SOFTEL®

SFT3308T IP to DVB-T Modulator

User Manual



SW Version: 1.23 Build 200.00 Jul 19 2016

HW version: 0.90.0.0

Web NMS version: 1.10

About This Manual

Intended Audience

This user manual has been written to help people who have to use, to 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 Overview

1.1 Outline

This IP to DVB-T modulator is an all-in-one device developed by us. It has 8 multiplexing channels and 8 DVB-T modulating channels, and supports maximum 1024 IP input through the GE port and 8 non-adjacent carriers (50MHz~960MHz) output through the RF output interface. The device is also characterized with high integrated level, high performance and low cost. This is very adaptable to newly generation DTV broadcasting system.

1.2 Key Features

- 2 GE input, SFP interface
- Supports up to 1024 channels TS over UDP/RTP, unicast and multicast, IGMP v2\v3
- Max 840Mbps for each GE input
- Supports accurate PCR adjusting
- Supports PID remapping and PSI/SI editing
- Supports up to 180 PIDS remapping per channel
- Support 8 multiplexed TS over UDP/RTP/RTSP output
- 8 DVB-T non-adjacent carriers output, compliant to ETSI EN300 744 standard
- Supports RS (204,188) encoding
- Support Web-based Network management



1.3 Inner Structure

1.4 Carrier Setting Illustration



1.5 Specifications

	Input	512×2 IP input, 2 100/1000M Ethernet Port (SFP)	
Input	Transport Protocol	TS over UDP/RTP, unicast and multicast, IGMP V2/V3	
	Transmission Rate	Max 840Mbps for each input channel	
	Input Channel	1024	
	Output Channel	8	
NA::::	Max PIDs	180 per channel	
Mux		PID remapping(auto/manually optional)	
	Functions	PCR accurate adjusting	
		PSI/SI table automatically generating	
	Channel	8	
	Modulation Standard	ETSI EN300 744	
Modulation	Constellation	QPSK/16QAM/64QAM	
Parameters	Bandwidth	6/7/8 MHz	
	Trans mode	2K/4K/8K	
	FEC	1/2, 2/3, 3/4, 5/6, 7/8	
	Interface	F typed output port for 8 non-adjacent carriers	
	RF Range	50~960MHz, 1kHz stepping	
RF Output	Output Level	-20~+10dbm (for all carriers), 0.5db stepping	
	MER	≥ 40dB	
	ACL	-55 dBc	
TC output	8 IP output over UDP	P/RTP/RTSP, unicast/multicast, 2 100/1000M Ethernet	
	Ports		
System	Web-based Network management		



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	Demission	420mm×440mm×44.5mm (WxLxH)	
General	Weight	3kg	
	Temperature	0~45°C(operation), -20~80°C(storage)	
	Power Supply	AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz	
	Consumption	≤20W	

Chapter 2 Physical Presentational Statement

2.1 Front panel Illustration:



2.2 Rear Panel Illustration:



1	NMS: network management port
2	RF output port
3	Reset IP: Reset webmaster IP address, recover it to default IP address
4	Link/Act Indicators
5	Data Input/Output 1/2 (SFP)



6	Power switch
7	AC Power Socket
8	Grounding

Chapter 3 Installation Guide

3.1 Acquisition Check

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

- IP to DVB-T Modulator
- User's Manual
- Power Cord

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

3.2 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 steps of the installation include:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing this IP to DVB-T Modulator
- Connecting signal cables
- Connecting communication port (if it is necessary)

3.2.1 Device's Installation Flow Chart Illustrated as follows:



3.2.2 Environment Requirement



ltem	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
Machine Hall Floor	Volume resistivity of ground anti-static material: $1X10^7 \sim 1X10^{10 \ \Omega}$,
	Grounding current limiting resistance: 1M (Floor bearing should be
	greater than 450Kg/m ²)
Environment	5~40°C(sustainable), 0~45°C(short time)
Temperature	installing air-conditioning is recommended
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
Deer & Window	Installing rubber strip for sealing door-gaps and dual level 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 power are
Devuer	independent to each other. Device power requires AC power 220V
Power	$\pm 10\%$ 50/60Hz or 110V $\pm 10\%$ 50/60Hz. Please carefully check before
	running.

3.2.3 Grounding Requirement

- All function modules' good grounding is 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 cables' outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.

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- 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.

3.2.4 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.

3.2.5 Device Grounding

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

3.3 Wire's Connection

3.3.1 Power cord connection

The power socket is located on the right of rear panel, and the power switch is on the left of front panel. User can plug one end of the power cord to the socket and insert the other end to AC power. 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 the IP to DVB-T Modulator, user should set the power switch to "OFF".

3.3.2 Signal and NMS Cable Connection

The signal connections include the connection of input signal cable and the connection of output signal cable.

Chapter 4 Web NMS Management

This device does not support the LCD operation, and the modification can only be operated under Web NMS.

4.1 Login

The factory default IP address is 192.168.0.136 and users can connect the device and web NMS through this IP address.

Connect the PC (Personal Computer) and the device with a net cable, and use ping command to confirm they are on the same network segment. For instance, the PC IP address is 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 0 to 255 except 252 to avoid IP conflict). Launch the web browser an input the device IP address in the browser's address bar and press Enter. It will display 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.

Username Password	e admin admin Default Usersadmin Default Passwordiadmin	
	Copyright @2011	

Figure-1

4.2 Operation

4.2.1 Summary

When we confirm the login, it displays the summary interface as Figure-2.



welc	2016-07-21 16:35:30 [EN 中文] [Exit]
Summary DEVICE INFORMATION	
Parameters System Information Modulator P Stream System Hardware Version: Web Version: Password Ponduct ID: Primware Log Uptime: Version: V	1.23 Build 200.00 Jul 19 2016 0.90 0.0 1.10 1.10 1.10 J 1.10 J 1.10 J 0.0331600-00000010-00000000-00000000 0 Day-00.04 31
User can click any item here to enter the corresponding interface to check information or set the parameters.	

Figure-2

4.2.2 Parameters

Parameters → TS Config:

Click "TS Config", it displays the interface where users can configure the output TS parameters in this interface. (Figure-3)

Summary					
arameters					
Modulator	Output TS 1 - Stream Select	General PID Bypass			
IP Stream	+ / × m				
vstem	→Lose → Locked	[23.3/23.3M] ^	→Normal → Overflow	[4.4/31.7M]	
Configuration		PID Rema	p = 2: dtv <=CH1_GE1_224.2.2.2:1001 [6] = 3: 3208A_17 <=CH1_GE1_224.2.2.2:1001 [7]		
Log	□ 1:0 3208A_16 □ 5:17 3208A_16 □ 7:10 3208A_16 □ 7:10 1519	Refresh Outp			
	[■] 8. [[520] 3208A_18 [●] 9. []1] 3208A_11 [●] 10: []2] 3208A_12				
	12: [4] 3208A_14 = 13: [513] 3208A_11 = 13: [513] 3208A_11	All Input			
		X			
	Parse program time out 60 seconds				

Figure-3

Output TS X

From the menu on up side of the webpage, clicking "Output TS X", it displays the interface as



Figure-4. Users can select the output TS channels.

CONFIG Output TS 1 - Stre	a <mark>m Select</mark> General PID Bypass		
Output TS 1 - Stre	a <mark>m Select</mark> General PID Bypass		
Output TS 1 - Stre	am Select General PID Bypass		
Output TS 1 - Stre	am Select General PID Bypass		
+ / Output TS 1	To select out	ut TS channel 1-8	
→Lose Output TS 2		Jut 15 channel 1-0	
⊕→CH1 Output TS 5 roy	g: 3/16) [23.7/23.7M]	⊕ →Output TS 1 (prog: 3)	[4.4/31.7M
CH2 Output 15.4 tog	g: 0) [23.7/23.7M] ☑ CA Filter g: 0) [23.7/23.7M] ☑ CA Filter		
→CH4 Output TS 6 100	g: 0) [23.7/23.7M] PID Remap	2	
-→CH5 Output TS 7 rog	g: 0) [23.7/23.7M] Refresh Input:		
Output TS 7	Refeach Quitau		
Output 15.8	Reliesh output		
	===>		
	<		
	All Input		
	All Output		
L			
Normal House and CO	and a second s		
	Output TS 2 GueCHT Output TS 4 GueCHT Output TS 4 GueCHT Output TS 5 GueCHT Output TS 6 Output TS 6 Output TS 8	••Lose Output TS 3 reg: 316) rg2.7 : 23.7 MI Discretion •••CH2 Output TS 4 0g 0) rg3.7 / 33.7 MI Discretion Discretion	etcase Output TS 2 Output TS 2 Output TS 3 Output TS 3 Output TS 4 <

Figure-4

> Stream Select

From the menu on up side of the webpage, clicking "Stream Select", it displays the interface where users can choose the programs to Mux out. (Figure-5)

		20
Status	TS CONFIG	
Parameters ▶TS Config	Output TS 1 - Stream Select General PID Bypass	
Modulator IP Stream		
(stem	all ase and acked	
Network Password • Configuration • Firmware Log	B → CH1_GE1_224.2.2.21001 (prog. 316)	3) [4 6/31.7
	Input Area Out	tput Area
	Partse grogram time out: 60 seconds Operation Area	



Configure 'Input Area' and 'Output Area' with buttons in 'Operation Area'. Instructions are as below: CA Filter : Enable/disable the CA Filter function. Clicking the box, user can filter the input CA to avoid disturbing with the device scrambling function.

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^I PID Remap: To enable/disable the PID remapping

Refresh Input To refresh the input program information

- Refresh Output To refresh the output program information
- Select one input program first and click this button to transfer the selected program to

the right box to output.

- Similarly, user can cancel the multiplexed programs from the right box.
- All Input To select all the input programs
- All Output To select all the output programs

Parse program To parse programs time out 60 seconds time limitation of parsing input programs

Program Modification:

The multiplexed program information can be modified by clicking the program in the 'output' area. For example, when clicking lccrv2<, it triggers a dialog box (Figure 6) where users can input new information.

Program Information		[close]
Program From Input:	CH1_GE1_224.3	2.2.2:1234 [302]
Service Name:	CCTV 2	
Program Number:	101	
Service Type:	0x01	
Service Provider:	CCTV	
PMT Descriptor Tag:	🖾 0x00	
PMT Descriptor Data:		(Hex)
PMT PID:	0x0020	
PCR PID:	0x0021	
MPEG-2 Video PID:	0x0022	
MPEG-2 Audio PID:	0x0023	
		Apply Close

Figure 6

> General

From the menu on up side of the webpage, clicking "General", it displays the interface where users can set parameters for each output channel. (Figure-7)



		2016-07-2
mmary Ts	CONFIG	
rameters		
TS Config	Output TS 1- Stream Select General PID Bypass	
Modulator		
IP Stream	Stream	
stem	Output Mode: Mux out 💌 PAT Insert: 🗹	
Network	SDT Insert: 🗹 BAT Insert: 🗹	
Configuration	Share BAT: CAT Insert:	
Firmware	PMT Insert: 🔽 TDT Insert: 🗹	
LOG	TOT Insert: V TS ID: 1	
	ON ID: 1 PCR Correct	
	PCR Speed BW D PCR State BW D	
	NIT	
	NIT Insert: Dx0000000	
	Network ID: 1 Network Name: network-1	
	Version Mode: Automatic Version Number: 5 (0-31)	
	Index TS ID ON ID Center Frequency Band Width Constellation 🕂 🏛	
		,
		Apple
		Add description
		rua desemptio

Figure-7

Users click the interface is display as below, and click to apply the modified parameters.(Figure-8)

NIT Descriptor			[close]
TS ID:	1		
ON ID:	1		
Frequency:	450.000	MHz	
Constellation:	16 QAM	~	
Symbol Rate:	6875	Ksps	
FEC Inner:	1/2 conv.	*	
FEC Outer:	not outer FEC	~	
		Add	Close

Figure-8

> PID Pass

From the menu on up side of the webpage, clicking "PID Pass", it displays the interface where to add the PIDs which need pass through. (Figure-9)



Summary			
► Status	TS CONFIG		
Parameters			
► TS Config	Output TS 1 - Stream S	elect General PID Bypass	
Modulator			
► IP Stream	Index Input Channel Input P	ID(0x) Output PID(0x) +	
System	1	a	
▶ Network			
▶ Password			
Configuration			Set Del-Al
▶ Firmware			
► Log			

Figure-9

Parameters \rightarrow Modulator:

From the menu on left side of the webpage, clicking 'Modulator', it will display the interface as Figure-10 where to set RF output parameters.

to use Web Mana	agement							
Summary	MODULA	TOR						
Parameters		Center Frequency: 6	78.000 MHz	Standard	I: DVBT			
► TS Config		Level(All Carriers): 0	.0 dBm	Channel	Info.(Alarm/Active	e/Total): 0/8/8		Click to set a
 Modulate IP Stream 	To set the common	Guard Interval: 1/3	2	Constell	ation: 64QAM	~		channels RF
System	modulation parameter	BandWidth: 8M		FFT Mod	le: 2K	~		output
 Network Password 	for all the 8 output	Code Rate: 7/8 Channel	Frequency	Gain offset	Status	Bit(Act/Max)		parameters
 Configura Firmware 	channels	1	650.000 MHz	0.0 dB	•	4.5/31.7 M	1721	
► Log		2	658.000 MHz	0.0 dB		0.0/31.7 M	Z 🕈	Click to set ea
		з	666.000 MHz	0.0 dB		0.0/31.7 M	2	output channe
		4	674.000 MHz	0.0 dB	•	0.0/31.7 M	1	norometers
		5	682.000 MHz	0.0 dB	•	0.0/31.7 M	2	parameters
		6	690.000 MHz	0.0 dB	•	0.0/31.7 M	1	
		7	698.000 MHz	0.0 dB	•	0.0/31.7 M	Z	
		8	706.000 MHz	0.0 dB		0.0/31.7 M	1.21	

Figure-10

Level(All Cerriere);	0.0	(00 - 110 dBm)
Level(All Cartiers).	0.0	(-20 ~ +10 ubiii,
Channel Enable:	V	
Start Frequency:	650.000	(50 ~ 960 MHz)
Bandwidth:	8.000	MHz
Gain offset:	0.0	(-10 ~ 0 dB)



Level(All Carriers):	0.0	(-20 ~ +10 dBm)
Channel Enable:		
Frequency:	650.000	(50 ~ 960 MHz)
Gain offset:	0.0	(-10 ~ 0 dB)

Parameters → IP Stream:

This modulator supports TS to output in IP (8*MPTS) format through the DATA port.

Click 'IP Stream', it will display the interface as Figure-12 where to set IP out parameters.

anametera	Channel Info.	.(Alarm/Active/Tota	l): 0/8/8						
TS Config Modulator	Channel	IP Address	Port	Protocol	Pkt Length	Null PKT Filter	Status	Bit(Act/Max)	1
IP Stream	1	224.2.2.2	2001	UDP	7	Π		4.5/31.7 M	
vstem	2	224 2 2 2	2002	LIDP	7			0.0/31.7 M	
Network	-		2002	LIDD	7			0.0/21.7 M	_
Password	J	224.2.2.2	2000	ODF	L			0.0/31.7 W	-
Configuration	4	224.2.2.2	2004	UDP	7			0.0/31.7 M	1
Log	5	224.2.2.2	2005	UDP	7			0.0/31.7 M	/
	6	224.2.2.2	2006	UDP	7			0.0/31.7 M	1
	7	224.2.2.2	2007	UDP	7			0.0/31.7 M	1
	8	224.2.2.2	2008	UDP	7		۲	0.0/31.7 M	2

Figure-12

Quickly Config.		[close]
Enable:	V	
IP Address:	224.2.2.2	
Port:	2001	
Step:	1	
Protocol:	UDP	~
Pkt Length:	7	~
Null PKT Filter:		
25.64990000,3559007 1089983	1257	Apply Close
Channel 1 Config.		Apply Close
Channel 1 Config. Enable:		Apply Close
Channel 1 Config. Enable: IP Address:	224.2.2.2	Apply Close
Channel 1 Config. Enable: IP Address: Port:	224.2.2.2 2001	Apply Close]
Channel 1 Config. Enable: IP Address: Port: Protocol:	224.2.2.2 2001 UDP	Apply Close] [close]
Channel 1 Config. Enable: IP Address: Port: Protocol: Pkt Length:	224.2.2.2 2001 UDP 7	Apply Close [close]
Channel 1 Config. Enable: IP Address: Port: Protocol: Pkt Length: Null PKT Filter:	224.2.2.2 2001 UDP 7	Apply Close (close)

System → Network:

Click 'Network', it will display the interface as Figure-13 where to set network



parameters.

ummary		
Status	NETWORK	
arameters		
TS Coofig	NMS	
Modulator	IP Address: 10.0.0.106	
P Stream	Subnet Mask: 255.0.0.0	
vstem	Gateway: 10.0.0.1	
Natwork	Web Manage Port: 80	
Password	MAC Addrase: 20:11:12:34:56:78	
Configuration		
Firmware		Apply
Log		
	DATA	
	DAIA	
	IP Address: 192.168.2.136	
	Subnet Mask: 255.255.0	
	Gateway: 192.168.2.1	
	MAC Address: 20:21:12:34:56:78	
	TS Output: GE1 🗹 GE2 🗹	
		Apply

Figure-13

System \rightarrow Password:

From the menu on left side of the webpage, clicking "Password", it will display the screen as Figure-14 where to set the login account and password for the web NMS.



welcome to use Web		201
Summary		
► Status	PASSWORD	
Parameters		
► TS Config	Modify the login name and password to make the device safely. If forget the name or password, you can reset it by keyboard. The default login name	
► Modulator	and password is "admin" Also please note the capital character and lowercase character.	
► IP Stream		
System	Current UserName: admin	
Network Reserverd	Current Password:	
Configuration	New UserName:	
► Firmware	New Password:	
	Confirm New Password:	
	A	aly

Figure-14

System \rightarrow Configuration:

From the menu on left side of the webpage, clicking "Configuration", it will display the

screen as Figure-15 where to set your configurations for the device.

CONFIGURATION Save Restore Factory Set Backup Load Select areas When you change the parameter,you shoud save configuration ,otherwise the new configuration will lost after reboot. Save configuration	agement	
CONFIGURATION Save Restore Factory Set Backup Load Select areas When you change the parameter, you shoud save configuration , otherwise the new configuration will lost after reboot. Save configuration	nmary	
Save Restore Factory Set Backup Load Select areas When you change the parameter,you shoud save configuration ,otherwise the new configuration will lost after reboot. Save configuration	itatus	CONFIGURATION
Save Restore Factory Set Backup Load Select areas When you change the parameter,you shoud save configuration ,otherwise the new configuration will lost after reboot. Save configuration Save configuration	ameters	
When you change the parameter you shoud save configuration , otherwise the new configuration will lost after reboot.	Config	Save Restore Factory Set Backup Load Select areas
When you change the parameter you shoud save configuration ,otherwise the new configuration will lost after reboot. Bave config		
Save config		When you change the parameter, you shoud save configuration , otherwise the new configuration will lost after reboot.
Silve config		
Silve config		
		Save config



Figure-15

System \rightarrow Firmware:

From the menu on left side of the webpage, clicking "Firmware", it will display the

screen as Figure-16 where to update firmware for the device.

We		2016
Summary Status	FIRMWARE	
Parameters TS Config Modulator IP Stream System Network Network	Warning: 1. Upgrade firmware(software and hardware) to get new function,please choose the right firmware to upgrade if you use a wrong file,the devi- may not work. 2. Upgrade will keep a long time,please do not turn off the power, otherwise the device will not work. 3. After upgrade you must reboot device manually.	ice
 ► Configuration ► Firmware ► Log 	Current Software Version: 1 23 Build 200.00 Jul 19 2016 Current Hardware Version: 0 90.0 File: 1 被低一 未选择文件。 Browse botton	ade

Figure-16

System \rightarrow Log:

From the menu on left side of the webpage, clicking "Log", it will display the screen as Figure-17 where to check the "Log".



welcome to use Web Manag		20
Summary	To select "Kernel log" and "System Log"	
Status	Log To select Kerner log and System Log	
Parameters		
TS Config	Log Type: Kernel Log Auto Refresh: U Kernel Class So	
Modulator	[0.000000] Katheroug al CPU 0x0	^
► IP Stream	[0.000000) Einex version 0-13-0-3-4 (vot@localhost.localdomain) (gcc version 4.9.1 (Sourcery CodeBench Lite 2014.11-30)) #134 SMP PREEMP1	
	0.000000] CPU: ARMv7 Processor [413fc090] revision 0 (ARMv7), cr=18c5387d	
System	0.0000001 CPU: PIPT / VIPT nonaliasing data cache, VIPT aliasing instruction cache 0.000001 CPU: PIPT / VIPT nonaliasing data cache, VIPT aliasing instruction cache	
Network	0.000000 Wachine model: xinx_yzhq-r/000	
Password	0.000000 tina. Reserve in mic a uxi sociologi	
Configuration	Outproved in the provide the termination Outproved in the proved in the provide termination Outproved in the provide termination	
► Firmware	0.0000001 free area init node node 0. podat 40560200. node mem map 57cf0000	
► Log	0.000000] Normal zone: 768 pages used for memmap	
	[0.000000] Normal zone: 0 pages reserved	-
	[0.000000] Normal zone: 98304 pages, LIFO batch:31	
	[0.000000] PERCPU: Embedded 9 pages/cpu @67cd3000 s8128 r8192 d20544 u36864	
	[0.000000] pcpu-alloc: s8128 r8192 d20544 u36864 alloc=9*4096	
	[0.000000] pcpu-alloc: [0] 0 [0] 1	
	 0.000000] Built 1 zonelists in Zone order, mobility grouping on. Total pages: 97536 	
	0.000000] Kernel command line: console=ttyPS0,115200 root=/dev/ram rw earlyprintk	
	U.UUUUUUU log_but_len individual max cpu contribution: 1310/2 bytes	
	U.Dubububi log_buti jeh total cpu_extra contributions. 1310/2 bytes	
	C. 0.000000 log bit lev: 26114 bits	
	0.000000 ing_out_int. 222144 bits 0.0000001 ast/ into the free: 12966/(98%)	
	Occupied and the contract of the contract	
	0.0000001 Dentry cache hash table entries: 65536 (order: 6. 262144 bytes)	
	0.000000] Inode-cache hash table entries: 32768 (order: 5, 131072 bytes)	
	0.000000] Memory: 359184K/393216K available (3790K kernel code, 219K nvdata, 1272K rodata, 192K init, 291K bss, 17648K reserved, 16384K c	r
	[0.00000] Virtual kernel memory layout:	
	[0.000000] vector : 0xfff0000 - 0xfff1000 (4 kB)	
	[0.000000] fixmap : 0xffc00000 - 0xfff00000 (3072 kB)	
	[0.000000] vmalloc: 0x58800000 - 0xff000000 (2664 MB)	
	U.000000 lowmerm : 0x40000000 - 0x58000000 (384 MB)	
	u.oududu mudies: Ukaruududu - Ukaruududu (14 MB)	
and the second se	[0.000000] .text. 0x40000000 - 0x40419310 (2005 kb)	

Figure-17

Chapter 5 Troubleshooting

Our ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All of our 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 us. 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 voltage 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

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• 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

Chapter 6 Packing list

•	IP to DVB-T Modulator	1 рс
•	User's Manual	1 pc
•	Power Cord	1 рс