

## Bluechips Microhouse

20 Years of Electronic Contract Manufacturing

# Company Overview

Founded in 1999, Bluechips is celebrating 20 years of successful operations as the Electronic Manufacturing Services (EMS) provider for industry-leading customers around the world.

From our headquarters in Northern Thailand, Bluechips provides a comprehensive full-product service for your customised electronics. Everything from the initial design of your product to the successful delivery is taken care of from the hands of one supplier with an after-sales service tailored to allow long-term cooperation between Bluechips and our customers.

Our team of more than 400 employees and our wealth of experience across industries such as automation, transportation, sensors, medical products and more makes Bluechips a reliable choice for your current production needs. Our significant investment in our people, processes and machinery means we will be a dependable partner for many years to come.



### Founded - 1999

Bluechips was founded by Mr. Thomas Zimpfer in 1999. After 20 years of operations, we remain a German-owned family business as well as a privately held company.



### Headquarters - Chiang Mai

Bluechips has been based in the North of Thailand since day one of our operations. Initially located just outside Chiang Mai in Lamhun, we made the move to our tailor-made factory in 2015.



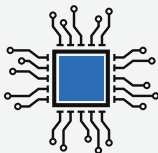
### International Offices - Three

In addition to our headquarters and production facility in Thailand, we operate with the strategic advantage of an International Purchasing Office in Hong Kong, our International Sales base in Germany and an additional sales office in France.



### Employees - 400+

The Bluechips team has steadily grown and includes members from all over the world with almost 20 nationalities represented. We could not maintain the level of our service without the experience of everyone from our engineers to our operators.



### Full-Product Electronics

The Bluechips service centres around our ability to serve our customers at every stage of product development. Having specialists at each point of your product's journey from R&D to Quality Assurance means we assure quality throughout our process.



### Multi-Industry Experience

Our growing base of customers has seen Bluechips gain experience with organisations in industries as varied as medical, solar, transportation, e-mobility on top of our core industries of automation, drives and sensors. This experience allows us to treat any type of product from a position of confidence.

# Our Locations



## Chiang Mai, Thailand

Our home in Chiang Mai, Thailand acts as our primary manufacturing location and headquarters. The building houses our management, the majority of our 400-strong team as well as more than 3000 square metres of combined production space. Everything from the design of your product to the production, packing and customer service originates in our specially-designed HQ. Only our mechanical department, powder coating and plastic injection take place off-site at our original facility under 30km away in Lamphun.



## Lörrach, Germany

Our German office acts as our international sales hub and a crucial point of communication for our customers. Our sales operations were relocated to Lörrach due to the strategic location so close to Switzerland & France.



## Hong Kong

Our International Purchasing Office in Hong Kong is crucial for ensuring that our supply chain remains as competitive and streamlined as possible. Our sourcing team in Hong Kong work consistently with our other offices to give our customers the best lead times and prices possible.



## Angers, France

Our permanent sales office in France is the latest addition to our international presence and is a big step forward for acquiring and serving our customers in the French speaking world. Our team in France corresponds with the German office to ensure further successful communication in Europe.



## The Bluechips Service

The Bluechips service centres on our ability to consistently develop long-term partnerships with our customers. That means that we are rightly expected to exhibit flexibility, reliability and quality throughout every aspect of our service.

That service incorporates every aspect of electronic production. When we talk about our start-to-finish manufacturing service, that means that we are willing to take care of the entire process for our customers and allow them to focus on their strategy, branding and direction.

The Bluechips team will work with you and communicate every stage of your product lifecycle. That means we will actively design or optimise your products and then transition your goods through sampling and into mass production.

Our post-production service is equally thorough and highlights our emphasis on customer partnership and retention. We operate under a strict quality first policy throughout the entire organisation; from the physical quality checks and tests to our multi-lingual customer service and specialised logistics teams.

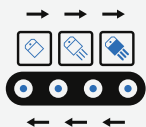






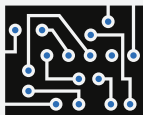
Research & Development

For many customers, our service starts with the R&D department. Having the ability to develop and improve products has often filled our customers with confidence that they can trust their electronic contract manufacturing to one supplier.



New Product Introduction

The NPI team acts as a crucial piece of our start-to-finish service. They allow us to carefully monitor the progress of all new products that come into Bluechips regardless of their current stage of development.



Mass Production

Our core service since the beginning of our operations has been our printed circuit board assembly. While we have added the entirety of the outsourcing process since, many of our customers still rely on the core capability in our production floor.



Mechanical & Cable

The importance of being able to manufacture full products has always been emphasised by our customers and over time we have accumulated comprehensive capabilities both in Chiang Mai and our previous facility in Lamphun.



Quality Assurance & Testing

Bluechips ensures that all products that leave our facility have gone through our rigorous quality assurance procedures. We have cutting-edge machinery to carry out testing as well as the ability to test according to customer requirements.



Logistics & Customer Service

To round off the Bluechips service, it is a point of emphasis within the company that our goal is to build long-term relationships with our customers. To maintain our side of our partnerships, Bluechips puts emphasis on delivery and communication to build trust with our customers.

# Markets We Serve

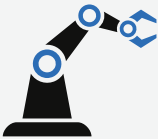
As an EMS supplier, it is important that we have the versatility to specialise in the manufacturing of products for a range of different industries. Across our 20 years of experience, we have built up a reputation for our quality products in the areas of automation, drives and the sensoric industries.

As the company developed new processes and acquired more customers, it was essential that we diversified our portfolio and became the supplier of choice for our customers regardless of their end market.

In recent years, our full-product service has meant that we have produced box builds for more than a dozen industries; both established and newly emerging.

With more and more areas of daily life becoming influenced by electronics, Bluechips remains ready to produce based on our experience or by obtaining the know-how to support you as we build a long-term cooperation.

Some examples of our experiences with certain industries and products include:



## Automation & Drives

Automation & Drives has been a key industry for Bluechips from day one. Several of our initial customers required us to build PLCs, Controller Boards and Inverters and still trust us with their products after years of developments.

With more and more automation changing the way the world works, Bluechips continues to grow in this industry as we retain our long-term clients and regularly and welcome new customers to work together.



## Transportation

Our work within the transportation industry varies from monitors on buses and in train stations to complex fleet management units controlling the flow of public transport in major cities.

Our LED and LCD displays are regularly customised based on the needs of our customers while products such as ticketing systems have been added to our portfolio more recently.



## E-Mobility

E-Mobility is a rapidly evolving market with major potential to change the daily lives of millions. As e-mobility is adopted more and more, companies with the experience of producing on-board displays, computers and power systems will be a major advantage to growing companies.

Bluechips has actively sought to specialise in this industry and our customers are seeing the benefits of our early adoption.



## Sensoric

The sensoric industry is another that Bluechips has actively participated in since our establishment in 1999.

Our consistent quality in this area has seen some customers remain with Bluechips since our first full year of operations.

Our capabilities in the area include powerful measurements in small devices with experience in making sensors for pH, air pressure and optical measurement among other applications.

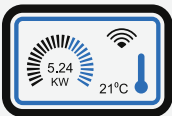


## Medical Devices

Our ISO 13485 accreditation for the production of medical devices in 2016 marked Bluechips' entry into a new market.

In a few short years Bluechips has gained valuable experience for the high standards of the medical market and applied these practices in all areas of production.

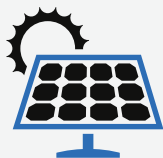
Our portfolio in the industry includes the development of medical monitors and small devices such as hearing aids.



## Smart Metering

Our transition into more varied industries has also seen Bluechips start to manufacture a number of devices for companies involved in smart metering.

Our customers in the industry have emphasised the usability of the products while remaining practical. Our experience in developing monitors in-house has allowed us to create and produce efficient designs for electronic indexing and analysis.



## Solar Energy & Power Management

Recent years have seen the emergence of a large number of companies looking to manage how they obtain and manage the energy they consume.

We have created solar devices for companies used for lighting, charging, power conversion and larger units for household management. The increase in companies looking for voltage control and power distribution has also seen large diversification in the production capabilities at Bluechips.

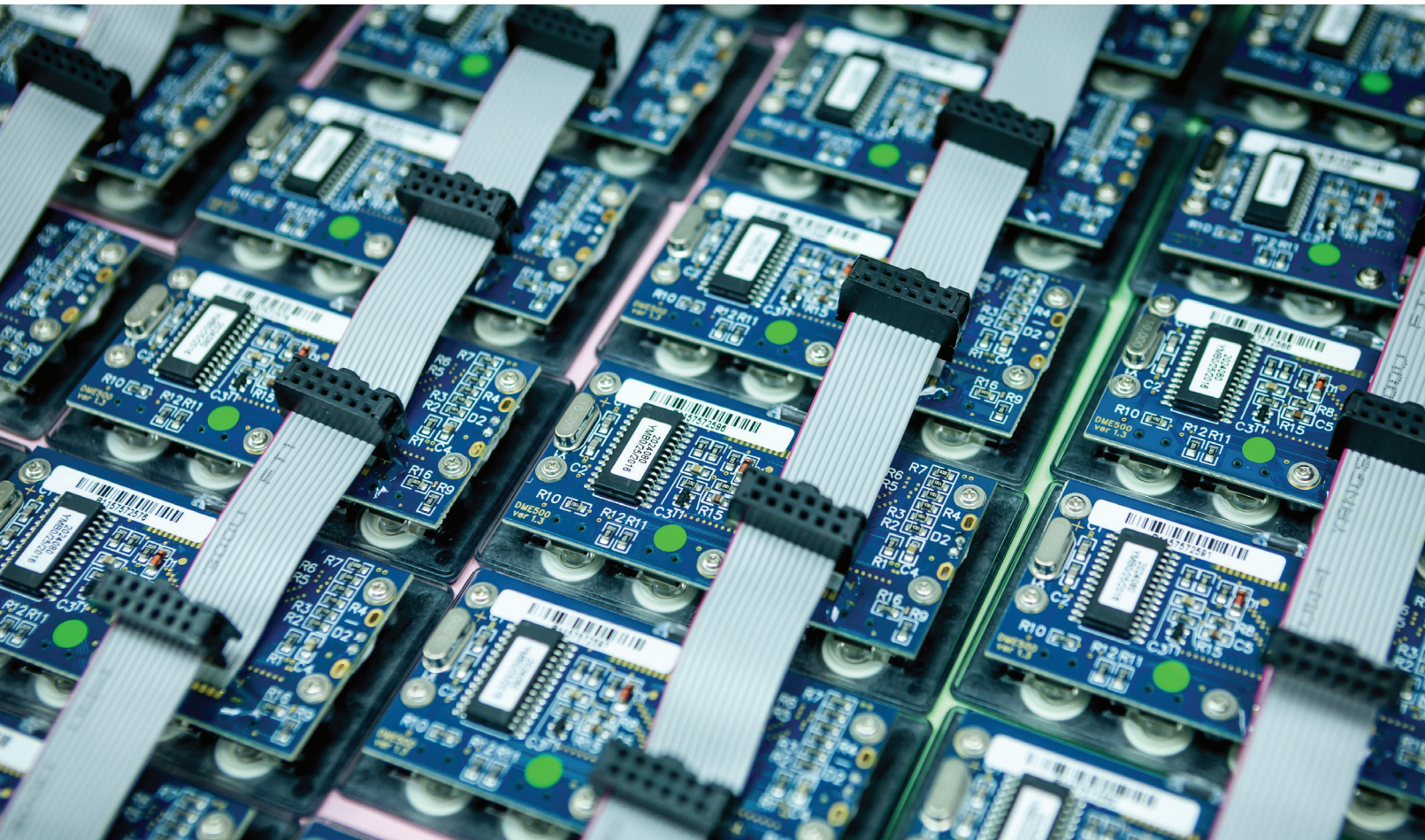


## Industrial Electronics

Industrial Electronics has been a stable and exciting industry for Bluechips to work in for many years.

The need for rugged and high-performance electronics in heavy industry has seen a lot of innovation in how we design and manufacture our products for the industry.

Our experience covers making Industrial Control Units as well as heavy duty monitors and touch terminals.





# Research & Development

In order to offer a true full-product service, we believe it is vitally important to have a forward-thinking Research & Development team on hand to assist in product design, prototyping and existing product optimisation.

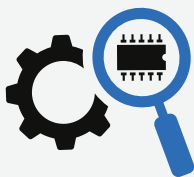
Our team of more than a dozen engineers come from across Europe and Asia and possess the capability to design software, hardware and firmware for your products. Everything about your product concept - from energy saving, size reduction, housing design and practicality can be consulted and created from our team and they can work with the rest of the Bluechips team in-house to get rapid prototypes from our production floor and mechanical workshop.

Our team in R&D also takes the opportunity to improve our know-how and widen our service offering by utilising our resources to develop in-house products. Our own innovations include products such as office control monitors and NFC nametags and have allowed our team to make use of this knowledge base to benefit multiple customer products.



## Software, Hardware & Firmware Product Design

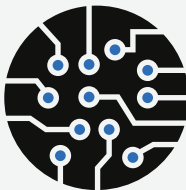
Our R&D service covers every facet of product design. From the physical circuit design and the housing to the internal software and firmware needed to run your product. We have engineers specialising in each individual area of product design who work together with our customers to meet or exceed the stated requirements for your product.



## Design New or Optimise Existing Products

Our team of engineers have experience in devising products from scratch and in finding incremental improvements to already existing products. Whether you come to us with the early stages of a product concept or with a long-established product line needing minor modifications, you will be met with an enthusiastic team looking to develop an optimal product at every opportunity.

For this reason, many of our customers have trusted us with the long-term improvement of multiple product families.



## Easy Transition into Mass Production

When products come through our Research & Development department there is the added benefit of working with one supplier for product design and manufacturing. The R&D team can work with our NPI division and our production team to make sure we can produce prototypes, samples and ease your product into mass production without the headache of going from one company to another.



## Experienced Team of International Engineers

Our established team in R&D is made up of specialists from around the world all based in our Chiang Mai facility. With hundreds of years of combined experience, our knowledge base on product development and optimisation has been building up substantially over our 20 years of operations.

The international nature of our team is also important with regards to customer communication. As another potential point of contact for technical questions and documentation, our customers always stay informed.

# New Product Introduction

The New Product Introduction team at Bluechips is the gateway for new projects to reach our mass production. In recent years, the team has grown substantially to ensure that any product that has not previously been through our production process is overseen to make sure that we can produce it effectively on a long-term basis.

Whether it is a project from R&D, an upgrade to existing goods or an established product being transferred from a previous supplier to Bluechips, our NPI engineers lead the process to make sure the yield and output meets our standards and customer expectations.



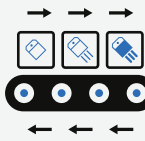
## Links Internal Teams & Processes

Our NPI team liaises with our internal teams from both a manufacturing and delivery perspective. By making sure that R&D and Production stay on schedule and that our customers get accurate account and shipping information, our NPI department is crucial for linking everything together.



## Ensures Quality from Day One

The key purpose of our NPI department is to optimise our production of your goods from the very start of your time working with us. That means we make sure capacity, technical documents and procedures are in place and prioritised as early as possible so that our partnership can hit the ground running.



## Smooth Transition for Changing Supplier

While we offer capabilities in bringing products from R&D into our production, our NPI service also covers long-established products that our customers are relocating from another supplier to Bluechips. Transitioning between suppliers is never easy and our NPI team takes great care to minimise the impact.



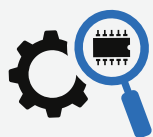
## Active Communication with Customers

Whether your products are newly developed or with a new supplier, the worst thing is not being up to date on the progress of your goods. Our NPI team take great care to keep you up to date on your product with technical details, ongoing concerns and estimated completion dates for peace of mind.



# Manufacturing

Manufacturing at Bluechips is to manufacture at a company that has worked tirelessly to create an environment where we can produce your electronics cost-effectively, on time and with no compromise on quality. Our ESD certified production space is more than 3000 square metres and is optimally designed alongside our warehouse for an efficient material flow. Our state-of-the-art machinery guarantees an efficient manufacturing output.



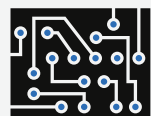
### 3000m<sup>2</sup> Production

Our combined production space of more than 3000m<sup>2</sup> was tailor-made alongside our headquarters to operate efficiently. Our space is maximised in order to improve our production capacity and pass on the benefits to our customers.



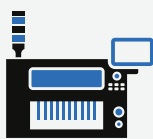
### 200+ Operators

Our production floor offers a balance between automatic processes and the ability of our trained operators. Our operators are specifically trained on each process and every product that we manufacture.



### ESD Certified Throughout

All our material handling areas have been developed specifically to avoid any potential defects through static electricity. Our robust ESD policy has seen Bluechips become one of the only certified organisations in Northern Thailand.



### New Machinery

Our production floor is constantly updated with new investments in machinery. All SMT lines are being replaced by new Fuji machinery with two lines already established. SMT towers are another example of significant recent investment.



### Multiple Processes

In keeping with our start-to-finish production philosophy, we offer full capabilities in SMT, COB, selective and vapor phase soldering, potting, bonding, screen printing, laser marking, conformal coating and more. This is in addition to our cable, mechanical and plastic offerings.



### Controlled Warehouse


Our 600m<sup>2</sup> warehouse is specially climate-controlled in order to ensure the safe storage of our components. Our inventory system allows us to automate much of the material picking process to save valuable time.





# Mechanical, Cable & Plastic

Often, a finished electronic product is much more than just the circuit board. Bluechips is constantly adding to our portfolio of capabilities by investing in our in-house cable, mechanical and plastic processes. By providing these services, we eliminate the need for our customers to work with multiple suppliers and schedules and make sure you have one quality-oriented partner working to provide you with a turnkey product to your standards and timeframe.



### Cable Manufacturing

Our cable room was brought into our current headquarters in 2016 to improve the proximity to our electronic production floor and packing & shipping area.

Our team can manufacture cables and harnesses and have a variety of stripping and crimping machinery. This is added to the electronics and housing in order to ship out a complete box build to our customers.



### Full Mechanical Workshop

Our mechanical workshop is situated at our original factory in Lamphun, less than 30km away from our headquarters and with regular deliveries between the two.

Our heavy-duty machinery is capable of laser cutting and punching, full CNC milling, grinding, bending and much more to make sure we can supply housings compliant with customer specifications without the need for additional suppliers.



### Large Investment in New Machinery

In order to make sure our offerings for mechanical, cable & plastic manufacturing match the comprehensiveness of the rest of our services, Bluechips has focused a lot of our investment on these areas.

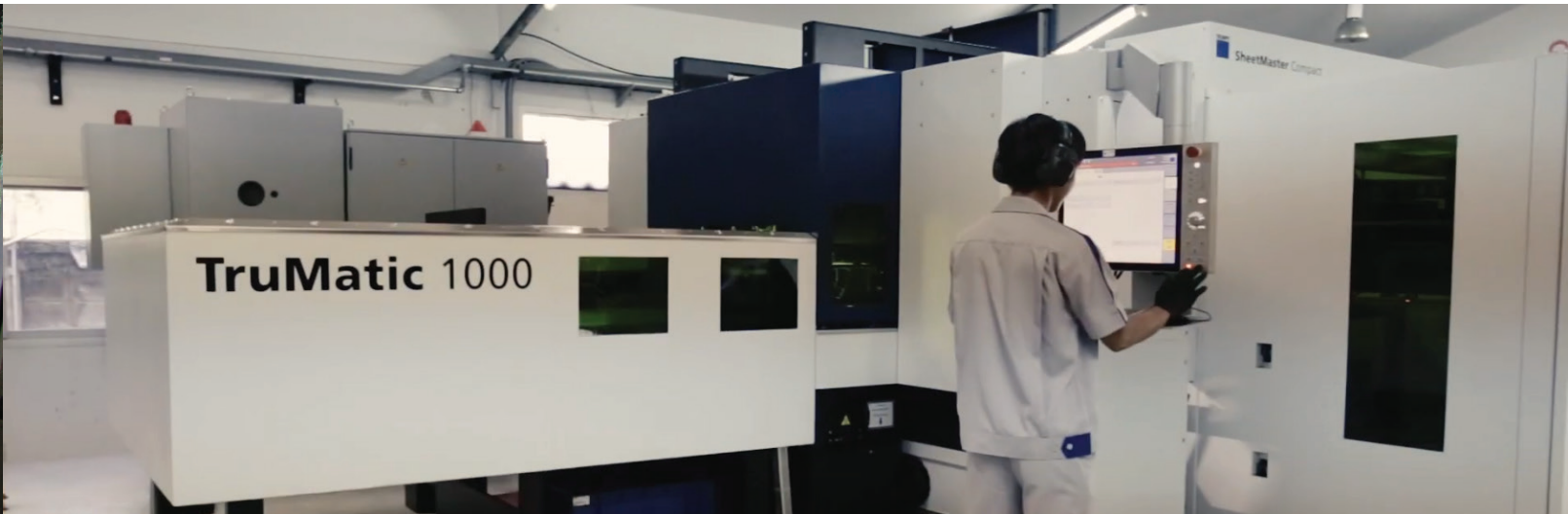
Our large Trumatic machine has added extensively to our metalwork capabilities with our customers already seeing the benefits. Our plastic injection machine is also under implementation and should positively impact many of our orders immediately.



### Powder Coating & Plastic Injection Molding

Recent investment has seen the acquisition of plastic injection molding machinery and capabilities will be ramped up during Q1 of 2020 to reassure our customers of the quality of every component in their products.

Our powder coating machinery has been up and running or several months and is another process we can keep in-house to improve our service. This further maximises our original factory space and keeps it operational together with our HQ.

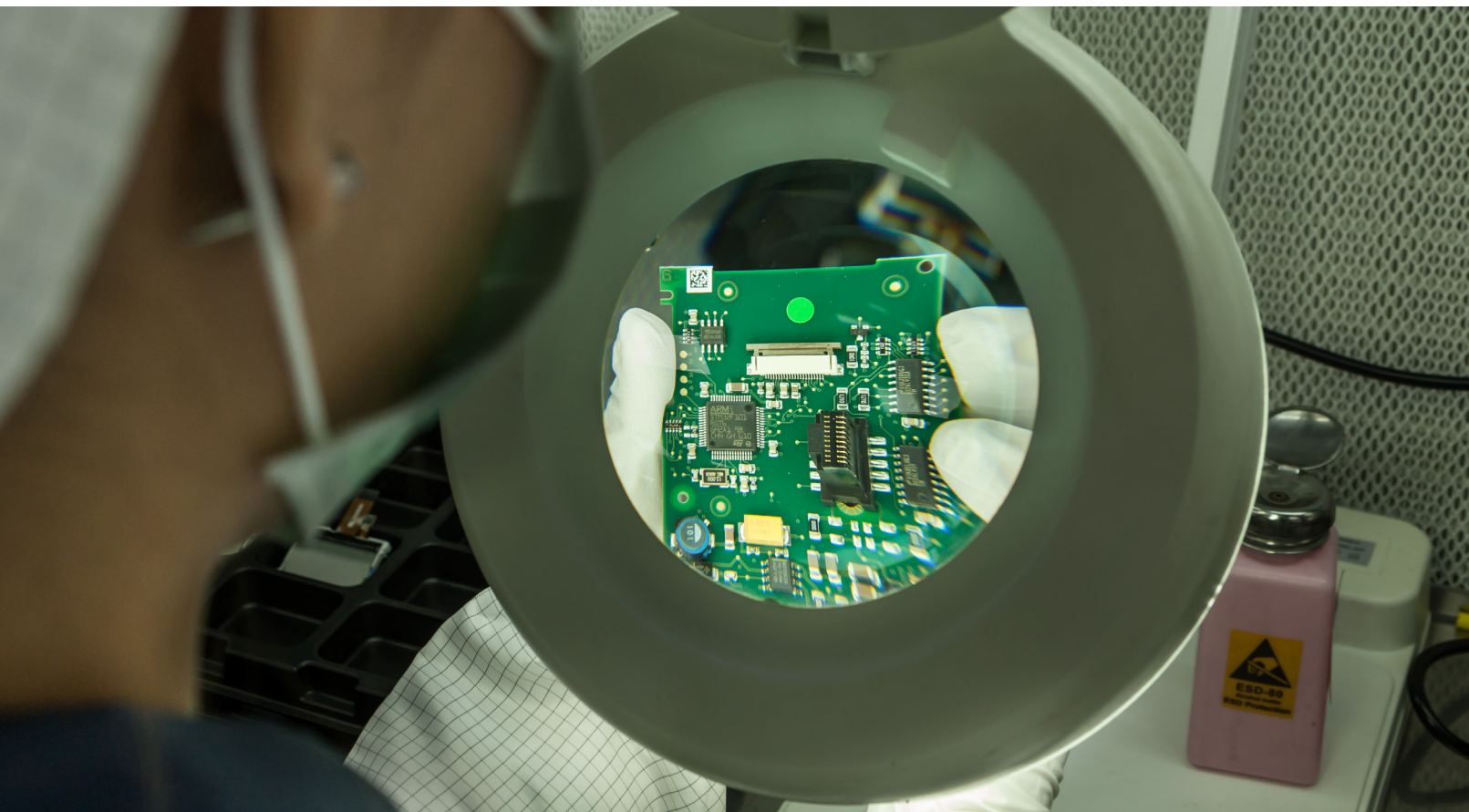


## Quality Assurance & Testing

Guaranteeing our customers consistently high quality was the founding principle of the company 20 years ago and two decades later it remains our top operational priority. The goal of the company is to operate under a quality first policy in every department without impacting our ability to keep pace with the fast-moving electronics market.

To back up our claims, Bluechips has invested continuously in our people and our machines to offer the latest testing capabilities delivered by our skilled team. Our machinery includes DAGE X-ray testing, multiple 3D AOI machines, contactless inspection of PCBs and more. Being able to obtain real-time information about potential anomalies, yield issues or problems with incoming materials means that we can work proactively to improve our work flow rather than wait for problems to occur with your products.

As such, the door at Bluechips is always open for our customers and companies interested in working together to see our operation at work.





10% of Team

Bluechips ensures that more than 10% of our team is directly involved with our Quality Assurance & Testing departments. In recent years, this has been closer to 20% to ensure that quality would not suffer as the company kept growing.



Investment in Machinery

A major part of our production floor is the presence of the latest and most powerful machinery to test our products as they progress through production. Our X-Ray machines and 3D AOI capabilities means defects are minimised at every stage.



Test to Customer Needs

Bluechips is always happy to test according to the requirements of our customer. Whether you supply the testing equipment yourself or it is developed at Bluechips, it is of top importance that we verify the functionality of your goods.



Incoming Quality Control

The quality of components that comes into Bluechips is just as important as our quality assurance initiatives on the shop floor.

Our IQC department makes sure that production does not even begin until we are satisfied with the quality of our materials.



Component Traceability

During the unavoidable instances where there are defects within our production line, we are able to trace the problem back to a specific process to minimise disruption.

Our barcode scanning system tracks the quality of our goods as they go through our production floor.



Regularly Audited

Our customers frequently visit our HQ in Thailand to verify the quality of our production processes.

As part of our aim for transparency with our customers, we welcome visits and audits to make sure you are satisfied and that we improve wherever possible.

Accreditations

ISO 9001  
Quality Management

ISO 14001  
Environmental Management

ISO 13485  
Medical Devices

SA 8000  
Social Accountability

ANSI/ESD 520.20  
Electrostatic Avoidance

IATF 16949 (scheduled for 2020)  
Automotive Quality Management



# Value-Added Services



## Customer Service

Our emphasis on building long-term partnerships means that our Customer Service department is a crucial part of our service. Customers are kept up to date regarding shipping times, internal developments and more from their designated Key Account Manager.



## Specialised Logistics

Our logistics team specialise both in importing our raw materials and the export of our finished products. In fast-moving industries, their contacts and problem solving save valuable days and dollars for our customers.



## Material Procurement

In electronics, having a good supply chain is a key factor in remaining competitive on price. Our Purchasing teams have been able to automate routine purchases to focus their efforts on getting tangible savings on our high value components.



## Real-Time Data

Teams and processes throughout the shop floor are traceable to allow us to maximise our efficiency in both production and the offices. Becoming more of a data centre for our customers continues to be a high priority.



## Planning for Efficiency

Our planning and scheduling teams work with the latest software to make sure that we plan our production lines to run as smoothly and effectively as possible. By reducing setup times and changeovers, we produce faster with no compromise on quality.



## Stable Infrastructure

The stability of working with a company that has two decades of experience in the industry allows peace of mind for startups and industry-leaders alike. Our investment in our building and machinery shows that Bluechips is intent on improving our service and not taking any business from our customers for granted.





## Going Forward



### Building on our 20 Years of Experience

We take great pride in reaching the milestone of 20 years of operations.

Most important, though, is how we can leverage our experience to improve the service we offer to our customers for another 20 years and beyond.

The coming years will see further investment in our machinery with our SMT lines continuing to upgrade to cutting-edge Fuji machines. Our new plastic capabilities will mean that even more of the EMS process will remain in-house and benefit customers on cost, quality and lead time.

Other significant investments are being made into software to ensure Bluechips is established as a valuable data centre on top of our manufacturing offerings. Planning, MES and tailored NPI software are all scheduled for implementation in the next years.

For our team, the imminent completion of our canteen and training centre will offer the potential for growth and fulfillment at Bluechips which we hope is reflected in the standard of service we offer.



## Contact Details

### Bluechips Microhouse Co., Ltd.

#### Head Office

155 Moo 5, Tambol Chae Chang  
A. San Kamphaeng, Chiang Mai,  
Thailand 50130

Tel: +66 (0) 53 371 000  
Fax: +66 (0) 53 371 099

Email: [info@bluechips.co.th](mailto:info@bluechips.co.th)

### Bluechips Microhouse GmbH

#### International Sales Office

Turmstraße 37  
79539 Lörrach  
Germany

Phone: +49 (0) 7621 589 4980  
Mobile: +49 (0) 176 227 39 224

Email: [sales@bluechips.co.th](mailto:sales@bluechips.co.th)