

AVC & HEVC Compression IP Cores Family

A range of H.264 and H.265 hardware video codecs

Each accelerated hardware encoder and decoder in this family satisfies particular needs for performance, power consumption, and silicon area, and offers smart trade offs of compression degree and quality.

Included are:

- **H.264/AVC Video Encoders and Decoders**, supporting different profiles and featuring the lowest power consumption and smallest silicon area compared to competitive cores,
- a hardware RTP stack for **H.264 Stream Decapsulation** and pre-integrated **Video Over IP Subsystems**, and

- An **H.265/HEVC Decoder** with versatile support for multiple profiles and video system characteristics.

CAST is one of the longest-running providers of image and video compression IP cores, with hundreds of successful customers shipping millions of media products, beginning in 1998. Royalty-free licensing is available for all these cores.

Compare the cores below, follow the [links](#) to individual product pages for full details, and [contact Sales](#) to learn more or discuss how we can support your evaluation.

H.264 ENCODER CORES	<u>H264-E-BIS</u> Intra-Only Baseline Profile	<u>H264-E-BPS</u> Low-Power Baseline Profile	<u>H264-E-MPS</u> Low-Power Main Profile	<u>H264-E-CFS</u> Ultra-Low-Power Baseline Profile	<u>H264-E-HIS</u> Intra-Only High Profile	<u>H264-E-BPF</u> Ultra-Fast Baseline Profile
Throughput (cycles/pixel)	4	4	4	4	2.5	2 or 1
Performance (16nm ASIC)	UHD/4k@30	UHD/4k@30	1080p@60	UHD/4k@30	1080p@60	UHD/4k@60
Silicon Resources *	Very Small	Small	Small	Small	Moderate	Moderate-High
Profile	Constrained Baseline	Constrained Baseline	Main	Constrained Baseline	High 10 Intra	Constrained Baseline
Slices Types	IDR	IDR, P	IDR, P	IDR, P	IDR	IDR, P
Chroma Formats	4:2:0	4:2:0	4:2:0	4:2:0	4:2:0	4:2:0
Bits per Sample	8	8	8	8	8, 10	8
Progressive/Interlaced	✓/✓	✓/✓	✓/✗	✓/✗	✓/✗	✓/✓
Multiple Video Channels	Optional	Optional	Optional	Optional	✗	Optional
CAVLC / CABAC	✓/✗	✓/✗	✗/✓	✓/✗	✓/✗	✓/✗
CBR and VBR	✓	✓	✓	✓	✗	✓
Intra-Refresh	N/A	✓	✓	✓	N/A	✓
Multiple Slices	✓	✓	✓	✓	✗	✓
Compressed Frame Store	✗	✗	✗	✓	N/A	N/A

* Very Small <100k Gates, Small < 200k Gates, Moderate < 500K Gates, and High > 500KGates

DECODER CORES	<u>H264-D-BP</u> H.264 Low-Latency Baseline Profile Decoder	<u>H264-LD-BP</u> H.264 Low-Power Baseline Profile Decoder	<u>H265-MP-D</u> HEVC/H.265 Main Profile Decoder
Standard	AVC/H.264	AVC/H.264	HEVC/H.265
Profile	Constrained Baseline	Constrained Baseline	Monochrome, Main, Main-10
Profile Compatibility	Full	Limited to streams from the H264-E-BPS/BPF, BIS cores	Full
Additional Features	✗	Interlaced with Main Profile Syntax	✗
Throughput (cycles/pixel)	2.5	4	~1.25
Silicon Resources	Moderate	Small	High

* Very Small <100k Gates, Moderate < 500K Gates and High > 500KGates