

iG-G47P

Virtex UltraScale+ FPGA PCIe Accelerator Card

The AMD's Virtex UltraScale+ FPGAs, offers a robust PCIe prototyping platform equipped with cutting-edge technologies. Designed for demanding, bandwidth-intensive applications, it excels in high-performance computing and network infrastructure tasks.

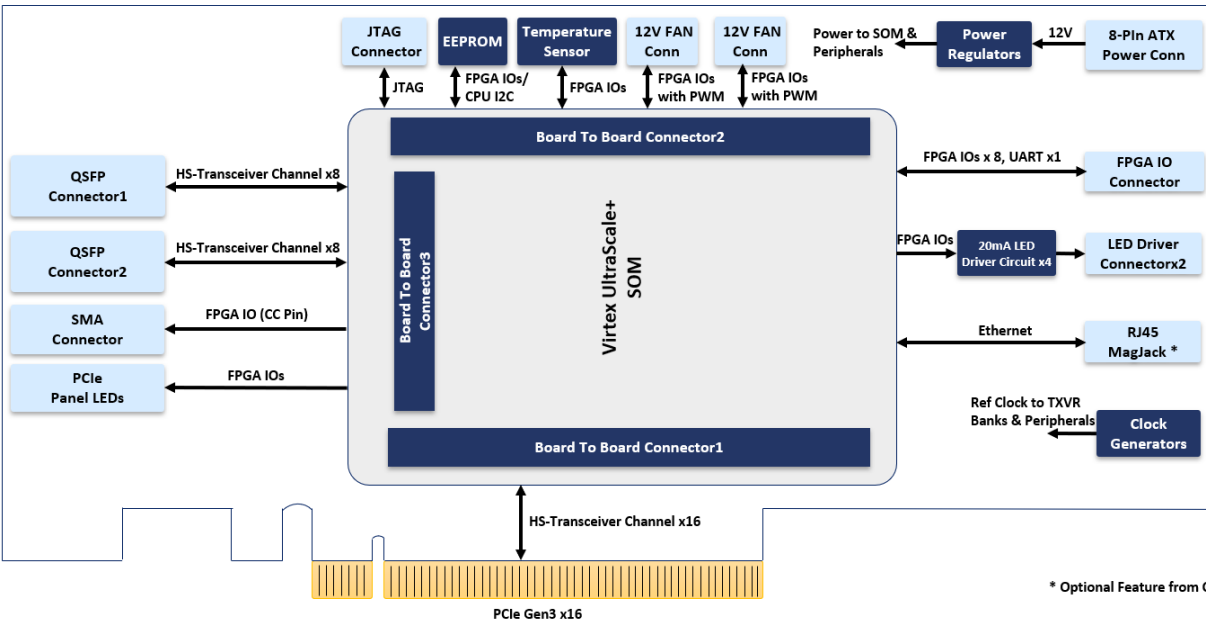
The platform features a high-performance processor interface, a Dual DDR4 memory channel, PCIe Gen3 x16 connectivity optimized for handling high data rates. A dual Arm Cortex-A7 with one DDR4 channel enhances the PCIe card's flexibility and control.



Highlights

- ❖ 203.2mm x 88.8mm, 3/4 Length, Full Height, Dual Slot
- ❖ PCIe Gen3 x16 Host Interface
- ❖ Dual QSFP-DD Connector with dual 100G support
- ❖ 2GB DDR4 RAM for CPU with ECC & Dual 4GB DDR4 RAM for FPGA with ECC
- ❖ Dual core Arm Cortex-A7 up to 1.2 GHz
- ❖ 128MB QSPI Flash for FPGA
- ❖ Supports 256MB NOR Flash For CPU

Block Diagram



* Optional Feature from CPU

Technical Specifications

SoC/FPGA	• AMD's Virtex UltraScale+ FPGA Series B2104 • Compatible with VU5P/VU7P/VU9P/VU11P/VU13P/VU080/VU095/VU125/VU160/VU190 devices • 3,780K Logic cells and 3,456K Configurable Logic Blocks • Gen3/2/1 Integrated PCIe block • 100G Ethernet MAC cores for high-speed connectivity	
CPU	• Dual Arm® Cortex®-A7 up to 1.2 GHz • 32 KB instruction and data L1 cache • Up to 512 KB coherent L2 cache	
Memory	• Dual 4GB DDR4 RAM for FPGA with ECC • 128MB QSPI Flash for FPGA • 2GB DDR4 RAM for CPU with ECC • 256MB NOR Flash for CPU • 512KB SRAM for CPU	
Host Interface	• PCIe Gen3 x16 Edge Connector	
Front Panel Features	From FPGA: • Dual QSFP-DD Connector • SMA connector x1 From CPU: • USB2.0 through Type C connector	
Back Panel Features	Power Input: 12V Input from 8Pin ATX Power connector From CPU: • 2Kbit EEPROM • Temperature Sensor • 12V Fan connector with PWM x2 • I2C x1 • LED Driver connector x2 • FPGA IO Header x1 • JTAG Header From CPU: • Data UART x1 • Debug UART Header • JTAG Header	
OS Support	Linux BSP – Linux 6.1.55 BareMetal BSP – Vivado 2024.2	
Operating Temp.	-40°C to +85°C	
Cooling	• Dual width Active cooling	
Form Factor	• Full Height, Dual Slot PCIe Card • 203.2mm x 88.8mm (¾Length PCIe)	
Enclosure	Aluminum alloy AL-6063	
Compliance	REACH & RoHS3 Compliant	

Ordering Information

*iW-G47P-V09P-4E008G-Q128M-LIA

Virtex UltraScale+ VU9P (-2) FPGA with Dual 4GB FPGA DDR4 with ECC,128MB QSPI
Flash based PCIe card with Linux

Product accessories

Power Supply

Power Supply ensures PCIe card stability during high-performance operation.

Thermal Solutions

For any highly integrated PCIe card product, thermal design is a very important factor. iWave supports Heat/Fan Sink for Card.

PCIe Bracket

Facilitates secure PCIe card installation, ensures compatibility with standard chassis, and withstands mechanical stress.

Card Backplate

To support secure installation and mechanical stability of the PCIe card, a Card Backplate is provided.

Applications

- Data Center for workloads**

PCIe card enhance data center efficiency by offloading networking, security, and storage functions, reducing CPU load and improving overall performance.
- High-Performance Computing**

By integrating PCIe card, HPC systems achieve low-latency communication, intelligent workload distribution, and accelerated data transfer, enabling seamless execution of high-speed simulations, AI, and scientific computing tasks.
- Data acceleration**

Leveraging PCIe card, systems achieve faster data ingestion, real-time analytics, and improved responsiveness for demanding enterprise and cloud workloads.

Additional Services

- Custom hardware integration**

Expanded specs and add-ons designed to meet your needs
- Preloaded Servers**

Ready-to-deploy in servers with flexible configurations
- IP and Solutions**

We reduce risk in both development and deployment with proven IP and solutions
- Service**

Documentation and issue tracking made easy at the iWave Support Center

A Global Leader in Embedded Systems Engineering and Solutions

Since 1999, we have pioneered leadership in embedded systems technology, establishing ourselves as a strategic embedded technology partner for advanced solutions. Our comprehensive portfolio encompasses ARM and FPGA System on Modules, COTS FPGA solutions, and ODM solutions which include Telematics, Gateways & HMI Solutions.

Beyond our robust product ecosystem, we provide comprehensive ODM support with specialized custom design and manufacturing capabilities, enabling customers to accelerate and optimize their product development roadmaps. With a strategic focus on industrial, automotive, medical, and avionics markets, we deliver innovative technology solutions to global clients.

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