Electronic Design & Manufacture

Hardware, Software and IoT Capabilities Under One Roof
Selecting a development and manufacturing partner is often the most important decision a business can take. So why not choose a company that not only has an unmatched track record acting as a third party, but uses the same team and capabilities for products sold under its own name?

At Lascar we have built decades of success by designing and producing award-winning products under our own EasyLog and PanelPilot brands. Developing our in-house capabilities to include not only electronics and hardware, but also digital IoT solutions, enables us to create state of the art, market leading products. You can share our success by allowing us to create products for you.
The broad scope of disciplines encompassed by the Engineering Design and Development team combine both electronic and mechanical hardware expertise with digital services including software, cloud platforms and mobile apps.

**Product Design and Digital Integration**

- **Schematic and PCB layout design**
  On a variety of substrates including FR4, ceramic and T-Clad.

- **Software development**
  Including embedded firmware across multiple processor platforms and driver displays.

- **Analogue and digital circuits**
  Including automated sensing and monitoring, process control and data logging.

- **Communications**
  For wireless platforms such as WiFi, Bluetooth, NFC and GSM as well as serial commms and protocols such as SPI, RS232, RS485, Modbus and CANbus.

- **Mechanical design**
  Including conceptual product design, electro-mechanical assemblies and injection moulding, waterproofing and drop test resilience.

**Displays and Display Integration**

- Sometimes the most inexpensive product update can be a simple display addition or upgrade. But display integration, particularly the introduction of touchscreen options, can also present a serious design challenge.

Lascar has been designing and integrating smart displays for five decades including extensive capacitive, resistive and e-paper technologies.

**IoT & Wireless Solutions**

- **Mobile Apps**
  Creative App development for both iOS and Android from storyboards, wireframes and prototyping to development and deployment.

- **Cloud Platforms**
  Combining front-end User Interface design, back-end processing and analytics, database design and API connection.

- **Software Development**
  From a strong storyboard to test and verification, we build intuitive and sustainable software for all Windows™ platforms.
Whether for market research, design concept selection, engineering reviews or initial user testing, prototypes are invaluable for ensuring the final performance and quality of your product. We can also carry out full design validation including EMC testing and approvals for CE, TUV, etc.

We offer an extensive range of prototyping options from one-off space models to small run PCB and display assemblies. Injection moulding designs can be proved using a variety of rapid prototyping techniques - SLS models for one-offs and polyurethane products made from hand finished masters where quantities are sought for more extensive testing.

With offices in the UK, US and Far East, Lascar’s team of purchasing professionals scour the world’s markets to find the best deal on the components used in manufacture. Our large group spend, coupled with established relationships with an extensive network of suppliers allow Lascar to offer considerable cost savings with uninterrupted supply.

Our low costs are coupled with a fully traceable purchasing system, using franchised distributors or directly through component manufacturers with strict procedures to eliminate the risk of counterfeit parts. We can hold large component stocks ensuring rapid response and flexible supply chain. Our Manufacturing Resource Planning system and a dedicated team are able to expedite any request, ensuring that customer needs will be met and exceeded.
Lascar benefits from electronics manufacturing facilities in both the UK and the Far East. We offer small batch or high volume production as well as full test, QA and supply chain solutions. Whether your project requires our design input or is already in production, we can help.

**Manufacture**

- **Chip-on-board wire bonding**
  Aluminium and gold wire bonding machines for chip-on-board assembly including epoxy encapsulation.

- **Plastic injection mould tooling**
  Aluminium or chromium steel injection mould tooling for plastics and rubber components.

- **Laser trimming**
  High speed functional in-circuit laser trimming for applications requiring extremely high accuracy resistor values.

- **Surface mount & conventional electronic assembly**
  Placement of components down to 01005 and uBGAs on a variety of substrates including FR4, T-clad, steel and ceramic.

- **Prototyping & fast turnaround**
  In-house SLA, SLS, silicon tooling, vacuum casting and fast turn-around PCB assembly for design verification.

- **Thick film hybrids**
  Electronic circuits printed onto ceramic tiles for use in extreme temperature applications or applications where high reliability is required.

- **Product Assembly**
  Final assembly of all electronic and mechanical parts including loading firmware, monitored through inspection gateways.

**Lascar Asia**

Our Hong Kong team manages larger volume, lowest cost production using a core group of trusted manufacturing partners. Not only does this give us access to high quality manufactured parts at competitive prices, but gives us on-the-ground, round the clock access to those companies manufacturing on our behalf.

- **Our 2000 square foot quality inspection lab offers a host of capabilities**, including statistical process control and analysis, failure mode analysis, writing and improving quality control plans and quality control documents, visual inspection of workmanship and PCB inspection to IPC 610/600 Class 3.

**Lascar HK Quality Lab**
Lascar’s team has extensive experience of supplying high quality, fully tested products to customers in a timely and convenient manner. Whether you require a Kanban system or prefer to operate on a just-in-time basis we offer the flexibility to ensure you are never left short.

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Supply

Products can be supplied bulk-packed or packaged ready to ship to the end user. Lascar’s in-house graphic design service can assist in designing and supplying packaging, user documentation and promotional materials that add marketing value to your product.

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Quality

The foundation of our business is built around a philosophy of exceptional levels of quality. This is engrained in both our company culture and processes. All processes are carried out in accordance with ISO9001 standards to achieve world-class quality levels.

As part of our ongoing quality improvement policy, all assemblies are passed through an Automated Optical Inspection (AOI) process and are inspected to IPC-A-610 Class 3. Custom test fixtures can be designed to meet any specific product qualification requirements, including electronic serialisation and full result traceability.