

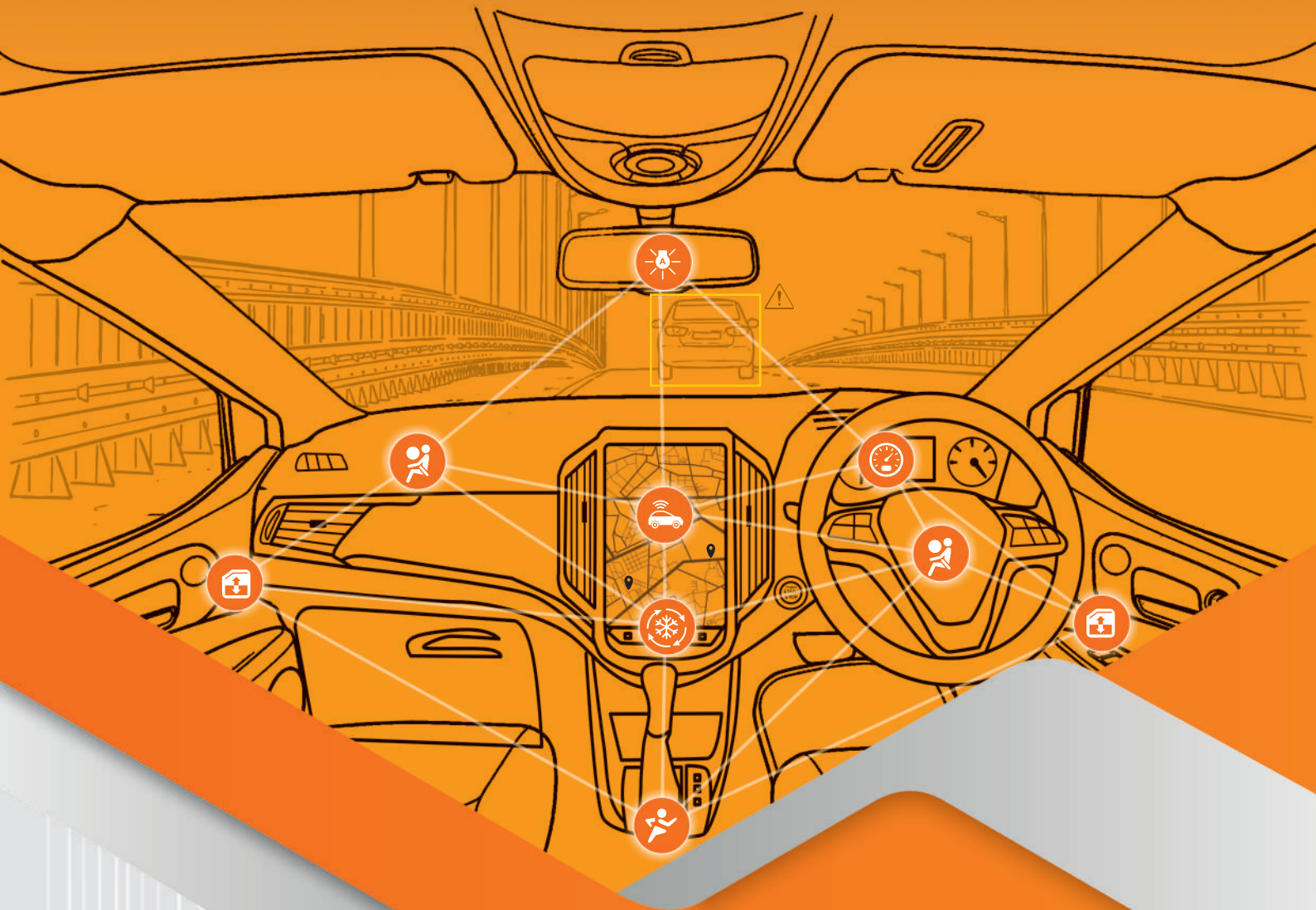
ELECTRONICS MANUFACTURING SERVICES

DESIGNING | PLANNING | INVENTORY MANAGEMENT
PRODUCTION | TESTING | SERVICE SUPPORT



ADDING VALUE

www.rootsems.com



OUR SERVICE DOMAINS



Automotive



Industrial
Automation



Consumer
Appliances



Communication



Power



Renewable
Energy



Defense



Aerospace

ABOUT US

Roots Industries India Limited delivers total manufacturing solutions to cover the entire bandwidth of Electronics Manufacturing Services starting from Design Services through Prototyping, Sourcing, Turnkey Manufacturing & Support Services.

The company was established in the year 1970, Roots group consists of 6 companies based in India, 1 JV manufacturing facility in abroad, 1 JV manufacturing facility in India, One Manufacturing facility in the US and 3PL warehouse in North America & Europe.

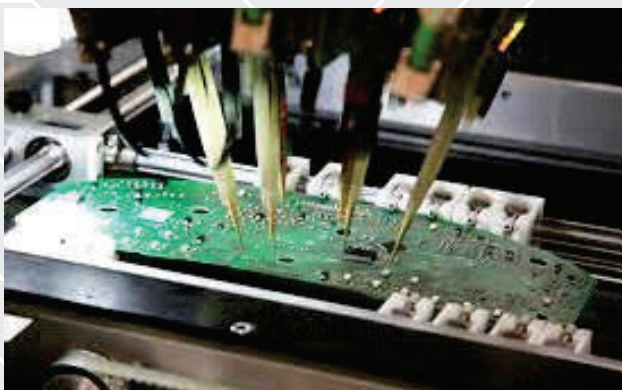
We are providing End to End Solutions to the Organised Sector in the field of Automotive, Aerospace, Consumer Appliances, Communication, Defense, Industrial Automation, IT Hardware, Medical, Power, Renewable Energy & Electric Vehicle.

Roots Industries India Limited is an ISO 9001/14001/45001 certified company. Our sector specific certifications are like IATF 16949 in Automotive Products, ISO 13485 for Medical Device & AS 9100 for Defence & Aerospace Devices, ESD S20.20 2014 Certified Compliance & IPC Standards 610 for Electronics Manufacturing Services.



PCB ASSEMBLY CAPABILITIES

- ◆ Hicomplex double sided PCB assembly
- ◆ High mix, Low to medium volume assemblies
- ◆ 5D Solder Paste Inspection
- ◆ 3D Automated Optical Inspection
- ◆ Vapor phase soldering
- ◆ Through hole soldering
- ◆ Conformal Coating
- ◆ Incircuit testing, End of line testing
- ◆ IPC 610 standards



TECHNOLOGIES

- ◆ SMT Fine-Pitch Assembly
- ◆ SMT and Reflow Soldering
- ◆ Pin in Paste Technology
- ◆ THT Soldering (Lead-free)
- ◆ 1% less than Void Soldering
- ◆ Automated Optical Inspection (AOI)
- ◆ Full Functionality Test (FFT)
- ◆ Component Programming (individually and On-board)

END TO END SOLUTION



ENGINEERING SERVICES

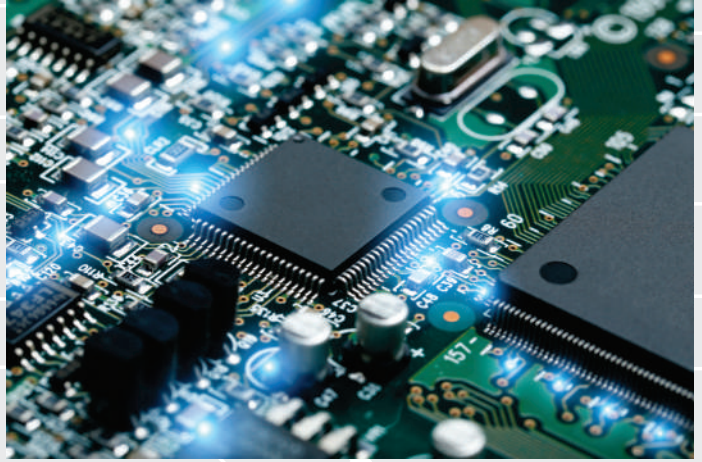
Roots services include Concept to Product, generating gerber data & output file required for manufacturing bare boards. We use advanced tools such as fab 3000.

Our capability includes designing multilayer PCB up to 16 layers with 4mil trace width as well as blind & buried via & BGA foot print designs with 0.5mm pitch.

We provides customized designs for products based on Automotive, GPS (Global Positioning System) / GSM (Global System for Mobile) designs, Microprocessor, I/O Interface & Industry Automation Controls etc.

Our experienced technical team enables us to offer highly effective value added engineering serives support with process definition.

- ◆ DFM (Design for Manufacturability)
- ◆ DFT (Design for Test)
- ◆ DFS (Design for Service) review & support for ESS (Environmental Stress Screening)
- ◆ EMI (Electro Magnetic Interference)
- ◆ EMC (Electro Magnetic Compatibility)
- ◆ HALT (Highly Accelerated Life Test)
- ◆ HASS (Highly Accelerated Stress Screening) testing of products.
- ◆ Our prototyping services provide customers with the benefits of reduced time to market through several innovative measures.
- ◆ We adopt concurrent engineering programs & quality process to ensure smooth transition from protos to bulk production.



INSPECTION & TESTING

- ◆ Full functional testing
- ◆ Incircuit testing
- ◆ 3D Automated Optical Inspection
- ◆ 5D Solder Paste Inspection
- ◆ Burning test
- ◆ Shock & Vibration
- ◆ Thermal Cycling
- ◆ Late Stage Customization
- ◆ Visual Inspection



STATE OF ART MANUFACTURING FACILITY

We have build up area nearly of 2,00,000 sq. feet and our electronics division have 12,000 sq. feet with a completely ESD free environment for SMT & THT line certified for ESD S20.20 & IPC Standard 610. We have IPC standard trained professionals.

We use design tools like Auto Cad, Pro E, Solid works & Simulation packages for 2D/3D modeling & E drawings.

Our domain expertise focuses on high mix, low, medium and high volume production, combined with value added services provide definitive benefits to the customer in the area of Automotive electronics sectors.



AREA OF EXPERTISE

- ◆ Roots Industries India Limited is an exceptionally experienced, leading manufactures of Electric horns, Electronic horns having multi functional products like Back up Alarm, USB Chargers & DC-DC Converters.
- ◆ We promote our products to Diverse segments including Automobile, Aerospace, Medical, Metrology, Comfort products, Electric Vehicles.
- ◆ We have been at the forefront of manufacturing space for the last 5 decades having the State of Art Technology, unmatched quality & management practices tailored to the industry.
- ◆ Roots offers "Concept To Product" services to all it's customers.



Automotive



Aerospace



Medical



Calibration



Electric Vehicles



Why EMS with ROOTS?

- ◆ Cost Effective Design
- ◆ QMS & Sector specific standards like ESD S 20.20 & IPC 610 certified
- ◆ Our Electronics R&D center specializes in Digital and Power Electronics with 25+ skilled experience engineers in Hardware and software design
- ◆ High Production Flexibility as per Customer need
- ◆ Value Added Services

OUR SERVICES

From the BOM, through production, to shipping your assembly, we work with you every step of the way to ensure a high quality, on-time delivered product.

FREQUENTLY ASKED QUESTIONS

- ◆ We understand that in competitive and dynamic markets, offering high quality products and competitive prices alone is simply not enough
- ◆ Our customers require the unparalleled customer service and manufacturing support that we provide to them through communication, responsiveness and flexibility to continually satisfy their rigorous demands and evolving product specifications
- ◆ Whether it is single or double sided or has surface mount, through hole or mixed technology components, we can populate virtually any printed circuit board you can design
- ◆ Our broad electronics manufacturing expertise comes together to provide complete system build services for simple "ONE STOP SOLUTION"



www.graphicssystem.in



ADDING VALUE

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