

Product:	XETK-S20.0B	Rev :	34	Page 1 of 18
Title :	Release-Notes			

Product :	XETK-S20.0B			
Title :	Release Notes			
File :	XETK-S20.0B_Release-NotesV34_.docx			
TTNR :	F-00K-108-051			
Comments :	Current shipped (hardware state): <b>C013/01</b> Current released firmware version: <b>HSP 14.0.0</b>			
Created:	Name R. Mai	Department ETAS-DAP/XPC-Fe3	Signature R. Mai	Date 2023-03-10
Released:	Name K.-H. Nirschl	Department ETAS-DAP/XPC-Fe3	Signature K.-H. Nirschl	Date 2024-03-08

## Changes

Revision	Description	Date	Name	Signature
01	Initial Version	2013-03-07	Sole	Sole
02	New $\mu$ C support	2013-12-10	Mohr	Mohr
03	Known issue for HSP V10.3.0 added	2014-02-04	Mai	Mai
04	$\mu$ C support, CalWakeUp and static feed-through of debugger added	2014-03-13	Mai	Mai
05	DISTAB17 Support	2014-06-25	Dak	Dak
06	BDF Support	2015-06-19	Mai	Mai
07	Updated HDC/Firmware with HSP10.10.0; new units manufactured with hardware state C013/01	2015-10-23	Oexner	Oexner
08	Editorial Modifications	2015-10-23	Oexner	Oexner
09	Update TOC	2015-11-17	Oexner	Oexner
10	Updated Firmware with HSP10.11.0	2015-12-10	Oexner	Oexner

Product:	XETK-S20.0B	Rev :	34	Page 2 of 18
Title :	Release-Notes			

11	Updated Firmware with HSP11.0.0	2016-03-30	Oexner	Oexner
12	Updated HDC/Firmware with HSP11.0.1	2016-04-26	Oexner	Oexner
13	Updated HDC/Firmware with HSP11.1.0	2016-06-09	Oexner	Oexner
14	Software and Microcontroller Support updated	2016-09-20	Oexner	Oexner
15	Updated HDC/Firmware with HSP11.2.1	2016-10-24	Oexner	Oexner
16	Updated Firmware with HSP11.3.0	2016-12-20	Oexner	Oexner
17	Updated Firmware with HSP11.4.0	2017-03-13	Oexner	Oexner
18	Improvements and bug fixes with HSP11.6.0	2017-09-21	Förmer	Förmer
19	Updated Firmware with HSP11.7.0	2017-12-01	Mai	Mai
20	Updated Firmware with HSP11.9.0	2018-06-18	Mai	Mai
21	Updated Firmware with HSP11.10.0	2018-09-13	Mai	Mai
22	Updated Firmware with HSP11.11.0	2018-12-12	Mai	Mai
23	Updated Firmware with HSP11.12.0	2019-03-20	Mai	Mai
24	Updated Firmware with HSP11.14.0	2019-09-17	Mai	Mai
25	Updated Firmware with HSP11.15.0	2019-12-10	Mai	Mai
26	Updated Firmware with HSP12.0.0	2020-03-23	Mai	Mai
27	Updated Firmware with HSP12.3.0	2020-12-01	Mai	Mai
28	Updated Firmware with HSP12.4.0	2021-03-11	Mai	Mai
29	Updated Firmware with HSP12.4.0	2021-06-29	Mai	Mai
30	Updated Firmware with HSP12.6.0	2021-09-16	Nirschl	Nirschl
31	Improvements, bug fixes an updated Firmware with HSP13.1.0	2022-06-10	Nirschl	Nirschl

Product:	XETK-S20.0B	Rev :	34	Page 3 of 18
Title :	Release-Notes			

32	Updated Firmware with HSP13.3.0	2022-12-07	Mai	Mai
33	Updated Firmware with HSP13.4.0	2023-03-10	Mai	Mai
34	Updated Firmware with HSP14.0.0	2024-03-08	Nirschl	Nirschl

Product:	XETK-S20.0B	Rev :	34	Page 4 of 18
Title :	Release-Notes			

## Table of content

1	General Information .....	6
1.1	Safety Notice .....	6
1.2	System Requirements .....	6
1.3	Restrictions .....	6
1.4	Miscellaneous.....	6
2	Version Syntax and Tool-Chain Information .....	7
2.1	Version-Syntax of the XETK-S20.0B .....	7
2.2	Version information of the tool-chain components .....	8
2.3	Software and microcontroller support .....	8
3	What's New - Release Notes .....	9
3.1	New or Enhanced Functions .....	9
3.1.1	New with HSP 14.0.0 and INCA V7.5.0.....	9
3.1.2	New with HSP 13.4.0 and INCA V7.4 SP4 .....	9
3.1.3	New with HSP 13.3.0 and INCA V7.4 SP3 .....	9
3.1.4	New with HSP 13.1.0 and INCA V7.4 SP1 .....	9
3.1.5	New with HSP 12.6.0 .....	10
3.1.6	New with HSP12.5.0, INCA 7.3.5 and XCT 4.2.5 .....	10
3.1.7	New with HSP12.4.0 .....	10
3.1.8	New with HSP12.3.0 .....	10
3.1.9	New with HSP12.0.0 .....	10
3.1.10	New with HSP11.15.0 .....	10
3.1.11	New with HSP11.14.0 .....	10
3.1.12	New with HSP11.12.0 .....	11
3.1.13	New with HSP11.11.0 .....	11
3.1.14	New with HSP11.10.0 .....	11
3.1.15	New with HSP11.9.0 .....	11
3.1.16	New with HSP11.8.0 .....	11
3.1.17	New with HSP11.7.0 .....	12
3.1.18	New with HSP11.6.0 .....	12
3.1.19	New with HSP11.4.0 .....	12
3.1.20	New with HSP11.3.0 .....	12
3.1.21	New with HSP11.2.1 .....	12
3.1.22	New with HSP11.2.0 .....	13
3.1.23	New with HSP11.1.0 .....	13
3.1.24	New with HSP11.0.1 .....	13
3.1.25	New with HSP11.0.0 .....	13
3.1.26	New with HSP10.11.0 .....	14
3.1.27	New with HSP10.10.0 and INCA 7.1.10 .....	14
3.1.28	New with HSP10.9.0 and INCA 7.1.9.....	14
3.1.29	New with HSP10.5.0 and INCA 7.1.5.....	14
3.1.30	New with HSP10.4.1 .....	14
3.2	Known issues .....	14
4	Product Variants.....	16
5	Hardware Modifications .....	16
5.1	General remarks to this chapter .....	16
5.2	Hardware delivery condition.....	16
6	Firmware Modifications .....	17
6.1	General remarks to this chapter .....	17
6.2	First delivered version.....	17

Product:	XETK-S20.0B	Rev :	34	Page 5 of 18
Title :	Release-Notes			

6.3	Current delivery condition .....	17
7	Abbreviations .....	18
8	Contact Information .....	19
8.1	Technical Support.....	19
8.2	ETAS Headquarters .....	19

Product:	XETK-S20.0B	Rev :	34	Page 6 of 18
Title :	Release-Notes			

# 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.

Product:	XETK-S20.0B	Rev :	34	Page 7 of 18
Title :	Release-Notes			

## 2 Version Syntax and Tool-Chain Information

### 2.1 Version-Syntax of the XETK-S20.0B

The XETK-S20.0B 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: **abb/cc**

Description (modification details refer chapter 5)

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

The XETK-S20.0B 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

Product:	XETK-S20.0B	Rev :	34	Page 8 of 18
Title :	Release-Notes			

## 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)	V10.0.0	V7.0.0 HF17	V3.9.0	A: V6.4 B: V6.1.4	A: V4.6 B: V4.2.2
TC27x-ED (B-Step, C-Step)	V10.4.0	V7.1.4	V4.0.0	A: V6.4 B: V6.1.4	A: V4.6 B: V4.2.2
TC29x-ED	V10.8.0	V7.1.8	V4.0.4	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

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 14.0.0 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)

##### 3.1.2 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

##### 3.1.3 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

##### 3.1.4 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

Product:	XETK-S20.0B	Rev :	34	Page 10 of 18
Title :	Release-Notes			

### 3.1.5 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

### 3.1.6 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.

### 3.1.7 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

### 3.1.8 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

### 3.1.9 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

### 3.1.10 New with HSP11.15.0

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

### 3.1.11 New with HSP11.14.0

Product:	XETK-S20.0B	Rev :	34	Page 11 of 18
Title :	Release-Notes			

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

### 3.1.12 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

### 3.1.13 New with HSP11.11.0

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

### 3.1.14 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

### 3.1.15 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

### 3.1.16 New with HSP11.8.0

Issue Identifier	Description
#588791	Calibration not working on some PD devices with (invalid calibration handle)

Product:	XETK-S20.0B	Rev :	34	Page 12 of 18
Title :	Release-Notes			

n/a	XCP Event if CPU type is not matching A2L file
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### 3.1.17 New with HSP11.7.0

Issue Identifier	Description
n/a	Added support for LERTv3

### 3.1.18 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

### 3.1.19 New with HSP11.4.0

Issue Identifier	Description
n/a	Support Feature "ECU_DEFINED_ERRORCODES"
n/a	Support monitoring VDDSB RAM

### 3.1.20 New with HSP11.3.0

Issue Identifier	Description
n/a	Cold start 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-alive 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"

### 3.1.21 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 raster.

Product:	XETK-S20.0B	Rev :	34	Page 13 of 18
Title :	Release-Notes			

Call #543855	Update to ensure INCA measurement does not stop if an RP system accesses an XETK event configured for both DAQ and STIM.
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3.1.22 New with HSP11.2.0

n/a

3.1.23 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

3.1.24 New with HSP11.0.1

Issue Identifier	Description
Call #517066	Support "multi-project A2L" (working for FETK-T, FETK-S, dmETK, XETK): Overlay memory configuration allocates only available calibration handles
Call #520218	HDC may hang up when ECU is going to reset while DMA transfer is running

3.1.25 New with HSP11.0.0

Issue Identifier	Description
Call #462578	Update of OMD handling to cover use cases where the OMD had been cleared by ECU software, without a standby power failure.
Call #495909	Performance improvements for DISTAB initialization for cold start measurements.
Call #509978, #509968, #510314	Update XETK heap memory handling to avoid sporadic communication issues: <ul style="list-style-type: none"> <li>Freezing working data causes connection interrupt (Call #509978)</li> <li>SET_DAQ_PTR error when changing experiments (Call #509968)</li> <li>After reconfiguration, measurement is not possible for DISTAB17 (Call #510314)</li> </ul>
Call #510041	Update to ensure measurement restarts correctly after ECU power interruption.
Call #513135	Update of DISTAB17 event list handling for 3 <sup>rd</sup> party use case. Event list entries will be written DAQ lists are started and after subsequent resets.

Product:	XETK-S20.0B	Rev :	34	Page 14 of 18
Title :	Release-Notes			

Call #515424	Update to support MCE measurements in case of ECU is power cycled during running MCE measurements.
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### 3.1.26 New with HSP10.11.0

Issue Identifier	Description
n/a	XETK supports Service Based Bypass V2.1 (INTECRIO 4.6 respect. ASCET-RP 6.4 needed)

### 3.1.27 New with HSP10.10.0 and INCA 7.1.10

Enhanced Handling of Enabling/Disabling of external Watchdog

### 3.1.28 New with HSP10.9.0 and INCA 7.1.9

Issue Identifier	Description
n/a	Support of BDF
Call #468348	Cold start – Missing of first measurement values
Call #459543	Connection lost in case of specific synchronous raster measurement setup
Call #455876	Incomplete handshake in case trigger register polling interval is less than 20 $\mu$ s and time interval between writing presence pattern and ACC address is larger than 20 $\mu$ s

### 3.1.29 New with HSP10.5.0 and INCA 7.1.5

Issue Identifier	Description
n/a	Support of DISTAB17

### 3.1.30 New with HSP10.4.1

Issue Identifier	Description
n/a	Support of microcontroller: TC275T-ED B-Step and C-Step
n/a	Feature: static feed-through of JTAG debugger
n/a	Feature: Calibration Wake Up

## 3.2 Known issues

Please contact ETAS for further information about known issues listed below.

Issue Identifier	Description
n/a	HSP V10.3.0, introduced for TC275T-ED B-Step, is not working properly. Please don't use this Version.

Product:	XETK-S20.0B	Rev :	34	Page 15 of 18
Title :	Release-Notes			

Call #332974	A bug in the IFX $\mu$ C TC275T-ED itself does not allow the DFlash to be used
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Product:	XETK-S20.0B	Rev :	34	Page 16 of 18
Title :	Release-Notes			

## 4 Product Variants

The XETK-S20.0B 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 **C012/01**. For the version syntax please refer to chapter 2.1.

### 5.2 Hardware delivery condition

The hardware state **C013/01** will be delivered with all new shipments.



Product:	XETK-S20.0B	Rev :	34	Page 17 of 18
Title :	Release-Notes			

## 6 Firmware Modifications

### 6.1 General remarks to this chapter

The programmable logic code within the XETK-S20.0B 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	1.0.66
Firmware Work	1.0.22
FPGA Rescue	1.0.66
Firmware Rescue	1.0.22
CPLD	1.0.2

### 6.3 Current delivery condition

The following firmware versions will be programmed into all XETK-S20.0B shipments:

FPGA Work	1.7.6
Firmware Work	1.17.123
FPGA Rescue	1.7.6
Firmware Rescue	1.17.123
CPLD	1.0.3

In case of any problems the above mentioned firmware can be programmed to the XETK by using HSP 14.0.0. 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.

Product:	XETK-S20.0B	Rev :	34	Page 18 of 18
Title :	Release-Notes			

## 7 Abbreviations

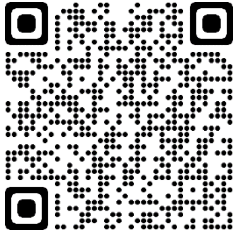
XETK	Product (emulator test probe) which can directly be connected to the tools PC
INCA	Measurement and Calibration Software of ETAS
ASCET-RP	Rapid Prototyping Software of ETAS
INTECRIO	Rapid Prototyping Software of ETAS
XETK Configuration Tool	Configuration Software, in order to configure a XETK
HSP	<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
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	<b>M</b> easurement & <b>C</b> alibration
RP	<b>R</b> apid <b>P</b> rototyping
CPLD	<b>C</b> omplex <b>P</b> rogrammable <b>L</b> ogic <b>D</b> evice
FPGA	<b>F</b> ield <b>P</b> rogrammable <b>G</b> ate <b>A</b> rray; interface component to the application hardware
PCB	<b>P</b> rinted <b>C</b> ircuit <b>B</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

Product:	XETK-S20.0B	Rev :	34	Page 19 of 18
Title :	Release-Notes			

## 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](http://www.etas.com/hotlines)



### 8.2 ETAS Headquarters

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