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ADCH-5300P-230

Professional HEVC IRD and Transcoder Module

The ADCH-5300P-230 is the newest model and flagship of ADVSAT's IRD product family. It provides operators an ideal solution for receiving, re-multiplexing, descrambling and decoding operations. Equipped with a variety of inputs, it ensures compatibility with all transmission media. The ADCH-5300P-230's re-multiplexing capabilities enable creation of new transport streams that are subsets of the original stream. Customized services may be output as multiple SPTS or MPTS over IP, as well as over ASI. By the dual DVB common interfaces, ADCH-5300P-230 could decrypt multiple services in one transport stream or two. ADCH-5300P-230 is also a professional IRD that features a broadcast quality decoder for MPEG-2 and MPEG-4 AVC/H.264 HEVC/H.265 in Standard Definition and High Definition formats, and provides a variety of industry standard digital and analog outputs, including CVBS video，AES3/EBU Audio, analog Audio, SD/HD -SDI and HDMI interfaces. The unit also performs aspect ratio adaptation of HD programs to generate professional quality baseband analog video and audio outputs for easy integration with existing cable network infrastructure. This all-in-one architecture makes the ADCH-5300P-230 an ideal product for distribution and contribution networks.

Main Feature

- Variety of input options DVB-T2/S2/S/C/T, TS/IP and ASI
- Redundant backup among Tuner, ASI and TS/IP with configurable priority
- SD/HD/UHD MPEG-2,MPEG-4 AVC/H.264, HEVC/H.265 video decoding
- Supports Transcoding（5300PE only）
- Analog and Digital Outputs, ASI, CVBS, AES/EBU Audio, HDMI, SDI, TS/IP
- Built-in TS re-multiplexer receives from ASI, Tuner and TS/IP Inputs
- 2×DVB-CI Slots, multi-program decryption, BISS-1 and BISS-E decryption
- Dynamic PMT detection and automatic updating
- Supports VBI TELETEXT, EBU/DVB Subtitle, Closed Caption
- UDP/RTP, Unicast/Multicast, and double full duplex SPTS/MPTS over IP
- Remote Control and Supervision by SNMP, HTTP WEB and Proprietary HDMS software
- On Site software update through IP and USB
- RSSI, received Eb/No & BER monitoring

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Specifications

Tuner Input	
DVB-S/S2 Tuner Input (ISI Factory Optional)	
Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for loop through output
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rate	1 ~ 45Msps
Roll-off Factor	DVB-S: 0.35
	DVB-S2: 0.35, 0.25, 0.2
FEC Code Rate	DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 7/8
	DVB-S2 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9,9/10
	DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LNB Polarity Selection Voltage	0, 13V, 18V selectable
LNB Band Selection Tone	0/22KHz selectable
Satellite Selection Command	DiSEqC 1.0
ISI ID	1 ~ 255 user configurable
DVB-S/S2 Tuner Input (16APSK/32APSK/64APSK Factory Optional)	
Connector Type	2×F type female 75Ω for Input,
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rate	QPSK/8PSK/16APSK: 1~ 58Msps
	32APSK:1 ~ 55Msps
	64APSK：1 ~ 34Msps
Roll-off Factor	DVB-S: 0.05 to 0.35
	DVB-S2: 0.05 to 0.35
FEC Code Rate	DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8
	DVB-S2: 1/2, 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LNB Polarity Selection Voltage	0, 13V, 18V selectable
Satellite Selection Command	DiSEqC 2.0

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DVB-C Tuner Input	
Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for loop through output
Input Frequency Range	51 ~ 862MHz
Input Level	45 ~ 75dBμV
Symbol Rate	1 ~ 7MBaud (ITU J.83 Annex A)
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
Input Return Loss	7dB (typ.)
DVB-T/T2 Tuner Input	
Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for loop through output
Input Frequency	104 ~ 862MHz (VHF/UHF)
Input Level	-20 ~ -70dBm
Constellation	DVB-T: QPSK, 16QAM, 64QAM
	DVB-T2: QPSK, 16QAM, 64QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
FFT Mode	DVB-T: 2K, 8K
	DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Guarding Interval	DVB-T: 1/4, 1/8, 1/16, 1/32
	DVB-T2: 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128
FEC Code Rate	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8
	DVB-T2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Input Return Loss	7dB (typ.)
ASI Input	
Connector Type	2×BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rate	⩽ 200Mb/s
TS over IP	
Connector Type	2×RJ-45 independent, 100/1000 Base-T for TS/IP
Effective Bit Rate	500Mb/s for 2xSPTS/MPTS IP Out, 500Mb/s for 2xSPTS/MPTS full duplex(single channel IP In and single channel IP Out)
Protocol	UDP / RTP, Multicast / Unicast, IGMPv3, ARP
FEC	SMPTE 2022(former ProMPEG) 1 Dimensional and 2 Dimensional, auto-adaptive settings for the inputting TS (Note: under full duplex mode only, 150Mb/s effective bit rate for both input & output)

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TS Processing	
TS Input Management	Demux and Remux among Tuner / DS3(optional) / E3 (optional), ASI and TS/IP Inputs
TS Output Management	Demux and Remux for 2 independent ASI outputs
Service and PID Management	2 independent Remux(120M*2), filtering and remapping
PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and Re-generation, EIT P/F edition
Descrambler	DVB Common Scrambling Algorithm (CSA)
BISS Mode	BISS-1, BISS-E
Common Interface	Double PCMCIA slots, compatible with major CA CAMs in the market
ASI Output	
Connector Type	2 pairs, 4 x BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	⩽ 200Mb/s
TS Processing	2 Independent TS pass through or Re-multiplexed from tuner, TS/IP and 2 ASI inputs
HD/SD-SDI Output	
Connector Type	2 pairs BNC female, 75Ω
SD Standard	SMPTE 259M, 270 Mb/s (10bit)
HD Standard	SMPTE 292M, 1.485 Gbit/s (10bit)
Audio Embedded	2×audio PIDs are embedded with PCM or passed through
Level	800mV p-p
HDMI Output	
Standard	1×HDMI 1.4 interface ,
Video Resolution and Frame Rate	1080I60, 1080Ii59.94,1080I50, 720P60,720P59.94, 720P50, 480P, 576P, 576I, 480I
Audio Embedded	1×stereo
Transcoding (5300PE)	
Video Resolution and Frame Rate	1080i（1920×1080）@25Hz,29.97Hz,30Hz:SMPTE274M: 6~24Mb/s 1080i（1440×1080）@25Hz,29.97Hz,30Hz:SMPTE274M: 5~24Mb/s 720p（1280×720）@50Hz,59.94Hz,60Hz:SMPTE296M: 4~24Mb/s 480i（720×480）@29.97Hz:SMPTE656M: 2~10Mb/s 576i（720×576）@25Hz: SMPTE656M: 2~10Mb/s
Ratio	4:3, 16:9
Audio Format	MPEG1 Layer II,MPEG2 AAC-LC, MPEG4 AAC-LC
Sample rate	48KHz
Compression Standard	MPEG1 Layer II: 64~384Kb/s（Stereo）,32~192Kb/s（Mono） MPEG2/4 AAC-LC: 48~512Kb/s (Stereo)，24~256Kb/s（Mono） MPEG2/4HE-AAC(V1,V2): 32~256Kb/s (Stereo), 16~128Kb/s（Mono）

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Video Decode	
Video Profile/Level	MPEG2 SP@ML,MP@HL
	MPEG4 SP@L0-3，ASP@L0-5，GMC, H.264 BP/MP/HP@ level 5.0, H.265 Main Profile@L5.0 High-tier
Audio Decode	
Audio Format	MPEG-1 Layer 2
	a. 2 stereo pairs (Stereo, Dual Mono, Left, Right)
	MPEG-2 AAC
	a. 5.1 down-mix to 2.0 (Stereo, Dual Mono, Left, Right)
	b. 2.0 (Stereo, Dual Mono)
	MPEG-4 HE-AAC v1/v2
	a. 5.1 down-mix to 2.0 (Stereo, Dual Mono, Left, Right)
	b. 2.0 (Stereo, Dual Mono, Left, Right)
Analog video Output	
CVBS Connector	1×BNC female 75Ω
CVBS Standard	NTSC, PAL, and SECAM
CVBS Resolution	576i×25, 480i×29.97
Nominal Output Level	1.0 Vp-p±5% (with standard test pattern)
Frequency Response	<±1 dB, at 5.5 MHz for PAL/SECAM, 4.2MHz for NTSC
Chroma-Luma Delay	<±30 ns
Field Time Distortion	<2%
Line Time Distortion	<1%
Short Time Distortion	<2%
Differential Gain	<3%
Digital Audio Output	
AES3/EBU	AES3/EBU AUDIO 1 AND AUDIO 2
Analog Audio Output	
Connector Type	2x 15 pin D-Sub (4 Stereo Services)
	4x XLR Breakout Cable Available
Output Mode	Left, Right, Dual Mono, Stereo
Number of Output	2 pairs of stereo audio outputs (2 Audio PIDs or 4 channels are decoded).
Cross Talk Among Channels	>70dB
THD	<0.3% @ 400Hz, 1KHz test tone
Frequency Response	±0.5dB over 20Hz ~ 18KHz

Output Level	0dBm in 600Ω (0dBu), adjustable range ±10dB
Ancillary Data Processing	
Subtitle	DVB, EBU
VBI	Teletext, WSS
Closed Caption	EIA 608, EIA 708, EIA 608-to-708
Redundancy	
Redundancy Port	Among Tuner, ASI input and TS/IP input
Switching Condition	TS Sync Loss
Switching Mode	Main, Spare
Control & Monitoring	
Connector Type	1×RJ-45, 10/100 Base-T, for equipment IP Control & Monitoring
Remote Control	SNMP 2.0, HTTP (Web GUI), Proprietary HDMS (Headend Device Management System)
Local Control	LCD display and Front control 6-key keypad
Serial Port	1×RS-232 D-sub female, for debug use only
Equipment Upgrade	Telnet/FTP, WEB/HTTP or USB
Physical	
Dimension	1U 19" Full-rack size, 445mm(Length)x 320mm(Width) x 45mm(Height)
Weight	5.0Kg
Power Supply	AC 90V ~ 250V, 50/60Hz
Power Consumption	30W (exclusive of LNB power)
Operating temperature	0 ~ 45℃
Storage temperature	-10 ~ 60℃
Operating Humidity	10 ~ 90%, non-condensed
Certification	
EMC: EN 55024:1998+A1:2001+A2:2003, EN 55022:2006+A1:2007, EN 61000-3-2:2006, EN 61000-3-3:2008	
FCC: Part 15 Class B	
LVD: EN 60950-1:2006 + A11:2009	

Back Panel Interface (Full Option)

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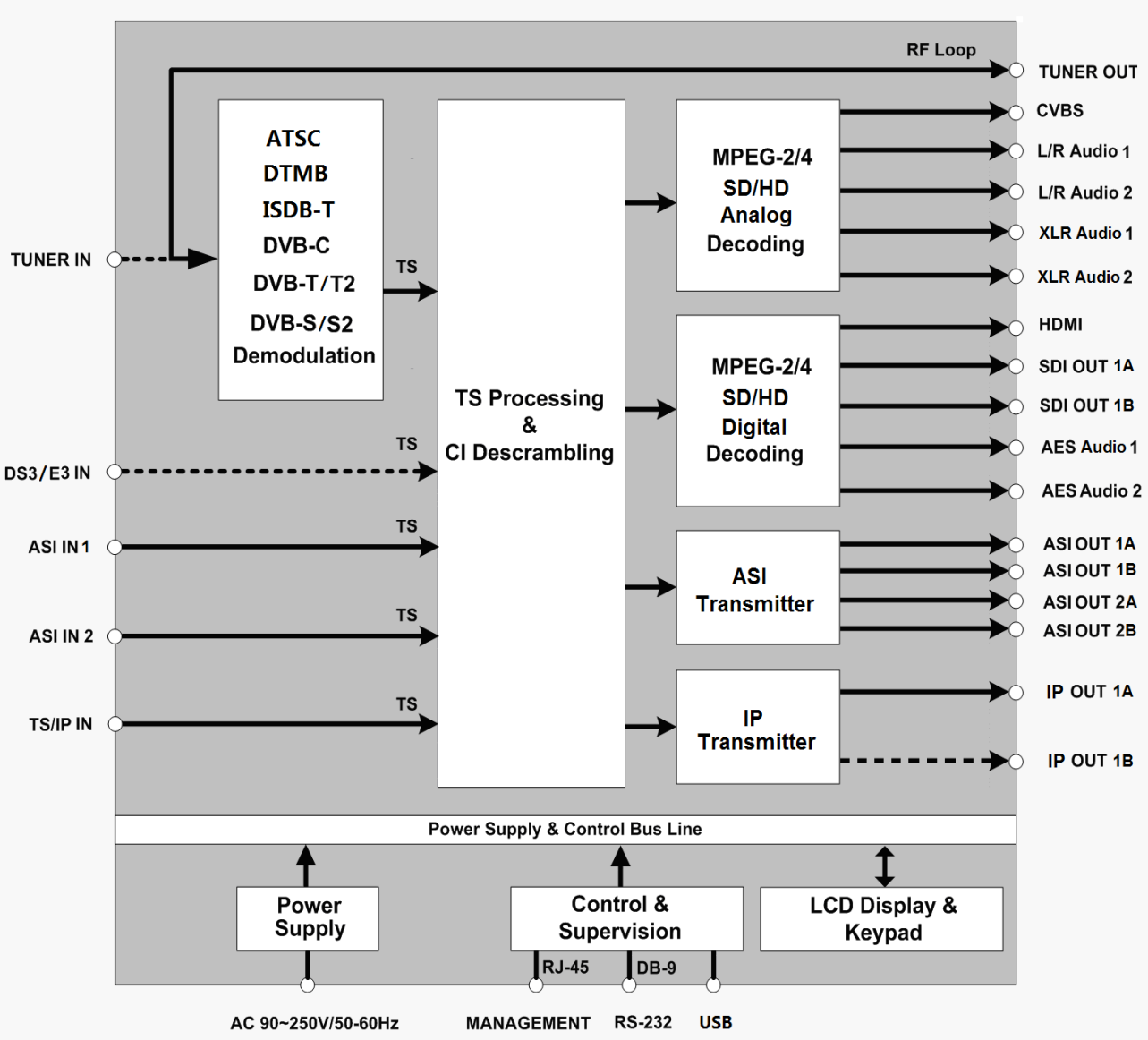
Block Diagram



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Model			DCH-5300PE-232S2							DCH-5300P-230x							DCH-5300P-232x						
Input	Tuner		S2	T2	ISDB	ATSC	DTMB	DS3	ISI	S2	T2	ISDB	ATSC	DTMB	DS3	ISI	S2	T2	ISDB	ATSC	DTMB	DS3	ISI
	DVB-S2		●							●							●						
	DVB-T2			●							●							●					
	ISDB				●							●							●				
	ATSC					●							●							●			
	DTMB						●							●							●		
	DS3							●							●							●	
	ISI								●							●							●
	ASI IN*2		●							●							●						
	CI x2		●							●							●						
Output	ASI	OUT1x2	●							●							●						
		OUT2x2	●							●							●						
	HD/SD SDI x2		●							●							●						
	转码		●																				
	HDMI		●							●							●						
	CVBS	BNC*2	●							●							●						
	Audio	RCA L/R	●							●							●						
		XLR L/R	●							●							●						
		AES3/EBU	●							●							●						
IP	GbE	2*RJ45	●														●						
Others	RS-232		●							●							●						
	Management		●							●							●						