Connected Home and Edge Computing Storage

Extreme High Endurance & Reliability Storage Solutions for Connected Home and Edge Computing

Western Digital.

Western Digital delivers a full range of Connected Home and Edge Computing storage solutions to help you reduce TCO and optimize performance.

High Endurance & Reliable Storage in a Connected World from Endpoints to Edge

With the advent of the cord-cutting, 5G-adopting world of cable and telecommunications, and the Mobile Virtual Network Operator (MVNO) business model, many service providers are expanding their touchpoints to create stickiness and retain customers and their businesses.

In Connected Home applications, service providers are extending their infrastructure to provide not only broadcast TV and streaming video content on-demand, but also IoT-related services such as home gateway and security, smart appliances, HVAC systems, and irrigation systems.

The conventional cloud-based DVR architecture (cDVR) that is used to store all the content and make decisions in the cloud is no longer adequate for service providers that seek to provide "anytime, anywhere, always-on" experiences to their customers.

Enter "Edge Computing" — the hybrid solution where computing power and data storage are brought closer to the location where they are needed — to help address the latency challenge, especially during the peak hour, due to network bandwidth, and prepare the service providers for the immediate and distant future where 4K, 8K contents are made more complicated with AR/VR/MR applications.

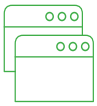
Storage at the Edge and Endpoints must meet specific requirements to help service providers achieve cost-effective DVR implementations and reduce TCO for their system and network architecture.

Western Digital provides a full portfolio of storage solutions including small form factors, a wide capacity option, broad operating temperature range, and most importantly, its high endurance for the anticipated 24/7 operations and workload. Western Digital's High Endurance portfolio for Edge Computing and Connected Home is specifically designed to optimize the overall performance of the applications that require constant and continuous writes to the storage. They are engineered and tested to meet the service provider's demanding reliability, endurance, and quality requirements. Furthermore, the additional features of our storage, such as Card Health Status Monitor and Remote Maintenance, will help service providers reduce TCO in both customer retention and system deployment.

Advanced Features

Product Highlights

- Custom-designed embedded flash drive, SD™, microSD™, USB, SSD and HDD for Connected Home
- A broad range of capacities: 4GB to 4TB[1]
- Extreme durability supporting the toughest time shift buffer (TSB) specification requirements
- Supports wide operational temperature range



Applications

- Smart TV
- Home entertainment — Pause live TV (PLTV), trick play, rewind, Lite DVR, nDVR, Push VOD, STB and content prepositioning
- Home networking — Routers and modems with embedded form factors
- Home automation — Security cameras, IoT gateway and energy management

Business Benefits

- Quickly deploy cost-effective DVR
- Enable ad-insertion at the Edge
- Drives faster time-to-market for new and advanced services
- Offloads network traffic during peak times
- Reduces network latencies
- Reduces TCO for system/network architecture
- Advanced OS and application solutions enable high reliability and longevity

Special Features

- Health Status Monitor for Cards & e.MMC — Remotely monitor usage and identify when upgrades or replacements are needed
- Host Lock for Cards & e.MMC — Prevent usage by unauthorized devices
- Programmable String for Cards & e.MMC — Program a unique identifier for inventory control
- Secure Firmware Update for Cards & e.MMC
- Remote Maintenance for Cards & e.MMC
- High bandwidth support for multi-stream of 4K/UHD content

High Endurance & Reliable Storage in a Connected World from Endpoints to Edge

e.MMC Embedded Flash Drive

iNAND® CH EM133 & EM123

e.MMC embedded flash drives optimized for high endurance applications

Features

- Capacities from 8GB to 256GB
- Advanced power protection, Auto refresh, manual refresh, Advanced health status and diagnostics
- Smart Partition™ solution with configurable SLC and MLC/TLC partitions
- Extended operating temperature range from –25°C to 95°C
- e.MMC 5.1 interface with HS400 Interface

Edge+ SD™ Cards

LD313 & LD513

Designed to enable fast deployment of revenue-generating services

Features

- Capacities from 4GB to 128GB[1]
- Up to 896 TBW[3] endurance
- Host lock, secure firmware update, health status monitor
- Wide operating temperature range from –25°C to 85°C

Solid State Drives

CL SN720 & CL SN520, PC SA530

Optimized for audio-video applications including PVRs, DVRs, and STBs

Features

- PCIe Gen3×4 NVMe™, PCIe Gen3×2 NVMe and SATA III interfaces
- M.2 2242, M.2 2280 and 2.5"/7mm form factors
- High capacities up to 2TB[1], Up to 1600 TBW[3] endurance

USB

USB XB513 & XB313

Built and tested to cost-effectively meet a wide variety of program-erase cycles and empower new user experiences

Features

- Capacities from 16GB (for video buffer) and 32GB to 128GB (for DVR Lite)[1]
- Up to 192 TBW[3] endurance
- Host lock, health status monitor
- Operating temperature range from 0°C to 55°C fits STB environments

Edge+ microSD™ Cards

QD313 and QD513

Custom-designed to meet the needs of high endurance applications such as pause live TV (PLTV)

Features

- Capacities from 4GB to 64GB[1]
- Host lock, secure firmware update, health status monitor
- Up to 640 TBW[3] endurance
- Enables entry-level lite DVR

Hard Disk Drives

AV-25 and AV-GP 1000

Engineered to offer cool, quiet, and reliable operation optimized for audio-video applications

Features

- Capacities from 320GB to 4TB[1]
- 2.5" and 3.5" form factors
- SATA 3 Gb/s Interface
- Low power consumption

Embedded Flash Drives

Product	iNAND® CH EM133	iNAND® CH EM123
Interface	e.MMC 5.1	
Capacity[1]	16GB to 256GB	8GB to 64GB
Operating Temp	–25°C to 95°C	
Endurance[3]	Up to 1117 TBW (UDA) (For EUDA – to be added)	Up to 448 TBW (UDA) and 1440 TBW (EUDA)
Dimensions	11.5×13×0.8mm – 11.5×13×1.2mm	
Ordering Information	SDINBDA6-###G-H	SDINBDG4-###G-H

SD & microSD Cards

Product	CH LD313	CH LD513	CH QD313	CH QD513
Form Factor	SD	SD	microSD	microSD
Capacity[1]	8GB to 128GB	4GB to 32GB	8GB to 64GB	4GB to 8GB
Operating Temp	–25°C to 85°C			
Endurance[3]	Up to 896 TBW	Up to 450 TBW	Up to 640 TBW	Up to 400 TBW
Sequential R/W (MB/s)[2]	Up to 50/30	Up to 50/50	Up to 50/30	Up to 50/50
Ordering Information	SDSDEB-###G	SDSDEC-###G	SDSDQEB-###G	SDSDQEC-###G

USB

Product	CH XB 513	CH XB 313
Capacity[1]	16GB	32GB to 128GB
Operating Temp	0°C to 55°C	
Endurance[3]	Up to 160 TBW	Up to 192 TBW
Sequential R/W (MB/s)[2]	7/5	Up to 20/10
Ordering Information	SDUFDEC-###G	SDUFDEA-###G

Hard Drives

Product	WD AV-25	WD AV-GP 1000
Interface	SATA 3 Gb/s	
Form Factor	2.5"	3.5"
Capacity[1]	320GB to 1TB	500GB to 4TB
Operating Temp	0°C to 60°C	0°C to 70°C
Technology	CMR	CMR
Ordering Information		
320GB[1]	WD3200LUCT	—
500GB[1]	WD5000LUCT	WD5000AURX
1TB[1]	WD10JUCT, WD10JUCX*	WD10EURX
2TB[1]	—	WD20EURX
3TB[1]	—	WD30EURX
4TB[1]	—	WD40EURX

* WD10JUCX Interface is SATA 6 Gb/s

Solid State Drives

Product	CL SN720	CL SN520	CL SN520	PC SA530
Interface	PCIe Gen 3×4 NVMe 1.3	PCIe Gen 3×2 NVMe 1.3		SATA 6 Gb/s
Form Factor	M.2 2280	M.2 2242	M.2 2280	2.5"/7 mm and M.2 2280
Capacity[1]	256GB to 2TB	128GB to 512GB	128GB to 512GB	256GB to 1TB
Operating Temp	0°C to 85°C			0°C to 70°C
Technology	3D TLC			
Ordering Information				
128GB[1]	—	SDAPNUW-128G-1022		—
256GB[1]	M.2 2280	M.2 2242	M.2 2280	SDASB8Y-256G (2.5", non-SED) SDASN8Y-256G (M.2 2280, non-SED) SDATB8Y-256G (2.5", SED) SDATN8Y-256G (M.2 2280, SED)
512GB[1]	256GB to 2TB	128GB to 512GB	128GB to 512GB	SDASB8Y-512G (2.5", non-SED) SDASN8Y-512G (M.2 2280, non-SED) SDATB8Y-512G (2.5", SED) SDATN8Y-512G (M.2 2280, SED)
1TB[1]	M.2 2280	M.2 2242	M.2 2280	SDASB8Y-1T00 (2.5", non-SED) SDASN8Y-1T00 (M.2 2280, non-SED) SDATB8Y-1T00 (2.5", SED) SDATN8Y-1T00 (M.2 2280, SED)
2TB[1]	256GB to 2TB	128GB to 512GB	128GB to 512GB	—

[1] 1GB=1,000,000,000 bytes. 1TB=1,000,000,000,000 bytes. Actual user storage may be less depending on operating environment.

[2] Based on internal testing; performance may vary depending on host device, usage conditions, drive capacity and other factors. 1MB=1,000,000 bytes.

[3] Approximations based on internal metrics that quantify how much data can be written to a card during its lifespan, expressed in Terabytes Written (TBW), with write amplification of 1. TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by capacity.

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