

Semiconductors  
Passive Components  
Electromechanical Components  
Displays & Monitors  
Boards & Systems  
Storage Technologies  
Wireless Technologies

V 5.7.1

Our Portfolio. **Unique.**

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## 360° Portfolio – Solutions for Your Company

Changing markets call for new solutions. With a service portfolio extending far beyond the area of just distribution, we have emerged as a major trendsetter and a source of first-class innovation. Indeed, we have established ourselves as a key interface between manufacturers and customers. To succeed at this level, it is essential that we always remain one step ahead of the game, that we identify new trends as they begin to take shape and that we define new benchmarks in service provision.

We call this approach "Intelligent Distribution". Boasting a product range that is unrivalled in breadth and depth, we have established ourselves as the largest independent European distributor of technical solutions for all product groups. Our unique portfolio is complemented by high-end logistic solutions tailored to customer requirements.

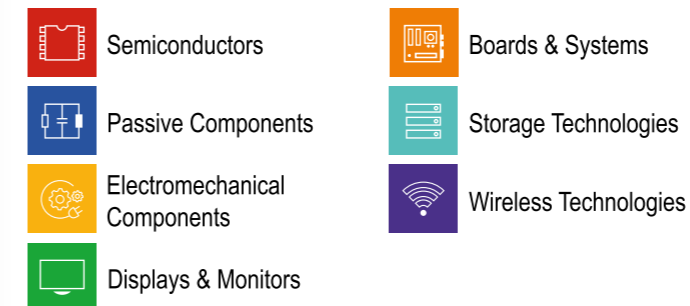


Thomas Rudel  
CEO

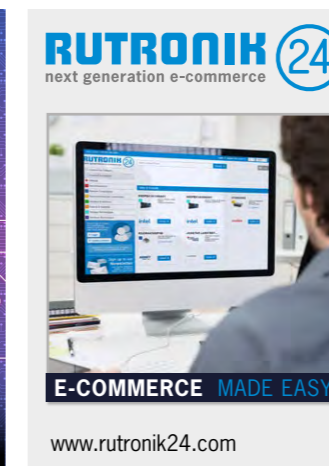
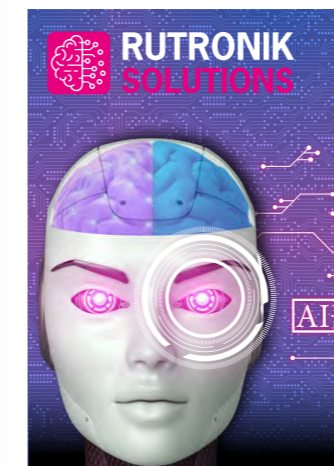
In addition to adjusting our services in line with market conditions, we are committed to shaping our business around customer structures and market needs, as well as aligning our operations with manufacturers' product planning. First-class availability and on-time delivery are two additional milestones of our success.

In essence, "Intelligent Distribution" is about creating a finely tuned service. Only by achieving this balance can one deliver added value on all fronts: more products, more solutions, more service and more profitability.

### Our Product Portfolio



### Our Initiatives



### Committed to excellence

#### Consult – Know-how. Built-in.

**The Technical Competence from RUTRONIK**  
Worldwide and individual consulting on the spot by competent sales staff, application engineers & product specialists.

#### Components – Variety. Built-in.

**The Product Portfolio from RUTRONIK**  
Wide product range of semiconductors, passive and electromechanical components, displays & monitors, boards & systems, storage and wireless technologies for optimum coverage of your needs.

#### Logistics – Reliability. Built-in.

**The Delivery Service from RUTRONIK**  
Innovative and flexible solutions: from supply chain management to individual logistics systems.

#### Quality – Security. Built-in.

**Quality without Compromise from RUTRONIK**  
The integrated management system (IMS) encompasses quality control, information security, environmental protection, occupational health and safety.





**More than 80 offices worldwide.**  
**Over 1900 employees. Present in America, Asia and Europe.**

**Consult** – Know-how. Built-in.

The technical competence from Rutronik

Worldwide and individual consulting on the spot: by competent sales staff, application engineers and product specialists.

- Worldwide and Individual Consulting
- Application Consulting
- Commercial Consulting
- Direct Contact to Franchise Suppliers

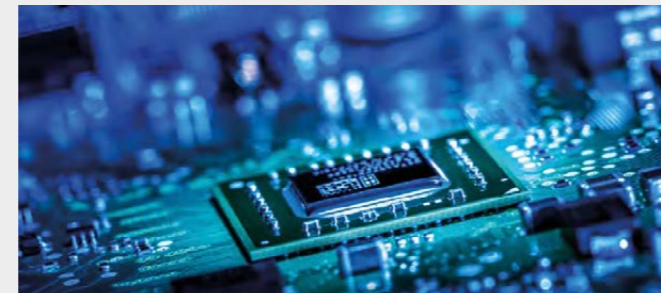


**Components** – Variety. Built-in.

The product portfolio from Rutronik

Wide product range of electronic components and embedded & wireless technologies for optimum coverage of your needs.

- Semiconductors
- Passive Components
- Electromechanical Components
- Embedded & Wireless
- Monitor & Displays
- Boards & Systems
- Storage Technologies
- Wireless Technologies



**Logistics** – Reliability. Built-in.

The delivery service from Rutronik

Innovative and flexible solutions: from supply chain management to individual logistics systems.

- Consulting
- Value Added Services
- Communication & Networking
- Logistics Fulfillment
- Logistics Modules
- Procurement



**Quality** – Security. Built-in.

Quality management without compromise

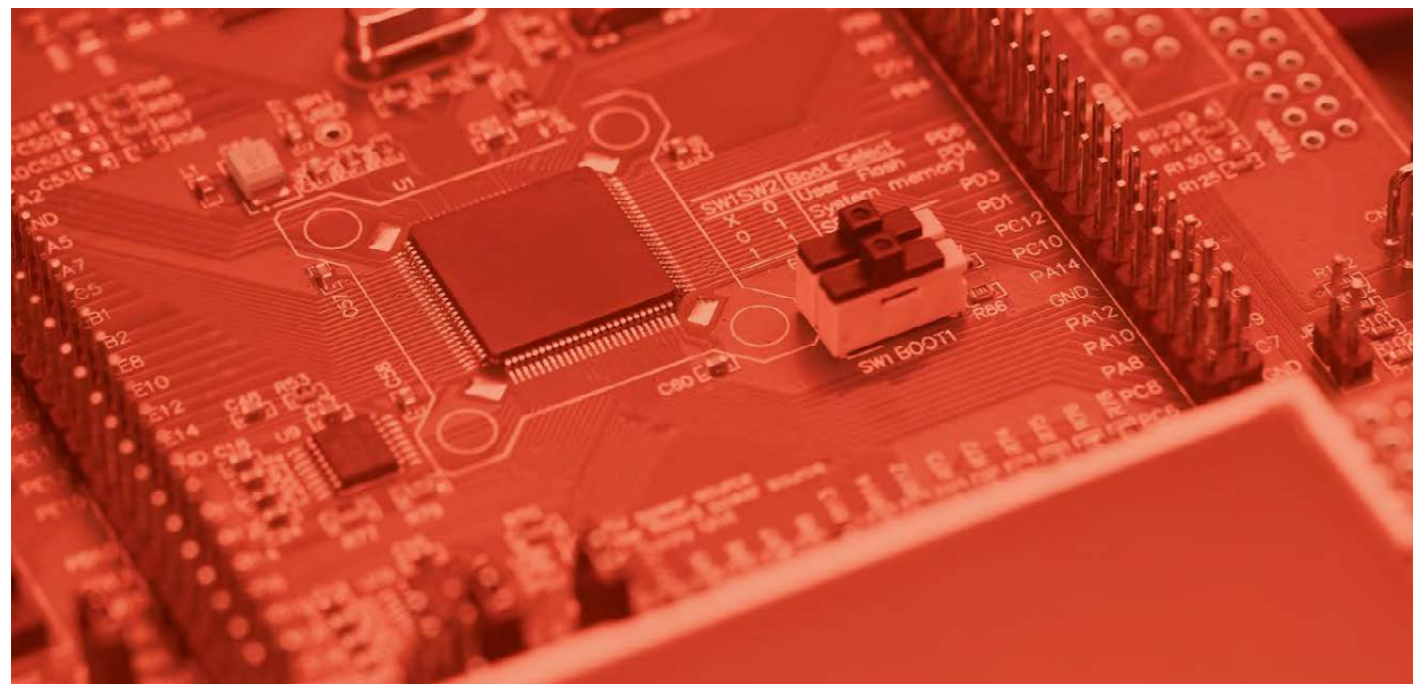
The integrated management system (IMS) encompasses quality control, information security, environmental protection, occupational health & safety.

- Certified Quality Management System
- Certified Environment, Health and Safety System
- Constant Monitoring of Processes





# Suppliers



# Discretes & Power Discretes

	BYD	Diodes Inc.	Diotec	Fagor	Infineon	Kyocera AVX	LiteOn	Littelfuse	Panasonic	Pan Jit	Pulse a YAGEO company	Rohm	Shindengen	Toshiba	Vincotech	Vishay	YAGEO GROUP
<b>Small Signal</b>																	
Standard Bipolar Transistors		■	■		■					■		■		■			
RF- & HF-Transistors		■			■			■						■			
Bridge Rectifiers		■	■	■			■	■		■			■			■	
Trigger Diodes (DIAC)			■	■									■				
Zener Diodes		■	■	■			■			■		■		■		■	
<b>Diodes</b>																	
Schottky Diodes		■	■	■	■		■	■		■		■	■	■		■	
Fast Recovery Diodes		■	■	■	■		■	■	■	■		■	■	■		■	
Silicon Carbide Diodes					■			■		■		■		■		■	
Protection Diodes		■	■	■	■		■	■		■	■	■		■		■	■
Standard Diodes/Rectifiers		■	■	■	■		■	■		■		■	■	■		■	
Thyristors			■	■	■		■	■					■			■	
Triacs				■				■					■				
<b>Power Discretes</b>																	
MOS Transistors		■	■		■		■	■		■		■	■	■		■	
Darlington Transistors			■		■							■					
Silicon Carbide Transistors	■				■			■				■		■			
GaN HEMTs					■												
IGBT	■	■			■	■		■				■		■	■	■	

# Power Management

	BYD	Delta	Diodes Inc.	ELMOS	FSP	Infineon	Kyocera AVX	Littelfuse	MaxLinear	Murata	Nisshinbo	AMS Osram	Recom	Rockchip	Rohm	TDK	Toshiba	Vincotech	Vishay	Wah Hing	
<b>Power Management IC</b>																					
High/ Low side Switches			■			■					■				■		■		■		
MOS/IGBT Drivers	■		■			■		■			■				■		■		■		
Motor Drivers			■	■		■					■				■		■		■		
Switching Regulator			■	■		■			■		■			■		■		■		■	
LED Drivers			■	■		■		■	■		■	■			■		■		■		
Low Drop Voltage Regulators (LDOs)			■	■		■			■		■				■		■		■		
Power Modules (incl. IPM)	■					■	■	■			■				■		■		■		
System Basic Chips						■															
<b>Power Supply and Point of Load</b>																					
AC/DC		■									■			■						■	
DC/DC		■							■	■				■		■					
Switching Reg Module										■				■							
LED Driver Modules					■								■								





# Analog ICs

	Diodes Inc.	Infineon	MaxLinear	Nisshinbo	Rohm	Toshiba	Vishay
<b>Amplifier</b>							
Comparators	■			■	■		
Current Shunt Amplifier	■						
Operational Amplifier	■			■	■	■	
<b>Logic</b>							
Buffer	■				■	■	
Decoder	■				■	■	
I/O Expander	■		■	■		■	
Inverter	■					■	
Shift	■					■	
Analog Switches / Multiplexer	■				■	■	■
<b>Converter &amp; digital potentiometer</b>							
A/D-Converter				■			
D/A-Converter				■	■		
<b>Voltage references &amp; supervisor</b>							
Supervisor	■		■	■	■		
Voltage References	■		■				
<b>Timer</b>							
Oscillator	■	■			■		
Real Time Clock	■	■			■		



# Digital ICs

	Alliance	AP Memory	Bosch Automotive	Diodes Inc.	Efinix	ELMOS	Epson	ESMT	FCL Components	Giantec	Gowin	HMS Networks	Infineon	Insights	Intel	KIOXIA	Littelfuse	MaxLinear	MediaTek	Nanya	Rockchip	Rohm	Segger	Swissbit	TDK-Micronas	Toshiba	Zentel
<b>MCUs and MPUs</b>																											
Microcontrollers MCU							■						■				■	■	■	■	■				■	■	
ARM Cortex-Mx							■						■						■	■							
Proprietary Cores 8, 16 and 32-bit							■						■														
Microprocessors MPU																			■	■						■	
ARM Cortex-Ax																			■	■							
Development Tools							■						■						■	■	■	■			■	■	
<b>Programmable &amp; Standard Logic</b>																											
FPGA					■						■																
Logic ICs				■																		■				■	
<b>Memories</b>																											
DDR	■							■					■						■								■
EEPROM										■												■					
Flash Memory	■							■					■			■											
eMMC Memory	■							■					■		■										■		
FRAM									■				■									■					
Pseudo SRAM	■	■											■														
SDRAM	■							■						■									■				■
SRAM	■												■														
<b>Communication</b>																											
CAN			■										■	■				■				■					
Ethernet															■			■									■
FlexRay													■														
Industrial Communication													■						■								
KNX							■																				
LIN													■														
Media																						■					
RS (-232, -485, -422)																			■								
USB														■													
Fieldbus													■														
<b>Special Functions</b>																											
ASSP & ASICs			■	■	■	■	■	■	■				■					■				■					■
Graphic Display Controller							■		■																		■
Speech ICs							■												■			■					
Telecom ICs																		■	■			■					



# Optoelectronic Components

	BrightLED	Everlight	IMM Photonics	Infineon	Isocom	Laser Components	Ledil	Lexlar	LifeOn	Littelfuse	Nisshinbo	ams Osram	Rohm	Samsung	Stanley	Toshiba	Vishay
<b>Visible LEDs</b>																	
Radial LED	■	■							■				■				■
SMD LED	■	■						■	■			■	■	■	■		■
Chip on Board LED	■	■						■	■			■	■	■	■		■
Highbrightness LED		■						■	■			■	■	■			■
Compact Light Source		■						■	■			■		■	■		
Secondary Optics			■				■								■		
Horticulture LED		■										■					
Automotive LED	■	■						■	■			■	■	■	■		■
UVA		■						■	■						■		■
UVC		■				■		■	■			■			■		■
<b>Couplers</b>																	
Standard	■	■	■		■				■	■						■	■
Highspeed		■			■				■	■						■	■
TRIAC		■			■				■							■	■
Solid State Relay		■		■	■				■	■						■	■
<b>Laser</b>																	
Standard Laserdiode			■			■						■	■				
High Power Laserdiode			■			■						■	■				
Lasermodule			■			■											
LiDAR Module												■					
VCSEL						■		■				■	■				■
<b>Infra Red</b>																	
Emitter / Detector	■	■				■		■	■		■	■	■		■		■
Remote Control / IRDA	■	■							■				■				■
Fiber Optic		■	■			■										■	
<b>LED Display</b>																	
Standard	■	■							■				■		■		■

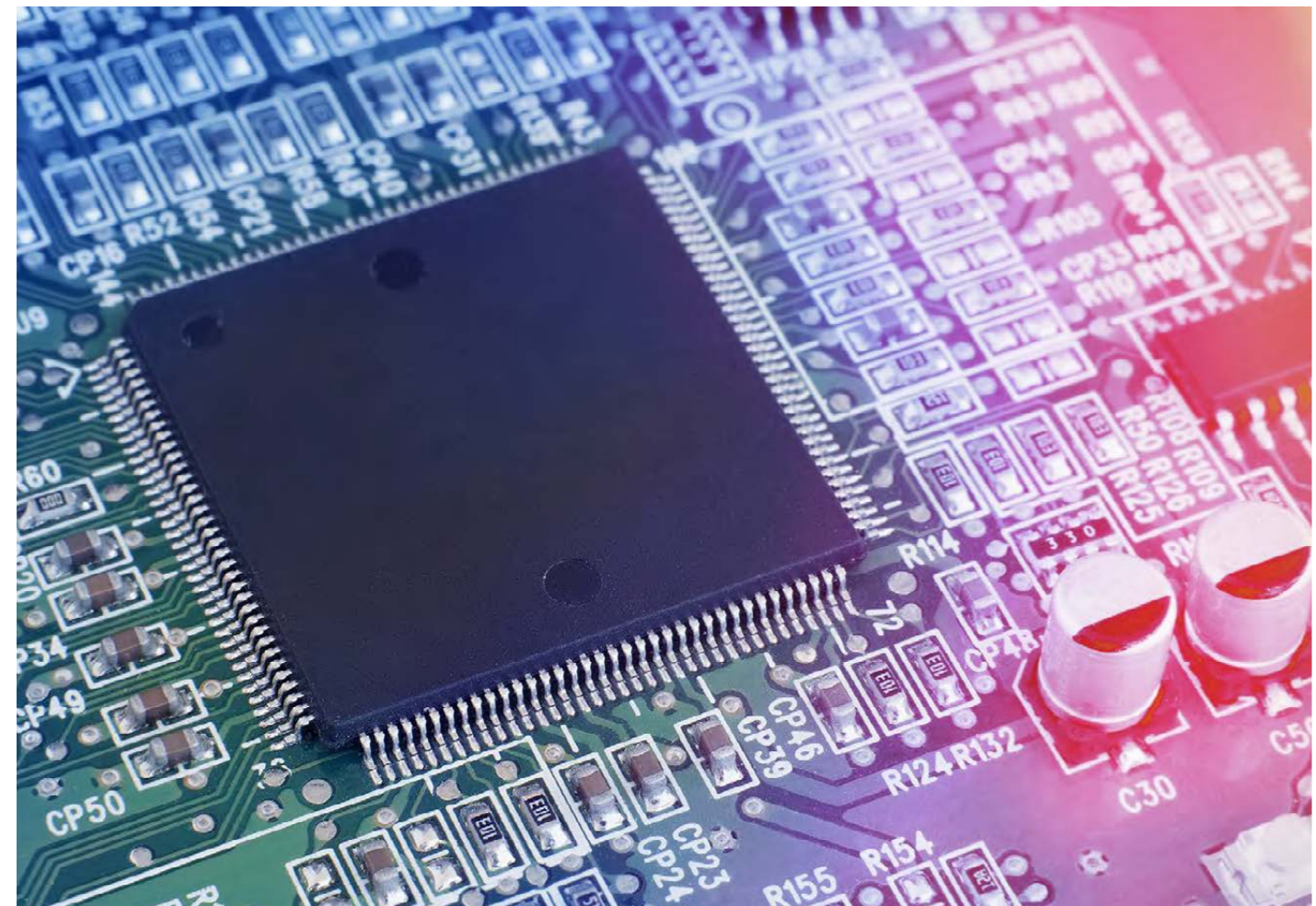


# Sensors

	Bosch Automotive	Bosch Sensortec	BYD	Comus	Diodes Inc.	ELMOS	Epson	Everlight	Infineon	LiteOn	Littelfuse	Murata	Nisshinbo	Omron	AMS Osram	Panasonic	Rohm	Sensirion	TDK	TDK-Micronas	Toshiba	Vishay	
<b>MEMS</b>																							
Absolute Orientation Sensors		■																					
Acceleration	■	■					■					■											
eCompass (Acceleration + Magnetometer)		■																					
Gyroscope	■	■					■					■											
IMU (Acceleration + Gyro)	■	■					■					■											
Microphone									■										■				
<b>Environmental</b>																							
<b>Airflow</b>																							
Gas		■							■			■		■					■				
Humidity		■																	■	■			
Pressure	■	■				■			■			■		■		■	■	■	■				
Temperature		■	■															■	■				
Particulate matter			■											■		■		■					
<b>Optical</b>																							
Ambient Light								■		■			■		■		■						■
Camera Modules			■											■		■							■
Far Infrared / Infrared						■		■				■	■	■	■	■	■						■
Fingerprint			■																				
Image			■												■		■					■	
Proximity				■				■	■	■				■	■		■						■
Radar								■					■		■		■						■
Reflective								■		■			■	■	■	■	■						■
Time-of-flight									■					■	■		■						■
Transmissive								■		■				■	■		■						■
Ultrasonic				■		■						■			■		■			■			
<b>Magnetic</b>																							
Geomagnetic		■																					
Hall Linear - Non Programmable					■																■		■
Hall Linear - Programmable									■												■		■
Hall Switch - Single					■				■		■						■				■		■
Hall Switch - Dual					■				■														
Hall Switch - Speed									■		■												
Hall Switch - Programmable					■																	■	
Magnetoresistive Switch													■										
Magnetoresistive 3D Switch													■										
Magnetoresistive Linear					■																		
Magnetoresistive 2D Sensor									■											■			
Multitaxis Hall									■												■		
TMR									■			■								■			
<b>Current</b>																							
Force	■																						
Hall based IC									■								■				■		■
Sensor Moduls											■												



# Suppliers



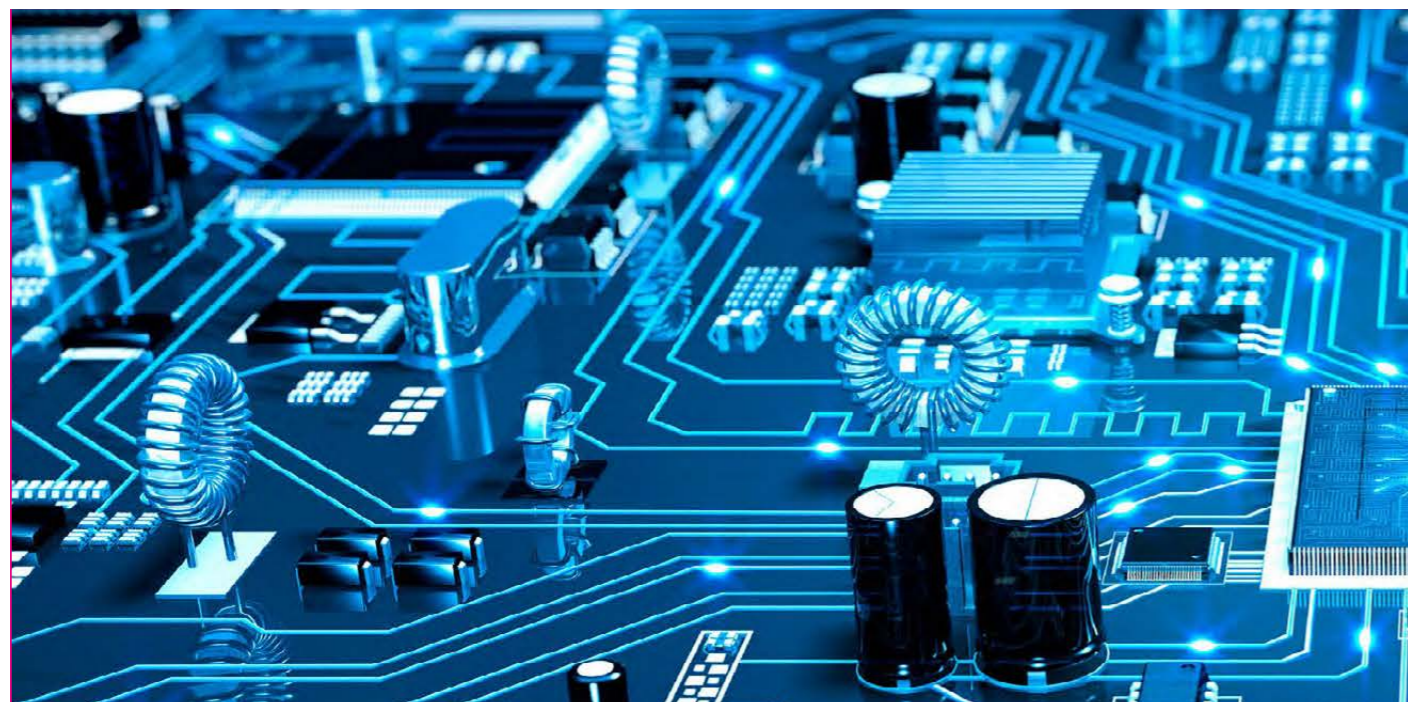
# Capacitors

	BM	Chang	Eaton	ISKRA	Jamicon	Kemet a YAGEO company	Korchip	Kyocera AVX	Maxwell	Murata	Panasonic	Rubycon	Samsung EM	Samwha	SECH	TDK	TDK EPCOS	Vishay	WIMA	YAGEO Group
<b>Electrolytic Capacitors</b>																				
SMD Capacitors		■			■	■		■			■	■		■				■		■
Miniature Radial Capacitors		■			■	■					■	■		■			■	■		■
Large Can Radial Capacitors		■			■	■						■		■			■	■		■
Axial Capacitors						■											■	■		
Solid Polymer Capacitors						■					■							■		■
Polymer Hybrid Capacitors						■		■			■	■		■			■	■		■
<b>Electric Double Layer Capacitors (EDLC)</b>																				
Flat Pack / Pouch Cells								■												
Coin / SMD			■			■	■													
Radial			■			■	■	■	■					■	■			■		
Screw / Weldable			■					■	■					■	■					
Modules			■				■	■	■					■	■				■	
<b>Ceramic Capacitors</b>																				
MLCC - Commodity						■		■		■			■	■		■	■	■		■
MLCC - High Cap						■		■		■			■	■		■	■	■		■
MLCC - High Volts						■		■		■			■			■	■	■		■
MLCC - High Reliability						■		■		■			■			■	■	■		■
MLCC - Automotive Grade						■		■		■			■			■	■	■		■
MLCC - Specialties (i.e. Array, HIQ, etc.)						■		■		■			■			■	■	■		■
Suppression and Safety Capacitor						■				■						■	■	■		■
Leaded Capacitor - Multi Layer						■		■		■						■	■	■		■
Leaded Capacitor - Single Layer						■				■						■	■	■		■
Special Tech (i.e. Silicon, Solid State, etc.)						■		■		■						■	■	■		■
<b>Film Capacitors</b>																				
SMD Capacitors						■		■			■									■
Leaded Capacitors	■			■		■		■			■						■	■	■	
Interference Suppression Capacitors	■			■		■					■						■	■	■	
Power Capacitors	■			■		■		■			■						■	■	■	
Motor Capacitors	■			■		■											■			
<b>Tantalum &amp; Niobium Capacitors</b>																				
SMD Standard Capacitors						■		■											■	
SMD Low ESR Capacitors						■		■											■	
SMD Polymer Capacitors						■		■			■		■						■	
SMD Conformal Coated Capacitors						■		■											■	
SMD Automotive & High Rel. Capacitors						■		■											■	
Leaded Capacitors						■		■											■	
Niobium Capacitors						■		■												■



# Resistors

	ASJ	Eaton	Joyin	KOA	Krah	Kyocera AVX	Littelfuse	Murata	Nexensos a YAGEO company	Nidec	Panasonic	Piher	Rohm	Susumu	TDK	TDK EPCOS	Viking	Vishay	Vitrohm a YAGEO company	YAGEO Group	YFC
<b>Fixed Resistors</b>																					
Thickfilm	■			■							■		■					■			■
Thinfilm				■							■		■	■			■	■			■
Shunt				■							■		■	■				■	■		■
MELF																	■	■	■		
Leaded Resistors				■														■	■	■	■
Low Power Wirewound Resistors				■	■													■	■	■	■
High Power Wirewound Resistors				■	■													■	■	■	■
Resistor Array	■																■				■
<b>Nonlinear Resistors</b>																					
PTC Thermistors							■	■								■		■			
NTC Thermistors			■			■	■	■			■				■	■		■			■
Thermistor Probes			■			■									■			■			■
Platin Sensors				■		■		■										■			■
SMD Varistors		■	■			■	■				■				■	■		■			
THT Varistors			■			■	■				■				■	■		■			■
<b>Variable Resistors</b>																					
Potentiometers						■					■							■			
Trimmers										■								■			



# Inductors, Timing Devices and Acoustic Components

	3L	Diodes	Eaton	EPSON	HKC	Jauch Quartz	Kemet a YAGEO company	Kingstate	Krattner-Inductive	Kyocera AVX	Marschner Tech Power	Murata	Panasonic	PUJ Audio	Pulse a YAGEO company	Sumida	TDK	TDK EPCOS	Vishay	Wah Hing
<b>Chokes</b>																				
Power/RF/Storage Chokes	■		■				■		■			■	■		■	■	■	■	■	
Common Mode Chokes	■		■				■		■			■			■	■	■	■		
Current Sense Transformer									■			■			■	■		■		
<b>Transformers</b>																				
RF/Power Transformers	■		■						■		■	■			■	■		■		■
Telecom & Datacom Transformers									■						■			■		
<b>Ferrites</b>																				
Ferrite Beads	■						■		■			■			■		■			
EMI Filters							■					■					■	■		
Ferrite Cores							■					■				■		■		
<b>Timing Devices</b>																				
SMD Resonators												■								
Leaded Resonators												■								
Crystals		■		■	■	■				■		■								
Oscillators		■		■	■	■				■		■								
Real Time Clocks					■					■										
<b>Filters</b>																				
Ceramic Filters												■								
SAW Filters					■					■		■						■		
<b>Acoustic Components</b>																				
Piezo Buzzers									■			■		■				■		
Magnetic Buzzers									■			■		■				■		
Microphones									■			■		■				■		
Speaker/Receiver									■			■		■				■		







# Suppliers



# Batteries

	Adam Tech	EEMB	EVE Energy	Keystone	MPE Garry	Murata	Panasonic	Renata	SAFT	Samsung SDI	Tenpower
Alkaline (Cylindrical & 9V Block)							■				
Lithium Metal coin cell (Primary & Secondary)		■				■	■	■			
Lithium Metal Cylindrical Cell (Primary)		■					■	■			
Lithium Ion Polymer		■						■			
Lithium Ion (Cylindrical Cell)			■							■	■
Battery Holder (THM & SMT)	■			■	■			■			

# Thermal Management

	ADDA	Assmann WSW	Delta	Fischer Elektronik	InnoTape	Jamicon	Mechatronics
AC Fans	■					■	■
DC Fans	■		■			■	■
EC Fans			■				
CPU Cooler	■		■				
Blowers	■		■			■	■
Heatsinks	■	■	■	■			
Heat Contacting Foils				■	■		
Heatpipes	■		■	■			
Housing				■			

# Fuses

	Conquer	Eaton	Littelfuse	Schurter	Siba
5x20 / 6.3x32	■	■	■	■	■
Automotive Fuses	■	■	■		
Subminiature Fuses	■	■	■	■	■
SMD Fuses	■	■	■	■	■
Resettable Fuses	■	■	■	■	
Fuse Holders	■	■	■	■	■
High Voltage Fuses	■		■	■	

# Relays

	Comus	Coto	FCL Components	Finder	HongFa	Littelfuse	Nexem	NF Forward	Omron	Relpol	TDK
Signal			■	■	■		■	■	■		
Power			■	■	■			■	■	■	■
Automotive			■		■		■	■	■		
Security				■	■				■		
Timer				■	■					■	
Sockets			■	■	■			■	■	■	
MosFet-Relays	■	■				■			■		
SSR's	■										
Reed Contacts	■	■				■					
Reed Relays	■	■				■					
Mercury Relays	■										
Proximity Switches	■					■					

# Switches

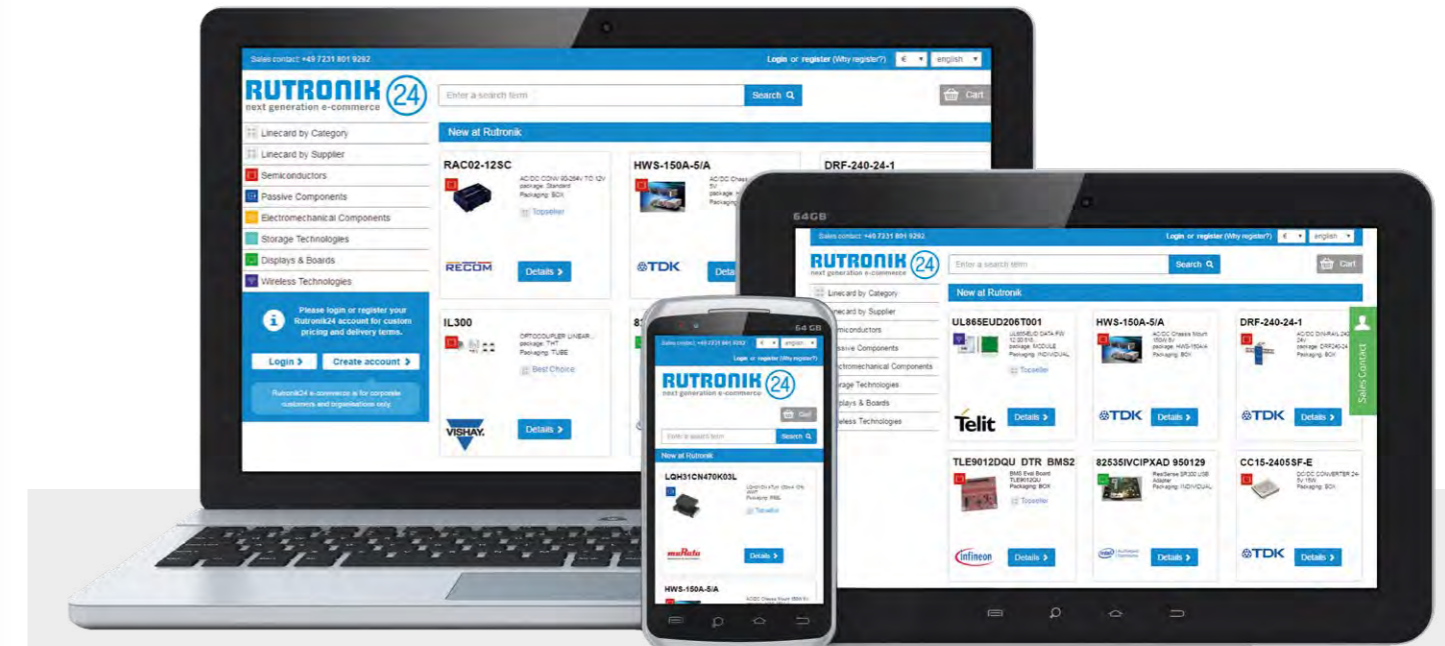
	C&K Littelfuse	Diptronics	Knitter-Switch	Omron	Panasonic	Schurter
Tact Switches	■	■	■	■	■	■
DIP Switches	■	■	■	■		
Slide Switches	■	■	■			
Pushbutton Switches	■	■	■		■	■
Rotary Switches	■		■			
Rotary Coded Switches	■	■	■	■		
Encoder Switches	■		■		■	
Toggle Switches	■		■			
Navigation Switches	■	■	■			
Industrial Switches	■	■	■			■
Rocker Switches	■		■	■		
Detection Switches	■	■	■	■	■	
Microswitches/Snapacting S.	■	■	■	■		
Membrane & Rubber Keypads			■			



# Interconnect Solutions

	Adam Tech	Alysium	Amphenol	Assmann WSW	Gradconn	JAE	Kyocera AVX	Lumberg / Lutronic	Molex	MPE Garry	Pancon	Preci-Dip	Pulse a YAGEO company	Sauro	Sumida	
<b>Connectors</b>																
Board-to-Board	■		■	■	■	■	■	■	■	■	■	■				
Wire-to-Board	■		■	■	■	■	■	■	■	■	■	■				
Wire-to-Wire	■		■	■		■		■	■							
Crimp Terminals	■		■	■		■			■	■						
FFC/FPC	■	■	■			■	■		■							
IC Socket	■			■						■		■				
USB	■		■	■		■			■				■			
Audio/Video	■		■	■		■		■	■							
D-Sub	■		■	■					■							
Memory and SD Card	■		■	■	■	■	■		■							
Modular Jacks	■		■	■					■				■			
Circular Connectors	■		■	■				■	■							
Coaxial Connector	■	■	■		■				■							
EV Charging	■		■			■										
Terminal Blocks	■		■	■				■	■						■	
Customized Connectors	■		■	■	■	■	■			■						
Tools Crimp			■			■		■	■							
<b>Cable &amp; Cable Assembly</b>																
Round Cable		■	■	■												
Flat Cable				■												
FFC/FPC	■	■	■	■			■		■							■
Standard Assembly	■	■		■		■			■							
Customized Assembly	■	■	■	■	■	■			■							■
EV Charging Cable	■		■			■										

# Next generation e-commerce



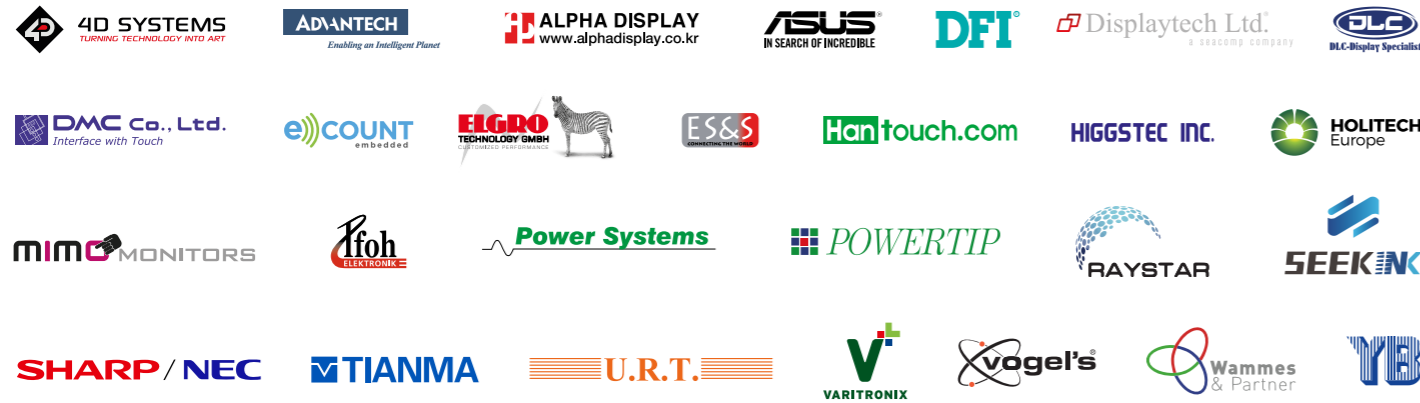
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## Suppliers



## TFTs

	4D Systems	Advantech	Alphadisplay	Displaytech	DLC	Ecourt	Holitech	Mimo Monitors	Powertip	Raystar	Sharp / NEC	Tianma	URT	Yeebo
1,5" - 2,4" Diagonals	■		■	■	■	■	■	■	■	■	■	■	■	■
2,5" - 3,4" Diagonals	■		■	■	■	■	■	■	■	■	■	■	■	■
3,5" - 5,7" Diagonals	■		■	■	■	■	■	■	■	■	■	■	■	■
5,7" - 7,0" Diagonals	■		■	■	■	■	■	■	■	■	■	■	■	■
8,4" - 15,0" Diagonals	■		■	■	■	■	■	■	■	■	■	■	■	■
15,1" - 21,3" Diagonals		■	■	■	■	■	■	■	■	■	■	■	■	■
21,4" - 42" Diagonals	■	■	■	■	■	■	■	■	■	■	■	■	■	■
42" - 65" Diagonals	■	■	■	■	■	■	■	■	■	■	■	■	■	■

## Passive Displays

	4D Systems	Advantech	Displaytech	DLC	Holitech	Powertip	Raystar	Seekink	Tianma	URT	Varitronix	Yeebo
Character- and Graphic Module			■	■	■	■	■	■	■	■	■	■
Customized Module / Panel			■	■	■	■	■	■	■	■	■	■
OLED	■		■			■				■		■
ePaper		■						■				
Turn Key Solutions	■	■	■	■	■	■	■	■	■	■	■	■

## Open Frames

incl. Controller, Cable, PowerSupply

	Advantech	Alphadisplay	Mimo Monitors
7" - 32"	■	■	■
37" - 82"	■	■	

## Smart Panels

incl. Controller

	4D Systems	Alphadisplay	Displaytech	Mimo Monitors	Powertip	Raystar	URT
0,96" - 1,8" Diagonals	■		■		■	■	
1,8" - 7" Diagonals	■		■	■	■	■	■
7" - 15" Diagonals	■						
15" - 19" Diagonals		■		■	■		
High Bright Versions	■	■		■	■		■

## Special TFT Applications

	4D Systems	DLC	Holitech	Mimo Monitors	Powertip	Tianma	URT	Yeebo
Brightness >= 500 cd/m²	■	■	■	■	■	■	■	■
Enhanced Temperature Range		■	■	■	■	■	■	■
Rough Environment			■	■	■	■	■	■

## Monitors & LED Walls

	4D Systems	Advantech	Alphadisplay	Asus	DFI	Ecourt	Holitech	Mimo Monitors	Sharp / NEC
Professional Monitor		■		■	■	■		■	■
Gaming Monitor		■	■	■		■		■	■
USB Monitor / Tablet								■	
Bar Type		■			■	■	■	■	
Open Frame Display	■	■	■		■	■		■	
Collaborative Solutions									■
Beamer									■
LED Walls/Panels									■

## Touch-Screen Panels & Controllers

	DLC	DMC	Hantouch	Higgstec	Holitech
Four+five wire resistive Touch Panel	■	■	■	■	■
Surface Wave Touch Panel			■	■	
Capacitive Touch Panel		■	■	■	■
Infrared Touch Panel			■	■	



## Display & Monitoring Accessories

	Elgro-Technology	ES&S	Mimo Monitors	Pfoh	Power Systems	Powertip	Sharp / NEC	Tianma	URT	Vogel's	Wammes & Partner Solution partner	Yeebo
Standard Cables and Connectors		■	■	■								
Customer-specific Cables		■		■								
Inverter					■							
Backlight						■		■	■			■
Trouble Shooting											■	
Beamer accessoires & Computing solutions							■					
Wall Mount Solutions			■							■		
Digital Signage Player							■					
Zebra Connectors (Elastomeric)	■											

## Suppliers



## Boards

	Adlink	Advantech	ASUS	Cherry	DFI	F&S	Kontron	Seco	Via
Industrial Mainboards	■	■	■		■		■		■
Server Mainboards		■	■		■		■		
Workstation Mainboards			■		■		■		
Desktop Mainboards			■				■		
Computer on Modules	■	■	■	■	■	■	■	■	■
Base- / Evaluationboards	■	■	■	■	■	■	■	■	■
Single Board Computer	■	■	■	■	■	■	■	■	■
Slot Single Board Computer		■			■				
Backplanes		■			■				
Blade Computing		■					■		

## Embedded Systems

	Adlink	Advantech	ASUS	DFI	EMKO	Extra Computer	Kontron	Seco	Via
Embedded Box-PCs	■	■	■	■	■	■	■	■	■
Embedded Panel PCs / Touch Panel PCs	■	■	■	■	■	■	■	■	■
Desktop PCs	■	■	■	■	■				
Mobile PCs / Ind. Tablet PCs / Comp.-Sticks	■	■	■			■			
Embedded Servers	■	■				■			

## Accessories

	Aaeon	Adlink	Advantech	ASUS	Cocom	DELTA	DFI	E-COUNT	EKL	F&S	FSP	HMS	HSM Zamecki	IEI	Intel	Kontron	Seco	Via
Digital LCD Controllers (Scaler)								■										
Artificial intelligence Accelerator Modules & Cards	■		■	■						■				■				
Controller Cards (Digital / Analog / Mixed Signal)			■									■			■			
Industrial Chassis / Cases			■				■									■		
Graphic Cards		■	■												■			
HPC Cards			■															
Coolers & Heatspreaders			■				■		■	■				■	■	■	■	■
Cables & Adapters			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

## Wired Communication

	Adlink	Advantech	Cherry	HMS	Intel	Kontron	Seco
Network Cards	■	■			■	■	■
Network Switches / KVM Switches		■				■	
Industrial Bus & Protocol Solutions	■	■		■			
Wired Long-Range Network Solutions			■				

## Processors

	Intel
Mobile Processors	■
Desktop Processors	■
Server Processors	■
Chipsets	■

## Power Supplies

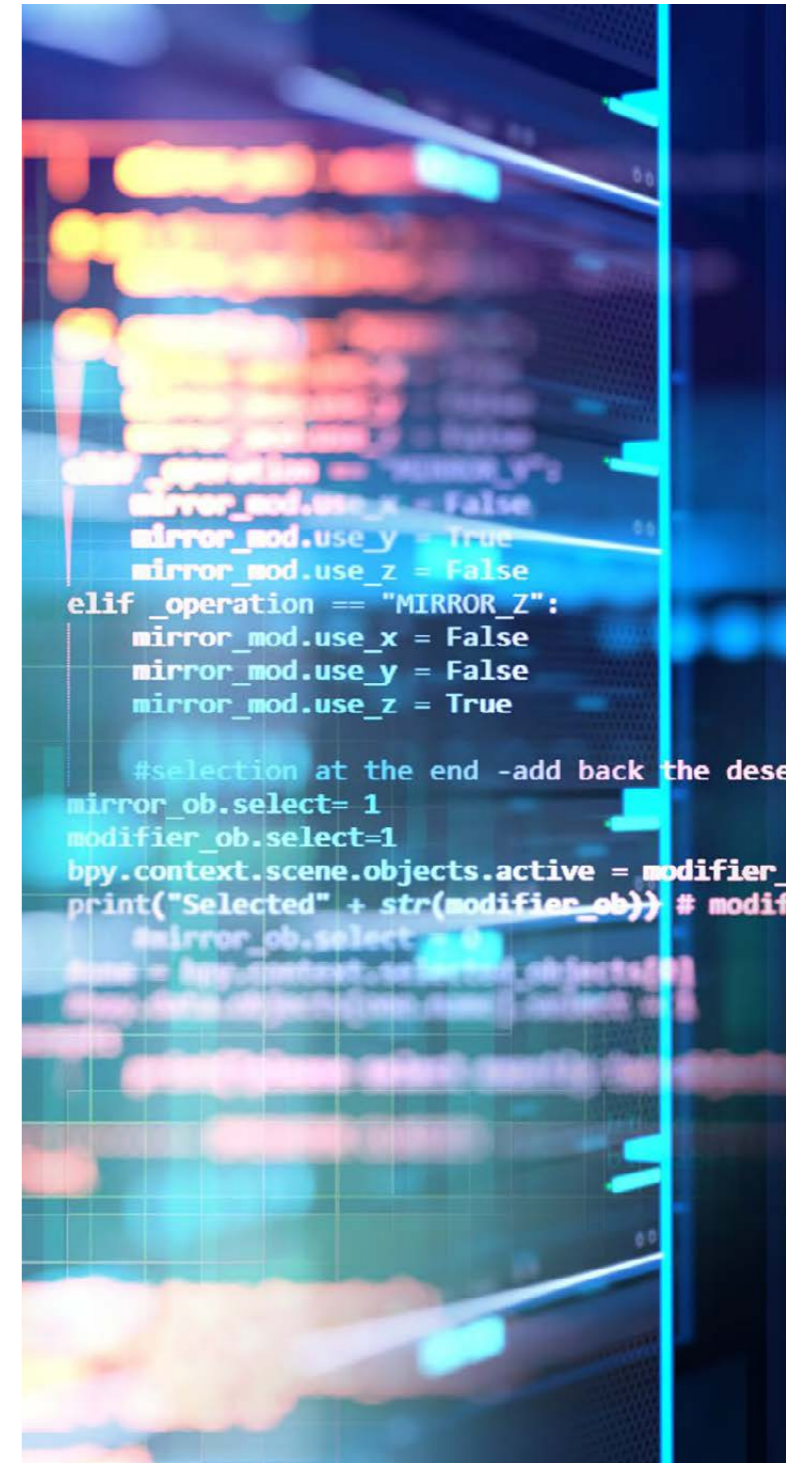
	Advantech	DELTA	DFI	FSP	Kontron
Industrial PC (IPC)	■	■		■	
Redundant Power Supplies		■		■	
AC/DC Adapter	■	■	■		■
DC/DC Converters		■	■	■	
Uninterruptable Power Supplies (UPS)				■	

## Suppliers



## Storage

	Advantech	Apacer	ATP	GoodRam	KIOXIA	Swissbit	Teac	Toshiba	Transcend
<b>Memory Modules</b>									
DDR1		■	■	■					■
DDR2		■	■	■					■
DDR3	■	■	■	■					■
DDR4	■	■	■	■					■
DDR5	■	■	■	■					■
<b>Flash-Memory</b>									
SD/microSD		■	■	■	■	■			■
Compact-Flash		■	■	■		■			■
CFast	■	■	■	■		■			■
CFexpress		■	■	■		■			■
Flash-Module (USB/PATA/SATA)		■	■			■			■
USB-Sticks		■	■	■		■			■
SSD 2.5"	■	■	■	■	■	■			■
mSATA	■	■	■	■	■	■			■
M.2	■	■	■	■	■	■			■
Add-in Card (AIC)					■				
U.2 SSD		■	■		■				■
U.3 SSD		■			■				
EDSFF	■	■			■	■			
<b>Hard Disc Drive</b>									
2.5"									■
3.5"									■
extern USB									■
<b>Optical Drives</b>									
CD-Drives for Audio/CE									■
DVD-Drives									■
BluRay-Drives									■
Medical Recorder									■
<b>Accessories</b>									
Card Reader		■	■	■					■





### Suppliers



### Bluetooth

	Asus	EnOcean (Dolphin)	FCL Components	GARMIN	Infineon	Insight SIP	iVativ	Minew	Murata	NORDIC	Panasonic	ROHM	SILEX	TDK	TELT
Bluetooth Classic Modules			■									■			
Bluetooth LE (Low Energy) Modules		■	■	■	■	■	■	■	■	■	■	■	■	■	■
Bluetooth Dual Mode Modules			■		■				■		■				
Bluetooth Dual Mode System on Chips					■										
Bluetooth LE (Low Energy) System on Chips					■					■					
Bluetooth devices (Beacons, Key Finder, Dongles etc.)	■		■			■	■	■							

### GSM/GPRS/UMTS/LTE/NB-IoT/5G GNSS

	2J Antennas	Advantech	GNS	Infineon	iVativ	Minew	Murata	NORDIC	TELC	TELT	Unicore
<b>GSM/GPRS/UMTS/LTE/NB-IoT/5G</b>											
Modules							■	■		■	
Cards		■								■	
Terminals		■			■				■	■	
With integrated GPS		■						■	■	■	
SIM-Card Connectivity										■	
<b>GNSS</b>											
GPS/GNSS Modules			■			■	■			■	■
GPS/GNSS Cards		■									
GPS/GNSS Chips				■							■
Ultra High Precision										■	■
Modules with integrated Antenna	■		■							■	



### Proprietary Wireless

	Advantech	EnOcean (Dolphin)	GARMIN	Infineon	Insight SIP	Minew	NORDIC	Panasonic	ROHM
Receiver Chips				■					
Transceiver Modules		■	■		■	■		■	
Transceiver Chips				■			■		■
Transmitter Chips				■			■		
Gateway Solution	■					■			
USB Sticks		■	■			■	■		

### Long Range Wide Area Network

	Advantech	Insight SIP	iVativ	Kyocera AVX	Minew	Murata
LoRa	■	■	■	■	■	■
Sigfox						■

### RFID/ NFC

	FCL Components	GARMIN	GIANTEC	IDTRONIC	Insight SIP	Minew	Murata	NORDIC	ROHM
Passive Reader Modules	■		■	■					■
Passive Transponder Chips			■				■		
Passive Transponder Devices			■	■			■		
Passive Reader Chips			■						
NFC Pairing Chip		■			■	■	■	■	

### Hardware Security Solutions

	Infineon
Authentication	■
Trusted Computing	■

### ZigBee

	EnOcean (Dolphin)	FCL Components	GARMIN	Infineon	Insight SIP	iVativ	Minew	NORDIC	Panasonic	ROHM
System on Chips				■					■	
Modules	■	■	■		■	■	■		■	■

### WIFI

	Advantech	Asus	FCL Components	Infineon	Insight SIP	Intel	iVativ	Minew	Murata	NORDIC	Panasonic	ROHM	SILEX	TELT
Modules WiFi a/b/g/n/ac			■		■	■	■	■	■		■	■	■	■
Modules WiFi 6 (ax)					■	■		■	■		■		■	■
Modules SubGHz-WiFi (ah)														■
Cards WiFi a/b/g/n/ac		■					■	■						■
Cards WiFi 6 (ax)							■				■			
Chips WiFi a/b/g/n/ac/ax				■					■	■				
Access Points/ Gateways/ Routers	■	■					■	■						■

### Accessories

	2J Antennas	Advantech	CHIMMORE	EnOcean (Dolphin)	GradConn	Kyocera AVX	Molex	Pulse a YAGEO comp.	YAGEO Group
Adapter Cables	■	■	■		■		■	■	
Antennas (internal)	■		■			■	■	■	■
Antennas (external)	■		■			■	■	■	■
Antennas (surface mounted)	■		■			■	■	■	■
SIM-card Holders					■	■	■		
Energy Harvester				■					

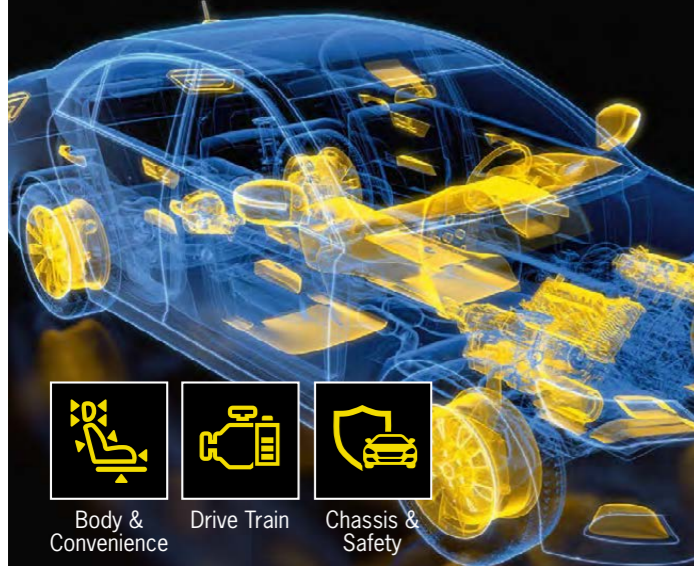
### Special Wireless Techn.

	GNS
ADS-B	■
TMC	■

### UWB

	Insight SIP	Minew	Murata
Modules	■	■	■

# RUTRONIK AUTOMOTIVE



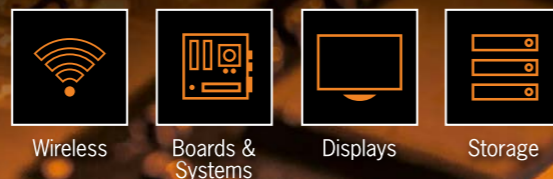
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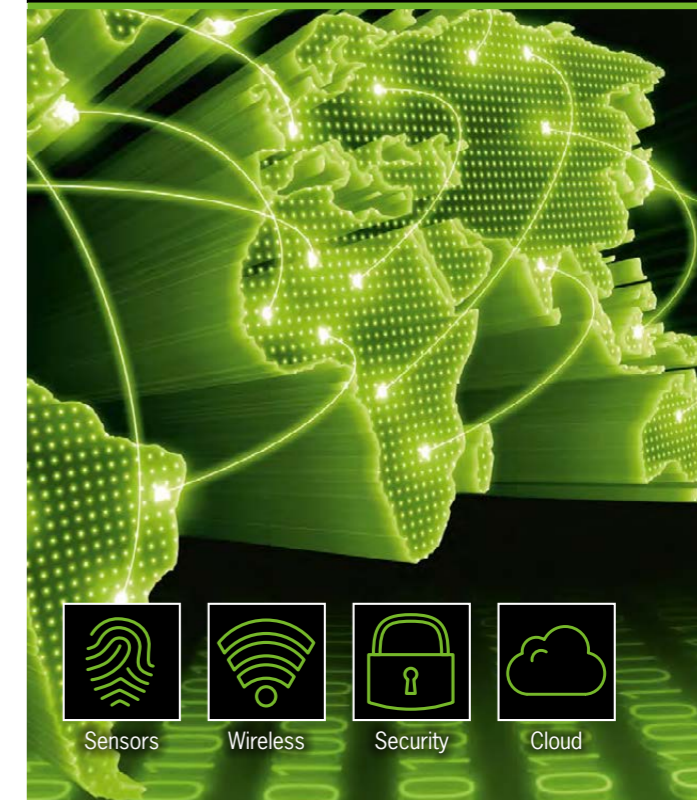
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