Ecosystem MTCA…

MTCA modules and applications

powerBridge
Computer

- 25 years in the market

- Privately owned

- More than 25 years VME experience

- Own Lab and integration facilities

- powerBridge has delivered more than 27.000 VME boards and 5.500 systems

- Associate PICMG member

- MTCA Techlab member

- ISO 9001:2015 and 14001:2015 approved

PICMG®

microTCA TECHNOLOGY LAB
A HELMHOLTZ INNOVATION LAB

100% paperless company

ISO 9001 · ISO 14001
LL-C (Certification)

Markets

Our diverse membership allows PICMG to develop compelling specifications in multiple markets. PICMG technologies are widely used in a broad swath of industries including industrial automation, military/aerospace, transportation, communications, test/ measurement, physics/research, energy, medical, and more!

	COM Express	AdvancedTCA	CompactPCI	CompactPCI Serial	HPM	MicroTCA / AMC	SHB
Industrial Automation	X		X	X		X	X
Gaming	X						
Telecommunications	X	X			X	X	
Aerospace	X		X	X	X	X	
Defense	X	X	X	X	X	X	X
Railway	X		X	X	X	X	
Energy	X		X	X	X	X	X
Medical	X		X	X	X	X	
Test / Measurement	X	X	X	X	X	X	
Physics		X			X	X	X
Drones / UAV	X		X	X	X	X	

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MTCA. AMC module Vendors.
Today.

Supplier	Type	Specifics
AIES, PL	I/O	FPGA/FMC carrier (Xilinx), CPU Link (PCIe uplink), MTCA.4
CAEN els, I	I/O	Picoammeter, FMC carrier, High-Voltage, MTCA.4
Commagility, GB	I/O	FPGA (Xilinx) + DSP, CPRI, OBSAI, MTCA.0
Concurrent Technology, GB	Processor & Storage	Core i7, Xeon, SATA HDD, MTCA.0, MTCA.4
DDC, US	I/O	Multiprotocol AMC, MIL-1553, ARINC 429, MTCA.0
Embedded Planet, US	Processor	PowerPC, PowerQUICC, QorIQ, MTCA.0
ESD, D	I/O	Analog Digital IO, CAN, PCIe AMC carrier, MTCA.0, EtherCAT Master Stack
IAF, D	I/O, DSP	DSP (CPRI), FPGA (CPRI), Q7 carrier AMC, MTCA.0
Ioxos, CH	I/O	Digitizer
MicroLAB, RU	I/O	DSP (C6678), FPGA (Xilinx), Network
Mitsubishi Tokki, JP	I/O	FPGA (Xilinx), MTCA.0, MTCA.4
Nutaq, CDN	I/O	MiMo, FPGA (Xilinx), MTCA.0, MTCA.4
NAT, D	MCH, Processor, PEM & I/O	MCH, QorIQ, PowerQuicc, FPGA (ARRIA 10, ZYNQ, Ultrascale),5G LTE, IO, EtherCat, Extender modules, High precision timer, DSP, Load Module, MTCA.0, MTCA.4

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Supplier	Type	Specifics
ParPro (formerly JumpGen), US	Processor & Network	Intel Core i7, Network, Storage, MTCA.0
Piezotechnics, D	I/O	Piezo driver RTM, MTCA.4
Prodrive, NL	Processor & I/O	Intel Xeon, ARM, DSP, FPGA (Zynq, Virtex), MTCA.0
Samway, RO	MCH, PEM, I&O	MCH, Power distribution module, Load Module, MTCA.0, MTCA.4
SanBlaze, US	Storage	SATA RAID Controller, Fibre Channel, SATA HDD/SSD
Scan Engineering Telecom, RU	Processor, MCH, I/O	Intel, SATA HDD, FPGA, DSP, serial COMMS, GbE,
Teledyne SP Devices, S	I/O	Digitizer Boards
Struck Innovative Systeme, D	I/O	Digitizer Boards
Surf	I/O	DSPs TI C648X (Voice and Video)
Tews, D	I/O	IP-Carrier, PMC Carrier, FPGA, high-speed ADC, Serial Comms, I/O
Vadatech, US	MCH, Processor, PEM & I/O	MCH, Processor AMC (Intel x86, QorIQ), PMC/XMC Carrier, Network (1/10G/40G), Packet processing, Graphics, Serial Comms, FireWire, Infiniband, Digital I/O, Storage, FPGA (Xilinx, Altera, ADC, DAC), Development, Load module
Several Institutes and Universities		
Fraunhofer Institute		
Industrial users	KBA, D	Frame grabber AMC Cameralink

MTCA. Power module Vendors.
Today.

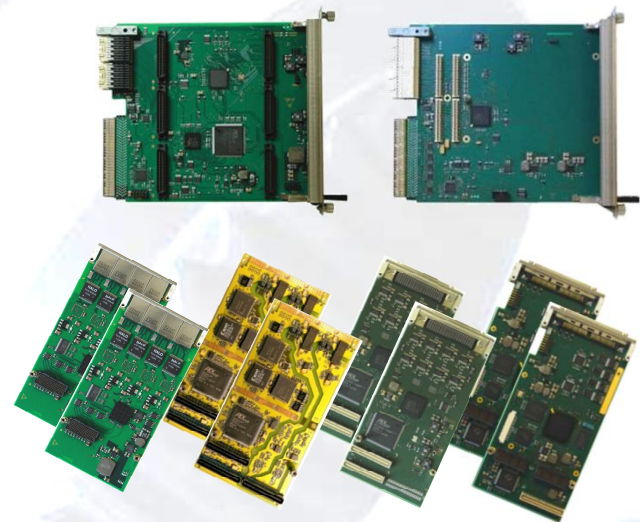| Supplier	Specifics
NAT, D	Single, 780W, DC, 600W, AC, Double 1.000W AC
nVent (Schroff), D	PEM, 12VDC,
Samway, RO	Single, DC
Vadatech, US	Single, 460, DC, Double, 780W, DC
WIENER Plein + Baus, D	1.000W, AC, MTCA.4, extreme low ripple/noise

MTCA. Chassis Vendors.
Today.

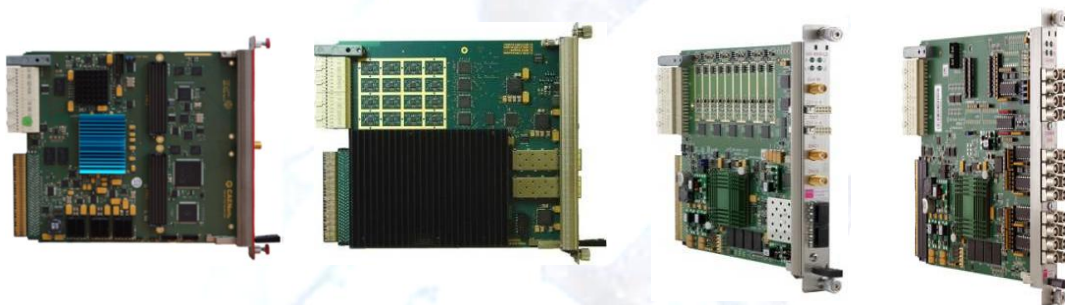| Supplier	Country	Specifics
asis	Israel	19", MTCA.0, customer specific
pixus TECHNOLOGIES	Canada	19", MTCA.0, MTCA.4, 1U, 2U, 5U
ELMA Your Solution Partner	Germany	19", development chassis, MTCA.0, MTCA.4
N.A.T.	Germany	19", MTCA.0, MTCA.4 chassis
powerBridge Computer	Germany	19", customer specific, Simple MTCA chassis, wall mount, MTCA.4
nVent SCHROFF	Germany	19", development chassis, wall mount, customer specific, MTCA.0, MTCA.4
vadatech THE POWER OF VISION	US	19", customer specific, MTCA.0, MTCA.4
Uber SUBRACK · CASE · PANEL	Japan	19", MTCA.0, MTCA.4

MTCA.4 Ecosystem.
Today.

- MTCA.4 Starter Kits, including MCH, CPU & PM

- Carrier + Mezzanines (IP, PMC, XMC, FMC)

- AMC Modules

- SW & FW Support including BSP, source code drivers, sample applications, FPGA framework

- Spare parts, like filler modules, adapter cables, program and debug tools, test adapter

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MTCA.4 Ecosystem.
Today.

- MTCA.4 Starter Kits, including MCH, CPU & PM
    - 7-slot desktop
    - 19" 2U, 3U, 9U chassis, up to 12-slots
    - LLRF backplane
    - AC and DC power input modules (up to 1.000W)

- AMC and RTM Modules
    - Analogue I/O (>1GS/s)
    - FPGA
    - High precision timer
    - …
- Spare parts, like filler modules, adapter cables, program and debug tools, test adapter

- Carrier + Mezzanines (IP, PMC, XMC, FMC)

- SW & FW Support including BSP, source code drivers, sample applications, FPGA framework

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MTCA.0 Ecosystem.
Today.

- MTCA.0 Starter Kits, including MCH, CPU & PM

- Carrier + Mezzanines
  (IP, PMC, XMC, FMC)

- AMC Modules

- SW & FW Support
  including BSP,
  source code drivers,
  sample applications,
  FPGA framework

- Spare parts, like filler modules, adapter cables,
  program and debug tools, test adapter

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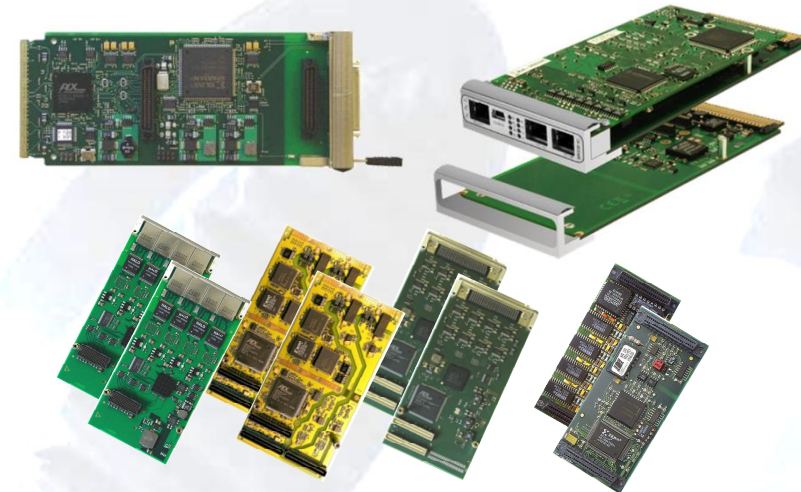
- MTCA.0 Chassis, including MCH, CPU & PM
  - 2-slot, 5-slot desktop
  - 19" 1U, 2U, 4U chassis, up to 10-slots
  - AC and DC power input modules (up to 780W)

- AMC Modules
  - Analogue IO (<1GS/s)
  - Fieldbus (EtherCAT, CAN, …)
  - Serial ports (RS232, 422, 485)
  - DSP and FPGA
  - HDD carrier and network cards

- Spare parts, like filler modules, adapter cables, program and debug tools, test adapter

- Carrier + Mezzanines (IP, PMC, XMC, FMC)
  - Secure legacy I/O functions
  - Maximum flexibility

- SW & FW Support including BSP, source code drivers, sample applications, FPGA framework

- **MTCA can act as EtherCAT Master**
    - Configuration and management of EtherCAT networks
    - Cyclic exchange of process data
    - Sophisticated API common to all implementations as interface between the application and the EtherCAT master stack
    - Mailbox based communication with:
        - CAN application protocol over EtherCAT (CoE)
        - Ethernet over EtherCAT (EoE)
        - File over EtherCAT (FoE)
        - Servo Drive over EtherCAT (SoE)
    - Built-in detailed diagnostics and profiling functions
    - Written in ANSI-C designed with high performance, small resource usage and scalability in mind
    - The core components are operating system (OS) and CPU architecture independent
    - Adaption to many prevalent (real-time) operating systems available from stock
    - EtherCAT Master Class A according to ETG.1500

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Computer

Fieldbus.
EtherCAT. Slaves.

EPS-9905
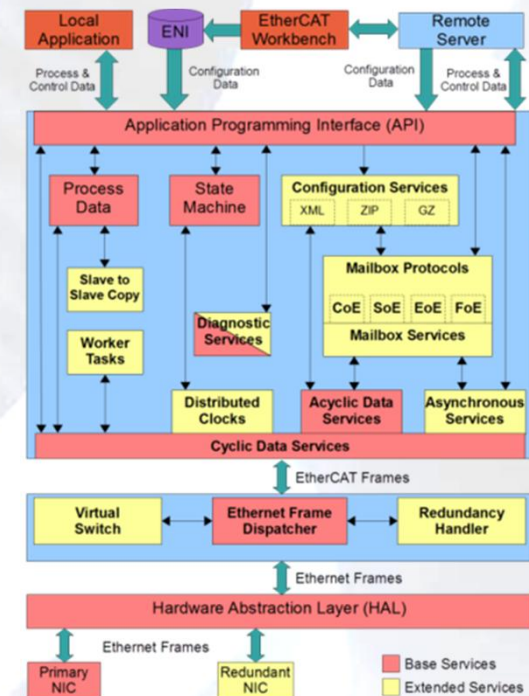
EPS-6000

EtherCAT Slave modules

- EPS-6000 EtherCAT bus coupler
- EPS-1132 digital input 32 channel with SPI interface (sinking type)
- EPS-2032 digital output 32 channel with SPI interface (sourcing type)
- EPS-2308 relay output 8 channel and 8 digital input with SPI interface
- EPS-3032 analogue input 32 channel (+/-10V) with SPI interface
- EPS-3216 analogue input 16 channel (0~20mA) with SPI interface
- EPS-3504 RTD input thermal 4 channel with SPI interface
- EPS-4008 analogue output 8 channel with SPI interface
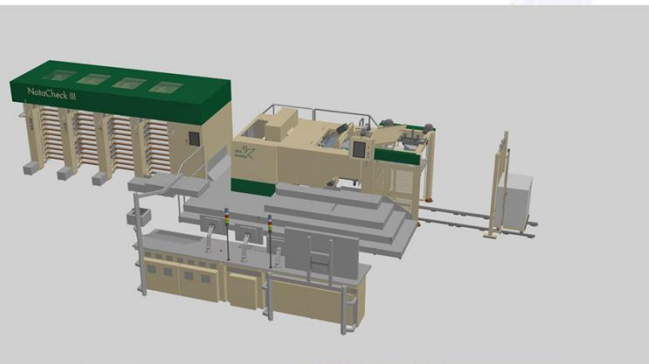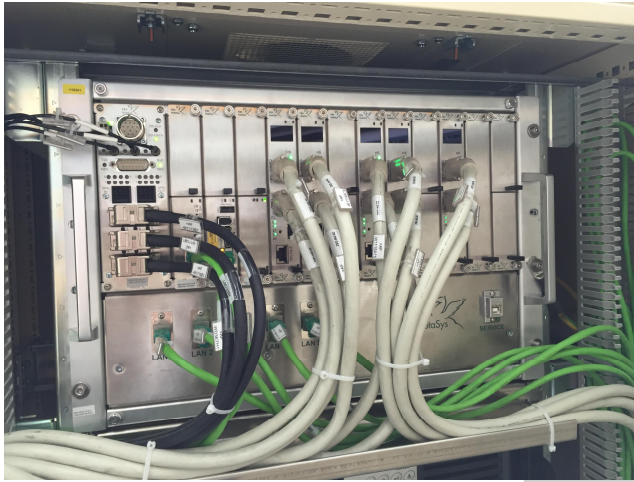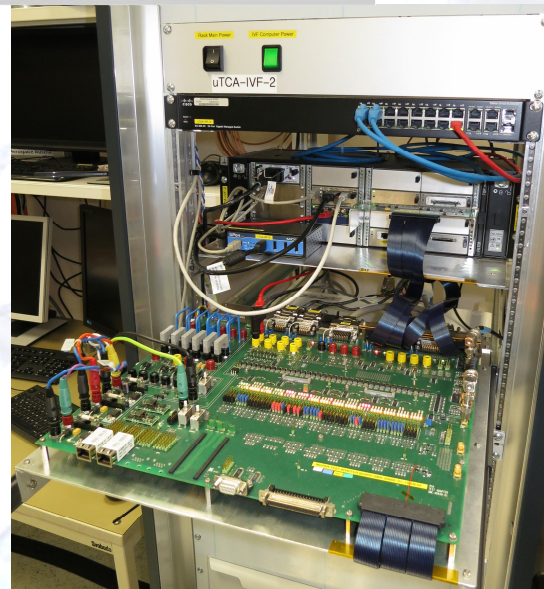- EPS-7002 pulse output motion controller 2 channel with SPI interface

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MTCA.
Real Market Applications.

- Image processing
- Traffic control
- Open Compute platform
- Telecom (Multi-protocol platform)
- HW Test and validation

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Computer

MTCA.
Real Market Applications.

test and measurement

- testbeds for avionics
- high speed visual inspection
- Non destructive Testing (NDT)
- spectral analysis
- Hardware-in-the-loop (HIL)

communication

- PABX
- Telecom gateways
- 5G/LTE basestation (CPRI, OBSAI) Testsystems
- conferencing platforms
- Software Defined Radio (SDR)

medical has adopted MTCA for

- high speed data aquisition
- image processing

others

- Broadcast
- homeland security and defence

And many, many more….

powerBridge Computer

Contact Information.

Let´s discuss your requirements and test our performance!

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