

N3100-4C

5G Timing Adapter

The UfiSpace N3100-4C is a 5G timing adapter that delivers accurate and reliable synchronization for COTS (Commercial of the Shelf) servers to address the O-RAN Open Fronthaul requirement.

By offloading the Precision Time Protocol (PTP) stack and servo from the COTS server, the N3100-4C will deliver stringent timing synchronization needed for end-to-end solution in O-RAN infrastructure. Equipped with Stratum 3E OXCO, high performance FPGA and in-house software stack complied with PTP and SyncE standards, N3100-4C provides Class C timing accuracy for various use cases such as 5G O-RAN fronthaul, data centers, High-Frequency Trading (HFT) and industrial automation. With all the software stack running on top of the adapter, it eliminates the extra integration and validation effort and ensures consistent timing performance under heavy DU CPU workload.

The N3100-4C is future-proofed with Intel E-810 controller, 4x 10GE/25GE interfaces, and multiple timing source including GNSS, 1PPS and 10MHz. It provides full timing features supporting Grand Master (T-GM), Boundary Clock (T-BC), and G8275.1 telecom profile and can fulfill O-RAN defined synchronization topology (LLS C1, C2, C3) requirement.



KEY BENEFITS

- Integrate all time synchronization function on the adapter
- Algorithm implemented in FPGA increases the performance and timing accuracy
- Off-load the packet processing from server, allow server focus on the computing task
- Future-proof for 5G with ultra-low forwarding latency, high precision frequency and phase timing synchronizations.
- Support O-RAN defined Synchronization Topology(LLS C1, C2, C3)

KEY FEATURES

- State machine fully compliant to ITU-T G8275.1
- PTP redundancy (tracking mechanism)
- SyncE and ESMC
- Dynamic Configuration, no restart needed
- Intuitive command line interface
- Assisted FTS (Full Timing Support)
- Supports full SyncE and IEEE 1588V2 (T-GM, T-BC/OC)
- Integrated Stratum 3E OXCO with Class C timing support
- Rich timing interfaces: 1PPS, 10MHz, and GNSS

SPECIFICATIONS

PHYSICAL

♦ 4 x 10/25G SFP28 ports	
Controller	Intel E-810
FPGA	Cyclone V SOC
Bus Type	PCIe Gen 4x16
Software	OS supported: CentOS, Ubuntu Timing: UFI PTP Timing Software
Interfaces	1 x GNSS input SMA 1 x 1PPS input/output SMB 1 x 10MHz input/output SMB
Timing Capabilities	Stratum 3E OCXO ITU-T Synchronous Ethernet (SyncE) IEEE 1588v2 (G.8275.1, T-BC/OC, T-GM) Offload PTP processing
Clock Specification	G.8271.1 Network limits for Time/Phase G.8272 PRTC G.8273.2 T-BC & T-TSC G.8273.4 APTS* G.8262 Ethernet Equipment Clock G.8262.1 eEEEC Specification G.8264/Y.1364 ESMC
Dimension (WxDxH)	126.35 x181.07 x 21.95 mm or 4.97" x 7.12" x 0.86" Net weight: 0.44 kg. or 0.97 lbs.

*To be available with firmware upgrade

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ENVIRONMENTAL

Power Supply	Max power Consumption: 48 Watts Typical Power Consumption: 34 Watts
Max. Operating Specs.	Operating temperature: 0°C to 55°C (32°F to 131°F) Operating humidity: 5% to 95% (RH), non-condensing
Max. Non-Operating Specs.	Storage temperature: -40°C to 70°C (-40°F to 158°F) Storage humidity: 5% to 93% (RH), non-condensing
Airflow	500LFM

PERFORMANCE

Timing Accuracy	Class C timing accuracy
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REGULATORY COMPLIANCE

Safety	UL 62368-1 IEC62368-1	EMC	FCC Part 15, Subpart B, Class A
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Specifications are subject to change without notice.

N3100-4C Views



SUPPORTED ACCESSORIES

- Transceivers
- 25G SFP28 CR, 25G SFP28 LR, 25G SFP28 SR, 10G SFP+ SR, 10G SFP+ LR
- Cable Types
- SMA coaxial cable with 1/4-36UNS-2B connector for GNSS
- SMB coaxial cable with 10-32UNF-2A connector for 1PPS and 10MHz

