

## G35-XFibre-100G

# Zynq Ultrascale+ Network and Storage Accelerator SmartNIC Card - 100G

The G35-XFibre-100G, built on Zynq Ultrascale+ MPSOC FPGAs, a high-performance NIC prototyping platform engineered for bandwidth-intensive applications, including 100Gbps network processing. Optimized for advanced computing and complex infrastructure, it delivers reliable, high-throughput performance for the most demanding data workloads.

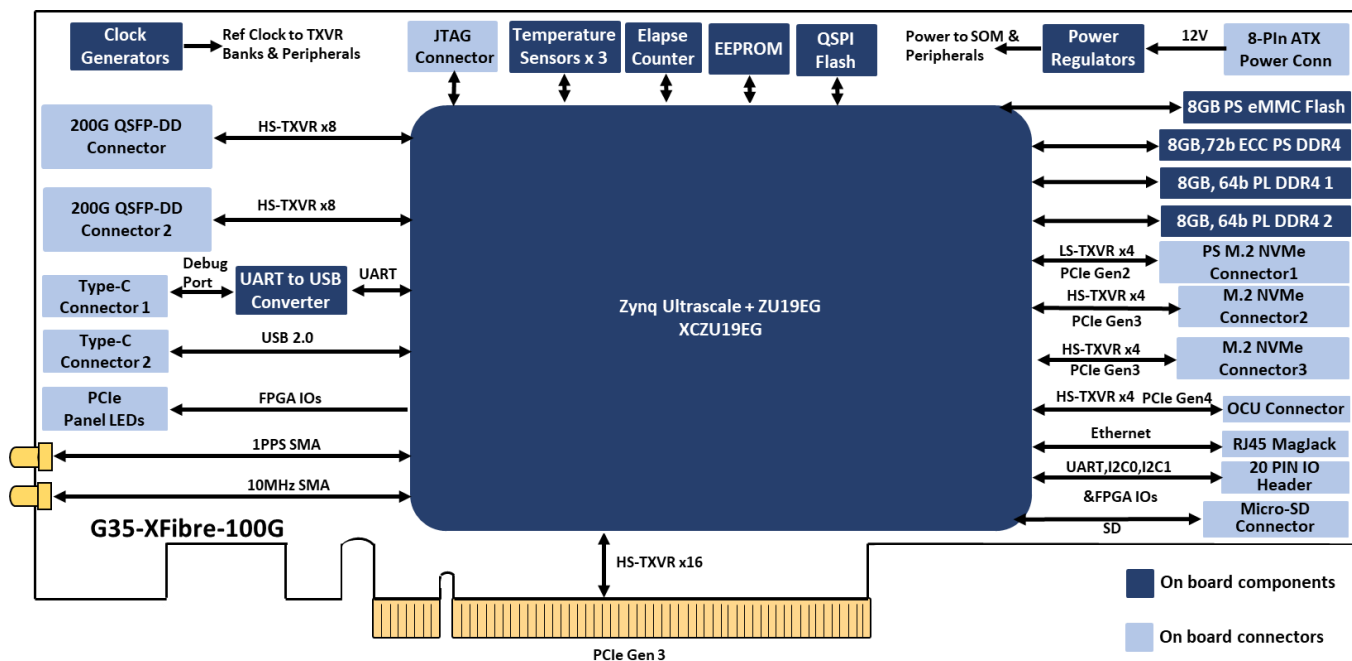
The platform features a high-performance processor interface, two DDR4 memory channels, PCIe Gen3 x16 connectivity, and support for high data rates up to 100Gbps. A quad-core 64-bit Arm Cortex-A53 PS with one DDR4 memory channel provides increased flexibility and control.



## Highlights

- ❖ PCIe Gen3 x16 Host Interface
- ❖ 3/4 Length, Full Height, Dual Slot with Active Cooling PCIe Card.
- ❖ Front Panel QSFP-DD Cage 2x 100GbE
- ❖ 3 DDR4 Channels
  - ❖ FPGA – Single 16GB, 64b, 2666MHz @341.2 Gbps
  - ❖ PS – Single 8GB, 64b+8bECC, 2400MHz @307.2 Gbps
- ❖ Dual Gen3 x4 M.2 NVMe Slots
- ❖ Single Gen3 x4 OCU Link Connector

# Block Diagram



# Technical Specifications

|                         |                                                                                                                                                                                                                                                                       |                       |                                                                                                                                                                                        |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FPGA                    | <ul style="list-style-type: none"><li>Zynq UltraScale+ MPSoC XCZU19EG</li><li>-2 Speed Grade</li><li>44x GTH Transceivers upto 16.3Gbps</li><li>28x GTY Transceivers upto 32.7Gbps</li><li>522K LUTs</li><li>1143K Logic Cells</li><li>70Mb Embedded Memory</li></ul> | Processor System      | <ul style="list-style-type: none"><li>1 x Quad-core 64-bit Arm Cortex-A53</li><li>20 pin GPIO - I2C, SPI</li></ul>                                                                     |
| Memory                  | <ul style="list-style-type: none"><li>1 x 16GB, 64b, 2666MHz@341.2 Gbps (FPGA)</li><li>1 x 8GB, 64b+8bECC,2400MHz @307.2 Gbps(PS)</li></ul>                                                                                                                           | NVMe                  | Dual Gen3 x 4 M.2                                                                                                                                                                      |
| PCIe Host Interface     | Gen3 x16                                                                                                                                                                                                                                                              | OCU Link Connector    | 1 x Gen3 x 4                                                                                                                                                                           |
| PCIe Bracket Connectors | <ul style="list-style-type: none"><li>2 x QSFP28-DD</li><li>1 x USB 2.0 Type-C Connector PS</li><li>1 x USB UART Type-C Connector PS</li><li>2 x SMA Connectors</li><li>1 x RJ45 Connector PS</li><li>2 x User LEDs</li></ul>                                         | Storage Media         | <ul style="list-style-type: none"><li>1 x 2Gb QSPI</li><li>1 x 8GB eMMC (OSM)</li></ul>                                                                                                |
| Network Interfaces      | 2 x QSFP28-DD                                                                                                                                                                                                                                                         | Host Software         | <ul style="list-style-type: none"><li>Linux OS</li><li>DPDK, P4</li></ul>                                                                                                              |
| Line rates (Ethernet)   | <ul style="list-style-type: none"><li>QSFP28-DD_1 : 2 x 100G,4 x 50G,2 x 40G,8 x 25G,8 x 10G</li><li>QSFP28-DD_2 : 2 x 100G,4 x 50G,2 x 40G,8 x 25G,8 x 10G</li></ul>                                                                                                 | PS Operating System   | Linux                                                                                                                                                                                  |
|                         |                                                                                                                                                                                                                                                                       | Operating Temperature | 0°C to 45°C                                                                                                                                                                            |
|                         |                                                                                                                                                                                                                                                                       | Power Input*          | <ul style="list-style-type: none"><li>75W max from PCIe x 16 Host</li><li>8Pin ATX Power Connector in Back Panel Power Droop</li><li>Sharing (to maximize power when needed)</li></ul> |
|                         |                                                                                                                                                                                                                                                                       | Cooling               | Active cooling                                                                                                                                                                         |
|                         |                                                                                                                                                                                                                                                                       | Form Factor           | <ul style="list-style-type: none"><li>Full Height, Single/Dual Slot PCIe Card</li><li>218mm x 115.15mm (¾ Length PCIe)</li></ul>                                                       |
|                         |                                                                                                                                                                                                                                                                       | Enclosure             | Aluminum alloy 5052- H32                                                                                                                                                               |
|                         |                                                                                                                                                                                                                                                                       | Compliance            | REACH & RoHS Compliant * CE*                                                                                                                                                           |

## 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

- **Traffic Generator**

Generation and management of high-speed network traffic, delivering line-rate throughput to support real-time processing, benchmarking, and advanced networking applications.

- **Network Storage**

An intelligent storage controller designed to enable advanced data processing capabilities and efficient storage management for modern applications.

- **Network Security**

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

- **Cloud and Data Center**

Virtualization, data processing, Network management, security

- **Packet Forward**

Traffic Steering, Load balancing, Traffic filtering

## 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

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[mktg@iwave-global.com](mailto:mktg@iwave-global.com)

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