

System Packaging

Modern packaging solutions for innovative IPs

Traditional chip designs are frequently nearing their limits given the increasing scope of functionality of electronic systems and increasing miniaturization. Innovative integration concepts permit higher data throughputs under lower energy consumption. However, the complexity and greater integration density are also producing new challenges.

Fraunhofer IIS/EAS supports you in selecting and implementing new packaging technologies. Our lengthy track record and cooperation undertaken with a wide range of partners help us in finding the best solution for your application.

Our Services

- Consulting on currently available solutions for highly integrative packaging
- Preliminary studies on appraising system capacity and costs
- Selecting the most suitable technology for an application
- Designing highly integrative packaging solutions
- Modeling of multi-physical effects (e.g. heat dissipation)
- Providing assembly design kits for ensuring the manufacturing and performance requirements

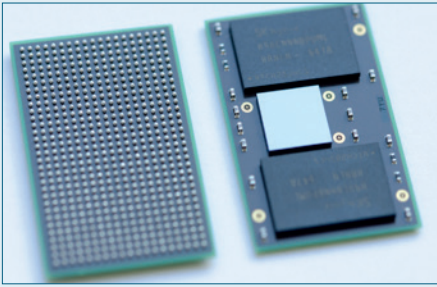
Your Benefits

- Single point contact from the system concept through to the draft and prototype manufacturing
- Highest-possible system performance under low energy consumption
- Maximum miniaturization of complex systems such as sensor systems
- A reduced risk in launching novel packaging solutions
- On time realization of prototypes and small batches
- Cost savings as against a comparable ASIC implementation

More information

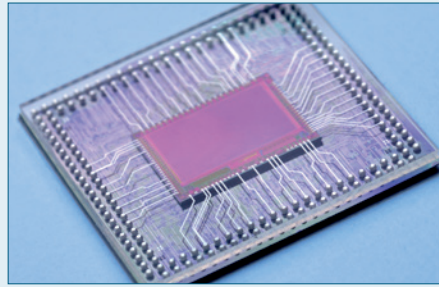


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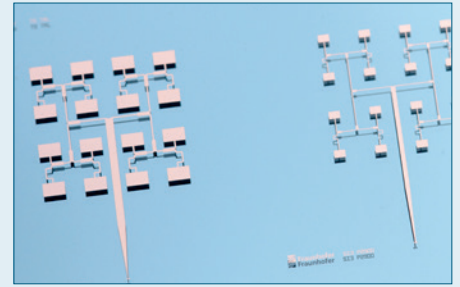
System-in-Package with organic interposer

- Integration of processors and memories
- Low-cost, large-scale integration
- Application fields: automotive, telecommunications and Industry 4.0



System-in-Package with silicon interposer

- For highly-specific packages (e.g. camera system, high-end memory and processor)
- Maximum integration
- Application fields: telecommunications, machine learning, Industry 4.0, medical technology



Integration of high-frequency components for 5G and other wireless standards

- Suitable, in particular, for new high frequency standards (28/38/60 GHz)
- Direct integration of aerials into the package
- Application fields: mobile communications, medical technology

above:

Exemplary realizations of our solutions for customers

Our Solutions for Your Designs

Even today, comprehensive sensor technologies, high computing power, multifarious wireless interfaces and actuator technologies of the most varied kinds are united in the tightest of spaces in a host of applications. This is the only way the growing requirements placed on systems from, for instance, telecommunications and medical technologies can be fulfilled.

Any further integration is often only possible with highly specialised packages. However, the high development costs of low-volume products subject to individual requirements pose a major challenge. The low production quantities automatically cause the unit price to rise and any profit margin to be reduced. To limit development costs, the manufacturers are therefore obliged to turn to standardized partial solutions and comprehensive software for the draft and simulation. The range on the market here is considerable but is one which markedly varies in terms of capacity, cost, availability and reliability. Finding the right technology is not easy and depends on the system specification and the field of application.

This is where Fraunhofer IIS/EAS comes in as your ideal partner bearing in mind its long track record in implementing packaging

solutions and its extensive network in both industry and research. We provide you with the chance to launch novel package variants much reduced in risk, and support you from concept planning through to actual manufacturing. In particular, we solve the special challenges of the design such as mastering the complexity, optimally utilizing the extra scope available and considering the tight thermal, mechanical and electrical coupling in the stacked system.

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