



Advantiv

Advanced Television Solutions



Advantiv[™]
Advanced Television Solutions
by Analog Devices

Enhancing the HD system design and consumer experience, Analog Devices offers its Advantiv[™] portfolio of video and audio integrated circuit solutions, specifically developed and optimized for advanced television applications.



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DEVICES**

Analog Devices in Advanced TV

Analog Devices offers a broad range of industry-certified solutions for advanced television (ATV) applications, with products that enable rewarding experiences for consumers enjoying the latest high definition (HD) TVs, DVD players, digital video recorders, audio/video receivers, video camcorders, and cable and satellite set-top boxes. Because the signal processing performance requirements for HD video, audio, and display interconnect functions are significantly higher than for standard definition TVs, ADI offers the Advantiv advanced television portfolio to provide cost-effective analog, digital, and mixed-signal solutions to solve the most difficult multiformat advanced television design challenges. Supported by ADI's system-level experts, these customer-driven solutions enable the latest in HD home entertainment systems.

Part Number Quick Reference Guide

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AD9983A
AD9984A
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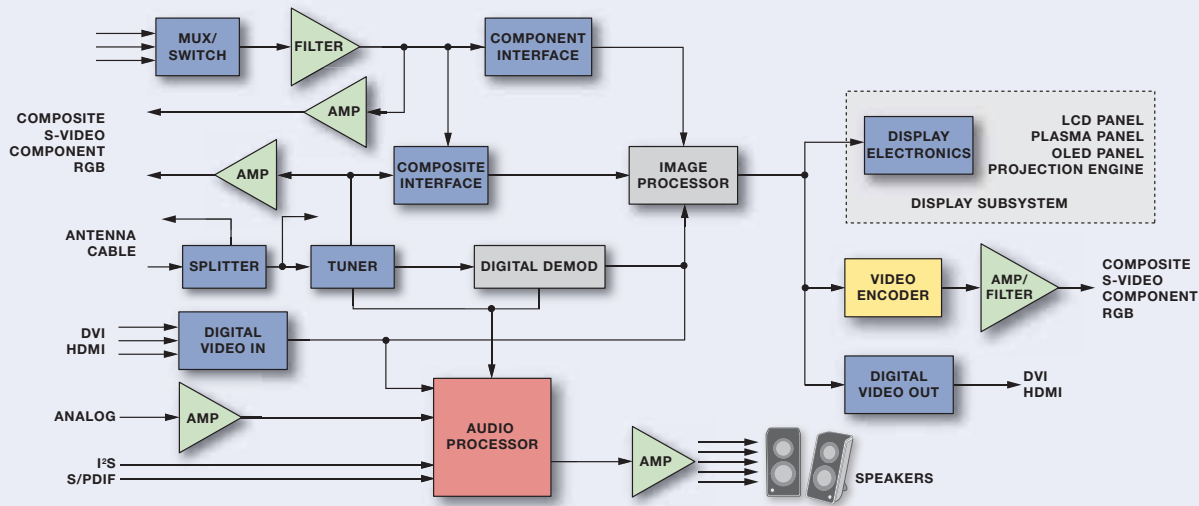
ADA4410-6
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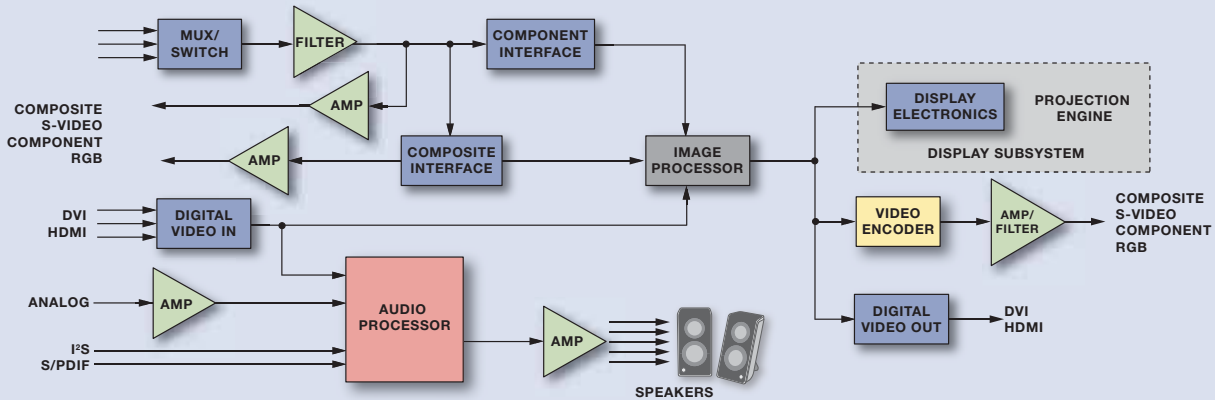


Signal Chains

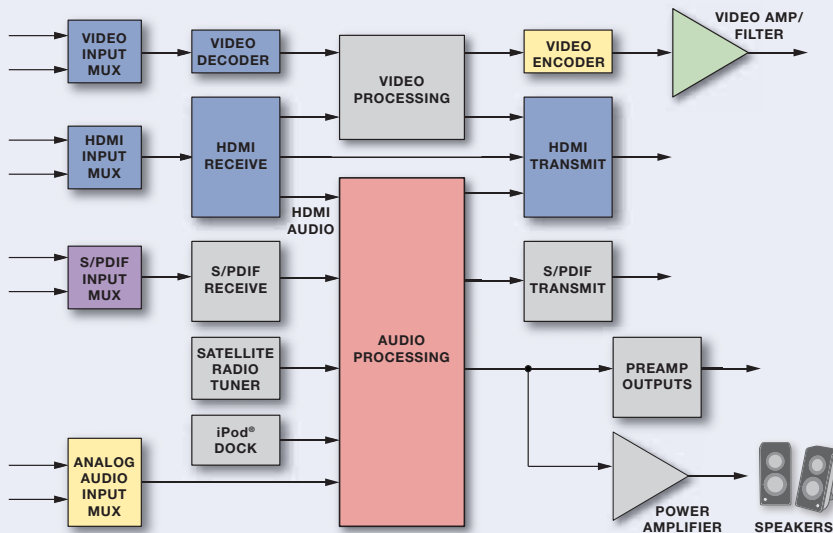
HDTV Set



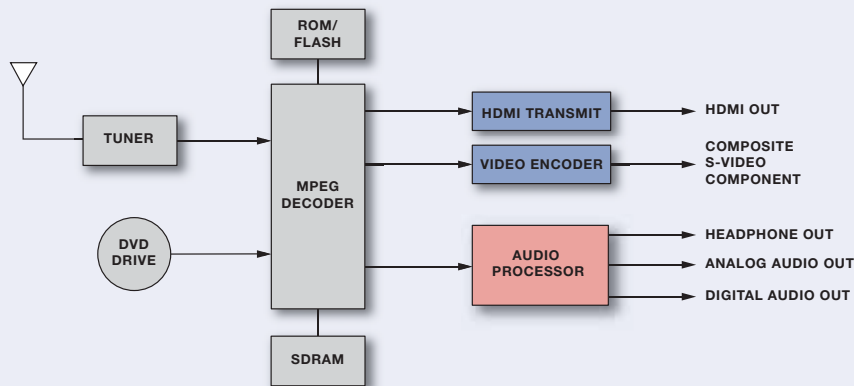
Projector



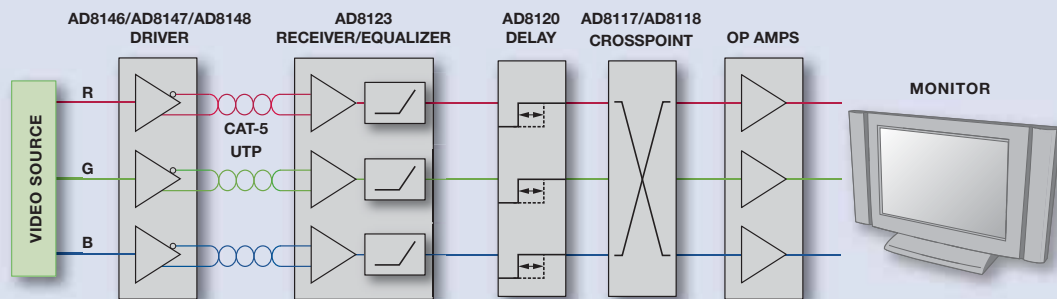
AV Receiver



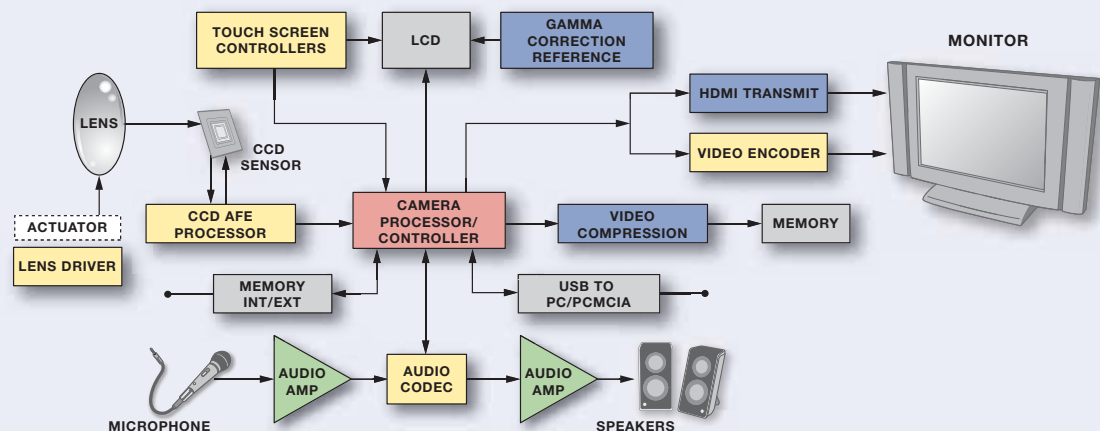
DVD Player/Recorder



Video Distribution



Digital Camera





Selection Tables

Analog/HDMI/DVI Display Interfaces

Part Number	Resolution (Bits)	Sample Rate (MSPS)	Max Display Resolution	Auto-Offset	Auto-Gain	Analog Input Mux	Macrovision Detector	Video Decoder	HDMI Rx	HDMI Input Mux	DVI Rx	HDCP Key Storage	Extended Temp Range	Package
AD9380	8	150	1080p/SXGA	•		2:1	•		•		•	Internal		100-lead LQFP
AD9381	8	150	1080p/SXGA						•		•	Internal		100-lead LQFP
AD9396	8	150	1080p/SXGA	•		2:1	•				•	External		100-lead LQFP
AD9397	8	150	1080p/SXGA								•	Internal		100-lead LQFP
AD9398	8	150	1080p/SXGA						•		•	External		100-lead LQFP
AD9880	8	150	1080p/SXGA	•		2:1	•		•		•	External		100-lead LQFP
AD9887A	8	170	UXGA								•	External		160-lead LQFP
AD9888	8	205	UXGA			2:1								128-lead LQFP
AD9983A	8	170	UXGA	•		2:1	•							80-lead LQFP, 64-lead LFCSP
AD9985A	8	140	SXGA	•									•	80-lead LQFP
AD9388	10	150	1080p/SXGA	•	•	3:1	•		•	2:1	•	Internal	•	144-lead LQFP
AD9388A	10	170	UXGA	•	•	3:1	•		•	2:1	•	Internal	•	144-lead LQFP
AD9984A	10	170	UXGA	•		2:1	•							80-lead LQFP, 64-lead LFCSP
ADV7441	10	150	1080p/SXGA	•	•	3:1	•	•	•	2:1	•	Internal	•	144-lead LQFP
ADV7441A	10	170	UXGA	•	•	3:1	•	•	•	2:1	•	Internal	•	144-lead LQFP
ADV7443	12	150	1080p/SXGA	•	•	3:1	•	•	•	2:1	•	Internal	•	144-lead LQFP

Audio Amplifier Products

Part Number	Common-Mode Rejection (dB)	THD + N (%)	Gain Error (%)	PSRR	Slew Rate (V/ μ s)	Description
SSM2141	100	0.0010	0.001	0.7 μ V/V	9.5	Differential line receiver
SSM2142	N/A	0.0060	0.700	80 dB	15	Balanced line driver
SSM2143	90	0.0006	0.03	110 dB	10	Differential line receiver
SSM2160	N/A	0.01	0.5 dB	N/A	N/A	6-channel volume control
SSM2165	N/A	0.20	N/A	50 dB	N/A	Microphone conditioner with noise gate
SSM2166	N/A	0.25	N/A	50 dB	N/A	Microphone conditioner with noise gate
SSM2019	130	0.01	0.1 dB	124 dB	16	Complete preamp

Audio Analog-to-Digital Converters

Part Number	Number of Input Channels	DNR (dB)	SNR (dB)	THD + N @ 1 kHz (dB)	Description
AD1871	2	105	105	−95	Stereo audio, 24-bit, 96 kHz, multibit Σ - Δ
AD1870	2	92	—	−90	Single-supply, 16-bit stereo Σ - Δ
AD1974	4	105	105	−95	Stereo audio, 24-bit, 96 kHz, multibit Σ - Δ

Audio Codecs for Advanced TV

Part Number	Analog Input ADC Channels	Analog Output DAC Channels	DNR (ADC) (dB)	DNR (DAC) (dB)	THD + N (ADC) (dB)	THD + N (DAC) (dB)	S/PDIF I/O	Sample Rate Conversion	Control Interface	Use for New Designs
ADAV801	2	2	102	101	−88	−91	•	•	SPI	•
ADAV803	2	2	102	101	−88	−91	•	•	I ² C®	•
ADAU1328	2	8	105	108	−96	−92			SPI	•

Audio Digital-to-Analog Converters

Part Number	DNR (dB)	SNR (dB)	THD + N @ 1 kHz (dB)	Description	Function
AD1955	120	120	−110	Multibit Σ - Δ with SACD playback	DAC
AD1852	114	114	−104	Stereo, 24-bit, 192 kHz, multibit, voltage output Σ - Δ	DAC
AD1854	113	112	−97	Complete single-chip stereo audio	DAC
AD1953	112	112	−100	SigmaDSP [®] 3-channel, 26-/48-bit processing	DAC, signal processor
AD1833A	110	110	−95	Multichannel, 24-bit, 192 kHz Σ - Δ	DAC
AD1958	109	108	−96	Stereo, 24-bit, 192 kHz, multibit Σ - Δ with PLL	DAC
AD1859	94	—	−88	Stereo, single-supply, 18-bit, integrated Σ - Δ	DAC
AD1866	90	95	−86	Single-supply, dual, 16-bit audio	DAC

Audio Signal Processors for TV Audio

Part Number	Analog Input ADC Channels	Analog Output DAC Channels	DNR (dB)	THD + N (ADC) (dB)	THD + N (DAC) (dB)	Digital Output PWM Channels (Diff)	Sound IF Demod	NTSC Standard	Worldwide Standard	Analog Speaker Out	PWM Speaker Out	Digital Audio I/O Channels
ADAV400	2	8	95	−93	−90	—				—	—	8/8
ADAV4101	2	6	95	−90	−85	—				2	—	8/2
ADAV4201	2	4	95	−90	−85	2				—	2	8/2
ADAV4312	4	11	95	−90	−85	—	•	•		4	—	8/2
ADAV4322	4	11	95	−90	−85	—	•		•	4	—	8/2
ADAV4412	4	7	95	−90	−85	4	•	•		—	4	8/2
ADAV4422	4	7	95	−90	−85	4	•		•	—	4	8/2

Class-D Audio Amplifiers

Part Number	Integrated Amplifier	Channels	Output Power (W)	Efficiency (%)	Dynamic Range (dB)	SNR (dB)	THD + N (dB)	Power Supply (V)	Supply Current (mA)
ADAU1590	•	2	11.5 (6 Ω)	87	101	101	−85	9 to 15	34
ADAU1592	•	2	18.0 (6 Ω)	87	101	101	−85	9 to 18	44

Class-D Audio Output Power Stage

Part Number	Channels	Output Power (W)	Efficiency (%)	Dynamic Range (dB)	SNR (dB)	Power Supply (V)	Min Load Impedance (Ω)
ADAU1513	2	14.5 (8 Ω)	90 (8 Ω)	96	96	9 to 18	4

Display Driver Electronics

Part Number	Resolution (Bits)	Number of Channels	Power Consumption (W)	Temperature Range (°C)	Package
AD8382	12	6	0.743	0 to 85	48-lead LFCSP
AD8383	10	6	0.7	0 to 85	48-lead LFCSP
AD8384	10	6	1.34	0 to 85	80-lead TQFP E-Pad
AD8386	10	12	1.1	0 to 85	80-lead TQFP E-Pad
AD8387	12	12	1.4	0 to 85	64-lead LFCSP_VQ

DecDriver[®]



HDMI/DVI Multiplexers

Part Number	Number of Input Channels	Number of Output Channels	Maximum Data Rate (Gbps)	Maximum Display Resolution	Input Equalizer (dB)	Output Pre-Emphasis (dB)	Integrated DDC Mux	Front Panel Buffer	Package
AD8192	2	1	2.25	UXGA/1080p	12	6	Buffered	•	56-lead LFCSP
AD8195	1	1	2.25	UXGA/1080p	12	6	Buffered	•	40-lead LFCSP
AD8190	2	1	1.65	UXGA/1080p	12	6	Unbuffered		56-lead LFCSP
AD8191	4	1	1.65	UXGA/1080p	12	6	Unbuffered		100-lead LQFP
AD8196	2	1	2.25	UXGA/1080p	12	6	Unbuffered		56-lead LFCSP
ADV3000	3	1	2.25	UXGA/1080p	12	6	Unbuffered		80-lead LQFP
AD8197	4	1	2.25	UXGA/1080p	12	6	Unbuffered		100-lead LQFP
AD8193	2	1	2.25	UXGA/1080p	0	N/A	N/A		32-lead LFCSP
AD8194	2	1	2.25	UXGA/1080p	12	N/A	N/A		32-lead LFCSP

HDMI/DVI Transmitters

Part Number	Resolution (Bits)	Sample Rate (MSPS)	Maximum Display Resolution	HDCP Key Storage	I ² S Audio Channels	S/PDIF	Audio Sample Rate (kHz)	CEC Support	Package
AD9389B	8	165	1080p/UXGA	Internal	8	•	192	N/A	64-lead LFCSP, 80-lead LQFP
AD9889B	8	165	1080p/UXGA	External	8	•	192	N/A	76-lead BGA, 64-lead LFCSP, 80-lead LQFP
ADV7520NK	8	80	720p/1080i	External	8	•	192	•	80-lead LQFP, 64-lead LFCSP
AD9387NK	8	80	720p/1080i	External	8	•	192	N/A	80-lead LQFP, 64-lead LFCSP

Portable Audio Products

Part Number	Speaker Driver		Headphone Driver		Microphone Driver		Description
	Stereo	Mono	Stereo	Mono	Stereo	Mono	
SSM2301		•					1.4 W mono filterless Class-D
SSM2302	•						1.4 W stereo filterless Class-D
SSM2304	•						2 W stereo filterless Class-D
SSM2306	•						2 W stereo filterless Class-D with extra low power consumption
SSM2211		•					2 W mono speaker driver
SSM2250		•	•				2 W mono speaker and stereo headphone driver
SSM2167					•		Microphone driver with noise gate
AD8592			•				Stereo headphone driver with shutdown
AD8541					•		Ultralow power microphone driver
AD8542					•		Stereo microphone driver
AD8544					•		Ultralow power microphone driver

SHARC Processors

Part Number	Clock Speed Max (MHz)	MMACS	On-Chip SRAM (Mb)	External Memory Type Supported	Number of Timers (GP)	Number of UARTs	Number of SPORTs	Audio Decoders in ROM	S/PDIF Transceiver	Sample Rate Conversion (dB)	Number of Precision Clock Generators (PCG)
ADSP-21362	333	666	3	Async	3	0	6	No	Yes	-128	2
ADSP-21364	333	666	3	Async	3	0	6	No	Yes	-140	2
ADSP-21369	266, 333, 400	532, 666, 800	2	Async, SDRAM	3	2	8	No	Yes	-128	4
ADSP-21371	266	532	1	Async, SDRAM	2	1	8	No	Yes	No	4
ADSP-21375	266	532	0.5	Async, SDRAM	2	1	4	No	No	No	4
ADSP-21266	200	400	2	Async	3	0	6	Yes: 4 Mb	No	No	2
ADSP-21366	333	666	3	Async	3	0	6	Yes: 4 Mb	Yes	-128	2
ADSP-21367	266, 333, 400	532, 666, 800	2	Async, SDRAM	3	2	8	Yes: 6 Mb	Yes	-128	4
ADSP-21368	266, 333	532, 666	2	Async, SDRAM	3	2	8	Yes: 6 Mb	Yes	-128	4



Video Amplifiers

Part Number				Disable	Supply Voltage (V)		Rail-to-Rail Out	A _{CL} Min	BW @ A _{CL} Min (MHz)	Slew Rate (V/μs)	0.1% Settling Time (ns)	0.1 dB Flatness (MHz)	Differential Gain (%)	Differential Phase (°)	I _V /Amp Typ (mA)	I _{OUT} (mA)
Single	Dual	Triple	Quad		Min	Max										
AD8000		AD8003		•	5	12		1	1650	3800	12	190	0.05	0.01	9.5	100
AD4860-1				•	5	12		1	1500	4100	12	190	0.02	0.01	13.5	100
				•	5	12		1	800	790	8	125	0.02	0.02	6	85
		ADA4861-3		•	5	12		1	730	625	13	100	0.01	0.02	6	100
		ADA4862-3		•	5	12		2	300	750	9	65	0.02	0.03	5.3	65
AD8061/ AD8063				•	2.7	8	•	1	300	650	35	30	0.01	0.04	6.8	50
		AD8073			5	12		1	300	500	25	10	0.05	0.1	3.5	30
ADA4850-1	ADA4850-2			•	2.7	6	•	1	175	220	85	9	0.12	0.09	2.5	94
ADA4851-1	ADA4851-2		ADA4851-4	•	2.7	12	•	1	130	200	55	11	0.08	0.11	2.5	90
ADA4853-1	ADA4853-2	ADA4853-3		•	2.65	5	•	1	100	120	54	22	0.022	0.10		

Video Compression Products

Part Number	Bits per Component	Compression Format	Internal Memory	On-Board Rate Control	720p/1080i/ 1080p 30 Hz	1080p 60 Hz	Application	Temperature Range (°C)
ADV212	12	JPEG2000	•	•	2 chips	4 chips	DCI/Pro Video	0 to 85
ADV216	12	JPEG2000	•	•	2 chips	4 chips	Advanced TV	0 to 70
ADV226	12	JPEG2000	•	•	1 chip	2 chips	Advanced TV	0 to 70

Wavescale™
Compression Technology
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Video Decoders

Part Number	Resolution (Bits)	ADC Speed (MHz)	Output Resolution (Bits)	Input Signal Types	HDMI Rx	Data Output Formats	Number of Input Channels	Application	3D Comb Filter	Package
ADV7180	10	86	8	Composite, Y/C, YPrPb		8- and 16-bit YCrCb 4:2:2	6	Portable	—	40-lead LFCSP, 64-lead LQFP
ADV7184	10	54	8	Composite, RGB SCART, Y/C, YPrPb		8- and 16-bit YCrCb 4:2:2	12	Connected box, HDTV	—	80-lead LQFP
ADV7188	12	54	10	Composite, RGB SCART, Y/C, YPrPb		8- and 16-bit YCrCb 4:2:2	12	Connected box, HDTV	—	80-lead LQFP
ADV7401	10	140	8	Composite, RGB, RGB SCART, Y/C, YPrPb		12-bit RGB DDR 24-bit YCrCb/RGB 4:4:4 8- and 16-bit YCrCb 4:2:2	12	Connected box, HDTV	—	100-lead LQFP
ADV7403	12	140	10	Composite, RGB, RGB SCART, Y/C, YPrPb		10- and 20-bit YCrCb 4:2:2 12-bit RGB DDR 24-bit YCrCb/RGB 4:4:4 8- and 16-bit YCrCb 4:2:2	12	Connected box, HDTV	—	100-lead LQFP
ADV7441	10	150	10	Composite, RGB, RGB SCART, Y/C, YPrPb, HDMI	•	10- and 20-bit YCrCb 4:2:2 12-bit RGB DDR 24-bit YCrCb/RGB 4:4:4 8- and 16-bit YCrCb 4:2:2	8	Connected box, HDTV	—	144-lead LQFP
ADV7441A	10	170	10	Composite, RGB, RGB SCART, Y/C, YPrPb, HDMI	•	10- and 20-bit YCrCb 4:2:2 12-bit RGB DDR 24-bit YCrCb/RGB 4:4:4 8- and 16-bit YCrCb 4:2:2	8	Connected box, HDTV	—	144-lead LQFP
ADV7443	12	150	10	Composite, RGB, RGB SCART, Y/C, YPrPb, HDMI	•	10- and 20-bit YCrCb 4:2:2 12-bit RGB DDR 24-bit YCrCb/RGB 4:4:4 8- and 16-bit YCrCb 4:2:2	8	Connected box, HDTV	—	144-lead LQFP
ADV7802	12	150	12	Composite, RGB, RGB SCART, Y/C, YPrPb	N/A	10-, 20-, 24-bit YCrCb 4:2:2 12-bit RGB DDR 36-bit YCrCb 12- and 24-bit YCrCb 4:2:2	—	Connected box, HDTV	Yes	176-lead LQFP
ADV7800	10	150	10	Composite, RGB, RGB SCART, Y/C, YPrPb	N/A	10-, 20-, 24-bit YCrCb 4:2:2 12-bit RGB DDR 36-bit YCb 12- and 24-bit YCrCb 4:2:2	12	Connected box, HDTV	Yes	176-lead LQFP



Video Distribution Drivers

Differential UTP Drivers (Video on Cat-5)

Part Number	Number of Channels	−3 dB BW (MHz)	0.1 dB Flatness (MHz)	Gain	Slew Rate (V/μs)	Disable	Positive Supply (V)	Total Supply Current (mA)	Features	Package
AD8131	1	400	85	2	2000		2.7 to 11	11.5	—	8-lead MSOP, 8-lead SOIC
AD8133	3	450	60	2	1600	•	4.5 to 11	28	—	24-lead LFCSP
AD8134	3	450	60	2	1600	•	4.5 to 11	31	Sync-on-CM	24-lead LFCSP
AD8146	3	900	220	2	3000	•	4.5 to 11	57	—	24-lead LFCSP
AD8147	3	780	210	2	3000	•	4.5 to 11	61.5	Sync-on-CM	24-lead LFCSP
AD8148	3	900	270	4	3000	•	4.5 to 11	61.5	Sync-on-CM	24-lead LFCSP

Video Distribution Equalizers

Differential Line Receivers (Video on Cat-5)

Part Number	Number of Channels	−3 dB BW (MHz)	0.1 dB Flatness (MHz)	Gain	Slew Rate (V/μs)	Disable	Positive Supply (V)	Total Supply Current (mA)	Features	Package
AD8129	1	200	50	RF/RG	1060	•	4.5 to 25.2	11	Stable G ≥ 10	8-lead MSOP, 8-lead SOIC
AD8130	1	270	45	RF/RG	1090	•	4.5 to 25.2	11	—	8-lead MSOP, 8-lead SOIC
AD8143	3	260	45	RF/RG	1000	•	4.5 to 25.2	11	—	32-lead LFCSP
AD8145	3	530	100	1 or 2	2000	•	4.5 to 11	48.5	Sync-on-CM	32-lead LFCSP

Differential Receiver/Equalizers (Video on Cat-5)

Part Number	Number of Channels	Peak Gain	Gain	Disable	Positive Supply (V)	Total Supply Current (mA)	Features	Package
AD8128	1	20 dB @ 120 MHz	1		9 to 11	24	Peak, gain, offset adjust	8-lead LFCSP
AD8123	3	55 dB @ 100 MHz	1	•	9 to 11	132	Peak, gain, offset, pole adjust	40-lead LFCSP

Video Encoders

Part Number	Number of DACs	DAC Output (Bits)	Input Data (Bits)	Maximum Oversampling (MHz)	Standard Definition	Progressive Scan	HD (Component)	Component RGB/YPrPb	CVBS/S-Video	NSV	Macrovision*
ADV7170	4	10	8	27	•			•	•		•
ADV7171	4	10	8	27	•			•	•		
ADV7172	6	10	8	27	•			•	•		•
ADV7173	6	10	8	27	•			•	•		
ADV7340	6	12	10	297	•	•	•	•	•	•	•
ADV7341	6	12	10	297	•	•	•	•	•	•	
ADV7342	6	11	8	297	•	•	•	•	•		•
ADV7343	6	11	8	297	•	•	•	•	•		
ADV7344	6	14	10	297	•	•	•	•	•	•	•
ADV7390	3	10	8	297	•	•	•	•	•		•
ADV7391	3	10	8	297	•	•	•	•	•		
ADV7392	3	10	10	297	•	•	•	•	•		•
ADV7393	3	10	10	297	•	•	•	•	•		

*Requires proof of Macrovision license before purchase.

NSV
Precision Video
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Video Filters

Part Number	Standards	Resolution	Gain	Input Mux	Positive Supply (V)	Supply Current (mA)	Operating Temp Range (°C)	Package
ADA4410-6	CV, RGB, SD, Y/C, YPrPb, YUV	1080i, 720p	2×; 4×	2:1	4.5 to 12	92	–40 to +85	32-lead LFCSP
ADA4411-3	RGB, SD, Y/C, YPrPb, YUV	1080i, 720p	2×; 4×	2:1	4.5 to 12	60	–40 to +85	24-lead QSSOP
ADA4412-3	RGB, SD, Y/C, YPrPb, YUV	1080i, 720p	2×	—	4.5 to 12	56	–40 to +85	20-lead QSSOP
ADA4417-3	RGB, YPrPb, YUV	1080i, 720p	2×	—	3.3 to 5	24	–40 to +85	10-lead MSOP
ADA4430-1	SD, Y/C	480i	2×	—	2.5 to 6	1.85	–40 to +125	6-lead SC70
ADA4431-1	SD, Y/C	480i	2×	—	2.5 to 3.3	4	–25 to +85	16-lead LFCSP

Video RF Splitters

Part Number	I/O Configuration	Inputs/Outputs	1 dB Bandwidth (MHz)	CSO (dBc)	CTB (dBc)	Noise Figure (dB)	Package
ADA4302-4	Differential	1:4	900	–73	–66	4.4	20-lead LFCSP
ADA4304-2	Single-ended	1:2	865	–62	–72	4.6	16-lead LFCSP
ADA4304-3	Single-ended	1:3	865	–62	–72	4.6	16-lead LFCSP
ADA4304-4	Single-ended	1:4	865	–62	–72	4.6	16-lead LFCSP

Video Switches

Part Number	Switch Type	Supply Voltage (V)	Gain (V/V)	BW @ A _{CL} (MHz)	Crosstalk @ 5 MHz (dB)	0.1 dB Flatness (MHz)	Differential Gain (%)	Differential Phase (°)	I _s Typ (mA)
AD8180/AD8182	Single/dual 2:1 mux	±5	1	930/780	–80	100	0.02	0.02	3.8/6/8
AD8183/AD8185	Triple 2:1 mux	±5	1/2	590/360	–84	90/60	0.01	0.02	25
AD8184	4:1	±5	1	700	–95	75	0.01	0.01	4.4
AD8186/AD8187	Triple 2:1 mux	5	1/2	1000	–84/–78	90/85	0.05	0.05	18.5/19.5
AD8188/AD8189	Triple 2:1 mux	5	1/2	350	–84/–78	70	0.05	0.05	18.5/19.5
AD8104/AD8105	32 × 16	±2.5	1/2	600	–80/–70	100	0.05	0.05	340
AD8110/AD8111	16 × 8	±5	1/2	390/260	–78	80/57	0.02	0.02	50
AD8112/AD8113	16 × 8, 16 × 16	±12, ±5	2	60	–83*	10	0.1	0.1	60
AD8114/AD8115	16 × 16	±5	1/2	225/200	–70	25/40	0.05	0.05	70/80
AD8117/AD8118	32 × 32	±2.5	1/2	600	–70/–75	100	0.05	0.05	500
AD8175/AD8176	16 × 9	±2.5	2/4	500/450	–88/–82	25	—	—	600
AD8177/AD8178	16 × 5	±2.5	2/4	500/450	–88/–82	25	—	—	460

* @ 20 kHz.



Advanced TV Product Spotlight

Analog/HDMI/DVI Display Interfaces

AD9388A Dual 10-Bit Analog and HDMI Rx Interface

- Three 10-bit ADCs sample up to 170 MHz
- Simultaneous HDMI and analog video processing
- Supports Deep Color (36-bit color for HDMI 1.3)
- 225 MHz HDMI Rx for up to 1080p resolution at 36-bit color
- Adaptive equalizer on HDMI inputs for longer cables
- 2:1 input mux on HDMI Rx
- HDMI repeater support
- Internal EDID RAM



AD9398 Low Cost HDMI Rx

- External HDCP keys
- 150 MHz HDMI Rx
- S/PDIF or up to 8 channels of I²S audio output
- 100-lead LQFP package
- Support for HDMI 1.1, DVI 1.0, and HDCP 1.1

AD9983A 8-Bit Analog Display Interface

- 170 MSPS sampling rate
- 300 MHz analog bandwidth
- Auto-offset adjustment
- Autogain balancing
- Low PLL clock jitter
- 2:1 input mux
- 4:4:4, 4:2:2, and DDR output

AD9984A 10-Bit Analog Display Interface

- 170 MSPS sampling rate
- 300 MHz analog bandwidth
- Auto-offset adjustment
- Autogain balancing
- Low PLL clock jitter
- 2:1 input mux
- 4:4:4, 4:2:2, and DDR output



Audio Signal Processors

ADAV4201 Integrated Audio Processor for Advanced TVs

- One stereo input ADC
- 4 output DAC channels
- -95 dB DNR
- High performance PWM digital outputs
- A/V sync delay up to 400 ms
- 125 MHz SigmaDSP processor core
- Support from SigmaStudio™ with ADI and third-party software

Class-D Audio Amplifiers

ADAU1513 Class-D Output Power Stage

- Integrated stereo output power stage (used with ADAV4201)
- Low RDS-ON: <0.3 Ω (per transistor)
- Efficiency: >90%
- Short-circuit and overtemperature protection
- 48-lead LFCSP package

Display Driver Electronics

AD8383 Low Cost 10-Bit, 6-Channel DecDriver®

- Fast settling time: 30 ns settling time to 0.25%
- Output drive to within 1.3 V of rails
- Slew rate of 460 V/ms
- Voltage controlled brightness and contrast levels
- Output short-circuit protection
- Max input update rate of 100 MSPS

HDMI/DVI Multiplexers

AD8195 Front-Panel HDMI Buffer

- Supports HDMI compliance testing input capacitance specs
- Terminates all high bandwidth, DDC, and CEC lines
- Equalized inputs and pre-emphasized outputs for longer cable lengths
- High speed: up to 2.25 Gbps
- 40-lead LFCSP package

HDMI/DVI Transmitters

ADV7520NK Low Power HDMI Tx with CEC Support

- Integrated CEC buffer simplifies system design
- Low power consumption (10 μ W power-down)
- Display resolutions up to 720p/1080i and SXGA
- 5 V tolerant I/O pins reduce system cost
- Choice of 76-ball BGA or 64-lead LFCSP package
- External HDCP keys (BGA package only)
- Integrated I²C master for easier EDID reading



Industry's First HDMI Transmitter to Feature On-Chip CEC Support



RF Splitters

ADA4302-4 1:4 Differential CATV Splitter ADA4303-2 1:2 Single-Ended CATV Splitter

- 54 MHz to 865 MHz CATV frequency range
- 4.6 dB gain
- 25 dB isolation
- 1.3 GHz bandwidth
- 4.4 dB noise figure
- Single 5 V supply

SHARC Processors

ADSP-21368 SHARC Processor

- 32-bit/40-bit floating-point processor
- Single-instruction, multiple-data (SIMD) computational architecture
- On-chip memory—2 Mb of on-chip SRAM and 6 Mb of on-chip mask-programmable ROM
- 400 MHz maximum core clock frequency
- 1.3 V core VDD/3.3 V I/O
- Software support for ADI and third-party audio algorithms

Video Amplifiers

ADA4853-3 Triple, Low Power, Rail-to-Rail Output Video Op Amp

- Ultralow power-down current: 0.1 mA
- High speed: 100 MHz (–3 dB bandwidth)
- 120 V/μs slew rate
- Single supply (2.65 V to 5 V)
- Output swings to within 200 mV of either rail
- 0.5 dB flatness: 22 MHz
- 16-lead TSSOP package



Video Compression

ADV216 Wavescal™ Video Codec

- Complete single-chip JPEG2000 compression/decompression solution
- Pin-compatible with ADV202 and ADV212
- JTAG boundary scan support
- Two ADV216s can be combined to support full frame SMPTE 274M (1080i) or SMPTE 296M (720p)
- Third-party software support and eval board is available

Video Decoders

ADV7441A 10-Bit Video Decoder with Integrated HDMI Rx

- Four 10-bit ADCs sampling up to 170 MHz
- 12-channel analog input mux
- Supports NTSC, PAL, and SECAM
- SCART fast blanking input
- Supports display resolutions up to 1080p/UXGA
- HDMI Rx supports Deep Color (HDMI 1.3)
- Adaptive equalizer on HDMI inputs for longer cables
- Internal HDCP keys



ADV7802 12-Bit Video Decoder with 3D Comb Filter

- Four NSV™ 12-bit ADCs sampling up to 80 MHz
- True 12-bit high dynamic range processing
- Support for composite, component, and RGB input
- Adaptive line length tracking (ADLLT)
- SCART fast blanking input
- 12-channel analog mux input

Video Encoders

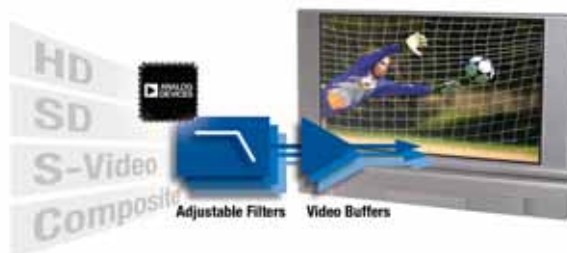
ADV7391 Low Power, 10-Bit, SD/HD Video Encoder

- 297 MHz oversampling triple DACs
- Support for composite, S-Video, and component video output
- Advanced low power consumption features:
 - Content-dependent, low power DAC operation
 - Cable detection
 - DAC auto power-down
- 32-lead LFCSP package

Video Filters

ADA4431 Ultralow Power SD Video Filter

- Low-pass video filter
 - –1 dB flatness out to 5.5 MHz
 - 28 dB rejection at 27 MHz
- Ultralow power-down current: 0.1 μA
- Charge pump allows for negative voltage on a single supply
- Low voltage supply: 2.5 V to 3.3 V
- Small packaging: 16-lead LFCSP



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