

# STARTEAM

Exceeding Manufacturing



## EXCEEDING MANUFACTURING

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STARTEAM is a leading Printed Circuit Boards (PCB) manufacturer, technology and solution provider. Established in 2021 through the merger of CML, CIA, and Jiangyou STARTEAM, we bring together more than 35 years of experience in the PCB industry. We expanded our operations by opening new facilities in Prachinburi, Thailand (PST) in September 2023, and in Flero, Italy (FST) in June 2024, complementing our existing operations in Jiangyou, China (JST). STARTEAM helps corporations and small-to-medium enterprises (SMEs) to provide impactful solutions by Exceeding Manufacturing.

## VISION

STARTEAM is a globally recognised manufacturer delighting by exceeding customer expectations through advanced and sustainable solutions for everything that we do.

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## MISSION

WE CARE ABOUT

## RELIABLE CONNECTIONS

We are in the 'connection business' because the products and solutions we offer to our customers help to create connections within their products. The concept of 'Reliable Connections' is not limited to our products and solutions but extends to the human level as well.

## VALUES

Our company values are the beliefs and principles that drive our business. They give us a common purpose and explain 'how' we work towards and achieve our vision.

RESPONSIBILITY

TEAMWORK

HONESTY

DETERMINATION

# GLOBAL PRESENCE



1,100+ employees globally



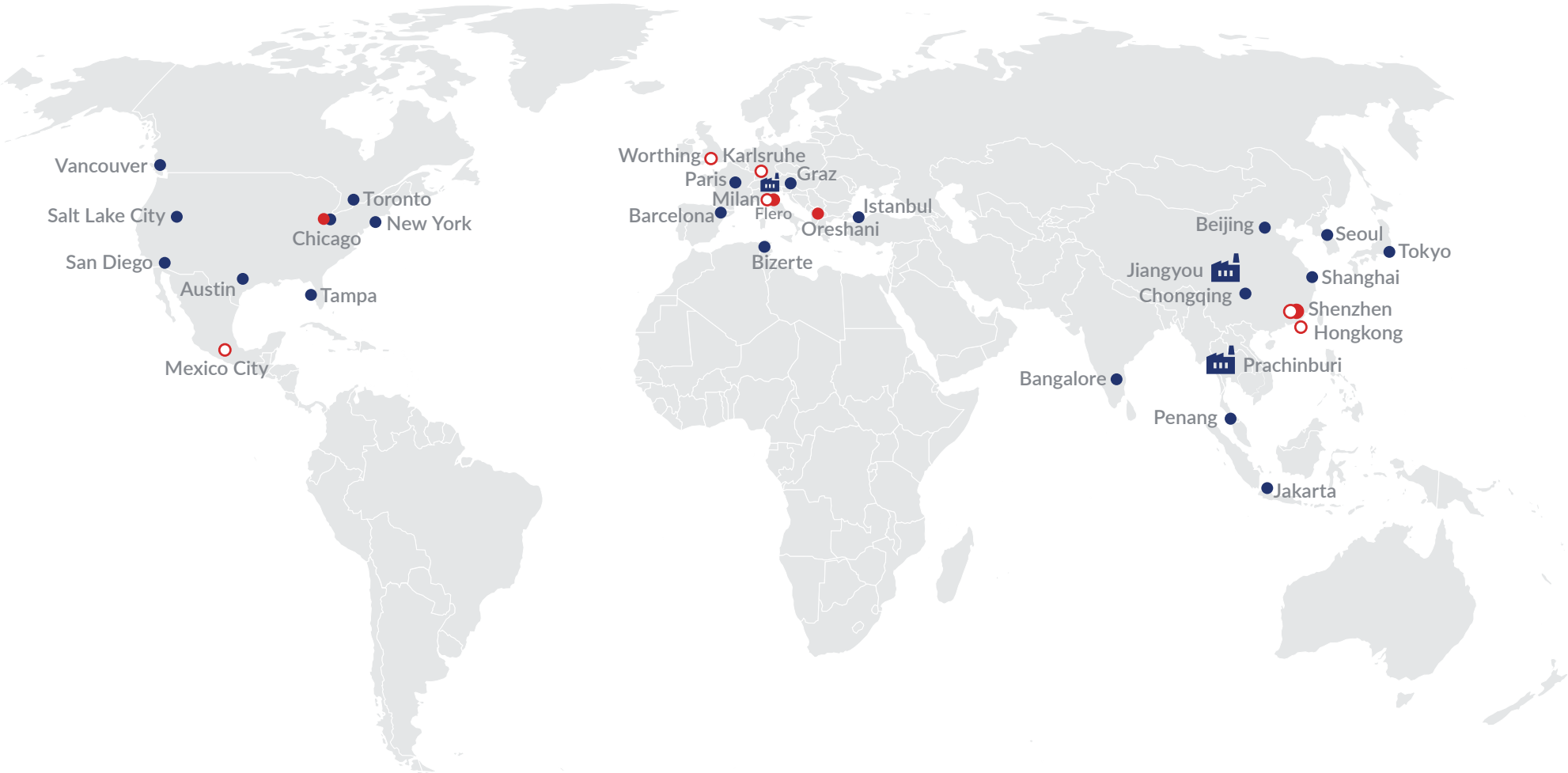
Over 1.5M m<sup>2</sup> production capacity per month (incl. manufacturing partners)



3 production facilities: Jiangyou, CHINA, Prachinburi, THAILAND, and Flero, ITALY



Group turnover 2023: 218M USD  
Est. turnover 2024: 200-210M USD



# 30+

Locations worldwide

Elevate your projects with **STARTEAM**, backed by over 35 years of PCB expertise and a network of 1,100+ experts. Our full-scale support spans from prototyping to mass production, with main offices in Hong Kong, Karlsruhe, and Shenzhen ensuring high quality and reliable service at every project phase.

Factories


Main offices Sales offices


Prototype & quick turn facilities




## OUR CHINA FACTORY - JST





 Jiangyou, Sichuan, China

 1-10 layers, aluminum, special materials, heavy copper up to 105µm, z-axis depth routing


 600+ employees

 German / Chinese expert management

 30,000 m<sup>2</sup> of production area


 Smart Manufacturing with PAILOT (AI based planning and scheduling), to drive efficiency, quality, traceability and sustainability

 Capacity 2024: 70,000 m<sup>2</sup>/month

 All material parts are inspected automatically (AVI)

## OUR THAILAND FACTORY - PST





 304 Industrial Park, Prachinburi Thailand


 2-16 layers within 2024/ HDI within 2025


 150+ employees

 German, Chinese, Hong Kong & Thai PCB expert management

 10,000m<sup>2</sup> of production area

 Smart Manufacturing set-up with integrated AI use cases

 Target capacity end of 2024: 25,000 m<sup>2</sup>/month

 'China + 1' strategy for supply risk management



# OUR ITALY FACTORY - FST



# OUR FOCUS

Automotive **60%**



- Auto lighting
- Control units
- Heating system
- Battery management for e-mobility
- Telematics

Industrial **12%**



- Test & measurement
- Process control & automation
- Safety equipment
- IoT & smart products

Telecommunication **9%**



- LTE & 5G devices
- 5G signal station
- Server comms units
- IoT & mobile devices

Energy & Lighting **8%**



- Energy generating
- Heating system
- Solar power
- Emergency power

Consumer **6%**



- White goods
- Weighing scale
- Home automation
- Office equipment
- Audio & video

Medical **5%**



- Ventilator
- Thermometer
- Dialysis machine
- Diagnostic device

## FROM PROTOTYPES TO VOLUME MANUFACTURING



Partner with our skilled engineers for your success



Global data management with Insight, InCAM Pro and Genesis



Prototypes supplied locally from our dedicated prototype facilities



Cooperation throughout the entire PCB product lifetime



Flero, Brescia, Italy



1-2 layers, starting Q1/2025: 1-6 layers, PTFE base material (teflon) for high-frequency applications



Experienced team in place, backed by our European branches



German / Italian expert management



1,000 m<sup>2</sup> of production area



Production & Leadtime:

Prototype	0,01 m <sup>2</sup> to 2 m <sup>2</sup>	LT 8 days
HMLV	up to 12 m <sup>2</sup>	LT 3 weeks
Quick Turn	HASL-LF	LT 5 days
Standard Leadtime		LT 4 weeks



Capacity 2024: 500 m<sup>2</sup>/month  
Capacity 2025: 1,000 m<sup>2</sup>/month

- German-owned PCB Manufacturer in China, Thailand & Italy – German quality combined with Asian efficiency
- All technologies supplied by our factory and our manufacturing partners



# OUR SERVICES & EXPERTISE

- We utilise a centralised PCB Gerber data management system with Insight, InCAM Pro & Genesis
- Full traceability of data to ensure that there is synchronisation of the latest revisions distributed to all our locations
- Every process step is controlled by our experienced engineers



## MANUFACTURING DATA CONTROL



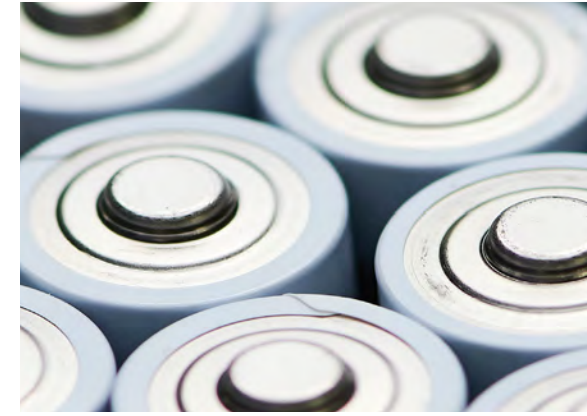
## DFM & PROTOTYPE SERVICE

- Feasibility analysis and visualisation of data prior to quotation and manufacture
- Design rule verifications to international standards by our PCB experts
- Utilisation check and panelization proposals
- Full engineering for cost optimisation
- Global prototype manufacturing locations

- Full cooperation throughout the entire PCB product lifetime
- Prototypes, NPI, small, medium and volume production
- Our global quality teams are ready for any eventuality locally
- End of Life support available



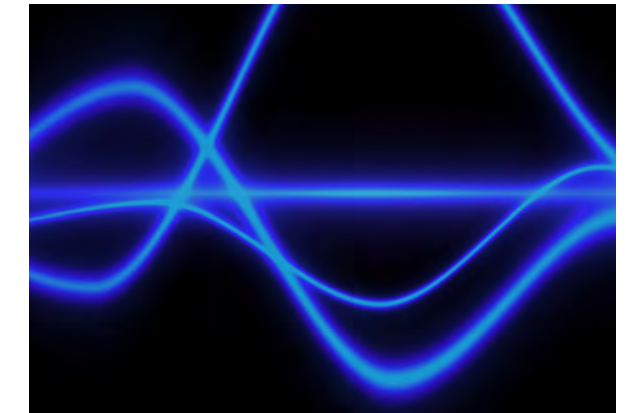
## COMPLETE PCB SERVICE



## POWER SOLUTIONS

- **Rechargeable Battery:**  
Ni Mh, Li ION, Li Polymer, LiFePO4, Pb Acid
- **Primary Batteries:**  
LiMnO2, LiSOCl2, Zinc, Carbon, Alkaline etc.
- **Custom Made:**  
Power Packs, Mobile power units, etc.

- **Antenna GPS & GSM antenna:**  
Assemblies, PCB mount Antenna Patches, SMT Chip component antennas (Standard & Custom)
- **Audio Devices & Sounders:**  
Piezo, Magnetic Buzzers, Transducers, Mems, etc.
- **Filters:**  
Chokes, Ferrite Coils, Inductors, etc.



## TRANSMISSION SOLUTIONS



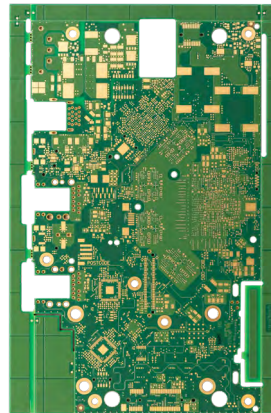
## INTERCONNECTIONS SOLUTIONS

- **Connectors:**  
Custom Made
- **Cable Assemblies:**  
Custom Made
- **Keypad & Touch Panels:**  
Membrane, Dome Switch panels, Silicon Keypads
- **Coaxial Cables:**  
RTK31, RG174, RG58 & RTK44  
Plus HSD & Ethernet

# BROAD TECHNICAL CAPABILITIES

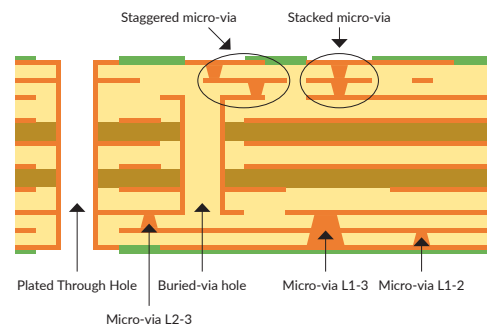
## RIGID PCBs

Layer-count	1 - 50+ Layers
PCB thickness	0.20 - 6.40 mm
Min. core thickness	0.05 mm
Max. PCB size	1170 x 660 mm
Min. track & gap innerlayers	0.050 / 0.050 mm
Min. track & gap outerlayers	0.076 / 0.076 mm
Min. mechanical drilled hole size	0.15 mm
Plating aspect ratio	25 : 1
Additional	Via plugging - Impedance control - Backdrilling - Depth routing
All surface finishes available:	HASL(LF) - ENIG - OSP - Electrolytic Gold - Immersion Tin - Immersion Silver - ENEPIG
All material types available:	FR4 - High-Speed/High-Frequency - Low Loss & Ultra Low Loss - Hybrid constructions



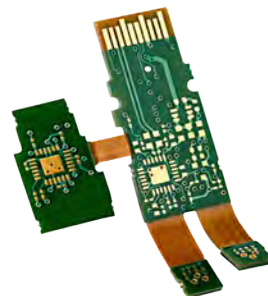
## HIGH DENSITY INTERCONNECT (HDI)

HDI structure	1+N+1 - 2+N+2 3+N+3 - 4+N+4
Min. laser-drill diameter	0.05 mm
Max. laser-drill diameter	0.25 mm
MicroVia aspect ratio	1 : 1
Additional	Depth drilling - Copper filled MV ELIC (Every Layer InterConnect)



## FLEX, RIGID-FLEX & BENDABLE PCBs

	Flex	Rigid-Flex
Layer-count	1 - 14 Layers	2 - 24 Layers
PCB thickness	0.06 - 0.70 mm	0.40 - 3.20 mm
Max. PCB size	550 x 450 mm	550 x 450 mm
Min. track	0.076 / 0.076 mm	0.076 / 0.076 mm
Additional	Attach to Aluminium substrate	MicroVias



## BENDABLE PCBs

- One bend into shape
- Depth-routed slot width depending on bending angle
- Remaining thickness min. 1 prepreg + copper + soldermask
- Flexible soldermask available

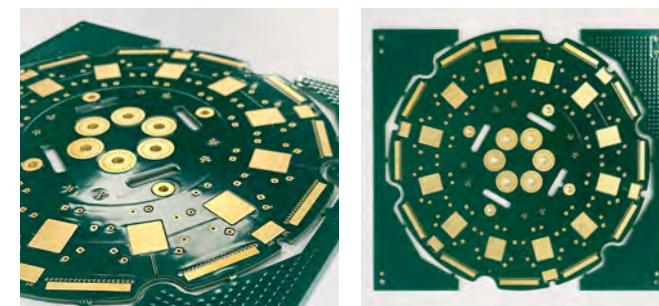
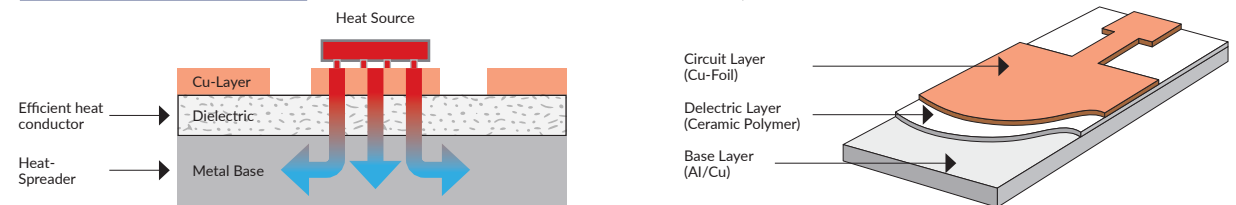


## THERMAL MANAGEMENT

Different technologies and materials are available to effectively manage and control the heat, each with distinct properties and applications tailored to your needs.

## INSULATED METAL SUBSTRATES (IMS)

	Aluminium Substrate	Copper Substrate
Layer-count	1 Layers	1 or 2 Layers
Copper thickness	18 - 105 µm	18 - 105 µm
Substrate thickness	0.5 - 3.0 mm	0.5 - 3.0 mm
Thermal Conductivity	1 - 2 - 3 - 5 - 7 W/m.K	1 - 2 - 3 - 5 - 7 W/m.K
Surface finishes	HASL (LF) - OSP - ENIG - Imm.Sn	No restrictions
Additional	Anodized or Brushed surface	Copper filled MicroVias

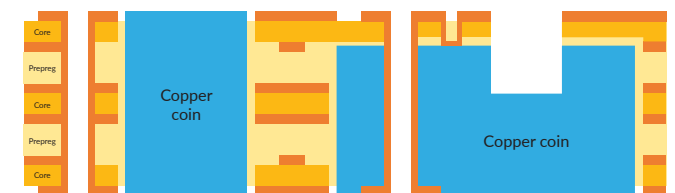


## HEAVY COPPER TECHNOLOGY

- Defined as heavy copper when copper thickness  $\geq 3$  oz (105 µm)
- Increases the carrying capacity and temperature resistance
- Copper thickness available up to 15 oz

## COPPER INLAY TECHNOLOGY (COINS)

- Copper Inlays are full copper objects embedded in the PCB
- Solving the thermal conductivity of specific components with high power
- Different copper shapes available (T-shape, round, rectangular)



Optimise your designs & costs through DFM and our eBook: **PCB Design Guidelines**  
Scan the QR-Code or visit our website and download your free version now:  
[www.starteam.global/pcb-design-guidelines](http://www.starteam.global/pcb-design-guidelines)

Any questions or requirements outside these listed Technical Capabilities? Please feel free to contact our global **R&D and Advanced Engineering Team** for reliable local support:  
[advanced.engineering@starteam.global](mailto:advanced.engineering@starteam.global)



# WE'RE DIFFERENT

## 01 PCB MANUFACTURING AND SUPPLY

Beside our own manufacturing, we exceed the capabilities of our factories through our global network of sample shops and strategic manufacturing partners.

## 02 SECURE AND RELIABLE

Traceable and accountable: our STARTEAM UL logo can be found on all our PCBs. We provide international product and reliability insurance with legal certainty, no matter where you are.

## 03 GLOBAL PRESENCE

Rooted in Europe, our presence is felt around the globe. With our Main Offices and Sales network, we ensure local relationships. Our technical experts develop your projects together with you, face to face, and in your native language.

## 04 AUTOMOTIVE QUALITY MIND-SET

Product quality and just-in-time: we deliver more than 200 million PCBs each year and we have never had a line stop. This is only possible through the efficiency of our global team and full control in the front end and production processes.

Global Product  
Civil Liability &  
Recall Insurance  
**Gothaer**

# JOIN US



## READY TO ELEVATE YOUR CAREER?

Start your journey at STARTEAM GLOBAL with innovative projects and a team that thrives on challenges and reliable connections.



Ready to take the first step?  
Explore our job openings and  
find the perfect role for you.

- **Flexibility:**  
We offer flexible working hours and mobile work options, for more balance within your career.
- **Diversity:**  
We value diversity as a strength that fosters creativity, authenticity, and an excellent understanding of customer needs.
- **Trainee Programs:**  
Offering dual training programs in Germany and Hong Kong, in Wholesale, Trade, Logistics, and Digitalisation.
- **Global Connections:**  
Travel and immerse yourself in diverse cultures at our global locations with opportunities for long-term assignments.



# SUSTAINABILITY & ESG

## STARTEAM General

- Dedicated Sustainability Manager
- ESG Reports issued in 2023 & 2024
- ISO 27001 certification for Information security, cybersecurity and privacy protection – Information security management systems
- Received the Bronze EcoVadis Sustainability Rating in 2023

## JST Factory

- ISO 9001 and ISO14001 (Environmental) certified
- ISO 45001 certified (Occupational Health and Safety)
- ISO 14064 certified (Carbon Footprint)
- ISO 50001 certified (Energy Management)
- Low carbon electricity mix: 65% of purchased electricity mix is generated from renewable energy sources such as solar panels and hydropower
- Solar energy project with target to surpass 90% green energy in 2025
- Audit process review according to German Supply Chain Due Diligence Act

## PST Factory

- ISO 9001 and ISO 14001 (Environmental) certified
- IATF 16949 certification in Q1 2025
- Forecast (10%) electricity from solar energy
- 70% of local materials will be used within 2024, up from 40% now
- Smart factory with high-tech machines from Schmolz, Cedal and Universal
- 50% of the wastewater recycled to production line
- Increasing the use of recycled packing material, starting 10% (target to 30%)

