

SND12000 Quick look

Key Features

- Fully P4 Programmable Switching fabric, 12.8T Tofino2
- 8 x Line Cards to support LAN working interface
- One feature Card for extra computing power
- Intel® Skylake-D® Xeon® SoC/CPU in COMe type7 form factor
- BMC based on AST 2520 and AMI IPMI2.0
- Chassis depth less 600mm
- 3+1 Redundant AC/DC CRPS 1600W
- 4+1 Modularized FANS

Ports Configuration

- LC1600: 16 x 100G, QSFP28
- LC4400: 4 x 400G, QSFP-DD
- 1 x USB Type-A console port
- 1 x mini-USB console port
- 1 x USB Type-A port
- 1 x RJ45 OOB GbE

Key Components

- 12.8T P4 Programmable Switching Fabric Tofino2 from Intel®
- COMe type 7 /w Intel® Xeon® D-2123IT 4 core @2.2Ghz , up to 12 core
- DDR4: SO-DIMM 16GB with ECC x 2 (up to 4 and Max. 128GB)

Physical

- Dimensions WxHxD:438x176x560mm
- Weight: 47 kg (8 x LC1600, 5 x fan trays, and 4 x PSUs)
- Rack-rails kit optional

Environmental

- Operating Temperature: 0°C to 45°C
- Storage Temperature: -40°C to 70°C
- Operating Humidity: 5% to 95% non-condensing
- NEBS Ready

Power

- 3+1 1600W AC/DC CRPS, Max Power: 4800W
- AC CRPS input range: 100-120 VAC, 10A; 200-277 VAC, 9A; 50/60 Hz
- DC CRPS input range: -40Vdc to -72Vdc

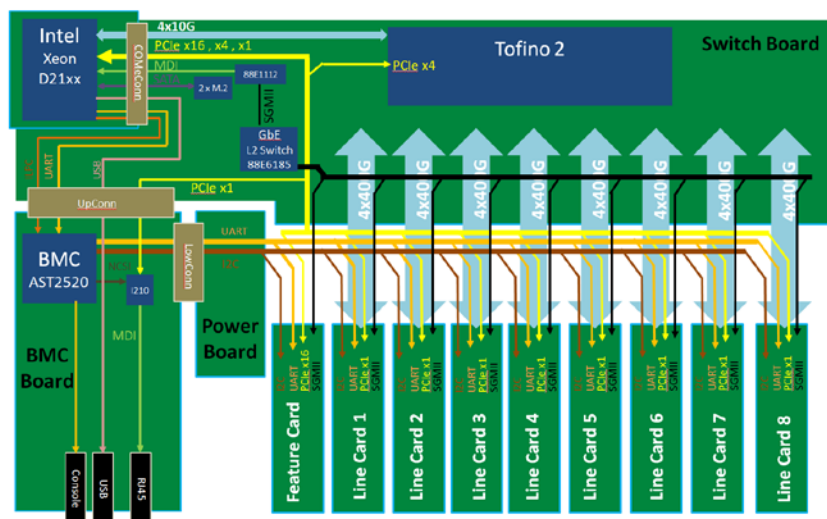


SND12000 Introduction

SND12000 is highly flexible modular 4U switch system with Intel programmable switching fabric. The high-density chassis with 8 interface module slots and up to 128 x 100G ports, totally achieve 12.8Tbps traffic. Collocating with Intel Xeon processor, developers can easily develop and deploy applications on the carrier grade Whitebox. SND12000 are applicable in SDN and 5G network.

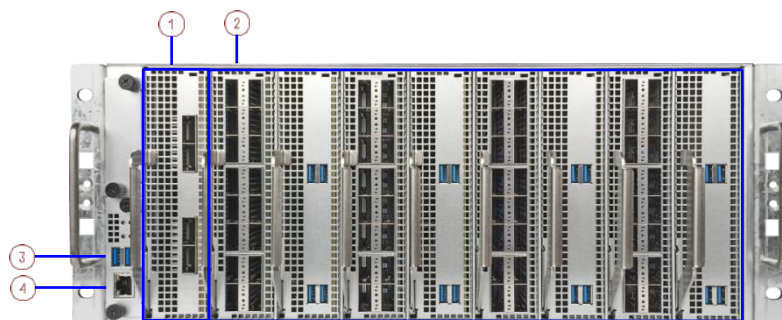
The programmable ASIC, Tofino 2, has multiple data pipeline and support run-time compiler using P4 programming language.

SND12000 is preloaded with Open Network Install Environment (ONIE) and Open Network Linux Platform (ONLP) V2, and supports Open Network Linux (ONL). SND12000 supports Software for Open Networking in the Cloud (SONiC).

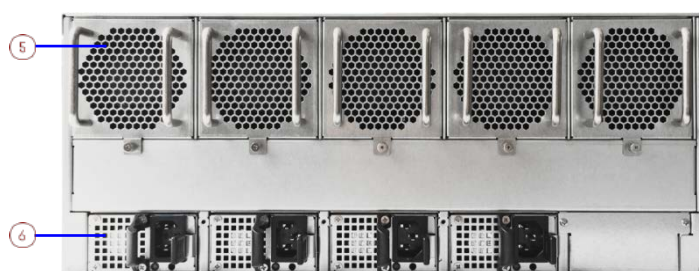


SND12000 High Level Block Diagram

SND12000 have an X86 CPU complex connected to Tofino2 via 4 x 10Gbps SERDEs, and can be divided into three functional blocks: Data plane to forward packets, Control plane to determine the forwarding behavior, and Management plane to provide configuration interface and network visibility. Feature card is available for extra computing power as expansion to CPU by 16 Lanes of PCIe Gen3.



Front View



Rear View

① Feature Card

② Line Card #1-8

③ USB and Console

④ OOB

⑤ Fan x5

⑥ CRPS 1600W x4



LC1600

- 16 x 100GbE (QSFP28)
- Hot-swappable
- Compatible with 40G QSFP+



LC4400

- 4 x 400GbE (QSFP-DD)
- Hot-swappable
- Compatible with 100G QSFP
- Available: TBD

SNOS X

SNOS is the Supervisory Network Operating System for Senao Networks Ethernet switch products including smart/L2/L2+ protocol stacks. Adopt REST API is the standard interface to communicate with external management applications, and integrated with several Cloud-based Solutions.

Bare
Metal

Bare Metal with
ONL distribution

WhiteBox
SNOS X

ONL/ONLP

SONiC

ONIE/Diag

ONIE/Diag

ONIE/Diag

Bootloader

Bootloader

Bootloader

Available: Q2, 2023

SND12000 Specifications	
Management Ports	• 1 x USB Type A – Console Port (no host capabilities) • 1 x Type A host port • 1 x Serial console port Mini USB • 1 x 10/100/1000 BASE-T RJ-45 out of band management port
Line Card LC1600 (maximum of 8 LCs)	16 x 100 GbE QSFP 28 ports 16 x 40 GbE QSFP+ ports 8 x 4x25 GbE QSFP28 ports 8 x 4x10 GbE QSFP+ ports
Feature card (9th slot)	Reserved for future use or extend the CPU functionality
Power Supplies	• Modular 1600W AC/DC power supply (up to 4 PSUs)
Fans	• Modular, 5 required • Front-Back airflow
Dimensions (L/W/H)	56.0cm/43.8cm/17.6cm
Weight	33 kg, only BMC but no power supplies, Line cards, fan modules insert.
Weight Fan	2.5 kg, 5 are mandatory
Weight Power Supply	1 kg
Weight Line Card	2 kg
Performance	Line rate 25.6 Tbps Switching Capacity (12.8 Tbps ingress, 12.8 Tbps egress)
CPU/Memory	• Intel Xeon processor, 12 Core • 128 GB, 4 x 32 GB RAM /w ECC • 2 x 120GB SSD Storage
Operating Conditions	• -5 ° – 50°C operating temperature • 5% to 90% relative humidity, non-condensing

Power Supply Specifications

	1600W AC PSU	1600W DC PSU
Dimensions (H/W/L)	4 cm/7.35cm/18.5cm	4 cm/7.35cm/18.5cm
Weight	1Kg	1Kg
Voltage Input Range	100 -127 VAC/200 -240 VAC	-48 to -60 VDC
Line Frequency Range	50 - 60 HZ N	N/A
PSU Input Socket	IEC 320 C16	BizLink 115HO-025987-R1
Operating Conditions	0° – 50°C operating temperature	0° – 50°C operating temperature

Product Specifications

Environmental Compliance

- EU RoHS: 2011/65/EU and amendment (EU) 2015/863
- EU WEEE: 2012/19/EU
- China RoHS: SJ/T 11363-2014
- Taiwan RoHS: CNS 15663

Packaging and Storage Specifications

- Temp: -40° C to 70° C (-40° F to 158° F)
- Humidity: 5% to 95% relative humidity, non-condensing