Alcom electronics

Embedded Systems & Edge AI

Embedded solutions to obtain top performance systems

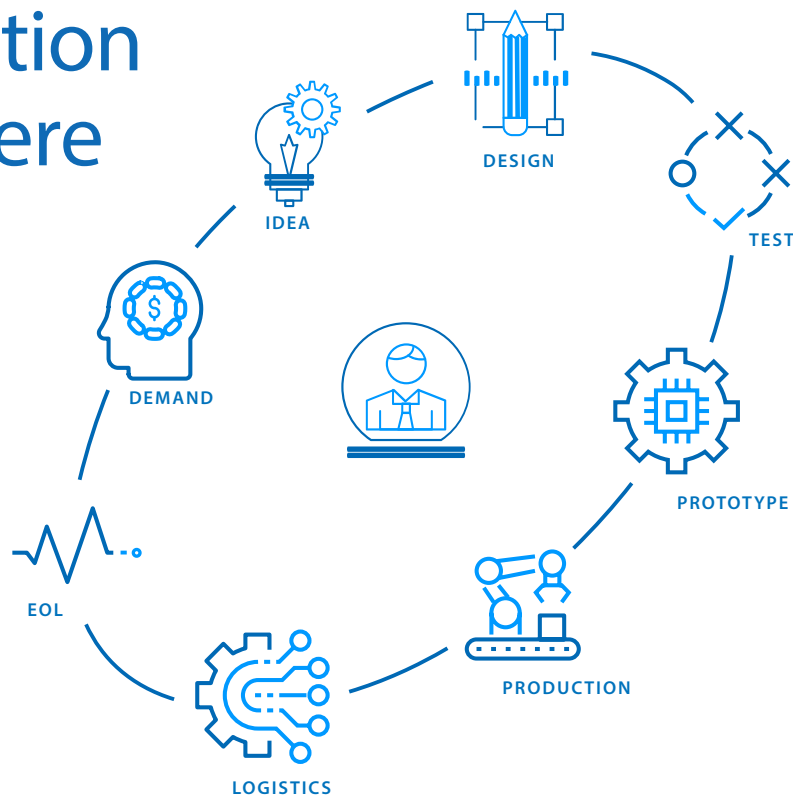# Embedded system solutions & Alcom

Experienced in its field

Alcom electronics is one of the leading embedded systems suppliers in the Benelux having a 20 years+ of experience within this market.

Complete product portfolio

The Alcom comprehensive product portfolio & custom configured system solutions are based on hardware platforms ranging from embedded computing modules, single board computers, display and touchscreen technologies, human-machine interfaces and industrial displays, industrial PCs, modular solution platforms.

On top of our standard products, we are open to listen to your specific needs-being commercial, technical, assembly and integration, logistics or custom-specific services.

Co-creation starts here

IDEA

DESIGN

TEST

DEMAND

PROTOTYPE

EOL

PRODUCTION

LOGISTICS

Alcom considers everybody an indispensable added value in the collaborative chain with all of its partners.

Applications & Markets

MANUFACTURING

EDGE COMPUTING
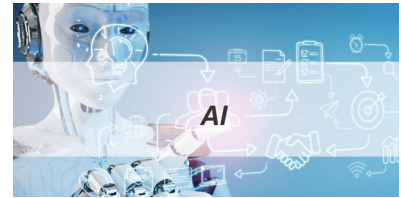

HEALTHCARE

DEFENSE
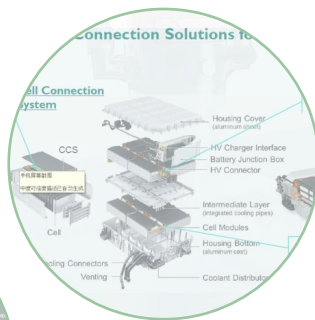

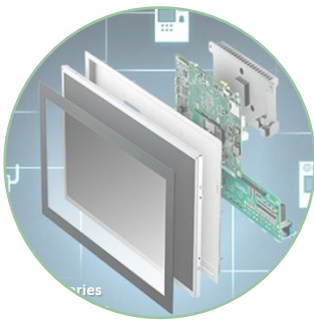MACHINE VISION

SMART CITIES

RAILWAY

ROBOTICS

ARTIFICIAL INTELLIGENCE

System solution examples

Typical workflow

CUSTOMER REQUIREMENTS

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CONSULTANCY

↓

ENGINEERING

↓

PROTOTYPING

↓

SERIAL PRODUCTION
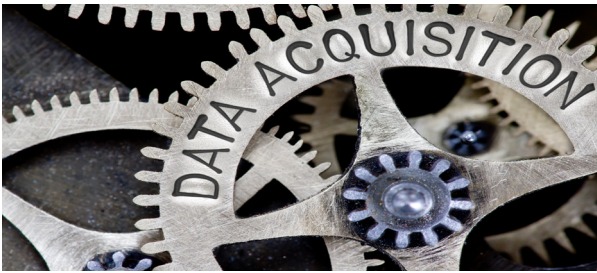
Embedded boards & systems

19 inch, VPX, cPCI, xTCA

- CPCI/ CPCI-serial/ serial-blades, enclosures, systems, backplanes
- VPX, OpenVPX rugged platforms & peripherals
- AdvancedTCA platforms; switch and processor blades
- 19" 1U-4U rackmount systems & tower workstations
- Rackmount integrated system solutions
- 19" Chassis, backplane & power supplies
- Accessories

Computer & System-on-Modules

- ARM, x86, Power Architecture, GPU-base
- Modular concepts offering replaceable and upgradable solutions
- SMARC, Qseven, ETX, MXM, DIMM, SODIMM, MicroSoM, LGA
- COM express type 7/6/2/10
- COM-HPC (COM-HPC server/client type)
- SoM's with integrated wireless connectivity
- COM cooling solutions
- Google Coral Edge TPU Modules & SoM's
- Proprietary standard solderable/pluggable SoM's
- Open standard modules
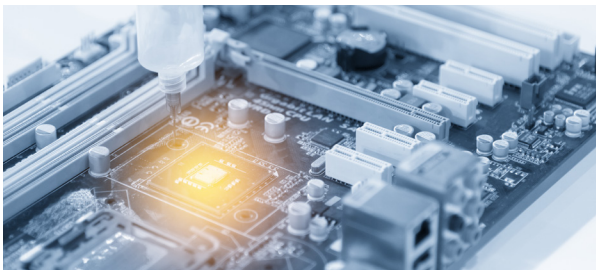- Starter Kits, Evaluation and carrier boards

Embedded I/O expansion modules & systems

- Data acquisition, digitizers, GPIB
- CAN, CAN FD and LIN fieldbus communication
- Bus converter modules
- Analog output, digital & remote I/O modules
- Digital & Analog for test, Measurement and manufacturing
- Controllers and distributed I/O with integrated Codesys control

GPU and Edge computing

- Embedded Graphics based on Nvidia Quadro & Intel Arc
- MXM GPU modules and PCI Express based on Nvidia Quadro GPU's
- Edge AI platforms based on Nvidia Jetson
- Edge AI solutions with Nvidia Jetson Orin
- Edge AI computing platforms and complete systems
- High performance AI Computing Systems

Industrial & embedded motherboards

- 3,5"-5,25" SBC, PC/104 & PC/104+, EPIC, Pico-ITX, ATX Thin Mini-ITX, Mini-ITX, PICMG
- Single Board Computers - SBC's, supporting multiple wireless interfaces
- Chassis/backplane/power supplies, peripherals & accessories

Industrial embedded communication

- 5G/4G Cat1bis - Cat-20/Cat-M/NB-IoT/3G/2G/GNSS
- Bluetooth, BLE, Thread, Zigbee, Matter, Z-Wave, Wi-Fi, Sub-Ghz multiprotocol and proprietary ICs and modules
- System-on-modules & SBCs with integrated wireless
- Smart automotive-grade modules
- Antenna's, cables and connectors

AI & Edge computing

Industrial PC & systems

- Modular embedded computers, IPC systems & IoT gateways
- GPU and Edge AI
- Compact/Expandable/integrated fanless embedded PCs
- NUC Mini PCs, kits and elements
- Tinker Board ultrasmall SBC- the best industrial Raspberry Pi alternative
- Industrial multi-touch displays, open-frame monitors and panel PCs
- Industrial & stainless steel panel PCs & HMI
- ATEx certified box Pcs
- In-vehicle, medical, Rail, Marine specific Embedded Computing
- Standard and custom-configured 19" rackmount form

Edge AI Computing for Machine vision

- Full spectrum of frame grabbers, video capturing cards, embedded vision systems & more
- AI Smart camera, vision system & AI vision software
- Compact-integrated PC systems with flexible expansion

Motion/motor control

- Motion control & I/O
- Pulse motion controllers
- EtherCAT motion control products
- Frequency inverters & servo motion
- Smart motor modules
- Robot and motor drive technology including e-mobility

PXI products

- PXI products for test & measurement
- PXI/PXIe modules, controllers, and chassis
- Remote controller

Smart camera

- AR/VR and XR digital wearable products/smart tracking solutions
- AI smart & embedded vision camera

Memory & Storage

Specialized storage and memory solutions for industrial/embedded systems

One size does not fit all. Providing unique solutions for unique challenges. We recognize the uniqueness of each customer's requirements, so we go the extra mile to custom-configure our memory and storage solutions according to the needs of our customers. Here, you'll find a glimpse into our diverse range of offerings. Let Alcom help you with your customized project.

SSDs

Industrial solid state drives and modules deliver dependable performance, efficient responsiveness and long usage life to accomplish mission-critical tasks. Sturdy and built to withstand rigorous operating environments, SSDs come in different form factors such as **2.5" SSDs**, **M.2** embedded modules, **mSATA**, **eUSB** and **industrial USB** drives for enterprise and industrial applications. They support high-speed interfaces such as **SATA 6 Gb/s** and the latest **NVMe™ protocol** on a PCIe® 4.0 x4 interface for reliable, blazing-fast, and future-ready performance.

Memory cards/ NAND FLASH

Industrial flash memory cards are portable, removable storage solutions built with advanced data reliability and data integrity features. These cards are light and compact with high storage capacities and built-in reliability features. They are designed for automotive, industrial automation, networking, health care, and other mission-critical applications.
Choose from **SD/microSD**, **CFast (SATA III)**, or **CompactFlash (PATA/IDE)** industrial memory cards for your specific application needs.
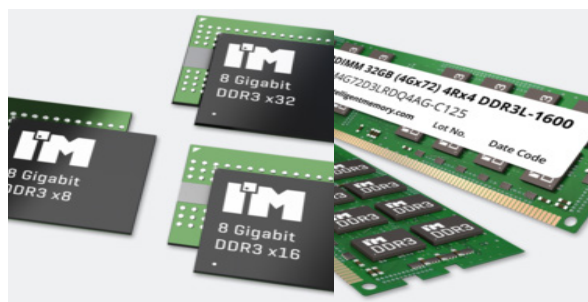
Managed NAND

Industrial managed NAND products combine raw NAND flash memory and hardware controller integrated within the same IC package. The integrated package simplifies the application interface design, allowing the internal controller to handle all the NAND flash memory management and freeing the host from having to do wear leveling, bad block management, error correction and other background functions. ATP managed NAND solutions deliver fast performance, consume lower power and are available in very small form factors to fit in space-restricted embedded/industrial systems.

- **e.MMC supported 8GB-128GB**
- **SecurStor-enabled managed NAND solutions**
- **PCIe Gen 3 NVMe M.2 40GB-480GB**

DRAM Components & Modules

- **SDRAM**   (64MB-512MB)
- **DDR1**   (128MB-1GB)
- **DDR2**   (256MB-4GB)
- **DDR3**   (1GB-16GB)
- **DDR4**   (2GB-128GB)
- **DDR5**   (8GB-256GB)
- **LPDDR4(X)**   (4GB-64GB)

Input systems

- Complete HMI solutions incl input system, display, electronics and housing
- Standard and customized front panels & touch solutions
- PCAP, resistive, IR, SAW touchscreens
- EMI shield windows for TFT modules
- Open frame monitors
- Capacitive switches
- Membrane switches

Panel PC's & HMI

- Industrial displays & panel PCs; medical & open frame panel PC
- Industrial multitouch panel PCs, displays & touch monitors
- Harsh-and extreme environment panel PCs & HMI
- ATEx-certified panel PC's, displays & box PCs
- In-vehicle panel PCs
- E-paper public display and healthcare IoT solutions
- Military Panel PC

Touchscreen technologies

- Resistive/P-cap/infrared and SAW touch
- Advanced & cost-effective optical bonding solutions
- Touch screen controllers
- UV-resistant, high brightness, flat, multifunctional touch displays
- ePaper displays with cover lenses (in glass, PC, or PMMA)
- ePaper display services including front light guides, touch and driving board
- Capacitive touch switches, sliders and/or wheels
- Custom-configured cover glass, display & touch integration
- LVDS and FCC cables, circuit adapters, video cables, power supply

Tablets, Handhelds & Wearables

- Industrial & Rugged Tablets
- Military Tablets
- Wearables
- Vehicle Mount Computers
- Accessories

Accessories for PDA's, Tablets & Mobile computers

- Power: Improve the usability areas by adding more power and smarter and faster charging of your Handheld rugged computer.
- Cases & Protection: Make your rugged handheld device withstand water, dust, and shock even better.
- Mounts: Find the right type of mounts, cradles or vehicle docks for use with your Handheld Rugged Computer.
- Expansions: Expand the capabilities by adding barcode scanners, RFID readers, pistol grips and extension caps.
- Misc: Find extra battery cables, print cartridges, memory cards, headsets or different carrying solutions.

Innovation and technology partners

Alcom electronics' offer

Based on Alcom's know-how and the in-depth knowledge for technology and innovation of our extensive worldwide network of trusted key partners, we offer the highest quality, credibility and complete services. We enable the technologies of today and tomorrow with embedded and intelligent computing. This includes support around the **latest CPU's** (Intel, NXP, AMD, NVIDIA, Qualcomm,…), **the latest board standards** (COM-HPC, COMe, SMARC), **Operating Systems** and all this in line with **standardization groups** and committees (such as SGET and PICMG) for Embedded Technologies. We can actively help shape all trends and new developments translating the above towards the optimal reliable customer system solution. We provide **our services via a "Human Touch"** that is key in advising the right solution and integration process. Our passionate and knowledgeable team of people understand the world of Embedded computing, Edge AI and other upcoming technologies that are just around the corner.

Reliable solutions, a local touch and know how with personal support on a human scale

Alcom offers all products and services available within the region and at our customers reach. We provide a networked team of capable and experienced individuals including manufacturer certified Solution Application Engineers. From idea to the production stage, we advise our customers in the integration of central intelligence in a way that is cost-effective, reliable and over the long term for the entire product lifecycle.

Contact us today

Learn about our practices and possibilities. Contact us today and let's talk about your current or next standard, flex modular or custom-configured embedded system solution to turn your ideas into reality. Our Team is ready to provide individualized consulting and proven intelligent solutions for your application that help shortening the time-to-market with reliable products and solutions. Let's share our common insights about the Embedded World of Technology!
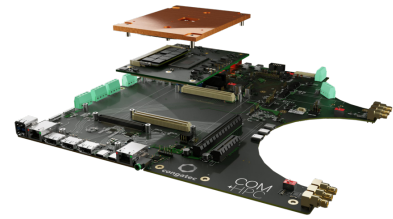
Our partners

ADLINK TECHNOLOGY INC.	AMobile Powered by MEDIATEK	APLEX Technology	ARBOR	Arestech Embedded & Automation Solutions
ASUS IoT	ATP	avalue Technology Inc.	congatec	DH electronics
DIGI	ENGICAM	GARZ & FRICKE	handheld	I'M INTELLIGENT MEMORY BEYOND LIMITS
korenix | A Beijer Group company BeiJer ELECTRONICS	PEAK System	ruGGON	SCHURTER ELECTRONIC COMPONENTS	SEALEVEL
	TQ	Transcend good memories start here	Vecow	

"…open mind, a laugh, sense of humour and appreciation of sometimes crazy ideas will help too…
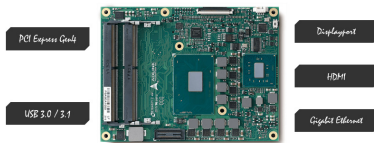
New product releases

COM-HPC ECOSYSTEMS THE GAME-CHANGERS FOR HIGH-PERFORMANCE DIGITIZATION PROJECTS

Our COM-HPC ecosystems are specifically engineered to provide everything developers need to be first to market with industry-leading solutions that deliver highest performance and bandwidth for all the new and emerging AI-powered edge computing and embedded server applications.
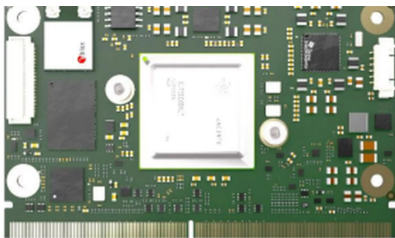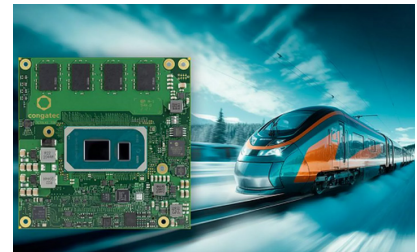

THE MOST COMPLETE PORTFOLIO OF COM EXPRESS TYPE 2/6/7/10

The success of COM Express in the embedded market is a result of the broad respect given to the PICMG consortium. PICMG has been responsible for many other widely accepted standard form factors in the embedded industry. Over the years, ADLINK has played a leading role in the PICMG COM.0 (COM Express) subcommittee.

CONGATEC COM EXPRESS MODULES RECEIVE IEC-60068 RAILWAY CERTIFICATION

The conga-TC570r COM Express Type 6 Compact modules, based on the 11th Generation Intel® Core™ processor family (code name "Tiger Lake"), have received IEC-60068 certification. This certification qualifies these modules for operation in railway applications, confirming that they meet the requirements for extreme conditions such as extended temperatures, rapid temperature changes, shocks, and vibrations.

SMARC MODULES FOR HIGH-END EDGE AI AND VISION PROCESSING IN ULTRA-LOW POWER ENVELOP

These new industrial-grade Computer-on-Modules are ideal for high-performance AI edge applications with an ultra-low power (ULP) envelope featuring dual Arm Cortex-A72 processors, powerful AI accelerators, and 3D graphics.

AVALUE HPM-SRSDE HIGH-PERFORMANCE COMPUTING PROPELS AI DEVELOPMENT

Avalue HPM-SRSDE solution is specifically designed for high-performance computing applications. With two built-in 4th Gen Intel® Xeon® scalable processors, HPM-SRSD server motherboard is not only capable of high-speed data processing and complex computing, the utilization of digital technology itself realizes Avalue's objective of sustainable business development.
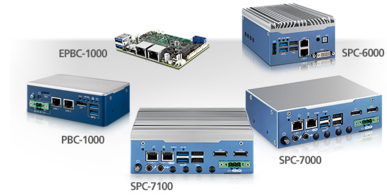

ASUS IOT ANNOUNCES TINKER BOARD 3N

Versatile Arm-based single-board computer delivers exceptional integration and expansion capability, robust and ready for the Industrial Internet of Things.

New product releases

EDGE AI PORTFOLIO TO ADDRESS THE GROWING DEMANDS OF THIN AIOT APPLICATIONS

Vecow Ultra-compact Embedded Systems line-up will further intensify product supply for the growing demand for the small form factor fanless computer market. As of early July 2023, Intel has officially announced that it will halt direct investments in the NUC business and will be pivoting to support ecosystem partners to build similar units.

NXP I.MX8M+ ARM BASED HMI SOLUTION

The ARMPAC-6A is the new sequence of ARMPAC series, which is designed for factory automation applications.
ARMPAC-6A comes in 7" and 10" TFT LCD with projected capacitive touch. It is a rugged, compact and light weight HMI, which is powered by NXP i.MX8M Plus Quad, 4 x Cortex A53 processor and is constructed by engineering plastic with IP65 compliant front bezel design.

THE ULTIMATE HMI SOLUTION FOR INDUSTRIAL AUTOMATION AND CONTROL

The Agile Line Series is a line with amazing features that utilize the Intel 11th Gen. CPU for high performance and ultra-low power consumption. Projected capacitive touch provides an intuitive user experience for machine control, data visualization and monitoring.

THE POWER OF EDGE AI ERA - FPC-521X SERIES

The edge AI computer FPC-521X Series is available for Intel® 12th / 13th Gen. and graphics card support NVIDIA MXM A2000/A4000 variants offering robust processing capabilities for high-speed, real-time data processing but low power consumption. These potent graphics units ensure seamless and high-speed image and video data processing, fundamental for any machine vision application.

INTEGRATED FANLESS (EXPANDABLE) EMBEDDED COMPUTERS MVP

MVP 5200 & MVP 6200 are 12/13th Generation Intel® Processor-Based Compact Modular Industrial Computers

The MVP-5200 Compact Modular Industrial Computers powered by 12/13th Gen Intel® Core™ i9/i7/i5/i3 and Celeron processors. The MVP-6200 Expandable Modular Industrial Computers powered by 12/13th Gen Intel® Core™ i9/i7/i5/i3 and Celeron processors.

SEALEVEL DEFENSE SYSTEMS AND PROGRAMS

Sealevel Systems, Inc. is an American-owned designer and manufacturer of COTS and full custom hardware and software. Sealevel customers range from industry leaders to every major US and Allied nations military contractor including Northrop Grumman, Raytheon, BAE, Boeing, L3Harris, NAVWAR, NAVAIR, and SOCOM.

Alcom product portfolio

ELECTRONIC COMPONENT SOLUTIONS	**WIRELESS EMBEDDED CONNECTIVITY & SENSORS**	**WIRELESS & INDUSTRIAL CONTROLS NETWORKING**	**DISPLAY & TOUCH**
LED & SOLID STATE LIGHTING	**POWER & EMC**	**RUGGED MOBILE COMPUTING**	**EMBEDDED SYSTEMS, AI & EDGE COMPUTING**

- Semiconductors
- Frequency & timing
- Power management
- Circuit protection & discretes
- Magnetics
- Passives & electromechanical
- Connectors & cable assemblies
- Photonics

- Wireless modules
- Antenna's
- Sensors

- Routers & gateways
- Wireless embedded computers
- Industrial ethernet and IP variations
- Wired & wireless machine networking
- Antenna's
- Device to cloud solutions
- Connectivity & remote management services
- Networking & connectivity

- Displays
- Touch screens
- Optical bonding
- Total display solutions

- LED light sources
- Optics
- Thermal management
- Power & intelligent controls
- LED modules

- AC/DC power supplies
- DC/DC converters
- Power management modules
- Wireless charging
- E-mobility solutions
- Transformers & power inductors
- UPS
- EMC filters

- Tablets
- PDA's
- Vehicle mount computers
- Accessories

- Computer-on-modules
- Embedded boards
- Industrial PC & automation
- System integration

Bridging the gap between technology, people and business with a human interface.

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Get to know us

ALCOM PROVIDES THE WORLD'S MOST ADVANCED TECHNOLOGIES.

With a team of like-minded entrepreneurs, Alcom will continue to inspire its valued customers to use advanced innovative building blocks in vertical markets. The importance of providing high-level services and a human interface based on specialism, knowledge and design-in expertise will remain key differentiators.

Alcom is positioned for growth. We invite all our customers to discuss their current and future concepts and designs. Let's connect, work and grow together.

OCTOBER 2023