The Global Player in Printed Circuit Board Manufacturing
INTRODUCTION

- **PLANT**: One of the largest Printed Circuit Board plants of India located at Vadodara, Gujarat.

- **Location**: 25 KM. away from Vadodara & 125 KM. away from Ahmedabad international airport.

- **YEAR OF ESTABLISHMENT**: 2004

- **PRODUCTION PLANT AREA**: 98000 SQ.FT

- **PRODUCTION CAPACITY**: 85000 SQ.MTR. Per Annum

- **TECHNOLOGY TIE-UP**: Hi-Tech PCB Manufacturer M/S Amitron Corporation, Chicago, USA
Brief Introduction of the Top Management

Chairman: Mr. B.H. Patel
He is a NRI having 40 years experience in the PCB manufacturing industry. He is the Chief Executive of three more PCB manufacturing companies in USA. One of which is the biggest privately held PCB shop of USA & highly equipped with latest technology.

Director: Mr. A.P. Naik
He was a bureaucrat in Gujarat Government for 30 years & now he is providing his services to Meena Circuits as a full time Director & taking care of all the commercial & financial activities as well as main facilitator for operational activities.
CONTINUE...

- **Chief Executive( Techno-Comm.): Dr.T.S.KrishnaRam**
  - He got retired from ECIL, Hyderabad & now he is offering his services to Meena Circuits and taking care of all the activities related to Business Growth Planning & Future Technical Planning for the growth of the company.

- **Manager – Business Development: Mr. S. Prasanna**
  - He is a PCB Professional and having experience in working with several abroad PCB companies including FUBA, Tunisia.
  - Now he is offering his services to Meena Circuits for business development activities in European countries.
CONTINUE...

- **Dy. Gen. Manager - Operations:** Mr. S.P. Singh
  - An Engineering graduate with 22 years experience of various PCB manufacturing companies in India. Taking care of all the activities related to Plant Operation.

- **Quality Manager:** Mr. Mahadev Das
  - A Hardcore PCB Professional with more than 16 years experience of various PCB manufacturing companies in India. Taking care of all the activities related to QC/QA and MR functions.
TECHNICAL CAPABILITY

❖ PRINTED CIRCUIT BOARD (PCB):

➢ OUR PRODUCT LINE:
  - Single Sided Circuit Boards
  - Double Sided Circuit Boards
  - Multilayer Circuit Boards (UP TO 12 LAYERS)
  - Metal Core PCBs
  - Proto type & Mass Production Boards

➢ MATERIALS USED:
  - FR-4 (For General Purpose PCBs)
  - FR-406 (For High Tg Applications)
  - FR-408 (For High Frequency Applications)
  - Al. Core (for LED Applications)
  - (ALL Material is UL94V-0 rated)
AVAILABLE FINISHES:

- Solder Mask Over Bare Copper (SMOBC)
- Solder Mask Over Electroplated Tin
- HASL (Tin Lead)
- HASL (Lead Free)
- Tin Plating (Electroless / Electrolytic / Immersion)
- ENIG Finish (Immersion Gold)
- Hard Gold Plating (Tab Gold)
- Carbon Printing

TESTING FACILITY AVAILABLE:

- Mania Universal Double Density High voltage Tester
- TTI Universal Double Density High Voltage Tester
- ECT Universal High Voltage Tester
  (All Boards get Tested with Netlist)
Mechanical Process Tolerances: (All are in mm)

- Minimum Annular Ring: ± 0.127
- Board Edge to Edge, Routed: ± 0.127
- Tooling Hole to Hole: ± 0.0508
- Hole to Hole: ± 0.0508
- Tooling Hole to Edge: ± 0.127
- Holes to Copper Registration: ± 0.127
- Copper to Solder Mask: ± 0.127
- Holes to Legend: ± 0.254
- Top to Bottom Registration: ± 0.127
- Image Line Tolerance: 90% Art Work

- Edge to Copper: ± 0.254
- Solder Mask Clearance: ± 0.127
- Minimum Hole Size: ± 0.254
- Minimum Inside Radius: ± 0.381
- Minimum Trace Widths: ± 0.127
- Hole to Hole Clearance: ± 0.381
- Pad to Pad Clearance: ± 0.1778
- Hole to Board Edge: ± 0.508
- Hole Diameter: ± 0.0635
- Scoring Tolerance: ± 0.127
QUALITY STANDARDS WE FOLLOW

- IPC-A-600 G
- IPC-SM-840 C
- JSS-52300
- JSS-52301
- JSS-52302
CERTIFICATIONS

- ISO-9001:2008 Certified
- UL Certified
- LCSO Certificate up to 10 Layer PCBs for supplying to Indian Defense Organizations.
- Under process for MIL Certification
HUMAN RESOURCE

- TOTAL MANPOWER: 235
  - FRONT OFFICE: 15
  - ENGINEERING: 15
  - PRODUCTION: 174
  - PROCESS CONTROL: 6
  - QUALITY: 25
MCPL Results Year and Year

MCPL Sales Growth Chart

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Value (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>Domestic</td>
</tr>
<tr>
<td>2007-08</td>
<td>Exports</td>
</tr>
<tr>
<td>2008-09</td>
<td>Total</td>
</tr>
<tr>
<td>2009-10</td>
<td></td>
</tr>
<tr>
<td>2010-11</td>
<td></td>
</tr>
</tbody>
</table>
CONTINUE...

% Rejection Chart

% Rejection Chart

Financial Year

% Rejection

2008-09 2009-10 2010-11 2011-12

% Rejection

2.5 2 1.5 1 0.5 0

% Rejection

2008-09 2009-10 2010-11 2011-12
CONTINUE...

![Delivery Performance Graph]

- % Delivery Performance:
  - 2008-09: 98.5%
  - 2009-10: 96.5%
  - 2010-11: 99%
  - 2011-12: 98.5%
FUTURE PLANS

PRODUCT LINE

- HDI PCBs UPTO 12 -16 LAYERS
- REGULAR PRODUCTION OF AL. Core PCBs
- TEFLON(PTFE) BOARDS PRODUCTION
EQUIPMENTS TO BE ADDED FOR HDI

- 2 No. HIGH SPEED MICRO DRILLING MACHINES
- 1 No. X-Ray DRILLING MACHINE
- ELECTROLESS COPPER PLATING LINE
- SPRAY COATER FOR SOLDER MASK PROCESS
- WET LAMINATION MACHINE FOR FINE LINE & THIN INNER LAYERS
- 2 No. FLYING PROBE TESTER FOR TESTING OF PROTOTYPE HDI BOARDS
CONTINUE...

- 1 No. XRF ANALYZER EQUIPMENT FOR CONCENTRATION ANALYSIS & TESTING OF PLATING CHEMICALS
- PLASMA DESMEAR PROCESS
OUR CUSTOMERS & SERVICES

OUR CUSTOMERS:
- Telecommunication & Networking
- Instrumentation & Automation
- Consumer Electronics & Medical Equipments
- Automotive Electronics & Power Sector
- Defense & Aerospace
- Testing & Measurement Instruments

SERVICES
- High-End Engineering
- Best Quality & Lowest Rejection
- Modern Machineries
- Efficient Human Resource
- Effective Communication and Support
- On Time Delivery Services
MACHINES

**Dynamotion CNC Drilling Machine**

- MCPL is using Dynamotion five spindle machine for medium to high volume production and also equipped with Excellon Mark IV, V &VI and Tru-drill 104/105 drilling machines.

**Conveyrised Shadow Line**

- MCPL is using Fully Conveyrised FSL Shadow Line for Direct Metallization process.

**Conveyrised Vertical Flash Plater (SFT)**

- The process gives perfection to copper build-Up on the panels. With Vertical synchronized and conveyrozed movement with eductor flooding system establish uniform copper plating in the holes and on the surface.
MCPL uses Hakuto Auto Cut Sheet Laminator. It gives best results & optimum utilization of the material.

It is outfitted with automatic registration systems featuring vacuum hold-down with excellent registration capabilities. Our Imaging Area is a 1000 class Clean Room.

Our Automatic Plating Line is equipped with three Transporters Baker Controller.
CONTINUE....

Automatic Electroless Ni-Gold Line

- Fully Automatic Vertical Electroless Ni Immersion Gold plating line for ROHS Finish.

Alchemy Horizontal Hot Air Leveling Machine

- Ultra Modern HASL Machine. Alchemy computer aided leveling is designed to achieve improved surface planarity, excellent solder distribution and finish. The reduced Solder contact time and convection pre-heat reduces thermal shock and flux absorption which give high reliability and consistency of product.
CONTINUE....

DES Line for Acid Etching of Inner Layers

- IS make DES Line for Inner Layer Processing.

Semi Automatic Film Punch for MLBs

- Semi Automatic Multiline Film Punch for better Inner Layer Registration.

BARCO AOI System for Inner Layers

- BARCO AOI System for Inner Layer Inspection prior to Lamaination.
CONTINUE....

TTI make High Voltage Bare Board Tester

- TTI make double Side Double Density High Voltage BBT Tester

Mania make High Voltage Bare Board Tester

- Mania make double Side Double Density High Voltage BBT Tester

Fully Automatic Thermally Heated OEM Vacuum Press

- OEM make fully Automatic PLC Controlled Thermally Heated 6 opening Multilayer Press (Combination of 2 Hot & 1 Cold Press).
MEENA CIRCUITS PVT LTD

Manufacturing Plant:

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