



User Manual



Los Angeles CA <u>Sales@thorfiber.com</u>

1-800-521-8467

A Note from Thor 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 Introduction

1.1 Product Overview

The most unique and cost effective Networked Digital HDMI RF modulator with CC (closed captioning).

Designed to allow any HDMI source like an STB, satellite receiver, HDMI camera , DVD player, Computer,

ROKU converted to any RF TV channel of your choice

It is an all-in-one device integrating HD MPEG2 encoding with AC3 Dolby Audio and CC input with internal

digital modulator. Converts HD audio / video signals from any device into DVB-C/T/ATSC/ISDB-T RF output.

Unit supports any HD source with the following video resolutions: 720p, 1080i, 1080p

The Closed Captioning input is CVBS - baseband video analog RCA input, it reads CC form the CVBS NTSC

Analog line 21

1.2 Key Features

- 1 HDMI channel in for encoding &1 CC input port
- MPEG-2 video encoding
- MPEG1 Layer 2 audio encoding & Dolby AC3
- DVB-C/T/ATSC/ISDB RF output options
- Web management NMS via RJ45
- Compact Form Factor
- Easy to setup



1.3 Specifications

HDMI Encoding Section						
	Interface	HDMI*1				
		Input		Output		
		480@59.94/60i	480@	030p		
		576@50i	576@	025p		
		720@50/59.94/60p	720@	025/30p		
Video	Resolution	1080@50i	1080	@25p		
		<u>1080@,59.94/60i</u>	1080	@30p		
		1080@50p	1080	@25p		
		<u>1080@59.94/60p</u>	1080	@30p		
	Aspect	16:9				
	Ratio					
	Bit rate	1.000~20.000 Mbps				
Audio	Encoding	MPEGI layer 2, AAC, A	AC3			
Audio	Sample rate	48KHz				
		MPEGI layer 2: 192kbps				
Bit rate		MPEGI layer 2 AAC: 18~297kbps				
		AC3: 128kbps				
DVB-C Modulator Section						
Standard		J.83A (DVB-C), J.83B				
MER		≥35dB				
RF freque	ency	100-1000MHz, 1KHz st	tep			
RF outpu	t level	0~ 47dbm (44~90 dbµV), 1db step				
Symbol r	ate	3.000~7.000Msps adjustable				
		J.83A	J.	83B		
Constella	tion	16/32/64/128/ 256 QAN	1 64	4/ 256 QAM		
Bandwidt	h	8M	6M			
DVB-T N	Iodulator Sec	tion				
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 freque	ency	100-1000MHz, 1KHz step				
RF output level		0~ 47dBm, 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
ATSC Modulator Sect	on
Standard	ATSC A/53
Constellation	8 VSB
RF output level	0~47dbm (44~90 dbµV), 1db step
MER	≥35dB
RF frequency	100~1000MHz, 1KHz step
System	
Management	Web
Language	English
Upgrade	Web update
General	
Power supply	DC 12V
Dimensions	203*144*52mm
Weight	< 1kg



1.4 Application Design Drawing



1 HDMI TO COAX RF MODULATOR



1.5 Appearance and Description





Chapter 2 Installation Guide

Please use caution when operating this device in order to abstain from any possible injury during installation. For this reason, please read all details listed below and make and use caution before proceeding to operate and use this electronic equipment.

2.1 Safety Instructions

- Must be operated and maintained in an area free of dust and debris.
- The cover should be securely fastened, do not open the cover of the chassis when the power is on. This will also void Thor 's manufacturer 's warranty.
- After installation, securely stow away all loose cables, external antenna, and others.
- Be careful when connecting a power source to the device.
- Do not operate in wet or damp areas. Make sure the extension cable is in good condition
- Make sure the power switch is off before you start to install the device

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

Do not cover the device with anything that obstructs 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 Thor Broadcast. Unauthorized substitutes may result in fire, electric shock or severe malfunction which will not be covered by Thor's Warranty.





Chapter 3 Web-page Management

You can alter the same settings through a computer by connecting the device to the web NMS Port. Always make sure that the computer's IP address is different from the Units IP address; otherwise, it will cause an IP conflict. Below is an explanation of how you can adjust settings through a web portal.

3.1 Login

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

Connect the PC (Personal Computer) and the device with an Ethernet cable, and use ping command to confirm that 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 a web browser to connect the device with a switch or PC by inputting the device's IP address in the browser's address bar and press Enter.

It will display the Login interface. Input the Username and Password (Both the default Username and Password are "admin".) and then click "Login" to start the device setting.



3.2 Operation

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

User can click	ENCODER MODULATOR						
any item here to enter the		System Information					
interface to check	번 Function · ·	Uptime: 13:34:20 Free Memory: 71604/ 40012 Software Version: 1.1.1 55%					
set the parameters.	© System ∧	Encode & Modulate Version Information					
	Firmware	Build Info: 1020412 Build Version: 2 Board ID: 2020000					
	Log	Core Version: 1020411 Media Version: 1020412					
	Configuration						

Figure-2

Function \rightarrow : **Encode & Modulate**

From the menu on left side of the webpage, click "Encoder & Module", it displays the interface

where you can configure the encoder parameters and select the modulating standard.

Hone	Encode 700450					- 1
Function ~						- i
For one & Modulate	Bitrate (1-20 Mbps	6.000	13.000	Program Number	4	1
	Audio torna	# MPEG1 Layer2	e e	Program Name	VAT-1	
S/see	GOP (1-60	16		Philt PiD	64	_ i
Network.	Latency (50-1000 min	500		Video PtD	65	
Firmule	Network 8	1		Audio PID	66	- i
Password	70.4	- (
Log						- i
Configuration						11
	NOCOLAW DVD-C-					_
	Even (1 over t	623.000	ing	Level Adjust (0-47 dB	0	
	0710					
	1000.7			Symbol rate (3-7 Msp.	6.875	
	ATSC-T	DVB-C(J SSA)		Constellation	eigan v	

Figure-3



System →: Network

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

ENCODER MOD	DULATOR		
C Home	NMS		
Encode & Modulate	IP Address :	192.168.1.4	
© System ∧	Subnet mask:	255 255 255.0	
Network	Gateway:	192.168.1.1 Get	
Firmware			
Password			
Log			
Configuration			

Figure-4

System →: Firmware

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

in Figure-5.

ENCODER MODULATOR		
© Home		
88 Function	\frown	
Encode & Modulate		
© System →	Click or drag and drop the file to upload to this area	
Network		
Firmware		
Password		
Log		
D Configuration		

Figure-5

System →: Password

From the menu on left side of the webpage, click "Password", it will display the screen as in 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.



ENCODER MOD	DULATOR
Home Home Function Code & Modulate	Password Modify the user login name and password to prevent others equipment. If you forget the user name or password, please network parameters on the liquid crystal to restore the default user name and password. The default user name and password is "admin", modify, please pay attention to the case
© System ∧	Current Username: agent
Network	* Current password:
Firmware	* New Username :
Password	* New Password:
Log	* Confirm new password:
Configuration	Apply reset

Figure-6

System →: Log

From the menu on left side of the webpage, click "Log", it will display the screen as in

Figure-7.

E	NCODER MO	DULATOR
8	Home Automatic A	Info Delete Log 9.964.744 [715970512] DEBUG - This is a DEBUG message Info 9.965.760 [715970512] INFO - This is a INFO message warning 3.963.851 [715970512] INFO - load cmdcp /usr/local/stbic/tg/devicectg db devicectg db warning 3.423.093 [769651840] INFO - load cmdcp /var/wwwiconfig.db devicectg db system log
2	Firmware Password Log Configuration	I.

Figure-7



.

Configuration:

From the menu on left side of the webpage, click "Configuration", it will display the screen as

in Figure-8.

🛆 Home	Save
Encode & Modulate	(i) When you change the parameter, you shoud save configuration , otherwise the new configuration will lost after reboot. \times
© System ∧	save
Network	Restore
Firmware	
Password	Load latest saved configuration, after click the "Restore" then please click the "Save config" button.otherwise the "Restore" parameter will lost after reboot.
Configuration	restore
	Factory Set
	Set all configuration back to default, after click the "Factory Set" then please click the "Save config" button, otherwise the default parameter will lost after reboot.
	factory
	Remove the configuration
	Clean up system configuration file, not back!
	delete
	Backup
	Backup your current configuration to a local file, it is suggested that do this prior to upgrade. ×
	backup
	Load
	From the local file configuration warning: • The new configuration will override the current configuration, please select the correct configuration file, otherwise the equipment may not be able to work properly. • Don't shut down during the process of reduction device power supply.
	1 upload

Figure-8



H-HDMI-CC-RF

Chapter 4 Packing List

H-HDMI-CC-RF	1PC
User Manual	1PC
Power Cord	1PC

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