



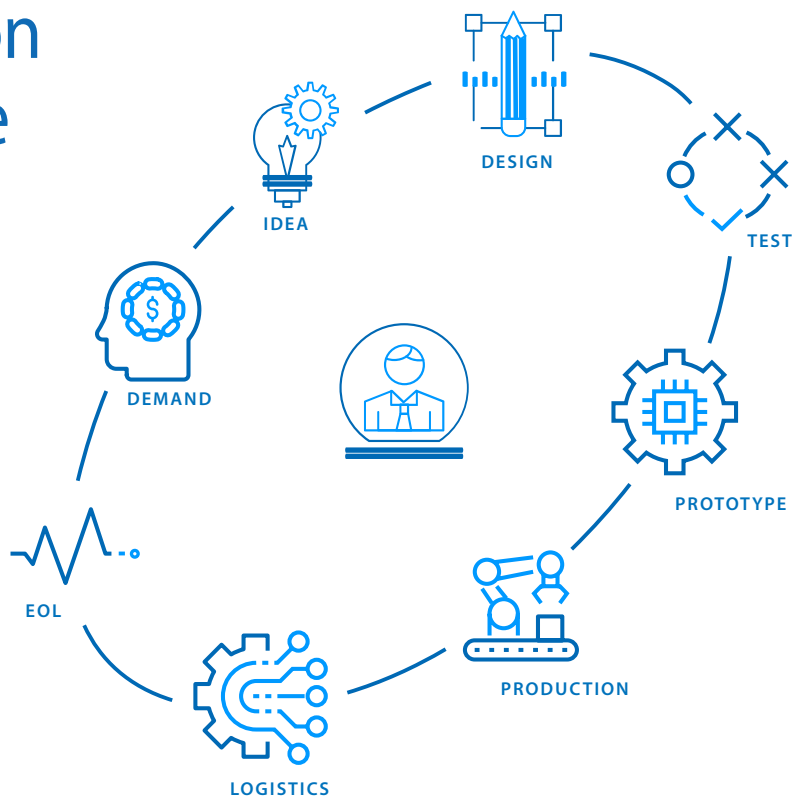
# Alcom & focused Semiconductor Technologies



While the semiconductor production capacity and the market demand stabilized over the last months, Alcom's Core competence portfolio expanded in the most advanced IC-solutions and technologies developed and produced all over the world. Alcom Electronics support its customers with a human touch on a human scale based on its renowned specialism, knowledge and design-in expertise. We thank our customers for being loyal during the pandemic and the well-known shortage period and look forward to cooperate with all existing and new customers' R&D-teams on post-Covid challenging electronics applications. From a logistics and Supply chain management point of view we are carefully selecting the right manufacturer, the right family AND the right P/N with your procurement teams to secure price-competitiveness, acceptable lead-times and long-life cycles during industrialisation.

We invite our customers to get in touch for core IC-products covering Microcontrollers and processors, High Performance Analog and Mixed Signal products, Power Management, Programmable Logic, Timing and Memory. On top, Alcom takes an architectural view that includes the support and delivery of matching main passives and electromechanical devices for your next embedded hardware concept. If you prefer "One stop designing", we can assist your R&D teams with dedicated and focused Application, In-region Product Management and Account management coverage....all delivered by a Human Touch!

## Co-creation starts here



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



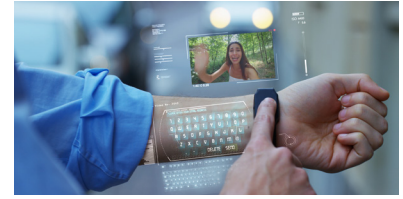
# Applications & Markets



HOME & BUILDING



MEDICAL, HEALTHCARE & FITNESS



MOBILE & WEARABLES



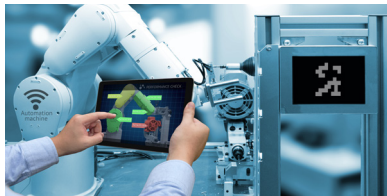
IIOT & INDUSTRY 4.0



AUTOMOTIVE



MOTOR CONTROL



FACTORY & INDUSTRIAL AUTOMATION, ROBOTICS

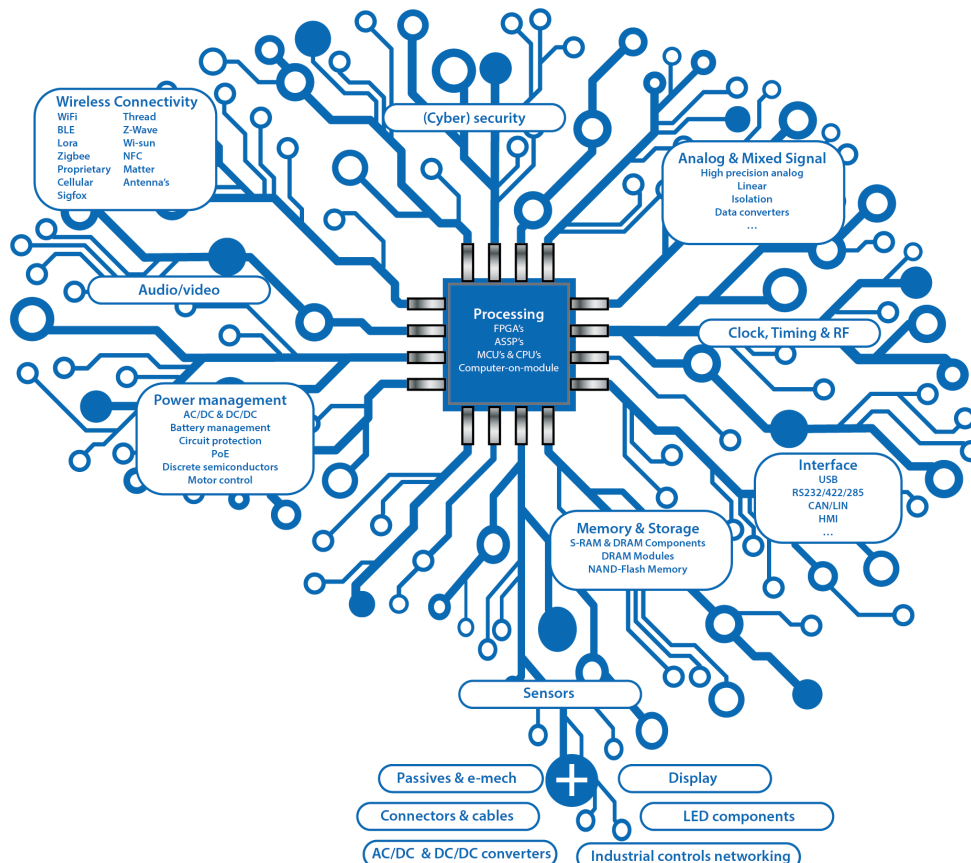


RF & WIRELESS COMMUNICATION



SMART RETAIL

A complete IC offering across your embedded system board



### Microcontrollers, IoT & FPGAs

#### Silicon Labs

- Microcontrollers (M23, M4, M33)
- SoC & Modules
- Wireless (5GHz, 2.4GHz, sub-GHz)
- Bluetooth, Zigbee, Wi-Fi, Z-Wave, Matter, Sidewalk, Wi-SUN

#### Epson

- Timing Devices:
  - Crystal Units
  - Oscillators (SPXO, VCXO, TCXO)
  - Real Time Clock Modules
- Semiconductors:
  - Ultra-low power Microcontrollers, 4-bit to 32-bit
  - Display Controllers for STN, TFT, ePaper
  - Voice and Audio IC speech synthesizer

#### Holtek

- Microcontrollers with integrated ASP functions, M0+/M3/M4
- SoC & Modules
- Motor control, analog peripherals, touch, USB

#### Nuvoton

- Microcontrollers (M23, M0+, M4)
- Microprocessor (A35)
- Ethernet networking
- Smart Home Audio
- Analog & Power

#### Tibbo Technology

- Microprocessor A35
- Integrated DDR memory
- Single-chip Linux

#### Cologne Chip

- GateMate™ FPGA Technology
- Novel CPE Architecture up to 512K LUTs
- Lowest Power in the Market
- Easy PCB design (only 2 layers)
- Open Source Synthesizer and P&R Tooling

### Security & IoT

#### Wisekey

- VaultIC Secure Elements
- Smart Card Reader Chips
- IneS Identity Provisioning Services and Identity Management
- Managed PKI for IoT / Matter providing Certificate Authority Infrastructure
- Quantum Innovation

### Memories

#### Amic

- NOR Flash
- Serial SPI FLash

#### ATP

- Memory Cards
- SSDs
- Managed NAND
- DRAM Modules

#### Intelligent Memory

- DRAM (SDRAM...DDR4)
- DRAM modules
- eMMC Flash

### Frequency Control, Protection & Discretes

#### SiTime

- MEMS Oscillators
- XO, VCXO, TCXO, OCXO
- nano-power kHz & MHz
- Clock generators

#### Protek Devices

- TVS Diodes / Arrays
- ESD Protection

#### Central Semiconductors

- Diodes, Rectifiers, Transistors
- Hi-Reliability Discretes
- Custom versions

### Interface, Networking, Audio & Video

#### FTDI Chip

- USB Interfacing (FS,HS, SS)
- USB-C, PD

#### Asix

- Industrial Ethernet ICs
- USB Ethernet ICs
- Embedded Ethernet Controllers
- Serial Interface Transceivers (RS232, RS422, RS485)

#### Valens

- HDBase-T Technology
- Audio / Video / Power / Ethernet / USB extension over single cable

### Power Management & Mixed Signal

#### MPS

- DC/DC Converters
- Modules with integrated inductor
- Battery Chargers
- Motor Drivers
- LED Drivers

#### Holtek

- Buck/Boost converters for wireless sensor applications
- LDO, Voltage Supervisor
- Battery Management
- LED Drivers
- ADC, Touch, OpAmps

#### Bridgelux

- Power MOSFETs

## Microcontroller & IOT



### Microcontrollers (M23, M4, M33)

- Low power Cortex M23, M33 with high integration
- 8-bit MCU for lowest power and lowest cost

### Wireless (5GHz, 2.4GHz, sub-GHz)

- Wireless System-on Chip
- Highest level of security (built-in secure element)

### SoC & Modules

- Pre-certified module with integrated antenna
- Easy migration path to SoC

### Bluetooth, Zigbee, Wi-Fi, Z-Wave, Matter, Sidewalk, Wi-SUN

- All IoT protocols supported
- Certified stacks
- Single point of contact for all support (including hardware, stack, software, etc.)



### Microcontrollers with integrated ASP functions

- 8-bit MCU for lowest cost with high integration and dedicated peripherals
- 32-bit Cortex M0+, M3, M4

### SoC & Modules

- Wireless Solutions for sub-GHz and Bluetooth

### Motor control, analog peripherals, touch, USB

- Integrated peripheral support for single-chip solutions
- Motor driver, Touch, USB, Battery Charger
- 24-bit AD converter
- Display Drivers
- Low-cost Power Management



### Microprocessor A7

- Quad-core 1GHz Cortex A7 with NEON GPU
- A926 realtime core
- Single 3V3 power supply

### Single-chip Linux

- LQFP form factor for easy PCB design
- Dual Ethernet, SDIO, eMMC support
- MIPI and HDMI video

### Integrated DDR memory

- 512MB DDR3 memory integrated
- Easy PCB design, no high-speed parallel buses



## Microcontroller, IOT, FPGAs & Security

### EPSON®

Epson is the World's leading manufacturer of quartz devices for applications from consumer to industrial, networking and automotive. Furthermore, they provide power efficient products for ePaper, LCD display applications and devices for healthcare, fitness and energy control solutions.

#### Timing Devices

- Crystal Units
- Oscillators (SPXO, VCXO, TCXO)
- Real Time Clock Modules

#### Semiconductors

- Ultra-low power Microcontrollers, 4-bit to 32-bit
- Display Controllers for STN, TFT, ePaper
- Voice and Audio IC speech synthesizer

### nuvoTon

#### Microcontrollers (M23, M0+, M4)

- Motor Control
- Ethernet, CAN, USB
- Secure processing

#### Smart Home Audio

- ADC, DAC, Codec
- Audio & Speech Controller and SoC
- Audio Recorder
- Audio Amplifier

#### Microprocessor (A35)

- Dual A35 core
- Integrated DDR memory

#### Analog & Power

- OpAmp
- Switching regulators
- Power switch
- Battery Management (Charging & Protection)



GateMate™ FPGA Technology offers a comprehensive multi-node portfolio to address requirements across a wide set of applications. Whether you are designing a state-of-the-art, high-performance networking application requiring the highest capacity, bandwidth, and performance, or looking for a low-cost, small footprint FPGA to take your software-defined technology to the next level, Cologne Chip GateMate™ FPGAs provide you with system integration while optimizing for performance/watt.

- Novel CPE Architecture up to 512K LUTs
- Lowest Power Consumption in the Market
- Easy PCB design (only 2 signal layers required)
- Open Source Synthesizer and P&R tooling

### WIS@key

#### Security & IoT

WIS@key is a leading cybersecurity company currently deploying large scale digital identity ecosystems for people and objects using Blockchain, AI and IoT. WIS@key microprocessors secure the pervasive computing shaping today's Internet of Everything. WIS@key IoT is active in virtually all IoT sectors (connected cars, smart cities, drones, agricultural sensors, anti-counterfeiting, smart lighting).

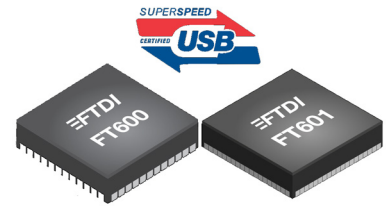
- VaultIC Secure Elements
- Smart Card Reader Chips
- InES Identity Provisioning Services and Identity Management
- Managed PKI for IoT / Matter providing Certificate Authority Infrastructure
- Quantum Innovation

## Interface & Networking

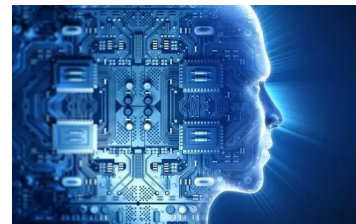


With over 30 USB peripheral chips offered in 5 product families, designers can choose the device which best matches their system need. FTDI Chip devices are aimed at full, high, and super speed solutions.

- USB Interfacing (Full Speed, High Speed, Superspeed)
- USB-C
- USB Host controllers
- Power Delivery support



- Industrial Ethernet ICs
- USB Ethernet ICs
- Embedded Ethernet Controllers
- Serial Interface Transceivers (RS232, RS422, RS485)



### **Audio / Video / Power / Ethernet / USB extension over single cable**

The VS100, VS2000 and VS3000 chipset families are based on HDBaseT technology. The VA6000 and VA7000 chipset families enable additional innovations, incl. extension of USB 2.0 and native extension of CSI-2.

### **HDBase-T Technology**

Valens is the inventor of HDBaseT Technology, the leading standard in the Audio-Video market, and an innovative automotive supplier of in-vehicle connectivity solutions.







### DC/DC Converters

MPS offers a large portfolio of Power Management buck/stepdown converters, boost/step-up converters, buck/boost converters, and flyback converters. Our buck converter family offers input ranges from 2V to 100V and output current up to 30A.

### Motor Drivers & Motor Controllers

- Reliable solutions for stepper motor drivers, brushless DC motor drivers, position sensors, DC brush motor drivers, and solenoid drivers.

### Power modules with integrated inductor

MPS Power Modules offer superior performance and size advantages when compared to other industry leading solution. The monolithic design allows for faster switching frequency, which leads to ultra fast transient response and size reduction. Our high efficiency and advanced packaging make thermal design easy.



### Power Management

- Buck/Boost converters
- LDO regulators
- Reset / Supervisor
- LED Drivers
- Battery Management

### Analog / Interface

- Opamps
- Touch Controllers
- ADC
- Can Controller

### Sensors & Modules

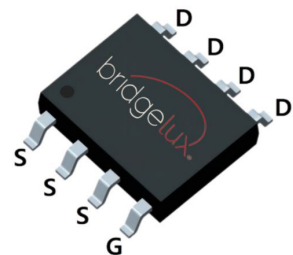
- Infrared Temperature Sensor
- PIR Sensor
- Air Pressure Sensor
- Temperature and Humidity Sensor
- Infrared Sensing Module
- Water Level Sensor



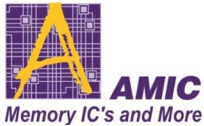
### Power MOSFETs

Widely used in various AC-DC switching power supplies

- High-voltage MOSFET
- Low-Voltage MOSFET
- SJ MOSFET
- SIC MOSFET
- Trench/SGT DMOS technology



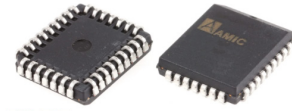
# Memories



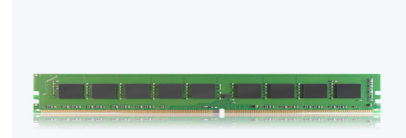
1Mbit ~ 64Mbit 3 Volts SPI NOR Flash

Alcom offers AMIC to its customers as one of the largest memory IC portfolios available in the semiconductor industry today – complete solutions from SRAM to NOR FLASH, from DRAM to FIFO, to meet all your demands.

## MEMORY



 **AMIC 3V SPI  
NOR FLASH**



### SSDs

- Reliable performance and efficient responsiveness for mission-critical tasks.

### Memory Cards

- Removable, secure and convenient storage for demanding applications.

### Managed NAND

- Advanced high-endurance embedded storage in a compact integrated package.

### DRAM Module

- Tough, fast and hardworking memory modules for the growing enterprise.



### DRAM Components

We offer the full range of JEDEC compliant DRAMs and ECC DRAMs (SDRAM, DDR1, DDR2, DDR3, DDR4, LPDDR4).

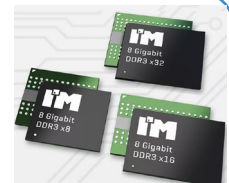
### DRAM Modules

All common form factors as well as special/custom designs (commercial and industrial temperature grade).

### NAND Flash products

All from proven CompactFlash cards to the latest PCIe technology (removable media, embedded form factors and BGA components).

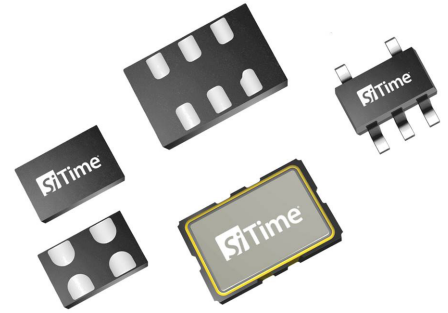
- SD & microSD
- EMMC
- SATA
- PCIE
- PATA/CF
- USB





## MEMS based Oscillators

- High performance, small size, high reliability
- Short Lead times
- Fixed Frequency kHz and MHz oscillators
- XO, VXCO, TCXO, OCXO
- Single-ended & differential outputs
- Nano-Power kHz and MHz oscillators in 1.2mm<sup>2</sup> package
- Clock Generators
- Active Resonators



## TVS Protection

ProTek's TVS products provide protection from transients caused by Electrostatic Discharge (ESD), Electrical Fast Transients (EFT), Tertiary Lightning and other induced voltages. Products range from standard to ultra-low capacitance (below 1 pF) and from the smallest DFN packages to large surface mounts.

- Chip Scale TVS Arrays
- EMI Filter / TVS Arrays
- TVS Diode Arrays
- High-powered Components & Modules
- Steering Diodes and Hybrid Arrays
- Thyristor Surge Suppressors



## Discrete semiconductors

We produce a wide range of standard devices, and we also excel in short lead times and custom or niche products and services.

- Diodes & Rectifiers
- Transistors
- MOSFETs & JFETs
- Protection Devices
- Thyristors
- Multi-Discrete Modules

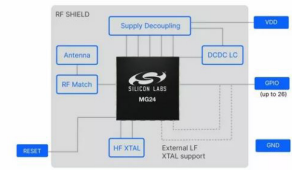


# New product releases

## MGM240P MULTI-PROTOCOL WIRELESS MODULE

The MGM240P is a secure, high-performance wireless module optimized for the needs of battery and line-powered IoT devices for 2.4 GHz mesh networks. Based on the Series 2 EFR32MG24 SoC, it enables 802.15.4 (Zigbee®, OpenThread®) and Bluetooth® Low Energy connectivity, delivering exceptional RF performance and energy efficiency, Matter ready Smart Home Connectivity, industry-leading Secure Vault® technology, and future-proofing capabilities.

xGM240P

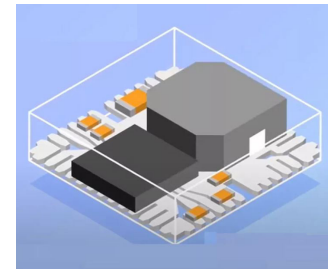


## 32-BIT MCU'S OFFERING POWER & PERFORMANCE-RATIO

Choosing a proper 32-bit MCU for your product application should focus not only on performance, but also on power consumption, package type, tooling, and cost. From the energy-efficient M0+ core series to the higher performing M3 core series, Holtek offers a wide range of flexible 32-bit MCU choices to meet your 32-bit application needs.

## POWER MODULES OFFERING SUPERIOR PERFORMANCE

MPS Power Modules offer superior performance and size advantages when compared to other industry leading solution. The monolithic design allows for faster switching frequency, which leads to ultra fast transient response and size reduction. Our high efficiency and advanced packaging make thermal design easy.



## INDUSTRIAL-GRADE MEMORY

Intelligent Memory industrial-grade memory product solutions present low-density eMMC flash memory components as well as low-density DDR2, DDR3 and DDR4 product families.

## SITIME PRECISION TIMING

Sitime's programmable MEMS-based Timing solutions offer a rich feature set that enables customers to differentiate their products with higher performance, smaller size, lower power, and better reliability. With over 2 billion devices shipped, SiTime is transforming the timing industry.



## MA35D1 HIGH-PERFORMANCE EDGE IOT SERIES

The NuMicro® MA35D1 series of microprocessors offers high performance, real time control, and advanced security features, making it an ideal solution for various applications such as smart factories, smart buildings, new energy, and Tiny AI/ML. The NuMicro® MA35D1 series not only meets the high-computational requirements needed for industrial IoT edge applications and can process data at the edge and respond in real time, it also provides advanced security mechanisms to prevent malicious software attacks, confidential data theft, or tampering with confidential data.

# 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

<ul style="list-style-type: none"> <li>• Semiconductors</li> <li>• Frequency &amp; timing</li> <li>• Power management</li> <li>• Circuit protection &amp; discretes</li> <li>• Magnetics</li> <li>• Passives &amp; electromechanical</li> <li>• Connectors &amp; cable assemblies</li> <li>• Photonics</li> </ul>	<ul style="list-style-type: none"> <li>• Wireless modules</li> <li>• Antenna's</li> <li>• Sensors</li> </ul>
<ul style="list-style-type: none"> <li>• Routers &amp; gateways</li> <li>• Wireless embedded computers</li> <li>• Industrial ethernet and IP variations</li> <li>• Wired &amp; wireless machine networking</li> <li>• Antenna's</li> <li>• Device to cloud solutions</li> <li>• Connectivity &amp; remote management services</li> <li>• Networking &amp; connectivity</li> </ul>	<ul style="list-style-type: none"> <li>• Displays</li> <li>• Touch screens</li> <li>• Optical bonding</li> <li>• Total display solutions</li> </ul>
<ul style="list-style-type: none"> <li>• LED light sources</li> <li>• Optics</li> <li>• Thermal management</li> <li>• Power &amp; intelligent controls</li> <li>• LED modules</li> </ul>	<ul style="list-style-type: none"> <li>• AC/DC power supplies</li> <li>• DC/DC converters</li> <li>• Power management modules</li> <li>• Wireless charging</li> <li>• E-mobility solutions</li> <li>• Transformers &amp; power inductors</li> <li>• UPS</li> <li>• EMC filters</li> </ul>
<ul style="list-style-type: none"> <li>• Tablets</li> <li>• PDA's</li> <li>• Vehicle mount computers</li> <li>• Accessories</li> </ul>	<ul style="list-style-type: none"> <li>• Computer-on-modules</li> <li>• Embedded boards</li> <li>• Industrial PC &amp; automation</li> <li>• System integration</li> </ul>

*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.

