ETAS

Product :	XETK-S20.1B
Title :	Release Notes
File :	XETK-S20.1B_Release-NotesV26.docx
TTNR :	F-00K-110-093
Comments :	Current shipped (hardware state): **D014/01** Current released firmware version: **HSP 14.3.0**

Created:	Name R. Mai	Department ETAS-DAP/XPC-Fe1	Signature R. Mai	Date 2024-09-17
Released:	Name K.-H. Nirschl	Department ETAS-DAP/XPC-Fe1	Signature K.-H. Nirschl	Date 2024-12-02

C h a n g e s

Revision	Description	Date	Name	Signature
01	Initial Version	2016-04-26	Oexner	Oexner
02	Updated HDC/Firmware with HSP11.1.0	2016-06-09	Oexner	Oexner
03	Software and Microcontroller Support updated	2016-09-20	Oexner	Oexner
04	Updated HDC/Firmware with HSP11.2.1	2016-10-24	Oexner	Oexner
05	Updated Firmware with HSP11.3.0	2016-12-20	Oexner	Oexner
06	Updated Firmware with HSP11.4.0	2016-03-13	Oexner	Oexner
07	Improvements and bug fixes with HSP11.6.0	2017-09-21	Förmer	Förmer
08	Updated Firmware with HSP11.7.0	2017-12-01	Mai	Mai
09	Improvements, bug fixes and updated Firmware with HSP11.8.0	2018-03-14	Mai	Mai
10	Improvements, bug fixes and updated Firmware with HSP11.9.0	2018-06-18	Mai	Mai

11	Improvements, bug fixes and updated Firmware with HSP11.10.0	2018-09-13	Mai	Mai
12	Improvements, bug fixes and updated Firmware with HSP11.11.0	2018-12-12	Mai	Mai
13	Improvements, bug fixes and updated Firmware with HSP11.12.0	2019-03-20	Mai	Mai
14	Improvements, bug fixes and updated Firmware with HSP11.14.0	2019-09-17	Mai	Mai
15	Improvements, bug fixes and updated Firmware with HSP11.15.0	2019-12-10	Mai	Mai
16	Improvements, bug fixes and updated Firmware with HSP12.0.0	2020-03-23	Mai	Mai
17	Improvements, bug fixes and updated Firmware with HSP12.3.0	2020-12-01	Mai	Mai
18	Improvements, bug fixes and updated Firmware with HSP12.4.0	2021-03-11	Mai	Mai
19	Improvements, bug fixes and updated Firmware with HSP12.5.0	2021-06-29	Mai	Mai
20	Improvements, bug fixes and updated Firmware with HSP12.6.0	2021-09-16	Nirschl	Nirschl
21	Improvements, bug fixes and updated Firmware with HSP13.1.0	2022-06-10	Nirschl	Nirschl
22	Improvements, bug fixes and updated Firmware with HSP13.3.0	2022-12-07	Mai	Mai
23	Improvements, bug fixes and updated Firmware with HSP13.4.0	2023-03-10	Mai	Mai
24	Improvements, bug fixes and updated Firmware with HSP14.0.0	2024-03-08	Nirschl	Nirschl
25	Improvements, bug fixes and updated Firmware with HSP14.2.0	2024-09-17	Mai	Mai
26	Improvements, bug fixes and updated Firmware with HSP14.3.0	2024-12-02	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

Recommended system requirements on a PC running ETK Drivers and Tools, HSP or Inca:
- 2 GHz Pentium-PC or equivalent, equipped with
  - 1 GB RAM (basic hardware), depending on the use cases 2GB RAM are advantageous
  - Hard disk with minimum 10 GB free disk space
  - DVD-ROM for installation
  - XGA-Graphic card with XGA-screen and resolution of at least 1024 x 768 with 16 bit colors, DirectX 7
  - Fast Ethernet adapter 100BaseT
    - with full duplex capability
    - configured as component TCP/IP only
    - separate to e.g. company network
  - WINDOWS® XP (SP3 or higher), WINDOWS®VISTA (SP1 or higher) or WINDOWS®7

1.3 Restrictions

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

1.4 Miscellaneous
To ensure the highest data throughput from the XETK 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 XETK-S20.1B

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

Hardware State Syntax: **abbb/cc**

Description (modification details refer chapter 5)
      a   PCB Version (A=V1.0, B=V1.1, C=V1.2, …)
      bbb   PCB Hardware State (010, 011, 012, …)
      cc   PCB Population Variant (00, 01, 02, …)

The XETK-S20.1B Firmware version information can be read out of the XETK using the firmware update tool HSP or XETK Configuration Tool. It is not printed onto a XETK sticker.

Firmware-Version Syntax: **aaa.bbb.ccccc**

Description (modification details refer chapter 5)
      aaa   Major Release (0…255)
      bbb   Minor Release (0…255)
      ccccc   Revision/Patch (0…65535)

Firmware Packages:
    HDC Work   aaa.bbb.ccccc
    Firmware Work   aaa.bbb.ccccc
    HDC Rescue   aaa.bbb.ccccc
    Firmware Rescue   aaa.bbb.ccccc
    CPLD   aaa.bbb.ccccc

2.2 Version information of the tool-chain components

To get this XETK 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 XETK 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 Software and microcontroller support

Microcontroller	HSP	INCA	ETK Tools	ASCET-RP	INTECRIO
TC23x	V11.10.0	V7.2.10	V4.1.12	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC26x	V11.2.0	V7.2.2	V4.1.3	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC26x-ED	V11.2.0	V7.2.2	V4.1.3	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC27x	V11.2.0	V7.2.2	V4.1.3	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC27x-ED (A-Step)	V11.0.1	V7.2	V4.1.0	A: V6.4 B: V6.1.4	A: V4.6 B: V4.2.2
TC27x-ED (B-Step, C-Step)	V11.0.1	V7.2	V4.1.0	A: V6.4 B: V6.1.4	A: V4.6 B: V4.2.2
TC29x	V11.8.0	V7.2.8	V4.1.9	A: V6.4 B: V6.3	A: V4.6 B: V4.3
TC29x-ED	V11.0.1	V7.2	V4.1.0	A: V6.4 B: V6.3	A: V4.6 B: V4.3
TC36x-PD	V11.15.0	V7.2.15	V4.1.16	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC37x-PD	V11.15.0	V7.2.15	V4.1.16	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC37x-ED	V11.12.0	V7.2.12	V4.1.13	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC37x-XX	V12.3.0	V7.3.4	V4.2.3	A: V6.4 B: V6.3	A: V4.6 B: V4.3
TC38x-PD	V11.8.0	V7.2.8	V4.1.9	A: V6.4 B: V6.3	A: V4.6 B: V4.3
TC39x-ED (A-Step)	V11.2.1	V7.2.2	V4.1.3	A: V6.4 B: V6.4	A: V4.6 B: V4.6
TC39x-ED (B-Step)	V11.8.0	V7.2.8	V4.1.9	A: V6.4 B: V6.3	A: V4.6 B: V4.3
TC39x-XX	V12.3.0	V7.3.4	V4.2.3	A: V6.4 B: V6.3	A: V4.6 B: V4.3
TC3Ex-PD	V14.2.0	V7.5.2	V4.4.2	A: V6.4 B: V6.3	A: V4.6 B: V4.3

A: SBB V2.1   /   B: HBB [DISTAB13]

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   New with HSP 14.3.0 and INCA V7.5.3

Issue Identifier	Description
774597	Unintentional read access to address "0" in case of wrong memory segment config
774192	Bugfix for DAP error counters

3.1.2   New with HSP 14.2.0 and INCA V7.5.2

Issue Identifier	Description
n.a.	Support of TC3Ex
ETKX-5336 / ETKF-1895	Improve internal timing
ETKX-4024	Support DAP Error Counter for XETK-S30
ETKBD-4	Align and extend XETK and FETK Lua APIs
ETKBD-23, ETKX-4351	Support Lua-based detection CPU type detection
#767514	Fix interrupt on halt after reset
#762534	Improve DAP timing

3.1.3   New with HSP 14.0.0 and INCA V7.5.0

Issue Identifier	Description
743317	XETK disconnection leads to OMD reconfiguration when bypass is active
ETKX-4547	Fix problems with XETK debug log
ETKX-4591	Fix and Improve behavior with multiple XCP connections
ETKX-4389	Improve XCP error message on failures of initializing overlay RAM
ETKX-3797	XETK Watchdog Counter as monitoring variable
ETKX-4053	Support for Semantic Versioning
ETKUS-3257	DRA Support for TC38x
ETKX-3784	Cleanup McWaitBit properly in case of XCP disconnect
ETKX-3866	Support additional commands for XCP flashing
ETKX-4131	Support CRC32 as checksum mechanism (config feature XcpChecksumAlgorithm)

3.1.4   New with HSP 13.4.0 and INCA V7.4 SP4

Issue Identifier	Description
ETKX-2694	Support Monitoring Variables
ETKX-3393	Improve out-of-memory behavior

3.1.5   New with HSP 13.3.0 and INCA V7.4 SP3

Issue Identifier	Description
ETKX-3239	Support for Disable ECU Watchdog via Script
Call 700524	Fix sporadically error using Distab17

3.1.6   New with HSP 13.1.0 and INCA V7.4 SP1

Issue Identifier	Description
ETKX-601	XETK returns XCP V1.5 is supported
ETKF-1304	Drop support for TC27x A-step
ETKX-2572 ETKX-2636	Improve XETK performance significantly to improve compatibility with BR_XETK-S3.0A
682863	Fix formatting of trace overflow event
684489	XCP CONNECT does not reset XCP TX counter when connection already exists
635588	Fix Watchdog disable Pin (WGDIS) is still active while ECU is unpowered

3.1.7   New with HSP 12.6.0

Issue Identifier	Description
#664102	Fix Start on working page after XETK Standby
#663507	XETK doesn't respond to unknown XCP user commands

3.1.8   New with HSP12.5.0, INCA 7.3.5 and XCT 4.2.5

Issue Identifier	Description
ETKPRG-974	Release of additional page switching method "DRA" (Direct Register Access). Available initially for TC39x-ED. Requires HSP12.5.0 and INCA 7.3.5 or newer.

3.1.9   New with HSP12.4.0

Issue Identifier	Description
ETKX-1063	Implement a standby configuration storage for XETK
ETKX-1027	Report measurement status in GET_STATE with key 0x16 (Measurement Status)
# 650642	XETK: TCP retransmit might be suboptimal under conditions with ethernet errors

3.1.10   New with HSP12.3.0

Issue Identifier	Description
ETKPRG-824	Support TC39x-XX and TC37x-XX
ETKX-887	Improve error handling in case of too many signals
# 645177	Loss of OMD / Working page after XETK standby
# 643709	TC39x EMEM DAP access timeout
# 642381	Out of Memory Error not propagating to user

3.1.11 New with HSP12.0.0

Issue Identifier	Description
# 626970	ECU traps due to EE change when ECU is off
# 629990	ECU traps due to switching to new PC without stopping the measurement before
ETKPRG-621	Support TC33xPD

3.1.12 New with HSP11.15.0

Issue Identifier	Description
ETKPRG-517 ETKPRG-539	Support of TC36x-PD and TC37x-PD

3.1.13 New with HSP11.14.0

Issue Identifier	Description
611515	XETK_Configuration: 5us trigger polling period could result in an inaccessible XETK
619762	Infrequent wrong order of XCP counter between DTO and CTO response

3.1.14 New with HSP11.12.0

Issue Identifier	Description
ETKX-96	Improvements for DAP access on block read
ETKPRG-227	Support of TC37x-ED
# 607283	Measurement of dummy data in case of DAP errors

3.1.15 New with HSP11.11.0

Issue Identifier	Description
#600925	Loss of connection in case of DAQ Overload (XCP counter error)

3.1.16 New with HSP11.10.0

Issue Identifier	Description
#595893	IP Manager cannot move XETK to different IP subnet when static IP is set

n/a	TC23x-PD supported

3.1.17 New with HSP11.9.0

Issue Identifier	Description
#589249	Static calibration with XCT does not work
#585676	Host connection is lost if attaching to running bypass with UDE
#588875	BDR not functioning when ECU has continuous running reset.
#587524	XETKS20 behavior is changed with HSP 11.7. regarding debug arbitration
#593528	Unable to avoid cpu mismatch message on TC29x projects
#592837	Access to ED RAM could fail while concurrently using a debugger by debug api

3.1.18 New with HSP11.8.0

Issue Identifier	Description
#588791	Calibration not working on some PD devices with (invalid calibration handle)
n/a	Support TC39xED_B and TC38xx
n/a	XCP Event if CPU type is not matching A2L file

3.1.19 New with HSP11.7.0

Issue Identifier	Description
n/a	Added support for LERTv3

3.1.20 New with HSP11.6.0

Issue Identifier	Description
n/a	Improved stability for XCP debugging feature
575539	Lauterbach Trace32 connected via XCP and INCA measurement in parallel leads to watchdog reset of XETK
571863	Lost connection after ECU shutdown

3.1.21 New with HSP11.4.0

Issue Identifier	Description
n/a	Support Feature "ECU_DEFINED_ERRORCODES"
n/a	Support monitoring VDDSBRAM

3.1.22 New with HSP11.3.0

Issue Identifier	Description
n/a	Coldstart Performance Improvements for DISTAB13
n/a	Support dynamic EMU for ATI Vision
Call #547844	Measurement with large EE containing 9000 measurements does not start with XETK
Call #541623	Send keep-alives to detect connection losses
Call #547411	After stopping and starting the OS (on ES910) the INCA measurement delivers no more data
Call #543394	When using timer triggers, measurement setup can fail with "Number of possible direct triggers exceeded"

3.1.23 New with HSP11.2.1

Issue Identifier	Description
n/a	TC39x-ED (A-Step) supported
n/a	XCP Debugging Enhancement: Increased JTAG clock when playing debug sequences.
Call #543853	Bypass counter is now incremented based on the value already set in ECU, not starting from 0.
Call #543854	Distab17 change counter and event header now updated properly when Distab17 is used together with timer triggered rasters.
Call #543855	Update to ensure INCA measurement does not stop if an RP system accesses an XETK event configured for both DAQ and STIM.

3.1.24 New with HSP11.2.0

n/a

3.1.25 New with HSP11.1.0

Issue Identifier	Description
n/a	Support of XCP Debugging Enhancements (New User Commands DBG_HALT_AFTER_RESET, DBG_SEQUENCE_MULTIPLE)
Call #524191	DAP frequency switching is failing

3.1.26 New with HSP11.0.1

Initial release of XETK-S20.1B.

4   Product Variants

The XETK-S20.1B can be purchased in one variant. For details refer to the user guide.

5 Hardware Modifications

5.1 General remarks to this chapter

Hardware issues or obsolete parts can make it necessary to modify the population of the XETK. Information about the modifications is listed underneath. The hardware state starts with version **D014/01**. For the version syntax please refer to chapter 2.1.

5.2 Hardware delivery condition

The hardware state **D014/01** will be delivered with all new shipments.

6 Firmware Modifications

6.1 General remarks to this chapter

The programmable logic code within the XETK-S20.1B is stored onto programmable logic devices (FPGA, CPLD). The first released firmware version is listed underneath. For the version syntax please refer to chapter 2.1.

6.2 First delivered version

FPGA Work	1.0.93
Firmware Work	1.0.62
FPGA Rescue	1.0.93
Firmware Rescue	1.0.62
CPLD	1.0.3

6.3 Current delivery condition

The following firmware versions will be programmed into all XETK-S20.1B shipments:

FPGA Work	1.9.5
Firmware Work	1.19.19
FPGA Rescue	1.9.5
Firmware Rescue	1.19.19
CPLD	1.0.3

In case of any problems the above mentioned firmware can be programmed to the XETK by using HSP 14.3.0. This HSP version is similar to the currently delivered XETK products. Newer HSP versions could contain bug fixes and / or new features.

Attention: For updating the XETK - FPGA with a later version by using the HSP Firmware update tool, all XETK - packages will be updated one after another and this will last a few minutes.

7   Abbreviations

XETK	Product (emulator test probe) which can directly be connected to the tools PC
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 XETK
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

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
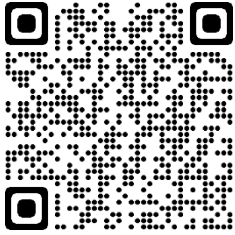
8.2 ETAS Headquarters

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