HIKVISION

H.264 High Resolution

Video & Audio Compression Board

DS-4000HSI Series

Brief Introduction of Hikvision DS-4000HSI card

DS-4000HSI compression board is Hikvision's new generation product, which adopts most advanced H.264 video compression algorithm and OggVorbis audio compression technology. The new DSP on DS-4000HSI has much better performance than before, and one DSP can manage to compress 8 channels video with CIF resolution and audio in real-time mode. It also supports compressing 8 channels video with 2CIF/DCIF/4CIF resolution in non real-time mode. The preview resolution is 4CIF. Newly designed PCB of the card more compact and steady and compatible SDK interface makes development faster and easier.

DS-4000HSI board uses fully optimized algorithm based on DSP technology to implement video & audio encoding, video & audio preview and motion detection, etc. Video image is directly transmitted from board to display frame buffer and compressed stream is also directly sent to host's memory. The whole transmit doesn't need any intervention of host computer processor, saving resources of host computer's processor greatly. One Personal computer can support up to 64 channels Video and audio input, parameters of each channel can be set independently and will not affect each other.

DS-4000HSI compression board supports Windows 2000/XP operating system at present. Hikvision provides demonstration application with its source code and SDK for the card. The whole SDK that is compatible with the DS-4000HCI series products includes system SDK, player SDK, networks SDK, media Player plug in, etc, and Hikvision also provides technical support and good after- sale service.

Model Description:

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DS  -  40    xx    HSI
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Model name

Channel Number

Card Series

Digital Surveillance
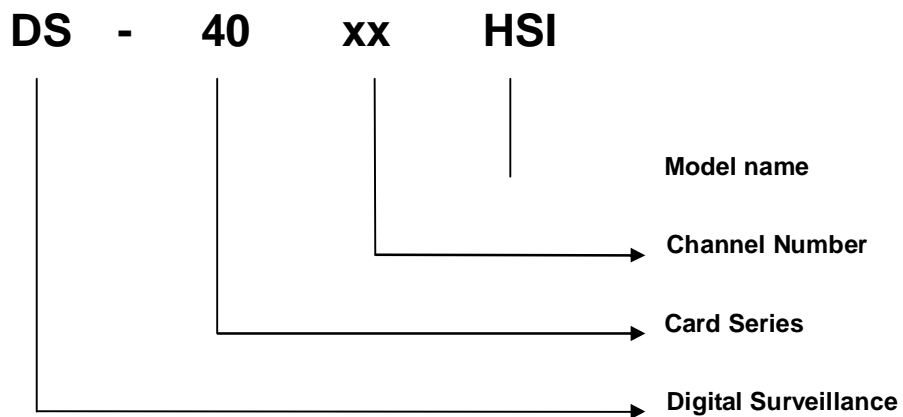
DS-4008HSI

DS-4016HSI

Features & Functions:

H.264 (MPEG-4/Part 10) video compression standard leads to high compression ratio and good video quality

OggVorbis audio compression standard, with 16 kHz sampling rate and 16 kbps output bitrate

Real-time Video and Audio compression with CIF resolution, the bitrate can be 512kbps or even 768kbps in some scene.

4CIF preview resolution

Comply with PCI 2.2 standard, Support PCI-X slot, A PC can support up to 64 channels

Support Windows2000/XP operation system

Provide full SDK, demonstration with source code

Provide player SDK and network SDK for PC platform. Less than 1 second delay in LAN.

I.B.P parameters are configurable.

Video quality and bitrate are configurable.

Brightness, contrast, saturation and hue of Video signal are configurable.

Support motion detection

Support OSD, LOGO, and MASK overlay

Don't support dual stream.

Don't support DS400xMDI card at local PC

Merits of Adopting Hikvision H.264 Compression Board

H.264 encoding has the advantage of high image quality, low bitrate and low storage requirement, especially suitable for digital video security. Hikvision H.264 compression board is the state-of-the-art video / audio compression board, which adopts H.264 ACE (ADVANCED CODE EFFICIENCY). Compared with other compression board, its advantage embodies the following aspects:

Save storage space

Hikvision board compression ratio is higher than those that adopt MPEG-1 or other standards. Given the same capacity of hard disk, Hikvision board leads to longer recording time, thus reduces storage costs and maintenance expenses and improves systematic reliability.

Excellent image quality

Hikvision board adopts variable bitrate coding. It assures constant image quality to different scene and motion picture. Even violent motion cannot bring the mosaic phenomenon. Hikvision board supports real time preview without wobble or time delay.

Preeminent characters of network transmission

Hikvision board adjusts parameter dynamically, which is suitable to assure excellent and fluent image quality in network transmission. It supports 4CIF, DCIF, 2CIF, CIF, QCIF coding, variable bitrate and variable frame rate.   This is more suitable for narrowband transmission, for instance, through PSTN, ISDN, DDN, etc.

Convenient control

Hikvision board's parameters, such as image quality, frame rate, and sensitive tolerance of motion detection can be adjusted when encoding. Actively setting parameters is significant in video security.

Flexible and reliable motion detection

Hikvision board adopts most advanced motion detecting technology whose analytical precision can be adjusted dynamically. It can not only detect micro-motion but also throw away misinformation. Reliable motion detection and video setting reduce storage requirement. The whole detecting procedure is completely done on board. Motion detection is completely independent from compression. It can detect both fast and slow motion.

Convenient video overlay function

Hikvision board supports flexible title overlay function. It can overlap time on active video with transparent processing. Its location can be adjusted conveniently.

Outstanding stability and sustainability

Hikvision board adopts encoding algorithm, SDK function and decoding software, which are specially designed for digital video security.   All of these make Hikvision board reliable and stable

Specifications:

Model	DS-4008HSI	DS-4016HSI
Video Input	8 Channels(PAL/NTSC)	16 Channels(PAL/NTSC)
	BNC(Vp-p = 1.0V, 75Ω)	
Audio Input	8 Channels	16 Channels
	BNC(Vp-p=2.0V,SNR > 83DB,Linear Electrical Level ,1000Ω)	
Encode DSP number	1	2
Preview Resolution	Resolution: 704*576(PAL),704*480(NTSC)	
Video Compression	H.264, Support CBR, VBR; Frame rate:1~25F/s(PAL),1~30F/s(NTSC)	
Compression Resolution	**Real-Time Mode:** CIF:352*288(PAL), 352*240(NTSC) QCIF:176*144(PAL), 176*120(NTSC)	
	Non Real-Time Mode: 4CIF:704*576(PAL), 704*480(NTSC) DCIF:528*384(PAL), 528*320(NTSC) 2CIF:704*288(PAL), 704*240(NTSC) CIF:352*288(PAL), 352*240(NTSC) QCIF:176*144(PAL), 176*120(NTSC)	
Audio Compression	OggVorbis, Sample ratio is 16KHz, Output ratio is 16kbps	
Power Consumption	Less than 4.5W	Less than 9W
Working Temperature	-10℃--+50℃	
Working Humidity	10%--90%	
Dimension	178mm*99mm	198mm*100mm

System Requirements	OS: Windows 2000/XP/Server 2003
	CPU: Intel Series
	Motherboard: based on Intel 845 / 865 /915/925/945 Chipset
	Memory: 256MB or above
	Display Adapter: Nvidia Geforce Mx400/420/440 serials, FX 5200/5600 GeForce 6600
	ATI Radeon 7000/7500/8500/9000/9200/9550/9600 serials, ATI X300/700
	Intel 845G/865G/915G integrated Graphics Controller

Ø In real-time mode, Video and Audio compression with CIF/QCIF resolution is real-time, and the bitrate can be 512kbps or even 768kbps in some scene.

Ø In non real-time mode, Each channel's frame rate of one DSP:

Resolution applied to 8 channels of one DSP		Bitrate		
		256kbps	512kbps	768kbp
4CIF	704*576(PAL)	3~**4** △	2~4 △	3~4 △
	704*480(NTSC)	3~4 △	3~4 △	3~4 △
DCIF	528*384(PAL)	5~6 △	4~5 △	5 △
	528*320(NTSC)	6 △	5 △	5 △
2CIF	704*288(PAL)	9	8	8
	704*240(NTSC)	10	9	9
CIF	352*288(PAL)	20	20	20
	352*240(NTSC)	24	22	21
QCIF	176*144(PAL)	25	25	25
	176*120(NTSC)	25	25	25

Note:
1. Using less channels of one DSP for 4CIF, the performance will be much better.
2. The sign △ means the preview with this resolution and bitrate is not real-time.