Product :	FETK-T4.0B			
Title :	Release Notes			
File :	FETK-T4.0B_Release-Notes_V11.docx			
TTNR :	F-00K-113-469			
Comments :	Currently shipped: **122512967A010/02** FPGA-Boot version: V1.2.25 FPGA-A version: V1.29.67 CPLD version: V1.2.3 Hardware-state: A010/02			
Created:	Name R. Mai	Department DAP/XPC-Fe1	Signature R. Mai	Date 2024-08-21
Released:	Name A. Sprenger	Department DAP/XPC-Fe1	Signature A. Sprenger	Date 2024-08-21

Changes

Revision	Description	Date	Name	Signature
01	122511936A010/02 - for FETK-T4.0B - Initial version	2022-02-25	Mai	Mai
02	122511936A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2022-06-20	Mai	Mai
03	122512112A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2022-09-16	Mai	Mai
04	12251227A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2022-11-18	Mai	Mai
05	12251237A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2023-03-16	Mai	Mai
06	122512442A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2023-06-15	Mai	Mai
07	122512512A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2023-09-19	Mai	Mai
08	122512611A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2023-11-24	Mai	Mai

09	122512717A010/02 - New or Enhanced Functions [3.1] and Firmware Modification [5.3]	2024-02-08	Mai	Mai
10	122512831A010/02 - New or Enhanced Functions [3.1] and FPGA Modification [5.3]	2024-06-06	Mai	Mai
11	122512967A010/02 - New or Enhanced Functions [3.1] and FPGA Modification [5.3]	2024-08-21	Mai	Mai

Table of content

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

To access the ECU the FETK-T4.0B has to be connected via ES89x modules.

The system can be used for high speed Measurement, Calibration and ECU flash programming with INCA. Support of ASCET / INTECRIO Rapid Prototyping applications e.g. functional prototyping – bypass depends on the functionality of connected modules. For supported tool versions refer to chapter 2.4. The FETK-T4.0B and ES89x system use the standardized protocol "XCP on Ethernet" for PC communication. Thus 3rd party tools can be connected to the ECU as well.

2 Version Syntax and Tool Chain Information

2.1 Version-Syntax of the FETK-T4.0B

The **FETK-T4.0B hardware version** information is located on the product sticker and can be read out of the FETK using the firmware update tool HSP or XETK Configuration Tool.

Overall Hardware Version Syntax: **aaabbbcddd/ee**

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

aaa FPGA-Boot-Code version (1.0.0, 1.0.1, 1.0.2, …)
bbb FPGA-Code version (1.0.0, 1.0.1, 1.0.2, …)

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)

c PCB Version (A=V1.0, B=V1.1, C=V1.2, …)
ddd PCB Hardware State (010, 011, 012, …)
ee PCB Population Variant (00, 01, 02, …)

The first delivered hardware state of the FETK-T4.0B is the following:

FETK-T4.0B: **122511936A010/02**

2.2 Version information of the tool chain components

To get this FETK 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 using HSP.
If you have any problems to get this FETK 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 FETK-T4.0B is supported by ES891.

2.4 Software and microcontroller support

Microcontroller	**HSP**	**INCA**	**ETK Tools**	**ASCET-RP**	**INTECRIO**
STM SR6X7	V13.0.0	V7.4.0	V4.3.0	V6.4	V4.6
STM SR6P7	V13.6.0	V7.4.6	V4.3.6	V6.4	V4.6

3 What's New - Release Notes

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

3.1 New or Enhanced Functions

3.1.1 In INCA 7.5.2 and HSP 14.2.0

Issue Identifier	Description
ETKF-2898	Multiple distab 17 events config and output areas
ETKF-2968	Implement monitor variables for ATU raw trace data rate 100ms
ETKF-2904	Improvement concept for writing the FGT configuration on ECU LUA
TFS 762366, TFS 754982	FETK-T4.0B: Improve workaround of TFS 754982 to eliminate possible false positives
TFS 761633	TI_I751 [INCA/FETK S1B] - Measurement breaks after disconnecting and reconnection of ECU VCC

3.1.2 In INCA 7.5.1 and HSP 14.1.0

Issue Identifier	Description
ETKF-2766	increased number of trace windows
TFS 762366	Implausible trace-based measured values with INCA and HSP – workaround implemented to avoid forwarding erroneous data, caused by µC.

3.1.3 In INCA 7.4.7 and HSP 13.7.1

Issue Identifier	Description
TFS 744653	fix double decode of single value continuous packet after id switch.

3.1.4 In INCA 7.4.7 and HSP 13.7.0

Issue Identifier	Description
TFS 738325	Change of value is not visible in INCA. Value is freezed till neighbor signal is added
TFS 739809	Measurements abord
TFS 7411454	Measurement abords after T15 reset with SR6P7
TFS 724210	while set KL 15 from off to on the MG1CS311 the MSG will be restarted without a WP
ETKPRG-1813	XCP Extensions: program, verify and checksum calculation

3.1.5 In INCA 7.4.6 and HSP 13.6.0

Issue Identifier	Description
ETKPRG-1767	Support for ST SR6P7 controller
TFS 724210	Fix trace interpreter FIFO overruns after module resets

3.1.6 In INCA 7.4.5 and HSP 13.5.0

Issue Identifier	Description
TFS 722709	Invalid ECU memory access may occur when reading ECU inform block magic pattern
TFS 719331	FETK with measurement Drops when using Timer Rasters with MonVars
ETKF-2323	Improve Scheduling of ECU access arbitration

3.1.7 In INCA 7.4.4 and HSP 13.4.0

Issue Identifier	Description
TFS 698234	After a softreset the ECU connection is sporadically not completely restored
ETKF-2128	Limitation and control of the XCP event rate
ETKF-2054	Extend DBG_GET_VENDOR_INFO Command
ETKF-2269	Optimize TEA-DEV interrupt source detection

3.1.8 In INCA 7.4.3 and HSP 13.3.0

Issue Identifier	Description
TFS 687725	Two HW reinits need for XCP measurement
ETKF-2141, ETKSW-3119	Add counter for how many resets watchdog disable should be active
ETKF-1901	Additional monitor variables for counting ECU resets

3.1.9 In INCA 7.4.2 and HSP 13.2.0

Issue Identifier	Description
TFS 687725	Two HW reinits need for XCP measurement
TFS 683889	INCA freezes on motor test bench sporadically
ETKPRG-1364	Execution of arbitrary ECU access sequences (Stabi)

3.1.10 In INCA 7.4.1 and HSP 13.1.0

Issue Identifier	Description
n/a	FETK-T4.0B CPLD Update to consider updated ED power range for ST micro SR6X7

3.1.11 In INCA 7.4.0 and HSP 13.0.0

Issue Identifier	Description
n/a	Initial version, support of FETK-T4.0B

3.2 Known issues

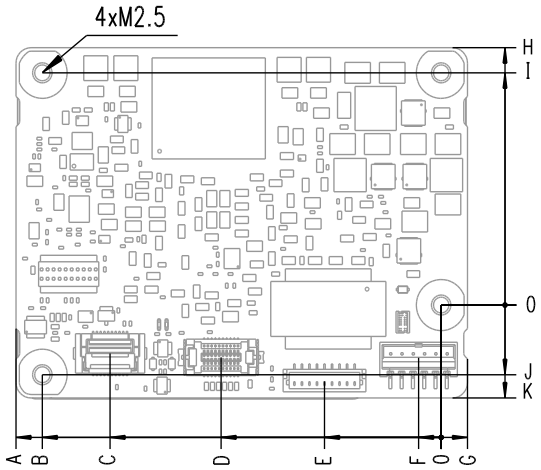
3.2.1 In INCA 7.5.1 and HSP 14.1.0

Issue Identifier	Description
TFS 762366	Implausible trace-based measured values with INCA and HSP – workaround: very sporadically result in false positives, discarding valid measurement data may occur

4 Product Variants

In general the FETK-T4.0B can be purchased in one variant.

4.1 FETK-T4.0B

Item number	F-00K-113-469
Description	FETK-T4.0B Emulator Probe for the ST Microelectronics SR6 microcontroller family
For details refer the datasheet	

DIM	MILLIMETERS	INCHES
A	$56.50^{+0.2}_{-0.2}$	$2.224^{+0.008}_{-0.008}$
B	$53.00^{+0.2}_{-0.2}$	$2.087^{+0.008}_{-0.008}$
C	$44.00^{+0.2}_{-0.2}$	$1.732^{+0.008}_{-0.008}$
D	$29.25^{+0.2}_{-0.2}$	$1.152^{+0.008}_{-0.008}$
E	$15.50^{+0.2}_{-0.2}$	$0.610^{+0.008}_{-0.008}$
F	$3.00^{+0.2}_{-0.2}$	$0.118^{+0.008}_{-0.008}$
G	$3.50^{+0.1}_{-0.1}$	$0.138^{+0.004}_{-0.004}$
H	$33.25^{+0.2}_{-0.2}$	$1.309^{+0.008}_{-0.008}$
I	$30.00^{+0.2}_{-0.2}$	$1.181^{+0.008}_{-0.008}$
J	$9.00^{+0.2}_{-0.2}$	$0.354^{+0.008}_{-0.008}$
K	$12.00^{+0.2}_{-0.2}$	$0.472^{+0.008}_{-0.008}$

5 Firmware Modifications

5.1 General remarks to this chapter

The programmable logic code within the FETK-T4.0B is stored onto programmable logic devices (FPGA). For the version syntax please refer to chapter 2.1.

Attention:
For updating the FETK - firmware with a later version by using HSP, all FETK 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 FETK. This procedure makes the firmware update fail-safe.

5.2 FPGA-Boot-Code

Revision	Description
Version 1.2.25	Initial Version

Delivery condition:

The FPGA-Boot version 1.2.25 will be programmed into all shipments

5.3 FPGA-Code

Revision	Description
Version 1.19.36	Initial Version
Version 1.21.12	- TFS 687725: Two HW reinits need for XCP measurement - TFS 683889: INCA freezes on motor test bench sporadically - ETKPRG-1364: Execution of arbitrary ECU access sequences
Version 1.22.7	- TFS 687725: Two HW reinits need for XCP measurement - ETKF-2141, ETKSW-3119 Add counter for how many resets watchdog disable should be active - ETKF-1901 Additional monitor variables for counting ECU resets
Version 1.23.7	- ETKF-2267: fix bug in HW SIPL Player - ETKF-2271: Update resets in sic_arm_swd_jtag to use RESET_B in init_jtag_swd - Call 698234: ECU connection sporadically not restored after a soft-reset
Version 1.24.42	- TFS 719331 FETK with measurement Drops when using Timer Rasters with MonVars - ETKF-2323 Improve Scheduling of ECU access arbitration
Version 1.25.12	- ETKPRG-1767: Support for ST SR6P7 controller - TFS 724210: Fix trace interpreter fifo overruns after module resets
Version 1.26.11	- ETKF-2111: Removal of ATU/TDP trace interrupts and process ECU reset assert interrupt

Version 1.27.17	TFS 744653: fix double decode of single value continuous packet after id switch.
Version 1.28.31	- ETKF-2766: increased number of trace windows - TFS 762366: Implausible trace-based measured values with INCA and HSP
Version 1.29.67	- ETKF-2898: Multiple distab 17 events config and output areas - ETKF-2968: Implement monitor variables for ATU raw trace data rate 100ms - ETKF-2904: Improvement concept for writing the FGT configuration on ECU LUA - TFS 762366, TFS 754982: FETK-T4.0B: Improve workaround of TFS 754982 to eliminate possible false positives - TFS 761633: TI_I751 [INCA/FETK S1B] - Measurement breaks after disconnecting and reconnection of ECU VCC

Delivery condition:

The FPGA version 1.29.67 will be programmed into all shipments

5.4 CPLD-Code

Revision	Description
Version 1.2.1	Initial Version
Version 1.2.3	FETK-T4.0B CPLD Update to consider updated ED power range for ST micro SR6X7

Delivery condition:

The FPGA version 1.2.3 will be programmed into all shipments

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 FETK. Information about the modifications is listed underneath. The hardware state starts with version **A010/01**. For the version syntax please refer to chapter 2.1.

6.2 No modification at hardware state A010/02

6.3 Hardware delivery condition

The hardware state **A010/02** will be delivered with all new shipments.

7 Abbreviations

ASCET-RP	Rapid Prototyping Software of ETAS
CPLD	**C**omplex **P**rogrammable **L**ogic **D**evice
ES891	MC hardware
ETK Tools	Configuration Software, in order to configure a (X)ETK / FETK
FETK	Product (emulator test probe)
Firmware	Software for MC hardware; necessary for implementation of new features or bug fixes
FPGA	**F**ield **P**rogrammable **G**ate **A**rray; interface component to the application hardware
Hot-fix	Software bug-fix for a refresh version
HS	**H**eat **S**preader
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
INCA	Measurement and Calibration Software of ETAS
INTECRIO	Rapid Prototyping Software of ETAS
MC	**M**easurement & **C**alibration
PCB	**P**rinted **C**ircuit **B**oard
RP	**R**apid **P**rototyping
SBB	**S**ervice **B**ased **B**ypass
Tool chain	MC hardware (e.g. ES690) and software (e.g. INCA)
XETK Configuration Tool	Configuration Software, in order to configure a (X)ETK / FETK
XCP	Universal Measurement and Calibration Protocol

8 Contact Information

8.1 Technical Support

For details of your local sales office as well as your local technical support team and product hotlines, take a look at the website: www.etas.com/hotlines

8.2 ETAS Headquarters

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Germany Internet: www.etas.com