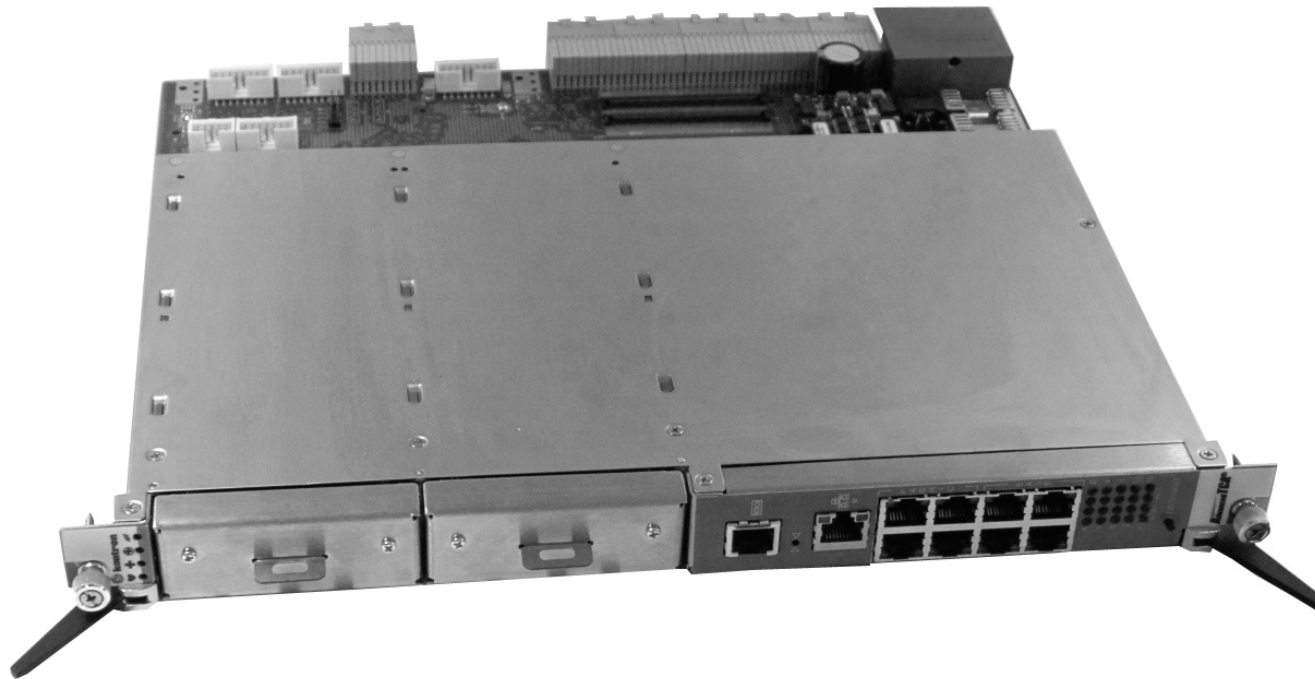


# ➤ **The Kontron AT8901 AdvancedTCA Hub Board**

*Prepared by:*

*Kontron Modular Computers GmbH*

➤ **Kontrons' Second Generation  
AdvancedTCA Hub Board**  
adds optional PICMG 3.1 Support and 2 AMC slots

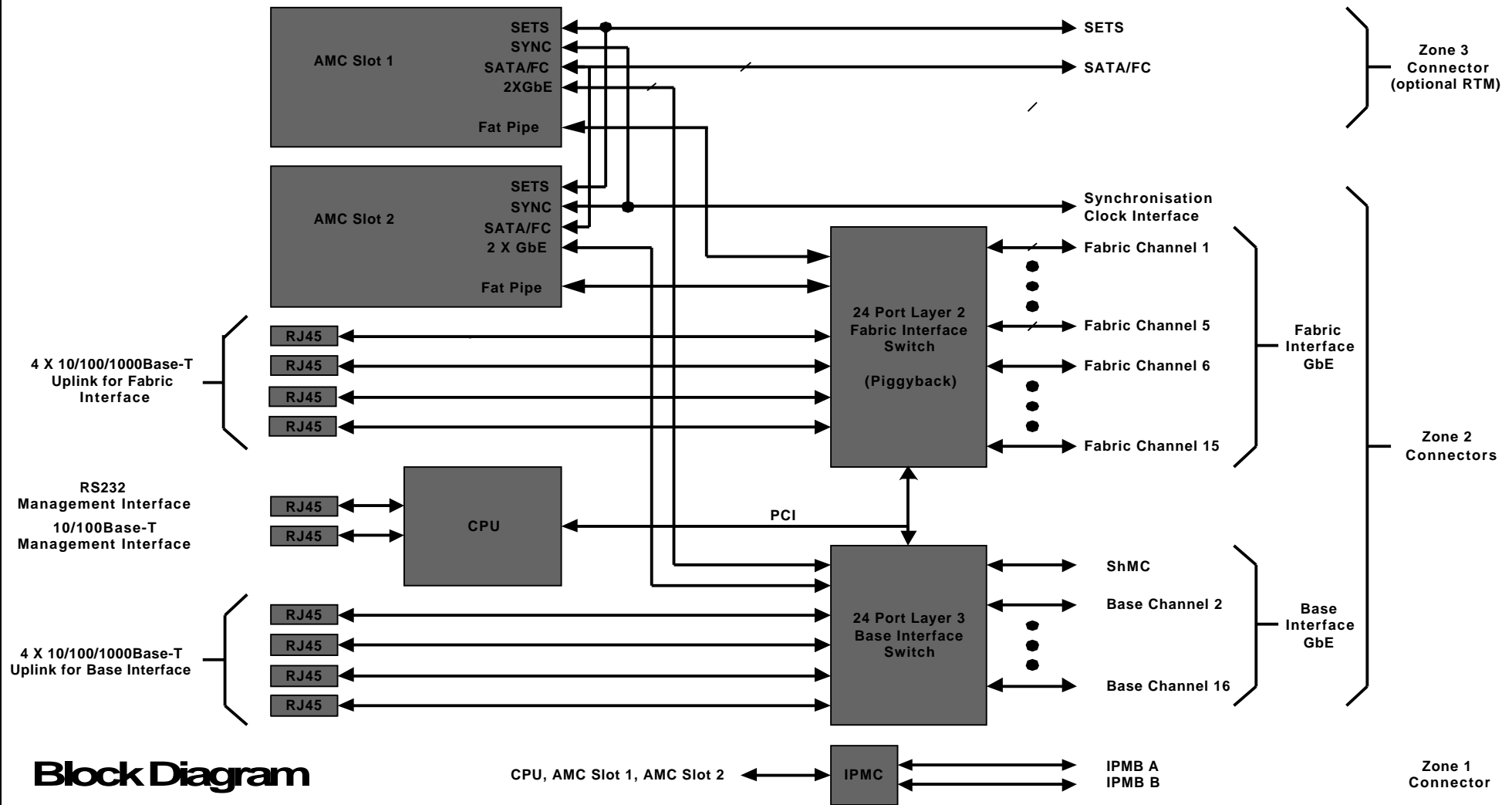


AT8901

## ➤ **Features at a Glance**

- Supports Base Interface (GbE)
- Supports Fabric Interface (1xGbE, 2xGbE)
- Supports 14 and 16 slot shelves
- 2 AMC slots for customisation
- 4 GbE Uplinks for Base as well as Fabric Interface
- Comprehensive protocol support
- Full Hot-Swap capabilities
- Full redundancy support

# ➤ Architecture



**Block Diagram**

# ➤ **Base Interface (PICMG 3.0)**

- Non-blocking Layer 3 switching/routing based on Broadcom Strata XGS III Family Switch Silicon and LVL7 Fastpath Protocol Stacks
- 4x10/100/1000Base-T uplinks on front panel
- 1xGbE connection to AMC slots B1 and B2.
- 1xGbE cross connect to adjacent Hub's AMC slots via update channel
- Ethernet/Bridging protocols
  - Link aggregation (802.3ad), VLANs (802.1Q), Spanning Tree (802.1D, 802.1w), QoS (802.1p), Flow control (802.3x), GVRP, GMRP
- IP routing protocols
  - OSPFv2, RIPv2, VRRP, IGMP snooping, IPv4 forwarding, DiffServ, ARP, ICMP

# ➤ **Fabric Interface (PICMG 3.1)**

- Non-blocking Layer 2 switching
- 2xGbE services to redundant Hub Board
- 2xGbE services to payload slots 2-5
- 1xGbE services to payload slots 6-15
- 4x10/100/1000Base-T uplinks on front panel
- 2x10GbE XAUI to AMC slot B1 and B2
- Link Aggregation (802.3ad), VLANs (802.1Q), Spanning Tree (802.1D, 802.1w), QoS (802.1p), Flow Control (802.3x), GVRP, GMRP

# ➤ Customisation (1)

- 2AMC slots featuring
  - Dual GbE to Base Interface Switch
  - Fat Pipe to Fabric Piggy Back
  - Network Clocking Interface
  - Direct RTM connections
- Usable for e.g.
  - Processor-AMC, e.g. acting as system controller
  - HDD-AMC as mass storage device for processor-AMC
  - SETS-AMC providing network synchronization for Telecom applications
  - Dual 10GbE fabric uplink-AMC to enable multi-shelf ATCA systems

# ➤ Customisation (2)

## ➤ Fabric Interface Piggy Back

- Enables cost optimized version for pure server-based applications by omitting Fabric Interface (built to order)
- Enables customized Fabric Backplane Connections
- Enables Custom Fabric Technology (e.g. ASI, PCI-EX), all possible backplane fabric links routed to connectors
- Generic 'Fat Pipes' to AMC slots
- PCI, LPC and I2C Control Interfaces
- IPMI Support