China Loong Circuit Board Co., Ltd.

Electronic Manufacturing Services Solution Provider

We'll be with you, together bring your project from ideas to market. China Loong Circuit Board offers comprehensive, collaborative high-technology

- Product design assistance and prototyping services,
- Electrical & Mechanical Manufacturing Assembly services,
- Supply Chain Management services,
- Global Logistic services,
- Return & Rework services.

For customers in high-reliability end-markets, including Medical, Industrial Controls, Semiconductor and Utilities Infrastructure.

CONTACT

china-circuitboard.com

Company profile

China Loong Circuit Board Co., Ltd., a subsidiary of China Loong Group Limited, is a leading manufacturer and solution provider specializing in high-performance printed circuit boards (PCBs). Established with a commitment to innovation and quality, we have grown into a trusted name in the electronics industry, delivering reliable, efficient , and advanced PCB solutions to clients worldwide.

Our product portfolio spans a wide range of applications, including Industrial Control, Home Appliance Control, New Energy, Medical Devices, Consumer Electronics, Internet of Things (IoT), and Security Systems. Whether for high-reliability industrial environments or compact smart home devices, our circuit boards are engineered to meet the exacting standards of today' s rapidly evolving technology landscape.

At China Loong Circuit Board, we provide comprehensive OEM and ODM services, allowing our partners to develop customized circuit board solutions tailored to their unique specifications and market needs. Backed by a skilled R&D team, state-of-the-art manufacturing facilities, and a stringent quality assurance process, we ensure every product meets international certifications such as ISO, RoHS, and other relevant industry standards.

Our mission is to empower innovation across industries by delivering precise, durable, and efficient circuit board solutions that drive performance and reliability. Whether supporting the advancement of renewable energy systems or enabling the next generation of smart devices, we are committed to helping our clients succeed in a connected, digital world.

With a strong focus on technology, sustainability, and customer satisfaction, China Loong Circuit Board Co., Ltd. continues to expand its global footprint, building long-term partnerships and powering the future of electronics—one circuit at a time.

Product Design Assistance & Rapid Prototyping Services

From concept to solutions, from idea to market, your project will be under experienced project management, sparing you the hassle of untimely conference calls, communication gaps, language barriers and "real time" information gathering.

China Loong Circuit Board's experienced Customer Success Team is ready to work with you at any stage of the product design cycle with a full menu of design and prototyping services, including:

CATALOGUE

Product Design Assistance & Rapid Prototyping Services

Digital circuit design & FPGA design.

Design for Manufacturability (DFM) review & analysis including Cost down Consulting Service

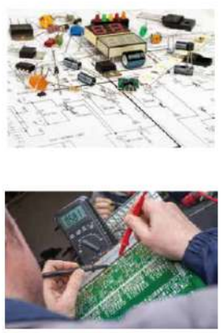
Design for Manufacturing or Design for Manufacturability (DFM) is the optimization of a part, product, or component's design, to create it cheaper and more easily.

Design for Excellence (DFX) review & analysis

Design for Excellence (or Design for X, or DfX) is basically a set of services aiming at analyzing the way your product has been designed. It encompasses Design for Manufacturing or Manufacturability (DfM), Design for Cost/Procurement (DfC/DfP), Design for Assembly (DfA) and Design for Testability (DfT).

Design for Reliability (DFR) review & analysis

Essentially, DFR is a process that ensures a product, or system, performs a specified function within a given environment over the expected lifetime. Design for reliability ensures that products and systems perform a specified function within a given environment for an expected lifecycle.



Design for Serviceability (DFS) review & analysis

Design for service (DFS) is a product lifecycle strategy that addresses a product's serviceability attributes. These attributes, such as reliability, configuration, and ergonomics, have a direct bearing on the cost and efficacy of servicing the product.

Design for Test Engineering (DFT) including test jigs & debug service

Design for testing or design for testability (DFT) consists of IC design techniques that add testability features to a hardware product design.

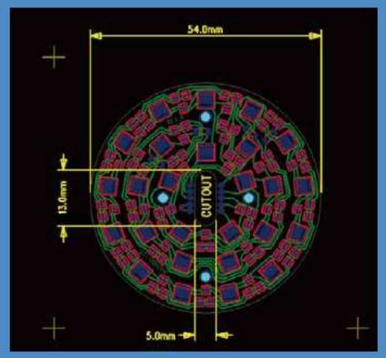
Industrial and Mechanical Design Assistance

Product Design Assistance & Rapid Prototyping Services

China Loong Circuit Board is recommended and considered as an important partner in customer's PCB design process, is able to meet customer's very tight PCB Design & Layout schedules

- Co-Design Service
- Schematic Design Service
- PCB Layout Service
- Cost Down Consulting Service
- One Stop Turn-Key Service
- Test Jigs & Debug Service
- PCB & BOM Reverse Engineering Service

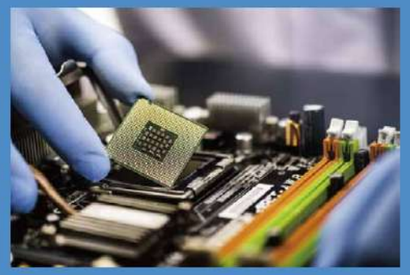
Min.trace width: 2.5mil
Min.vias: 6mil(4mil Laser drilling)
Min.BGA spacing: 0.35mm
Max. High-speed signal: 40GBPS
HDI Highest layer: 22L
Min.trace spacing: 2.5mil
Max. Layer: 48L
Max.BGA Pin: 3600pin
Fastest delivery time: 6H/item
HDI Highest layer order: 14L arbitrary order HDI



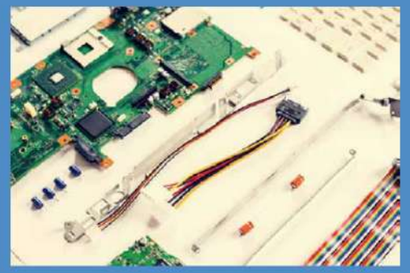
- Products types: Data communication products, Optical network products, Multimedia products, Network products, Medical products, Industrial control products, etc.
- Chip types: Network processing series, Intel server series, Freescale PowerP-C Series, Samsung ARM series, DDR3 & DDR4 series, etc.
- Design software: Cadence Allegro\ORCAD, Mentor WG\PADS Protel99\Altium Designer(AD)
- MCU Decryption, CPLD Decryption, SPLD Decryption, PLD Decryption, IC Decryption and Chip Decryption, and PCB & PCBA reverse engineering.

Reverse Engineering Service

No matter you are an electrical engineer, a product designer, a system integrator or a maker, you might have met situations that products are an old design, components on board hard-to-find or obsolete, documentation from original manufacture are no longer achievable.



Customers meet these cases and come to China Loong Circuit Boarde
for solution, we disassemble the sample (a bare PCB or an assembled PCB) in very details, examine and scan the board (PCB) layer by layer, using our advanced tools, to provide customers an update documentation package.



PCB Reverse engineering can use 3D scanner technologies such as laser scanners, structured light source converters, or X-ray tomography to measure dimensions based on existing physical components, and then construct 3D virtual models through CAD, CAM, CAE, or other software.

Our PCB reverse engineering service includes:

- PCB reverse engineering (1-28 layers).
- BOM list reverse engineering.
- Schematic reverse engineering.
- Remanufacturing obsolete and unsupported electronic circuit boards and card assemblies.
- Chip decryption or IC decryption or MCU decryption.

Product Design Assistance & Rapid Prototyping Services

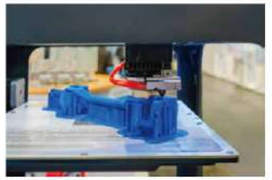
CNC machining, rapid prototyping and 3D printing

We partner with reputable local suppliers that are also committed to flexibility and open communication. With them we have built an effective, responsive supply chain that is focused on you. Through lean management tools and regular evaluations, we keep our customers directly connected with our suppliers to mitigate any surprises and to ensure that everyone is on the same page.

We are often asked to assist in the prototype development of new product ideas of our customers. We offer a number of rapid prototype options that are available to you to help validate the form, fit, and function of your future injection molded part design. If “speed to market” is your concern, often times a prototyping method can be the interim solution. Whether you need 2 parts or 200 parts, China Loong Circuit Boarde can
accommodate your rapid needs.

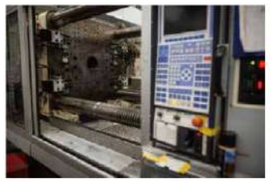
SLA (Stereo lithography) – Provides a functional 3D physical model generated from a CAD file for a very good initial review of your design concept. Considered to be the standard for rapid prototyping in the industry today.

3D Printing – On the leading edge of what is known as ‘Additive Manufacturing’ and probably the quickest method available today to turn your 3D CAD model into a physical part.



Cast Urethane – A very good method of prototyping to generate limited quantities of parts (2-20), while offering a broader range of durometer (hardness) and color

CNC Machining – Can be the method of choice if a full 3D CAD model is not available or if your needs require fabricating a shape from a specific material.



Low-Cost Injection Molds – Certainly the most advanced of the prototyping options. Often the choice in a critical application when the other options might be too limited, or if you are just ready for this step and need an immediate quantity of parts.

Product Design Assistance & Rapid Prototyping Services

We Provide

- Rigid, Flex, Rigid-Flex board
- Embedded resistors, connector pins and capacitors
- Metal-cored PCB, Heavy Copper PCB
- High-Density Interconnect, Blind and buried via hole

Highlights:

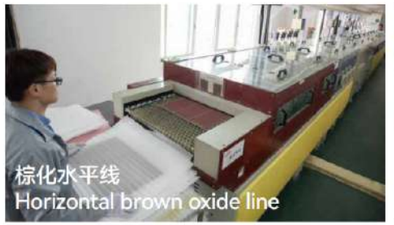
- 2 hours rapid response: Enquires and consultation responded within 2 hours.
- Regular orders on time delivery over 90%. Full QTY Expedite orders on time delivery over 99%.
- 10 years experienced PCB manufacturing services team.
- Complete materials including stock special materials made by world's top companies such as Rogers, Isola Nanya, Arlon, Taconic, Ventec, Dupont, Teflon, Panasonic, Bergquist etc.
- In an effort to offer our customer complete PCB solutions with best price and service, our factory not only manufacture PCB in our own house but also cooperate with China top PCB manufacturer for very complicated boards.
- We provide expedite services for both prototype and volume production:

  Fastest prototype 1L to 8L: 24 hours.

  Fastest volume production(within100m^2) 2L to 6L: 72 hours.
- We offer flexible payment terms: Prepayment, Payment after delivery, Monthly Payment. You can also let us know about your usual way of payment, we will try best to meet your requirements if needed.

Product Design Assistance & Rapid Prototyping Services


AOI
AOI both inner&outer layer


棕化水平线
Horizontal brown oxide line


金相显微镜
Metallurgical Microscope


钻机
Drilling machine


全自动字符喷墨机
Automatic Character ink printer


锣板机
Routing machine


垂直电镀线
Vertical plating line

Prototype PCB Manufacturing Capability

Alternative processes are available through our network of fully approved sub-contractors

PCB Prototype Features	Capability
Quality Grade	Standard IPC 2-3
Number of Layers	1-32layers
Order Quantity	1pcs +
Material	**Rigid**: FR2, CEM-3, FR4 (standard-halogen free-high performance) including: ShengYi, Iteq, Elite Materials Corp., NanYa, kingboard, Grace, TUC, Meteorwave
	Flex: PI, PET, including: Taiflex, Dupont FR&AP, Panasonic, ShengYi, Doosan, Hanwha, SF305
	Metal Core: Metal Core Aluminum based material including: Bergquist MP, HT&CML, ITEQ T-Lam, Laird TLAM SS Taiflex, Dupont FR&AP, Panasonic, ShengYi, Doosan, Arlon, Ventec and suggested local material brand (for detail pls contact our sales)
Board Size	Maximum 610 x 1200mm(24"x47")
Board Thickness	Rigid PCB: 0.15mm-10mm
	FLEX PCB: 0.05mm-0.16mm
Copper Weight	1.0oz-15.0oz
Inner Layer Copper Weight	0.5oz-12.0oz
Min Trace/Space(track/gap or width/space)	2mil/2mil(0.05mm/0.05mm)
Solder Mask Color	Green, White, Blue, Black, Red, Yellow or others
Silkscreen Color	White, Black or others
Surface Finish	ENIG/GF/OSP/IAg/HASL(LEAD)/HASL(Leadfree)/ Plating Au/Ni/Immersion Sn/GF+OSP/GF+HASL/ OSP+ENIG/IAG+GF/Isn+GF
MinDrilling Hole Diameter	mechanical : 0.1mm
	laser : 0.05mm
NPTH Hole Size Tolerance	±0.025mm
PTH Hole Size Tolerance	±0.003"(±0.08mm)-±.006"(±0.15mm)
Surface/Hole Plating Thickness	20 μm-30 μm
Aspect Ratio	20:1 (board thickness:hole size)

Product Design Assistance & Rapid Prototyping Services

Rapid PCB Assembly Prototyping and Box Building Prototyping

Our Rapid PCBA Prototype services allow our customers to get their development boards into the hands of their engineering team quickly, so that they can keep pace with their product development schedule. Our ability to quickly develop a manufacturing process and exercise our custom-built, rapid response supply chain and tooling partners helps make up time in the development cycle.

China Loong Circuit Boarde's Rapid Prototype services utilize the most advanced technology, including high-end flex
placement, optical inspection, 3D and paste printing cameras and selective soldering equipment. Known for the highest level of technical service, our experienced Customer Success Team provides agile process controls, from component kit check-in to final inspection, as well as seamless project management and effective communications from start to finish.

Delivery Time:

Order Conditions	Standard Delivery Date	The fastest Delivery Date
Prototype (<20pcs)	2days	8hours
Small Volume (20-100pcs)	6days	12hours
Medium Volume (100-1000)	3days	24hours
Mass Production (>1000)	Depends on BOM	Depends on BOM

Electrical & Mechanical Manufacturing Assembly Services

Plant area is 7000 m^2,
10 SMT lines
3 THT production lines
5 testing lines
Total 360 employees.

Electrical & Mechanical Manufacturing Assembly Services

Key Pad Assemblies

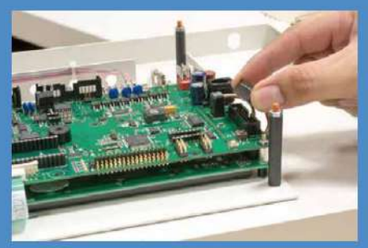
Enclosures

Power Panel Assemblies

Fan Trays

Box Builds

Cable & Harness Assembly



Modules

Medical Devices

Rigid PCB Manufacturing Capacity

Rigid PCB Feature	Parameter (in)	Parameter (mm)
Layers	1-30>	1-30>
Max Board Size	24"× 47"	610 x 1200mm
Min Board Thickness - 1-2 (layers)	4mil	0.1mm
Min Board Thickness - 4 (layers)	10mil	0.25mm
Min Board Thickness - 6 (layers)	16mil	0.4mm
Min Board Thickness - 8 (layers)	16mil	0.4mm
Min Board Thickness - 10 (layers)	32mil	0.8mm
Min Board Thickness -12 (layers)	40mil	1.0mm
Min Board Thickness - 14 (layers)	48mil	1.2mm
Min Board Thickness - 16 (layers)	54mil	1.4mm
Min Board Thickness - 18 (layers)	62mil	1.6mm
Min Board Thickness ->20 (layers)	62mil	1.6mm
Board Thickness Range	14 - 276mil	0.35 - 7mm
Max Copper Thickness	15oz	525um
Min Line Width / Space	2mil / 2mil	0.05 / 0.05mm
Min Hole Size	3mil	0.075mm
PTH Dia. Tolerance	±2mil	±0.05mm
NPTH Dia. Tolerance	±1rmil	±0.025mm
Hole Position Deviation	±3mil	±0.075mm
Outline Tolerance	±4rmil	±0.1mm
S/M Pitch	3mil	0.075mm
Aspect Ratio	18:01	18:01
Thermal Shock	5 x 10Sec @288	5 x 10Sec @288
Warp & Twist	<=0.7%	<=0.7%
Flammability	94V-0	94V-0
Impedance Control	±5%	±5%
HDI Capability	Any Layer	Any Layer

High Frequency PCB, RF PCB Manufacturing Capability

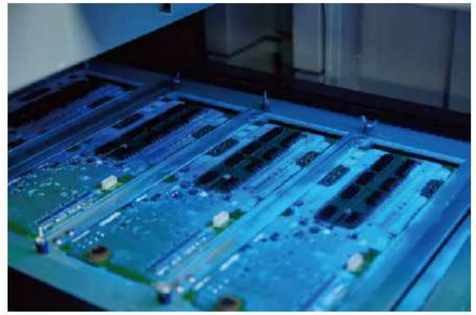
Mass Production
PCB Fabrication

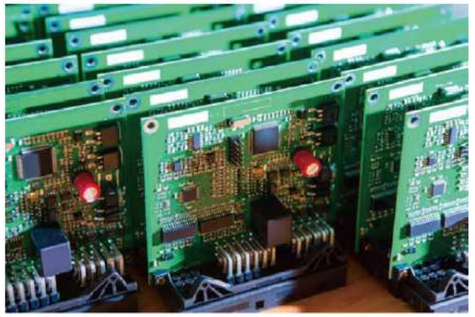
RF PCB Feature	Specification
Layers Counts	1-20 layers
Materials	Low loss / low Dk, higher performance FR-4, PPO, Teflon, hydrocarbon / ceramic filled
Highlights	Controlled impedance, low loss materials
Profile method	v-score, Routing
Dielectric thickness	0.1mm - 3.0mm
Copper weights (finished)	½ to 6 ounce
Minimum track and gaps	0.075mm / 0.075mm
Maximum dimensions	580mm x 1010mm
Metal core thickness	0.4-2mm post bonded
Surface finishes available	HASL(Lead-free), OSP, ENIG, Immersion tin, Immersion silver

HDI PCB Manufacturing Capability

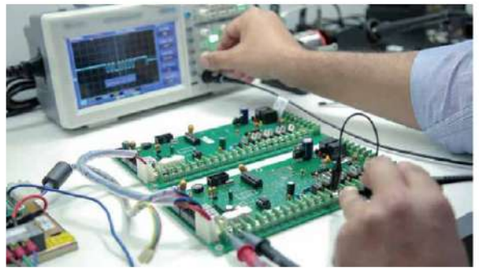
HDI PCB Feature	Technical Specification
layers counts	4-30 layers
HDI builds	1+N+1, 2+N+2, 3+N+3, 4+N+4, any layer in R&D
Materials	FR4, Halogen free FR4, Rogers
Copper weights (finished)	18μm - 70μm
Minimum track and gap	0.075mm / 0.075mm
PCB thickness	0.40mm - 3.20mm
Maximum dimensions	610mm x 450mm
Surface finishes available	OSP, Immersion Gold(ENIG), Immersion tin, Immersion silver, Electrolytic gold, Gold fingers
Minimum mechanical drill	0.15mm
Minimum laser drill	0.1mm advanced

Electrical & Mechanical Manufacturing Assembly Services





- Quick Turn PCB Assembly
- Prototype PCB Assembly
- Cable wire & Harness Assembly
- Box Build Assembly
- Surface Mount PCB Assembly Services
- Through Hole PCB Assembly
- Fine Pitch Component Insertion
- BGA and QFN Assembly
- Mixed Technology PCB Assembly
- IC Programming
- Conformal Coating
- Rework & Modification



Electrical & Mechanical Manufacturing Assembly Services

- Automated Optical Inspection for Structural Testing
- In-circuit Testing(ICT) BGA 3D X-Ray Inspection for Reliability Testing
- PCB Assembly test fixtures for Functionality Testing
- Thermal cycling, burn-in testing and shock and vibration testing for Life Cycle Testing

• Functional tester	• Test software
• Design For Assembly	• Functional Testing(FCT)
• AOI& visual inspections	• The DFA report
• Avoid assembly issues	• Embedded system testing
• Connect component failures	• Trouble shooting program

Electrical & Mechanical Manufacturing Assembly Services

Item #	Item Name	PCB Assembly Capabilities
1	Lead Time	Our service ranges from 8- 48 Hours for prototype and small volume PCB assembly projects. Since each project complexity is different, our turn-time starts from the time that all the components, PCB files (Gerber files/other PCB files, etc.,), Centroid(Pick & Place PNP file, or data or documents/images/photos are ready, then we start our assembly work.
2	Parts Source	kitten(consigned): Our Kitted PCB Assembly requires you supplying all the components and ship to us
		Partial Kitted: Our Partial Kitted PCB Assembly service means you offer the main components, and we source the rest components for you, and returned you assembled boards. We will ask for your approval on every details of the components concerning price, quality and availability.
		Turn-key: Our Turn-key PCBA service is based on our world wide network of components sourcing. We source from reliable suppliers such as Digikey/Mouser/TME/Element 14 and also local authorized distributors. We will always ask for your approval before making any decisions on equivalent components.
3	Assembly Options	We offer Surface Mount(SMT)Assembly, Through hole (THT) Assembly, hybrid of both(Mixed Assembly), BGA & QFN Assembly and Kit Assembly, with single or double-sided placement, Fitch Component Insertion.
4	Types of Solder	We offer both leaded and lead-free(RoHS Compliant)PCB assembly services for our customers.
5	Stencils	We use laser cut stainless steel stencils to ensure high reliability for fine pitch and Ball Grid Arrays(BGA) components.
6	Minimum Order	Any Qty. Our minimum order qty is 1 pcs. We specially focused on prototype (1-10pcs), small batch(10-100pcs) assembly and low volume PCB (100-500pcs) assembly.
7	Component Size	Passive Component: we can handle passive components as small as 03015,01005,0201,0402.
		BGA: We have the ability to handle Ball Grid Arrays(BGA) of 0.35mm pitch with X-ray testing.
		Fine Pitch Components as small as 0.38mm fine pitch parts.
8	Component Package	We accept parts in Reels, Cut Tape, Tube & Tray, Loose Parts and Bulk.

Electrical & Mechanical Manufacturing Assembly Services

Item #	Item Name	PCB Assembly Capabilities
9	Board Dimension	Min Board Size: L50mm x W50mm (Board smaller than this size need to be panelized)
		Max Board Size: L774mm x W710mm
10	Board Shape	We can assemble boards in Rectangular, Circular and any Odd Shapes. For PCB shapes other than rectangle, pls panelized the bare PCBs (printed circuit boards) in an array, and break-away fields at the two longer paralleled edges of the panelized boards, in this way boards can be assembled by the machine, our engineers can help you with PCB panelization if needed.
11	Board Type	We can assemble Rigid Boards (FR4, Cem..etc), Metal Core (Aluminum, Copper) Boards, Flex Board(Flex PCB), Rigid - flex Board(Rigid -Flex PCB)
12	IC Programming	DIP, SDIP QSOP, SSOP TSSOP, PLCC QFN, MLP BGA, CSP SOT SOP, MSOP TSOP QFP, MLF DFN
13	Inspections	Visual inspection: general quality check.
		X-ray Inspection: checks for BGAs, QFN and bare circuit boards.
		AOI Testing: checks for solder paste, 0201 components, missing components and polarity.
14	Functional Testing	Functional testers Test software Design For Assembly Functional Testing(FCT)
		Avoid assembly issues Correct component failures Trouble-shooting program
		Functional test will follow your test procedures

Supply Chain Management

At China Loong Circuit Boarde Electronics, we understand that every product is unique. That's why we have designed our
supply chain processes to be adaptable, flexible, and responsive to the individual requirements of each customer

• Planning

China Loong Circuit Boarde Electronics utilizes Design for Supply Chain principles and technology at all stages of product design, testing and NPI, production and distribution.

• Sourcing

We have established global supply chains, reflecting years of partnership with reliable global suppliers that meet our criteria for flexibility and open communications

3M, XILINX, AiSHi, Amphenol, ANALOG DEVICES, Atmel, ABRACON, DUPONT, EVERLIGHT, Fibocom, GEYER, HRS, Infineon + CYPRESS, JST, KAYAKU ADVANCED MATERIALS, Littelfuse, KYOCERA, LOCTITE, MICROCHIP, muRata INNOVATOR IN ELECTRONICS, nexperia, MAXLINEAR, nichicon, NXP founded by Philips, onsemi, SiliconMotion, power integrations, SILERGY, molex, TE connectivity, Panasonic, TAIYO YUDEN, RENESAS, REALTEK, hreeBor, TDK, TEXAS INSTRUMENTS, SIMCom, life.augmented, VICOR, VISHAY, WAGO, WÜRTH ELEKTRONIK, YAGEO

Supply Chain Management

• Manufacturing

China Loong Circuit Boarde Electronics supply chain management support utilizes component consignment systems, safety stock programs and established supplier partnerships to ensure assembly and manufacturing of your
product proceeds efficiently and flawlessly.

• Delivering

China Loong Circuit Boarde Electronics supply chain management services extend throughout the life of your product, including Finished Goods Kanban Programs, warehousing and logistics management.

• Returns

We support both in and out of warranty returns for our customers. We can customize and conduct a failure analysis of the return, retest, refurbish, replace and provide you data on the failure.

Global Logistics Services

- Integrated logistics and fleet carrier management
- Preferred partnerships with domestic and international carriers including contract negotiation services
- Management of third-party logistics providers (3PLs) and freight-forwarders
- Direct order fulfillment planning and implementation
- Shipment routing and guide generation
- Import and export documentation
- Commercial invoicing
- International compliance and Customs clearance monitoring services
- Cargo insurance and freight claims processing
- Reverse logistics planning and implementation

Return & Rework Services

With China Loong Circuit Board as your partner in developing and producing manufacturing your product, our process control methodology will assist you in identifying the optimal rework process to correct the fault, preparing documentation and ensuring regulatory compliance.