

iServer+

DIBVISION | DIBSYS

Carrier Grade Encoder/Receiver/Modulator DTV IPTV Platform



iServer+ is a powerful, yet low power consumption, rack-mount with the features of Encoder, Modulator, Receiver, IP Gateway and IPTV Server for the protocol-conversion application and IPTV-System application.

Multiple protocol conversion solution with the flexible configuration, It can get max 6 pluggable streamer cards embedded, such as encoder card and tuner card to receive the HDMI signals and tuner signals etc.

It can also convert the input IP streams from the embedded modules and Ethernet ports over SRT, HTTP, UDP, RTP, RTSP, HLS protocol and TS files into the output IP streams over SRT, HTTP, UDP, RTP, RTSP, HLS and RTMP protocol. It is also integrated with Dibsystv IPTV management software and Streamer cards to make it ideal in an IPTV system, such as hotel, hospital and community.

Key Features

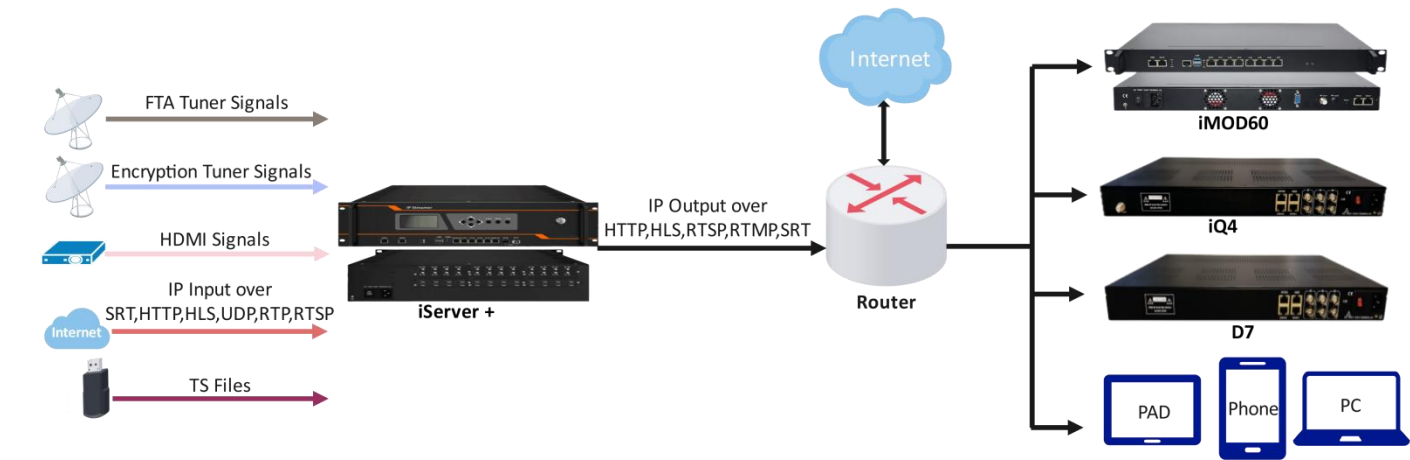
- Encoder/Receiver/Modulator, IP Gateway and IPTV Server in one device
- Default no module,used for IP to protocol conversion
- 2 separate Web GUI, one for Cards and Gateway, the other for IPTV Server
- SRT input mode support Caller and Rendezvous; SRT output mode support Listener, Caller and Rendezvous
- Support inter-cut feature of a live program, a TS file and a picture
- 2.5G port and SFP+ supported**
- Support IP anti-jitter feature for the external IP streams
- DIBSYS IPTV APK download in the Web GUI
- Optional --- Modularized design, max 6 cards embedded, a flexible option as per the actual application
- Multi-level password control for your system security
- LCD/Key button for Network-Setting checking

Business Benefits

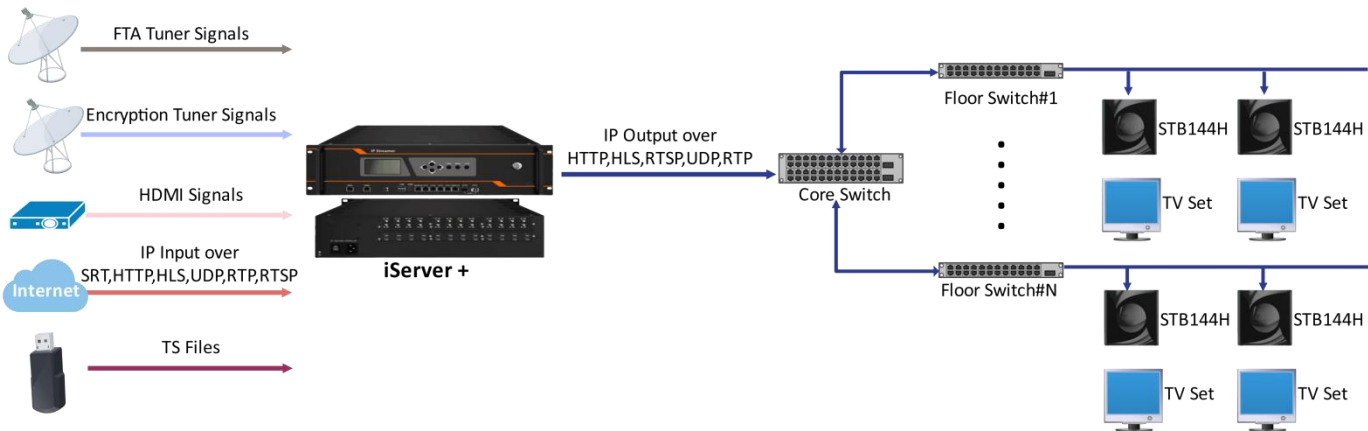
- Programs classification and packaging: different programs for different customer needs
- carry out Cable TV and IPTV users with different needs in about 1000 person community
- up to 6 module pluggable designs, support different module combinations for easy expansion
- Mandatory insertion of video advertisements: provide advertising solutions for hotels
- Room service, laundry service, wake-up service, etc., to enhance customer experience and service quality
- hotel welcome message displays the customer's name, providing personalized services and enhancing the customer experience.

Application

Protocol Conversion



IPTV System



TECHNICAL SPECIFICATIONS

Input

IP inputs thru ETH 1-4 GE ports & 6-7 SFP+ ports over SRT, HTTP, UDP (SPTS), RTP(SPTS), RTSP (over UDP, payload: mpeg TS) and HLS-----3 U Model TS files uploading through Web management Encoder card and Tuner card etc (Please refer to the detailed card spec below)

IP Output

IP outputs thru ETH0, GE port over SRT, HTTP (Unicast), UDP (SPTS, Multicast), RTP, RTSP, HLS and RTMP (Program source should be H.264 and AAC encoding)

SYSTEM

Channel switching time with DIBSYS' STB: HTTP (1-3s), HLS (0.4-0.7s)

It is closely related with the program bitrate and protocol type etc for Max program numbers involved in protocol conversion, and the actual application shall prevail with **maximum 80% CPU utilization** (Please refer to Test data for reference in the end of the spec)

It is closely related with the program bitrate and protocol type etc for Max affordable terminal numbers in IPTV application of the STB/Android TV installed with DIBSYS IPTV APK and the actual application shall prevail with **maximum 80% CPU utilization** (Please refer to Test data for reference in the end of the spec)

IPTV Features: Live channel, VOD, Hotel intro, Dining, Hotel service, Scenery intro, APPS, Adding scrolling caption, welcome words, pictures, advertisement, video, music etc (the features are only applicable to IP out application in the STB/Android TV installed with DIBSYS IPTV APK)

Environment

Power Supply	AC100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz
Dimension	482mm×464mm×44mm (WxLxH)
Operating temperature	0 ~ 45℃
Storage temperature	-20 ~ 80℃
Humidity	10 ~ 90% non-condensed

Available Card Specification (more available cards later for development)

Tuner Descrambling Card



Stream in 2 Tuner input, F Type,
Stream out 16 SPTS output over UDP/RTP
DVB-CI 2 independent common interface slots

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; 32 BISS Keys

Version1: DVB-S/S2/S2X Tuner

Stream in 2 Tuner input, F Type
Input Frequency 950-2150MHz

DVB-S

Symbol Rate QPSK 1~45Mps
Signal Strength -65~ -25dBm
FEC Demodulation 1/2, 2/3, 3/4, 5/6, 7/8

DVB-S2

Symbol rate QPSK/8PSK 1~45Mps,
16APSK 1~45 Mps, 32APSK1~32 Mps
FEC Demodulation 1/2, 2/3, 3/4, 5/6, 7/8, 4/5, 5/6, 8/9, 9/10

DVB-S2X

Symbol rate:
QPSK/8PSK/16APSK 0.5~45 Mps;
8APSK/32APSK 0.5~40Mps
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, 7/90
32APSK 3/4, 4/5, 5/6, 8/9, 2/3-L, 32/45, 11/15, 7/9, 9/10

Support Diseqc function

Version2: DVB-C (J.83 A/C)/J.83B/ DVB-T/DVB-T2/ISDB-T switchable Tuner

Stream in 4 frequencies input
(each RF in interface for 2 frequencies locking), F Type,

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 supported for DVB-T2

Standard

ISDB-T
Input Frequency 60-890MHz

8 FTA Tuner Card



Stream in 8 Tuner input, F Type,
Stream out 512 SPTS out over UDP/RTP/RTSP, Unicast/Multicast

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

Version1: DVB-S/S2/S2X FTA Tuner

Symbol rate QPSK/8PSK/16APSK 0.5~45 Mps; 8APSK/32APSK: 0.5~40Mps
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, 7/90
32APSK 3/4, 4/5, 5/6, 8/9, 2/3-L, 32/45, 11/15, 7/9, 9/10

Support Diseqc function

Version2: DVB-C (J.83 A/C)/J.83B/ DVB-T/DVB-T2/ISDB-T switchable FTA Tuner

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

8 FTA DVB-S/S2/S2X Tuner Card



Stream in 8 Tuner input, F Type, with loop out
Stream out 512 SPTS out over UDP/RTP/RTSP, Unicast/Multicast
Tuner input DVB-S/S2/S2X
Symbol rate QPSK/8PSK/16APSK 0.5~45 Mps;
8APSK/32APSK: 0.5~40Mps

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/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 Dseqc function

8 HDMI Encoder Card



Input 8*HDMI (4 HDMI is available)
 Output 8*SPTS (4 SPTS if 4 HDMI) output over UDP/RTP/RTSP, Unicast/Multicast

Video Encoding

Video format **Version1: MPEG-4 AVC/H.264**
Version2: HEVC/H.265, 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

RF Modulator Card

16/32 QAM Modulating Module



Module Specifications

Standard	EN300 429/ITU-T J.83A/B (DVB-C)
MER	≥40db
RF frequency	50~960MHz, 1KHz step
Data input	Max 512 IP input over UDP/RTP, 2 GE Ports (RJ45/SFP) Max 1024 IP input over UDP/RTP, 2 GE Ports (RJ45/SFP)
Data output	16/32 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 modulating
Maximum simulcrypt CA	4

8/16 DVB-T/ATSC Modulating Module



Module Specifications

Standard:	ETSI EN300 744 ATSC A/53
MER	≥40db
RF Frequency	50~960MHz, 1KHz step
Data input	256 IP input over UDP/RTP, 2GE Ports (RJ45/SFP) 512 IP input over UDP/RTP, 2GE Ports (RJ45/SFP)
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 non-adjacent carrier outputs within 192M bandwidth

8/16 ISDB-Tb Modulating Module



Module Specifications

Standard	ARIB STD-B31
Bandwidth	6M
Constellation	QPSK, 16QAM, 64QAM
RF frequency	50~960MHz, 1KHz step
Data input	Max 512/1024 IP input over UDP/RTP, 2 GE Ports (RJ45/SFP)
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.

Test data for reference (3U)

Protocol conversion	Programs	Bitrate	Terminals	CPU utilization
UDP to HTTP	150	8M	600	82%
UDP to HLS	150	8M	1300	30%
UDP to SRT	130	8M	---	75%
UDP to RTMP	150	8M	---	80%