



NDS3508F

IPTV Gateway

HTTP/UDP/RTP/RTSP/HLS



HTTP/UDP/HLS/RTMP



NDS3508F-10



NDS3508F/ NDS3508F-M



Outline

Dexin NDS3508F/NDS3508F-10 (NDS3508F-M) IPTV Gateway is a device which is used for the protocol conversion scenarios and streaming media distribution scenarios. It can convert the broadcast network IP stream over HTTP, UDP, RTP, RTSP and HLS and TS file into HTTP, UDP, HLS and RTMP protocol. The system can achieve the integration by receiving a variety of commercial streaming media



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services. Also, the system can provide streaming media services directly.

Key Features

- 8 Data ports (NDS3508F/NDS3508F-M) :

First Data port: IP out over HTTP, UDP (SPTS), HLS and RTMP

Data CH1-7 ports: IP in over HTTP, UDP (SPTS), RTP (SPTS), RTSP and HLS

IP out over HTTP, HLS and RTMP (Unicast)

- 10 Data ports (NDS3508F-10) :

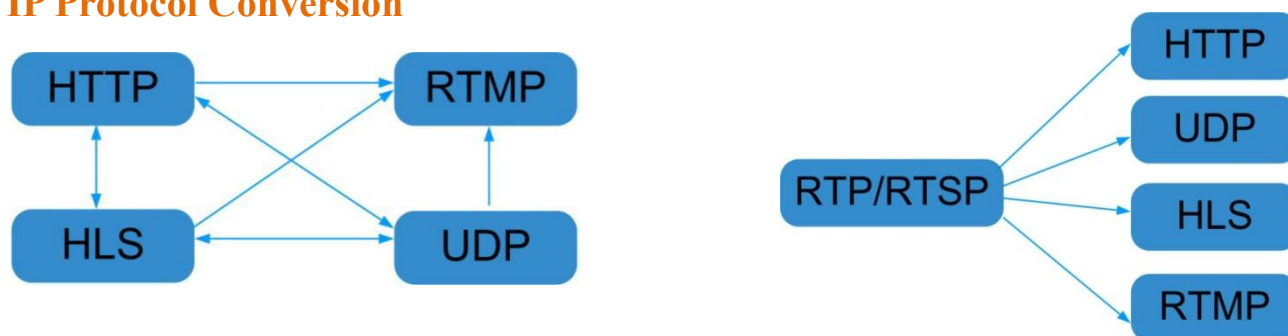
First Data port: IP out over HTTP, UDP (SPTS), HLS and RTMP

Data CH1-9 ports: IP in over HTTP, UDP (SPTS), RTP (SPTS), RTSP and HLS

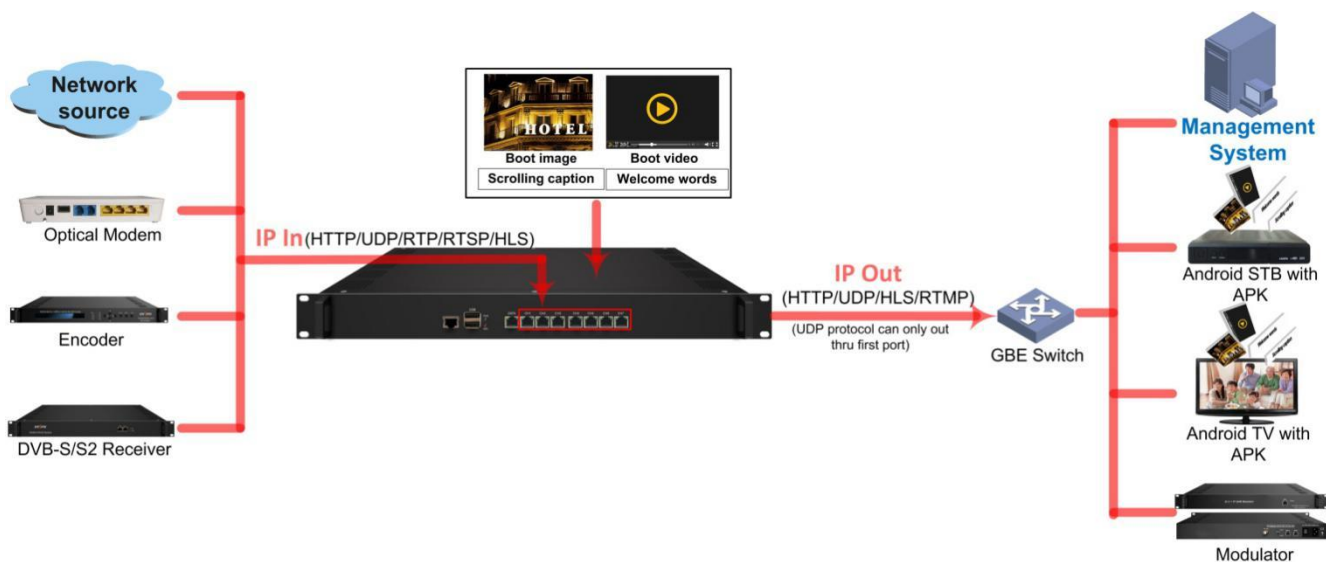
IP out over HTTP, HLS and RTMP (Unicast)

- Support TS files uploading through Web management
- Support **IP anti-jitter** function
- Support adding **scrolling caption, welcome words, boot image and boot video** (this function is only applicable to IP out application and the STB/Android TV must be installed Dexin IPTV APK)
- Support downloading Dexin IPTV APK directly from this device
- Support about 80 HD/SD programs (Bitrate:2Mbps) When HTTP/RTP/RTSP/HLS is converted into UDP (Multicast),the actual application shall prevail, and **suggest maximum 80% CPU utilization**
- Support program playing with APK downloaded android STB and TV, maximum 150 terminals
- Control via web-based NMS management through DATA port

IP Protocol Conversion



General Principle Chart



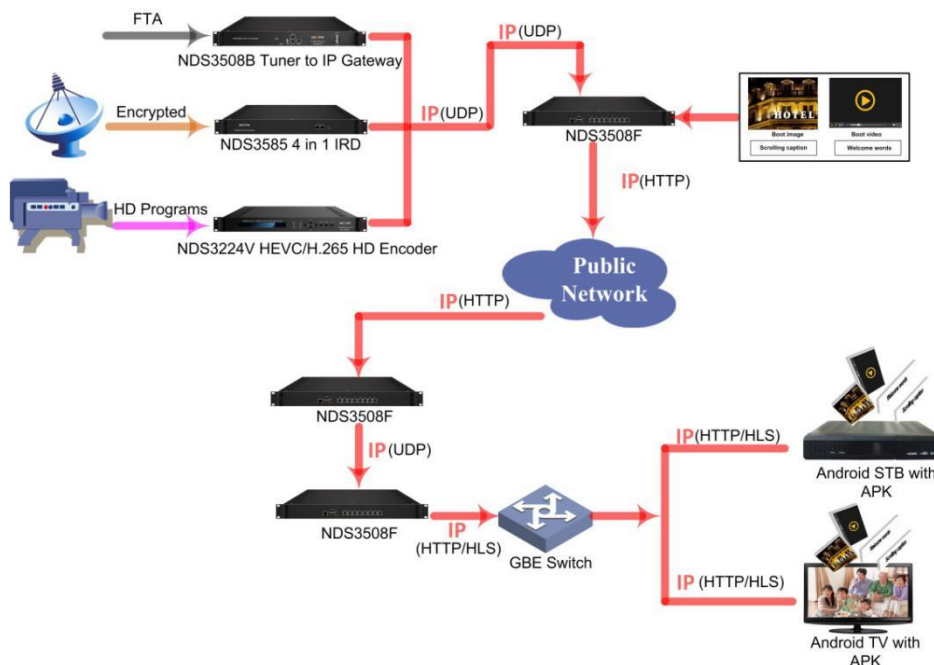
Scrolling caption/welcome words/boot image/boot video is only applicable to IP out application and the STB/Android TV must be installed Dexin IPTV APK

Specifications

Input	IP input thru CH 1-7(1000M) over HTTP, UDP(SPTS), RTP(SPTS), RTSP (over UDP, payload: mpeg TS) and HLS(NDS3508F/NDS3508F-M)	
	IP input thru CH 1-7(1000M) over HTTP, UDP(SPTS), RTP(SPTS), RTSP (over UDP, payload: mpeg TS) and HLS(NDS3508F-10)	
IP output	TS files uploading through Web management	
	IP out thru Data port (1000M) over HTTP (Unicast), UDP(SPTS, Multicast) HLS and RTMP (Program source should be H.264 and AAC encoding)	
System	IP out thru CH 1-7(1000M) over HTTP/ HLS/RTMP (Unicast)(NDS3508F/NDS3508F-M); IP out thru CH 1-7(1000M) over HTTP/ HLS/RTMP (Unicast)(NDS3508F-10)	
	CPU: NDS3508F(1037)/NDS3508F-M(i5) NDS3508F-10(Celeron 3965)	Memory: 4G
	Solid-State Disk (SSD): 16G (60G optional)	
	Channel switching time with DEXIN' STB: HTTP (1-3s), HLS (0.4-0.7s)	
	Support adding scrolling caption, welcome words, boot image and boot video (this function is only applicable to IP out application and the STB/Android TV must be installed Dexin IPTV APK)	
	Play programs with APK downloaded android STB and TV, maximum 150 terminals(See details in below Test data for reference)	
	Support about 80 HD/SD programs (Bitrate: 2Mbps) When HTTP/RTP/RTSP/HLS is converted into UDP (Multicast), the actual application shall prevail, and suggest maximum 80% CPU utilization	
	web-based NMS management thru DATA port	
General	Demission	482mm×324mm×44mm (WxLxH)
	Temperature	0~45℃(operation), -20~80℃(storage)
	Power Supply	AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz

Application:

Maximum 200 Terminals solution



Head-end devices:

Data Source	Function	Mark
NDS3508B Tuner to IP Gateway	Receiving FTA Programs	Input: 16 tuner, 2ASI Output: IP (16 MPTS or 512 SPTS)
NDS3585 4 in 1 IRD	Decrypting programs	Input:4 RF, 1ASI, 4IP Output: IP (48 SPTS and 4 MPTS), 4ASI Support descramble programs through 4 CAMs/CIs
NDS3224V H.265/H.264 HD Encoder	HDMI HD Programs	Input: 4/8/12×HDMI/SDI Output: IP (1 MPTS and 4/8/12 SPTS) Support H.265/HEVC, H.264/AVC Encoding
NDS3508F IPTV Gateway	Converting protocol	Input: 7 channels IP over UDP Output: 1channel IP over HTTP

Receiving devices:

Data Source	Function	Mark
NDS3508F IPTV Gateway	As a receiver to receive programs from public Network	Input IP protocol: HTTP Output IP protocol: UDP Support about 80 HD/SD programs (Bitrate: 2Mbps), suggest maximum 80% CPU utilization
NDS3508F IPTV Gateway	As a server	Input IP protocol: UDP Output IP protocol: HTTP/HLS maximum 250 terminals

Terminal devices:



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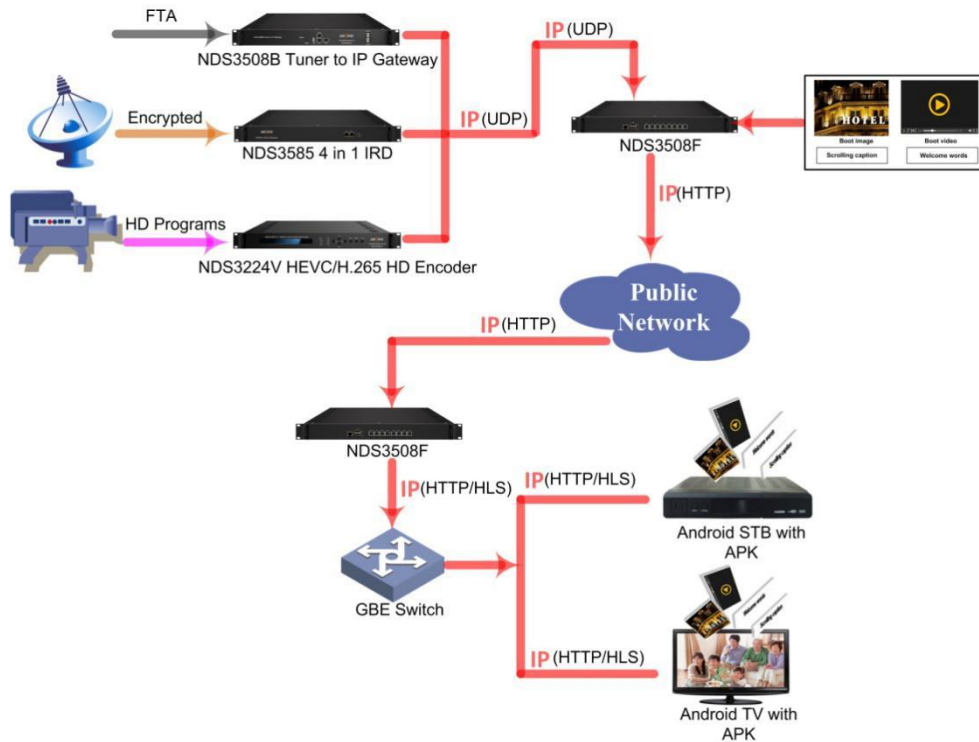
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Terminal Type	Mark
Android STB with APK	Support HTTP&HLS protocol Support Dexin APK configuration
Android TVs with APK	Support HTTP&HLS protocol Support Dexin APK configuration Support self-start Dexin APK when TV is on

Total device number:

Head-end device	Device	Number
	NDS3508B Tuner to IP Gateway	1
	NDS3585 4 in 1 IRD	1
	NDS3224V HEVC/H.265 HD Encoder	1
	NDS3508F IPTV Gateway	1
Receiving device	NDS3508F IPTV Gateway	2
Terminal device	Android STB with APK/ Android TVs with APK	maximum 250

A small number of programs and terminals solution



Head-end devices:

Data Source	Function	Mark
NDS3508B Tuner to IP Gateway	Receiving FTA Programs	Input: 16 tuner, 2ASI Output: IP (16 MPTS or 512 SPTS)
NDS3585 4 in 1 IRD	Decrypting programs	Input:4 RF, 1ASI, 4IP Output: IP (48 SPTS and 4 MPTS), 4ASI Support descramble programs through 4 CAMs/CIs
NDS3224V H.265/H.264 HD Encoder	HDMI HD Programs	Input: 4/8/12×HDMI/SDI Output: IP (1 MPTS and 4/8/12 SPTS)

		Support H.265/HEVC, H.264/AVC Encoding
NDS3508F IPTV Gateway	Converting protocol	Input: 7 channels IP over UDP Output: 1 channel IP over HTTP

Receiving devices:

Data Source	Function	Mark															
NDS3508F IPTV Gateway	As a receiver and a server, please view the following data for reference.	Input IP protocol: HTTP Output IP protocol: HTTP/HLS															
	<table border="1"> <thead> <tr> <th>Protocol conversion</th> <th>Programs</th> <th>Bitrate</th> <th>Terminals</th> </tr> </thead> <tbody> <tr> <td rowspan="2">HTTP to HTTP</td> <td>30</td> <td>2Mbps</td> <td>150</td> </tr> <tr> <td>50</td> <td>2Mbps</td> <td>80</td> </tr> <tr> <td>HTTP to HLS</td> <td>50</td> <td>2Mbps</td> <td>200</td> </tr> </tbody> </table>		Protocol conversion	Programs	Bitrate	Terminals	HTTP to HTTP	30	2Mbps	150	50	2Mbps	80	HTTP to HLS	50	2Mbps	200
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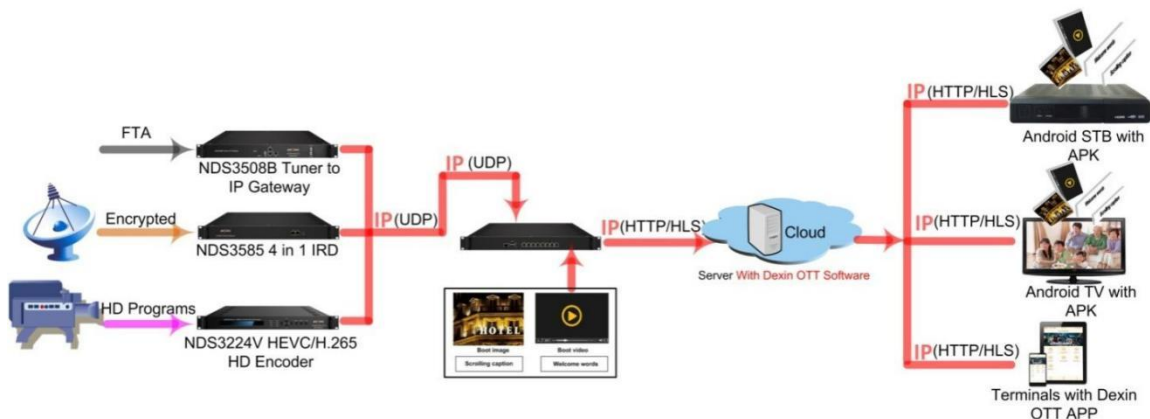
Terminal devices:

Terminal Type	Mark
Android STB with APK	Support HTTP&HLS protocol Support Dexin APK configuration
Android TVs with APK	Support HTTP&HLS protocol Support Dexin APK configuration Support self-start Dexin APK when TV is on

Total device number:

	Device	Number
Head-end device	NDS3508B Tuner to IP Gateway	1
	NDS3585 4 in 1 IRD	1
	NDS3224V HEVC/H.265 HD Encoder	1
	NDS3508F IPTV Gateway	1
Receiving device	NDS3508F IPTV Gateway	1
Terminal device	Android STB with APK/ Android TV with APK	According to NDS3508F's CPU utilization after receiving programs.

The number of terminals according to the cloud server



Head-end devices:

Data Source	Function	Mark
NDS3508B Tuner to IP Gateway	Receiving FTA Programs	Input: 16 tuner, 2ASI Output: IP(16 MPTS or 512 SPTS)
NDS3585 4 in 1 IRD	Decrypting programs	Input:4 RF, 1ASI, 4IP Output: IP (48 SPTS and 4 MPTS), 4ASI Support descramble programs through 4 CAMs/CIs
NDS3224V H.265/H.264 HD Encoder	HDMI HD Programs	Input: 4/8/12×HDMI/SDI Output: IP (1 MPTS and 4/8/12 SPTS) Support H.265/HEVC, H.264/AVC Encoding
NDS3508F IPTV Gateway	Converting protocol	Input: 7 channels IP over UDP Output: 1channel IP over HTTP and HLS

Receiving devices:

Data Source	Function	Mark
Cloud Server	Receiving and store programs and as a server	Input IP protocol: HTTP/HLS Output IP protocol: HTTP/HLS Support Dexin OTT software configuration

Terminal devices:

Terminal Type	Mark
Android STB with APK	Support HTTP&HLS protocol Support Dexin APK configuration
Android TV with APK	Support HTTP&HLS protocol Support Dexin APK configuration Support self-start Dexin APK when TV is on
Mobile Phone or Tablet PC	Installing Dexin OTT APP

Total device number:

	Device	Number
Head-end device	NDS3508B Tuner to IP Gateway	1
	NDS3585 4 in 1 IRD	1
	NDS3224V HEVC/H.265 HD Encoder	1
	NDS3508F IPTV Gateway	1
Receiving device	Cloud Server	1
Terminal device	Android STB with APK/ Android TV with APK/ Mobile Phone or Tablet PC with Dexin OTT APP	The number of terminals according to the cloud server

Test data for reference:

Protocol conversion	Programs	Bitrate	Terminals		CPU utilization
---			NDS3508F/ NDS3508F-10	NDS3508F-M	---
HTTP/RTP/RTSP/HLS to UDP	80	2M	---	---	55%
HTTP to HTTP	30	2M	150	300	80%
	50	2M	80	160	80%
HTTP to HLS	50	2M	200	400	46%
UDP to HLS	50	2M	200	400	50%

	80	2M	150	300	72%
UDP to HTTP	50	2M	120	240	50%

Order Guide:

		3508F-L	3508F	3508F-10	3508F-M	3508F-M-12	3508S	3508S-10	3508S-M	3508S-I	3508I	
Size		1U	1U	1U	1U	1U	2U	2U	2U	2U	2U	
Hardware	CPU	Celeron 3865U	Celeron 1037,3965	Celeron 3965	intel I5	intel I5	Celeron 1037,3965	Celeron 1037,3965	intel I5	intel I3 6100	intel I7	
	Memory	8G	8G	8G	8G	8G	8G	8G	8G	8G	8G	
	Core	2	2	2	4	4	2	2	4	4	8	
	Solid-State Disk(SSD)	120G SSD	120G SSD	120G SSD	120G SSD	120G SSD	120G SSD	120G SSD	120G SSD	120G SSD	120G SSD	120G SSD
	Mechanical Hard Disk	/	/	/	/	/	4T SATA	4T SATA	4T SATA	/	4T SATA	
Data Port Number		6	8	10	8	12	8	10	8	8	8	
10G Port (SFP+)		/	/	/	/	/	/	/	/	SFP+	SFP+	
Middleware		live+IPTV	live+IPTV	live+IPTV	live+IPTV	live+IPTV	live+IPTV	live+IPTV	live+IPTV	live+IPTV	live+IPTV	
load capacity	Input Channels	SD(4M)*40	SD (4M) *40	SD (4M) *40	HD (8M) *40	HD (8M) *40	SD (4M) *40	SD (4M) *40	HD (8M) *40	HD (8M) *50	HD (8M) *60	
	User Number	60	100	100	120	120	100	100	150	400	600	
VOD load		≤20	≤20	≤20	≤20	≤20	≤50	≤50	≤50	≤50	≤50	