



## Company Profile

# INTERFAB ELECTRONICS ( INDIA ) PVT. LTD.

**INTERFAB** means  
**INTER**-active **FAB**-rication



# Company profile

- An ISO 9001 : 2000 company
- A total solution company having in house facility for
  - Embedded design
  - PCB CAD Centre for up gradation of design layouts
  - Fast prototype assembly
  - Electronic Manufacturing Services
  - In circuit & functional testing
  - Conformal coating & encapsulation
  - Reliability testing



# Directors' background

- **Deepak G. Sawant**

Managing Director

Post graduate in Solid State Electronics

Worked with Indian Institute of Science ,

Vikas Hybrids , Rolta India Limited

Professional Experience : 27 Years

Member of SMTA, IMAPS, ELCINA



- **Supriya D. Sawant**

Director

Science Post graduate and Management Professional

ISO 9001:2000 Lead Auditor

Worked with Hoechst Research & Multinationals like

Cadburys, Hindustan Unilever Limited as QA Head

Professional Experience : 21 Years



# Mission & Vision



## MISSION STATEMENT

Emerge, as a leader in Surface Mount Technology (SMT) by providing Total Solution for customized needs in Design Conversion & Manufacturing.



## VISION STATEMENT

To be recognized as the most successful & low cost electronics manufacturing service provider in organized corporate sector.

## Values: (Guiding Principles at all levels)

- Motivate performers to see a bigger picture and set goals with execution & end result in mind.
- Train & treat employees with respect , cultivate confidence & decision making abilities.
- Practice Innovation, Integration & Involvement . Emphasize on vision, not supervision.
- Develop systems with emphasis on customer focus & continual improvement



# Quality Policy

- The company will strive for total customer satisfaction by providing engineering solutions through Surface Mount Technology (SMT).
- The company will regularly review the effectiveness of its Quality Management System (QMS) for continual improvement of systems and operations.
- The company will adopt latest technological trends to enhance business operations in high-end technology based products.
- The company will motivate & train competent employees to enhance their technical capabilities.
- The company will maintain an open communication channel with its customers & will carefully monitor their feedback to upgrade Products, Services and Quality Standards.



# Quality Objectives

- Meticulously follow Quality Management System & ISO9001: 2000 procedures. Adapt best manufacturing practices required to satisfy the customer needs.
- Minimize the customer complaints by evaluation of documented data and target for maximum yield by adapting six sigma techniques.
- Effective utilization of Automated machines by installing additional Quality Control equipment for consistency & reliability in the processes .
- Use innovation in design & standardize design methods by using state of Art CAD,CAE ,CAM tools to support industries in India & Abroad.
- Define and implement an operation model suitable to adapt QMS, E-business (Internet, web enabled), Enterprise Resource planning. Cultivate simplicity, consistency & productivity in business model.



# Quality Objectives

- Achieve yearly sales growth of 50% in contract manufacturing of Printed Circuit Board (PCB) Assemblies.
- Collaborate with leaders who need support in EMS technology support , associate with institutions like SMTA, ELCINA , IMAPS to acquire latest know how.
- Focus efforts on application of allied technologies such as Electronics Design Automation (EDA), Lead-free Soldering Technology, and Computer Aided Manufacturing (CAM).
- Introduce INTERFAB's services to export market and step forward to exhibit our products & services in international fairs.



# Our Business Activities

- Electronic Manufacturing Services
- Contract Manufacturing ( Equipment building )
- Conversion of conventional assemblies in to mix technology SMT cards
- Design & Development of hybrid microcircuits
- Prototype support for embedded design
- Repairs, rework & maintenance of PCB cards

# Fast prototyping & Evaluation

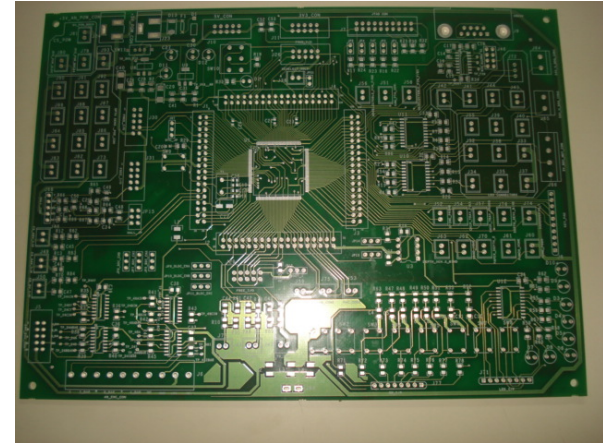


Engineering support to select latest in wide variety of components & packages

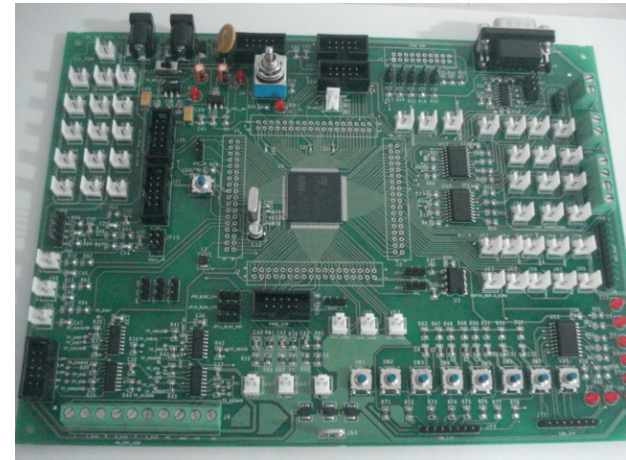
Faster evaluation based on availability of reliable components , a Lean process approach

Integrated design environment to support documentation needs

Flexibility to generate offline CAM data for quick turnaround & optimization.

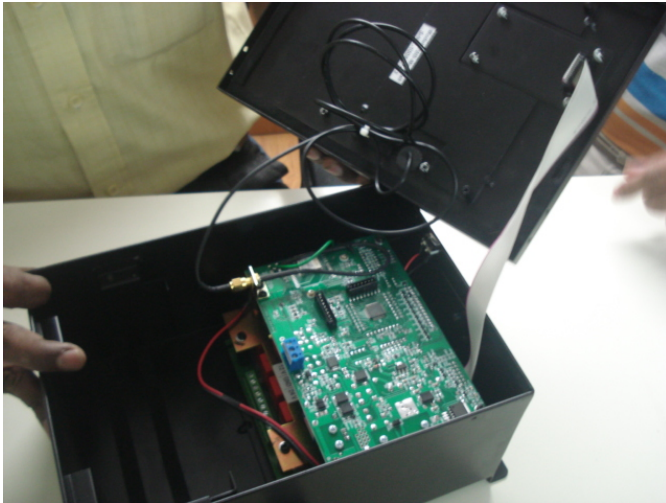


BBT tested Bare Board



Prototype/Evaluation Card

# Contract Manufacturing (Box Building)



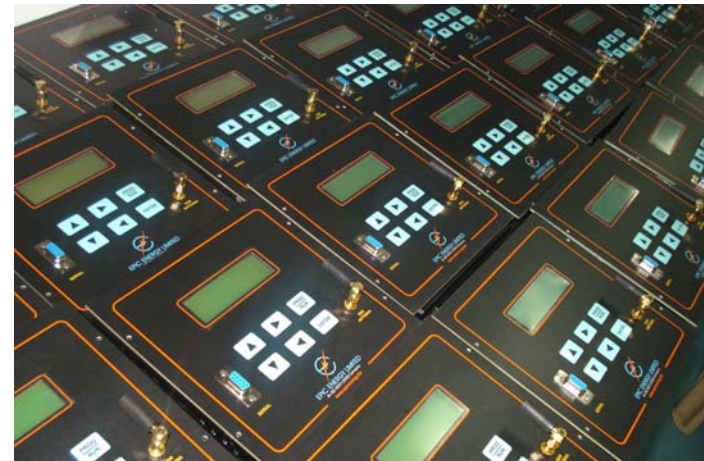
Intelligent Black Box



HVAC Power control Module

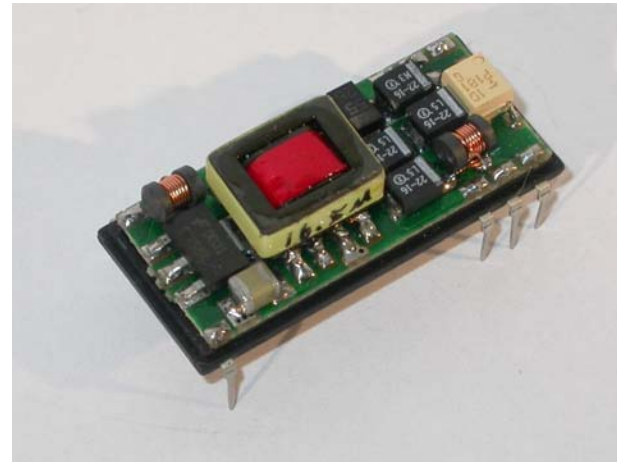
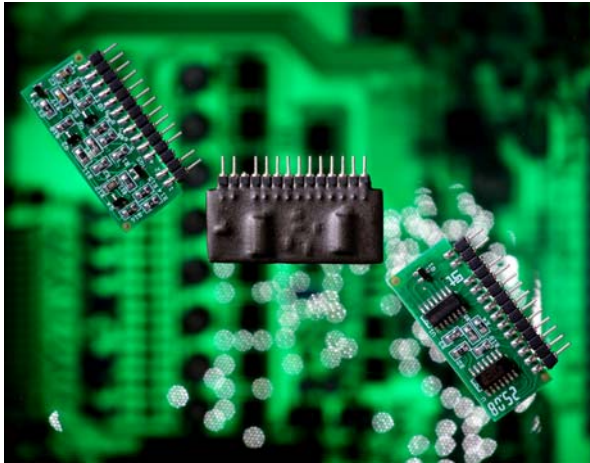


Portable POS Thermal Printer



Energy Management System

# Design Development of SMT & Hybrid Modules



Hybrid Micro-Circuits (HMCs)

Surface Mount Technology Assemblies (SMAs)

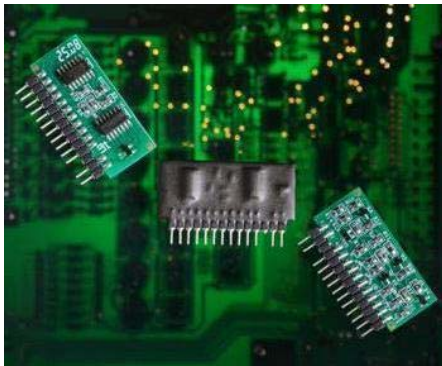
# Products



ACTEL FPGA Evaluation Card



Embedded design Solutions



Hybrid Micro-Circuits (HMCs)



SPM Control Card

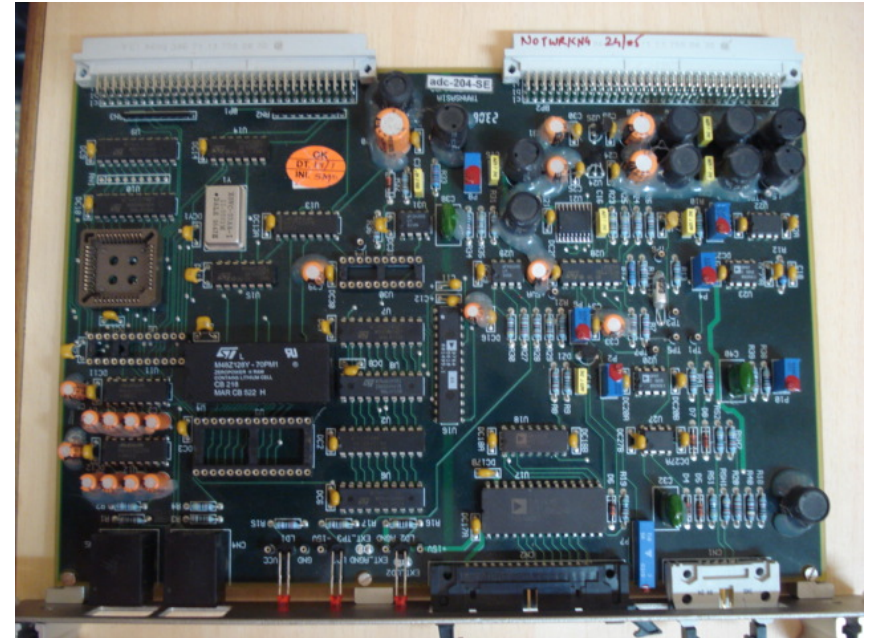


Printer Driver Interface Card

# Products



INTRUMENTATION CONTROL CARD



ETHERNET CARD

# Human Resources



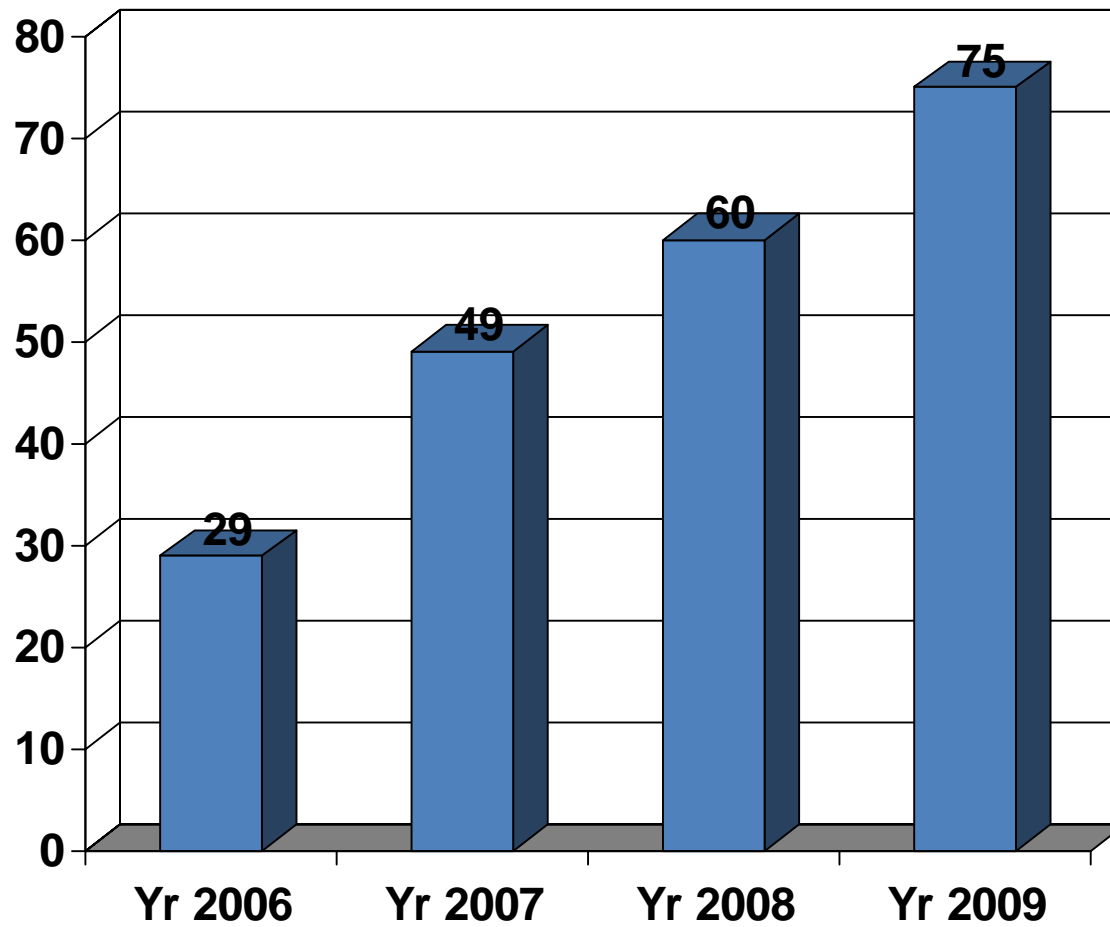
- 42 employees
- Government approved apprentice training centre
- Managerial staff : Engineers, Electronics Post graduates with vast industry & management experience
- Supervisors & asst. managers :
- Diploma engineers, graduates
- Operators : ITI , NCTVT certificate holders



TEAM INTERFAB



## Satisfied Customers



■ No. of Satisfied Customers

INTERFAB believes in Interaction with OEMs to help them to organize their needs in manufacture of clean, reliable & globally acceptable products.



# Supply Chain Management

- Technically qualified and efficient purchase team
- Stores equipped with MRP ( material resource planning ) with wide component data base
- In house vendor development program implemented
- Supplier evaluation & records of delivery schedules & quality inward inspection maintained.
- Import of raw material & components through authorized distributors, dealers

# Infrastructure for sourcing



- Direct overseas purchase of critical items.
- Sourcing channels established for smaller quantities : Farnell, Mouser, RS components, Digikey etc
- Secured storage of critical components in humidity / temp controlled atmosphere



# ERP used in company

- Well defined Quality Management System (QMS ) to support for systematic
  - Material flow
  - Data flow
  - Work Instructions flow
- Evaluation of ERP service providers :(Is in progress)
  - Flow charts ready for operations , information work flow
  - Forms & formats devised for data generation
  - Data entered & maintained on desktops at each work stage process to easy retrieval of information.
  - Questionnaire ,Benchmarks given to ERP vendors to satisfactory demonstrate its the end use.



# Manufacturing set up

- Air conditioned , dust free, humidity controlled rooms
- Entire production facility equipped with anti-static flooring
- Static control & material handling aids being used
- The State of the art machines & equipments for PCB assembly
- Trained manpower



Wave Soldering



SMT line with Reflow process

# High Density placements with flexibility & productivity



KE 2060 High –Speed Flexible Mounter



KE 2050 High –Speed Chip Shooter

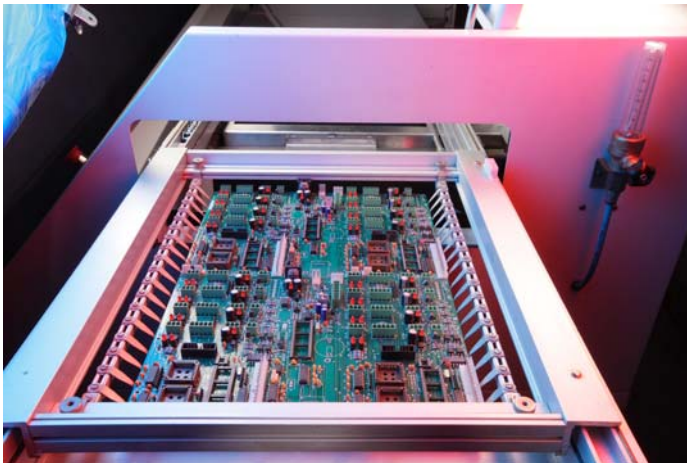
# The State of Art machines



Fine Pitch Multifunction Chip Mounter KE760M



High Speed Chip Shooter KE2050M ,KE2060L



EPS Double Wave Soldering Machine



Multi zone Reflow Conveyor Oven

# RoHS Compliant Soldering process



- Lead free (R-o-H-S) compliant Re-flow solder process.
- Pin & Chain , Conveyor-mesh for High volume production of double sided SMT Cards.
- Multi-zone closed loop monitoring to profile High density Multi-layer Boards with small delta t .
- Online Graphical display of Thermal profile supporting PC for easy data/programmed recall
- Conveyorised mesh, pin & chain for High volume
- Can solder double sided SMT component on multilayer PCBs.
- High density Boards with delta T
- Computerised thermal profile



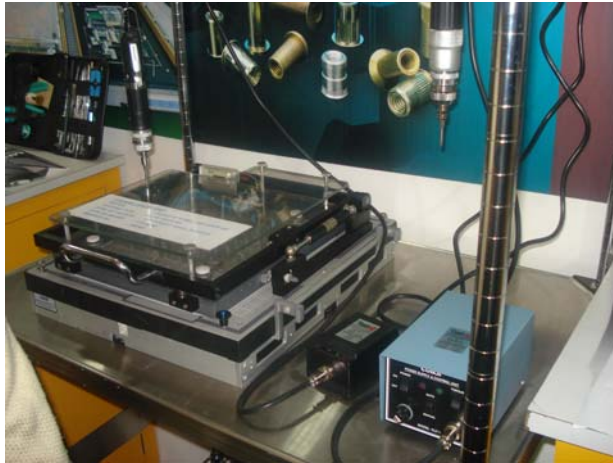
7 Zone Pin & Chain Conveyor Reflow Oven



EPS Double Wave Soldering Machine



# Test performance: ICT & FCT



Tailor made Test Jigs



Function Test Modules



In Circuit Tester Focus 2000

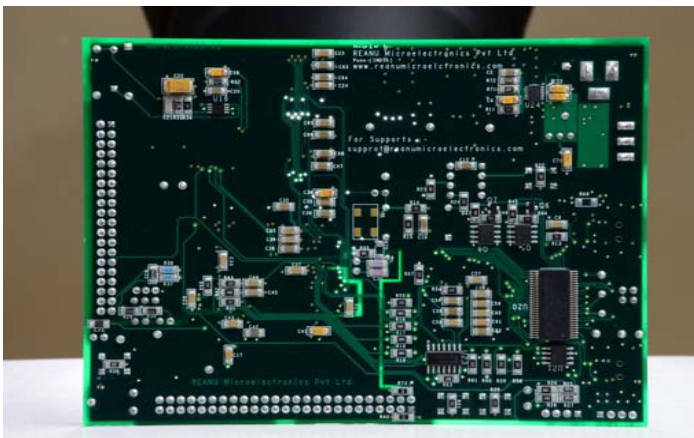
# Concurrent Engineering Environment



Integrated CAD/CAM Software environment



Multilayer PCB Assemblies



Continual improvement for highest standards in Quality

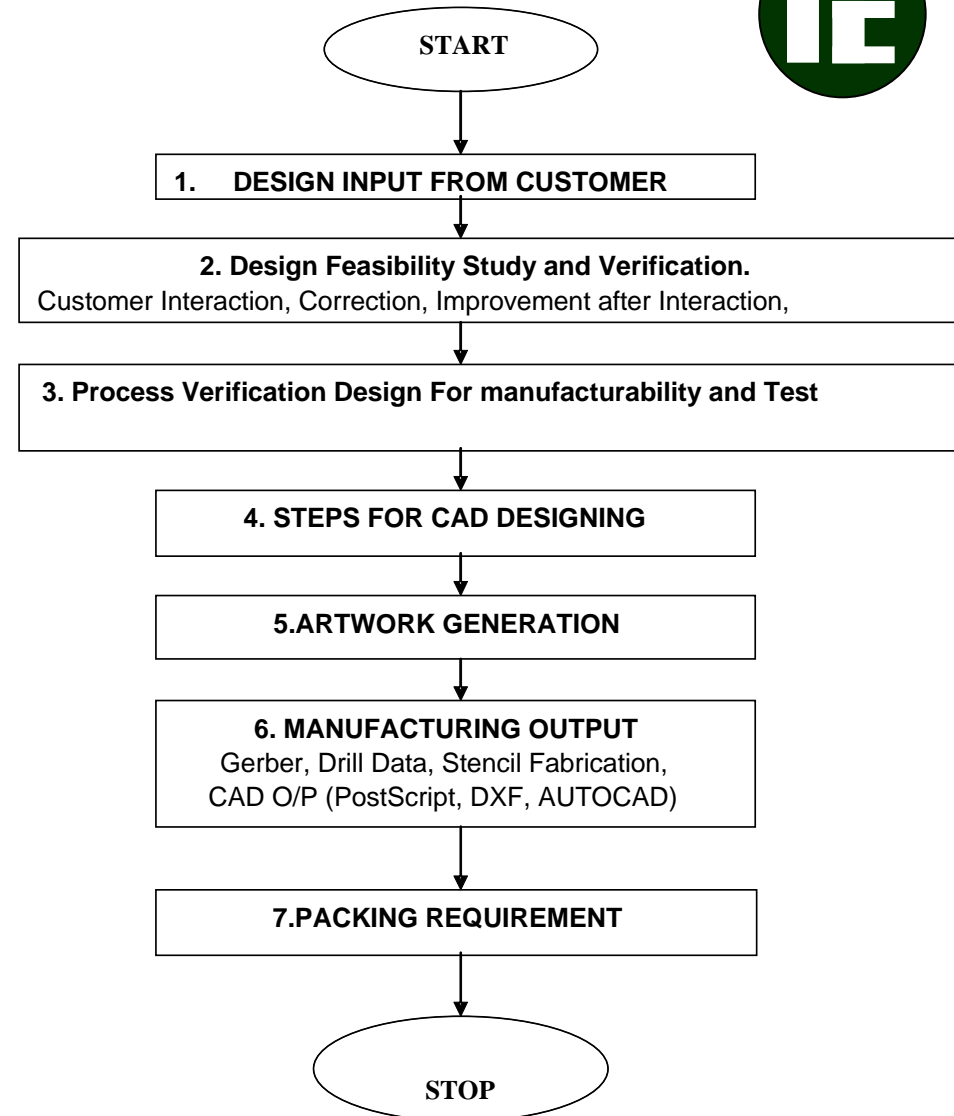
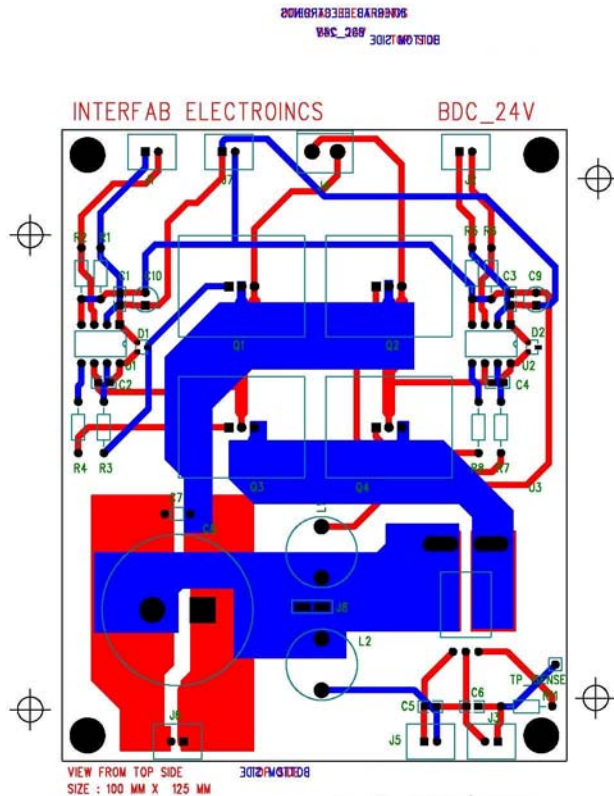


Support from in-house CAD Center & Prototypes Facility

# Design for Manufacturability (DFM)



Design methodology for LEAN Process



At Design stage assembly is categorized based on flow of applied Manufacturing stages.

This helps to even an operator to select & identify an appropriate Quality Plan.

This in turn facilitates an easiest way to understand & apply work instructions on shop floor.



## Machines & Equipment

Name	Make	Features
Fine pitch Chip Mounter KE 760 M	Juki corporation , Japan	Built in Component verification, coplanarity check, Height measurement , suitable for BGA &CSP assembly
High Speed Chip Shooter KE 2050 M	Juki corporation , Japan	High speed board assembly with HLC & flexiCAD software
High Speed Multi function Chip mounted KE 2060 M	Juki corporation , Japan	Fine pitch chips assembly (0402 to 50 mm chip size )
Lead free Reflow Oven CR M 7HAO	Tangtek Corporation, Taiwan	Pin & chain conveyor , multi zone PID , Built in Thermal profile , RoHS compliant

# Machines & Equipment



Name	Make	Features
Stencil Printer	Integrated Ideas & Technologies Inc , USA	X,Y , Theta & Snap off Z control
Wave soldering machine	Elektra Aries, Sweden	
Wave soldering machine ISO DWSM 300 LF	EPS, India	Double SMD wave, SPC data provision, Off line data log in , RoHS compliant
Selective Soldering Machine M56	Wenesco, USA	Rework & repair facilitation of through hole components
IR Reflow Oven 540 .25	SEF, Germany	Quick Thermal profiling to support fast prototyping
Inspection camera	Menzel, Taiwan	50X, 100X magnification for Fine pitch components



# Machines & Equipment

Name	Make	Features
Hot Air Oven	IEC, India	Endurance testing
Hot Air Oven	Lifelong, India	Thermal Ageing
CAD work station	Allegro Cadence, U S A	Concurrent engineering Environment, CAM support
Assorted test & measuring instruments	Textronics, Sanwa, Aplab, Rishabh, Meco, Bonkot	Digital oscilloscopes, Digital multimeters, LCR meters
Solder paste dispensers STD 208	I & J Fishner, USA	Paste dispensing for Prototyping
De humidifiers	Arctic India	Humidity control
Cutting, Bending & Forming machines	OLMF, Italy	Pre solder setting

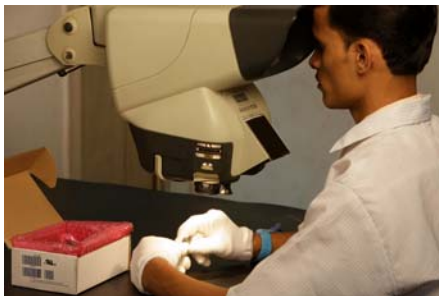
# Quality Assurance system



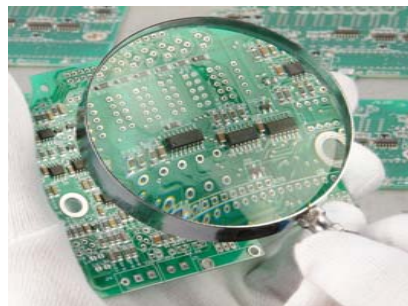
- Comprehensive Quality Management Systems Manual covering detailed operating procedures & work instructions
- Well defined Quality plan includes procedures for
  - Inward goods inspection
  - In process checks
  - Final batch inspection
  - Functional Testing
  - Reliability / Endurance test



Finished assembly Inspection



Inward Inspection



V. I. of Bare PCBs

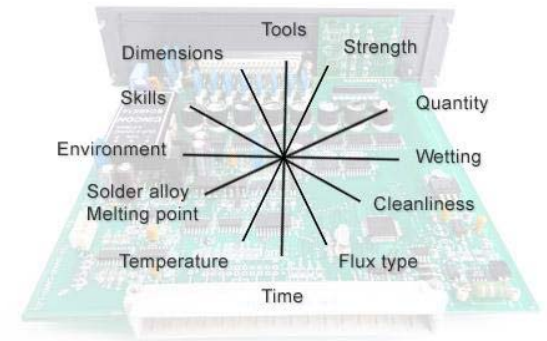


In Process Visual Inspection

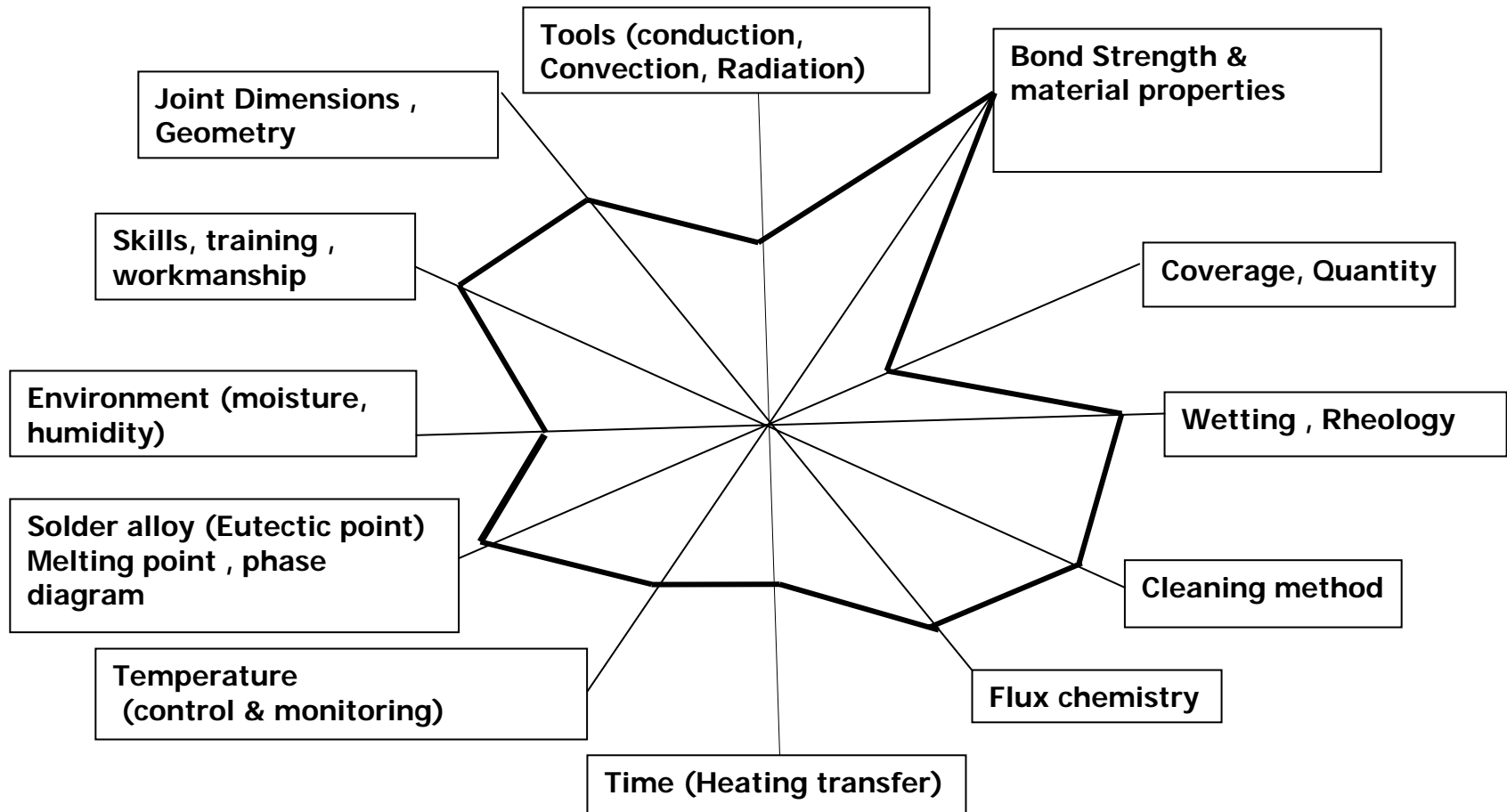


# Quality Assurance System

- Customer complaint handling through
  - Root Cause Analysis
  - Other Fault finding Tools viz. 4M analysis,
  - Corrective Action
  - Preventive Action for Fool proofing ( Poka Yoke )
- Traceability & product identification:
  - Unique numbering & labeling system
  - Log books maintained with details of batch codes, specific process parameter
  - Process inspection reports checked at each production stage.
  - Flow charts prepared & defined specific to each quality plan based on product type/mix.



# Process parameters optimization



Reliability through INTERACTION & Constructive FEEDBACK from Shop floor



# In process Quality checks

- In process Formats include multiple criteria for compliance to Quality Parameters
- The formats flow through out the manufacturing process to monitor defects in the product throughout process cycle
- Check list prepared specific to
  - inward inspection : of bare PCBs, Components, RM & consumables
  - Process parameters : Dispensing, Stencil printing, Assembly, Temp. profiling of Reflow & wave soldering
  - Final inspection : Criteria include specific customer inputs
  - Testing : 100 % Test parameters tabulated as per Customer test procedures

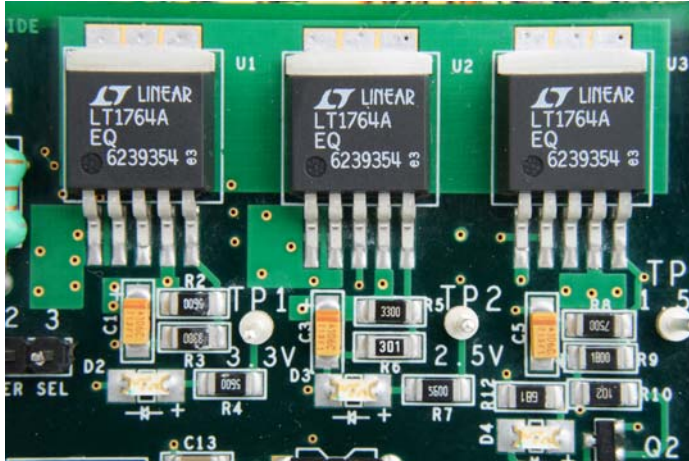


# In process testing set up

- Component solderability tests
- Component reliability tests on functional test circuits
- Tailor made pallets to identify missing components
- Validation of Critical Processes viz. Component Placement And Soldering
- In House Test jig fabrication set up for ICT & FCT specific to product test requirements
- Mechanical tooling ,fixtures devised to get consistent result during cutting, bending ,forming operations



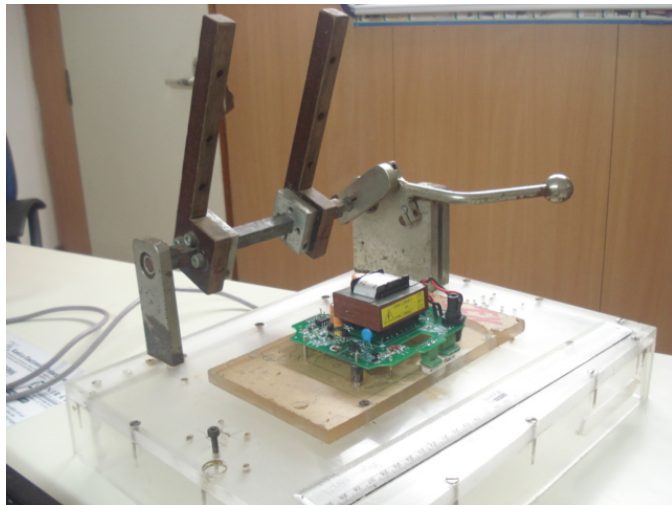
# Test Methods: Combination MDA, ICT & FCT



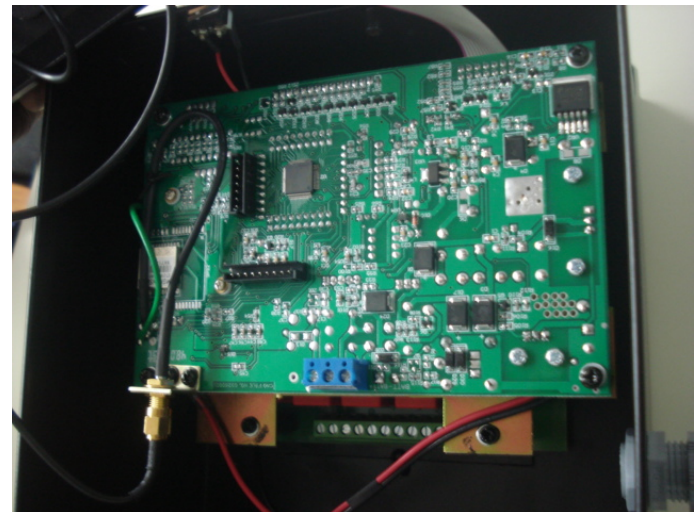
Manufacturing Defect Analysis



Check list for Functional test procedure



Customized Test Jigs



System Ready for Final Functional Test



# Conformal coating

- Humidity controlled area to ensure  $RH < 40\%$
- Degassing of moisture and air in forced hot air controlled temperature ovens at  $80\text{ C}$  for 24 Hrs
- Latest equipment, tools and techniques for masking, spray coating and storage



Conformal Spry Coating



Relative Humidity Monitoring



# Conformal coating

- Immediate soaking and curing of cards after encapsulation
- Special moulds made to mask & protect critical components during spraying
- Thermometer & Hygrometer to log in temp . & humidity in encapsulation area



Components Tests during Thermal Ageing



Dehumidifiers (RH control)



# Final Quality checking

- Product specific checklist prepared to ensure
  - Component orientation, height, mechanical dimensions and tolerances
  - Adhesion of bulky components to prevent damage due to vibration and transport
  - Re inspection of rework
  - Final inspection for Solder quality and manufacturing defects
  - Verification and approval of functional test reports
- Traceability : Unique board identification number created



# Packaging

- Packing of Finished product in antistatic bags, static control bubble foam packaging
- Special enclosures with lid covers devised to ensure safe delivery of the product .
- Plastic crates devised with separators to compartmentalize packing to avoid finish product damage during transportation.
- During rainy season containers wrapped in Plastic covers to avoid moisture entry.



Antistatic Bags packing ( Static controlled area)



Tailor made Packing Containers

# Commercial & Warranty Terms



- Test & performance guaranteed only for INTRFAB certified or approved products.
- DFM & DFT aspects checked & product can be certified or approved to qualify for warranty conditions.
- In case of Contract manufacturing or labour jobs workmanship guaranteed for commercial valid terms .
- Process improvement data or feedback sought from shop floor for continual improvement
- Recommended changes, customer suggestions followed to go through design iterations, & for process & material improvement .
- In case of failure immediate corrective action & preventive measures taken. PDCA cycle followed to target for zero defect or no product failures again.

# INTERFAB means INTER-active FAB-rication



Customer Satisfaction through INVOLVEMENT, INTEGRATION, INNOVATION

# INTERFAB a Total Solution Company



Financial SWOT Analysis & SME Rating

## Maximise Your Margins. RoHS Complaint.

**Electronic Manufacturing Services. Contract PCB Assembly.**

**Why INTERFAB?**

- Express turn around (24 or 48 hours)
- Design for Manufacture (DFM) review by trained production team.
- Variety of makes package made available for cost optimization.
- Quality components, PCB standardization in process and performance guaranteed by functional & endurance test.
- Total Process control of fine pitch devices such as micro BGAs, CSPs, TQFPs, Flip Chips, Micro connector assemblies.
- Sophisticated equipment such as stencil printers, dispenser and pick n' place
- Versatile Juki pick n' place machines.
- Easy conversion from Allegro, Protel, PADS, CAD to data.

A true EMS company providing total solution in SMT Design & Conversion of PCB Assemblies, Hybrid Micro-circuits (HMCs), Microelectronic Modules & Sub-assemblies, Fast SMT PCB prototyping with CADENCE CAD design tools

INTERFAB is synonym of INTERACTIVE FABRICATION by "Involvement" in projects, "Innovation" in design & development and "Integration" of processes to meet desired results.

RoHS complaint, this State of Art Facility is equipped with static controlled environment equipped with sophisticated automated machines such as Japanese makes of Multifunction Fine-pitch IC mounters, High speed Chip pick & placer, Multi-zone conveyor Reflow & Wave soldering ovens

**Quality Assurance by using Six Sigma techniques**

**Electronics Manufacturing Services**

```

    graph LR
    A[Schematic Entry, Bom list Generation] --> B[Allegro PCB Layout (CADENCE PCB Design suite)]
    B --> C[Document Design, Manufacture outputs]
    C --> D[Prototype Evaluation & Testing]
    D --> E[Batch production for DFM & DFT]
    E --> F[Mass production with seamless process control]
    
```

**INTERFAB ELECTRONICS (I) PVT. LTD.**  
Electronics Sadan No. 1, Ground Floor, C-19, MIDC Electronics Zone, Near GTL, Mahape, Navi Mumbai - 400 710, India  
Tel: 91-22-27689177, 27613528 • Telefax: 91-22-2761 3527 • Email: interfabelectronics@rediffmail.com, interfab@vsnl.com  
Visit us: www.interfabindia.com

**INTERFAB means INTERACTIVE FABrication Lead Free**

INTERFAB a Total Solution Company

Thanks !  
We welcome you at



# INTERFAB ELECTRONICS (I) PVT.LTD.

18,19,20 – C , Electronic Sadan No. 1

MIDC Electronics Zone , Near GTL

Mahape , Navi Mumbai 400710.

Phone : 022-27689177, 27613528 Telefax : 022 27613527

Contact: Deepak -9892321128, Supriya-9892321129.

- Website : [www.interfabindia.com](http://www.interfabindia.com)
- E mail : [interfabelectronics@rediffmail.com](mailto:interfabelectronics@rediffmail.com) ,  
[interfab.download@gmail.com](mailto:interfab.download@gmail.com)