Nutaq
Perseus 611x

Double-width Virtex-6 AMC

PRODUCT SHEET

Nutaq® Wireless

QUEBEC | MONTREAL | NEW YORK | nutaq.com

Nutaq **Perseus 611x**

- **Virtex-6 FPGA**
- **Dual HPC FMC sites**
- **High-speed links to RTM**
- **PCIe 8x Fat Pipes support**

Nutaq RD's Perseus 611x is a double-width AMC featuring a Virtex-6 FPGA, two high-pin-count FMC sites, and RTM expansion.

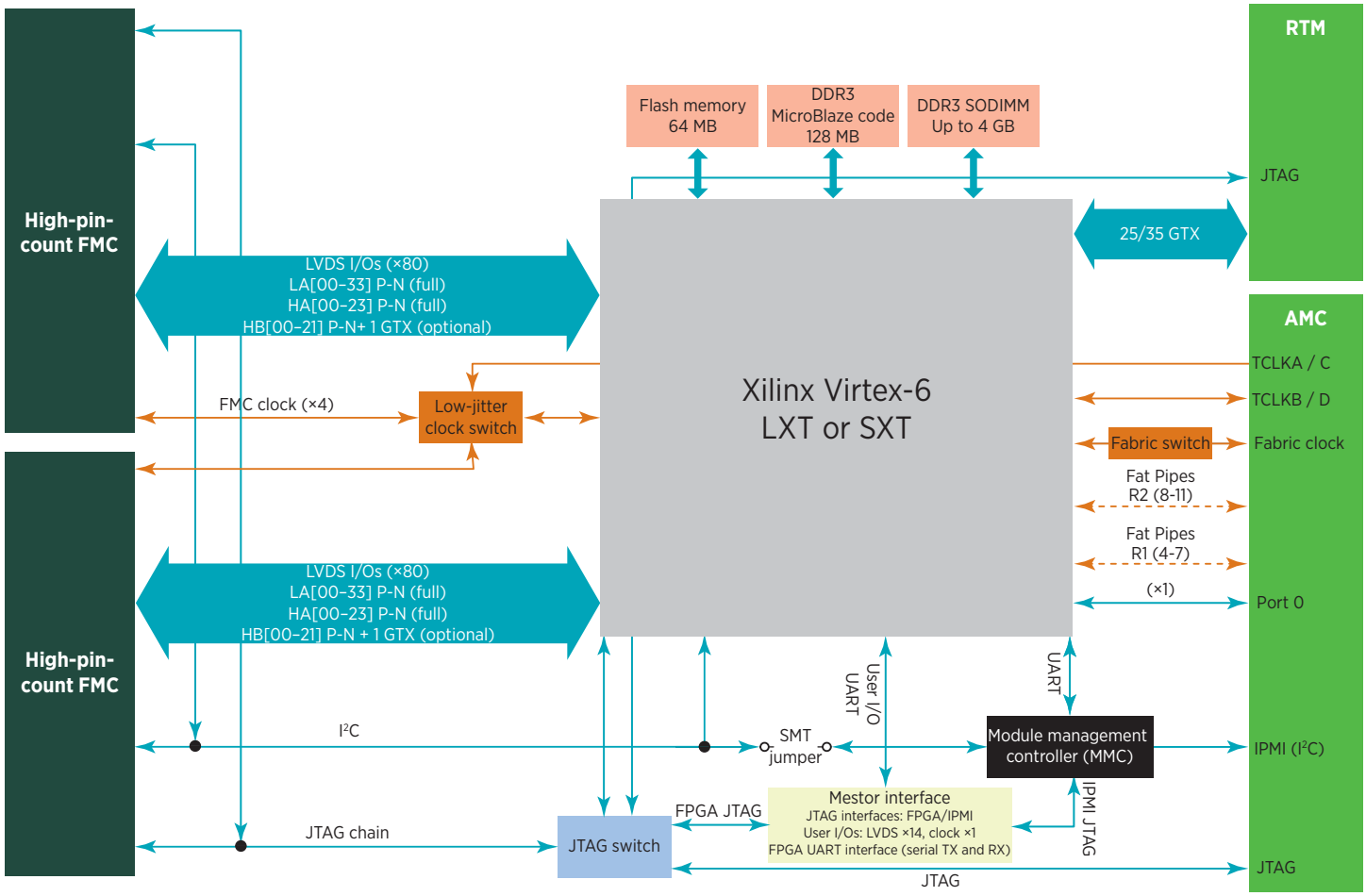
INCREASED I/O DENSITY

The Perseus 611x doubles the front-panel I/O capability compared to traditional single-width AMC. By interfacing twice as many channels to a single FPGA, large-scale acquisition systems will benefit from lower cost-per-channel, as well as higher system density.

HIGH-SPEED INTERCONNECT

Except for the GbE base channel, almost all GTX high-speed transceivers of the FPGA have been routed to connect to an RTM (see RTM-611x for an off-the-shelf module). This interconnect architecture makes it possible to establish dedicated communication links between several Perseus 611x boards in a very flexible way., enabling the creation of large FPGA clusters with optimal inter-node data flow topology. Those links can also be used to route data to/from external equipment using various transports, such as PCIe, SRIO, SAS, SATA, 10-GbE (XAUI), SFP, XFP, etc.

SP6113x functional block diagram



APPLICATIONS

- DAQ systems
- FPGA clusters
- Correlators
- Phased array
- Beamforming
- Tomography

SPECIFICATIONS

FPGA

Xilinx Virtex-6 FPGA

- SP6111: LX550T
- SP6113: SX475T

Memory

- Up to 4 GB, 64-bit DDR3 SDRAM SODIMM
- 64 MB NOR flash memory (16 bits) — for FPGA images, MicroBlaze boot code and user code
- 128 MB DDR3 SDRAM (8 bits) — for MicroBlaze FPGA applications

AMC connectivity

- GigE (port 0)
- Optional Fat Pipes R1/R2 (port 4-11)

RTM connectivity

- 25 or 35 GTX full-duplex lanes

Front panel

- Board mounted LEDs
- 2 FMC slots

I/O expansion capabilities

- (2) High-pin-count VITA 57.1 FMC site
- 80× LVDS I/O [LA00-33/HA00-23/HB00-21]
- 4× clock (2× FMC to FPGA and 2× bidirectional FMC to/from FPGA)
- Optional 1x TRX per FMC

Mechanical

- Double-width, mid-size AMC

IPMI controller

- Voltage monitor
- Geographical address monitor
- Temperatures monitors
- Power/Reset controller
- UART

Standards compliance

- AdvancedMC R2.0 (PICMG AMC.2)
- VITA 57.1 FMC HPC (supports the rugged and commercial form factors)
- Hot swap
- IPMI

Testing and development interfaces

- Mestor interface — FPGA JTAG, IPMI JTAG, mini-B USB serial port, GPIOs)
- Test points
- Jumpers
- Software switches
- USB
- LEDs

Electrical

- AMC 12 V main source, 3.3 V IPMI

ORDERING OPTIONS

Perseus 611-ABC-DEF-GHJ

- **A** = FPGA Type/Size
  - 1 = LX550T Virtex-6 FPGAs
  - 3 = SX475T Virtex-6 FPGAs
- **B** = FPGA Speed Grade
  - 0 = -1
  - 1 = -2
- **C** = DDR3 FPGA SODIMM Size
  - 0 = 1 GB
  - 1 = 4 GB
- **D** = TRX options
  - 0 = 35 RTM GTX
  - 1 = 25 RTM GTX, Fat Pipes R1 & R2 : Port 4-11 (8 GTX), 1 TRX per FMC sites
- **E,F** = Reserved (Set as 0)
- **G** = Operating Temperature
  - 0 = Commercial Temp
  - 1 = Industrial Temp*
- **H** = Development Software
  - 0 = BSDK. Include Host development and FPGA development Framework*
  - 1 = MBDK. Include BSDK + Model-based FPGA development within Simulink and Host co-simulation Simulink tools*
- **J** = Debugging
  - 0 = No debugging tools (Not recommended for application development phase)
  - 1 = Flex Mestor expansion kit
  - 2 = Mestor expansion kit (Includes Mestor Breakout Box)

* Contact info@nutaq.com for availability

Nutaq products are constantly being improved; therefore, Nutaq reserves itself the right to modify the information herein at any time and without notice.

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