Certificate / Certificat

Zertifikat / 合格証

Nuclei 21/06-003 C001

exida hereby confirms that the:

NA900 Processor

Nuclei System Technology Co., Ltd.
Shanghai, P.R. China

Has been assessed per the relevant requirements of:

ISO 26262:2018 Parts 2, 4, 5, 7, 8 and 9

and meets the requirements providing a level of integrity to:

ASIL D

Safety related function:

The NA900 Processor was developed as a HW Safety Element out of Context (SEooC), with the following assumed top-level safety requirements for a safety related application context:

- Safe computation (including execution of the defined ISA, handling of interrupts and external events, privilege mode access protection, memory access protection and low power mode management, etc.)
- Protect the data integrity of all safety related SRAM storage and transfer between core and SRAM
- Provide safe communication through the bus interfaces
- Correctly indicate the processor status through external miscellaneous output signals

Application restrictions:

The NA900 processor shall be used according to the requirements described in the Nuclei NA900 Processor Safety Manual.

Evaluating Assessor

Certifying Assessor

The manufacturer may use the mark:

Revision 1.0 Jul 17, 2023
Surveillance Audit Due
Aug 1, 2026

ANAB
ANSI National Accreditation Board
A C C R E D I T E D
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

Certificate / Certificat / Zertifikat / 合格証

NA900 Processor

Systematic Capability: ASIL D

NA900 Processor

Product Overview

The Nuclei NA900 Processor (NA900 V1.0.0-RC1) is a configurable CPU core based on the RISC-V architecture, which is developed as a Hardware SEooC (Safety Element out of Context), and delivered to customers as a soft-IP (i.e. delivery as RTL code).

To support safety related applications, the NA900 includes several safety mechanisms to detect and control hardware faults (e.g. Dual-Core Lockstep, ECC for all safety related SRAMs, and EDC / parity-based bus I/O protection).

Systematic Capability: ASIL D

The NA900 Processor has been developed as a Hardware Safety Elements out of Context (SEooC) according to ISO 26262-10. The development, as documented by Nuclei, meets the applicable ASIL D design specification, implementation and verification requirements of ISO 26262, parts 4, 5, 7, 8, 9, as guided by ISO 26262-10, and the functional safety management requirements per ISO 26262-2.

Hardware Safety Integrity: ASIL D

The FMEDA results show that the NA900 can meet the ASIL D requirements of ISO 26262-5, clause 8, including the ASIL D target values for the architectural metrics SPFM (≥ 99%) and LFM (≥ 90%).

The FMEDA metric results depend on the configuration of the NA900 Processor. It is the responsibility of the user and integrator of the NA900 processor, to adjust the FMEDA according to their actual IP configuration, and to re-evaluate the FMEDA results in the context of their safety related IC or system.

Following documents are a mandatory part of this certification

Assessment Report: Nuclei 21/06-003 R003, V1 R0

Safety Manual: Nuclei NA900 Safety Manual ASIL D V1 R1

FMEDA Report: Nuclei NA900 FMEDA V1 R2

80 N Main St
Sellersville, PA 18960

T-048, V4R2