THOR BROADCAST

1, 2, 4 Channel SDI to ATSC Modulators and IPTV Encoders

H-1SDI-ATSC-IPLL | H-2SDI-ATSC-IPLL | H-4SDI-ATSC-IPLL

Product Family	Professional SDI encoder, ATSC 8VSB RF modulator, ASI transport, and IPTV output in one 1RU rackmount headend chassis.	**Input Options**	1, 2, or 4 SDI inputs using BNC 75 Ohm connectors. Supports SD-SDI, HD-SDI, and 3G-SDI up to 1080p60.	**Output Options**	Clear ATSC RF over coax, IPTV MPEG-TS over UDP/RTP/RTSP, and ASI input/output for headend integration.
Network Managed	Browser-based NMS management for RF, bitrate, service, PID, and IP streaming configuration.	**Low Latency**	Low latency modes available for live video applications where standard encoder delay is not acceptable.	**Applications**	Schools, stadiums, campuses, PEG, houses of worship, government, hotels, and broadcast/AV headends.

Product page: https://thorbroadcast.com/product/1-4-sdi-to-atsc-modulators-and-iptv-streaming-encoders.html

Model Selection - Choose the Correct SDI Input Count

1 Channel SDI-ATSC-IPLL	**H-1SDI-ATSC-IPLL**	1 x SD/HD/3G-SDI	Single program SDI feed, camera, switcher, PEG feed, IRD output	Single channel RF/IP insertion or dedicated channel source
2 Channel SDI-ATSC-IPLL	**H-2SDI-ATSC-IPLL**	2 x SD/HD/3G-SDI	Two cameras, two program feeds, two SDI sources	Small ATSC headend, redundant feeds, two channel venue/campus distribution
4 Channel SDI-ATSC-IPLL	**H-4SDI-ATSC-IPLL**	4 x SD/HD/3G-SDI	Multiple cameras, switcher outputs, replay, graphics, IRDs	Multi-channel ATSC 8VSB RF and IPTV headend in one 1RU chassis

Important: Select the model based on the number of SDI input sources required in the project. All models use the same platform style and output architecture; the SDI input count is the main difference.

Real Rear Panel Views

H-1SDI-ATSC-IPLL - 1 SDI Input

H-2SDI-ATSC-IPLL - 2 SDI Inputs

H-4SDI-ATSC-IPLL - 4 SDI Inputs

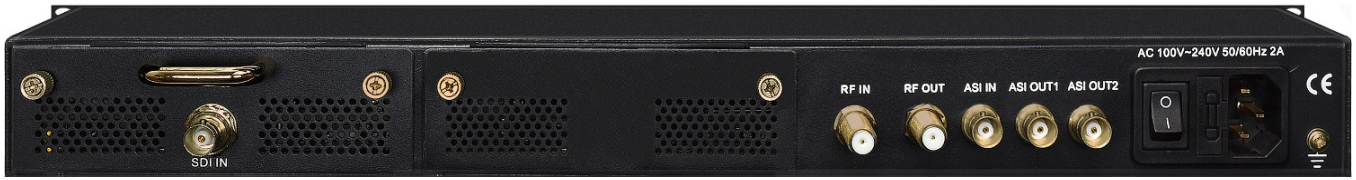
Front and Rear Panel Views

Shared Front Panel Design

The front panel includes the LCD status display, NMS and DATA Ethernet ports, power/alarm indicators, lock indicators, menu/navigation buttons, and rack-mount ears.

Real Rear Panel Photos - 1, 2, and 4 SDI Versions

H-1SDI-ATSC-IPLL | 1 SDI Input | Rear Panel



H-2SDI-ATSC-IPLL | 2 SDI Inputs | Rear Panel

H-4SDI-ATSC-IPLL | 4 SDI Inputs | Rear Panel

Core Features and Technical Overview

SDI Encoding

Accepts SD-SDI, HD-SDI, and 3G-SDI sources up to 1080p60. The 1, 2, and 4 input versions allow the chassis to match small or multi-source broadcast/AV systems.

ATSC RF Output

Outputs ATSC compatible 8VSB RF carriers for North American TV and coax distribution. ATSC provides approximately 19 Mbps per carrier and is designed for ATSC TV tuners and set-top boxes.

IPTV Streaming

Provides MPEG transport stream output over IP using UDP, RTP, or RTSP. Supports unicast and multicast delivery for LAN IPTV systems.

ASI Integration

Includes ASI input and ASI outputs for multiplexer, IRD, monitoring, and professional headend workflows.

Chassis	1RU professional rackmount encoder/modulator chassis
Models	H-1SDI-ATSC-IPLL, H-2SDI-ATSC-IPLL, H-4SDI-ATSC-IPLL
SDI Inputs	1, 2, or 4 x SD/HD/3G-SDI BNC inputs, 75 Ohm
Input Formats	720p 50/59.94/60, 1080i 50/59.94/60, 1080p 50/59.94/60
Video Encoding	MPEG-2 SD/HD 1.5-19.5 Mbps; H.264 HD 0.8-19.5 Mbps
Audio Encoding	Dolby AC3, MPEG-1 Layer II, MPEG-2 AAC, MPEG-4 AAC
Audio Sample Rate	48 kHz
Audio Bitrates	64, 96, 128, 192, 256, 320 kbps
RF Modulation Standard	ATSC compatible 8VSB, 19 Mbps per RF carrier
RF Frequency	30-960 MHz, 1 kHz step
RF Level	5-35 dBmV adjustable
IP Output	MPEG-TS over UDP / RTP / RTSP, multicast or unicast
ASI I/O	ASI input up to 120 Mbps; ASI output 1-60 Mbps
Power	100-240 VAC auto switching, approx. 20 W

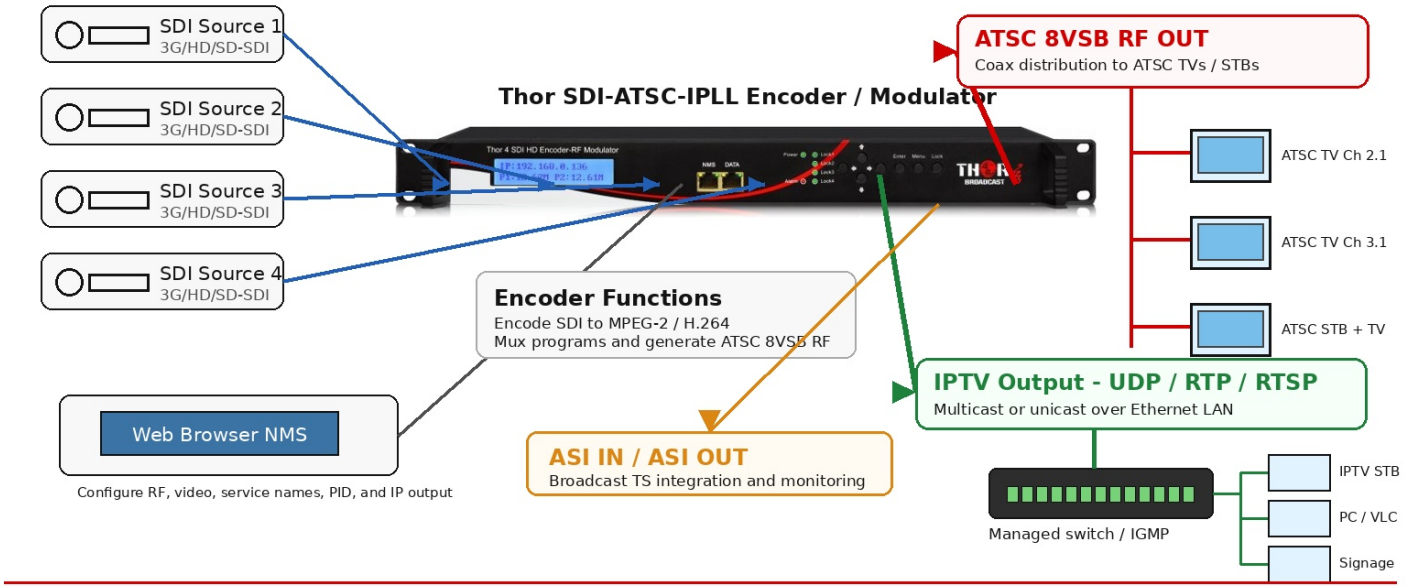
Gateway note: The SDI-ATSC-IPLL platform encodes SDI sources and outputs transport streams to RF/IP/ASI. Always verify TV, STB, or decoder support for the selected video codec and audio codec before final deployment.

Typical SDI to ATSC 8VSB RF + IPTV Signal Flow

1. SDI Sources	Cameras, switchers, replay systems, IRDs, or other professional SDI equipment.	**2. SDI-ATSC-IPLL Encoder**	Encodes each SDI source, multiplexes programs, and prepares RF/IP/ASI outputs.	**3. Coax and IP Network**	ATSC RF feeds coax distribution while IP output feeds LAN switches for IPTV.	**4. Endpoints**	ATSC TVs, STBs, decoders, PCs/VLC, signage players, and monitoring systems.

SDI to ATSC 8VSB RF + IPTV Application Diagram

H-1SDI-ATSC-IPLL | H-2SDI-ATSC-IPLL | H-4SDI-ATSC-IPLL



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Example: Four HD-SDI inputs can be encoded and distributed as custom ATSC TV channels over 8VSB RF while also providing IPTV streaming and NMS management over Ethernet.

Output Modes and Headend Integration

ATSC RF Output	F-type RF OUT / coax	Distribute encoded SDI sources as ATSC 8VSB broadcast-style TV channels over existing coax.	ATSC TVs, coax plant, RF splitters/combiners, CATV amplifiers
RF Input / Loop / Combine	F-type RF IN / RF OUT	Integrate the unit into an RF headend chain or combine with other RF sources when system design requires it.	Existing RF headend, MATV/CATV system
IPTV Streaming	Ethernet, UDP / RTP / RTSP	Stream transport streams over LAN. Use multicast for one-to-many distribution and unicast for point-to-point workflows.	IP STBs, VLC/PCs, decoders, signage players, monitoring systems
ASI Input	BNC ASI IN	Accept external transport streams and mux selected programs by PID into the output system.	ASI encoder, multiplexer, IRD, transport stream source
ASI Outputs	BNC ASI OUT1 / ASI OUT2	Feed transport streams to other professional broadcast or monitoring equipment.	ASI analyzer, multiplexer, IRD, headend gear
NMS Management	Ethernet NMS / web browser	Configure RF channel, modulation, bitrate, audio, service names, PIDs, and IP output parameters.	Laptop/PC on same management network

Multicast note: For IPTV multicast deployments, use managed Ethernet switches with IGMP support to avoid flooding the network. For bench testing, a PC with VLC can verify UDP/RTP streams before final system integration.

Basic Installation and Configuration Checklist

1	Mount and power the chassis	Install in a 19 inch rack with proper ventilation. Connect 100-240 VAC power.
2	Connect SDI sources	Use quality 75 Ohm BNC SDI cables. Confirm each source format is supported and stable.
3	Connect RF output	Connect RF OUT to the coax headend, combiner, ATSC test TV, or RF meter. Plan splitter/combiner losses.
4	Connect management network	Connect NMS/DATA Ethernet to a laptop or LAN. Use the web interface for configuration.
5	Set QAM parameters	Select ATSC 8VSB RF frequency, RF output level, program numbers, and service names.
6	Set video/audio parameters	Choose MPEG-2 or H.264 and audio codec. For maximum TV compatibility in many US QAM systems, MPEG-2 video with AC3 audio is often preferred for ATSC compatibility.
7	Set IP streaming	Define multicast/unicast IP, port, and protocol. Keep endpoints and source network design on the correct subnet/VLAN.
8	Verify all outputs	Test RF with a TV or meter; test IP with VLC/STB; test ASI with professional headend tools if used.

Quick Troubleshooting

No SDI lock	Verify source resolution/frame rate, SDI cable, BNC connector, and active SDI source output.
TV cannot tune channel	Check ATSC 8VSB frequency, RF level, channel plan, and TV clear-QAM capability.
No audio on TVs	Confirm audio codec compatibility. Most ATSC TVs and STBs use AC3 audio for best compatibility.
IP stream not visible	Check IP address/port/protocol, VLAN/subnet, firewall, and multicast IGMP switch settings.

Ordering Notes and Application Checklist

How many SDI inputs are required?	Determines whether the correct chassis is H-1SDI-ATSC-IPLL, H-2SDI-ATSC-IPLL, or H-4SDI-ATSC-IPLL.
What RF standard and channel plan will be used?	The unit outputs ATSC compatible 8VSB, and the system must be configured to match the site TV/headend standard and frequency plan.
Will the system use coax, IPTV, ASI, or all outputs?	Impacts RF combining, switch selection, multicast design, monitoring, and headend integration.
How many TVs or endpoints will receive the signal?	Helps size RF amplifiers/splitters and determine whether multicast IPTV should be deployed.
What codecs do the receiving devices support?	TVs, STBs, and IPTV decoders must support the chosen video/audio codec and transport stream format.
Are closed captions or special service names required?	Confirm captioning/service metadata requirements before final configuration.

Thor Broadcast SDI-ATSC-IPLL Product Family

A flexible professional encoder/modulator platform for converting 1, 2, or 4 SDI sources into ATSC 8VSB RF TV channels, IPTV streams, and ASI transport outputs for modern AV and broadcast distribution systems.

H-1SDI-ATSC-IPLL	1 Channel SDI to ATSC 8VSB RF Modulator and IPTV Streaming Encoder
H-2SDI-ATSC-IPLL	2 Channel SDI to ATSC 8VSB RF Modulator and IPTV Streaming Encoder
H-4SDI-ATSC-IPLL	4 Channel SDI to ATSC 8VSB RF Modulator and IPTV Streaming Encoder

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