

## DXP-3400PA

### 4-Channel H.264 HD IRD



The DXP-3400PA provides operators an ideal solution for multi receiving, descrambling, remultiplexing and decoding operations. By the quad DVB common interfaces, DXP-3400PA could decrypt multiple services in 4 transport stream. DXP-3400PA is also a professional IRD that features a broadcast quality decoder for MPEG-2 and MPEG-4 AVC/H.264 in both Standard Definition and High Definition formats, and provides a variety of industry standard digital and analog outputs, including 4 separated CVBS video, analog Audio, SD-SDI and HD-SDI. The unit also performs HD down-conversion and aspect ratio adaptation of HD programs to generate professional quality baseband analog video and audio outputs and TS over IP operations for easy integration with existing cable network infrastructure. This all-in-one architecture makes the DXP-3400PA an ideal product for distribution and contribution networks.

#### Main Feature

- Quad Tuner Input, Supports variety of input options DVB-T2/S2/S/C/T/DTMB/ATSC/ISDB-T, DS3/E3,
- Supports DVB-S2 Input Stream Identifier (ISI, optional) and DVB-T SFN MIP pass through
- SD/HD MPEG-2 and MPEG-4 AVC/H.264 digital video decoding
- Two Audio PIDs decode or pass through (compressed) for each SDI output
- Built-in 2xTS re-multiplexer, one receives from Tuner1, Tuner2, CI1 and CI2 Inputs, the other receives from Tuner3, Tuner4, CI3 and CI4 Inputs
- Support 2xIP streaming in & 2 IP out at full duplex mode, or 128xchannels IP out at IPTV mode, or 11xchannels IP out at DVB mode
- On Site software update through IP or USB
- 4x 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
- Remote Control and Supervision by SNMP, HTTP WEB and Proprietary HDMS software
- PCM audio embedded in SDI and HDMI outputs
- AC3 and Dolby E audio can be passed through by SDI
- VBI TELETEXT, WSS and Closed Caption embedded in SDI
- RSSI, received Eb/No & BER monitoring
- Redundant power supply

#### Built-in Remultiplexer and TS/IP interface



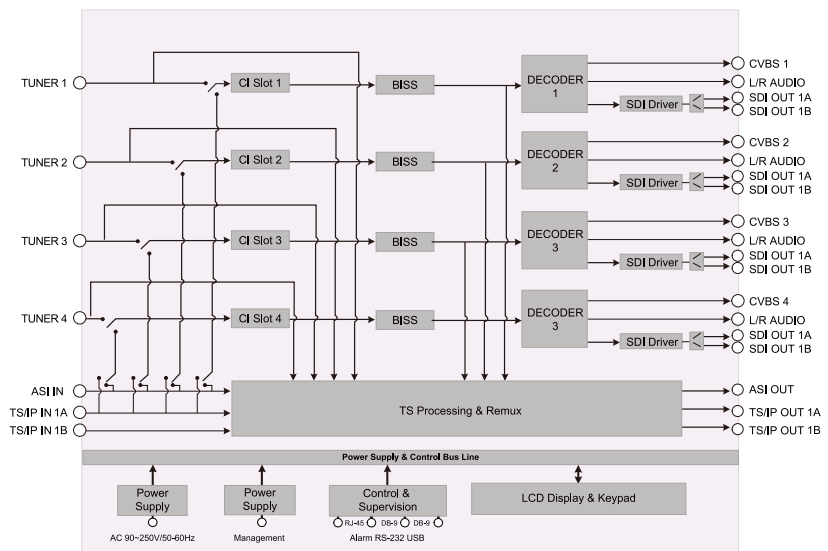
#### Up to 8 channels in one rack



#### Hot-swappable redundant power supply



#### Block Diagram



## Specification

<b>Tuner Input</b>	
<b>DVB-S/S2 Tuner Input (ISI Factory Optional)</b>	
Connector Type	4×F type female 75Ω for Input
Input Frequency Range	950~2150MHz
Input Level	-25~-65dBm
Symbol Rate	2~45MBaud
Roll-off Factor	DVB-S QPSK: 0.35 DVB-S2 8PSK: 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
<b>DVB-C Tuner Input</b>	
Connector Type	4×F type female 75Ω for Input
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.)
<b>DVB-T/T2 Tuner Input</b>	
Connector Type	4×F type female 75Ω for Input
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.)
<b>DTMB Tuner Input</b>	
Connector Type	4×F type female 75Ω for Input
Input Frequency Range	46.5~866MHz
Input Level	-87~-29dBm
Symbol Rate	7.56MBaud
Bandwidth	6MHz/7MHz/8MHz
Constellation	4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM
Guard Interval	PN420, PN595, PN945
Roll-off Factor	0.05
Interleaving Depth	240, 720
FEC Code Rate	0.4, 0.6, 0.8
<b>ATSC Tuner Input</b>	
Connector Type	4×F type female 75Ω for Input
Input Frequency Range	54~864MHz
Input Level	-75~-7dBm(ATSC 8VSB)
Symbol Rate	10.762MBaud
Constellation	8VSB
Roll-off Factor	0.115
Bandwidth	6MHz
<b>DS3 Input (Option)</b>	
Connector Type	4×BNC female, 75Ω, including loop through

Standard	Compliant with ITU-T G.703
Frame Structure	Compliant with ITU-T G.752 and ITU-T G.804
Bit Rate	44.736Mb/s
<b>TS Processing</b>	
TS Input Management	Demux and Remux among Tuner and CI Inputs
TS Output Management	Demux and Remux for 4 independent ASI outputs
Service and PID Management	Remux, filtering and remapping
PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and Re-generation
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
<b>ASI Input</b>	
Connector Type	1 independent BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤ 100Mb/s
<b>ASI Output</b>	
Connector Type	2 independent BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤ 100Mb/s
<b>Digital Video Processing</b>	
Video Standard	MPEG-2(MP@ ML for SD, MP@HL for HD) MPEG 4/H.264 AVC Part 10 (MP@L3 for SD, HP@L4.1 for HD)
SDI Video Resolution	1080i×30, 1080i×29.97, 1080i×25, 720p×60, 720p×59.94, 720p×50, 576i×25, 480i×29.97
Video PID Bit Rate	≤ 60Mb/s
<b>HD/SD-SDI or ASI Output</b>	
Video Standard	MPEG-2(MP@ ML for SD, MP@HL for HD) MPEG 4/H.264 AVC Part 10 (MP@L3 for SD, HP@L4.1 for HD)
Audio Standard	MPEG-1 Layer-I/II, MPEG-2 Layer-II LC-AAC, HE-AAC
Connector Type	4 Pairs of SDI output, BNC, female, 75Ω
SD Standard	SMPTE 259M, 270 Mb/s (10bit)
HD Standard	SMPTE 292M, 1.485 Gbit/s (10bit)
Level	800mV p-p MPEG-1 Layer 2 a. 2 stereo pairs (Stereo, Dual Mono, Left, Right) Dolby Digital (AC3) a. 5.1 down-mix to 2.0 (Stereo, Dual Mono, Left, Right) b. Dolby Digital Audio Pass-through Dolby Digital Plus(AC3+) a. 5.1 down-mix to 2.0 (Stereo, Dual Mono, Left, Right) b. Dolby Digital Audio Pass-through MPEG-2 AAC a. 5.1 down-mix to 2.0 (Stereo, Dual Mono, Left, Right) b. 2.0 (Stereo, Dual Mono, Left, Right) MPEG-4 HE-AAC v1/v2 a. 5.1 down-mix to 2.0 (Stereo, Dual Mono, Mono, Left, Right) b. 2.0 (Stereo, Dual Mono, Left, Right)
Embedded Audios	
Embedded Ancillary Data	Teletext, WSS, CC

### Analog Video Output

Standard	4×HDMI 1.3 interface (up to 1080i)
Video Resolution and Frame Rate	1 0 8 0 i × 3 0 , 1 0 8 0 i × 2 9 . 9 7 , 1 0 8 0 i × 2 5 , 7 2 0 p × 6 0 , 7 2 0 p × 5 9 . 9 4 , 7 2 0 p × 5 0 , 4 8 0 p × 6 0 , 5 7 6 p × 5 0 , 5 7 6 i × 2 5 , 4 8 0 i × 2 9 . 9 7
Audio Embedded	4×stereo

### Digital Audio Output

CVBS Connector	4×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 stream)
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%
Differential Phase	<2°
Signal to Noise Ratio	>55dB (luminance weighted)

### Analog Audio Output

Connector Type	2×D-sub 9 male included 4 pairs of stereo audio with XLR adaptor cable
Output Impedance	600Ω (balanced)
Output Mode	Left, Right, Dual Mono, Stereo
Number of Output	4 pairs of stereo audio outputs (4 Audio PIDs or 8 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

### TS over Ip

Connector Type	2×RJ-45, 100/1000 Base-T TS/IP Full duplex mode IEEE 802.3, 10/100/1000 Base-T 2 IP in and 2 IP out, Max bit rate: 120Mb/s X 4 Protocol: UDP/RTP SPTS or MPTS; ICMP, ARP, IGMPv2, IGMPv3 TS/IP IPTV Mode TS/IP Out only, IEEE 802.3, 10/100/1000 Base-T 128 IP out, second port backup, Max bit rate : 400Mb/s Protocol: UDP/RTP SPTS or MPTS; ICMP, ARP, IGMPv2, IGMPv3 TS/IP DVB Mode TS/IP Out only, IEEE 802.3, 10/100/1000 Base-T 11 IP out, second port backup, Max bit rate : 600Mb/s Protocol: UDP/RTP SPTS or MPTS; ICMP, ARP, IGMPv2, IGMPv3
Effective Bit Rate	

### Control & Monitoring

Connector Type	1×RJ-45, 10/100 Base-T, for equipment IP Control
Remote Control	SNMP, HTTP (Web Interface)
<b>Proprietary HDMS (Headend Device Management System)</b>	
Local Control	LCD display and 6-key keypad
Serial Port	1×RS-232 D-sub female, for debug use only
Equipment Upgrade	Embedded FTP loader and Telnet
<b>Physical</b>	
Weight	3.5kg
Power Supply	AC 90V~250V, 50/60Hz
Power Consumption	24W (exclusive of LNB power)
Operating temperature	0~45°C
Storage temperature	-10~60°C
Operating Humidity	10~90%, non-condensed

## Back Panel Interface

