



AHD/AVD 6x10  
AHD/AVD 4x10  
AHD/AVD 1x10

## HIGHLIGHTS

- Video output:
  - 1 x HD-SDI / SDI
- Monitor output:
  - 1 x HD-SDI / SDI
- External sync input
- BISS 1-E descrambling
- Audio outputs:
  - 4,8 or 16 embedded channels
  - 2 or 4 AES/EBU channels
- Transport inputs:
  - 1 or 2 x IP with FEC (SMPTE 2022) (Unicast or Multicast)
  - 1 x DVB-ASI
- ASI Loop output
- H.264 Profiles:
  - Hi422P@L4, HP@L4 and MP@L4
- MPEG-2 Profiles:
  - 422P@HL and MP@HL
- HDTV formats:
  - 720p50, 720p59.94, 720p60
  - 1080i50, 1080i59.94, 1080i60
- Audio formats:
  - MPEG-1 Layer II
  - MPEG-4 AAC (LC/HE, HE v2)
  - Dolby Digital (passthrough)
  - Dolby Digital Plus (passthrough)
  - PCM transparent passthrough
  - SMPTE-302M
- Firmware upgradable
- Redundant AC or DC power supply
- Management:
  - Web Browser
  - SNMP
  - Display and keypad

## HDTV H.264 / MPEG-2 DECODER

**ALTUM AHD** is the H.264/MPEG-2 family of High Definition (HDTV) decoders with support for 4:2:0 and 4:2:2 profiles manufactured by SAPEC.

- **ALTUM AHD** supports High Definition (HD) decompression, H.264 and/or MPEG-2 4:2:0 and/or 4:2:2 profiles.
- **ALTUM AVD** supports High Definition (HD) decompression, H.264 and/or MPEG-2 4:2:0 and/or 4:2:2 profiles and it is upgradeable to High Definition (HD) H.264 and/or MPEG-2 4:2:0 and/or 4:2:2 profiles through software license.

**ALTUM AHD/AVD** has two HD-SDI/SDI video output with up to 16 SDI embedded mono channels and up to 4 AES/EBU channels.

**ALTUM AHD/AVD** has a genlock input in order to synchronize the video output with a SD or HD reference signal.

**ALTUM AHD/AVD** can receive the encoded signal over DVB-ASI or IP and has an ASI loop output for monitoring or signal forwarding purposes.

**ALTUM AHD** supports Hi422P@L4, HP@L4 and MP@L4 profiles in H.264 HD as well as 422P@HL and MP@HL profiles in MPEG-2 HD. **ALTUM AHD/AVD** models have different encoding profiles by default and can be upgraded with optional profiles by means of software license. The models available are listed in the table below:

Model Profile	AHD 6210	AHD 6010	AHD 4210	AHD 4010	AHD 1210	AHD 1010	AVD 6210	AVD 6010	AVD 4210	AVD 4010	AVD 1210	AVD 1010
<b>HDTV</b>												
H.264 HP@L4	●	●	●	●	○	○	○	○	○	○	○	○
H.264 Hi422P@L4	●	○	●	○	○	○	○	○	○	○	○	○
MPEG-2 MP@HL	●	●	○	○	●	●	○	○	○	○	○	○
MPEG-2 422P@HL	●	○	○	○	●	○	○	○	○	○	○	○
<b>SDTV</b>												
H.264 HP@L3	●	●	●	●	○	○	●	●	●	●	○	○
H.264 Hi422P@L3	●	○	●	○	○	○	●	○	●	○	○	○
MPEG-2 MP@ML	●	●	○	○	●	●	●	●	○	○	●	●
MPEG-2 422P@ML	●	○	○	○	●	○	●	○	○	○	●	○

● Standard ○ Optional

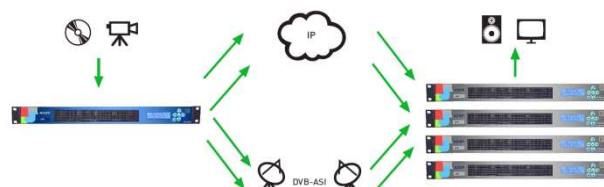
**ALTUM AHD/AVD** supports several audio algorithms: MPEG-1 Layer II, MPEG-4 AAC (LC/HE, HE v2), Dolby Digital and Digital+ (passthrough), PCM transparent passthrough and SMPTE-302M.

**ALTUM AHD/AVD** support BISS 1 and BISS E descrambling.

**ALTUM AHD/AVD** allows remote control over integrated web server, with the ability to store internal events and potential alarms, SNMP and local control by display and keyboard.

**ALTUM AxE** power supply can be AC or DC, and optionally it can have a redundant power supply, so AC+AC, AC+DC and DC+DC power supply configurations are possible.

## TYPICAL APPLICATION



# TECHNICAL SPECIFICATIONS

AxD 6010    AxD 6210    AxD 4010    AxD 4210    AxD 1010    AxD 1210

## Video Output

### Digital Outputs

<b>Number of outputs:</b>	1 x BNC						
<b>Formats:</b>	HD-SDI (SMPTE 292M): 1080i50, 1080i59.94, 1080i60, 720p50, 720p59.94, 720p60	●	●	●	●	●	●
	SDI (SMPTE 259M): 625/25Hz, 525/29.97Hz						
<b>Impedance:</b>	75 Ω						

### Monitor Output

<b>HD-SDI / SDI:</b>	1 x BNC	●	●	●	●	●	●
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### External Sync Input

<b>Number of inputs:</b>	1 x BNC	●	●	●	●	●	●
<b>Formats:</b>	Blackburst in SD and 1080i50, 1080i59.94, 720p50, 720p59.94						

## Audio Outputs

### SDI Embedded

<b>Number of outputs:</b>	4, 8 or 16 channels	●	●	●	●	●	●
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### Digital Outputs

<b>Number of outputs:</b>	2 or 4 AES/EBU channels						
<b>Format:</b>	AES/EBU	●	●	●	●	●	●
<b>Sample frequency:</b>	48Khz						
<b>Impedance:</b>	75 Ω						

## Video Decoding

### Decoding Standards

<b>Standard and profile/level:</b>	H.264 HP@L4 (AHD) and HP@L3 (AHD/AVD); 2 to 25 Mbps	●	●	●	●	○	○
	H.264 Hi422P@L4 (AHD), Hi422P@L3(AHD/AVD); 3 to 80 Mbps	○	●	○	●	○	○
	MPEG-2 MP@HL(AHD), MP@ML(AHD/AVD); 8 to 80 Mbps	●	●	○	○	●	●
	MPEG-2 422P@HL (AHD) MP@ML(AHD/AVD): 25 to 80 Mbps	○	●	○	○	○	●

### Decoding Features

<b>Bitrate types:</b>	CBR (H.264, MPEG-2), VBR (H.264)						
<b>Decoding resolutions:</b>	<b>525 (NTSC):</b> 720 x 480, 704 x 480, 528 x 480, 352 x 240						
	<b>625 (PAL):</b> 720 x 576, 704 x 576, 528 x 576, 352 x 576						
	<b>720p: ( for AHD)</b> 1280 x 720, 960 x 720	●	●	●	●	●	●
	<b>1080i:(for AHD)</b> 1920 x 1080, 1440 x 1080, 1280 x 1080, 960 x 1080, 720x576, 720x480						

## Audio Decoding

### Audio Formats

<b>Standard:</b>	MPEG-4 AAC (LC/HE v1, HE v2)	●	●	●	●	○	○
	MPEG-1 Layer II (ISO/IEC 11172-3)	●	●	○	○	●	●
	Dolby Digital (AC-3) passthrough	●	●	●	●	●	●
	Dolby Digital Plus (EAC-3) passthrough	●	●	●	●	●	●
	PCM transparent passthrough	●	●	●	●	●	●
	SMPTE-302M (bit transparent audio passthrough)	●	●	●	●	●	●

### Decoding Bitrates

<b>Decoding bitrates:</b>	From 64 kbps to 384 kbps (MPEG-1 Layer II) From 24 kbps to 448 kbps (MPEG-4 AAC)	●	●	●	●	●	●
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## Transport Inputs

### Ethernet

<b>Number of inputs:</b>	1 or 2 x RJ-45						
<b>Interface:</b>	10/100/1000 Mbps						
<b>Encapsulation:</b>	TS over IP: UDP, RTP and RTP with COP3 FEC (SMPTE 2022) (Multicast / Unicast)	●	●	●	●	●	●

### ASI

<b>Number of inputs:</b>	1 x BNC						
<b>Loop output:</b>	1 x BNC	○	○	○	○	○	○
<b>Encapsulation:</b>	188 byte TS						

## System Management

<b>Configuration</b>	Integrated web server, SNMP, display and keypad	●	●	●	●	●	●
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## Environmental

### Power

<b>Input voltage range:</b>	AC 100 - 240 V 50/60 Hz or DC 40 - 60 V						
<b>Typical consumption:</b>	< 220W						
<b>Operating temperature:</b>	5°C to 35°C	●	●	●	●	●	●

### Physical

<b>Dimensions:</b>	19" wide x 1RU high x 500 mm	●	●	●	●	●	●
<b>Weight:</b>	10 Kg						

● Standard ○ Optional

SAPEC reserves the right to change the specifications without notice

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