

AMC FPGA Carrier for FMC, Virtex-5 – AMC512

AMC FPGA Carrier, Virtex-5



KEY FEATURES

- AMC FPGA carrier for FPGA Mezzanine Card (FMC) per VITA-57
- Xilinx Virtex-5 FPGA in FF1136 package
- Up to 512 MB of FPGA DDR2 memory
- AMC Ports 4-7 and 8-11 routed to FPGA per AMC.1, AMC.2 and AMC.4 (FPGA programmable per protocol such as PCIe, 10 GbE or SRIO)
- AMC FCLKA, TCLKA, TCLKB, TCLKC and TCLKD are routed

Benefits of Choosing VadaTech

- Various Xilinx Virtex-5 FX/LX and SX FPGAs available
- Dual bank of DDR2 memory allows larger buffer sizes while processing and queuing data to the host
- The LVDS cross-bar switch provides improved clock flexibility
- Electrical, mechanical, software, and system-level expertise in house
- Full ecosystem of front and rear boards, enclosures, specialty modules, and test/dev products from one source
- AS9100 and ISO9001 certified company

The AMC512 is an AMC FPGA Carrier with an FMC (VITA 57) interface. The AMC512 is compliant to the AMC.1, AMC.2, AMC.3 and/or AMC.4 specification. The unit has an on-board, re-configurable FPGA which interfaces directly to AMC FCLKA, TCLKA-D, FMC DP0-3, and all FMC LA/HA/HB pairs. The FPGA interfaces to dual bank of DDR2 memory (32-bit wide) for a total of 512MB. This allows for large buffer sizes to be stored during processing as well as for queuing the data to the host.

The AMC512 has a single FMC connector per VITA-57 allowing the versatility of various FMC modules to be implemented.

VadaTech can modify this product to meet special customer requirements. Contact us to discuss your application.

REFERENCE DESIGN

VadaTech provides a reference design implementation for our FPGAs complete with VHDL source code and configuration binaries. The reference design focuses on the I/O ring of the FPGA to demonstrate low-level operation of the interconnections between the FPGA and other circuits on the board and/or backplane. It is geared to prove out the hardware for engineering/factory diagnostics and customer acceptance of the hardware, but it does not strive to implement a particular end application.

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and μ TCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTM), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

BLOCK DIAGRAM

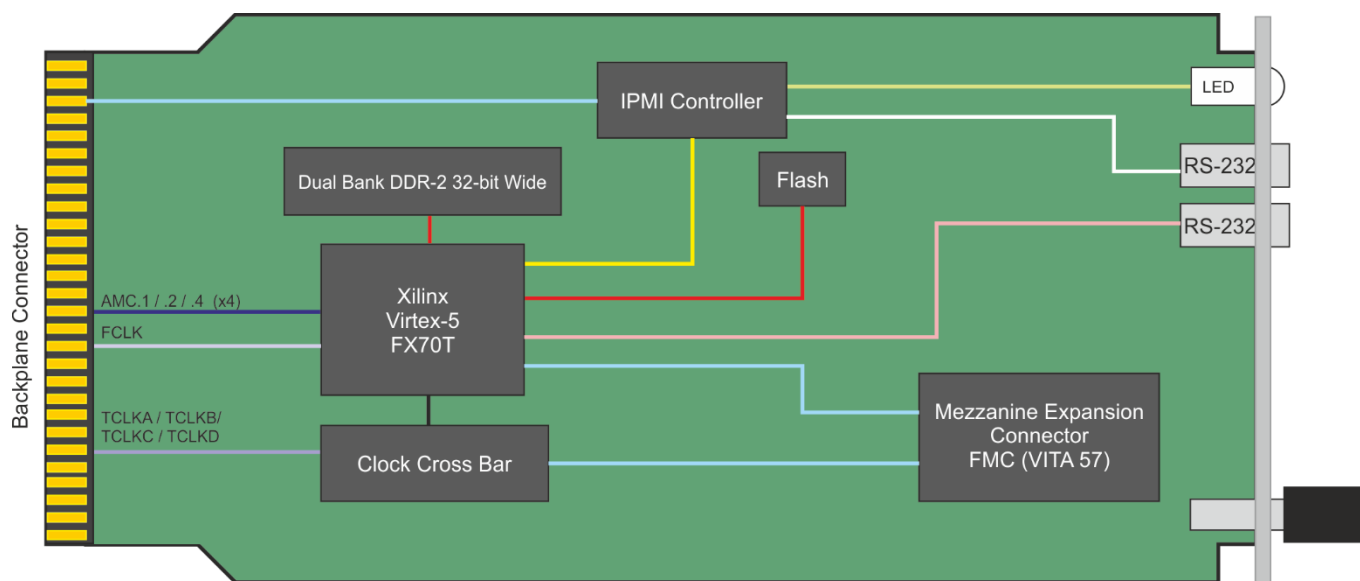


Figure 1: AMC512 Block Diagram

SPECIFICATIONS

| Architecture | | |
|---------------------------|--|--|
| Physical | Dimensions | Single module, full-size |
| | | Width: 2.89" (73.5 mm) |
| | | Depth 7.11" (180.6 mm) |
| Type | AMC FPGA Carrier | Xilinx Virtex-5 Device |
| | | DDR2 memory |
| | | Single FMC slot |
| Standards | | |
| AMC | Type | AMC.1, AMC.2, AMC. 3 and AMC.4 (FPGA programmable) |
| Module Management | IPMI | IPMI version 2.0 |
| PCIe | Lanes | x4 or x8 |
| XAUI | Lanes | x4 |
| Aurora/SRIO | Lanes | x4 (if the x8 PCIe is not used) |
| Ethernet | GbE | 1000-BaseBX |
| Configuration | | |
| Power | AMC512 | Carrier is ~20W (without mezzanine) application specific |
| Environmental | Temperature | Operating Temperature: -5° to 55°C (air flow > 400LFM) industrial and military versions also available (See environmental spec sheet) |
| | | Storage Temperature: -40° to +85°C |
| | Vibration | Operating 9.8 m/s² (1.0 G), 5 to 500Hz |
| | Shock | 30Gs on each axis |
| | Relative Humidity | 5 to 95 per cent, non-condensing |
| Front Panel | Interface Connectors | Front panel FMC, IPMI RS-232, FPGA RS-232 |
| | LEDs | IPMI management control |
| | | 4 user defined LEDs |
| | Mechanical | Hot swap ejector handle |
| Conformal Coating | | Humiseal 1A33 Polyurethane (Optional) |
| | | Humiseal 1B31 Acrylic (Optional) |
| Other | | |
| MTBF | MIL Hand book 217-F @ TBD Hrs | |
| Certifications | Designed to meet FCC, CE and UL certifications where applicable | |
| Standards | VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards | |
| Warranty | Two (2) years | |
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ORDERING OPTIONS

COMMON CONFIGURATIONS

AMC512-123-710-000

AMC512 – ABC – DE0 – 0HJ

A = FPGA DDR2 Memory

0 = None
1 = Reserved
2 = 512 MB (total)

B = PCIe Option

0 = No PCIe (Ports 4-11)
1 = PCIe on Ports 4-7
2 = PCIe on Ports 8-11
3 = PCIe on Ports 4-11

C = Front Panel Size

1 = Reserved
2 = Mid-size
3 = Full-size

D = FPGA

1 = Reserved
2 = Reserved
3 = Reserved
4 = XC5VSX95T
5 = XC5VLX110T
6 = XC5VLX155T
7 = XC5VFX70T
8 = XC5VFX100T

E = FPGA Speed

1 = Low
2 = High

H = Temperature Range

0 = Commercial (–5° to +55° C)
1 = Industrial (–20° to +70° C)
2 = Military (–40° to 85° C)*

J = Conformal Coating

0 = None
1 = Humiseal 1A33 Polyurethane
2 = Humiseal 1B31 Acrylic

*Edge of module for conduction-cooled boards

RELATED PRODUCTS



AMC534 100G
FPGA



FMC210 FMC
10-bit ADC



FMC108 FMC
Dual QSFP+

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