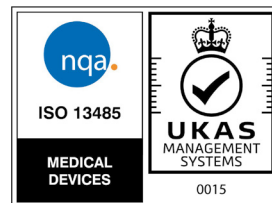




Electronic Manufacturing Solutions





**Providing best-in-class, strategic  
and sustainable partnerships  
through continuous growth,  
service, quality and reliability.**

## About Us

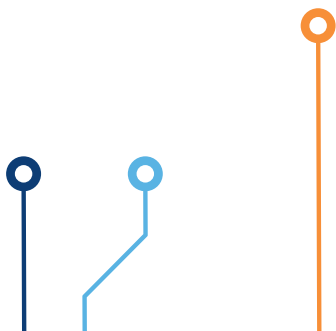
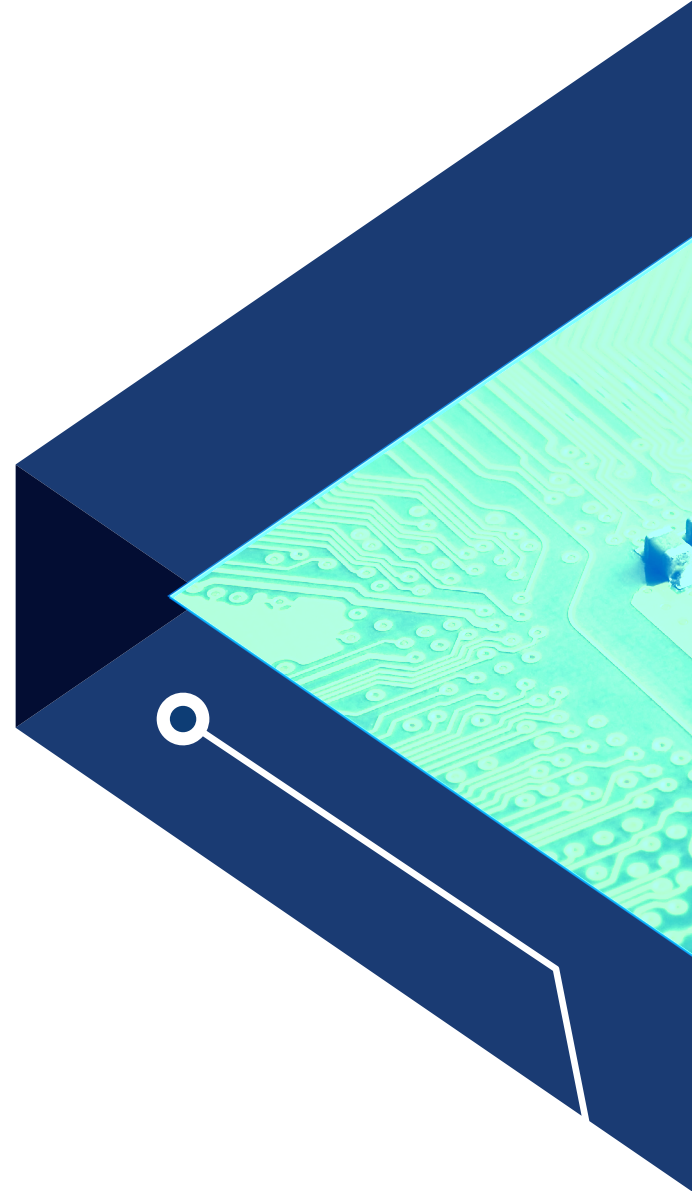
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EMS is well-established in the UK as a global supplier of electronic manufacturing services, including printed circuit board assembly (PCBA), full turnkey solutions and cable assembly. We also provide design support for new and existing products.

Based in Newbury, Berkshire, we're a specialist PCB assembly manufacturer, assisting with various requirements from prototype to large-volume assembly projects. Over the last few years, we've invested £1 million in a new line of PCBA equipment that includes the latest surface-mount technology and made further investments in selective soldering machinery in 2022.

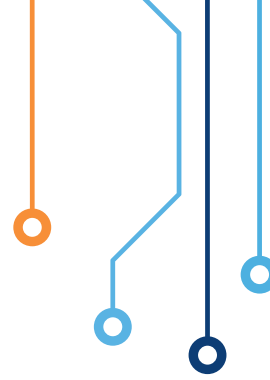
Each of our other offerings – cable assembly, box build turnkey solutions, final product testing and procurement – now perfectly complement our core PCB assembly services, further accompanied by our dedicated NPI process.

Our team sees projects through from start to finish and is dedicated to delivering a reliable, best-in-class service that exceeds customer expectations and keeps them coming back time and time again. Most of our customers come to us through word of mouth, and many have even been working with us in excess of a decade!



## Printed Circuit Board Assembly

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PCBs play a crucial role in applications across many different sectors. As a specialist PCB assembly manufacturer, we offer both ultra-fine pitch surface-mount technology (SMT) and plated through-hole technology (THT) – enabling us to provide the complete assembly solution you require. Thanks to our policy of continuous investment, all of our PCB assembly services are carried out using the latest, top-of-the-range equipment.

### **SURFACE-MOUNT ASSEMBLY**

PCB assembly using this process is often faster and cheaper, leading to cost savings for both the manufacturer and you, the customer. Our machines use class-leading surface-mount technology, which offers optically aligned and flexible placement capabilities for all SMT component types including:

- 01005 cases sized up to high-density fine-pitch devices such as QFP, BGA, uBGA, QFN, CSP and large odd-form components in excess of 100 x 50mm;
- Through-hole technology (THT) component assembly by our IPC J-STD-001 trained staff.
- Assembly to IPC-A-610 Class 2 as standard, with Class 3 available upon request.

## PCBA PROTOTYPE

We supply PCB prototypes to volume. Our PCBA prototyping services offer flexibility to suit any requirement and we will always adapt the solution offered to meet the target price, in line with the complexity and turnaround time. EMS' efficient prototyping can be combined with our quick turnaround service to deliver prototypes within 10 working days for standard designs.

## INSPECTION

EMS offers, as standard, automated optical inspection (AOI) of all SMT components and production batches. This service includes component package recognition, part number check and solder joint inspection. Inspection is carried out to IPC-A-610 Class 2 as standard, with Class 3 available on request.

## PCB CLEANING

Our Trident ZDO Aqueous Cleaner is capable of adapting from low to high-volume batch production and contains adjustable board racks to handle PCBs up to 600mm in length for automatic wash, rinse and dry cycles. The machine also features advanced statistical process control (SPC), data-logging with barcode scanner, built-in programmable cleanliness verification, testing via a resistivity meter and an automatic dosing and mixing system.

## Solutions & Services

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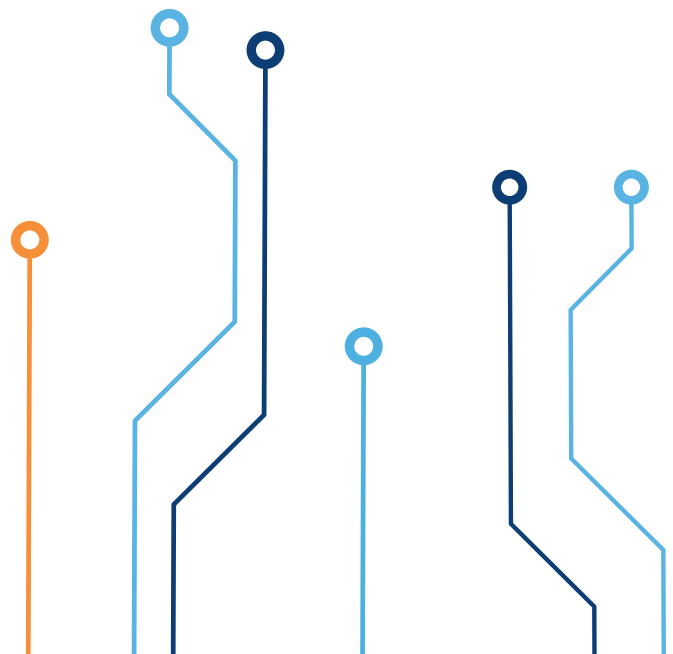
To complete our service offering, we provide an extensive range of additional electronic manufacturing solutions that complement our core PCB assembly services perfectly — all from our base in the UK.

### TURNKEY ASSEMBLY

Combining our full range of supply chain management, manufacturing and test capabilities allows EMS to provide you with fast, efficient and cost-effective turnkey solutions tailored to your production needs. Our turnkey assembly services encompass all aspects of the project including the procurement of components, manufacturing the PCB and the box build assembly. Final test solutions and packaging then complete your assembly ready for shipment. As the single point of contact, we'll manage your requirement, source parts and liaise with suppliers to deliver the end product.

### CABLE ASSEMBLY

EMS offers an additional service for cable and crimping solutions, including wire/cable cut and stripped to support our full turnkey solutions. We're also able to offer solutions for complete cable assembly, with assemblies produced to IPC/-WHMA-A-620 Class 2 as standard, with Class 3 available upon request.



## **NPI**

Our dedicated NPI service, among many things, considers design for manufacture to ensure best practise and assist with improving quality, significantly reducing any cost impact on our customers.

## **PROCUREMENT**

EMS offers a comprehensive range of purchasing solutions — from single component supply in one delivery to JIT/Kanban despatch and complete kit supply. We take care of all your electronic, mechanical or other purchasing requirements to make your experience as smooth as possible. Based on-site in Newbury, the procurement team works closely with the sales team and, at times, directly with our customers' design engineers. This process ensures full visibility across all projects and enables the team to offer expert advice and reassurance to our customers.

In light of the shortages, having a trusted supply chain is vital. Any reputable EMS provider will have a bank of trusted parts suppliers at their disposal and will be able to identify the best supplier for your project's needs. Additionally, they'll be able to demonstrate that they vet their suppliers regularly based on quality, delivery, cost and much more.

## **TEST SOLUTIONS**

We offer a range of automated test solutions for PCB assemblies, cable assembly and final product testing – a crucial component of the manufacturing process. We offer testing from simple 'go/no go' to full functional testing, creating detailed test reports as required. In addition to our on-site in-circuit test (ICT) equipment, we're also able to use customer-provided bespoke testing solutions. Working closely with our customers and a trusted ATE provider, we can develop the best test solutions for your needs, ensuring we maintain only the highest levels.

## Certifications

With staff trained to J-STD-001 to ensure correct process control, IPC standards provide customers with a clear benchmark for acceptability of electronic assemblies broken down into classes. As standard, EMS produces all assemblies to Class 2, with Class 3 available on demand to suit customer requirements.

### IPC CERTIFICATION

**IPC-A-610** Acceptability of Electronic Assemblies

**IPC J-STD-001** Requirements for Soldered Electrical and Electronic Assemblies

**IPC/WHMA-A-620** Requirements and Acceptance Cable and Wire Harness Assemblies

### ISO 13485:2016



Gained in March 2021, as a standalone QMS standard, the ISO 13485:2016 is based on the ISO 9001 and is designed for regulatory compliance for the manufacture of medical devices.

Few pieces of equipment require the level of quality of medical devices. Their accuracy is pivotal to the safety of professionals using the devices and, of course, their patients. Therefore, the ISO 13485:2016 needs to be comprehensive and focus on the importance of the design, development, production, storage, distribution, installation, servicing and final decommissioning of a medical device.

### ISO 9001:2015



ISO 9001:2015 is a globally recognised standard which helps companies develop a Quality Management System (QMS). The system supports companies to:

- Meet customer quality requirements.
- Improve operational processes.
- Reduce lead times.
- Produce high quality services and products.

On the 29th and 30th of November 2021, global certification body NQA conducted two days of re-certification of the existing ISO 9001:2015 at EMS. The audit didn't identify any nonconformities or opportunities for improvement, resulting in a new certificate being issued.



## Industry Sectors

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EMS' clients cover a wide variety of industrial sectors with a vast range of requirements – from bare boards through to SMT assembly, cable assembly and full box build with test solutions.



**Renewable Technology**



**IoT (Internet of Things)**



**Industrial**



**Marine**



**Energy Saving**



**Building Controls**



**Motorsport**



**Communications**



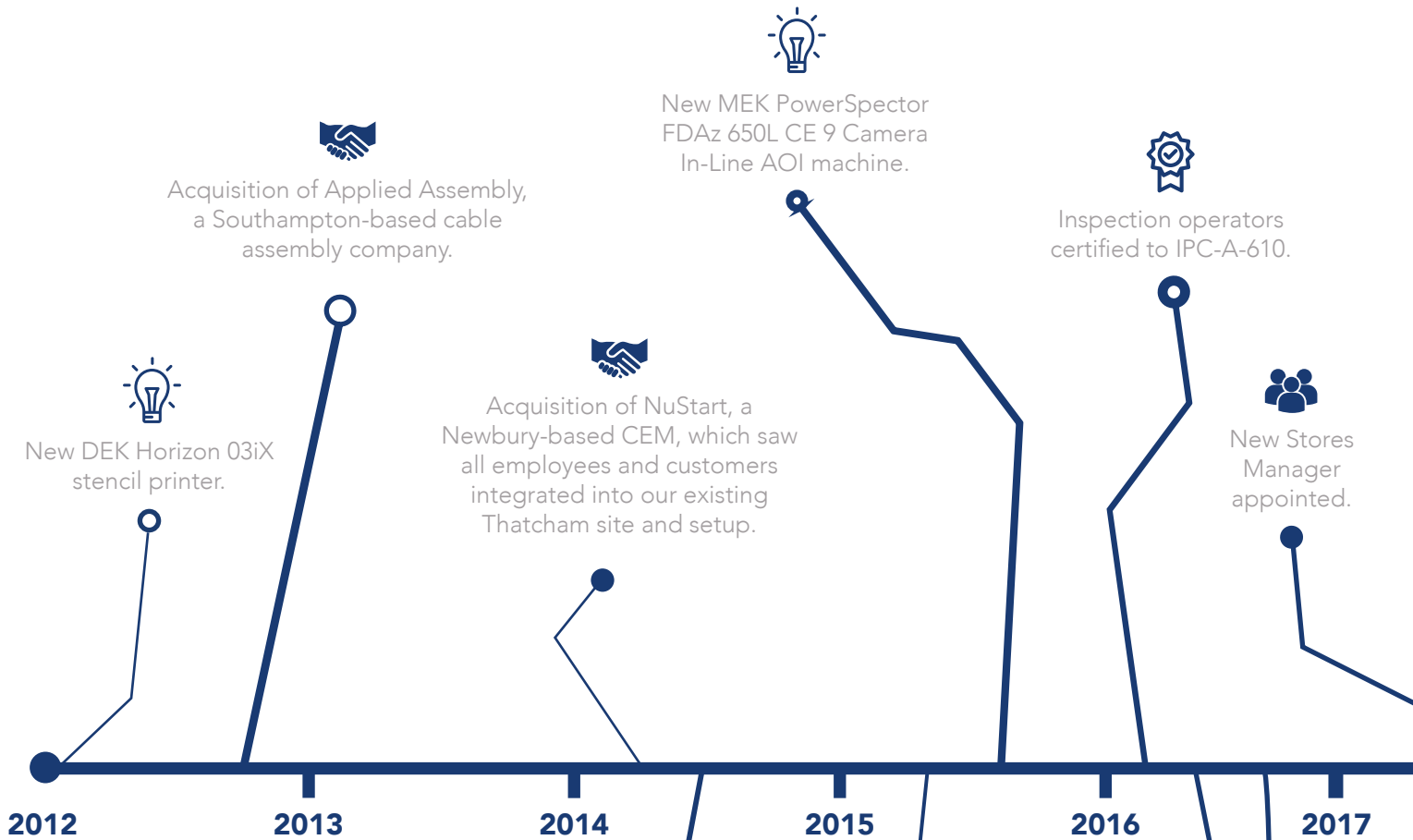
**Medical**



**Instrumentation**



# Our History



## 2011 & EARLIER

Investment in surface-mount technology (SMT) assembly equipment.

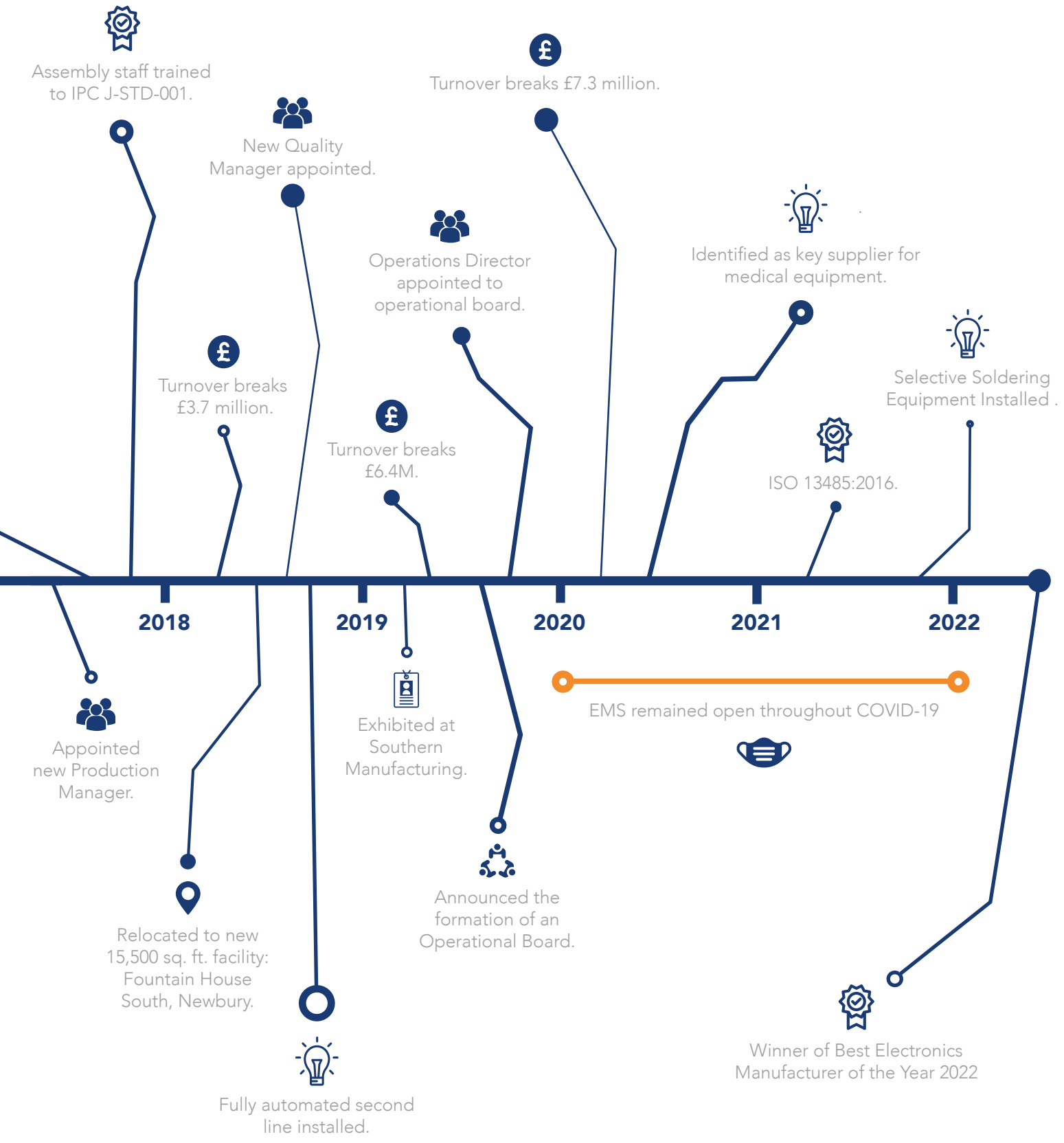
Relocation to a 5,700 sq. ft. facility in Thatcham, Berkshire.

Acquisition of LAM Electronics, a Berkshire-based CEM, which added key customer opportunities, as well as staff members who are still with EMS today.

Investment in cable assembly capabilities.

Installation of new MRP system: Factory Master.

Inspection operators certified to IPC/WHMA-A-620.



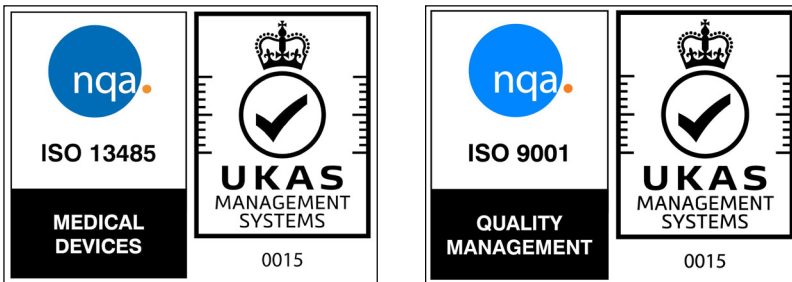
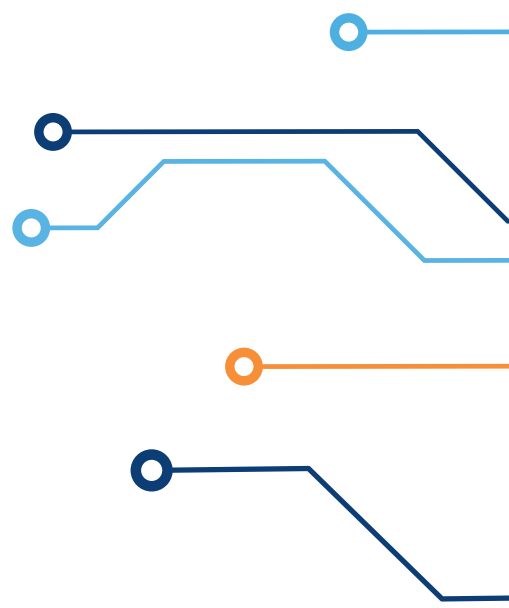
## Quality

Quality is critical to our success: it's integral to and underpins all of our processes. We manage our activities and associated resources as a series of planned processes to produce the right assembly at the right time, and with minimum wastage.

Our individual processes are structured into a documented quality management system, known as our business management system (BMS), which meets the requirements for ISO 13485:2016. We are committed to the continuous improvement of the products and services we provide, whilst also driving forward the effectiveness of our integrated BMS.

Our management team drives compliance by ensuring all statutory, regulatory, legislative and contractual requirements are in place – and we provide an internal environment in which our people are fully involved in achieving our quality objectives.

EMS always carries out automated optical inspection (AOI) of all SMT components regardless of batch size, including component package recognition, part number check and solder joint inspection. Inspection is carried out to IPC-A-610 Class 2 as standard, with Class 3 available on request — further supported by staff trained to J-STD-001.





**Providing best-in-class, strategic and sustainable partnerships through continuous growth, service, quality and reliability.**

# Surface Mount Line 1



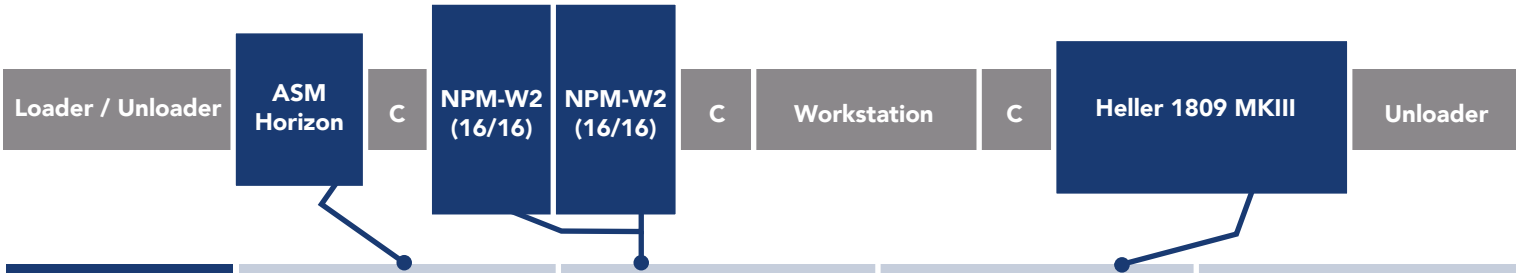
<b>Item</b>	Stencil Printer	SMT Pick & Place	Reflow Oven	PCB Handling
<b>Manufacturer</b>	ASM (formally DEK)	Panasonic	Heller	Nutek
<b>Description</b>	Horizon 03iX	CM101D x 2	1809 MkIII	Loaders & conveyors



<b>Specification</b>	<ul style="list-style-type: none"> <li>Stencil printer for 23" or 29" frames, with camera fiducial alignment.</li> <li>Fitted with HawkEye 1700 for up to 100% paste on pad inspection.</li> </ul>	<p>Optically aligned flexible placement;</p> <ul style="list-style-type: none"> <li>Down to 01005"</li> <li>Including, BGA, uBGA, QFN, CSP</li> <li>Up to 100mm x 50mm x 15mm (L x W x T)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated software with zone and profile control for optimal PCB reflow of almost any design</li> <li>18 heated zones, 9 top and 9 bottom.</li> <li>Excellent energy efficiency and short heat up times.</li> <li>High throughput capability.</li> </ul>	<ul style="list-style-type: none"> <li>Loader/loader, linking conveyors and unloader for full PCB assembly automation.</li> </ul>

<b>Maximum PCB Length</b>	<b>Part Number Capacity</b>	<b>Components Per Hour</b>
500mm	160	38,000

# Surface Mount Line 2



<b>Item</b>	Stencil Printer	SMT Pick & Place	Reflow Oven	PCB Handling
<b>Manufacturer</b>	ASM (formally DEK)	Panasonic	Heller	Nutek
<b>Description</b>	Horizon 03iX	NPM-W2 x 2	1809 MkIII	Loaders & conveyors



<b>Specification</b>	<ul style="list-style-type: none"> <li>Stencil printer for 23" or 29" frames, with camera fiducial alignment.</li> <li>Fitted with HawkEye 1700 for up to 100% paste on pad inspection.</li> </ul>	<p>Optically aligned flexible placement;</p> <ul style="list-style-type: none"> <li>Down to 01005"</li> <li>Including, BGA, uBGA, QFN, CSP</li> <li>Up to 100mm x 50mm x 15mm (L x W xT)</li> </ul>	<ul style="list-style-type: none"> <li>Integrated software with zone and profile control for optimal PCB reflow of almost any design</li> <li>18 heated zones, 9 top and 9 bottom.</li> <li>Excellent energy efficiency and short heat up times.</li> <li>High throughput capability.</li> </ul>	<ul style="list-style-type: none"> <li>Loader/loader, linking conveyors and unloader for full PCB assembly automation.</li> </ul>
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<b>Maximum PCB Length</b>	<b>Part Number Capacity</b>	<b>Components Per Hour</b>
500mm	123	110,000

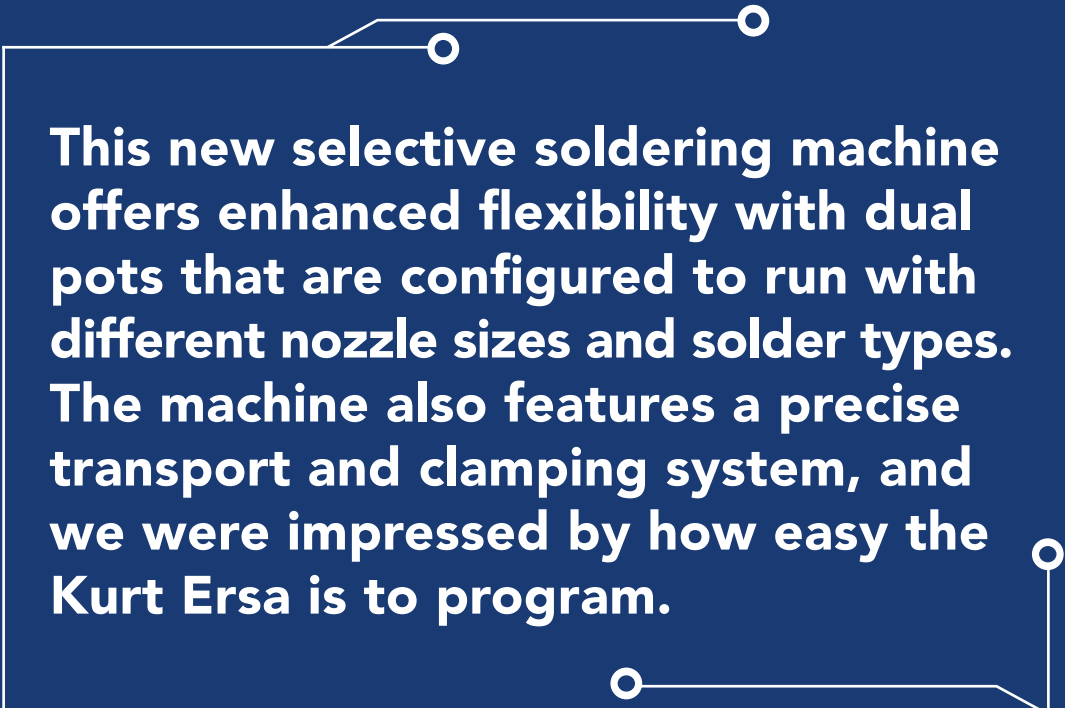
## Selective Soldering

The Kurtz Ersä Versaflo 3/35 Global Edition is a new addition to our portfolio. This soldering machine offers enhanced flexibility with dual pots that can be configured to run with different nozzle sizes and/or different solder types. During the selection process, we were impressed by how easy the Kurtz Ersä machine is to program, along with having a very precise transport and clamping system. This machine also matched our pre-heating needs perfectly for high Cu mass applications.

We also complemented the selective investment with a new nitrogen generator system from Atlas Copco. A consistent nitrogen supply is essential for selective soldering as it results in better wetting and clean joints with less flux and a lower temperature.







**This new selective soldering machine offers enhanced flexibility with dual pots that are configured to run with different nozzle sizes and solder types. The machine also features a precise transport and clamping system, and we were impressed by how easy the Kurt Ersa is to program.**

# Automated Optical Inspection (AOI)

<b>Item</b>	Automated Optical Inspection (AOI)	Automated Optical Inspection (AOI)
<b>Manufacturer</b>	MEK	MEK
<b>Description</b>	MEK PowerSpector FDAz 650L	MEK PowerSpector GTAz+GDAz 550BTL



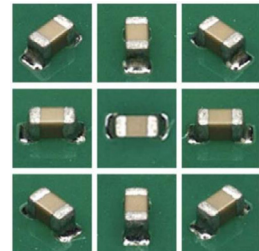
<b>Specification</b>	<ul style="list-style-type: none"> <li>• AOI with 18.75u HD Camera with telecentric optics and eight off 10u side cameras for side and edge inspection of components.</li> <li>• Omnidirectional multi angle, multi colour LED lighting</li> <li>• with the capability to test a range of criteria on all types of solder joints.</li> <li>• 1 camera with top side clearance of 30mm.</li> <li>• Maximum PCB size = 650mm x 550mm</li> </ul>	<ul style="list-style-type: none"> <li>• AOI with two 18.75u HD Camera with telecentric optics and eight off 10u side cameras for side and edge inspection of components.</li> <li>• Omnidirectional multi angle, multi colour LED lighting with the capability to test a range of criteria on all types of solder joints.</li> <li>• 2 cameras;                             <ul style="list-style-type: none"> <li>• Top side, clearance = 30mm</li> <li>• Bottom side, clearance = 60mm</li> <li>• For inspection of both sides of a PCB at the same time.</li> </ul> </li> <li>• Maximum PCB size = 550mm x 550mm</li> </ul>
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550 BTL with top & bottom cameras, for double sided inspection at the same time.



Both MEK machines are fitted with 8 sidecameras for side and edge inspection



Combined with the central camera this provides a top down view for standard inspection and 8 side views.

# Additional Equipment

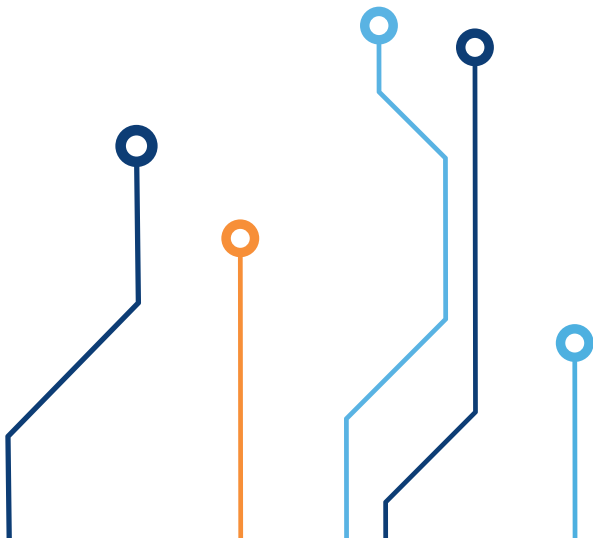
<b>Item</b>	PCB Cleaning Machine	In Circuit Test Machine
<b>Manufacturer</b>	Trident	HP / Agilent
<b>Description</b>	Trident ZDO	3070 Series 3



## Specification

- The Trident ZDO is a batch load PCB cleaning machine, which offers;
- A closed loop (Zero Discharge Wash Cycle) providing excellent environmental benefits.
- Automatic Wash, Rinse and Dry Cycles.
- Built In Programmable Cleanliness Verification Testing via a resistivity meter.
- Adjustable board racks to hand PCBs up to 600mm in length.
- Spray in air cleaning system with oscillating basket.

- In Circuit Test (ICT) machine for use with custom test jigs to provide in circuit test.
- of any Printed Circuit Board Assembly (PCBA).
- Functional testing could also be added to the process if applicable.
- Suitable high volume repeatable assemblies.



## Contact Us

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