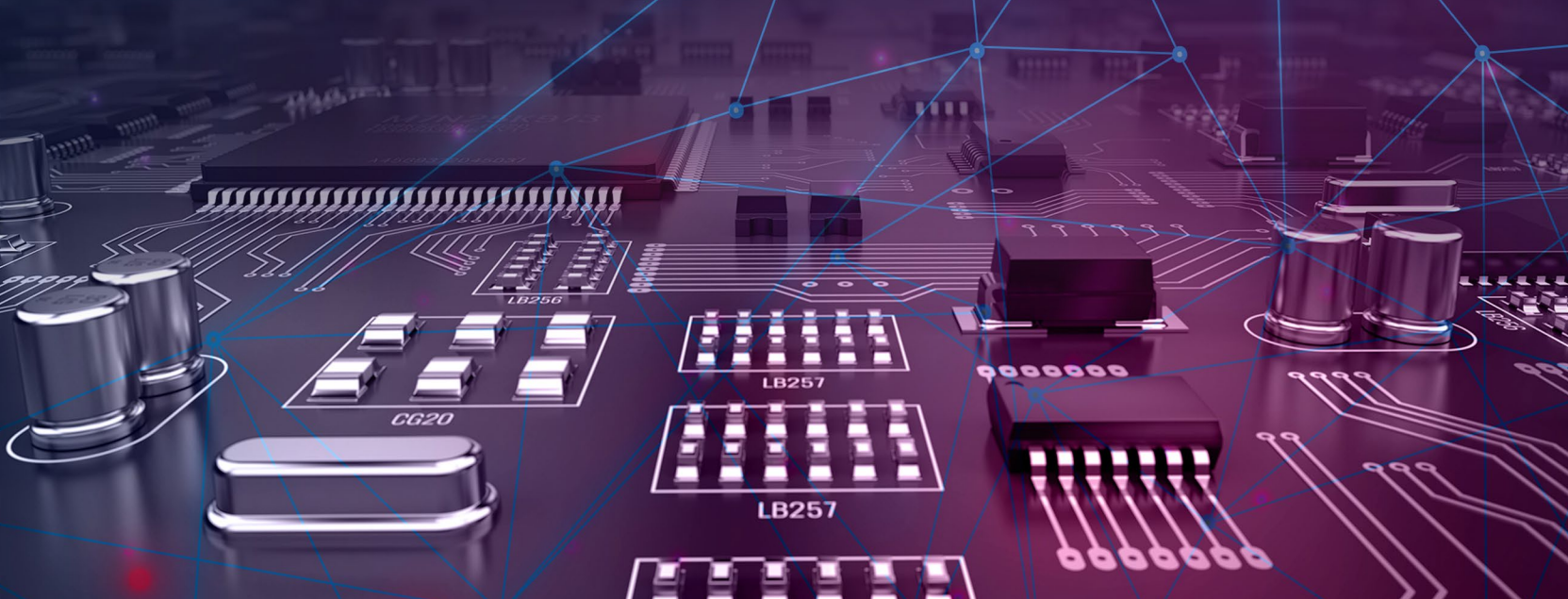




Tailor-made electronics



More than 40 years of continuous growth

Josep Forges Nogués, founder of TEF, asserted that the most valuable asset of any organization is its people. With this conviction, he established TEF Montajes y Servicios in 1982, over 40 years ago.

Our purpose is to provide subcontracting services in electronic assembly to manufacturers in need, through continuous improvement in quality, exceptional service, and a commitment to the development of our human team.

These principles have been pivotal in TEF's evolution to date. Currently, under the leadership of the **second generation** of the family, we maintain the same spirit and continue to trust in the vision laid out by our founder.



Josep Forges Nogués founds TEF Montajes as an electronics workshop in Hospitalet de Llobregat.

1982

Relocation to the historic building "La Vanguard" in Hospitalet de Llobregat, and SMT assembly begins.

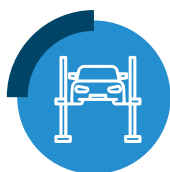
1985

Relocation to the Fonollard Nord Industrial Park (current facilities) due to the expansion of SMT lines and the need for more space.

2008

Expansion of facilities in Sant Boi de Llobregat (3,800 m²) and increase to 4 SMT lines.

2017



Automotive



Lighting



Electromechanics



Medical devices



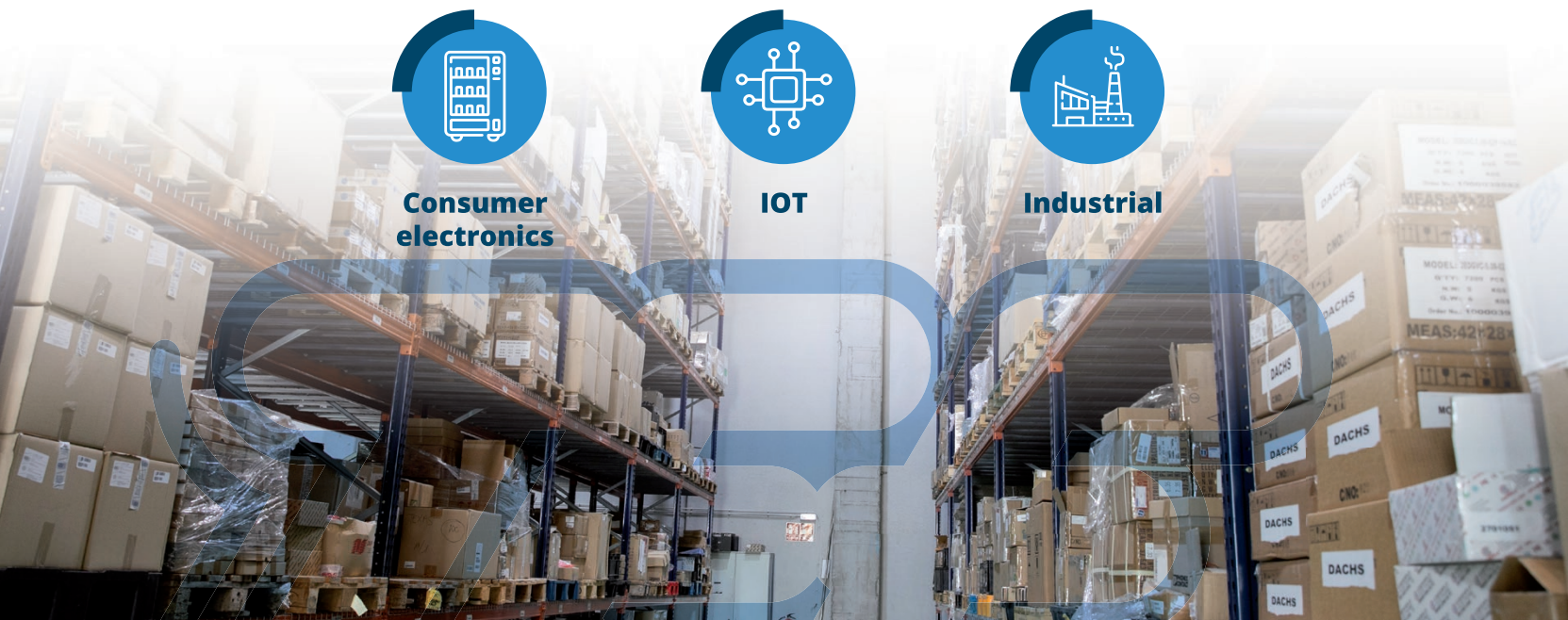
Consumer electronics



IOT



Industrial





THE TEF FAMILY

At TEF, we manufacture electronic boards tailored to the needs of our clients using the most advanced technology available. However, undoubtedly, one of the keys to our success is our human team comprised of technicians, engineers, inventors, specialists, managers, salespeople, administrative staff, and more. The TEF family is vast and diverse, made up of highly qualified professionals in each of their respective fields.

We are a young, dynamic, and innovative team with a clearly technological profile and, most importantly, with ideas and a strong desire to continue growing, both professionally and personally.



Machinery renovation and structural improvements are carried out to continue our policy of continuous improvement and provide the best service to our customers.

2022

Expansion to 5 SMD lines and improvement of the factory layout, including enhancements in THT soldering with new machinery acquisitions.

2024



Versatility, adaptability and flexibility are in our DNA.



Electronic equipment design department



Test equipment design department



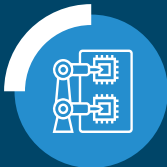
Technical office



Industrialization department



Technical department



Manufacturing



Quality department



Purchasing department



Logistics

Assembly of electronic boards SMT (Surface Mount Technology)

At TEF, we have **5 fully equipped surface-mount technology (SMT)** component assembly lines, providing us with a nominal capacity of around 140,000 components per hour. These differentiated lines offer us great versatility in manufacturing and allow us to produce any type of series, whether they are small or large volume.

EQUIPMENT Line

1

2

3

- ✓ **Screen printing:** MSTECH AT
- ✓ **SPI:** PEMTON
- ✓ **Pick and place:** HANWHA TECHWIN SM471 | HANWHA TECHWIN SM482 PLU
- ✓ **Oven reflow:** SHENZHEN KAIT HIGH-TECH CO LTD KTR-10
- ✓ Accumulator Rack (Fifo/Lifo)
- ✓ **AOI:** PEMTRON 3D AUTO OPTICAL INSPECTION EAGLE 3D-8800HSL



EQUIPMENT Line

4

5

- ✓ **Screen printing:** MSTECH AT
- ✓ **SPI:** 3D SOLDER PASTE INSPECTION SYSTEM MODELO TROI-7700EL
- ✓ **Pick and place:** HANWHA TECHWIN SM471 | HANWHA TECHWIN SM482 PLU
- ✓ **Oven reflow:** SHENZHEN KAIT HIGH-TECH CO LTD KTR-10
- ✓ Accumulator Rack (Fifo/Lifo)
- ✓ **AOI:** PEMTRON 3D AUTO OPTICAL INSPECTION EAGLE 3D-8800HSL



Boosting
production with
cutting-edge
technology.

Assembly of electronic boards THT (Through Hole Technology)



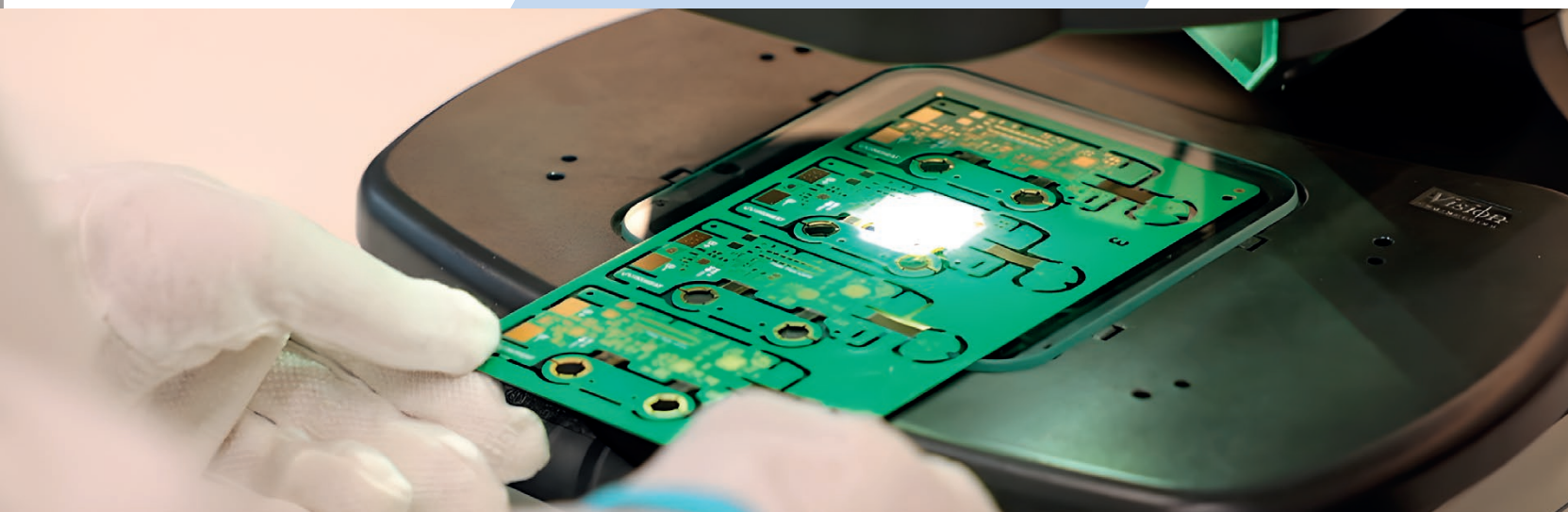
This type of assembly, known as THT or conventional assembly, is carried out manually, allowing us to assemble a wide variety of components in any quantity. Once the components are placed on the board, we can proceed with soldering using different systems.

In our production lines, we use state-of-the-art soldering machines, including the Erska Powerflow N2 and the Erska Versaflow 40/50, as well as manual methods. At TEF, and true to our principles of innovation and sustainability, we have taken steps to **reduce our environmental footprint**.

We have invested in **soldering equipment** that uses nitrogen instead of more polluting technologies, thus eliminating obsolete machinery that caused greater environmental impact.



5



Los PCBs son productos complejos que requieren conocimiento, esfuerzo y tiempo para ser fiables. Porque se utilizan en productos de los que todos dependemos en nuestra vida cotidiana y esperamos que funcionen. ¿Cómo se convierten en fiables? ¿Qué determina su fiabilidad? ¿Es el espesor del cobre o la clase IPC la que decide?

Cada día tenemos preguntas como estas. Y nos encanta. Tenemos más de 490 expertos en PCB en tres continentes que hablan 19 idiomas y están a tu servicio. **Independientemente de dónde estés o cuándo tengas una pregunta**, ¡contacta con nosotros!

¿Cuál es tu pregunta sobre PCB?

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Llámenos al +34 91 539 88 77 o envíe un correo electrónico a marketing_es@ncabgroup.com o visite www.ncabgroup.com/es para más información.



Finishes

At TEF, we are committed to the continuous improvement of the finishes of the electronic boards we assemble. We offer three types of finishes depending on the intended use of the electronic board and its technical specifications or customer requirements.

1 Varnishing

With one of the most modern lines on the market (comprised of a NORDSON ASYMTEK SL-940 and a UVLED-FLIPPER-CCAOI curing oven) selectively varnishing the previously defined circuits and their drying.

2 Silicone

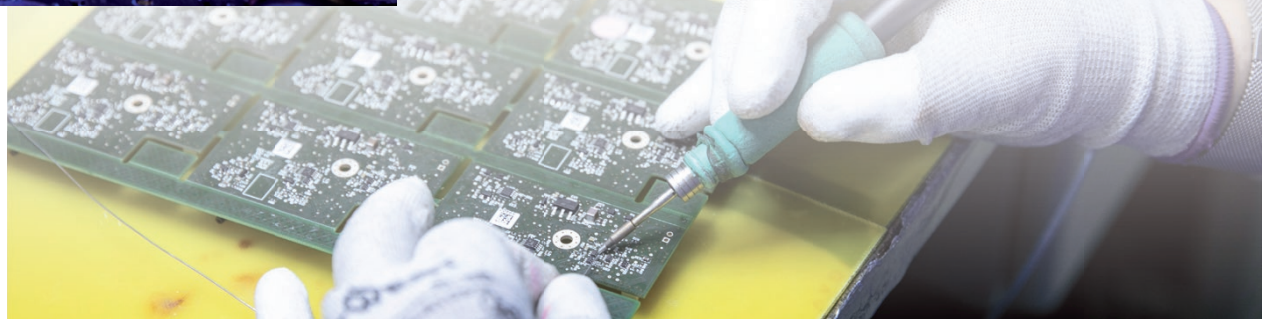
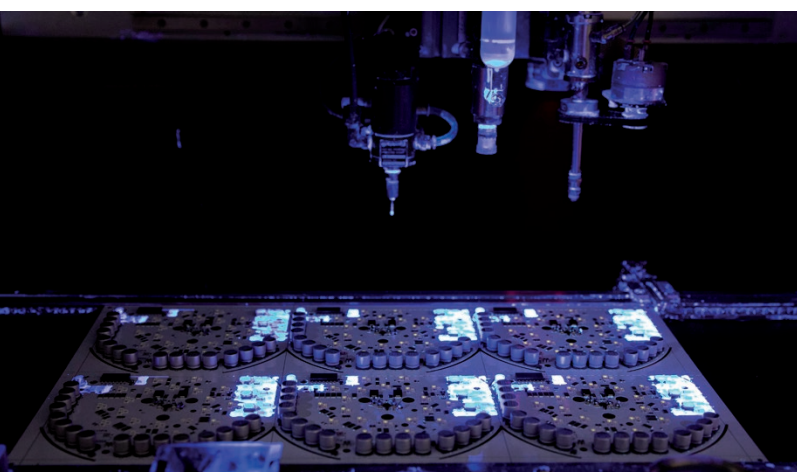
Silicone insulation ensures greater protection of the boards against impacts, temperature changes, humidity, dirt, and degradation caused by various factors.

3 Resins

Ideal for boards where electronic components need to be sealed to ensure total waterproofing, or that operate under extreme conditions.



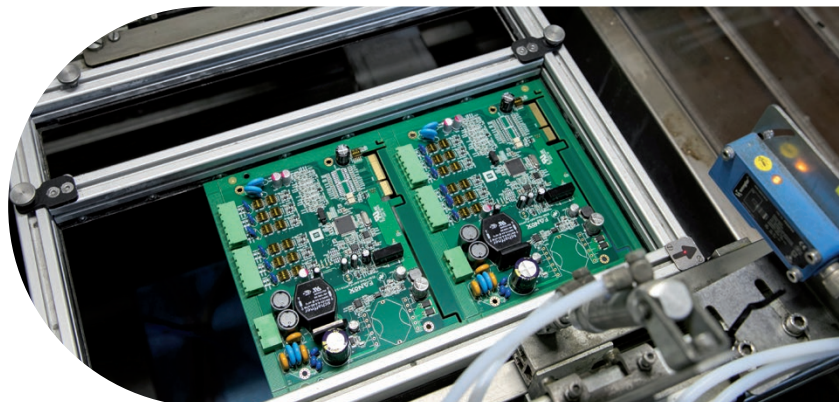
We offer a full range of electronic finishes to ensure maximum protection and performance of each assembled board.



Mechanical assembly of electronic equipment



The mechanical assembly of electronic boards is a fundamental part of the services offered by TEF Montajes. At TEF, we carry out the integration of mechanical elements, such as casings, supports, heat sinks, and cooling systems, according to the product design requirements. Additionally, we offer the option of conducting performance tests to ensure the quality and durability of the final product delivered to our client.



Excellence in mechanical integration is essential. We fine-tune every detail to achieve total customer satisfaction.

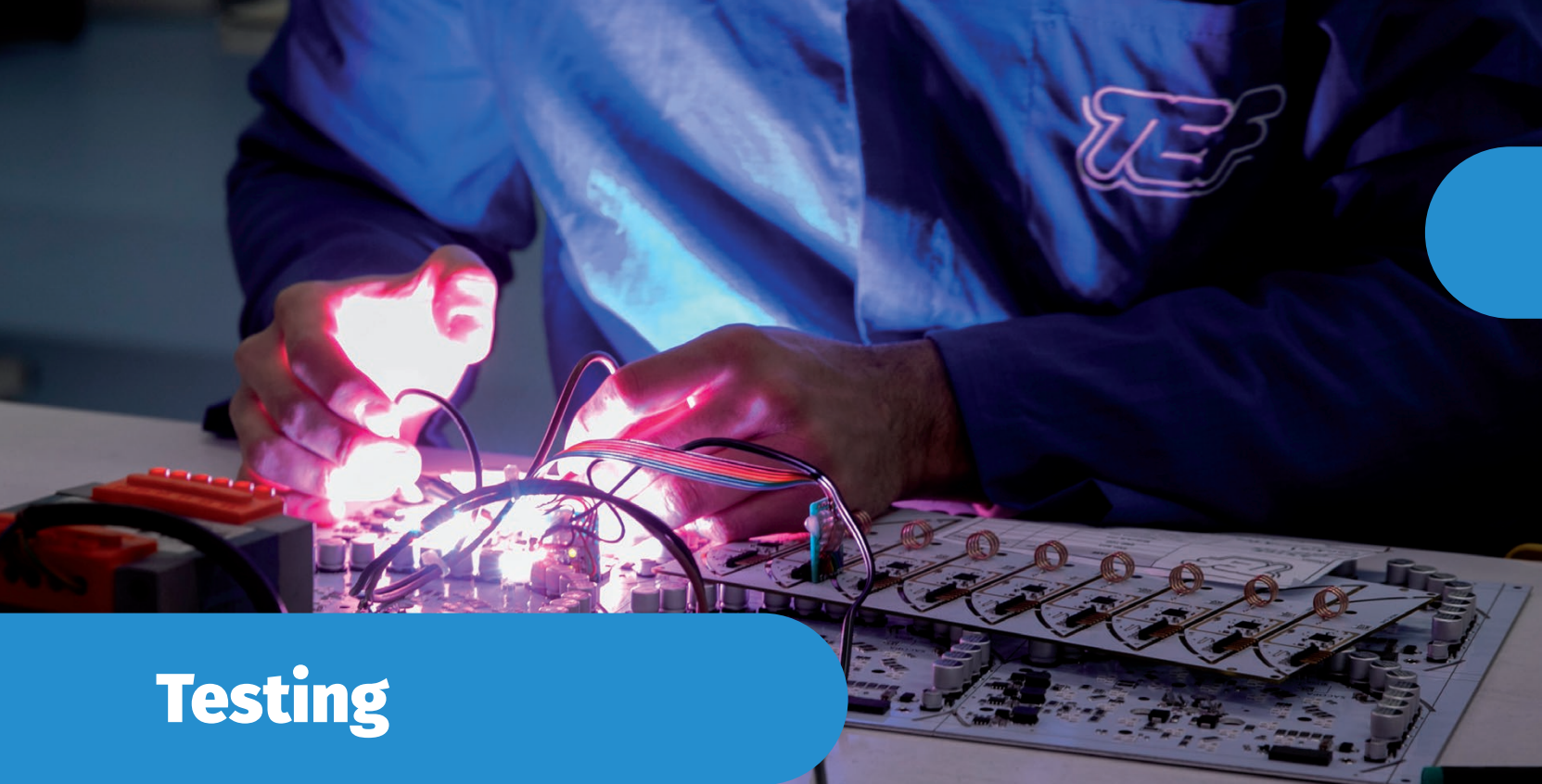
7

Disponemos de las **marcas líderes** del mercado



www.ondaradio.es





Testing

All our products undergo rigorous inspections before leaving our facilities, thus guaranteeing their **quality and optimal performance**. To achieve this, we carry out exhaustive testing of the manufactured boards and equipment, using techniques such as functional testing, electrical tests, and flying probe testing (in-circuit).

Our success is based on the combination of cutting-edge technology and a human team composed of highly qualified technicians specialized in the sector. The deep knowledge of the electronic field and the extensive experience of the TEF team constitute our added value.

Once the boards or equipment are delivered to their final destination, we also provide comprehensive after-sales service. We accompany our clients from the beginning of the project to the end of the product's life cycle, ensuring their continuous satisfaction.

At TEF, we offer our clients the opportunity to collaborate in the joint design of all the utensils necessary to provide these services. In addition, we make our knowledge and resources available to ensure the best outcome for both parties.

🔑 Certified quality.
Total commitment.



Inspection



Boards incorporating BGA technology, once soldered, must undergo an X-ray inspection (RX). At TEF, we have a recently acquired state-of-the-art Nordson machine, with which we carry out a three-dimensional inspection of the parts.

With this installation, we process all the internal production of the plates and we offer an external verification service, which includes sending all the photographs taken to the client so that they can see the layout of the welds, voids, etc.

We also perform visual inspections in the previous steps of the process:



SPI inspection

After screen printing of the board

3D inspection

AOI inspection

Of the components, once placed on the board

To carry out this inspection, we have a Pemtron 8800 HSL in 3D.



BGA SOLDERING

We have a rework machine, the Ersal PL 550A model, which allows us to repair faulty inserts and solder joints in BGA components. With this equipment, our technicians perform the entire rework process, which consists of several stages:

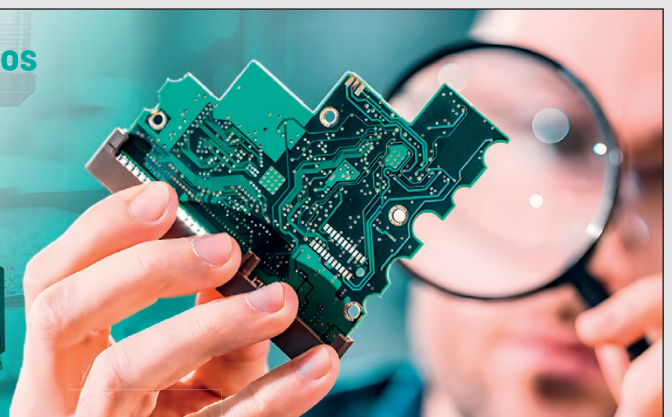
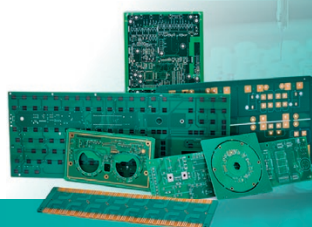
- Desoldering the defective component.
- Reballing.
- Placement and soldering of the new component on the board.

Cutting-edge X-ray technology for BGA technology.

Una solución global para sus circuitos impresos

Safe-PCB se posiciona como su fabricante de confianza para PCBs, especializados en prototipos y series con tiempos de entrega críticos. Contamos con instalaciones de vanguardia ubicadas en el núcleo de la principal zona de producción de PCB, complementadas con una plataforma web segura y fácil de usar que permite simular, configurar, gestionar y hacer seguimiento de sus pedidos.

SAFE
www.safe-pcb.com



Logistics and Traceability

From the moment we start working on a project until it is fully operational, we take care of everything related to logistics. Our customised ERP (Enterprise Resource Planning) system enables us to oversee all phases of the process:



The selection of suppliers and the purchase of components and materials necessary for the manufacturing of each product.



The management of the stock of each customer.



The delivery of the product both locally, nationally or internationally, by means of our own transport or companies specialised in the logistics sector.

Another important point is TEF's smart warehouses, which allow the traceability of the entire process to be fully automated. We currently have three warehouses focused on the storage of SMD and THT material.

These warehouses facilitate:

- Precise stock control.
- A drastic reduction of errors.
- Considerable savings in both manufacturing time and costs.

Logistic efficiency from start to finish.



ISAN

Industrias Técnicas, S.L.

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Polígono Industrial Malpica
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50016 ZARAGOZA

Tel. 976 138 107
Fax 976 138 108
isansl@isansl.es

Quality



We have high quality standards thanks to our strict production registration processes and our concern for the environment.



> ISO 9001:2015 Certificate

TEF has had this accreditation since 2002, which reflects our quality policy regarding our products and customer satisfaction.



> ISO 14001:2015 Certificate

Since 2011, we have had this accreditation which guarantees that our processes are sustainable and contribute to reducing the environmental impact of our activities.

Coming soon in 2024

> ISO 13485:2016 Certificate

Quality management system for medical products.





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