

# Caster-T328

200\* IP/IP H.264 IPTV Transcoder



**Caster-T328** is a real-time transcoding of IPTV streams turn-key solution which producing Mobile TV, Internet TV, IPTV and broadcast live video services from a single platform, eliminating the need for separate headends. The transcoder delivers high-quality services to tens of thousands of users worldwide, from bandwidth-limited mobile delivery to up to full 1080p HD over high-speed networks for traditional TVs or big screen smart mobile devices.

**Caster-T328** can transcode MPEG-2 or H.263 or H.264/AVC content to multiple codecs, profiles and streams in different protocols, enabling new multiscreen services. Thanks to 3th Generation STREAM compression engine, Caster provides the higher bandwidth efficiency on the market, and the best video quality and Highest cost effective to end users. With a huge number of transcoded channels, Caster reaches one of best density of the market. Each Blade is including 25 channels transcoding and Two GbE port in/out, total reach 200Channels in 8 blades of 3RU chassis.

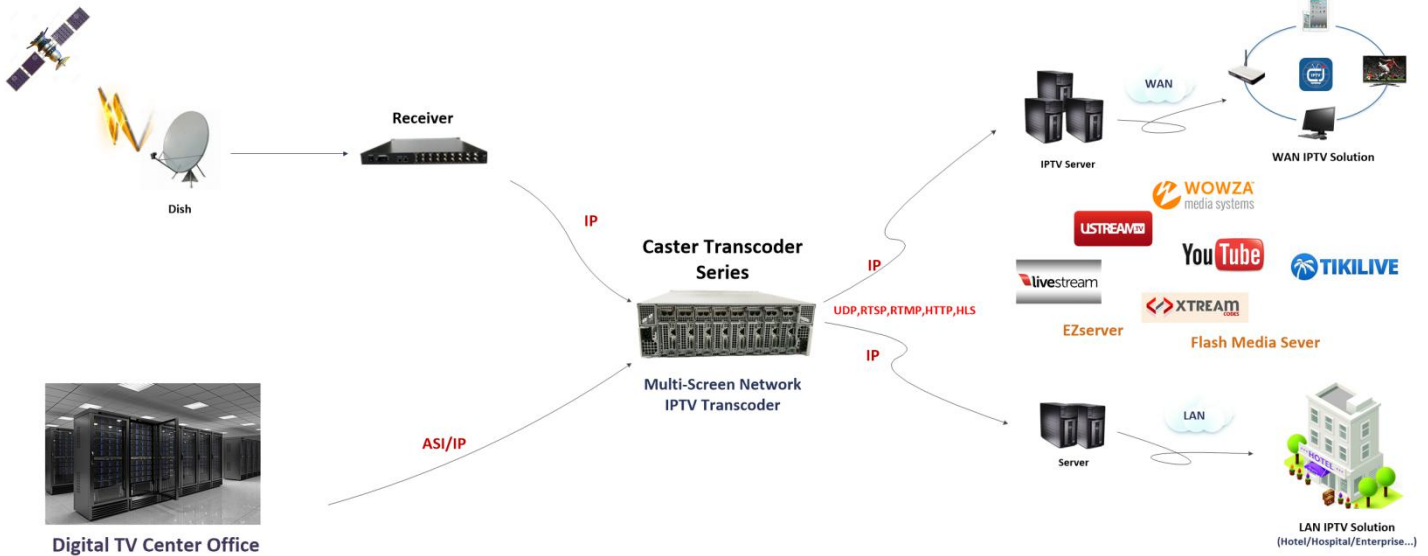
Caster-T328 runs on powerful hardware, enables to deliver impressive images to various servers, such as Adobe Flash Server, Wowza Server, Windows Media Server, Apples HTTP Live Streaming and some other servers base on UDP/RTP/RTSP /MMS/ HTTP/FTP/RTMP/HLS protocols.

## Features

- High density 3-RU platform can transcode up to 200\*SD or 80\*720p or 40\*FullHD profiles
- Max.25 channels per blade, A total of 8 blades in 3RU chassis
- Superior video quality at low bitrates, generally video bitrate advised SD about 1500kbps, 720p about 3mbps, 1080p about 6mbps for lowest bitrate
- Creates simultaneous High, Medium and Low bitrate streams (profiles) of MultiScreen IPTV application
- Optional H.265 transcodes by software licensed
- Baseline, main & high profile with variable GOP
- Multiple Codec, Protocol, Bitrate, Resolution, Profile per channel
- HD-to-SD down, SD-to-HD up conversion
- GbE IP Inputs and outputs – UDP,RTSP,RTMP,Pull/Push HTTP, HTTP Live Smooth(HLS), FTP M3u8 playlist files
- Picture-in-picture (PIP) operation supported
- Flexible GOP structures with Reference-frame and B-frame edit
- Frame rate down- and up-conversion
- High quality pre-processing including filtering, Deinterlacing, cross scaling, image insertion
- Support for Variable Bit Rate (VBR) encoding maximizes adaptive streaming video quality and bandwidth efficiency
- Based on embedded Ubuntu Linux via flashdisk
- The preview interface adds color control adjustment (CCATM) function (video output brightness, contrast, saturation, aberration).
- TS parameter configuration: The output stream can be edited to change the program number, program name, supplier (for video output part), easy to identify end device.
- DVB Subtitle and Logo insertion
- High contrast LCD display
- Parameter template settings and imports
- Real time preview of input video stream in encoding and parameter configuration
- Real-time dynamic monitoring of each transcoding channel operation
- Dual hot-swappable power supply
- Easy configuration via Web GUI
- Low power consumption and high reliability with MTBF(Mean Time Between Failure)  $\cong$  87600 Hours

## Main Application

- Distribute HD Video to Ethernet
- Transcoding low bitrate in limited bandwidth for Terrestrial and Cable TV operator
- IPTV live stream transcoding
- Transcoding for multi-screens and devices
- Small/Middle-Scale Headends for Multiple System Operators
- Deliver Huge transcoding Streams in most cost effective solution



## TECHNICAL SPECIFICATIONS

### Inputs and Outputs

Two Gig Ethernet Port per blade, Up to 8 hot plug blades
RJ45 100/1000M - Auto Negot
MPEG-TS(MPTS/SPTS) Over IP input
MPEG-TS (SPTS) Over IP out
TS Over UDP/RTP/HTTP
RTP over HTTP
FLV Over HTTP
RTMP
MP3 over HTTP
FLV
ASP
HTTP Live streaming Apple HLS (m3u8)

### Pre-processing

Subtitle Overlay	LOGO insertion/ Image cropping Option Static or roll subtitle, up to 3 way
Deinterlace	default, Close, Linear, Blend, Bob, Yadif
PID Configuration	PMT/Video/Audio PID; PCR delay/disp interval
Advanced Processing	In-loop De-blocking filter Scene detection, CABAC.CAVLC Entropy coding Automatic PicAFF,MBAFF Interlaced coding Automatic Flexible Macroblock Ordering(ASO) and Arbitrary Slice Ordering(ASO) in Baseline profile Flexible Macroblock Ordering(FMO) and Arbitrary Slice Ordering(ASO) in Baseline Profile 8x8 vs, 4x4 Transform Adaptivity in High profile Quantization Scaling Matrices in High profile I,B and P Slices, Multiple Reference Frames

### Video Processing

Bitrate Control	VBR,CBR,ABR,NearCBR
Frame rate	2-30fps
Screen Ratio	4:3, 16:9
Option	Multiple concurrent outputs per each encoding input
Video codec	H.264 Main/High Profile 3.0- 5.1 H.263 Profile Levels 10, 20, 30 MPEG-4 SP, Levels 0, 0b, 1, 2, 3 H.264 Baseline Levels 1, 2, 3
Encoding delay	1000-1500ms
B-Frame	0-5
Reference Frame	1-6
Key frame rate	1-18
Video Bitrate	32kbps to 10Mbps
Video Delay	0-1000ms
Scale	Ordinary, Auto Padding intelligent Scale
Fast Mode	Quality Priority, Balanced, Speed Priority

MPEG-2 Input	H.264 Output	Qty
SD/480i inputs @4 Mbps	SD @2Mbps, 480i	25x8
720p inputs @10 Mbps	720p @4Mbps	10x8
1080i/p inputs @18 Mbps	1080p @ 6Mbps	5x8

Resolution	1920x1080p, 1280x720p, 720x576p, 720x480p, 640x480p, 480x360p, Configurable
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### Audio Processing

Numbers of encoding	2 audio Channels per one video source (Provides up to 8 audio channels for customization)
Audio encoding	AAC, AACv2, AMR Dolby Digital(AC-3) Dolby Digital Plus(EAC-3) MP2A, MP3A, Transparent
Audio Channel	Single, Dual, 5.1 Channel
Audio Track	0, 1, 2, 3
AV Sync	0s, 0.5s, 1s, 3s, 4s, 5s, 6s
Sample rate	8khz to 48khz
Bitrate rate	8kbps to 384kbps
Volume	Ordinary, Intensity1, Intensity2, Intensity3
AGC	On, Off

### Management

Local interface	Power On/Off button Power LED; Blade status LED
Configuration	Web-based user's interface
Port	RJ45, 10/100/1000M Base-T
Language	English

### Environment

Fans	4x 8cm Heavy duty fans with optimal cooling zone
Form Factor	3RU
Power Supply	Dual hot-swappable 1000W:100-120V,50-60Hz,12-10Amp 1620W:180-240V,50-60Hz,10.5-8Amp
Operation temperature	0~50°C (32 -122°F)
Storage temperature	-40-70°C (-40-158°F)
Power consumption (per blade)	1620W high-efficiency redundant
Dimensions	590mm (W) x 440mm (L) x 140mm (H)
Weight	40kg (62.2lbs)

## ORDERING INFORMATION

Product category	Product Model	Detail Description	Application
Related Products	25Channel H.264 IPTV transcoder <b>Caster-t322</b>	2*GbE IP input/output, 25*SD or 10*HD or 5*FullHD transcoder per Chassis 1RU, UDP/RTSP/HTTP/HLS/ RTMP, H.264	-Terrestrial TV system -IPTV -Upgrade H.264 to H.265 -Deliver video to Ethernet
	25Channel H.265 IPTV transcoder <b>Anystream400</b>	2*GbE IP input/output, 25*SD or 12*HD or 5*FullHD transcoder per Chassis 1RU, UDP/RTSP/HTTP/HLS/ RTMP, H.264/H.265	-Terrestrial TV system -IPTV -Upgrade H.264 to H.265
	200Channel H.265 IPTV Transcoder <b>Anystream428</b>	2*GbE IP input/output, 25*SD or 12*HD or 5*FullHD transcoder per blade, Up to 8 hot plug blades, h.264/h.265 encoding, UDP/RTSP/ HTTP/HLS/RTMP	-IPTV/OTT -Multi-screen Deliver -Lowest bitrate -Terrestrial/Cable TV
	30Channel H.264 OTT Transcoder <b>Matrix-I</b>	2*GbE IP input/output, 30SD(or 15HD or 6*FullHD per Chassis 1RU, H.264 encoding, 1RU chassis, UDP/RTSP/HTTP/HLS/ RTMP	-Cable TV/DTH -IPTV/OTT -Web/Internet TV -Ultra-low bitrate at Superior video quality-
Companion Products	PREMIUM 8* DVB-S2 FTA IRD <b>IRD1218Plus</b>	8* DVB-C or FTA/BISS DVB-S2 inputs (QPSK/8PSK/ 16APSK/ 32APSK demoduation); 14MPTS/240+SPTS/2ASIout; MPEG-TS over UDP/RTP; Multiplexer/Scrambling; 5 years Warranty	-Large and Medium Cable TV operator -IPTV/OTT headend
	PREMIUM 8* DVB-S2 CI IRD <b>IRD1380</b>	8*DVB-C/S2/T2/ATSC/ISDBT/8*CI input. 9* MPTS/128*SPTS/ 9*ASI out; MPEG-TS over UDP/RTP; Multiplexer; 5Years Warranty	-Content providers -DTH -Carrier-grade Broadcast
	Carrier-grade IP QAM modulator <b>IPQ6250</b>	16 QAM no-adjacent/Two GbE IP per Module, 3 Modules/48QAM per 1RU, Annex A/B/C, Multiplexer/Scrambling; 5Years Warranty	-CableTV operator -Distribute video to QAM Network
	8ASI/450IP ->120IP Multiplexer <b>DCM701</b>	8*ASI/450 IP inputs, Multiplex to 120 SPTS or MPTS IP out, MPEG-TS over UDP/RTP out	-Convert ASI to IP -Distribute MPTS To SPTS -IPTV&Cable TV headend