



**DS-7204/7208/7216HVI-ST  
Series DVR  
Technical Manual**

## Notices

---

The information in this documentation is subject to change without notice and does not represent any commitment on behalf of HIKVISION. HIKVISION disclaims any liability whatsoever for incorrect data that may appear in this documentation. The product(s) described in this documentation are furnished subject to a license and may only be used in accordance with the terms and conditions of such license.

Copyright © 2006-2011 by HIKVISION. All rights reserved.

**This documentation is issued in strict confidence and is to be used only for the purposes for which it is supplied.** It may not be reproduced in whole or in part, in any form, or by any means or be used for any other purpose without prior written consent of HIKVISION and then only on the condition that this notice is included in any such reproduction. No information as to the contents or subject matter of this documentation, or any part thereof, or arising directly or indirectly therefrom, shall be given orally or in writing or shall be communicated in any manner whatsoever to any third party being an individual, firm, or company or any employee thereof without the prior written consent of HIKVISION. Use of this product is subject to acceptance of the HIKVISION agreement required to use this product. HIKVISION reserves the right to make changes to its products as circumstances may warrant, without notice.

**This documentation is provided "as-is," without warranty of any kind.**

Please send any comments regarding the documentation to:

[overseasbusiness@hikvision.com](mailto:overseasbusiness@hikvision.com)

Find out more about HIKVISION at [www.hikvision.com](http://www.hikvision.com)

## Overview

---

Developed by Hikvision on the basis of the latest technology, DS-7216HVI-ST Series Digital Video Recorder combines the latest in advanced H.264 video encoding and decoding technologies delivering high performance rock-solid reliability and longer recording times.

DS-7216HVI-ST Digital Video Recorder can be used as a standalone video surveillance product, as well as to build up a powerful surveillance network making it is perfect for home or small business applications.



**DS-7216HVI-ST**

## **Main Features**

---

- **User-friendly GUI for easy operation**
- **1024×768 VGA output resolution**
- **Simultaneous VGA and CVBS output**
- **Up to 4CIF resolution**
- **Scheduled and event recording parameters configurable per individual camera**
- **Partial digital zoom by using mouse when in PTZ control mode**
- **16-ch synchronous playback**
- **Support dual stream**
- **Different recording storage period configurable for each channel**
- **NTP, SADP, DHCP protocols supported**

## Functions & Performances

---

### Compression

- PAL/NTSC adaptive video inputs.
- H.264 video compression with high reliability and superior definition.
- G.711 audio compression standard.
- Independent video encoding parameters, including frame rate, resolution, bit rate, video quality, etc.
- Scheduled and event recording parameters configurable for per individual camera.
- Support dual stream.
- Encoding for both audio/video composite stream and video stream; audio and video synchronization during composite stream encoding.
- Compression, storage and network transmission of video image at 4CIF or CIF resolution.
- Watermark technology.

### Local Monitoring

- Up to 1024×768 resolution for VGA output display.
- Simultaneous VGA and CVBS output.
- 1/4/9/16-camera video live view, with the camera order adjustable.
- Group switch, manual switch and automatic cycle modes selectable for video live view, with the auto cycle period configurable.
- Digital zoom in live view mode.
- Shield of assigned channel for live view.
- Privacy masking capability.
- Multiple PTZ protocols supported, and settings and callup of presets, patrols and patterns.
- Video image zoom-in by clicking the mouse and tracing by dragging mouse in PTZ control mode.

### Hard Disk Management

- Connection to 2 SATA hard disks supported, with up to 2TB storage capacity.
- S.M.A.R.T technology.
- HDD standby function.
- HDD file system is compatible with Windows. Use pre-allocating hard disk management technology, and no disk fragments.

### Recording

- Cycle and non-cycle recording mode.
- Scheduled and event video encoding parameters.

- Multiple recording types, including manual, continuous, alarm, motion, motion | alarm and motion & alarm recording, etc.
- 8 recording time periods with separate recording types.
- Pre-record and Post-record time for alarm and motion detection, and pre-record time for schedule and manual recording.
- Lock and unlock of video files.
- HDD property can be set to read-only.
- Video data search and playback by channel number, recording type, time etc.
- Digital zoom function in playback mode.
- Pause, play fast, play slow, skip forward, and skip backward when playback, locating in progress bar by dragging the mouse.
- 16-channel synchronous playback.

## **Backup**

- Record files backed up via USB device.
- Bunch backup by file or by time.
- Record files edited for backup in playback.
- Management and maintenance for backup devices.

## **Alarm & Exception**

- Configurable arming time for alarm in/out.
- Various alarm types supported: alarms for video loss, motion detection, video tempering, video signal abnormal, video in/out format unmatched, illegal access, network disconnection, IP conflict, hard disk error and hard disk full.
- Various alarm response actions supported: camera recording, relay out, on-screen warning, audible warning and upload to center, etc.
- Auto recovery from exceptions.

## **Others**

- Control of DVR via front panel keys, mouse and IR remote control.
- Three-level user management, each user with individual operating permission for DVR and camera.
- Powerful record and search for log of operation, alarm and exceptions.
- Import/export of device configuration files.

## **Network**

- 10/100M adaptive network interface.
- TCP/IP protocol suites, PPPoE, DHCP, DNS, DDNS, NTP, SADP protocols, etc.
- Unicast and multicast supported; TCP and UDP protocols applicable in unicast transmission.
- Remote search, playback and download, lock/unlock of video files;

support breakpoint resume.

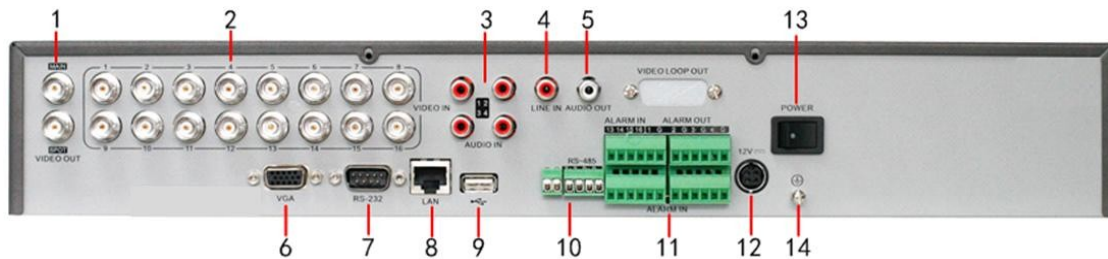
- Remote access and configuration of parameters; remote import/export of device configuration parameters.
- Remote access of device running status, system log and alarm status.
- Remote control of DVR via button operation.
- Remote lock/unlock of panel buttons and mouse.
- Remote formatting of hard disk, upgrade, reboot/shutdown and other system maintenance operations.
- RS-485 transparent channel transmission.
- Event alarm and exceptions upload to remote management host.
- Remote manual recording.
- Remote video image capture in JPEG format.
- Remote PTZ control.
- Voice talk and broadcast.
- Built-in WEB Server.

## **Development**

- Provision of SDK in Windows and Linux operating systems.
- Application software source code of Demo.
- Support and training service for application system development.

## Rear Panel & Interfaces

### Rear Panel of DS-7216HVI-ST



- ① MAIN/SPOT VIDEO OUT
- ② VIDEO IN
- ③ AUDIO IN
- ④ LINE IN
- ⑤ AUDIO OUT
- ⑥ VGA Interface
- ⑦ RS-232 Serial Interface
- ⑧ LAN
- ⑨ USB Interface
- ⑩ RS-485 Interface
- ALARM IN, ALARM OUT
- 12VDC Power Supply Interface
- POWER
- GND



## Specifications

Model	DS-7216HVI-ST	
Video/Audio input	Video compression	H.264
	Analog video input	16-ch, BNC connector (1.0 Vp-p, 75 Ω); PAL / NTSC adaptive
	Audio compression	G.711
	Audio input	4-ch, RCA connector (2 Vp-p, 1 kΩ)
	Voice talk input	1-ch, RCA (2.0 Vp-p, 1 kΩ)
	VGA output	1-ch, resolution: 1024 × 768/60 Hz
	CVBS output	2-ch, BNC connector (1.0 Vp-p, 75 Ω); Resolution: PAL: 704 × 576, NTSC: 704 × 480
	Audio output	1-ch, RCA connector (Linear, 1 kΩ)
Video/Audio output	Recording resolution	4CIF / 2CIF / CIF / QCIF
	Frame rate	4CIF / 2CIF: 6 fps CIF / QCIF: 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps ~ 2048 kbps, or user-defined (Max. 3072 kbps)
	Stream type	Video / Video & Audio
	Audio bit rate	64 kbps
	Dual stream	Support
	Synchronous playback	16-ch
Hard disk	Type	2 SATA interfaces
	Capacity	Up to 2 TB capacity for each interface
External interface	Network interface	1, RJ45 10 M / 100 M adaptive Ethernet interface
	Serial interface	1 RS-485 interface, 1 RS-232 interface
	USB interface	2, USB 2.0
	Alarm in	16
	Alarm out	4
Others	Power supply	12 VDC
	Consumption	≤15 W (without hard disk or DVD-R/W)
	Working temperature	- 10°C ~ + 55°C
	Working humidity	10% ~ 90%
	Chassis	19-inch standard rack-mounted 1.5 U chassis
	Dimensions (W x D x H)	440 × 390 × 70 mm
	Weight	≤8 kg (without hard disk or DVD-R/W)

## Overview

---

Developed by Hikvision on the basis of the latest technologies, DS-7208HVI-ST Series Digital Video Recorder combines with the advanced H.264 video encoding and decoding standard and maintains high performance rock-solid reliability and longer recording service time.

DS-7208HVI-ST Digital Video Recorder can be used as a standalone video surveillance product, as well as to build up a powerful surveillance network which is suitable for home or small-scale business applications.



**DS-7208HVI-ST**

## **Main Features**

---

- **User-friendly GUI for easy operation**
- **1024×768 VGA output resolution**
- **Simultaneous VGA and CVBS output**
- **Up to 4CIF resolution**
- **Scheduled and event recording parameters configurable per individual camera**
- **Partial digital zoom by using mouse when in PTZ control mode**
- **8-ch synchronous playback**
- **Support dual stream**
- **Different recording storage period configurable for each channel**
- **NTP, SADP, DHCP protocols supported**

## Functions & Performances

---

### Compression

- PAL / NTSC adaptive video inputs.
- H.264 video compression with high reliability and superior definition.
- G.711 audio compression standard.
- Independent video encoding parameters, including frame rate, resolution, bit rate, video quality, etc.
- Scheduled and event recording parameters configurable for per individual camera.
- Support dual stream.
- Encoding for both audio/video composite stream and video stream; audio and video synchronization during composite stream encoding.
- Compression, storage and network transmission of video image at 4CIF or CIF resolution.
- Watermark technology.

### Local Monitoring

- Up to 1024×768 resolution for VGA output display.
- Simultaneous VGA and CVBS output.
- 1/4/9-camera video live view, with the camera order adjustable.
- Group switch, manual switch and automatic cycle modes selectable for video live view, with the auto cycle period configurable.
- Digital zoom in live view mode.
- Shield of assigned channel for live view.
- Privacy masking capability.
- Multiple PTZ protocols supported, and settings and callup of presets, patrols and patterns.
- Video image zoom-in by clicking the mouse and tracing by dragging mouse in PTZ control mode.

### Hard Disk Management

- Connection to 2 SATA hard disks supported, with up to 2TB storage capacity.
- S.M.A.R.T technology.
- HDD standby function.
- HDD file system is compatible with Windows. Use pre-allocating hard disk management technology, and no disk fragments.

### Recording

- Cycle and non-cycle recording mode.
- Scheduled and event video encoding parameters.

- Multiple recording types, including manual, continuous, alarm, motion, motion | alarm and motion & alarm recording, etc.
- 8 recording time periods with separate recording types.
- Pre-record and Post-record time for alarm and motion detection, and pre-record time for schedule and manual recording.
- Lock and unlock of video files.
- HDD property can be set to read-only.
- Video data search and playback by channel number, recording type, time etc.
- Digital zoom function in playback mode.
- Pause, play fast, play slow, skip forward, and skip backward when playback, locating in progress bar by dragging the mouse.
- 8-channel synchronous playback.

## **Backup**

- Record files backed up via USB device.
- Bunch backup by file or by time.
- Record files edited for backup in playback.
- Management and maintenance for backup devices.

## **Alarm & Exception**

- Configurable arming time for alarm in/out.
- Various alarm types supported: alarms for video loss, motion detection, video tempering, video signal abnormal, video in/out format unmatched, illegal access, network disconnection, IP conflict, hard disk error and hard disk full.
- Various alarm response actions supported: camera recording, relay out, on-screen warning, audible warning and upload to center, etc.
- Auto recovery from exceptions.

## **Others**

- Control of DVR via front panel keys, mouse and IR remote control.
- Three-level user management, each user with individual operating permission for DVR and camera.
- Powerful record and search for log of operation, alarm and exceptions.
- Import/export of device configuration files.

## **Network**

- 10/100M adaptive network interface.
- TCP/IP protocol suites, PPPoE, DHCP, DNS, DDNS, NTP, SADP protocols, etc.
- Unicast and multicast supported; TCP and UDP protocols applicable in unicast transmission.
- Remote search, playback and download, lock/unlock of video files;

support breakpoint resume.

- Remote access and configuration of parameters; remote import/export of device configuration parameters.
- Remote access of device running status, system log and alarm status.
- Remote control of DVR via button operation.
- Remote lock/unlock of panel buttons and mouse.
- Remote formatting of hard disk, upgrade, reboot/shutdown and other system maintenance operations.
- RS -485 transparent channel transmission.
- Event alarm and exceptions upload to remote management host.
- Remote manual recording.
- Remote video image capture in JPEG format.
- Remote PTZ control.
- Voice talk and broadcast.
- Built-in WEB Server.

## **Development**

- Provision of SDK in Windows and Linux operating systems.
- Application software source code of Demo.
- Support and training service for application system development.

## Rear Panel & Interfaces

### Rear Panel of DS-7208HVI-ST



- ① MAIN/SPOT VIDEO OUT
- ② VIDEO IN
- ③ AUDIO IN
- ④ LINE IN
- ⑤ AUDIO OUT
- ⑥ VGA Interface
- ⑦ RS-232 Serial Interface
- ⑧ LAN
- ⑨ USB Interface
- ⑩ POWER
- RS-485 Interface, ALARM IN, ALARM OUT
- 12VDC Power Supply Interface
- GND

## Specifications

Model	DS-7208HVI-ST	
Video/Audio input	Video compression	H.264
	Analog video input	8-ch, BNC connector (1.0 Vp-p, 75 Ω); PAL / NTSC adaptive
	Audio compression	G.711
	Audio input	4-ch, RCA connector (2 Vp-p, 1 kΩ)
	Voice talk input	1-ch, RCA (2.0 Vp-p, 1 kΩ)
	VGA output	1-ch, resolution: 1024 × 768/60 Hz
	CVBS output	2-ch, BNC connector (1.0 Vp-p, 75 Ω); Resolution: PAL: 704 × 576, NTSC: 704 × 480
	Audio output	1-ch, RCA connector (Linear, 1 kΩ)
Video/Audio output	Recording resolution	4CIF / 2CIF / CIF / QCIF
	Frame rate	4CIF / 2CIF: 8 fps CIF / QCIF: 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps ~ 2048 kbps, or user-defined (Max. 3072 kbps)
	Stream type	Video/ Video & Audio
	Audio bit rate	64kbps
	Dual stream	Support
	Synchronous playback	8-ch
Hard disk	Type	2 SATA interfaces
	Capacity	Up to 2TB capacity for each interface
External interface	Network interface	1, RJ45 10 M / 100 M adaptive Ethernet interface
	Serial interface	1 RS-485 interface, 1 RS-232 interface
	USB interface	2, USB 2.0
	Alarm in	8
	Alarm out	4
Others	Power supply	12 VDC
	Consumption	≤10 W (without hard disk or DVD-R/W)
	Working temperature	-10 °C ~ +55 °C
	Working humidity	10% ~ 90%
	Chassis	19-inch standard rack-mounted 1U chassis
	Dimensions (W x D x H)	445× 45 ×290 mm
	Weight	≤4 kg (without hard disk or DVD-R/W)



## Overview

---

Developed by Hikvision on the basis of the latest technologies, DS-7204HVI-ST Series Digital Video Recorder combines with the advanced H.264 video encoding and decoding standard and maintains high performance rock-solid reliability and longer recording service time.

DS-7204HVI-ST Digital Video Recorder can be used as a standalone video surveillance product, as well as to build up a powerful surveillance network which is suitable for home or small-scale business applications.



**DS-7204HVI-ST**

## Main Features

---

- **User-friendly GUI for easy operation**
- **Up to 1024×768 VGA output resolution**
- **Simultaneous VGA and CVBS output**
- **Up to CIF/QCIF real-time or 4CIF non-real-time resolution**
- **Scheduled and event recording parameters configurable per individual camera**
- **Partial digital zoom by using mouse when in PTZ control mode**
- **Up to 4-ch synchronous playback**
- **Support dual stream**
- **Different recording storage period configurable for each channel**
- **NTP, SADP, DHCP protocols supported**

## Functions & Performances

---

### Compression

- PAL/NTSC adaptive video inputs.
- H.264 video compression with high reliability and superior definition.
- G.711 audio compression standard.
- Independent video encoding parameters, including frame rate, resolution, bit rate, video quality, etc.
- Scheduled and event recording parameters configurable for per individual camera.
- Support dual stream.
- Encoding for both audio/video composite stream and video stream; audio and video synchronization during composite stream encoding.
- Compression, storage and network transmission of video image at 4CIF or CIF resolution.
- Watermark technology.

### Local Monitoring

- Up to 1024×768 resolution for VGA output display.
- Simultaneous VGA and CVBS output.
- 1/4-camera video live view, with the camera order adjustable.
- Group switch, manual switch and automatic cycle modes selectable for video live view, with the auto cycle period configurable.
- Digital zoom in live view mode.
- Shield of assigned channel for live view.
- Privacy masking capability.
- Multiple PTZ protocols supported, and settings and callup of presets, patrols and patterns.
- Video image zoom-in by clicking the mouse and tracing by dragging mouse in PTZ control mode.

### Hard Disk Management

- Connection to 1 SATA hard disk supported, with up to 2TB storage capacity.
- S.M.A.R.T technology.
- HDD standby function.
- HDD file system is compatible with Windows. Use pre-allocating hard disk management technology, and no disk fragments.

### Recording

- Cycle and non-cycle recording mode.
- Scheduled and event video encoding parameters.

- Multiple recording types, including manual, continuous, alarm, motion, motion | alarm and motion & alarm recording, etc.
- 8 recording time periods with separate recording types.
- Pre-record and Post-record time for alarm and motion detection, and pre-record time for schedule and manual recording.
- Lock and unlock of video files.
- HDD property can be set to read-only.
- Video data search and playback by channel number, recording type, time etc.
- Digital zoom function in playback mode.
- Pause, play fast, play slow, skip forward, and skip backward when playback, locating in progress bar by dragging the mouse.
- 4-channel synchronous playback.

## **Backup**

- Record files backed up via USB device.
- Bunch backup by file or by time.
- Record files edited for backup in playback.
- Management and maintenance for backup devices.

## **Alarm & Exception**

- Configurable arming time for alarm in/out.
- Various alarm types supported: alarms for video loss, motion detection, video tempering, video signal abnormal, video in/out format unmatched, illegal access, network disconnection, IP conflict, hard disk error and hard disk full.
- Various alarm response actions supported: camera recording, relay out, on-screen warning, audible warning and upload to center, etc.
- Auto recovery from exceptions.

## **Others**

- Control of DVR via front panel keys, mouse and IR control.
- Three-level user management, each user with individual operating permission for DVR and camera.
- Powerful record and search for log of operation, alarm and exceptions.
- Import/export of device configuration files.

## **Network**

- 10/100M adaptive network interface.
- TCP/IP protocol suites, PPPoE, DHCP, DNS, DDNS, NTP, SADP protocols, etc.
- Unicast and multicast supported; TCP and UDP protocols applicable in unicast transmission.
- Remote search, playback and download, lock/unlock of video files;

support breakpoint resume.

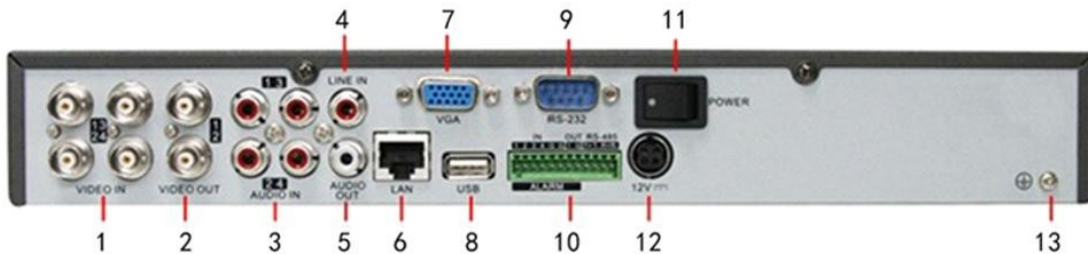
- Remote access and configuration of parameters; remote import/export of device configuration parameters.
- Remote access of device running status, system log and alarm status.
- Remote control of DVR via button operation.
- Remote lock/unlock of panel buttons and mouse.
- Remote formatting of hard disk, upgrade, reboot/shutdown and other system maintenance operations.
- RS -485 transparent channel transmission.
- Event alarm and exceptions upload to remote management host.
- Remote manual recording.
- Remote video image capture in JPEG format.
- Remote PTZ control.
- Voice talk and broadcast.
- Built-in WEB Server.

## **Development**

- Provision of SDK in Windows and Linux operating systems.
- Application software source code of Demo.
- Support and training service for application system development.

## Rear Panel & Interfaces

### Rear Panel of DS-7204HVI-ST



- ① VIDEO IN
- ② VIDEO OUT
- ③ AUDIO IN
- ④ LINE IN
- ⑤ AUDIO OUT
- ⑥ LAN
- ⑦ VGA Interface
- ⑧ USB Interface
- ⑨ RS-232 Serial Interface
- ⑩ RS-485 Interface, ALARM IN, ALARM OUT
- POWER
- 12VDC Power Supply Interface
- GND

## Specifications

Model	DS-7204HVI-ST	
Video/Audio input	Video compression	H.264
	Analog video input	4-ch, BNC connector (1.0 Vp-p, 75 Ω); PAL / NTSC adaptive
	Audio compression	G.711
	Audio input	4-ch, RCA connector (2 Vp-p, 1 kΩ)
	Voice talk input	1-ch, RCA (2.0 Vp-p, 1 kΩ)
	VGA output	1-ch, resolution: 1024 × 768 / 60 Hz
	CVBS output	2-ch, BNC connector (1.0 Vp-p, 75 Ω); Resolution: PAL: 704 × 576, NTSC: 704 × 480
	Audio output	1-ch, RCA connector (Linear, 1 kΩ)
Video/Audio output	Recording resolution	4CIF / 2CIF / CIF / QCIF
	Frame rate	4CIF / 2CIF: 12 fps CIF / QCIF: 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps ~ 2048 kbps, or user-defined (Max. 3072 kbps)
	Stream type	Video/ Video & Audio
	Audio bit rate	64 kbps
	Dual stream	Support
	Synchronous playback	4-ch
Hard disk	Type	1 SATA interface
	Capacity	Up to 2TB capacity for each interface
External interface	Network interface	1, RJ45 10 M / 100 M adaptive Ethernet interface
	Serial interface	1 RS-485 interface, 1 RS-232 interface
	USB interface	2, USB 2.0
	Alarm in	4
	Alarm out	1
Others	Power supply	12 VDC
	Consumption	≤10 W (without hard disk or DVD-R/W)
	Working temperature	-10°C ~ +55°C
	Working humidity	10% ~ 90%
	Dimensions (W x D x H)	315 × 230 × 45 mm
	Weight	≤2.5 kg (without hard disk or DVD-R/W)