

AURIX[™] TC37x variants

About this document

Scope and purpose

This document is an addendum to the TC37x 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.
- SAL: T_{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, RIF and CIF are not available.
- M: MotionWise software.
- F: Extended Flash.
- G: Additional Connectivity.
- H: ADAS Standard feature.
- N: Standard feature with AMU.

Table of contents**Table of contents**

	About this document	1
	Table of contents	2
1	TC37x AA step variants	3
2	Memory maps of TC37x variants	6
	Revision history	7
	Disclaimer	8

1 TC37x AA step variants

1 TC37x AA step variants

A table of TC37x AA step variants.

Table 1 TC37x AA Step

SAL-TC370TP-96F300	SAL-TC377TP-96F300S	SAL-TC375TP-96F300W	SAK-TC377TP-96F300S	SAK-TC375TP-96F300W	SAK-TC377DP-96F300S	SAL-TC377DP-96F300S
Step						
AA	AA	AA	AA	AA	AA	AA
Production status						
Standard	Standard	Standard	Standard	Standard	Customer Specific	Customer Specific
Package type						
Bare Die	PG-LFBGA-292	PG-QFP-176	PG-LFBGA-292	PG-QFP-176	PG-LFBGA-292	PG-LFBGA-292
Pinout						
BD	LFBGA 0.8 mm	LQFP 0.5 mm	LFBGA 0.8 mm	LQFP 0.5 mm	LFBGA 0.8 mm	LFBGA 0.8 mm
Reference silicon						
TC37x	TC37x	TC37x	TC37x	TC37x	TC37x	TC37x
Temperature range (ambient)						
-40°C up to +170°C	-40°C up to +150°C	-40°C up to +150°C	-40°C up to +125°C	-40°C up to +125°C	-40°C up to +125°C	-40°C up to +150°C
Chip ID						
Attention: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.						
0x89007080	0x89007780	0x89007580	0x89007780	0x89007580	0xC9007780	0xC9007780
Cores / checker cores						
3/2	3/2	3/2	3/2	3/2	2/2	2/2
Maximum frequency (MHz)						
300	300	300	300	300	300	300
Program flash (MB)						
6	6	6	6	6	6	6
Data flash 0 (single-ended) (KB)						
256	256	256	256	256	256	256
Total SRAM (without EMEM and Cache) (KB)						
992	992	992	992	992	768	768
EMEM Size (KB)						
0	0	0	0	0	0	0
DSPR (KB)						

1 TC37x AA step variants

Table 1 TC37x AA Step (continued)

SAL- TC370TP-96F3 00	SAL- TC377TP-96F 300S	SAL- TC375TP-96F 300W	SAK- TC377TP-96F 300S	SAK- TC375TP-96F 300W	SAK- TC377DP-96F 300S	SAL- TC377DP-96F 300S
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	240 in CPU0&1	240 in CPU0&1
DLMU (KB)						
64 per CPU	64 per CPU	64 per CPU	64 per CPU	64 per CPU	64 per CPU	64 per CPU
PSPR (KB)						
64	64	64	64	64	64	64
LMU (KB)						
0	0	0	0	0	0	0
DAM (KB)						
32	32	32	32	32	32	32
AMU¹⁾						
No	No	No	No	No	No	No
ADC (primary groups/channels)						
4/32	4/32	4/25	4/32	4/25	4/32	4/32
ADC (secondary groups/channels)						
4/60	4/60	4/45	4/60	4/45	4/60	4/60
ADC (fast compare channels)						
4	4	4	4	4	4	4
ADC (EDSADC channels)						
6	6	6	6	6	6	6
CAN (modules/nodes)						
2/2x4	2/2x4	2/2x4	2/2x4	2/2x4	2/2x4	2/2x4
FlexRay (modules/channels)						
1/1x2	1/1x2	1/1x2	1/1x2	1/1x2	1/1x2	1/1x2
HSSL modules						
1	1	1	1	1	1	1
ASCLIN modules / with ASC and LIN / with 3-wire SPI						
12/12/11	12/12/11	12/12/10	12/12/11	12/12/10	12/12/11	12/12/11
QSPI modules / with LVDS						
5/2	5/2	5/2	5/2	5/2	5/2	5/2

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

1 TC37x AA step variants

Table 1 TC37x AA Step (continued)

SAL- TC370TP-96F3 00	SAL- TC377TP-96F 300S	SAL- TC375TP-96F 300W	SAK- TC377TP-96F 300S	SAK- TC375TP-96F 300W	SAK- TC377DP-96F 300S	SAL- TC377DP-96F 300S
SENT channels						
15	15	15	15	15	15	15
MSC modules						
2	2	2	2	2	2	2
PSI5 channels						
2	2	2	2	2	2	2
PSI5-S module						
Yes	Yes	Yes	Yes	Yes	Yes	Yes
SDMMC module						
No	No	No	No	No	No	No
Maximum Ethernet availability: 1Gbit/100Mbit/No						
1Gbit/s	1Gbit/s	100Mbit/s (RMII)	1Gbit/s	100Mbit/s (RMII)	1Gbit/s	1Gbit/s
MCDS availability						
miniMCDS	miniMCDS	miniMCDS	miniMCDS	miniMCDS	miniMCDS	miniMCDS
ADAS cluster available						
No	No	No	No	No	No	No
HSM available						
Yes	Yes	Yes	Yes	Yes	Yes	Yes

2 Memory maps of TC37x variants

2 Memory maps of TC37x variants

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

Cores / checker cores

Variants:

- 3/2: umbrella, see User's Manual.
- 2/2: reduced CPU variant, not available is CPU2 including its RAMs (DSPR, DCACHE, DTAG, PSPR, PCACHE, PTAG, DLMU).

HSM

Variants:

- Yes: umbrella, see User's Manual.
- No: HSM and DF1 are not available.

Ethernet availability

- 1Gbit/s: umbrella, see User's Manual.
- 100Mbit/s (RMII): due to pin limitations in this package the GETH module can be only used in RMII mode.

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

Revision history

Document version	Date of release	Description of changes
V1.0	2019-02-05	<ul style="list-style-type: none">First release.
V1.1	2019-03-01	<ul style="list-style-type: none">Removed devices: SAK-TC377T-96F300S and SAK-TC375T-96F300W.Added devices: SAK-TC377DP-96F300S and SAL-TC377DP-96F300S.
V1.2	2019-06-12	<ul style="list-style-type: none">Chapter 1: TC37x AA 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.

Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

Edition 2019-06

Published by
Infineon Technologies AG
81726 Munich, Germany

© 2019 Infineon Technologies AG
All Rights Reserved.

Do you have a question about any
aspect of this document?
Email: erratum@infineon.com

Document reference
IFX-vxe1559112312940

IMPORTANT NOTICE

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffheitsgarantie").

With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

WARNINGS

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury