



power**B**ridge  
C o m p u t e r

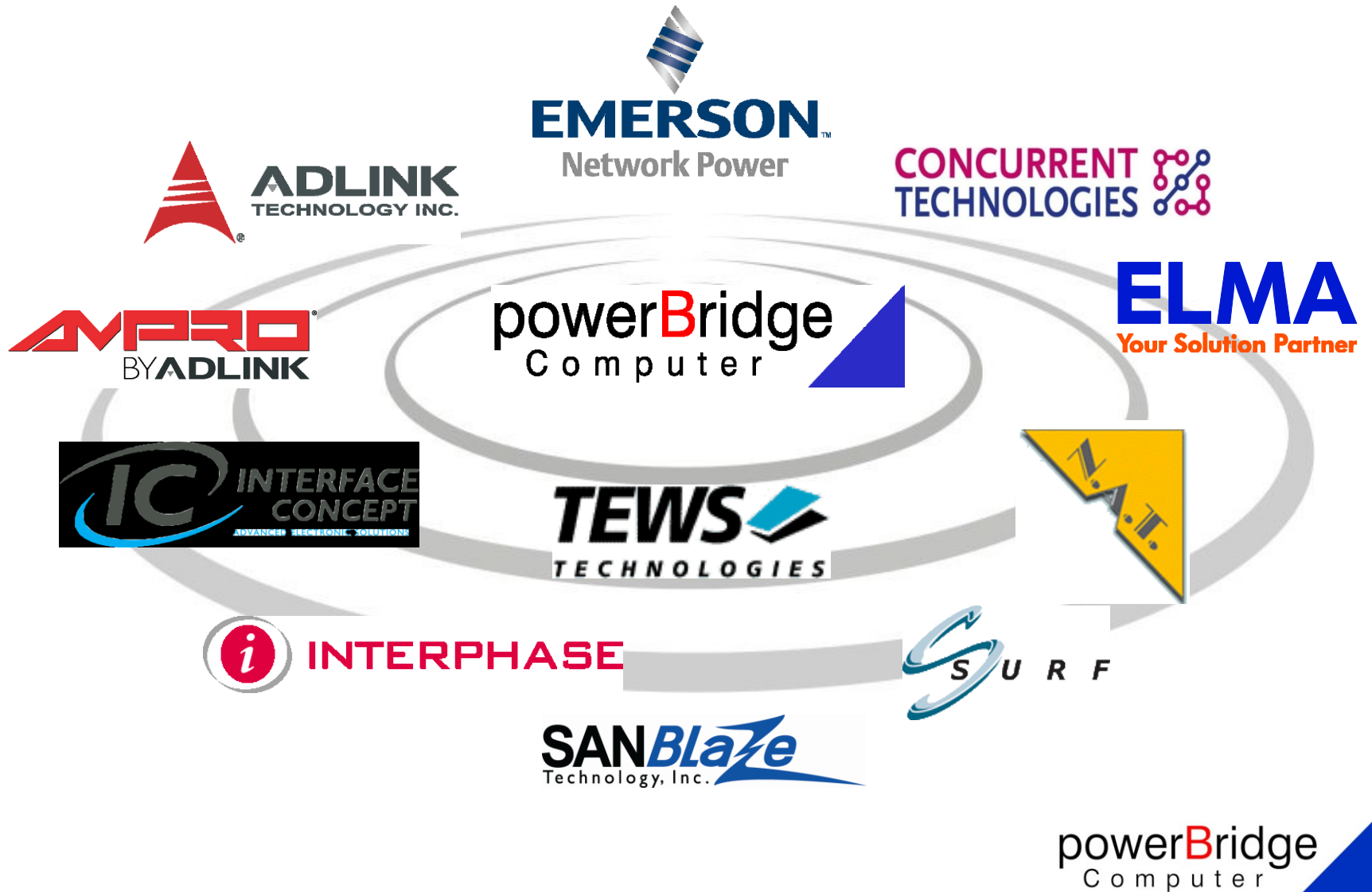


# The Company

- Founded in 1993
- Headquartered in Burgwedel / Hannover
- Share holder: Susanne Görke
- Managing director: Thomas Hannemann
- Products from world leading manufacturers
- Lab and integration facilities for customer specific products and systems



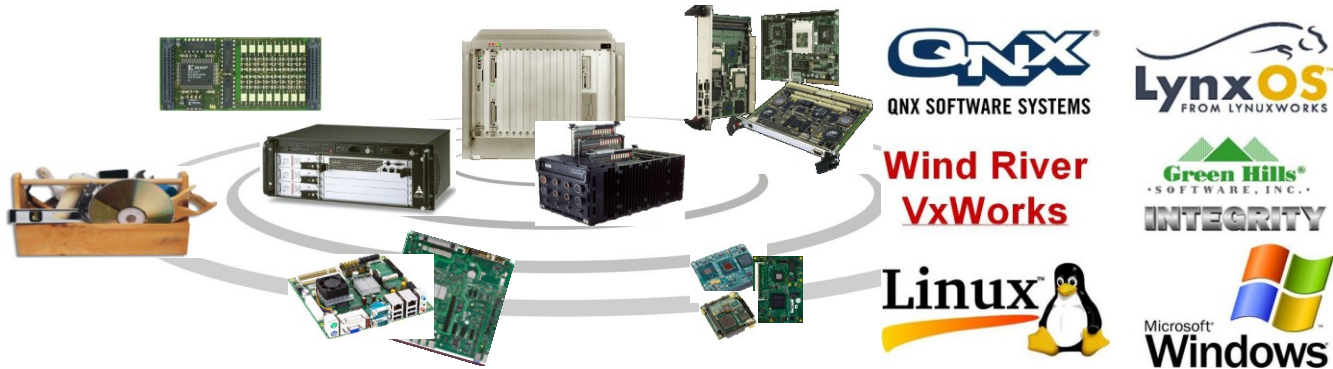
# Our Manufacturer Network Partners



# Core Competencies

- Distribution of computer boards and systems into telecom, medical, automation, high energy physics, transportation, and defence applications
- Deliver complete high quality systems based upon standard industrial components
- Deliver customer specific and customer ready products into the embedded market
- Consultancy and support by experienced engineers

# powerBridge – the solution provider



- Custom solutions based on COTS products:
- AdvancedTCA boards, chassis, systems, and HA solutions
- $\mu$ TCA chassis, systems, and HA solutions
- CompactPCI/PICMG 2.16 boards, chassis, systems, and HA solutions
- VMEbus (VME, VXS, VPX) boards, chassis, and systems
- AMC, PMC/XMC, PTMC, PrPMC and IndustryPack mezzanine modules
- Industrial Motherboards (MicroATX, MITX, SFF, COM Express, Nano)
- Consulting, system development, and custom design

# powerBridge – high energy physics community

- powerBridge is a well respected partner in Europe for the high energy physics community
- Delivers embedded computer systems to institutes and labs all over Europe
- Mainly involved in the discussions about next generation accelerator electronics at XFEL, Germany
- One of the few industrial partners for the DESY XFEL decision process
- TAMC900 was developed for and in cooperation with DESY XFEL
- powerBridge manufacturers partner network has extensive experience with FPGA devices and product development
- Participating in community events
- Technical expertise
- Understands the needs of our customers

# Reference Customers/projects

## Defence, MIL and Aero Customers

- EADS
  - Simulationsystems based upon VMEbus & CompactPCI
- OHB Systems
  - Aero and space application, VMEbus, CompactPCI, conduction cooled



## Industrial-Automation

- Horiba Automotive Test Systems (Schenck Pegasus)
  - Testbenches for automotive VMEbus
- BMW Rolls-Royce
  - Turbine testbeds VMEbus



# Reference Customers/projects

## Telecommunication

- ATIS Assman
  - Telecommunication  
VMEbus, CompactPCI
- Temic
  - Speechrecognition  
CompactPCI, DSP



## Public Transport

- Deutsche Bahn
  - Testbeds for track inspection  
VMEbus, PowerPC
- T-Systems
  - Traffic control systems  
VMEbus





# Customized Systems based upon Standards



VME based controlsystem  
with Dualcore PPC CPU,  
running OS-9



Application: Medical  
automationsystem for  
pharmaceutical industry

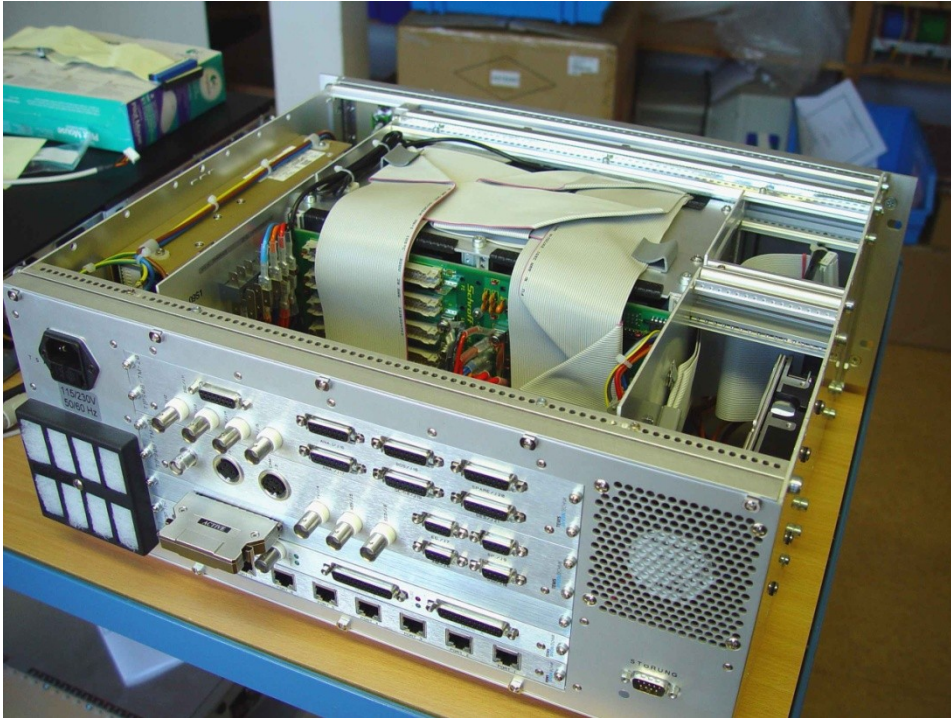
# Customized Systems based upon Standards



VMEbus based  
controlsystem with 3 PPC  
CPUs und

Application: gearbox and  
brake testbed for car  
manufacturing

# Customized Systems based upon Standards



VME based control system running under VxWorks

Application: Wafer Inspection system for semiconductor industry



# Customized Systems based upon Standards



cPCI based system  
with Dualcore CPUs  
and Embedded Linux

Application:

Medical test  
equipment, detection  
of pollution or particles  
in ampules



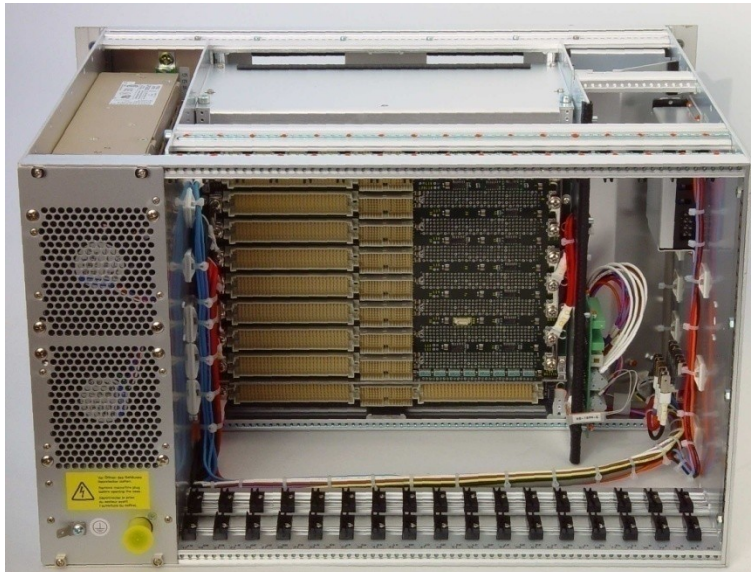
# Customized Systems based upon Standards



Custom chassis design with  
VME64 backplane

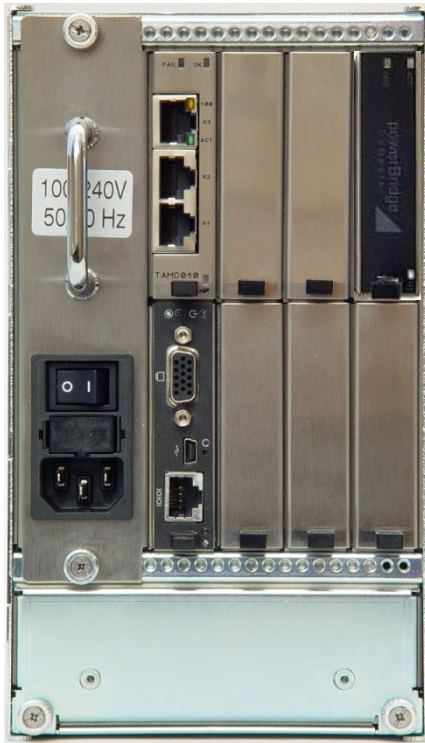
VME Rack for military  
applications

Used in environmental critical  
conditions, such as shock and  
vibration, ultra low noise





# Customized Systems based upon Standards



## Simple MicroTCA System for wall mount

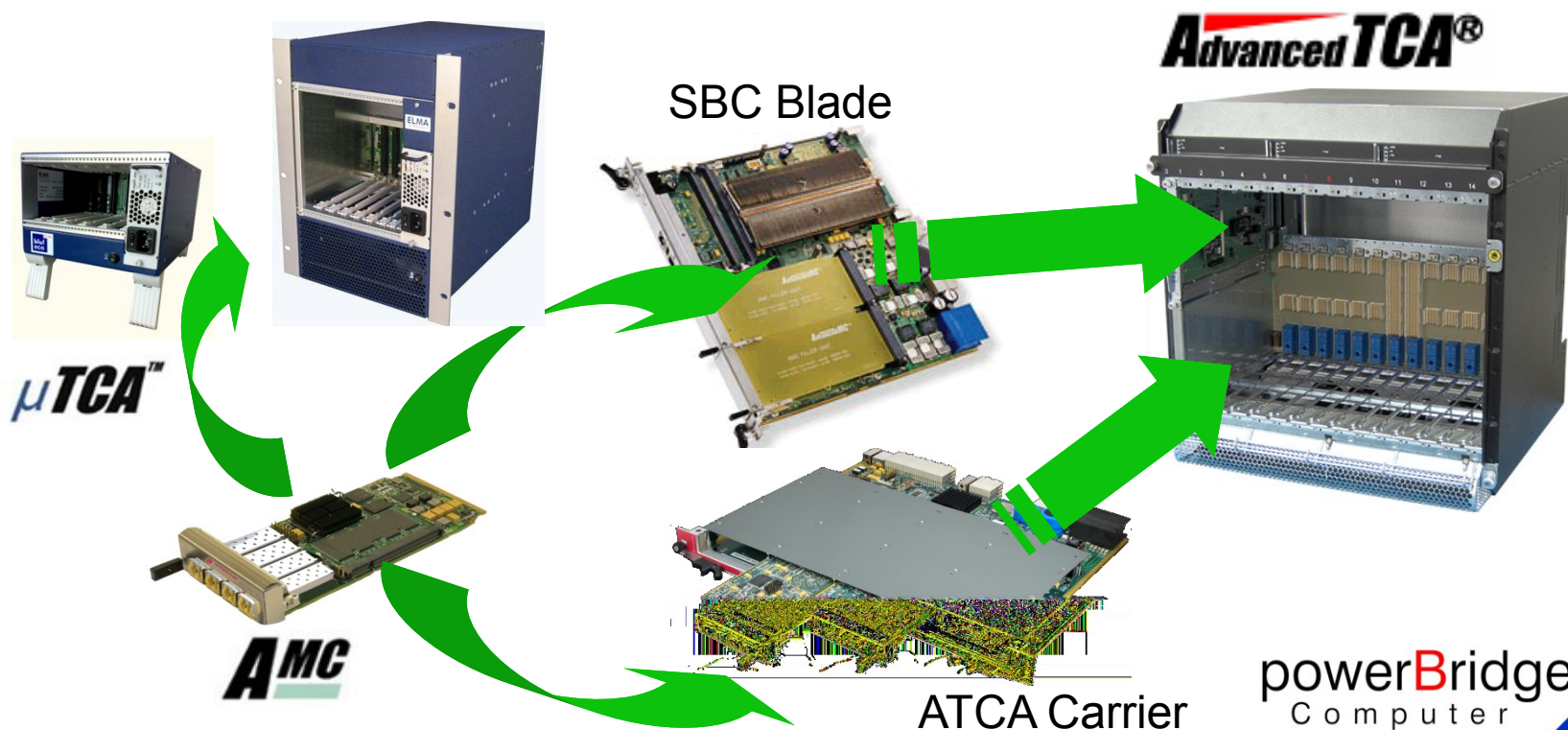
- 7 mid-size AMC Slots, optional up to 3 double mid-size Slots
- optional GbE Switch AMC module
- 250W power supply
- Hot-swap fan and dust filter

# Backup Slides



# AdvancedTCA & MicroTCA ( $\mu$ TCA)

- Scalable systems architecture
- High speed interconnect, different protocol communication
- Custom designs allows significant cost reduction
- Complete migration path



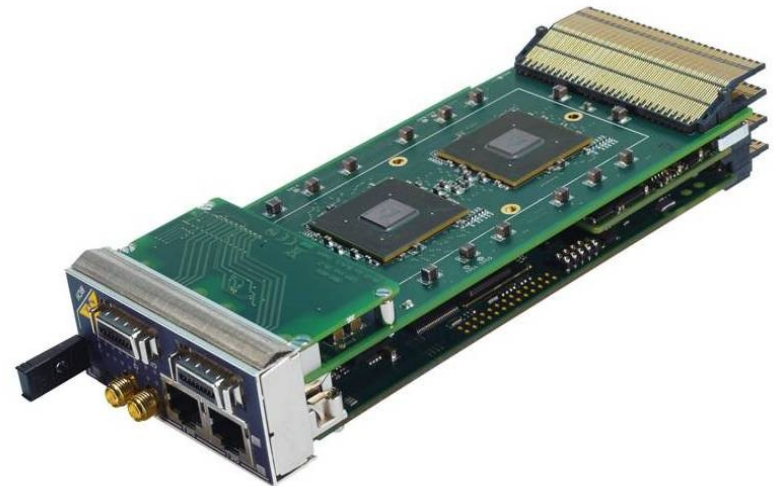
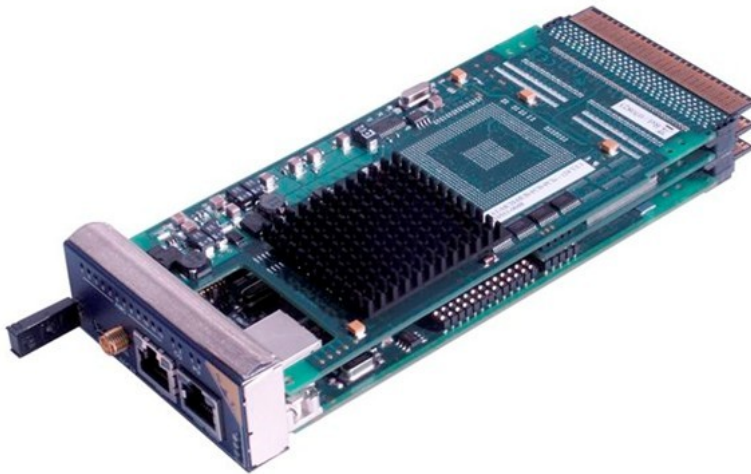
# $\mu$ TCA

- Several  $\mu$ TCA system configurations available



# MCH

- Industry well accepted MCH available from N.A.T.



- Interconnect: GbE, 10GbE, PCIe, SATA/SAS and SRIO, Gen. 2

# CPU Boards

- X86 or PowerPC Processor AMCs

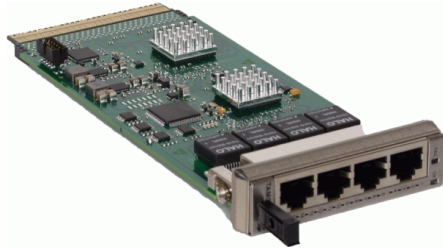


- Interconnect: GbE, PCIe, SATA/SAS and/or SRIO, Gen. 2

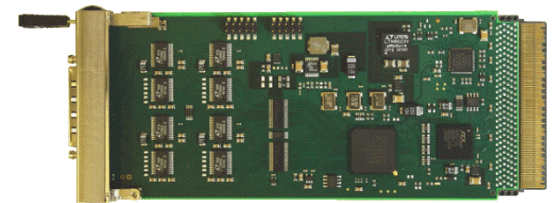
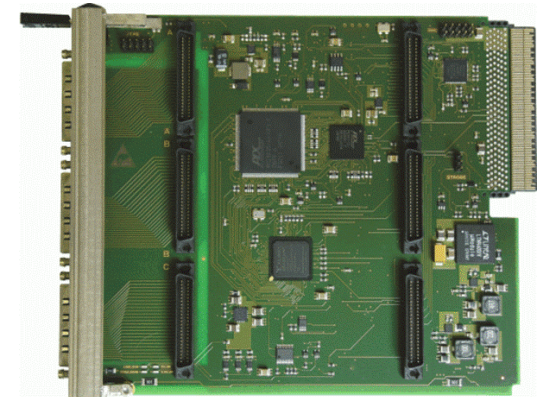




# I/O modules for $\mu$ TCA



- Analog and Digital I/O
- ARINC 429
- MIL-STD-1553
- Carrier: IP and PMC
- SATA/SAS Discs
- ATM, E1/T1, DSP
- LTE/WiMAX
- Ethernet, GbE
- Fieldbus
- Fibre Channel
- FPGA
- Graphics
- Motion Control
- Serial Ports
- Switches
- Test and Display

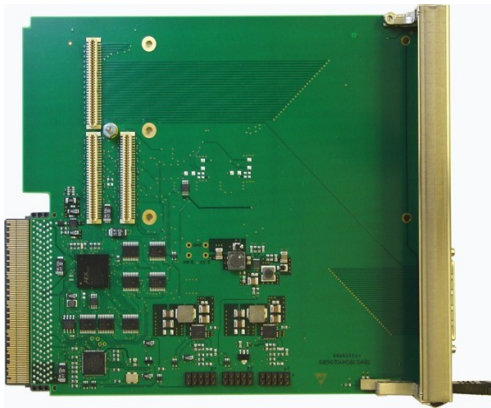


# I/O modules for $\mu$ TCA (2)

- Different Carriers for Rapid Prototyping

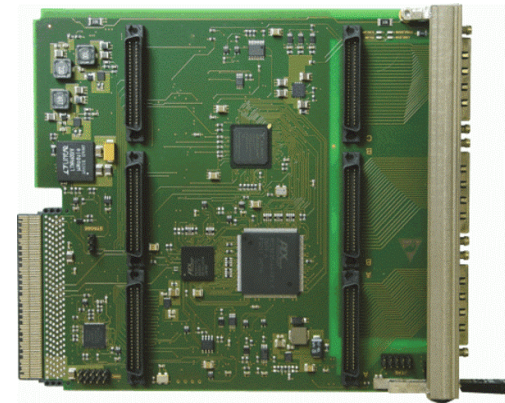


- IndustryPack Carrier



- PMC Carrier

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TECHNOLOGIES

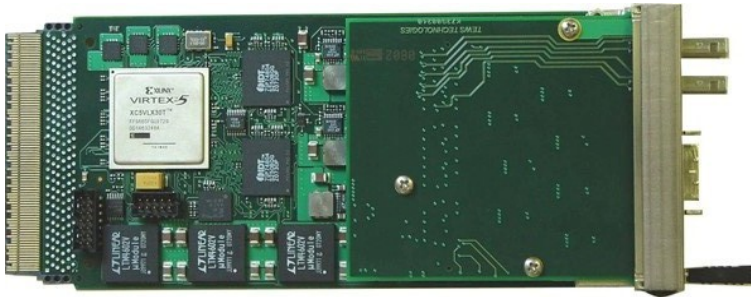


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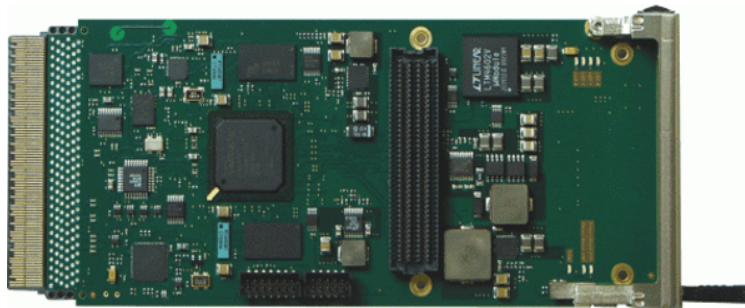
# I/O modules for $\mu$ TCA (3)

- A/D & FPGA

- TAMC900, 8-port 14-bit 105MSps ADC AMC



- TAMC631, Spartan 6 FPGA AMC with FMC Slot







# MicroTCA.4 Crates

**ELMA**  
Your Solution Partner

**Schroff**®

- 2 major players in the market
- Both offers 6-Slot Development and 12- Slot redundant systems

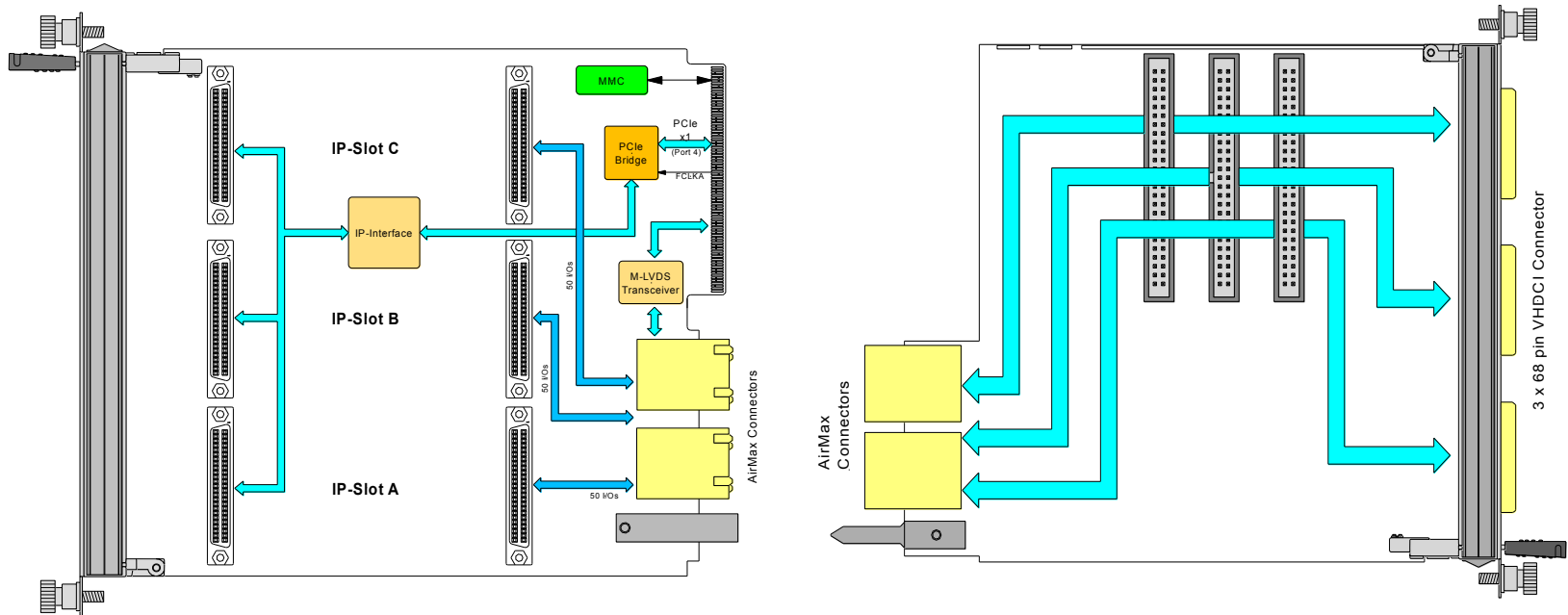


- **powerBridge Computer Starter-Kits available**

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Computer

# IndustryPack Carrier

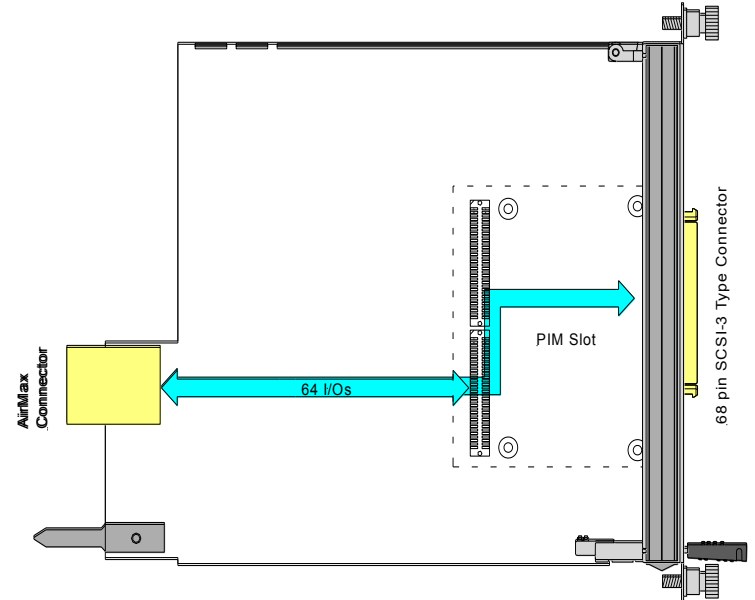
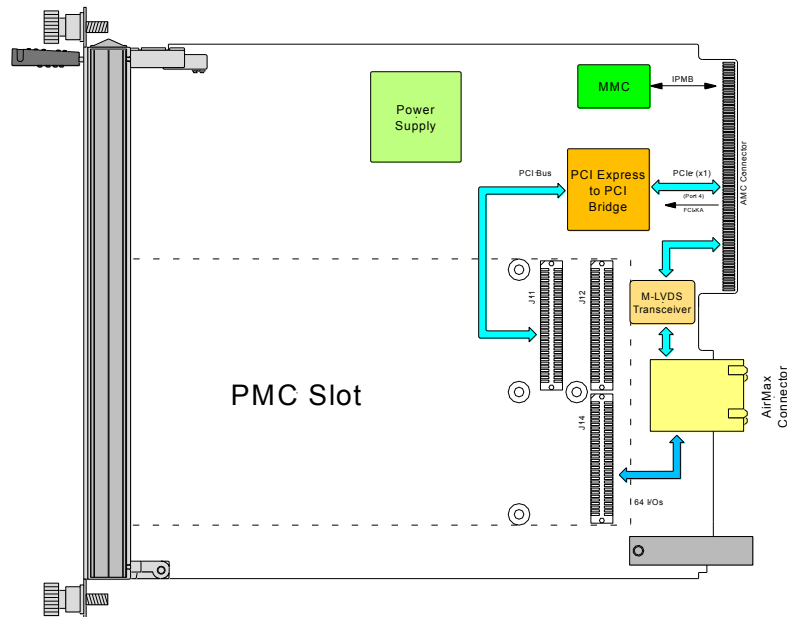
- TAMC220, Double AMC with 3 IP-Slots and  $\mu$ RTM



- In development, first boards available in May 11

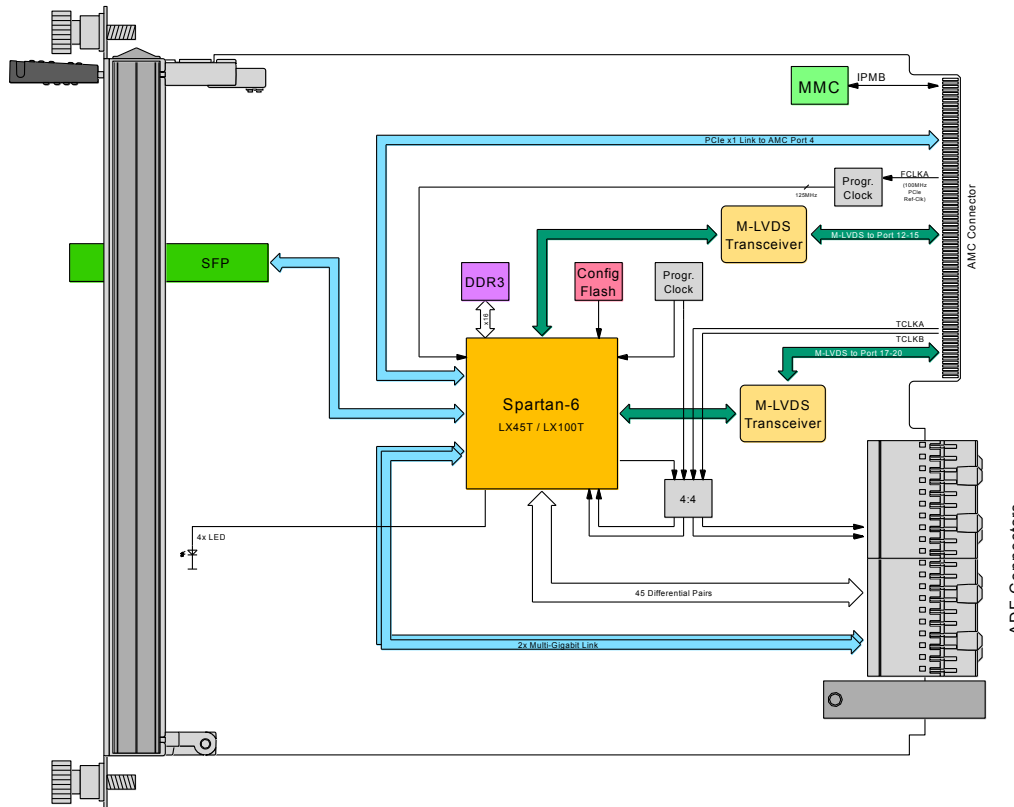
# PMC Carrier

- TAMC261, Double AMC PMC Slot and  $\mu$ RTMs



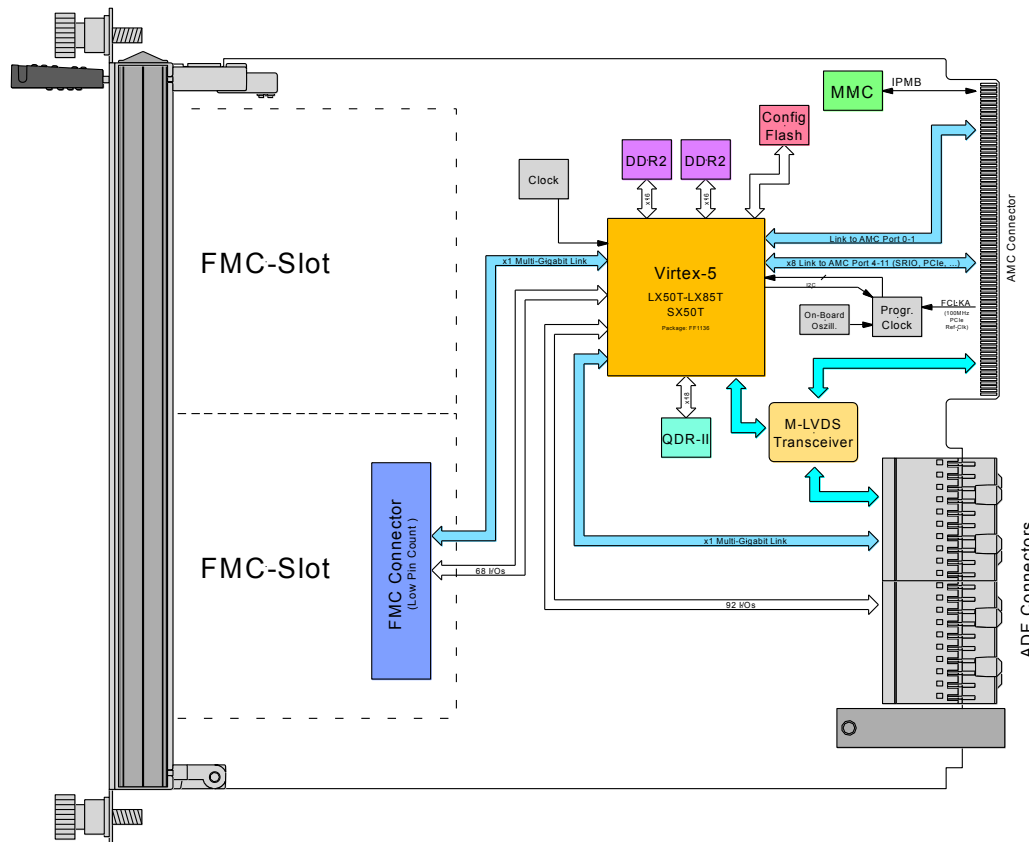
# Low-End Spartan 6, LX45T, LX100T

- TAMC651, Double AMC mit Spartan 6 FPGA und Rear-IO



# Mid-Range Virtex V, LX50T-85T, SX50T

- TAMC660, Double AMC mit Virtex V FPGA und Rear-I/O



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# Roadmap MTCA.4, $\mu$ RTM

$\mu$ RTM is a vital part of MTCA.4, which makes a system very modular  
Nearly any kind of interface in any combination can be implemented by using an  $\mu$ RTM module

Examples:

- High speed ADCs
- Medium speed ADCs, high channel count
- High speed DACs
- Medium speed DACs, high channel count
- Digital I/O (incl. LVDS)
- Networking
- Motion Control
- Communication (RS-232, RS-485, RS-422, M-LVDS, ...)
- Fieldbus ...

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▪ **Contact:**

- Thomas Holzapfel
- Email: [thomas.holzapfel@powerbridge.de](mailto:thomas.holzapfel@powerbridge.de)
- Tel: +49-5139-9980-21
- Fax: +49-5139-9980-49

powerBridge Computer Vertriebs GmbH, Ehlbeek 15a  
30938 Burgwedel, Germany

<http://www.powerbridge.de>

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**There is a lot more  
below the surface**

Thank you