# ISSDK17RN

## Release notes for ISSDK v1.7

Rev. 1.7 — 22 June 2020 Release notes

**Document information**

| Information | Content |
|---|---|
| Keywords | IoT Sensing SDK, ISSDK, MCUXpresso, middleware |
| Abstract | Release notes for IoT Sensing SDK (ISSDK) v1.7 middleware |

# 1 Overview

The IoT Sensing Software Development Kit (ISSDK) is the embedded software framework enabling NXP's digital and analog sensors platforms for IoT applications. ISSDK provides a unified set of sensor support models that target NXP's portfolio of sensors across a broad range of ARM Cortex core-based Microcontrollers. ISSDK is offered as a middleware component in MCUXpresso SDK for supported microcontrollers. ISSDK relies on the SDK 2.x drivers and project release infrastructure to create a unified user experience. ISSDK v1.7 combines a set of robust sensor drivers and algorithms along with example applications to allow a user to get started using NXP sensors quickly.

# 2 Features

## 2.1 What is new in ISSDK v1.7

- ISSDK middleware component integrated with MCUXpresso SDK 2.8.0 Rel 12 ecosystem
- ISSDK enablement on LPC55S16-EVK (Niobe4 Mini)
  - Added sensors examples for LPCXpresso55S16 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement on MIMXRT685-EVK
  - Added sensors examples for MIMXRT685-EVK custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement on EVKB-IMXRT1050
  - Added sensors examples for EVKB-IMXRT1050 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement for EVK-MIMXRT1010
  - Added sensor examples for EVK-MIMXRT1010 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement on EVK-MIMXRT1015
  - Added sensors examples for EVK-MIMXRT1015 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement on EVK-MIMXRT1020
  - Added sensors examples for EVK-MIMXRT1020 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement on EVK-MIMXRT1060
  - Added sensors examples for EVK-MIMXRT1060 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement on EVK-MIMXRT1064
  - Added sensors examples for EVK-MIMXRT1064 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement for FRDM-K32L3A6
  - Added sensor examples for FRDM-K32L3A6 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement for FXPS7250A4 (AMAP) Analog absolute pressure sensor.
  - Added FXPS7250A4 sensor driver
  - Added sensor example for FRDM-KE15Z kit with FRDMSTBA-PA7250 in MCUXpresso
- ISSDK enablement on LPC55S69-EVK (Niobe4)

  - Added sensors examples for LPCXpresso55S69 custom kit with FRDM-STBC-AGM01 in MCUXpresso
- ISSDK enablement on MEK-MIMX8QM
  - Enabled on-board sensors (FXOS8700, FXAS21002, MPL3115, ISL29023) examples for MEK-MIMX8QM in MCUXpresso
- ISSDK enablement for NPS300x (Diff-P) sensor
  - Added NPS300xxx sensor driver
  - Added sensors examples for FRDM-KE15Z kit with FRDMSTBIDP300x in MCUXpresso
- Added MCUXpresso IDE support for pedometer examples for kits based on FRDM-STBC-AGM01, FRDM-STBC-AGM04 and FRDM-STBC-MULT2-B, and on-board sensor kits based on FRDM-KL25Z and FRDM-KL27Z

## 2.2 Delivered in ISSDK v1.6

- ISSDK middleware component integrated with MCU SDK 2.3 Rel7 ecosystem
- ISSDK enablement on EVK-MIMXRT1050
  - Added GPIO abstraction layer
  - Added sensors examples for EVK-MIMXRT1050 custom kit with AGM01 in MCUXpresso
- ISSDK enablement on LPC5411x (Niobe2)
  - Added GPIO abstraction layer
  - Added custom kit examples for AGM01 and AGMP03 in MCUXpresso
- ISSDK enablement on KE15Z
  - Added kit examples for MPXV5004DP in MCUXpresso
  - Added sensor driver and sample applications for MPXV5004DP
  - FRDM-KE15Z analog example project for MPXV5004DP
- Added orientation demos with Host I/O support (AGM01)
- ISSDK enablement on FRDM-K32W042
  - Added GPIO abstraction layer
  - Added sensors examples for FRDM-K32W042 custom kit with AGM01 in MCUXpresso

## 2.3 Delivered in ISSDK v1.5

- ISSDK middleware component integrated with MCU SDK 2.2 Rel6 ecosystem.
- ISSDK project generation module updated to support MCUXpresso IDE (RedEye). ISSDK kits sensor and algorithm example projects are now supported with MCUXpresso IDE (RedEye).
- Added additional sensor examples:
  - FRDM-KL27Z on-board MAG3110 examples
  - FXAS21002 SPI example
- Added STB-CE host protocol compliant demo sources supported with STB-CE (Freedom Sensor ToolBox – Community Edition).

## 2.4 Delivered in ISSDK v1.1

- ISSDK middleware component integrated with MCU SDK 2.1 Rel5 ecosystem.
- Adoption of KSDK 2.0 CMSIS driver implementations.

- Added FRDM-K64F-AGM04 kit.
- Created sensor driver for FXPQ3115 pressure/bio-compatible sensor.
- Added FRDMKL27-B3115 kit.
- Added FRDM-KL25Z as an MMA8451 kit.
- Added FRDM-KL27Z as an MMA8451 kit.
- Added FreeRTOS sensor fusion algorithm examples for FRDM-K64F-AGM04.
- Added bare metal sensor fusion algorithm examples for FRDM-K64F-AGM01 and FRDM-K22F-AGM01.
- Added pedometer algorithm example for FRDM-K64F-AGM04.
- Added pedometer algorithm example for FRDM-KL25Z as an MMA8451 Kit and FRDM-KL27Z as an MMA8451 kit.

## 2.5 Delivered in ISSDK v1.0

- ISSDK middleware component introduced and integrated with MCU SDK 2.0 ecosystem.
- Designed ISSDK middleware component design into MCU SDK 2.0 ecosystem.
- Created sensor drivers for MMA845X, MMA865X, FXLS8471, MMA8491, FXLC95000, FXAS21002, FXOS8700, MMA9553 and MPL3115 sensors.
- Added FRDM-K64F-AGM01 kit.
- Added FRDM-K64F-MULT2B kit.
- Added FRDM-K22F-AGM01 kit.
- Added FRDM-K22F-SA9500 kit.
- Added FRDMKL25-A8471 kit.
- Added FRDMKL25-A8491 kit.
- Added FRDMKL25-P3115 kit.
- Added FreeRTOS sensor fusion algorithm examples for FRDM-K64F-AGM01, FRDM-K22F-AGM01 and FRDM-K64F-MULT2B kits.
- Added bare metal sensor fusion algorithm examples for FRDM-K64F-MULT2B kit.
- Added pedometer algorithm example for FRDM-K64F-AGM01, FRDM-K22F-AGM01 and FRDM-K64F-MULT2B kits.

## 2.6 Supported sensors

The following NXP sensors are supported by ISSDK v1.7:

**Table 1. Sensors supported by ISSDK v1.7**

| Sensor part number | Sensor type | Interface | | |
|---|---|---|---|---|
| | | SPI | $I^2C$ | ADC |
| **FXAS21002** | Gyroscope | ✓ | ✓ | — |
| **FXLC95000** | Intelligent accelerometer | ✓ | ✓ | — |
| **FXLS8471** | Digital accelerometer | ✓ | ✓ | — |
| **FXOS8700** | Digital accelerometer and magnetometer | ✓ | ✓ | — |
| **FXPQ3115** | Pressure/Bio-Compatible | — | ✓ | — |
| **FXPS7250A4** | Analog absolute pressure sensor, 20 to 250 kPa | — | — | ✓ |
| **MAG3110** | Digital magnetometer | — | ✓ | — |
| **MMA845X** | Digital accelerometer | — | ✓ | — |
| **MMA8491** | Digital accelerometer | — | ✓ | — |
| **MMA865X** | Digital accelerometer | — | ✓ | — |
| **MMA9553** | Intelligent accelerometer | — | ✓ | — |
| **MPL3115** | Digital pressure | — | ✓ | — |
| **MPXV5004DP** | Differential and gauge, integrated analog pressure sensor | — | — | ✓ |
| **NPS300xxx** | Precise low-pressure gauge/differential sensor | ✓ | ✓ | — |

### 2.7 Algorithm support

ISSDK v1.7 supports Sensor Fusion V7.2.x algorithm deployed as example applications and source code libraries.

ISSDK v1.7 supports a pedometer algorithm V1.0 deployed as example applications, interface files and a binary library.

## 3 Development tools

The ISSDK v1.7 is supported with the following development toolchains:

- MCUXpresso IDE v11.2.0
- IAR Embedded Workbench for ARM version v8.50.1
- MDK-ARM Microcontroller Development Kit (Keil)® v5.30
- *Makefiles* support with GCC revision 9-2019-q4 from ARM Embedded

## 4 PC configurations

The system configurations required to use ISSDK v1.7 supported development toolchains are as follows:

**Table 2. PC configurations**

| Parameter | Minimum configuration | Recommended configuration |
|---|---|---|
| Operating system | Windows 7 / Windows 10 | |
| Communications to target hardware | USB port | |
| Processor speed in GHz | 1.8 | 2.6 |
| RAM in GB | 4 | 8 |
| Free disk space in GB | 20 | 400 |

# 5 Supported development systems

ISSDK v1.7 is designed to be distributed as codebases created by MCUXpresso SDK Builder targeting a particular sensor demonstration kit. A sensor demonstration kit is defined as a known combination of a Freedom Development Board and an Arduino compatible Sensor Shield board. MCUXpresso SDK Builder allows selection of these kits as input configurations to the SDK Builder.

The following standard (Table 3) and custom (Table 4) sensor kits are supported by ISSDK v1.7:

- Standard sensor kits are official MCU board - sensor shield kits which are available for end user to order from NXP Sensor Evaluation Boards web page.
- Custom sensor kits are board shield pairs which will not be available for end user to order as official MCU board - sensor shield kits (MCU board and sensor shield must be ordered separately).

**Table 3. Standard sensor kits supported by ISSDK v1.7**

| Sensor kit | MCU board | Sensor shield board |
|---|---|---|
| FRDM-K22F-AGM01 | FRDM-K22F | FRDM-STBC-AGM01 |
| FRDM-K22F-SA9500 | FRDM-K22F | FRDM-STBC-SA9500 |
| FRDM-K64F-AGM01 | FRDM-K64F | FRDM-STBC-AGM01 |
| FRDM-K64F-AGM04 | FRDM-K64F | FRDM-STBC-AGM04 |
| FRDMKE15-DP300x | FRDM-KE15Z | FRDMSTBIDP300x |
| FRDMKE15-DP5004 | FRDM-KE15Z | FRDMSTBCDP5004 |
| FRDMKE15-PA7250 | FRDM-KE15Z | FRDMSTBA-PA7250 |
| FRDM-KL25Z | FRDM-KL25Z | Using on-board MMA8451 |
| FRDMKL25-A8471 | FRDM-KL25Z | FRDMSTBC-A8471 |
| FRDMKL25-A8491 | FRDM-KL25Z | FRDMSTBC-A8491 |
| FRDMKL25-P3115 | FRDM-KL25Z | FRDMSTBC-P3115 |
| FRDM-KL27Z | FRDM-KL27Z | Using on-board MMA8451, MAG3110 |
| FRDMKL27-B3115 | FRDM-KL27Z | FRDMSTBI-B3115 |
| FRDMKL27-B3115 | FRDM-KL27Z | FRDMSTBI-B3115 |

**Table 4. Custom sensor kits supported by ISSDK v1.7**

| Sensor kit | MCU board | Sensor shield board |
|---|---|---|
| EVKB-IMXRT1050 with AGM01 | EVKB-IMXRT1050 | FRDM-STBC-AGM01 |
| EVK-MIMXRT1010 with AGM01 | EVK-MIMXRT1010 | FRDM-STBC-AGM01 |
| EVK-MIMXRT1015 with AGM01 | EVK-MIMXRT1015 | FRDM-STBC-AGM01 |
| EVK-MIMXRT1020 with AGM01 | EVK-MIMXRT1020 | FRDM-STBC-AGM01 |
| EVK-MIMXRT1050 with AGM01 | EVK-MIMXRT1050 | FRDM-STBC-AGM01 |
| EVK-MIMXRT1060 with AGM01 | EVK-MIMXRT1060 | FRDM-STBC-AGM01 |
| EVK-MIMXRT1064 with AGM01 | EVK-MIMXRT1064 | FRDM-STBC-AGM01 |
| FRDM-K32L3A6 with AGM01 | FRDM-K32L3A6 | FRDM-STBC-AGM01 |
| FRDM-K32W042 with AGM01 | FRDM-K32W042 | FRDM-STBC-AGM01 |
| FRDM-K64F with MULT2B | FRDM-K64F | FRDM-FXS-MULT2-B |
| LPCXpresso54114 with AGM01 | LPXCpresso54114 | FRDM-STBC-AGM01 |
| LPCXpresso55S16 with FRDM-STBC-AGM01 | LPCXpresso55S16 | FRDM-STBC-AGM01 |
| LPCXpresso55s69 with AGM01 | LPCXpresso55s69 | FRDM-STBC-AGM01 |
| MEK-MIMX8QM | MEK-MIMX8QM | Using on-board FXOS8700, FXAS21002, MPL3115, ISL29023 |
| MIMXRT685-EVK with FRDM-STBC-AGM01 | MIMXRT685-EVK | FRDM-STBC-AGM01 |

# 6 Release contents

**Table 5. Release contents**

| Deliverable | Location | Status |
|---|---|---|
| Kits | <install_dir>/boards/<kit_name> | • Added board kits for EVKB-IMXRT1050, EVK-MIMXRT1015, EVK-MIMXRT1020, EVK-MIMXRT1060 and EVK-MIMXRT1064 with FRDM-STBC-AGM01<br>• Added board kit for FRDM-KE15Z and FXPS7250A4<br>• Added board kit for FRDM-KE15Z and NPS300xxx<br>• Added board kit for LPCXpresso55s16 with FRDM-STBC-AGM01<br>• Added board kit for LPCXpresso55s69 with FRDM-STBC-AGM01<br>• Added board kit for MEK-MIMX8QM<br>• Added board kit for MIMXRT685-EVK with FRDM-STBC-AGM01 |
| Sensor driver examples | <install_dir>/boards/<kit_name>/issdk_examples/sensors | • Added sensor examples for EVKB-IMXRT1050, EVK-MIMXRT1015, EVK-MIMXRT1020, EVK-MIMXRT1060 and EVK-MIMXRT1064 with FRDM-STBC-AGM01<br>• Added sensor examples for FRDM-KE15Z with DP300xxx<br>• Added sensor example for FRDM-KE15Z with FRDMSTBA-PA7250 kit<br>• Added sensor examples for LPCXpresso55s16 with FRDM-STBC-AGM01 custom kit<br>• Added sensor examples for LPCXpresso55s69 with FRDM-STBC-AGM01 custom kit<br>• Added custom kit sensor examples for MEK-MIMX8QM<br>• Added sensor examples for MIMXRT685-EVK with FRDM-STBC-AGM01 custom kit |
| Algorithm examples | <install_dir>/boards/<kit_name>/issdk_examples/algorithms | Enabled MCUXpresso IDE support for pedometer examples |

| Deliverable | Location | Status |
|---|---|---|
| Board kit specific configuration | <install_dir>/middleware/issdk/boardkit | • Added board kit definition files for EVKB-IMXRT1050, EVK-MIMXRT1010, EVK-MIMXRT1015, EVK-MIMXRT1020, EVK-MIMXRT1060 and EVK-MIMXRT1064 with FRDM-STBC-AGM01 custom kits<br>• Added board kit definition files for FRDM-KE15Z with FRDMSTBA-PA7250 kit<br>• Added board kit definition files for FRDM-K32L3A6 with FRDM-STBC-AGM01 custom kit<br>• Added board kit definition files for FRDM-KE15Z and DP300xxx<br>• Added board kit definition files for LPCXpresso55s16 with FRDM-STBC-AGM01 custom kit<br>• Added board kit definition files for LPCXpresso55s69 with FRDM-STBC-AGM01 custom kit<br>• Added board kit definition files for MEK-MIMX8QM custom kit<br>• Added board kit definition files for MIMXRT685-EVK with FRDM-STBC-AGM01 custom kit |
| CMSIS driver Implementations | <install_dir>/middleware/issdk/drivers | Unchanged |
| Documentation | <install_dir>/docs/ISSDK | Updated for ISSDK v1.7 |
| Middleware | <install_dir>/middleware/issdk | Updated |
| Sensor algorithms | <install_dir>/middleware/issdk/algorithms | Added MCUXpresso IDE support for pedometer examples |
| Driver examples | <install_dir>/middleware/issdk/driverexamples | • Added FXPS7250A4 (AMAP) sensor example<br>• Added NPS300xxx sensor example |
| Sensor drivers | <install_dir>/middleware/issdk/sensors | Unchanged |
| ISSDK specific drivers | <install_dir>/middleware/issdk/drivers | Unchanged |
| CMSIS Driver API Includes | <install_dir>/CMSIS/Driver/Include | Unchanged |
| Host protocol compliant demo sources | <install_dir>/middleware/issdk/driverexamples/demos | Unchanged |

# 7 Open/Closed defects

## 7.1 ISSDK v1.7 open defects

There are no open defects in ISSDK v1.7.

## 7.2 ISSDK v1.7 closed defects

There are no closed defects in ISSDK v1.7 (no open defects reported in ISSDK v1.6).

# 8 Known Issues

There are no known issues in this software release.

# 9 Revision history

**Table 6. Revision history**

| Rev | Date | Description |
|---|---|---|
| 1.7 | 20200622 | • Section 2.1, replaced MCU SDK 2.7 Rel11 with MCUXpresso SDK 2.8.0 Rel 12<br>• Section 3, revised as follows<br>– Replaced IDE v11.1.0 with IDE v11.2.0<br>– Replaced ARM version 8.40.2 with ARM version 8.50.1<br>– Replaced MDK-ARM Microcontroller Development Kit (Keil)® v5.28 with MDK-ARM Microcontroller Development Kit (Keil)® v5.30<br>– Replaced Makefiles support with GCC revision 8-2019-q3 with Makefiles support with GCC revision 9-2019-q4 |
| 1.6 | 20200218 | • Section 2.1 and Table 4: Added support for LPC55S16-EVK and MIMXRT685-EVK.<br>• Section 6, Table 5, revised as follows:<br>– Added two additional bullets under "Status" for "Kits" to include LPCXpresso55s16 and MIMXRT685-EVK.<br>– Removed "custom kit" from first and fourth bullets under "Status" for "Sensor driver examples".<br>– Removed "kit" from second bullet under "Status" for "Sensor driver examples".<br>– Added two additional bullets under "Status" for "Sensor driver examples" to include LPCXpresso55s16 and MIMXRT685-EVK.<br>– Removed "_1.7" from "Location" for "Board kit specific configuration".<br>– Added two additional bullets under "Status" for "Board kit specific configuration" to include LPCXpress055s16 and MIMXRT685-EVK. |
| 1.5 | 20191112 | • Replaced "AGM01" with "FRDM-STBC-AGM01" throughout document<br>• Added support for FRDM-K32L3A6 in Section 2.1, Table 4 and Table 5.<br>• Added support for FXPS7250A4 (AMAP) in Section 2.1, Table 3 and Table 5.<br>• Added support for EVK-MIMXRT1010 in Section 2.1, Table 4 and Table 5.<br>• Replaced "MCU SDK 2.5 Rel9" with "MCU SDK 2.7 Rel11" in Section 2.1<br>• Added FXPS7250A4 in Section 2.6<br>• Updated development toolchain version numbers in Section 3.<br>• Update Sensor Fusion algorithm and pedometer algorithm version numbers in Section 2.7<br>• Updated development toolchain version numbers in Section 3. |
| 1.4 | 20181206 | • Added support for EVK-MIMXRT1015 in Section 2.1, Table 4 and Table 5.<br>• Added support for LPC55S69-EVK (Niobe4) in Section 2.1, Table 4 and Table 5.<br>• Replaced "MCU SDK 2.4 Rel8" with "MCU SDK 2.5 Rel9" in Section 2.1<br>• Update Sensor Fusion algorithm and pedometer algorithm version numbers in Section 2.7<br>• Updated development toolchain version numbers in Section 3. |
| 1.3 | 20180919 | • Added support for EVK-MIMXRT1064 in Section 2.1, Table 4 and Table 5.<br>• Added support for MEK-MIMX8QM in Section 2.1, Table 4 and Table 5. |
| 1.2 | 20180821 | Added support for EVK-MIMXRT1060 in Section 2.1, Table 4 and Table 5. |
| 1.1 | 20180604 | Added support for EVK-MIMXRT1020 in Section 2.1, Table 4 and Table 5. |
| 1 | 20180403 | Initial release for ISSDK v1.7 |

# 10 Legal information

## 10.1 Definitions

**Draft** — The document is a draft version only. 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 herein and shall have no liability for the consequences of use of such information.

## 10.2 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.

**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.

**Non-automotive qualified products** — Unless this data sheet 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 is for reference only. The English version shall prevail in case of any discrepancy between the translated and English versions.

**Security** — While NXP Semiconductors has implemented advanced security features, all products may be subject to unidentified vulnerabilities. Customers are responsible for the design and operation of their applications and products to reduce the effect of these vulnerabilities on customer's applications and products, and NXP Semiconductors accepts no liability for any vulnerability that is discovered. Customers should implement appropriate design and operating safeguards to minimize the risks associated with their applications and products.

## 10.3 Trademarks

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

**Kinetis** — is a trademark 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 or registered trademarks of Arm Limited (or its subsidiaries) 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.

# Tables

# ISSDK17RN

Release notes for ISSDK v1.7

## Contents





For more information, please visit: http://www.nxp.com
For sales office addresses, please send an email to: salesaddresses@nxp.com

**Date of release: 22 June 2020**
**Document identifier: ISSDK17RN**