

Extreme Signal Acquisition, Generation and FPGA-based Processing

Tekmicro's QuiXilica-V6 family of products offer a range of building blocks for signal acquisition, generation and processing using the latest analog-to-digital (ADC) and digital-to-analog (DAC) technology combined with high density FPGA-based processing.

Each QuiXilica product combines an FPGA processing baseboard with one or two QuiXmodules. The baseboard provides the FPGA, memory, network and system management resources, and the QuiXmodules provide the ADC and/or DAC interfaces with the appropriate channel count, sample rate and resolution for the user's application.

All QuiXilica products are supported by a comprehensive developers' kit which contains FPGA cores for all board support functions along with sample designs and demonstration software.

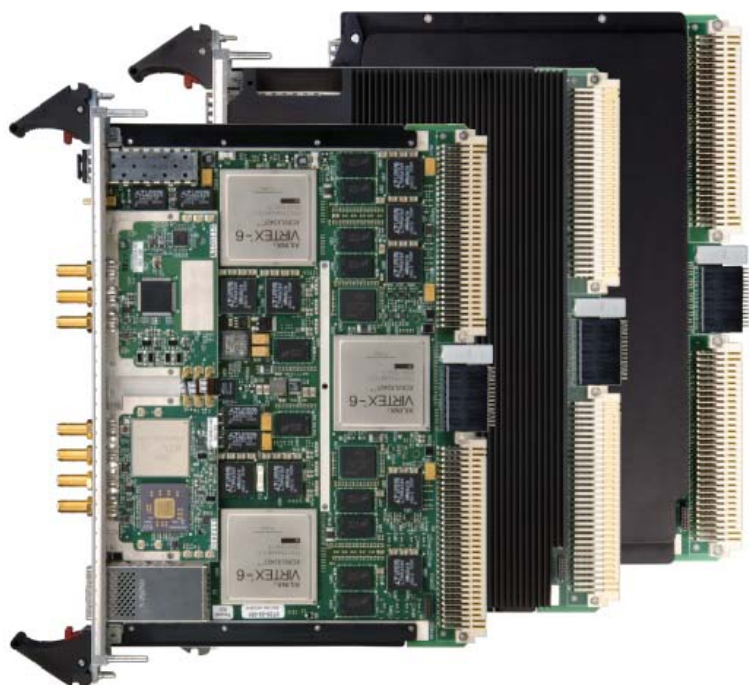
| Product | ADC Inputs | DAC Outputs |
|-------------------|---|-----------------------|
| Proteus-V6 | 2 x 5 GSPS x 10-bit | |
| Calypso-V6 | 2 x 3.6 GSPS x 12-bit or 6 x 1.8 GSPS x 12-bit | |
| Gemini-V6 | 1 x 3.6 GSPS x 12-bit or 3 x 1.8 GSPS x 12-bit | 1 x 4.0 GSPS x 12-bit |
| Neptune-V6 | 2 x 2.2 GSPS x 10-bit | |
| Orion-V6 | | 2 x 4.0 GSPS x 12-bit |
| Triton-V6 | 1 x 2.2 GSPS x 10-bit | 1 x 4.0 GSPS x 12-bit |
| Atlas-V6 | 8 x 1.0 GSPS x 12-bit | |
| Charon-V6 | | 8 x 1.2 GSPS x 14-bit |
| Titan-V6 | 4 x 1.0 GSPS x 12-bit | 4 x 1.2 GSPS x 14-bit |
| Aries-V6 | 10 x 250 MSPS x 16 bit | |

All QuiXilica-V6 Products Feature

- Three Xilinx Virtex-6 devices (LX240, SX315, or SX475)
- 5 GB of DDR3 SDRAM memory, aggregate throughput of 32 GB/s across six banks
- Onboard Gigabit Ethernet network with front panel (SFP) and VITA 41.6 (P0) interfaces
- Front Panel CXP module, 12 fibers at up to 6.4 Gb/s, aggregate throughput of 9.3 GB/s in each direction
- VMEbus interface for control / status and system management
- Optional VITA 41 high speed P0, adds dual 4x full duplex links at up to 6.4 Gb/s plus additional VITA 41.11 user I/O via Rear Transition Module (RTM)
- Local system management processor
- VME 6U form factor, VITA 41.0 compliant


QuiXilica-V6 Benefits:

- Optimized FPGA density and performance vs. power for constrained size, weight and power applications
- Modular ADC and DAC solutions with a wide range of off-the-shelf options to match application's bandwidth / resolution requirements
- Sample-accurate synchronization across multiple boards for coherent processing in high channel count applications (up to 210 channels per 21 slot chassis)
- Fully network enabled FPGA technology for scalable interconnectivity
- Legacy VMEbus interface to support low impact technology refresh into existing systems
- System management processor to monitor temperature, voltage and current as well as performing Built-In-Test, diagnostics, and bitstream management for better reliability, availability and maintainability



Environmental / Ruggedization

In addition to providing high performance, Tekmicro boards and systems have been designed for ruggedization and power management. Tekmicro products operate effectively in laboratory, rugged air-cooled, and rugged conduction-cooled environments to meet the needs of deployed applications.

Ruggedization Options

| Specification | Commercial | Rugged Level 2 | Rugged Level 3 |
|--------------------------------|---|--|---|
| Cooling | Convection | Convection | Conduction |
| Operational Temperature | 0 to +55 °C (300 LFM airflow) | -40 to +70 °C (600 LFM airflow) | -40 to +85 °C (At Card Edge) |
| Storage Temperature | -40 to +85 °C | -55 to +100 °C | -55 to +125 °C |
| Relative Humidity | 10% to 95% non-condensing | 5% to 95% non-condensing | 0% to 95% non-condensing |
| Conformal Coating | No | Yes | Yes |
| Shock | ½ sine pulse, 20 g, 11 ms | ½ sine pulse, 20 g, 11 ms | ½ sine pulse, 40 g, 11 ms |
| Vibration (Sine) | 2 g peak 15 to 2,000 Hz | 10 g peak 15 to 2,000 Hz | 10 g peak 15 to 2,000 Hz |
| Vibration (Random) | 0.003 g ² /Hz from 15 to 2,000 Hz | 0.04 g ² /Hz from 15 to 2,000 Hz | 0.1 g ² /Hz from 15 to 2,000 Hz |



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