<table>
<thead>
<tr>
<th><strong>YEAR</strong></th>
<th><strong>EVENTS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>Company started to design and manufacture low-cost, high-performance IC packages. Focus on using advanced organic substrates to reduce cost of ceramic IC packages.</td>
</tr>
<tr>
<td>2001</td>
<td>Invested in equipment and clean room to provide bare die assembly. Continue to invest to provide 3D and advanced packaging solutions to underserved mid-volume markets.</td>
</tr>
<tr>
<td>2016</td>
<td>ISI acquired by Molex: “The unique capabilities and technologies the ISI team brings to Molex... strengthens our platform for growth in existing markets and opens doors to new opportunities.”</td>
</tr>
</tbody>
</table>
COMPANY AT A GLANCE

Design and Manufacture of Electronic Solutions

- Microelectronics / 3D & Advanced Packaging
- Ruggedized Modules
- IC Obsolescence Solutions
- High Performance Interconnect

Headquarters: Camarillo, CA, USA

Subsidiary of molex®

ISO9001:2008 Certified by Perry Johnson Registrars

- IPC Class III compliant soldering
- Certified IPC Specialist inspectors & key operators
- In-house Certified IPC Trainer

ITAR registered North American facilities
ISI’s uncommonly broad design and production capabilities allow quick creation of innovative solutions that would otherwise require multiple suppliers.
Capabilities: DESIGN

System Engineering
- Requirement Definition
- IC & Component Selection
- Schematic Generation
- Signal & Power Integrity
- Firmware & Software Development
  - FPGAs & Programmable Logic
  - Microcontrollers
  - Memory
  - DAC, ADC
  - Power Supplies

Mechanical / Physical Packaging
- High Density / 3D / Stacked Packages
- Ruggedization
- Thermal Management & Modeling
- Precision Mechanics & Tolerance Analysis
- Material Selection & Optimization
  - Design for Manufacture (DFM)
  - Design for Test (DFT)
  - Design for Reliability (DFR)

PCB / Substrate
- Highly experienced designers with state-of-the-art experience
- Broad supplier base to cover multiple technology requirements
- High density design rules
  - 25 Gbps+ digital designs
  - On-shore and off-shore supply base

Advanced Interconnect
- Connector solutions optimized for module-level interconnect
- Solder Attach
  - BGA, LGA
  - Leadframe (QFP, SOIC)
  - Through Hole (PGA, DIP)
- Socketed
  - Board-to-Board
  - BGA socketing
- Custom Interconnect Solutions
Capabilities: **ELECTRONICS ASSEMBLY**

**Advanced SMT**
- State-of-the-art SMT assembly
- RoHS (lead-free) and Leaded
- uBGA to 55mm+ devices
- Precision dispense & coating
- Process Development for non-standard requirements

**Bare Die Assembly**
- Die attach & Wirebond
- Flip Chip & Underfill
- Wafer Dicing
- Stacked Die Assembly
- Mixed Assembly (SMT + Bare Die)
ISI’s unique data-driven manufacturing process uses standard materials and processes to quickly create cost-effective custom configurations with low NRE.

This provides a level of design freedom that enables miniature, high-performance designs.

ISI has unique capability to make a multi-component module form-fit-function compatible to a standard semiconductor package.

**Capabilities: INTERCONNECT**

- **Socketed Module**
  - HiLo Flexible Interconnect
  - 2500+ position
  - 0.8mm, 1mm, custom pitch
  - Low profile, < 3mm mated pair
  - 10Gbps + applications

- **Soldered Module**
  - BGA & LGA
  - Leadframe / FlexFrame
  - PGA, MicroPGA & DIP

- **Custom Interconnect**
  - Orthogonal Board-to-Board
  - Automotive - Overmolded
  - Capacitor Doubler
Capabilities: **ELECTRONICS OVERMOLDING**

Electronics Overmolding

Multiple components integrated in a monolithic module

- Void-free encapsulation/underfill of all components
- Thermoset epoxy compatible with standard SMT reflow profile

✓ Cost-effective way to ruggedize electronics for harsh environments
  ✓ Extended temperature and temp cycling
  ✓ High shock & vibration environments
Capabilities:
**ISI + MOLEX = BETTER TOGETHER**

- Trusted supplier to worlds’ leading electronics companies
- Scale and resources to compete in high volume
- Global customer sales and support
- Leader in technologies complimentary to ISI
We work best when engaged with our customers at the early concept development stage.

Together we explore multiple approaches to arrive at the best technical and commercial solution with a quick time-to-market.
PRODUCT APPLICATIONS

- Integrated Solutions
- Advanced Packaging
- IC Obsolescence & RoHS Solutions
- Module-to-Board & Custom Connectors

Systems

Components
INTEGRATED SOLUTIONS

Products with significant ISI design content & leveraging multiple ISI capabilities

Near Sensor Computing
- Put processing at the sensor to reduce bandwidth to the host/datacenter
- Leverages ISI’s FPGA & Analog design capabilities
- IoT play for data-intensive sensors (video, RF)

32 Node Compute-In-Memory Cluster
- Postage-stamp sized compute nodes
  - SoC FPGA
  - 8 GB DDR3
- (32) nodes in ~ 3” x 3” master modules
  - Water cooled thermal design
ADVANCED PACKAGING

Next Level Integration blends high density, 3D, and bare die packaging with advanced interconnect to quickly deliver miniaturized solutions.

System in Package (SiP)

4 Die Stack:
- Processor
- DDR
- Flash
- ADC

VR Die & Passives
HiLo Connector for Stacking
22x22mm Module
Shown prior to encapsulation
IC OBSOLESCENCE SOLUTIONS & BGA REBALLING

Footprint Conversion Adapters

- BGA to BGA
- TSOP to SOJ
- Multi-BGA to BGA
- FPGA + Level Translators in Monolithic QFP

RoHS / Lead-Free Solutions

- Lead-Free BGA Reballing
- Leaded BGA Reballing
- BGA Interposers

Replace obsolete ASICS and ICs without re-spinning the motherboard

Maximize Reliability & SMT Process Compatibility
ISI’s **standard and custom** connector technologies support a wide range of commercial, industrial, and defense applications.

Our in-house design and manufacturing capabilities allow us to **quickly go from concept to mass production** in weeks, not months and allows for surprisingly affordable NRE.
Innovative Integration and Nallatech are leading suppliers of FPGA board-level solutions, their FPGA hardware, software, firmware expertise is available for advanced ISI projects. Both were wholly-owned subsidiaries of ISI, and are now also Molex companies.

**Nallatech** products accelerate computing algorithms by leveraging high performance, programmable FPGA devices

[www.nallatech.com](http://www.nallatech.com)

**Innovative Integration** combines FPGAs, analog ICs, firmware and software to provide data acquisition and signal processing solutions

[www.innovative-dsp.com](http://www.innovative-dsp.com)
THANK YOU!

Contact ISI to engage on your next project:

» Dave Gagnon  
**Western USA**
Office: (714) 993-9618  
Cell: (714) 261-3733  
Email: dave.gagnon@molex.com

» Bob Garon  
**Midwest USA**
Cell: (630) 707-0991  
Email: bob.garon@molex.com

» Brian Witzen  
**Eastern USA**
Cell: (919) 633-0798  
Email: brian.witzen@molex.com

Address: 741 Flynn Road / Camarillo, California 93012  
Phone: (805) 482-2870  
Website: www.ISIPKG.com