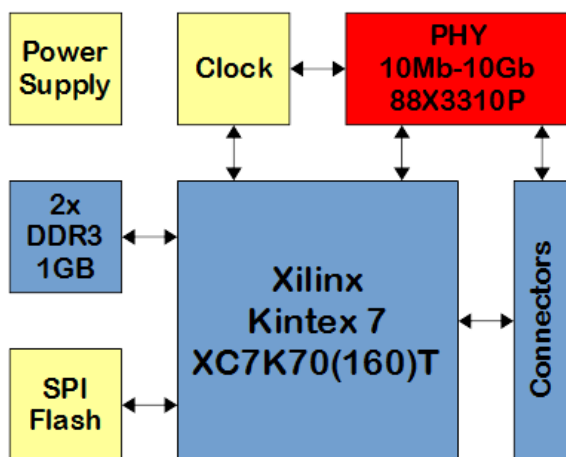


XENIE programmable 10GBASE-T FPGA module

The **Xenie** is a product family of highly integrated FPGA modules that includes the Xilinx® Kintex7® FPGA and 10Gbit Ethernet Marvell Alaska X 88X3310P PHY on a single board. The module is fully programmable to provide "Any to Ethernet" high performance connectivity. On the line side, the PHY supports the following protocols 10GBASE-T, 5GBASE-T, 2.5GBASE-T, 1000BASE-T, 100BASE-TX and 10BASE-Te. The PHY is compatible with the IEEE 802.3an, IEEE 802.3bz standards, NBASE-T™ Specification and supports IEEE802.1ae MACsec protocol and PTP functionality with IEEE 1588 v2. PTP time-stamp processing.



The FPGA's MGT lines support rates up to 12.5Gbit. The module is equipped with 1 GByte of DDR3L SDRAM and 32 MByte of Flash memory as a storage for configuration bitstream. Six GTX multi-gigabit transceivers and three full FPGA I/O banks (in total 150 single-ended I/O or up to 72 differential pairs) with configurable IO voltage are available via two high-speed, high-pin-count, board-to-board connectors. All other necessary supporting circuitry, like clock oscillators and voltage regulators are placed on module, requiring the user to attach literally only connectors and a single DC power supply.

Features

- 10Mbit to 10Gbit data rates on UTP copper line
- Compliant with NBASE-T spec. for 2.5G and 5G
- Kintex 7 - XC7K70(160)T-xFFG676C
- 100m reach on Cat5e for 2.5G and 5G modes
- 100m reach on Cat6a for 10G mode
- QSPI Flash for in-system configuration
- 150 single-ended I/O or up to 72 diff. pairs
- 1GB DDR3L memory (32b x 1600Mt/s)
- 3.3V single voltage power supply
- Small form factor 76 x 52 mm
- Flexible expansion via high-density board-to-board connectors

Applications

- Camera systems, Hyperspectral imaging
- PCI Express interface
- Protocol converters, bridges
- Security applications
- IP development
- Digital signal processing
- Cloud computing
- General-purpose prototyping platform
- DAC/ADC - JESD204B
- 12G, 6G, 3G-SDI, HD-SDI Video
- Video compression systems



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XENIE programmable 10GBASE-T FPGA module

The Xenie BB carrier board is a prototyping platform for evaluation and testing purposes of Xenie based family modules. The carrier board is ideally equipped for testing 10GBASE-T Ethernet solutions, 10GBASE-SR, 10GBASE-LR and SDI (**S**erial **D**igital **I**nterface) up to 12G. The carrier board provides flexible clocking options with two fixed or programable clock generator.



Features

- Single power supply from 6V to 16V
- Current consumption measurement
- 10GBASE-T RJ45 Connector with common mode sense option
- SFP+ Connector
- 2 x 12G SDI Input (LMH1219)
- 2 x 12G SDI Output (LMH1218)
- Oscillators 148.5MHz and 148.35MHz
- RS232, JTAG, 4 x LED
- GPIO connectors
 - Single ended
 - Differential pairs

Available Technical Support

- VHDL example project with source code
 - PHY and peripheral initialization
 - Microblaze and DDR3 design
 - 10G MAC, UDP full rate
 - Open source project published at www.opencoures.org
- Control software
- Board schematic Allegro Cadence
- PCB design Allegro Cadence
- Xilinx Vivado HLx Web Edition support
- Custom design upon request



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