

TCL **Elektronika** **Global** **Leaders in** **PCBs**

PRINTED CIRCUITS SINCE 1965

CERTIFIED:

ISO9001 - EN9100 FM – ROHS
IATF 16949 – JOSCAR CERTIFICATE
IPC – IEC – UL LED

PRODUCTION:

EUROPE/UNITED KINGDOM/FAR EAST
AND WORLDWIDE
STOCK MANAGEMENT





Prototyping



Proven logistics



**Global track record
for delivering
excellence**

TCL ELEKTRONIKA Logistics & Stock management

- You pay later
- Stock is on your premises and available to use at any time
- The number of carriage transactions is reduced



Stress-free, on time, and without any of the headaches that logistics can cause that's how we deliver! Our range of shipment options ensure you receive your order in the right place and at the right time, anywhere in the world.

Custom-made inventory management is our specialty, which means we will find solutions for every need. Our inventory management team will monitor your usage against expected levels to ensure production lines are kept always running.

Without stress, on time and without the hassle that logistics can cause, this is how we deliver!

Inventory Buffering

Kan-Ban/Re-Order Point Systems

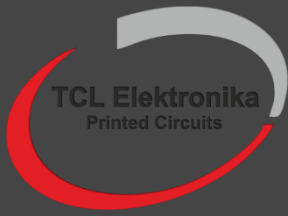
Schedule-Sharing

Consigned Inventory

We will look at the detail between replenishment lead times, freight costs of inventory, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space, product quality management, replenishment, return of defective goods and demand forecasting.

We can deliver stock to your warehouse, but you'll only pay when the goods are consumed or sold. Payment terms is as agreed of OC4





**WE DELIVER.
WE TAKE CARE
OF YOUR CUSTOM
CLEARANCE.**



Our European hub TCL Elektronika is ready to receive stock from our EU / UK Asia facilities and distribute product to our European customers.

Customs clearance involves the preparation and submission of documentation that is required to export or import your goods into or out of a country. Customs clearance is a crucial part of your cargo shipping from Point A to Point B seamlessly across the world. We will take care of, and you will save costs and precious time.

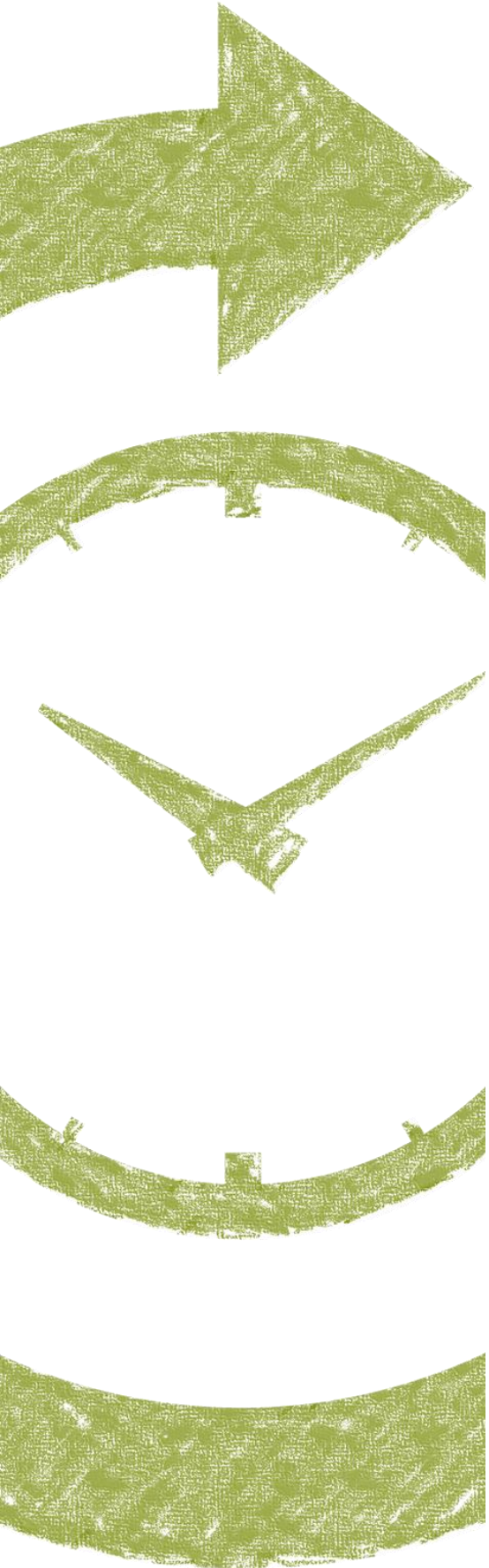


Costs saving



Time effective





Quick-turn PCB Manufacturing

Quick-turn PCB manufacturing?

Small and medium batches!

We produced under a restricted time frame. It is effective for those who require urgent PCB manufacturing services without compromising the quality of production. We understand the importance of time-to-market requirements of our clients. Quick turn encourages prototyping, increases the speed of prototype production and even research and development, thereby enabling manufacturers to improve market potential. We help detect and fix possible errors in the early stages

TCL Elektronika tries to ensure its clients are satisfied with job delivery time.

- **Access To Variety Of Board Selection:** It allows the designer to try various boards for their ideas.
- TCL Elektronika offers both high-end boards and rigid boards Flex and rigid Flex at competitive prices.
- Prototypes / small and medium batches
- Quality supplies



SMALL BATCHES



MEDIUM BATCHES



CAD – CAM

SUPPORTING YOU

with all our engineer
experience

Our in-house engineers support both clients and sales teams in the EU / UK and China. Their primary function is to ensure data integrity and find the best possible design solutions available for you.

- DRC (debugging)
- CAD data validation
- Design For Manufacture advisory service
- Gerber manipulation (customization of data)
- APQP & PPAP document provision

We have adopted the DFM concept in order to optimize efficiency. Our engineers provide vital input into PCB designs at the concept and design stages which helps reduce manufacturing time and costs. We use set guidelines for DFM practices which help to precisely define various tolerances, rules and common manufacturing checks



Heavy Copper

High power applications

Heavy copper PCBs are printed circuit boards with 3 ounces or more of finished copper in the inner and / or outer layers. Our manufacturing facility has been specially designed with heavy copper capacity in mind, allowing us to produce boards with up to 32 layers. We also have the capacity for Extreme Heavy Copper, up to 30 ounces per layer for 2-layer applications. Building a heavy copper circuit gives the boards several benefits, including:

- Greater resistance to thermal stress
- Increased current carrying capacity
- Reduced product size by incorporating multiple copper weights on the same circuit layer



Increased endurance to thermal strains



Increased current carrying capacity



Increased mechanical strength at connector sites and in PTH holes

**1.00mm Copper Base Plate
(28.5oz)**

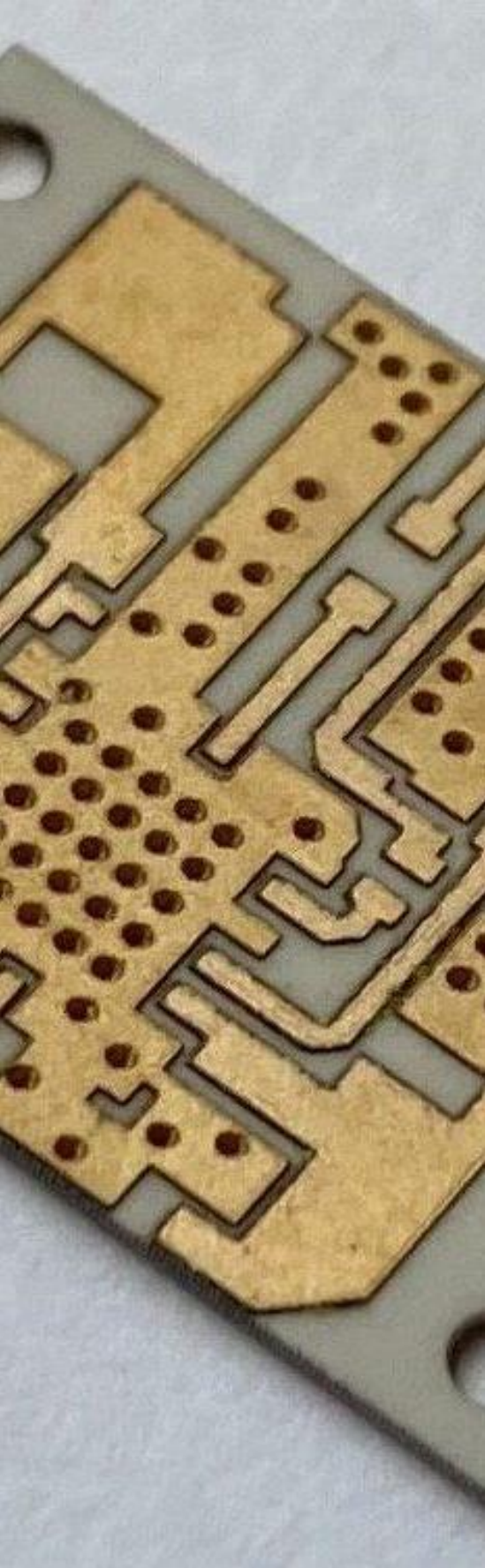
1x Prepreg type = EM8271 106

2.4mm Core H/H EM8271 (Etched off copper)

1 x Prepreg type = EM8271 106

**1.00mm Copper Base Plate
(28.5oz)**





Ceramic PCBs

Optimization of thermal management

Superior heat dissipation is the key advantage of Ceramics over more conventional materials used for PCB manufacturing. With components placed directly on the boards and without an insulation layer, the heat flow through the boards is much more efficient. In addition to this, ceramic materials can withstand high operating temperatures (up to 350 ° C) and have a very low CTE (coefficient of thermal expansion), allowing for additional compatibility options for circuit design.

- Higher thermal conductivity values (up to 170 W / m-K)
- High operating temperatures up to 350 ° C
- low CTE
- Suitable for high frequency applications due to the low signal loss
- Possibility of airtight packages with 0% water absorption

TCL Elektronika specializes in alumina oxide (Al₂O₃) and aluminum nitride (AlN) panels. Direct Bond Copper (DBC) and Direct Plated Copper (DPC) technologies are used for circuits depending on requirements and / or applications.





TCL ELEKTRONIKA

in the MEDICAL / AVIATION / AUTOMOTIVE PCBs



Medical PCBs are used in the cardiovascular field, for heart-related applications, like pacemakers. They are also used in medical imaging applications, like in MRIs. Third, they can be found in monitoring devices and such as body temperature monitors or defibrillators.



Some PCB design and assembly jobs are too important to be handled by a team of engineers. You may benefit from partnering with TCL Elektronika in Class 3 electronics, but also assists in the design process. Aerospace / Avionics PCB requires highly reliable printed circuit boards under extreme conditions.



Role of PCB in automobile. Components like automotive sensors, GPS modules, illumination systems, door switch modules, engine control modules, and audio systems are held together by circuit boards. Hence, the entire operating mechanism of the vehicle depends on the board design and layout.

WE ARE CERTIFIED



TCL ELEKTRONIKA (Europe)

The established policy of TCL (Europe) Elektronika Kft. is to provide their customers with products that satisfy their needs and expectations in terms of quality, service, and price, delivered in conformance with the company's quality specification or as laid down by the customer. Each employee understands the need to improve performance and workmanship continually wherever possible and thus produce or provide the best quality product. This is reflected in the job description and operating procedures and through the support and encouragement given by immediate superiors.

Quality policy

Effective sourcing of Printed Circuit Boards (PCBs) requires commitment, time and experience. Matching the technical and commercial requirements of clients to the capabilities of a manufacturing plant is a vital part of what we do. We provide a total PCB Supply and Stock Management solution and, with over 50 years of PCB engineering, manufacturing and logistics experience of our group in EU / UK and the Far East, can attribute our success to our expertise and commitment to quality. To build on our enviable track record of growth and smart investment, we will continue to provide unrivalled 'Excellence in Logistics' to all our clients. In doing so, we will maintain our place as one of the leading forces in the PCB industry.

Global Leaders

We are fully aware of the implications of RoHS and REACH regulation as it applies to our business. We monitor our materials, exposure and compliance levels via regular contact with the European Chemicals Agency (ECHA) and report on Substances of Very High Concern (SVHC) levels and usage scenarios where appropriate to customers and suppliers. As 'downstream users' we have not had any obligation to register substances. It is our intention to maintain a continuing dialogue with both suppliers and customers for the protection of the supply chain and full compliance with RoHS and REACH regulations. No Products supplied contain any of the 205 substances which are currently designated as SVHC by REACH regulation in excess of 0.1% weight by product. No Products supplied contain any substances which are regulated by the current RoHS regulations, including the 4 new Phthalates recently added.

RoHS and Reach policy

TCL Elektronika
Printed Circuits



TURN OVER
£40 Million

Team

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EMPOWER YOUR PROJECTS

- 30+ Millions of PCBs delivered annually
- Up to 58 layers
- Controlled logistics
- Factories in the UK, Europe and the Far East
- Intelligent inventory management