Genesys 2

Part # 410-300

Hide Details

IC:	Xilinx Kintex-7™ FPGA (XC7K325T-2FFG900C)

The Digilent Genesys 2 board is an advanced, high-performance, ready-to-use digital circuit development platform based on the powerful Kintex-7™ Field Programmable Gate Array (FPGA) from Xilinx. With its high-capacity, high-speed FPGA, fast external memories, high-speed digital video ports, and wide expansions options, the Genesys 2 is well suited for data and video processing applications. Several built-in peripherals, including Ethernet, audio and USB 2.0 allow a wide range of additional applications. The fully-populated high-speed FMC HPC connector opens the door to great expansion possibilities.

The Kintex-7 FPGA offers more capacity, higher performance, and more resources than the Virtex-5 from the first-generation Genesys. FPGA features include:

- 50,950 logic slices, each with four 6-input LUTs and 8 flip-flops
- 2 MB fast block RAM
- Ten clock management tiles, each with phase-locked loop (PLL) and mixed-mode clock manager
- 840 DSP slices
- Internal clock speeds exceeding 700MHz
- On-chip analog-to-digital converter (XADC)
- Sixteen GTX transceivers capable of operating at over 10Gbps
- Commercial -2 speed grade

The Genesys 2 also offers an improved collection of ports and peripherals, including:

- Fully-populated 400-pin FMC HPC connector w/ ten GTX lanes
- USB-UART Bridge
- 128x32 pixel OLED
- 16-bit VGA connector
- Pmod for XADC signals

- Two four-lane DisplayPort connectors
- HDMI Sink and HDMI Source
- 10/100/1000 Ethernet PHY
- 1GB 1800Mbps on-board DDR3
- USB 2.0 Host/Device/OTG PHY
- Dedicated USB port for JTAG programming and data transfers

- Micro SD card connector
- Audio codec w/ four 3.5mm jacks
- Serial Flash
- Five Pmod ports
- USB HID Host for mice, keyboards and USB MSD Host for storage

The Genesys 2 can be programmed from various sources, like USB thumb drive, microSD, the on-board non-volatile Flash or the on-board USB-JTAG programmer circuit.

The Genesys 2 is compatible with Xilinx's new high-performance Vivado® Design Suite as well as the ISE toolset. Included in the box is a voucher that unlocks the Design Edition of Vivado (normally $2,995) that is device-locked to the Genesys 2. This allows designs to be implemented straight out of the box at no additional cost. The Design Edition of Vivado also unlocks the Logic Analyzer tool and still includes the ability to create Microblaze soft-core processor projects.