

Product:	XETK-S16.0	Rev :	15	Page 1 of 13
Title :	Release-Notes			



Product :	XETK-S16.0			
Title :	Release Notes			
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TTNR :	XETK-S16.0A      F-00K-112-258			
Comments :	Current shipped hardware state: <b>E014/02</b> Current released firmware version: <b>HSP 14.2.0</b>			
Created:	Name M. Higgins	Department NE/EHE3	Signature M. Higgins	Date 2024-09-24
Released:	Name R. Shaddach	Department NE/EHE3	Signature R. Shaddach	Date 2024-09-24

## Changes

Revision	Description	Date	Name	Signature
01	Initial Version	2019-09-24	M. Higgins	M. Higgins
02	Updated HDC / FW	2019-12-17	M. Higgins	M. Higgins
03	Updated HDC/ FW	2020-03-31	M. Higgins	M. Higgins
04	New microcontroller support	2020-06-25	M. Higgins	M. Higgins
05	Updated HDC/Firmware with HSP 12.2.	2020-09-29	M. Higgins	M. Higgins
06	Updated HDC/Firmware with HSP 12.3. Additional $\mu$ Cs supported.	2020-12-15	M. Higgins	M. Higgins
07	Updated HDC/Firmware with HSP 12.6.	2021-9-28	M. Higgins	M. Higgins
08	Updated HDC/Firmware with HSP 13.3.0. Additional $\mu$ Cs supported.	2022-12-13	M. Higgins	M. Higgins
09	Updated HDC/Firmware with HSP 13.4.0. Additional $\mu$ Cs supported. Updated hardware to E014/02.	2023-03-28	M. Higgins	M. Higgins
10	Updated HDC/Firmware with HSP 13.5.0.	2023-06-27	M. Higgins	M. Higgins
11	Updated HDC/Firmware with HSP 13.6.0.	2023-09-15	M. Higgins	M. Higgins
12	Updated HDC/Firmware with HSP 13.7.0. Additional $\mu$ Cs supported.	2023-12-12	M. Higgins	M. Higgins

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13	Updated HDC/Firmware with HSP 14.0.0.	2024-03-26	M. Higgins	M. Higgins
14	Updated HDC/Firmware with HSP 14.1.0	2024-06-25	M. Higgins	M. Higgins
15	Updated HDC/Firmware with HSP 14.2.0	2024-09-24	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 have to 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

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## 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

The XETK-S16.0 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)

<b>a</b>	PCB Version (A=V1.0, B=V1.1, C=V1.2, ...)
<b>bbb</b>	PCB Hardware State (010, 011, 012, ...)
<b>cc</b>	PCB Population Variant (00, 01, 02, ...)

The XETK-S16.0 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)

<b>aaa</b>	Major Release (0...255)
<b>bbb</b>	Minor Release (0...255)
<b>cccc</b>	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

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## 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 table reflects the initial versions which can be used with the XETK-S16.0 and the listed microcontroller.

<b>Microcontroller</b>	<b>HSP</b>	<b>INCA</b>	<b>ETK Tools</b>	<b>ASCET-RP</b>	<b>INTECRIO</b>
NXP S32Vxxx_Rev1	V11.14.0	V7.2.14	V4.1.15	V6.4	V4.6
Cypress S6J3xxx_Rev1	V11.14.0	V7.2.14	V4.1.15	V6.4	V4.6
Cypress CYT2Bx_Rev1	V11.14.0	V7.2.14	V4.1.15	V6.4	V4.6
Cypress CYT4Bx_Rev1	V11.14.0	V7.2.14	V4.1.15	V6.4	V4.6
NXP S32K14x_Rev1	V12.1.0	V7.3.1	V4.2.1	V6.4	V4.6
NXP S32K3xx_Rev1	V13.3.0	V7.3.3	V4.2.3	V6.4	V4.6
QCOM SA8xxx_Rev1	V12.3.0	V7.3.3	V4.2.3	V6.4	V4.6
NXP S32Gxxx_Rev1	V13.0.0	V7.4.0	V4.3.0	V6.4	V4.6
TI AM263x_Rev1	V13.3.0	V7.4.3	V4.3.3	V6.4	V4.6
NXP S32Z27x_Rev1	V13.4.0	V7.4.4	V4.3.4	V6.4	V4.6
NXP S32NZ5x_Rev1	V13.7.0	V7.4.7	V4.3.7	V6.4	V4.6
Thinktech TTA8_Rev1	V13.4.0	V7.4.4	V4.3.4	V6.4	V4.6

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### 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 HSP 14.2.0

Issue Identifier	Description
Feature: ETKUS-3681	Enhancements to HDC to ensure the JTAG /TRST signal is asserted when the microcontroller is in reset. The signal is asserted based on /RESETin, not /RESETout.
Feature: ETKUS-3665	Additional configuration features to allow the XETK to be configured for new microcontrollers, using the generic uC type: <ul style="list-style-type: none"> <li>- SifAdiVersion</li> <li>- SifDefaultApAddress</li> <li>- SifDefaultCswValue</li> </ul> Features are not available in XCT.

##### 3.1.2 In HSP 14.1.0

Issue Identifier	Description
Correction of TFS #762502	XETK now reacts to changes of the configuration feature "IFSupplyVoltage" immediately; refer to the known issue list in section 3.2 for further details.

##### 3.1.3 In HSP 14.0.0, INCA 7.5.0, ETK Tools 4.4.0

Issue Identifier	Description
Feature: ETKPRG-2035	Support of standard XCP Debugging with Lauterbach Trace32. Simultaneous usage with INCA is not possible with this version.
Feature: n/a	Align cpu type naming for microcontrollers supported by XETK-S16.0A and FETK-T5.0.

##### 3.1.4 In HSP 13.7.0, INCA 7.4.7, ETK Tools 4.3.7

Issue Identifier	Description
Feature: ETKPRG-1567	Support of NXP S32NZ5x microcontrollers. Requires HSP 13.7.0.

##### 3.1.5 In HSP 13.6.0, INCA 7.4.6

Issue Identifier	Description
Feature: ETKPRG-1839	Add support of 30MHz and 40MHz JTAG frequencies, removal of 25MHz. Requires INCA 7.4.6 for accurate performance calculation / raster check. 40Mhz is

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	applicable for S32Gxxx and S32Z27x microcontrollers. 30MHz is applicable for S32K3xx microcontroller.
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### 3.1.6 In HSP 13.5.0

Issue Identifier	Description
Feature: n/a	Enhancements to HDC for configuration / debugging new or unsupported microcontrollers. Configuration for TI TDA4Vx available.

### 3.1.7 In HSP 13.4.0

Issue Identifier	Description
Correction of TFS #715473	XETK-S16 no longer has memory access errors when using hardware debugger arbitration. Issue was introduced in HSP13.0.
Feature: ETKPRG-1624	XETK-S16 HDC is prepared for hardware state E014/02. After updating to this version, the user is not able to downgrade to older HDC versions using HSP.

### 3.1.8 In INCA 7.4.4, HSP 13.4.0, ETK Tools 4.3.4

Issue Identifier	Description
Feature: ETKPRG-1603	Support of NXP S32Z27x microcontrollers.
Feature: ETKPRG-1377	Support of Thinktech TTA8 microcontrollers.

### 3.1.9 In INCA 7.4.3, HSP 13.3.0, ETK Tools 4.3.3

Issue Identifier	Description
Feature: ETKPRG-1521	Support of TI AM263x microcontrollers.

### 3.1.10 In INCA 7.4.0, HSP 13.0.0, ETK Tools 4.3.0

Issue Identifier	Description
Feature: ETKUS-1422	Support of NXP S32Gxxx microcontrollers.

### 3.1.11 In HSP 12.6.0

Issue Identifier	Description
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.

### 3.1.12 In HSP 12.3.0

Issue Identifier	Description
Feature: ETKPRG-872	Align CPLD update approach to be consistent with other XETK, FETK-T.



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Correction of TFS #648782	Fixed issues with hardware debugger arbitration which had been introduced with HSP 12.2.
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### 3.1.13 In INCA 7.3.3, ETK Tools 4.2.3

Issue Identifier	Description
Feature: ETKPRG-734	Support of Qualcomm SA8xxx microprocessors.
Feature: ETKPRG-866	Support of NXP S32K3xx microcontrollers.

### 3.1.14 In HSP 12.2.0

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

### 3.1.15 In INCA 7.3.1, ETK Tools 4.2.1

Issue Identifier	Description
Feature: ETKPRG-675	Support of NXP S32K14x microcontrollers.

### 3.1.16 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.

### 3.1.17 In HSP 11.15.0

Issue Identifier	Description
Correction of TFS #621341	Occasional memory access failure with HW debugger arbitration.
Correction of TFS #622269	Watchdog Timer disable is not available with certain ETANx cables (ETAN4)
Correction of TFS #625241	Configuration feature for JTAG voltage not switching to 3.3V correctly

### 3.1.18 In INCA 7.2.14, HSP 11.14.0, ETK Tools 4.1.15

Issue Identifier	Description
-	Initial release of XETK-S16.0A

## 3.2 Known issues

### 3.2.1 In HSP 13.7, HSP 14.0

Issue Identifier	Description
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TFS #762502	XETK only configures the ECU interface voltage during boot-up sequence; any change in the feature "IFSupplyVoltage" is not applied until the XETK power is cycled. The expected behavior is that the voltage is used immediately when the configuration value is received by the XETK.
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### 3.2.2 In HSP 11.14.0

Issue Identifier	Description
TFS #621341	Occasional memory access failure with HW debugger arbitration.
TFS #622269	Watchdog Timer disable is not available with certain ETANx cables (ETAN4)

## 4 Product Variants

The XETK-S16.0 can be purchased in only one variant, XETK-S16.0A. For complete details refer to the user guide.

The XETK-S16.0A provides a JTAG interface to connect to the ARM based microcontrollers.

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## 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

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

### 5.3 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.

### 5.4 Current delivery condition

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

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## 6 Firmware Modifications

### 6.1 General remarks to this chapter

The programmable logic code within the XETK-S16.0 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

FPGA Work	1.1.96
Firmware Work	1.0.63
FPGA Rescue	1.2.30
Firmware Rescue	1.0.54
CPLD	1.0.6

### 6.3 Current delivery condition

The following firmware versions will be programmed into all XETK-S16.0 shipments:

FPGA Work	1.15.9
Firmware Work	1.18.17
FPGA Rescue	1.3.7
Firmware Rescue	1.0.54
CPLD	1.0.7

In case of any problems, the above-mentioned components can be programmed to the XETK by using **HSP V14.2.0**. 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.

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## 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	<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
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)
XETK Configuration Tool	Configuration Software, in order to configure a (X)ETK / FETK