Data Sheet : H-THUNDER-1

HDMI Modulator | QAM RF Coax Output

Full HD up to 1080P - 1 Channel

Thor 1 HDMI Digital RF Modulator CC 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.

H- THUNDER- Supports **up to 8 HDMI inputs** and its modular design (maximum 8 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 camera, 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, with no IPTV output**

The 8-channel model has 8 HDMI / CVBS -baseband video inputs that can be selected from the menu, so support any HD HDMI source or any analog CVBS source like Analog Video cameras.

This Input can be also used as Input for Closed captioning generated from video devices like DVD players or Cable STB's on CVBS output CC 21

	H- THUNDER -1	H-HDMI-QAM-IPLL OR H-4ADHD-QAM-IPLL
Number of Inputs	1	1,2,4
Number of CATV frequencies (carriers)	1 video has its own channel	4
Modulation	QAM, ATSC, DVB-T, ISDB-T in the same unit -pre-loaded & switchable	QAM, ATSC, DVB-T, ISDB-T Firmware dependent
Can modulate multiple programs on the same frequency - carrier	No, each program needs to be modulated on a separate frequency	Yes, multiple programs can be modulated on the same frequency, for example 2.1, 2.2, 2.3, 2.4
Encoding method	MPEG2 only	MPEG2 or H.264 - selectable
Dolby Audio Encoding	Yes	Yes
NMS	YES	YES
Front Panel Control	YES	YES
IPTV Output	NO	YES

Features

- 1 HDMI channel Input
- 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 (500~1000ms)
- MPEG layer 2, AAC, and DD AC3 Audio Encoding
- CC (Closed Caption), EIA 608
- 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
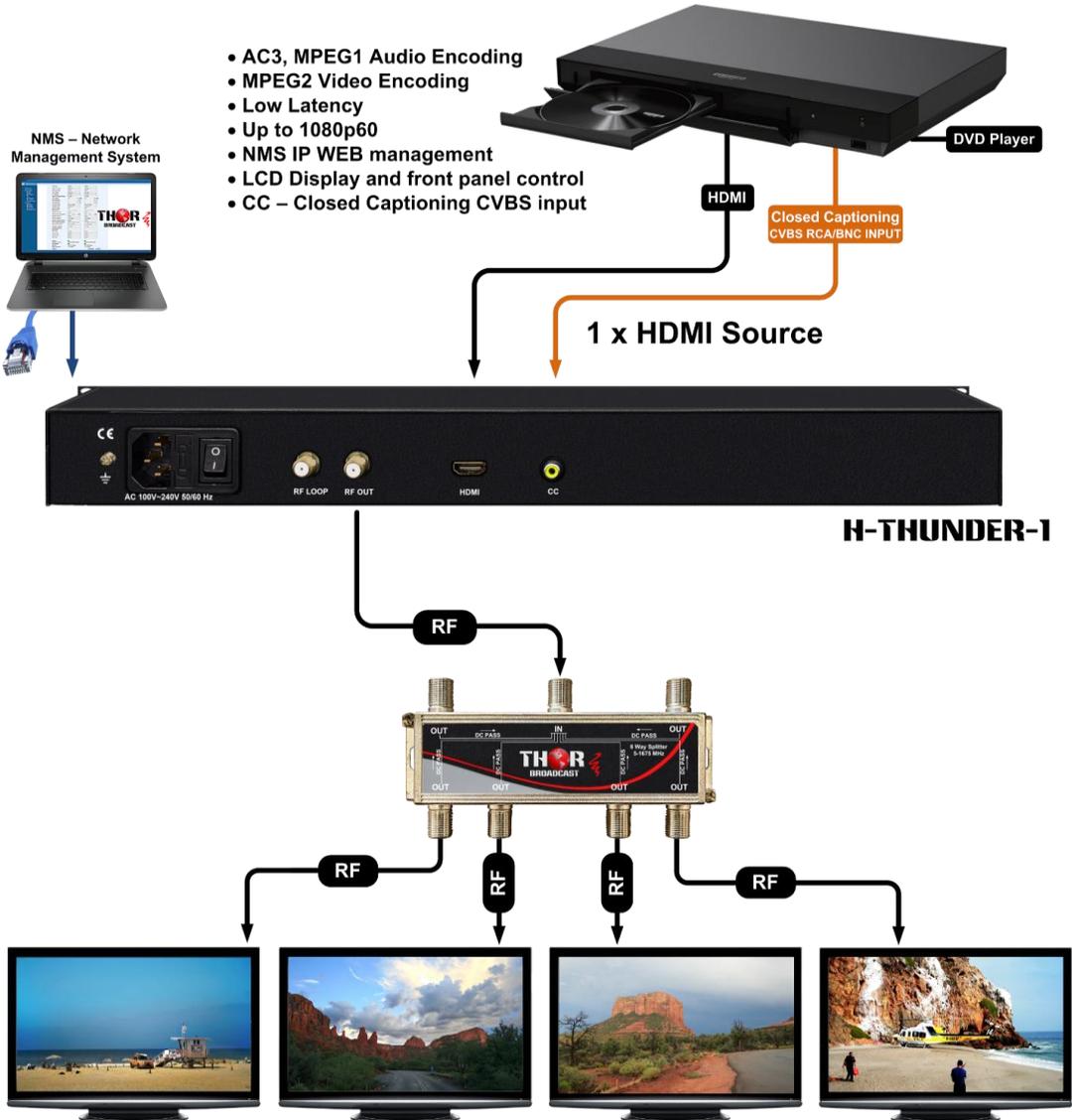- LCD Display and front panel control

Specifications

HDMI Encoding Section		
Input	Interface	• H-THUNDER-1 - 1HDMI + 1CVBS for CC
Video	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
Audio	Encoding	MPEG1 Layer2, AAC, AC3
	Sample rate	48KHz
	Bit rate	MPEG1 Layer2 (192kbps)
		AAC (VBR)
		AC3 (128kbps)

DVB-C Modulator Section		
Standard		J.83A (DVB-C), J.83B
MER		≥35dB
RF frequency		54-1000MHz, 1KHz step
RF output level		-35dbm, 1dB step
Symbol rate		3.000~7.000Msps adjustable
Constellation	J.83A	J.83B
	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 Mode:	2K, 8K
MER	≥35dB
RF frequency	54-1000MHz, 1KHz step
RF output level	-35dbm, 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	54~1000MHz, 1KHz step
RF output level	-35dbm, 1dB step

ATSC Modulator Section	
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
System	
Management	Web
Language	English
Upgrade	Web update
General	
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

New Affordable 1 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

NMS – Network Management System

DVD Player

HDMI

Closed Captioning CVBS RCA/BNC INPUT

1 x HDMI Source

AC 100V~240V 50/60 Hz   RF LOOP   RF OUT   HDMI   CC

H-THUNDER-1

RF

RF   RF   RF   RF

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