

# ENAEFERT1064UG

## Enabling Additional EdgeFast Bluetooth Protocol Abstraction Layer Examples on RT1064

Rev. 1.0 — 10 January 2024

User guide

### Document information

Information	Content
Keywords	EdgeFast Bluetooth Protocol Abstraction Layer Examples, EdgeFast, Bluetooth, Protocol Abstraction Layer, Examples, PAL, RT1064, ENAEFERT1064UG
Abstract	This document takes peripheral_ht as an example and describes the steps to migrate EdgeFast examples from RT1060EVK to RT1064 (based on SDK 2.13.0) and from RT1060EVKC to RT1064 (based on SDK 2.14.0) with different toolchains.



## 1 Introduction

NXP supports Bluetooth/Bluetooth Low Energy on RT1060EVK and RT1060EVKC. RT1064 has the same MCU die with RT1060EVK and RT1060EVKC and therefore it is possible to migrate the examples.

This document takes *peripheral\_ht* as an example and describes the steps to migrate EdgeFast examples from RT1060EVK to RT1064 (based on SDK 2.13.0) and from RT1060EVKC to RT1064 (based on SDK 2.14.0) with different toolchains including IAR, Arm GCC, and MDK.

## 2 Migrate examples from RT1060EVK to RT1064

This topic describes the [Section "Common steps"](#) and the steps to migrate with the [Section "IAR"](#), [Section "Arm GCC"](#), and [Section "MDK"](#) toolchains.

### 2.1 Common steps

1. Download *SDK\_2.13.0\_EVK-MIMXRT1060* and *SDK\_2.13.0\_EVK-MIMXRT1064*.
2. Copy the following folders from RT1060EVK package to RT1064 package: <install\_dir>/components/internal\_flash/ <install\_dir>/middleware/edgefast\_bluetooth/ <install\_dir>/middleware/wireless/.
3. Create a folder named *edgefast\_bluetooth\_examples/* under <rt1064\_install\_dir>/boards/evkmimxrt1064/.
4. Copy the entire folder from <rt1060evk\_install\_dir>/boards/evkmimxrt1060/edgefast\_bluetooth\_examples/peripheral\_ht/ to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/.
5. Copy *clock\_config.[c/h]* and *board.c* from <rt1064\_install\_dir>/boards/evkmimxrt1064/demo\_apps/hello\_world/ to <rt1064\_installed>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/ to replace the previous files.
6. Add `#define EDGEFAST_BT_LITTLEFS_MFLASH 1` in <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/app\_config.c.
7. Make the following changes in <rt1064\_installed>/boards/evkmimxrt1064/edgefast\_bluetooth/peripheral\_ht/board.h.

```
#define BOARD_FLASH_SIZE (0x800000U)
```

```
#define BOARD_FLASH_SIZE (0x400000U)
```

### 2.2 IAR

1. Navigate to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/iar/.
2. Make the following changes.

File name	Previous item	New item
peripheral_ht.ewp	1060	1064
	1062	1064

3. Rename *MIMXRT1062xxxxxx\_flexspi\_nor.icf* as *MIMXRT1064xxxxxx\_flexspi\_nor.icf* and make the following changes.

47	define symbol m_interrupts_start	= 0x60002000;	47	define symbol m_interrupts_start	= 0x70002000;
48	define symbol m_interrupts_end	= 0x600023FF;	48	define symbol m_interrupts_end	= 0x700023FF;
49			49		
50	define symbol m_text_start	= 0x60002400;	50	define symbol m_text_start	= 0x70002400;
51	define symbol _ROM_END_	= 0x6057FFFF;	51	define symbol _ROM_END_	= 0x7017FFFF;

## Enabling Additional EdgeFast Bluetooth Protocol Abstraction Layer Examples on RT1064

<pre> 86 define exported symbol m_boot_hdr_conf_start = 0x60000000; 87 define symbol m_boot_hdr_ivt_start = 0x60001000; 88 define symbol m_boot_hdr_boot_data_start = 0x60001020; 89 define symbol m_boot_hdr_dcd_data_start = 0x60001030;  95 BT_LITTLEFS_STORAGE_SECTOR_SIZE = 0x1000; /* 4k flash secto 96 BT_LITTLEFS_STORAGE_MAX_SECTORS = (0x60800000 - EDGEFAST_BT 97 ***/ </pre>	<pre> 86 define exported symbol m_boot_hdr_conf_start = 0x70000000; 87 define symbol m_boot_hdr_ivt_start = 0x70001000; 88 define symbol m_boot_hdr_boot_data_start = 0x70001020; 89 define symbol m_boot_hdr_dcd_data_start = 0x70001030;  95 BT_LITTLEFS_STORAGE_SECTOR_SIZE = 0x1000; /* 4k flash secto 96 BT_LITTLEFS_STORAGE_MAX_SECTORS = (0x70400000 - EDGEFAST_BT 97 ***/ </pre>
--	--

## 2.3 Arm GCC

1. Navigate to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/armgcc/.
2. Rename the following files.

Path	Previous name	New name
<rt1064_install_dir>/middleware/wireless/ethermind/	middleware_edgefast_bluetooth_k32w061_controller_MIMXRT1062.cmake	middleware_edgefast_bluetooth_k32w061_controller_MIMXRT1064.cmake

3. Make following changes.

File name	Previous item	New item
config.cmake	1060	1064
	1062	1064
flags.cmake	1062	1064
CMakeLists.txt	1060	1064
	1062	1064

4. *mflash* is used in RT1064 instead of *flash\_adapter*, therefore, comment `include(component_flexspi_nor_flash_adapter_rt1064_MIMXRT1064)` in *CMakeLists.txt*.
5. Rename *MIMXRT1062xxxxxx\_flexspi\_nor.ld* as *MIMXRT1064xxxxxx\_flexspi\_nor.ld* and make the following changes.

<pre> 37 _ROM_START_ = 0x60002400; 38 _ROM_END_ = 0x6057FFFF;  80 EDGEFAST_BT_LITTLEFS_STORAGE_MAX_SECTORS = (0x60800000 - EDG 81 /** littleFS configuration End **/ 82 83 84 HEAP_SIZE = DEFINED(__heap_size__) ? __heap_size__ : 0x10 85 STACK_SIZE = DEFINED(__stack_size__) ? __stack_size__ : 0x04 86 VECTOR_RAM_SIZE = DEFINED(__ram_vector_table__) ? 0x0000400 87 88 /* Specify the memory areas */ 89 MEMORY 90 { 91     m_flash_config (RX) : ORIGIN = 0x60000000, LENGTH 92     m_ivt (RX) : ORIGIN = 0x60001000, LENGTH 93     m_interrupts (RX) : ORIGIN = 0x60002000, LENGTH </pre>	<pre> 37 _ROM_START_ = 0x70002400; 38 _ROM_END_ = 0x7017FFFF;  80 EDGEFAST_BT_LITTLEFS_STORAGE_MAX_SECTORS = (0x70400000 - EDG 81 /** littleFS configuration End **/ 82 83 84 HEAP_SIZE = DEFINED(__heap_size__) ? __heap_size__ : 0x10 85 STACK_SIZE = DEFINED(__stack_size__) ? __stack_size__ : 0x04 86 VECTOR_RAM_SIZE = DEFINED(__ram_vector_table__) ? 0x0000400 87 88 /* Specify the memory areas */ 89 MEMORY 90 { 91     m_flash_config (RX) : ORIGIN = 0x70000000, LENGTH 92     m_ivt (RX) : ORIGIN = 0x70001000, LENGTH 93     m_interrupts (RX) : ORIGIN = 0x70002000, LENGTH </pre>
---	---

## 2.4 MDK

1. Navigate to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/mdk/.
2. Make following changes.

## Enabling Additional EdgeFast Bluetooth Protocol Abstraction Layer Examples on RT1064

File name	Previous item	New item
peripheral_ht.uvprojx	1060	1064
	1062	1064

- Copy evkmimxrt1064\_flexspi\_nor.ini from <rt1064\_install\_dir>/boards/evkmimxrt1064/demo\_apps/hello\_world/mdk/ to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/mdk/.
- Rename MIMXRT1062xxxxx\_flexspi\_nor as MIMXRT1064xxxxx\_flexspi\_nor and make the following changes.

49 #define m_flash_config_start 0x60000000	49 #define m_flash_config_start 0x70000000
50 #define m_flash_config_size 0x00001000	50 #define m_flash_config_size 0x00001000
51	51
52 #define m_ivt_start 0x60001000	52 #define m_ivt_start 0x70001000
53 #define m_ivt_size 0x00001000	53 #define m_ivt_size 0x00001000
54	54
55 #define m_interrupts_start 0x60002000	55 #define m_interrupts_start 0x70002000
56 #define m_interrupts_size 0x00000400	56 #define m_interrupts_size 0x00000400
57	57
58 #define m_text_start 0x60002400	58 #define m_text_start 0x70002400
59 #define _ROM_END_ 0x6057FFFF	59 #define _ROM_END_ 0x7017FFFF
95 EDGEFAST_BT_LITTLEFS_STORAGE_START_ADDRESS (_ROM_END_ + 1)	95 EDGEFAST_BT_LITTLEFS_STORAGE_START_ADDRESS (_ROM_END_ + 1)
96 EDGEFAST_BT_LITTLEFS_STORAGE_END_ADDRESS (0x60800000)	96 EDGEFAST_BT_LITTLEFS_STORAGE_END_ADDRESS (0x70400000)
97 EDGEFAST_BT_LITTLEFS_STORAGE_SECTOR_SIZE (0x1000)	97 EDGEFAST_BT_LITTLEFS_STORAGE_SECTOR_SIZE (0x1000)

### 3 Migrate examples from RT1060EVKC to RT1064

This topic describes the [Section "Common steps"](#) and the steps to migrate with the [Section "IAR"](#), [Section "Arm GCC"](#), and [Section "MDK"](#) toolchains.

#### 3.1 Common steps

- Download SDK\_2.14.0\_EVKC-MIMXRT1060 and SDK\_2.14.0\_EVK-MIMXRT1064.
- Copy the following folders from the RT1060EVKC package to the RT1064 package: <install\_dir>/middleware/edgefast\_bluetooth/ <install\_dir>/middleware/wireless/ethermind.
- Create a new folder named edgefast\_bluetooth\_examples/ under <rt1064\_install\_dir>/boards/evkmimxrt1064/.
- Copy the entire folder from <rt1060evkc\_install\_dir>/boards/evkmimxrt1060/edgefast\_bluetooth\_examples/peripheral\_ht/ to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/.
- Copy clock\_config.[c/h] and board.c from <rt1064\_install\_dir>/boards/evkmimxrt1064/demo\_apps/hello\_world/ to <rt1064\_installed>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/ to replace the previous files.

#### 3.2 IAR

- Navigate to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/iar/.
- Make the following changes in the listed order.

File name	Previous item	New item
peripheral_ht.ewp	1062	1064
	mflash/evkmimxrt1060	mflash/mimxrt1064

## Enabling Additional EdgeFast Bluetooth Protocol Abstraction Layer Examples on RT1064

File name	Previous item	New item
	evkcmimxrt1060	evkmimxrt1064
	6B	6A

3. Rename MIMXRT1062xxxxx\_flexspi\_nor.icf as MIMXRT1064xxxxx\_flexspi\_nor.icf and make the following changes.

<pre> 39 define symbol m_interrupts_start      = 0x60002000; 40 define symbol m_interrupts_end        = 0x600023FF; 41 42 define symbol m_text_start            = 0x60002400; 43 define symbol m_text_end              = 0x607FFFFF - </pre>	<pre> 39 define symbol m_interrupts_start      = 0x70002000; 40 define symbol m_interrupts_end        = 0x700023FF; 41 42 define symbol m_text_start            = 0x70002400; 43 define symbol m_text_end              = 0x703FFFFF - </pre>
<pre> 57 define exported symbol m_boot_hdr_conf_start = 0x60000000; 58 define symbol m_boot_hdr_ivt_start          = 0x60001000; 59 define symbol m_boot_hdr_boot_data_start    = 0x60001020; 60 define symbol m_boot_hdr_dcd_data_start      = 0x60001030; </pre>	<pre> 57 define exported symbol m_boot_hdr_conf_start = 0x70000000; 58 define symbol m_boot_hdr_ivt_start          = 0x70001000; 59 define symbol m_boot_hdr_boot_data_start    = 0x70001020; 60 define symbol m_boot_hdr_dcd_data_start      = 0x70001030; </pre>

### 3.3 Arm GCC

1. Navigate to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/armgcc/.
2. Copy folder from <rt1060evkc\_install\_dir>/boards/evkcmimxrt1060/edgefast\_bluetooth\_examples/template/ to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/ and rename the files.

Path	Previous name	New name
<rt1064_install_dir>/boards/evkmimxrt1064/edgefast_bluetooth_examples/	middleware_edgefast_bluetooth_mcux_linker_template_evkcmimxrt1060.cmake	middleware_edgefast_bluetooth_mcux_linker_template_evkmimxrt1064.cmake
	middleware_edgefast_bluetooth_sdio_template_evkcmimxrt1060.cmake	middleware_edgefast_bluetooth_sdio_template_evkmimxrt1064.cmake

3. Add the following content to <rt1064\_install\_dir>/devices/MIMXRT1064/all\_lib\_device.cmake at appropriate location.

```

...
${CMAKE_CURRENT_LIST_DIR}/../../boards
${CMAKE_CURRENT_LIST_DIR}/../../boards/evkmimxrt1064/edgefast_bluetooth_examples/
template
${CMAKE_CURRENT_LIST_DIR}/../../middleware/edgefast_bluetooth
${CMAKE_CURRENT_LIST_DIR}/../../middleware/wireless/ethermind
...
include_if_use(middleware_edgefast_bluetooth_ble_ethermind_cm7f)
include_if_use(middleware_edgefast_bluetooth_ble_ethermind_lib_cm7f)
include_if_use(middleware_edgefast_bluetooth_br_ethermind_cm7f)
include_if_use(middleware_edgefast_bluetooth_br_ethermind_lib_cm7f)
include_if_use(middleware_edgefast_bluetooth_btle_ethermind_cm7f)
include_if_use(middleware_edgefast_bluetooth_btle_ethermind_lib_cm7f)
include_if_use(middleware_edgefast_bluetooth_common_ethermind)
include_if_use(middleware_edgefast_bluetooth_common_ethermind_hci)
include_if_use(middleware_edgefast_bluetooth_common_ethermind_hci_uart)
include_if_use(middleware_edgefast_bluetooth_config_ethermind)
include_if_use(middleware_edgefast_bluetooth_config_template)
include_if_use(middleware_edgefast_bluetooth_extension_common_ethermind)
include_if_use(middleware_edgefast_bluetooth_k32w061_controller)
include_if_use(middleware_edgefast_bluetooth_mcux_linker_template_evkmimxrt1064)
include_if_use(middleware_edgefast_bluetooth_pal)
include_if_use(middleware_edgefast_bluetooth_pal_db_gen_ethermind)
include_if_use(middleware_edgefast_bluetooth_pal_host_msd_fatfs_ethermind)
include_if_use(middleware_edgefast_bluetooth_pal_platform_ethermind)

```

## Enabling Additional EdgeFast Bluetooth Protocol Abstraction Layer Examples on RT1064

```

include_if_use(middleware_edgefast_bluetooth_porting)
include_if_use(middleware_edgefast_bluetooth_porting_atomic)
include_if_use(middleware_edgefast_bluetooth_porting_list)
include_if_use(middleware_edgefast_bluetooth_porting_net)
include_if_use(middleware_edgefast_bluetooth_porting_toolchain)
include_if_use(middleware_edgefast_bluetooth_porting_work_queue)
include_if_use(middleware_edgefast_bluetooth_profile_bas)
include_if_use(middleware_edgefast_bluetooth_profile_dis)
include_if_use(middleware_edgefast_bluetooth_profile_fmp)
include_if_use(middleware_edgefast_bluetooth_profile_hps)
include_if_use(middleware_edgefast_bluetooth_profile_hrs)
include_if_use(middleware_edgefast_bluetooth_profile_hts)
include_if_use(middleware_edgefast_bluetooth_profile_ipsp)
include_if_use(middleware_edgefast_bluetooth_profile_pxr)
include_if_use(middleware_edgefast_bluetooth_profile_tip)
include_if_use(middleware_edgefast_bluetooth_profile_wu)
include_if_use(middleware_edgefast_bluetooth_sdio_template_evkmimxrt1064)
include_if_use(middleware_edgefast_bluetooth_shell)
include_if_use(middleware_edgefast_bluetooth_shell_ble)
include_if_use(middleware_edgefast_bluetooth_template)
include_if_use(middleware_edgefast_bluetooth_wifi_nxp_controller_base)...

```

## 4. Make the following changes in the listed order.

File name	Previous item	New item
config.cmake	MIMXRT1062xxxxB	MIMXRT1064xxxxA
	mflash_evkcmimxrt1060	mflash_rt1064
	1062	1064
	evkcmimxrt1060	evkmimxrt1064
flags.cmake	1062	1064
	6B	6A
CMakeLists.txt	1062	1064
<rt1064_install_dir>/middleware/edgefast_bluetooth/middlewa re_edgefast_bluetooth_template.cmake	evkcmimxrt1060	evkmimxrt1064
<rt1064_install_dir>/middleware/wireless/ethermind/middlewa re_edgefast_bluetooth_common_ethermind_hci_uart.cmake	1062	1064
<rt1064_install_dir>/middleware/wireless/ethermind/ middleware_edgefast_bluetooth_k32w061_controller.cmake	1062	1064
<rt1064_install_dir>/middleware/wireless/ethermind/middlewa re_edgefast_bluetooth_wifi_nxp_controller_base.cmake	evkcmimxrt1060	evkmimxrt1064
<rt1064_install_dir>/boards/evkmimxrt1064/edgefast_bluetoot h_examples/middleware_edgefast_bluetooth_mcux_linker_templa te_evkmimxrt1064.cmake	1062	1064
<rt1064_install_dir>/boards/evkmimxrt1064/edgefast_bluetoot h_examples/middleware_edgefast_bluetooth_sdio_template_evkm imxrt1064.cmake	1062	1064

## 5. Rename MIMXRT1062xxxxx\_flexspi\_nor.ld as MIMXRT1064xxxxx\_flexspi\_nor.ld and make the following changes.

<pre> 39 m_text_start = 0x60002400; 40 m_text_size = 0x007FDC00 - LITTLEFS_REGION_SIZE; 41 42 HEAP_SIZE = DEFINED(__heap_size__) ? __heap_size__ : 0x1000; 43 STACK_SIZE = DEFINED(__stack_size__) ? __stack_size__ : 0x0400; 44 VECTOR_RAM_SIZE = DEFINED(__ram_vector_table__) ? 0x00000400 : 0; 45 46 /* Specify the memory areas */ 47 MEMORY 48 { 49     m_flash_config (RX) : ORIGIN = 0x60000000, LENGTH = 0x00001000 50     m_ivt (RX) : ORIGIN = 0x60001000, LENGTH = 0x00001000 51     m_interrupts (RX) : ORIGIN = 0x60002000, LENGTH = 0x00000400 </pre>	<pre> 39 m_text_start = 0x70002400; 40 m_text_size = 0x003FDC00 - LITTLEFS_REGION_SIZE; 41 42 HEAP_SIZE = DEFINED(__heap_size__) ? __heap_size__ : 0x1000; 43 STACK_SIZE = DEFINED(__stack_size__) ? __stack_size__ : 0x0400; 44 VECTOR_RAM_SIZE = DEFINED(__ram_vector_table__) ? 0x00000400 : 0; 45 46 /* Specify the memory areas */ 47 MEMORY 48 { 49     m_flash_config (RX) : ORIGIN = 0x70000000, LENGTH = 0x00001000 50     m_ivt (RX) : ORIGIN = 0x70001000, LENGTH = 0x00001000 51     m_interrupts (RX) : ORIGIN = 0x70002000, LENGTH = 0x00000400 </pre>
--	--

3.4 MDK

- 1. Navigate to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/mdk/.
- 2. Make the following changes in the listed order.

File name	Previous item	New item
peripheral_ht.uvprojx	1062	1064
	mflash/evkcmimxrt1060	mflash/mimxrt1064
	evkcmimxrt1060	evkmimxrt1064
	6B	6A

- 3. Copy evkmimxrt1064\_flexspi\_nor.ini from <rt1064\_install\_dir>/boards/evkmimxrt1064/demo\_apps/hello\_world/mdk/ to <rt1064\_install\_dir>/boards/evkmimxrt1064/edgefast\_bluetooth\_examples/peripheral\_ht/mdk/.
- 4. Rename MIMXRT1062xxxxx\_flexspi\_nor as MIMXRT1064xxxxx\_flexspi\_nor and make the following changes.

43 #define m_flash_config_start 0x60000000	43 #define m_flash_config_start 0x70000000
44 #define m_flash_config_size 0x00001000	44 #define m_flash_config_size 0x00001000
45	45
46 #define m_ivt_start 0x60001000	46 #define m_ivt_start 0x70001000
47 #define m_ivt_size 0x00001000	47 #define m_ivt_size 0x00001000
48	48
49 #define m_interrupts_start 0x60002000	49 #define m_interrupts_start 0x70002000
50 #define m_interrupts_size 0x00000400	50 #define m_interrupts_size 0x00000400
51	51
52 #define m_text_start 0x60002400	52 #define m_text_start 0x70002400
53 #define m_text_size 0x007FDC00 - LITTLEFS	53 #define m_text_size 0x003FDC00 - LITTLEFS

4 Note about the source code in the document

Example code shown in this document has the following copyright and BSD-3-Clause license:

Copyright 2024 NXP Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 5 Revision history

[Table 1](#) summarizes the revisions to this document.

Table 1. Revision history

Document ID	Release date	Description
ENAEFERT1064UG v.1.0	10 January 2024	Initial version



## Legal information

### Definitions

**Draft** — A draft status on a document indicates that the content is still under internal review and subject to formal approval, which may result in modifications or additions. NXP Semiconductors does not give any representations or warranties as to the accuracy or completeness of information included in a draft version of a document and shall have no liability for the consequences of use of such information.

### Disclaimers

**Limited warranty and liability** — Information in this document is believed to be accurate and reliable. However, NXP Semiconductors does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. NXP Semiconductors takes no responsibility for the content in this document if provided by an information source outside of NXP Semiconductors.

In no event shall NXP Semiconductors be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

Notwithstanding any damages that customer might incur for any reason whatsoever, NXP Semiconductors' aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the Terms and conditions of commercial sale of NXP Semiconductors.

**Right to make changes** — NXP Semiconductors reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

**Suitability for use** — NXP Semiconductors products are not designed, authorized or warranted to be suitable for use in life support, life-critical or safety-critical systems or equipment, nor in applications where failure or malfunction of an NXP Semiconductors product can reasonably be expected to result in personal injury, death or severe property or environmental damage. NXP Semiconductors and its suppliers accept no liability for inclusion and/or use of NXP Semiconductors products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

**Applications** — Applications that are described herein for any of these products are for illustrative purposes only. NXP Semiconductors makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification. Customers are responsible for the design and operation of their applications and products using NXP Semiconductors products, and NXP Semiconductors accepts no liability for any assistance with applications or customer product design. It is customer's sole responsibility to determine whether the NXP Semiconductors product is suitable and fit for the customer's applications and products planned, as well as for the planned application and use of customer's third party customer(s). Customers should provide appropriate design and operating safeguards to minimize the risks associated with their applications and products.

NXP Semiconductors does not accept any liability related to any default, damage, costs or problem which is based on any weakness or default in the customer's applications or products, or the application or use by customer's third party customer(s). Customer is responsible for doing all necessary testing for the customer's applications and products using NXP Semiconductors products in order to avoid a default of the applications and the products or of the application or use by customer's third party customer(s). NXP does not accept any liability in this respect.

**Terms and conditions of commercial sale** — NXP Semiconductors products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.nxp.com/profile/terms>, unless otherwise agreed in a valid written individual agreement. In case an individual agreement is concluded only the terms and conditions of the respective agreement shall apply. NXP Semiconductors hereby expressly objects to applying the customer's general terms and conditions with regard to the purchase of NXP Semiconductors products by customer.

**Export control** — This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from competent authorities.

**Suitability for use in non-automotive qualified products** — Unless this document expressly states that this specific NXP Semiconductors product is automotive qualified, the product is not suitable for automotive use. It is neither qualified nor tested in accordance with automotive testing or application requirements. NXP Semiconductors accepts no liability for inclusion and/or use of non-automotive qualified products in automotive equipment or applications.

In the event that customer uses the product for design-in and use in automotive applications to automotive specifications and standards, customer (a) shall use the product without NXP Semiconductors' warranty of the product for such automotive applications, use and specifications, and (b) whenever customer uses the product for automotive applications beyond NXP Semiconductors' specifications such use shall be solely at customer's own risk, and (c) customer fully indemnifies NXP Semiconductors for any liability, damages or failed product claims resulting from customer design and use of the product for automotive applications beyond NXP Semiconductors' standard warranty and NXP Semiconductors' product specifications.

**Translations** — A non-English (translated) version of a document, including the legal information in that document, is for reference only. The English version shall prevail in case of any discrepancy between the translated and English versions.

**Security** — Customer understands that all NXP products may be subject to unidentified vulnerabilities or may support established security standards or specifications with known limitations. Customer is responsible for the design and operation of its applications and products throughout their lifecycles to reduce the effect of these vulnerabilities on customer's applications and products. Customer's responsibility also extends to other open and/or proprietary technologies supported by NXP products for use in customer's applications. NXP accepts no liability for any vulnerability. Customer should regularly check security updates from NXP and follow up appropriately. Customer shall select products with security features that best meet rules, regulations, and standards of the intended application and make the ultimate design decisions regarding its products and is solely responsible for compliance with all legal, regulatory, and security related requirements concerning its products, regardless of any information or support that may be provided by NXP.

NXP has a Product Security Incident Response Team (PSIRT) (reachable at [PSIRT@nxp.com](mailto:PSIRT@nxp.com)) that manages the investigation, reporting, and solution release to security vulnerabilities of NXP products.

**NXP B.V.** — NXP B.V. is not an operating company and it does not distribute or sell products.

### Trademarks

Notice: All referenced brands, product names, service names, and trademarks are the property of their respective owners.

**NXP** — wordmark and logo are trademarks of NXP B.V.

AMBA, Arm, Arm7, Arm7TDMI, Arm9, Arm11, Artisan, big.LITTLE, Cordio, CoreLink, CoreSight, Cortex, DesignStart, DynamIQ, Jazelle, Keil, Mali, Mbed, Mbed Enabled, NEON, POP, RealView, SecurCore, Socrates, Thumb, TrustZone, ULINK, ULINK2, ULINK-ME, ULINK-PLUS, ULINKpro, µVision, Versatile — are trademarks and/or registered trademarks of Arm Limited (or its subsidiaries or affiliates) in the US and/or elsewhere. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved.

EDGEFAST — is a trademark of NXP B.V.

IAR — is a trademark of IAR Systems AB.

Tables

Tab. 1. Revision history .....8

Contents

1 Introduction ..... 2

2 Migrate examples from RT1060EVK to RT1064 ..... 2

2.1 Common steps ..... 2

2.2 IAR ..... 2

2.3 Arm GCC ..... 3

2.4 MDK ..... 3

3 Migrate examples from RT1060EVKC to RT1064 ..... 4

3.1 Common steps ..... 4

3.2 IAR ..... 4

3.3 Arm GCC ..... 5

3.4 MDK ..... 7

4 Note about the source code in the document ..... 7

5 Revision history ..... 8

Legal information ..... 9

Please be aware that important notices concerning this document and the product(s) described herein, have been included in section 'Legal information'.