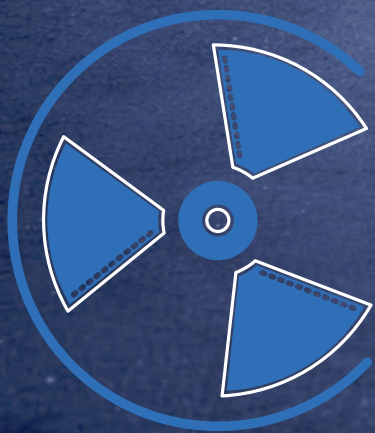




ELSIL

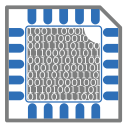


SMD

Micropackaging

VALUE-ADDED
SERVICES





SNAPSHOT & HISTORY



FLEXIBILITY

EXPERTISE

QUALITY

SNAPSHOT & HISTORY



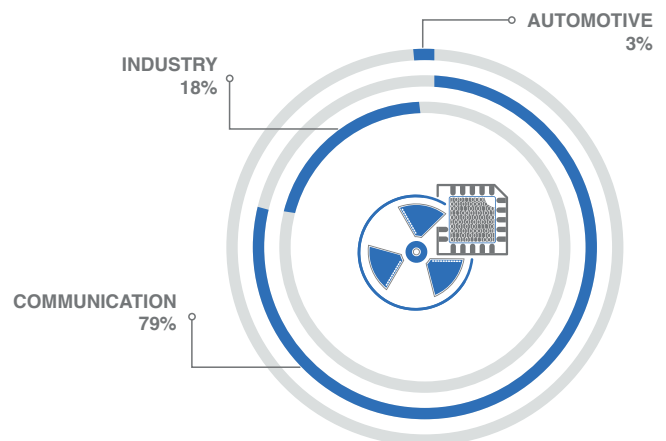
ELSIL Tunisia is a high-tech company based in Tunis metropolitan area, specialized in **Device Programming, Marking, Control and Tape&Reel** with **20 years of experience** in this industry.

Our knowledge of this business and our common history with the **European pioneer** leads us to create **SMD Micropackaging**, a **Carrier Tape Manufacturing** company, not only to integrate strategic part of our supply chain but also to propose **global packaging solutions for various industry sectors**.

These two sisters companies are driven by same policy and strategy and are led by same **high skilled management team** for an **improved operational efficiency**.

50
employees

Based in
Tunis Metropolitan
Area



ELSIL
Tunisia

Creation of **ELSIL Tunisia**

An IC Programming Center

2006

2013

SMD
Micropackaging

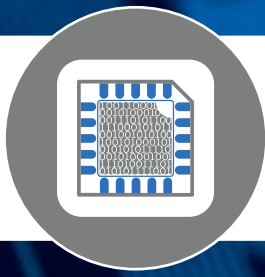
ELSILTechnologies
become **SMD Micropackaging**

A CarrierTape Manufacturing Company
for electronic and mechanical SMD

2025

Creation of **ELSIL Technologies**

A Testing and Packaging center for
electronic SMD products



CORE CAPABILITIES

I firmly believe that the two main basis of the electronics industry are quality and cost control. Because a production line stop should never occur, all actors in the supply chain have the duty to optimize their processes, not only internally, but also upstream and downstream.

It's not just a matter of technique or means, but a question of harmony in terms of methods, engineering, manufacturing, supply and deliveries that we strive to achieve on a daily basis. Because customer satisfaction is our main goal, I would call ELSIL Tunisia and SMD Micropackaging a value-added services companies before a manufacturing company. And it starts with a total understanding of the customer's needs! That's why we work on building a strong partnership with each of them, from the development of prototyping solutions to mass production and all the standards needed to achieve excellence.

Your Challenge is our passion!
Maximilien PETIT - Founder & C.E.O.

60 Mio
IC Programming

10 Kkm
Tape Manufacturing

2000m² located in Tunis Metropolitan Area, **ELSIL Tunisia and SMD Micropackaging** benefits through its past history from **more than 30 years of experience** and has built a strong position in this industry, relying on established **worldwide industrial partnerships and prestigious customers**.

Today ELSIL can claim a capacity to program more than **60 million units per year**, while SMD Micropackaging is able to manufacture more than **300 millions of pockets per year**.

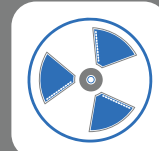
All **ELSIL Tunisia and SMD Micropackaging** services are executed in a **highly secure environment**.

Our production plant is fully protected by **morpho access control** and monitored **cameras**, IT rooms with fences and **dedicated access control**, and **proactive fire-safety system**.

All ELSIL Tunisia and SMD Micropackaging equipment benefits from a **back-up installation, preventive and predictive maintenance**, operating as **lines or blocks** for a **full autonomous production**.

**FULL
REDUNDANCY**

CORE VALUES



FLEXIBILITY

ELSIL Tunisia and SMD Micropackaging as **human-size companies** offers to its customers **flexibility and scalability** based on **constantly increased performances, modern machines** and **ramping-up manufacturing** to meet the **growing demand of its customers**.

ELSIL Tunisia and SMD Micropackaging are able to manage **prototyping stage, fine-tuning product** and **component provisioning lead times and delivery** to answer their customers requirements in the field in a **day-to-day product cycle**.

According to customers' needs, **ELSIL Tunisia and SMD Micropackaging** are able to absorb from **low volumes** to **huge capabilities production** on its manufacturing site, **from stand-alone services to turn-key solutions**.

EXPERTISE

With a **strong experience** in manufacturing for **worldwide leaders**, **ELSIL Tunisia and SMD Micropackaging** confirms **unique skills and in-house expertise**.

To remain at the **cutting-edge technology** in this evolving manufacturing industry, **ELSIL Tunisia and SMD Micropackaging** invests continuously in **tool development, qualified staff & training** in terms of **design, security improvement, methods and processes** as well as **manufacturing and logistics skills**.

We are used to working **closely with customers to jointly manage their daily concerns**, allowing us also to **constantly improve ourselves** to offer the **accurate answer to complex and custom services** in the **shortest time**.

QUALITY

Quality is our motto to reach excellence in everyday life.

ELSIL Tunisia and SMD Micropackaging hugely invests in its **quality process** to ensure **control at each step of its production cycle**, in line with Poka Yoke principle, leading **ELSIL Tunisia and SMD Micropackaging** to **target zero fault production**.

We are using tools coming from IATF standards, such as FMEA, control plan, etc...

We ensure our customers the **guaranty of high-performance and reliable services**.

Traceability, accurate reporting, preventive and predictive maintenance, spare parts, **process performances**, and **certifications**, are all key elements for customers to select **ELSIL Tunisia and SMD Micropackaging** as a **trusted partner**.



TECHNOLOGY

NORFlash, **NANDFlash**, SERIALFlash, **eMMC**, SDCard, μ SDCard, COMPACTFlash, **MICRO**, CPLD, PLD, FPGA, Prom, **Eeprom**, GSM, Bluetooth and **Wi-Fi modules for IoT**, **secure devices** with certificates & keys for authentication & cryptography, etc.

PACKAGE

WLCSP, **QFN**, **BGA**, **QFP**, **TSOP**, **SSOP**, **SO**, **DIL**... We can process your devices packaged in **Tray**, **Stick**, **Tape**, etc.

HARDWARE & SOFTWARE DEVELOPMENT

Algorithms

The programming algorithm libraries are **regularly updated** by system manufacturers, who work closely with **component manufacturers**.

Development

If a solution is not available for a **specific component**, we take care of having it **developed and validated**.

Specific

For specific algorithms, particularly for **NAND Flash**, we provide support to achieve the best **bad block management** solution.

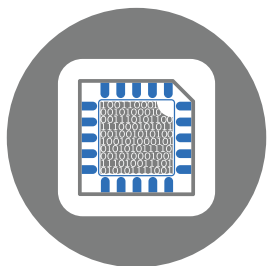
For **eMMC** memories, we take into account their architecture—based on **NAND Flash** combined with an **embedded controller** that automatically manages **logical/physical address translation**, **wear leveling**, and error correction (**ECC**). We therefore **adapt algorithm development** accordingly.

Serialization

We also offer programming with **serialization**.

Optimization

We analyze and optimize algorithm performance to ensure **reliability**, **fast execution**, and **compatibility with hardware constraints**.



PROGRAMMING SERVICES

LASER MARKING

Laser marking is a **high-precision solution** used to permanently identify electronic components and industrial parts.

Using a controlled laser beam, it engraves or alters the material surface **without contact**, ensuring a clean, **permanent result** that is resistant to **mechanical, thermal, and chemical stresses**.

This technology provides **excellent readability**, even on small surfaces, and allows the integration of **serial numbers, QR codes, DataMatrix codes, logos, or technical references**.

It meets the **strict traceability** and compliance requirements of the electronics, industrial, and technology sectors.

Fast, clean, and requiring no consumables, laser marking **optimizes production processes** while ensuring consistent, **professional quality**.

For **confidentiality** or obsolescence reasons, we can perform **laser marking removal**.

LOW OR HIGH TEMPERATURE LABELS

Low- and high-temperature labels are designed to ensure **reliable identification** in **extreme thermal environments**.

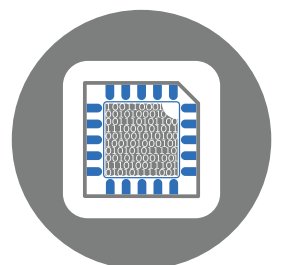
They maintain **adhesion, readability, and integrity** despite intense **cold cycles** or prolonged exposure to **high temperatures**.

Low-temperature labels are ideal for applications in **refrigerated environments** or those subject to rapid temperature variations.

High-temperature versions, on the other hand, withstand industrial processes such as **reflow, baking, or environments close to heat sources**.

Durable and suited to industrial constraints, these solutions ensure **optimal traceability** of electronic components while meeting **quality and compliance requirements**.

MARKING



MECHANICAL CONTROL

3D inspection of electronic components is now an **essential technology in modern manufacturing processes**, particularly in the electronics industry where **precision and reliability** are critical.

It enables highly **accurate analysis of dimensions**, alignment, pitch, and the deviation of **leads or balls** on electronic components, providing a far more comprehensive view than traditional 2D inspection systems.

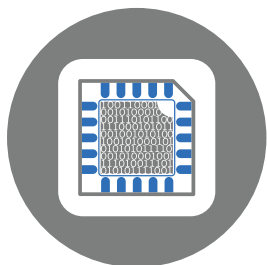
Using **advanced sensors**, high-resolution cameras, and techniques such as fringe projection or laser triangulation, 3D inspection can **detect defects that are invisible to the naked eye or difficult to identify with standard 2D inspection**.

This service can be included **as part of a programming or packaging process**, or used independently as **incoming inspection** to verify supplier delivery **compliance**.

This type of inspection is carried out using **automated systems** and enables control **prior to tray loading** or **Tape & Teel packaging**.

This allows you to **eliminate placement defects** and ensure the **proper use** of your **most valuable components**.

Detailed measurement reports following each component inspection.



3D INSPECTION

PACKAGING

Compliant with **IEC 60286-3** or **specific requirements**, and with **EIA-481/3** standards.

Use of **automatic** and **semi-automatic** equipment.

Incoming packaging in **trays**, **sticks**, or **bulk**.

All types of components (standard packages, connectors, antennas, shields, pads, ceramics, etc.).

3D dimensional testing, marking inspection, and polarity check **prior to tape & Reel packaging**.

Packaging on carrier tapes **from 8 mm to 120 mm**.

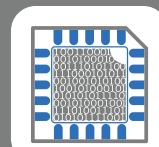
Pull-off force **measurement report**.

Traceability of each reel.

We perform **Automatic Tape & Reel packaging** of standard packages with **prior 2D or 3D inspection**.

As a Carrier Tape Manufacturer, we are able to respond quickly to all your urgent needs.

TAPE & REEL



EXPERTISE

More than **700 different cavity types** are available to quickly meet all your **packaging needs**.

Likewise, the **high flexibility** of our **tooling** allows us to adapt to **any specific requirement**. We use highly **precise measurement** equipment to ensure optimal **manufacturing reliability**.

WIDTH

8 / 12 / 16 / 24 / 32 / 44 / 56 / 72 / 88 / 104 / 120 / 136 mm + custom widths.

The **carrier tape widths** we offer are **tailored** to the **requirements** of **electronic component packaging** in professional environments.

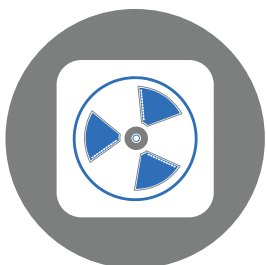
Available in a **wide range of dimensions**, they ensure **optimal compatibility** with **industrial standards** and **automated SMT placement systems**.

Each tape is designed to ensure precise **component retention**, excellent **dimensional stability**, and **mechanical strength** suited to the **stresses of transport, storage, and machine feeding**.

The consistency of cavity spacing and pitch **enables smooth, continuous feeding**, reducing the risk of incidents and production interruptions.

Our solutions also meet the **specific requirements** of the electronics industry, particularly in terms of **ESD protection**, traceability, and consistent performance.

Thanks to controlled tooling and high-precision dimensional inspection capabilities, we ensure **repeatable quality** and **long-term reliability**, suitable for both **technical batches** and **high-volume industrial production**.



CARRIER TAPE MANUFACTURING

MATERIALS

We select **technical materials** suited to the requirements of **electronic and industrial packaging**:

PVC offers excellent **rigidity** and **good dimensional stability**, while **antistatic PVC** limits **electrostatic** charge buildup to protect **sensitive components**.

PS provides a **cost-effective** and **efficient solution** for standard applications, and its **conductive version** ensures controlled charge dissipation in **ESD environments**.

PET stands out for its **mechanical strength**, **transparency**, and **thermal resistance** while **Antistatic PET** combines these qualities with enhanced **electrostatic protection**.

PC is known for its **very high impact resistance and stability**, particularly in demanding conditions, while **conductive PC** ensures optimal protection against **electrostatic discharge**.

Our tapes are available in thicknesses of **0.2, 0.25, 0.3, 0.4, and 0.5 mm**, allowing precise **adjustment of rigidity** and **mechanical strength** to meet project requirements.

OUR TAPES

100% of our carrier tapes undergo rigorous **dimensional inspection** throughout the manufacturing process.

Each batch is **verified** against precise criteria: **cavity geometry, pitch, flatness, thickness, and material compliance**.

Our **process** also includes additional **sampling checks** using independently qualified measurement equipment, ensuring **repeatability and reliability**.

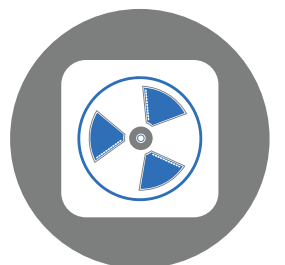
Our **high-precision tooling** and **inspection systems** ensure dimensional consistency **perfectly suited** to **automated SMT placement systems**.

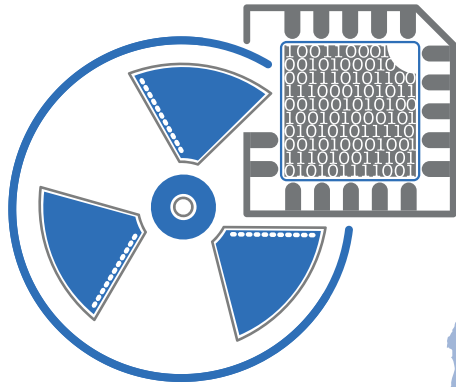
This quality requirement **secures machine feeding** and **reduces the risk of production downtime** for our customers.

Thanks to a **high-performance machinery** base and **flexible production capacity**, we are able to handle **large volumes** while maintaining **high standards** and **competitive pricing**.

Feel free to contact us for any request to **convert your packaging to tape**, whatever your component (connector, mechanical part, etc.), in order to **optimize your process** and **increase your productivity**.

CARRIER TAPE MANUFACTURING





IC Programming
Carrier Tape Manufacturing

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VALUE-ADDED SERVICES

