

Electronics²

Kontron sets new standards
Development | Prototyping | Production | Assembly

Discover the advantages – Get to know us



kontron
The Power of IoT

Electronics²

»Electronics² is more than just development, prototyping, production and assembly. More than just a company. More than just a location.«

Christoph Caselitz
VP Sales Europe & Automotive



Electronics²

Partnership that creates added value

Since 2018, Kontron has invested specifically in its own production sites, positioning itself at the forefront of the ODM/EMS market alongside its strong service brand, Electronics². Backed by the combined expertise of Kontron, KATEK, and beflex electronic, Electronics² offers a comprehensive portfolio ranging from prototype production to small and medium series to large-scale series production. This allows our customers to receive all development and manufacturing services from a single source, offering maximum flexibility and tangible added value.

Our goal is to precisely meet the unique needs of each of our customers, whether they are a medium-sized company or an international corporation. With state-of-the-art production facilities in Europe and other locations in North America, Electronics² offers an exceptional footprint. Our customers benefit from local proximity, short distances, and a resilient, globally positioned supply chain. Our focus on both regional presence and global synergies gives us a clear competitive advantage, especially in uncertain times.

Thanks to the Kontron family's extensive expertise, we are now a one-stop shop for many industries, including industrial, medical technology, energy, automotive, defense and aerospace. Electronics² delivers innovative solutions that are precisely tailored to the respective requirements of each industry. We accompany you from the initial product idea through development,

prototyping, certification, series production, and comprehensive lifecycle management with our comprehensive range of services.

At the same time, companies maintain their unique expertise and personal accessibility, supplemented by targeted cross-location collaboration to maximize efficiency and innovative strength. Our investments in new technologies, such as AI-based optical inspection, edge computing, and secure connectivity, set the standard and allow our customers to anticipate and meet future market demands.

At Electronics², we stand for equal partnerships, the highest quality, and sustainable solutions. We listen to your needs and offer flexible production and service models to ensure maximum customer satisfaction and mutual success. Find out how Electronics² can support your company as a strong partner in the ODM/EMS market today and in the future.

Christoph Caselitz
VP Sales Europe & Automotive



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Electronics²

– Creating synergies for your projects

By combining our strengths and acting as one, we create significant value for our customers. We leverage synergies, develop innovative solutions faster and produce volume products more cost-effectively.





Electronics² – A strong network for development, production and innovative solutions

- › Hardware development of electronic components and devices
- › Software development for automation, communication and visualization
- › Mechanical design with state-of-the-art development tools
- › Product industrialization from prototype to series production
- › Highest quality manufacturing services
- › Stringent quality and functional testing
- › Final assembly of complex assemblies and devices



IoT/Industry 4.0



Mechanical Engineering



Medical Technology



Building Services Technology



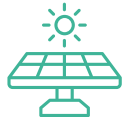
Automotive



Aerospace



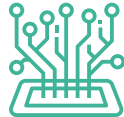
Telecommunication



Environmental Technology



Office Technology



Electronics



Laboratory Technology



Home Appliance Technology



Consumer Electronics



Defense



Space



Railroad

CERTIFICATE



ISO 9001:2015

Certificates and mandatory norms

We maintain the highest quality standards through consistent quality management and extensive certifications.

Quality is our calling card, and we operate on the basis of a well-internalized, continually audited quality management system. Our **ISO 9001:2015 Certification** demonstrates our commitment to transparent business operation and thoroughly documented processes across all business segments. We pledge to live up to these values, continually review and develop them, and comply with statutory and administrative obligations at all times.

By virtue of our commitment to the environmental management norm **DIN EN ISO 14001**, we assume responsibility for ecological conservation. We define targets for sustainable and resource-saving projects and processes.

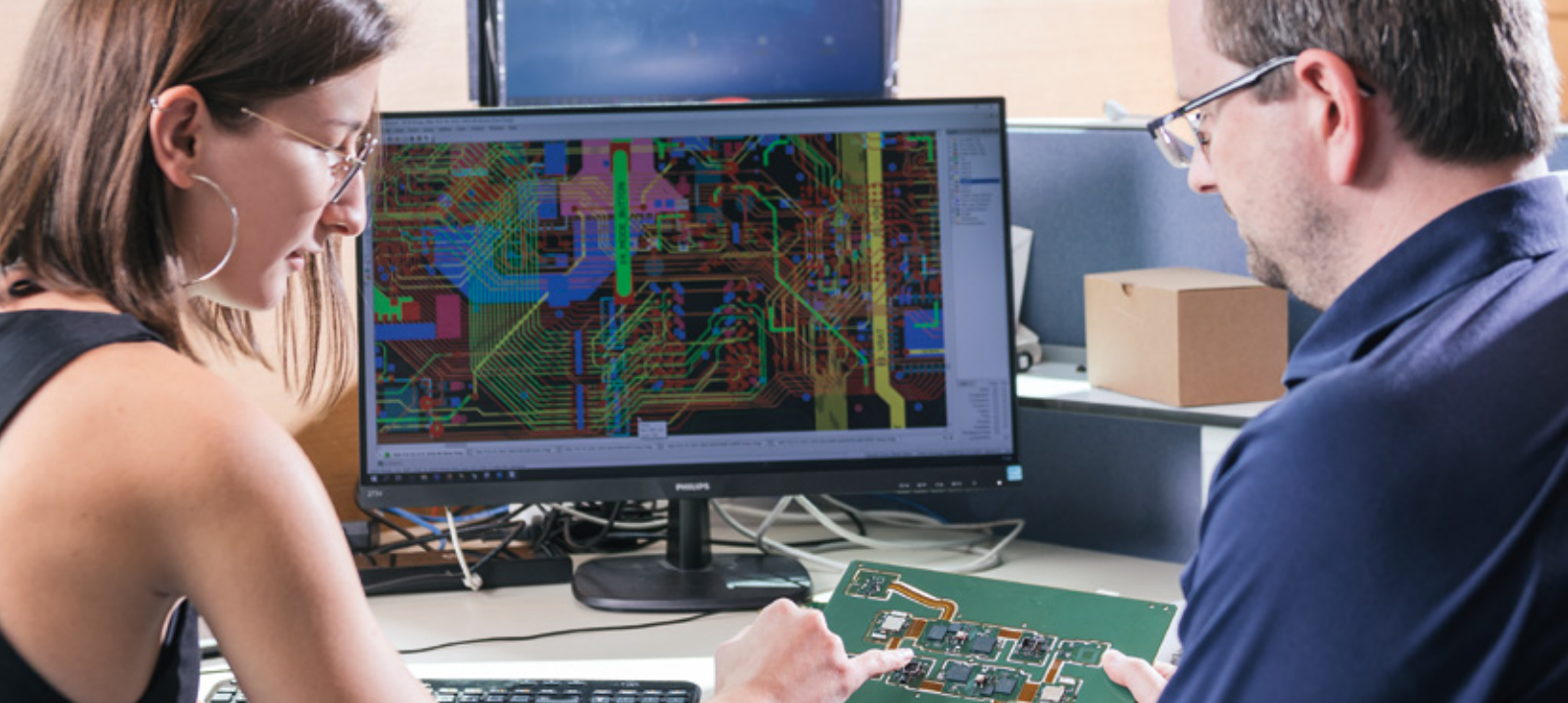
EN ISO 13485 relates to quality management with respect to development and production of custom components and products for the medical technology sector. Only products certified under ISO 13485 may be marketed in the EU.

IATF 16949, a globally recognized standard for quality management systems in the automotive industry, expands our certification portfolio. It covers all aspects of quality management, including product development, manufacturing and customer service.

All facilities are ISO 9001 certified

- **ISO 13485, ATEX/IECEX**
beflex electronic GmbH, Germany
- **ISO 14001, ISO 13485, UL, Apple MFI**
Kontron Electronics GmbH, Germany, Hungary
- **ISO 13485, ATEX-DIRECTIVE 2014/34/EU, UL, Apple MFI**
Kontron Austria GmbH, Austria
- **ISO 14001, ISO/IEC 27001**
Kontron d.o.o., Slovenia
- **ISO 13485, ISO 14001**
Kontron Europe GmbH, Germany
- **Avionics Maintenance and Repair Organisation, Augsburg Reference: DE.145.0092**
Kontron Europe GmbH, Augsburg, Germany
- **ISO 14001, IATF 16949, ISO 13485, ISO 50001, ISO 45001**
KATEK GmbH, Germany, Hungary and Czech Republic
- **ISO 14001, IATF 16949, ISO 50001**
KATEK Düsseldorf GmbH, Germany
- **ISO 14001, IATF 16949, ISO 50001**
Kontron Solar GmbH, Germany, Bulgaria
- **ISO 14001, IATF 16949, ISO 50001, ISO/IEC 27001**
Kontron Leipzig GmbH, Germany
- **ISO 13485, AS9100D, ITAR Registered**
Nextek, Inc., USA
- **ISO 13485, ISO 14001**
Kontron Canada Systems Inc., Canada





Product development

We make your ideas reality

Our many years of development experience and our technology expertise on state-of-the-art components and procedures guarantee your success. Based on your product specs, we develop and optimize your product and bring it to series maturity.

We are there to support you when you need construction advice, help with generating CAD layouts or defining specifications for components and design. In addition to a wide array of testing methodologies, we develop and manufacture test equipment for electronic validation of your components. Our EMC lab ensures full compliance with the relevant guidelines and regulations throughout the development process.

Our focus lies on these key industry sectors: Mechanical engineering, automation, transport, home appliance technology, building services engineering, environmental engineering, electric mobility, gateways, IoT devices and medical technology.

Hardware

- › Product specification
- › Circuit design
- › Layout design
- › Commissioning

Software

- › Real-time software
- › Linux BSPs
- › Applications programming
- › Web technology

Mechanics

- › Industrial design
- › 2D/3D construction
- › Materials
- › Tool procurement

Product industrialization

- › Prototype construction
- › EMC lab
- › Declaration of conformity
- › Construction of test equipment



Elektronic Prototyping

The direct route to a market-ready solution

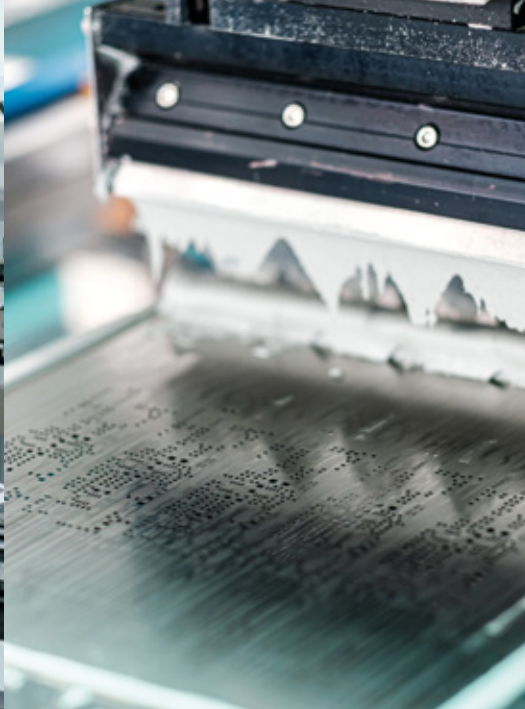
Prototyping is a key component of developing innovative electronics. It allows new ideas and concepts to be tested and refined under real-world conditions at an early stage. This approach reduces development time and costs while ensuring the quality of the final product from the outset.

Take advantage of our comprehensive services to shorten development times and minimize project risks. Bring your products to market faster and more securely.

Our service portfolio

- › Prototyping & Rapid Prototyping
- › Layout design
- › Obsolescence management
- › New product introduction
- › Inline test procedures
- › Test equipment construction and development
- › Production network





Electronics manufacturing and final assembly

Quality and precision at every stage of production

As an experienced provider of electronics services, we deliver maximum competence in a wide range of manufacturing procedures. We offer a broad scope of services for your entire component assembly, from circuit board mounting to various soldering processes, application of protective coatings and final assembly.

We are pleased to support you with our technology expertise, develop ideas and solutions for your prototypes and assist you in bringing your product to series maturity. We are the trusted partner at your side.

Assembly technologies

- › SMT technologies
- › THT assembly

Soldering processes

- › Reflow soldering
- › Wave soldering
- › Selective soldering

Surface protection

- › Coating
- › Nano coating
- › Potting

Final assembly

- › Electromechanical assemblies
- › System integration
- › Box build





Small-series production | 0 – 500 assemblies

Using modern technology and our experience, we manufacture small batch sizes efficiently and with precision, ideal for innovative projects, pre-series and custom-made products.

- › **Maximum flexibility:** Product adjustments can be made at short notice
- › **Fast market entry:** Rapid implementation and series production launch
- › **Lower risk:** Low capital commitment, quantity- based procurement
- › **Cost-effective implementation:** Customized solutions for small batch sizes

Medium-volume production | 500 – 100.000 assemblies

For medium-volume production, we combine efficiency with a high degree of flexibility, which is ideal if you are looking for the right production method between small and large series.

- › **Optimal cost-benefit ratio:** Attractive cost structure thanks to scaled processes
- › **Reliable quality:** Proven processes and continuous quality control
- › **Agile production management:** Rapid response to changing market demand
- › **Global purchasing network:** Security of supply and competitive prices

Large-scale production | Over 100.000 assemblies

Our automated production lines and strict quality standards ensure cost-effectiveness and reliability, guaranteeing you sustained market success.

- › **Automated production lines:** Maximize cost efficiency with state-of-the-art process automation
- › **Integrated quality management:** Consistently high quality in every batch
- › **Optimized logistics processes:** Short lead times and reliable delivery capability
- › **Global production:** Short delivery routes thanks to locations in Europe, America, and Canada.



Testing and programming

Modern technology and maximum quality

All electronics components, modules and systems produced by Kontron are subjected to strict functional and quality testing. For us, secure recognition of potential errors is an absolute prerequisite for optimal production quality.

Thanks to our many years of experience in developing and building test equipment and based on our own custom testing infrastructure, we ensure that components are validated in strict compliance with customer specifications.



Inline inspection procedures

- › SPI solder paste inspection
- › 3D AOI automated optical inspection

End-of-line testing processes

- › ICT in-circuit test
- › FPT flying probe test
- › FKT function test
- › BST boundary scan test
- › High-voltage test
- › X-ray

Test equipment development and construction

- › Testing according to customer specification
- › Own test infrastructure
- › Test software development
- › Hard- and software development

Traceability

- › Traceability on component and process level
- › Process data monitoring and archiving

Special services

- › Prototyping
- › Cleanroom production
- › Pressfit
- › Cable assembly



Maintenance and services

We are optimally equipped

Benefit as a customer from our global supplier network and the advantages of large procurement volumes within the Kontron Group. We are ideally positioned to handle the immense range of requirements, components and production technologies that our customers bring to us.

Our service scope encompasses a wide range of tasks along the entire product lifecycle. Each and every day, we do our best to fulfill your expectations.

»Our SCM and global sourcing teams connect with our suppliers in the closest possible way. Our customer focus and clearly defined delivery channels guarantee efficient supply in normal times but are essential in times of shortage and crisis.«



Thomas Ebner
CPO

Material management

- › Kontron global sourcing, worldwide demand consolidation and direct price negotiations with manufacturers
- › Direct support of all leading semiconductor manufacturers
- › Global network of suppliers
- › On-site staff in the most important procurement markets

Product lifecycle management

- › PCN process, EOL monitoring, sourcing, and stocking of discontinued parts
- › Search for and testing of alternative components
- › Connection to silicon experts
- › Long-term storage of components with nitrogen

Logistic concepts

- › Consignment stock for a flexible and needs-based supply
- › Kanban
- › Rolling forecast
- › Security stocks

Repairs service

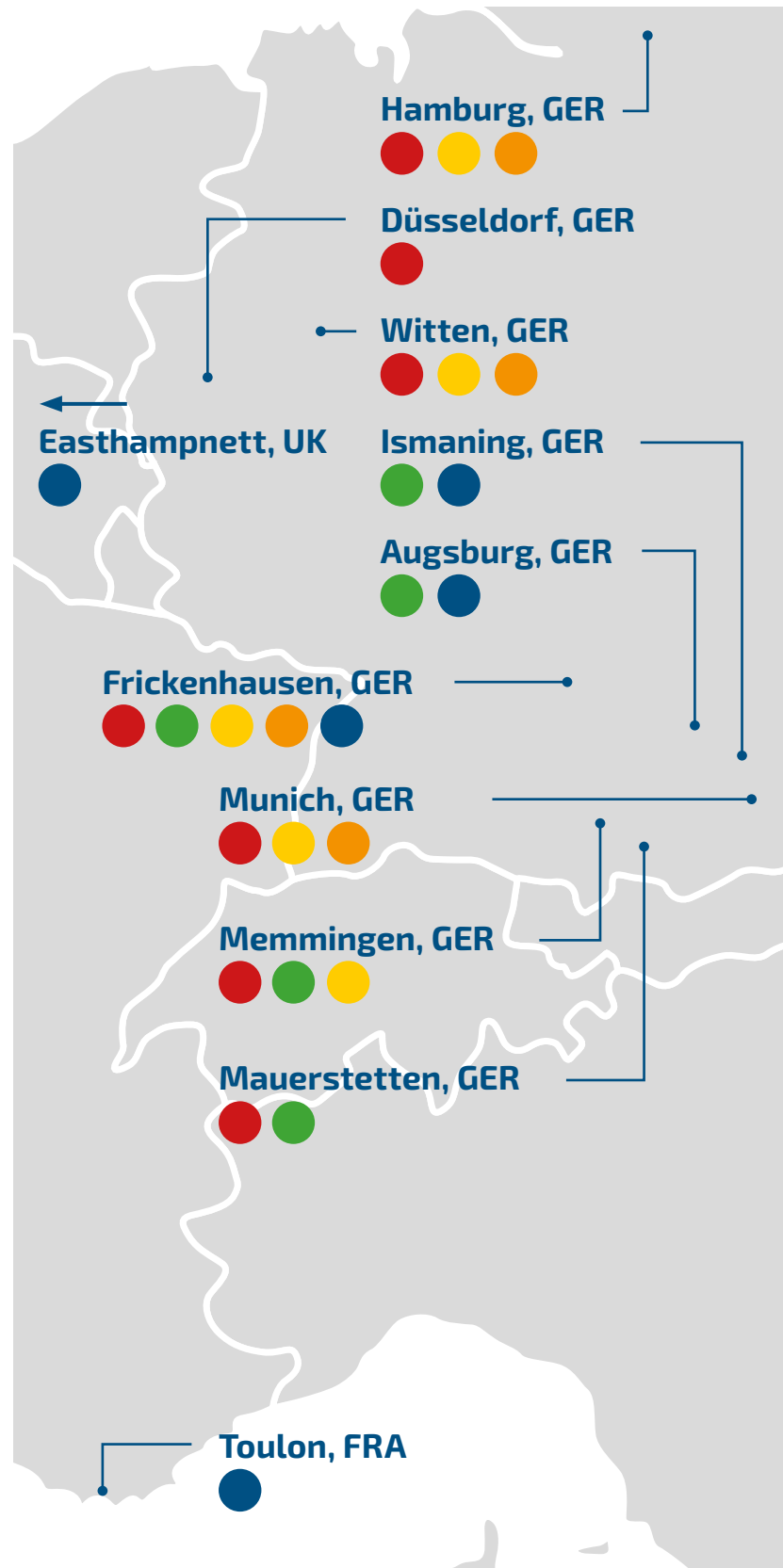
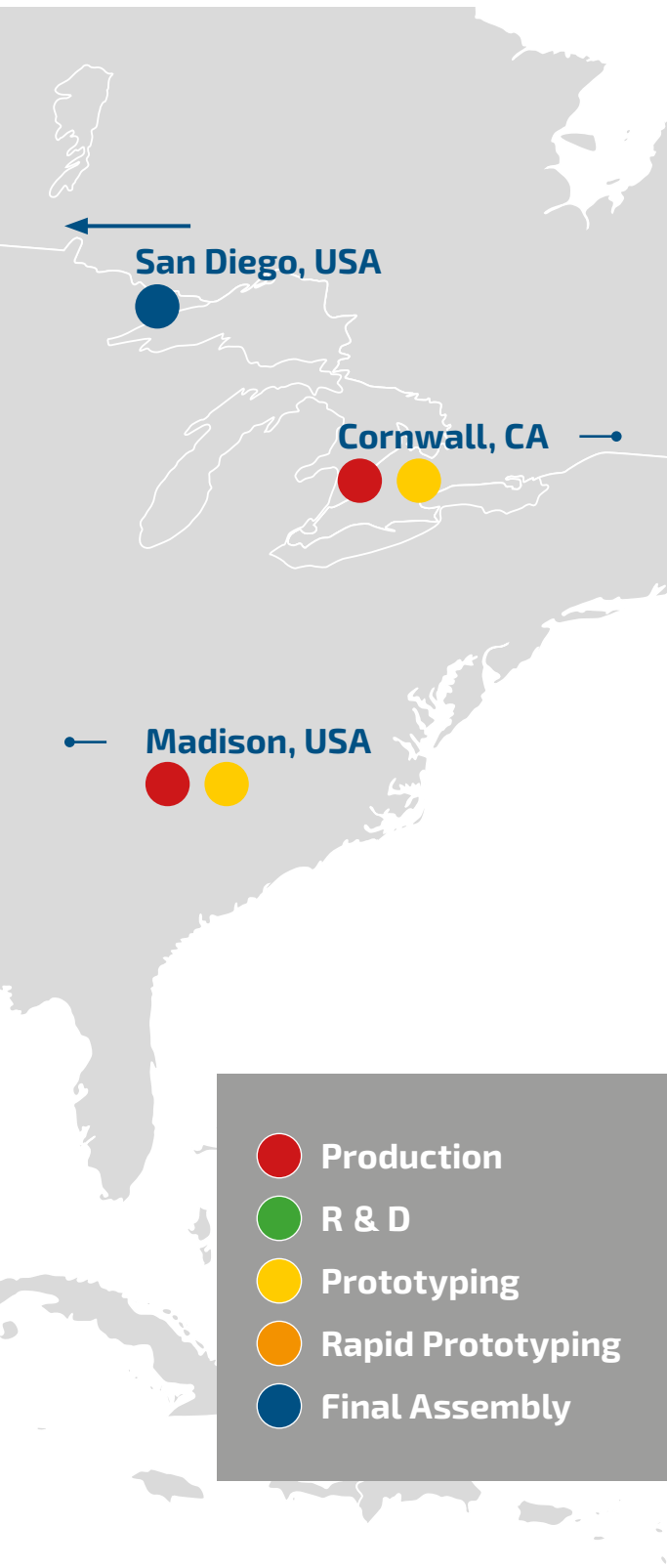
- › Repair in cases of warranty and services
- › Technical support

Electronics²
– Development, Prototyping,
Production, Assembly

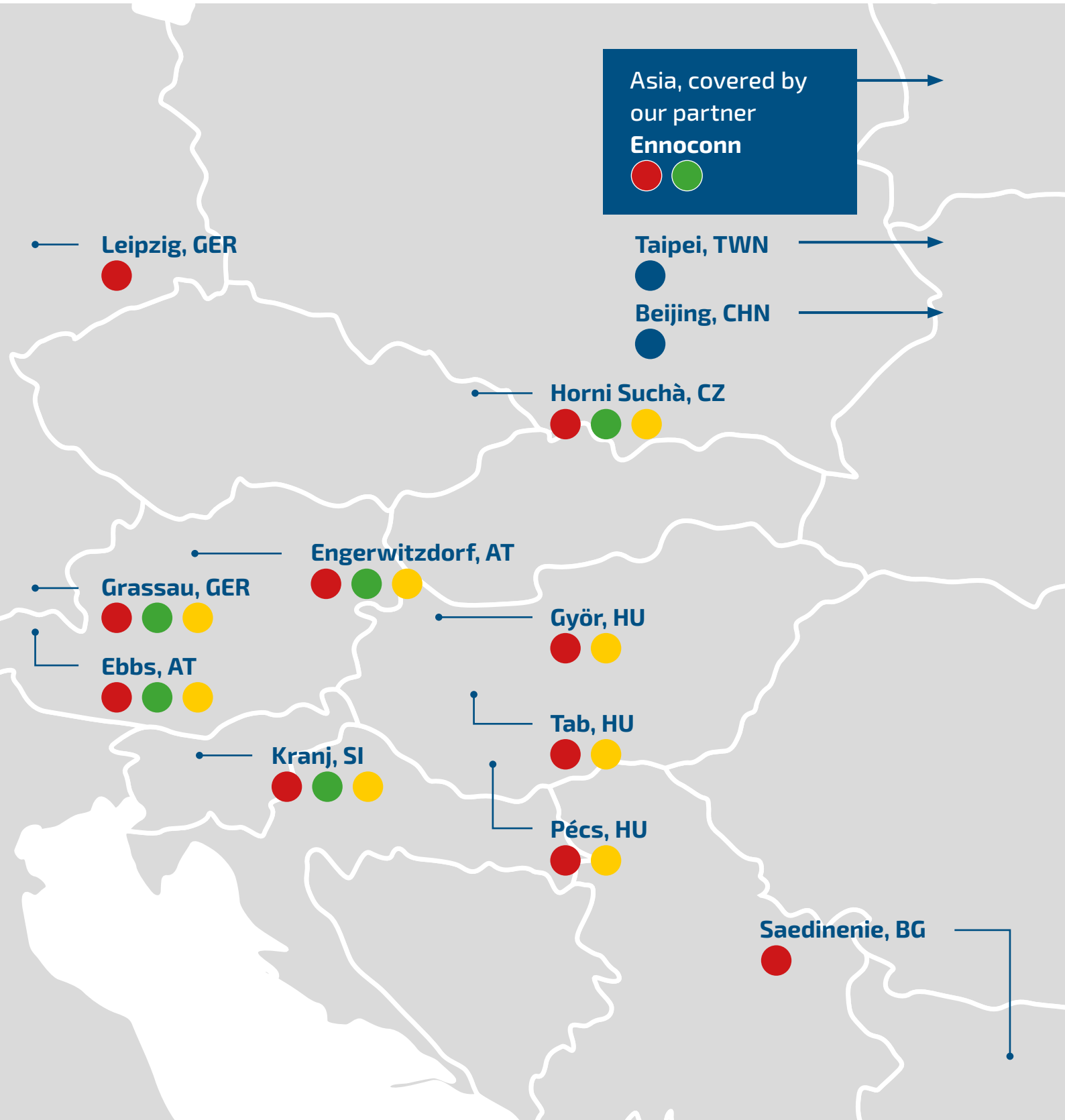
	beflex electronic GmbH, Germany	Kontron Europe GmbH, Germany	Kontron Electronics GmbH, Germany, Hungary		KATEK GmbH, Germany, Hungary, Czech Republic	Kontron eSystems GmbH, Germany, Bulgaria	Kontron Automotive GmbH, Germany	Kontron Austria GmbH, Austria	Kontron d.o.o., Slovenia	Nextek Inc., USA	Kontron Canada Systems Inc.	
Development services												
Hardware		✓	✓		✓	✓		✓	✓		✓	
Layout	✓	✓	✓		✓	✓		✓	✓		✓	
Software		✓	✓		✓	✓		✓	✓			
Mechanics		✓	✓		✓	✓		✓	✓		✓	
Development and construction of test equipment	✓	✓	✓		✓	✓	✓	✓	✓	✓		
Production services												
SMT assembly	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Number of SMT assembly lines	1	10	5		12	12	6	5	4	4	5	
Number of Prototype lines	6					1		1		3	1	
Wave soldering		✓	✓		✓	✓	✓	✓	✓	✓	✓	
Selective soldering	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Pressfit		✓	✓		✓	✓	✓	✓	✓	✓	✓	
Cable assembly						✓		✓	✓			
PCB cleaning	✓	✓	✓		✓	✓		✓	✓	✓		
Inline inspection procedures												
SPI solder paste inspection	✓	✓	✓		✓	✓	✓		✓	✓	✓	
3D AOI automated optical inspection	✓	✓	✓		✓	✓		✓	✓	✓	✓	
Testing process												
ICT in-circuit test	✓	✓	✓		✓	✓	✓	✓	✓		✓	
FBT flying probe test	✓	✓			✓	✓	✓			✓	✓	
FKT function test	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
BST boundary scan test	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
High-voltage test	✓	✓	✓		✓	✓		✓	✓		✓	
Test and quality												
Traceability	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Cleanroom	Class 8											
X-ray		✓			✓	✓		✓	✓	✓	✓	
Surface protection												
Coating		✓	✓		✓	✓	✓	✓	✓	✓	✓	
Thick-film coating		✓	✓		✓	✓		✓	✓		✓	
Nano coating					✓	✓		✓	✓			
Grounting		✓	✓		✓	✓		✓	✓	✓		
Final Assembly												
System assembly for complex devices and systems	✓	✓	✓		✓	✓		✓	✓	✓	✓	
Box building	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Typical quantities per year												
Large-scale production (> 100.000)					✓	✓	✓				✓	
Medium series (500 – 100.000)		✓	✓		✓	✓	✓	✓	✓	✓	✓	
Small series (< 500)	✓	✓	✓			✓		✓	✓	✓	✓	
Prototyping	✓	✓	✓		✓	✓		✓	✓	✓	✓	
Rapid Prototyping	✓											

Electronics²

– Development, Prototyping,
Production, Assembly



With a strong network of specialized locations, we offer comprehensive solutions from a single source. Discover where and how we can lead your projects to success.





We are your partner!

Electronics² – Your advantages at a glance

- › **Low volume/high mix to very high volume/low mix**
As a leading electronics service provider, we cover the entire spectrum – from prototypes to small and medium series through to high-volume series production.
- › **Network of electronics service providers**
With locations in Europe and America as well as partners in Asia, we are ideally positioned to meet the needs of our customers locally.
- › **Active site selection**
We will advise you on which location best meets your requirements.
- › **Internal second source**
We offer maximum supply security in the event of production downtime. Thanks to site-independent redundancy, we are able to ensure resilient production.
- › **Lifecycle analysis and management**
We use SiliconExpert forecast data to help you determine the optimum time for your new design or redesign.
- › **Product and cost analysis**
Our experts offer solution-oriented advice on how to reduce costs when selecting components and manufacturing processes in order to achieve the best result for you.
- › **Logistics concepts**
Our solutions include consignment stock, Kanban, rolling forecast and safety stock to ensure your continuous supply.
- › **Secure supply chains**
Take advantage of our global purchasing network. We avoid supply bottlenecks through forward-looking planning and strategic partnerships.
- › **Consistent quality management and comprehensive certifications**
We ensure that the highest quality standards are maintained and that your requirements are always met.
- › **One-Stop-Shop for comprehensive solutions**
Comprehensive development and manufacturing services as well as standard products, from modules to complete systems. Software from secure operating systems to complex applications. Industry-specific solutions for future markets such as solar energy, eMobility, 5G communication and transportation.

Your Powerhouse for Electronics Solutions.



Through targeted investments in our production landscape and the integration of leading specialists such as KATEK and beflex electronic, we have established Electronics². Today, as the Kontron Group, we are at the forefront of the ODM/EMS market with this strong service brand and have set the standard for quality, innovation, and reliability.

I invite you to experience Electronics² as your strong partner for achieving sustainable success today and in the future.

Hannes Niederhauser

CEO Kontron AG

»Development and manufacturing are matters of trust. That's what we stand for with our name and reputation – now and in future.«

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