

AMC-V6L

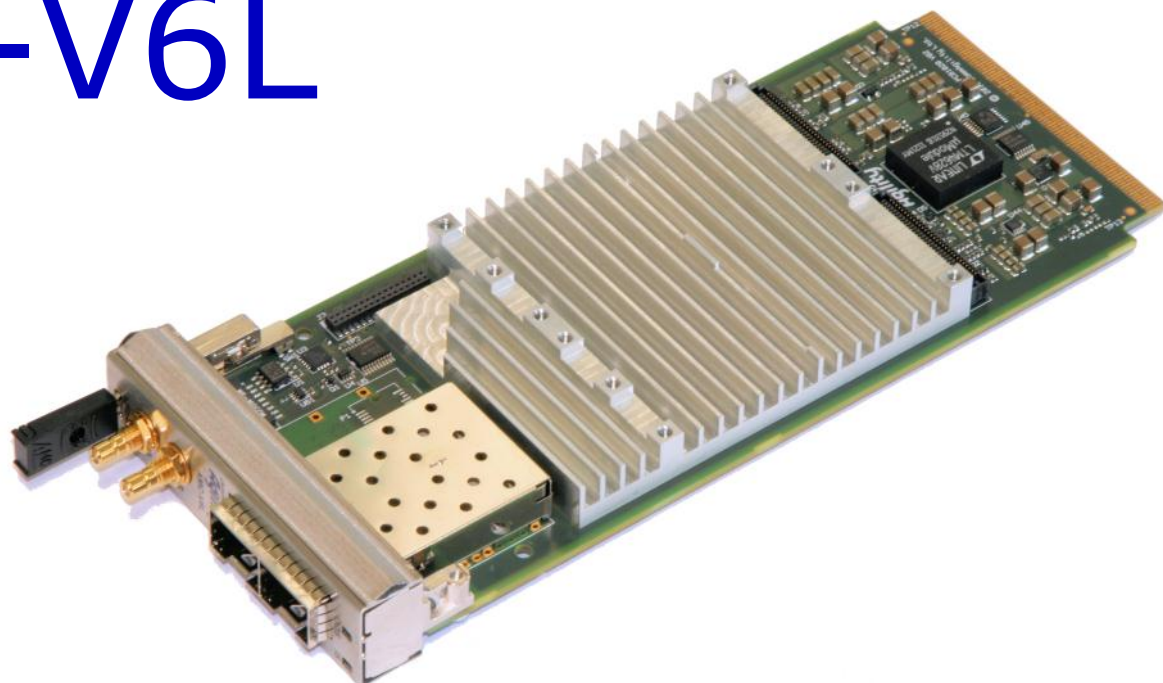
DATASHEET

A low cost and high performance Virtex-6 FPGA based AMC card with high speed, flexible I/O

Suitable for use with both ATCA carriers and MicroTCA chassis

Dual SFP+ to front panel supporting a wide range of I/O protocols

Synchronisation via front panel or AMC TCLKs; GPS receiver option



KEY FEATURES

- Xilinx Virtex-6 FPGA
- LX75T-2 FPGA standard build
- DDR3 SDRAM
- FLASH memory
- "Fat pipe" connections direct from AMC backplane 4-7, 8-11 to FPGA
- Dual GbE from FPGA to backplane
- Two front panel SFP+ sockets for interfaces up to 6.25 Gbaud
- Timing and synchronisation from GPS receiver, front panel or backplane clock I/O
- Single width mid-size PICMG AMC.0 R2.0 Advanced Mezzanine Card
- Mezzanine sites

RESULTING BENEFITS

- ⇒ High performance FPGA family
- ⇒ Cost effective, high density device
- ⇒ Latest external memory technology
- ⇒ Storage available for multiple FPGA configurations and additional software
- ⇒ Backplane data links at up to 20 Gbaud; can be SRIO, PCIe or XAUI or CPRI
- ⇒ Industry standard control links
- ⇒ Optical I/O configurable as CPRI, OBSAI, GigE, SRIO or other standards
- ⇒ Flexible system interfacing; minimal additional equipment required for wireless applications
- ⇒ Works with ATCA carrier cards as well as MicroTCA chassis; can run standalone
- ⇒ Allows customisation with additional front panel I/O (AMC is then full-size)

The CommAgility AMC-V6L is a low cost, high performance FPGA-based interface and processing card in the extremely compact mid-size, single width Advanced Mezzanine Card form factor. It is powered by a high-density Xilinx Virtex-6 FPGA, and ideal for interfacing applications using the on-board SFP+ ports for I/O, or a more specialised I/O mezzanine.

The board supports dual Gigabit Ethernet to the backplane, as well as the fat pipes on AMC ports 4-7 and 8-11 which can support PCI Express (with build option), SRIO, XAUI or even CPRI, at up to 20 Gbaud per link. The board provides two front panel SFP+ optical interfaces that provide flexible high-speed links, and are configurable as CPRI, OBSAI, GigE, SRIO or other standards. In addition, customised mezzanines may be fitted for additional specialised front panel I/O.



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HARDWARE SPECIFICATIONS

FPGA: Xilinx Virtex-6™ FPGA:

- LX75T-2 standard build, up to LX240T possible for special builds
- Configuration from FLASH
- 256 Mbytes x16 DDR3-1066 SDRAM
- 128 Mbytes x16 parallel FLASH
- 2 fat pipe 20Gbps 4x links to AMC ports 4-7 and 8-11
- 4x GTX to AMC ports 20-17 possible
- 2 Gigabit Ethernet ports to backplane
- 2x front panel SFP+ at up to 6.25 Gbps (3x SFP+ also possible)

Timing: full timing and sync support:

- Configurable low-jitter PLL for master clocks, using VCXO and TI LMK04803
- Front panel clock and trigger: input or output, 3V3 (pulsed) and 0dBm levels
- AMC Telecom clock A-D support
- SFP+ recovered clock support
- Optional on-board GPS receiver for high accuracy clock generation

Front panel I/O:

- Dual SFP+ at up to 6.25 Gbps: CPRI, OBSAI, SRIO, Aurora, GigE etc
- Dual SMB for clock and trigger I/O
- SMB for GPS antenna, if fitted

Mezzanine site: Additional custom front panel I/O via 2 mezzanine sites, each with 17 GPIO lines and 20 LVDS pairs

Form Factor:

- Single-width Advanced Mezzanine Card, AMC.0 Rev 2.0 compliant
- Mid-size standard product (full-size if GPS or mezzanine fitted)
- AMC.2 GigE to AMC Ports 0 and 1
- 20 Gbaud x4 fat pipe connections to AMC ports 4-7 and 8-11
- Serial port to AMC Port 15
- Hot swap support

Debug: FPGA JTAG and serial port via CommAgility Breakout Board (AMC-BB). Additional FPGA JTAG debug connector on underside of board.

Module Management Controller:

- AMC.0 IPMB_L interface
- FRU EEPROM data
- Power & reset, health monitoring

ENVIRONMENT/EMC/SAFETY

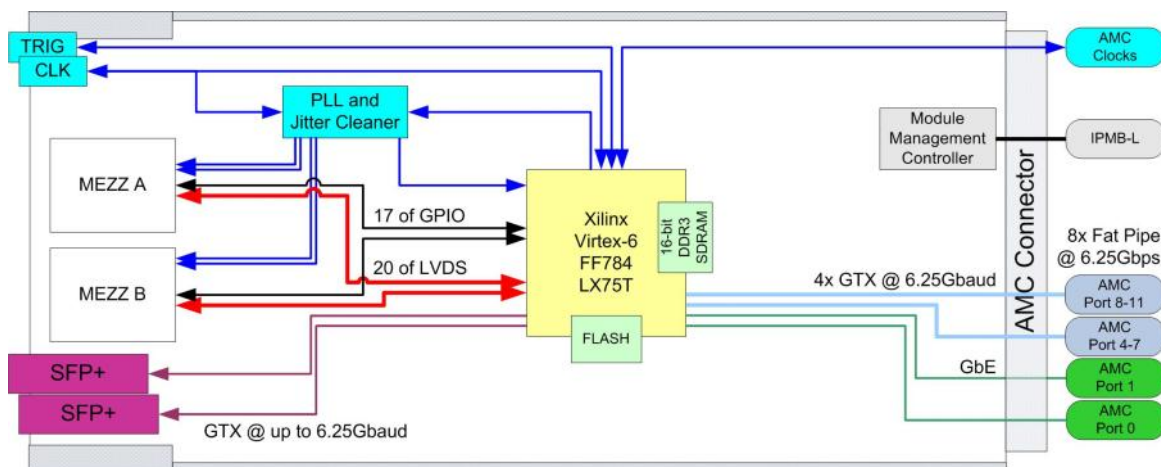
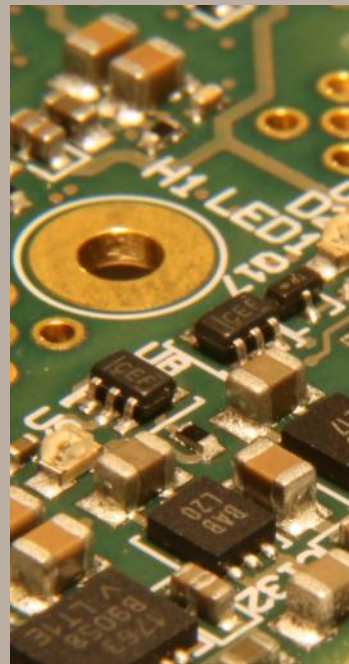
- Operating temp: 0-40°C ambient
- Power consumption: up to 20W max
- Designed for NEBS/ETSI compliance when used in appropriate chassis
- 2004/108/EC and FCC EMC compliant
- 2002/95/EC RoHS, 2002/96/EC WEEE and 2006/95/EC LVD compliant

SOFTWARE

Management: Full embedded suite based on Pigeon Point™ Software

FPGA: Xilinx ISE and EDK project to demonstrate functionality and provide a basis for customer project development

Embedded processor: MicroBlaze BSL including board control, IP stack with Telnet and TFTP, Flash update



OEM PARTNERSHIP SERVICES:

IN DEVELOPMENT: Support and training; hardware customisation; software and FPGA development.

IN PRODUCTION: lead-time reduction; extended warranty; and repair; quick turn repairs and/or spares stocking.

EXTENDED LIFE: obsolescence management; guaranteed lifecycle; Escrow.

LICENSING is offered for high volume

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