DCH-6000P

Professional HEVC IRD and Processor

The DCH-6000P is the newest model and flagship of PBI's IRD product family. It provides operators an ideal solution for receiving, remultiplexing, descrambling and decoding operations, maximum supporting 4K*2K@60fps 10bit decoding. Equipped with a variety of inputs, it ensures compatibility with all transmission media. The DCH-6000P'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, DCH-6000P could decrypt multiple services in one transport stream or two. DCH-6000P is also a professional IRD that features a broadcast quality decoder for MPEG-2 and MPEG-4 AVC/H.264 HEVC/H.265 in SD, HD and UHD formats, and provides a variety of industry standard digital and analog outputs, including CVBS video, HDMI and 4*3G SDI interface. 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 DCH-6000P an ideal product for distribution and contribution networks.

1.5" LCD Monitor on front panel

Support 12G SDI Output

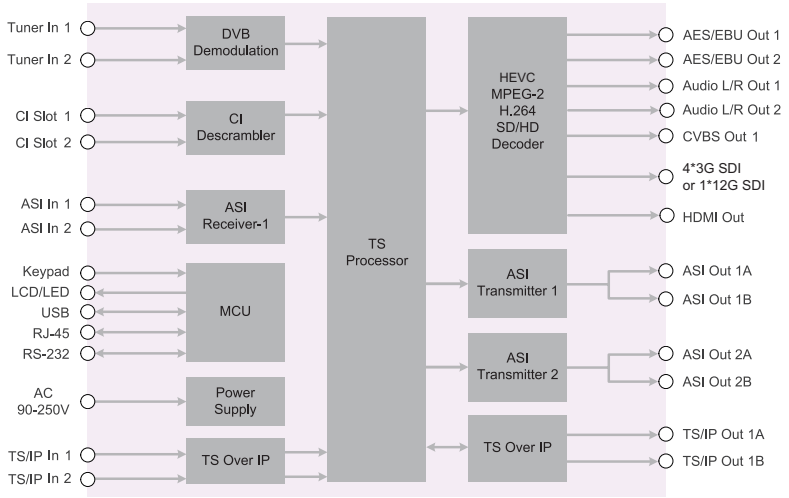
Hot-swappable redundant power supply

Main Feature

- Variety of input options DVB-S2/S/C/T, TS/IP and ASI
- Supports DVB-S2 Input Stream Identifier and DVB-T SFN MIP pass through
- 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
- Analog and Digital Outputs, ASI, CVBS, HDMI, SDI, TS/IP
- Multiple 4K output interfaces, 4*3G SDI, 12G SDI and HDMI 2.0
- Supports HDR10/HLG
- Built-in TS re-multiplexer receives from ASI, Tuner and TS/IP Inputs
- 2×DVB-CI Slots, support for all major CAS and CAMs, BISS-1 and BISS-E descrambling
- Dynamic PMT detection and automatic updating
- Supports VBI TELETEXT, EBU/DVB Subtitle, Closed Caption
- UDP/RTP, SRT, Unicast/Multicast, and double full duplex SPTS/MPTS over IP
- Remote Control and Supervision by SNMP, HTTP WEB and Proprietary HDMS software
- One alarm Relay with D-sub 9 male connector
- On Site software update through IP and USB
- RSSI, received Eb/No & BER monitoring

Block Diagram

DCH-6000P Functional Block Diagram



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Specification

Tuner Input	
DVB-S/S2X Tuner Input (16APSK/32APSK/64APSK)	
Connector Type	2×F type female 75Ω
Input Frequency Range	950~2150MHz
Input Level	-25~-65dBm
Symbol Rate	DVB-S2X/S2 QPSK 8PSK: 1~60MSps DVB-S2X/S2 QPSK 16APSK: 1~58MSps DVB-S2X/S2 QPSK 32APSK: 1~55MSps DVB-S2X/S2 QPSK 64APSK: 1~34MSps DVB-S QPSK: 1~54MSps
Roll-off Factor	DVB-S QPSK: 0.35 DVB-S2 8PSK: 0.35, 0.25, 0.2 DVB-S2X: 0.35, 0.25, 0.2, 0.15, 0.1, 0.05
FEC Code Rate	DVB-S2 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9,9/10 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 DVB-S2X: 64800 bits FECFRAME VCM and ACM
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-C Tuner Input	
Connector Type	2×F type female 75Ω
Input Frequency Range	51~862MHz
Input Level	45~75dBμV
Symbol Rate	1~MBaud (ITU J.83 Annex A)
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
Input Return Loss	7dB (typ.)
DVB-T Tuner Input	
Connector Type	2×F type female 75Ω
Input Frequency	104~862MHz (VHF/UHF)
Input Level	-20~-70dBm
Constellation	DVB-T: QPSK, 16QAM, 64QAM
Bandwidth	6MHz, 7MHz, 8MHz
FFT Mode	DVB-T: 2K, 8K
Guarding Interval	DVB-T: 1/4, 1/8, 1/16, 1/32
FEC Code Rate	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8
Input Return Loss	7dB (typ.)
DTMB Tuner Input	
Connector Type	2×F type female 75Ω for Input
Input Frequency	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
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	800Mb/s for 16xSPTS/MPTS IP Out, 200Mb/s for 4xSPTS/MPTS full duplex (single channel IP In and single channel IP Out)
Protocol	SRT/UDP/RTP, Multicast/Unicast, IGMPv3, ARP

TS Processing	
TS Input Management	Demux and Remux among Tuner, ASI and TS/IP Inputs
TS Output Management	Demux and Remux for 2 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, 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(Main, Spare), 4×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
3G\12G SDI Output	
Connector Type	4×BNC female 75Ω, Port1 supports 12G/6G/3G SDI Port2 supports 6G/3G SDI Port3 and 4 supports 3G SDI
SDI Level	Level A/Level B
SDI Mode	Square Division mode, 2 Sample interleave Downscale
SDI Standard	SMPTE 2080M, SMPTE 2081M, SMPTE 259M, SMPTE 292M, SMPTE 296M, SMPTE 425M
Video Resolution and Frame Rate	2160p60, 2160p50, 1080P60, 1080P59.94, 1080P30, 1080P29.97, 1080P25, 1080i×30, 1080i×29.97, 1080i×25, 720p×60, 720p×59.94, 720p×50
Audio Embedded	8×audio PIDs are embedded with PCM or passed through
Level	800mV p-p
HDMI Output	
Standard	1×HDMI 2.0, HDCP 2.2
Video Resolution and Frame Rate	2160p60, 2160p50, 2160p30, 2160p23.98, 2160p24, 2160p25, 2160p29.97, 1080i×30, 1080i×29.97, 1080i×25, 720p×60, 720p×59.94, 720p×50
Video PID Bit Rate	≤ 50Mb/s
Genlock	
Connector Type	1 x BNC female, 75Ω
Input Signal	Analog SD (black & burst)
Video Decoding	
Video Profile/Level	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 Decoding	
Audio Format	MPEG L1/L2 DRA/Real Audio AAC-LC, HE AAC V1/V2 AC3
Analog Video Output	
CVBS Connector	1×BNC female 75Ω
CVBS Standard	NTSC, PAL and SECAM
CVBS Resolution	576i×25, 480i×29.97
Analog Audio Output	
Connector Type	2×DB9 male, with DB9 to XLR adaptor cable

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Output Impedance	600Ω (Balanced)
Output Mode	Left, Right, Dual Mono, Stereo
Number of Output	2 pairs of stereo audio outputs (2 Audio PIDs or 4 channels)
Digital Audio Output	
Connector Type	2×DB9 male,
Number of Output	2×audios are decoded or passed through
Nominal Output Level	1V p-p (with standard test stream)
Output Format	AES/EBU
Load Impedance	110Ω (with XLR adaptor cables)
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
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	
Operating Humidity LVD: EN 60950-1:2006 + A11:2009	

Back panel Interface