DIBVISION | DIBSYS

iServer

Encoder/Receiver + IPTV Gateway + IPTV Server
All in one IPTV System

iServer is a powerful, yet low power consumption, rack-mount with the features of Encoder, 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 3 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 Dibsys IPTV management software and Streamer cards to make it ideal in an IPTV system, such as hotel, hospital and community.

Key Features

- Encoder/Receiver, 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
- Ethernet ports(GE), customized Ethernet port setting is available

--ETH0: IP output over SRT, HTTP, UDP (SPTS), RTP, RTSP, HLS and RTMP
--ETH1&2: IP input over SRT, HTTP, UDP (SPTS), RTP (SPTS), RTSP and HLS
--ETH3: Web Management Port

- 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
- Support IP anti-jitter feature for the external IP streams
- DIBSYS IPTV APK download in the Web GUI
- Optional --- Modularized design, max 3 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

Advantage

- **Encoder/Receive +IPTV middleware all in one design**

Support 3 Pluggable module, able to support different kinds of module, Greatly reduces hotel costs and makes installation and maintenance more convenient, Ready-to-install and ready to use.

- **Build-in protocol conversion function**

Able to receive video from internet, supports SRT, HTTP, UDP (SPTS), RTP, RTSP, HLS and RTMP, up to **480Mbps** (60 HD Programs, Bitrate: 8Mbps)

- **Support self channels**

Support uploading TS files directly in Web GUI to broadcast your own channels work as live channels

- **Powerful performance**

When run for IPTV supports up to **400 terminals** to connect simultaneously (60 Programs, Bitrate: 2Mbps), the actual application shall prevail with maximum 80% CPU utilization

- **Multi function**

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

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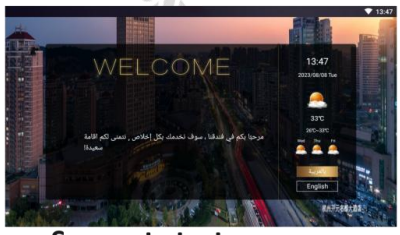
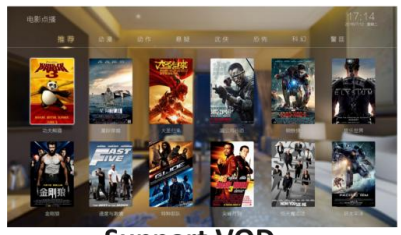


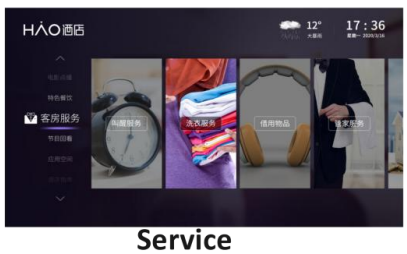
Support startup screen

Customization main interface



Support VOD

LIVE TV

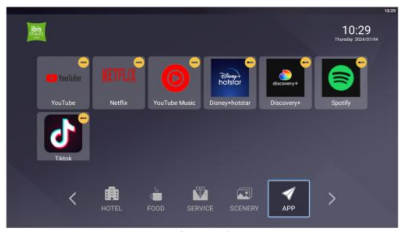


Service

Scenery

Food function

Hotel Introduction

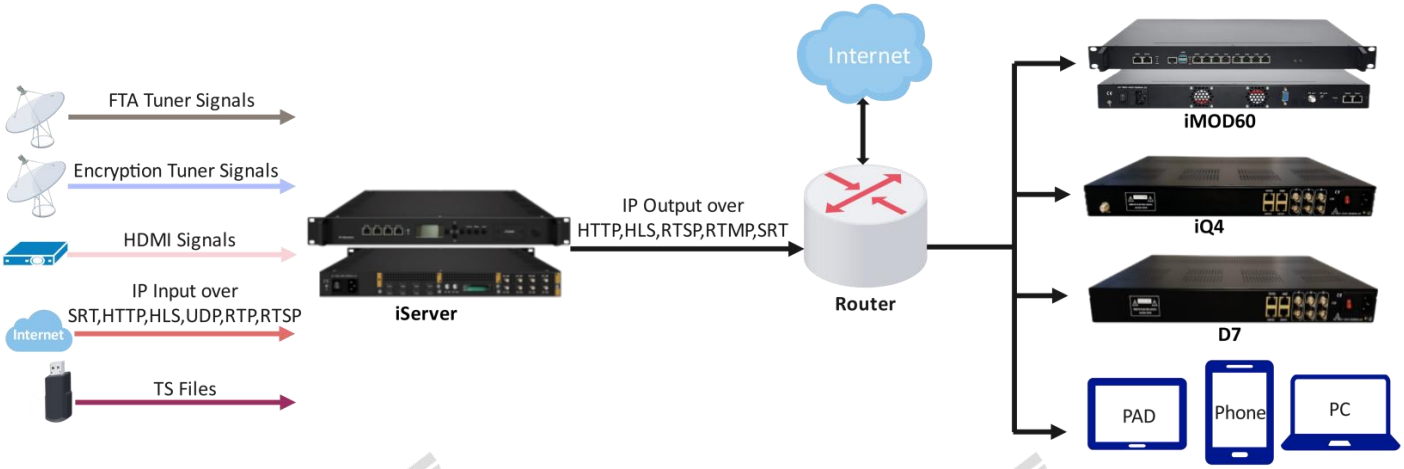


Support third party APP

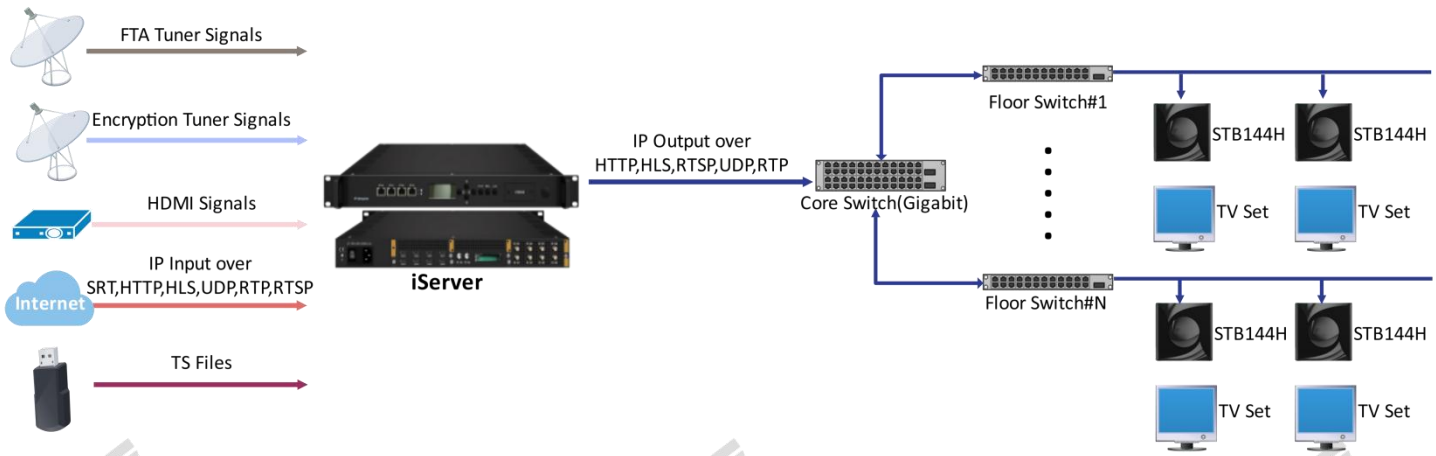
Protocol conversion

Application

Protocol Conversion



IPTV System



TECHNICAL SPECIFICATIONS

Input

IP inputs thru ETH 1&2, GE ports over SRT,HTTP, UDP(SPTS), RTP(SPTS), RTSP (over UDP, payload: mpeg TS) and HLS
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 1~45Msps
Signal Strength	-65~ -25dBm
FEC Demodulation	1/2, 2/3, 3/4, 5/6, 7/8

DVB-S2

Symbol rate	QPSK/8PSK 1~45Msps, 16APSK 1~45 Msps, 32APSK1~32 Msps
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 Msps;
8APSK/32APSK	0.5~40Msps
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

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 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

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 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

Test data for reference

Protocol conversion	Programs	Bitrate	Terminals	CPU utilization
UDP to HTTP	60	8M	100	80%
UDP to HLS	60	8M	120	65%
UDP to HTTP	60	2M	400	80%
UDP to HLS	60	2M	400	40%
UDP to SRT	45	8M	---	80%
UDP to RTMP	50	8M	---	80%

