

# FPGA SmartNIC WSN6050 Series

Dual 100G Ethernet  
Intel® Agilex™ FPGA-based SmartNIC  
with carrier grade timing solution



WNC's FPGA SmartNIC WSN6050 series provides high performance hardware acceleration for 4G/5G vRAN forward error correction (FEC) applications. The card also supports precision time protocol (PTP) configurations C1, C2, C3, C4 and SyncE to enable synchronization for O-RAN fronthaul split 7.2x eCPRI and split 8 CPRI. The flexible Ethernet interface can achieve speeds of up to 200 Gbps and supports IEEE1588 GM/BC, G.703 ToD and 1PPS as a phase indication. Together with the built-in Stratum 3E OCXO which provides holdover capability, these features are critical in achieving 5G ultra-reliable low latency communication (URLLC). This SmartNIC platform also supports UPF acceleration for 5GC/MEC VNF.

The SmartNIC is based on an Intel® Agilex™ FPGA AGF014, which embeds a hard processor system (HPS) with a quad-core ARM Cortex-A53 processor.

WNC's FPGA SmartNIC WSN6050 series is supported by the Intel® Open FPGA Stack (OFS), which provides a new scalable, source-accessible FPGA hardware and software modular infrastructure, including OFS-enabled board management controller (BMC), drivers, workloads, OS distributions, FPGA factory image, industry standard interfaces and application programming interfaces (APIs), and application-specific FPGA Interface Manager (FIM). This modular infrastructure provides hardware, software and application developers with scalability and standardization to develop and optimize acceleration platform solutions.

## Target Applications

- 4G/5G vRAN (Virtualized Radio Access Network)
- UPF for 5GC/MEC  
(5G Core Network/MEC User Plane Function)
- NFVI (Network Function Virtualization Infrastructure)
- AI-based Content Delivery Network (CDN)
- Ultra-low latency for electronic trading
- High-performance computing
- Video transcoding
- Cyber security

## Key Features

- Timing interface G.703 ToD for GPS receiver
- eCPRI message type 5 supports vRAN fronthaul
- 2 GB DDR4 for HPS
- Enhanced OCXO for longer holdover capability
- Local eMMC storage for Linux system



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