Product :	XETK-S22.0
Title :	Release Notes
File :	XETK-S22_Release-Notes.docx
TTNR :	XETK-S22.0B F-00K-110-949 XETK-S22.0D F-00K-110-950
Comments :	Current shipped hardware state: **E014/02** Current released firmware version: **HSP 14.3.0**

Created:	Name M. Higgins	Department NE/EHE3	Signature M. Higgins	Date 2024-12-10
Released:	Name R. Shaddach	Department NE/EHE3	Signature R. Shaddach	Date 2024-12-10

Changes

Revision	Description	Date	Name	Signature
01	Initial Version	2017-11-28	M. Higgins	M. Higgins
02	Updated HDC/Firmware with HSP 11.8. Updated hardware to C011/02.	2018-04-24	M. Higgins	M. Higgins
03	Updated HDC/Firmware with HSP 11.9. Additional µCs supported.	2018-06-26	M. Higgins	M. Higgins
04	Updated HDC/Firmware with HSP 11.10. Updated hardware to C012/02.	2018-09-25	M. Higgins	M. Higgins
05	Introduction of XETK-S22.0D. Updated HDC/Firmware with HSP11.11.	2018-12-18	M. Higgins	M. Higgins
06	Updated HDC/Firmware with HSP 11.12	2019-03-26	M. Higgins	M. Higgins
07	Updated HDC/Firmware with HSP 11.13	2019-06-25	M. Higgins	M. Higgins
08	Updated HDC/Firmware with HSP 11.14. Additional µCs supported.	2019-09-24	M. Higgins	M. Higgins
09	Updated HDC/Firmware with HSP 11.15	2019-12-17	M. Higgins	M. Higgins
10	Updated HDC/Firmware with HSP 12.0.0	2020-03-31	M. Higgins	M. Higgins

11	Updated HDC/Firmware with HSP 12.1. Additional µCs supported.	2020-06-25	M. Higgins	M. Higgins
12	Updated HDC/Firmware with HSP 12.2.	2020-09-29	M. Higgins	M. Higgins
13	Updated HDC/Firmware with HSP 12.3.	2020-12-15	M. Higgins	M. Higgins
14	Updated HDC/Firmware with HSP 12.6.	2021-9-28	M. Higgins	M. Higgins
15	Updated HDC/Firmware with HSP 13.1.0. Additional µCs supported. Downdate limitation introduced.	2022-06-28	M. Higgins	M. Higgins
16	Updated HDC/Firmware with HSP 13.2.0.	2022-09-27	M. Higgins	M. Higgins
17	Updated HDC/Firmware with HSP 13.3.0. Updated hardware to E014/02.	2022-12-13	M. Higgins	M. Higgins
18	Updated HDC with HSP 13.4.0.	2023-03-28	M. Higgins	M. Higgins
19	Additional µCs supported.	2023-12-12	M. Higgins	M. Higgins
20	Updated HDC with HSP 14.1.0	2024-06-25	M. Higgins	M. Higgins
21	Updated HDC/Firmware with HSP 14.2.0	2024-09-24	M. Higgins	M. Higgins
22	Updated HDC/Firmware with HSP 14.3.0	2024-12-10	M. Higgins	M. Higgins

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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

The following minimum system prerequisites must be met:

Required Hardware
- Intel Core-i7, 4. Generation (or higher), Quad Core
- Min. 16 GB RAM
- DVD-ROM drive (for installation)
- PCIe network adapter with Intel Chipset (no USB)
- Graphics with a resolution of at least 1024x768, 256MB RAM, 16bit color and DirectX 9

Required Operating System
- 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
- Intel Core-i7, 4. Generation, Quad Core or equivalent
- 16 GB RAM
- DVD-ROM drive (for installation)
- PCIe network adapter with Intel Chipset
- 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, WINDOWS® 98SE, and WINDOWS® XP are not supported

1.4 Miscellaneous

To ensure the highest data throughput from the XETK device up to the PC system the following recommendations should be considered:
- Set power save mode to the highest level
- Disable virus scan
- Use network adapter for ETAS application only
- Update network adapter drivers

2 Version Syntax and Tool-Chain Information

2.1 Version-Syntax of the XETK-S22.0

The XETK-S22.0 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-S22.0 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

The XETK-S22.0D supports all microcontrollers from the XETK-S22.0B, and additionally offers support of the Aurora Trace interface with the listed microcontrollers.

2.3.1 JTAG

The table reflects the initial versions which can be used with the XETK-S22.0B and the listed microcontroller. The XETK-S22.0D also supports the same microcontrollers using JTAG with its initial release using INCA V7.2.11, HSP V11.11.0, and ETK Tools V4.1.12.

Microcontroller	HSP	INCA	ETK Tools	ASCET-RP	INTECRIO
RH850_E1xFCC1_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
RH850_E1xFCC2_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
RH850_E2xFCC1_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
RH850_E2xFCC2_Rev1	V11.9.0	V7.2.9	V4.1.11	V6.4	V4.6
RH850_C1MA_Rev1	V11.9.0	V7.2.9	V4.1.11	V6.4	V4.6
RH850_F1L_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
RH850_F1K_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
RH850_F1x_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
RH850_P1M_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
V850_PJ4_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
V850_Px4_Rev1	V11.7.0	V7.2.7	V4.1.8	V6.4	V4.6
RH850_U2AEVA_Rev1	V11.14.0	V7.2.14	V4.1.15	V6.4	V4.6
RH850_U2A16_Rev1	V13.4.0	V7.4.4	V4.3.4	V6.4	V4.6
RH850_U2A8_Rev1	V13.4.0	V7.4.6	V4.3.6	V6.4	V4.6
RH850_U2A6_Rev1	V13.4.0	V7.4.4	V4.3.4	V6.4	V4.6
RH850_E2x_Rev1	V12.1.0	V7.3.1	V4.2.1	V6.4	V4.6
RH850_P1xC_Rev1	V12.1.0	V7.3.1	V4.2.1	V6.4	V4.6
RH850_U2B24FCC_Rev1	V13.1.0	V7.4.1	V4.3.1	V6.4	V4.6
RH850_U2B10FCC_Rev1	V13.7.0	V7.4.7	V4.3.7	V6.4	V4.6
RH850_U2B10_Rev1	V13.7.0	V7.4.7	V4.3.7	V6.4	V4.6
RH850_U2B6FCC_Rev1	V13.7.0	V7.4.7	V4.3.7	V6.4	V4.6
RH850_U2B6_Rev1	V13.7.0	V7.4.7	V4.3.7	V6.4	V4.6

2.3.2 Aurora

The table reflects the initial versions, which can be used with the XETK-S22.0D and the listed microcontroller. The XETK-S22.0B does not support Aurora.

Microcontroller	HSP	INCA	ETK Tools	ASCET-RP	INTECRIO
RH850_E2xFCC1_Rev1	V11.11.0	V7.2.11	V4.1.12	V6.4	V4.6
RH850_E2xFCC2_Rev1	V11.11.0	V7.2.11	V4.1.12	V6.4	V4.6
RH850_U2AEVA_Rev1	V11.14.0	V7.2.14	V4.1.15	V6.4	V4.6
RH850_U2B24FCC_Rev1	V13.1.0	V7.4.1	V4.3.1	V6.4	V4.6

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 7.5.3, HSP 14.3.0

Issue Identifier	Description
Correction of TFS # 776513	Reverted changes introduced with below feature ETKPRG-2126 due erroneous memory reads in very specific conditions.

3.1.2   In HSP 14.3.0

Issue Identifier	Description
Feature: ETKUS-3666	Allow HSP downdate of components based on the specific HW state of the ETK. For example, HW state C0xx has less restrictions than HW state E0xx.
Feature: ETKUS-3824	Setting the configuration feature "IFSupplyVoltage" to 1.8V or 2.5V is only possible for HW state E0xx or higher.

3.1.3   In INCA 7.5.2, HSP 14.2.0

Issue Identifier	Description
Feature: ETKPRG-2126	Improved JTAG performance by 20% for Distab based measurement. Requires both INCA7.5.2 and HSP14.2.0 to have increased performance. Using this HSP version with older INCA versions results in the same performance as the past. Using this INCA version with older HSP versions will allow the user to potentially select too many measurement signals, resulting in a measurement

	overflow. Existing experiments usable with prior INCA versions remain useable with this INCA version. When using INCA 7.5.2 or higher, ensure the ETK is updated with HSP 14.2.0 or higher.

Feature:
ETKPRG-2211
	Additional configuration features for customer specific use cases:
	  - MaxCollectionFactor defines if multiple XCP DAQs may be stored in a single ethernet frame.
	  - ReadyPinTimeout defines how long the ETK waits for the JTAG /RDY pin before a timeout occurs.
	
	Features are not available in XCT.

3.1.4   In HSP 14.1.0

Issue Identifier	Description
Feature: ETKUS-3481	Ensure proper operation of 40MHz JTAG for microcontrollers specified with up to 17ns TDO max delay (U2A). Additionally update misc. timing constraints for TDO at 10/20/25 MHz

3.1.5   In INCA 7.4.7, ETK Tools 4.3.7

Issue Identifier	Description
Feature: ETKPRG-1878	Support of RH850 U2B10 and U2B6 microcontrollers.

3.1.6   In INCA 7.4.6, ETK Tools 4.3.6

Issue Identifier	Description
Feature: ETKPRG-1841	Support of RH850 U2A8 microcontroller.

3.1.7   In INCA 7.4.4, ETK Tools 4.3.4

Issue Identifier	Description
Feature: ETKPRG-1633	Support of RH850 U2A16 and U2A6 microcontrollers.

3.1.8   In HSP 13.4.0

Issue Identifier	Description
Correction of TFS #715476	The XETK-S22 downdate prevention is corrected. Please refer to "New or Enhanced Functions, In HSP13.1" and "Known Issues, In HSP13.1 to HSP13.3" for further details on the corrected issue. After updating to this version, the user is not able to downdate to older HDC versions using HSP.

3.1.9 In HSP 13.3.0

Issue Identifier	Description
Feature: ETKUS-2395	Update Aurora status register to show individual lane status; formerly only overall link status was available.

3.1.10 In HSP 13.2.0

Issue Identifier	Description
Correction of TFS #690760	CRAM4 slave trace of the RH850 U2B24 is now possible, additionally requires INCA 7.4.2.

3.1.11 In HSP 13.1.0

Issue Identifier	Description
Correction of TFS #683538	XETK-S22 is now performing HW arbitration correctly during /RESETout events under all circumstances.
Feature: ETKPRG-929	Support of RH850 U2B24FCC microcontroller. Requires INCA 7.4.1.
Feature: ETKPRG-1467	XETK-S22 HDC is prepared for the upcoming hardware state E014/02. After updating to this version, the user is not able to downdate to older HDC versions using HSP.

3.1.12 In INCA 7.4.1, ETK Tools 4.3.1

Issue Identifier	Description
Feature: ETKPRG-929	Support of RH850 U2B24FCC microcontroller. Requires HSP 13.1.0.

3.1.13 In HSP 12.6.0

Issue Identifier	Description
Correction of TFS #664102	Correction of start on working page after XETK recovers from standby mode.
Correction of TFS #663507	XETK now responds to all unknown XCP user commands.
Correction of TFS #655514	WDT disable pin can now be correctly controlled via XCP ECU_WATCHDOG_DISABLE command.

3.1.14 In INCA 7.3.6

Issue Identifier	Description
Correction of TFS #662647	Raster check incorrectly using JTAG access timing with Supplementary D17 rasters instead of trace access timing.

3.1.15 In ETK Tools 4.2.6

Issue Identifier	Description
Feature: ETKUS-1756	Support of RH850 P1M-E microcontroller memory map, included in cpu type P1M.

3.1.16 In INCA 7.3.3

Issue Identifier	Description
Feature: ETKPRG-827	Enabled Direct Register Access (DRA) Page switching for all RH850 microcontrollers with built in overlay registers / memory. Requires HSP 12.3.0
Feature: ETKPRG-735	Support of RH850 F1KM-Sx microcontrollers, included in cpu type F1K.

3.1.17 In HSP 12.3.0

Issue Identifier	Description
Feature: ETKPRG-848	Enabled ECU Backed Flashing (EBF) with legacy handshake. Using EBF with Advanced Handshake does not require an HSP update.
Feature: ETKPRG-827	Enabled Direct Register Access (DRA) Page switching for all RH850 microcontrollers with built in overlay registers / memory. Requires INCA 7.3.3.
Feature: ETKPRG-872	Align CPLD update approach to be consistent with FETK-T3.

3.1.18 In HSP 12.2.0

Issue Identifier	Description
Feature: ETKUS-1023 / ETKUS-961	Updated architecture between HDC and FW to reduce logic utilization.

3.1.19 In HSP 12.1.0

Issue Identifier	Description
Feature: ETKPRG-672	Support of enhanced RH850 halting sequence for flashing the microcontroller. - Requires updated ProF Control Flow (only to use new halting) - Only supported for RH850 E2x, U2A microcontrollers - Existing ProF Control Flows are still functional

3.1.20 In INCA 7.3.1, ETK Tools 4.2.1

Issue Identifier	Description
Feature: ETKPRG-673	Support of RH850 E2x (production) microcontrollers.
Feature: ETKPRG-682	Support of RH850 P1x-C microcontroller.

3.1.21 In HSP 12.0.0

Issue Identifier	Description
Correction of TFS #623391	Advance Handshake: 'RAM valid' bit mistakenly cleared in some cases on simultaneous ECU / XETK power up.

Correction of TFS #629341	XETK Boot: XETK releases reset too early during power on.
Correction of TFS #628211	JTAG access occurs up to 4 bytes beyond defined memory segments, potential to trigger ECC error.
Correction of TFS #631530	Potential for Aurora training to fail during first attempt, in particular setups at cold temperature.
Feature: ETKPRG-615	Enhancements to ETK Debugger Comm interface to provide: - Ability to detect if an XETK or FETK type is present - Ability to request the ETK to skip trace setup
n/a	Online bist with Lauterbach debugger isn't working correctly. 'Bist Status' to the debugger has the wrong polarity.

3.1.22 In INCA 7.3.0, INCA 7.2.16

Issue Identifier	Description
Feature: ETKPRG-615	Enhancements to trace plugin to consider new ETK Debugger Comm interface bit 'ETK skip trace setup'. Requires HSP 12.0.0 or newer.

3.1.23 In INCA 7.2.15, HSP 11.15.0, ETK Tools 4.1.16

Issue Identifier	Description
Correction of TFS# 622755	HSP: Side affect when using "online bist mode" (JtagTrstMode = 0) when microcontroller goes through an application reset
Correction of TFS# 619144	INCA: XETK does not support multiple busmasters in the same trace window entry
Correction of TFS# 616910	XCT: Calibration Method 'FixedSizeNonMoveable' has original address and size grayed out
New Feature, Jira: ETKPRG-487	INCA: Updates to trace resource sharing: trace windows are allocated in descending order, several registers are written via read/modify/write
New Feature, Jira: ETKPRG-487	HSP, XCT: Update to support debugger recognizing "power down BIST" mode

3.1.24 In INCA 7.2.14, HSP 11.14.0, ETK Tools 4.1.15

Issue Identifier	Description
Correction of TFS# 619011	Update to ensure the ECU handshake is not missed in specific configurations when using the Lauterbach T32 in multi-core mode.
Correction of TFS# 619819	XETK-S22 updated to ensure standby voltage is applied as configured
Correction of TFS# 620783	Updated XETK-S22.0D FW to reduce coldstart timing with trace data acquisition.
Correction of TFS# 620577	Updated XCT memory ranges for E2x and U2A microcontrollers: data flash & extended data flash
New Feature, Jira: ETKPRG-396	Updates to support new microcontroller: RH850_U2AEVA_Rev1

New Feature, Jira: ETKPRG-397	XETK updated to support new feature "Enhanced Coldstart for Distab17"

3.1.25 In INCA 7.2.13, HSP 11.13.0, ETK Tools 4.1.14

Issue Identifier	Description
Correction of TFS#611988	XETK updated to properly propagate the microcontroller VCC to the debugger in all cases.
New Feature, Jira: ETKPRG-322	XETK updated to support an additional standby mode, "deep sleep", similar to FETKs.
New Feature, Jira: ETKPRG-361	XETK updated to support trigger polling of C1MA subcore (PE3), in addition to the primary cores.

3.1.26 In INCA 7.2.12, HSP 11.12.0

Issue Identifier	Description
Correction of TFS#610143	XETK "Fine Grain Trace" support aligned to FETK. When using HSP 11.12.0, INCA 7.2.12 must be used; otherwise fine grain trace measurement is not possible.

3.1.27 In INCA 7.2.11, HSP 11.11.0, ETK Tools 4.1.12

Issue Identifier	Description
Feature TFS# n/a	XETK-S22.0D released

3.1.28 In INCA 7.2.11, HSP 11.11.0

Issue Identifier	Description
Feature TFS# n/a	XETK-S22.0 & INCA support up to 256 hardware triggers, using up to 64 shared priorities.

3.1.29 In HSP 11.10.0, ETK Tools 4.1.11

Issue Identifier	Description
Feature TFS# 598019	Additional configuration feature "FLMD0Usage", for selecting the primary function of the XETK pin "FLMD0". With this feature, it is now possible re-assign the FLMD0 pin to the function of watchdog timer disable (WDT). The following values are possible: "FLMD0Usage" "FLMD0" "FLMD0Usage" "WDT" The default value of the XETK is "FLMD0". The feature is introduced to support the use case of a low pin count ETANx connector (provides only FLMD0 signal), but the WDT function is needed for the ECU. Higher pin count ETANx connectors provide both signals.

	The display name in the (X)ETK Configuration Tool is "FLMD0 Pin Used As".
Feature TFS# 591757	Additional configuration feature "CpuTriggerCfg", for selecting the trigger polling method used by the XETK. The following values are possible: "CpuTriggerCfg" "0" -> 32 bits of PE0 (core 0) "CpuTriggerCfg" "1" -> 32 bit OR of PE0 & PE1 The default value of the XETK is "0". The feature is introduced to support the use case of reading triggers from each core, e.g. C1MA2. With this microcontroller, PE1 can't write to the trigger register of PE0; therefore the XETK must be configured to read PE1. The total number of triggers is still 32. The display name in the (X)ETK Configuration Tool is "Trigger Register Select". Note: The user must ensure different bits are used by PE0 and PE1.
Feature TFS# n/a	Additional configuration feature "AdvancedHandshakeEnabled", for selecting the handshake (HS) method used by the XETK. The following values are possible: "AdvancedHandshakeEnabled" "0" -> Legacy HS "AdvancedHandshakeEnabled" "1" -> Adv HS The default value of the XETK is "0". The feature is introduced to support the introduction of the Advanced Handshake used by other (F,X)ETK to the XETK-S22. This handshake uses the microcontroller registers DBG_MBIN, DBG_MBOUT. The new handshake is recommended for all new projects and is possible with all RH850 microcontrollers. It ensures future compatibility to FETK products. The display name in the (X)ETK Configuration Tool is "Advanced Handshake Enabled".
Feature TFS# 589822	Updates to support new microcontrollers: RH850_E2xFCC2_Rev1 and RH850_C1MA_Rev1 Support for these microcontrollers is already included in INCA 7.2.9.

3.1.30 In HSP 11.9.0

Issue Identifier	Description
Feature TFS# 589822	Updates to support new microcontrollers: RH850_E2xFCC2_Rev1 and RH850_C1MA_Rev1
Correction of TFS# 585976	Update to ensure debug registers are not cleared on application resets (/RESETout only).

3.1.31 In INCA 7.2.9

Issue Identifier	Description
Feature TFS# 589822	Updates to support new microcontrollers: RH850_E2xFCC2_Rev1 and RH850_C1MA_Rev1

3.1.32 In HSP 11.8.0

Issue Identifier	Description
Correction of TFS# 583880	Update to ensure XETK propagates ECU VCC status correctly to the debugger connector.
Correction of TFS# 584065	Update to ensure the XETK is controlling reset as expected from XETK power on or returning from standby mode.
Correction of TFS# 578670	Update to ensure the XETK updates the Distab 17 event list header before writing coldstart 'ready' pattern.
Correction of TFS# 584857	Update to ensure the XETK does not lose connection with the PC due to externally controlled microcontroller resets.
Correction of TFS# 584858	Update to ensure the XETK maintains JTAG access to the µC going through internally generated software resets when "ResetOut" = "0".

3.1.33 In ETK Tools 4.1.9

Issue Identifier	Description
Correction of TFS# 582669	Update to ensure default calibration handles can be created for each microcontroller.
Correction of TFS# 589205	Update to allow OMDv2 to be displayed and selected.

3.1.34 In INCA 7.2.7 and HSP 11.7.0

Issue Identifier	Description
n/a	Initial version, support of XETK-S22

3.2   Known issues

3.2.1   In HSP 13.1 to HSP13.3

Issue Identifier	Description

TFS #715476	The XETK-S22 downdate prevention is not implemented correctly in HSP13.1 to HSP13.3. It allows the user to put an older HSP version (HSP12.x) into the device which is not supported with certain HW states and results in a nonfunctional XETK-S22. To regain full functionalities for all XETK-S22 HW states, update the XETK to HSP13.1 or higher.

3.2.2   In HSP 13.1.0, INCA 7.4.1

Issue Identifier	Description
TFS #690760	Unable to use CRAM 4 slave trace of RH850 U2B24.

3.2.3   ETK Tools 4.1.10

Issue Identifier	Description
Feature TFS# 589822	Updates to support new microcontrollers are only included in INCA, but not ETK Tools: RH850_E2xFCC2_Rev1 and RH850_C1MA_Rev1 Will be corrected in ETK Tools 4.1.11.

3.2.4   In HSP 11.8.0

Issue Identifier	Description
591279	The XETK-S22 does not support MCE. Issue is planned for resolution HSP 11.9.0.
591757	The XETK-S22 only reads the primary core's trigger register. The microcontrollers that are unable to write to this register from the other cores must use additional software to instruct the primary core to write to the trigger register.

3.2.5   In HSP 11.7.0

Issue Identifier	Description
583880	In some cases, the XETK will not propagate the ECU VCC status correctly to the debugger. The debugger is usable while the ECU is on; however, when the ECU is turned off the debugger may report target in reset instead of target off.
584065	The XETK is not controlling reset as expected from XETK power on or returning from standby mode.
578670	The XETK does not update Distab 17 event list header before writing coldstart 'ready' pattern.
584857	The XETK may lose connection with the PC sporadically when measurement is in process and an external reset is applied to the microcontroller.
584858	The XETK does not support the µC going through internally generated software resets when "ResetOut" = "0".

3.2.6   In ETK Tools 4.1.8

Issue Identifier	Description
582669	The Calibration Handles display in the Memory Layout Editor shows missing or incorrectly sized handles for specific microcontrollers after creating the default handle set. This will also result in the incorrect information in a generated a2l snippet. The following have correct information displayed: - RH850_E1xFCC1_Rev1 - V850_PJ4_Rev1 The following have incorrect sizes displayed: - RH850_E1xFCC2_Rev1 (actual is 32KB) - RH850_P1M_Rev1 (actual is 8KB) The remaining microcontrollers have no default handle set displayed. For the capabilities of all microcontrollers, please refer to the product's Solution Proposal. Issue is planned for resolution in ETK Tools 4.1.9.
589205	It is not possible to select OMDv2.

4 Product Variants

The XETK-S22.0 can be purchased in two variants. For complete details refer to the user guide.

4.1 XETK-S22.0B

The XETK-S22.0B provides a JTAG interface to connect to the Renesas RH850 family of microcontrollers.

4.2 XETK-S22.0D

The XETK-S22.0D provides a JTAG and Aurora Trace interface to connect to the Renesas RH850 family of microcontrollers. The Aurora Trace interface offers a higher measurement throughput rate; however, the interface is only available on specific microcontrollers.

The XETK-S22.0D is additionally compatible to the XETK-S22.0B's JTAG interface, features, and supported microcontrollers.

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. The first released version, available modifications, and current version are listed below. For the version syntax please refer to chapter 2.1.

5.2 First delivered version

5.2.1 XETK-S22.0B

The hardware state **B011/02** is the first delivered version.

The revision B pcb is manufactured with partially defective drill files. As a result, six nets are missing ground connections. The proper functionality is achieved by adding five additional wires and one resistor to connect the nets to ground. The hardware is shipped with these additional modifications.

5.2.2 XETK-S22.0D

The hardware state **C012/02** is the first delivered version.

5.3 Changes from hardware state B011 to C011

The functionality of C011/02 is equivalent to B011/02. The C011 hardware does not require any additional wires or resistors for proper ground connections. An upgrade from B011 to C011 is not necessary or possible.

5.4   Changes from hardware state C011 to C012

The functionality of C012/02 hardware has a resistor value change for the VSTBY output level. The resistors R911 and R913 have new values to consider the resistance of the ETAMx cable connection. The nominal output voltage of VSTBY remains as specified in the product User Guide. An upgrade from C011 to C012 is not necessary, but is possible on request during by using the standard repair process.

5.5   Changes from hardware state C012 to E014

The functionality of E014 hardware remains the same as C012. Various obsolete components have been replaced. An upgrade from C012 to E014 is not necessary or possible.

5.6   Current delivery condition

5.6.1   XETK-S22.0B

The hardware state **E014/02** is delivered with all new shipments.

5.6.2   XETK-S22.0D

The hardware state **E014/02** is delivered with all new shipments.

6   Firmware Modifications

6.1   General remarks to this chapter

The programmable logic code within the XETK-S22.0 is stored onto programmable logic devices (FPGA, Firmware). The first released version and current version are listed below. For the version syntax please refer to chapter 2.1.

6.2   First delivered version

6.2.1   XETK-S22.0B

FPGA Work	1.0.2
Firmware Work	1.0.11
FPGA Rescue	1.0.2
Firmware Rescue	1.0.11
CPLD	1.0.3

6.2.2   XETK-S22.0D

FPGA Work	1.3.29
Firmware Work	1.3.58
FPGA Rescue	1.2.16
Firmware Rescue	1.2.28
CPLD	1.0.6

6.3   Current delivery condition

The following firmware versions will be programmed into all XETK-S22.0 shipments:

FPGA Work	1.17.10
Firmware Work	1.20.16
FPGA Rescue	1.3.7
Firmware Rescue	1.6.1
CPLD	1.0.7

In case of any problems, the above-mentioned components can be programmed to the XETK by using **HSP V14.3.0**. 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 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.
Update of FPGA(rescue), Firmware(rescue), and CPLD are **not** done in a failsafe
manner.

7   Abbreviations

ASCET-RP	Rapid Prototyping Software of ETAS
XETK	Product (emulator test probe)
firmware	Software running on the XETK hardware; may be updated for 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
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