



Data Sheet

MDLake 100G

Mobile Data Lake

Data center technology for mobile use

MDLake is a small form factor network storage unit designed for mobile SAN applications. It combines high-bandwidth data center technology with automotive requirements to enable the next generation of raw sensor data recording in ADAS/AD development.

Based on RDMA technology RoCE v2, the MDLake allows a data throughput of 80 Gbit/s via single-link or up to 128 Gbit/s for dual-link configurations by offloading the processing unit in your recorder.

NVMe over Fabrics (NVMe-oF) secures best compatibility by connecting the MDLake storage partitions as a local storage device.

High-speed Ethernet

With two multi-port compatible 100 Gbit/s QSFP28 Ethernet interfaces you can connect any recorder via active optical cable (AOC), passive optical network (PON) or direct attach copper (DAC) solutions including daisy chaining.

Highlights

- Mellanox BlueField I/O Processing Unit IPU
- 16 core ARM SoC with 32 GB DDR4

- RoCE v2 and NVMe-oF datacenter technology
- 30 TB to 256 TB Storage JBOF (RAID0)
- 2x 100 Gbit/s QSFP28
- 80 to 128 Gbit/s sustained write performance
- μ C based System control and monitoring
- Integrated ARM SoC for management and Web interface
- up to 60 °C operating temperature at full load
- 6.5 – 32 V automotive DC power supply with Ignition
- Windows and Linux support
- Trusted Storage with encrypted drives according TCG OPAL 2.0





Specifications

	MDLake 100G – c-temp	MDLake 100G – e-temp
Part Number	B17038-MDL-1CX-XXXX	B17038-MDL-1EX-XXXX
Operating Temperature	0 °C ~ +50 °C	-10 °C ~ +60 °C
SSD Quantity	16	8
Sustained Write	1x 80 Gbit/s to 2x 64 Gbit/s	1x 80 Gbit/s to 2x 40 Gbit/s
Storage Capacity	16x 3.84 TB (60T), 16x 7.68 TB (120T)	8x 7.68 TB (60T)
SSD type	1U Short Device Form Factor SFF-TA-1006 (E1.S)	
Power Supply	6.5 – 32 V DC, 10 – 32 V permanent, 400 W max., 250 W typical Ignition/Terminal 15 input	
HMI	16x2 character LCD display für system control and monitoring	
OS Support	Windows Client (with NVMe-oF Initiator), Windows Server, Linux	
Configuration	10/100M Ethernet Management Port and Web interface	
Compatibility	Any RoCE/NVMe-of compatible Ethernet Interface Verified: NVIDIA/Mellanox ConnectX-5 & ConnectX-6 solutions	
Mechanics	320 mm (W) x 380 mm (D) x 44 mm (H), ~5.2 kg	
IP Class	IP20	
Humidity	5 - 93 % non-condensing	
Vibration	Approved according LV124 specification with 6.5 m/s ² amplitude at full system load	
Approvals	CE, FCC, VCCI, RoHS, REACH, EN 55032 (Class A) / EN 55035, EN 61000-6-2, EN 61000-6-4, ISO 7637-2 and LV124 partly approved; On request: ECE R10, E1, E13	
Packaging	delivery in 550 x 500 x 94 mm Flightcase (P/N B17038-MDL-001-A004)	

Accessories

Part Number	Name	Description
B17038-MDL-001-A001	19"/1U Mounting Angle	Mounting angle for 19inch rack mount
B17038-MDL-001-A002	19"/1U Frame (Device)	Swappable rack mount option (Part 1/2) for device
B17038-MDL-001-A003	19"/1U Frame (Rack)	Swappable rack mount option (Part 2/2) for rack
B09003-PWR-002-0360	360W AC/DC Power Supply	External 13.8V/26A power supply
B24004-ICO-001-0311	Transceiver 100GBase-SR4	Optical 100G transceiver QSFP28 to SR4
B24004-ICO-003-XXXX	DAC Ethernet cables	100GbE QSF28 DAC, different lengths
B24004-ICO-004-XXXX	Connection Sets	Sets for connecting MDLake to any BRICK or PC System
B24004-ICO-005-XXXX	Passive Optical cables	100GbE SR4 optical cables, different lengths