



TRIVISION

Model: TBT-8HTQ Encoder Modulator User Manual





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 Introduction

1.1 Product Overview

TBT-8HTQ Encoder modulator is an all-in-one device integrating MPEG2 encoding and modulating to convert audio/video signals into DVB-C/T/ATSC/ISDB-T/DTMB RF out. It support 4 HDMI inputs, and its pay-as-you-grow modular design (maximum support 4/8 HDMI inputs) and flexible configuration are making it extremely scalable, very reliable with high performance. The signals source could be from STB, satellite receiver, closed-circuit television cameras and antenna etc. Its output signal is to be received by TVs or STBs etc.

1.2 Key Features

- Supports 4/8 HDMI channels input
- Supports MPEG2 video encoding
- Supports 1080p/i, 720p, 576i, 480i video resolution
- Supports low latency(50~1000ms)
- Supports MPEG-1 layer 2, MPEG-2 AAC, and AC3 audio encoding
- Supports CC (Closed Caption), EIA 608
- Supports LCN(Logical Cluster Number)
- DVB-C/T/ATSC/ISDB-T/DTMB RF out in one device, modulation dynamic switching
- Each channel support 1 DVB-C/T/ATSC/ISDB-T/DTMB output option
- Control via web-based NMS, and easy updates via web

1.3 Specifications



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HDMI Encoding Section

Input	Interface	HDMI*4/8	
	Encoding	MPEG2	
	720@50/59.94/60p	720@25/30p	
	1080@50i	1080@25p	
	1080@59.94/60i	1080@30p	
	1080@50p	1080@25p	
	1080@59.94/60p	1080@30p	
	Bit-rate	2.000~20.000 Mbps	
	GOP	1~60	
	Rate Control	VBR	
Video	Aspect Ratio	16 :9	
	Encoding	MPEGI layer 2,MPEG-2AAC, AC3	
	Sample rate	48KHz	
	Bit rate	MPEGI layer 2 (128kbps)	
		MPEG-2 AAC (VBR)	
Audio	Bit rate	AC3 (128kbps)	

DVB-C Modulator Section

Standard	J.83A (DVB-C), J.83B	
MER	≥35dB	
RF frequency	100-1000MHz, 1KHz step	
RF output level	-48~ -10dBm, 1dB step	
Symbol rate	3.000~7.000Msps adjustable	
	J.83A	J.83B
Constellation	16/32/64/128/256QAM	64/ 256QAM
Bandwidth	8M	6M

DVB-T Modulator Section

Standard	DVB-T COFDM	
Bandwidth	2M, 3M, 4M, 5M, 6M, 7M, 8M	
Constellation	QPSK, 16QAM, 64QAM	
Code rate	1/2, 2/3, 3/4, 5/6, 7/8	
Guard Interval	1/32, 1/16, 1/8, 1/4	
Transmission	2K, 8K	
Mode:		
MER	≥35dB	
RF frequency	100-1000MHz, 1KHz step	
RF output level	-48~ -10dBm, 1dB step	

ISDB Modulator Section

Input	Output
480@59.94/60i	480@30p
576@50i	576@25p

Standard	ARIB STD-B31
Constellation	QPSK, 16QAM, 64QAM
Guard Interval	1/32, 1/16, 1/8, 1/4
Transmission Mode	2K, 4K, 8K
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
RF frequency	100~1000MHz, 1KHz step
RF output level	-48~ -10dBm, 1dB step

ATSC Modulator Section

Standard	ATSC A/53
Constellation	8 VSB
MER	≥35dB
RF frequency	100~1000MHz, 1KHz step
RF output level	-48~ -10dBm, 1dB step

DTMB Modulator Section

RF frequency	100-1000MHz, 1KHz step
RF output level	-48~ -10dBm, 1dB step
Transmission Mode	S-0.8-4QAM-595, S-0.8-16QAM-595, M-0.4-16QAM-945V, M-0.6-16QAM-945V, M-0.6-64QAM-420V, M-0.6-64QAM-945V, M-0.8-16QAM-420V, M-0.8-16QAM-945V, M-0.8-64QAM-420V,

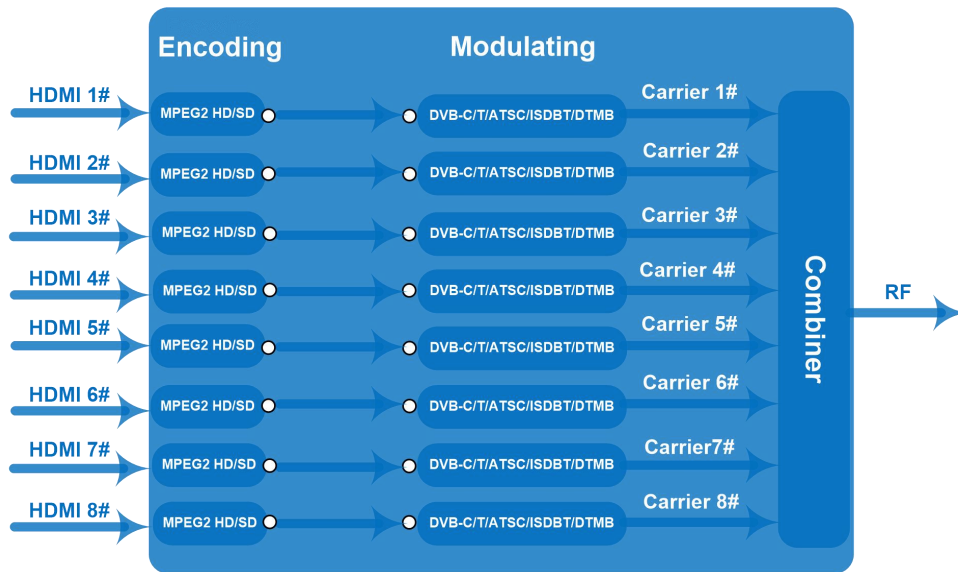
System

Management	Web
Language	English
Upgrade	Web update

General

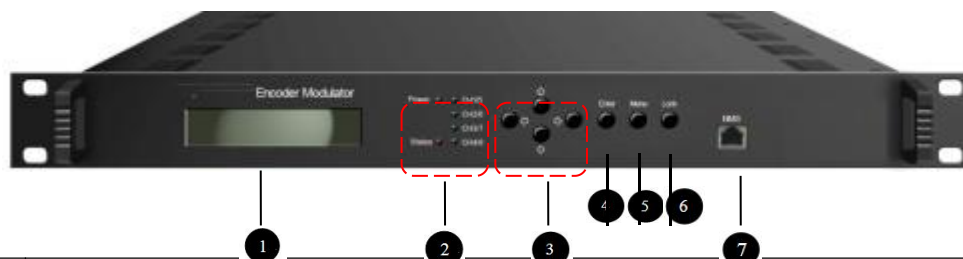
Power supply	AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz
Dimensions	482*328*44.5mm
Temperature	0~45℃(operation), -20~80℃(storage)

1.4 Inner Principle Chart



1.5 Appearance and Description

Front Panel Illustration



1	LCD screen	
2	Indicators	Power Indicator
		Status Indicator
		CH1-CH4/8 indicates the 4/8 channels input
3	UP/ DOWN, LEFT/RIGHT keys	
4	Enter key	
5	Menu key	
6	Lock key	
7	NMS (Network management port)	

Rear Panel Illustration

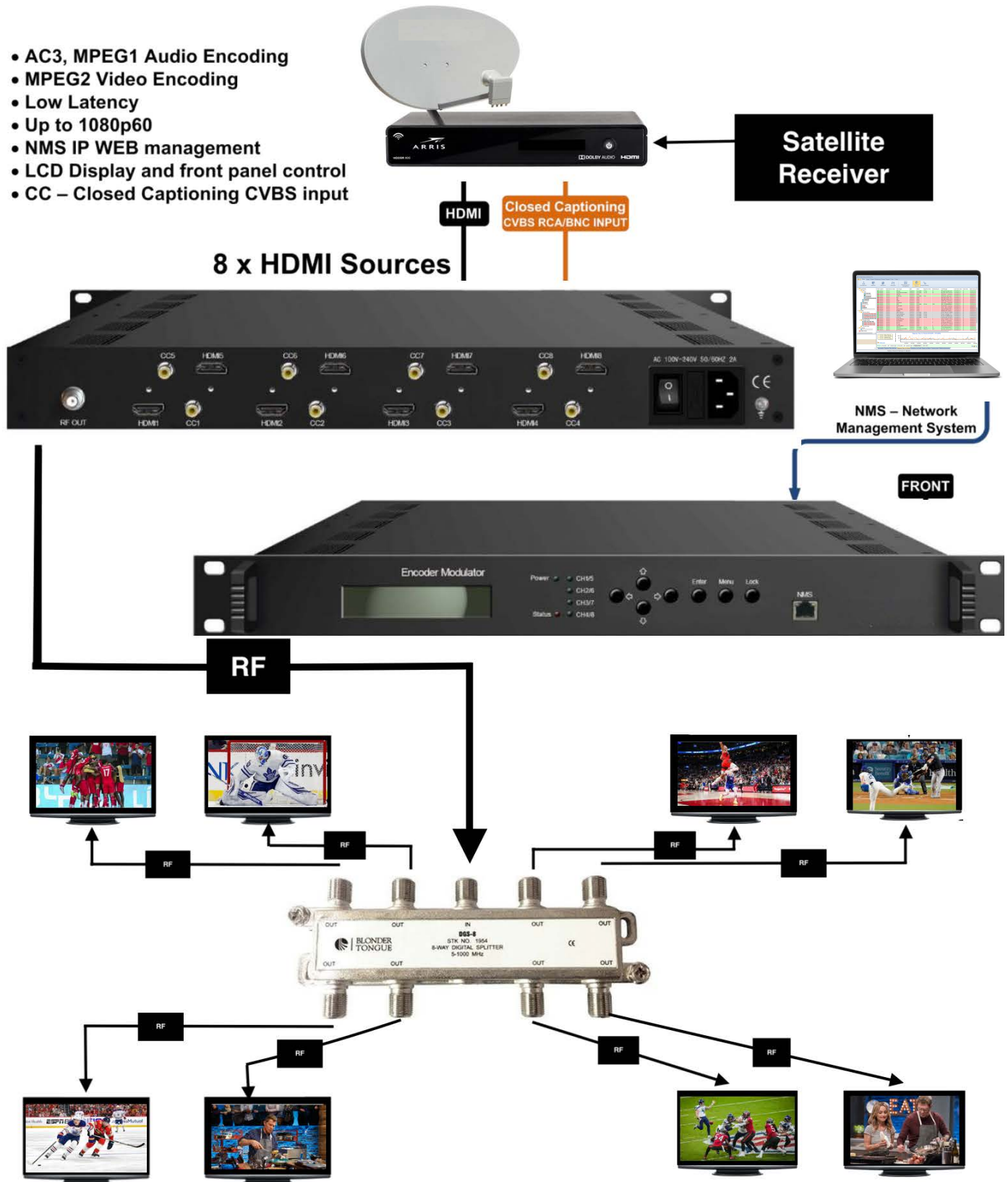


1	RF output
2	4/8 HDMI input and 4/8 CC input ports
3	Power Switch/Fuse/Power socket
4	Grounding Pole

1.6 Application Drawing

8 HDMI Digital RF Modulator with CC (Closed Captioning) (QAM / ATSC / DVB-T / ISDB-T) up to 1080p60 / Low Latency

- AC3, MPEG1 Audio Encoding
- MPEG2 Video Encoding
- Low Latency
- Up to 1080p60
- NMS IP WEB management
- LCD Display and front panel control
- CC – Closed Captioning CVBS input



Chapter 2 Installation Guide

This section explains the precautions users must take to avoid potential injuries during installation or use of the product. Please read all the details carefully and keep them in mind before installing or using the product.

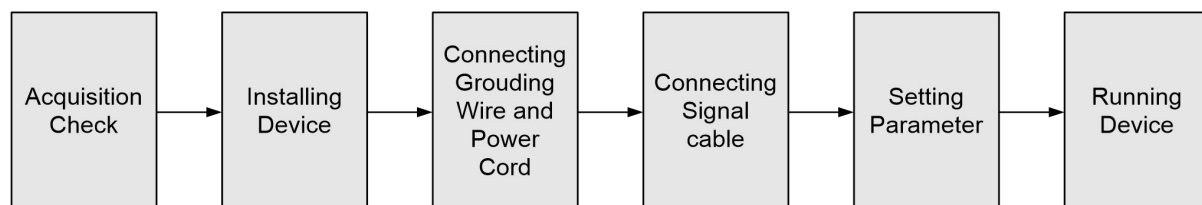
2.1 General Precautions

- ✓ Must be operated and maintained free of dust or dirt
- ✓ The cover should be securely fastened, do not open the cover of the products when the power is on.
- ✓ After use, securely stow away all loose cables, external antenna, and other items

2.2 Power precautions

- ✓ When you connect the power source, make sure it will not be overloaded
- ✓ Avoid operating on a wet floor in the open. Make sure the extension cable is in good condition
- ✓ Make sure the power switch is off before you start to install the device

2.3 Device's Installation Flow Chart Illustrated as following



2.4 Environment Requirement

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, the 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.
Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$, Grounding current limiting resistance: $1 M\Omega$ (Floor bearing should be greater than 450 Kg/m^2)
Environment Temperature	$5 \sim 40^\circ \text{C}$ (sustainable), $0 \sim 45^\circ \text{C}$ (short time), installing air-conditioning is recommended
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
Door & 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
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC $110\text{V} \pm 10\%$, 50/60Hz or AC $220\text{V} \pm 10\%$, 50/60Hz. Please carefully check before running.

2.5 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.
- ✓ 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 25 mm^2 .

Chapter 3 Operation

Encoder modulator's front panel is user operating interface. Before operating, user can decide whether directly use the default setting or customize the input and output parameters setting. The detail operations is as follows:

Keyboard Function Description:

ENTER: Activating the parameters which need modifications, or confirming the change after modification.

MENU: To cancel presently entered value, resume previous setting and return to previous menu.

LEFT/RIGHT: To move the “►” to choose or set the parameters.

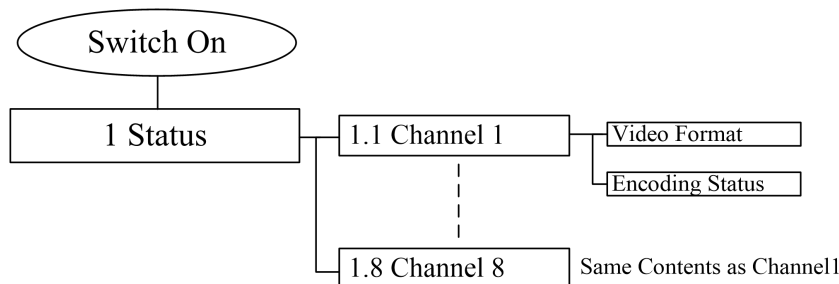
UP/DOWN: To modify activated parameter or page up/down when parameter is inactivated.

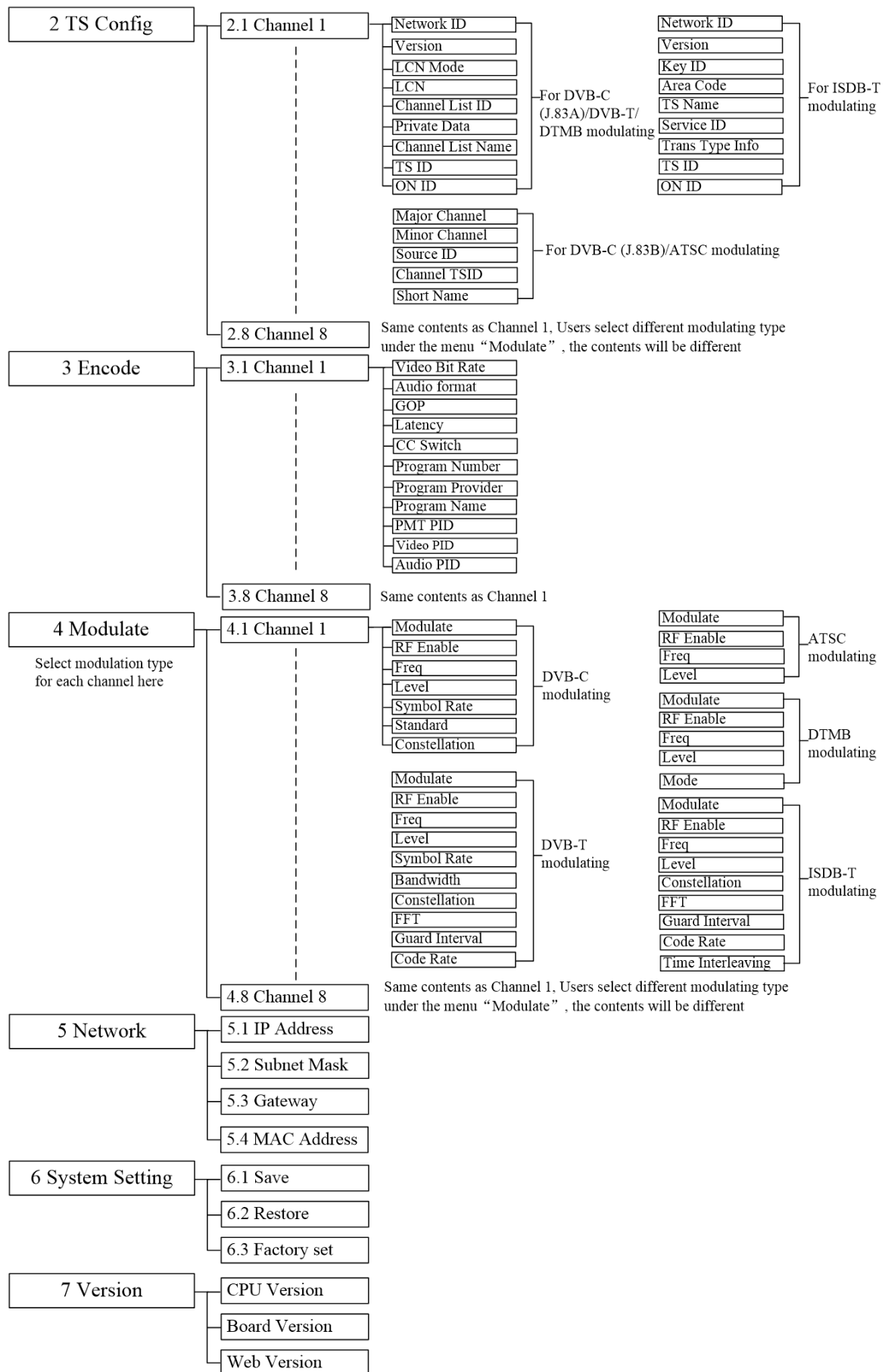
LOCK: To Lock the screen / cancel the lock state. After pressing lock key, the system will question the users to save present setting or not. If not, the LCD will display the current configuration state.

At the “Factory Configuration” page, user can press “**ENTER**” key to restore the factory default configuration.

3.1 LCD Menus

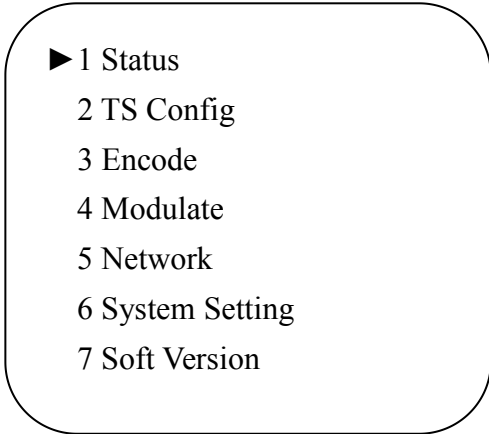
An overview of the LCD menus:





3.2 General Settings

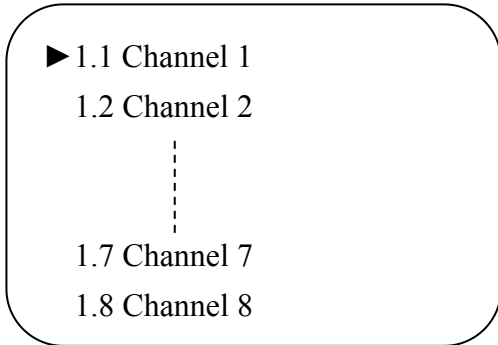
By pressing LOCK key, users can enter in the main menu and set the parameters in the following editing interfaces, the LCD will display the following pages:

- 
- ▶ 1 Status
 - 2 TS Config
 - 3 Encode
 - 4 Modulate
 - 5 Network
 - 6 System Setting
 - 7 Soft Version

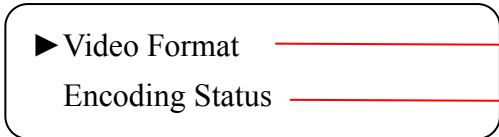
The option with “▶” is the current selection, users can press the ENTER key to enter the specified submenu to modify the parameters.

3.2.1 Status

Under this menu, users can check input source status of each channel. The contents are the same for Channel 1-8, so here just takes one channel as the example.

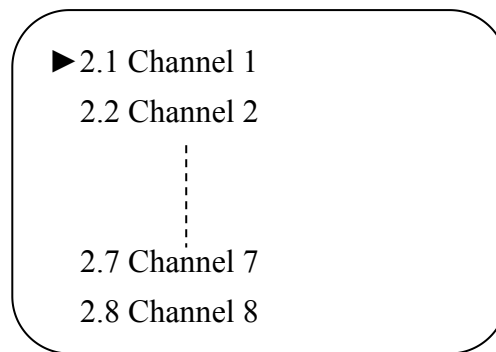
- 
- ▶ 1.1 Channel 1
 - 1.2 Channel 2
 - ...
 - 1.7 Channel 7
 - 1.8 Channel 8

➤ Channel 1/2/3/4/5/6/7/8

- 
- ▶ Video Format → Display input video resolution
 - Encoding Status → Display encoding status: Error/Normal

3.2.2 TS Config

This device is equipped with maximum 8 modulator carriers. Under this menu, users can enter the corresponding channels to set the relevant parameters. The setting principle is the same for Channel 1-8, so here this manual just takes one channel as the example to explain. After pressing the enter key, the LCD will display the following pages:

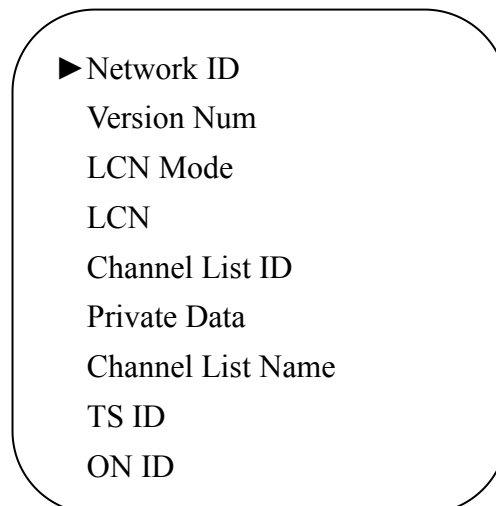


➤ Channel 1/2/3/4/5/6/7/8

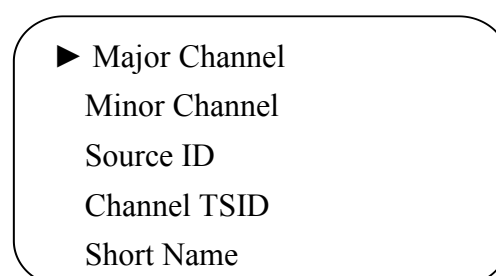
supports 8 Channels output with DVB-C, DVB-T, ATSC, DTMB or ISDB-T modulating. Users select different modulating modes for each channel under the menu of “**3.2.4 Modulate**”, the TS parameters will be different, LCD will display the following pages:

Selecting modulation mode as DVB-C:

DVB-C has 2 standards, selecting standard as J.83A, LCD will display the following pages:



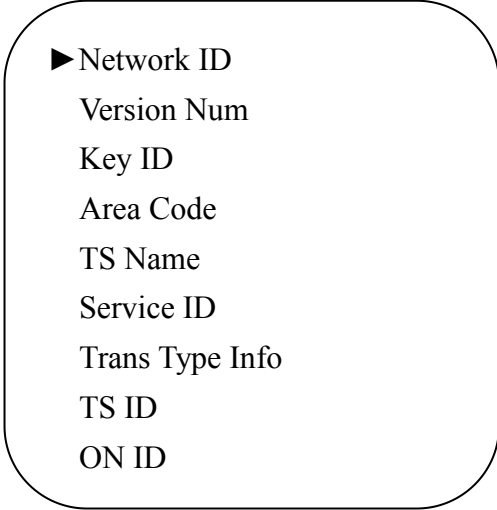
Selecting standard as J.83B, LCD will display the following pages:



Selecting modulation mode as DVB-T/ DTMB, the LCD contents are the same as DVB-C (J.83A).

Selecting modulation mode as ATSC, the LCD contents are the same as DVB-C (J.83B).

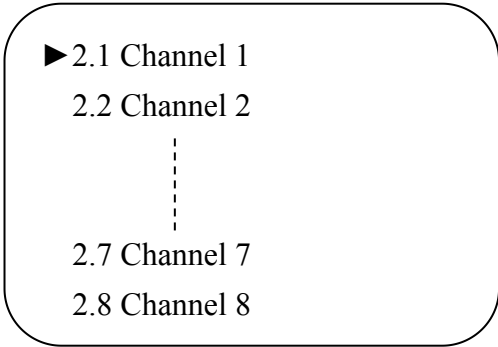
Selecting modulation mode as ISDB-T, the LCD will display the following pages:



► Network ID
Version Num
Key ID
Area Code
TS Name
Service ID
Trans Type Info
TS ID
ON ID

3.2.3 Encode

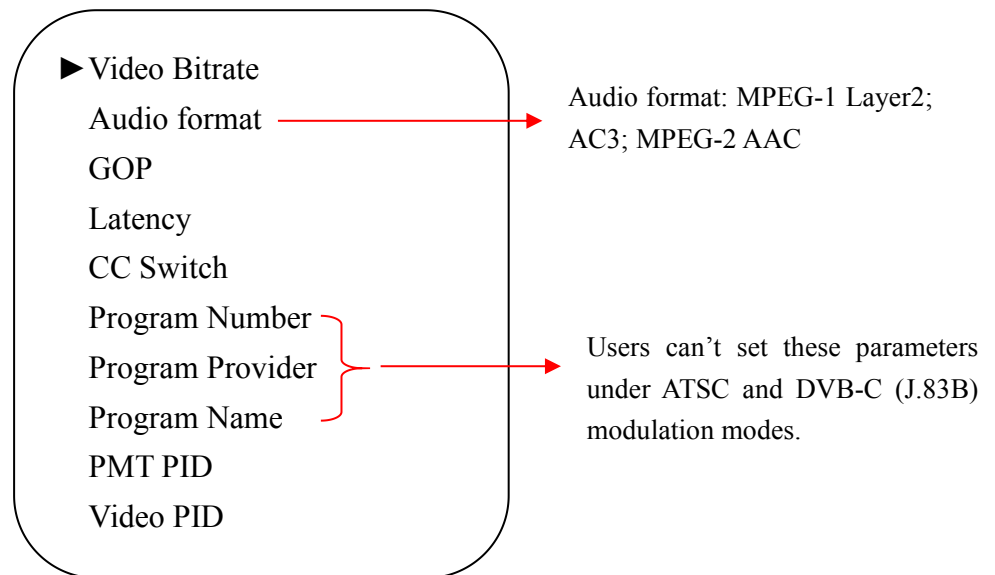
This device is equipped with maximum 8 HDMI channels input. Under this menu, users can enter the corresponding channels to set the relevant encoding input parameters.



► 2.1 Channel 1
2.2 Channel 2
⋮
2.7 Channel 7
2.8 Channel 8

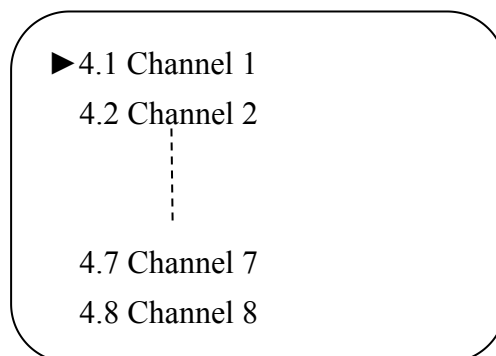
➤ Channel 1/2/3/4/5/6/7/8

The setting principle is the same for Channel 1-8, so here this manual just takes one channel as the example to explain. After pressing the enter key, the LCD will display the following pages:



3.2.4 Modulate

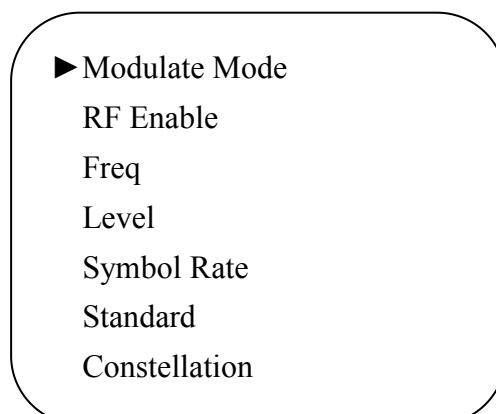
supports 8 RF out carriers, users can enter the corresponding channels to select modulation mode and set the relevant RF output parameters.



➤ Channel 1/2/3/4/5/6/7/8

Users can set these parameters by pressing ENTER to enter these submenus. The LCD will display the following pages

DVB-C:



DVB-T:

► Modulate Mode

RF Enable

Freq

Level

Symbol Rate

Bandwidth

Constellation

FFT

Guard Interval

Code Rate

ATSC:

► Modulate Mode

RF Enable

Freq

Level

DTMB:

► Modulate Mode

RF Enable

Freq

Level

Mode

ISDB-T:

► Modulate Mode

RF Enable

Freq

Level

Constellation

FFT

Guard Interval

Code Rate

Time Interleaving

3.2.5 Network Setting

After enter Network Setting, there are four submenus shows as the following LCD displays.

IP Address
192.168.000.136

Subnet Mask
255.255.255.000

Gateway
192.168.000.001

MAC Address
XX:XX:XX:XX:XX:XX

3.2.6 System setting

➤ Save

Users can enter Saving Configuration submenu for saving settings. Choose yes and press ENTER to confirm.

Saving Config
▶ YES NO

➤ Restore

At this menu, user can choose yes to restore the device into the last saved configuration.

Load Saved CFG?
▶ YES NO

➤ Factory Set

Choose yes to restore the device into factory's default configuration.

Reset all sets?
▶ YES NO

3.2.7 Soft Version

User can check the CPU, Board and Web version of this equipment under this submenu.

CPU/Board/Web Version
XX:XX:XX

Chapter 4 WEB NMS Operation

User not only can use front buttons to set configuration, but also can 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 IP address; otherwise, it would cause IP conflict.

4.1 login

The default IP address of this device is 192.168.0.136. (We can modify the IP through the front panel.)

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 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 0 to 255 except 252 to avoid IP conflict).

Use web browser to connect the device with PC by inputting the Encoder Modulator's 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.



Figure-1

4.2 Operation

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

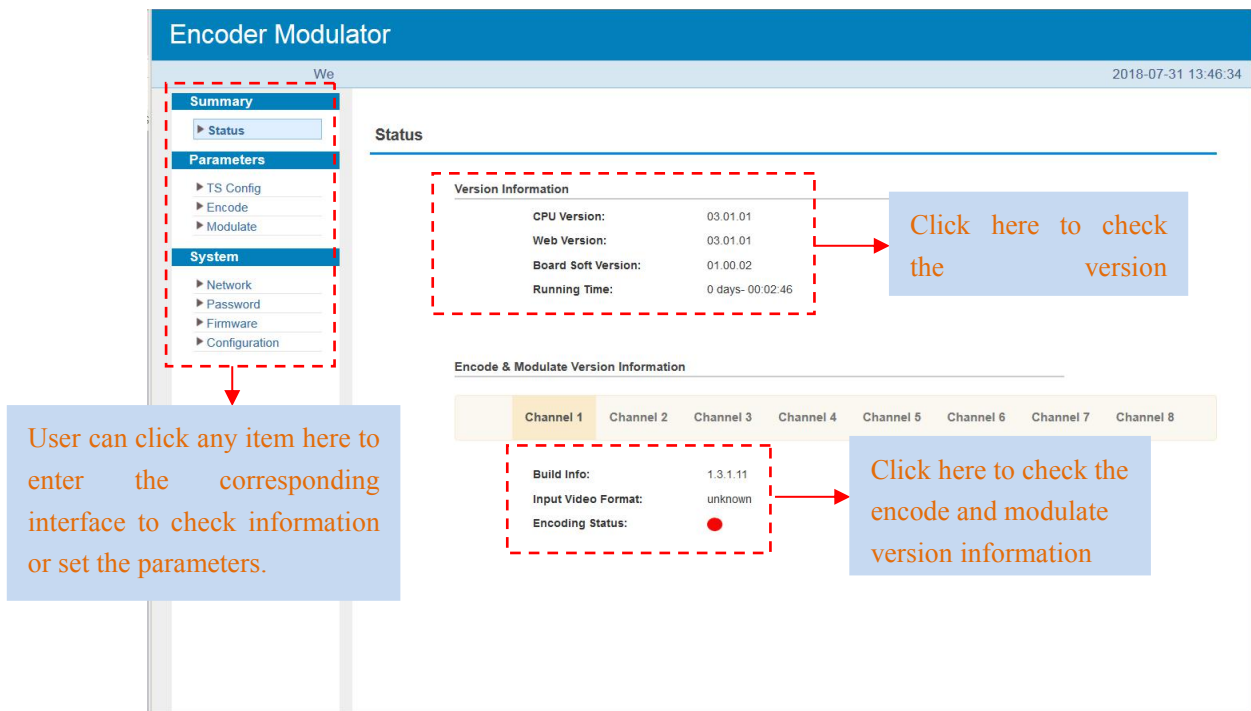
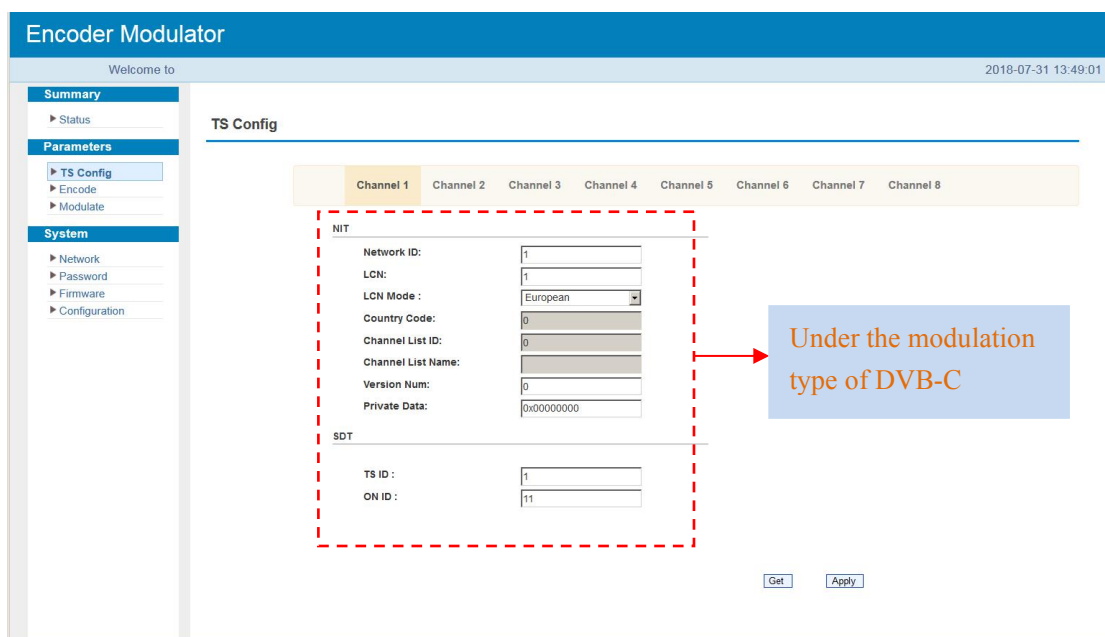


Figure-2

Parameters → TS Config:

Clicking “TS Config”, users can configure 8 channels of the output TS, users select different modulating types under “**Modulate**”, the TS config parameters will be different (Figure-3). Each channel support 1 DVB-C/T/ATSC/ISDB-T/DTMB output option, here we select DVB-C/DVB-T/ATSC/DTMB/ISDB-T modulation types for Channel 1-5 as an example.





Encoder Modulator

elcome to Web NMS Page2018-07-31 13:49:29

Summary

► Status

Parameters

► TS Config

► Encode

► Modulate

System

► Network

► Password

► Firmware

► Configuration

TS Config

Channel 1Channel 2Channel 3Channel 4Channel 5Channel 6Channel 7Channel 8

NIT

Network ID:

LCN:

LCN Mode :

Country Code:

Channel List ID:

Channel List Name:

Version Num:

Private Data:

SDT

TS ID :

ON ID :

GetApply

Under the modulation type of DVB-T

Encoder Modulator

V2018-07-31 13:50:04

Summary

► Status

Parameters

► TS Config

► Encode

► Modulate

System

► Network

► Password

► Firmware

► Configuration

TS Config

Channel 1Channel 2Channel 3Channel 4Channel 5Channel 6Channel 7Channel 8

VCT

Major Channel:

Minor Channel:

Source ID:

Channel TSID:

Short Name:

GetApply

Under the modulation type of ATSC

Encoder Modulator

Welcome to V 2018-07-31 13:50:38

Summary

- Status

Parameters

- **TS Config**
- Encode
- Modulate

System

- Network
- Password
- Firmware
- Configuration

TS Config

Channel 1
Channel 2
Channel 3
Channel 4
Channel 5
Channel 6
Channel 7
Channel 8

NIT

Network ID:

LCN:

LCN Mode :

Country Code:

Channel List ID:

Channel List Name:

Version Num:

Private Data:

SDT

TS ID :

ON ID :

Get Apply

Under the modulation type of DTMB

Encoder Modulator

Welcome 2018-07-31 13:50:56

Summary

- Status

Parameters

- **TS Config**
- Encode
- Modulate

System

- Network
- Password
- Firmware
- Configuration

TS Config

Channel 1
Channel 2
Channel 3
Channel 4
Channel 5
Channel 6
Channel 7
Channel 8

NIT

Network ID:

Version Num:

Key ID:

Service ID:

Area Code:

Trans Type Info:

Ts Name:

SDT

TS ID :

ON ID :

Get Apply

Under the modulation type of ISDB-T

Figure-3

Parameters → Encode:

Clicking “Encode”, it displays the information of the program from the 8 HDMI encoding channels as Figure-4.



Figure-4

Parameters → Modulate:

Clicking “Modulate”, it displays the interface where users can configure the modulating parameters. Clicking “Setting Type→PART SET” to select modulation type and set frequency for each channel (Figure-5); Clicking “ALL SET” and select the “Modulation Type” and set frequency for all channels (Figure-6).

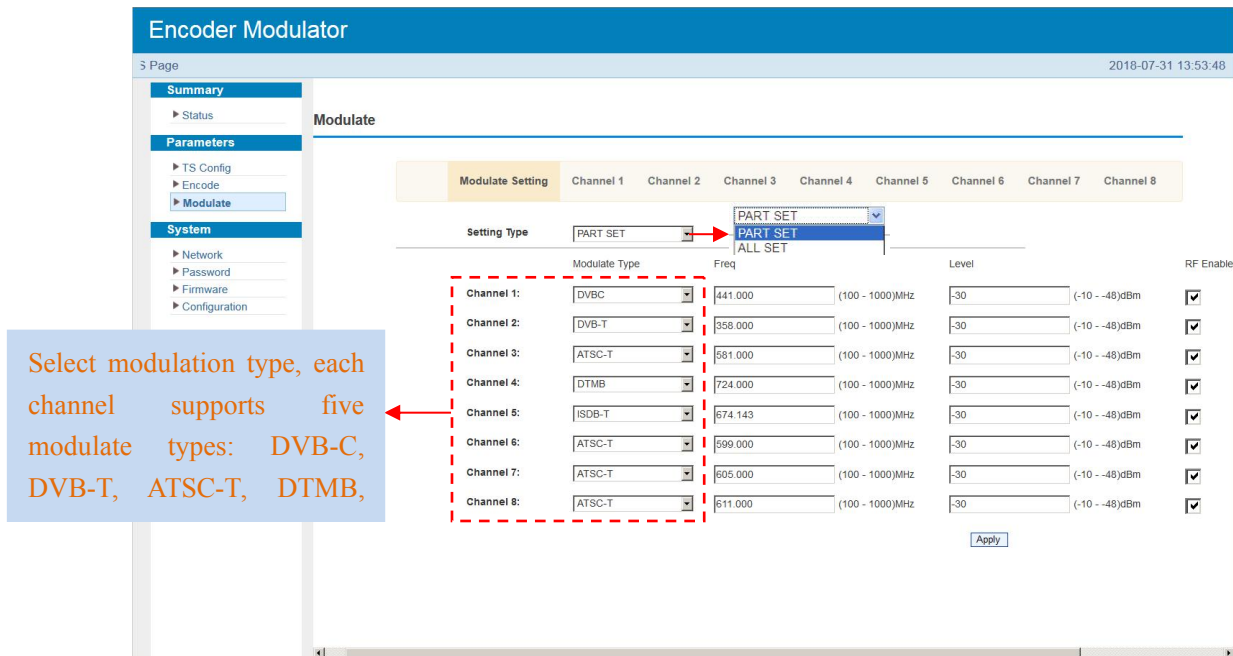
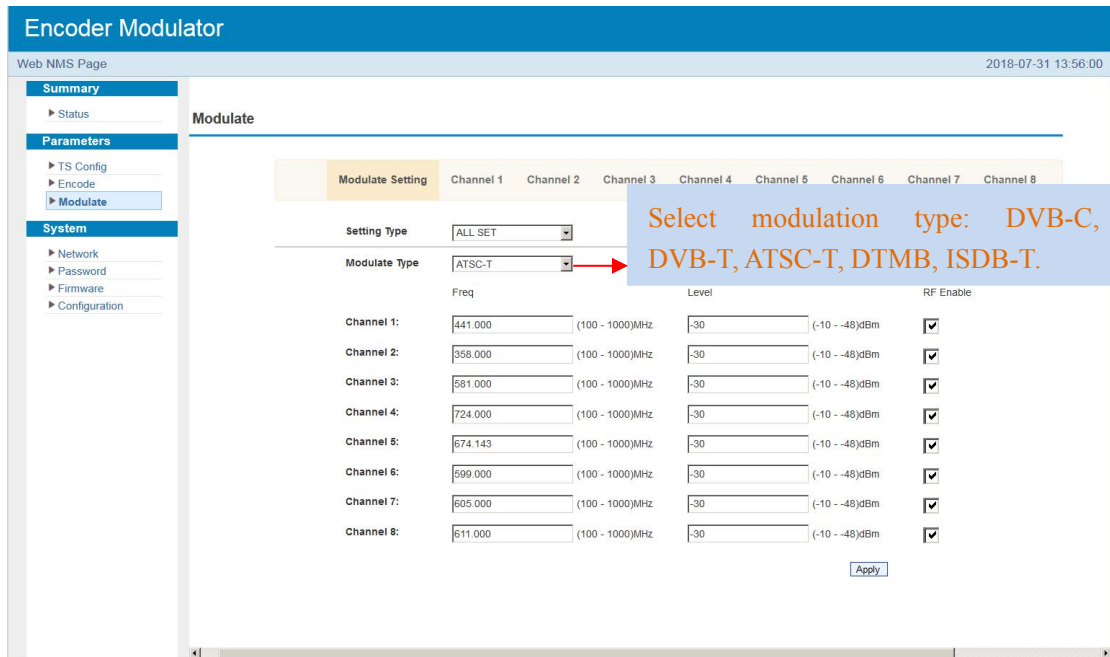


Figure-5



Encoder Modulator
Web NMS Page 2018-07-31 13:56:00

Summary
Status

Parameters
TS Config
Encode
Modulate

System
Network
Password
Firmware
Configuration

Modulate

Modulate Setting Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Channel 7 Channel 8

Setting Type: ALL SET

Modulate Type: ATSC-T

Freq: Channel 1: 441.000 (100 - 1000)MHz Channel 2: 358.000 (100 - 1000)MHz Channel 3: 581.000 (100 - 1000)MHz Channel 4: 724.000 (100 - 1000)MHz Channel 5: 674.143 (100 - 1000)MHz Channel 6: 599.000 (100 - 1000)MHz Channel 7: 605.000 (100 - 1000)MHz Channel 8: 611.000 (100 - 1000)MHz

Level: Channel 1: -30 (-10 - -48)dBm Channel 2: -30 (-10 - -48)dBm Channel 3: -30 (-10 - -48)dBm Channel 4: -30 (-10 - -48)dBm Channel 5: -30 (-10 - -48)dBm Channel 6: -30 (-10 - -48)dBm Channel 7: -30 (-10 - -48)dBm Channel 8: -30 (-10 - -48)dBm

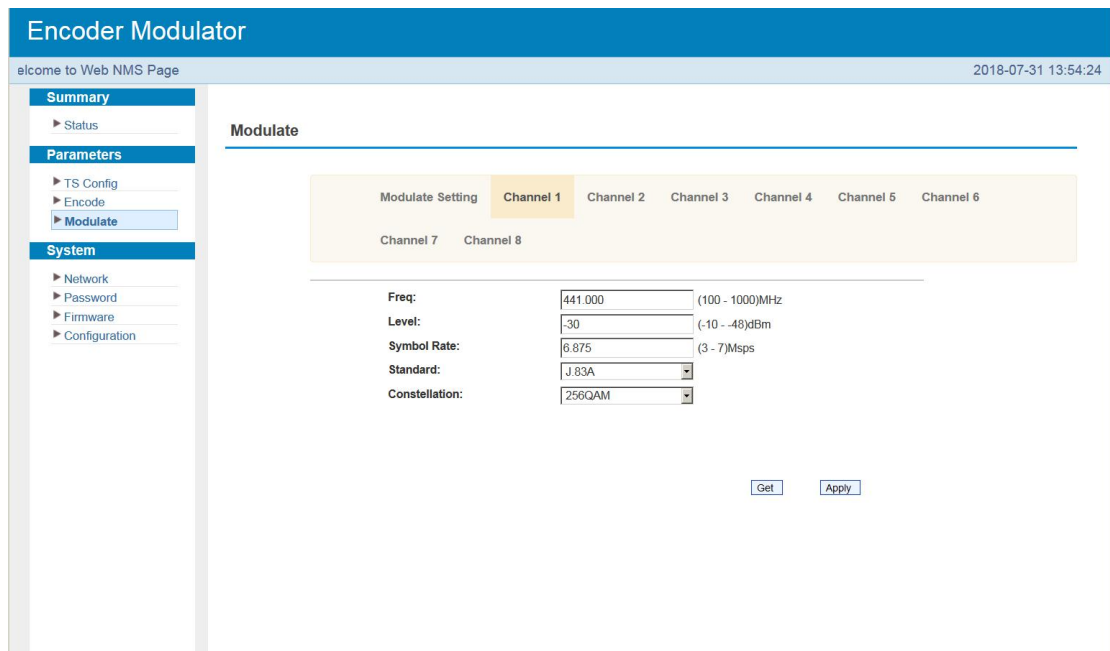
RF Enable: Channel 1: ☒ Channel 2: ☒ Channel 3: ☒ Channel 4: ☒ Channel 5: ☒ Channel 6: ☒ Channel 7: ☒ Channel 8: ☒

Apply

Figure-6

Clicking “Channel1/2/3/4/5/6/7/8”, it displays the interface where users can configure the modulation parameters (Figure-7). Each channel supports 1 DVB-C/T/ATSC/ISDB-T/DTMB output option. Here we select DVB-C/DVB-T/ATSC/DTMB/ISDB-T modulation types for Channel 1-5 as an example.

Channel 1: DVB-C modulating



Encoder Modulator
Welcome to Web NMS Page 2018-07-31 13:54:24

Summary
Status

Parameters
TS Config
Encode
Modulate

System
Network
Password
Firmware
Configuration

Modulate

Modulate Setting Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Channel 7 Channel 8

Freq: 441.000 (100 - 1000)MHz

Level: -30 (-10 - -48)dBm

Symbol Rate: 6.875 (3 - 7)Mps

Standard: J.83A

Constellation: 256QAM

Get Apply



Channel 2: DVBT Modulating

Encoder Modulator

b NMS Page2018-07-31 13:54:39

Summary

► Status

Parameters

► TS Config

► Encode

► Modulate

System

► Network

► Password

► Firmware

► Configuration

Modulate

Modulate SettingChannel 1Channel 2Channel 3Channel 4Channel 5Channel 6Channel 7Channel 8

Freq:358.000(100 - 1000)MHz

Level:-30(-10 - -48)dBm

Bandwidth:8M

FFT:2K

Guard Interval:1/16

Code Rate:3/4

Constellation:64QAM

Get

Apply

Channel 2: DVB-T modulating

Channel 3: ATSC modulating

Encoder Modulator

Web NMS Page2018-07-31 13:54:57

Summary

► Status

Parameters

► TS Config

► Encode

► Modulate

System

► Network

► Password

► Firmware

► Configuration

Modulate

Modulate SettingChannel 1Channel 2Channel 3Channel 4Channel 5Channel 6Channel 7Channel 8

Freq:581(100 - 1000)MHz

Level:-30(-10 - -48)dBm

Get

Apply

Channel 4: DTMB modulating

Encoder Modulator

Web NMS Page2018-07-31 13:55:12

Summary

► Status

Parameters

► TS Config

► Encode

► Modulate

System

► Network

► Password

► Firmware

► Configuration

Modulate

Modulate SettingChannel 1Channel 2Channel 3Channel 4Channel 5Channel 6Channel 7Channel 8

Freq:724.000(100 - 1000)MHz

Level:-30(-10 - -48)dBm

Mode:M-0.6-64QAM-945V

Get

Apply

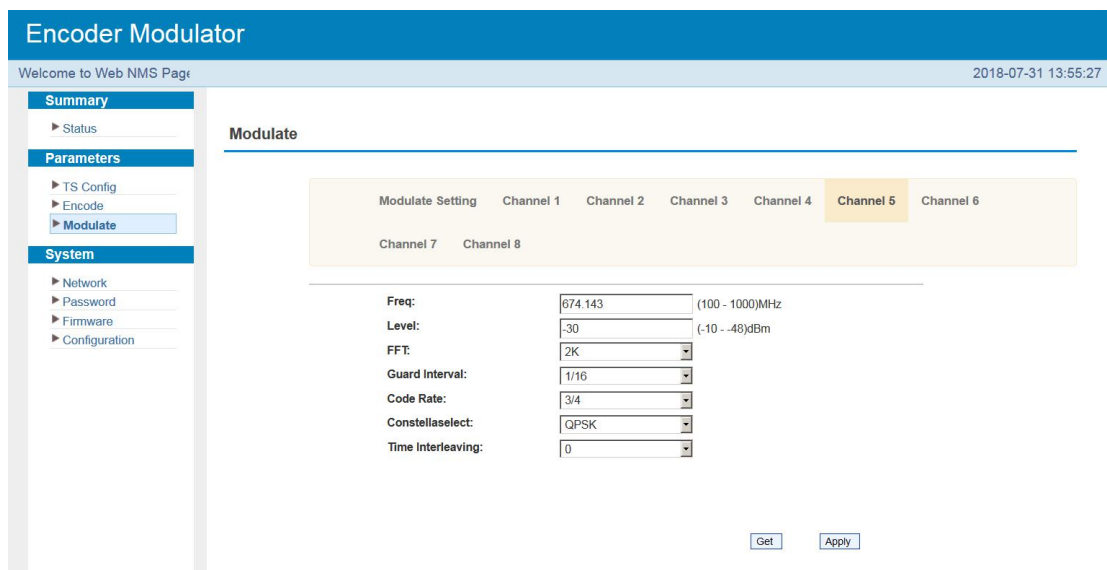
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July 2026

Trivision Broadband and Telecom Inc
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www.trivisionbtinc.com

Channel 5: ISDB-T modulating



The screenshot shows the 'Encoder Modulator' web interface. The left sidebar contains a menu with 'Summary', 'Parameters', and 'System'. Under 'Parameters', 'Modulate' is selected. The main area is titled 'Modulate' and shows a tabbed interface for channels 1 through 8. 'Channel 5' is the active tab. Below the tabs, there are input fields for the following parameters:

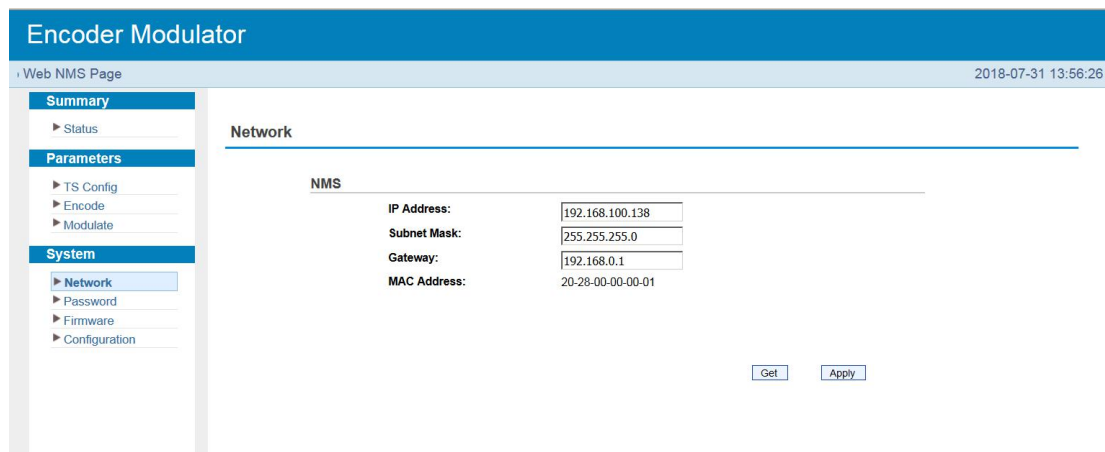
Freq:	674.143	(100 - 1000)MHz
Level:	-30	(-10 - -48)dBm
FFT:	2K	
Guard Interval:	1/16	
Code Rate:	3/4	
Constellaselect:	QPSK	
Time Interleaving:	0	

At the bottom right of the form are 'Get' and 'Apply' buttons.

Figure-6

System → Network:

Clicking “Network”, it displays the interface as Figure-7 where to set network parameters.



The screenshot shows the 'Encoder Modulator' web interface with the 'Network' tab selected in the left sidebar. The main area is titled 'Network' and shows a section for 'NMS' with the following parameters:

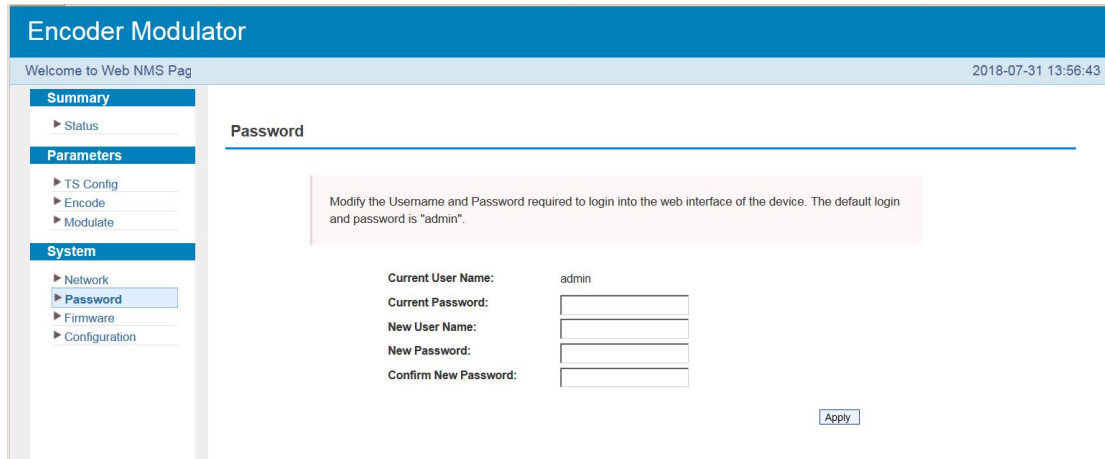
IP Address:	192.168.100.138
Subnet Mask:	255.255.255.0
Gateway:	192.168.0.1
MAC Address:	20-28-00-00-00-01

At the bottom right of the form are 'Get' and 'Apply' buttons.

Figure-7

System → Password:

Clicking “Password”, it displays the screen as Figure-8 where to set login account and password for the web NMS.



Encoder Modulator

Welcome to Web NMS Page 2018-07-31 13:56:43

Summary

- Status

Parameters

- TS Config
- Encode
- Modulate

System

- Network
- **Password**
- Firmware
- Configuration

Password

Modify the Username and Password required to login into the web interface of the device. The default login and password is "admin".

Current User Name: admin

Current Password:

New User Name:

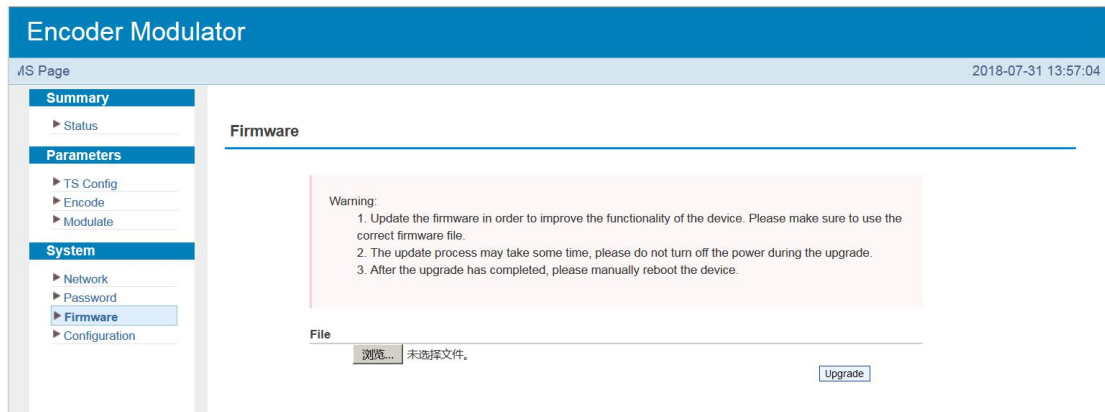
New Password:

Confirm New Password:

Figure-8

System → Firmware:

Clicking “Firmware”, it displays the screen as Figure-9 where to update the firmware of this device.



Encoder Modulator

AS Page 2018-07-31 13:57:04

Summary

- Status

Parameters

- TS Config
- Encode
- Modulate

System

- Network
- Password
- **Firmware**
- Configuration

Firmware

Warning:

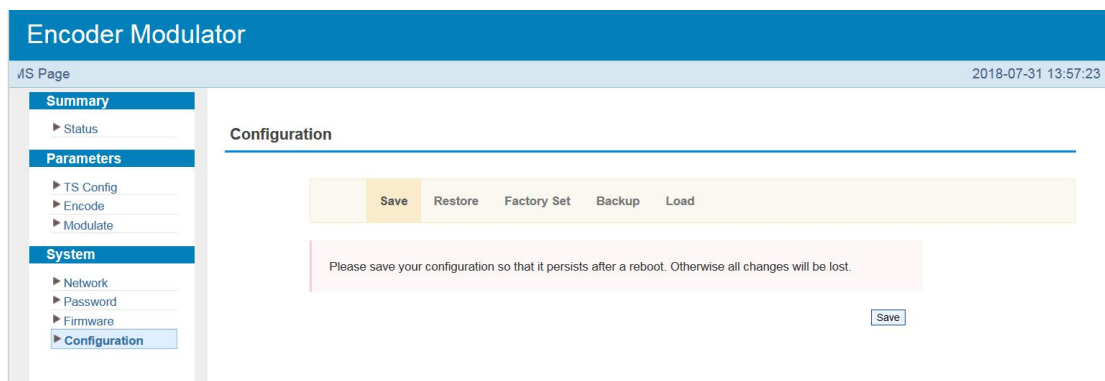
1. Update the firmware in order to improve the functionality of the device. Please make sure to use the correct firmware file.
2. The update process may take some time, please do not turn off the power during the upgrade.
3. After the upgrade has completed, please manually reboot the device.

File 未选择文件.

Figure-9

System → Save/Restore/Factory Set/Backup/Load:

Clicking “Save/Restore/Factory Set/Backup/Load”, it displays the screen as Figure-10 where to Save/Restore/Factory Set/Backup/Load your configurations.



Encoder Modulator

AS Page 2018-07-31 13:57:23

Summary

- Status

Parameters

- TS Config
- Encode
- Modulate

System

- Network
- Password
- Firmware
- **Configuration**

Configuration

Please save your configuration so that it persists after a reboot. Otherwise all changes will be lost.

Figure-10

Chapter 5 - Troubleshooting

This Devices quality assurance system has been approved by the CQC organization. We guarantee the products' quality, reliability and stability. All products have passed all testing and manual inspections before they are shipped out. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by . To prevent a potential hazard, please strictly follow the operation conditions.

Prevention Measures

- 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 be 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

Encoder Modulator User

Manual

Power Cord

CATV QAM Channel Center Frequency - 54 MHz to 860 MHz

EIA CH.	MHz Center Frequency	EIA CH.	MHz Center Frequency	EIA CH.	MHz Center Frequency
2	57	42	333	87	603
3	63	43	339	88	609
4	69	44	345	89	615
5	79	45	351	90	621
6	85	46	357	91	627
95	93	47	363	92	633
96	99	48	369	93	639
97	105	49	375	94	645
98	111	50	381	100	651
99	117	51	387	101	657
14	123	52	393	102	663
15	129	53	399	103	669
16	135	54	405	104	675
17	141	55	411	105	681
18	147	56	417	106	687
19	153	57	423	107	693
20	159	58	429	108	699
21	165	59	435	109	705
22	171	60	441	110	711
7	177	61	447	111	717
8	183	62	453	112	723
9	189	63	459	113	729
10	195	64	465	114	735
11	201	65	471	115	741
12	207	66	477	116	747
13	213	67	483	117	753
23	219	68	489	118	759
24	225	69	495	119	765
25	231	70	501	120	771
26	237	71	507	121	777
27	243	72	513	122	783
28	249	73	519	123	789
29	255	74	525	124	795
30	261	75	531	125	801
31	267	76	537	126	807
32	273	77	543	127	813
33	279	78	549	128	819
34	285	79	555	129	825
35	291	80	561	130	831
36	297	81	567	131	837
37	303	82	573	132	843
38	309	83	579	133	849
39	315	84	585	134	855
40	321	85	591	135	861
41	327	86	597		