DEEPSHIELD SYSTEMS HARDWARE ARCHITECTURE BLUEPRINT

CONFIDENTIAL AND PROPRIETARY

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1. DOCUMENT CONTROL

1 This Hardware Architecture Blueprint ("Blueprint") is a confidential and proprietary document of DeepShield Systems, Inc., a Delaware corporation ("Company").

2 This Blueprint contains trade secrets and confidential information protected under 18 U.S.C. § 1839 and related state laws.

2. SYSTEM OVERVIEW

1 The DeepShield Hardware Architecture comprises three primary subsystems:

(a) Perimeter Security Module (PSM-X300)

(b) Core Processing Unit (CPU-D750)

(c) Industrial Control Interface (ICI-M100)

2 Each subsystem is designed for redundant operation with N+1 failover capability in accordance with IEC 61508 SIL-3 requirements.

3. HARDWARE SPECIFICATIONS

1 Perimeter Security Module (PSM-X300)

- Processing: Custom FPGA array (Xilinx Ultrascale+)
- Memory: 64GB ECC DDR4-3200
- Network: 4x 100GbE ports (fiber)
- Power: Dual redundant 800W supplies
- Cooling: Active thermal management system

2 Core Processing Unit (CPU-D750)

- Processor: AMD EPYC 7763 (64-core)
- Memory: 512GB ECC DDR4-3200
- Storage: 4x 2TB NVMe SSDs in RAID 10
- Network: 8x 25GbE ports
- Management: Dedicated IPMI interface

3 Industrial Control Interface (ICI-M100)

- Protocol Support: Modbus, Profinet, EtherCAT
- I/O: 32 isolated digital inputs, 16 relay outputs
- Serial: RS-232/422/485 interfaces
- Certification: IECEx, ATEX Zone 2

4. SECURITY ARCHITECTURE

1 Hardware Security Features

- Trusted Platform Module (TPM) 2.0
- Secure Boot with hardware root of trust
- Physical tamper detection circuits
- Encrypted storage with hardware acceleration
- Side-channel attack protection

2 Network Security

- Hardware-based packet inspection
- Wire-speed encryption (AES-256-GCM)
- Physical port isolation
- MAC/IP filtering in hardware

5. COMPLIANCE AND CERTIFICATION

1 The Hardware Architecture complies with:

- IEC 62443-4-2 (Component Security Requirements)
- NIST SP 800-82 Rev. 2
- ISA/IEC 62443-4-1
- UL 2900-2-2

2 Environmental Specifications

- Operating Temperature: -40 C to +70 C
- Humidity: 5% to 95% non-condensing
- Shock: IEC 60068-2-27
- Vibration: IEC 60068-2-6

6. INTELLECTUAL PROPERTY PROTECTION

1 The Hardware Architecture is protected by:

- U.S. Patent No. 11,234,567
- U.S. Patent No. 11,345,678
- European Patent EP3456789
- Additional patents pending

2 Proprietary Elements

All circuit designs, board layouts, and firmware implementations are proprietary and confidential to the Company.

7. MANUFACTURING AND SUPPLY CHAIN

1 Manufacturing Partners

- Primary: ISO 9001:2015 certified facilities
- Secondary: AS9100D certified facilities
- Component sourcing: Authorized distributors only

2 Quality Control

- 100% functional testing
- Environmental stress screening
- Automated optical inspection
- X-ray inspection of critical components

8. LEGAL NOTICES

1 This Blueprint and all information contained herein is provided "AS IS" without warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability,

fitness for a particular purpose, or non-infringement.

2 This Blueprint is subject to change without notice. Company reserves the right to make changes to the Hardware Architecture at any time.

9. AUTHORIZATION

This Hardware Architecture Blueprint is approved and authorized by:

/s/ Sarah Blackwood

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