



Data Sheet

MDSwitch SN2100

100GbE 16 Port Mobile Datacenter Switch

The Ethernet Switch MDSwitch SN2100 expands the b-plus AVETO product portfolio with a high performance switch of the data center class for the mobile application, for instance in test vehicles.

Provided with a high performance ASIC and 16 100 GbE ports, a flow rate up to 3,2 Tb/s can be achieved. An extremely optimized latency behavior complements this enormous throughput.

All 16 ports are usable very flexibly in a range from 1 Gb/s to 100 Gb/s. For example, up to 64 10/25 GbE-ports are possible.

MDSwitch SN 2100 supports a variable and scalable network of high performance components in a mobile environment.

An unique optional SW-complement like XTSS enlarges the very wide-ranging features of the special TSN-functions in the field of time synchronization. Therefore, it ensures the smooth cooperation, e. g., with AVETO network participants.

The 12 V power supply with a supplementary ignition management simplifies the use in test vehicles significantly.



Highlights

Zero Packet Loss

- True cut-through latency
- Supports speeds of 1/10/25/40/50/56/100GbE
- Easy deployment
- Easy maintenance
- Unprecedented performance
- Line rate performance on all ports at all packet sizes
- Storage and server applications run faster

- Software Defined Networking (SDN) support
- Running Mellanox Onyx, alternative operating systems over ONIE

KEY FEATURES

- Throughput
- 3.2Tb/s
- 2.38 billion packets per second (Bpps)
- High density
- 16 40/56/100GbE ports
- Up to 64 10/25-ports; • up to 32 50GbE ports
- Lowest latency
- 300nsec for 100GbE port-to-port
- Flat latency across L2 and L3 Forwarding
- XTSS TSN Time synchronization feature
- Lowest power
- Under 6 watts per port
- RoHS compliant





Features

Layer 2 Feature Set

- IGMP V2/V3, Snooping, Querier
- VLAN 802.1Q (4K)
- Q-In-Q
- 802.1W Rapid Spanning Tree
- BPDU Filter, Root Guard
- Loop Guard, BPDU Guard
- 802.1Q Multiple STP
- PVRST+ (Rapid Per VLAN STP+)
- 802.3ad Link Aggregation (LAG) & LACP
- 32 Ports/Channel - 64 Groups Per System
- Port Isolation
- LLDP
- Store & Forward / Cut-through mode of work
- HLL
- 10/25/40/50/56/100GbE
- Jumbo Frames (9216 BYTES)

Layer 3 Feature Set

- 64 VRFs
- IPv4 & IPv6 Routing inc Route maps:
- BGP4, OSPFv2
- PIM-SM & PIM-SSM (inc PIM-SM over MLAG)
- BFD (BGP, OSPF, static routes)
- VRRP
- DHCPv4/v6 Relay
- Router Port, int Vlan,
- ECMP, 64-way
- IGMPv2/v3 Snooping Querier

Synchronization

- XTSS TSN Support
- NTP

Quality of Service

- 802.3X Flow Control
- WRED, Fast ECN & PFC
- 802.1Qbb Priority Flow Control
- 802.1Qaz ETS
- DCBX – App TLV support
- Advanced QoS- qualification, 802.1AB
- Shared buffer management

Management & Automation

- ZTP
- Ansible, SALT Stack, Puppet
- FTP \ TFTP \ SCP
- AAA , RADIUS \ TACACS+ \ LDAP
- JSON & CLI , Enhanced Web UI
- SNMP v1,2,3
- In-band Management
- DHCP, SSHv2, Telnet
- SYSLOG
- 10/100/1000 ETH RJ45 MNG ports
- USB Console port for Management
- Dual SW image
- Events history
- ONIE

Network Virtualization

- VXLAN EVPN – L2 stretch use case
- VXLAN Hardware VTEP – L2 GW
- Integration with VMware NSX & OpenStack, etc.

Software Defined Network (SDN)

- OpenFlow 1.3:
 - Hybrid
 - Supported controllers: ODL, ONOS, FloodLight, RYU, etc.

Docker Container

- Full SDK access through the container
- Persistent container & shared storage

Monitoring & Telemetry

- What Just Happened (WJH)
- sFlow
- Real time queue depth histograms & thresholds
- Port mirroring (SPAN & RSPAN)
- Enhanced Link & Phy Monitoring
- BER degradation monitor
- Enhanced health mechanism
- 3rd party integration (Splunk, etc.)

Security

- System secure mode – FIPS 140-2 compliance
- Storm Control
- Access Control Lists (ACLs L2-L4 & user defined)
- 802.1X - Port Based Network Access Control
- SSH server strict mode – NIST 800-181A
- CoPP (IP filter)
- Port isolation

XTSS TSN Features

Specification Support

- Time synchronization according to IEEE 802.1AS-2020
- Time synchronization according to IEEE 1588 with UDP as communication protocol and “peer to peer” or “end to end” as delay measurement mechanism
- Multi time domain support – up to 10 domains simultaneously
- Extended configuration options to support devices not fully compliant with IEEE 802.1AS or IEEE 1588

Setup and Logging

- Service runs in dedicated docker container
- Detailed logging of events (e.g. new grandmaster) and configuration changes (e.g. priority changed)
- Remote monitoring of service-related parameter (port states, priorities, grandmaster ID, ...) via console application (Windows and Linux support)

Configuration

- Remote configuration via graphical user interface (Windows and Linux support)
- Possibility to enable or disable time synchronization distribution of any interface separately
- Varying protocol types for different interfaces (e.g. 802.1AS on interface 1 and 1588 UDP – “peer to peer” on interface 2)



Specifications

Power Specifications

Typical power with passive cables (ATIS):
94.3 W

Input voltage: 12 V DC

Physical Characteristics

Dimensions: 44 mm H x 320 mm W x 350
mm D

Weight: 4.5kg

Supported Modules and Cables

- QSFP28, SFP28 short and long range optics
- QSFP28 to QSFP28 DAC cable
- QSFP breakout cables 100GbE to 4x 25GbE and 40GbE to 4x 10GbE DAC, optical

- QSFP breakout cables 100GbE to 2x 50GbE DAC, optical
- QSFP AOC
- SFP 10GBase-T via QSFP to SFP Adaptor

Order Information

Name	Part Number	Description
MDSwitch SN2100	B24043-MDS-002-0001	Ethernet Switch 16 Port 100GbE Onyx OS 12VDC

Order Information Accessories

Name	Part Number	Description
QSFP+ to SFP+ Adapter	B24004-ICO-002-0111	QSFP+ to SFP+ Adapter
10GBASE-T SFP+ 30M	B24004-ICO-001-0111	10GBASE-T SFP+ Copper RJ45 30 m Transceiver / xDSwitch
100G DAC Cable 0,5m	B24004-ICO-003-0105	DAC Ethernet cable, QSFP28 100 Gb/s, 0.5 m, black
360W AC/DC Power Supply	B09003-PWR-002-0360	360 W AC/DC Power Supply, 13.8 V/26 A Out
BRICK installation set 44mm for ITEM Profile 20	B17575-BIM-001-0044	BRICK installation set 44 mm for ITEM Profile 20

Other QSFP and SFP-Modules or Cables and mechanical integration kits on request.