

Product:	FETK-S2.1A	Rev :	13	Page 1 of 10
Title :	Release-Notes			

DRIVING EMBEDDED EXCELLENCE



Product :	FETK-S2.1A			
Title :	Release Notes			
File :	FETK-S2.1A_Release-Notes_V13.docx			
TTNR :	F-00K-110-102			
Comments :	<p>Currently shipped: <b>1071225A010/01</b></p> <p>FPGA-Boot version: V1.0.7  FPGA-A version: V1.22.5  Hardware-state: A010/01</p>			
Created:	Name R. Mai	Department DAP/XPC-Fe3	Signature R. Mai	Date 2022-11-18
Released:	Name A. Sprenger	Department DAP/XPC-Fe3	Signature R. Mai	Date 2022-11-18

## Changes

Revision	Description	Date	Name	Signature
01	107117A010/01 - for FETK-S2.1A - Initial version	2018-02-06	Sprenger	Sprenger
02	1071223A010/01 – New or Enhanced Functions <a href="#">[3.1]</a> and Firmware Modification <a href="#">[5.3]</a>	2018-09-11	Sprenger	Sprenger
03	107138A010/01 – New or Enhanced Functions <a href="#">[3.1]</a> and Firmware Modification <a href="#">[5.3]</a>	2019-03-05	Mai	Mai
04	107138A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2019-05-29	Mai	Mai
05	1071310A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2020-01-23	Mai	Mai
06	1071137A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2020-06-18	Mai	Mai
07	1071137A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2020-09-17	Mai	Mai
08	1071155A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2020-12-02	Mai	Mai
09	1071169A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2021-03-10	Mai	Mai
10	10711753A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2021-09-17	Mai	Mai

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11	10711911A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2022-02-25	Mai	Mai
12	10712110A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2022-09-16	Mai	Mai
13	1071225A010/01 – New or Enhanced Functions <a href="#">[3.1]</a>	2022-11-18	Mai	Mai

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## 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-S2.1A 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-S2.1A and ES89x system use the standardized protocol "XCP on Ethernet" for PC communication. Thus 3<sup>rd</sup> party tools can be connected to the ECU as well.

## 2 Version Syntax and Tool Chain Information

### 2.1 Version-Syntax of the FETK-S2.1A

The **FETK-S2.1A 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: **aaabbbccddd/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-S2.1A is the following:

FETK-S2.1A: **107117A010/01**

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## 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 tool.

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-S2.1A is supported by ES891.

## 2.4 Software and microcontroller support

Microcontroller	HSP	INCA	ETK Tools	ASCET-RP	INTECRIO
MPC5746M-ED / EMU57EM80xy	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
MPC5746M / SPC57EM80xy	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
MPC5744K-ED / EMU574K72xy	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
MPC5744K / SPC574K72xy	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
MPC5777A-ED / EMU57HM90xy	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
MPC5777A / SPC57HM90xy	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
MPC5746R-ED *1	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
MPC5746R	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
SPC/EMU58NN84	V11.8.0	V7.2.8	V4.1.9	V6.4.3	V4.6.2
EMU58NE84	V11.13.0	V7.2.13	V4.1.14	V6.4.3	V4.6.2
SPC58xG	V11.13.0	V7.2.13	V4.1.14	V6.4.3	V4.6.2

- 1) In case offline-BIST is used, this is only supported with Rainier Cut2.0B (not supported with Cut1.0/2.0/2.1)

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### 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 7.4.3 and HSP 13.3.0

Issue Identifier	Description
TFS 687725	Two HW reinites 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

##### 3.1.2 In INCA 7.4.2 and HSP 13.2.0

Issue Identifier	Description
TFS 687725	Two HW reinites need for XCP measurement
TFS 683889	INCA freezes on motor test bench sporadically
TFS 682337	Flashing via FETK is sometimes failing
ETKPRG-1364	Execution of arbitrary ECU access sequences (Stabi)

##### 3.1.3 In INCA 7.4.0 and HSP 13.0.0

Issue Identifier	Description
ETKF-1311	Remote Reset soll Serial Interface teilweise zurücksetzen - Freescale
ETKF-1794	TEA-MGR: Reject conflicting CONF_EVENT/CONF_RASTER commands
ETKF-1792	Resource optimization: Investigate possible resource usage savings regarding internal debug logic
ETKF-1576	TEA-MGR: Support new XCP command XETK_CONF_WAIT_STATE

##### 3.1.4 In HSP V12.6.0

Issue Identifier	Description
ETKF-1588	Implementation to measure bypass roundtrip time

##### 3.1.5 In INCA 7.3.4 and HSP V12.4.0

Issue Identifier	Description
ETKF-1144	Implement XCP Command Get_Version
ETKF-872	Extend XCP "START_STOP_SYNC

##### 3.1.6 In INCA 7.3.3 and HSP V12.3.0

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Issue Identifier	Description
ETKF-1308	support temperature sensor
646463	FETK-S2.1A cannot be found after standby

### 3.1.7 In INCA 7.3.2 and HSP V12.2.0

Issue Identifier	Description
ETKF-1205; 623845	TEA-MGR Implementation of Handling host port disconnection in stacked ES8xx system (FW)
638591	Simultaneous startup of ECU and FETK-S2 leads sporadically to lost engine off timer

### 3.1.8 In INCA 7.3.1 and HSP V12.1.0

Issue Identifier	Description
637041	FETK-S2.1A does not start up properly

### 3.1.9 In INCA 7.2.15 and HSP V11.15.1

Issue Identifier	Description
628645	VCC_INTF can't switch to 5V

### 3.1.10 In INCA 7.2.13 and HSP V11.13.0

Issue Identifier	Description
n/a	Support of EMU58NE84 and SPC58xG
n/a	Support of XCP Time Correlation

### 3.1.11 In INCA 7.2.12 and HSP V11.12.0

Issue Identifier	Description
606644	ECU (Bernina) stall after power up

### 3.1.12 In INCA 7.2.10 and HSP V11.10.0

Issue Identifier	Description
583933	correction of wake up and keep alive behaviour between FETK and E891

### 3.1.13 In INCA 7.2.8 and HSP V11.8.0

Issue Identifier	Description
n/a	Initial version, support of FETK-S2.1A

## 3.2 Known issues

None.

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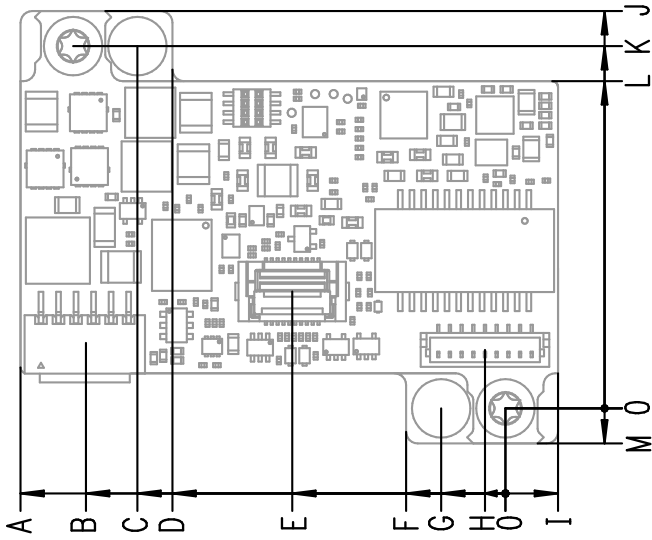




## 4 Product Variants

In general the FETK-S2.1A can be purchased in one variant.

### 4.1 FETK-S2.1A

Item number	F-00K-110-102																																										
Description	FETK-S2.1A Emulator Probe for the NXP / STM MPC57xx (Qorivva) microprocessor family																																										
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>41.50<sup>+0.2</sup><sub>-0.2</sub></td> <td>1.634<sup>+0.008</sup><sub>-0.008</sub></td> </tr> <tr> <td>B</td> <td>35.90<sup>+0.3</sup><sub>-0.3</sub></td> <td>1.413<sup>+0.012</sup><sub>-0.012</sub></td> </tr> <tr> <td>C</td> <td>31.50<sup>+0.1</sup><sub>-0.1</sub></td> <td>1.240<sup>+0.004</sup><sub>-0.004</sub></td> </tr> <tr> <td>D</td> <td>28.50<sup>+0.2</sup><sub>-0.2</sub></td> <td>1.122<sup>+0.008</sup><sub>-0.008</sub></td> </tr> <tr> <td>E</td> <td>18.25<sup>+0.3</sup><sub>-0.3</sub></td> <td>0.719<sup>+0.012</sup><sub>-0.012</sub></td> </tr> <tr> <td>F</td> <td>8.50<sup>+0.2</sup><sub>-0.2</sub></td> <td>0.335<sup>+0.008</sup><sub>-0.008</sub></td> </tr> <tr> <td>G</td> <td>5.50<sup>+0.1</sup><sub>-0.1</sub></td> <td>0.217<sup>+0.004</sup><sub>-0.004</sub></td> </tr> <tr> <td>H</td> <td>1.75<sup>+0.2</sup><sub>-0.2</sub></td> <td>0.069<sup>+0.008</sup><sub>-0.008</sub></td> </tr> <tr> <td>I</td> <td>4.5<sup>+0.2</sup><sub>-0.2</sub></td> <td>0.177<sup>+0.008</sup><sub>-0.008</sub></td> </tr> <tr> <td>J</td> <td>34.00<sup>+0.2</sup><sub>-0.2</sub></td> <td>1.339<sup>+0.008</sup><sub>-0.008</sub></td> </tr> <tr> <td>K</td> <td>31.00<sup>+0.1</sup><sub>-0.1</sub></td> <td>1.220<sup>+0.004</sup><sub>-0.004</sub></td> </tr> <tr> <td>L</td> <td>28.00<sup>+0.2</sup><sub>-0.2</sub></td> <td>1.102<sup>+0.008</sup><sub>-0.008</sub></td> </tr> <tr> <td>M</td> <td>3.00<sup>+0.2</sup><sub>-0.2</sub></td> <td>0.118<sup>+0.008</sup><sub>-0.008</sub></td> </tr> </tbody> </table>	DIM	MILLIMETERS	INCHES	A	41.50 <sup>+0.2</sup> <sub>-0.2</sub>	1.634 <sup>+0.008</sup> <sub>-0.008</sub>	B	35.90 <sup>+0.3</sup> <sub>-0.3</sub>	1.413 <sup>+0.012</sup> <sub>-0.012</sub>	C	31.50 <sup>+0.1</sup> <sub>-0.1</sub>	1.240 <sup>+0.004</sup> <sub>-0.004</sub>	D	28.50 <sup>+0.2</sup> <sub>-0.2</sub>	1.122 <sup>+0.008</sup> <sub>-0.008</sub>	E	18.25 <sup>+0.3</sup> <sub>-0.3</sub>	0.719 <sup>+0.012</sup> <sub>-0.012</sub>	F	8.50 <sup>+0.2</sup> <sub>-0.2</sub>	0.335 <sup>+0.008</sup> <sub>-0.008</sub>	G	5.50 <sup>+0.1</sup> <sub>-0.1</sub>	0.217 <sup>+0.004</sup> <sub>-0.004</sub>	H	1.75 <sup>+0.2</sup> <sub>-0.2</sub>	0.069 <sup>+0.008</sup> <sub>-0.008</sub>	I	4.5 <sup>+0.2</sup> <sub>-0.2</sub>	0.177 <sup>+0.008</sup> <sub>-0.008</sub>	J	34.00 <sup>+0.2</sup> <sub>-0.2</sub>	1.339 <sup>+0.008</sup> <sub>-0.008</sub>	K	31.00 <sup>+0.1</sup> <sub>-0.1</sub>	1.220 <sup>+0.004</sup> <sub>-0.004</sub>	L	28.00 <sup>+0.2</sup> <sub>-0.2</sub>	1.102 <sup>+0.008</sup> <sub>-0.008</sub>	M	3.00 <sup>+0.2</sup> <sub>-0.2</sub>	0.118 <sup>+0.008</sup> <sub>-0.008</sub>
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## 5 Firmware Modifications

### 5.1 General remarks to this chapter

The programmable logic code within the FETK-S2.1A 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 1.0.7	Initial Version

Delivery condition:

The FPGA-Boot version 1.0.7 will be programmed into all shipments

### 5.3 FPGA-Code

Revision	Description
Version 1.1.7	Initial Version
Version 1.2.23	583933: correction of wake up and keep alive behaviour between FETK and E891
Version 1.3.8	606644: ECU (Bernina) stall after power up
Version 1.3.10	628645: VCC_INTF can't switch to 5V
Version 1.13.7	637041: FETK-S2.1A does not start up properly
Version 1.15.6	ETKF-1308: support temperature sensor 646463: FETK-S2.1A cannot be found after standby
Version 1.16.9	ETKF-1289: Disallow illegal DAP settings in hwcfg.lua ETKF-1367: Improve error handling in hwcfg.lua plugins
Version 1.17.53	<ul style="list-style-type: none"> <li>- ETKF-1357: Implement optional debug information for CableCom load</li> <li>- ETKF-1551: Vstby Follow-Up Story for changing signal names</li> <li>- ETKF-1433: 'Spike: Used only one serial interface generic module on all FETKs'</li> <li>- ETKF-1500: Use common standby_controller for FETK-S and XETK</li> <li>- ETKF-1604: 'handshake_secu: correct reset value for handshake timeout'</li> <li>- ETKF-1577: Cleanup regdef.lua to optimize resources and drop unused functionality</li> <li>- ETKF-1588: Implementation to measure bypass roundtrip time (HDC)</li> <li>- ETKF-1651: Use only one serial interface generic module on all FETKs</li> </ul>
Version 1.19.11	<ul style="list-style-type: none"> <li>- ETKF-1311: Remote Reset soll Serial Interface teilweise zurücksetzen</li> <li>- ETKF-1794: TEA-MGR: Reject conflicting CONF_EVENT/CONF_RASTER commands</li> <li>- ETKF-1792: Resource optimization: Investigate possible resource usage</li> </ul>

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	savings regarding internal debug logic - ETKF-1576: TEA-MGR: Support new XCP command XETK_CONF_WAIT_STATE
Version 1.21.10	- TFS 687725: Two HW reinites need for XCP measurement - TFS 683889: INCA freezes on motor test bench sporadically - ETKPRG-1364: Execution of arbitrary ECU access sequences - TFS 682337: Flashing via FETK is sometimes failing
Version 1.22.5	- TFS 687725: Two HW reinites 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

Delivery condition:

The FPGA version 1.22.5 will be programmed into all shipments

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## 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 A010/01

### 6.3 Hardware delivery condition

The hardware state **A010/01** will be delivered with all new shipments.

## 7 Abbreviations

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