PBI

Integrated Receiver Encoders

Brighten Your Digital View!

DCH-3000PE
Multi-Standard to MPEG-2 SD Transcoder

DCH-3000PE is specially designed for the network operators who have to keep MPEG-2 services in their networks instead of MPEG-4 although more and more services from satellite and terrestrial are broadcasting in MPEG-4 today. The main reason to keep MPEG-2 service is to avoid the re-investment of the MPEG4 STBs either by the operator or by the subscriber.

The most used function of DCH-3000PE is for MPEG-4 to MPEG-2 SD trans-coding. Equipped with a wide range of input Tuner, ASI and IP, adapted to most of digital TV broadcast network, DCH-3000PE decodes any of the MPEG2 and H.264/MPEG4 TV programs in SD and HD program to baseband, and then re-compress it into MPEG-2 SD. The ancillary data, such as VBI Tele-text, Subtitles, and Digital Audio are looped through and inserted into the re-compressed stream. The re-compressed MPEG-2 stream can be outputted over ASI as well as over IP. DCH-3000PE is also a professional IRD that features a broadcast quality decoding for MPEG-2 and MPEG-4 AVC/H.264 in both SD and HD formats. It provides a variety of industry standard digital and analog audio and video outputs. Equipped with dual DVB common interfaces, DCH-3000PE works with most of conditional access Systems in the market. Remote control and supervision can be done over SNMP based management system or Web page. This all-in-one architecture makes the DCH-3000PE an ideal product for H.264/ MPEG4 to MPEG-2 conversion system.

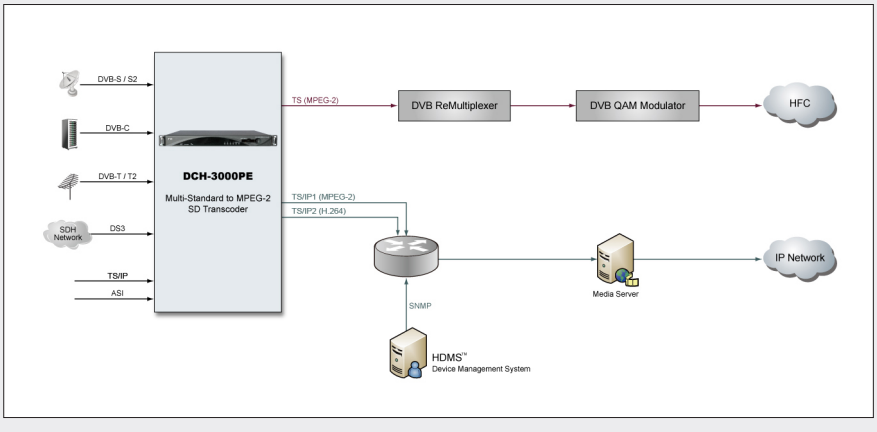
Multiple Inputs and Outputs

2x DVB-CI Slots, Multi Programs decryption

Remote Control and Supervision by SNMP, HTTP WEB and Proprietary HDMS software

Main Feature

- Multi-standard and format to MPEG-2(MP@ ML) trans-coding
- Multiple inputs DVB-S2/S/C/T/T2, TS/IP, ASI, DS3 and E3
- Redundant inputs among Tuner, ASI and TS/IP
- SD/HD MPEG-2 and MPEG-4/H.264 digital Video decoding
- Digital audio pass through for trans-coding
- Digital audio down-mix and loop through over SDI embedded
- Multiple Analog and Digital Outputs for decoded signal, ASI, TS/IP, SDI, and CVBS
- Flexible re-multiplexing among ASI, Tuner and TS/IP Inputs
- Standard definition MPEG2 encoder
- 2x DVB-CI Slots, Multi Programs, BISS-1 and BISS-E decryption
- Dynamic PMT detection and automatic updating
- VBI Tele-text, EBU/ DVB Subtitle, Closed Caption pass through
- UDP/RTP and Unicast/Multicast SPTS and MPTS over IP I/O
- Built-in remultiplexer with PSI/SI re-generation
- Remote Control and Supervision by SNMP, HTTP WEB and Proprietary HDMS software
- RSSI, received Eb/No & BER monitoring
- On Site software update through IP



Specification

Tuner Input	
DVB-S/S2 Tuner Input	
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	5 ~ 45MBaud/s for QPSK
	10 ~ 31MBaud/s for 8PSK
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, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 8/10
	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
DVB-C Tuner Input	
Connector Type	1 × F type female 75Ω for Input, 1 × F type female 75Ω for loop through output
Input Frequency	48 ~ 860MHz
Input Level	45 ~ 75dBμV
Symbol Rate	1 ~ 7MBaud (ITU J.83 Annex A)
Constellation	16/32/64/128/256QAM
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 ~ 860MHz (VHF/UHF)
Input Level	-20 ~ -70dBm (Quasi Error Free, QEF)
Constellation	DVB-T: QPSK/16-QAM/64-QAM;
	DVB-T2: QPSK, 16QAM, 64QAM, 256QAM
Bandwidth	6MHz/7MHz/8MHz
FFT Mode	DVB-T: 2K/8K DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Guard 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	1 × BNC, 75Ω
Standard	DVB-ASI, EN50083-9
TS Processing	Re-multiplexing of ASI, Tuner, and TS/IP Inputs
DS3 Input (Option)	
Connector Type	2 × 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
TS over IP	
Connector Type	2 × RJ-45, 10/100 Base-T for TS/IP
TS/IP1	TS/IP output for demodulated signal source
TS/IP2	TS/IP output for transcoded service
Useful Bit Rate	70Mb/s for 10/100 Base-T
Protocol	UDP / RTP, Multicast / Unicast, IGMPv2,ARP
TS Processing	
TS Input Management	Remux and demux between Tuner / DS3 (optional) / E3 (optional), ASI and TS/IP Inputs
TS Output Management	Remux and demux for mirrored 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
ASI Output	
Connector Type	2 × BNC Female, 75Ω
ASI OUT1	output for demodulated signal source
ASI OUT2	output for transcoded service
Standard	DVB-ASI, EN50083-9
TS Processing	TS remultiplexing among tuner, TS/IP and ASI inputs
Digital Video Decoding	
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)
Video PID Bit Rate	< 80Mb/s
SDI Video Resolution	1080i × 30, 1080i × 29.97,1080i × 25, 720p × 60, 720p × 59.94, 720p × 50, 576i × 25, 480i × 29.97 (only 576i × 25 or 480i × 29.97 is selectable when transcoding mode is selected)
SDI Output	
Connector Type	BNC Female, 75Ω
Serial Interface	SMPTE 259M, 270 Mb/s (10bit)
Level	800mV p-p
Digital Audio Decoding	
Connector Type	SDI BNC Female, 75Ω
Number of Outputs	1 × digital audio* is decoded, 1 × digital audio loop through
Sampling Rate	32, 44.1 and 48KHz
Audio Bit Rate	32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 384, 416 and 448 kb/s for MPEG-1 Layer I
	32, 48, 56, 64, 80, 96, 112, 128, 160, 192, 224, 256, 320 and 384 kb/s for MPEG-1 Layer II
Output Level	1Vpp
Output Format	XLR Balanced Audio
Load Impedance	110Ω (with cable adaptors)
Digital Audio Video Compression	
Video Compression	
Analog Video Format	NTSC, PAL and SECAM
Compression Standard	MPEG-2 MP@ML (ISO/IEC13818-2)
Video Resolution	480i (720 × 480) @29.97Hz: SMPTE125M 576i (720 × 576) @25Hz: ITU-R BT.656-4
Aspect Ratio	4:3/16:9 selectable
Video Encoding Bit rate	1.5 ~ 20Mb/s
Audio Compression	
Compression Standard	MPEG-1 Layer I, II
Audio Sampling Rate	32K, 44.1K, 48K
Audio Encoding Bit rate	32, 64,128, 192, 256, 384Kbps
Analog Video Output	
CVBS Connector	1 × BNC 75Ω
Video Standard	NTSC, PAL, and SECAM
Signal Level	1000mVp-p±30mV
Frequency Response	<0.5dB,≥-4dB at 5.5MHz
Chroma-Luma Delay	<±30 ns
Field Time Distortion	<2%
Line Time Distortion	<1%
Short Time distortion	<2%
Differential Gain	<4%
Differential Phase	<5
Signal to Noise Ratio	>55 dB (luminance weighted)
Analog Audio Output	
Connector Type	DB-9 Connector
Output Impedance	600Ω (balanced)
Output Mode	Left, Right, Dual Mono, Stereo
Number of Outputs	1 pairs of stereo audio outputs

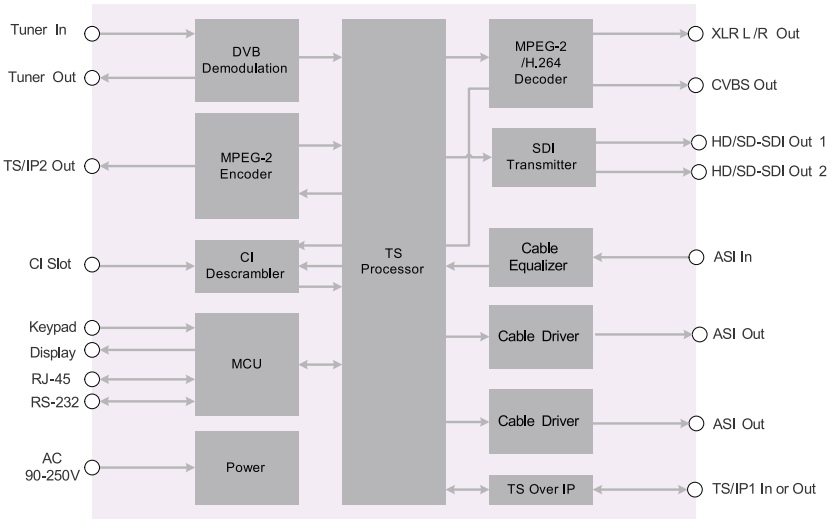
Ancillary Data Processing	
Subtitle	DVB/EBU
VBI	Teletext, WSS, VFD, VPS
Closed Caption	EIA 608, EIA 708, EIA 608-to-708
Redundancy	
Redundancy Port	between Tuner, ASI inputs and TS/IP
Switching Condition	TS Sync Loss
Switching Mode	Main, Spare
Control & Monitoring	
Connector Type	1 × RJ-45, 10/100 Base-T, for equipment IP Control
Local Control	LCD display and 6-key keypad
Serial Port	1 × RS-232 9-pin D-sub, for debug use only

Remote Control	SNMP, HTTP Web, Proprietary HDMS Network System Management Software
Equipment Upgrade	FTP loader
Physical	
Dimension	44mm × 420mm × 430mm
Weight	4.5Kg Net, 6.2Kg Gross
Power Supply	AC 90V ~ 250V, 50/60Hz
Power Consumption	24W (exclusive of LNB power)
Operating Temperature	0 ~ 45℃
Storage Temperature	-10 ~ 60℃
Operating Humidity	10 ~ 90%, non-condensed
Certification	
CCC.CE, FCC	

* For more information about digital audio, please contact our sales representative.

Block Diagram

DCH-3000PE Function Block Diagram



Order Information

Functionality \ Model	DCH-3000PE-XX				
	-S2	-C	-T	-T2	-DS3
Tuner Input	DVB-S2	DVB-C	DVB-T	DVB-T2	DVB-DS3
ASI Input	× 1	× 1	× 1	× 1	× 1
DVB Common Interface	× 2	× 2	× 2	× 2	× 2
Built-in Remultiplexer	•	•	•	•	•
ASI Output (mirrored)	× 2	× 2	× 2	× 2	× 2
SDI	× 1	× 1	× 1	× 1	× 1
CVBS (BNC)	× 1	× 1	× 1	× 1	× 1
Balanced Audio XLR (DB-9)	× 1	× 1	× 1	× 1	× 1
100M TS/IP for decoding output	•	•	•	•	•
100M TS/IP for trasncoding output	•	•	•	•	•

• standard configuration

Back panel Interface

Room 401, Dingjun Plaza, No.75 SuZhou Street, Haidian District, Beijing, China 100080
Tel: +86-10-82617178 Fax: +86-10-82610263 E-mail: sales@pbicn.com