Overview

- **Company Overview**
  - Over 5,000 products
  - High Performance Adapters and Sockets
  - Many Custom Designs & Turn-Key Solutions
  - Engineering – Electrical and Mechanical
  - ISO9001:2008 Registration

- **Capabilities Overview**
  - Simulation
    - QFIN for heat sink design
    - Microwave Studio for electrical
  - 3D Solid Modeling CAD & CAM
    - ProEngineer
    - Solid Works
    - Gibbs cam
  - PCB Technology
    - PADS Layout, PADS Router
    - Controlled Impedance, Embedded Resistors, Laser Micro Vias, Filled Via in Pad, 3/3 traces, Rigid-flex PCBs
  - State of the art CNC machines - Tight Tolerance 3D Machining (e.g. ±0.0127mm), Swiss screw machine, Print, Pick, Place & Reflow assembly line, High speed PCB drilling, Automated Optical Inspection

- **Product Overview**
  - GHz Elastomer Sockets
  - Spring Pin Sockets
  - Silver Particle Sockets
  - Stamped Pin Sockets
  - Silver Matrix Sockets
  - Giga-snaP BGA Socket Adapters
  - SMT Package Emulation
  - Package Convertors
  - Prototype, Probing & Analysis Adapters
  - Electronic Modules
Engineering Sockets

Capabilities
- 0.3mm to 1.27mm pitch
- 2x3mm to 50x50mm device
- BGA, LGA, QFN, QFP, SOIC, WLP
- 4000 pin count
- 40GHz
- Heat sink options
- Easy chip replacement
- Custom support plate options
- Custom mounting options
- Industry’s smallest footprint

BGA compressed on Elastomer

Double latch lid

Surface mount adapter

Silver particle Elastomer

Swivel lid socket with decaps accommodated back plate

PoP socket with two elastomers

Clamshell lid

Gold RF socket

Open top lid

No mounting hole socket

Custom insulation plate

Heat sink lid

Torque indicator

Back-to-back socket
Production & Burn-in Sockets

Capabilities
- 0.2mm to 1.27mm pitch
- 2x3mm to 50x50mm device
- BGA, LGA, QFN, QFP, SOIC, WLP
- 4000 pin count
- 40 GHz, 500K cycles
- Consistent contact resistance throughout life
- Low cleaning frequency
- High current & extreme temperature

Self cleaning Pogo pin crown

Ceramic QFP socket with center E-pad

Low profile Burn-in SBT socket

SOIC production socket with Clamshell lid

BGA production socket with heat sink lid

Multi Level SBT socket

Flat lead Ceramic QFP production socket
# Contact Technology Summary

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Embedded Wire Elastomer (SG)</th>
<th>Spring Pins (SS)</th>
<th>Embedded Silver Particle Elastomer (XG)</th>
<th>Stamped spring pins (SBT/HBT)</th>
<th>Embedded Silver Ball Elastomer Matrix (SM/SMP)</th>
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<tr>
<td>Bandwidth, GHz</td>
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# Pin Datasheet

**High Performance**

**Sockets & Adapters**

1-800-404-0204

info@ironwoodelectronics.com

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<tr>
<th>Pin Family</th>
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<td>Radius Cone</td>
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<td>U Shape</td>
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<td>Self Inductance (nH)</td>
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<td>Insertion Cycles</td>
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</tbody>
</table>

1.0 Form factor SBT, pin spaced 0.55mm, equal 0.625mm pitch application.
Engineering Adapters

Power PC BGA device interfaced to Logic analyzer and motherboard for functional analysis.

0.5mm pitch 21x21 array 289 position BGA solder balls to AMP 104068 connectors using rigid flex PCB with socket fixture.

60 pin, 0.8mm pitch BGA rigid-flex probing adapter with AMP micctor and BGA surface mount foot.

Capabilities:
- 0.4mm to 1.27mm pitch
- 2x2mm to 50x50mm device
- BGA, LGA, QFN, SOIC, PLCC, QFP, DIP, PGA, etc
- 2000 pin count
- RoHS compatible
- Agilent, Tektronix compatible
- Rigid & flex options

J-led PLCC Emulator foot

Leadless QFN emulator

Gull-wing QFP Emulator foot

SOIC, PLCC adapter

BGA proto adapter with Clamshell pogo pin socket

Flex emulator – 125 position AMP Z pack connector to 80 position female interface.

Allows QFN device to be socketed to motherboard with signals brought out to test pins.

IP, Sep 2013
Production Adapters

- BGA to BGA conversion with complex signal swap due to device enhancement without additional real estate
- QFP device mounted to PLCC Footprint on target board with shortest trace length
- Capabilities:
  - 0.4mm to 2.54mm pitch
  - 2x2mm to 50x50mm device
  - BGA, LGA, QFN, SOIC, PLCC, QFP, DIP, PGA, etc
  - 3 mil trace/space
  - Laser micro vias
  - Embedded caps & resistors
  - Lead free options
  - Tray, Tape & Reel options
  - Turnkey solutions
- SOIC device mounted to PLCC footprint using solder column technology for high volume production
- SOIC to DIP convertor using blind hole technology
- PLCC plug connects Daughter card to socket
- 2000 pin count BGA system plugged together & shown separately
- Daughter card module Interfaced to QFP footprint
- 0.5mm pitch BGA Pluggable adapter system
- SoC module with high density connector
Facility Overview

24000 Sq. Ft Building

Production area

Machining area

ESD Automated Assembly area
Typical Custom Product Process Flow

0 day
- Customer Sends Drawings, Specs

1 day
- Concept Designed With Customer
- Quotes & Drawings rev A

1 day
- Customer Approves / Orders

1 day
- Engineer designed product

1 day
- Design Approved by Customer
- Documentation generated
- Components manufactured
- Part Assembled and Tested

3 days
- Part Inspected and Shipped

1 day
Custom Capabilities

- Custom designs in 2 days
- Match customer’s PCB footprint
- Custom manufacturing in 10 days
- Multiple contactor technologies
- Heat sink simulation and design
- Contactor signal integrity simulation
- In-house automated optical inspection
- In-house machining
- Quick turn production