Accelerate growth.

Embedded Electronic Products:
System on Modules
Saving time and money throughout your product’s lifecycle.

With today’s competitive landscape and advancing technology, you require that your products get to market faster than ever before. Products that traditionally take years to develop are now expected to be completed in a fraction of the time and at half the cost. Utilizing a System on Module (SOM), you can realize a faster time to market, reduce design risk, increase product quality, and address resource constraints resulting in a lower total lifecycle product cost.

A Logic PD SOM offers:

• A fully tested hardware and software solution to get you up and running in a fraction of the time when designing from scratch
• A proven solution with over ten years of designing SOMs and over one million SOMs delivered to the marketplace
• Full management of the product lifecycle, from part obsolescence to supply chain challenges
• Comprehensive industry certifications including FCC, RoHS, REACH, Industry Canada
Evaluating your situation to determine the best possible solution.

When deciding between a System on Module (SOM) and a chip down solution, it is important to think about criteria such as per-unit cost, overall quantity, and continued engineering support. Absorbing long-term costs such as continuation engineering and component risk management into the upfront cost of the SOM helps keep the total lifecycle product cost low. The charts below outline the items that need to be considered when deciding which option is best for your situation.

**Business Case**

<table>
<thead>
<tr>
<th>EAU Quantity</th>
<th>SOM</th>
<th>Chip Down</th>
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<tbody>
<tr>
<td>1K</td>
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<tr>
<td>5K</td>
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<td>50K</td>
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**Lifecycle Product Cost Considerations**

When comparing the lifecycle product cost of SOMs vs. chip down designs, it is important to consider all costs, not just the up-front product design costs:

- Hardware development
- Software development
- Test fixture development
- Continuation engineering
- Component procurement
- Obsolescence management
- Inventory
- Manufacturing scrap
- Warranty
- Certification
- Risk of delayed product launch
- Risk of development cost overruns
- Risk of unrealized projected volume
Turning SOMs Into Success

At Logic PD, we understand the importance of value. When creating our SOMs, we strive to give you the things you ask for like a small footprint, low power consumption and proven software. See how Logic PD customers have used our SOMs to speed their time to market while reducing costs and increasing product quality.
A U.S. defense company needed to quickly launch a wrist-worn, GPS-like soldier tracking device with an AS9100:2009 certified company and turned to Logic PD to help. The Logic PD team of engineering and manufacturing experts worked to eliminate excess size and weight by utilizing the most compact SOM. At less than one square inch, the SOM was able to help the team deploy the device to the battlefield on time.

Market Considerations

- Regulatory engineering and manufacturing requirements
- Secure data transmission
- COTS small form factor embedded computing

www.logicpd.com/soldier
A major global healthcare company needed to bring a new Class III defibrillator to market in less than four years – not an easy feat for the medical device industry. Having already selected one of Logic PD’s SOMs to speed up the development process, the customer utilized Logic PD’s ISO 13485-compliant design and manufacturing services to deliver to the market months ahead of schedule.

Market Considerations

• Regulatory engineering and manufacturing requirements
• Product lifespan and component obsolescence
• Device reliability and efficiency (i.e. boot time, battery life, size)
This test and measurement customer came back to Logic PD to improve the performance of their handheld line of spectrum analyzer products. Working together the customer and Logic PD were able to consolidate components and integrate a reduced cost module that provides five times better performance and processing speeds.

**Market Considerations**
- Regulatory engineering and manufacturing requirements
- New technologies provide cost reduction opportunities
- User adoptability and expectations (i.e. speed, connectivity)

www.logicpd.com/analyster
Logic PD SOM Products

Technical Applications

Torpedo™ SOMs
- Mobile devices
- Low-profile devices
- Display devices
- Wired/wireless applications
- Low power applications
- Small footprint

Inflexion™ SOMs
- Surveillance
- Digital signage
- Software defined radio
- Industrial networking
- Motor control
- Imaging systems
- Medical diagnostics, monitoring, therapy
- FPGA applications

Acuity™ SOMs
- Human-machine interfaces
- Portable devices
- Smart devices
- Differentiated platforms by cost & performance
- Vision/camera systems
- Wired/wireless applications
Torpedo™ SOMs  Inflexion™ SOMs  Acuity™ SOMs

Performance Factors

- Low Power Consumption
- Design/Architecture Flexibility
- Wireless/Connected/M2M
- High Definition Video
- Small Footprint
- Processor Performance
- BSP Software Platforms Available
- Security
- Fast Boot
- Thermal Management
- Ease of Use
- Low Cost Module
- System Cost Reduction

Scale
(tower)  (higher)
Performance on Factor
Logic PD SOM Configurations and Options

Learn more about Logic PD’s SOM offerings at www.logicpd.com/SOM

Torpedo™ SOMs

The Logic PD Torpedo System on Modules are a Logic PD standard product offering based on Texas Instruments’ DaVinci™ DM3730 and Sitara™ AM3703 processors. With an ultra-compact form factor, these market-driven SOMs were created to provide customers with improved cost, performance, and temperature options. The Torpedo family of SOMs can also be customized to fit your exact solution specifications.

The Torpedo SOM offers:

- Off-the-shelf solution
- Speeds up to 1 GHz
- Long battery life
- Size less than one square inch
- Android™, Linux, and Windows BSPs
- Power consumption of less than 5 mW
- Wireless chipset with 802.11a/b/g/n, Bluetooth®, and GPS support
- Faster time to mission-critical functionality
**Inflexion™ SOMs**

Logic PD’s Inflexion SOM, based on the Zynq®-7000 platform by Xilinx, is the best solution for applications requiring high-processing power and the flexibility to customize system interfaces. The Zynq-7000 platform’s combination of a high performance application microprocessor with a Field Programmable Gate Array (FPGA) in a single chip provides a best in class platform for balancing both performance and power. Logic PD’s Inflexion SOM provides the basis for smarter designs which require high level of security and reliability, the ability to optimize system interfaces, and perform real time analytics and control.

**The Inflexion SOM offers:**
- Combined ARM-based processing system and programmable logic
- Flexible architecture which minimizes custom hardware development
- Efficient solution for analytics and control
- High level of security and reliability
- Balanced solution for performance and power
- Off-the-shelf solution

**Acuity™ SOMs**

Logic PD’s Acuity SOM provides high-performance multimedia processing for next generation smart devices. Utilizing Freescale’s i.MX6 technology, the scalable multicore architecture provides the basis to develop a portfolio of end devices on a single hardware design. In addition, the optional wireless interfaces provide improved wireless connectivity for local and wide area networks.

**The Acuity SOM offers:**
- Higher performance for multimedia applications
- Scalable architecture: provides the basis for the creating of a differentiated product line utilizing a single hardware platform
- Improved connectivity and wireless throughput, Wi-Fi, and Bluetooth® options
- Improved video playback
- Dual display support
- Long battery life
Supporting your Success

Your project cannot afford delays. To reduce your risk and save you time in your development process our applications engineering support will help you evaluate SOM options and accelerate the integration of the module into your product design.

Logic PD has resources to support you at every stage in the product lifecycle; from evaluating SOMs to determine if they are the right fit, through product launch and software maintenance. By taking advantage of one of Logic PD’s support packages, you can have a dedicated engineering resource to help you achieve your goals and deliver your product to market on time.

Logic PD offers a variety of different support packages to fit your needs and help you be successful.

Trusted by the world’s most demanding markets.

Logic PD’s established Quality Management System is maintained to the highest national and international standards to ensure customer satisfaction, allowing us to work in some of the world’s most demanding markets.

• ISO 9001: 2008 design and manufacturing
• ISO 13485: 2003 design and manufacturing
• AS9100:2009 manufacturing & supporting services
• FDA 21 CFR 820 compliant
Helping you launch products that accelerate **growth**.

Logic PD is the lead systems integrator delivering complete connected solutions to the world’s most demanding markets by providing complete product lifecycle management, technology expertise, and exceptional customer service.

- **Di**
  - Discover
  - Contextual inquiry
  - Ethnographic studies
  - Co-discovery research
  - Persona development
  - User experience models
  - Collaborative design
  - Innovation workshops

- **De**
  - Design
  - User interface design
  - Industrial design
  - Interface prototyping
  - Usability testing
  - Concept development
  - Competitive analysis
  - Design for manufacturing

- **Dv**
  - Develop
  - Test engineering
  - Electrical engineering
  - Mechanical engineering
  - Software engineering
  - Systems engineering
  - DSP design
  - FPGA capabilities

- **DI**
  - Deliver
  - Product lifecycle management
  - Test services
  - Supply chain management
  - Manufacturing capabilities
  - System assembly
  - System assembly
  - Fulfillment services
  - After-market services
About Logic PD

Logic PD helps launch products that accelerate growth by being the complete product innovation and product realization company for connected devices in the world’s most demanding markets. Logic PD’s experienced team of problem solvers and suite of embedded technology products support customers at any stage in the product lifecycle from discovery, design, development, and delivery to help control costs, reduce risk, and deliver innovative products to market faster.

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Contact us at solutions@logicpd.com or visit our website at www.logicpd.com.
## Worksheet

### END PRODUCT APPLICATION

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### KEY TECHNICAL FEATURE

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### KEY BUSINESS INDICATOR:

- [ ] Time to Market
- [ ] Unit Cost
- [ ] Development Cost
- [ ] Support to Production
- [ ] Risk Reduction
- [ ] Sustaining Support

### LOGIC PD SOM

- [ ] Torpedo™ SOMs
- [ ] Inflexion™ SOMs
- [ ] Acuity™ SOMs

### CUSTOMER INFORMATION

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