

DS-A81016S Series Storage System

Introduction

The DS-A81 series is an economical and reliable Hybrid SAN (Storage Area Network) product. Hikvision Hybrid SAN product creates a network with access to data storage servers, and it integrates Hikvision's unique video direct streaming technology as well as supports IPSAN. Hybrid SAN system supports third-party cameras such as BOSCH, AXIS, SONY, Samsung, etc., and supports RTSP and SIP protocols, and extended data retention. With no recording server needed, Hikvision's Hybrid SAN systems truly make applications simple, flexible, and budget-friendly.



Key Feature

Economical and Stable Hardware Platform

- Modular and no-cable design and SBB 2.0 structure.
- 64-bit multi-core processor.
- 4 GB high-speed cache.
- Four 1000M network interfaces.
- 12G SAS high-speed transmission channel.
- Redundant design for key modules.

HDD Detection and Repair/RAID Optimization

- Detection before operation.
- Detection in operation.
- Fault reparation.
- RAID 0, 1, 3, 5, 6, 10, 50, and VRAID.
- Global and local hot spare.
- Quick RAID building.
- Capability of cascading up to two storage enclosures behind a single SAS port.

Advanced Data Protection

- Synchronous backup of key information in system disk and HDD.
- RAID-based tamper-proof data technology.
- Auto data synchronization between devices.

Energy Efficient

- CPU load balance.
- Auto fan tuning.

User-Friendly UI

- Quick configuration.
- Various alarm management.
- Supports SADP protocol.
- Supports SNMP.

Surveillance-Specialized Stream Media Direct Storage (Direct Streaming Mode)

- Space pre-allocation strategy.
- Direct storage for video and picture streams.
- Supports direct IP camera/DVR/NVR streaming and recording.
- Support H264, H264+, H265, H265+.
- Support N+1.
- Supports camera access through RTSP, ONVIF, and PSIA protocol.
- Supports alarm/scheduled/manual recording.
- Automatic network replenishment (ANR), timely uploading, and video loss alarm.
- Lock key videos.
- VRAID data protection.
- Supports both Direct Streaming Mode and IPSAN Mode.
- Search, play, and download videos by video type or video time.



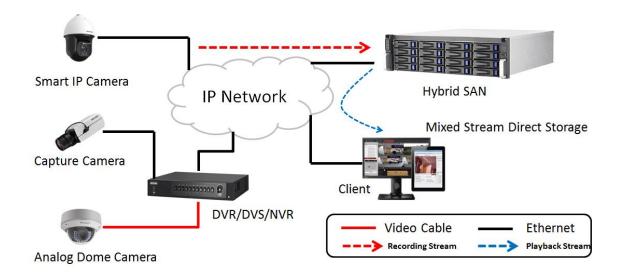


Specification

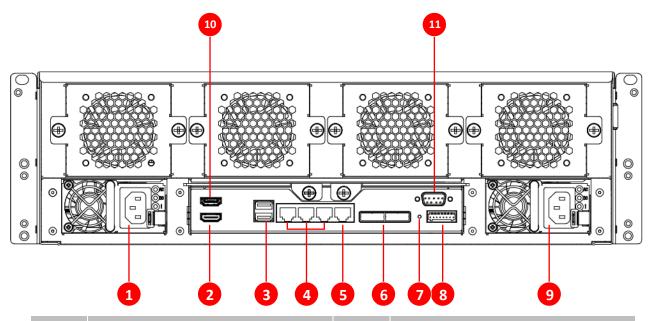
Direct Streaming Mode: video (2 Mbps) + picture IPSAN 180-ch recording + playback Processor One controller (64-bit multi-core processor) Cache 4 GB (extendable to 32 GB) HDD slot 16	Model		DS-A81016S		
Performance Picture IPSAN 180-ch recording + playback Processor One controller (64-bit multi-core processor)		Direct Streaming			
Processor One controller (64-bit multi-core processor)	Performance		320-ch recording + playback		
Cache A GB (extendable to 32 GB) HDD slot 16 Interface/capacity SATA/Up to 12 TB Hot-swapping Supported HDD support Single, RAID(Enterprise Hard Disk) RAID RAID RAID RAIDO, 1, 3, 5, 6, 10, 50, VRAID, JBOD, Hot-spare Disk management Logical volume management Logical volume management Management SCSI volume, video volume management Video protection Lock key video, N+1 service protection, ANR, video loss detection and alarm Searching mode Search by time and event Downloading mode Quick download, batch download, download by segment, download by merging Management mode Alarm mode Sound, light, email, message, web page Log downloading Download no web page MiniSAS interface Nanagement network interface Management network interface MiniSAS interface Supported LOSB 3.0 2 Alarm interface 1 HDMI 2 Power supply Redundant Consumption (with HDDs) Raited: \$550 W Service; Sound (14 °F to 1158 °F) Working: \$30 W (967 BTU with 16 HDDs) Raited: \$550 W Sounding: \$5° to +40 °C (41 °F to 1158 °F) Working: \$5° to 90%RH (non-condensing/frozen) Storing: 50° to 90%RH (non-condensing/fr		IPSAN	180-ch recording + playback		
A GB (extendable to 32 GB) Interface/capacity SATA/Up to 12 TB	Controller	Processor	One controller (64-bit multi-core processor)		
Interface/capacity SATA/Up to 12 TB	Controller	Cache	4 GB (extendable to 32 GB)		
HDD HDD support Single, RAID(Enterprise Hard Disk) RAID RAIDO, 1, 3, 5, 6, 10, 50, VRAID, JBOD, Hot-spare Disk management Disk inspection, alarm and repair Logical volume management Secording mode Video protection Lock key video, N+1 service protection, ANR, video loss detection and alarm Searching mode Downloading mode Quick download, batch download, download by segment, download by merging Management Potocol Alarm mode Sound, light, email, message, web page Log downloading Download on web page Protocol Data network interface 3, 1000M Ethernet interface Management network interface 3, 1000M Ethernet interface 1 Interfaces MinisAs interface Supported COM 1 USB 3.0 2 Alarm interface 1 HDMI 2 Power supply Redundant Consumption (with HDDs) Environment temperature • Working: 45 to 90 wRH (non-condensing/frozen) Environment humidity • Working: 20% to 90%RH (non-condensing/frozen) Dimensions (W × H × D) HOD SISS AD MINISAS interface) Junches high) Jimensions (W × H × D) HOD SISS AD MAN X 122 x 495 mm (17.3 x 5.2 x 19.5 in)		HDD slot	16		
HDD support Single, RAID(Enterprise Hard Disk) RAID RAID RAIDO, 1, 3, 5, 6, 10, 50, VRAID, JBOD, Hot-spare		Interface/capacity	SATA/Up to 12 TB		
Storage Disk management Disk inspection, alarm and repair	HDD	Hot-swapping	Supported		
Disk management Disk inspection, alarm and repair		HDD support	Single, RAID(Enterprise Hard Disk)		
Storage Management Recording mode Recording mode Recording mode Recording mode Search by time and event Downloading mode Management Management Downloading mode Management Downloading mode Maintenance Device Maintenance Maintenance Network Protocol Data network interface MiniSAS interface M		RAID	RAID0, 1, 3, 5, 6, 10, 50, VRAID, JBOD, Hot-spare		
Management Mecording Mode Searching mode Search by time and event Downloading mode Management mode Management mode Management mode Management mode Management mode Malarm mode Log download, batch download, download by segment, download by merging Management mode Malarm mode Log download no web page Download no web page Download no web page Management network interface MiniSAS interface Supported COM 1 USB 3.0 2 Alarm interface HDMI 2 Power supply Redundant Working: 4308 W (967 BTU with 16 HDDs) Rated: ≤ 550 W Environment temperature Vorking: 20° C to +70° C (-4° F to +158° F) Storing: 20° C to +70° C (-4° F to +158° F) Storing: 20° K to 80%RH (non-condensing/frozen) Storing: 5% to 90%RH (non-condensing/frozen) Dimensions (W × H × D) Lock key video volume management of multiple devices Malarm recording Wall-streepring Management Management Note key video (N+1 service protection, ANR, video loss detection and alarm Alarm recording Web-based GU, serial port CLI, centralized management of multiple devices Monagement devent Mebe-based GUI, serial port CLI, centralized management of multiple devices Monagement devent Mebe-based GUI, serial port CLI, centralized management of multiple devices 15CSI, SNR, SNR, SNR, SNR, SNR, SNR, SNR, SNR	Chauses	Disk management	Disk inspection, alarm and repair		
Recording Management Video protection Lock key video, N+1 service protection, ANR, video loss detection and alarm Management Searching mode Search by time and event Dewice Maintenance Management mode Web-based GUI, serial port CLI, centralized management, download by merging Network Protocol Sound, light, email, message, web page Network Protocol iSCSI, RTSP, ONVIF, PSIA Data network interface 3, 1000M Ethernet interface Management network interface 1, 1000M Ethernet interface MiniSAS interface Supported COM 1 USB 3.0 2 Alarm interface 1 HDMI 2 Power supply Redundant Environment • Working: ≤308 W (967 BTU with 16 HDDs) • Rated: ≤ 550 W • Working: ≤550 W General Environment humidity • Working: 20% to 80%RH (non-condensing/frozen) Chassis 3U (19 inches high) Dimensions (W × H × D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)	_		iSCSI volume, video volume management		
Management Searching mode Search by time and event Downloading mode Quick download, batch download, download by segment, download by merging Maintenance Management mode Web-based GUI, serial port CLI, centralized management of multiple devices Alarm mode Sound, light, email, message, web page Log downloading Download no web page Network Protocol iSCSI, RTSP, ONVIF, PSIA Janagement network interface 3, 1000M Ethernet interface MinisAs interface Supported COM 1 USB 3.0 2 Alarm interface 1 HDMI 2 Power supply Redundant Consumption (with HDDs) • Working: ≤308 W (967 BTU with 16 HDDs) HDDs) • Rated: ≤ 550 W Environment temperature • Working: ≤20°C to +40°C (41°F to 104°F) • Storing: -20°C to +70°C (-4°F to +158°F) • Working: 200°C to 90%RH (non-condensing/frozen) • Storing: 5% to 90%RH (non-condensing/frozen) • Dimensions (W × H × D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		Recording mode	Timing recording, manual recording, dual-stream recording, alarm recording		
Downloading mode Download Management mode Maintenance Maintenance Maintenance Network Protocol Data network interface Management network is CSJ, RTSP, ONVIF, PSIA 3, 1000M Ethernet interface Network interface Management network interface Management network is CSJ, RTSP, ONVIF, PSIA 3, 1000M Ethernet interface Network interface Management network interface Network interface Management network interface Network interf	Recording	Video protection	Lock key video, N+1 service protection, ANR, video loss detection and alarm		
Device Maintenance Management mode Web-based GUI, serial port CLI, centralized management of multiple devices Maintenance Alarm mode Sound, light, email, message, web page Download no web page Network Protocol Journal Data network interface Journal Data network interface Management network interface Journal Data network interface Journal Data network interface	Management	Searching mode	Search by time and event		
Device Maintenance Maintenance Alarm mode Sound, light, email, message, web page Network Protocol iSCSI, RTSP, ONVIF, PSIA Journal of Management network interface Management network interface 3, 1000M Ethernet interface MiniSAS interface Supported COM 1 USB 3.0 2 Alarm interface 1 HDMI 2 Power supply Redundant Consumption (with HDDs) • Working: ≤308 W (967 BTU with 16 HDDs) HDDs) • Rated: ≤ 550 W Environment temperature • Working: +5 °C to +40 °C (41 °F to 104 °F) • Storing: -20 °C to +70 °C (-4 °F to +158 °F) General Environment humidity • Working: 20% to 80%RH (non-condensing/frozen) Chassis 3U (19 inches high) Dimensions (W × H × D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		Downloading mode	Quick download, batch download, download by segment, download by merging		
Maintenance Log downloading Download no web page Network Protocol SCSI, RTSP, ONVIF, PSIA Jata network interface Management network interface MiniSAS interface COM USB 3.0 Alarm interface HDMI Power supply Consumption (with HDDs) Environment temperature Storing: -20 °C to +70 °C (-4 °F to +158 °F) Environment humidity Chassis Dimensions (W × H × D) Alarm inters as 3, 1000M Ethernet interface 1, 1000M Ethernet		Management mode	Web-based GUI, serial port CLI, centralized management of multiple devices		
Downloading Download no web page		Alarm mode	Sound, light, email, message, web page		
Data network interface 3, 1000M Ethernet interface	Maintenance	Log downloading	Download no web page		
Interfaces MinisAs interface Supported COM 1 USB 3.0 2 Alarm interface 1 HDMI 2 Power supply Redundant Consumption (with HDDs) Rated: ≤ 550 W Environment temperature	Network	Protocol	iSCSI, RTSP, ONVIF, PSIA		
Interfaces MiniSAS interface Supported		Data network interface	3, 1000M Ethernet interface		
COM			1, 1000M Ethernet interface		
COM USB 3.0 Alarm interface HDMI Power supply Redundant Consumption (with HDDs) Environment temperature Environment humidity Chassis Dimensions (W × H × D) Dimensions (W × H × D) Alarm interface 1 Working: 20 to 40 (967 BTU with 16 HDDs) Redundant Working: ≤308 W (967 BTU with 16 HDDs) Working: ≤308 W (967 BTU with 16 HDDs) Working: 550 W Working: +5 °C to +40 °C (41 °F to 104 °F) Storing: -20 °C to +70 °C (-4 °F to +158 °F) Working: 20% to 80%RH (non-condensing/frozen) Storing: 5% to 90%RH (non-condensing/frozen) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)	late of see	MiniSAS interface	Supported		
Alarm interface HDMI 2 Power supply Redundant Consumption (with HDDs) Rated: ≤ 550 W Environment temperature Environment humidity Chassis Dimensions (W × H × D) HDMI 2 Redundant Working: ≤308 W (967 BTU with 16 HDDs) Rated: ≤ 550 W Working: +5 °C to +40 °C (41 °F to 104 °F) Storing: -20 °C to +70 °C (-4 °F to +158 °F) Working: 20% to 80%RH (non-condensing/frozen) Storing: 5% to 90%RH (non-condensing/frozen) 440 × 132 × 495 mm (17.3 × 5.2 × 19.5 in)	interraces	COM	1		
HDMI2Power supplyRedundantConsumption (with HDDs)• Working: ≤308 W (967 BTU with 16 HDDs)Environment temperature• Working: +5 °C to +40 °C (41 °F to 104 °F)Environment temperature• Storing: -20 °C to +70 °C (-4 °F to +158 °F)Environment humidity• Working: 20% to 80%RH (non-condensing/frozen)Chassis3U (19 inches high)Dimensions (W × H × D)440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		USB 3.0	2		
$\begin{tabular}{cccccccccccccccccccccccccccccccccccc$		Alarm interface	1		
Consumption (with HDDs) HDDs) Rated: ≤ 550 W Environment temperature Output Environment humidity Environment humidity Environment humidity Environment humidity Output Environment humidity Environment humidity Output Environment humidity Output Environment humidity Environment humidity Output Environment humidity Ou		HDMI	2		
HDDs) • Rated: ≤ 550 W Environment • Working: +5 °C to +40 °C (41 °F to 104 °F) temperature • Storing: -20 °C to +70 °C (-4 °F to +158 °F) Environment humidity • Working: 20% to 80%RH (non-condensing/frozen) • Storing: 5% to 90%RH (non-condensing/frozen) Chassis Dimensions (W × H × D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		Power supply	Redundant		
Environment temperature • Working: +5 °C to +40 °C (41 °F to 104 °F) • Storing: -20 °C to +70 °C (-4 °F to +158 °F) • Working: 20% to 80%RH (non-condensing/frozen) • Storing: 5% to 90%RH (non-condensing/frozen) Chassis Olimensions (W × H × D) Dimensions (W × H × D)		Consumption (with	• Working: ≤308 W (967 BTU with 16 HDDs)		
temperature Storing: -20 °C to +70 °C (-4 °F to +158 °F) Environment humidity Working: 20% to 80%RH (non-condensing/frozen) Storing: 5% to 90%RH (non-condensing/frozen) Chassis Ju (19 inches high) Dimensions (W × H × D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		HDDs)	• Rated: ≤ 550 W		
General Environment humidity • Working: 20% to 80%RH (non-condensing/frozen) • Storing: 5% to 90%RH (non-condensing/frozen) Chassis 3U (19 inches high) Dimensions (W × H × D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		Environment	• Working: +5 °C to +40 °C (41 °F to 104 °F)		
Environment humidity Storing: 5% to 90%RH (non-condensing/frozen) Chassis 3U (19 inches high) Dimensions (W × H × D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)	General	temperature	• Storing: -20 °C to +70 °C (-4 °F to +158 °F)		
Dimensions (W × H × 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		Environment humidity			
D) 440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		Chassis	3U (19 inches high)		
Weight (without HDDs) ≤ 20 Kg (44.1 lb)			440 x 132 x 495 mm (17.3 x 5.2 x 19.5 in)		
		Weight (without HDDs)	≤ 20 Kg (44.1 lb)		



Typical Application



Physical Interface



No.	Name	No.	Name
1	Power module 1	7	Reset button
2	HDMI inteface 1	8	Alarm interface
3	USB interface	9	Power module 2
4	Data network interface 1 to 3	10	HDMI interface 2
5	Management network interface	11	RS-232 interface
6	SAS interface		



Hikvision Tested and Recommended HDDs

Note: It is strongly recommended to use enterprise HDDs in RAID mode and iSCSI application for its stability feature. Please consult with Hikvision sales before using HDDs not listed below.

HDD model	Capacity (TB)	HDD model	Capacity (TB)
ST12000NM0008	12	ST1000NM0055	1
ST10000NM0478	10	WD101KRYZ-01	10
ST10000NM0086	10	WD101KRYZ-31	10
ST10000NM0016	10	WD8003FRYZ-31	8
ST8000NM0055	8	WD8003FRYZ-01	8
ST8000NM0016	8	WD6002FRYZ-31	6
ST6000NM0024	6	WD4002FYYZ-31	4
ST4000NM0024	4	WD2005FBYZ	2
ST2000NM0024	2	WD6002FRYZ	6
ST6000NM0115	6	WD4002FYYZ	4
ST4000NM0115	4	HUS726T4TALA6L4	4
ST2000NM0125	2	HUS726T6TALE6L4	6
ST4000NM0035	4	HKS728T8TALE-31	8
ST3000NM0005	3	HUS728T8TALE6L4	8
ST2000NM0055	2	HUH721212ALE-31	12

Available Model

DS-A81016S

Distributed by

HIKVISION[®]

Headquarters

No.555 Qianmo Road, Binjiang District, Hangzhou 310051, China T +86-571-8807-5998 overseasbusiness@hikvision.com

Hikvision USA T+1-909-895-0400 sales.usa@hikvision.com

Hikvision Australia T +61-2-8599-4233 salesau@hikvision.com

Hikvision India T+91-22-28469900 sales@pramahikvision.com

Hikvision Canada T+1-866-200-6690 sales.canada@hikvision.com

Hikvision Thailand T+662-275-9949 sales.thailand@hikvision.com Hikvision Europe T+31-23-5542770 sales.eu@hikvision.com

Hikvision Italy T+39-0438-6902 info.it@hikvision.com

Hikvision Brazil T +55 11 3318-0050 Latam.support@hikvision.com

Hikvision Turkey T +90 (216)521 7070- 7074 sales.tr@hikvision.com

Hikvision Malaysia T+601-7652-2413 sales.my@hikvision.com Hikvision UK & Ireland T +01628-902140 sales.uk@hikvision.com

Hikvision South Africa Tel: +27 (10) 0351172 sale.africa@hikvision.com

Hikvision France T +33(0)1-85-330-450 info.fr@hikvision.com

Hikvision Kazakhstan T +7-727-9730667 nikia.panfilov@hikvision.ru

Hikvision Vietnam T +84-974270888 sales.vt@hikvision.com Hikvision UAE T +971-4-4432090 salesme@hikvision.com

Hikvision Singapore T +65-6684-4718 sg@hikvision.com

Hikvision Spain T +34-91-737-16-55 info.es@hikvision.com

Hikvision Tashkent T +99-87-1238-9438 uzb@hikvision.ru

Hikvision Hong Kong T +852-2151-1761 info.hk@hikvision.com Hikvision Russia T +7-495-669-67-99 saleru@hikvision.com

Hikvision Korea T +82-{0}31-731-8817 sales.korea@hikvision.com

Hikvision Poland T +48-22-460-01-50 info.pl@hikvision.com

Hikvision Indonesia T+62-21-2933759 Sales Indonesia@hikvision.com

Hikvision Colombia sales.colombia@hikvision.com