

DCH-5100P Professional HDTV IRD and Processor

The DCH-5100P IRD and Processor provides operators an ideal solution for receiving, remultiplexing, descrambling and decoding operations. Equipped with a variety of inputs that ensures compatibility with all transmission media. The DCH-5100P's remultiplexing 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-5100P could decrypt multiple services in one transport stream or two. DCH-5100P 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 CVBS video, AES/EBU Audio, 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 for easy integration with existing cable network infrastructure. This all-in-one architecture makes the DCH-5100P an ideal product for distribution and contribution networks.



Main Feature

- Multiple inputs DVB-T2/S2/S/C/T/T2, TS/IP, ASI and DS3/E3 (optional)
- Supports DVB-S2 Input Stream Identifier (ISI, optional) and DVB-T SFN MIP pass through
- Redundant backup among Tuner, ASI and TS/IP with configurable priority
- SD/HD MPEG-2 and MPEG-4 AVC/H.264 digital video decoding
- Two Audio PIDs decode or pass through (compressed) in SDI output
- Multiple Analog and Digital Outputs, ASI, CVBS, YPbPr, HDMI, SD/HD-SDI, AES/EBU Audio, TS/IP
- Built-in TS re-multiplexer receives 2 x ASI, Tuner and TS/IP Inputs
- 2 x 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 SPTS/MPTS over IP (full duplex, optional)
- Remote Control and Supervision by SNMP, HTTP WEB and Proprietary HDMS software
- PCM audio embedded in SDI and HDMI outputs
- PCM audio output on two AES/EBU audio output ports
- On Site software update through IP
- RSSI, received Eb/No & BER monitoring

Dual DVB Common Interface and Multi Programs decryption



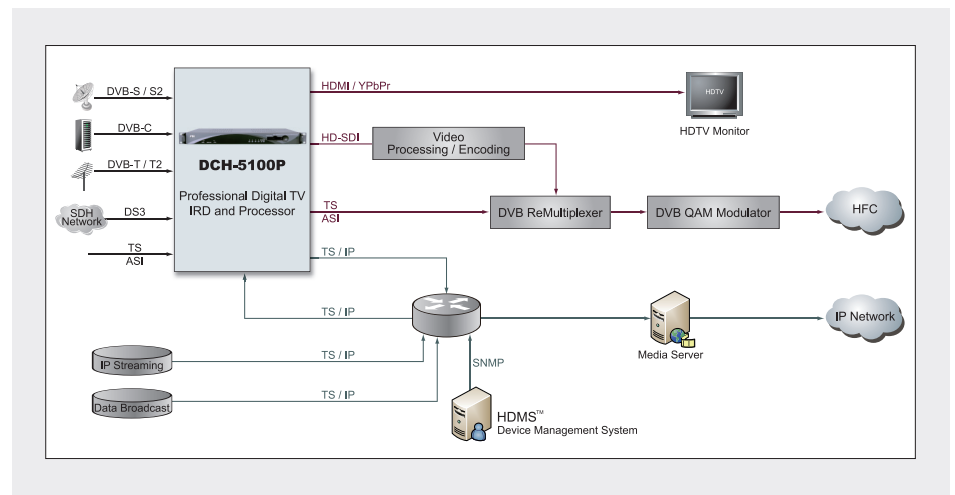
A variety of industry standard digital and analog outputs



Gigabit Ethernet or Dual 100M TS/IP interface for IP based networks



Application Case



Specification

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	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
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	48 ~ 862MHz
Input Level	45 ~ 75dB μV
Symbol Rate	1 ~ 7MBaud (ITU J.83 Anne × 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 ~ 862MHz (VHF/UHF)
Input Level	-20 ~ -70dBm
Constellation	DVB-T: QPSK/16-QAM/64-QAM DVB-T2: QaPSK, 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	2 × BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rate	≤ 100Mb/s
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	1 × RJ-45, 10/100 Base-T or 100/1000 Base-T for TS/IP
Effective Bit Rate	70Mb/s for 10/100 Base-T, 800Mb/s for 1000 Base-T
Protocol	UDP / RTP, Multicast / Unicast, IGMPv2, ARP
TS Processing	
TS Input Management	Demu × and Remu × among Tuner / DS3 (optional) / E3 (optional), ASI and TS/IP Inputs
TS Output Management	Demu × and Remu × for 2 independent ASI outputs
Service and PID Management	Remu ×, 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

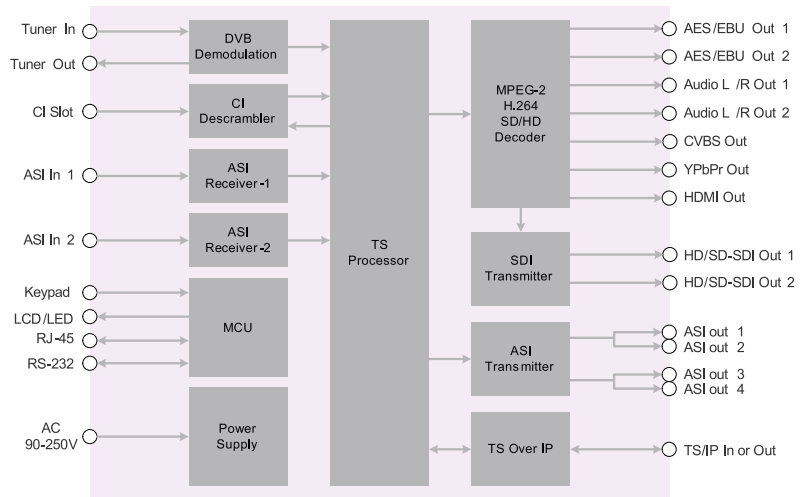
ASI Output	
Connector Type	2 pairs of BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤ 99Mb/s
TS Processing	2 Independent TS Re-multiple × ed from tuner, TS/IP and 2 ASI inputs
HDMI Output	
Standard	1 × HDMI 1.3 interface (up to 1080i)
Video Resolution and Frame Rate	1080i × 30, 1080i × 29.97, 1080 × 25, 720p × 60, 720p × 59.94, 720p × 50, 480p × 60, 576p × 50, 576i × 25, 480i × 29.97
Audio Embedded	2 × stereos or compressed data pass through*
Digital Video Processing	
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	< 80Mb/s
HD/SD-SDI Output	
Connector Type	1 pair of BNCs (mirrored), female, 75Ω
SD Standard	SMPTE 259M, 270 Mb/s (10bit)
HD Standard	SMPTE 292M, 1.485 Gbit/s (10bit)
Level	800mV p-p
Digital Audio Processing	
Connector Type	2 × D-sub 9 male with × LR adaptor cables
Number of Output	2 × audio are decoded or passed through*
Audio Sampling Rate	32, 44.1 and 48 KHz
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
Nominal Output Level	1V p-p (with standard test stream)
Output Format	AES/EBU
Load Impedance	110Ω (with × LR adaptor cables)
Analog Video Output	
YPbPr Connector	1 set of RCA female, 75Ω
CVBS Connector	1 × BNC female 75Ω, 1 × RCA female 75Ω
CVBS Standard	NTSC, PAL, and SECAM
YPbPr Resolution	1080i × 30, 1080i × 29.97, 1080i × 25, 720p × 60, 720p × 59.94, 720p × 50, 480p × 60, 576p × 50, 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 and 15MHz for HD YPbPr
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, with × LR adaptor cable
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 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, VFD, VPS
Closed Caption	EIA 608, EIA 708, EIA 608-to-708

Redundancy	
Redundancy Port	among Tuner, 2 × 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
Remote Control	SNMP, HTTP (Web Interface), Proprietary HDMS (Headend Device Management System)
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

Physical	
Dimension	44mm × 483mm × 255mm
Weight	3.4Kg Net, 5.4Kg Gross
Power Supply	AC 90V ~ 250V, 50/60Hz
Power Consumption	24W (e × clusive of LNB power)
Operating temperature	0 ~ 45°C
Storage temperature	-10 ~ 60°C
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	

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

Block Diagram



Order Information

Interface	Model	DCH-5100P-30X	DCH-5100P-43X	DCH-5100P-44X	DCH-5100P-46X
Tuner		X = Tuner option: <input type="checkbox"/> -T2: DVB-T2 <input type="checkbox"/> -T: DVB-T <input type="checkbox"/> -C: DVB-C <input type="checkbox"/> -S2: DVB-S2 <input type="checkbox"/> -ISI: DVB-S2 ISI <input type="checkbox"/> -D: DS3 <input type="checkbox"/> -E3: E3			
ASI Input		× 2	× 2	× 2	× 2
Common Interface		× 2	× 2	× 2	× 2
Built-in Re-mux		•	•	•	•
ASI-Output		× 2	× 2	× 2	× 2
HDMI		× 1	× 1	× 1	× 1
SDI		× 2	× 2	× 2	× 2
YPbPr		× 1	× 1	× 1	× 1
Audio L/R		× 2	× 2	× 2	× 2
AES-EBU		× 2	× 2	× 2	× 2
CVBS		× 2	× 2	× 2	× 2
10/100M extension board (Dual 6 Ch)			•		
10/100M extension board (32 Ch)				•	
GbE extension board (Full duplex)					•

• standard

Back panel Interface (Full option)

