

# AURIX™ TC37xEXT variants

## About this document

### Scope and purpose

This document is an addendum to the TC37xEXT Product Data Sheet and User's Manual, listing all planned product variants, key parameters such as memory size and optional features.

The User's Manual lists functions implemented on the Silicon, but this document counts functions that are pinning dependent; i.e. functions are counted that are connected to at least one package pin. As pins are overlaid with several functions the pinning needs to be checked (see Product Data Sheet) to determine the number of usable functions in an application.

### Naming conventions

Prefix:

- SAK:  $T_{\text{ambient}}$  Temperature Range from -40 °C up to +125 °C.
- SAL:  $T_{\text{ambient}}$  Temperature Range from -40 °C up to +150 °C (packaged device).

Feature package:

- P: Standard feature.
- E: Emulation device with all features of the emulated standard type, additionally full MCDS, overlay functionality for calibration, AGBT as trace interface for development (depending on the package).
- C,V,Z: Customer Specific.
- A: ADAS ext. Memory.
- T: ADAS + emulation.
- X: Extended Feature device. These products contain the extended memory (EMEM) of the ADAS subsystem. The ADAS peripherals SPU and RIF are not available.
- M: MotionWise software.
- F: Extended Flash.
- G: Additional Connectivity.
- H: ADAS Standard feature.
- N: Standard feature with AMU.



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## 1 TC37xEXT AB step

## 1 TC37xEXT AB step

A table listing the TC37xEXT AB step variants.

Table 1 TC37xEXT\_AB step

| SAK-TC377TX-96F300S                                                                                              | SAL-TC377TX-96F300S     | SAK-TC377TX-64F300S     |
|------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|
| <b>Step</b>                                                                                                      |                         |                         |
| AB                                                                                                               | AB                      | AB                      |
| <b>Production Status</b>                                                                                         |                         |                         |
| Standard                                                                                                         | Standard                | Customer Specific       |
| <b>Package Type</b>                                                                                              |                         |                         |
| PG-LFBGA-292                                                                                                     | PG-LFBGA-292            | PG-LFBGA-292            |
| <b>Pinout</b>                                                                                                    |                         |                         |
| TX                                                                                                               | TX                      | TX                      |
| <b>Reference Silicon</b>                                                                                         |                         |                         |
| TC37xEXT                                                                                                         | TC37xEXT                | TC37xEXT                |
| <b>Temperature Range (Ambient)</b>                                                                               |                         |                         |
| SAK                                                                                                              | SAL                     | SAK                     |
| <b>Chip ID</b>                                                                                                   |                         |                         |
| <b>Attention:</b> The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version. |                         |                         |
| 0xA9017781                                                                                                       | 0xA9017781              | 0xA7017781              |
| <b>Cores / Checker Cores</b>                                                                                     |                         |                         |
| 3/3                                                                                                              | 3/3                     | 3/3                     |
| <b>Max. Freq. (MHz)</b>                                                                                          |                         |                         |
| 300                                                                                                              | 300                     | 300                     |
| <b>Program Flash (MB)</b>                                                                                        |                         |                         |
| 6                                                                                                                | 6                       | 4                       |
| <b>Data Flash0 (single-ended) (KB)</b>                                                                           |                         |                         |
| 256                                                                                                              | 256                     | 256                     |
| <b>Total SRAM (without EMEM and Cache) (KB)</b>                                                                  |                         |                         |
| 992                                                                                                              | 992                     | 992                     |
| <b>EMEM Size (KB)</b>                                                                                            |                         |                         |
| 3072                                                                                                             | 3072                    | 3072                    |
| <b>DSPR (KB)</b>                                                                                                 |                         |                         |
| 240 in CPU0&1; 96 other                                                                                          | 240 in CPU0&1; 96 other | 240 in CPU0&1; 96 other |
| <b>DLMU (KB)</b>                                                                                                 |                         |                         |
| 64 per CPU                                                                                                       | 64 per CPU              | 64 per CPU              |

## 1 TC37xEXT AB step

Table 1 TC37xEXT\_AB step (continued)

| SAK-TC377TX-96F300S                                          | SAL-TC377TX-96F300S | SAK-TC377TX-64F300S |
|--------------------------------------------------------------|---------------------|---------------------|
| <b>PSPR (KB)</b>                                             |                     |                     |
| 64 per CPU                                                   | 64 per CPU          | 64 per CPU          |
| <b>LMU (KB)</b>                                              |                     |                     |
| 0                                                            | 0                   | 0                   |
| <b>DAM (KB)</b>                                              |                     |                     |
| 32                                                           | 32                  | 32                  |
| <b>AMU<sup>1)</sup></b>                                      |                     |                     |
| No                                                           | No                  | No                  |
| <b>ADC (Primary Groups/Channels)</b>                         |                     |                     |
| 4/32                                                         | 4/32                | 4/32                |
| <b>ADC (Secondary Groups/Channels)</b>                       |                     |                     |
| 4/60                                                         | 4/60                | 4/60                |
| <b>ADC (Fast Compare Channels)</b>                           |                     |                     |
| 4                                                            | 4                   | 4                   |
| <b>ADC (EDSADC Channels)</b>                                 |                     |                     |
| 6                                                            | 6                   | 6                   |
| <b>CAN (Modules/Nodes)</b>                                   |                     |                     |
| 3/3x4                                                        | 3/3x4               | 3/3x4               |
| <b>FlexRay (Modules/Channels)</b>                            |                     |                     |
| 1/1x2                                                        | 1/1x2               | 1/1x2               |
| <b>HSSL Modules</b>                                          |                     |                     |
| 1                                                            | 1                   | 1                   |
| <b>ASCLIN Modules / with ASC &amp; LIN / with 3-wire SPI</b> |                     |                     |
| 12/12/11                                                     | 12/12/11            | 12/12/11            |
| <b>QSPI Modules / with LVDS</b>                              |                     |                     |
| 5/2                                                          | 5/2                 | 5/2                 |
| <b>SENT Channels</b>                                         |                     |                     |
| 15                                                           | 15                  | 15                  |
| <b>MSC Modules</b>                                           |                     |                     |
| 2                                                            | 2                   | 2                   |
| <b>PSI5 Channels</b>                                         |                     |                     |
| 2                                                            | 2                   | 2                   |

<sup>1</sup> AMU is abbreviated as ASC Modeling Unit. For Additional details about AMU, Contact an Infineon Representative

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**1 TC37xEXT AB step**
**Table 1 TC37xEXT\_AB step (continued)**

| SAK-TC377TX-96F300S                                 | SAL-TC377TX-96F300S | SAK-TC377TX-64F300S |
|-----------------------------------------------------|---------------------|---------------------|
| <b>PSI5-S Module</b>                                |                     |                     |
| Yes                                                 | Yes                 | Yes                 |
| <b>SDMMC Module</b>                                 |                     |                     |
| Yes                                                 | Yes                 | Yes                 |
| <b>Max. Ethernet Availability: 1Gbit/100Mbit/No</b> |                     |                     |
| 2x1Gbit/s                                           | 2x1Gbit/s           | 2x1Gbit/s           |
| <b>MCDS Availability<sup>2)</sup></b>               |                     |                     |
| MCDS                                                | MCDS                | MCDS                |
| <b>ADAS Cluster Available</b>                       |                     |                     |
| No                                                  | No                  | No                  |
| <b>CIF</b>                                          |                     |                     |
| Yes                                                 | Yes                 | Yes                 |
| <b>HSM Available</b>                                |                     |                     |
| Yes                                                 | Yes                 | Yes                 |

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<sup>2</sup> Refer to the **MCDS availability** section of this document for additional details.

## 2 Memory maps of TC37xEXT variants

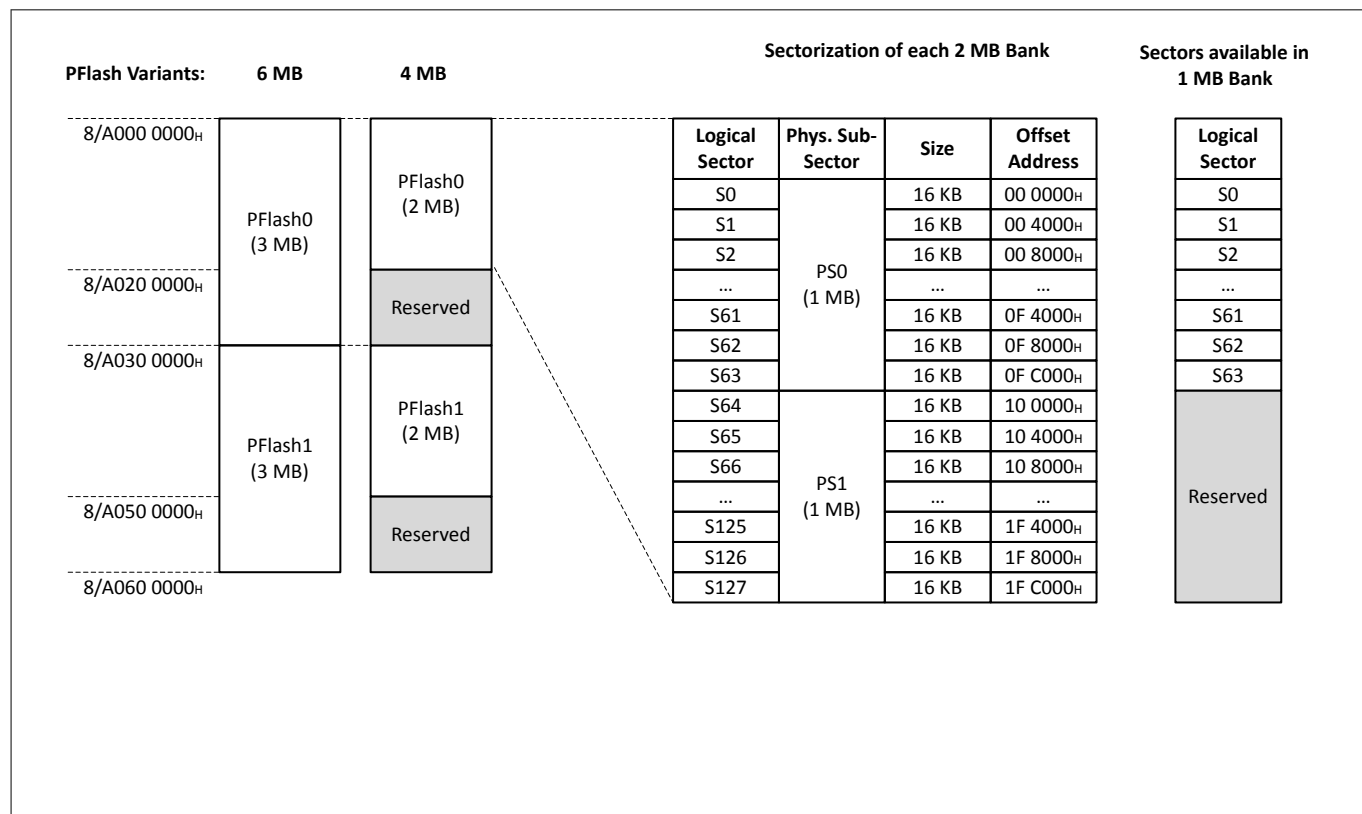
### 2 Memory maps of TC37xEXT variants

This section shows the influence of above feature variants on the memory map.

#### Program Flash

Variants:

- 6 MB: umbrella (3 x 2 MB), see User's Manual.
- 4 MB: 2 MB + 2 MB (see Figure below).



**Figure 1 PFlash variants**

#### MCDS availability

- MCDS is not intended for use in productive devices. It may not be tested and is not covered by the safety case. For this functionality, please refer to the Aurix 2G Emulation device Data Sheet.

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**Revision history**
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| Document version | Date of release | Description of changes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V1.0             | 2019-03-05      | <ul style="list-style-type: none"> <li>First release.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| V1.1             | 2019-06-12      | <ul style="list-style-type: none"> <li>Chapter 1: Removed the following Variants in the 'Variants Table' - SAL-TC377TE-96 F300S, SAL-TC375TE-96 F300W, SAK-TC375TE-96 F300W, SAK-TC374TE-96 F300W, SAL-TC370TE-96 F300</li> <li>Chapter 2: Updated the Memory Maps of TC37xEXT variants to remove the Ethernet and ADC variation on the memory maps.</li> <li>Chapter 1: TC37xEXT AB step variants table format changed to fit all the contents.</li> <li>Chapter 1: Added new row in the variant tables called "AMU" with the footnote for additional details.</li> <li>Chapter: About this document: Feature package definitions are updated to consistent with the product naming nomenclature definition.</li> </ul> |
| V1.2             | 2019-08-21      | <ul style="list-style-type: none"> <li>Chapter 1: Added the following Variants in the 'Variants Table' - SAK-TC377TX-64F300S and update the Memory maps section.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| V1.3             | 2020-01-10      | <ul style="list-style-type: none"> <li>Page 1: About the document: Feature Package 'X' definition is updated to remove CIF.</li> <li>Chapter 1: Added new row in the variant tables called "CIF" indicating the Camera Interface availability.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| V1.4             | 2020-11-19      | <ul style="list-style-type: none"> <li>Chapter 1: Added a Foot note for the 'MCDS Availability' to explain its usage.</li> <li>Chapter 2: Added 'MCDS Availability' section to describe its usage.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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