will be addressed in a future release. |
| For ModusToolbox™ 2.x applications using PSoC™ 4 devices, if you open the application using ModusToolbox™ version 3.x, the Device Configurator (version 4.0) may show various errors with various types of connections, such as SAR ADC SOC Input, TCPWM Start/Stop/Capture/Count/Reload Signal, DMA Channel Trigger Input or connections between pins over Digital Input and Digital Output. | Select new signals for the invalid connections to resolve the issues. |
| For ModusToolbox™ 2.x applications using PSoC™ 4 or PSoC™ 6 devices, if you open the application using ModusToolbox™ version 3.x, the Device Configurator (version 4.0) may show "Resource overused" errors in some cases where the pin's Digital Input, Digital Output, and Analog parameters are set at the same time. | Select new signals for the invalid connections to resolve the issues. |

Known issues/limitations

| Problem | Workaround |
|---|--|
| <p>If you have a project and design.modus file with different manufacturing part numbers (MPNs), and one of the MPNs is a module, the Device Configurator displays a message stating that the MPNs differ.</p> <p>However, included in that message is a statement that the MPNs are not supported by the device-db. This statement is incorrect.</p> | <p>You can safely ignore the incorrect statement in the message. There is no impact to the application.</p> |
| <p>If one of the WICED Radio Interface personalities is instantiated in the Universal Digital Block (UDB), it will not allow picking connections for the DMA signals.</p> | <p>The WICED Radio Interface personalities should not be used in practice. Instead, to enable communication with an external radio device from a PSoC 6S1 device, the BSP/Application should use the udb-sdio-whd library and set the appropriate component for the desired port. See the README.md file contained in the udb-sdio-whd library for more details.</p> <p>Additionally, to reserve the appropriate resources so they do not get overused by the configurator, the board should include a cyreservedresources.list file next to the design.modus file. Refer to one of the existing PSoC 6S1 boards (eg: CY8CKIT-062-WIFI-BT, CYW9P62S1-43012EVB-01, CYW9P62S1-43438EVB-01, ...) for what this file should contain.</p> |

4.14 Bluetooth® Configurator

| Problem | Workaround |
|--|---|
| <p>When using the Bluetooth® Configurator with AIROC™ CYW20829 devices, the TX power level (dBm) parameter under the GAP Settings tab has no effect.</p>  | <p>Leave the default value (0dBm) in this field when using an AIROC™ CYW20829 device. This issue will be addressed in a future release.</p> |

4.15 CAPSENSE™ Tuner

| Problem | Workaround |
|---|---|
| <p>Switching between Synchronized and Asynchronized mode in the CAPSENSE™ Tuner may not be executed correctly for PSoC™ 4000T projects in cases where the device is working in deep sleep mode for substantial periods of time.</p> | <p>In order for the CAPSENSE™ Tuner to switch between Synchronized and Asynchronized mode, the device should be in active mode with working I²C or UART communication channel.</p> |

Known issues/limitations

4.16 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 this release notes document, may be available online at: ModusToolbox™ Software website |

Revision history

Revision history

| Revision | Date | Description of Change |
|----------|------------|---|
| ** | 2017-12-29 | Initial Release. |
| *A | 2018-11-21 | Updates for Production. |
| *B | 2019-09-19 | Updates for version 1.1. |
| *C | 2019-10-18 | Updates for version 2.0. |
| *D | 2019-10-21 | Copyright text for FreeType. |
| *E | 2019-11-04 | Added known issues. |
| *F | 2020-03-26 | Updates for version 2.1. |
| *G | 2020-04-07 | Adding Known Issues for version 2.1; fixed Rev. in footer. |
| *H | 2020-04-21 | Adding known Issue for QSPI Configurator. |
| *I | 2020-05-20 | Removed fixed known issue. |
| *J | 2020-06-29 | Added known issues for Programming/Debugging. |
| *K | 2020-09-01 | Updates for version 2.2. |
| *L | 2020-09-25 | Added several known issues. |
| *M | 2020-10-19 | Added issue about programming in DeepSleep mode. |
| *N | 2020-12-04 | Added issue about Eclipse IDE and macOS Big Sur. |
| *O | 2020-12-10 | Added issued for no access to GitHub. |
| *P | 2021-03-25 | Updates for version 2.3. Updated text for M1 workaround. Added issue about importing into Eclipse. |
| *Q | 2021-04-22 | Updated text for known issue about build failing in Eclipse for imported projects. |
| *R | 2021-07-07 | Added issue for PSoC™ 4 error message that can be ignored. |
| *S | 2021-09-23 | Updates for version 2.4. |
| *T | 2021-10-08 | Updated the version of modus-shell for Windows to 1.3.0. Added build issues for legacy BTSDK projects, as well as XMC™ projects using Linux and IAR. |
| *U | 2022-01-26 | Added issue for font size on Project Creator and Library Manager when using multiple screens. |
| *V | 2022-09-28 | Updates for version 3.0 release. |
| *W | 2023-03-21 | Added issue of program starting before build finishes when working with multi-core projects. |
| *X | 2023-06-02 | Updates for version 3.1 release. |

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Edition 2023-06-02

Published by

Infineon Technologies AG

81726 Munich, Germany

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Document reference

002-22557 Rev. *X

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