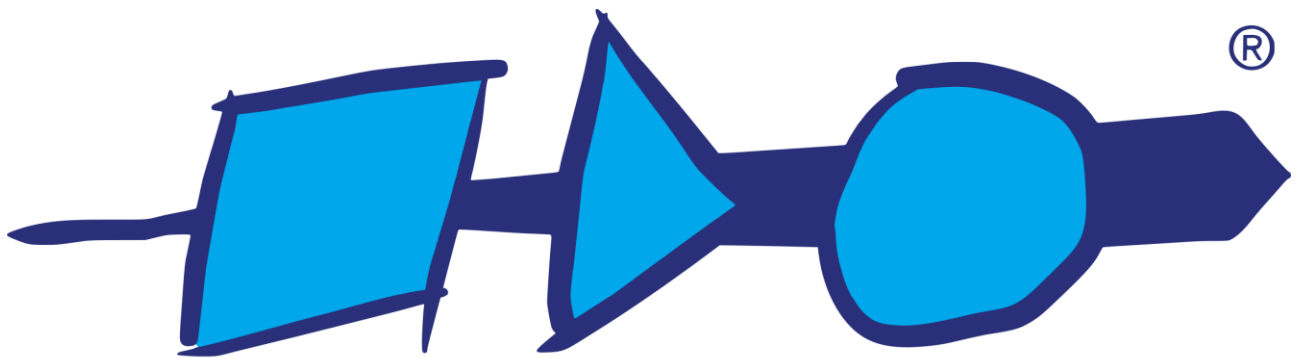A Quick Reference Guide to

UDE® Universal Debug Engine
Debugging, Trace and Test for Embedded Systems

**Integrated Development Environment
for 64-, 32-, 16-bit Microcontrollers and Embedded Processors**

**AURIX, TriCore, Arm Cortex-M/R/A, Arm7/9/11, S32G/S/V,
Stellar G/P/E, RH850, R-Car, RISC-V, ARC, Power Architecture**

universal debug engine

pls
Development Tools

Introduction

Overview

Thank you for choosing the UDE® Universal Debug Engine, a professional framework for debugging, trace and test of microcontrollers and multi-core SoCs.

The software which you are about to install is the UDE® Standard License software. Included with the full licensed version comes a high-speed communication hardware which speeds up downloading your application into the target system. It offers a flexible way of communication via various communication channels to the supported microcontroller.

Special versions of UDE® like the **MemTool Flash/OTP Memory Programming Tool** are available on your request.

The **UDE Manual.pdf** (A Software Guide to **UDE® Universal Debug Engine),** an appendix of this manual, supplements this manual and describes the UDE® based on the selective Evaluation Boards. However, the UDE® is also working with other 64- /32-bit architectures based hardware and simulators. Please see the compatibility list in the appendix of the **UDE Manual.pdf** or the up-to-date list on our Web site for supported MCUs and SoCs.

The **UDE Manual Appendix.pdf** (Hardware Appendix to the Software Guide), an appendix of the **UDE Manual.pdf**, supplements this manual. Please see this manual for detailed description of the hardware interfaces.

You are invited to browse to our Web site at **https://www.pls-mc.com** to get the newest information or to download the latest version of **UDE® Universal Debug Engine**. Please check your **registration for the PLS Newsletter**, which informs you about latest UDE® news and updated software version of the UDE®. The PLS Newsletter is provided via e-mail and you can register it via your profile at **https://www.pls-mc.com/accounts/profile/**. In addition, the latest update information is available via the **About Box** of UDE®.

Feedback

PLS welcomes feedback on our products and documentations. If you have any comments, suggestions or improvements about the products you are using, please use the Feedback Form from our Web Site **https://www.pls-mc.com**, send an e-mail to **support@pls-mc.com** or call our Support Line + 49 35722 384 - 0.

Downloads

The following items can be downloaded at **https://pls-mc.com/service/downloads/** after registration.

➢ UDE® Software

➢ **UDE Manual.pdf** (A Software Guide to UDE® Universal Debug Engine)

➢ **UDE Manual Appendix.pdf** (Hardware Appendix to the Software Guide)

➢ UDE® Application examples

➢ Additional information and datasheets.

System Requirements

To run **UDE® Universal Debug Engine** at least the following minimum system configuration is required:

	Minimum	**Recommended**
CPU	Intel or AMD x86_64 (64-bit) processor	Intel Core i7™ or AMD R7 processor
RAM	4 GByte	8 GByte
Free disk space	2 GByte HDD	8 GByte SSD
Display	SXGA	WUXGA
Operating System	Windows®10 64-bit or Windows®11 64-bit	Windows®10 64-bit or Windows®11 64-bit

Further requirements are described inside our **UDE Manual.pdf**.

Safety Instructions

Safety Instructions for Products and Equipment

Warning! It is critical that you read and follow this safety advice, the product description including technical data and the associated technical documentation. Do not use the product if you cannot read and/or understand the Information for safe operation. If you do have questions for safe operation, please contact the PLS support at **support@pls-mc.com**.

This PLS product enables users to control systems which accomplish safety functions (e.g., in electronic control systems), to change safety relevant data, or to allocate those for further processing. Hence, the application of this product can be hazardous. Improper use and unskilled application without adequate instruction and experience in handling of such products may cause threats to life and physical conditions as well as damages to property.

Our products have been developed and released exclusively for use in applications defined in the product description.

Fitness and suitability of the products for any intended use beyond the utilization for which the products have been released (e. g. other stresses/strains or technical conditions) need to be verified by the user on his own authority by taking appropriate actions and measures (e. g. by means of tests).

➢ PLS products made available as **beta versions** of firmware, hardware and software are to be used exclusively in testing and evaluation. These products may have not sufficient technical documentation and may not fulfill all requirements for quality and accuracy for market released series products. Therefore, product performance may differ from the product description and your expectations. The product should be used only in controlled test environments. Do not use data and results from **beta versions** without prior and separate verification and validation and do not pass them to third parties without prior examination.

➢ Do not use this product if you do not have proper experience and training in using the product.

➢ Data of any kind, which have been identified or collected by using PLS products, have to be verified with respect to reliability, quality and suitability prior to any use or dissemination.

➢ When using this product with systems which accomplish safety functions (e.g., in electronic control systems) that influence system behavior and can affect the safe operation of the system, you must ensure that the system can be transitioned to a safe condition (e.g. emergency shutdown or emergency operation mode) if a malfunction or hazardous incident should occur.

➢ All applicable regulations and statutes regarding operation must be strictly followed when using this product

➢ It is recommended to use the products only in closed and designated test environment.

Warning! If you fail to follow this safety advice, there might be a risk of death, serious injury or property damage. PLS and their representatives shall not be liable for any damage or injury caused by improper use of the product. PLS provides trainings regarding the proper and intended use of this product.

Regulatory Compliance and Compliance Statements

The UADx hardware is in conformity with the protection requirements of the EU Council Directive EMC 89/336/EWG, EMC 2004/108/EC, EMC 2014/30/EC. The UADx hardware has been tested and found to comply with the limits for Class B Information Technology Equipment according to the European Standard EN 55022, EN 55024. Please refer the **UDE Manual Appendix.pdf** (Appendix D – CE Declarations).

The UADx hardware complies with the relevant provisions of the RoHS Directive for the European Union.

Software

> Install the software only on systems which fulfill the minimum requirements both in hard- and software.

> For installation of the software administrator rights are required to copy files in directories which are protected by the Windows OS, to install device drivers and modify the registry.

> The software enables the in-depth control of embedded systems. It should only be operated by persons who have the necessary expertise in the systems.

> Incorrect usage of the software can lead to irreparable destruction of components in the connected systems. This concerns in particular components whose integrated permanent memory (e.g. FLASH, PCM) is protected by special mechanisms.

> There is a particular danger if mechanical devices such as motors or actuators are controlled by the embedded systems. In this case, all necessary precautions must be taken to avoid accidents, e.g., emergency shutdown.

> There is also a particular danger if the embedded systems switch voltages that exceed the permissible contact voltages. In this case, all precautions must be taken to avoid accidents, e.g. insulation.

Electrical Safety Instructions

The UDE® Universal Debug Engine shall only be used according to the installing instructions of the **UDE Manual.pdf** and **UDE Manual Appendix.pdf**. Any external power supply used with the Universal Access Device (UAD2^{pro}, UAD2^{+}, UAD2^{next}, UAD3^{+} ...) and its components shall comply with the relevant regulations and standards applicable in the country of intended use.

Please observe the following safety instructions when using the power supply:

> Always use the supplied power adapter, and connect it to an AC outlet of the rated voltage and frequency. If an AC adapter other than those specified by PLS is used, it may result in damage to the UADx and its accessories or AC adapter, fire or electric shock.

> Do not insert or disconnect the AC plug with wet hands. Doing so may cause electric shock.

> Insert the power plug fully and securely. Incomplete insertion may cause fire or electric shock.

> The power supply unit should be connected to an easily accessible socket outlet in the immediate vicinity of the unit.

> Always disconnect the power cord by holding the power plug. Pulling the power cord itself may damage it and cause fire or electric shock.

- ➢ Ensure that the device connections do not come into contact with liquids and do not touch them with wet or greasy hands or metal objects. If liquid gets into the device, stop using the device immediately and contact **support@pls-mc.com**.

- ➢ Do not store the devices in environments with high humidity or where the temperature may change suddenly. If condensation has formed, switch the devices off immediately and wait until all water drops have evaporated.

- ➢ Do not pour liquid substances over the UADx and its accessories or drop other objects on it, this could cause serious damage to the UADx and its components. If this should happen please stop all work with the UADx and its accessories immediately and contact **support@pls-mc.com**.

- ➢ Do not disassemble or attempt to repair the equipment. If a device is damaged, stop using the device immediately and contact **support@pls-mc.com.** Do not touch damaged areas. Avoid contact with eventually spilled liquids.

- ➢ If the UADx and its accessories is visibly damaged or its functionality is limited, it must not be used without prior instruction from support staff (**support@pls-mc.com**). Especially if components are damaged where voltage is flowing through them. These must be replaced by the manufacturer in order to avoid hazards.

- ➢ Unplug the power cord from the wall outlet during a thunderstorm or prolonged absence! Otherwise, damage to the unit could be caused by overvoltage.

Mechanical Safety Instructions

- ➢ Hold the head of the USB cable with your index finger and thumb on both sides and **insert** the cable straight into the USB port as shown in the illustration below. Make sure that you insert it straight and not at an angle.

- ➢ Hold both sides of the USB cable with your index finger and thumb at the point where it is connected to the computer and carefully **pull it out** horizontally to remove the cable from the USB port.

- ➢ Do not insert or remove a USB plug with excessive force.

- ➢ Do not plug in or pull out the USB plug upwards, downwards, left, right or forwards.

- ➢ Do not pull or tug on the USB cable when plugged into the port.

Safety Instructions

> Do not use the Universal Access Device (UAD2^{pro}, UAD2$^+$, UAD2^{next}, UAD3$^+$ ...) and its accessories in places where flammable or combustible gases (gasoline etc.) are present. Doing so may cause a fire.

> The UADx and its components should be operated in a well-ventilated environment and should not be covered. The UADx and its accessories are only intended for use inside buildings.

> The UADx and its components should be placed on a stable, flat surface in use.

> Do not use excessive force when using the equipment. Do not pull on cables or bend them too much.

> Do not expose the devices to fire, microwaves or high temperatures.

> The UADx and its accessories must not be operated if it is damaged, or if smoke or odd smells occur. Doing so may result in a fire. In such situations, disconnect the power adapter from the AC outlet, and contact **support@pls-mc.com**.

> Make sure that the UADx and its accessories is stored at ground level and in a position that does not endanger persons and surrounding equipment.

> Do not place the UADx and its accessories on an unstable or sloping surface. Doing so may result in its dropping or overturning, causing injury. Be careful not to drop the UADx and its accessories when carrying it.

> Before cleaning, remove all connected cables to avoid the risk of electric shock. Clean the outside of the devices only, using a soft, damp cloth. Do not use chemicals or abrasives. Avoid under all circumstances the penetration of moisture into the device.

> The use of spare parts, accessories and special equipment which have not been tested and approved by PLS can have a negative influence on the function and properties of the UADx and its components. Therefore, PLS is not liable for any resulting damage.

> Improper operation of the UADx and its accessories may cause damage to the devices or other property. It may therefore only be used in technically perfect condition and for its intended purpose in accordance with the operating instructions given in the manual.

> Safe use of UADx and its accessories is only possible if the user manual is read completely and the instructions are followed completely. Non-observance of the instructions can lead to considerable damage or accidents.

> Anyone using UDE® /UADx and its accessories must have access to the **UDE Quick Reference Guide** as well as the **UDE Manual.pdf** (A Software Guide to UDE® Universal Debug Engine) and the **UDE Manual Appendix.pdf** (Hardware Appendix to the Software Guide).
> The **UDE Quick Reference Guide** can be found here: in the delivery content of the UDE® as printed manual, UDE® Software installation as PDF.

> **Keep these operating instructions at a safe place for later use.**

> The product may only be used by persons instructed in the safe use of the product and understand the resulting dangers.

> Children should be supervised to ensure that they must not play with the UADx and its components.

> Keep the devices, all accessories and packaging materials out of reach of children and pets. Small objects such as the packaging materials could be accidentally swallowed. Cables could be tied around the neck.
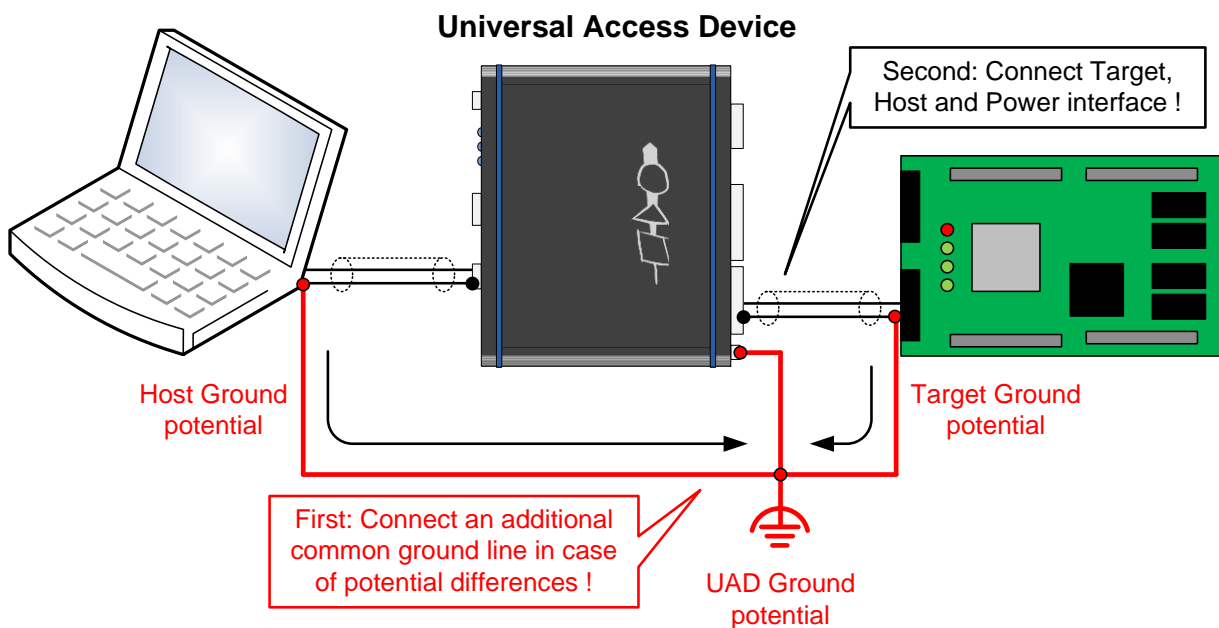
Static Electricity Precautions

Electrostatic Discharge (ESD) can damage a sensitive electronic component! Under several conditions static electricity and ground potential differences between the Access Device and the user's target hardware can build up high voltages - over 10000 Volts (10 kV) in some cases. The electrostatic discharge of this build-up voltage results in fast high current waveforms and fast magnetic (H-field) or electrostatic (E-field) disturbances. The discharge into the electronic components and circuitry can damage or destroy hardware components, resulting in failures and reduced reliability.

Because of the **non-hot-pluggable** 1.65 Volts / 5.0 Volts properties of the **JTAG/DAP/SWD** connectors, these ports are endangered especially by electrostatic discharging. The maximum voltage on these pins must not exceeded 5.5 Volts against the UAD's ground, especially in the case that the ground planes are not connected first. To protect your hardware against damage from static electricity and ground potential discharge, you have to follow some basic precautions:

1. Before you change any cable connections from the Access Device, please **remove the power** from the Access Device and your target system.

2. Ensure that the **static electricity** and **ground potentials** between the Access Device, the host PC and the target hardware are **balanced**. If there is a danger of high potential differences, you must connect the Access Device, the host PC and the target hardware to the same ground domain **via a low resistance connection**.

3. Establish the target connection and **power on** the systems.

Universal Access Device

Second: Connect Target, Host and Power interface !

Host Ground potential

Target Ground potential

First: Connect an additional common ground line in case of potential differences !

UAD Ground potential

Attention! All Universal Access Devices are equipped with a **ground socket** on the front side. Please use this ground socket for discharging the static electricity and balancing ground potentials between the Universal Access Device, the host PC and the target hardware **BEFORE** you connect the target hardware to the Access Device.

Firmware updates

⚠ **Attention!** When a new version of UDE® is started the first time, a firmware update may be executed on the Universal Access Device (UAD2, UAD2^{pro}, UAD2^{next}, UAD3$^+$). This may take some more time than usual for the 'target connect' operation.
Please **DO NOT** power off or unplug the access device while this time!

Original Components of Delivery

A proper function of the UDE® Universal Debug Engine and its hardware devices is only guaranteed for working with the original components tested and delivered by PLS.

These parts can be identified by an inhered UDE® label:

The delivered components are verified by the recommends and standards of the chip manufactures. Please see the chapter **Delivery Contents** of the **UDE Manual.pdf** for further hints.

Trouble Shooting with UDE®

Trouble Shooting Checklist

Please read this **UDE Manual Appendix.pdf** and the hints very conscientious. If the problem is not soluble, the fastest way is to download the **UDE Support Checklist Form** from **https://www.pls-mc.com/downloads/UDE_Support_Checklist_Form.pdf**, fill out and e-mail it to the PLS Support Line at **support@pls-mc.com**.

Run UDE®, open the affected workspace, set the Message View Log level to Maximum and reproduce the problem. Open menu **Help – UDE Support Request Form**, fill out the necessary fields and save it as a ZIP file. Now please send the ZIP file as attachment including the used password to the PLS Support Line at **support@pls-mc.com**.

Our Support team will contact you as soon as possible.

Frequently Asked Questions (FAQ's)

For technical questions, please consult the UDE® FAQ list on our website **https://www.pls-mc.com/faqs.html** first.

Precautions when installing a new UDE® version

When starting a newly installed version of UDE® for the first time, a **firmware update** may be executed for the access device (UAD2^{pro}, UAD2$^+$, UAD2^{next}, and UAD3$^+$). This may take some more time than usual for the "target connect" operation. Please **DO NOT** power OFF or unplug the access device during this period!

Downloading the latest UDE® Version

Our **PLS Newsletter** keeps you informed about latest news and software versions of the UDE®. You can subscribe to the PLS Newsletter via your profile at **https://www.pls-mc.com/accounts/profile/**.

You may find the latest version of UDE® Universal Debug Engine and other components on our website **https://www.pls-mc.com/download.htm** for downloading. It is required that you are registered and logged in before.

Feedback

PLS welcomes feedback on our products and documentations. If you have any comments, suggestions or improvements about the products you are using, please use the Feedback Form from our Web Site **https://www.pls-mc.com**, send an e-mail to **support@pls-mc.com** or call our Support Line + 49 35722 384 - 0.

Appendix - CE Declarations

CE Declaration

C E

CE Declaration of Conformity

Das Erzeugnis entspricht den grundlegenden Anforderungen der einschlägigen EG-Richtlinien. Ein in den Richtlinien vorgesehenes Konformitätsbewertungsverfahren wurde durchgeführt.

The product conforms to the basic requirements of the relevant EC directives. A conformity assessment method as provided for in the directives has been performed.

Firma: **PLS** Programmierbare Logik & Systeme GmbH
Company: Technologiepark   D - 02991 Lauta

Gerätebezeichnung: **Universal Access Device 2**
Designation for High-Speed Communication Add-On Board
equipment:

Das Produkt erfüllt die Bestimmungen der Richtlinie Niederspannungsrichtlinie 2006/95/EG.

The product meets the CE Low Voltage Regulation 2006/95/EC.

Der Nachweis der elektromagnetischen Verträglichkeit erfolgte entsprechend EG-Richtlinie 2004/108/EG nach folgenden Normen:

For verification in accordance with CE directive 2004/108/EC the following standards were applied:

EN 55022 : 2003 - 12
EN 55024 : 2003 - 10

Die oben genannte Firma hält die folgende technische Dokumentation zur Einsicht bereit:

The above company shall keep the following technical documentation in readiness for inspection:

- Bedienungsanleitung
- Konstruktionspläne
- Prüfunterlagen
- Sonstige Technische Dokumentation

- Operating instructions
- Design diagrams
- Test documents
- Other technical documentation

Lauta, 01.07.2004

S.Clije

Dr.-Ing. Stefan Weiße
Entwicklungsleiter, Chief-Technical-Officer
PLS Programmierbare Logik & Systeme GmbH

C E

CE Declaration of Conformity

Das Erzeugnis entspricht den grundlegenden Anforderungen der einschlägigen EG-Richtlinien. Ein in den Richtlinien vorgesehenes Konformitätsbewertungsverfahren wurde durchgeführt.	The product conforms to the basic requirements of the relevant EC directives. A conformity assessment method as provided for in the directives has been performed.

Firma: **PLS** Programmierbare Logik & Systeme GmbH
Company: Technologiepark   D - 02991 Lauta

Gerätebezeichnung: **Universal Access Device 2⁺**
Designation for   High-Speed Communication Add-On Board
equipment:

Das Produkt erfüllt die Bestimmungen der Richtlinie Niederspannungsrichtlinie 2006/95/EG.	The product meets the CE Low Voltage Regulation 2006/95/EC.
Der Nachweis der elektromagnetischen Verträglichkeit erfolgte entsprechend EG-Richtlinie 2004/108/EG nach folgenden Normen:	For verification in accordance with CE directive 2004/108/EC the following standards were applied:

<div align="center">

EN 55022 : 2003 - 12
EN 55024 : 2003 - 10

</div>

Die oben genannte Firma hält die folgende technische Dokumentation zur Einsicht bereit:	The above company shall keep the following technical documentation in readiness for inspection:

• Bedienungsanleitung	• Operating instructions
• Konstruktionspläne	• Design diagrams
• Prüfunterlagen	• Test documents
• Sonstige Technische Dokumentation	• Other technical documentation

S.Weiße

Lauta, 01.07.2005

Dr.-Ing. Stefan Weiße
Entwicklungsleiter, Chief-Technical-Officer
PLS Programmierbare Logik & Systeme GmbH

C E

CE Declaration of Conformity

Das Erzeugnis entspricht den grundlegenden Anforderungen der einschlägigen EG-Richtlinien. Ein in den Richtlinien vorgesehenes Konformitätsbewertungsverfahren wurde durchgeführt.

The product conforms to the basic requirements of the relevant EC directives. A conformity assessment method as provided for in the directives has been performed.

Firma: **PLS** Programmierbare Logik & Systeme GmbH
Company: Technologiepark   D - 02991 Lauta

Gerätebezeichnung: **Universal Access Device 3**
Designation for High-Speed Communication Add-On Board
equipment:

Das Produkt erfüllt die Bestimmungen der Richtlinie Niederspannungsrichtlinie 2006/95/EG.

The product meets the CE Low Voltage Regulation 2006/95/EC.

Der Nachweis der elektromagnetischen Verträglichkeit erfolgte entsprechend EG-Richtlinie 2004/108/EG nach folgenden Normen:

For verification in accordance with CE directive 2004/108/EC the following standards were applied:

EN 55022 : 2008 - 05
EN 55024 : 2003 - 10

Die oben genannte Firma hält die folgende technische Dokumentation zur Einsicht bereit:

The above company shall keep the following technical documentation in readiness for inspection:

- Bedienungsanleitung
- Konstruktionspläne
- Prüfunterlagen
- Sonstige Technische Dokumentation

- Operating instructions
- Design diagrams
- Test documents
- Other technical documentation

S.Weiße

Lauta, 01.02.2010

Dr.-Ing. Stefan Weiße
Entwicklungsleiter, Chief-Technical-Officer
PLS Programmierbare Logik & Systeme GmbH

CE

CE Declaration of Conformity

Das Erzeugnis entspricht den grundlegenden Anforderungen der einschlägigen EG-Richtlinien. Ein in den Richtlinien vorgesehenes Konformitätsbewertungsverfahren wurde durchgeführt.

The product conforms to the basic requirements of the relevant EC directives. A conformity assessment method as provided for in the directives has been performed.

Firma:
Company: PLS Programmierbare Logik & Systeme GmbH
Technologiepark   D - 02991 Lauta

Gerätebezeichnung: **Universal Access Device 2^{pro}**
Designation for equipment: High-Speed Communication Add-On Board

Das Produkt erfüllt die Bestimmungen der Richtlinie Niederspannungsrichtlinie 2006/95/EG.

The product meets the CE Low Voltage Regulation 2006/95/EC.

Der Nachweis der elektromagnetischen Verträglichkeit erfolgte entsprechend EG-Richtlinie 2004/108/EG nach folgenden Normen:

For verification in accordance with CE directive 2004/108/EC the following standards were applied:

EN 55022 : 2008 - 05
EN 55024 : 2003 - 10

Die oben genannte Firma hält die folgende technische Dokumentation zur Einsicht bereit:

The above company shall keep the following technical documentation in readiness for inspection:

- Bedienungsanleitung
- Konstruktionspläne
- Prüfunterlagen
- Sonstige Technische Dokumentation

- Operating instructions
- Design diagrams
- Test documents
- Other technical documentation

S.Weiße

Dr.-Ing. Stefan Weiße
Entwicklungsleiter, Chief-Technical-Officer
PLS Programmierbare Logik & Systeme GmbH

Lauta, 22.08.2011

C E

CE Declaration of Conformity

Das Erzeugnis entspricht den grundlegenden Anforderungen der einschlägigen EU-Richtlinien. Ein in den Richtlinien vorgesehenes Konformitätsbewertungsverfahren wurde durchgeführt.	The product conforms to the basic requirements of the relevant EU directives. A conformity assessment method as provided for in the directives has been performed.

Firma: **PLS** Programmierbare Logik & Systeme GmbH
Company: Technologiepark   D - 02991 Lauta

Gerätebezeichnung: **Universal Access Device 2^{pro} V2**
Designation for High-Speed Communication Add-On Board
equipment:

Das Produkt erfüllt die Bestimmungen der Richtlinie Niederspannungsrichtlinie 2014/35/EU.	The product meets the CE Low Voltage Regulation 2014/35/EU.
Der Nachweis der elektromagnetischen Verträglichkeit erfolgte entsprechend EG-Richtlinie 2014/30/EU nach folgenden Normen:	For verification in accordance with CE directive 2014/30/EU the following standards were applied:

EN 55022 : 2011 - 12
EN 55024 : 2011 - 09

Die oben genannte Firma hält die folgende technische Dokumentation zur Einsicht bereit:	The above company shall keep the following technical documentation in readiness for inspection:

- Bedienungsanleitung
- Konstruktionspläne
- Prüfunterlagen
- Sonstige Technische Dokumentation

- Operating instructions
- Design diagrams
- Test documents
- Other technical documentation

Lauta, 01.07.2016

Matthias Noack
Entwicklungsleiter Hardware,
Chief-Technical-Officer
PLS Programmierbare Logik & Systeme GmbH

CE

CE Declaration of Conformity

Das Erzeugnis entspricht den grundlegenden Anforderungen der einschlägigen EU-Richtlinien. Ein in den Richtlinien vorgesehenes Konformitätsbewertungsverfahren wurde durchgeführt.

The product conforms to the basic requirements of the relevant EU directives. A conformity assessment method as provided for in the directives has been performed.

Firma: **PLS** Programmierbare Logik & Systeme GmbH
Company: Technologiepark   D - 02991 Lauta

Gerätebezeichnung: **Universal Access Device 2^{next}**
Designation for   High-Speed Trace and Communication Add-On Device
equipment:

Das Produkt erfüllt die Bestimmungen der Richtlinie Niederspannungsrichtlinie 2014/35/EU.

The product meets the CE Low Voltage Regulation 2014/35/EU.

Der Nachweis der elektromagnetischen Verträglichkeit erfolgte entsprechend EG-Richtlinie 2014/30/EU nach folgenden Normen:

For verification in accordance with CE directive 2014/30/EU the following standards were applied:

EN 55022 : 2011 - 12
EN 55022 1 : 2016 - 08
EN 55024 : 2011 - 09

Die oben genannte Firma hält die folgende technische Dokumentation zur Einsicht bereit:

The above company shall keep the following technical documentation in readiness for inspection:

- Bedienungsanleitung
- Konstruktionspläne
- Prüfunterlagen
- Sonstige Technische Dokumentation

- Operating instructions
- Design diagrams
- Test documents
- Other technical documentation

Lauta, 01.05.2017

Matthias Noack
Entwicklungsleiter Hardware,
Chief-Technical-Officer
PLS Programmierbare Logik & Systeme GmbH

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