

User Manual



IPTV UDP to HLS GATEWAY

H-IPTV-GATEWAY



A Note from Thor Broadcast about this Manual

Intended Audience

This user manual has been written to help people who have to use, integrate and to install the product. Some chapters require some prerequisite knowledge in electronics and especially in broadcast technologies and standards.

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Chapter 1 Product Outline

1.1 Outline

H-IPTV-GATEWAY 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 services. Also, the system can provide streaming media services directly.

1.2 Features

• 8 Data ports:

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)

- 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 THOR IPTV APK)

• Support downloading THOR 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



1.5 Specifications

	IP input thru CH 1-7(1000M) over HTTP, UDP(SPTS), RTP(SPTS), RTSP (over
Input	UDP, payload: mpeg TS) and HLS
	TS files uploading through Web management
	IP out thru Data port (1000M) over HTTP (Unicast), UDP(SPTS, Multicast) HLS
IP output	and RTMP (Program source should be H.264 and AAC encoding)
	IP out thru CH 1-7(1000M) over HTTP, HLS and RTMP (Unicast)
	Memory: 4G
	Solid-State Disk(SSD): 16G
	Channel switching time with THOR STB: HTTP (1-3s), HLS (0.4-0.7s)
	Support adding scrolling caption, welcome words, boot image and boot video
Swetom	(this function is only applicable to IP out application and the STB/Android TV
System	must be installed THOR IPTV APK)
	Play programs with APK downloaded android STB and TV, maximum 150
	terminals
	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 utilizationweb-based NMS management thru DATA port							
	Demission	482mm×324mm×44mm (WxLxH)						
General	Temperature	0~45°C(operation), -20~80°C(storage)						
	Power Supply	AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz						

1.6 Appearance and Description

Front Panel Illustration:



1/2	Reserved ports for future
3	Data port for IP output and Network management
4	CH1~CH7: IP input / Unicast output ports
5	Grounding Pole/ Power Switch and socket
6	VGA port for connecting displayer





Chapter 2 Installation Guide

2.1 Acquisition Check

When users open the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

- H-IPTV-GATEWAY IPTV Gateway
- User's Manual
- Grounding Cable
- Power Cord

If any item is missing or mismatching with the list above, please contact local dealer.

2.2 Installation Preparation

When users install device, please follow the below steps. The details of installation will be described at the rest part of this chapter. Users can also refer rear panel chart during the installation.

The main content of this chapter including:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing gateway
- Connecting signal cables
- Connecting communication port (if it is necessary)

2.2.1 Device's Installation Flow Chart Illustrated as following:





2.2.2 Environment Requirement

Item	Requirement						
	When user installs machine frame array in one machine hall, the						
Machine Hall Space	distance between 2 rows of machine frames should be 1.2~1.5m						
	and the distance against wall should be no less than 0.8m.						
	Electric Isolation, Dust Free						
	Volume resistivity of ground anti-static material:						
Machine Hall Floor	$1X10^7 {\sim} 1X10^{10\Omega}$, Grounding current limiting resistance: 1M						
	(Floor bearing should be greater than 450Kg/m ²)						
Environment	$5\sim40^{\circ}C(sustainable)$, $0\sim45^{\circ}C(short time)$,						
Temperature	installing air-conditioning is recommended						
Relative							
Temperature	20%~80% sustainable 10%~90% short time						
Pressure	86~105KPa						
Decar & Windows	Installing rubber strip for sealing door-gaps and dual level						
Door & Window	glasses for window						
Wall	It can be covered with wallpaper, or brightness less paint.						
Fire Protection	Fire alarm system and extinguisher						
	Requiring device power, air-conditioning power and lighting						
Derror	power are independent to each other. Device power requires AC						
Power	power 100V-240V 50/60Hz 2A. Please carefully check before						
	running.						

2.2.3 Grounding Requirement

- All function modules' good grounding designs are the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Coaxial cable's outer conductor and isolation layer should keep proper electric



conducting with the metal housing of device.

- Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm².

2.2.4 Frame Grounding

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The area of the conduction between grounding wire and grounding strip should be no less than 25mm².

2.2.5 Device Grounding

Connecting the device's grounding rod to frame's grounding pole with copper wire.

2.3 Wire's Connection

The grounding wire conductive screw is located at the right end of rear panel, and the power switch, fuse, power supply socket is just beside ,whose order goes like this, power switch is on the left ,power supply socket is on the right and the fuse is just between them.

• Connecting Power Cord

User can insert one end into power supply socket, while insert the other end to AC power.

• Connecting Grounding Wire

When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω .

Caution:

Before connecting power cord to H-IPTV-GATEWAY IPTV Gateway, user should set the power switch to "OFF".



Chapter 3 WEB NMS operation

User can only control and set the configuration in computer by connecting the device to web NMS Port. User should ensure that the computer's IP address is different from the H-IPTV-GATEWAY's IP address; otherwise, it would cause IP conflict.

3.1 login

The default IP of this device is 192.168.200.136:3333 (3333 is IP port number which can't be changed)

Connect the PC (Personal Computer) and the device with net cable, and use ping command to confirm they are on the same network segment.

I.G. the PC IP address is 192.168.200.136, we then change the device IP to 192.168.200.xxx (xxx can be 0 to 255 except 136 to avoid IP conflict).

Use web browser to connect the device with PC by inputting this device's IP address in the browser's address bar and press Enter.

It displays the Login interface as Figure-1. Input the Username and Password (Both the default Username and Password are "admin".) and then click "Login" to start the device setting.

User ID admin	•	+ Admin Login	+	1			
User ID admin		Admin Login		٦			
User ID admin		Admin Login					
admin							
				ור			
Password	ł						
•••••							
		Lovin					
		Login		- 1			
	Password	Password	Password Login	Password	Password	Password Login	Password Login





Figure-1

3.2 Operation

System Chart

When we confirm the login, it displays the status interface where users can have an overview

of system chart. (Figure-2)





Streaming Media→ NIC Management

From the menu on left side of the webpage, clicking "NIC Management", it displays the interface where users can set the dialing and NIC parameters. (If users want to use dialing function, please contact with local operators.) (Figure-3)

	WAY	ATE	V-G	[-IPT	H				€R	TH
	≜ admin -							:	SCORI	
	boot Device	Reboot service Reb	Factory reset	Save configuration	Upgrade system					
				C function.	us, PPPoE dialing and configure NIC	ement offer to check Network adapter sta	Streaming Media > NIC Manag	e Current Position	System Topology	
	ting	tion NIC Sett	dialing opera	dialing status	Data	IP/MAC	network adapter name	number	🖽 Streaming Media 🗸	
		Ţ			↓ receive:0/s ↑ send:0/s	192.168.200.136 00:90:27:E0:E3:97	eth0 disconnected	1 67	NIC Management Custom Program	
		NIC Setting-[eth0]	6		↓ receive:0/s † send:0/s	192.168.201.136 00:90:27:E0:E3:98	eth1 disconnected	2	Protocol Conversion HTTP	
•	static address 192.168.200.136	Mode:	6		↓ receive:40 Kb/s ↑ send:5416 Kb/s	192.168.202.136 00:90:27:E0:E3:99	eth2 [100Mbps] full duplex self-adaption	з 🗗	⊂ ADV < ∞ More Configuration <	
	255.255.255.0	Subnet mask: Gateway:	6	×	1.673.4105	PPPoE-[eth0]	eth3 disconnected	4 67	-8 refers to 8	Number 1-8
		DNS.				User ID:	eth4 [1000Mbps]		s. Number 1	data ports.
	00:90:27(e0:57)bd	MAC	(()			Tussilord.	full duplex self-adaption	5 🗖	he output data	refers to the
save cano			6	dial disconnected	5000.0/5	00.00.21.20.20.00	eth5 disconnected	6	users can't set	port. So us
		P	6		↓ receive:0/s ↑ send:0/s	192.168.206.136 00:90:27:E0:E3:9D	eth6 disconnected	7 67	ameters.	dialing param
		1	6		↓ receive:168 Kb/s ↑ send:1120 b/s	192.168.207.136 00:90:27:E0:E3:9E	eth7 [100Mbps] full duplex self-adaption	8 67		

Figure-3

Streaming Media→ **Custom Program**

Clicking "Custom Program", it displays the interface where users can upload TS files from local sources for distributing programs. (Figure-4)

SCORE			🛎 admin 🔸
		Upgrade system Save configuration	Factory reset Reboot service Reboot Device
🖨 System Topology	# Current Position: Streaming Media > Custom Program		
🖽 Streaming Media 🗸		▲ Upload Custom Program X Diete all	
NIC Management	Hard disk total capacity:10 GB Spare capacity:4 GB Used rat	lio:57.59%	
Custom Program	number program name	size	operate
HTTP	1 720P 59.94.ts	53 MB	×
⊡ ADV <			
✿ More Configuration <			
Sys Information			
			Web:V1.1.24 MsCore:V01.00.20.25.02



Streaming Media → **Protocol Conversion**

Clicking "Protocol Conversion", it displays the interface where users can set protocol conversion parameters and add programs from CH1-7. Input protocol supports HLS, HTTP, RTP, UDP, RTSP (RTP over UDP, playload MPEGTS). Output supports HLS, UDP, RTMP

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(RTMP is only supported when input sources are H.264 and AAC encoding.) Output address can't be changed when selecting HLS as output protocol. (Figure-5)

									Descendence of the second	and Case configuration Easterns	eset Reboot servi	e Reboot Device
	🖷 System Topology	# Current	Position: Str	reaming Media > Pr	otocol Conversion	1			Upgrade sys	ann i Save conngoration i Pactory r		
	E Streaming Media ~	Input proto	ocol: HL S, HT	TTP, RTP, UDP. RTSP(rtp over udp,paylo	ad MPEGTS	i);Output protocol: HLS, UDP, R	TMP(RTMP output	is only supported when input p	rogram source are H.264 and AAC encoding		
	NIC Management Custom Program	► start d	distribution	III stop distributi	on 📕 stop all	≡ Batch	h Setting All	▲ template d	ownload	s & export programs + add program	n 🛍 batch delete	≡ program sorting
	Protocol Conversion		number	status p	rogram name		eth4 [1000Mbps]	program type	the W22D D2 D 59-5140	output address	realtime	rate operate
	HTTP TE ADV <		1	• •	XTV-15		full duplex self-adaption eth4 [1000Mbps]	normal	ttp://259.95.0.66.5140	http://192.168.202.136.6060/hts/114/	114.III306 2776 KD	ps 💌
	og More Configuration <		2	• •	XTV-14		full duplex self-adaption eth4 [1000Mbps]	normal	np.//239.93.0.67.5140	http://192.168.202.136.6060/hts/113/	113.11306 2007 KD	ps 🖌 🗙
	Sys Information			• •	XTV-13		full duplex self-adaption eth4 [1000Mbps]	normal	np.//239.93.0.66.5140	http://192.168.202.136.6060/hts/112/	112.111306 2043 KD	ps 🖉 🗙
			4	✓ D	XTV-12		full duplex self-adaption eth4 [1000Mbps]	normal	rtp://239.93.0.65:5140	http://192.168.202.136:8060/hls/111/1	111.m3u8 2802 Kb	ps 🖌 🗙
Click here to	select		5	✓ D	XTV-11		full duplex self-adaption	normal	rtp://239.93.0.3:5140	http://192.168.202.136:8060/hls/110/	110.m3u8 2554 Kb	ps 🖌 🗶
he programs			6	✓ D	XTV-10		full duplex self-adaption eth4 [1000Mbps]	normal	rtp://239.93.0.63:5140	http://192.168.202.136:8060/hls/109/	109.m3u8 2602 Kb	ps 🖌 🗙
			7	✓ D	XTV-9		full duplex self-adaption eth4 [1000Mbps]	normal	rtp://239.93.1.2:5140	http://192.168.202.136:8060/hls/108/	108.m3u8 2621 Kb	ps 🖋 🗙
		Ш	8	✓ D	XTV-8		full duplex self-adaption	normal	rtp://239.93.0.112:5140	http://192.168.202.136:8060/hls/107/	107.m3u8 2565 Kb	ps 🖉 🗙
		total pro	ogram: 50	, number of distr	ibution: 50				1 1000 00 0 01 01 10			
								_			Web:V1.1.24 MsCore	V01.00.20.25.02
							Figure	-5				
≡ Batc	ch Setting : Clic	k bo	x in	front o	of prog	gran	n number	top al	hen click i	t to batch prog	rams in	formation a
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sable below hable eep	Nate download Aimpoint in the program of the click of the	ort progra batch	x in ns ku Ba ms n imj dd p	front of eep the atch Setting program type Anti-jitte input NIC utput protoco	of prog origin	gran nal r mal able p P Cl rogr edit	n number program in lick to rams t program	downl	hen click i ation	t to batch prog	inputtir	formation a
Eable below	h Setting : Click box. "Keep" Nate download a imper- nation and to h program : Click	ort progra batch	x in ns ku Ba ums u imj dd p	front of eep the atch Setting program typ: Anti-jitte input NIC utput protocol e export pro port/ex rogram	of prog origin 	mal able ep P	n number program in lick to rams t program	downl	hen click i ation	t to batch prog	rams in	formation a
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sable table eep P inform + add	h Setting : Clic box. "Keep" hate download a import nation and to h program : Click	ort progra batch	x in ns ku Ba a imj dd p	front of eep the atch Setting program type Anti-jitte input NIC autput protoco	of prog origin . nor r. dis . Kee di. UD	rogr edit	n number program in lick to rams t program	downl	hen click i ation	t to batch prog	inputtir	formation a

THOR		H-IPTV-GATEWAY
	edit program info	×
	program name:	eg,CCTV4
	program type:	normal normal
	Anti-jitter:	disable •
	input NIC -	eth1
	output protocol	UDP eth3 eth4 eth5
RIMP	input address:	eg,rtp://239.93.0.100.5140
	output address:	udp://224.3.3.2:10002
		*Anti jitter can output smoothly and re-package, but it will consume more system
		resources. Prease use caution. when output protocol is RTMP, input protocol only supports UDP and RTP .
		Submit Cancel
batch delete : Click to batch de i≡ program sorting : Click to sort prog	lete progran grams manu	ually by dragging program's name
	program sorting	ig drag program to sort ×
	DXTV-15	DXTV-14 DXTV-13 DXTV-12 DXTV-11 DXTV-10
	DXTV-9	DXTV-8 DXTV-7 DXTV-8 DXTV-5 DXTV-4 DXTV-3
	DXTV-2	DXTV-1 DXTV-2 DXTV-4 DXTV-3 DXTV-4
	DXTV-5	DXTV-6 DXTV-7 DXTV-8 DXTV-9 DXTV-10 DXTV-11 DXTV-13 DXTV-14 DXTV-15 DXTV-1 DXTV-2 DXTV-2
	DXTV-12 DXTV-4	DXTV-5 DXTV-6 DXTV-7 DXTV-8 DXTV-9 DXTV-10
	DXTV-11	DXTV-12 DXTV-13 DXTV-15 DXTV-1
	DXTV-2	
		Sizhmit Cancel

Streaming Media→ **HTTP**

Clicking "HTTP", it displays the interface where users can set the HTTP parameters. HLS, HTTP and RTSP can't be converted into HTTP directly, but UDP and RTP can be converted into HTTP. The setting principle is same as "Protocol Conversion". (Figure-6) Note: If users want to IP out over HTTP, they need to convert HLS/HTTP/RTSP into UDP/RTP, and then converting UDP/RTP into HTTP.

							1	<u>1-IP</u>	1 V-	GA	IEW	Ά
SCORE							Batch Setting				× 1 -	
	di Current I	anitian. Care		> UTTO Incode and and and		A Contemporter and LITTE	input NIC -	eth4			·	
 System Topology Streaming Media 	► start d	istribution	stop distri	bution stop all	■ Batc	h setting All				St	bmit Cancel	
NIC Management Custom Program Protocol Conversion		number	status	program name		template download	import programs input address	export programs output address	+ add program realtime rate	the number of online	i≡ program sorting operate ≡	
HTTP		1	×	CCTV-1	6 %	eth4 [1000Mbps] full duplex self-adaption	rtp://239.93.0.88:5140	D -		-	e ×	
♥ More Configuration <		2	×	CCTV-2	5 %	eth4 [1000Mbps] full duplex self-adaption	rtp://239.93.0.59:5140	D -	-	-	×	
		3	×	CCTV-3	5%	eth4 [1000Mbps] full duplex self-adaption	rtp://239.93.0.109:514	edit program ir 40	ifo			
		4	×	CCTV-4	5%	eth4 [1000Mbps] full duplex self-adaption	rtp://239.93.0.60:5140	program nam	e: 1 C: eth3			
		5	×	CCTV-5	5%	eth4 [1000Mbps] full duplex self-adaption	rtp://239.93.0.110:514	input addres	s: rtp://25	9.93.0.77:5140		
		6	×	CCTV-6	5%	eth4 [1000Mbps] full duplex	rtp://239.93.0.111:514	n 10 -	-	-	₽ ×	Submit

Figure-6

ADV→ **Rolling Subtitles**

ľ

ADV function is only applicable to IP out application and the STB and TV must be installed IPTV APK.

Clicking "Rolling Subtitles", it displays the interface where users can add rolling subtitles and set subtitles' parameters. After submitting, rolling subtitles will appear when playing programs. (Figure-7)

🛞 MSCORE						💄 admin -
				Upgrade system	Save configuration Fa	actory reset Reboot service Reboot Device
# System Topology	# Current Position: ADV > Rollin	g Subtitles				
B Streaming Media < ■ ADV ×		+ Add			w	elcome to XXX Hotell
Rolling Subtitles Boot Images	welcome	to XXX Hotel!	Content	welcome to XXX Hote!!	Speed	e e e e e e e e e e e e e e e e e e e
ପ୍ଟ More Configuration <						
Sys Information		Input contents	Position	Bottom		
			Font-color	PTIIII	Shadow-color	#000000
			Font-size		Transparency	
			BGM-color	#000000	BGM-transparen	ده های می اور
			Starting time		Finish time	
						Diete si delete submit
						Web:V1.1.24 MsCore:V01.00.20.25.02

Figure-7

ADV→ Boot Images

Tel: (800) 521-8467



Clicking "Boot Images", it displays the interface where users can add boot images. Click "Add" and then upload it. After submitting, boot images will appear when starting IPTV APK. (Figure-8)



Figure-8

More Configuration→ **System Set**

Clicking "System Set", it displays the interface where users can select client protocol and

Unicast output port, and	d set ADV p	oarameters. (Figu	Protocol Con HTTP	iversion		
S MSCORE			Receiving conversion	programs from "I 1" or "HTTP"	Protocol	Ladmin -
# System Topology	re Configuration > System Set	L	7		eth0 eth1	
E Streaming Media < I ADV <	Client protocol	Protocol Conversion	×		eth2 eth3 eth4	
∞¢ More Configuration ~ System Set	Client Player Setting:	MS Player	 Client 	reboot to take	eth5 eth6 eth7	
Streaming Media Setting	Client exit setting,	enable	Client	reboot to take effect	"eth0" r	refers to Data port. "eth1-7"
Boot Live Boot Video Boot Live" refers to access live screen with no images and videos.	Subtitle Interval. Boot Setting: Interval. Welcome Words Setting:	3 Boot images 3 enable	C m		refer to Unicast HTTP/H while UI	CH1~7. Users can choose output port. IP out over ILS/RTMP through "eth0-7", DP through "eth0".
"Boot Video" & "Boot Images" refer to start APK with video or images.	Welcome Words:	retres	.ti	L		
	Selecting "Ena it will appear w	when starting IPTV AKP.	vords and		Web:V1.1.2	4 MsCore V01.00.20.25.01



Select boot setting as "Boot Video" to upload boot video here and it will appear when starting IPTV APK. Suggest the size of video file doesn't over 500M.

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More Configuration→ **Streaming Media Setting**

Clicking "Streaming Media Setting", it displays the interface where users can set streaming media parameters. (Figure-10)

SCORE					🛓 admin 🗸
			Upgrade system Save configuration	Factory reset Reboot service Re	eboot Device
🛪 System Topology	R Current Position: More Configuration	> Streaming Media Setting restart service to take effect			
🖽 Streaming Media <	IGMP				
C ADV < C More Configuration ∽	IGMP Version	○ V1 ● V2 ○ V3			
System Set	Streaming Media Parameters				
Streaming Media Setting	Enable Router				
Client Managment AUZ Information	Enable RTP OVER RTSP(TCP)				
Sys Information	Disable RTP CRC				
	Restart Setting				
	Maintenance Frequency	Mor •			
	Time	05:00			
			Submit		
				Web:V1.1.24 MsCore:V01.00.3	20.25.02

Figure-10

More→ Client Management

Clicking "Client Management", it displays the interface where users can download APK from this device and then upload it to STB and TV. (Figure-11)





Clicking "Download APK", it will trigger a box as below (select saving pass) to save IPTV APK flie.

IPT	/.apk			×
	apk			
	apk File (18.6	MB)		
	http://192.168.207	7.136:3333		
Fi	efox			
	Browse			
	IDT)/ank			
•	ич і ч.арк			
			Savo	Cancol
			Jave	Cancer

$More {\rightarrow} AUZ \ Information$

Clicking "AUZ Information", it displays the interface where users can check the authorization information. (Figure-12)

MSCORE					📤 admi
		Upg	rade system	m Save configuration Factory reset Reboot service Re	eboot Dev
A System Topology	Current Position: More Configuration > AUZ Info	ormation			
🖽 Streaming Media <	•	Download identifying inf	ormation	▲ Upload authorization certificate	
⊡ ADV <	1		2		
✿ More Configuration ✓	authorization info		1		
System Set	authorization status:	done			
Streaming Media Setting	authorization user ID:	3508	1		
Client Managment	authorization valid days	unlimited	1		
AUZ Information	Maximum number of authorization concurrent work -	300	÷		
Sys Information			4		



System Information

Clicking "System Information", it displays the interface where users can check the system information such as CPU usage rate, CPU usage record and so on. (Figure-13)

R Current Position: Sys Information				
running process number: 35	blocking (process number: 0		
CPU usage rate		CPU usage record		
100%		100%		
80% -		80% -		
40%		40%		
20%		20%		
CPU1 79%	CPU2 86%	1651 1652 1653	16:54 16:55 16:56	
total memory: 4 GB available memory: 2 GB	free memory: 2 GB shared memory: 244 MB	buffer: 15 MB cache: 437 MB	total swap partiti free swap partitic	on capacity: 4 MB in capacity: 4 MB
Memory usage distribution		Memory usage record		
		Current/30.72%		
		80%		
0165		60% - 40% -		
shared	memory	20% -		
cache -		1651 1652 1653	16:54 16:55 16:56	
NIC	IP/MAC	Data packet	Data traffic	
	192.168.200.136	receive:0.error:0.abandon:0	‡ receive:0/s .total:0	
disconnected	00:90:27:E0:E3:97	send:0,error:0,abandon:0	total:0	
	192.168.201.136	receive:0.error:0.abandon:0	‡ receive:0/s .total:0	
disconnected	00:90:27:E0:E3:98	send:0,error:0,abandon:0	total:0/s ,total:0	
	192.168.202.136	receive:714725,error:0,abandon:0	receive:0/s .total:40	8 Mb
full duplex self-adaption	00:90:27:E0:E3:99	send:4853843,error:0,abandon:0	total:56 G	ib
- eth3	192.168.203.136	receive:0,error:0,abandon:0	‡ receive:0/s ,total:0	
🖵 🖗 disconnected	00:90:27:E0:E3:9A	send:0,error:0,abandon:0	total:0/s ,total:0	
eth4 [1000Mbps]	192.168.204.136	receive:101403017,error:0,abandon:23419	‡ receive:48 Mb/s ,to	tal:1040 Gb
🖵 🗞 full duplex self-adaption	00:90:27:E0:E3:9B	send:1748,error:0,abandon:0	t send:1536 b/s ,tota	al:1008 Kb
eth5	192.168.205.136	receive:0,error:0,abandon:0	‡ receive:0/s ,total:0	
disconnected	00.90.27 E0 E3.9C	send:0,error:0,abandon:0	<pre>f send:0/s ,total:0</pre>	
-C eth6	192.168.206.136	receive:0,error:0,abandon:0	‡ receive:0/s ,total:0	
🖵 🗞 disconnected	00:90:27:E0:E3:9D	send:0,error:0,abandon:0	total:0/s ,total:0	
eth7 [100Mbps]	192.168.207.136	receive:6983605,error:0,abandon:611	‡ receive:168 Kb/s ,t	otal:4152 Mb
🖵 🔏 full duplex self-adaption	00:90:27:E0:E3:9E	send:240845,error:0,abandon:0	total \$\$ send:40 Kb/s	2176 Mb
Hard disk partition	Hard disk total capacit	y Spare capacity	Used capacity	Used ra
1	■ 10 GB	4 GB	6 GB	57.72%
/boot/efi	≣ 511 MB	506 MB	5 MB	0.90%
/dev	E 2 GB	2 GB	0	0.00%
/dev/shm	■ 2 GB	2 GB	Z30 MB	11.94%
/run	₩ 305 MB	5 MB	0 MD	1.53%
/nun/lock	E 100 KB	100 KB	0	0.00%
/ww/fs/caroup	■ 2 GB	2 GB	0	0.00%
	81.00	2.00		0.00 /

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Chapter 4 Troubleshooting

H-IPTV-GATEWAY quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All THOR products have been passed the testing and inspection before ship out factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by THOR. To prevent potential hazard, please strictly follow the operation conditions.

Prevention Measure

• Installing the device at the place in which environment temperature between 0 to 45 °C

• Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary

• Checking the input AC within the power supply working range and the connection is correct before switching on device

- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed





For Further Tech Support 1-800-521-Thor(8467) support@thorfiber.com