| NEW PRODUCT | DIGILENT A National Instruments Company | *Release Year* 2021 | *Released Quarter* Q3 |
|---|---|---|---|
| *Digilent Part Number* 410-383-5EV | | *Category* FPGA | |

## OVERVIEW

***Product Name:*** Genesys ZU-5EV: Zynq Ultrascale+ MPSoC Development Board

***Product Subtitle:*** Zynq UltraScale+ 5EV MPSoC development board for Smarter Vision

***Product Description:*** The Genesys ZU-5EV is designed with high-definition video in mind, and is ideal for multimedia, automotive ADAS, surveillance, and other embedded vision applications. The board features a Xilinx Zynq® UltraScale+™ MPSoC (Multi-Processing System on Chip) EV device. The ZU5EV is equipped with a quad-core Arm® Cortex®-A53 applications processor, dual-core Cortex-R5 real-time processor, Mali™-400 MP2 graphics processing unit, 4KP60 capable H.264/H.265 video codec, and 16nm FinFET+ programmable logic.

The excellent mix of on-board peripherals, upgrade-friendly DDR4, Mini PCIe and microSD slots, multi-camera, a video codec, and GTH transceivers allowing HDMI Source, Sink and 10G SFP+ to support a wide number of use-cases. Different specialized ports, including FMC Gigabit expansion ports, Pmod and high-speed SYZYGY-compliant expansion module ports for new Zmods, enable flexible expansion and easy access to a wide ecosystem of add-on modules, perfect for silicon evaluation and rapid prototyping.

***Key Search Terms:*** Zynq Ultrascale+, XCZU5EV-SFVC784-1-E, AI, embedded vision,4K video, 5G, wireless, WiFi, Ethernet, cellular, Machine learning, ARM, Cortex, Smart Vision, H.264/H.265, HDMI, video codec, audio, streaming, camera, SFP+, 10G, GPU, FMC, DSP, USB Type C, SSD, SATA,

***Video Link:*** N/A

***Datasheet:*** https://digilent.com/reference/programmable-logic/genesys-zu/reference-manual

***Demo / Project Links:***

- Installing Vivado, Xilinx SDK, and Digilent Board Files
  - Note: When installing Vivado, make sure to include support for Zynq Ultrascale+ parts.
- Getting Started with Vivado IP Integrator
  - Note: This guide was originally written for non-Ultrascale Zynq boards and boards using Microblaze. The flow for Ultrascale Zynq is largely the same as non-Ultrascale Zynq. The “Zynq Ultrascale+ MPSoC” IP core should be used in place of the “ZYNQ7 Processing System”
- Getting Started with the Genesys ZU
- Genesys ZU Out-of-Box Vivado Project
- Genesys ZU Out-of-Box Petalinux Project
- Genesys ZU 5EV HDMI Demo Project

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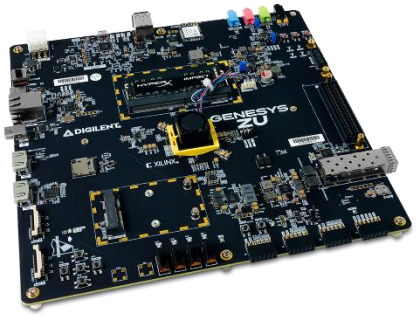
### *Features*

- XCZU5EV-SFVC784-1-E (with heat sink and fan)
  - Quad-core ARM® Cortex-A53 Application Processing Unit
  - Dual-core ARM® Cortex-R5 Real-Time Processing Unit
  - Mali-400 MP2 graphics processing unit
  - 256K logic cells
- Memory:
  - 4 GiB DDR4 SODIMM module
  - ISSI 256 MB SNOR Flash
  - MicroSD Card Slot
- Peripheral connectivity:
  - USB Type-C 3.1 Gen1 Dual-Role Device
  - MiniPCIe / mSATA dual slot
  - USB 2.0 Host
- Network connectivity:
  - 2.4 GHz on-board WiFi
  - 1G w/IEEE 1588 Ethernet
  - SIM card slot
  - WLAN/WWAN/LoRa: option – MiniPCIe
  - SFP+ 10G Ethernet
- Multimedia:
  - 1.2a Dual-Lane Display Port
  - 2x Pcam Dual-Lane
  - Audio Codec
  - H.264/H.265
  - HDMI Source
  - HDMI Sink
- Expansion:
  - 1x FMC expansion connector
  - 1 x FMC Gigabit
  - 1x SYZYGY port
  - 4x Pmod ports
- GPIO: LED, Buttons, Switches
- Kits include
  - Power Supply, Desktop, 12V, 8A, w/PCIE Connector
  - IEC cable, US, 1.2 meter
  - IEC cable, EU, 1.2 meter
  - USB A TO MICRO B CABLE
  - Cable, USB, A to Type C, 15CM
  - JTAG HS1
  - Voucher for the Xilinx MIPI CSI-2 IP cores

### *Product Image*




### *Image Links:*

- https://flic.kr/p/2mgy671 (Oblique)
- https://flic.kr/p/2mgy6d3 (Top)
- https://flic.kr/p/2mgzfZx (Bottom)

| ***3 Target Applications*** | ***Related Products*** |
| --- | --- |
| • Situational Awareness<br>• Surveillance/Reconnaissance<br>• Smart Vision<br>• Image Manipulation<br>• Graphic Overlay<br>• Human Machine Interface<br>• Automotive ADAS<br>• Video Processing<br>• Interactive Display | • Genesys ZU-3EG (410-383-3EG)<br>• Zmod ADC 1410 (410-396)<br>• Zmod DAC 1411 (410-397)<br>• PCAM 5C (410-358)<br>• All Pmods |