TOC

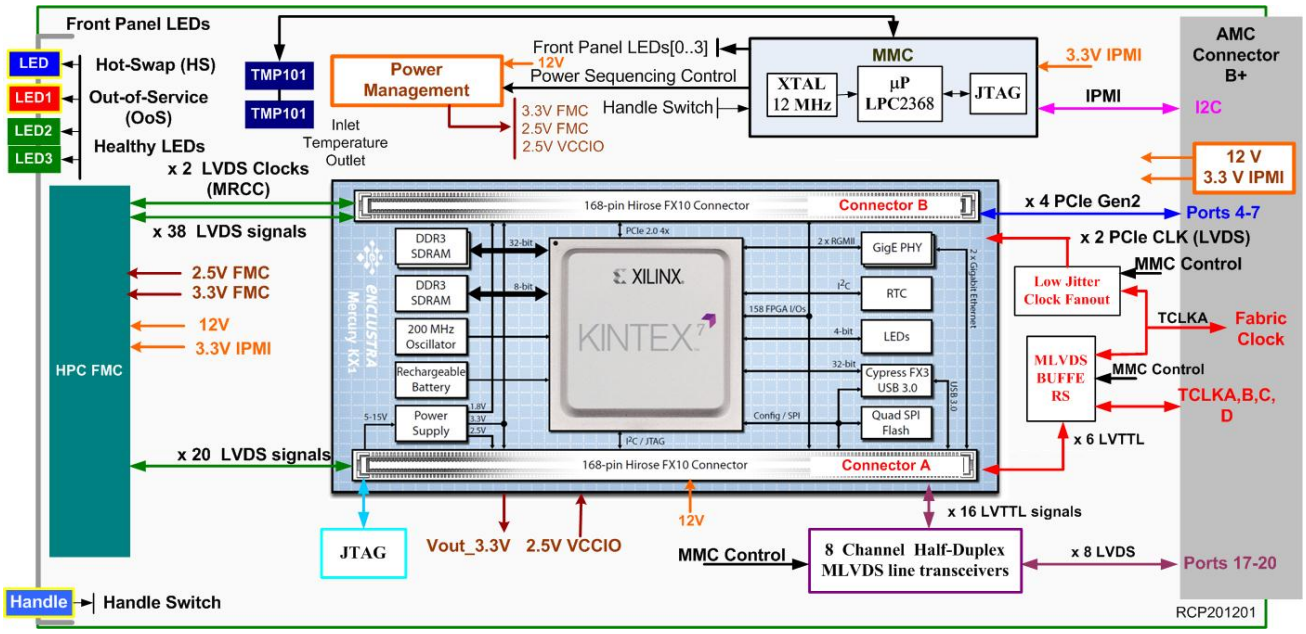
Development and production:

Datasheet

- Full size, single width AMC for mTCA and AdvancedTCA
- Xilinx® Kintex™-7 FPGA family (XC7K325T-2FFG676I)
- 2048 + 512 Mbytes DDR3 SDRAM
- Supports AMC.1 PCI Express
- High-pin-count VITA 57.1 FMC expansion for I/Os

The AMC-MKX1 module is a full-size AMC card suitable for use in mATCA and AdvancedTCA platforms, designed to meet the processing needs of high-performance applications in demanding nuclear fusion data acquisition applications and compliant to the ATCA-PTSW-AMC4 AMC carrier. The AMC-MKX1 is based on the Mercury KX1 FPGA module (M-KX1) which provides large processing power on the inboard Xilinx® Kintex™-7 FPGA (XC7K325T). The M-KX1 module is accommodated in the AMC module through two 168-pin Hirose FX10 connectors. AMC-KX1 is intended for high-performance, high-bandwidth, and low-latency processing applications.

AMC-MKX1 Functional Block Diagram



Specifications

FPGA	• Xilinx® Kintex™-7 FPGA- XC7K325T-2FFG676I	
Memory	• Default 2 GB, 32-bit DDR3 SDRAM • 256 MB, 8-bit DDR3 SDRAM – for Microblaze FPGA applications • Up to 64 MBytes Quad SPI Flash	
AMC **Connectivity**	• TCLK A/B/C/D clock support for AMC R2.0 through onboard clock switch • Fabric clock — RX or TX (100 MHz PCIe, default) • AMC.1 PCI Express: One ´4 PCIe Gen2 link on ports 4-7; • User LVDS I/Os (ports 17–20)	
Front Panel	• Board Mounted LEDs • FMC slot	
I/O expansion capabilities	• High-pin-count VITA 57. FMC sit ◦ 78 differential user defined pairs: 34 LA pair; 24 HA pair; HB pairs ◦ 2 differential clocks	
Mechanical	• Full-size, Single width AMC • AMC B+ edge connector	
IPMI	• Voltage monitor • Geographical address monitor	• Power/Reset controller

Controller	• Temperatures monitors	• UART
Standards **Compliance**	• AdvancedTCA base 3.0 (PICMG 3.0/3.4) • AdvancedMC R2.0 (PICMG AMC.0/AMC.1) • Support for AdvancedMC R1.0 also available	• µTCA R1.0 • VITA 57.1 FMC HPC • Hot-plug • IPMI
Electrical	• AMC 12 V mains source • 3.3V IPMI	
Testing and development interfaces	• FPGA JTAG • IPMI JTAG, mini-B USB serial port	• Test points • Jumpers • LEDs
FMC Module Option IST Solution	**FMC-AD-1Gx** • 2 channels @ 1.6 GHz 12-bit; or 1 channel @ 3.2 GHz 12-bit • AC/DC coupling and Single-Ended/Differential Input	

Datasheet in PDF format.