



## 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 12V 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)

# Data Sheet MDSwitch SN2100

## Mobile Datacenter Technology

### Specifications

<p><b>Power Specifications</b> Typical power with passive cables (ATIS): 94,3W Input voltage: 12V DC</p> <p><b>Physical Characteristics</b> Dimensions: 44mm H x 320mm W x 350mm D Weight: 3,2kg</p>	<p><b>Supported Modules and Cables</b> QSFP28, SFP28 short and long range optics — QSFP28 to QSFP28 DAC cable — QSFP breakout cables 100GbE to 4x25GbE and 40GbE to 4x10GbE</p>	<p>DAC, optical — QSFP breakout cables 100GbE to 2x50GbE DAC, optical — QSFP AOC — SFP 10GBase-T via QSFP to SFP Adaptor</p>
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### Ordering Information

Name	Article-No.	Description
MDSwitch SN2100	B24043-MDS-002-0001	Ethernet Switch 16 Port 100GbE Onyx OS 12VDC

### Ordering Information Accessories

Name	Article-No.	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 RJ-45 30m Transceiver / xDSwitch
100G DAC Cable 0,5m	B24004-ICO-003-0105	DAC Ethernet cable, QSFP28 100Gb/s, 0.5m, black
360W AC/DC Power Supply	B09003-PWR-002-0360	360W AC/DC Power Supply, 13.8V/26A Out
BRICK installation set 44mm for ITEM Profile 20	B17575-BIM-001-0044	BRICK installation set 44mm for ITEM Profile 20

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