

# EMCOMO Solutions AG

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## Leading Edge Data Aquisition

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**We create first class Embedded Computer Solutions based on world leading Suppliers**

# About EMCOMO

- EMCOMO Solutions AG, Neu-Ulm, Germany
- Founded 2010
- Management:



**Thomas Sabisch**  
CEO



**Karl Judex**  
CTO/COO

- Shareholders:
  - Management (>50%)
  - Private Investors



## ➤ Embedded Computer Systems

- MicroTCA, cPCI, VME, VPX and ATCA based Systems
- Own MicroTCA CPU modules
- Box-PCs, HMI
- Various I/O components from leading vendors
- Customized Hard- and Software components

## ➤ Services

- Consulting and system design according to the customer requirements
- Project specific adaptations and extensions (Software, Hardware, mechanics)
- System setup and installation
- Integration tests and system tests
- Technical support

## ➤ Distribution of Embedded Systems/Boards/Modules



**EM-AM4024**

# Target markets



Test/Measurement



Communication



Automotive



MIL/Aero



Space



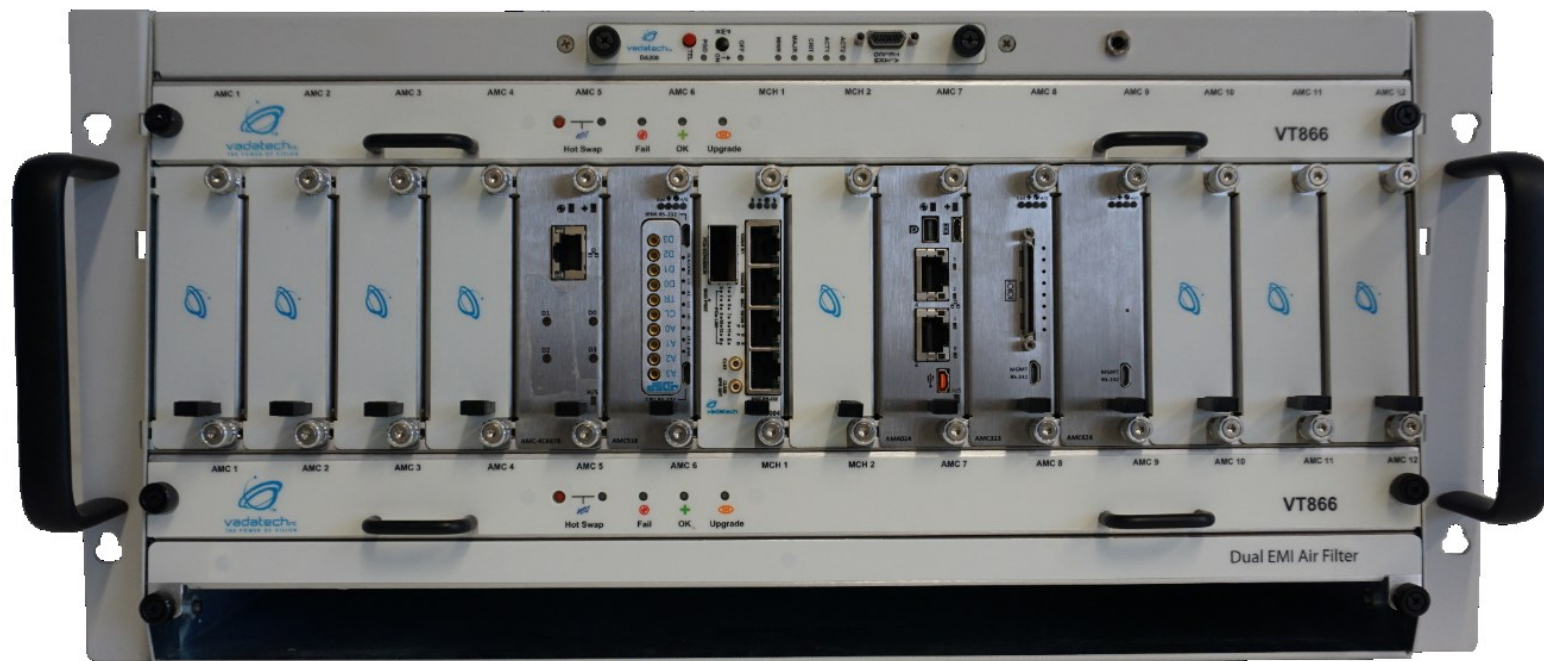
Automation/IOT

# Small size – MTCA.0 System



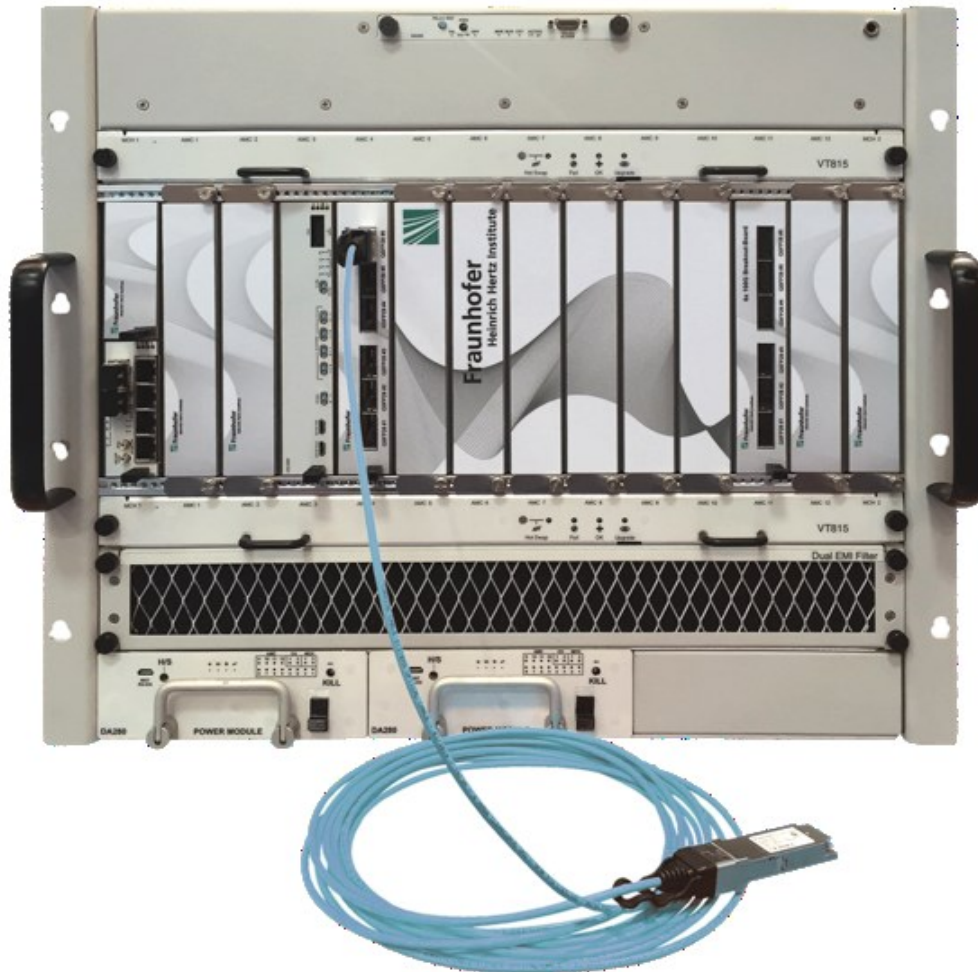
- 1U 19" MTCA.0 Chassis, 2 full-size AMCs
- Xilinx UltraScale™ XCKU115 FPGA
  - Dual ADC @ 6.4 GSPS, 12-bits or quad ADC @ 3.2 GSPS
  - Dual DAC @ 12 GSPS, 16-bits
  - 20 GB DDR-4 memory

# Medium size – MTCA.1 System



- 5U 19" MTCA.1 Chassis, 12 full-size AMCs
- Core i7 CPU with 512GB SSD
- 4 TMS320C6678 8-Core DSPs
- Xilinx Virtex-7 690T FPGA
  - Quad ADC, 370 MSPS @ 16-bit
  - Quad DAC, 2.5 GSPS @ 16-bit

# Full size – MTCA.4 HSDAQ System

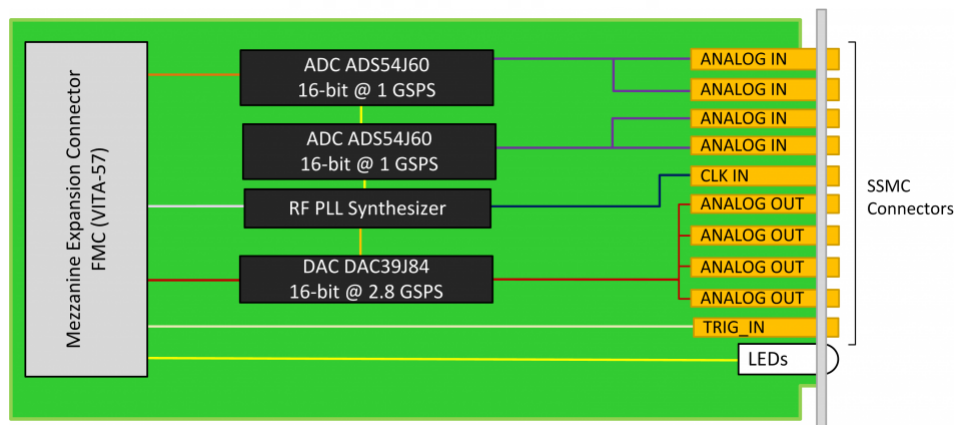


- 9U 19" MTCA.4 Chassis, 12 full-size AMC Slots
- 2x Xilinx UltraScale™ FPGA
  - Dual ADC, 56 GSPS @ 8-bit
- 550 Gb/s Board to Board via Zone 3 Backplane
- External links via QSFP28 6x 100G per Module
- Optional UltraScale+™ Processing FPGA

# Modular Solution with dual FMC Carrier



- Double mid-size or full-size AMC module
- Xilinx Virtex-7 690T FPGA
- QorIQ P2040 CPU
- FMC module with
  - Quad ADC, 1.0 GSPS @ 16-bit
  - Quad DAC, 2.8 GSPS @ 16-bit





# New DAQ Solutions: Faster, Denser

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- Increasing processing power
  - More power per board – FPGA+DSP
  - More power per board – UltraScale+
  - More power per chassis – SuperCarrier
  
- Increasing acquisition speed
  - More bandwidth on the board – FMC+
  - Even more bandwidth on the board – integrated modules
  - More bandwidth off the board – PinoutPlus
  - Even more bandwidth off the board – Zone 3

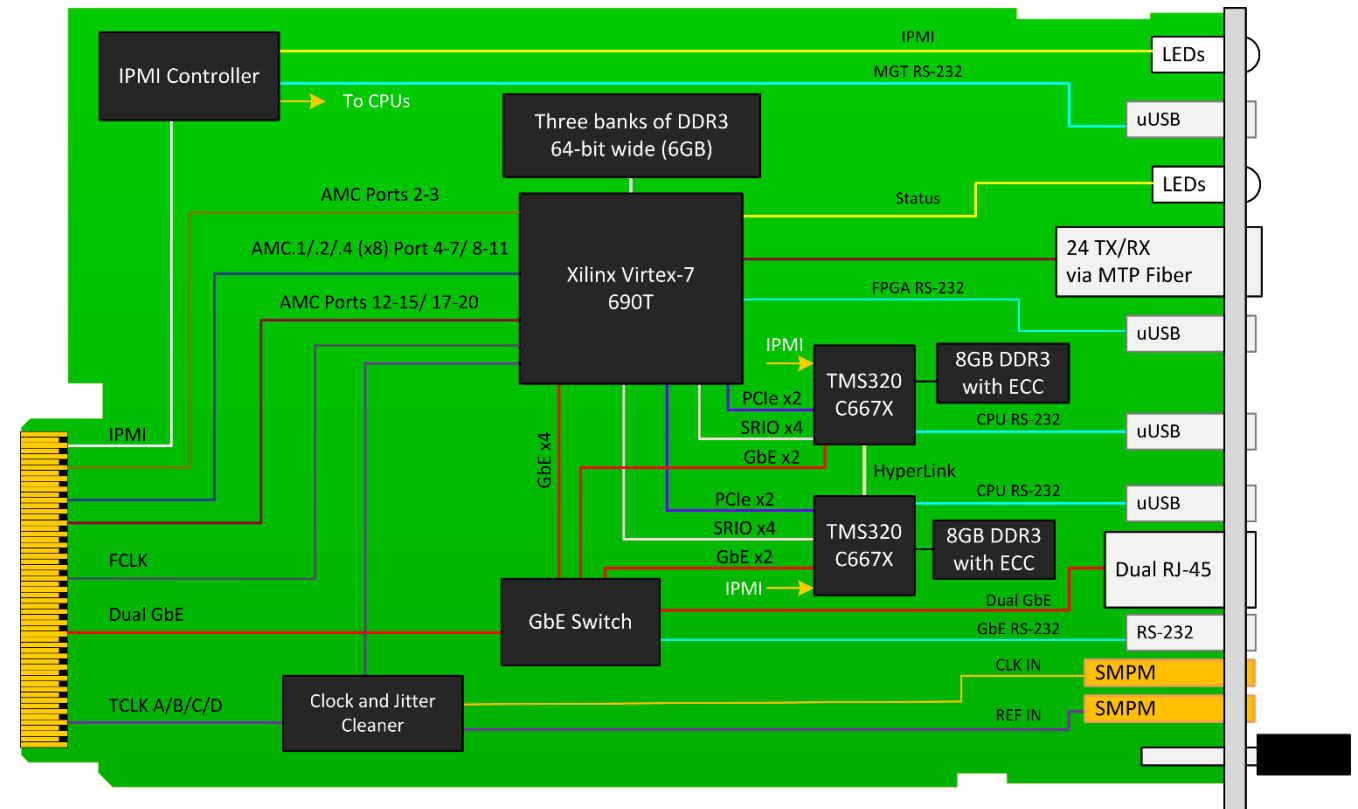
Creating leading edge DAQ solutions  
with products from our partner



vadatech  
THE POWER OF VISION

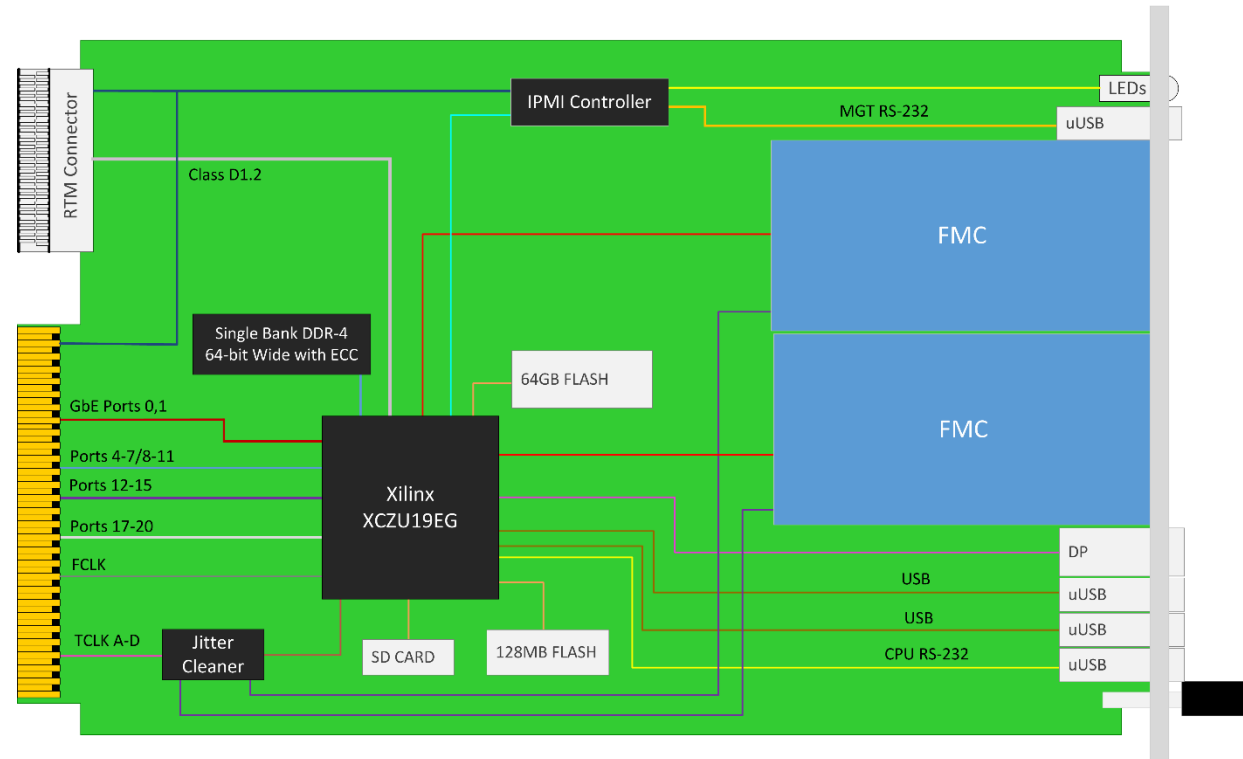
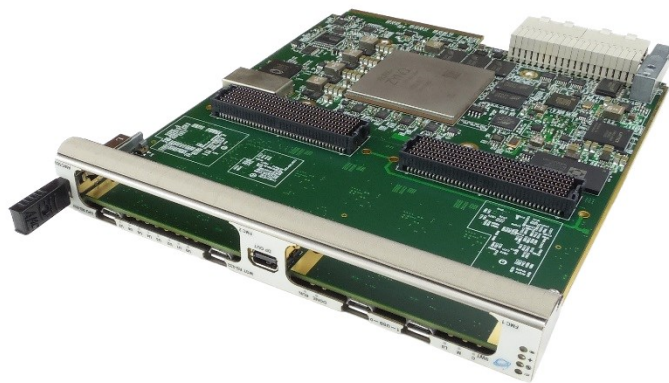
# AMC540 – Xilinx Virtex-7 FPGA with Dual TI DSP

- Dual TI TMS320C667x DSP with 8GB DDR3
- Virtex-7 690T with 6GB DDR3
- 12 or 24 MTP/MPO fibre to front
- On-board GbE switch



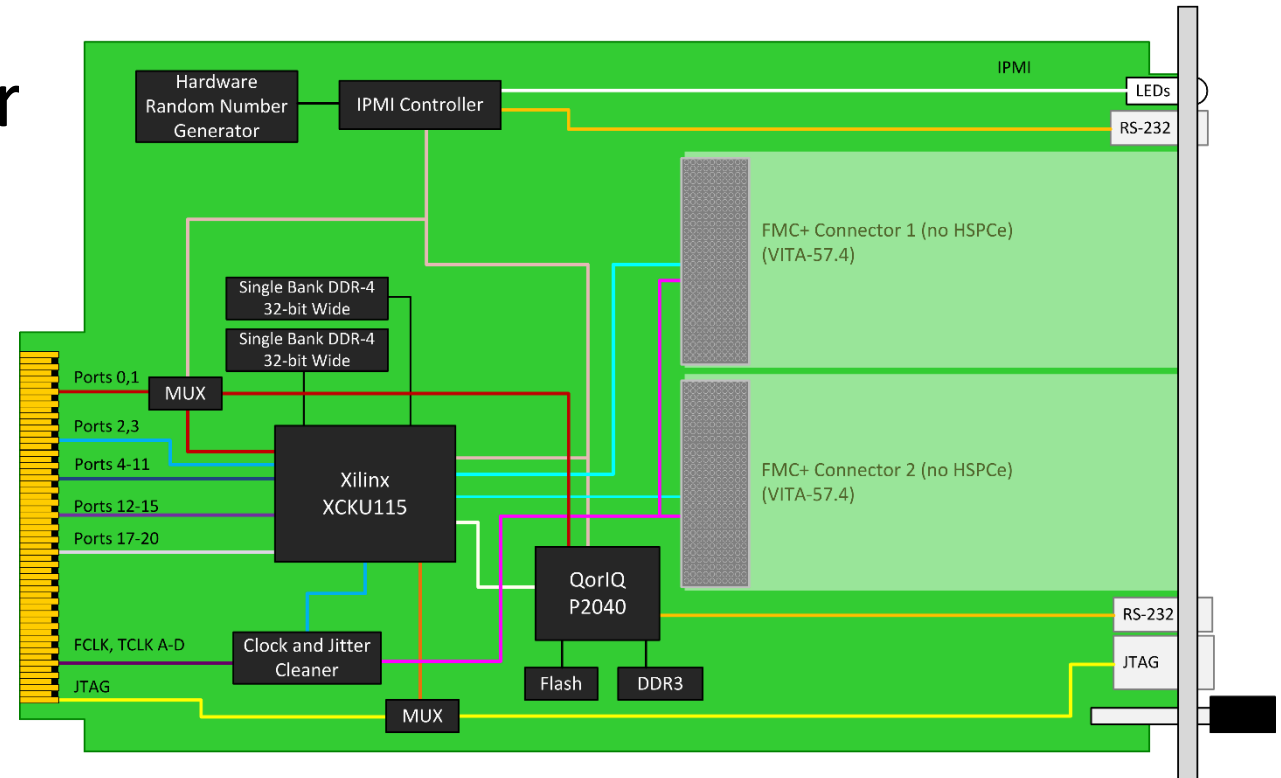
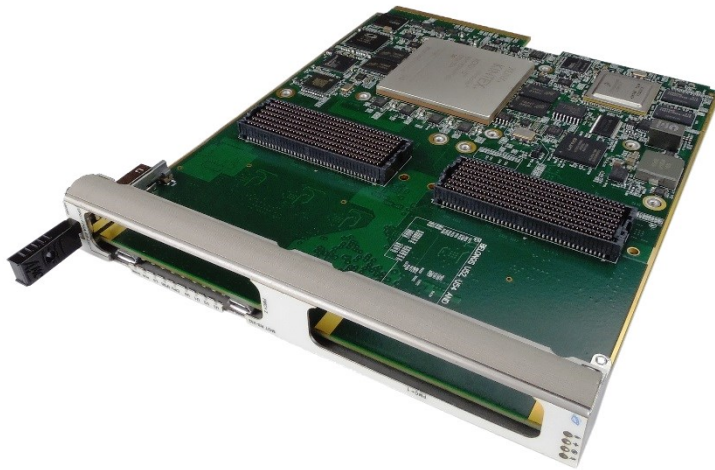
# AMC580 – Zynq UltraScale+ FPGA

- Dual FMC Carrier AMC module
- XCZU19EG (1968 DSP Slices and 1143k logic cells)
- 8GB DDR4, 64GB FLASH
- RTM follows Class D1.2 recommendation



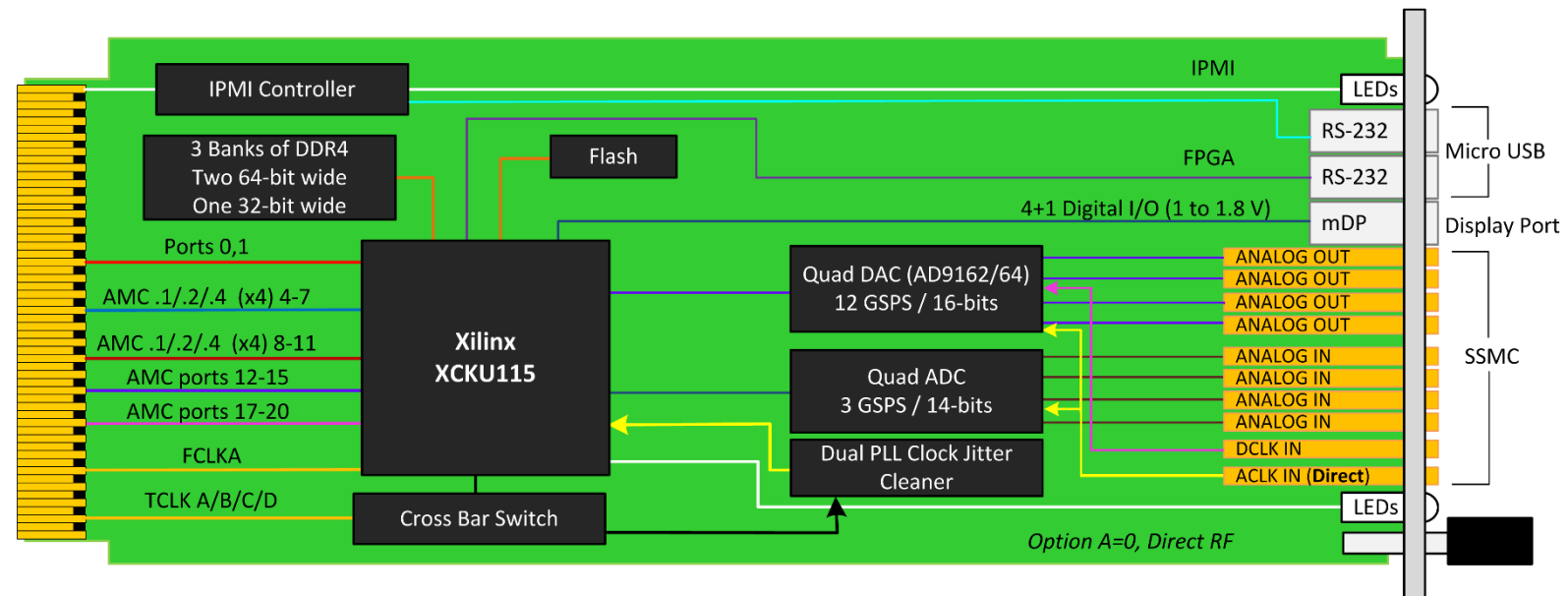
# AMC583 – Dual FMC+ Carrier, Kintex UltraScale

- XCKU115 with 8GB DDR4
- Dual FMC+ site (w/o HSPCe)
- On-board P2040 co-processor



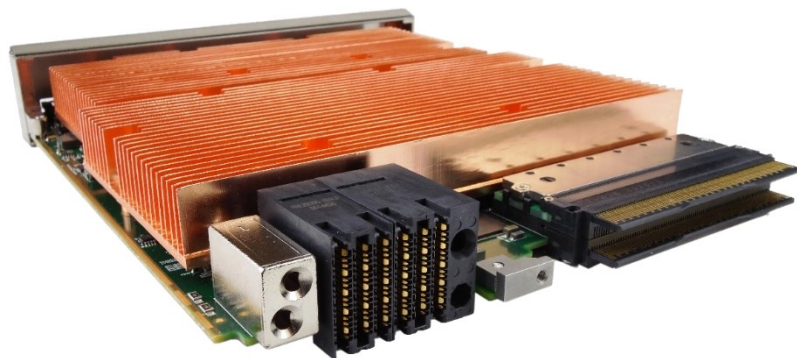
# AMC598 – Quad ADC and DAC, Kintex UltraScale

- XCKU115 with 20GB DDR4
- Quad AD9208 (14-bit ADC @ 3 GSPS)
- Quad AD9164 (16-bit DAC @ 12 GSPS)

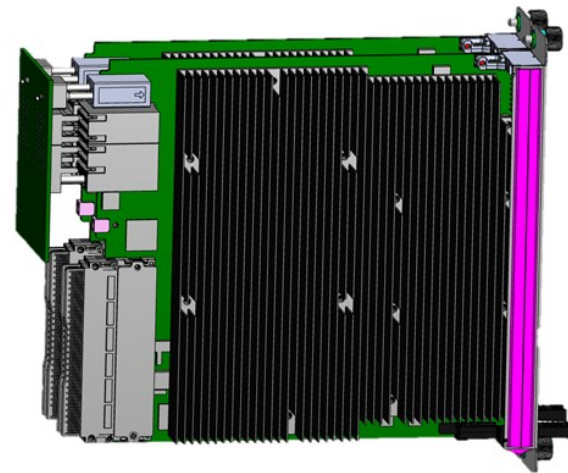


# AMC594 – Ultra High Speed ADC with XCVU190

- 8-bit ADC at up to Dual channels 56 GSPS or Quad channels 26 GSPS generating 896Gb/s
- AMC594 with Xilinx UltraScale™ XCVU190 FPGA:
  - 60 GTH 16.3Gb/s Transceivers and 60 GTY 30.5Gb/s Transceiver for data transfer
  - 2,350k system logic cells and 1,800 DSP slices for heavy processing
- High-speed Zone 3 connector supports over 500 Gb/s off-board data routing via dedicated Zone 3 PCB
- Highest analog bandwidth (-3 dB analog input bandwidth nominally >14GHz)



AMC594



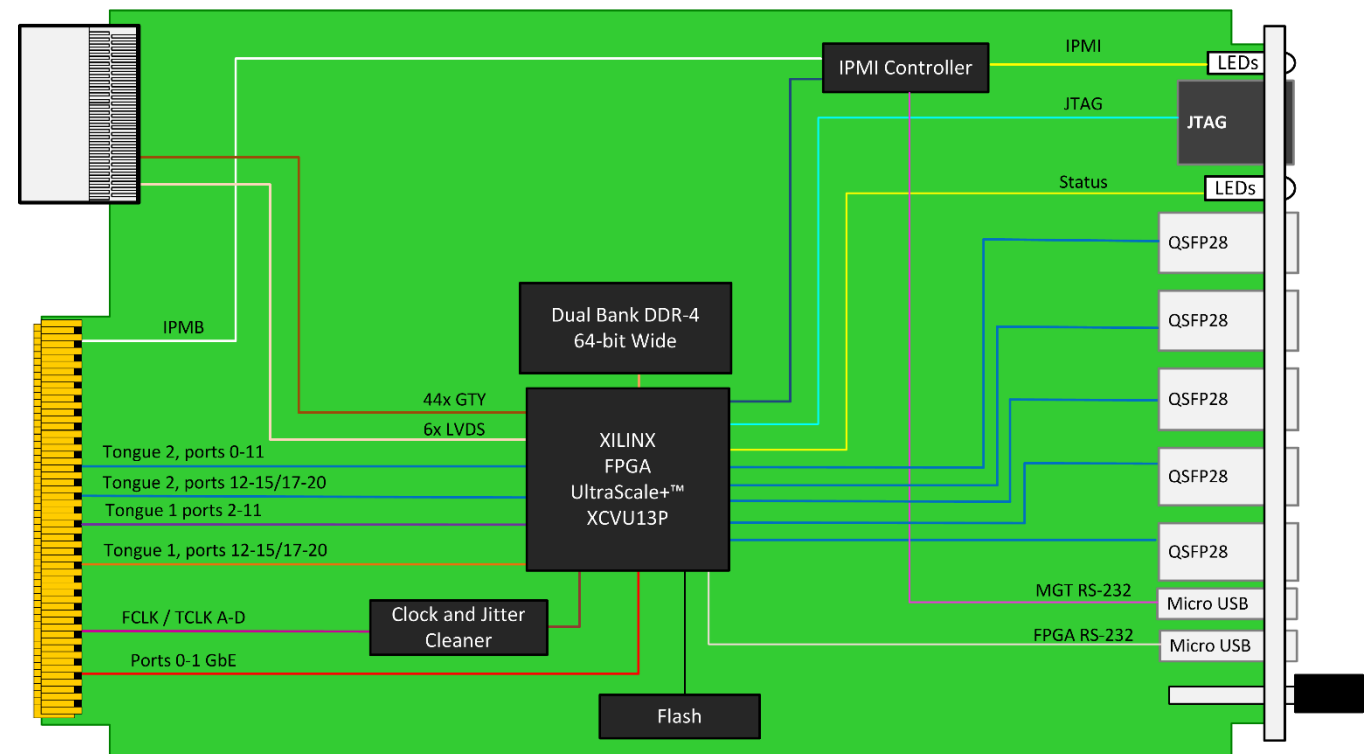
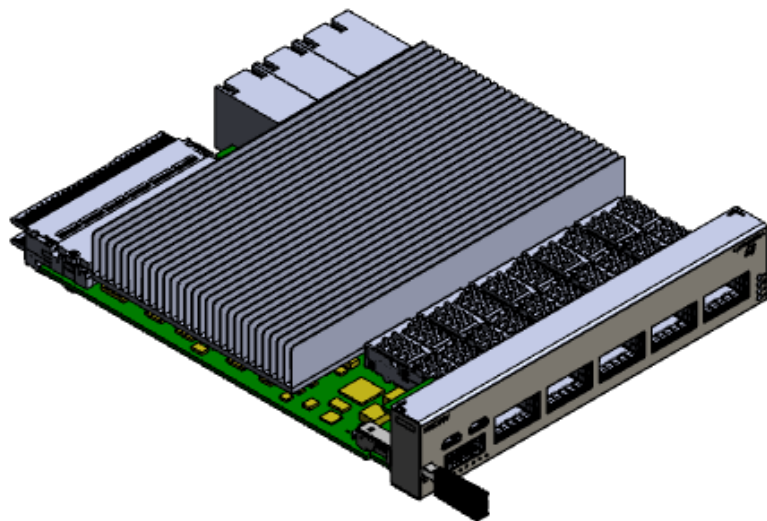
Two AMC594 assembled with Zone 3 PCB



VT815

# AMC584 – Virtex UltraScale+ with Zone 3

- Zone 3 connector for ADC / DAC connection supporting over 1 Tb/s total bandwidth
- XCVU13P provides over 12,000 DSP slices and 3,780 thousand logic cells
- Up to 5x 100 GbE to front panel





**Thank you!**  
**Any Questions**

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