

# HARBOR D025

## 25GBE TOP OF RACK DATA CENTER SWITCH



The T1Nexus Harbor D025 is a 48 port 25GbE and 8 port 100GbE switch in a compact 1U form factor that provides 2.0Tbps Bandwidth, ideally suited for Datacenter top of rack deployments.



The D025 provides programmable data plane innovation and can support port level configuration of 10GbE or 25GbE with 8 100GbE QSFP28 uplink ports. It provides superior low latency and power efficiency in a clean PHYless design, while offering high reliability features such as redundant and hot swappable power supplies and fans in forward and reverse airflow configurations.

The Harbor D025 supports current and future network requirements, including a COM-E modular x86-based control plane with BMC Management Plan and Precision Timing options for easier integration of automation tools familiar to server administrators, and an ONIE installer to support 3rd party network operating systems.

### FEATURES

**Interfaces:** 48 SFP28 25GbE ports, 4 QSFP28 and 2 QSFP28DD ports, Rear CPU/BMC shared Management (RJ45) and Console (RJ45) ports, USB (Type A)

**Switching Capacity:** 2.0Tbps IO Bandwidth, 32M Byte Buffer

**Latency:** Less than 500ns port to port (cut-through mode)

**EEE:** 802.3az

**Datacenter:** DCB, TRILL, Virtual Port (VM) Switching, L2 GRE, NVGRE and VXLAN (encap/decap TEP)

**Telemetry:** Improved Instrumentation with

Transient Capture Buffer, Packet Timestamp and Buffer Statistics

**CPU:** Intel Denverton 1.6Ghz Dual-core (up to 8-core), 4-32GB ECC DDR4, 16GB up to 1TB M.2 SSD

**Routing Tables:** Unified

**Forwarding Tables:** up to 354K MPLS labels, 350K LPM, 128K ACL

**Content Aware Processing:** Layer 2-7 packet classification, FCoE

**Transceivers:** SFP28 upto 2W, QSFP28 upto 4.5W power, SR to 300m, LR to 10km, DAC (to 5m passive)

### IEEE1588 & SYNC E TIMING OPTION

- Supports IEEE1588 1-step and 2-step time stamping
- Supports TC and BC mode
- Supports SyncE recovery

### BMC SYSTEM MANAGEMENT OPTION

- DDR3 1Gb~4Gb/SPI 8Mb~64Mb Flash for dual boot
- NC-SI shared management port
- Serial over LAN (SOL) enabled
- Supports remote (BIOS/firmware) online upgrading
- IPMI 2.0

## LAYER TWO HARDWARE SUPPORTED

- 802.3ad LACP
- 802.1D STP, 802.1w RSTP, 802.1s MSTP, TRILL
- 802.1Q VLAN 4096, SVLAN, PVLAN
- 802.1 Q-in-Q double-tagged VLAN
- 802.1P L2 Prioritization
- 802.1AB LLDP
- 802.1x Network Access Control
- IGMP/MLD Snooping
- PBB/PBB-TE
- VM Switching/VEPA/VN-Tag/802.1Qbh
- Mirroring
- Storm Control

## LAYER THREE HARDWARE SUPPORTED

- Hardware-based IP Forward
- IPv4/v6 Routing Protocols: OSPF, RIP, IS-IS, BGP
- VRF, ECMP/WCMP, VRRP
- VPWS, VPLS, L3 VPN
- Hardware Based Tunneling: IPv4/v6, GRE, MiM
- IGMPv1/v2/v3
- IP Multicast: PIM-SM, PIM-DM, PIM-SSM
- Hierarchical ECMP
- Enhanced IPF width and keys for SDN

## TRAFFIC MANAGEMENT HARDWARE SUPPORTED

- Flexible QoS Queuing for UC Packets
- Separate QoS Queues for UC and MC Packets (10 each/port)
- 2-Rate, 3-Color Policing
- SP, WRR, WDRR Queuing
- DCBX (ETS, PFC, CN/QCN)
- Per-Port DSCP
- Per-Port Oversubscription

## POWER AND COOLING

- Under 550W peak consumption with maximum optics, 1+1 redundant, hot swap PSUs
- 100 - 240VAC auto-ranging, 47-63Hz or, 180- 300VDC auto input
- 48V PSU option available
- 3+1 redundant fans, front to back and back to front system cooling

## PHYSICAL DIMENSIONS

Height: 43.8 mm (1.73") 1 EIA unit

Width: 442 mm (17.3")

Depth: 521 mm (20.5")

## ENVIRONMENTAL: OPERATING

Temperature: 0°C to 45°C

Humidity: 5% to 90% non-condensing

## APPROVALS

EMC: CN(GB9254-2008), EU(EN55022, EN55024), FCC, VCCI, CCC

Safety: IEC60950-1, GB4943, UL/CSA, CB, CCC

Note: All specifications and figures are subject to change without prior notice.

T1 PART NUMBER	DESCRIPTION
D025-2C4G16-F2B	2Core Denverton CPU, 4GB RAM, 16 GB SSD, BMC, Front to Back Airflow, Dual AC/HVDC PSU
T1-SFP-25G-SR	25G SFP28 850nm 100m DOM Transceiver Module
T1-SFP-10/25G-SR	10G/25G dual rate SFP28 850nm 100m DOM Transceiver Module
T1-SFP-25G-LR	25G SFP28 1310nm 10km DOM Transceiver Module
T1-DAC-25G-xxxM	xxx-m 25G SFP28 Passive Direct Attach Copper Twinax Cable. xxx=1,2,3,5
T1-AOC-25G-xxxM	xxx-m 25G SFP28 Active Optical Cable. xxx=1,2,3,5,7,10,15,20,25,30
T1-QSFP28-100G-SR4	100GBASE-SR4 QSFP28 850nm 100m DOM Transceiver Module
T1-QSFP28-100G-CWDM4	100GBASE-CWDM4 QSFP28 1310nm 2km DOM Transceiver Module
T1-QSFP28-100G-LR4	100GBASE-LR4 QSFP28 1310nm 10km DOM Transceiver Module
T1-QSFP28-100G-ER4L	100GBASE-ER4 QSFP28 1310nm 40km DOM Transceiver Module
T1-DAC-100G-xxxM	xxx-m 100G QSFP28 Passive Direct Attach Copper Twinax Cable. xxx=1,2,3
T1-AOC-100G-xxxM	xxx-m 100G QSFP28 Active Optical Cable. xxx=1,2,3,5,7,10,15,20,25,30
T1-DAC4X25G-xxxM	xxx-m 100G QSFP28 to 4x25G SFP28 Passive Direct Attach Copper Breakout Cable. xxx=1,2,3
T1-AOC4X25G-xxxM	xxx-m 100G QSFP28 to 4x25G SFP28 Breakout Active Optical Cable. xxx=1,2,3,5,7,10,15,20,25,30,50

