

# Data Sheet : H-THUNDER-4

HDMI Modulator | QAM RF Coax Output

Full HD up to 1080P - 4 Channel



**Thor 4 HDMI Digital RF Modulator 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 **4-channel Thor Thunder-4 HDMI RF Modulator** is a powerful device designed to encode and modulate HDMI sources into CATV RF channels. It supports **Full HD resolutions up to 1080p/60** and enables seamless distribution of content over coaxial cables to multiple TVs equipped with QAM or ATSC tuners. This makes it an excellent choice for **cost-effective video distribution** in environments like hotels, schools, and residential setups.

Once connected to a coaxial network, the modulator allows TVs to **scan and locate the channels** easily. Users can then switch between channels using a standard TV remote, simplifying content delivery and management. The unit encodes video in **MPEG-2** format and audio in either **AC3** or **MPEG1**, ensuring compatibility with a wide range of devices.

The Thunder-4 is designed for **user-friendly operation**, offering two convenient control options:

1. **Web-based GUI** accessible via IP interface.
2. **Front-panel LCD display** with physical buttons for on-site configuration.

Notably, the modulator is **HDCP-compliant**, meaning it works seamlessly with any HDMI source, including encrypted content.

For larger installations, multiple Thunder units (or a combination of **Thunder-4** and **Thunder-8** models) can be connected together to create up to **135 CATV RF channels**. The **8-channel model** is available under the part number **Thunder-8**, making it a versatile and scalable solution for high-density video distribution.

Additionally, this unit can generate **any worldwide CATV RF modulation standard**, including **ATSC, DVB-C Annex A, DVB-C Annex B, DVB-T, and ISDB-T**, ensuring global compatibility and flexibility for any application.

H- THUNDER-4 Supports **4 HDMI inputs** and its modular design (maximum 4 HDMI inputs) and **flexible configuration** makes it scalable and **very reliable while providing high performance**.

The signal source could be **from any STB, satellite receiver, closed-circuit television cameras, and antenna, etc.** Its output signal is designed to **work with any TV or STB**. Because it comes standard with **every RF modulation standard** built-in, this device can work anywhere in the world in a plug and play format.

This unit is similar to our popular line **H-1,2,4 HDMI-QAM-IPLL** product line, but it has some differences. It is a less expensive unit, each program is modulated on its own frequency, **CATV RF output only, no IPTV output**

## Comparison: Thunder-8 vs. Other Models

Feature	Thor Thunder-8	H-HDMI-QAM-IPLL Series
Number of Inputs	8	1, 2, 4, 8
Number of CATV Frequencies	8 (each source modulated on its own channel)	4 (supports multiple programs on one channel, e.g., 2.1, 2.2)
Modulation Standards	QAM, ATSC, DVB-T, ISDB-T (pre-loaded)	QAM, ATSC, DVB-T, ISDB-T (firmware dependent)
Encoding Method	MPEG-2	MPEG-2 or H.264 (selectable)
Dolby Audio Support	Yes	Yes
NMS (Network Management System)	Yes	Yes
Front Panel Control	Yes	Yes
IPTV Output	No	Yes

## Features:

- 4 HDMI channels Inputs (model dependent)
- HDCP compliant works with any HDMI source like DVD Player or Cable, Satellite STB up to 1080p/60 resolution
- MPEG2 Video Encoding
- 1080p/60, 1080i, 720p, 576i, 480i Video Resolution
- Low Latency (50~100ms)
- MPEG layer 2, AAC, and DD AC3 Audio Encoding
- LCN
- DVB-C DIGITAL QAM, ATSC, DVB-T, ISDB-T RF in one device, Modulation dynamic switching
- Control Via Web-Based NMS, and easy updates Via Web
- LCD Display and front panel control

## Specifications:

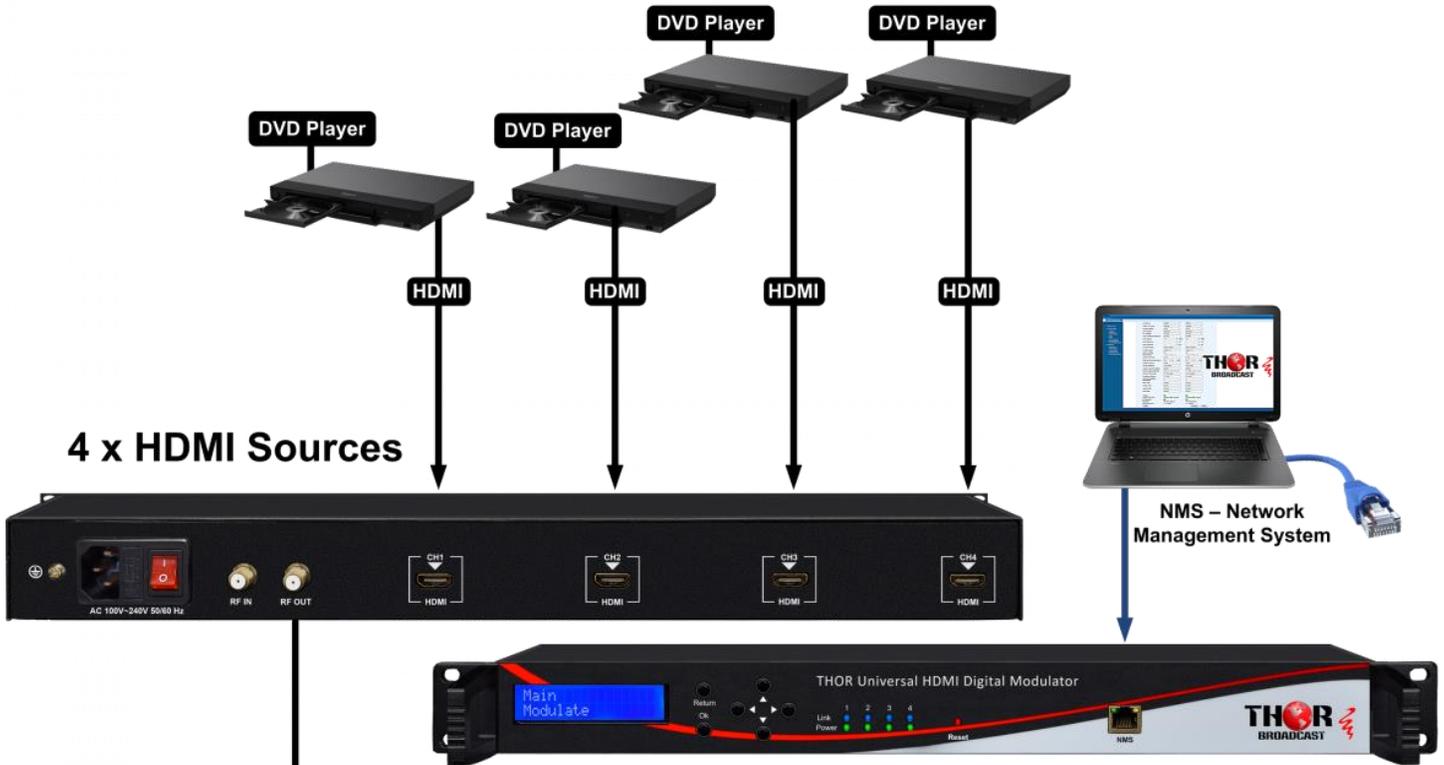
HDMI Encoding Section		
<b>Input</b>	Interface	• H-THUNDER-4 - 4HDMI
<b>Video</b>	Encoding	MPEG2
	Input	Output
	480@59.94/60i	480@30p
	576@50i	576@25p
	720@50/59.94/60p	720@25/30p
	1080@50i	1080@25p
	1080@59.94/60i	1080@30p
	1080@50p	1080@25p
	1080@59.94/60p	1080@30p
	Bit-rate	2.000~20.000 Mbps
	Rate Control	VBR
Aspect Ratio	16 :9	
<b>Audio</b>	Encoding	MPEG1 Layer2, AAC, AC3
	Sample rate	48KHz
	Bit rate	MPEG1 Layer2 (192kbps)
		AAC (VBR)
AC3 (128kbps)		
DVB-C Modulator Section		
<b>Standard</b>	J.83A (DVB-C), J.83B	
<b>MER</b>	≥35dB	
<b>RF frequency</b>	54-1000MHz, 1KHz step	
<b>RF output level</b>	-35dbm, 1dB step	

Symbol rate	3.000~7.000Msps adjustable	
	J.83A	J.83B
Constellation	16/32/64/128/256QAM	64/ 256QAM
Bandwidth	8M	6M
<b>DVB-T Modulator Section</b>		
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	54-1000MHz, 1KHz step	
RF output level	-35dbm, 1dB step	
<b>ISDB Modulator Section</b>		
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	54~1000MHz, 1KHz step	
RF output level	-35dbm, 1dB step	
<b>ATSC Modulator Section</b>		
Standard	ATSC A/53	
Constellation	8VSB	
RF output level	-35dbm,1dB step	
MER	≥35dB	
RF frequency	54~1000MHz, 1KHz step	
RF output level	-35dbm, 1dB step	
<b>System</b>		
Management	Web	
Language	English	
Upgrade	Web update	
<b>General</b>		
Power supply	AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz	
Dimensions	482x328x44.5mm = (19"x12.9"x1.7" )	
Temperature	0~45°C(operation),-20~80°C(storage)	

Drawing:

# Universal 4 HDMI Digital RF Modulator

(QAM / ATSC / DVB-T / ISDB-T) up to 1080p60 / Low Latency



**H-THUNDER-4**

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

