



- ▶ Remarkable H.264 compression performance
- ▶ 4 CVBS inputs of either NTSC or PAL
- ▶ 4 audio inputs and 4 audio outputs
- ▶ 4 independent H264 streams with a max. bit rate of 3MBit/s per stream
- ▶ 4 independent RGB channels for local camera display on DSS
- ▶ 4 independent luminance channels for algorithms
- ▶ Audio can be controlled independently of video stream
- ▶ Up to five AVM-4004 cards per PRO-6000 system
- ▶ Colour-coded connections



The AVM-4004 is Cathexis' flagship video card, providing image capture, live display, transmission and replay at double the compression performance of its predecessor, the AVM-3000/3100.

H.264 is a tipping point that has changed the way the world records, views and handles video. This faster, smaller, higher-quality video has extended the depth and scope of full-motion video applications, translating into significant benefits for the surveillance and other video-based industries.

The Cathexis upgrade from MPEG-2 to H.264 is in line with this unprecedented global adoption of the H.264 standard, and sets Cathexis at the leading edge of digital surveillance video solutions.

As many as five AVM-4004 cards can be fitted into a PRO-6000 processor platform, providing 20 channels of full-motion NTSC or PAL video that is either synchronized with audio, or treats audio as an independent stream.

By default, the card is designed for video input connectivity via a standard Cathexis BNC or VMX rear-panel connector unit, so

there are no BNC connectors on the card.

An option is to order the BNC-2004 patch panel, which provides four BNC connections directly to the card.

Audio is optional, with audio inputs and outputs each connecting via a 16-way ribbon cable to an AJA-1000 Audio Jack Assembly, which bolts into an available slot in the processor platform's rear-panel.

For duplex audio, it is necessary to order two AJA-1000s with the card. These are delivered with ribbon cables.

NOTE: SLOT LIMITATION ON THE PROCESSOR PLATFORM REAR-PANEL

The standard PRO-6000 processor platform has eight horizontal slots. For duplex audio, each AVM-4004 card requires two of these slots. Careful planning is required with audio functionality, as 1) rear-panel slots may already be in use by other hardware such as I/O card alarm inputs and relay outputs, and 2) at best, a maximum of four AVM-4004s can have full audio (4cards x 2 horizontal slots = all 8 horizontal chassis slots).

H.264

H.264 / Advanced Video Coding (AVC) is a vendor-independent industry standard for video compression that is rapidly being adopted by the biggest international users of web-based and other remote transmission video (for example, Windows Media Player, Flash video, iPod, YouTube, Blu-Ray, QuickTime, Apple iPhone, Apple iChat videoconferencing, 3G, and digital TV transmitters such as DVB-T and ISDB-T DVM).

Advantages over earlier compression formats

1. The greatest advantage is that H.264 has better compression performance than previous standards.
2. The H.264 format is more flexible, with more options than earlier formats, which makes it suitable for a broader range of applications, from professional quality television broadcasting, to videoconferencing, to webcams.
3. Because the standard is rapidly becoming a global norm, video content producers of all types are able to encode to a single, widely acceptable standard where the content is easily viewed and manipulated by end-users.

Disadvantage compared to earlier compression formats

For the equivalent resolution and frame rate, H.264 requires more CPU and RAM than earlier standards

Ordering information

AVM-4004	4-channel PCI-based H.264 compression card
BNC-2004	(Optional) 4-Input card-mounted Patch Panel
AJA-1000	Audio Jack Assembly

Video Specifications

Video std	CCIR/PAL and EIA/NTSC
Compression	H264
Video inputs	4x CVBS inputs of either NTSC or PAL
Input connectors	CVBS inputs may be connected either via a VMX product (via the standard 16 way ribbon cable) or via a BNC-2004 patch panel, which provides four BNC connectors directly on the AVM-4004
Bit Range	100 kb/s to 2Mb/s
Max cards per DSS	Up to five AVM-4004s can be installed in a single PRO-6000 system
Channels	<ul style="list-style-type: none"> ▶ 4 independent H264 streams with a maximum bitrates of 3MBit/s per stream at 25 fps PAL / 30 fps NTSC ▶ 4 independent RGB channels for local camera display on DSS ▶ 4 independent luminance channels for algorithms
Recording Rate	<ul style="list-style-type: none"> ▶ At 704 x 576 pixels (full frame/4 CIF/2 fields interlaced) 30 frames per second NTSC ▶ At 352 x 288 pixels (CIF/1 field non interlaced) 30 frames per second NTSC
Live Viewing Rate (RGB)	<ul style="list-style-type: none"> ▶ At 720 x 288 (2 field / 4 CIF) Per camera up to 30 frames per second NTSC (channel usage dependant) ▶ At 360 x 288 (1 field / CIF) Per camera up to 30 frames per second NTSC (channel usage dependant)
Playback Rate	Playback is not card related, it depends on the system processing speed at the time of playback.

Audio Specifications

Inputs / outputs	4x audio inputs and 4x outputs, Line voltage (1V peak to peak)
Audio hardware	Audio inputs and output connect separately via 16 way ribbon cables to two Cathexis AJA-1000 connectors - one provided for inputs and one for outputs
General	<ul style="list-style-type: none"> ▶ Dedicated audio processing channel per camera input. ▶ Audio channel synchronized with

video for recording

- ▶ Audio channels can optionally be used independently of video

Compression Type	Audio Compression is AAC when audio is compressed with video
Amplification	A microphone / input must connect via a preamplifier and a speaker / output to an amplifier.

General

Approvals	Requirements of EMC directive 89/336/EEC: SABS CISPR22:1997 SABS CISPR24:1997 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-11 IEC 61000-3-2 IEC 61000-3-3
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Requirements

DSS software	DSS release 5041d1 or later. Note that the AVM-4004 does not function by default on NetBSD 161 units – NetBSD 161 users please refer to Support Desk.
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Rear-panel connector unit	BNC-xxxx or VMX-xxxx product (via the standard 16 way ribbon cable) Note that a BNC-2004 patch panel provides 4 BNC connectors directly on the AVM-4004
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Audio	2x AJA-1000 Audio Jack Assembly (one for audio in and one for audio out) NOTE CONNECTOR LIMITATION ON THE PROCESSOR PLATFORM: – Each AVM-4004 has an Audio In connector and an Audio Out connector that fit in slots in the processor platform’s rear panel. Careful planning is required, as rear panel slots are limited, with some possibly already being used for other hardware (for example I/O card alarm inputs / relay outputs). It is not possible to have full audio across five AVM-4004 cards.
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Audio Amplification	A microphone / input must connect via a preamplifier and a speaker / output to an amplifier.
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