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Product :	ETK-S4.2			
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File :	ETK-S4.2_Change_Information_V09.doc			
TTNr :	ETK-S4.2A: F-00K-104-960 ETK-S4.2B: F-00K-105-529 ETK-S4.2C: F-00K-106-737			
Comments :	<p align="center">ETK-S4.2A and ETK-S4.2B</p> <p align="center">Currently shipped: 112334A010 EPLD version: V11 FPGA-Boot version: V23 FPGA-A version: V34 Hardware-state: A010</p>		<p align="center">ETK-S4.2C</p> <p align="center">Currently shipped: 234553A011 EPLD version: V23 FPGA-Boot version: V45 FPGA-A version: V53 Hardware-state: A011</p>	
Created:	Name Mai	Department PRM-H	Signature Mai	Date 01.02.2013
Released:	Name Meerwein	Department EHE2	Signature Meerwein	Date 01.02.2013

Changes

Revision	Description	Date	Name	Signature
01	112331A010 for ETK-S4.2A and ETK-S4.2B Initial version	02.08.2007	Mai	Mai
02	112332A010 for ETK-S4.2A and ETK-S4.2B Support of new μ C [chapter 2.3.2 & 3.2]	27.11.2007	Mai	Mai
03	112332A010 for ETK-S4.2A and ETK-S4.2B Support of new μ C [chapter 2.3.2 & 3.2]	11.02.2008	Mai	Mai
04	112332A010 for ETK-S4.2A and ETK-S4.2B Support of new μ C [chapter 2.3.2 & 3.2]	08.10.2008	Spr	Spr
05	112333A010 for ETK-S4.2A and ETK-S4.2B New FPGA Version [chapter 3.2.3] 234548A011 for ETK-S4.2C Initial Version [chapter 2 & 3.3 & 4.4]	20.04.2010	Mai	Mai
06	234550A011 for ETK-S4.2C Support of new μ C [chapter 2.3.2 & 3.3]	26.10.2010	Mai	Mai
07	112334A010 for ETK-S4.2A and ETK-S4.2B 234552A011 for ETK-S4.2C New FPGA Version [chapter 3.2.3] [chapter 3.3.3]	24.01.2011	Mai	Mai
08	234552A011 for ETK-S4.2C Support of new μ C [chapter 2.3.2]	19.05.2011	Mai	Mai
09	234553A011 for ETK-S4.2C New FPGA Version [chapter 3.3.3]	01.02.2013	Mai	Mai

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1 General remarks to this document

This document consists of three main parts.

Chapter 2 contains general information about the required tool-chain to use these ETKs.

Three different items are described.

- Explanation of the version-system of the ETK-S4.2
- Description of the different product variants
- The required versions of software (INCA / ASCET) , HSP (calibration hardware firmware of e.g. ES59x, ES690, ES1232, ...) and ETK - hardware.
Additionally other requirements for running the ETK.

Chapter 3 contains information about PLD-Code changes concerning these ETKs.

Chapter 4 contains information about hardware changes concerning these ETKs.

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2 Version description and Tool-Chain Information

2.1 Version-Syntax of the ETK-S4.2

The ETK-S4.2 version information is located on the sticker of the ETK or can be read out of the ETK using the ETK-Configuration Tool.

The version information has the following syntax: **aabbccdeee/ff**

PLD-Code Information:

aa: EPLD-Code version (10, 11, 12...)	see chapter 3
bb: FPGA-Boot-Code version (10, 11, 12...)	see chapter 3
cc: FPGA-A-Code version (10, 11, 12...)	see chapter 3

Hardware-Information:

d : PCB version (A, B, C, ...)	
eee: Hardware state of the PCB (010, 011, 012, ...)	see chapter 4
ff: Assembly variant of the PCB (00, 01, 02, ...)	

The first delivered hardware states of the ETK-S4.2 were the following:

- ETK-S4.2A: **112331A010/01**
- ETK-S4.2B: **112331A010/02**
- ETK-S4.2C: **234548A011/10**

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2.2 Product Variants

In general the ETK-S4.2 can be purchased in three variants.

- The functionality of ETK-S4.2A and ETK-S4.2B is identical, but the connectors are different in each version.
- The ETK-S4.2C differs in the supported microcontroller family, in comparison to the other versions, and in the connectors.
- the mechanical dimension is identical, for all three variants:

DIM	MILLIMETERS	INCHES
A	60.00 ^{+0.2} _{-0.2}	2.362 ^{+0.008} _{-0.008}
B	56.50 ^{+0.1} _{-0.1}	2.224 ^{+0.004} _{-0.004}
C	33.00 ^{+0.2} _{-0.2}	1.299 ^{+0.008} _{-0.008}
D	3.50 ^{+0.1} _{-0.1}	0.138 ^{+0.004} _{-0.004}
E	3.00 ^{+0.1} _{-0.1}	0.118 ^{+0.004} _{-0.004}
F	37.00 ^{+0.1} _{-0.1}	1.457 ^{+0.004} _{-0.004}
G	40.00 ^{+0.2} _{-0.2}	1.575 ^{+0.008} _{-0.008}
H	2.60 ^{+0.1} _{-0.0}	0.102 ^{+0.004} _{-0.000}

2.2.1 ETK-S4.2A

Item number	F-00K-104-960
Description	Emulator Probe for the Infineon AU00-F or AU00-NG microprocessor, ECU adaption via 26 pin Erni plug
For details refer to datasheet	

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2.2.2 ETK-S4.2B

Item number	F-00K-105-529
Description	ETK-S4.2B Emulator Probe for the Infineon AUDDO-F and AUDDO-NG microprocessor, ECU adaption via 12 pin Erni and 7 pin JST plug
For details refer to datasheet	

2.2.3 ETK-S4.2C

Item number	F-00K-106-737
Description	ETK-S4.2C Emulator Probe for the Infineon AUDDO-MAX microprocessor, ECU adaption via 12 pin Erni and 7 pin JST plug
For details refer to datasheet	

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2.3 Version information of the Tool-Chain components

To get this ETK running with the other components of the Tool-Chain please make sure that the version mentioned below or a newer one is used. If your software-, firmware- or hardware version is older, please update it. If you have any problems to get this ETK running please contact our local customer support or sales representative.

The registered users with a valid INCA SW Service Contract will automatically receive the newest INCA-version (CD-ROM).

Updates or refreshes can also be downloaded from the ETAS homepage:

www.etas.com

2.3.1 Hardware support

The ETK-S4.2 is supported by ES690, ES59x, ES910 and ES100.2/3 system with ES1232.

2.3.2 Software and microcontroller support

List of supported Infineon microcontroller:

- ETK-S4.2A and ETK-S4.2B

Microcontroller	HSP	INCA	ETK Drivers and Tools	ASCET-RP	INTECRIO
TC1736ED ²⁾	V7.1.0	V6.2.1	V2.1.0	V6.0.0	V3.1.0
TC1766 ¹⁾	V4.2	V5.3	n. a.	V5.4	V1.1
TC1766ED ¹⁾	V4.2	V5.3	n. a.	V5.4	V1.1
TC1767 ²⁾	V7.1.0	V6.2.1	V2.1.0	V6.0.0	V3.1.0
TC1767ED	V6.1.1	V6.1	V1.1.1	V5.6	V3.0
TC1796 ¹⁾	V4.2	V5.4	n. a.	V5.4	V1.1
TC1796ED ¹⁾	V4.2	V5.4	n. a.	V5.4	V1.1
TC1797 ²⁾	V7.1.0	V6.2.1	V2.1.0	V6.0.0	V3.1.0
TC1797ED ²⁾	V6.1.1	V6.1	V1.1.2	V5.6	V3.0

¹⁾ Operating the ETK-S4.2 in the ETK-S4.1 mode with limited function scope (ETK-S4.2 features "Pull CalWakeUp until Startup Handshake" and "Debugger Detection and Watchdog Disable" are not supported)

²⁾ Feature "Protocol based page switching using OCON" is supported

- ETK-S4.2C

Microcontroller	HSP	INCA	ETK Drivers and Tools	ASCET-RP	INTECRIO
TC1724ED	V8.1.4	V6.2.1	V2.1.11	V6.0.1	V3.1.0
TC1728ED	V8.1.4	V6.2.1	V2.1.11	V6.0.1	V3.1.0
TC1782ED	V8.1.4	V6.2.1	V2.1.5	V6.0.1	V3.1.0
TC1791 ¹⁾	V8.1.4	V6.2.1	V2.1.9	V6.0.1	V3.1.0
TC1791ED ¹⁾	V8.1.4	V6.2.1	V2.1.9	V6.0.1	V3.1.0
TC1793 ¹⁾	V8.1.4	V6.2.1	V2.1.9	V6.0.1	V3.1.0
TC1793ED ¹⁾	V8.1.4	V6.2.1	V2.1.9	V6.0.1	V3.1.0
TC1798 ¹⁾	V8.1.4	V6.2.1	V2.1.9	V6.0.1	V3.1.0
TC1798ED ¹⁾	V8.1.4	V6.2.1	V2.1.9	V6.0.1	V3.1.0

¹⁾ No page switching via direct register access possible with EES-AA step of this microcontroller

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3 PLD-Code Changes

3.1 General remarks to this chapter

The programmable logic code within the ETK-S4.2 is stored onto programmable logic devices (FPGA and EPLD). For the version syntax please refer to chapter 2.1.

3.2 ETK-S4.2A and ETK-S4.2B

3.2.1 EPLD-Code

Revision	File date	Description
Version 1.1	18.08.2005	Initial Version

Delivery condition:
The EPLD version 1.1 will be programmed into all shipments.

3.2.2 FPGA-Boot-Code

Revision	File date	Description
Version 2.3	16.05.2007	Initial Version

Delivery condition:
The FPGA-Boot version 2.3 will be programmed into all new shipments.

3.2.3 FPGA-A-Code

Revision	File date	Description
Version 3.1	16.05.2007	Initial Version
Version 3.2	16.11.2007	The FPGA Code has to be adapted in order to support new Microcontrollers. This Version additionally supports the TC1736ED, TC1767, TC1767ED, TC1797 and TC1797ED.
Version 3.3	13.04.2010	New FPGA code to improve EMC robustness of HD-Reset line
Version 3.4	18.01.2011	New FPGA code to ensure correct recovery after unexpected reset under high measurement load.

Delivery condition:
The FPGA A version 3.4 will be programmed into all new shipments.

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3.3 ETK-S4.2C

3.3.1 EPLD-Code

Revision	File date	Description
Version 2.3	28.01.2010	Initial Version

Delivery condition:

The EPLD version 2.3 will be programmed into all shipments.

3.3.2 FPGA-Boot-Code

Revision	File date	Description
Version 4.5	28.01.2010	Initial Version

Delivery condition:

The FPGA-Boot version 4.5 will be programmed into all new shipments.

3.3.3 FPGA-A-Code

Revision	File date	Description
Version 4.8	26.03.2010	Initial Version
Version 5.0	06.10.2010	The FPGA Code has to be adapted in order to support new Microcontrollers. This Version additionally supports the TC1791, TC1791ED, TC1793, TC1793ED, TC1798 and TC1798ED
Version 5.2	17.01.2011	New FPGA code to ensure correct recovery after unexpected reset under high measurement load.
Version 5.3	22.01.2013	Enable alternative configuration for using DAI2 output pin as WDGDIS instead

Delivery condition:

The FPGA A version 5.3 will be programmed into all new shipments.

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4 Hardware Changes

4.1 General remarks to this chapter

Hardware problems or obsolete parts can make it necessary to change the manufacturing of this ETK. Information about the changes is listed underneath. For the version syntax please refer to chapter 2.1.

4.2 ETK-S4.2A

Hardware-state	Description
A010	Initial Version

Delivery condition

The hardware-state A010 will be delivered with all new shipments.

4.3 ETK-S4.2B

Hardware-state	Description
A010	Initial Version

Delivery condition

The hardware-state A010 will be delivered with all new shipments.

4.4 ETK-S4.2C

Hardware-state	Description
A011	Initial Version

Delivery condition:

The hardware-state A011 will be delivered with all new shipments.

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5 Abbreviations

ETK	Emulator test probe
ES1000	VME - system, successor of INCA-VME
INCA-VME	Old VME - system for MC and RP
ES690	MC hardware, successor of MAC2
MAC2	Old MC hardware
INCA	MC software, successor of VS100
VS100	MC software
ETK Configuration Tool	Configuration Software, in order to configure an ETK, successor of the old DOS tool
DOS ETK-Config-Tool	Old configuration software, in order to configure an ETK
HSP	H ardware S ervice P ack; ETAS product which includes the firmware for the complete ETAS hardware, shipped together with INCA but also available as standalone product, download at ETAS homepage possible
Firmware	Software for MC hardware; necessary for implementation of new features or bugfixes
Hotfix	Software bugfix for a refresh version
Tool-chain	MC hardware (e.g. ES690) and software (e.g. INCA)
MC	M easurement & C alibration
RP	R apid P rototyping
PLD	P rogrammable L ogic D evice
FPGA	F ree P rogrammable G ate A rray; interface component to the application hardware
PCB	P rinted C ircuit B oard
DPR	Dual Ported RAM; special RAM onto the ETK which allows an access from ECU and application hardware at the same time
/CS	Chip select