

## G63-XFibre-400G®

# Versal™ Premium Accelerator SmartNIC Card – 400G

The iWave Versal™ Premium SmartNIC 400G is a high-performance FPGA-based acceleration platform built on the AMD Versal™ Premium Gen1 Adaptive SoC. Combining up to 400G Ethernet connectivity with PCIe Gen5 and a scalable programmable architecture, it enables customers to rapidly develop and deploy custom networking, security, storage, and data processing applications while delivering deterministic performance and exceptional flexibility.



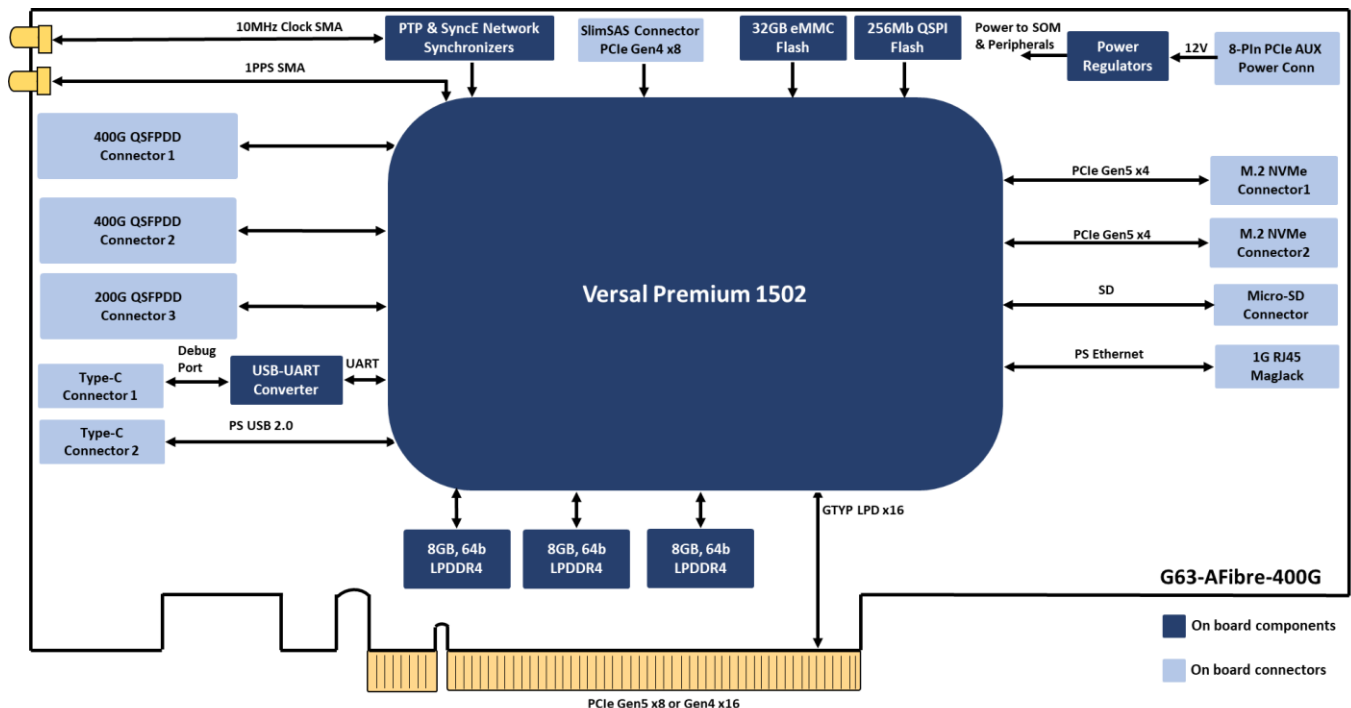
## Highlights

- ❖ PCIe Gen5 x8 Host Interface
- ❖ Full height, 3/4 Length, Single Slot with Active Cooling PCIe Card
- ❖ 3x QSFP-DD Connectors
- ❖ Dual Gen5 x4 M.2 NVMe Slots
- ❖ 3 x 8GB LPDDR4 @3733MHz<sup>1</sup>
- ❖ Single Gen4 x8 SlimSAS Connector for extended PCIe capabilities

**Note:**

<sup>1</sup> Compile time configurable for PL or PS

# Block Diagram



# Technical Specifications

|                         |                                                                                                                                                                                              |                     |                                                                                                                                                                           |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FPGA                    | <ul style="list-style-type: none"><li>Versal™ Premium VP1502</li><li>-2 Speed Grade (core and Transceivers)</li><li>Up to 3763K Logic Cells</li><li>1720K LUTs</li></ul>                     | Debug Port          | Debug Type-C                                                                                                                                                              |
| Memory                  | 3 x 8GB LPDDR4 @ 3733 MHz <sup>1</sup>                                                                                                                                                       | Processor System    | Dual Arm Cortex-A72 @1.7GHz, Dual-core Arm Cortex-R5F @800MHz                                                                                                             |
| PCIe Host Interface     | Gen5 x8                                                                                                                                                                                      | Storage Media       | <ul style="list-style-type: none"><li>256 MB QSPI Flash</li><li>1x 32G eMMC Flash</li><li>1x Mirco SD</li></ul>                                                           |
| Network Interfaces      | <ul style="list-style-type: none"><li>2 x 400GbE</li><li>1 x 200GbE</li></ul>                                                                                                                | Host Software       | <ul style="list-style-type: none"><li>Linux OS</li><li>DPDK*</li></ul>                                                                                                    |
| Line rates (Ethernet)   | <ul style="list-style-type: none"><li>QSFP-DD_1- 400 Gbps: 1 x 400GbE, 4x 100G</li><li>QSFP-DD_2- 200 Gbps: 1 x 200GbE, 2 x 100G</li><li>QSFP-DD_3- 200 Gbps: 1 x 200GbE, 2 x 100G</li></ul> | PS Operating System | Linux                                                                                                                                                                     |
| NVMe                    | 2x Gen5 x4 M.2 Connector                                                                                                                                                                     | Operating Temp.     | 0°C to 45°C                                                                                                                                                               |
| PCIe Bracket Connectors | <ul style="list-style-type: none"><li>3 x QSFP-DD Connectors</li><li>1 x USB UART Type-C</li><li>2 x SMA Connectors</li></ul>                                                                | Power Input         | <ul style="list-style-type: none"><li>75W max from PCIe Host</li><li>8Pin ATX Power Connector in Back Panel Power Droop Sharing (to maximize power when needed)</li></ul> |
|                         |                                                                                                                                                                                              | Enclosure           | Aluminum alloy 5052- H32                                                                                                                                                  |
|                         |                                                                                                                                                                                              | Compliance          | REACH & RoHS Compliant * CE*                                                                                                                                              |

**Note:**

<sup>1</sup> 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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