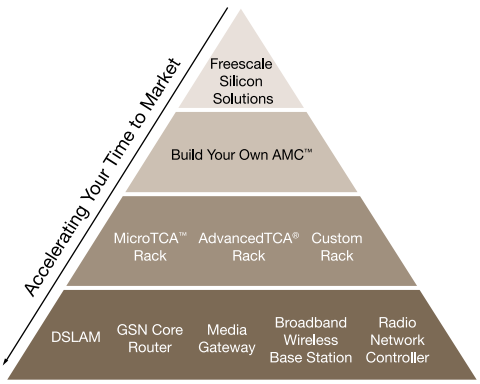
AdvancedMC™ Reference Design
MPC8568E Network Interface Card (NIC)

Featuring

- 1 x MPC8568E
  - High-performance PowerQUICC® III processor
  - e500 core, built on Power Architecture™ technology, at 1.0–1.5 GHz
  - 3199 MIPS at 1.33 MHz (est. Dhrystone 2.1)
  - Initial offerings up to 1.33 GHz
  - QUICC Engine™ dual reduced instruction set computing (RISC) cores at 300–500 MHz
  - Helps reduce system footprint with integrated QUICC Engine technology
- Application area
  - High-performance data plane interworking, network termination, control plane processing and board controller applications within:
    - Node B/base transceiver station (BTS)
    - Radio network controller (RNC)
    - Media gateway (MGW)
- Reference design collateral
  - Comprehensive pack of design collateral
  - Assists customer designs and reduces time to market
- Supports industry-standard rack options:
  - Advanced Telecom Computing Architecture (AdvancedTCA® or ATCA®) or MicroTCA™



Speeding Up Development, Intercepting Markets

Rapid time to market is one of the most critical success factors for any business. With this ever increasing pressure, the need to quickly prototype and develop designs and systems can be a key engineering bottleneck. As part of Freescale's AdvancedTCA/AdvancedMC™ (AMC) Rapid System Development Program, the reference designs are free design examples with supporting collateral to help accelerate the design and systems building process.

Each of the reference designs are supported with collateral comprised of detailed designed specifications, schematics, Gerbers, firmware code/files and software such as board support packages (BSPs) and drivers.

The MPC8568E-based AMC design example is aimed at high-performance interworking, control plane and board control applications. The high-performance e500 core is ideal for control plane and board control processing within the BTS, MGW and RNC. Additionally, the on-chip QUICC Engine coprocessor is suited to interworking and termination of ATM/AAL2/AAL5, TDM and Ethernet for use within Network Interface Cards (NICs) throughout the Radio Access Network (RAN).

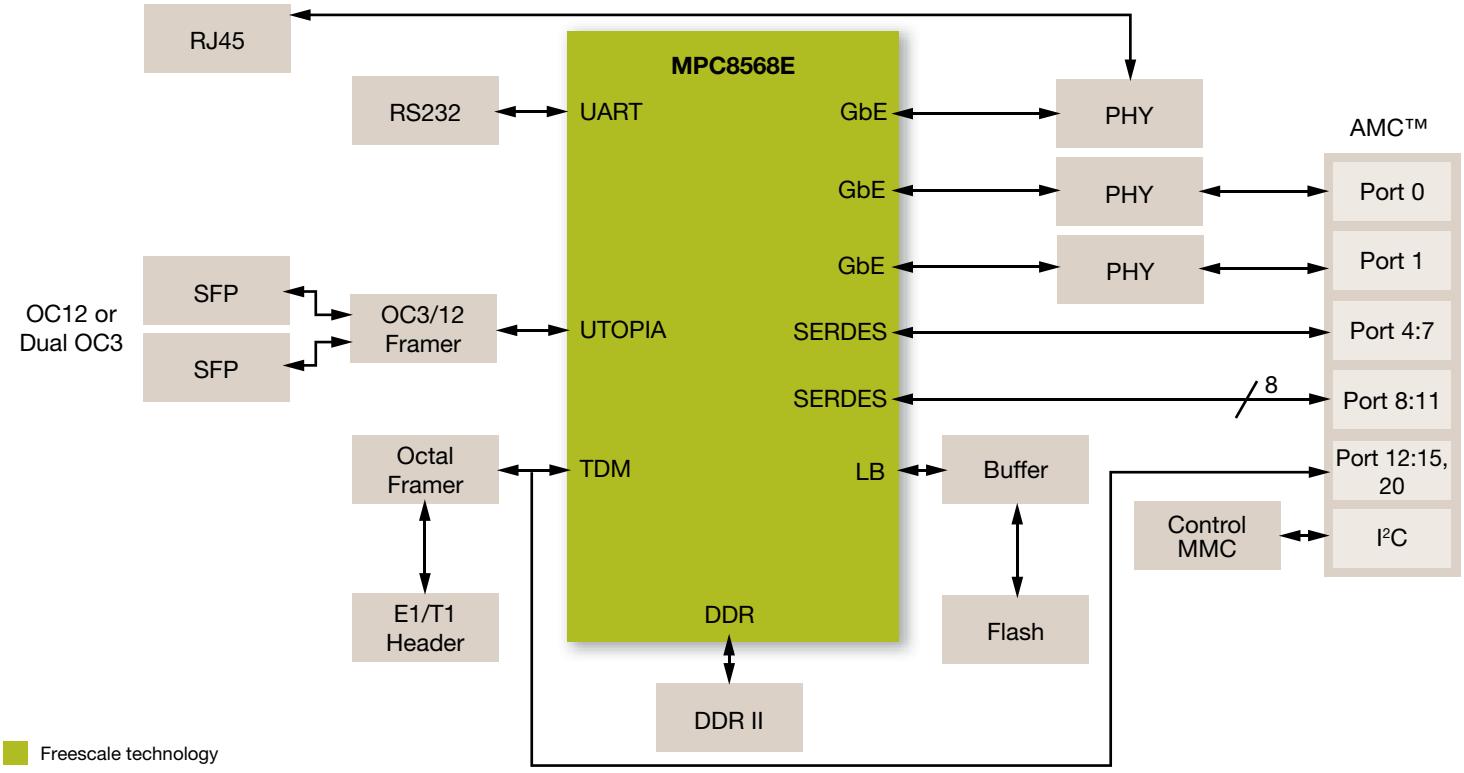
Reference Design Collateral

- Detailed Design Specifications (DDS): Details the specifications of the design example. Helps customers understand the architecture and components used in the design.
- Schematics: Comprehensive design-level schematics. Aids and accelerates the design process by giving customers full design level connectivity and component values.
- Gerber Files: Design example Gerber data to assist manufacturing—drilling diagrams, routing plots, tracking and hole dimensions, etc.
- Firmware: Design example code for on-board CPLDs, FPGAs and ROMs.
- Software: BSPs, drivers and demo applications to assist in design, board and application bring-up.
- Device Data Sheet Links: Quick links to all online Freescale device data sheets and resources to speed up device knowledge.

Note: The design examples are provided "AS IS". The reference design collateral may be subject to registration, license or other agreements.

freescale semiconductor

MPC8568E AdvancedMC™ Block Diagram



Board Level Device Features

- MPC8568E
  - e500 Power Architecture core at 1.0–1.5 GHz
  - 3199 MIPS at 1.33 GHz (est. Dhrystone 2.1)
  - Initial offerings up to 1.33 GHz
  - 512 KB L2 Cache
  - 2 x Serial RapidIO® x 4 or single PCI Express® x 8
  - DDR memory controller: 333 MHz
- QUICC Engine module
  - 3 x Gigabit Ethernet
  - 2 x UTOPIA/POSPHY-L2 with MPHY
- Board memory
  - 512 MB DDR II (discrete)
  - 128 MB flash memory

Board I/O

- AMC connector
  - 1 x/4 x Serial RapidIO or
  - 4 x/8 x PCI Express
  - 2 x Gigabit Ethernet interfaces
  - 8 x TDMs
- Headers and debug
  - TDM –> E1/T1
  - JTAG/COP
- Front panel expansion and debug
  - 1 x UTOPIA OC12/OC3
  - 1 x Gigabit Ethernet interfaces (RJ45)
  - 1 x RS232

Application Area

Data plane interworking, network termination and board controller processor in:

- Node B
- RNC
- MGW

Learn More: For more information about Freescale's AdvancedTCA/AMC Rapid System Development Program, please visit **www.freescale.com/atca**.

Document Number: AMCMPC8568FS
REV 1

freescale semiconductor