AURIX™ TC35x variants

About this document

Scope and purpose

This document is an addendum to the TC35x 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: $T_{ambient}$ Temperature Range from -40 °C up to +125 °C.

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,D,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 TC35x AB step

A table listing the TC35x AB step variants.

Table 1 TC35x AB step

SAK-TC357TA-64F300S	SAK-TC357TH-64F300S	SAK-TC356TA-64F300S	SAK-TC356TH-64F300S	SAK-TC356TD-48F300S
Step				
AB	AB	AB	AB	AB
Production Status				
Standard	Standard	Standard	Standard	Customer Specific
Package Type				
PG-LFBGA-292	PG-LFBGA-292	PG-LFBGA-180	PG-LFBGA-180	PG-LFBGA-180
Pinout				
ADAS	ADAS	ADAS	ADAS	ADAS
Reference Silicon				
TC35x	TC35x	TC35x	TC35x	TC35x
Temperature Range (Ambient)				
SAK	SAK	SAK	SAK	SAK
Chip ID ***Attention*: *The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.***				
0xB7015781	0xF7015781	0xB7015681	0xF7015681	0xB6015681
Cores / Checker Cores				
3/2	3/2	3/2	3/2	3/2
Max. Freq. (MHz)				
300	300	300	300	300
Program Flash (MB)				
4	4	4	4	3
Data Flash0 (single-ended) (KB)				
128	128	128	128	128
Total SRAM (without EMEM and Cache) (KB)				
1472	960	1472	960	1472
EMEM Size (KB)				
2048	2048	2048	2048	2048
DSPR (KB)				
240 in CPU0&1; 96 other	240 in CPU0&1; 96 other	240 in CPU0&1; 96 other	240 in CPU0&1; 96 other	240 in CPU0&1; 96 other
DLMU (KB)				

1 TC35x AB step

Table 1 TC35x AB step (continued)

SAK-TC357TA-64F300S	SAK-TC357TH-64F300S	SAK-TC356TA-64F300S	SAK-TC356TH-64F300S	SAK-TC356TD-48F300S
64 per CPU	64 per CPU	64 per CPU	64 per CPU	64 per CPU
PSPR (KB)				
64 per CPU	64 per CPU	64 per CPU	64 per CPU	64 per CPU
LMU (KB)				
512	0	512	0	512
DAM (KB)				
0	0	0	0	0
AMU[1)]				
No	No	No	No	No
ADC (Primary Groups/Channels)				
2/16	2/16	2/8	2/8	2/8
ADC (Secondary Groups/Channels)				
0	0	0	0	0
ADC (Fast Compare Channels)				
0	0	0	0	0
ADC (EDSADC Channels)				
0	0	0	0	0
CAN (Modules/Nodes)				
2/2x4	2/2x4	2/4+3	2/4+3	2/4+3
FlexRay (Modules/Channels)				
1/1x2	1/1x2	1/1x2	1/1x2	0
HSSL Modules				
0	0	0	0	0
ASCLIN Modules / with ASC & LIN / with 3-wire SPI				
4/4/4	4/4/4	4/4/4	4/4/4	4/4/4
QSPI Modules / with LVDS				
4/0	4/0	4/0	4/0	4/0
SENT Channels				
0	0	0	0	0
MSC Modules				
0	0	0	0	0

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

1 TC35x AB step

Table 1 TC35x AB step (continued)

SAK-TC357TA-64F300S	SAK-TC357TH-64F300S	SAK-TC356TA-64F300S	SAK-TC356TH-64F300S	SAK-TC356TD-48F300S
PSI5 Channels				
0	0	0	0	0
PSI5-S Module				
No	No	No	No	No
SDMMC Module				
No	No	No	No	No
Max. Ethernet Availability: 1GBit/100Mbit/No				
1Gbit/s	1Gbit/s	1Gbit/s	1Gbit/s	No
MCDS Availability				
MCDSlight	MCDSlight	MCDSlight	MCDSlight	MCDSlight
ADAS Cluster Available				
Yes	Yes	Yes	Yes	Yes
CIF				
No	No	No	No	No
HSM Available				
Yes	Yes	Yes	Yes	Yes

2 Memory maps of TC35x variants

This section describes the influence of the available feature variants on the memory map.

Program Flash

Variants:

- 4 MB: umbrella (2 x 2 MB), see User's Manual.
- 3 MB: 1.5 x 2 MB (see Figure below).

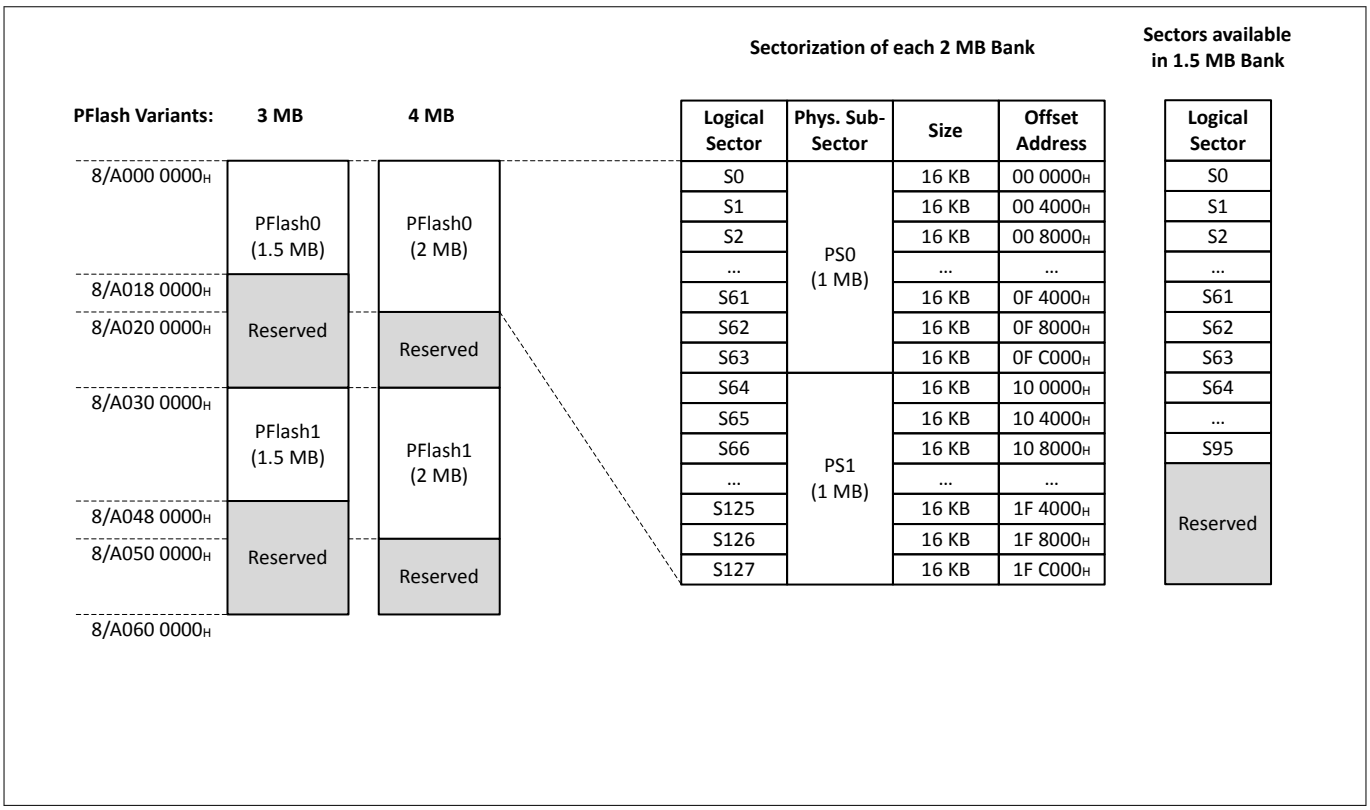

Figure 1 TC35x PFlash variants

LMU

Variants:

- 512 KB: umbrella (see User's Manual).
- 0 KB: no LMURAM is available.

ADC availability

- Limitation on availability of ADC channels are caused by pin limitations. See Data Sheet for the pinning table of the package.

Revision history

Document version	Date of release	Description of changes
V1.0	2019-02-05	• First release.
V1.1	2019-03-01	• Added BGA-180 variants SAKTC356TA-64F300S and SAKTC356TH-64F300S. • Changed from AA step to AB step.
V1.2	2019-06-07	• Chapter 1: Added new row in the variant tables called "AMU". • Internal Version only and not released for customers
V1.3	2019-06-12	• Chapter 1: TC35x AB step variants table format changed to fit all the contents. • Chapter 1: Added new row in the variant tables called "AMU" with the footnote for additional details. • Chapter: About this document: Feature package definitions are updated to consistent with the product naming nomenclature definition.
V1.4	2020-01-13	• Chapter 1: The 'PSPR' Memory sizes are corrected. • Page 1: About the document:Feature Package 'X' definition is updated to remove CIF. • Chapter 1:Added new row in the variant tables called "CIF" indicating the Camera Interface availability.
V1.5	2020-02-03	• Chapter 1, Table 1: New Variant SAK-TC356TD-48F300S added. • Chapter 2: Added Program Flash variant Figure. • Chapter 1, Table 1: In the PSPR (KB) row, added 'per CPU' to make it more transparent.
V1.6	2020-04-15	• Chapter 2: Updated Program Flash variant Figure to depict 1.5 x 2 MB Program Flash.

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