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06.06.03	Optical power meters	06.08.01.06.13	Transient-value recorders
06.06.04	Fiber optic measurement equipment, miscellaneous	06.08.01.06.14	Energy-consumption measurement
06.06.05	Sound level meters	06.08.01.06.15	Powerline measurement equipment IEC 1000-3-3
06.07	Image / pattern recognition and processing	06.08.01.06.16	Power analyzers / disturbance analyzers
06.07.01	Image-processing software	06.08.01.06.17	Measurement equipment, miscellaneous
06.07.02	Identification systems	06.08.01.07	Current sinks
06.07.03	Optical inspection systems	06.08.01.07.01	Resistive / inductive / capacitive loads
06.07.04	Equipment for image / pattern recognition and processing, miscellaneous	06.08.01.07.02	Variable loads, electronic loads
06.08	Electrical parameters	06.08.01.07.03	Programmable loads
06.08.01	Analog measurement techniques	06.08.01.08	Hand-held measurement equipment
06.08.01.01	RF measurement equipment	06.08.01.08.01	Multimeters
06.08.01.01.01	Frequency counters	06.08.01.08.02	Oscilloscopes
06.08.01.01.02	Power meters	06.08.01.08.03	Hand-held measurement equipment, miscellaneous
06.08.01.01.03	Spectrum analyzers	06.08.02	Digital measurement equipment
06.08.01.01.04	Measuring receivers	06.08.02.01	Logic analyzers
06.08.01.01.05	Network analyzers, vector (VNA)	06.08.02.02	Digital measurement equipment, miscellaneous
06.08.01.01.06	Signal generators	06.08.03	Communication test equipment
06.08.01.01.07	Sweep generators	06.08.03.01	LAN analyzers
06.08.01.01.08	Measurement equipment for electrical / magnetic parameters, miscellaneous	06.08.03.02	WAN analyzers
06.08.01.02	Microwave measurement equipment	06.08.03.03	PCI bus analyzers and measurement adapters
06.08.01.03	EMI measurement techniques	06.08.03.04	USB analyzers
06.08.01.03.01	EMI test systems	06.08.03.05	CAN bus testers
06.08.01.03.02	TEM cells	06.08.03.06	TV and radio measurement equipment
06.08.01.03.03	Coupling / decoupling networks	06.08.03.07	Communication test equipment, miscellaneous
06.08.01.03.04	Measuring chambers for EME measurements	06.08.04	Mobile radio measurement equipment
06.08.01.03.05	EMI test receivers	06.08.04.01	Test systems for analog mobile radios
06.08.01.03.06	Near field probes	06.08.04.02	Test systems for digital mobile radios
06.08.01.03.07	ESD testers	06.08.04.03	Signal generators for digital mobile radio transmission
06.08.01.03.08	EMC test-site equipment	06.08.04.04	Analyzers for digital mobile radio transmission
06.08.01.03.09	Antennas	06.08.04.05	Geographical radio-coverage analysis systems
06.08.01.03.10	Magnetic-field measurement equipment	06.08.04.06	Type-approval test systems
06.08.01.03.11	Power amplifiers	06.08.05	Protective-measure test devices
06.08.01.03.12	Surge and burst test equipment	06.08.05.01	Ground test equipment
06.08.01.03.13	Testing electrical / magnetic properties, other devices for	06.08.05.02	Insulation testers
06.08.01.04	Accessories for RF and μW measurement equipment	06.08.05.03	High-voltage testers
06.08.01.04.01	Measurement bridges / bridge circuits	06.08.05.04	Short-circuit localization devices, network analyzers
06.08.01.04.02	Calibration kits	06.08.05.05	Safety testers, multimeters
06.08.01.04.03	High-frequency test probes	06.08.05.06	Installation tester
06.08.01.04.04	Attenuators	06.08.06	Test systems
06.08.01.04.05	Power dividers	06.08.06.01	Semiconductor test systems
06.08.01.04.06	Directional couplers	06.08.06.02	IC testers
06.08.01.04.07	Test sets	06.08.06.03	Mixed-signal test systems
06.08.01.04.08	Noise generators	06.08.06.04	Board testers
06.08.01.04.09	Filters	06.08.06.05	Boundary scan board test systems
06.08.01.04.10	RF connectors	06.08.06.06	In-circuit testers
06.08.01.04.11	RF measurement cables	06.08.06.07	Functional testers
06.08.01.05	Audio measurement equipment	06.08.06.08	Combination testers (in-circuit & function)
06.08.01.05.01	Audio level meters	06.08.06.09	Benchtop ATEs, miscellaneous
06.08.01.05.02	Distortion factor measurement devices	06.08.06.10	Real-time measured-value acquisition systems
06.08.01.05.03	Signal analyzers, also FFT	06.08.06.11	Adapters for assembly testing
06.08.01.06	General-purpose measurement equipment	06.08.06.12	Test systems without adapters
06.08.01.06.01	Voltmeters	06.08.06.13	Measurement-data acquisition systems with distributed sensors
06.08.01.06.02	Current meters	06.08.06.14	Multiple-channel measurement systems (loggers)
06.08.01.06.03	Power meters	06.08.06.15	Component testers for electronics (hardware-specific)
		06.08.06.16	Power supply test equipment
		06.08.06.17	Cable test systems
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07 Electronic design (ED/EDA)

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08.01.02	Common mode chokes
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06.08.08.17	Test pin arrays
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- 09.01.01.02 DIL switches
- 09.01.01.03 Dial / rotary switches
- 09.01.01.04 Push-button switches
- 09.01.01.05 Remote-control switches, miscellaneous
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- 09.01.01.08 PCB switches
- 09.01.01.09 Illuminated key switches / keypads
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- 09.01.01.16 Safety switches
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09.01.02 Switches with additional functions

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09.01.03 Electrical keys

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09.01.04 Detector components

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Components and accessories for keyboards

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09.02

Connectors

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09.02.06.01.04	F connectors	09.02.10.10	Crimping tools
09.02.06.01.05	N connectors	09.03	Cables and connectivity technology
09.02.06.01.06	SMA connectors	09.03.01	Connection and terminal technology
09.02.06.01.07	SMB / SMC / SMS connectors	09.03.01.01	Terminals / terminal strips
09.02.06.01.08	PC 7.0 mm connectors	09.03.01.02	Connectors (silicon rubber)
09.02.06.01.09	PC 3.5 mm connectors	09.03.01.03	Connection strips
09.02.06.01.10	PC 2.4 mm connectors	09.03.01.04	Test terminals
09.02.06.01.11	PC 2.0 mm connectors and smaller	09.03.01.05	Terminal strips
09.02.06.01.12	Adapters	09.03.01.06	Terminals with diodes
09.02.06.01.13	Twinaxial components	09.03.01.07	PCB terminals
09.02.06.01.14	Coaxial connectors, miscellaneous	09.03.01.08	Feed-through terminals
09.02.06.02	Fiber-optic plug-in connectors	09.03.01.09	Measurement terminals
09.02.06.03	Data connectors (e.g. RJ 45)	09.03.01.10	Disconnect terminals
09.02.07	Cables with connectors	09.03.01.11	Terminals, miscellaneous
09.02.07.01	Configured cable / connector combinations for data technology		
09.02.07.02	Configured cable / connector combinations for sensor / actuator applications		
09.02.07.03	Configured cable / connector combinations for household equipment		
09.02.07.04	Configured cable / connector combinations for industrial electronics		

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09.03.02.01	Contact elements / modules	09.04.03.08	Wall-mountable housings
09.03.02.02	Screen-connection elements	09.04.03.09	Specialized housings for assemblies / devices
09.03.02.03	Contactless electrical rotary joints	09.04.03.10	Housings, RF-resistant
09.03.02.04	Soldered connection elements	09.04.03.11	Wall-mountable and desktop housings, miscellaneous
09.03.02.05	Wire-wrap elements	09.04.04	Small-scale housings
09.03.02.06	Removable connection elements, miscellaneous	09.04.04.01	Sheet-metal housings
09.03.02.07	Power distribution components (power strips)	09.04.04.02	Plastic housings, application-specific
09.03.02.08	Microconnectors	09.04.04.03	Hand-held housings
09.03.02.09	Press-fit connectors	09.04.04.04	Milling housings
09.03.02.10	Individual contacts	09.04.04.05	Mini housings, miscellaneous
09.03.02.11	Chip-card connection frames	09.04.05	Special housings
09.03.02.12	Permanent contacting elements, miscellaneous	09.04.05.01	Specialized component enclosures
09.03.02.13	Connection elements, miscellaneous	09.04.05.02	Portable cases
09.03.03	Connector accessories	09.04.05.03	Individual housings
09.03.03.01	Continuity accessories	09.04.06	Accessories for housings
09.03.03.02	Elastomers, electrical / thermal conducting	09.04.06.01	Card slots
09.03.03.03	Shrink-wrap hoses	09.04.06.02	Covers
09.03.03.04	Strain-relief elements	09.04.06.03	Front panels for assemblies / devices
09.03.03.05	Threaded cable glands	09.04.06.04	Front panels, customized
09.03.03.06	Accessories, miscellaneous	09.04.06.05	Front handles
09.03.04	Cables	09.04.06.06	Housing seals
09.03.04.01	Coaxial high-frequency cables	09.04.06.07	Knobs
09.03.04.02	RF cords	09.04.06.08	Rubber and plastic parts for housings
09.03.04.03	Semi-rigid cables	09.04.06.09	Distance assembly fittings
09.03.04.04	Ready-made coaxial cables	09.04.06.10	Housing cover accessories
09.03.04.05	Coaxial conductor components and systems	09.04.06.11	Conduits
09.03.04.06	Twinaxial components	09.04.06.12	Filters, air
09.03.04.07	Wire harnesses	09.04.06.13	Power distribution components
09.03.04.08	Spiral cords	09.04.06.14	Accessories for housings, miscellaneous
09.03.04.09	Customized cables	09.04.07	Thermal management
09.03.04.10	Light-conducting cables	09.04.07.01	Passive components
09.03.04.11	Instrument cables	09.04.07.01.01	Shieldings, thermal
09.03.04.12	Safety cables / leads	09.04.07.01.02	Insulating elements, special
09.03.04.13	Data transmission cables	09.04.07.01.03	Heat sinks
09.03.04.14	Computer cables, configured	09.04.07.01.04	Specialized heat sinks
09.03.04.15	Round-conductor ribbon cables for IDC	09.04.07.01.05	Heat-conducting plates / washers
09.03.04.16	Flexible ribbon cables	09.04.07.01.06	Circuit carriers, thermally conductive
09.03.04.17	Shielded cables	09.04.07.01.07	Passive components, miscellaneous
09.03.04.18	Halogen-free cables	09.04.07.01.08	Thermal interface materials
09.03.04.19	Enamelled wire	09.04.07.02	Active components
09.03.04.20	Wire / cables / leads, miscellaneous	09.04.07.02.01	Fans
09.03.04.21	Cables, miscellaneous	09.04.07.02.02	Fan inserts
09.03.05	DDI and other network technology components	09.04.07.02.03	Heat exchangers with built-in radiators
09.04	Casing technology	09.04.07.02.04	Heat pumps, thermoelectric
09.04.01	DIN rail housings	09.04.07.02.05	Peltier elements
09.04.02	Control and system racks	09.04.07.02.06	Heat exchanger systems
09.04.02.01	19" racks and cabinets	09.04.07.02.07	Heat pipes
09.04.02.02	RF-shielded housings	09.04.07.02.08	Air-conditioning units
09.04.02.03	Circuit boxes	09.04.07.02.09	Radiators and coolants
09.04.02.04	Sheet-metal structures	09.04.07.02.10	Cooling equipment
09.04.02.05	System racks for telecommunications	09.04.07.02.11	CPU cooling equipment
09.04.03	Build-in and desktop housings	09.04.07.02.12	Filter fans
09.04.03.01	19" inserts and housings	09.04.07.02.13	Thermostats
09.04.03.02	19" frames	09.04.07.02.14	Thermal management aids, miscellaneous
09.04.03.03	19" accessories	09.04.07.02.15	Thermofoil heaters
09.04.03.04	Console housings	09.04.07.02.16	Heating elements with / without regulators
09.04.03.05	Computer housings	09.04.07.02.17	Active components, miscellaneous
09.04.03.06	Stand-alone housings		

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09.04.08.01 EMC-conducted

- 09.04.08.01.01 EMC-type plug-in connectors
- 09.04.08.01.02 EMC leads
- 09.04.08.01.03 EMC filters
- 09.04.08.01.04 SM EMI suppression filters
- 09.04.08.01.05 Chip bead EMI suppressors
- 09.04.08.01.06 Mains filter modules
- 09.04.08.01.07 RF chokes
- 09.04.08.01.08 Filter-equipped plug-in connectors
- 09.04.08.01.09 Threaded EMC cable glands
- 09.04.08.01.10 EMC feedthrough components
- 09.04.08.01.11 X/Y capacitors
- 09.04.08.01.12 Electronic protection devices, miscellaneous

09.04.08.02 EMC-radiated

- 09.04.08.02.01 Shieldings (EMC)
- 09.04.08.02.02 Housings with EMC protection
- 09.04.08.02.03 RF seals
- 09.04.08.02.04 Metal sealings for housings
- 09.04.08.02.05 Polymere seals for housings
- 09.04.08.02.06 Conductive tapes / cloth
- 09.04.08.02.07 Window glass, RF-sealed

09.04.08.03 EMP protection

09.04.08.04 ESD protection

- 09.04.08.04.01 ESD protective agents
- 09.04.08.04.02 Voltage suppressors
- 09.04.08.04.03 Limiter diodes
- 09.04.08.04.04 Surge protection equipment

09.04.08.05 Packaging materials

- 09.04.08.05.01 Packaging materials
- 09.04.08.05.02 Blister belting strips
- 09.04.08.05.03 Blister belt cover strips
- 09.04.08.05.04 Belt spools for component belting

09.04.08.06 Protection components, miscellaneous

- 09.04.08.06.01 Suppressor chokes
- 09.04.08.06.02 Suppressor capacitors
- 09.04.08.06.03 Shielded chokes / converters
- 09.04.08.06.04 EMC ferrite cores
- 09.04.08.06.05 Circuit breaker for equipment protection
- 09.04.08.06.06 Equipment-protection fuses
- 09.04.08.06.07 Fuse holders / sockets
- 09.04.08.06.08 Fuse terminal blocks
- 09.04.08.06.09 Surge protection and interference filters

10 Power supplies

10.01 Transformers

- 10.01.01 Power-supply transformers
- 10.01.02 PCB transformers
- 10.01.03 Planar transformers
- 10.01.04 Miniature transformers
- 10.01.05 Toroidal core transformers
- 10.01.06 Security transformers
- 10.01.07 Isolating transformers (including shielded)
- 10.01.08 High-voltage transformers
- 10.01.09 Pulse transformers
- 10.01.10 Stray-field transformers
- 10.01.11 Autotransformers
- 10.01.12 Transformers, miscellaneous
- 10.01.13 PCB transformers
- 10.01.14 Switched-mode power supply (SMPs) transformers
- 10.01.15 Lighting transformers
- 10.01.16 Audio transformers

10.02 Coilware for specific applications

- 10.02.01 Filter coils
- 10.02.02 Commutation chokes
- 10.02.03 Chokes, miscellaneous
- 10.02.04 Coilware, application-specific
- 10.02.05 Coilware, shielded
- 10.02.06 Coilware, miscellaneous

10.03 Magnets and coil accessoires

- 10.03.01 Core-molded parts
- 10.03.02 Cores
- 10.03.03 Coil former
- 10.03.04 Metal powder coil cores
- 10.03.05 Accessories, miscellaneous
- 10.03.06 Amorphous cut cores

10.04 Power supplies, DC output

- 10.04.01 AC / DC power supplies, single / multiple phase
- 10.04.02 AC / DC power supplies, battery charging
- 10.04.03 AC / DC power supplies, DIN rail
- 10.04.04 DC / DC converter, DIN rail
- 10.04.05 Accessories for DIN rail power supplies
- 10.04.06 AC / DC power supplies, open frame
- 10.04.07 AC / DC power supplies, configurable
- 10.04.08 DC / DC converter, low power < 100 W
- 10.04.09 DC / DC power modules > 100 W
- 10.04.10 DC / DC converter for automotive and e-mobility

10.04.11 AC / DC power supplies, fixed AC plug and desktop

- 10.04.12 AC / DC power supplies for medical application
- 10.04.13 AC / DC power supplies for telecom applications
- 10.04.14 DC / DC converter for railway application
- 10.04.15 Bidirectional DC / DC converter

10.05 Power supplies, AC output

- 10.05.01 Artificial mains networks
- 10.05.02 Mains power devices, insert housing
- 10.05.03 Mains power devices, portable
- 10.05.04 Plug-in mains power devices (AC / AC)
- 10.05.05 Inverters (DC / AC)

10.06 Frequency converters

10.07 UPS systems

- 10.07.01 Uninterruptable power supplies (UPS)
- 10.07.02 Backup power supplies
- 10.07.03 Mains power stabilizers

10.08 Special power supplies

- 10.08.01 Programmable power supplies
- 10.08.02 System power supplies
- 10.08.03 Lab power supplies
- 10.08.04 Intelligent power modules, customized
- 10.08.05 Power supplies, high-voltage
- 10.08.06 Mains power devices, application-specific
- 10.08.07 LED power supplies
- 10.08.08 Rectifier for telecom systems

10.09 Batteries

- 10.09.01 Accumulators, up to 50 Ah
- 10.09.02 Primary elements and batteries
- 10.09.03 Smart batteries
- 10.09.04 Chargers, battery
- 10.09.05 Power management systems
- 10.09.06 Batteries, NiMH
- 10.09.07 Batteries, lithium
- 10.09.08 Batteries, lead acid
- 10.09.09 Batteries, NiCd

10.10 Accessories

- 10.10.01 Power factor compensation equipment
- 10.10.02 Voltage stabilizers
- 10.10.03 Charge rectifiers
- 10.10.04 Battery testers
- 10.10.05 Accessories, miscellaneous

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11.01	Rigid PCBs	11.04.12	Ultrafine-line circuitry (< 50 µm)
11.01.01	Standard PCBs	11.04.13	PCBs, other
11.01.02	Copper through-hole PCBs	11.04.14	Optical PCBs
11.01.03	Silver through-hole PCBs	11.04.15	LED PCBs
11.01.04	Ultrathin ML (100 µm / layer)	11.04.16	High-Tg circuit boards (HTg)
11.01.05	Plated through-hole PCBs	11.05	Injection molded circuits, MID / 3D-MID
11.01.06	PCBs with blind and buried vias		
11.01.07	HDI PCBs	11.05.01	3D-MID circuit boards
11.01.08	PCBs with thick copper	11.05.02	Hybrid MID components
11.01.09	Multilayer PCBs, miscellaneous	11.05.03	MID components, other
11.02	Flexible PCBs	11.06	Ceramic PCBs
11.02.01	Standard flexible PCBs	11.06.01	LTCC (low-temperature co-fired ceramic)
11.02.02	Multilayer flexible PCBs	11.06.02	HTCC (high-temperature co-fired ceramic)
11.02.03	HDI flexible PCBs	11.06.03	DBC (direct bonded copper)
11.02.04	Rigid or semi-flexible PCBs	11.06.04	DPC (direct plate copper)
11.02.05	Ultra-thin flexible PCBs	11.06.05	Al ₂ O ₃ substrates
11.02.06	Roll-to-roll flexible PCBs	11.06.06	AlN substrates
11.02.07	Shielded flexible PCBs	11.06.07	Ceramic PCBs, miscellaneous
11.03	Rigid-flex PCBs	11.07	Hybrid modules (including multi-chip modules)
11.03.01	Standard rigid-flex PCBs	11.07.01	Thick-film hybrids
11.03.02	Multilayer rigid-flex PCBs	11.07.02	Thin-film hybrids
11.03.03	HDI rigid-flex PCBs	11.07.03	RF hybrids
11.03.04	Symmetrical rigid-flex PCBs	11.07.04	Hybrid modules, mixed-signal
11.03.05	Asymmetrical rigid-flex PCBs	11.07.05	Hybrid circuits on glass substrates
11.04	Special PCBs	11.07.06	Hybrid modules on ceramic substrates
11.04.01	Bondable PCBs	11.07.07	Multi-chip module hybrids, miscellaneous
11.04.02	Metal core PCBs	11.07.08	Application-specific hybrid circuits
11.04.03	PCBs with embedded resistors	11.07.09	Networks, miscellaneous
11.04.04	Flexible circuits	11.07.10	Miscellaneous hybrid circuits / modules
11.04.05	Flex-rigid circuits	11.07.11	Strip-conductor components for microwave technology
11.04.06	Micro via PCBs	11.07.12	Clock modules
11.04.07	PCBs on aluminum substrates	11.07.13	Hybrid modules, miscellaneous
11.04.08	High frequency PCBs	11.08	Accessories for PCBs
11.04.09	Impedance-controlled PCBs	11.08.01	Conductor strips
11.04.10	Press-fit component PCBs	11.08.02	Accessories for PCBs, miscellaneous
11.04.11	Large-format PCBs (more than 600 mm)		

12 EMS electronic manufacturing services

12.01	Intermediate / semifinished goods	12.02.01.05	Services for development and design
12.01.01	Intermediate / semifinished goods, metallic	12.02.02	IT systems / design software
12.01.01.01	Bent parts	12.02.02.01	CAD / CAM systems
12.01.01.02	Precision turned parts	12.02.02.02	3D software
12.01.01.03	Compression molded parts	12.02.02.03	Simulation
12.01.01.04	Injection molded parts	12.02.02.04	Software for model making and prototyping
12.01.01.05	Stamped bent parts	12.02.02.05	Other IT services / systems
12.01.01.06	Stamped parts / stamped parts with press fit zones	12.03	Prototyping
12.01.01.07	Drawn parts	12.03.01	PCBs
12.01.01.08	Stamped parts and metal components, other	12.03.02	Housings
12.01.02	Intermediate / semifinished goods, plastic and rubber	12.03.03	Equipment
12.01.02.01	Electrically conductive elastomers	12.03.04	Small-batch manufacturing
12.01.02.02	Injection-molded parts made of plastic	12.03.05	Techniques / technology
12.01.02.03	2-component injection-molded parts	12.03.05.01	3D modelling
12.01.02.04	Injection-molded parts made of silicone	12.03.05.02	3D printing
12.01.02.05	Injection-molded parts made of rubber	12.03.05.03	Rapid prototyping
12.01.02.06	Components made of fiber-reinforced plastic	12.03.05.04	Laser sintering (SLS)
12.01.02.07	Components made of plastic or rubber, other	12.03.05.05	Stereo lithography (STL)
12.01.03	Intermediate / semifinished goods made of ceramics	12.03.05.06	Other techniques / technology
12.01.04	Intermediate / semifinished goods, other	12.03.06	Prototyping, miscellaneous
12.02	Product development	12.04	Hybrid components / assemblies
12.02.01	Component development / design	12.04.01	Metal-plastic hybrids
12.02.01.01	Design	12.04.02	Metal-rubber hybrids
12.02.01.02	Component, system and product development	12.04.03	Plastic-plastic hybrids
12.02.01.03	Development and design engineering	12.04.04	Plastic-rubber hybrids
12.02.01.04	Process development	12.04.05	Metal-ceramic hybrids

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12.04.06	Ceramic-plastic hybrids
12.04.07	Hybrid housings
12.04.08	Hybrid assemblies
12.04.09	Hybrid components, other
12.05	EMS (component/ chip carrier manufacturing)
12.05.01	Layout services
12.05.02	Artwork production services
12.05.03	Screen production services
12.05.04	Coating services
12.05.05	Laser engraving
12.05.06	Wire erosion
12.05.07	Laser welding / cutting
12.05.08	Plating services
12.05.09	Reflow services
12.05.10	Surface treatment
12.05.11	Production services for component / chip carrier manufacturing, miscellaneous
12.05.12	Manufacturing processes for printed, flexible electronics
12.05.12.01	Mass patterning techniques
12.05.12.02	Digital printing
12.05.12.03	Other printing processes
12.05.12.04	Vacuum processes
12.05.12.05	Photolithography
12.05.12.06	Laser processes
12.05.12.07	Coating technologies
12.05.12.08	Material processing
12.05.12.09	Light induced processing
12.05.12.10	Dosing and mixing technology
12.05.12.11	Encapsulation
12.05.12.12	Clean room technology
12.05.12.13	Roll-to-roll processing
12.05.12.14	Other manufacturing processes

13 Automotive

13.01	Electrical and hybrid electrical vehicles (EVs and HEVs)
13.01.01	Electrical drives
13.01.01.01	Asynchronous machines (ASMs)
13.01.01.02	Electrical drives, miscellaneous
13.01.01.03	Gearboxes for electrical drives
13.01.01.04	Traction inverters
13.01.01.05	Powertrain EMC filters
13.01.02	Charging of electric vehicles
13.01.02.01	Battery chargers
13.01.02.02	DC/DC converters
13.01.02.03	High current contacts
13.01.02.04	Products for high voltage electrical systems
13.01.03	Charging cables
13.01.03.01	Charging stations
13.01.03.02	Charging, miscellaneous
13.01.03.03	On-boards chargers
13.01.03.04	Accessories for charging systems
13.01.04	Energy storages for EVs and HEVs
13.01.04.01	Battery management systems
13.01.04.02	Battery systems
13.01.04.03	Electrochemical capacitors (supercaps / double layer capacitors)
13.01.04.04	Energy storages, miscellaneous

12.06	EMS (component construction and equipment manufacturing)
12.06.01	Solder mask services
12.06.02	Hybrid solutions
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12.06.04	Bonding of dies on PCBs
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12.06.06	Component insertion under cleanroom conditions
12.06.07	Metal machining
12.06.08	Manufacturing precision drilling and milling parts
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12.06.10	Assembly production
12.06.11	EMD shielding
12.06.12	Cabling
12.06.13	Labeling
12.06.14	Electronics assembly and packaging, system integration for printed, flexible electronics
12.06.14.01	Electronics assembly and packaging
12.06.14.02	Lamination
12.06.14.03	Printed, flexible system integration
12.06.14.04	Hybrid systems (polytronics)
12.06.15	Inspection and test systems
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12.06.15.03	Chemical characterization
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12.06.15.06	Quality / process control
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12.06.15.08	Other inspection and test systems
12.06.16	Production services for component construction and equipment manufacturing, miscellaneous

13.02	Interior / comfort
13.02.01	Comfort functions
13.02.01.01	Power window control
13.02.01.02	Electrical seat adjustment
13.02.01.03	Seat heater
13.02.01.04	Interior lights
13.02.01.05	Ambient lights
13.02.01.06	Electrical air conditioning
13.02.01.07	Printed, flexible lighting
13.02.02	Driver information
13.02.02.01	Multi-purpose instrument
13.02.02.02	Head-up display
13.02.02.03	Displays (see displays)
13.02.02.04	Warning lights, displays
13.02.03	Communication / telematics
13.02.03.01	Car radio / loudspeaker
13.02.03.02	Infotainment
13.02.03.03	Multimedia
13.02.03.04	Navigation
13.02.03.05	GPS receiver
13.02.03.06	Car antenna
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13.02.03.08	Bluetooth
13.02.03.09	Ethernet
13.02.03.10	Telematics

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13.03.02	LED lighting	13.05.02.02	Solenoid valves
13.03.03	LED taillights	13.05.02.03	Piezo valves
13.04	Sensors and autonomous driving	13.05.02.04	Relays (see electromechanics/ system peripherals)
13.04.01	Driver assistance systems	13.05.02.05	Switches (see electromechanics/ system peripherals)
13.04.01.01	Adaptive cruise control (ACC)	13.05.02.06	Fuses
13.04.01.02	Parking assistant	13.05.02.07	Smart power
13.04.01.03	Radar	13.05.02.08	Connectors (see electromechanics/ system peripherals)
13.04.01.04	Lidar		Cable assemblies
13.04.01.05	Infrared	13.05.02.09	Optical conductors
13.04.01.06	Video/ camera	13.05.02.10	Sensors (see sensor technology)
13.05	Electrical on-board power supply	13.05.03	Bus systems
13.05.01	Energy supply	13.05.03.01	Gateway
13.05.01.01	Energy storage (batteries, ultracaps)	13.06	Construction and test
13.05.01.02	Energy recovery systems	13.06.01	Services
13.05.01.03	DC/DC converter, DC/AC converter	13.06.01.01	Controller development
13.05.01.04	Battery sensor	13.06.01.02	Software development
13.05.01.05	Power supply sensor	13.06.01.03	Hardware development
13.05.01.06	Central electrics	13.06.02	Test equipment
13.05.01.07	On-board power supply management	13.06.02.01	Hardware in the loop
13.05.01.08	48 V on-board power supply products	13.06.02.02	Tester
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14.01	Mobile networks	14.04.14	GNSS chip sets
14.01.01	5G	14.04.15	GNSS receivers
14.01.02	EDGE	14.04.16	RF assemblies, miscellaneous
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14.01.06	UMTS	14.04.20	Wireless power
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14.02.04	Infrared	14.04.27	Modems
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14.02.06	LPWAN	14.04.29	RFID
14.02.07	NFC	14.04.30	Robotic and autonomous systems
14.02.08	RFID	14.04.31	SAT tuners
14.02.09	Terahertz technology	14.04.32	SDR
14.02.10	WLAN	14.04.33	Smart cities
14.02.11	WPAN	14.04.34	Games
14.02.12	Zigbee	14.04.35	Spread-spectrum transmitters/ receivers
14.02.13	Other standards	14.04.36	SRD
14.03	Printed, flexible antennas	14.04.37	Tactile internet
14.04	Wireless applications	14.04.38	TV receiver subsystems
14.04.01	Alarm and security technology	14.04.39	TV tuners
14.04.02	Antennas	14.04.40	URLLC
14.04.03	Smart lighting	14.04.41	Wireless IoT
14.04.04	eMMB	14.04.42	WSAN
14.04.05	Wireless development kits	14.04.43	Other applications
14.04.06	Network design and development tools	14.05	Research, development and other services
14.04.07	Remote control	14.05.01	Content providers
14.04.08	Wireless measurement technology	14.05.02	Design service
14.04.09	Wireless transceiver ICs	14.05.03	Wireless network designer
14.04.10	Wireless sensors	14.05.04	Network and platform operator
14.04.11	Wireless automation	14.05.05	Testing and certification laboratory
14.04.12	Smart home/ smart buildings	14.05.06	Service providers
14.04.13	Healthcare and medical	14.05.07	Other business areas

Product Index

Range of exhibits according to product groups

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Services

15.01

Information supplier

- 15.01.01 Parts databases, also with online access
- 15.01.02 Product information systems
- 15.01.03 Technical books
- 15.01.04 Technical publications
- 15.01.05 Publications, miscellaneous
- 15.01.06 Standards

15.02

Institutions / organizations

- 15.02.01 Research organizations / institutes
- 15.02.02 Education and training
- 15.02.03 Trade associations, organizations
- 15.02.04 Industrial clusters

15.03

Consulting, start-ups and technology transfer

- 15.03.01 Economic development agencies
- 15.03.02 Start-up forum
- 15.03.03 Consulting
- 15.03.04 Technology transfer
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15.04

Electronics development / approval / testing / certification

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- 15.04.02 FPGA design
- 15.04.03 Hardware design
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15.04.06

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- 15.04.07 EMC testing / characterization
- 15.04.08 Calibration / test equipment services
- 15.04.09 Test-program creation
- 15.04.10 Testing services, electronic components
- 15.04.11 Consulting services for electro-mechanical solutions
- 15.04.12 Environmental simulation testing
- 15.04.13 System design
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Services

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- 15.05.06 Distribution
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- 15.05.08 Quality management
- 15.05.09 Kitting
- 15.05.10 Recycling assemblies, components
- 15.05.11 Disposal, recycling
- 15.05.12 Other services

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