英飞凌 AURIX™ TC3x C4C 产品变体

关于本文档

范围和目的

本文档是英飞凌 TC3x 产品数据手册和用户手册的补充说明，列出了所有计划的产品变体、关键参数（例如存储器容量和可选功能）。

用户手册列出了已在硅片上实现的功能，本文档统计了依赖于引脚的功能，即至少连接到一个封装引脚的功能。由于引脚具备多种功能，因此需要检查引脚的分配（参见产品数据手册）以确定在具体应用中可用功能的数量。

命名规则

前缀：

- SAK：$T_{ambient}$ 温度范围为-40°C至+125°C

特性封装：

- P：标准特性
- E：仿真器件，具备被仿真标准型号的全部功能，另外支持完整MCDS、用于标定的叠加（overlay）功能、以及作为开发追踪接口的 AGBT（视封装而定）
- V、Z、M：客户定制
- A：ADAS 扩展存储器
- T：ADAS + 仿真
- X：功能扩展型设备。这些产品包含ADAS子系统的扩展存储器 (EMEM)，但不支持 ADAS 外设 SPU 和 RIF
- F：扩展闪存
- G：附加连接功能
- H：ADAS 标准特性
- N：带 AMU 的标准特性

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1 TC3x variants for C4C

The following table lists the TC3x variants for C4C market

1.1 TC39x BD step

A table listing the TC39x BD step variants.

Table 1 TC39x_BD step

SAK-TC397XX-256F300C	SAK-TC397XP-256F300C
Step	
BD	BD
Production Status	
Standard	Standard
Package Type	
PG-LFBGA-292	PG-LFBGA-292
Pinout	
LFBGA 0.8 mm	LFBGA 0.8 mm
Reference Silicon	
TC39x	TC39x
Temperature Range (Ambient)	
SAK	SAK
Chip ID ***Attention**: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.*	
0xAF019793	0x8F019793
Cores / Checker Cores	
6/4	6/4
Max. Freq. (MHz)	
300	300
Program Flash (MB)	
16	16
Data Flash0 (single-ended) (KB)	
1024	1024
Total SRAM (without EMEM and Cache) (KB)	
2528	2528
EMEM Size (KB)	
4096	0
DSPR (KB)	

(table continues...)

1 TC3x variants for C4C

Table 1 (continued) TC39x_BD step

SAK-TC397XX-256F300C	SAK-TC397XP-256F300C
240 in CPU0&1; 96 other	240 in CPU0&1; 96 other
DLMU (KB)	
64 per CPU	64 per CPU
PSPR (KB)	
64 per CPU	64 per CPU
LMU (KB)	
768	768
DAM (KB)	
128	128
AMU[1)]	
No	No
ADC (Primary Groups/Channels)	
5/40	5/40
ADC (Secondary Groups/Channels)	
4/60	4/60
ADC (Fast Compare Channels)	
8	8
ADC (EDSADC Channels)	
6	6
CAN (Modules/Nodes)	
3/3x4	3/3x4
FlexRay (Modules/Channels)	
2/2x2	2/2x2
HSSL Modules	
2	2
ASCLIN Modules / with ASC & LIN / with 3-wire SPI	
12/12/11	12/12/11
QSPI Modules / with LVDS	
6/2	6/2
SENT Channels	
20	20
MSC Modules	

(table continues...)

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

1 TC3x variants for C4C

Table 1 (continued) TC39x_BD step

SAK-TC397XX-256F300C	SAK-TC397XP-256F300C
2	2
PSI5 Channels	
4	4
PSI5-S Module	
Yes	Yes
SDMMC Module	
Yes	Yes
Max. Ethernet Availability: 1GBit/100Mbit/No	
1Gbit/s	1Gbit/s
MCDS Availability[2)]	
MCDS	MCDS
ADAS Cluster Available	
No	No
CIF	
No	No
HSM Available	
Yes	Yes

2 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.

1.2 TC38x AE step

A table listing the TC38x AE step variants.

Table 2 TC38x_AE step

	SAK-TC387QP-160F300C
Step	
	AE
Production Status	
	Standard
Package Type	
	PG-LFBGA-292
Pinout	
	LFBGA 0.8 mm
Reference Silicon	
	TC38x
Temperature Range (Ambient)	
	SAK
Chip ID ***Attention**: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.*	
	0x8C008784
Cores / Checker Cores	
	4/2
Max. Freq. (MHz)	
	300
Program Flash (MB)	
	10
Data Flash0 (single-ended) (KB)	
	512
Total SRAM (without EMEM and Cache) (KB)	
	1376
EMEM Size (KB)	
	0
DSPR (KB)	
	240 in CPU0&1; 96 other
DLMU (KB)	
	64 per CPU

(table continues...)

1 TC3x variants for C4C

Table 2 (continued) TC38x_AE step

	SAK-TC387QP-160F300C
PSPR (KB)	
	64 per CPU
LMU (KB)	
	128
DAM (KB)	
	64
AMU[3)]	
	No
ADC (Primary Groups/Channels)	
	5/40
ADC (Secondary Groups/Channels)	
	4/60
ADC (Fast Compare Channels)	
	4
ADC (EDSADC Channels)	
	6
CAN (Modules/Nodes)	
	3/3x4
FlexRay (Modules/Channels)	
	2/2x2
HSSL Modules	
	1
ASCLIN Modules / with ASC & LIN / with 3-wire SPI	
	24/24/11
QSPI Modules / with LVDS	
	5/2
SENT Channels	
	20
MSC Modules	
	2
PSI5 Channels	
	4

(table continues...)

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

1 TC3x variants for C4C

Table 2 (continued) TC38x_AE step

	SAK-TC387QP-160F300C
PSI5-S Module	
	Yes
SDMMC Module	
	No
Max. Ethernet Availability: 1GBit/100Mbit/No	
	1Gbit/s
MCDS Availability	
	miniMCDS
ADAS Cluster Available	
	No
CIF	
	No
HSM Available	
	Yes

1.3 TC37x AA step

A table listing the TC37x AA step variants.

Table 3 TC37x_AA step

	SAK-TC377TP-96F300C
Step	
	AA
Production Status	
	Standard
Package Type	
	PG-LFBGA-292
Pinout	
	LFBGA 0.8 mm
Reference Silicon	
	TC37x
Temperature Range (Ambient)	
	SAK
Chip ID ***Attention**: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.*	
	0x89007780
Cores / Checker Cores	
	3/2
Max. Freq. (MHz)	
	300
Program Flash (MB)	
	6
Data Flash0 (single-ended) (KB)	
	256
Total SRAM (without EMEM and Cache) (KB)	
	992
EMEM Size (KB)	
	0
DSPR (KB)	
	240 in CPU0&1; 96 other
DLMU (KB)	
	64 per CPU

(table continues...)

1 TC3x variants for C4C

Table 3 (continued) TC37x_AA step

	SAK-TC377TP-96F300C
PSPR (KB)	
	64 per CPU
LMU (KB)	
	0
DAM (KB)	
	32
AMU[4]	
	No
ADC (Primary Groups/Channels)	
	4/32
ADC (Secondary Groups/Channels)	
	4/60
ADC (Fast Compare Channels)	
	4
ADC (EDSADC Channels)	
	6
CAN (Modules/Nodes)	
	2/2x4
FlexRay (Modules/Channels)	
	1/1x2
HSSL Modules	
	1
ASCLIN Modules / with ASC & LIN / with 3-wire SPI	
	12/12/11
QSPI Modules / with LVDS	
	5/2
SENT Channels	
	15
MSC Modules	
	2
PSI5 Channels	
	2

(table continues...)

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

1 TC3x variants for C4C

Table 3 (continued) TC37x_AA step

	SAK-TC377TP-96F300C
PSI5-S Module	
	Yes
SDMMC Module	
	No
Max. Ethernet Availability: 1GBit/100Mbit/No	
	1Gbit/s
MCDS Availability	
	miniMCDS
ADAS Cluster Available	
	No
CIF	
	No
HSM Available	
	Yes

1.4 TC36x AA step

A table listing the TC36x AA step variants.

Table 4 TC36x AA step

SAK-TC367DP-64F300C	SAK-TC364DP-64F300C
Step	
AA	AA
Production Status	
Standard	Standard
Package Type	
PG-LFBGA-292	PG-QFP-144
Pinout	
LFBGA 0.8 mm	TQFP 0.4 mm
Reference Silicon	
TC36x	TC36x
Temperature Range (Ambient)	
SAK	SAK
Chip ID ***Attention**: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.*	
0x87006780	0x87006480
Cores / Checker Cores	
2/2	2/2
Max. Freq. (MHz)	
300	300
Program Flash (MB)	
4	4
Data Flash0 (single-ended) (KB)	
128	128
Total SRAM (without EMEM and Cache) (KB)	
576	576
EMEM Size (KB)	
0	0
DSPR (KB)	
192 per CPU	192 per CPU
DLMU (KB)	
64 per CPU	64 per CPU

(table continues...)

1 TC3x variants for C4C

Table 4 (continued) TC36x AA step

SAK-TC367DP-64F300C	SAK-TC364DP-64F300C
PSPR (KB)	
32 per CPU	32 per CPU
LMU (KB)	
0	0
DAM (KB)	
0	0
AMU[5)]	
No	No
ADC (Primary Groups/Channels)	
4/32	4/16
ADC (Secondary Groups/Channels)	
2/28	2/21
ADC (Fast Compare Channels)	
2	2
ADC (EDSADC Channels)	
4	4
CAN (Modules/Nodes)	
2/2x4	2/2x4
FlexRay (Modules/Channels)	
1/1x2	1/1x2
HSSL Modules	
1	1
ASCLIN Modules / with ASC & LIN / with 3-wire SPI	
12/12/10	12/12/8
QSPI Modules / with LVDS	
4/1	4/1
SENT Channels	
10	10
MSC Modules	
1	1
PSI5 Channels	
2	2

(table continues...)

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

1 TC3x variants for C4C

Table 4 (continued) TC36x AA step

SAK-TC367DP-64F300C	SAK-TC364DP-64F300C
PSI5-S Module	
Yes	Yes
SDMMC Module	
No	No
Max. Ethernet Availability: 1GBit/100Mbit/No	
1Gbit/s	100Mbit/s (RMII)
MCDS Availability	
No	No
ADAS Cluster Available	
No	No
CIF	
No	No
HSM Available	
Yes	Yes

1.5 TC35x AB step

A table listing the TC35x AB step variants.

Table 5 TC35x AB step

	SAK-TC357TA-64F300C
Step	
	AB
Production Status	
	Standard
Package Type	
	PG-LFBGA-292
Pinout	
	ADAS
Reference Silicon	
	TC35x
Temperature Range (Ambient)	
	SAK
Chip ID ***Attention**: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.*	
	0xB7015781
Cores / Checker Cores	
	3/2
Max. Freq. (MHz)	
	300
Program Flash (MB)	
	4
Data Flash0 (single-ended) (KB)	
	128
Total SRAM (without EMEM and Cache) (KB)	
	1472
EMEM Size (KB)	
	2048
DSPR (KB)	
	240 in CPU0&1; 96 other
DLMU (KB)	
	64 per CPU

(table continues...)

1 TC3x variants for C4C

Table 5 (continued) TC35x AB step

	SAK-TC357TA-64F300C
PSPR (KB)	
	64 per CPU
LMU (KB)	
	512
DAM (KB)	
	0
AMU[6]	
	No
ADC (Primary Groups/Channels)	
	2/16
ADC (Secondary Groups/Channels)	
	0
ADC (Fast Compare Channels)	
	0
ADC (EDSADC Channels)	
	0
CAN (Modules/Nodes)	
	2/2x4
FlexRay (Modules/Channels)	
	1/1x2
HSSL Modules	
	0
ASCLIN Modules / with ASC & LIN / with 3-wire SPI	
	4/4/4
QSPI Modules / with LVDS	
	4/0
SENT Channels	
	0
MSC Modules	
	0
PSI5 Channels	
	0

(table continues...)

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

1 TC3x variants for C4C

Table 5 (continued) TC35x AB step

	SAK-TC357TA-64F300C
PSI5-S Module	
	No
SDMMC Module	
	No
Max. Ethernet Availability: 1GBit/100Mbit/No	
	1Gbit/s
MCDS Availability	
	MCDSlight
ADAS Cluster Available	
	Yes
CIF	
	No
HSM Available	
	Yes

1.6 TC33xEXT AA step

A table listing the TC33xEXT AA step variants.

Table 6 TC33xEXT_AA step

	SAK-TC337DA-32F200C
Step	
	AA
Production Status	
	Standard
Package Type	
	PG-LFBGA-292
Pinout	
	ADAS
Reference Silicon	
	TC33xEXT
Temperature Range (Ambient)	
	SAK
Chip ID ***Attention**: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.*	
	0xB4013780
Cores / Checker Cores	
	2/1
Max. Freq. (MHz)	
	200
Program Flash (MB)	
	2
Data Flash0 (single-ended) (KB)	
	128
Total SRAM (without EMEM and Cache) (KB)	
	456
EMEM Size (KB)	
	1024
DSPR (KB)	
	192 in CPU0; 96 in CPU1
DLMU (KB)	
	8 in CPU0; 64 in CPU1

(table continues...)

Table 6 (continued) TC33xEXT_AA step

	SAK-TC337DA-32F200C
PSPR (KB)	
	32 in CPU0; 64 in CPU1
LMU (KB)	
	0
DAM (KB)	
	0
AMU	
	No
ADC (Primary Groups/Channels)	
	6/40
ADC (Secondary Groups/Channels)	
	0
ADC (Fast Compare Channels)	
	0
ADC (EDSADC Channels)	
	0
CAN (Modules/Nodes)	
	1/1x4
FlexRay (Modules/Channels)	
	0
HSSL Modules	
	0
ASCLIN Modules / with ASC & LIN / with 3-wire SPI	
	6/6/6
QSPI Modules / with LVDS	
	4/0
SENT Channels	
	6
MSC Modules	
	0
PSI5 Channels	
	0
PSI5-S Module	

(table continues...)

Table 6 (continued) TC33xEXT_AA step

	SAK-TC337DA-32F200C
	No
SDMMC Module	
	Yes
Max. Ethernet Availability: 1GBit/100Mbit/No	
	1Gbit/s
MCDS Availability	
	MCDSlight
ADAS Cluster Available	
	Yes
CIF	
	No
HSM Available	
	Yes

1.7 TC33x AA step

A table listing the TC33x AA step variants.

Table 7 TC33x AA step

	SAK-TC334LP-32F200C
Step	
	AA
Production Status	
	Standard
Package Type	
	PG-QFP-144
Pinout	
	TQFP 0.4 mm
Reference Silicon	
	TC33x
Temperature Range (Ambient)	
	SAK
Chip ID ***Attention**: The value of SCU_CHIPID in the UCODE field contains the default value 0 not the µCode version.*	
	0x84003480
Cores / Checker Cores	
	1/1
Max. Freq. (MHz)	
	200
Program Flash (MB)	
	2
Data Flash0 (single-ended) (KB)	
	128
Total SRAM (without EMEM and Cache) (KB)	
	208
EMEM Size (KB)	
	0
DSPR (KB)	
	192
DLMU (KB)	
	8 in CPU0

(table continues...)

1 TC3x variants for C4C

Table 7 (continued) TC33x AA step

	SAK-TC334LP-32F200C
PSPR (KB)	
	8 in CPU0
LMU (KB)	
	0
DAM (KB)	
	0
AMU[7)]	
	No
ADC (Primary Groups/Channels)	
	2/16
ADC (Secondary Groups/Channels)	
	2/26
ADC (Fast Compare Channels)	
	0
ADC (EDSADC Channels)	
	0
CAN (Modules/Nodes)	
	2/8
FlexRay (Modules/Channels)	
	1/2
HSSL Modules	
	0
ASCLIN Modules / with ASC & LIN / with 3-wire SPI	
	12/12/10
QSPI Modules / with LVDS	
	4/0
SENT Channels	
	6
MSC Modules	
	0
PSI5 Channels	
	0

(table continues...)

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

Table 7 (continued) TC33x AA step

SAK-TC334LP-32F200C
PSI5-S Module
No
SDMMC Module
No
Max. Ethernet Availability: 1GBit/100Mbit/No
No
MCDS Availability
No
ADAS Cluster Available
No
CIF
No
HSM Available
Yes

Revision history

Document version	Date of release	Description of changes
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