



DHP300

DTV Head-end Processor



Product Outline

DHP300 DTV head-end processor is the new generation of intelligent headend processing equipment. This 1-U case comes with 6 independent module slots. Each module can be configured individually based on the applications including encoding, decoding, trans-coding, multiplexing, descrambling and modulating processing and the combination of all these functions. It supports multiple input and output interfaces and signal formats. With its powerful performance and low cost, DHP300 is especially adequate for the new generation CATV system.

Key Features

- Support flexible combination of different type of modules
- Support up to 6 modules
- Support IP input/output, RJ45/SFP interface, Unicast/Multicast
- Support Web management, Updates via web
- Single or Redundancy power supply for option

Module Specifications:

4 CVBS/SDI Encoding Module



DX214B

Module Specifications:

Input: 4 CVBS (DB9 to RCA) or 4 SDI (BNC)

Output: 1MPTS and 4 SPTS output over UDP/RTP, unicast and multicast

Video Encoding:

Video format: MPEG-2, MPEG4 AVC/H.264

Image format: PAL, NTSC SD signal (Only for CVBS input)

Resolution:

Input: 720*576 @50i

Output: 720*576/352*288/320*240/320*180/176*144/160*120/160*90@50Hz

Input: 720*480 @60i

Output: 720*480/352*288/320*240/320*180/176*144/160*120/160*90@60Hz

Rate Control: CBR/VBR

GOP structure: IPPP, IBPBP, IBBPB, IBBBBP

Video bitrate: 0.5~5Mbps

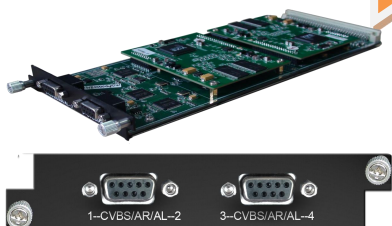
Audio Encoding:

Audio format: MPEG1 Audio Layer 2, LC-AAC, HE-AAC

Sampling rate: 48KHz

Bit-rate: 48/56/64/80/96/112/128/160/192/224/256/320/384 Kbps

Support Logo, Caption, QR Code insertion

4 CVBS Encoding Module

DX214/DX214A
Module Specifications:

Input: 4 CVBS video, 4 Stereo Audio (DB9 to RCA)

Output: 1MPTS and 4 SPTS output over UDP/RTP, unicast and multicast

Video Encoding:

Video format: MPEG-2 (4:2:0)

Image format: PAL, NTSC SD signal

Output resolution: 720×480_60i, 544×480_60i, 352×480_60i, 352×240_60i,
320×240_60i, 176×240_60i, 176×120_60i, 720×576_50i,
704×576_50i, 640×576_50i, 352×288_50i, 320×288_50i,
176×288_50i, 176×144_50i

GOP structure: IP, IBP, IBBP, IBBBP

Video bitrate: 0.1Mbps~8Mbps per channel

Support CC (closed caption)

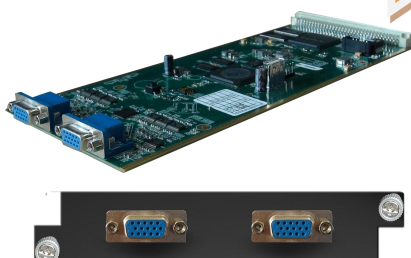
Audio Encoding:

Audio format: MPEG-1 Layer 2, DD AC3 (2.0)

Sampling rate: 48KHz

Audio bitrate:128/192/256/320/384kbps each channel

Support Logo, Caption, QR Code insertion (for DX214A only)

8 CVBS(or 8 audio) Encoding Module

DX218S
Module Specifications:

Input: 8 CVBS video, 8 Stereo Audio (DB15 to RCA), or 8 ch analog audio input to work as audio encoder module

Output: 1 MPTS and 8 SPTS output over UDP/RTP, unicast and multicast

Video Encoding:

Video format: MPEG4 AVC/H.264

Image format: PAL, NTSC SD signal

Resolution: 720×576i, 720×480i

Rate Control: CBR/VBR

GOP structure: IPP

Video bitrate: 1~7Mbps each channel

Audio Encoding:

Audio format: MPEG-1 Layer 2

Sampling rate: 48KHz

Bit-rate: 64/128/192/224/256/320/384Kbps each channel

Support Logo, Caption, QR Code insertion

2 HDMI/SDI Encoding/Transcoding Module

DX202A

DX202A-D
Module Specifications:

Input: 2*HDMI, 2*BNC for CC (Closed Caption) input - (DX202A)

Input: 2*HD/SD SDI - (DX202A-D)

Output: 1*MPTS output over UDP, Unicast/Multicast

Video Encoding:

Video format: MPEG2 & MPEG4 AVC/H.264

Input resolution: 1920*1080_60P, 1920*1080_50P, 1920*1080_60i, 1920*1080_50i, 1280*720_60p, 1280*720_50P, 720*480_60i, 720*576_50i

Aspect ratio: 16:9, 4:3

Video bitrate: 0.8~19Mbps

Support CC (closed caption)

Audio Encoding:

Audio format: MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC,

Dolby Digital AC3 (2.0) encoding (Optional); AC3 (2.0/5.1) passthrough

Sampling rate: 48KHz Audio bitrate: 64Kbps-320kbps each channel

Video Transcoding:

2*MPEG2 HD → 2*MPEG2/H.264 HD; 4*MPEG2 HD → 4*MPEG2/H.264 SD;

2* H.264 HD → 2*MPEG2/H.264 HD; 4* H.264 HD → 4*MPEG2/H.264 SD;

4 *MPEG2 SD → 4 *MPEG2/H.264 SD; 4* H.264 SD → 4 *MPEG2/H.264 SD

Audio Transcoding:

MPEG-1 Layer 2, AC3 (Optional) and AAC any-to-any

8 HDMI Encoding Module

DX228S
Module Specifications:

Input: 8*HDMI

Output: 1*MPTS and 8*SPTS output over UDP/RTP/RTSP, Unicast/Multicast

Video Encoding:

Video format: MPEG-4 AVC/H.264

Input resolution: 1920×1080_60P, 1920×1080_60i, 1920×1080_50P, 1920×1080_50i, 1280×720_60P, 1280×720_50P, 720×576_50i, 720×480_60i,

Output resolution: 1920×1080_30P, 1920×1080_25P, 1280×720_30P, 1280×720_25P, 720×576_25P, 720×480_30P,

GOP structure: IP...P (P Frame adjustment, without B Frame)

Video Bit-rate: 1Mbps~13Mbps each channel

Rate Control: CBR/VBR

Audio Encoding:

Audio format: MPEG1 Layer II, LC-AAC, HE-AAC and AC3 Pass through, support audio gain adjustment

Sampling rate: 48 KHz

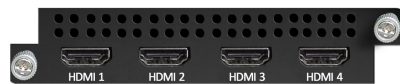
Audio Bit-rate:

MPEG-1 Layer 2: 48/56/64/80/96/112/128/160/192/224/256/320/384 kbps

LC-AAC: 48/56/64/80/96/112/128/160/192/224/256/320/384 kbps

HE-AAC: 48/56/64/80/96/112/128 kbps

Support Logo, Caption, QR Code insertion

4 HDMI/SDI Encoding Module

DX224H/HV
Module Specifications:

Input: 4×HDMI (1.4) /SDI input, HDCP 1.4

Output: 1 MPTS and 4 SPTS output over UDP/RTP/RTSP

Video Encoding:

Video format: HEVC/H.265 & MPEG 4 AVC/H.264

Resolution:

	Input	Output	
		HEVC/H.265	MPEG-4 AVC/H.264
DX224HV	4*1080P-50	4*1080P-50	4*1080P-25 2*1080P-50
	4*1080P-60/59.94	4*1080P-60, 4*1080P-59.94	4*1080P-30 4*1080P-29.97 2*1080P-60 2*1080P-59.94
	4*1080I-50	4*1080P-50, 4*1080P-25	4*1080I-50 4*1080P-25 2*1080P-50
	4*1080I-60/59.94	4*1080P-60, 4*1080P-30	4*1080I-60 4*1080P-30 2*1080P-60
	4*720P-50	4*720P-50	4*720P-50
	4*720P-60/59.94	4*720P-60, 4*720P-59.94	4*720P-60 4*720P-59.94
	DX224H	4*1080P-50	4*1080P-50
4*1080P-60/59.94		4*1080P-60, 4*1080P-59.94	4*1080P-60 4*1080P-59.94
4*1080I-50		4*1080P-50, 4*1080P-25	4*1080P-25 4*1080P-50 4*1080I-50
4*1080I-60/59.94		4*1080P-60, 4*1080P-30	4*1080P-30 4*1080P-60 4*1080I-60
4*720P-50		4*720P-50	4*720P-50
4*720P-60/59.94		4*720P-60, 4*720P-59.94	4*720P-60 4*720P-59.94

Chroma: 4:2:0

Bit rate (each channel): 0.5Mbps~20Mbps (H.265); 4 Mbps~20Mbps (H.264)

Rate Control: CBR/VBR

GOP structure: IBBP, IPPP

Audio Encoding:

Audio format: MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3

Passthrough

Bit-rate (each channel):

48Kbps~384Kbps (MPEG-1 Layer 2 & LC-AAC);

24 Kbps~128 Kbps (HE-AAC); 18 Kbps~56 Kbps (HE-AAC V2)

Sampling rate: 48KHz Support Audio Gain adjust

Support Logo, QR Code insertion--Optional as per order

4 HDMI/SDI Encoding Module

DX224V
Module Specifications:

Input: 4×SDI/HDMI (1.4) input, HDCP 1.4

Output: 1 MPTS and 4 SPTS output over UDP/RTP/RTSP

Video Encoding:

Video format: HEVC/H.265 & MPEG 4 AVC/H.264

Resolution:

HDMI VI & SDI:

Input	Output	
	HEVC/H.265	MPEG-4 AVC/H.264
4*1080P-50	4*1080P-50	2*1080P-50
4*1080P-60/59.94	4*1080P-60/59.94	2*1080P-60/59.94
4*1080I-50	4*1080P-50	4*1080I-50 2*1080P-50
4*1080I-60/59.94	4*1080P-60/59.94	4*1080I-60/59.94 2*1080P-60/59.94
4*720P-50	4*720P-50	4*720P-50
4*720P-60/59.94	4*720P-60/59.94	4*720P-60/59.94

HDMI V2:

Input	Output	
	HEVC/H.265	MPEG-4 AVC/H.264
4*2160P_25/30/29.97	2*2160P_25/30/29.97	1*2160P_25/30/29.97
4*1080P_50/60/59.94	4*1080P_50/60/59.94	2*1080P_50/60/59.94
4*720P_50/60/59.94	4*720P_50/60/59.94	4*720P_50/60/59.94

Chroma: 4:2:0 Bit rate: 0.5Mbps~20Mbps (H.265); 4 Mbps~20Mbps (H.264)

Rate Control: CBR/VBR

GOP structure: IBBP, IPPP

Audio Encoding:

 Audio format: MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3
Passthrough

Sampling rate: 48KHz

Bit-rate (each channel):

48Kbps~384Kbps (MPEG-1 Layer 2 & LC-AAC)

24 Kbps~128 Kbps (HE-AAC)

18 Kbps~56 Kbps (HE-AAC V2)

Support audio gain adjust

Support Logo, QR Code insertion--available on HDMI V1


DX902A

Stream in: 2 Tuner input, F Type,
 16 IP inputs from data port, UDP/RTP, unicast and multicast, IGMP
 V2/V3

Stream out: 1 MPTS and 16 SPTS outputs over UDP/RTP/RTSP, Unicast/Multicast

DVB-CI: 2 independent common interface slots

Tuner input: DVB-S/S2/S2X

Symbol rate: QPSK/8PSK/16APSK 0.5~45 Msps; 8APSK/32APSK:
 0.5~40Msps

Input Frequency: 950-2150MHz

DVB-S Constellation: QPSK
 FEC Demodulation: 1/2, 2/3, 3/4, 5/6, 7/8

DVB-S2 Constellation: QPSK/8PSK/16APSK/32APSK
 FEC Demodulation:
 QPSK: 1/2, 2/3, 3/4, 5/6, 3/5, 4/5, 8/9, 9/10
 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10

DVB-S2X Constellation: QPSK/8PSK/8APSK/16APSK/32APSK
 FEC Demodulation:
 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 13/45, 9/20, 11/20
 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10, 23/36, 25/36, 13/18
 8APSK: 5/9-L, 26/45-L
 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5,
 3/5-L, 28/45, 23/36, 2/3-L, 25/36, 13/18, 7/9, 77/90
 32APSK: 3/4, 4/5, 5/6, 8/9, 2/3-L, 32/45, 11/15, 7/9, 9/10

Support Diseqc function

Multiplexing:

Maximum PID Remapping: 256 output pids

Function: PID remapping (automatically or manually), Accurate PCR adjusting,
 generate PSI/ SI table automatically

Descrambling:

CAM/CI Quantity: 2

BISS Mode: Mode 1, Mode E; up to 120Mbps, 32 BISS key

4 FTA Tuner Module

DX904B
Module Specifications:

Stream in: 4 Tuner input, F Type

Stream out: 1 MPTS out for mux, 4 MPTS out for 4 tuner input pass through over UDP/RTP/RTSP, unicast/multicast

Tuner input: DVB-S/S2/S2X

Symbol rate: QPSK/8PSK/16APSK 0.5~45 Msps; 8APSK/32APSK: 0.5~40Msps

Input Frequency: 950-2150MHz

DVB-S Constellation: QPSK

FEC Demodulation: 1/2, 2/3, 3/4, 5/6, 7/8

DVB-S2 Constellation: QPSK/8PSK/16APSK/32APSK

FEC Demodulation:

QPSK: 1/2, 2/3, 3/4, 5/6, 3/5, 4/5, 8/9, 9/10

8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10

16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

32APSK: 3/4, 4/5, 5/6, 8/9, 9/10

DVB-S2X Constellation: QPSK/8PSK/8APSK/16APSK/32APSK

FEC Demodulation:

QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 13/45, 9/20, 11/20

8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10, 23/36, 25/36, 13/18

8APSK: 5/9-L, 26/45-L

16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45, 23/36, 2/3-L, 25/36, 13/18, 7/9, 77/90

32APSK: 3/4, 4/5, 5/6, 8/9, 2/3-L, 32/45, 11/15, 7/9, 9/10

Support Diseqc function

Multiplexing:

Max number of managing PID: 256

Function: PID remapping (automatically/ manually), Accurate PCR adjust, PID pass-through

Descrambling:

BISS Mode: Mode 1, Mode E; up to 120Mbps, 32 BISS Key

8 FTA Tuner Module

DX908

Stream in: 4/8 Tuner input, F Type,
 Stream out: 8 MPTS passthrough out for 8 tuner input, or 2 MPTS out after multiplexing, or 512 SPTS out over UDP/RTP/RTSP, Unicast/Multicast
 Tuner input: DVB-S/S2/S2X
 Symbol rate: QPSK/8PSK/16APSK 0.5~45 Msps; 8APSK/32APSK: 0.5~40Msps
 Input Frequency: 950-2150MHz

DVB-S Constellation: QPSK

FEC Demodulation: 1/2, 2/3, 3/4, 5/6, 7/8

DVB-S2 Constellation: QPSK/8PSK/16APSK/32APSK

FEC Demodulation:

QPSK: 1/2, 2/3, 3/4, 5/6, 3/5, 4/5, 8/9, 9/10

8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10

16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

32APSK: 3/4, 4/5, 5/6, 8/9, 9/10

DVB-S2X Constellation: QPSK/8PSK/8APSK/16APSK/32APSK

FEC Demodulation:

QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 13/45, 9/20, 11/20

8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10, 23/36, 25/36, 13/18

8APSK: 5/9-L, 26/45-L

16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45, 23/36, 2/3-L, 25/36, 13/18, 7/9, 77/90

32APSK: 3/4, 4/5, 5/6, 8/9, 2/3-L, 32/45, 11/15, 7/9, 9/10

Support Diseqc function

Multiplexing:

Maximum PID Remapping: 256 output pids

Function: PID remapping (automatically or manually), Accurate PCR adjusting, generate PSI/ SI table automatically

Descrambling:

BISS Mode: Mode 1, Mode E; up to 120Mbps, 32 BISS Key

4 Freqs Descrambling Module

DX942A

Stream in: 4 frequencies input(each RF in interface for 2 frequencies locking), F Type, 16 IP inputs(UDP/RTP) from data port, unicast and multicast, IGMP V2/V3

Stream out: 1 MPTS and 16 SPTS output over UDP and RTP/RTSP, Unicast/Multicast

DVB-CI: 2 independent common interface slots

Tuner input: DVB-C (J.83 A/C)/J.83B/ DVB-T/DVB-T2/ISDB-T switchable

Standard: DVB-C (J.83 A/C); J.83B

Input Frequency: 60MHz~890MHz

Symbol rate: 1000~9000Ksps

Constellation: 16/32/64/128/256 QAM; 64/256 QAM for J.83B

Standard: DVB-T/T2

Frequency In: 60MHz~890MHz

Bandwidth: 5/6/7/8M bandwidth

PLP Index: 0~255 for DVB-T2

Standard: ISDB-T

Input Frequency: 60-890MHz

Multiplexing:

Maximum PID Remapping: 256 output pids

Function: PID remapping (automatically or manually), generate PSI/ SI table automatically

Descrambling:

CAM/CI Quantity: 2

BISS Mode: Mode 1, Mode E; up to 120Mbps, 32 BISS Keys

8 FTA Tuner Module

DX928

Stream in: 8 tuner input, F Type
 Stream out: 8 MPTS passthrough out for 8 tuner input, or 2 MPTS out after multiplexing, or 512 SPTS out over UDP/RTP/RTSP, Unicast/Multicast

Tuner input: DVB-C (J.83 A/C)/J.83B/ DVB-T/DVB-T2/ISDB-T switchable

Standard: DVB-C (J.83 A/C); J.83B

Input Frequency: 60MHz~890MHz

Symbol rate: 1000~9000Ksps

Constellation: 16/32/64/128/256 QAM; 64/256 QAM for J.83B

Standard: DVB-T/T2

Frequency In: 60MHz~890MHz

Bandwidth: 5/6/7/8M bandwidth

PLP Index: 0~255 for DVB-T2

Standard: ISDB-T

Input Frequency: 60-890MHz

Multiplexing:

Maximum PID Remapping: 256 output pids

Function: PID remapping (automatically or manually), generate PSI/ SI table automatically

Descrambling:

BISS Mode: Mode 1, Mode E; up to 120Mbps, 32 BISS Keys

4 ASI/IP Multiplexing Module

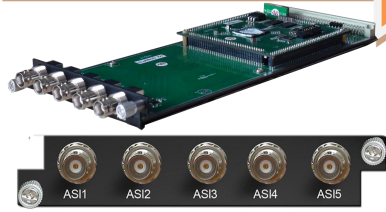
DX504
Module Specifications:

ASI inputs/outputs: 4 ASI bi-direction, BNC 75Ω (manually set input or output)
 IP inputs/outputs: 2 GE Ports in the module (100/1000Mbps self-adaption) and the DHP300 chassis (data ports or other modules)

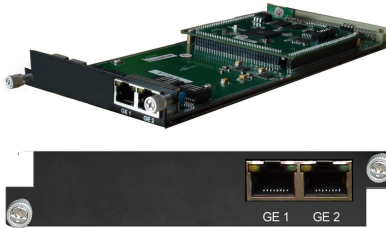
Re-multiplexing: PID remapping, PCR correction, generate PSI/ SI table automatically

Stream In: maximum 4 ASI input, 768 IP inputs over UDP/RTP (256 IP inputs thru GE1, GE2 in the module and the DHP300 chassis respectively)

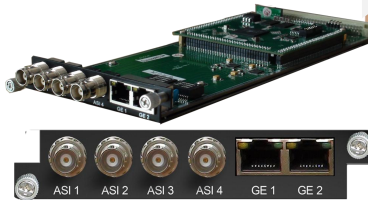
Stream Out: maximum 4 ASI output, 4 MPTS output over UDP/RTP thru GE1, GE2 in the module and thru the DHP300 chassis

5 ASI Multiplexing Module

DX505
Module Specifications:

ASI inputs/outputs: 5 ASI bi-direction, BNC 75Ω (manually set input or output)
 IP inputs/outputs: the DHP300 chassis (data ports or other modules)
 Stream in: maximum 5 ASI input, 256 IP inputs over UDP/RTP thru the DHP300 chassis
 Re-multiplexing: PID remapping, PCR correction, generate PSI/ SI table automatically
 Stream out: maximum 5 ASI output, 5 MPTS out over UDP/RTP thru the DHP300 chassis

IP De-Multiplexing Module

DX506
Module Specifications:

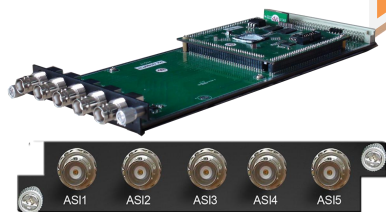
IP input: 512 SPTS or MPTS input over UDP, RTP, Unicast and Multicast thru GE1 Ethernet Port (100/1000M)
 Re-multiplexing: PID remapping, PCR correction, generate PSI/ SI table automatically
 Stream Out: 512 SPTS output over UDP, RTP, Unicast and Multicast through GE2 Ethernet Port (100/1000M)

ASI/IP Mux-Scrambler Module

DX514
Module Specifications:

ASI inputs/outputs: 4 ASI bi-direction, BNC 75Ω
 IP inputs/outputs: 2 Ethernet Port (100/1000M)
 Stream connector input
 Re-multiplexing: PID remapping, PCR correction, generate PSI/ SI table automatically
 Stream In: maximum 4 ASI input, 32 IP input per channel over UDP/RTP
 Stream Out: maximum 4 ASI output, 4 IP (MPTS) output over UDP/RTP/RTSP

Scrambling:

Maximum simulcrypt CA: 4
 Standard: ETR289, ETSI 101 197, ETSI 103 197
 Connection: Local/remote connection

ASI TS Switch Module

DX515
Module Specifications:

Input: 3 ASI
 Output: 2 ASI output (output 1 for one of the switch steams out, output 2 for main input stream)
 TS packet: 188/204
 Switch Mode: Manually/Auto
 Support monitor program status (bitrate, continuous counting, synchronization status)
 Support channel mode and program mode switching
 Support to switch back to the main stream manually or automatically once the main stream recovers

16/32 QAM Modulating Module

DX316/DX332
Module Specifications:

Data input: 512*3 IP input over UDP/RTP from 2 GE Ports (RJ45/SFP) and internal stream connector board, unicast/multicast

Data output: 16 or 32 IP output over UDP/RTP/RTSP, unicast/multicast, 2 GE Ports (RJ45/SFP)

Trans Rate: Max 840Mbps/GE Port

RF output (F type): 16/32 channels of multiplexing, scrambling and modulation.

Multiplexing:

Maximum PID Remapping: 256 output pids per channel

Function: PID remapping (automatically or manually), Accurate PCR adjusting, generate PSI/SI table automatically

Scrambling:

Maximum simulcrypt CA: 6

Standard: ETR289, ETSI 101 197, ETSI 103 197

Connection: Local/remote connection

Modulation:

Standard: EN300 429/ITU-T J.83A/B/C MER: $\geq 40\text{dB}$

RF frequency: 50~960MHz, 1KHz step

RF output level: -20~+10dBm (87~117 dB μ V), 0.1dB step for all carriers

Symbol Rate: 3600~7200Ksps, 1ksps stepping

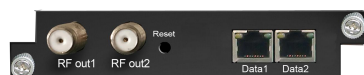
5057Ksps (J.83B, 64QAM), 5361Ksps (J.83B, 256QAM)

Constellation/Bandwidth: J.83A: 16/32/64/128/256QAM, 8M

J.83B/C: 64/256QAM, 6M

DX316 Output: 16 non-adjacent carrier outputs within 192M bandwidth

DX332 Output: 32 non-adjacent carrier outputs within 384M bandwidth

48 QAM Modulating Module

DX348D
Module Specifications:

Data input: 512*3 IP input over UDP/RTP from 2 GE Ports (RJ45/SFP) and internal stream connector board, unicast/multicast

Data output: 48 IP output over UDP/RTP/RTSP, unicast/multicast, 2 GE Ports (RJ45/SFP), GE1 for IP #1-#24, GE2 for IP #25-#48

Trans Rate: Max 840Mbps/GE Port

Multiplexing:

Maximum PID Remapping: 256 output PIDs per channel

Function: PID remapping (automatically or manually), Accurate PCR adjusting, generate PSI/SI table automatically

Scrambling:

Maximum simulcrypt CA: 6

Standard: ETR289, ETSI 101 197, ETSI 103 197

Connection: Local/remote connection

Modulation:

Standard: EN300 429/ITU-T J.83A/B/C MER: $\geq 40\text{dB}$

RF frequency: 50~960MHz, 1KHz step

RF output level: -20~+10dBm (87~117 dB μ V), 0.1dB step for all carriers

Symbol Rate: 3600~7200Ksps, 1ksps stepping

5057Ksps (J.83B, 64QAM), 5361Ksps (J.83B, 256QAM)

Constellation/Bandwidth: J.83A: 16/32/64/128/256QAM, 8M

J.83B/C: 64/256QAM, 6M

RF output: 2 F type output ports for 48 non-adjacent carriers, 75 Ω

Carrier 1~24 out thru RF1, 25~48 thru RF2, each RF supports 384M bandwidth

8/16 ISDB-Tb Modulating Module

DX306i
Module Specifications:

Data input: 512*3 IP input over UDP/RTP from 2 GE Ports (RJ45/SFP) and internal stream connector board, unicast/multicast
 Data output: 8/16 IP output over UDP/RTP/RTSP, unicast/multicast, 2 GE Ports (RJ45/SFP)
 Trans Rate: Max 840Mbps/GE Port
 RF output (F type): 8/16 channels of multiplexing and modulation.

Multiplexing:

Maximum PID Remapping: 256 input per channel
 Function: PID remapping (automatically or manually), Accurate PCR adjusting, generate PSI/ SI table automatically

Modulation:

Standard: ARIB STD-B31
 Bandwidth: 6M
 Constellation: QPSK, 16QAM, 64QAM
 Guard Interval: 1/32, 1/16, 1/8, 1/4
 Transmission Mode: 2K, 4K, 8K
 Code rate: 1/2, 2/3, 3/4, 5/6, 7/8
 MER: ≥ 40 dB
 RF frequency: 50~960MHz, 1KHz step
 RF output level: -20dBm~+10dBm (87~117dB μ V), 0.1dB stepping
 RF Output: 8/16 non-adjacent carrier outputs within 192M bandwidth

Order Guide:

DX306i-8: 8 non-adjacent ISDB-T carrier output + 8 IP MPTS output
 DX306i-16: 16 non-adjacent ISDB-T carrier output + 16 IP MPTS output

8/16 DVB-T Modulating Module

DX308T
Module Specifications:

Data input: 512*3 IP input over UDP/RTP from 2 GE Ports (RJ45/SFP) and internal stream connector board, unicast/multicast
 Data output: 8/16 IP output over UDP/RTP/RTSP, unicast/multicast, 2 GE Ports (RJ45/SFP)
 Trans Rate: Max 840Mbps/GE Port

Multiplexing:

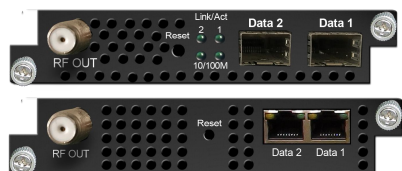
Channel Number: 8/16 multiplexing channels
 Maximum PID Remapping: 256 input per channel
 Function: PID remapping (automatically or manually), Accurate PCR adjusting, generate PSI/ SI table automatically

Modulation:

Standard: ETSI EN300 744
 MER: ≥ 40 db
 RF Frequency: 50~960MHz, 1KHz step
 Constellation: QPSK/16QAM/64QAM Bandwidth: 6/7/8 MHz
 Trans mode: 2K/4K/8K
 FEC: 1/2, 2/3, 3/4, 5/6, 7/8
 RF Output Level: -20~+10dbm (for all carriers), 0.1dB stepping
 RF Output (F type): 8/16 non-adjacent carrier outputs within 192M bandwidth

Order Guide:

DX308T-8: 8 non-adjacent DVB-T carrier output + 8 IP MPTS output
 DX308T-16: 16 non-adjacent DVB-T carrier output + 16 IP MPTS output

8 ATSC Modulating Module

DX308AT
Module Specifications:

Data input: 512*3 IP input over UDP/RTP from 2 GE Ports (RJ45/SFP) and internal stream connector board, unicast/multicast

Data output: 8 IP output over UDP/RTP/RTSP, unicast/multicast, 2 GE Ports (RJ45/SFP)

Trans Rate: Max 840Mbps/GE Port

Multiplexing:

Channel Number: 8 multiplexing channels

Maximum PID Remapping: 256 input per channel

Function: PID remapping (automatically or manually), Accurate PCR adjusting, generate PSI/ SI table automatically

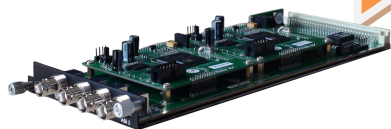
Modulation:

Standard: ATSC A/53 MER: $\geq 40\text{db}$ RF Frequency: 50~960MHz, 1KHz step

Constellation: 8VSB Bandwidth: 6MHz FEC: RS(208 188)+Trellis

RF Output Level: -20~+10dbm (for all carriers), 0.1db stepping

RF Output (F Type) : 8 non-adjacent carrier outputs within 192M bandwidth

2 HD-SDI Decoding Module

DX702
Module Specifications:

ASI input/output: 2 ASI bi-directions, BNC 75 Ω

IP Stream input support

IP output: 1 MPTS output over UDP, Unicast/Multicast

Decoding:

Video/Audio Out: 2 HD/SD SDI output

Video Format: MPEG-2, MPEG-4 AVC/H.264

Resolution: 480i,480p,576i,576p,720p@50/59.94/60,1080i@50/59.94/60

Chroma: 4:2:0

Audio Format: MPEG1 Layer2, LC-AAC, HE-AAC, AC3 (2.0/5.1), AC3

Passthrough,

Support **Dual Audio** Out

4 HDMI Decoding Module

DX714A
Module Specifications:

Input: 8 IP (MPTS/SPTS) input over UDP/RTP thru stream connector, Unicast/Multicast

Output: 4 HDMI output

Decoding:

Video/Audio Out: 4 HDMI output with 1 channel stereo audio embedded in each port

Video Format: MPEG-2, MPEG-4 AVC/H.264, HEVC/H.265, AVS, AVS+

Audio Format: MPEG 1 Layer 2, LC-AAC, HE-AAC, AC3 (2.0), DRA

Resolution: 480i, 480p, 576i, 576p, 1280 \times 720_50p, 1280 \times 720_60p,

1920 \times 1080_50i, 1920 \times 1080_50p 1920 \times 1080_60i, 1920 \times 1080_60p

Support **manually upscale/downscale resolution**

Equipment Specifications:

Base Unit Parameters

Dimension (W×L×H): 482mm×410mm×44mm
Environment: 0~45℃(work); -20~80℃(Storage)
Power requirements AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz
Power Supply: Single or Redundancy power supply for option, as per order

Parameters Comparison:

	DHP400	DHP300
IP Data Transport	One-way Transport: GE1/GE2 support output maximum 8 MPTS & 512 SPTS	Bi-directional Transport: GE1/GE2. SFP1/SFP2 for IP stream input and output
TS Processing Number	Support 1 TS (MPTS/SPTS) input from each module, and maximum bit rate is 350Mbps	N/A
Multiplexing	Support multiplexing function: It can mux TSs from different modules to one TS and output through one module or GE1/GE2 port	Doesn't support multiplexing function: It can combine TSs from different modules and output these TSs through one module or GE1/GE2 SFP1/SFP2 port
Output Per Module	1 MPTS after multiplexing	1 or Multiple MPTS/SPTS
LED	N/A	LED in the front panel show IP address