

Product:	ETK-S20.1	Rev :	13	Page 1 of 10
Title :	Release-Notes			

DRIVING EMBEDDED EXCELLENCE



Product :	ETK-S20.1A			
Title :	Release Notes			
File :	ETK-S20.1_Release-Notes_V13.docx			
TTNR :	F-00K-109-139			
Comments :	<p>Currently shipped for ETK-Mode: 337278B010/01</p> <p>EPLD version: V33 FPGA-Boot version: V72 FPGA-A version: V78 Hardware-state: B010/01</p> <p>Currently shipped for FETK-Mode: 33140240B010/01</p> <p>EPLD version: V33 FPGA-Boot version: V1.4.0 FPGA-A version: V2.4.0 Hardware-state: B010/01</p>			
Created:	Name R. Mai	Department PGA/PRM-M2	Signature R. Mai	Date 2017-11-17
Released:	Name A. Sprenger	Department NE/PJM	Signature A. Sprenger	Date 2017-11-17

Changes

Revision	Description	Date	Name	Signature
01	114446B010/00 for ETK-S20.1A - Initial version	2013-09-12	Mai	Mai
02	114446B010/00 – new μ C support [chapter 2.4]	2013-11-20	Spr	Spr
03	114447B010/00 – generic μ C support and new FPGA Version added [chapter 2.4 & 5.4]	2014-03-14	Mai	Mai
04	114447B010/00 – new μ C support [chapter 2.4]	2014-05-20	Mai	Mai
05	114449B010/00 – HARR handling added [chapter 5.4]	2015-03-16	Mai	Mai
06	337175B010/00 33120130B010/01 – Support of ES891 added [chapter 5.4]	2015-06-30	Mor	Mor
07	337277B010/00 33130150B010/01 – Bugfix	2015-09-29	Khm	Khm

Product:	ETK-S20.1	Rev :	13	Page 2 of 10
Title :	Release-Notes			

08	337278B010/00 – SBB support added and FPGA Update 33130180B010/01 [chapter 3.1] and [chapter 5.4]	2016-04-19	Mai	Mai
09	337278B010/00 33130190B010/01 – Bugfix [chapter 3.1] and [chapter 5.6]	2016-06-08	Mai	Mai
10	337278B010/00 331301100B010/01 – Bugfix [chapter 3.1] and [chapter 5.6]	2016-09-14	Mai	Mai
11	337278B010/00 33130200B010/01 – Bugfix [chapter 3.1] and [chapter 5.6]	2016-10-17	Mai	Mai
12	337278B010/00 33140210B010/01 – New or Enhanced Functions [3.1.1] and Firmware Modification [5.6]	2016-12-16	Spr	Spr
13	337278B010/00 33140240B010/01 – Bugfix [chapter 3.1] and [chapter 5.6]	2017-11-17	Mai	Mai

Product:	ETK-S20.1	Rev :	13	Page 3 of 10
Title :	Release-Notes			

Table of content

1	General Information	4
1.1	Safety Notice	4
1.2	System Requirements	4
1.3	Restrictions	4
1.4	Miscellaneous.....	5
2	Version Syntax and Tool-Chain Information	5
2.1	Version-Syntax of the ETK-S20.1A	5
2.2	Version information of the tool-chain components	6
2.3	Hardware support	6
2.4	Software and microcontroller support	6
3	What's New - Release Notes	7
3.1	New or Enhanced Functions	7
3.1.1	In INCA 7.2.7 and HSP V11.7.0	7
3.1.2	In INCA 7.2.3 and HSP V11.3.0	7
3.1.3	In INCA 7.2.2 HF2 and HSP V11.2.1	7
3.1.4	In INCA 7.2.2 and HSP V11.2.0	7
3.1.5	In INCA 7.2.1 and HSP V11.1.0	7
3.1.6	In INCA 7.2.0 and HSP V10.10.1	8
3.1.7	In INCA 7.1.10 and HSP V10.10.0.....	8
3.1.8	In INCA 7.1.9 and HSP V10.9.0	8
3.1.9	In INCA 7.1.8 and HSP V10.8.0	8
3.1.10	In INCA 7.1.4 and HSP V10.4.0	8
3.1.11	In ETK Drivers & Tools V3.12.0 and HSP V10.3.0.....	9
3.2	Known issues	9
3.2.1	In HSP V10.3.0.....	9
3.2.2	In HSP V10.9.1.....	9
4	Product Variants.....	10
4.1	ETK-S20.1A.....	10
5	Firmware Modifications	11
5.1	General remarks to this chapter	11
5.2	EPLD-Code.....	11
5.3	FPGA-Boot-Code for ETK-Mode	11
5.4	FPGA-Boot-Code for FETK-Mode.....	11
5.5	FPGA-Code for ETK-Mode	12
5.6	FPGA-Work-Code for FETK-Mode.....	12
6	Hardware Modifications	13
6.1	General remarks to this chapter	13
6.2	No modification at hardware state B010/01.....	13
6.3	Hardware delivery condition	13
7	Abbreviations	14

Product:	ETK-S20.1	Rev :	13	Page 4 of 10
Title :	Release-Notes			

1 General Information

1.1 Safety Notice

Calibration activities influence the behavior of the ECU and the systems controlled by the ECU. This may result in unexpected behavior of the vehicle and thus can lead to safety critical situations. Only well trained personnel should be allowed to perform calibration activities.

1.2 System Requirements

The following minimum system prerequisites have to be met:

Required Hardware

- 2 GHz Processor
- 2 GB RAM
- DVD-ROM drive (for installation)
- Network adapter
- Graphics with a resolution of at least 1024x768, 256MB RAM, 16bit color and DirectX 9

Required Operating System

- Windows® XP SP3 (32bit) or higher,
- Windows® Vista SP1 (32bit) or higher,
- Windows® 7 SP1 (32 or 64bit*) or higher.
- Windows 8 (32 / 64 bit*)

*) INCA uses the 32bit compatibility mode on a 64-bit operating system.

Required Free Disk Space

- 250 MB (not including the size for application data)

The following system prerequisites are recommended:

Recommended Hardware

- 3 GHz Quad-Core Processor or equivalent
- 4 GB RAM
- DVD-ROM drive (for installation)
- Network adapter
- Graphics with a resolution of at least 1280 x 1024, 1GB RAM, 32bit color and DirectX 9

Recommended Operating System

- Windows® 7 SP1 64bit (INCA uses the 32bit compatibility mode on a 64-bit operating system)

Recommended Free Disk Space

- >500 MB

1.3 Restrictions

WINDOWS® 95b, WINDOWS® NT, WINDOWS® 2000 and WINDOWS® 98SE are not supported

Product:	ETK-S20.1	Rev :	13	Page 5 of 10
Title :	Release-Notes			

1.4 Miscellaneous

To ensure the highest data throughput from the ETK device up to the PC system no other PC software should be run via this Ethernet adapter.

2 Version Syntax and Tool-Chain Information

2.1 Version-Syntax of the ETK-S20.1A

The **ETK-S20.1A hardware version** information is located on the product sticker and can be read out of the ETK using the firmware update tool HSP or XETK Configuration Tool.

Overall Hardware Version Syntax: **aabbccdeee/ff**

Description of PLD-Code Information (modification details refer chapter 3)

ETK-Mode:

aa EPLD-Code version (11, 12, 13, ...)
bb FPGA-Boot-Code version (11, 12, 13, ...)
cc FPGA-Code version (11, 12, 13, ...)

FETK-Mode:

aa EPLD-Code version (11, 12, 13, ...)
bbb FPGA-Boot-Code version (11, 12, 13, ...)
ccc FPGA-Code version (11, 12, 13, ...)

The hardware version of the PCB is also located on the label attached to the PCBs. These version is subordinate to the Overall hardware state cannot be read out by software.

PCB Hardware State Syntax: **deee/ff**

Description of Hardware-Information (modification details refer chapter 4)

D PCB Version (A=V1.0, B=V1.1, C=V1.2, ...)
eee PCB Hardware State (010, 011, 012, ...)
ff PCB Population Variant (00, 01, 02, ...)

The first delivered hardware state of the ETK-S20.1A is the following:

ETK-Mode: ETK-S20.1A: **337277B010/01**

FETK-Mode: ETK-S20.1A: **33130150B010/01**

Product:	ETK-S20.1	Rev :	13	Page 6 of 10
Title :	Release-Notes			

2.2 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.

Updates or refreshes can be downloaded from the ETAS homepage:

<http://de.etasgroup.com>

<http://en.etasgroup.com>

2.3 Hardware support

The ETK-S20.1A is supported by ES59x, ES891, ES910 and ES1000.2/3 System with ES1232.

2.4 Software and microcontroller support

Microcontroller	HSP	INCA	ETK Tools	ASCET-RP	INTECRIO
TC2D5-ED	V9.7.0	V7.0.0	V3.5.0	V6.1.3	V4.2.0
TC27x-ED A-Step	V9.7.0	V7.0.0	V3.5.0	V6.1.3	V4.2.0
TC27x-ED B-Step	V10.2.0	V7.0.0	V3.11.0	V6.1.3	V4.2.0
TC27x-ED C-Step ¹⁾	V10.4.0	V7.0.0	V3.11.0	V6.1.3	V4.2.0
TC26x-ED	V10.3.0	V7.1.3	V3.12.0	V6.1.3	V4.2.0
TC29x-ED	V10.3.0	V7.1.3	V3.12.0	V6.1.3	V4.2.0
TC2xx_Generic_Cfg1	10.4.0	7.1.4	V4.0.0	V6.1.3	V4.2.0

¹⁾ and higher versions (microcontroller steps) if they support the C-step specifications

3 What's New - Release Notes

This chapter lists the main improvements compared to a previous shipped ETK product. Additionally a detailed list of already known issues can be found here.

3.1 New or Enhanced Functions

3.1.1 In INCA 7.2.7 and HSP V11.7.0

Issue Identifier	Description
578494	Bugfix: FETK ECU Access error when debugger is connected

3.1.2 In INCA 7.2.3 and HSP V11.3.0

Issue Identifier	Description
n/a	Support of reconfigurable size, moveable EMU RAM (LERT V3) in FETK mode
n/a	XCP Debug API: responsive behavior in case of non-existing memory access improved in FETK mode
n/a	Support of IEEE 1588 time synchronization in FETK mode
n/a	Support of SBB V2.1 and SBB V3.1 in FETK mode
553146, 551481	Improved stability of ETK-S20 Update in FETK mode
553705	New FETK boot HDC for production. No functional changes.

3.1.3 In INCA 7.2.2 HF2 and HSP V11.2.1

Issue Identifier	Description
n/a	increased performance for debugging over XCP
502023	Support of fast raster use cases
534258	Performance optimization of ETK on ES891. 100µs raster beside other raster is now possible

3.1.4 In INCA 7.2.2 and HSP V11.2.0

Issue Identifier	Description
n/a	enhancement of monitor to log lost measurement data
537202	No measure values via ETK if ES891 is in use

3.1.5 In INCA 7.2.1 and HSP V11.1.0

Product:	ETK-S20.1	Rev :	13	Page 8 of 10
Title :	Release-Notes			

Issue Identifier	Description
n/a	SW debugger arbitration in FETK modi
n/a	MCE V2 Support in FETK mode
523931	Calwakeup bit added to HS pattern in FETK mode
n/a	HS without ES device could be performed twice

3.1.6 In INCA 7.2.0 and HSP V10.10.1

Issue Identifier	Description
518185	ETK Handshake fails powering ECU and ETK simultaneously on
523056	Update of Dual-mode FW is not possible
n/a	Calwakeup reset after ES89x disconnect (im FETK mode)
n/a	Support of Service Based Bypass V2.1 and V3.1 (min. SW requirements: ASCET V6.4.0 or INTECRIO V4.6.0)

3.1.7 In INCA 7.1.10 and HSP V10.10.0

Issue Identifier	Description
476580	MC_WAIT Bit always on
484663, 484664	Calibration under special conditions not working
480157	Added XCP service request "SERV_RESET". Gives the user a hint to reset the ECU if ECU and FETK are powered at the same time.

3.1.8 In INCA 7.1.9 and HSP V10.9.0

Issue Identifier	Description
n/a	Support of ES891

3.1.9 In INCA 7.1.8 and HSP V10.8.0

Issue Identifier	Description
n/a	Added capability to issue "Halt-after-Reset" sequence immediately after end of ECU reset to enable recovery of brain-dead ECU.

3.1.10 In INCA 7.1.4 and HSP V10.4.0

Issue Identifier	Description
call 376880 & 377113	Stabilization of handshake with TC275ED B-Step

Product:	ETK-S20.1	Rev :	13	Page 9 of 10
Title :	Release-Notes			

n/a	Support of new microcontroller: - Generic device "TC2xx_Generic_Cfg1"
-----	--

3.1.11 In ETK Drivers & Tools V3.12.0 and HSP V10.3.0

Issue Identifier	Description
n/a	Support of new microcontrollers: - INFINEON TC26x-ED - INFINEON TC29x-ED

3.2 Known issues

3.2.1 In HSP V10.3.0

Issue Identifier	Description
Call #376880	Handshake between ECU and ETK fails rarely with TC27x-ED B-Step

3.2.2 In HSP V10.9.1

Issue Identifier	Description
Call #475942	The HSP 10.9.1 supports only one FETK, connected on port FETK1. Nevertheless an FETK, connected on port FETK2 will be displayed with the HSP. Do not update the FETK, connected on port FETK2.

4 Product Variants

In general the ETK-S20.1A can be purchased in one variant.

4.1 ETK-S20.1A

Item number	F-00K-109-139																											
Description	ETK-S20.1A Emulator Probe for the Infineon AURIX microprocessor family, ECU adaption via 10 SAMTEC 5 pin JST plug, with further adapter.																											
For details refer the datasheet	<table border="1"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> <th>INCHES</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>60.00^{+0.2}_{-0.2}</td> <td>2.362^{+0.008}_{-0.008}</td> </tr> <tr> <td>B</td> <td>56.50^{+0.1}_{-0.1}</td> <td>2.224^{+0.004}_{-0.004}</td> </tr> <tr> <td>C</td> <td>35.00^{+0.2}_{-0.2}</td> <td>1.380^{+0.008}_{-0.008}</td> </tr> <tr> <td>D</td> <td>3.50^{+0.1}_{-0.1}</td> <td>0.138^{+0.004}_{-0.004}</td> </tr> <tr> <td>E</td> <td>3.00^{+0.1}_{-0.1}</td> <td>0.118^{+0.004}_{-0.004}</td> </tr> <tr> <td>F</td> <td>37.00^{+0.1}_{-0.1}</td> <td>1.457^{+0.004}_{-0.004}</td> </tr> <tr> <td>G</td> <td>40.00^{+0.2}_{-0.2}</td> <td>1.575^{+0.008}_{-0.008}</td> </tr> <tr> <td>H</td> <td>2.60^{+0.1}_{-0.0}</td> <td>0.102^{+0.004}_{-0.000}</td> </tr> </tbody> </table>	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	35.00 ^{+0.2} _{-0.2}	1.380 ^{+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}
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	35.00 ^{+0.2} _{-0.2}	1.380 ^{+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}																										

5 Firmware Modifications

5.1 General remarks to this chapter

The programmable logic code within the ETK-S20.1A is stored onto programmable logic devices (FPGA, CPLD). For the version syntax please refer to chapter 2.1.

Attention:

For updating the ETK - firmware with a later version by using HSP, all ETK firmware packages will be updated one after another. This will last a few minutes and must not be cancelled by the user. In case the firmware update had been finished unsuccessfully due to some reason, the update will have to be repeated. HSP will program the rescue packages onto the ETK. This procedure makes the firmware update fail-safe.

5.2 EPLD-Code

Revision	Description
Version 1.1	Initial Version
Version 3.3	Added ES891 Support

Delivery condition:

The EPLD version 3.3 will be programmed into all shipments

5.3 FPGA-Boot-Code for ETK-Mode

Revision	Description
Version 4.4	Initial Version
Version 7.1	Added ES891 Support
Version 7.2	Bug fixes for ES891 support

Delivery condition:

The FPGA-Boot version 7.2 will be programmed into all shipments

5.4 FPGA-Boot-Code for FETK-Mode

Revision	Description
Version 1.2.0	Initial Version
Version 1.3.0	Bug fixes for ES891 support
Version 1.4.0	New FETK boot HDC for production. No functional changes.

Delivery condition:

The FPGA-Boot version 1.4.0 will be programmed into all shipments

Product:	ETK-S20.1	Rev :	13	Page 12 of 10
Title :	Release-Notes			

5.5 FPGA-Code for ETK-Mode

Revision	Description
Version 4.6	Initial Version
Version 4.7	Stabilization of handshake with TC275ED B-Step
Version 4.9	HARR handling added to enable recovery of brain-dead ECU
Version 7.5	Added ES891 Support
Version 7.7	Bug fixes: Reconnection approved
Version 7.8	Keep ECU in reset until ETK is initialized

Delivery condition:

The FPGA version 7.8 will be programmed into all shipments

5.6 FPGA-Work-Code for FETK-Mode

Revision	Description
Version 1.3.0	Initial Version
Version 1.5.0	Bug fixes: MC Wait Bit, quick power cycle
Version 1.8.0	Delay handshake until ES891 has finished ETK configuration
Version 1.9.0	Bug fixes: - 523931, Calwakeup bit added to HS pattern in FETK mode - n/a, Handshake without ES device could be performed twice
Version 1.10.0	Filesystem update for FETK mode
Version 2.1.0	- Support for fast raster use cases - Increased performance for debugging over XCP - Improved stability of ETK-S20 Update in FETK mode (553146, 551481)
Version 2.4.0	Bug fix: - 578494 FETK ECU Access error when debugger is connected

Delivery condition:

The FPGA-Work version 2.4.0 will be programmed into all shipments

Product:	ETK-S20.1	Rev :	13	Page 13 of 10
Title :	Release-Notes			

6 Hardware Modifications

6.1 General remarks to this chapter

Hardware issues or obsolete parts can make it necessary to modify the population of the ETK. Information about the modifications is listed underneath. The hardware state starts with version **B010/00**. For the version syntax please refer to chapter 2.1.

6.2 No modification at hardware state B010/01

6.3 Hardware delivery condition

The hardware state **B010/01** will be delivered with all new shipments.

Product:	ETK-S20.1	Rev :	13	Page 14 of 10
Title :	Release-Notes			

7 Abbreviations

ETK	Product (emulator test probe)
ES1000	VME - system, successor of INCA-VME
INCA-VME	Old VME - system for MC and RP
ES891	MC hardware
ES690	MC hardware, successor of MAC2
ES59x	MC hardware, successor of ES690
MAC2	Old MC hardware
INCA	Measurement and Calibration Software of ETAS
ASCET-RP	Rapid Prototyping Software of ETAS
INTECRIO	Rapid Prototyping Software of ETAS
XETK Configuration Tool	Configuration Software, in order to configure a (X)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 bug fixes
Hot-fix	Software bug-fix 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
CPLD	C omplex P rogrammable L ogic D evice
FPGA	F ield 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