Toradex
Swiss. Embedded. Computing.

Zinnia Gateway

PRODUCT BRIEF

Industrial Grade | Secure by design | Powered by Torizon™

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Zinnia Gateway Product Brief

Certified industrial edge, ready for deployment

Zinnia Gateway is a ready-to-deploy industrial edge platform built on Toradex hardware and Torizon software stack, together forming a production-ready, CRA-compliant platform. It provides engineering teams with a solid foundation for building reliable edge applications, saving months of effort integrating hardware, operating systems, update and monitoring infrastructure.

Zinnia Gateway — **A complete industrial edge platform with integrated hardware, production-ready software, and operations capabilities, certified and ready for deployment from day one!**

Stop building infrastructure. Start building your application.

Use Zinnia Gateway as the foundation for your edge solution, so your team can spend more time building customer value and less time maintaining device infrastructure. Compared to traditional gateways, Zinnia Gateway provides a more integrated and scalable foundation for modern edge systems.

Traditional Gateways

- Hardware, OS, updates, and remote operations may be delivered as separate or loosely connected capabilities
- Product lifecycle and availability depend on the gateway vendor's suppliers roadmap
- OS maintenance, software updates, and security patching remain a long-term customer responsibility
- Security and compliance readiness depend on additional vendor or customer effort
- Development workflows vary by platform, requiring teams to stitch together multiple tools and environments
- Hardware platforms are often fixed, limiting performance flexibility over time

Zinnia Gateway

- Certified gateway with integrated hardware, software, remote updates and access capabilities
- Built on Toradex embedded hardware quality, with long-term platform availability and support expertise
- Maintained, production-ready Linux platform with update and secure LTS approach
- Security-by-design approach with a CRA-ready software foundation
- Streamlined development with VS Code workflows, multi-language support, ready-to-use frameworks
- Scalable performance through the Verdin ecosystem without redesigning the system

Built for Real-World Applications

Industrial Automation

- PLC, CNC, gateway, and motion control systems
- Modbus, CAN, and industrial protocol integration
- Predictive maintenance and real-time monitoring

Energy & Infrastructure

- Smart grids and renewable energy systems
- Water systems and distributed infrastructure
- Remote monitoring of distributed assets

Building & Urban Systems

- Building automation and control
- Monitoring and control of public infrastructure
- Gateways for smart city connectivity

Edge AI & Vision

- Camera-based inspection
- Object detection and monitoring
- Safety and quality applications at the edge

Zinnia Gateway Product Brief

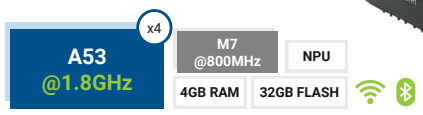
Hardware and Features

Zinnia Gateway is a certified industrial gateway designed for reliable operation in demanding environments. With a rugged, compact, fanless enclosure and DIN-rail compatible mounting, it is built to be deployed directly into machines, control cabinets, and infrastructure systems.

Based on Toradex's embedded hardware expertise, Zinnia Gateway combines iMX8M Plus processing power, industrial connectivity, and hardware security in a compliant ready-to-use product.

Powered by verdin iMX8M Plus

Industrial edge compute powered by Toradex's proven Verdin System on Module platform.



Certified for industrial deployment

Designed as a certified end product, with CE, FCC, and RoHS readiness for industrial deployment.

Performance, Interfaces and Mechanical

CPU details	
CPU Name	NXP i.MX 8M Plus
CPU Type	4x Arm Cortex™-A53
Microcontroller	1x Arm Cortex™-M7
CPU Clock	1600MHz (A53) 800MHz (M7)
NEON	Yes
L1 Instruction Cache	32KB (A53) 32KB (M7)
L1 Data Cache	32KB (A53) 32KB (M7)
L2 Cache	512KB

Memory	
RAM	4GB LPDDR5 (32 Bit)
Flash	32GB eMMC

Operating System	
Pre-flashed OS	Torizon

Connectivity	
USB 3.0	2x Host
USB 2.0	1x OTG 1x Debug
Ethernet	2x Gigabit
Wi-Fi	2.4 / 5 GHz Dual Band 2x2 Wi-Fi 5, 802.11ac
Bluetooth	Bluetooth 5.3
PCIe	1x Mini PCIe
SIM Card	1x Nano SIM card slot
UART	1x RS232 1x RS485
GPIO	3x isolated I/Os
Analog Inputs	2x Analog Input 0–25 mA
SDIO / SD / MMC	1x 4 Bit microSD
CAN	1x CAN

Multimedia	
Neural Processing Unit (NPU)	Yes (2 TOPS)
Capacitive Touch Interface	Yes

Physical	
LEDs	1x RGB: power on and status 2x RGB: user configurable
Weight	0.439kg
Size	98.4 x 133.5 x 36.2 mm
Thermal Solution	Built-in Heatsink
Temperature	-40°C to 85°C
Shock / Vibration	EN 60068-2-6/50g 20ms
Supply Voltage	9-36V
Power Dissipation	TBD
Intended Use	For End Products
Product Availability	2036+

Integrating Past and Future

Zinnia Gateway connects to both standard-protocol and modern industrial systems, making it suitable for equipment monitoring, protocol integration, edge processing, and connectivity applications.

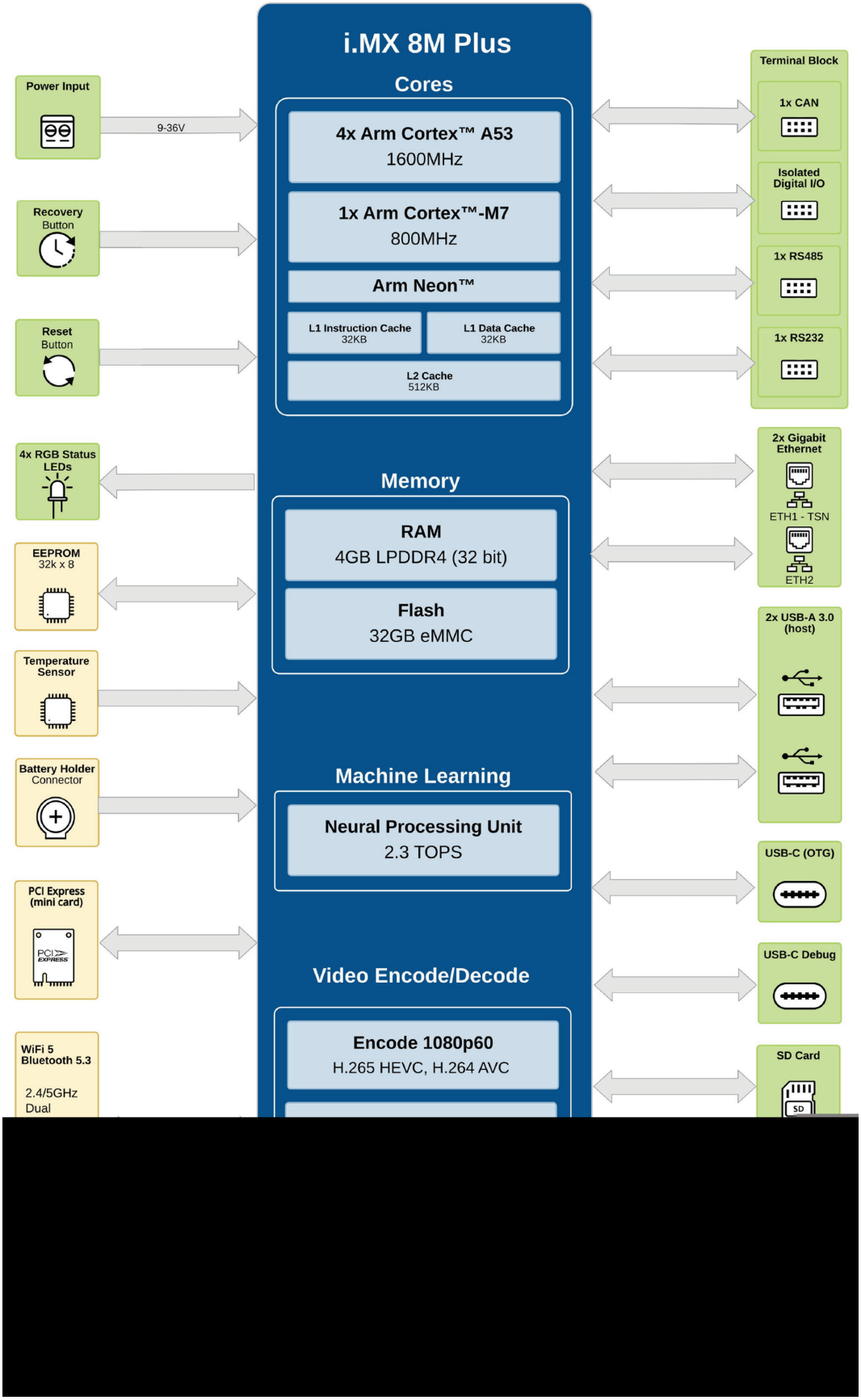
Designed for Field Installation

- Compact enclosure for infrastructure installations
- Fanless thermal design for reliable operation
- Built-in heatsink for passive cooling
- DIN-rail compatible mounting
- Hardware design suitable for harsh environments

Built for Industrial Connectivity

- Ethernet for industrial networking
- RS-232/485 for serial devices and equipment
- CAN for industrial and machine communication
- Digital I/O for sensing, control, and status signals
- USB for peripherals and expansion

Block Diagram



Performance Scalability

Zinnia Gateway provides a ready-to-use product today and a scalable platform path for future product variants, performance upgrades, and custom gateway desinns.

Verdin ecosystem advantage

As your application evolves, the Verdin System on Module ecosystem helps you adapt compute performance while preserving interfaces, system architecture, and development investment.

Scale Performance Without Redesign

- Match compute performance to different application requirements
- Preserve interfaces, enclosure strategy, and system architecture
- Use pin-compatible Verdin modules across performance levels
- Reduce redesign and requalification effort across product variants

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