

HDMI to RF 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

This encoder & modulator is designed based on consumer electronics which allow audio/video signal input in TV distributions with applications in home entertainment, surveillance control, hotel Digital Signage, shops etc.

It is an all-in-one device integrating MPEG2 encoding and modulating to convert audio/video signals into DVB-C/T/ATSC/ISDB-T RF out.

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

- Support 1 HDMI channel in for encoding
- Support 1 CC input port, EIA608
- Support MPEG-2 video encoding
- Support MPEG1 Layer 2 audio encoding
- Support DVB-C/DVB-T/ATSC/ISDB RF output. **Modulation dynamic switching**
- Support LCN
- Support Web management

1.3 Specifications

HDMI Encoding Section				
Video	Encoding	MPEG2		
	Interface	HDMI*1		
		Input	Output	
		480@59.94/60i	480@30p	
		576@50i	576@25p	
		720@50/59.94/60p	720@25/30p	
		1080@50i	1080@25p	
	1080@59.94/60i	1080@30p		

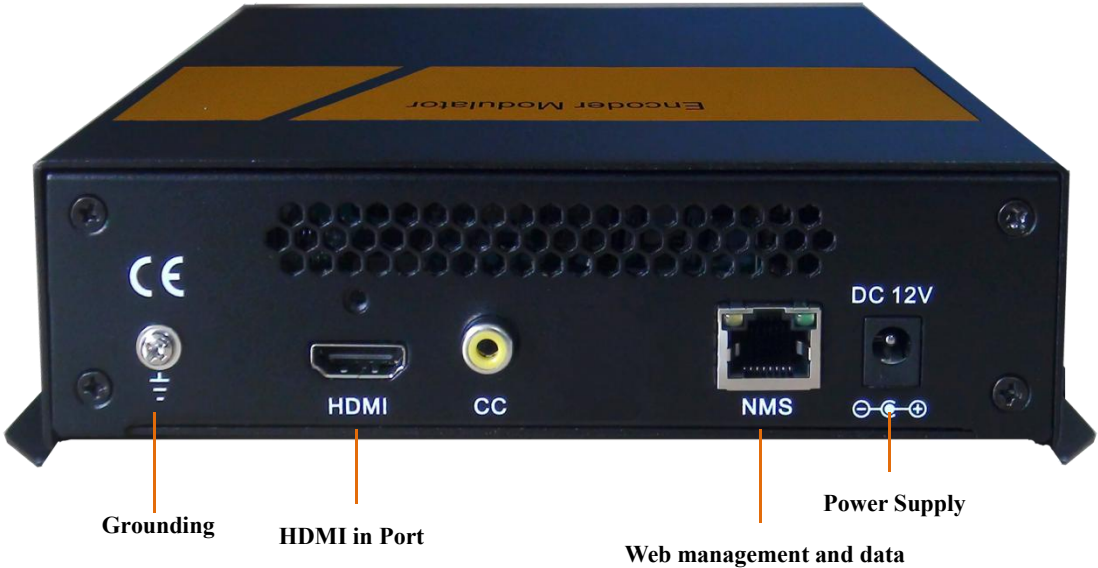
		1080@50p	1080@25p
		1080@59.94/60p	1080@30p
	Aspect Ratio	16:9	
	Bit rate	1.000~20.000 Mbps	
Audio	Encoding	MPEGI layer 2, AAC, AC3	
	Sample rate	48KHz	
	Bit rate	MPEGI layer 2 (192kbps)	
		AAC (VBR)	
		AC3 (128kbps)	
DVB-C Modulator Section			
Standard		J.83A (DVB-C), J.83B	
MER		≥35dB	
RF frequency		100-1000MHz, 1KHz step	
RF output level		-63~ -16dBm (44~91 dBμV), 1dB step	
Symbol rate		3.000~7.000Msps adjustable	
	J.83A	J.83B	
Constellation	16/32/64/128/ 256 QAM	64/ 256 QAM	
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 Mode:		2K, 8K	
MER		≥35dB	
RF frequency		100-1000MHz, 1KHz step	
RF output level		-63~ -16dBm(44~91 dBμV), 1dB step	
ISDB Modulator Section			
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		-63~ -16dBm(44~91 dBμV), 1dB step	
ATSC Modulator Section			
Standard		ATSC A/53	
Constellation		8 VSB	
RF output level		-63~-16dBm (44~91 dBμV), 1dB step	
MER		≥35dB	

RF frequency	100~1000MHz, 1KHz step
RF output level	-63~ -16dBm(44~91 dBμV), 1dB step
System	
Management	Web
Language	English
Upgrade	Web update
General	
Power supply	DC 12V
Dimensions	203*144*52mm
Weight	< 1kg

1.4 System Connection Samples



1.5 Appearance and Description




Chapter 2 Installation Guide

2.1 Safety Instructions

 **WARNING:** Hot plug is not allowed since it may cause system halted.

To prevent fire or electrical shock, do not expose the device to rain or moisture.

 The network encoder is powered with a voltage of 12V DC. The power supply voltage must not exceed the recommended voltage, which otherwise may cause irreparable damage to the device and the invalidation of the warranty. Therefore:

- Do not replace power supply with a voltage greater than 12V DC.
- Do not connect the device to the power if the power cord is damaged.
- Do not plug the device into mains supply until all cables have been connected correctly.
- Do not cut the cord.

 Avoid placing the device next to central heating components and in areas of high humidity.

Do not cover the device with elements that obstruct the ventilation slots.

If the network encoder has been kept in cold conditions for a long time, keep it in a warm room minimum 2 hours before plugging into the mains.

Mount the device in vertical position with the connectors located on the top side.

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part.

Unauthorized substitutes may result in fire, electric shock or other hazards.

Safety check- Upon completion of any service or repairs to this device, ask the service technician to perform safety checks to determine that the device is in proper condition.

2.2 Installations

 **RISK OF damage to the unit**

Mechanically handling the unit may result in damage. Do not connect the unit to the power supply before or during assembly. Connect the unit as below instructed.



NO HOT PLUG!

- Connect the signal input in the respective connectors. The signal source can be from a surveillance monitor, DVD, set-top box, CCTV and etc.
- In case of connecting to a wired network, connect the encoder Ethernet port and terminal's Ethernet port with ethernet cable.
- In case of connecting wireless network, following Step 2, connect the encoder Ethernet port and router port with Ethernet cable.
- Power supply connection: a) Connect the earth cable; b) Connect the power plug to the unit mains connector; c) Connect the power plug to the mains socket.

Chapter 3 Web-page Management

Users cannot use front buttons to set configuration, and can only control and set the configuration in computer by connecting the device to web NMS Port. Users should ensure that the computer's IP address is different from the encoder modulator's IP address; otherwise, it would cause IP conflict.

3.1 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).

Use web browser to connect the device with PC by inputting the device'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

3.2 Operation

When we confirm the login, it displays Homepage as Figure-2 where users can have an overview of the device's system information.

User can click any item here to enter the corresponding interface to check information or set the parameters.

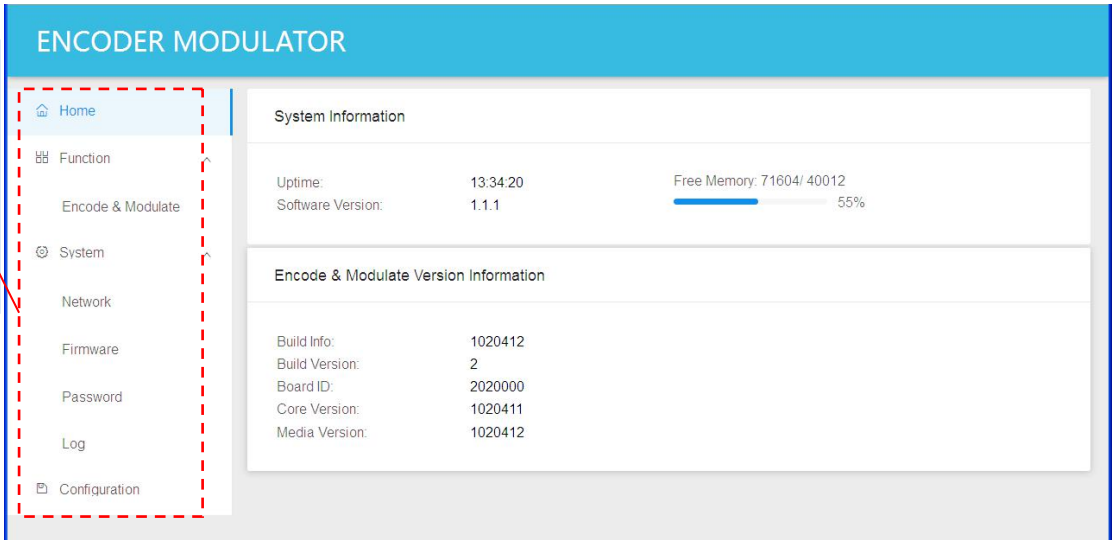


Figure-2

Function →: Encode & Modulate

From the menu on left side of the webpage, clicking “Encoder & Module”, it displays the interface where users can configure the encoder parameters and select the modulating standard as Figure-3.

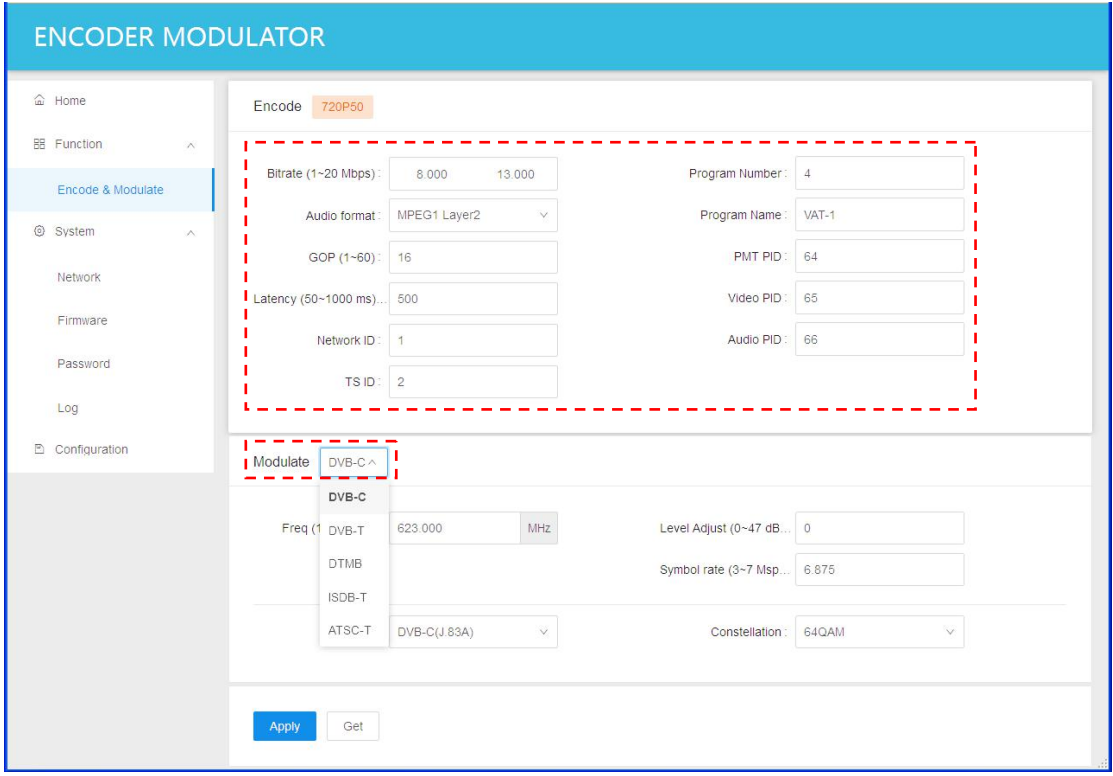


Figure-3

System →: Network

Click “Network” , it will display the interface as Figure-4 where to set network parameters. Here user can change the device network configuration as needed.

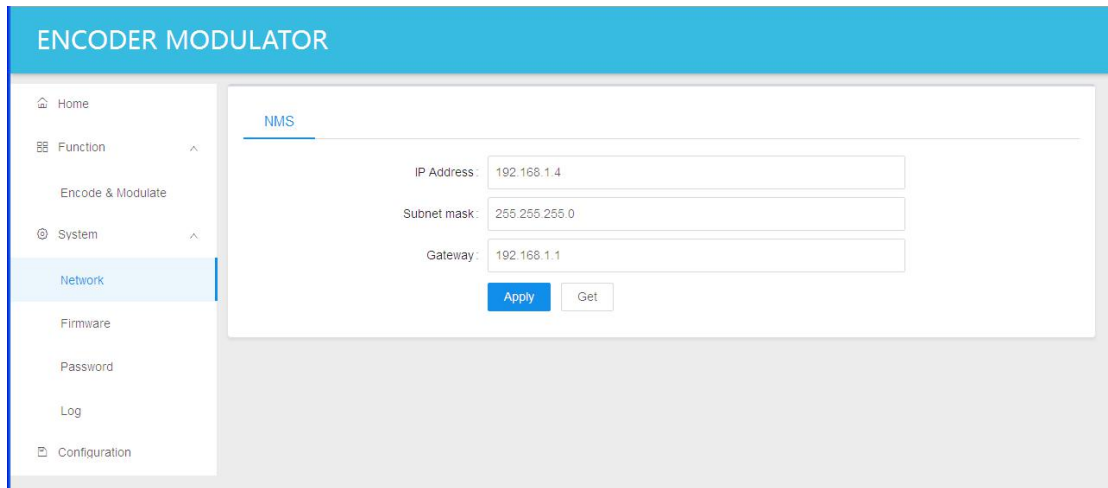


Figure-4

System →: Firmware

From the menu on left side of the webpage, clicking “Firmware”, it will display the screen as Figure-5.

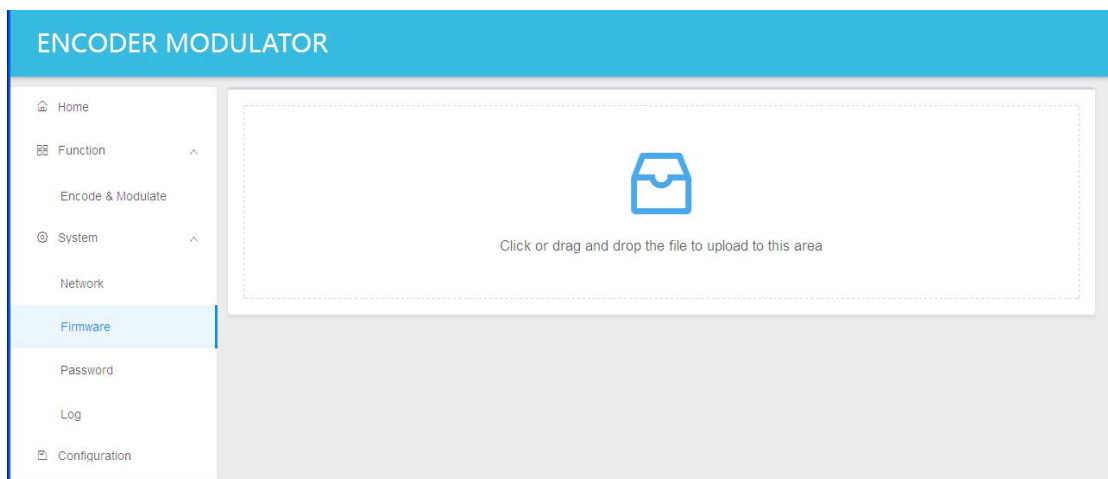


Figure-5

System →: Password

From the menu on left side of the webpage, clicking “Password”, it will display the screen as Figure-6 where to set the login account and password for the web NMS. After inputting the current and new Username and Password, click “Apply” to save the configuration.

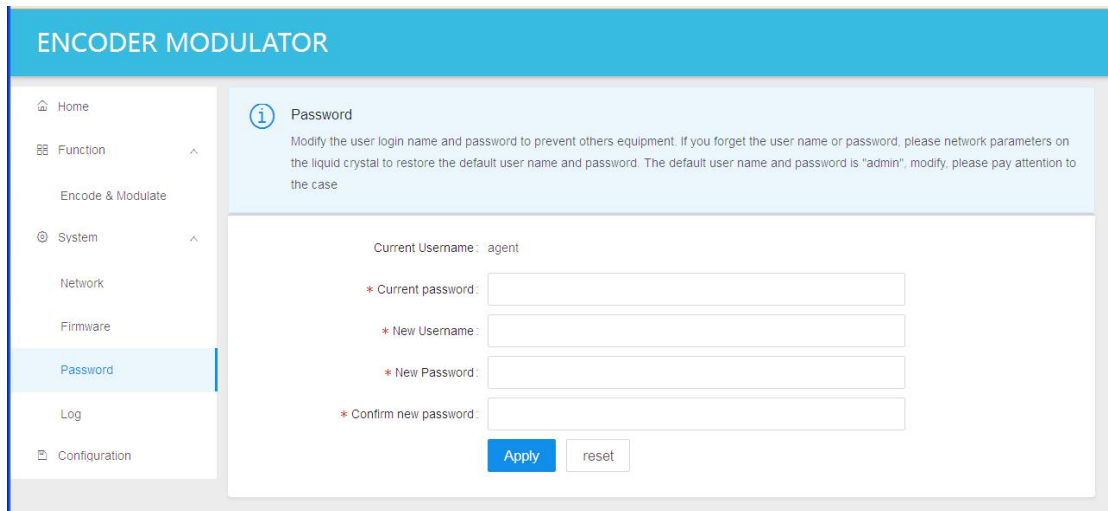


Figure-6

System →: Log

From the menu on left side of the webpage, clicking “Log”, it will display the screen as Figure-7.

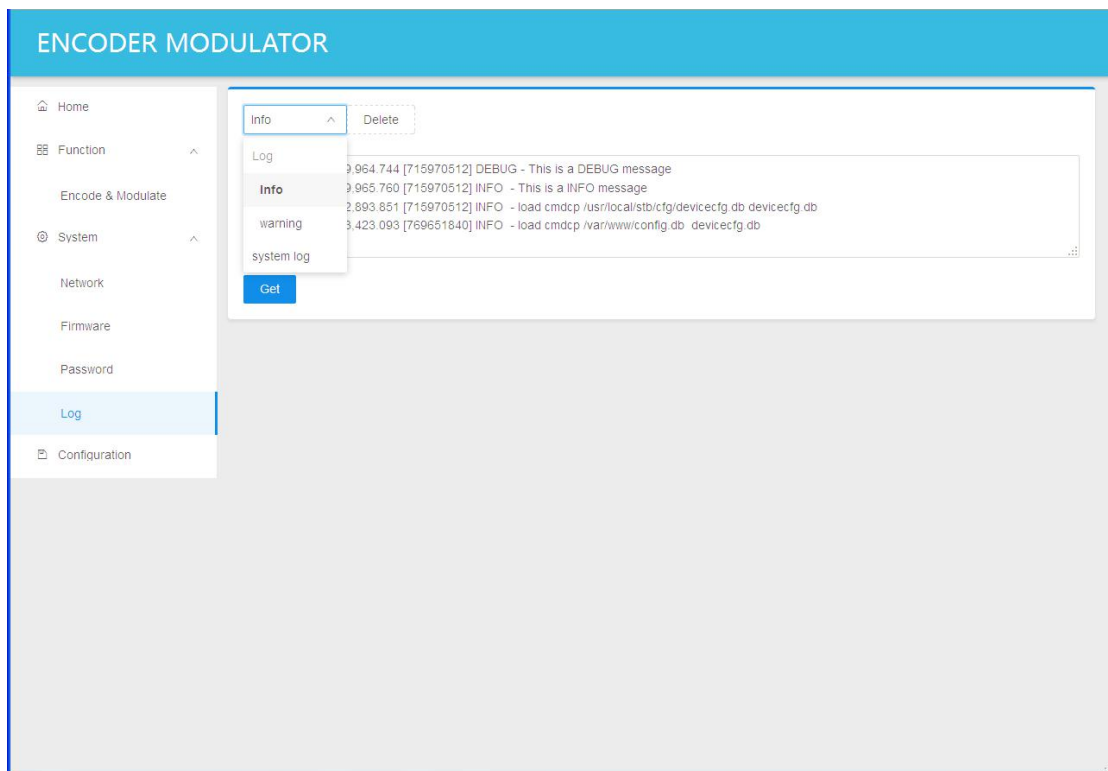


Figure-7

Configuration:

From the menu on left side of the webpage, clicking “Configuration”, it will display the screen as Figure-8.

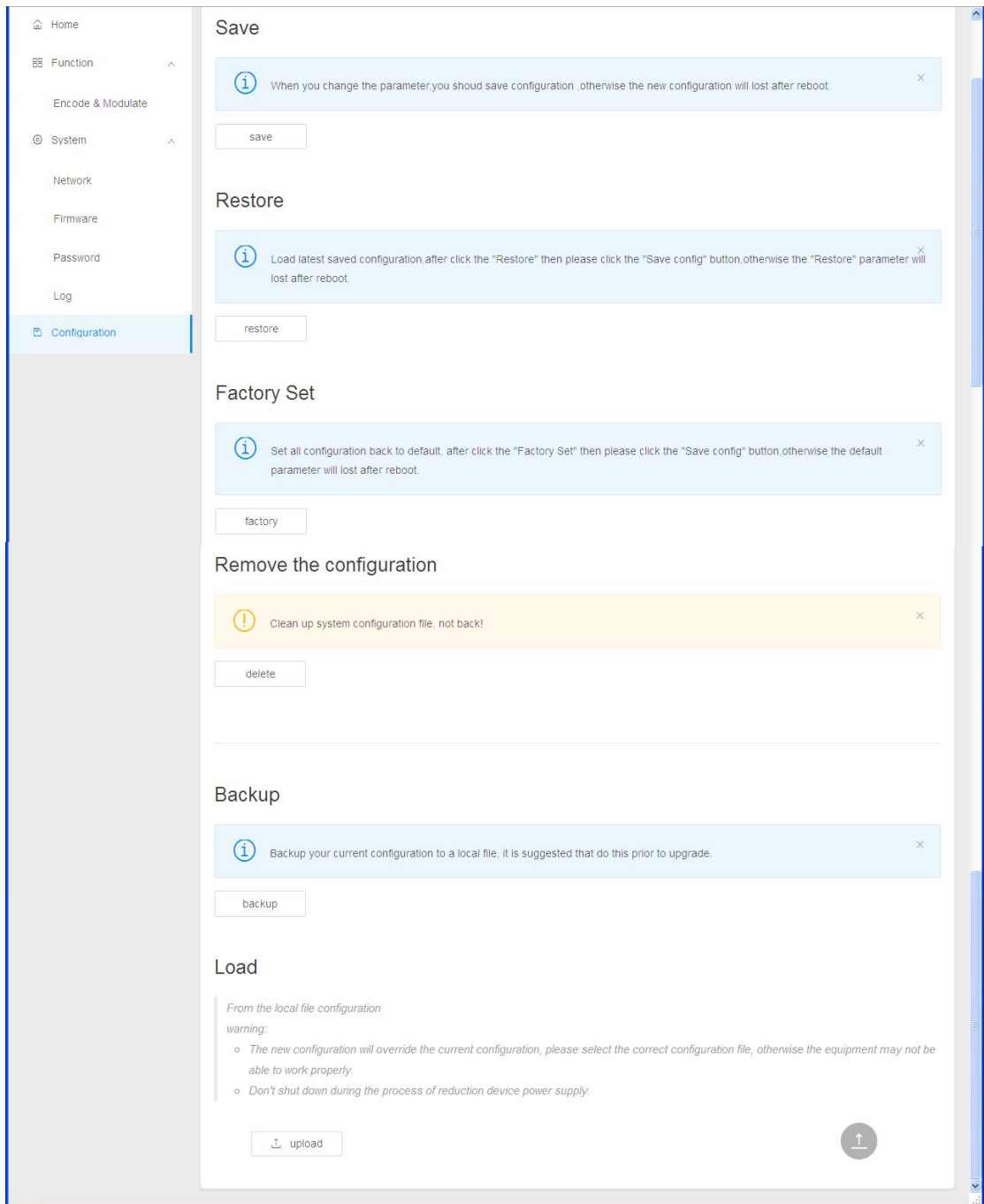


Figure-8

Chapter 4 Packing List

Encoder Modulator	1PC
User Manual	1PC
Power Cord	1PC