FRIWO

Electronic Manufacturing Services – how to find the ideal EMS provider

WHITE PAPER incl. Q&A on the selection of your manufacturing partner

EMS & Outsourcing

EMS is a method of outsourcing in which parts of the production are outsourced in order to reduce costs and focus more on new product development, marketing, and sales.

The market for Electronic Manufacturing Services (EMS) is dynamic and the demand for electronic components and outsourced manufacturing services is growing.

According to market research, the industry will grow at a compound annual growth rate of 7.5% between 2018 and 2024*.

The growing demand for electronic products for the end user and technological advances will allow manufacturers of these electronic components to benefit from the latest opportunities.

With increasing customer demands and the need to keep costs under control, more and more of these manufacturers are working with EMS providers who have qualified knowledge and experience of the industry.

Electronic Manufacturing Services – overview and applications

The core of any electronic manufacturing service offering consists of designing, manufacturing, and testing the products. An EMS provider assumes these functions, which can also include complete system assembly for original equipment manufacturers.

For example, by offering system integration – or **"box build"** services - manufacturers can use a process to combine PCB assemblies, cable harnesses, enclosure manufacturing, testing and more.

What are Electronic Manufacturing Services (EMS)?

The term Electronic Manufacturing Services (EMS) refers to a whole industry segment and also to a specific group of companies.

EMS is often used in conjunction with the more general term of contract manufacturing (CM).

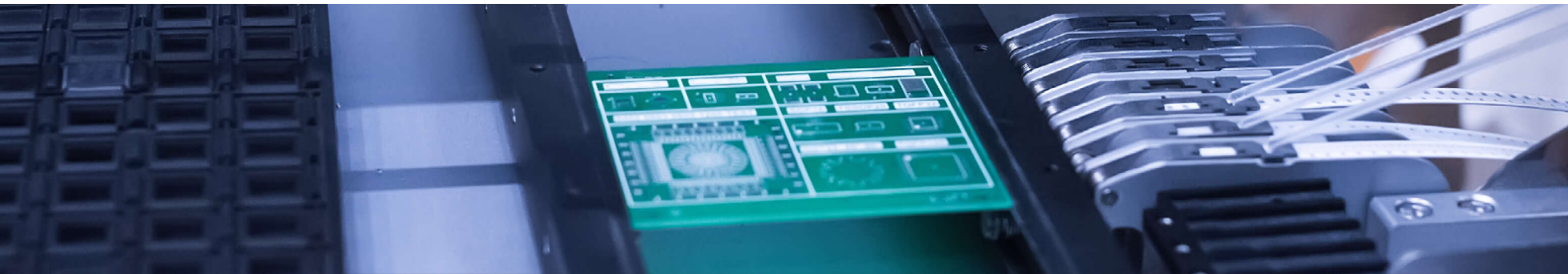
In short, EMS companies provide a wide range of value-added engineering and manufacturing outsourcing services to original equipment manufacturers (OEMs) that enable them to improve operational efficiencies and focus on core activities, such as research and development (R&D).

An experienced EMS service provider offers you end-to-end contract manufacturing for electronic assemblies and equipment. You provide your technical documents, such as parts lists and drawings, and the EMS provider does the rest, ideally delivering everything from a single source.

In this white paper you will learn more about the driving factors of EMS, applications, challenges, and what you should consider when outsourcing your product manufacturing.

"Box build," also known as system integration, is the complete assembly of a customer's end product. The process goes beyond the manufacture of printed circuit boards (PCBs) and extends to electromechanical assembly, enclosure production, the installation and routing of cables or cable harnesses, and the installation of sub-assemblies and components.

*www.marketresearchengine.com/electronics-manufacturing-services-market



Overview of the electronic manufacturing industry market

According to market research, one of the most important factors driving the market for Electronic Manufacturing Services is that companies are focusing more on their own skills and core competencies, which means they are looking for solution providers who offer expertise in their specific area or market sector. The applications in the field of electronics manufacturing are broad and varied.

Some fields of application in electronics manufacturing include:

Medicine - Medical OEMs expect their EMS provider to bring not only the best processes and highest quality standards to the table, but also industry expertise and experience.

Industry - Industrial applications use many technologies in a wide range of sectors: from scope and specification to prototyping, testing, and final assembly. These services are needed to bring a new product to the market.

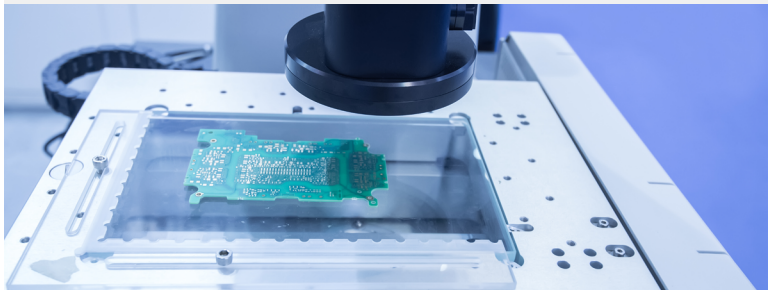
Tools – EMS providers should also focus on their end customers: Users expect a simple and user-friendly power supply for their electronic devices and tools.

Comparison of OEM & EMS providers

The terms used in electronics manufacturing are as varied as the roles they play.

OEM – Original Equipment Manufacturer
An Original Equipment Manufacturer, or OEM, manufactures products in its own factories but does not market them itself.

EMS – Electronic Manufacturing Services
EMS refers to the end-to-end contract manufacturing of electronic assemblies, devices, and systems - from development and PCB assembly to testing concepts and worldwide delivery. Large EMS providers usually operate their factories in China and other Asian countries.



Why outsource electronics manufacturing?

One of the main reasons why companies outsource their manufacturing is to reduce costs. OEMs can concentrate on research and development while at the same time cutting down on capital investment.

Another reason, however, is to gain or maintain a competitive advantage by accelerating the time to market of products.

Top 7 advantages of outsourcing your electronics manufacturing

1. Switching your fixed cost investments to a variable cost model
2. Reduction/minimization of risks
3. Fast market launch
4. Improved productivity
5. Better agility
6. Extensive experience and competence in manufacturing processes
7. Broader and more global supply chain and expansion of global network

How should you start the process of selecting an EMS provider?

How do you know that an EMS provider is right for you? **Ask questions!**

The process of selecting a manufacturing partner can be time-consuming and frustrating, so you need to know what questions to ask.

1. Does the EMS provider have the necessary expertise and experience?

Choosing a manufacturing partner is a difficult decision to make. A key factor to bear in mind is the experience of the potential provider or its credibility within the industry that you are hoping to enter, work in, or grow in. EMS providers that have been successfully in operation for many years should be able to provide testimonials from satisfied customers.

2. What kind of added value can EMS providers offer within the planning and design process?

Most EMS companies offer a certain level of support through design for manufacturing (DFM) processes. Original equipment manufacturers should be looking for a proactive EMS partner with industry-leading toolsets, clear planning and design guidelines, and experienced and amenable staff that can get your product to market faster.

3. Does the provider invest in modern technologies and equipment?

You need to be able to rely on a manufacturing partner who supports your company through the use of advanced manufacturing and testing technologies, and who shows a commitment to continuous investments.

4. Does your service provider meet the required industry standards and certifications?

Leading companies will be able to demonstrate all the necessary certification according to the latest standards and specifications in all major market sectors of their customers. Obtaining and maintaining certification requires investment, time, and adherence to strict processes and controls, especially in the medical, tools, and industrial sectors.

Your EMS provider should be certified in accordance with the following:

DIN EN ISO 9001:2000
DIN EN ISO 14001:2005
DIN EN ISO 13485:2016

5. How extensive is the product testing provided?

Product testing should be discussed in the early planning phase. Environmental and reliability tests should also be performed on certain products that must operate in particularly demanding environments, to ensure that your products can withstand the intended use.

Your EMS provider should perform the following tests:

Automatic optical inspection
In-circuit test
Functional testing
Safety testing
X-ray inspection

6. Is the communication effective and transparent?

Communication with your chosen manufacturing partner should be consistent, transparent, and collaborative. The exchange of information is crucial to the success of the partnership. It allows for open and active dialog, making it simpler and faster for business decisions to be made. EMS partners must align with your ethics and compliance requirements.

7. Does your potential provider have a process for launching new products?

Is the potential manufacturing partner experienced in launching new products on the market? Are they competent in dealing with your market sector? Your EMS partner must understand how they can support and promote the product development process. They are set to create added value for your company by checking designs, qualifying products, ramping up volume, and being cost-efficient. Having a committed NPI team on side is an added bonus.

8. Do you complement each other?

To know that your supplier speaks the same language as you and has experience in your market sector speaks volumes. The manufacturer best suited to your needs understands the requirements needed to complete the order on time, possesses the necessary certifications, and knows all legal aspects of working on the specific products or assemblies required. Look for service providers willing to provide you with references.

9. Does your EMS provider have a manufacturing location that is compatible with your short- and long-term requirements?

Whether you are looking for someone to be involved locally or provide you with support for a global market, your electronics manufacturing partner must be suited to your immediate needs and long-term strategic goals. In this way, the relationship is established both for the short and long term.

10. Does the EMS provider have a product life cycle management and/or counterfeit prevention system?

A robust product life cycle management program, which monitors the product throughout the design and development phase, is vital to success. It should also include obsolescence management, which takes into account the service life of the components used and includes a plan to replace obsolete parts.

The EMS provider you select should prevent counterfeit electronic components through the application of preventive measures, and procure all components from reliable sources. In order to be considered a serious candidate, the potential provider must offer the customer a repair service for electronic devices and spare parts after completion of manufacture.

11. How is traceability managed?

Traceability is important within the supply chain as it allows for components and products to be recalled, production to be tracked, and spare parts to be allocated. For this reason, the information required by manufacturers, suppliers, and dealers must be gathered and provided.

12. Will your potential partner strategically align the business with yours?

Senior management should be open to a forum that sets out a roadmap for a true partnership. It is critical that they become involved early in the design process and work together in every aspect of the relationship, from communication and cost reduction to forecasting.

The partner should proactively provide industry insights and product design expertise, and guide customers toward innovative solutions.

13. What's next?

You should feel confident that you have a dedicated team to take care of aftermarket needs, including service requirements and product remanufacturing. It is important that they offer comprehensive support for the product life cycle, the management of obsolescence, and the technological management.

Contact us!

As an experienced EMS provider, we offer end-to-end contract manufacturing for electronic assemblies and equipment. You provide us with your technical documentation, such as component lists and drawings, and we do the rest – supplying everything you need from a single source. We work closely with you throughout: Our experienced EMS team offers competent support, from the initial inquiry through to the finished device.

Thanks to our EMS services, you benefit from a significant synergy effect: You can concentrate on your core competencies and gain access to additional capacities, avoiding capacity bottlenecks or surpluses.

FRIWO is certified according to DIN EN ISO 9001:2008, DIN EN ISO 14001:2009, and DIN EN ISO 13485:2016. The company is equipped with state-of-the-art technology and meets the latest manufacturing standards, thereby reducing commercial risk on your part while avoiding the need to invest in new technologies.

What is high-mix low-volume manufacturing?

A production environment is considered to be high-mix low-volume if it manufactures a wide variety of products, often in limited series. There are two market advantages to this: it can be tailored to customer demand and has lower storage needs.

Customer expectations regarding more customized products are changing, shifting manufacturing to a high product mix, low volume scenario that adds more dynamics to manufacturing systems.

Manufacturing complex products in limited series can be challenging for OEMs. This is why many OEMs decide to outsource the manufacturing of high-mix low-volume production to service providers with more experience or expertise in a particular area. Outsourcing production can lead to fewer costly errors and free up internal capacities.

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What does an EMS project look like in detail? Learn more in our Use Cases:

Project „Vehicle Parts"

Ready for delivery again within the shortest possible time
Download Use Case now

Project „Energy Monitoring"

From small series to mass production
Download Use Case now