

G86-XFibre-800G®

Versal™ Premium Gen2 Accelerator SmartNIC Card – 800G

The iWave Versal™ Premium Gen2 800G SmartNIC, built on the AMD Versal™ Premium Gen2 Adaptive SoC, unlocks the future of high-speed networking with a programmable 800G platform engineered for deterministic low-latency performance and adaptive hardware acceleration across modern data center, finance and edge infrastructures. Featuring PCIe Gen6 and a scalable FPGA architecture, it enables wire-speed packet processing and application-specific acceleration for evolving networking workloads.



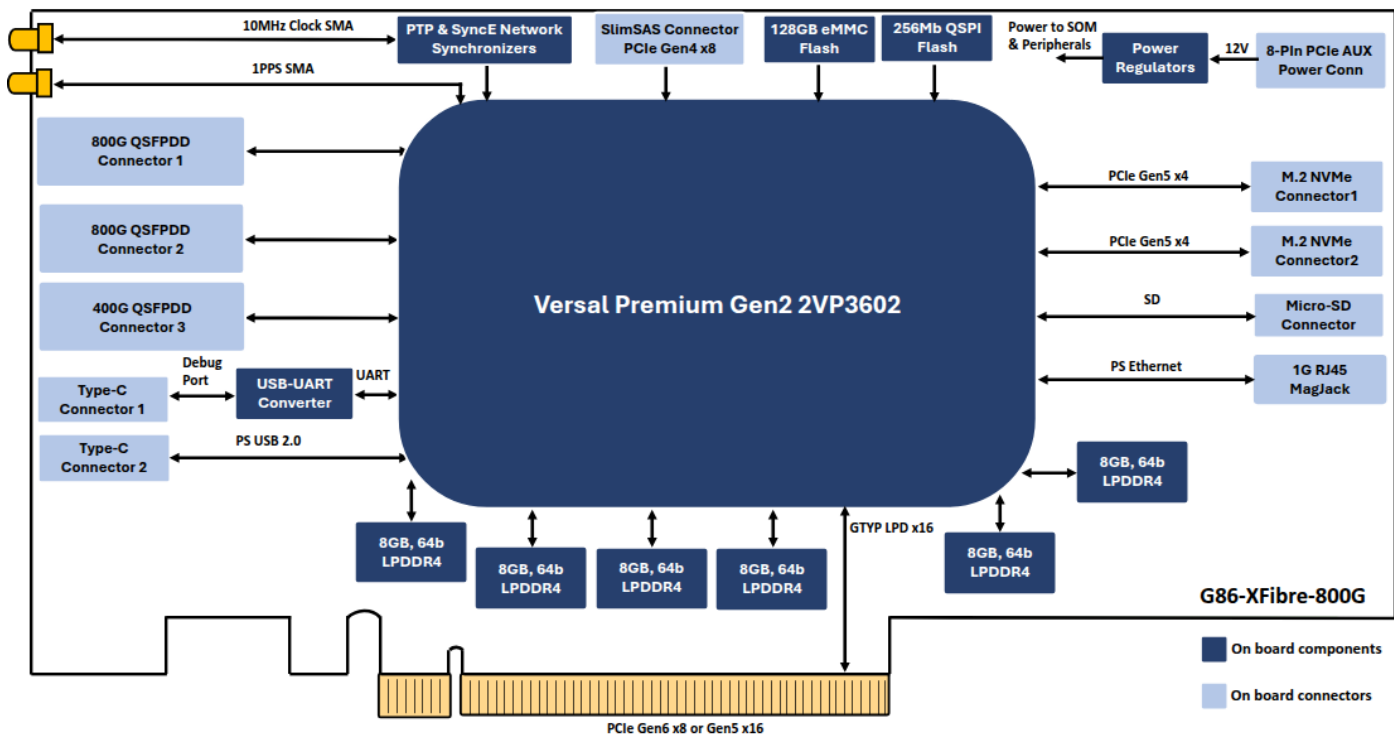
Highlights

- ❖ PCIe Gen6 ×8 Host Interface
- ❖ Full height, 3/4 Length, Single Slot with Active Cooling PCIe Card
- ❖ 3× QSFP-DD Connectors
- ❖ Dual Gen5 x4 M.2 NVMe Slots
- ❖ 6 x 8GB LPDDR5¹ @8533MHz
- ❖ Single Gen4 x8 SlimSAS Connector for extended PCIe capabilities

Note:

¹ Compile time configurable for PL or PS

Block Diagram



Technical Specifications

FPGA	- Versal™ Premium Gen2 2VP3602 -2 Speed Grade (core and Transceivers) - Up to 3.3M Logic cells 1,496K LUTs	Processor System	Dual Arm Cortex-A72 @1.7GHz, Dual-core Arm Cortex-R5F @800MHz
Memory	6 x 8GB LPDDR5 ¹ @ 8533 MHz	Storage Media	256 MB QSPI Flash 1x 128G eMMC Flash
PCIe Host Interface	Gen6 x8	Host Software	Linux OS & DPDK*
PCIe Bracket Connectors	3x QSFP-DD Connectors 1 x USB UART Type-C 2 x SMA Connectors	PS Operating System	Linux
Network Interfaces	400GbE 800GbE	Operating Temp.	0°C to 45°C
Line rates (Ethernet)	- QSFP-DD_1- 800 Gbps: 2 x 400GbE, 8 x 100G - QSFP-DD_2- 800 Gbps: 2 x 400GbE, 8 x 100G - QSFP-DD_3- 400 Gbps: 1 x 400GbE, 4 x 100G	Power Input	75W max from PCIe Host 8Pin ATX Power Connector in Back Panel Power Droop Sharing (to maximize power when needed)
NVMe	2x Gen5 x4 M.2 Connector	Cooling	Active cooling (Fan sink)
		Form Factor	- Full Height, 3/4 Length Single Slot PCIe Card 254mm x 111.15mm (3/4 Length)
		Enclosure	Aluminum alloy 5052- H32
		Compliance	REACH & RoHS Compliant * CE*

Note:

¹ Compile time configurable for PL or PS

Product accessories

Auxillary Power Supply

Auxiliary Power Supply ensures SmartNIC stability during high-performance operation.

Thermal Solutions

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

PCIe Bracket

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

Card Backplate

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

Applications

Financial Trading

SmartNICs accelerate ultra-low-latency market data processing, order execution and risk management for high-performance financial trading systems.

Data Center for workloads

SmartNICs enhance data center efficiency by offloading networking, security and storage functions, reducing CPU load and improving overall performance.

Network Security

SmartNIC Fortifies network defenses and ensures the integrity, confidentiality and availability of critical data and resources.

High-Performance Computing

By integrating SmartNICs, 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 Path acceleration

By Offloading functions, SmartNICs ensure faster and more efficient data transfer between storage and compute nodes.

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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