Experience

- *Digital Signal Processing*
- *Networking*
- *Test*
- *Measurement*
- *Bus Interfaces*
- *Bus Protocols*
- *Digital Video*
- *Imaging*
- *Telecom*
- *Automotive*
- *Medical*
- *Military*
- *Datacom*
- *Satcom*

NORTHBRIDGE TECHNOLOGY

Modules

NORTHBRIDGE TECHNOLOGY's experience in embedded design has led to the development of a keen understanding of the "module" space. The module market can be broken into two broad areas; SOMs (System on Modules) and CRMs (Component Replacement Modules).

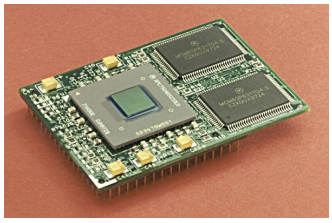
System On Module

SOMs are highly integrated component SBCs that support system expansion and application-specific customization. The SOM module delivers the core functionality while all of the application-specific features are designed into the baseboard, creating a semi-custom embedded solution. SOMs are designed to be used with baseboards, and to become *integral parts* of board systems or subsystems. Broadly speaking this category includes mezzanine cards (e.g. PMC)

The trend is toward standard SOM interfaces, which drives economies of scale. Many SOMs, however use custom interfaces and are used as solutions to specific problems. The dominant SOM interface is ETX, with SOM 144, STX and DIMM interface also playing in this space.

Independent of the interface, there are several dominant reasons to use a SOM in an embedded system:

- Flexibility: customers achieve economies of scale by designing standard socket in a common board allowing them to accommodate dynamically change the feature sets for their product offering.
- Future proof: modules are designed with foresight to allow OEMs to update and introduce advanced SBCs by simply updating the SOM
- Cost Reduction: by mounting high-density circuitry on a module, the expense in not incurred across the entire PCB.



Component Replacement Module

Component Replacement Modules allow the use of newer and readily available ICs when obsolescence issues arise. CRMs also address end of life ASICs issues. Many ASICs can be converted to standard FPGA platforms, prolonging the life of the board or system without incurring the cost of an unplanned redesign.

Chief among the advantages this approach are:

- Reprogramable
  - Simplifies development and debugging
  - Enables changes at any point in the production cycle
- Flexible
  - Can be used to replace many obsolete digital ASIC/ASSP
  - Maintains "footprint" and "powerprint" profile
- Eliminate further "End of Life" problems
  - Key component in board cost reduction programs

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NORTHBRIDGE TECHNOLOGY has experience in developing solutions for the both the SOM and CRM markets. Our modules are designed to accommodate single or multiple components and to fit virtually any IC footprint, allowing for unique, cost effective solutions to your toughest module problems.

NORTHBRIDGE TECHNOLOGY 's turn-key process includes, design, prototyping, module assembly, and test and delivery of the production module. We have experience in numerous adaptor flavors, including fine pitch footprints such as BGA (0.5mm) and QFP (0.4mm) and we can handle both low and high volume deliveries.