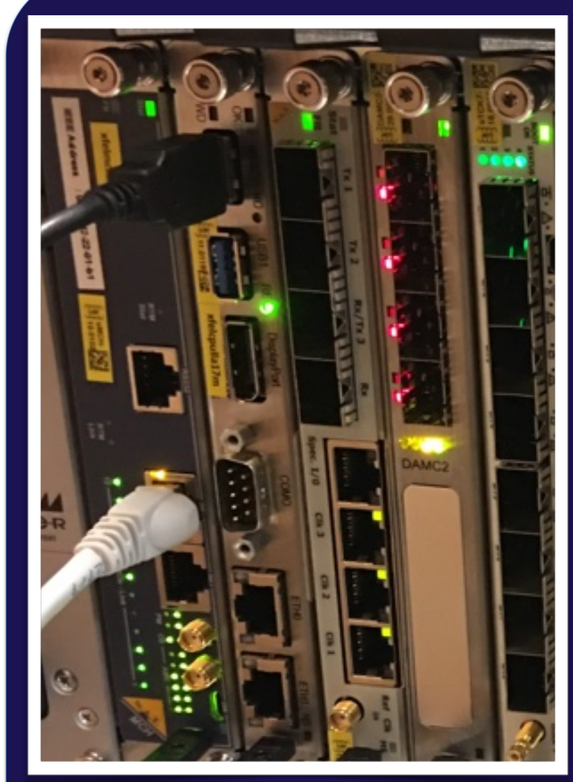
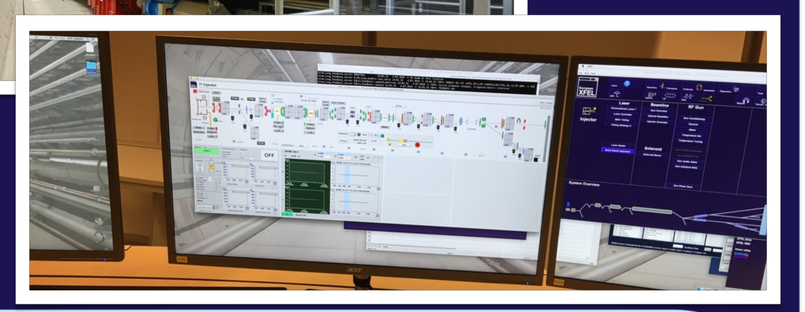
N.A.T. Solutions for MTCA.4.1

Complete and EASY to Use



Components for Installations like XFEL

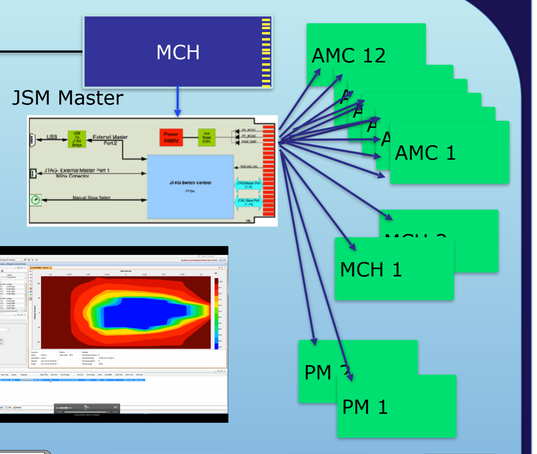
12/6 slot 19'' Chassis	NATIVE-R9, NATIVE-R2
RF Backplane	NAT-LLRF-Backplane
JTAG Switch Module	NAT-JSM
Power Supplies	NAT-PM1000, NAT-RPM
80xPCIe Gen3, 16xGbE	NAT-MCH-PHYS80
48xPCIe Gen3, 16xGbE	NAT-MCH-PHYS
LLRF Mangement	NAT-MCH-RTM-BM-FPGA
PicoSecond Timer	NAMC-psTimer, -RTM-C
Kintex7 & 8xSFP	NAMC-TCK7
FMC-Carrier	NAMC-ARRIA10/ZYNQ-FMC



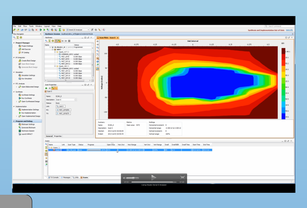
Easy Configuration of High Performance Technology

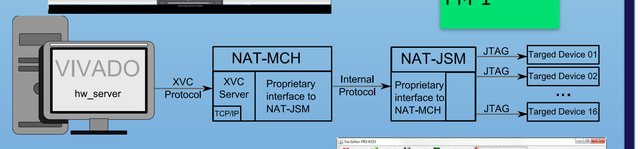
- Debugging of multiple JTAG Xilinx devices via MCH, no need for JTAG adapter
- IPMI Debug over Ethernet
- Easy to use Web Interface to configure
  - PCIexpress
    - PCIexpress Clusters inside and outside of MTCA crate,
    - Individual x4, x8, x16 PCIexpress configurations
  - Power Module
    - Power Configurator to set up 1+1, n+1 power configuration
    - individual maximum current setting in FRU and backplane
  - GbE/XAUI: Virtual LAN, Port Mirroring etc configurations
- JAVA Support NAMC-psTimer (compatible with x2Timer)
- LLRF backplane and eRTM support

Ethernet

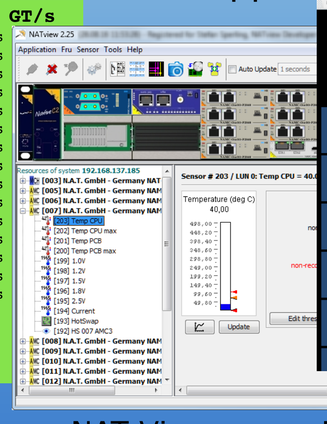


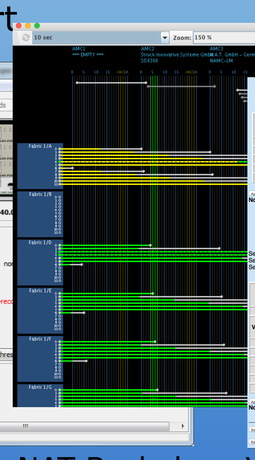
JTAG connection by virtual probe, i.e. Xilinx Vivado

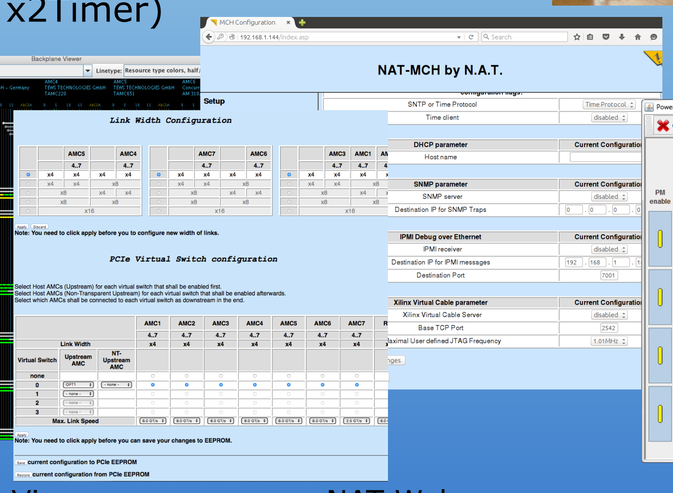


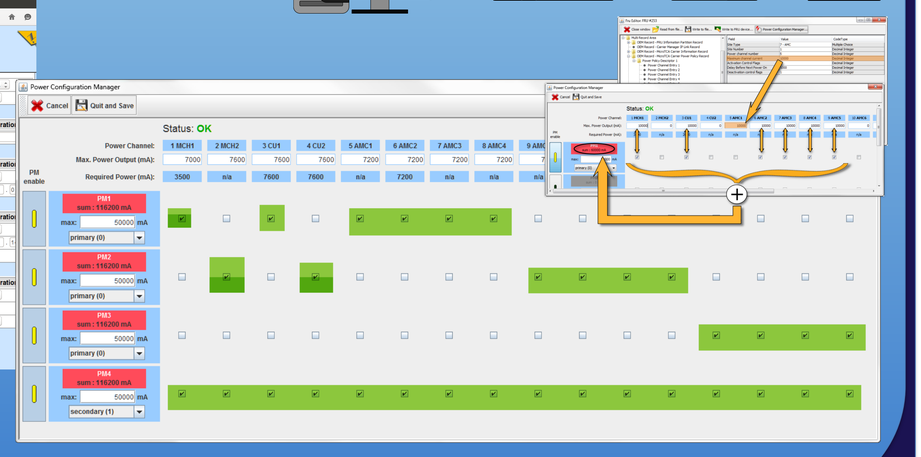



```
AMC  1 Port  4 is PCIe - x4 - 2,5 GT/s
AMC  1 Port  5 is PCIe - x4 - 2,5 GT/s
AMC  1 Port  6 is PCIe - x4 - 2,5 GT/s
AMC  1 Port  7 is PCIe - x4 - 2,5 GT/s
AMC  2 Port  4 is PCIe - x4 - 2,5 GT/s
AMC  2 Port  5 is PCIe - x4 - 2,5 GT/s
AMC  2 Port  6 is PCIe - x4 - 2,5 GT/s
AMC  2 Port  7 is PCIe - x4 - 2,5 GT/s
AMC  3 Port  4 is PCIe - x4 - 2,5 GT/s
AMC  3 Port  5 is PCIe - x4 - 2,5 GT/s
AMC  3 Port  6 is PCIe - x4 - 2,5 GT/s
AMC  3 Port  7 is PCIe - x4 - 2,5 GT/s
AMC  4 Port  4 is PCIe - x4 - 2,5 GT/s
AMC  4 Port  5 is PCIe - x4 - 2,5 GT/s
AMC  4 Port  6 is PCIe - x4 - 2,5 GT/s
AMC  4 Port  7 is PCIe - x4 - 2,5 GT/s
local RTM link status:
   Ethernet - 1000Base-BX
   PCIe - x16 - 8 GT/s
```



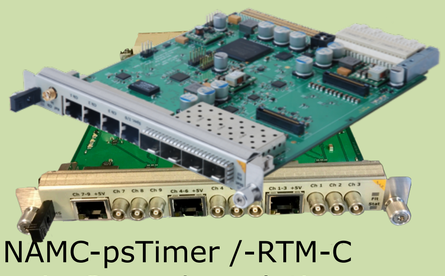




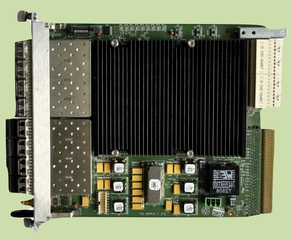


NAT-CLI | NAT-View | NAT Backplane Viewer | NAT Web | NAT Power Configurator

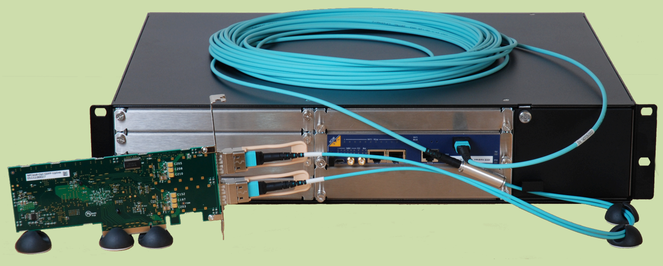
Latest News



NAMC-psTimer /-RTM-C
picoSecond resolution
receive / transmit /gateway

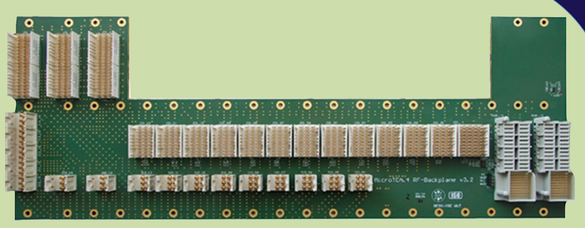


NAMC-TCK7
Kintex-7+8xSFP+



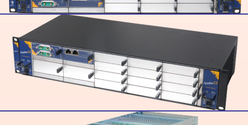
NATIVE-R2 with NAT-MCH-PHYS80
PCIe-Gen3 x4,x8,x16
optical PCIe Uplink

NAT-MCH-RTM with
4-Core-XEON-E3 or Core-i3
ZYNQ-FPGA, LLRF-Support

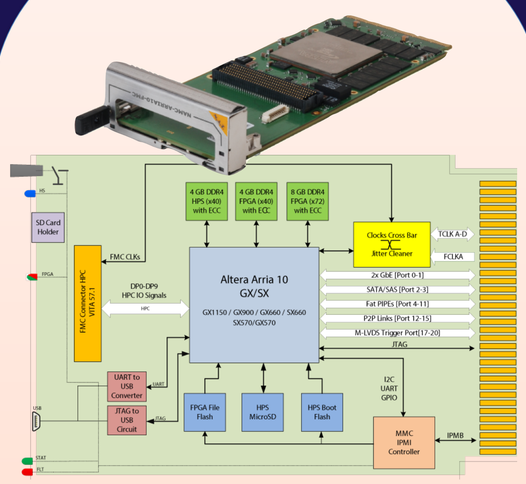


NAT-LLRF Backplane

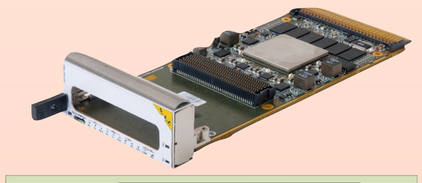
MicroTCA Crates

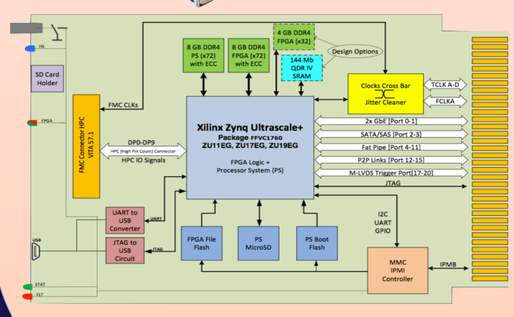
Standard	Name	Size	
MTCA.0	NATIVE-mini	1U, 2 AMC Slots	
	NATIVE-C1	19'', 1U, 6 AMC Slots	
	NATIVE-C2	19'', 2U, 12 AMC Slots	
	NATIVE-C5	5U, 7 double AMC Slots	
MTCA.1	NATIVE-SX	3U, 5 Slot	
	NATIVE-IPC	19'', 4U, 10 AMC Slots	
	NATIVE-C8	19'', 8U, 10 AMC Slots, JSM	
MTCA.4	NATIVE-R2	19'', 2U, 6 AMC+ 6 RTM Slots, JSM	
	NATIVE-R5	5U, 7 AMC + 7 RTM Slots	
	NATIVE-R9	19'', 9U, 12 AMC + 12 RTM Slots, JSM, LLRF	
MTCA.2 MTCA.3	on request		

AMC-FMC Carrier



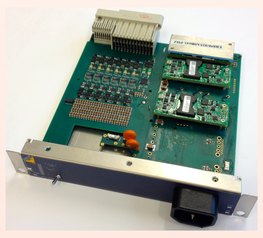
NAMC-ARRIA10-FMC





NAMC-Xilinx-FMC
Ultrascale+ and Zynq

Power Supplies AC and DC



• NAT-PM-DC600LV	DC 24V (18-36V)	600W
• NAT-PM-DC420	DC -48V (-40..-60V)	420W
• NAT-PM-DC840	DC -48V (-40..-60V)	840W
• NAT-PM-AC600	AC 110-265	600W
• NAT-PM-AC600D	AC 110-265V	600W
• NAT-PM-AC1000	AC 110-265V	1000W
• NAT-RPM-PSC	AC 110-265V	+/-VV, 600W

MicroTCA Carrier Hub and Management

- Single NAT-MCH-xxx
  - GbE, XAUI, PCIe, RapidIO
  - Clock generation and distribution 1pps-700 MHz
  - optical and copper uplink XAUI, RapidIO

- Double NAT-MCH-PHYS/-80
  - GbE, PCIe
  - Clock distribution with low latency
  - optical x4, or x8 or x16 or two x8 PCIe uplinks

SEI Tagung at HZDR

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