



Engineering Innovation. Manufacturing Excellence. Global Delivery.

High-Tech ODM | AIoT Solutions | Turnkey Electronics
Manufacturing | Energy Storage | Automotive Electronics



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NASH: One Group. Complete Capability.

NASH is a vertically integrated group combining deep engineering expertise with industrial-scale manufacturing. Through NASH Industries, NASH Tech Labs, and NASH Energy, the group delivers end-to-end solutions — from concept design to full production — across electronics, energy storage, and automotive sectors where precision, reliability, and innovation are non-negotiable.

NASH Industries Industrial Engineering

A global engineering and manufacturing organization delivering precision products and solutions across multiple industries

- Precision mechanical engineering
- Large-scale industrial manufacturing
- Global supply chain management
- End-to-end product lifecycle support

NASH Tech Labs Technology & Electronics

The technology and electronics division focused on high-performance embedded hardware and intelligent systems.

- Motherboard design & embedded computing
- AIoT platforms & industrial automation
- Vision systems & smart devices
- Turnkey electronics manufacturing

NASH × Intel 'Make in India' Motherboards

In November 2025, NASH Industries launched its first series of 'Make in India' motherboards built on the Intel B760 chipset for Intel's Raptor Lake processor family — with Intel providing architecture, design, and firmware support to bring the field-deployable platform to global customers. It was unveiled with Intel's Edge Computing Group at Intel Industry Solution Builders Connect, Bengaluru.

Design to Deployment: Complete Turnkey Services

NASH Tech Labs provides a fully integrated product development and manufacturing service — eliminating the complexity of managing multiple vendors. Every stage, from initial hardware design through to final delivery, is managed under one roof with full traceability and quality control.

Product Engineering

Hardware design, motherboard development, PCB layout, thermal design, and full mechanical design services from concept to production-ready specification.

Validation & Testing

Functional testing, reliability testing, environmental testing, and compliance support — ensuring every product meets specification before it ships.

Manufacturing

SMT assembly, box build, system integration, and packaging — delivered from production lines built to global quality standards.

Lifecycle Management

BOM control, obsolescence management, and global supply chain support — protecting your product across its full commercial lifetime.

End-to-End Workflow

Step	Stage	Description
01	Design	Hardware, PCB, mechanical, thermal and firmware design
02	Validate	Functional, reliability, environmental, and compliance testing
03	Manufacture	SMT, box build, system integration, and packaging
04	Deliver	BOM control, supply chain support, and global logistics

Industries We Serve

NASH designs and manufactures hardware, batteries, and automotive electronics deployed across industries where failure is not an option. Our products are engineered to meet the specific reliability, certification, and integration requirements of each vertical.

Industry	Application
Smart Manufacturing	Embedded computing and IPC platforms for smart factory automation, machine control, and Industry 4.0 applications.
Industrial Automation	Rugged hardware for process control, robotics, conveyor systems, and real-time industrial monitoring.
Retail & Self-Service	Kiosk platforms, POS terminals, and peripheral ecosystems for seamless retail and self-service customer experiences.
Banking & Financial Services	Secure, high-availability computing platforms for ATMs, self-service banking terminals, and queue management systems.
Smart Cities	Edge computing, vision systems, and AIoT platforms enabling connected infrastructure and urban intelligence.
Transportation	Rugged embedded systems for fleet management, ticketing, passenger information, and traffic management applications.
Healthcare	Fanless, reliable computing platforms for diagnostic imaging, patient kiosks, and clinical environment monitoring systems.
Defense & Security	High-reliability, rugged computing and vision systems designed for security and surveillance applications.
Energy & Utilities	Industrial computing, IoT platforms, and battery energy storage systems for grid management and utility infrastructure control.
Electric Mobility	Battery packs, BMS, and motor controllers for two- and three-wheeler EVs, e-bikes, and light electric vehicles.
Commercial Vehicles	ECUs, CAN gateways, and BLDC controllers engineered for heavy-duty and commercial vehicle electronics.



Mini PCs & Edge Computing

ASTRIX MINI-ITX

ASTRIX is a compact Mini-ITX powered by Intel Core Series-2 processors, designed to deliver high-performance computing in space-constrained industrial and embedded applications. With DDR5 memory, high-speed networking, flexible expansion, multiple display interfaces, and robust connectivity, ASTRIX is built for scalable system integration.

Feature	Advantage	Customer Benefit
Intel® Core™ Series-2 Processor, up to 65W with Turbo Mode	High-performance processing with dynamic boost capability	Enables smooth and reliable execution of demanding industrial and edge-computing workloads
DDR5 SO-DIMM, up to 32 GB	Faster memory performance and higher capacity	Supports efficient multi-tasking and responsive application performance
Multiple Display & High-Speed I/O	DP, HDMI, Mini HDMI, LVDS and multiple USB interfaces	Provides flexible connectivity for displays, HMLs, peripherals and industrial devices
2.5GbE + 1GbE Dual LAN & PCIe Gen 4×8	High-speed networking and scalable expansion	Enables fast data communication and integration of application-specific expansion cards
TPM 2.0, WDT & Hardware Monitoring	Enhanced security, system recovery and health monitoring	Improves system reliability, security and long-term operational stability



Technical Specifications

Specification	Details
Product	ASTRIX Motherboard
Form Factor	Mini-ITX – 170 × 170 mm (6.7" × 6.7")
CPU	Intel® Core™Series-2 (BTL-S) Processors
Chipset	Intel B760
Memory	2 × DDR5 SO-DIMM
Maximum Memory	Up to 32 GB
Memory Speed	4800 / 4000 / 3600 / 3200 MHz
BIOS	1 × 256 Mbit Flash; UEFI BIOS
Display	1 × DisplayPort, 1 × HDMI, 1 × Mini HDMI, 1 × LVDS Header
LAN 1	2.5 GbE – Intel I226IT
LAN 2	1 GbE – Intel I226LM
PCIe Expansion	1 × PCIe Gen 4, x8 Lane
SATA	2 × SATA Gen3, 6Gb/s

Specification	Details
M.2 Storage	2 × M.2 – NVMe / SATA
Wireless Expansion	1 × M.2 E-Key / CNVi
USB 2.0	4 × USB 2.0 Type-A + 1 × USB 2.0 Header
USB 3.2	4 × USB 3.2 Type-A + 1 × USB 3.2 Header
Audio	Stereo, MIC Input Enabled
Security	On-board TPM 2.0
I/O Controller	Embedded Controller
Hardware Monitoring	Voltage, Temperature & Fan Speed Detection
OS Support	Windows 10/11 64-bit, Linux
Input Power	1 × 6-pin Power Connector, 12/24V
DC Jack	1 × DC Jack – Optional
Operating Temperature	0°C to 60°C
Storage Temperature	-20°C to 80°C



Industrial PCs (IPC)

ASTRIX Industrial AIO Panel PC

10.4" / 15" / 19" Industrial Panel PC with Intel® Core™ Series 2 (BTL-S) Processor

The ASTRIX Industrial Panel PC is a rugged, high-performance all-in-one computing platform designed for industrial automation, HMI, smart factory, kiosk, and embedded computing applications. Powered by Intel® Core™ Series 2 Processors and the Intel® B760 chipset, it combines powerful processing, PCAP touchscreen displays, dual LAN connectivity, and industrial-grade reliability. Available in 10.4", 15", and 19" display sizes.

Feature	Advantage	Customer Benefit
Intel® Core™ Series 2 Processor & Intel® B760 Chipset	Delivers high-performance computing for industrial workloads	Faster processing and reliable operation for automation and HMI applications
10.4", 15", and 19" PCAP Touch Displays with Privacy Filter	Multiple display options with enhanced user interaction and data privacy	Flexible deployment across kiosks, control panels, and industrial environments
Dual LAN (2.5GbE + 1GbE) & Rich I/O Connectivity	High-speed networking and seamless integration with peripherals	Improved connectivity and efficient system communication
DDR5 Memory up to 64 GB & Multiple Storage Options	Supports intensive applications and future scalability	Smooth multi-tasking and long-term system performance
Industrial-Grade Metal Chassis with TPM Security	Rugged design and enhanced cybersecurity	Reduced downtime, secure operation, and dependable performance in harsh environments

Technical Specifications

Parameter	Specification
Processor	Intel® Core™ Series 2 (BTL-S) Processor
Chipset	Intel® B760
Memory	2 x DDR5 SO-DIMM, up to 32 GB
Graphics	Intel® Integrated UHD Graphics
Display Size	10.4" / 15" / 19" TFT LCD with PCAP Touch Panel
Privacy Filter	30° Viewing Angle (H/V)
Video Outputs	HDMI / DP / LVDS / Mini-HDMI
Ethernet	LAN1: 2.5 GbE – Intel KT1226IT; LAN2: 1 GbE – Intel KT1226LM
Storage Interface	2 x SATA (Gen3) 6Gb/s; 2 x M.2 Connector (NVMe / SATA)
USB 2.0	4 x USB 2.0 Type-A Ports; 1 x USB 2.0 Header
USB 3.2	4 x USB 3.2 Type-A Ports; 1 x USB 3.2 Header
Network Expansion	1 x M.2 Connector (CNVi)
Expansion Slots	1 x PCIe Gen4 x8 Lane Slot

Parameter	Specification
Audio	Stereo, MIC Input Enabled
Security	TPM Default
Input Power	12V-24V DC
Mounting	Panel Mount / VESA Mount
Operating Temperature	0°C – 60°C
Storage Temperature	-20°C – 80°C
Operating Humidity	10% – 90% RH Non-condensing
Cooling Design	Active Cooling
Front Panel	Industrial-grade Metal Chassis
OS Support	Windows® 10 / Windows® 11 / Linux
Certifications	CE / FCC / RoHS
Applications	Industrial Automation, HMI, Kiosk, Smart Factory

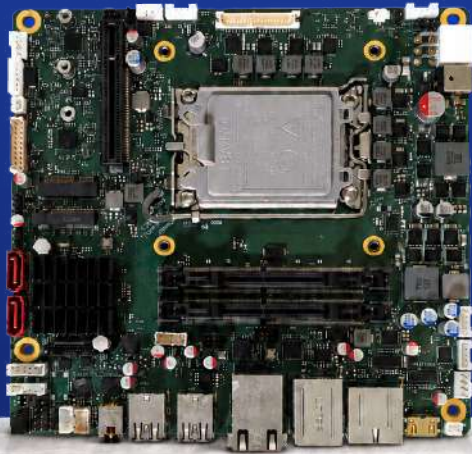
Motherboards

NASH Anthem Industrial Motherboard

High-Performance Computing Platform for Industrial, Retail & Edge AI Applications

Anthem Motherboard is built on Intel® Raptor Lake-S architecture supporting 12th, 13th, and 14th Gen Intel® processors, delivering powerful computing performance with flexible customisation for industrial applications including IPC, HMI, Box PC, Mini-ITX, SBC and embedded systems.

Feature	Advantage	Customer Benefit
Intel® LGA1700 12 th /13 th /14 th Gen Core™ Processor Support	High-performance computing platform	Enables demanding industrial and AI workloads
DDR4 SO-DIMM Memory Support (Up to 32 GB)	Flexible memory configuration	Supports multi-tasking and data-intensive applications
Multiple Display Interfaces (DP, HDMI, Mini HDMI, LVDS/eDP)	Faster data communication and peripheral support	Improves system performance and connectivity
High-Speed Connectivity (2.5GbE + 1GbE LAN)	Faster data communication and peripheral support	Improves system performance and connectivity
Industrial Features (TPM 2.0, WDT, Hardware Monitoring)	Enhanced security and system reliability	Ensures stable operation in industrial environments



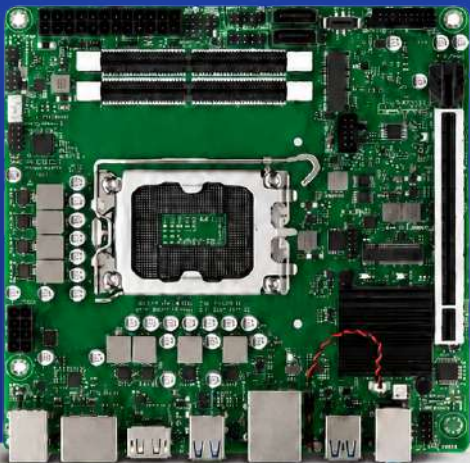
Technical Specifications

Parameter	Specification
Processor Support	14 th Gen Intel® Core™ RPL-S Processors. Back Compatible with 13 th /12 th Gen Intel® Core™ ADL-S Processors
CPU Socket	Intel® LGA1700
Chipset	Intel® B760
Memory	2 x DDR4 SO-DIMM (Up to 2 x 32 GB)
BIOS	256 Mbit Flash, Intel BIOS Support
Display Output	1 x DP, 1 x HDMI 2.0, 1 x Mini HDMI, LVDS/eDP Header
Ethernet	LAN1: Intel® I226IT 2.5GbE; LAN2: Intel® I225LM 1GbE
USB Ports	Up to 6 x USB 3.2, 6 x USB 2.0
Storage	2 x SATA III, 2 x M.2 NVMe/SATA
Expansion Slot	PCIe x8 Gen 4
Wireless Expansion	M.2 E-Key (Wi-Fi & BLE)
Audio	Stereo Audio, Mic Enabled
Security	TPM Default
OS Support	Windows® 10/11 64-bit & Linux
Input Power	12/24V Support
Operating Temperature	0°C to 60°C

STARNIX Industrial Motherboard

The STARNIX Mini-ITX Industrial Motherboard is a compact, high-performance embedded computing platform powered by the latest Intel® Core™ Series 2 processors. Designed for industrial automation, smart retail, medical devices, kiosks, edge AI, and intelligent transportation, it delivers exceptional computing power, flexible connectivity, and industrial-grade reliability in a space-efficient Mini-ITX form factor.

Feature	Advantage
Intel® Core™ Series 2 Processor with Intel® B760 Chipset	Delivers high-performance computing for demanding industrial workloads
Mini-ITX (170 × 170 mm) Compact Form Factor	Space-saving design with flexible deployment
DDR5 Memory Support (Up to 32 GB)	High-speed memory bandwidth for multi-tasking
Dual LAN (2.5GbE + 1GbE) & Rich I/O Connectivity	High-speed networking with extensive peripheral support
PCIe Gen4 x16, Dual M.2 & SATA Storage	Flexible expansion and high-speed storage options



Technical Specifications

Parameter	Specification
Processor	Intel® Core™ Series 2 (BTL-S) Processors
Chipset	Intel® B760
Memory	2 × DDR5 SO-DIMM, Up to 32 GB (5600/4800 MHz)
BIOS	Intel® UEFI BIOS, 256 Mbit Flash
Graphics Output	1 × DisplayPort, 1 × HDMI, 1 × LVDS Header
Ethernet	1 × 2.5GbE (Intel® I226IT), 1 × 1GbE (Intel® I226LM)
Expansion Slot	1 × PCIe Gen3/Gen4 x16
Storage	2 × SATA Gen3, 2 × M.2 M-Key (NVMe/SATA)
Wireless Expansion	1 × M.2 E-Key (CNVi)
USB 2.0	4 × USB 2.0 Ports, 2 × USB 2.0 Headers
USB 3.2	4 × USB 3.2 Ports, 2 × USB 3.2 Headers
Serial Ports	1 × RS232, 1 × RS485
Audio	3.5 mm Stereo Jack
Security	TPM Default
Hardware Monitoring	Voltage, Temperature & Fan Speed Detection
OS Support	Windows® 10/11 (64-bit), Linux
Input Power	24-pin ATX + 8-pin Connector
Operating Temperature	0°C to 60°C
Storage Temperature	-20°C to 80°C
Form Factor	Mini-ITX (170 × 170 mm / 6.7" × 6.7")

DURGAII-H610 Industrial Motherboard

The DURGAII-H610 motherboard is designed for industrial automation, HMI, kiosk, and embedded computing applications. Powered by Intel® 11th and 12th Generation processors, it delivers reliable performance, flexible connectivity, and long-term operational stability.

Feature	Advantage	Customer Benefit
Intel® 11 th /12 th Gen Core™ Processor Support	High-performance computing architecture	Faster processing and improved system responsiveness
Dual Gigabit Ethernet Ports	Reliable and redundant network connectivity	Ensures uninterrupted communication in industrial environments
SATA + M.2 Storage Support	Supports both conventional and high-speed SSD storage	Faster boot-up, data access, and application loading
RS232 / RS422 / RS485 Industrial Interfaces	Easy integration with PLCs, sensors, and legacy equipment	Simplifies deployment in industrial automation systems
Wide 12V-24V DC Input Power	Compatible with diverse industrial power sources	Greater installation flexibility and enhanced operational reliability



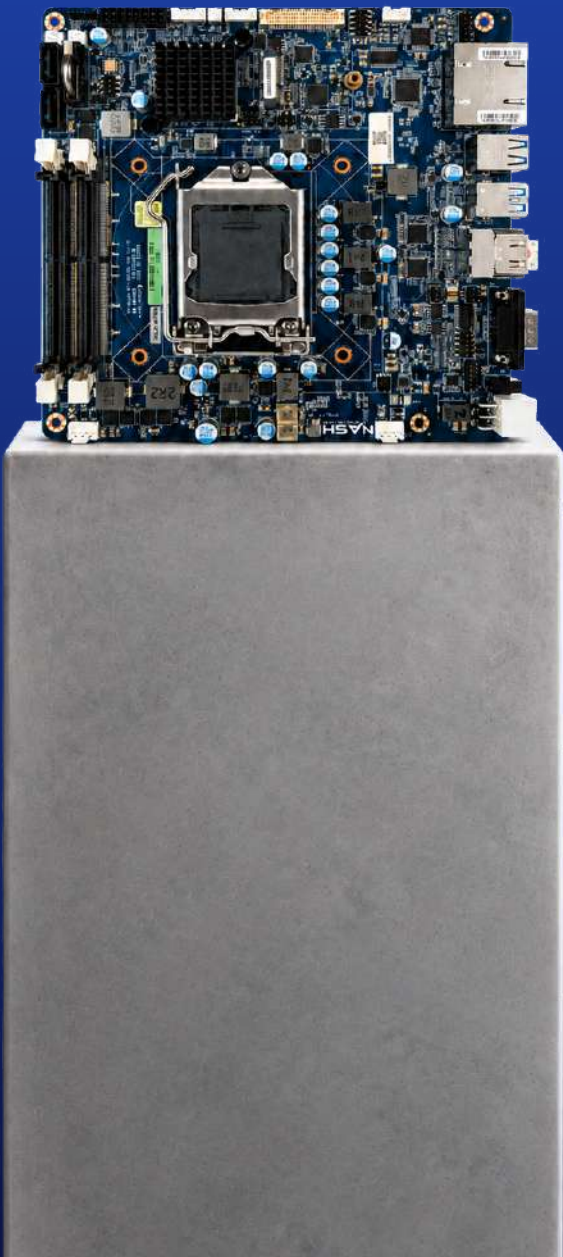
Technical Specifications

Parameter	Specification
Processor	Intel® 11 th /12 th Gen Core™ i9/i7/i5/i3, Celeron®, Pentium®
Chipset	Intel® H610
Memory	2 x DDR4 SO-DIMM, Up to 32 GB
Graphics	Intel® UHD Graphics
Video Outputs	2 x HDMI, 1 x LVDS Header
Ethernet	2 x Gigabit LAN
Serial Ports	1 x RS232, 1 x RS232/RS422/RS485 Header
Storage	2 x SATA Gen3, 1 x M.2 (NVMe/SATA)
USB 2.0	2 Ports
USB 3.2	2 Ports + Header
Wireless Expansion	M.2 E-Key for Wi-Fi/Bluetooth
Audio	Realtek ALC897 HD Audio, 7.1 Channel
Security	TPM Default
Speaker Support	2 Channel x 5W
Input Power	12V-24V DC
Operating Temperature	0°C to 60°C
Storage Temperature	-20°C to 80°C
Humidity	10%-90% RH Non-Condensing
Cooling	Active Cooling
OS Support	Windows® 10, Windows® 11, Linux
Compliance	CE, FCC, RoHS

DURGA-H310 Industrial Motherboard

The DURGA-H310 is a robust industrial motherboard designed for automation, HMI, kiosk, and embedded computing applications. Powered by Intel® 8th and 9th Generation Coffee Lake-S processors, it delivers reliable computing performance, rich industrial I/O connectivity, and long-term operational stability.

Feature	Advantage	Customer Benefit
Intel® 8 th /9 th Gen Coffee Lake-S Processor Support	Proven and reliable computing architecture	Delivers stable performance for industrial applications
Dual Gigabit Ethernet Ports	Enables simultaneous network communication	Improves connectivity and operational reliability
RS232 / RS422 / RS485 Industrial Interfaces	Supports a wide range of industrial equipment	Simplifies integration with PLCs, sensors, and controllers
SATA & M.2 Storage Support	Flexible storage expansion options	Faster system boot-up and efficient data handling
Wide 12V-24V DC Input Power	Compatible with industrial power environments	Ensures reliable operation across diverse installations



Technical Specifications

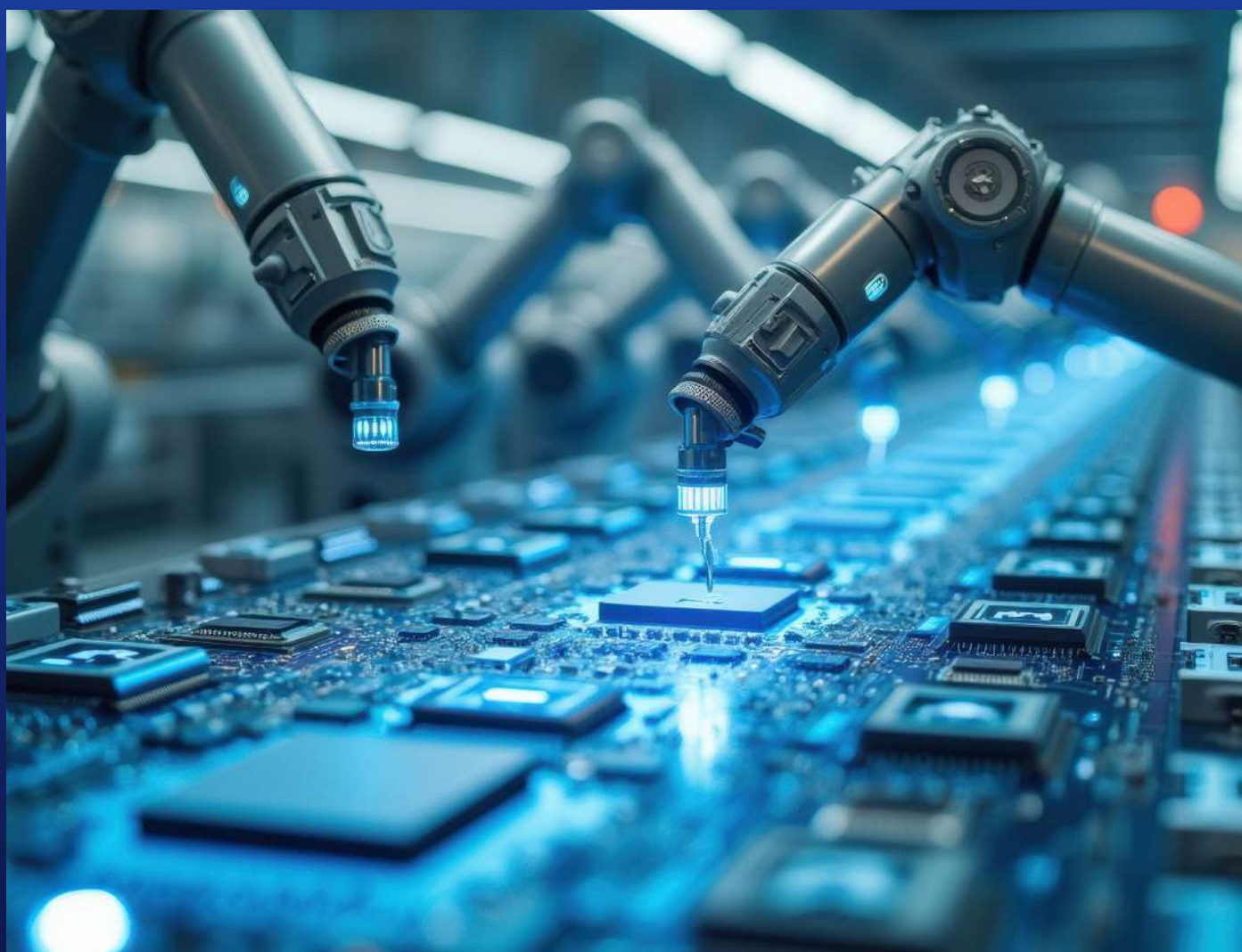
Parameter	Specification
Processor	Intel® 8 th /9 th Gen Core™ i7/i5/i3, Celeron®, Pentium®
Chipset	Intel® H310
Embedded Controller	IT8528E
Memory	2 x DDR4 SO-DIMM, 2400/2666 MT/s, Up to 32 GB
Graphics	Intel® Integrated UHD Graphics
Video Output	2 x HDMI, 1 x LVDS Header
Ethernet	LAN1: Intel I219LM 1GbE, LAN2: Intel I210AT 1GbE
Serial Ports	1 x RS232, 1 x RS232/RS422/RS485 Header
Storage	2 x SATA Gen3, 1 x M.2 (NVMe/SATA)
USB 2.0	2 x USB 2.0 Type-A
USB 3.2	2 x USB 3.0 Type-A, 1 x USB 3.2 Header
Expansion	M.2 E-Key for Wi-Fi/Bluetooth
Audio	Mic-In, Line-In, Line-Out
Speaker Support	2 Channel x 5W
Input Power	12V-24V DC, 4A
Operating Temperature	0°C to 55°C
Storage Temperature	-20°C to 80°C
Humidity	10%-90% RH Non-Condensing
Cooling	Active Cooling
OS Support	Windows® 10, Windows® 11, Linux
Compliance	CE, FCC, RoHS

AIoT Solutions

NASH Industrial AIO Panel PC Series — Consolidated Overview

The NASH Industrial AIO Panel PC portfolio is designed for industrial automation, smart factory, HMI, kiosk, and edge computing applications. The series spans multiple Intel processor generations, offering scalable performance, industrial-grade reliability, and 24/7 operation in demanding environments.

Feature	Advantage	Customer Benefit
Intel® Processor Portfolio (Coffee Lake-S to Core™ Series 2)	Multiple performance tiers available	Choose the right performance level based on application needs and budget
Industrial-Grade Metal Chassis with PCAP Touch	Rugged construction for harsh environments	Improved durability and reduced maintenance costs
Dual LAN Connectivity	Reliable network redundancy and communication	Enhanced uptime and seamless industrial networking
Input Power (12V–24V)	Flexible power integration	Easy deployment across industrial systems
Multiple Expansion Options (PCIe, M.2, SATA)	Supports customization and future upgrades	Protects investment and extends product lifecycle



Platform Comparison

Specification	Durga (CL)	Durgall	Anthem	Astrix
Processor Platform	Intel® Coffee Lake-S (8 th /9 th Gen)	Intel® Alder Lake-S (11 th /12 th Gen)	Intel® Raptor and Alder Lake-S (12 th /13 th /14 th Gen)	Intel® Core™ Series
Chipset	Intel® H310	Intel® H610	Intel® B760	Intel® B760
Memory	DDR4, Up to 32 GB	DDR4, Up to 32 GB	DDR4, Up to 32 GB	DDR5, Up to 32 GB
Display Sizes	10.4", 15", 19"	10.4", 15", 19"	10.4", 15", 19"	10.4", 15", 19"
Touch Technology	PCAP Touch	PCAP Touch	PCAP Touch	PCAP Touch
Video Outputs	2x HDMI, 1x LVDS	2x HDMI, 1x LVDS	HDMI, DP, LVDS, Mini HDMI	HDMI, DP, LVDS, Mini HDMI
Ethernet	Dual 1GbE	Dual 1GbE	1x 2.5GbE + 1x 1GbE	1x 2.5GbE + 1x 1GbE
Serial Ports	RS232, RS485, RS422	RS232, RS485, RS422	—	—
Storage	2x SATA Gen3	2x SATA + 1x M.2	2x SATA + 2x M.2	2x SATA + 2x M.2
USB 2.0	2 Ports	2 Ports	4 Ports + Header	4 Ports + Header
USB 3.2	2 Ports + Header	2 Ports + Header	4 Ports + Header	4 Ports + Header
PCIe Expansion	—	—	PCIe Gen4 x8	PCIe Gen4 x8
Security	TPM Default	TPM Default	TPM Default	TPM Default
Input Power	12V-24V DC, 4A	12V-24V DC, 6A	12-24V DC, 8A	12-24V DC, 8A
Operating Temp	0°C to 60°C	0°C to 60°C	0°C to 60°C	0°C to 60°C
OS Support	Windows® 10/11, Linux	Windows® 10/11, Linux	Windows® 10/11, Linux	Windows® 10/11, Linux
Compliance	CE, FCC, RoHS	CE, FCC, RoHS	CE, FCC, RoHS	CE, FCC, RoHS



Memory & Storage Solutions

NASH DDR4 & DDR5 SODIMM Memory Modules

NASH DDR4 and DDR5 SODIMM memory modules are engineered to deliver high-performance, reliability, and compatibility for laptops, industrial PCs, embedded systems, networking equipment, and edge computing applications.

Feature	Advantage	Customer Benefit
High-Speed Performance (Up to 5600 MT/s DDR5)	Faster data transfer and reduced latency	Improved multi-tasking, faster boot times, and enhanced system responsiveness
100% Factory-Tested	Ensures reliability and consistent performance	Reduced failure rates and lower maintenance costs
On-Die ECC Technology (DDR5)	Detects and corrects internal memory errors	Greater data integrity and system stability for critical applications
Low Power Consumption (1.1V DDR5 / 1.2V DDR4)	Improved energy efficiency and reduced heat generation	Extended battery life and lower operating costs
10-Year Warranty & JEDEC Compliance	Long-term product support and industry-standard compatibility	Peace of mind, dependable operation, and easy integration across platforms



Technical Specifications

Specification	DDR4 SODIMM	DDR5 SODIMM
Capacity	8 GB	16 GB
Form Factor	DDR4 SODIMM	DDR5 SODIMM
Part Number	NIS0408NEC-2666C19	NIS0516NEC-5600C46
Speed / Frequency	2666 MT/s / 3200 MT/s	5600 MT/s
CAS Latency	CL19 (2666) / CL22 (3200)	CL46
Voltage	1.2V	1.1V
Pins	262 Pin	262 Pin
ECC Support	N/A	On-Die ECC (ODE)
Operating Temperature	0°C to 85°C	0°C to 70°C
Storage Temperature	-55°C to +100°C	-55°C to +100°C
Warranty	10 Years	10 Years
OS Support	Windows®, macOS	Windows®, macOS
Environmental Compliance	RoHS & Halogen-Free	RoHS & Halogen-Free

Printers & Peripherals

NASH POS Printer Solution — NPOS3200B

Ergonomic, Compact & Reliable Thermal Printing Solution

High-speed POS printing for Retail, Hospitality, Banking & Self-Service Applications. Delivers fast thermal printing, reliable performance and easy integration for modern billing and transaction environments.

Feature	Advantage	Customer Benefit
High-Speed Thermal Printing (Up to 150 mm/sec)	Faster receipt generation	Reduces customer waiting time and improves checkout
Dual Interface Support (USB + Serial/Ethernet)	Flexible system connectivity	Easy integration with POS terminals and embedded systems
Barcode & QR Code Printing Support	Supports multiple transaction formats	Enables digital receipts, inventory and tracking applications
Auto Cutter + High Reliability Design	Automatic paper cutting with long lifecycle	Improves user convenience and reduces maintenance
Compact Design with White Labeling Support	Easy branding and space-saving installation	Suitable for customized OEM POS solutions



Technical Specifications

Parameter	Specification
Model	NPOS3200B
Printing Technology	Thermal Line Dot Printing
Printing Speed	100 mm/sec (Up to 150 mm/sec)
Resolution	203 DPI
Printing Width	72 mm / 576 dots per line
Paper Size	80 mm (3 inch standard)
Paper Roll Diameter	80 mm
Paper Thickness	0.054 – 0.091 mm

Parameter	Specification
Interface	USB + Serial/Ethernet Support
Driver Support	Windows®, Linux & Android
Barcode Support	UPC-A/E, JAN13/EAN, CODE39, CODE128, QR Code, PDF417
Cutter Type	Auto Cutter (Full/Partial Cut)
Cutter Life	1 Million Cuts
Print Head Life	100 km
Operating Temperature	0°C to 50°C
Dimensions	130 x 130 x 130 mm
Weight	Approx. 1kg



NASH NRP3100L Kiosk Thermal Printer

Ergonomic, Compact & Reliable — Japanese-Quality Thermal Printer for Kiosk, Retail & Self-Service Applications

Compact kiosk thermal printer designed for high reliability, fast receipt printing and easy system integration across self-service and transaction-based applications

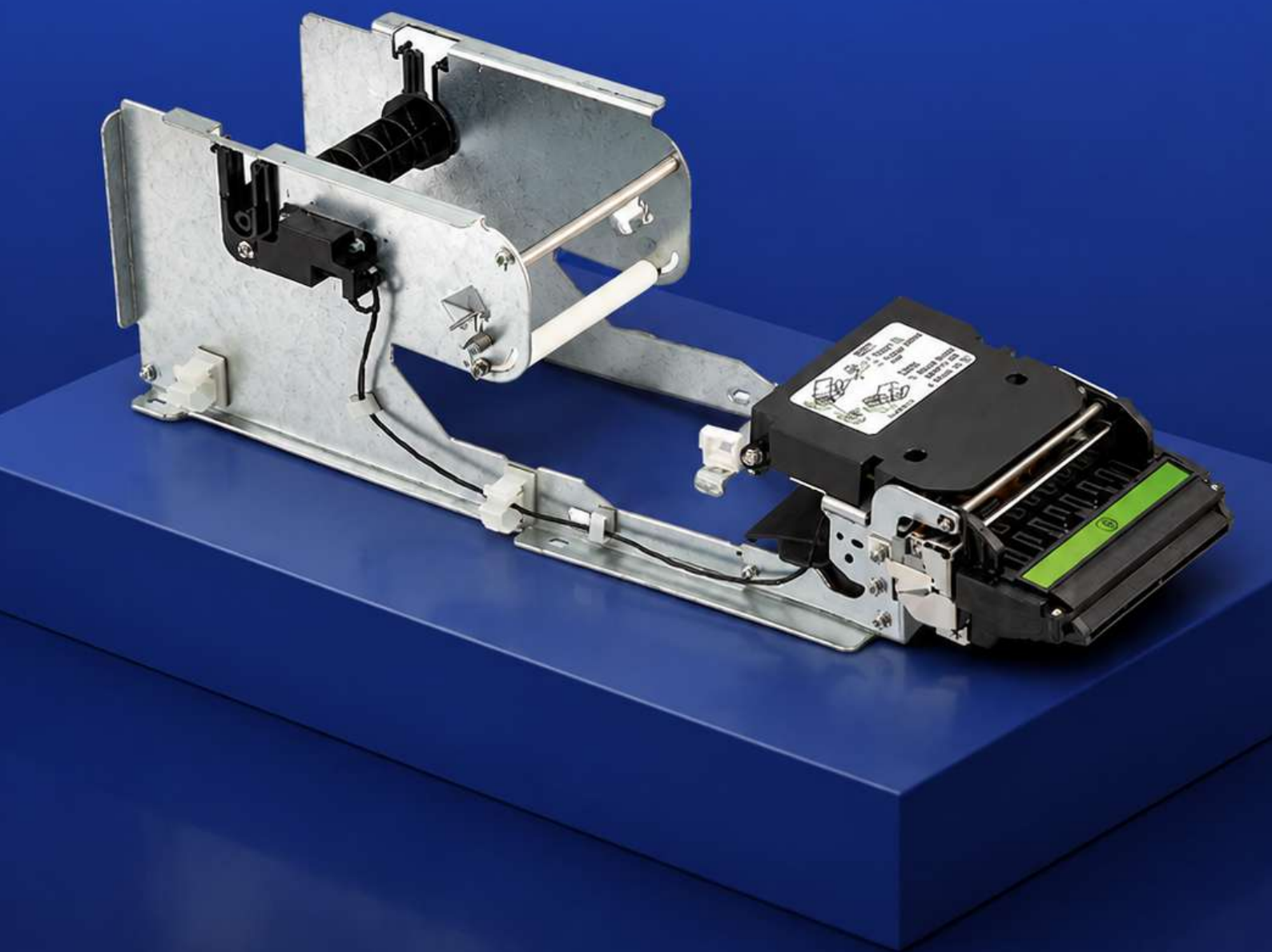
Feature	Advantage	Customer Benefit
High-Speed Thermal Printing (100 mm/sec)	Fast and efficient receipt printing	Reduces customer waiting time in kiosks and POS systems
Compact Kiosk Design	Space-saving integration with machines	Easy installation in compact terminals and embedded
Auto Cutter with 1 Million-Cut Life	Reliable automatic paper cutting	Improves user convenience and reduces maintenance
USB Interface + Multi-OS Support	Simple connectivity and integration	Flexible deployment across multiple platforms
Barcode & QR Code Printing Support	Supports digital and transaction printing needs	Enables ticketing, billing, and identification applications



Technical Specifications

Parameter	Specification
Model	NRP3100L
Printing Method	Thermal Line Dot Printing
Printing Speed	100 mm/sec
Resolution	203 DPI
Printing Width	72 mm / 576 dots per line
Paper Size	80 mm (3 inch)
Roll Diameter	210 mm
Barcode Support	UPC, EAN, Code 39, Code 128, ITF, CODABAR, QR Code
Cutter Life	1 Million Cuts

Parameter	Specification
Print Head Life	100 km
Interface	USB
OS Support	Windows®, Linux, Android
Sensors	Paper Low, Black Mark, Paper Present, Receipt Removal
Power Supply	24V ±10%, 2.5A
Operating Temperature	0°C to 50°C
Operating Humidity	35% to 80%
Dimensions	465 x 120 x 145 mm
Weight	1.7 kg



Camera & Vision Systems

NASH Retail Camera — NDC4.0RT

Professional-Grade Retail Camera System

High-performance USB camera for face recognition, QR/barcode scanning, object detection, and customer analytics in self-checkout systems, inventory management, smart retail stores, kiosks, and warehouses.

Feature	Advantage	Customer Benefit
AI-Powered Face Recognition	Enables customer analytics and security monitoring	Improved customer insights and enhanced store security
High-Speed QR & Barcode Scanning	Supports rapid and accurate product identification	Faster checkout and inventory processing
Intelligent Object Detection	Automates product recognition and tracking	Reduced manual effort and improved operational efficiency
USB 2.0 Compliant Design	Easy integration with existing retail systems	Faster deployment and lower integration costs
Exceptional Low-Light Performance	Maintains image quality in challenging lighting conditions	Reliable performance across diverse retail environments

Technical Specifications



Parameter	Specification
Model	NDC4.0RT
Lens Focal Length	4 mm Fixed Focus
Resolution	FHD (1920 x 1080)
Field of View	80° Horizontal, 45° Vertical
Connectivity	USB 2.0
Operating Temperature	-10°C to +55°C
Dimensions	120 x 80 x 45 mm
Weight	80 g
Certifications / MTBF	CE, CB, WEEE, RoHS-certified, MTBF of 150,000 hours, calculated in accordance with the Telcordia Issue 3

NASH Automotive Rear View Camera (RVC) Module

Automotive-grade camera solution designed to enhance vehicle safety, visibility, and driver awareness. Supports AHD and VGA resolutions with ultra-wide-angle coverage, ideal for rear-view monitoring, 360° surround-view systems, and ADAS applications.

Feature	Advantage	Customer Benefit
Ultra-Wide 130° Viewing	Maximises vehicle visibility	Reduces blind spots and improves driving safety
AHD & VGA Resolution	Clear image quality for vehicle monitoring	Enhanced driver awareness and confidence
IP67 Waterproof Design	Reliable operation in harsh weather conditions	Long-term durability and reduced maintenance
Advanced Protection Circuitry	Protects against voltage fluctuations and electrical disturbances	Improved product reliability and vehicle safety
360° Camera Integration Capability	Supports surround-view systems and ADAS applications	Better maneuverability, parking assistance, and accident prevention



Technical Specifications

Parameter	Specification
Camera Type	Automotive Rear View Camera (RVC)
Resolution	VGA & AHD Resolution
Video Output	NTSC / PAL
Viewing Angle	Ultra-Wide 130°
Waterproof Rating	IP67
Protection Features	Over-current, Over-voltage, Reverse Voltage, ESD & EMI Protection up to 30KV
Product Dimensions	21 x 21 x 30 mm
Display Compatibility	CVBS Compatible Display

NDC2.4PRT USB 2.0 Camera Module

Compact Full HD camera solution for kiosks, ATMs, POS systems, biometrics, and embedded vision applications.

Feature	Advantage	Customer Benefit
Up to 2MP Resolution with 100dB WDR	Delivers high-quality images in varied lighting conditions	Improved recognition accuracy and image clarity
USB Video & Audio Class Compliance	Simplifies integration into existing systems	Faster deployment and reduced development effort
Built-in Image Signal Processor	Advanced image enhancement and optimization	Superior image quality for critical applications
Omni-Directional MEMS Microphone	High-quality audio capture	Enhanced communication and voice-enabled applications
Compact Industrial Design	Easy integration into kiosks, ATMs, and POS systems	Space-saving deployment and flexible installation



Technical Specifications

Parameter	Specification
Model	NDC2.4PRT
Resolution	2 MP
Frame Rate	Up to 30 fps
WDR	100 dB
Interface	USB 2.0
Lens Options (Wide)	140° H x 80° V
Lens Options (Narrow)	75° H x 40° V
Audio	Omni-Directional Digital MEMS Microphone
Microphone Sensitivity	Approx. -46 dBFS
Product Dimensions	60 x 16 x 18 mm

NASH AI Surveillance Camera

Intelligent Video Security for Stores, Malls, Supermarkets & Smart Retail

Feature	Advantage	Customer Benefit
AI Object Detection (Person / Face / Vehicle / License Plate)	Real-time intelligent identification	Faster security response and accurate monitoring
AI Behavior Analytics (Intrusion / Line Crossing / Loitering / Crowd Detection)	Automatically detects abnormal activities	Improves safety and prevents security incidents
High Resolution Video (3K 5MP / 4K 8MP)	Captures clear and detailed images	Better evidence quality and visibility
AI Image Enhancement + WDR + Night Vision	Maintains image clarity in difficult lighting	Reliable 24/7 surveillance performance
IP67 + PoE + Low Power Design	Easy installation with industrial reliability	Reduced maintenance cost and long-term operation

Technical Specifications

Parameter	Specification
Camera Model	NASH NSC-5141WE / NSC-8141WE
Resolution	Up to 5MP (3K) / 8MP (4K Ultra HD)
Image Sensor	1/3" CMOS
Video Frame Rate	Up to 30 fps
AI Processor	Integrated Neural Network Processing Unit (NPU)
AI Computing	Up to 500 GigaOPS (5MP) / 1.2 TerraOPS (8MP)
Video Encoding	H.265 / H.264 / MJPEG
Dynamic Range	74dB (5MP) / 120dB WDR (8MP)
Power	12V DC / PoE IEEE 802.3af
Protection	IP67
Operating Temperature	-40°C to 80°C
Security	AES Encryption, Secure Boot Support

NASH AI Surveillance Camera — Automotive Industry

Smart Vision Monitoring for Manufacturing Plants, Warehouses & Vehicle Yards

Technical Specifications

Parameter	Specification
Camera Model	NASH NSC-8141WE
Resolution	4K Ultra HD / 8MP
Sensor	1/3" CMOS
Processor	ARM Cortex A53 Quad Core @ 1.4GHz
AI Computing	Up to 1.2 TerraOPS
Video Encoding	H.265+ / H.265 / H.264+ / H.264 / MJPEG
Video Output	3840 x 2160 @ 30 fps
Wide Dynamic Range	120dB WDR
Power Supply	12V DC / PoE
PoE Standard	IEEE 802.3af (802.3at Type 1)
Protection	IP67
Operating Condition	-20°C to 70°C for complete product, Humidity ≤ 90%
Security	AES 128/192/256, RSA, Secure Boot

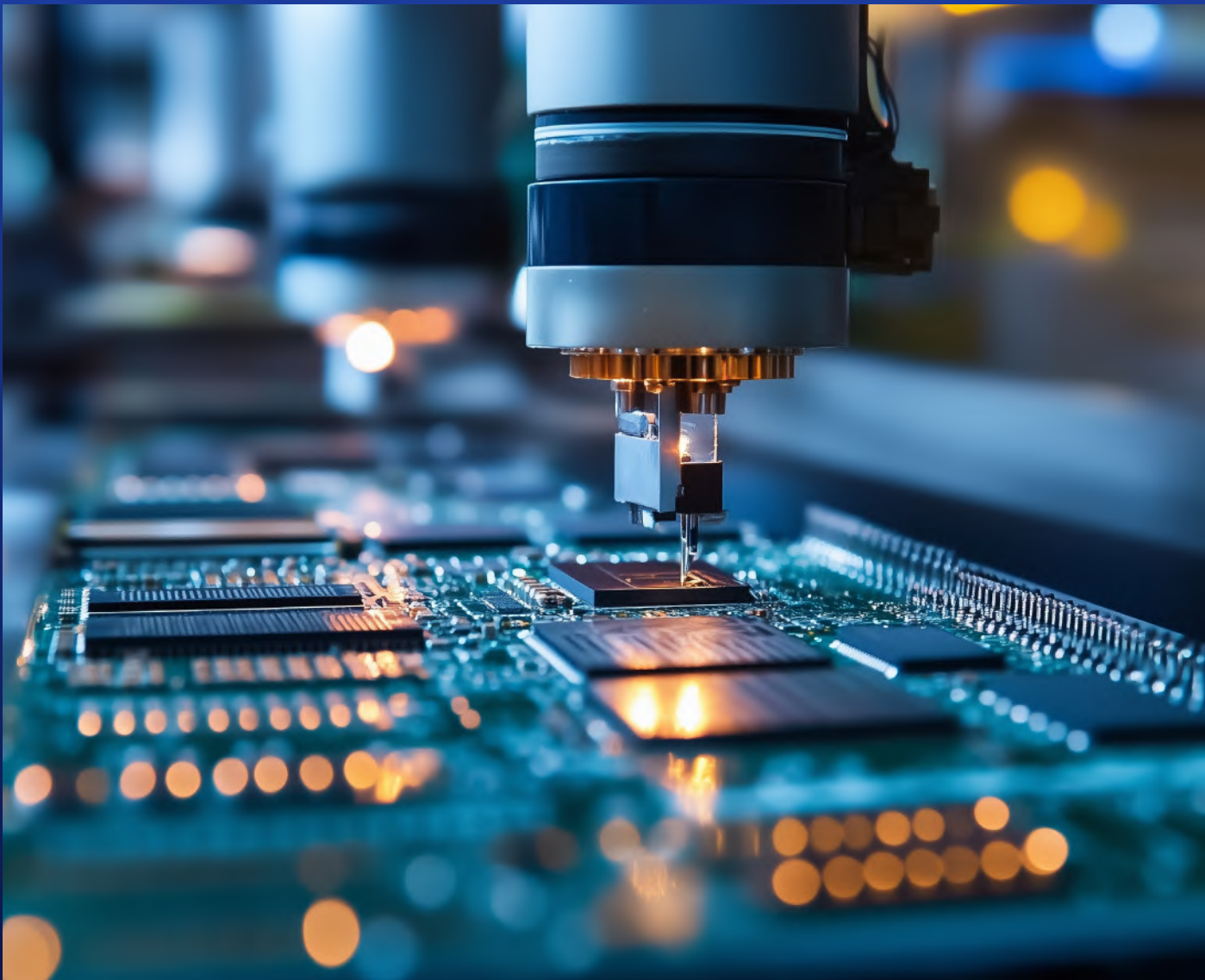


NASH RGB + IR Dual Lens USB Camera Module

Smart Vision Solution for Retail, Automotive & Embedded Applications

Combines high-resolution RGB imaging, IR sensing, biometric capability and compact design for secure authentication, smart terminals and intelligent vision applications.

Feature	Advantage	Customer Benefit
Dual RGB + IR Sensor	Simultaneous color imaging and IR depth capture	Enables accurate face recognition and reliable identification
Windows® Hello & Face Authentication Support	Secure biometric authentication capability	Improves security for access control and smart devices
Full HD 1080p RGB Imaging	High-quality video and image capture	Better user experience and clear visual communication
IR Low-Light Optimization	Works in dark and challenging lighting conditions	Reliable 24/7 operation
Compact Thin-Bezel Design + USB Plug & Play	Easy integration into laptops, kiosks and embedded systems	Faster deployment with reduced design complexity



Technical Specifications

Parameter	Specification
Product Type	USB 2.0 RGB + IR Dual Lens Camera Module
RGB Sensor	2 MP CMOS
RGB Resolution	1920 x 1080 Full HD
RGB Frame Rate	Up to 60 fps
IR Sensor	1280 x 720 IR CMOS
IR Resolution	640 x 360
Interface	USB UVC/UAC Compliant
Video Format	YUY2 / MJPEG
Lens Field of View	RGB: 74.8° H / 82.4° Diagonal
Image Processing	AEC, AWB, Noise Reduction, DIS, Face Detection
Dynamic Range	RGB ~85dB / IR ~75dB
Operating Temperature	-30°C to +85°C
PCB Size	95.8 x 3.05 x 0.5 mm
IR FOV	60°C, 80°C, 120°C
IR Wavelength	940 nm



Surround View Camera

Surround View Camera is an intelligent panoramic vision solution built on the **TI AM69A platform**, combining multi-camera video capture, AI-based image stitching, Vision Language Model (VLM) capabilities, and local AI processing. It creates a seamless panoramic view while enabling intelligent scene understanding and natural interaction through on-device AI.

Feature	Advantage	Customer Benefit
Multi-Camera Panoramic Vision	Combines multiple wide-FOV cameras into a real-time panoramic view	Provides wider situational awareness and reduces blind spots
AI-Based Image Stitching	Automatically aligns camera feeds and corrects perspective	Delivers seamless panoramic imagery with reduced stitching artifacts
Vision Language Model (VLM)	Enables scene understanding, visual reasoning, and object/environment awareness	Allows intelligent analysis of the captured environment and context
Local AI Assistant & On-Device Processing	Uses local LLM/VLM models with privacy-preserving offline operation	Enables natural interaction and AI insights without relying on cloud processing
Edge AI Optimized Architecture	Runs real-time inference on the CP with no NPU dependency	Supports reliable, low-latency AI processing for embedded deployments

Technical / Platform Specifications

Specification	Details
Processor Platform	TI AM69A
Camera Interface	FPD-Link
Camera Type	Multiple Arducam Cameras
Camera Configuration	Multi-camera, wide FOV
Image Processing	AI-based image stitching
AI Models	Local LLM (2.5B / 0.5B), Vision Language Model (VLM)
AI Processing	CPU-based Edge AI
NPU Dependency	No NPU dependency
AI Operation	Local / Offline
Inference	Real-time inference pipeline
Key AI Functions	Scene understanding, visual reasoning, object & environment awareness
Interaction	Natural-language interaction and visual question answering
Deployment	Embedded edge deployment

Kiosk Platforms

NASH Self Bag Drop & Volumetric Measurement Kiosk

Smart, Secure & Automated Baggage Processing Solution

Advanced self-service baggage processing solution combining automated bag drop, volumetric measurement, baggage analysis, facial recognition, and intelligent security features. Enables faster check-ins, reduced operational costs, and improved passenger experience.

Feature	Advantage	Customer Benefit
Automated Self Bag Drop & Volumetric Measurement	Reduces manual intervention and processing time	Faster passenger check-in and improved operational efficiency
Integrated Barcode, Passport & RFID Reader	Streamlines passenger identification and baggage processing	Reduced queues and enhanced customer experience
Weight & Dimension Measurement System	Accurate baggage validation and compliance checking	Minimizes errors and avoids excess baggage disputes
Intel® RealSense™ 3D Camera & Image Analytics	Advanced object detection and baggage analysis	Improved security and automated baggage handling
Security Features (Intrusion Detection, Secure Door, Emergency Stop)	Enhanced system and passenger safety	Reliable and secure operation in high-traffic environments



Technical Specifications

Parameter	Specification
Processor	Intel® Core™ Series 2 (BTL-S) Processor
Chipset	Intel® B760
Memory	2 x DDR5 SO-DIMM, Up to 64GB
Display	10.4" / 15" / 19" TFT LCD with PCAP Touch Panel
Video Outputs	HDMI / DP / LVDS / Mini-HDMI
Ethernet	2.5GbE Intel KT1226IT + 1GbE Intel KT1226LM
Storage	2 x SATA Gen3, 2 x M.2 (NVMe/SATA)
USB 2.0	4 x USB 2.0 Type-A, 1 x USB 2.0 Header
USB 3.2	4 x USB 3.2 Type-A, 1 x USB 3.2 Header
Input Power	12V-24V DC
Operating Temperature	0°C - 60°C
Certifications	CE / FCC / RoHS



NASH Self-Service Kiosk

Unmatched Versatility, Speed & Precision for Enhanced Customer Experiences

Versatile self-ordering platform designed to improve customer engagement, reduce wait times, and streamline transactions across retail, hospitality, airports, and service centers. Powered by Intel® J1900 Quad-Core processor with a 17" capacitive touchscreen.

Feature	Advantage	Customer Benefit
17" Capacitive Touchscreen	Intuitive and responsive user interface	Faster transactions and improved user experience
Intel® J1900 Quad-Core Processor with SSD Storage	Reliable and efficient system performance	Smooth operation and reduced downtime
Integrated Barcode Scanner	Quick and accurate data capture	Faster checkout and reduced manual errors
High-Speed Thermal Printer (100 mm/sec)	Rapid receipt and ticket printing	Shorter customer wait times
Windows®, Linux & Android Support	Flexible software compatibility	Easy integration with existing business systems



Nash Energy : India's First Mass-Scale LFP Cell Manufacturer

India's First LFP Battery Manufacturer

NASH Energy, a part of NASH Group, is India's first LFP battery manufacturer and a pioneer in advanced lithium-ion solutions. Its 22,000 sq.ft. Bengaluru facility combines Indian manufacturing excellence with Japanese R&D expertise, with BIS-certified 32140 cells. With 180+ engineers, NASH serves 15+ Fortune 500 companies, manufacturing 90% of battery pack components in-house.

Milestone	Detail
2.5M Cells	Shipped since the first cell rolled off the line in Sep 2024
40+ Customers	Across 2W/3W EVs & home energy storage
2 GWh	Prismatic pack line operational, Nov 2025
10 GWh	Roadmap capacity, paced to customer demand
2021	Acquired Forte Nippon (Japan) for cell chemistry & design

Integrated Expertise

- Two-Wheeler & Three-Wheeler battery solutions
- Portable Energy Storage for field and home use
- Battery Energy Storage System (BESS)
- UPS Solutions – single and three-phase backup

Cell Manufacturing & Technology Partnerships

NASH Energy – Japan

NASH's LFP cell chemistry traces to Forte Nippon, a Japanese electrochemistry firm acquired by NASH Energy in 2021. NASH Energy is also India's only complete integrated energy solutions manufacturer from cells to battery packs. The manufacturing unit in Dobbaspeta has both cell and battery pack manufacturing lines.

Rincell – USA (JV)

A joint venture with US-based Rincell extends NASH's chemistry range into NMC cells in 18650 and 21700 form factors – high-energy-density formats built for drones, defence platforms, and high-speed two-wheelers.

Battery Management Systems (BMS)

NASH Energy offers an advanced range of Hardware and Smart BMS solutions designed to manage battery packs safely, efficiently, and intelligently.

Product	Key Specification
Hardware BMS 12V / 25V / 48V	0–100A range, up to 15S configuration, LFP/NMC chemistry
Smart BMS 25V, 75A	Up to 14S, 3-wheeler / auto / e-rickshaw / solar use case
Smart BMS 48V, 100A	Up to 16S, solar / telecom / mobility applications
Smart BMS 48V–89.6V (14S–28S)	45–75A, residential & commercial energy storage

Applications

- Renewable Energy Storage — Solar inverter systems and off-grid power storage with intelligent battery management
- E-Mobility — Two/three-wheeler EVs, e-bikes, and light EVs with BIS-certified LFP cells
- UPS & Telecom — Uninterruptible power supplies and telecom backup with industrial-grade BMS protection



BattMonX Application

BattMonX is an intelligent Battery Management System (BMS) application designed for **real-time monitoring, configuration, control and analysis of battery systems**. It provides multi-protocol connectivity, live battery insights, analytics, alarms, firmware management and cross-platform access through a single intuitive platform.

Feature	Advantage	Customer Benefit
Real-Time Battery Monitoring	Live visibility of voltage, current, power, SOC, SOH and temperature	Quickly identify battery conditions and improve operational reliability
Energy Analytics & Cell Monitoring	Detailed energy, efficiency, cell voltage, balancing and historical insights	Enables data-driven decisions, better battery performance and predictive maintenance
Multi-Protocol & Interface Support	Supports UART, CAN, BLE and Wi-Fi communication	Flexible integration with different BMS, battery packs and connected systems
Intelligent Alarms & Firmware Management	Alarm prioritization, diagnostics and OTA firmware management	Reduces downtime and simplifies system maintenance and software updates
Battery, Asset & Cross-Platform Management	Manage multiple battery packs, configurations and assets through desktop/mobile access	Provides centralized control and scalable monitoring across multiple deployments

Specifications / Technical Details

Functional and interface specifications:

Specification	Details
Communication Interfaces	UART, CAN, BLE, Wi-Fi
Monitoring Parameters	Voltage, Current, Power, SOC, SOH, Temperature
Cell Monitoring	Individual cell voltage, balancing status & history
MOSFET Monitoring	CHG, DSG & PRE status
Data & Analytics	Real-time data, trends, historical reports & logs
Firmware	OTA upload, download, version management & flashing
Alarm System	Intelligent alarm grouping, prioritization & diagnostics
Asset Management	Battery packs, variants, configurations & asset names
Real-Time Updates	WebSocket-based live telemetry & status updates
Access	Desktop & Mobile
Additional Features	Admin Portal, Interactive Map, AI Chatbot

BMS Automation Tool

BMS Automation Tool is a comprehensive automation framework designed for **testing, monitoring and managing Battery Management Systems (BMS)** with speed, accuracy and confidence. It automates test execution, configuration, firmware validation, log analysis and reporting to streamline BMS development and validation.

Feature	Advantage	Customer Benefit
Automated Test Execution	Executes functionality and cycle tests with automated pass/fail validation	Reduces manual testing effort and accelerates BMS validation
Real-Time Device & Status Monitoring	Provides live BMS parameters including voltage, current, temperature and operating status	Enables faster issue detection and improved testing visibility
Configuration & Firmware Management	Reads, modifies and validates firmware parameters and automates firmware upgrade validation	Simplifies configuration management and reduces firmware validation time
Log Validation & Intelligent Reporting	Validates data, event and error logs while generating Excel/HTML reports	Improves traceability, documentation and accuracy of test results
Scalable Communication & Automation Framework	Supports UART/CAN communication with automated test setup and execution	Enables flexible integration with different BMS platforms and scalable regression testing

Technical / Interface Specifications

Specification	Details
Communication Interfaces	UART, CAN
Communication Setup	Automatic port detection and BMS communication configuration
Testing	Functionality Tests, Cycle Tests, Regression Testing
Test Execution	Automated execution with pass/fail validation
Monitoring	Voltage, Current, Average Temperature, Operating Mode, Stack Voltage
Configuration	Firmware parameters, search parameters, limits and device configuration
Firmware	Automated firmware upgrade and validation
Log Validation	Data Logs, Event Logs and Error Logs
Reporting	Automated Excel & HTML reports
Real-Time Dashboard	Device status, test progress and execution summary
Control	MOSFET & RTC control through GUI

EVOLT – EV Charging Management Platform

EVOLT is an intelligent **EV Charging Management Platform** designed to manage, monitor and optimize EV charging networks through a connected, centralized system. It brings together station management, analytics, tariffs, payments, firmware, users and real-time operations to enable smarter and more efficient charging infrastructure.

Feature	Advantage	Customer Benefit
Station Management & Real-Time Monitoring	Live monitoring, remote control, OCPP configuration and transaction history	Improves station uptime and enables centralized control of the charging network
Advanced Dashboard & Analytics	Trends, station rankings, grid analytics, session analysis and forecasting	Provides actionable insights to optimize operations and make data-driven decisions
Firmware & OCPP Management	Bulk OTA updates, scheduling, progress tracking and real-time logs	Simplifies maintenance and enables efficient management of large charging networks
Dynamic Tariff & Payment Management	Supports flat, time-of-use and demand-based pricing along with wallet/payment tracking	Enables flexible monetization and improves revenue management
Secure & Scalable User/Asset Management	RBAC, JWT authentication, multi-tenant support and centralized administration	Provides secure access, scalable operations and better control across multiple charging deployments

Technical / Platform Specifications

Specification	Details
Charging Protocol	OCPP
Authentication & Security	RBAC, JWT Authentication
Access Technologies	QR, RFID, NFC
Firmware Management	Bulk OTA, scheduling & progress tracking
Tariff Models	Flat, TOU & demand-based pricing
Payment Integration	Razorpay, prepaid wallet, recharge & payment tracking
User Architecture	Multi-tenant support
Analytics	Station, session, grid, usage & trend analytics
Forecasting	Energy & session forecasting
Station Search	Geo-search with live station status
Reporting / Monitoring	System health, usage statistics, logs & audit tracking
Admin Features	Tenant, user, feature, subscription & system management
Platform Access	Dashboard-based centralized management

Automotive Electronics

NASH DCU

Dosing Control Unit | AdBlue/DEF SCR Aftertreatment

DESIGNED • DEVELOPED • VALIDATED IN-HOUSE — MAKE IN INDIA

The NASH DCU is an AdBlue/DEF dosing controller for SCR exhaust aftertreatment in commercial vehicles, engineered end-to-end by NASH Tech Labs — hardware (electronics & mechanical), low-level drivers, base software, application software and manufacturing. Its airless dosing architecture delivers reduced system cost and complexity versus air-assisted designs, with pump, injector and heater management, freeze protection, and OBD fault reporting, tamper and defeat monitoring per BS-VI.

Feature	Advantage	Customer Benefit
AdBlue/DEF Dosing Controller — Airless Architecture	End-to-end engineered dosing control (hardware, drivers, application software, manufacturing) using an airless design	Reduced system cost and complexity versus air-assisted designs
Pump, Injector & Heater Management	Coordinated control across tank, line and pump circuits	Reliable, consistent dosing performance across operating conditions
Freeze Protection with Automated Purge	Automated purge cycle triggered at shutdown	Protects the dosing system from freeze damage in cold climates
Layered Software Architecture (Model-Based Design)	Application layer over a runtime layer with DIAG, MEM and COM services, plus a full low-level driver suite; built with MATLAB/Simulink and Embedded Coder	High computational efficiency, low power draw and faster development cycles
OTA-Capable Reprogramming (PBL/SBL over UDS)	Secure bootloader reflash alongside over-the-air update capability	Simplified, secure fleet-wide software updates and maintenance
MIL, SIL & HIL Validated — ASIL B Design Target	Verified in software, model and hardware-in-the-loop testing, with DVVP covering vibration, IP6k9k, immunity and ESD	Dependable operation designed to automotive safety, EMI/EMC and functional safety standards

Technical Specifications

Parameter	Specification
Supply Voltage	7 V – 32 V (12/24 V CV systems)
Microcontroller	Arm Cortex-M7
Flash Memory	2 MB
RAM	164 KB
EEPROM	128 MB
Connector	35-pin, die-cast sealed enclosure
CAN Channels	2× CAN
Safety	ASIL B design target
EMC	Automotive EMI/EMC standards
Emission Norm	BS-VI OBD compliant
Protocols	J1939, UDS, XCP
Reprogramming	PBL/SBL secure reflash + OTA
Toolchain	MATLAB/Simulink, Embedded Coder, Vector Tools, VS Code
Validation	MIL, SIL & HIL verified software; DVVP (Mechanical Vibration, IP6k9k, Immunity, ESD)
Applications	AdBlue/DEF dosing for SCR exhaust aftertreatment in commercial vehicles
Manufacturing	Designed, developed & validated in-house — Make in India

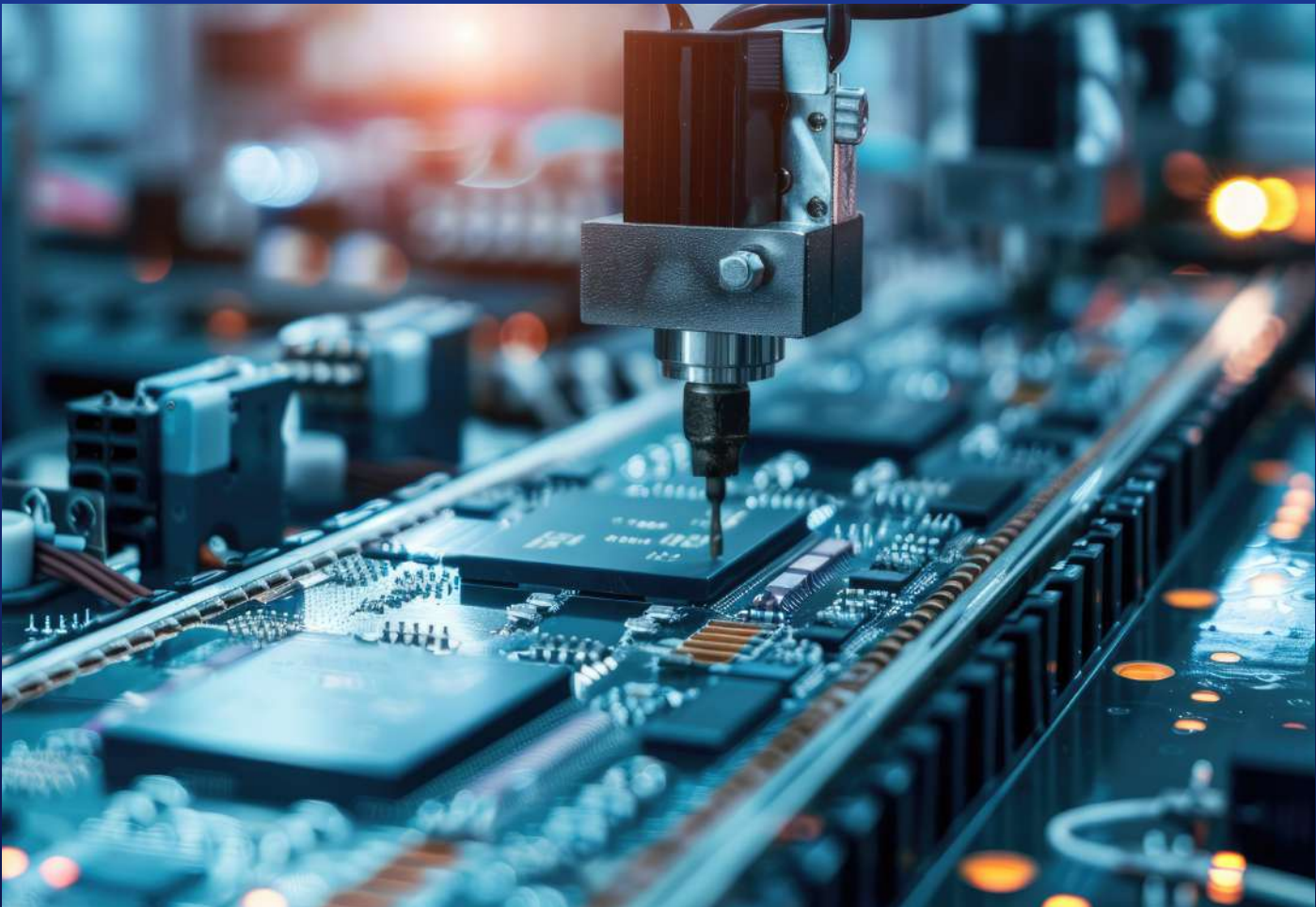


NASH CAN Gateway

Advanced Multi-Channel Automotive CAN Gateway Solution

High-performance CAN Gateway for commercial vehicles, electric vehicles, construction equipment, and telematics applications. Delivers intelligent message routing, protocol conversion, low-latency communication, and advanced diagnostics for reliable vehicle network integration.

Feature Advantage Customer Benefit		
5 Independent CAN Channels	Connects multiple vehicle CAN networks simultaneously	Enables seamless communication between Powertrain, Body, Diagnostics and Telematics ECUs
Configurable Routing & ID Translation	Supports flexible 1:1, 1:N and N:1 message routing	Simplifies vehicle network integration and supports customised applications
Baud Rate & Protocol Conversion	Bridges CAN networks operating at different communication speeds	Ensures compatibility between legacy and modern vehicle systems
UDS Diagnostics & Secure Reflash	Supports diagnostics, calibration and firmware updates	Reduces maintenance time and improves serviceability
Hardware & Software Message Filtering	Prioritises critical network traffic	Enhances communication reliability and improves overall network performance
Wake-on-CAN with Low Power Standby	Intelligent power management during vehicle standby	Reduces power consumption while maintaining instant network availability



Technical Specifications

Parameter	Specification
Model	NCGW5000
Microcontroller	Arm Cortex-M7, Automotive Grade (AEC-Q100)
CAN Channels	5× CAN 2.0A/B (11-bit & 29-bit Identifier Support)
Communication Speed	Up to 1Mbps
Routing Latency	<1 ms Typical
Protocols Supported	UDS (ISO 14229-1 / ISO 15765-2)
Protocol Conversion	Classical CAN Baud Rate Conversion
Message Routing	1:1, 1:N & N:1 Configurable Routing
Bootloader	UDS-Based Secure Reflash
Supply Voltage	9V-32V DC (12V / 24V Systems)
Protection	Reverse Polarity & Load Dump Protection
Transient Immunity	ISO 7637-2 / ISO 16750-2 Compliant
Standby Current	<1 mA
Operating Temperature	-40°C to +85°C (105°C Option Available)
Ingress Protection	IP67 Sealed Enclosure
Connector	Automotive Sealed Multi-Way Connector
EMC Compliance	CISPR 25 & ISO 11452 (Design Target)



High-Tech ODM

Engineering-Led Product Development — White Label & Co-Development

NASH Tech Labs operates as a high-technology ODM — taking customer concepts from initial specification through electronics design, mechanical engineering, firmware development, validation, and into full manufacturing. NTL's co-development model means customers retain IP ownership while leveraging NTL's engineering depth and production infrastructure.

Engineering Capabilities

- Concept Design — System architecture, technology selection, platform feasibility studies, and detailed product specification development
- Electronics Design — Schematic capture, PCB layout, signal integrity analysis, power integrity simulation, and design-for-manufacture review
- Mechanical Design — Enclosure design, thermal modelling, DFM analysis, tooling specifications, and industrial design
- Firmware Development — BIOS, UEFI, bootloader, embedded OS porting, BSP development, and application firmware
- Validation & Compliance — Functional testing, EMC pre-compliance, environmental stress testing, and safety certification support

Co-Engineered Silicon Roadmap

NTL designs proprietary BIOS for Intel-based platforms spanning IPC/HMI, BOX PC & Mini-ITX, 3.5" SBC PC/IOT, All-in-One PC, and System-on-Module form factors.

Roadmap aligned with: Raptor Lake-S · Panther Lake-U/H · Twin Lake · Bartlett Lake-S · Nova Lake

Model	Description	Key Points
Co-Development Model	Customer defines product requirements and owns IP. NASH provides full engineering execution.	Full IP ownership retained by customer; joint development roadmap and milestone reviews
White Label Program	Customer selects from NASH's product portfolio and applies own branding. Fastest route to market.	NASH standard product as base; customer branding, colour, label, and package supported

Turnkey Manufacturing

From Prototype to Production — SMT, Box Build, and Beyond

NASH's manufacturing infrastructure handles the full production lifecycle — from engineering prototype builds through to high-volume commercial production. With 95,000 sq.m. across 15+ SAP-enabled factories, automated SMT lines, AOI/X-ray inspection, and full traceability, NASH delivers production-grade electronics, batteries, and automotive components to global quality standards.

Capability	Description
SMT Assembly	Multi-line surface mount technology assembly with automated solder paste inspection and reflow profiling
Automated Inspection	AOI and X-ray inspection at every production stage — ensuring zero-defect delivery downstream
Box Build	Complete mechanical assembly, cable harnessing, sub-system integration, and finished system build
Burn-In Testing	Thermal cycling, extended power-on stress testing, and functional validation under operational load
Full Traceability	Component-level traceability from incoming inspection through to finished goods
Quality Management	IATF 16949, ISO 9001/14001/45001, AS9100D, and EN 15085-2 certified quality systems
Vertical Integration	Electronics, mechanical design, metal fabrication, wire harness, and box build under one roof
Global Reach	Manufacturing across Bengaluru, Chennai, Pune, plus Dubai, Mexico, and Romania

Why Partner with NASH?

Engineering Depth. Manufacturing Scale. Single-Source Ownership.

Choosing NASH as your hardware, energy, and automotive electronics partner means working with a single organization that covers every stage of the product journey — from silicon and cell selection through board design, battery assembly, box build, test, and global logistics. No fragmented supply chain. No handover risk. One team, one relationship, one warranty.

Pillar	What It Means
Engineering Depth	Custom motherboard, BMS, and ECU design expertise built over 50+ years. In-house hardware, firmware, mechanical, and thermal engineering.
Manufacturing Scale	Production-ready SMT, battery assembly, and box build infrastructure with global quality standards across 15+ facilities.
Turnkey Ownership	Single partner from concept to deployment. One contract, one relationship, one point of accountability.
India Advantage	Cost-effective, resilient, and globally competitive manufacturing from India — 25+ patents filed across sectors.
Long-Term Partnership	NASH is committed to long-term product support — lifecycle management, obsolescence handling, and revision services.
Energy & Automotive Ready	Beyond electronics hardware, NASH brings BIS-certified battery manufacturing and in-house automotive ECU/CAN expertise.

The NASH Advantage at a Glance

Capability	Detail
Design to Deployment	Complete in-house coverage — hardware, firmware, mechanical, battery, automotive, manufacturing, and test
Intel® Partner	Aligned to Intel's embedded and IoT roadmap with early access to platform transitions
ODM Capability	Co-development, white label, and private label programs for OEM customers
Industrial Standards	Products designed to industrial temperature, vibration, and reliability requirements
Energy Storage	India's first LFP battery manufacturer with BIS-certified cells and in-house BMS and end-to-end manufacturing capability
Automotive Electronics	ASIL B / J1939 / XCP-compliant ECUs, BLDC controllers, and CAN gateways
Global Delivery	Supply chain and logistics capability for customers across Asia, Europe, and the Americas
India Manufacturing	Cost-competitive, high-quality production with skilled engineering and manufacturing talent

