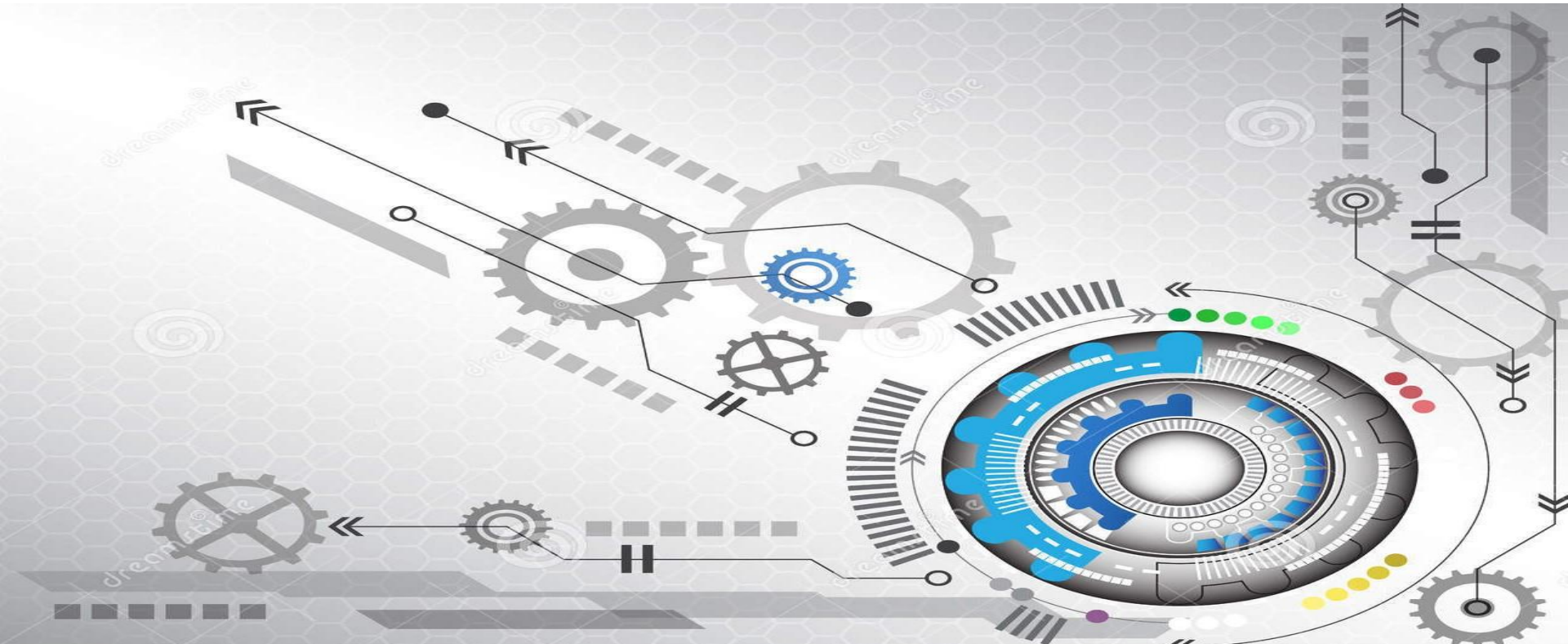




**DESIGN &
MANUFACTURING**



ENGINEERING E **XCELLENCE**

Concept to Manufacturing / Testing & Automation / System Validation / Value Engineering



Company Overview

Leading end-to-end Integrated Electronics Design and Manufacturer

- Located in Chennai, India
- Capabilities across the entire spectrum of ESDM service.
- Over 10+ years of experience
- Conceptual Design, Process Engineering, Integrated Manufacturing and Life Cycle Support
- Medical, Automotive, Industrial, Railways, Internet of Things ("IoT") and other segments.





Company Overview

- Capability to Design and Develop innovative solutions.
- In-house state of the art SMT manufacturing facility
- ISO 9001: 2015 Quality Certified
- Entrusted by customers for more than a decade to address their critical solution needs.
- Strong team of 30+ Employees
- Company-wide ERP System for Efficient Material, Product Data and Finance Management
- Dedicated NPI, Engineering and Prototype Teams
- High-quality reliable products





Quality Policy

Siliconz is focused on delivering **High Quality Design** and **Manufacturing Services** that exceeds customer expectations and continually enhance our processes to improve **Customer Satisfaction** and **On-time Delivery**





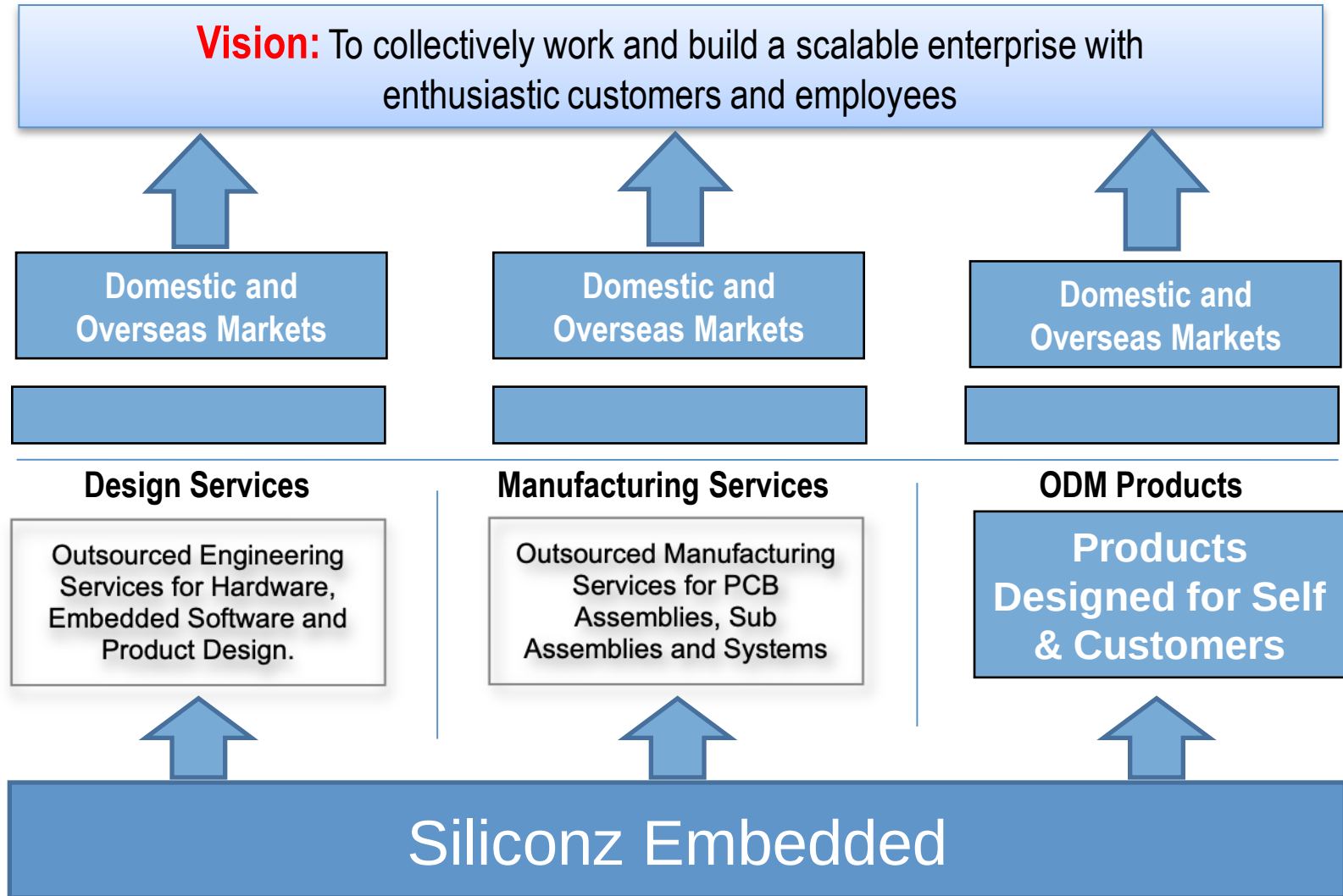
Why Siliconz ?

We help customers,

- Achieve faster time-to-market
- High reliability product at affordable cost
- Value addition at every stage of product development
- Fast turnaround time

End-to-End integrated Product Design and Manufacturing Services that combine Hardware, PCB layout, Software, Mechanical, Rapid prototype and System level Testing all under one roof.

Business Model

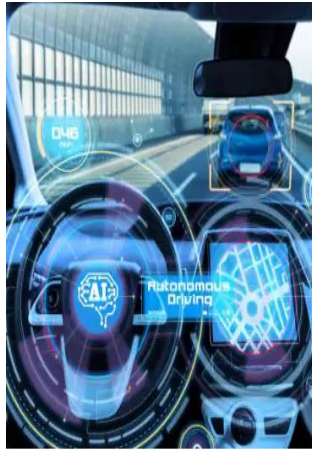




Domain Expertise



**Medical &
Diagnostics
Devices**



Automotive



Industrial



Consumer

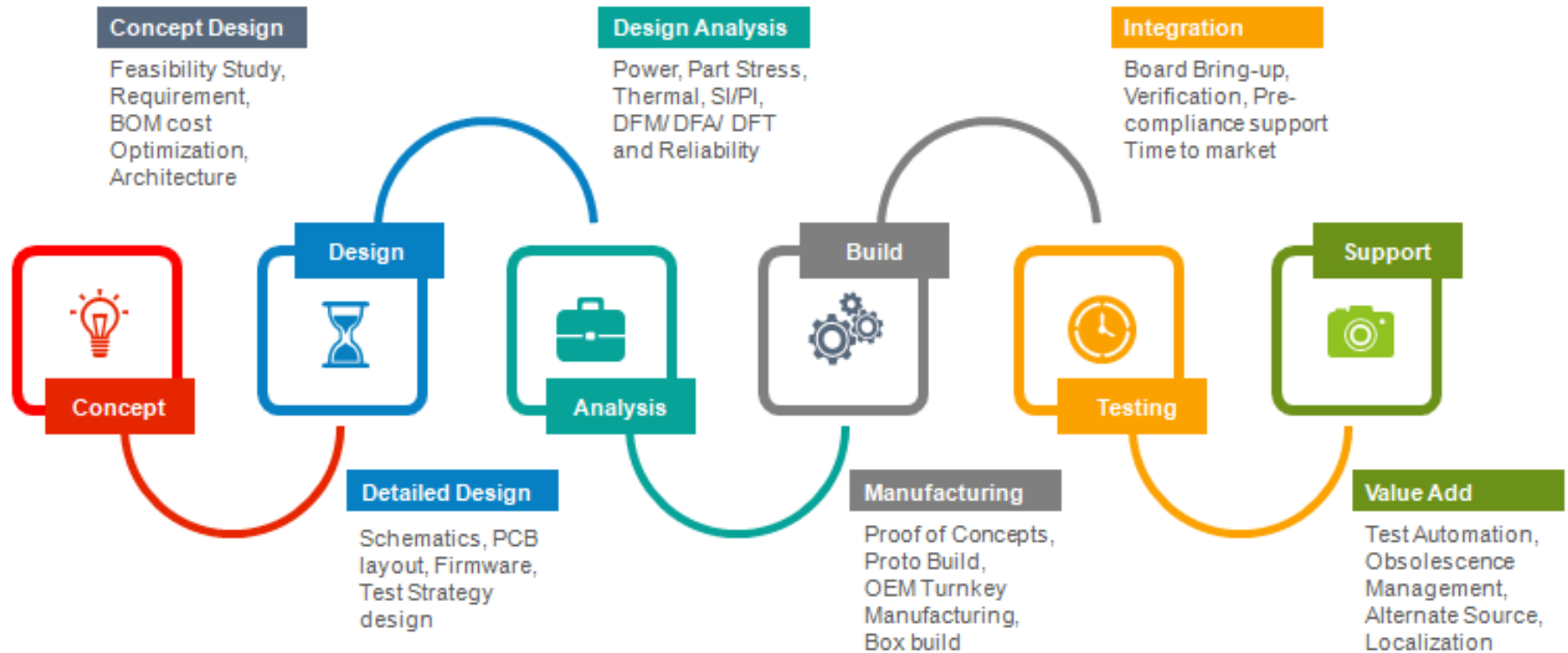


**Internet of
Things**

- ✓ Data Acquisition & Control Systems
- ✓ LED lighting
- ✓ Remote monitoring device and control
- ✓ Short range wireless devices.
- ✓ Rapid prototype design



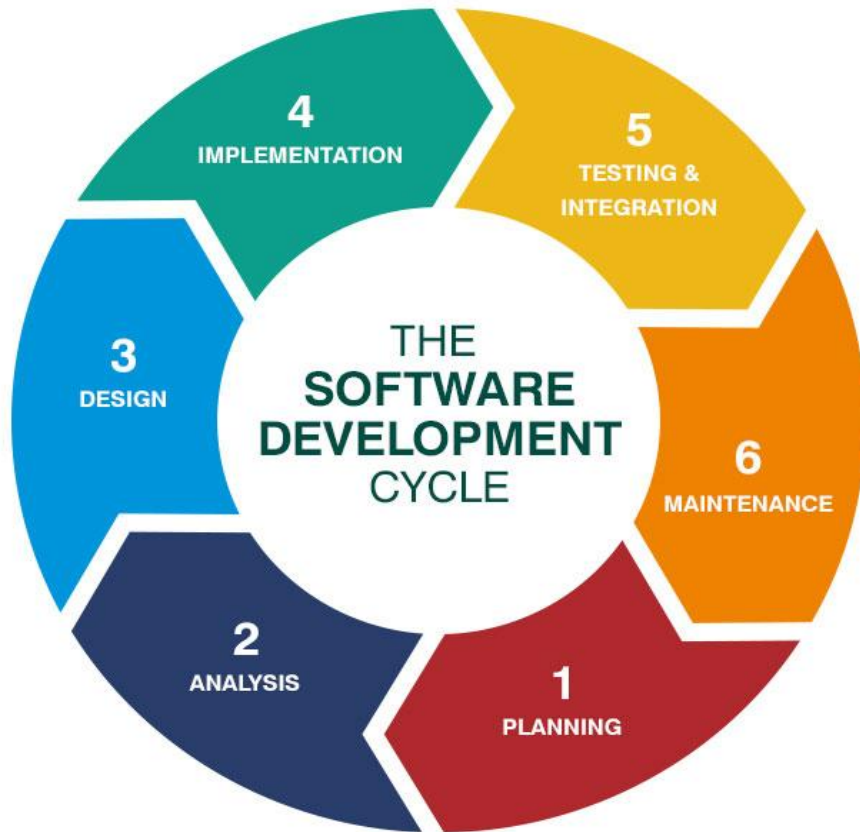
EDS - Engineering Design Process Flow





Electronic Design Services - Hardware

- **Microcontroller platforms:** ARM CORTEX Series, ST, Renesas, Holtek, NXP, Silicon Labs and Microchip 8/16/32 Bit
- **Open-Source Hardware:** Raspberry PI, Arduino
- **Wired Interfaces / Protocols :** RS232 – UART, RS485 – MODBUS, ETHERNET - HTTP, TCP, UDP, USB 3.0, Wi-Fi, CAN BUS, LIN, SECS-GEM, HID etc.,
- **Wireless Interfaces:** Wi-Fi, Bluetooth, ZigBee , RF Transceivers, RFID - HF / LF/ UHF
- **Battery Management:** Li-Ion, NiMH, Etc. Charging Circuits, Battery Fuel Gauges
- **Power Electronics:** BLDC Motor Drivers, AC-DC and DC-DC Modules, Discrete SMPS Design and Switched Mode DC-DC Converters, Controller cards for Stabilizer
- **Display / User Interface:** 7-Segment Displays, Character LCDs, Graphical LCDs, Capacitive Touch Screen,
- **PCB Layout:** Up to 16 Layers using Cadence Allegro / OrCAD, Impedance Control Design, Differential Pair, Signal / Power Integrity, EMI & EMC Compliance



- **Development Tools :**
KEIL, MPLAB, IAR, CUBE IDE, Simplicity Studio, HOPE 3000
- **Operating Systems :**
Android, iOS, RTOS, Linux, Windows
- **Languages :**
Assembly, Embedded C, C++, Python
- **Web Applications :**
Python, HTML/CSS/JS



EDS – Products Designed

- Medical Devices & Diagnostic Instruments
- Data Acquisition & Control Systems
- IoT – Internet of Things
- LED lighting
- Remote monitoring device and control
- Short range wireless devices
- Consumer Electronics & Appliances



Production Infrastructure

Design to Delivery - In-house Manufacturing Capabilities

- Clean Antistatic Production Area
- SMD & Leaded Assembly Lines
- RoHS and Lead Soldering
- High speed Pick & Place Machine
- 8 Zone SMT Reflow Oven
- Optical Microscope based PCB Quality Inspection
- Harsh Environment ready PCBA Production
- 100 % functional testing of all Products





Electronic Manufacturing Services (EMS)

End-to-End Electronic System Design and Manufacturing for

- Board Level Assembling
- Modules
- Products, etc.,

Fully automated **SMT pick and place machine** for the SMT components in **Electro-Statically safe** work environment and trained professionals to operate & manage. We also do line assembly and through hole assembly.

Complete testing to your specifications, including full assembly using customer supplied fixtures or fixtures developed as per the requirements.



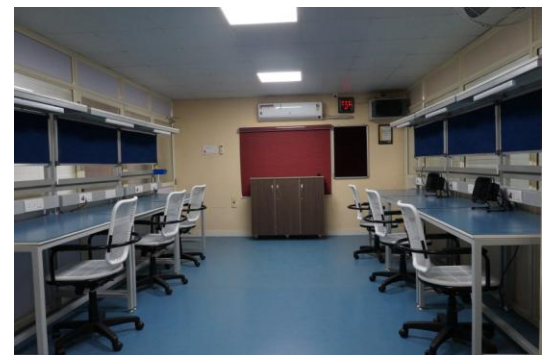
Manufacturing Services

Prototype Manufacturing

PCB Fabrication - Component Procurement -
Import - PCB Assembly SMT and TH , BGA
Assembly with Inspection
Small Volumes 1 to 100 Quantity
2~4 Weeks Turnaround Time with Dedicated Team

Turnkey - Mass Manufacturing

PCB Fabrication - Component Procurement -
Import - PCB Assembly SMT and TH - Testing - Box
Build, BGA Assembly with Inspection
Volumes 100 to >10K Quantity
8~12 Weeks Turnaround Time



Semi-Auto Printer



PCB Inspection Conveyor





INFRASTRUCTURE – SMT Mounter (Pick & Place)

High-Speed
Smart Modular Mounter

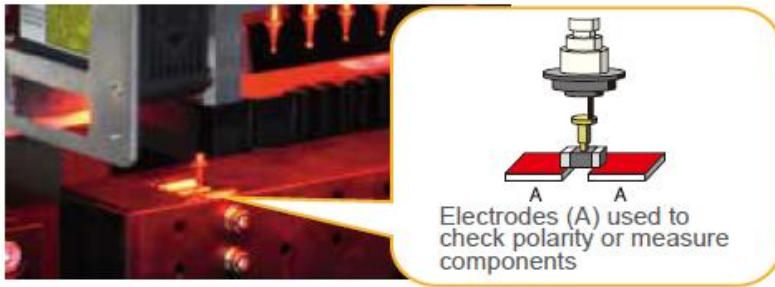


- Speed, up to **47,000 CPH**
- Wide component range from **0201** (metric) to large connectors and ICs
- Superior Placement Accuracy - **35 Microns**

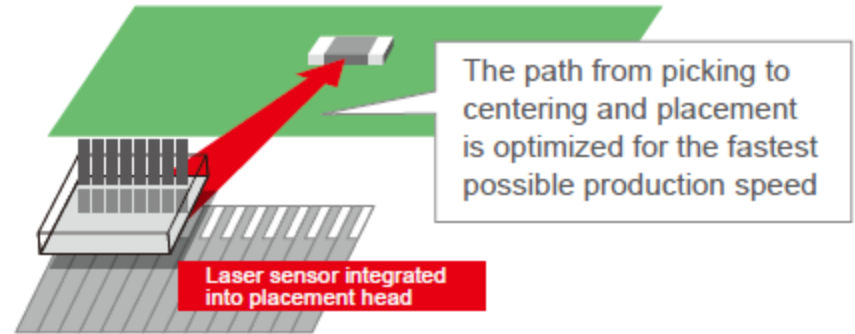


INFRASTRUCTURE – SMT Mounter Features

Incorrect component prevention
Component Verification System



8-nozzle simultaneous, on-the-fly
centering for high-speed



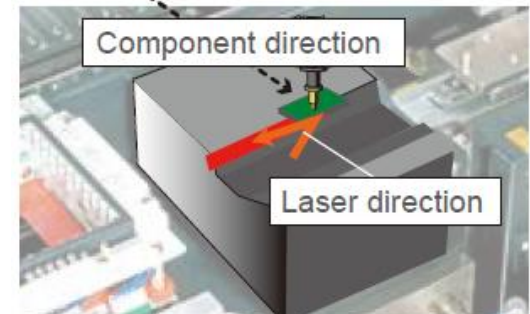
Co-planarity sensor - checks balls and leads



BGA ball defect



Lead float defect



Coplanarity sensor

Lead Free Reflow Oven



Linking Conveyor



- **8 Zone** Top / Bottom Lead free Reflow Oven
- $\pm 1^{\circ}\text{C}$ temperature stabilization accuracy
- **PID+SSR** Temperature Control Method
- No Thermal Stress - Longest Tunnel
- Both **Chain and Mesh** Conveyors



INFRASTRUCTURE – PCB INSPECTION

Auto Focus Digital Microscope

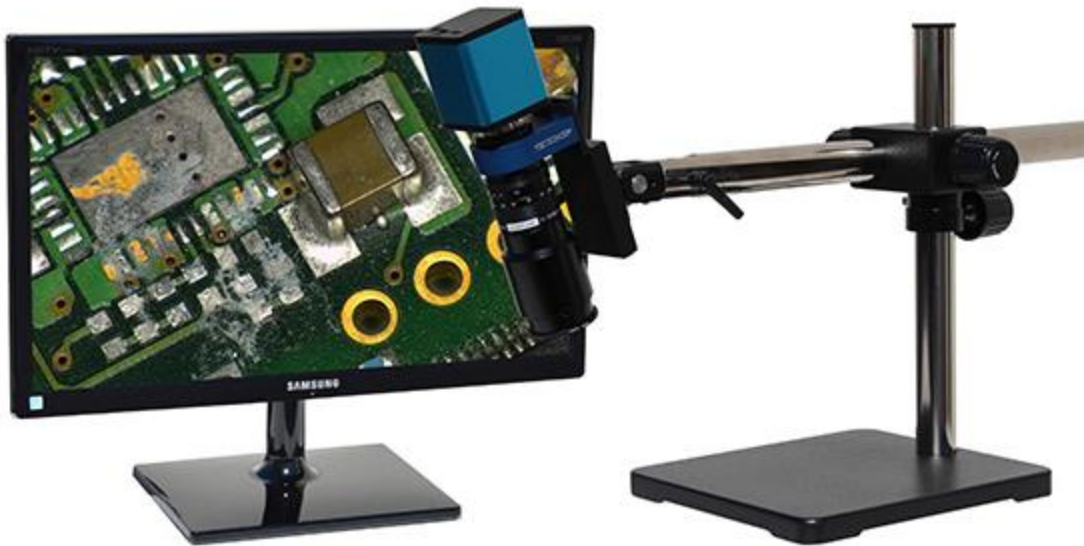
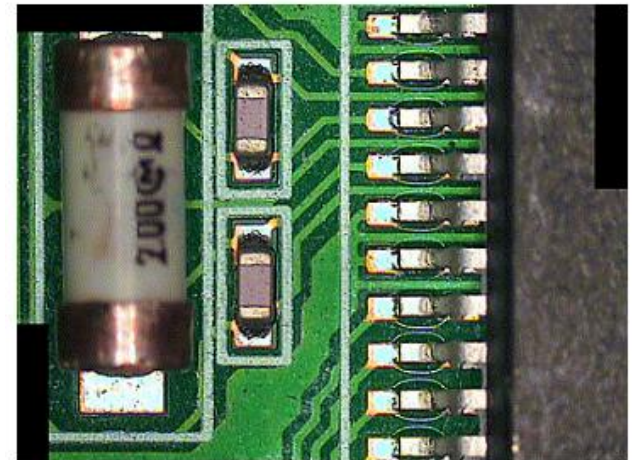
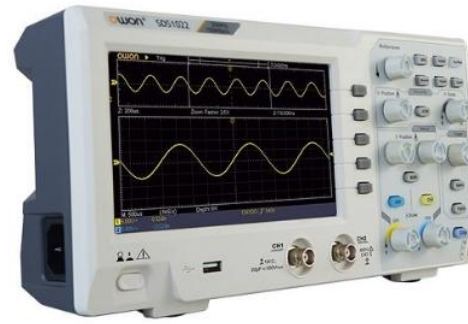


Image Stitching and
Extended Depth of
Focus

High Definition HD 1080p auto focus digital microscope with high Depth of Field
Optical Magnification 91x with 2x digital amplification.



- Forming Machines
- Testing setup & Jigs
- Test & measuring Instruments
- Power Backup





ESD Protection

- Conductive Epoxy Shop-floor for Superior ESD.
- All the working tables/benches are Covered by ESD Mats.
- Special Isolated copper earth for better conductivity.
- Antistatic Wrist band and footwear for every operator/technician
- Conductive Discharge Plate for every major facility
- Materials / Components are handled in Anti-static trays.
- All the material storage racks are grounded to ESD earth points.
- Periodic Anti-static Audits
- Plastic / Nylon material pouches are avoided in production.
- No Charge Generating Nylon or synthetic materials used



**Email**

sales@siliconzembedded.com

Address

Siliconz Embedded Solutions LLP
No.299, Burma Colony 4th Main road,
Perungudi Industrial Estate,
Chennai 600096. India

GSTIN: 33ACJFS1894B1Z6

Website

www.siliconzembedded.com

THANK YOU

