ETAG is an Electronic Contract Manufacturing company which offers complete solutions for materials sourcing & procurement, PCB, PCBA (Printed Circuit Board Assembly), box building (plastic or metal enclosure), Reverse engineering, Components, Stencils, manufacturing and order shipment etc.

Based on IRAN, specialized in high Quality, low-to-high volume building, with quick response for New Product Introduction (NPI) and diverse products experience, ETAG serves as a reliable & flexible manufacturing partner to customers worldwide and significantly optimizes our customers’ operations and time to market.

Also ETAG has office in HK for management the engineering and orders.
Business Type:

Trading & Engineering Company

<table>
<thead>
<tr>
<th>Main Products</th>
<th>Contract Manufacturing, PCB Assembly Plastic Molding &amp; Injection, OEM &amp; Design House ODM, PCB, Reverse engineering, Components, BGA XRAY Test, Stencil</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Guangdong, China (Mainland)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year Established</td>
<td>2000</td>
</tr>
<tr>
<td>Number Of Employees</td>
<td>50 People</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>US$150 Million - US$10 Million</td>
</tr>
<tr>
<td>Main Markets</td>
<td>IRAN, INDIA, TURKEY, KOREA, EUROPE</td>
</tr>
<tr>
<td>Certifications</td>
<td>ISO9001, ISO14001, ISO10002, UL, IEC, PC</td>
</tr>
<tr>
<td>Product Certifications</td>
<td>CE, EMC, CE</td>
</tr>
</tbody>
</table>

ETAG - Your Best Reliable Design & Manufacturing Partner in IRAN!

Since 2000, ETAG is a design & contract manufacturing company focused on consumer electronics, tele-communications industries, wireless industries, medical and other industries where product quality and reliability are most critical.

We help worldwide customers develop, design and manufacturing for PCB assembly, cables, plastics, metals and other custom parts, subsystems and complete finished products.

Our current products line includes:

Consumer Electronics: Audio products, Bluetooth products
Wireless industry: Smart Card Readers, Card readers, Wireless communication
Telecommunication: IP phones, CDMA/GSM modules
Plastic/Metals: Metal Emblems, Stapler, Calculators, Screw Driver, Hammer
And many other OEM/ODM products

Our specialized design and engineering teams can tailor products to meet your specific needs. We employ more than 800 highly qualified skilled workers, with manufacturing facility covering a total area of 35,000sqm.

From China manufacturing offices and OEM/ODM base in Shenzhen, ETAG serves as a global partner to worldwide customers.

Our dedication to cutting-edge technology, product excellence, consistent quality, competitive pricing, unsurpassed service and customer satisfaction has brought us outstanding recognition in these industries.
Our core competences:

**Strong OEM/ODM capability:**
ETAG employs a complete team of engineers from a variety of backgrounds.
- Electronic Engineers
- Mechanical/Construction Engineers
- Mold/Tool Engineers
- Industry Designers
- Package Engineers

Our OEM/ODM design team has expertise to rapidly prototype upon the approval of finalized specifications. In addition, the winning of ISO9001 certification ensures the exactitude of our research and development procedures with the highest product quality. For complete customer satisfaction, we also provide an extended product service and warranty program.

**High quality:**
In ETAG, quality dominates all of company’s product development, engineering, procurement and production activities. ETAG makes sure that all of our employees are aware of their personal responsibilities regarding our company’s commitment to quality products and services, and their role in achieving the utmost fulfillment of our customers' requirements.

From our suppliers, we control that the materials and components manufactured by them meet the specified and expectable maximum customer quality requirements thus promoting the constant improvement.

**We are awarded following international quality standards:**
1. ISO9001
2. ISO14000
3. OHSAS18001

Our mission at quality concept is to provide the highest quality products with customer satisfaction as the core of our commitment!

**Substantial saving:**
Our parts are 100% exported to customers from all over the world, including Europe and Asia.

We help our customers reduce their purchasing cost at 5% - 200% on each single part.

**Here is why we can make such cheap price without compromised quality:**
- low cost manufacturer plants in China, Taiwan.
- low labor cost in China
- high volume production demand, bigger discount from material source.
- high inventory turnover
On time delivery:
With advanced machines & well organized production lines, our production capacity allows us to meet customer delivery requirement. From 2000 to 2006, our on time delivery percentage for each year had been more than 99%. We are doing better now.

Within 24 hours reply & no language barriers:
We understand the importance of timely response. We follow 24-hour reply rule to our customer. It means every question from customers will be answered within 24 hours with positive information.
Quality Control

QA/QC Introduction

We are awarded ISO 9001:2000 certificate.

Creating a Quality-Driven Organization

ETAG makes sure that all of its employees are aware of their personal responsibilities regarding the company's commitment to quality products and services, and their role in achieving the utmost fulfillment of our customers' requirements.

From our suppliers we control that the materials and components manufactured by them meet the specified and expectable maximum customer quality requirements thus promoting the constant improvement.

Our mission at Quality Concept is to provide the highest quality products with customer satisfaction at the core of our commitment.
Total Quality Management
The achievement of ETAG is relying on the level of service that we can provide to our customers. One of the ways that we provide this high level of service is through comprehensive quality system. This quality system supports ETAG’s initiatives of product innovation, cost-effective manufacturing and superior customer service.

Quality System
ETAG believes that through rigorous implementation of the quality assurance program, it has been able to achieve a reputation for consistently high product quality, and that this reputation is an important competitive advantage for retaining existing customers and attracting new customers among industry leaders in the communications, computers and consumer electronics industries.

RoHS Compliance:
ETAG strives to provide its customers with innovative products solutions while making a conscious effort to reduce each products’ overall environmental impact on human health and the environment by eliminating or minimizing the use of hazardous chemicals.

Our policy for achieving and maintaining compliance to the HSPM is outlined below:

* ETAG continues to monitor changes in the Directive to ensure that our products continue to comply with the latest requirements.
* ETAG requires all new products to comply with RoHS by stating this objective in the design objective specification.
* ETAG evaluates and tests the alternative materials in order to replace heavy metal material.
* ETAG Procurement policy and procedures require all subcontractors and suppliers to be RoHS compliant for products to ETAG.
R&D Capacity:

Research & Development

To fulfill your requirement of high quality, cost-effective products, with quick time to market in product development, ETAG has established and assembled an OEM/ODM team to cater to the specific demands that off-the-shelf products could not meet.

ETAG employs a complete team of engineers from a variety of backgrounds.

- Industry Designers
- Mechanical/Construction Engineers
- Mold/Tool Engineers
- Electronic Engineers
- Package Engineers

Our OEM/ODM design team has the expertise to rapidly prototype upon the approval of finalized specifications. In addition, the winning of ISO-9001 certification ensures the exactitude of our research and development procedures with the highest product quality. For complete customer satisfaction, we also provide an extended product service and warranty program

OEM/ODM services have been a major part of ETAG’s production over the last 5 years, and they will continue to be vital in the future. All of our products can be modified to suit specific needs. Completely new products are often created at the request of our customers.

Equipment and Facilities

- Molding & Tooling, PCBA Assembly
- CNC Molding Fabrication,
- Tooling House,
- SMT PCBA,
- DIP PCBA
- PCBA Assembly
- Testing
- Package
Excellent Service

Our Total Value-Added Package begins with product design and development, through supply chain and materials management, prototyping, production planning and manufacturing, testing, quality assurance, logistics to customer service support.

We have built our reputation of quality service in worldwide clients by offering various customize-product programs, substantial savings, right on time delivery and seamless communications.

Component Sourcing & Procurement

We have a very strong sourcing & purchasing team which maintain great relationship with more than 300 vendors.

Strictly according to customer Bill of Materials (BOM), unless specified, all components we sourced are original components with original excellent quality.

If there are substitute parts needed (for great cost reduction or shorter lead time), ETAG will notify customer first and provide datasheet or sample testing results for customer approval. We will not use the substitute parts unless customer approves it.

Our materials team are focus on

- Cost effective Materials solutions
- New Supplier Qualification Process
- Regularly supplier performance survey system
- RoHs materials compliance
- Cost Saving Method
- Quarterly review price
- Outsource qualified alternative suppliers and lower price substitute materials

- More than 300 vendors
- More than 10000 kinds of component
Plastic or Metal Enclosure

Whether you need precision plastic/metal components or large plastic/metal enclosures for your electronics products, ETAG has the tools and capabilities to deliver your orders on time and on budget.

Software tools: Solid Works, Pro/E
Supported File format: IGS, STEP, CAD..etc

Rapid Prototyping

We can meet all of your prototype needs. Our dedicated prototype lab provides quick-turn, hand and machine assembled prototypes to meet short design cycle times. Parts procurement can be handled in a variety of ways, from acquiring all components needed to assemble your prototypes, to using consigned components exclusively.

Our highly trained engineering and manufacturing personnel oversee prototype assembly to ensure design specification conformance prior to the start of production.

Advantage:

· Establishes solid supplier relationships to enable parts availability and cost effective pricing
· Offers fast and efficient prototype assembly to reduce design cycle time
· Provides one single shop for electrical and mechanical prototypes to simplify communication and reduce time-to-market.
· Contributes Design for Manufacturability (DFM) and Testability (DFT) recommendations to improve manufacturability of the product, which ultimately reduces time to market

Production and On Time Delivery

ETAG provides complete manufacturing solutions to solve and satisfy your manufacturing needs. Our manufacturing facilities are equipped with state-of-art machineries from leading equipment vendors and professional engineering teams to deliver your prototype, new product introduction, complete assembly, low volume, and high volume requirements.

In addition, we have built strong process control methodology, systems integration, flexible production processes and innovative manufacturing technologies to optimize processes and drive continuous improvement.
Capabilities:

Materials Management
Single-Sided, Double-Sided, Multilayer Boards
PCBA (Printed Circuit Board Assembly)
   SMT (Surface Mount Technology)
       0201
       BGA (Ball Grid Array)
       CCGA (Ceramic Column Grid Array)
       CSP (Chip Scale Package)
       QFP (Quad Flat Package)
       Convection Reflow
   PTH (Pin Through Hole)
       Automated Pin Through Hole Assembly
   Hand Soldering
   Wave Soldering
Mechanical Assembly and Box Build
New Product Development

ETAG offers a broad range of Electrical, Mechanical, and Software Engineering Services. Our design team is ready to work as part of your design engineering staff to make your design a reality.

Our designers have extensive knowledge and expertise to help you with high complexity, high speed, or high layer count printed circuit boards. Our Design Services are tightly coupled with our manufacturing and test systems to ensure the design is measured up to your specifications and satisfaction.

We have standard 6 important steps to complete a new project successfully:

<table>
<thead>
<tr>
<th>Item</th>
<th>ETAG Service</th>
<th>Work Description</th>
<th>Result to Deliver</th>
</tr>
</thead>
</table>
| 1    | Electronic Circuit / Schematic design | 1. Study customer requirements  
2. Discuss with customer for key requirements and suggest preliminary solutions  
3. Generate initial schematic based on customer requirement  
4. Schematic verification process internally by SOLACE Engineering team leaders  
5. Software engineering team involvement process if required  
6. Computer stimulate process  
7. Finalize schematic. Go to PCBA process | Schematic  
(Software: Mentor Graphic PADS, ProTel) |
| 2    | Software Development | 1. Study carefully about customer requirement  
2. Discuss with customer for key requirements  
3. Evaluate possible software solutions  
4. Utilize software platform to develop software | Programmable Hex file  
(software: V++, C++) |
| 3    | Components Sourcing & Qualification | 1. Components sourcing  
2. Supplier qualification based on cost, Quality, delivery, service...  
3. Components substitution possibility evaluation  
4. Provide Cost & Lead time for each BOM items | Bill of Materials Component Lead time |
| 4    | PCB layout | 1. Layout PCB board according to schematic  
2. PCB to comply with required certification and standards  
3. Check information of each component and layout good quality PCB to accommodate each part in terms of mechanical way and electronic way.  
4. Layout PCB to fit related cases | Gerber Files Component Position Layout Drawing  
(Software: Mentor Graphic PADS, ProTel) |
| 5    | Plastic & Metal Case design | 1. Design cases drawings based on customer requirements  
2. Material Selection  
3. Mould / Tool design  
4. Injection manufacturing processs consideration  
5. Support for manufacturing and production adjustments | 1. 2D and 3D drawing  
2. Mould information  
3. Materials Spec  
(Software: SolidWorks, Pro/E) |
| 6    | Product prototyping | 1. Sourcing samples of components  
2. PCBA assembly  
5. Test PCBA performance and make sure the PCBA will perform functionally according to customer testing specification. (Key Point!) | 2 Working prototypes with testing results |
Reverse Engineering

Have you lost your product technical documentation? Is the supplier that built your product no longer available? Was your electronic or PCB design developed on an obsolete system? You want to make a copy of some products but with improvement features?

If so ETAG can reverse engineer your printed circuit board. Reverse engineering combined with re-engineering can revitalise old circuits to create a better return on investment.

What you can expect from a PCB reverse engineering project:
- Schematic diagrams including any on board, point to point and wiring diagrams
- Bill of materials including the individual data sheets of each component
- Replacement parts for obsolete components
- Gerber files for the production of the PCB boards
- Two prototypes PCB assembled with components for testing and evaluation

PCB LAYOUT

ETAG offers world-class, state-of-the-art and reliable PCB layout services.

Our PCB engineer's primary goal is to work closely with you to create a PCB layout meeting your design characteristics including signal integrity issues. In addition they will balance the effort and cost associated with fabrication and assembly while they maintaining the quality delivery time.

PCB Layout Services
- Parts Library Creation
- PCB Design Translations
- Netlist Translations
- Interactive/Auto Routing
- Layout/Schematic Netlists Verifications

Documentation
- Gerber Files
- Aperture Lists
- Netlist
- NC Drill Files
- Fabrication & Assembly Drawings
- Pickup and Place file

Technologies
- Military
- Digital
- Flex
- Analog
- RF
- Evaluation and reference
- Probe Boards
- DUT Interposer

CAD/CAM
- ORCAD Capture
- DXDesigner
- Allegro
- Altium
- PADS
- Protel
- Eagle
High Quality Products

We help clients develop and manufacturing for PCBA (Printed Circuit Board Assembly), PCB (Printed Circuit Board), cables, plastics, metals and other custom parts, subsystems and complete finished products.

The current product lines include, but not limited to:

- Consumer Electronics: Video/Audio Products, Touch Screen Devices, Control Boards for different electronic devices...
- Power supply & LED products: Power Supplies, LED drivers boards, LED lighting products...
- Industry Control Boards/equipments: M2M device
- Telecommunication: IP phones, CDMA communication modules...
- Wireless industry: Smart Readers, Card readers, Wireless communication devices...

We provide excellent turnkey manufacturing service for:

- Electronic Circuit Design
- PCB Layout (Software: PowerPCB, Protel..etc)
- PCBA Assembly (SMT and DIP)
- Plastic Mould Design (Software: Pro/E, Solidworks...etc)
- Plastic Injection
- Sheet Metal Tool & Stamping
- Component and material sourcing
- Connector & Cable Assembly
- Product Final assembly
- Product Testing
- Product Package
- Logistic shipping coordination
PCBA Assemblies Manufacturing:
SMT Parts Assembly, Through Hole Assembly (DIP), Quick Turn Prototype, Production PCBA assemblies, Functional testing, package.

PCB (Printed Circuit Board) Manufacturing:

*Lead time:*
Quick Turn prototypes: 2 - 3 days for double sides PCB's; 4 - 6 days for multilayer PCB's.
Production order: 2 - 4 weeks

*Manufacturing Capabilities:*
Material: FR-4, High Tg FR-4, Halogen free, High Frequency (Rogers, Arlon, Taconic, Nelco...) etc.
Surface Treatment: HASL, Immersion Gold, ENIG, ENEPIG, Immersion Silver, Immersion Tin, Flash Gold, Golden Finger, OSP, Lead free HASL etc.

<table>
<thead>
<tr>
<th>Item</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layers</td>
<td>2 to 50</td>
</tr>
<tr>
<td>Max. board size</td>
<td>48&quot;x24&quot;</td>
</tr>
<tr>
<td>Max. board thickness</td>
<td>472mil</td>
</tr>
<tr>
<td>Min. board thickness</td>
<td>15.7mil</td>
</tr>
<tr>
<td>Min. CORE thickness</td>
<td>2mil</td>
</tr>
<tr>
<td>Max. copper thickness</td>
<td>Inner Layer: 12OZ</td>
</tr>
<tr>
<td></td>
<td>Outer Layer: 12OZ</td>
</tr>
<tr>
<td>Min line width/space</td>
<td>1.0mil/1.0mil</td>
</tr>
<tr>
<td>Min CNC drilling size</td>
<td>4mil</td>
</tr>
<tr>
<td>Min lazer drilling size</td>
<td>3mil</td>
</tr>
<tr>
<td>Aspect ratio</td>
<td>20:01</td>
</tr>
<tr>
<td>Impedance tolerance control</td>
<td>±5%</td>
</tr>
<tr>
<td>HDI ability</td>
<td>6+N+6</td>
</tr>
</tbody>
</table>
Rigid-Flex Board:

Mass production capacity for high density rigid-flex board fabrication
Max layers count: 20
Min Line width/spacing for inner layer(mil): 3.5/3.5
Max Aspect Ratio: 10:1
Min Hole size(mil): 8
Max panel size: 20*24 inch
Impedance control
Covers & Cases: Plastic or Metal

Metal: Aluminium, Stainless Steel, Zinc Alloy...etc. Process: Stamping, Punch, Casting, Machining.
Surface treatment: SilkScreen, Painting, Plating... Software Tool: SolidWorks, Pro/E

Complete Assemblies or Finished Goods
We make complete product assemblies: most typically PCBA + Box Covers.
We are able to work starting from initial product design, Electronic circuit Design, PCB Layout, Plastic/Metal mechanical design, Mold / Tooling design & fabrication, Component Sourcing, sub-assembly, full assembly to final product testing.

package

Typical manufacturing process for finished products
Surface treatment: SilkScreen, Painting, Plating... Software Tool: SolidWorks, Pro/E
Case Study - OEM Project with partial ODM services

Customer Location: Americans / Project: M2M Devices with 3G communications

Product Description

layers PCB with high tg FR4 materials 10
Over 1000+ electronic components
BGAs
ARM11 CPU Processor
GSM & CDMA 3G Modems
Lipo battery assembly
Solid Plastic Covers

Excellent Services provided from ETAG

Partial Hardware Design Service which includes
PCB Layout -10 layers
Rapid Prototype for approval

Complete Manufacturing Service which includes
Component Sourcing & Procurement - electronic and mechanical parts
Achieved significant cost saving by recommend alternative connector suppliers
Plastic Mould Design & fabrication
Plastic case injections
SMT Parts Assembly
BGA soldering
Through Hole Parts Assembly
Case Study 1 - OEM Products

Customer Location: North Americans / Project: LED Lighting Products

Product Description

LED lighting - super light
Automobile Grade
SMT Parts
Through Hole Parts
Cable assembly

Excellent Services provided from ETAG

Complete TurnKey Contract Manufacturing Service which includes
Component Sourcing & Procurement - electronic and mechanical parts
Achieved significant cost saving by recommend alternative connector suppliers
Plastic Mould Design & fabrication
Plastic case injections
SMT Parts Assembly
BGA soldering
Through Hole Parts Assembly
PCBA + Plastic Cover Assembly - Finished Goods
On Line Product Testing - 100%
Quality Control
Packing
Shipping

Case Study 3 - OEM + ODM Project

Customer Location: Americans / Project: Prepaid self cell phone re-charge device

Product Description
ARM9 Processor
GSM / CDMA 3G Modems
RFID, Voice Chip
Credit Card Payment
Plastic / Metal Covers
Payment system: mechanical

Excellent Services provided from SOLACE

Complete Hardware Design Service which includes
Electronic Schematic Design
(PCR Layout (6 layers
Plastic Cover Design
Plastic Mould Design
Components Sourcing
Rapid Prototype for approval
Complete Manufacturing Service which includes

Component Sourcing & Procurement (electronic and mechanical parts)
Achieved significant cost saving by recommend alternative connector suppliers
Plastic Mould Design & fabrication
Plastic case injections
SMT Parts Assembly
BGA soldering
Through Hole Parts Assembly
PCBA + Plastic Cover Assembly - Finished Goods
On Line Product Testing - 100%
Quality Control
Packing
Shipping

Case Study 4 - OEM + ODM Project

Customer Location: Western European / Project: Video&Audio Tour Guide Devices

Product Description

ARM7 CPU Processor
LCD - touch screen optional “2.4
Video (support 10+ formats) / Audio - support 5+ formats
FM Radio and Transimter
RF alarm 2.4G
Unique software application specially designed for tour guide
Full Keypad

hours Lipo battery 10

Solid Plastic Cover designs

replacable front and bottom covers

**Excellent Services provided from ETAG**

**Complete Hardware + Software Design Service which includes**

Electronic Schematic Design

Software / Firmware program

PCB Layout

Plastic Cover Design

Plastic Mould Design

Components Sourcing

Rapid Prototype for approval

**Complete Manufacturing Service which includes**

(Component Procurement (electronic and mechanical parts

Plastic mould fabrication

Plastic case injections

SMT Parts Assembly

Through Hole Parts Assembly

PCBA + Plastic Cover Assembly - Finished Goods

On Line Product Testing - 100%

Quality Control

Packing

Shipping
Assembly Equipment Listing

Air-Vac PCBRM-10 soldering rework station
American Hakko soldering stations
Artos Engineering CS-29 wire processing machine
Bausch & Lomb StereoZoom® 4, 0.7x - 3x microscope with illuminators
Berg Electronics crimp tools
Berg Electronics PV-250A semi-automatic application machine (with tooling for Mini-PV™ receptacle
Custom forming and trimming tooling
Daniels Mfg. Corp. adaptor tool sets for over twelve MIL-C series connectors
(Daniels Mfg. Corp. WA22 pneumatic indent crimp tool (with full range of dies
(Daniels Mfg. Corp. WA27F pneumatic indent crimp tool (with full range of dies
Dazor lighted magnifiers at workstations
ESD-controlled workstations
Hand assembly tools at workstations
HEPCO, Inc. prep equipment
(Hexacon solder pot (both 63/37 alloy and SAC305
Hexacon Therm-O-Trac Power Boost System soldering station
(Hirose crimping machine (with applicators
Hirose hand tools
Loupot prep equipment
Luma Electric Co. resistance soldering unit
Metcal SmartHeat® Technology temperature-controlled soldering station
(Molex hand tools (with full range of dies
Novastar Convection Reflow Oven, Model 1200
Oryx miniature soldering irons / transformers
Pace MBT Rework Station
(Panduit CT-720 manual crimping tool (with full range of dies
(Pico 400-BHD pneumatic crimping tool (with full range of dies
(Pico 500-D pneumatic crimping tool (with full range of dies
(Plato solder pot (both 63/37 alloy and SAC305
Pneumatic press / tooling for various connectors
Raychem IR-550 infrared heating tool
Schleuniger JacketStrip 8310 jacket slitting machine
Schleuniger MP 257 coaxial cable stripper (with programmable stripping of coaxial cable (and tough insulations
(Schleuniger OmniStrip 9400 automatic wire processor (with prefeeder and wire stacker
Schleuniger UniStrip 2015 stripping machine
Schleuniger UniStrip 2100 stripping machine
Schleuniger UniStrip 2500 stripping machine
Sondad Industries, Inc. prep equipment
(TE Connectivity AMP-OLECTRIC Model “G” terminating machines (with applicators
(TE Connectivity CERTI-CRIMP hand tools (with over 100 dies
(TE Connectivity DYNA-CRIMP electric/hydraulic power units (with heads and tooling
TE Connectivity hydraulic hand crimp tooling
(TE Connectivity pneumatic crimp tooling (with interchangeable dies
(TE Connectivity Nu/Clean AquaBatch Jr. Aqueous Batch Cleaner (closed loop system
(TE Connectivity Nu/Era Jr. - 10-inch Wave Solder Systems machine configured to 63/37 alloy
(Thomas & Betts TBM6 manual crimp tool (with full range of dies
(.Tooling for swaging rivets and other board fasteners (e.g. Cambion™, Mill-Max®, etc
Ungar 4700 SMC/IC Removal/Reflow Station
Van Dorn Demag Corporation Newbury 30 30-ton vertical clamp injection molding machine
Various flat cable presses and tooling
Wahl soldering irons / transformers

Comprehensive Quality Assurance Equipment Listing

Agilent Technologies N9923A FieldFox RF Vector Network Analyzer
Bench power supplies
BK Precision® 5MHz function generator
Cablescan continuity tester
(Cirris Touch 1 - HP high voltage tester (with hi-pot capability and printed confirmation
Cirris Touch 1 high voltage tester
Fluke multimeters
Sotcher Measurement Hi-Pot / Continuity Tester
Tektronix oscilloscope
Vision Engineering Mantis Elite stereo microscope
Electromechanical Assembly Examples

With over 10 years of electromechanical assembly we’ve had the opportunity to work in a variety of industries and offer unique solutions for our customers. Some examples are

- Fluidic probes
- Frames
- Measurement systems
- Motor controllers
- OEM instrument subassemblies
- Pneumatic actuators
- Pumps
- Thermal probes
- Traffic control housings
- XYZ motion systems

Panel and chassis assembly is a primary business service combining all elements of our field. Whether your product is a unique power supply or a modified enclosure we can assemble and wire to your specifications. Chassis fabrication offered via outside service

- Full line of hardware
- Harness development
- Plating, painting and silkscreen offered via outside service
- Torque measuring tools

Our equipment includes a pneumatic press with tooling for various connectors, as well as tooling for swaging rivets and other board fasteners (e.g. Cambion™, Mill-Max®, etc)

Custom Cable Assembly Comprehensive Equipment Listing

- Agilent Technologies N9923A FieldFox RF Vector Network Analyzer
- American Hakko soldering stations
- Artos Engineering CS-29 wire processing machine
- Berg Electronics crimp tools
- Berg Electronics PV-250A semi-automatic application machine (with tooling for Mini-PV™ receptacle
- Cablescan continuity tester
- (Cirris Touch 1 - HP high voltage tester (with hi-pot capability and printed confirmation
- Cirris Touch 1 high voltage tester
- Daniels Mfg. Corp. adaptor tool sets for over twelve MIL-C series connectors
- (Daniels Mfg. Corp. WA22 pneumatic indent crimp tool (with full range of dies
- (Daniels Mfg. Corp. WA27F pneumatic indent crimp tool (with full range of dies
- (Hexacon solder pot (both 63/37 alloy and SAC305
- (Hirose crimping machine (with applicators
- Hirose hand tools
(Molex hand tools (with full range of dies
(Panduit CT-720 manual crimping tool (with full range of dies
(Pico 400-BHD pneumatic crimping tool (with full range of dies
(Pico 500-D pneumatic crimping tool (with full range of dies
(Plato solder pot (both 63/37 alloy and SAC305
Raychem IR-550 infrared heating tool
Schleuniger JacketStrip 8310 jacket slitting machine
Schleuniger MP 257 coaxial cable stripper (with programmable stripping of coaxial cable and tough insulations
(Schleuniger OmniStrip 9400 automatic wire processor (with prefeeder and wire stacker
Schleuniger UniStrip 2015 stripping machine
Schleuniger UniStrip 2100 stripping machine
Schleuniger UniStrip 2500 stripping machine
Sotcher Measurement Hi-Pot / Continuity Tester
(TE Connectivity AMP-O-LECTRIC Model “G” terminating machines (with applicators
(TE Connectivity CERTI-CRIMP hand tools (with over 100 dies
(TE Connectivity DYNA-CRIMP electric/hydraulic power units (with heads and tooling
TE Connectivity hydraulic hand crimp tooling
(TE Connectivity pneumatic crimp tooling (with interchangeable dies
(Thomas & Betts TBM6 manual crimp tool (with full range of dies
Van Dorn Demag Corporation Newbury 30 30-ton vertical clamp injection molding machine
XYZ motion systems
BGA Assembly of PCBs

ETAG ProtoPlace BGA - perfect handling for the new generation of components. Assembly of highly integrated printed circuit boards is possible.

The placement of components with hidden connections requires a reliable and precise adjustment because of expensive inspection systems and difficult repair possibilities. The BGA Placer is appropriate for the accurate placement of different types of BGA, CSP and Flip chip components, as well as for fine pitch and ultrafine pitch of components.

The system is suitable both for the development lab and for the volume production of printed circuits.

Product characteristics

Placement of BGA and QFP components from 5 mm x 5 mm to 45 mm x 45 mm
Granite base
Air-bearing positioning table
Inspection after placement