



### Applications

- Surveillance systems w/ <8 channels (ex: SMB, SOHO)
- Systems where bandwidth is limited, unstable, and/or expensive
- Low power systems (ex: battery/solar operated systems)
- Fail-safe storage for mission critical deployments
- Storage for standalone camera installation

### Business Benefits

- Optimize bandwidth usage
- Eliminate network dependency
- Enable real-time, local compute/analysis
- Improve analytics response time
- Provide a fail-safe in hybrid systems

### Product Offering

- Available in UFS, e.MMC, SD™, and microSD™ formats
- 4GB to 400GB capacity
- Broad range of endurance options to support extreme write durability requirements, up to 1600 TBW\*

### Product Features Available

- High Capacity, Extreme Endurance
- Wide Temperature range: -40°C to 85°C
- Health Status Monitor: Track the health and life of your critical storage
- Host Lock: Storage attaches to a single device and thereafter is used only with that device
- Programmable Identifier String: Program a unique identifier on the card for remote traceability
- Secure Firmware Update: Enables remote maintenance of the storage solution

### Reliable Storage at the Edge of Surveillance

In surveillance architectures the video content can be stored locally in the camera (edge storage), at the server/cloud side, or a combination of the two locations. A growing trend of distributed computing (ex: mesh networks, VMS on camera) is pushing more of the compute and storage functions to the edge of the network. As such, having a reliable edge storage solution is critical in these surveillance architectures.

Deploying edge storage creates powerful benefits. For smaller installations where space and resources are limited, eliminate the overhead and cost for a dedicated onsite NVR/DVR. For mission critical deployments, increase system reliability with a fail-safe storage at each camera, ensuring uninterrupted operations regardless of network availability. And in cases where bandwidth resources are limited, or real-time analysis is desired, a hybrid edge and cloud storage solution optimizes bandwidth usage and provides instant actionable analytics.

Consider an example, where high resolution video is recorded locally, while a user can view a live video feed in low resolution. The camera can perform real-time analytics based on the local copy, and can indicate whether any immediate actions are required. In the background, only the low resolution feed and/or metadata is sent back to the cloud for further "big data" analysis.

#### There are several crucial factors to consider when it comes to edge storage:

- **Endurance:** the endurance is an indicator of the overall useful life of the system, and needs to support the intended use case. In a 24x7 recording system, an extreme endurance solution is critical to enabling reliability over a long period of time. For example, to support 3 years of continuous recording, at 10Mbps, you will need a solution that supports 154TBW over this period.
- **Capacity:** ensure that you have enough capacity for your surveillance needs. For example, to store ~24 hours (ring buffer) of HD video at 10Mbps, you will need at least 128GB of storage.
- **Smart features:** one such feature is a health status monitor, which will allow you to track the health of the storage and enable preventative maintenance before any unexpected failures



SD and microSD Cards for Surveillance						
Product	WD Purple SC QD102 microSD Card Surveillance High Endurance	WD Purple SC QD312 microSD Card Surveillance Extreme Endurance	Industrial IX LD332 SD Card Extended Temp	Industrial IX LD332 SD Card Wide Temp	Industrial IX QD332 microSD Card Extended Temp	Industrial IX QD332 microSD Card Wide Temp
Capacity*	32GB to 256GB	64GB to 256GB	8GB to 64GB		8GB to 128GB	
Interface	SD 6.0 UHS-I 104	SD 6.0 UHS-I 104	SD 3.0 UHS-I 104		SD 3.0 UHS-I 104	
Operating Temp	-25°C to 85°C	-25°C to 85°C	-40°C to 85°C	-25°C to 85°C	-40°C to 85°C	-25°C to 85°C
Sequential R/W (MB/s)**	Up to 100/60	Up to 100/65	Up to 80/50		Up to 80/50	
Endurance	Up to 256 TBW	Up to 768 TBW	Up to 192 TBW		Up to 384 TBW	
Enhanced Features	Health Status Register	Health Status Register	Health Status Register, Host Lock, Programmable String, Secured FFU, Auto and Manual Read Refresh			
Ordering Information	WDD###G1POA WDD###G1PCA (China)	WDD###G1P1B	SDSDAF3-###G-XI	SDSDAF3-###G-I	SDSDAQF3-###G-XI	SDSDAQF3-###G-I

Industrial iNAND® Embedded Flash Drives for Surveillance					
Product	iNAND® IX EU312 XI Extended Temp	iNAND® IX EU312 Wide Temp	iNAND® IX EM122 XI Extended Temp	iNAND® IX EM122 Wide Temp	iNAND® MC EM131
Capacity*	16GB to 256GB		8GB to 64GB		32GB to 256GB
Interface	UFS 2.1 Gear 3/2 Lane		e.MMC 5.1 HS400		eMMC 5.1 HS400
Operating Voltage	Core Voltage(VCC): 2.7-3.6V I/O (VCCQ2) of either: 1.7-1.95V or 2.7-3.6V		Core voltage (VCC) 2.7-3.6 V I/O (VCCQ) voltage: either: 1.7-1.95V or 2.7-3.6V		Core Voltage (VCC): 3.3V I/O (VCCQ): 1.8V, 3.3V
Operating Temp	-40°C to 85°C	-25°C to 85°C	-40°C to 85°C	-25°C to 85°C	-25°C to 85°C
Sequential R/W (MB/s)**	Up to 800/550		Up to 300/160		Up to 300/260
Random R/W (IOPS)**	Up to 40K/45K		Up to 22K/14K		Up to 20K/15K
Endurance	Up to 704 TBW		Up to 160 TBW		Up to 320 TBW
Enhanced Features	Advanced Health Report, Manual Refresh, Smart Partitioning, Thermal Protection		Advanced Health Report, Manual Refresh, Smart Partitioning		
Packages****	11.5x13x1.2mm		11.5x13x0.8mm - 11.5x13.1.2mm		11.5x13x1.0mm
Ordering Information	SDINDDH6-###G-XI	SDINDDH6-###G-I	SDINBDG4-###G-XI1	SDINBDG4-###G-I1	SDINBDA4-###G
Formerly Known As	iNAND® 8521XI Extended Temp	iNAND® 8521I Wide Temp	iNAND® 7250XI Extended Temp	iNAND® 7250I Wide Temp	iNAND® 7550

\* 1GB=1,000,000,000 bytes. Actual user storage less.

\*\* Based on SanDisk internal testing. Performance based on e.MMC high speed interface, using an 8-bit bus. Read and write speed may vary depending on read/write conditions. 1 megabyte (MB) = 1 million bytes.

\*\*\* Device operation at 3.3V I/O limited to max 1 hour usage (ex: for use during content/image preloading).

\*\*\*\* Package size varies based on capacity.

\*\*\*\*\* TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.

## Western Digital

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