

Data Sheet : H-12HDMI-QAM-IPLL

CATV RF MODULATOR - HDMI Multiplexer



12 HDMI Channels to CATV RF Coax Digital Modulator QAM, ATSC, DVB-T, ISDB-T, format up to 1080p60 low latency with IPTV Streamer and ASI Out

The new high capacity H-12HDMI-QAM-IPLL Encoder Modulator from Thor Broadcast has a new sophisticated redesigned platform for **enabling modulation of up to 12 HDMI sources and 12 CVBS CC(Closed Caption) sources simultaneously**. This unit has the ability to ingest IP Transport Streams and multiplex them among the RF output channels, similarly you can also input a single ATSC (or other RF modulation standard) and add its transport streams among the QAM output. This unit comes standard with a plethora of options to help you add **extra transport streams from various media to build your own RF headend quickly and easily without extra hardware**.

The **H-12HDMI-QAM-IPLL** supports MPEG2 and MPEG-4 AVC/H.264 video encoding and MPEG1 Layer II audio encoding (MPEG-2 AAC, MPEG-4 AAC Optional), Dolby Digital AC3, as well as AC3 pass through.

This unit has the ability to multiplex, create, and add program streams to your RF QAM cable channels cost-effective design make this device widely used in variety of digital distribution systems such as CATV headend cable systems

Create your own digital signage systems, and add HDMI sources to your existing QAM cable system in a single 1RU high density encoder modulator from Thor.

HDMI MULTIPLEXER

The Thor Broadcast **HDMI Encoder modulator** can be set up as a multi-channel **video switcher** so you can put multiple videos on one RF 6mhz frequency.

Since QAM 256 contains 38Mbps data storage, it means **we can use all that bandwidth to place several programs via multiplexing on a single RF channel**, each 6Mhz can carry any encoded video bitrate so long as they don't exceed the 38mbps total. For example, if we have a 4 source modulator, we can set the encoded bit rate on each video to 9.5Mbps, so $9.5 \times 4 = 38\text{Mbps}$. We can fit all of those programs in one QAM 256 channel.

So let's say that we choose 57mhz, which is CH2 on the QAM RF spectrum, we will be able to modulate 4 video's onto channels 2.1, 2.2, 2.3, 2.4 simultaneously.

This is important in case we want to **insert multiple video programs on limited RF space occupied by different channels** from the cable company; or other modulators creating channels in your CATV lineup.

Features:

- 12 HDMI inputs with 12 CC inputs via CVBS
- (Data 1 port) over UDP and RTP
- MPEG1 Layer II; Dolby AC3, AC3 pass through ; MPEG-2 AAC, MPEG-4 AAC
- HD (1080i/720p) to SD (576p/480p) downscale conversion
- 1MPTS and 24 SPTS IP (DATA1 and DATA2 port) output over UDP, RTP/RTSP
- ASI output mirrors one of the RF carriers
- PID remapping/ accurate PCR adjusting/PSI/SI editing and inserting
- Control via web management NMS
- 16 Groups Multiplexing/Scrambling/ DVB-C QAM ANNEX A and B Modulating (based on RF)
- 8 Groups Multiplexing/ DVB-T/ATSC Modulating (based on RF)
- 6 Groups Multiplexing / ISDB-T Modulating (based on RF)
- Up to 16 MPTS IP (Data2 Port Only) output over UDP, RTP/RTSP (# of MPTS is based on RF standard of device) (16MPTS for DVB-C; 8MPTS for DVB-T/ATSC; and 6MPTS for ISDB-T)

Model Selection:

- **H-12HDMI-QAM-IPLL** - 12 HDMI input to CATV RF QAM (CABLE) Modulation Output and IPTV output -Low Latency
- **H-12HDMI-ATSC-IPLL** - 12 HDMI input to CATV RF ATSC OFF AIR Modulation Output and IPTV output -Low Latency
- **H-12HDMI-DVBT-IPLL** - 12 HDMI input to CATV RF DVB-T OFF AIR Modulation Output and IPTV output -Low Latency
- **H-12HDMI-ISDBT-IPLL** - 12 HDMI input to CATV RF ISDB-T OFF AIR Modulation Output and IPTV output -Low Latency

Specifications:

Input	12 HDMI inputs 12 CC (Closed Caption, EIA608/EIA708) input, BNC interface	
Video	Resolution	1920×1080_60P, 1920×1080_50P, 1920×1080_60i, 1920×1080_50i, 1280×720_60P, 1280×720_50P, 720×576_50i, 720×480_60i
	Resolution Downscale	1080i/720p to 576p/480p
	Encoding	MPEG2 & MPEG4 AVC/H.264
	Bit-rate	0.8~19Mbps each channel
	Rate Control	CBR/VBR
Audio	Encoding	MPEG1 Layer II, AC3 pass through (MPEG-2 AAC, MPEG-4 AAC Optional)
	Sampling rate	48KHz
	Audio Gain	0-400% adjustable
	Bit-rate	64~320Kbps each channel (each channel)
Multiplexing	Maximum PID Remapping	180 input per channel
	Function	PID remapping (automatically or manually)
		Accurate PCR adjusting
		Generate PSI/ SI table automatically
Stream output	1 MPTS and 24 SPTS IP output over UDP and RTP/RTSP, 2*1000M Base-T Ethernet interface, Data 1 and Data 2 1 ASI output mirrors the MPTS output	
System function	Network management (WEB)	
	Ethernet software upgrade	
Miscellaneous	Dimension (W×L×H)	19"×17.3"×1.7mm 1RU Rackmount Chassis
	Approx weight	8kg - 16lb
	Environment	0~45°C (Operational); -20~80°C (Storage)
	Power requirements	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz

Drawing:

12 HDMI CATV RF MODULATOR with CC (Closed Captioning)
(QAM/ATSC/DVB-T/ISDB-T) up to 1080p60 / Low Latency with IPTV Streamer and ASI Out

