

# AMC FPGA Carrier

## AMC510



### KEY FEATURES

- AMC FPGA carrier to add customize mezzanines modules
- Clock in/out
- Trig in/out
- Sync in/out
- AMC Ports 0-1 and 4-11 are routed to FPGA (protocols such as PCIe, SRIO, XAUI, etc. are FPGA programmable)
- Xilinx Virtex-5 FPGA in FF1136 package
- AMC FCLK, CLKA, CLKB, CLKC and CLKD are routed
- On board PLL for buffering/multiplying and jitter cleaner
- Option for QDR-II
- RoHS compliant

The AMC510 is an AMC FPGA Carrier so that it would allow custom mezzanine to be developed for different end applications. The module is compliant to the AMC.1, AMC.2 and/or AMC.4 specification. The unit has an on-board, re-configurable FPGA which interfaces directly to the AMC Ports 0-1, 4-11, FCLK, ACLK, BCLK, CCLK, and DCLK. The FPGA has an interface to the QDR-II memory (36 and 72-bit wide). This allows for large buffer sizes to be stored during processing as well as for queuing the data to the host.

The AMC510 allows for external clocking as well as internal clocking. The clock goes through an on-board PLL for buffering/multiplying and jitter cleaner.

Trig in/out, Clock in/out and Sync in/out have an SMB connector in the front.

VadaTech can modify this product to meet special customer requirements without NRE (minimum order placement is required).

## **AdvancedMC™**

## SPECIFICATIONS

| Architecture         |                                                                                                                                                                                                                                                                                                                       |                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Physical             | Dimensions                                                                                                                                                                                                                                                                                                            | Double-width,Full-Height                                                                |
|                      |                                                                                                                                                                                                                                                                                                                       | Width: 5.85in. (148.5 mm)                                                               |
|                      |                                                                                                                                                                                                                                                                                                                       | Depth: 7.11 in. (180.6 mm)                                                              |
| Type                 | AMC FPGA Carrier                                                                                                                                                                                                                                                                                                      | Xilinx FGPA Virtex-5 Devices                                                            |
|                      |                                                                                                                                                                                                                                                                                                                       | PLL multiplier/divider with jitter cleaner                                              |
|                      |                                                                                                                                                                                                                                                                                                                       | External clock with Trig in/out                                                         |
|                      |                                                                                                                                                                                                                                                                                                                       | QDR-II                                                                                  |
| Standards            |                                                                                                                                                                                                                                                                                                                       |                                                                                         |
| AMC                  | Type                                                                                                                                                                                                                                                                                                                  | AMC.1, AMC.2, and AMC.4 (FPGA programmable)                                             |
| Module Management    | IPMI                                                                                                                                                                                                                                                                                                                  | IPMI Version 2.0                                                                        |
| PCIe                 | Lanes                                                                                                                                                                                                                                                                                                                 | x4 or x8                                                                                |
| XAUI                 | Lanes                                                                                                                                                                                                                                                                                                                 | Dual port XAUI                                                                          |
| Aurora/SRIO          | Lanes                                                                                                                                                                                                                                                                                                                 | x4                                                                                      |
| Ethernet             | GbE                                                                                                                                                                                                                                                                                                                   | 1000-BaseBX                                                                             |
| Configuration        |                                                                                                                                                                                                                                                                                                                       |                                                                                         |
| Power                | AMC510                                                                                                                                                                                                                                                                                                                | Carrier is 10W without the Mezzanine                                                    |
| Environmental        | Temperature                                                                                                                                                                                                                                                                                                           | Operating Temperature: 0° to 65° C (Air flow requirement is to be greater than 400 LFM) |
|                      |                                                                                                                                                                                                                                                                                                                       | Storage Temperature: -40° to +90° C                                                     |
|                      |                                                                                                                                                                                                                                                                                                                       |                                                                                         |
|                      | Vibration                                                                                                                                                                                                                                                                                                             | 1G, 5-500Hz each axis                                                                   |
|                      | Shock                                                                                                                                                                                                                                                                                                                 | 30Gs each axis                                                                          |
| Front Panel          | Relative Humidity                                                                                                                                                                                                                                                                                                     | 5 to 95 percent, non-condensing                                                         |
|                      | Interface Connectors                                                                                                                                                                                                                                                                                                  | Three SMB style                                                                         |
|                      | LEDs                                                                                                                                                                                                                                                                                                                  | IPMI Management Control                                                                 |
|                      |                                                                                                                                                                                                                                                                                                                       | 12 user defined LED                                                                     |
|                      | Mechanical                                                                                                                                                                                                                                                                                                            | Hot Swap Ejector Handle                                                                 |
| Software Support     | Operating Systems                                                                                                                                                                                                                                                                                                     | Linux, Windows, Solaris and VxWorks                                                     |
| Other                |                                                                                                                                                                                                                                                                                                                       |                                                                                         |
| MTBF                 | MIL Handbook 217-F > TBD.                                                                                                                                                                                                                                                                                             |                                                                                         |
| Certifications       | Designed to meet FCC, CE and UL certifications where applicable                                                                                                                                                                                                                                                       |                                                                                         |
| Standards            | VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards                                                                                                                                                                                                                                             |                                                                                         |
| Compliance           | RoHS and NEBS                                                                                                                                                                                                                                                                                                         |                                                                                         |
| Warranty             | Two (2) years.                                                                                                                                                                                                                                                                                                        |                                                                                         |
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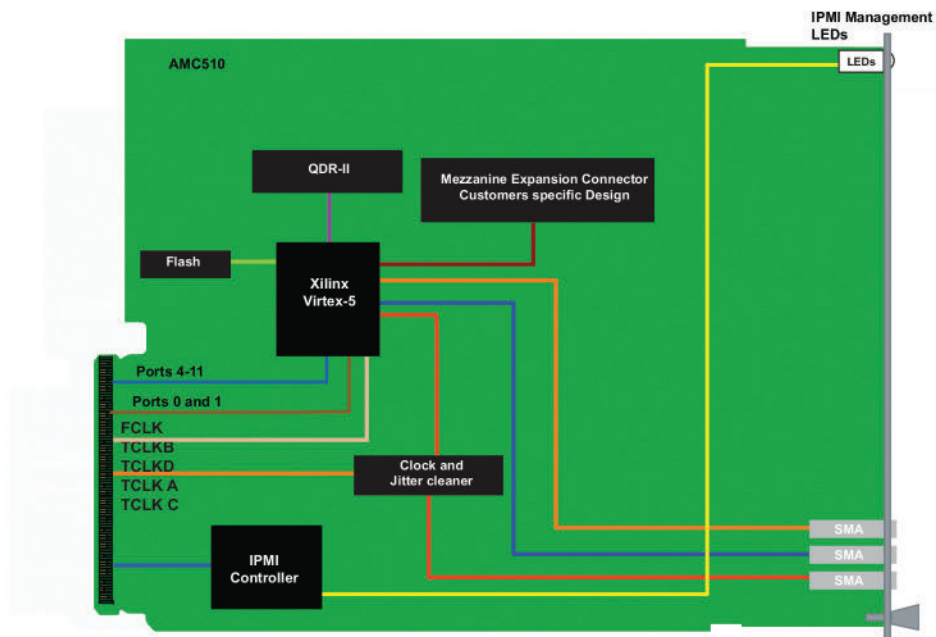
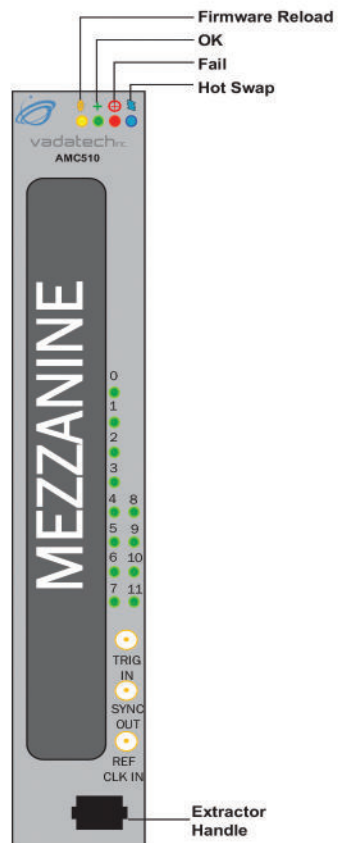


FIGURE 1. AMC510 Functional Block Diagram

FIGURE 2. AMC510 Functional Block Diagram



## ORDERING OPTIONS

### AMC510 - AOC - DE0 - 00J

#### A = QDR-II Memory

- 0 = None
- 1 = 2 x 36 (single chip)
- 2 = 2 x 72 (two chips)
- 3 = Reserved

#### D = FPGA

- 1 = Reserved
- 2= XC5VSX95T
- 3= XC5VLX110T
- 4= XC5VLX155T
- 5= Reserved
- 6= Reserved
- 7= Reserved

#### J = Conformal Coating

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

#### E = FPGA SPEED

- 1 = Low
- 2 = High

#### C = Front Panel

- 1 = Reserved
- 2 = Reserved
- 3 = Full-Height

