



vicuesoft

Video Analysis Solutions



VQ DVK

Decoder Validation Kit



Vicuesoft DVK

VQ DVK is a Bitstreams and software toolchain for Decoder IP design and compliance validation. It is a must have tool for chip RTL design, target appliance integration (such as a smartphone, smart TV, Set Top Box), software stack verification before customer shipment. It is carefully structured to be as compact as possible, to address maximum coverage and minimize validation time during design process.

Save weeks, potentially months of work needed for validation and ship quality with decoders for improved competitiveness reducing time-to-market. Ensure that Integrated decoder IP satisfies target requirements ahead of product delivery!



www.vicuesoft.com



DVK is :

- A Video Decoder Certification
- A comprehensive set of test bitstreams, a configurable encoder and analytics tool to verify a decoder compliance to a standard
- A powerful validation environment for VVC, AV1, HEVC, VP9 decoder developers
- A tool which allows to compare test decoder's output with "known correct" results
- An instrument to determine anomalies in decoder design to save validation and support costs

Syntax - handy tiny size (small resolution and 1-2 frames only) to maximize coverage of each syntax element and cross-coverage of essential pairs. One test stream - one feature, make individual "coding block" design independently. Good for initial RTL design.

Stress - include all the features covered by the Syntax streams, in higher resolution and more frames. Good for an advanced stage of decoder design.

Performance - test the limits of hardware decoder's speed. Good for final validation to prove compliance to Level requirements.

Error Resilience - set of non-fully-compliant bitstreams to test decoder's robustness to errors and ability to recover. Good for final validation to deliver viable end user product.



VVC Bitstreams

Main 10 profile (8.9, 10bit, mono/420)	Main 10 444 profile (8/9/10bit, mono/420/422/ 444)	Multilayer Main 10 profile (8/9/10bit, mono/420)	Multilayer Main 10 444 profile (8/9/10bit, mono/420/422/ 444)
1164 streams	2263 streams	1632 streams	3199 streams
280 streams	280 stream	-	-
39 streams	42 streams	-	-
213 streams	15 streams	-	-

AVS3 Bitstreams

Main 8bit profile (8bit, 420)	Main 10bit profile (8/10bit 420)	High 8bit profile (8bit 420)	High 10bit profile (8/10bit 420)
200 streams	400 streams	425 streams	850 streams
36 streams	72 stream	36 streams	72 streams
400 streams	800 streams	1656 streams	3312 streams
0 streams	0 streams	0 streams	0 streams

AV1 Bitstreams

Main profile (8/10bit, mono/420)	High profile (8/10bit, mono/420/444)	Professional profile (8/10/12bit, mono/420/422/444)
288 streams	410 streams	534 streams
28 streams	14 streams	14 streams
21 streams	42 streams	42 streams
130 streams	65 streams	65 streams



HEVC Bitstreams

Main profile (8bit, 420)	Main 10 (10bit, 420)	REXT (8/10/12bit, mono/422/444)
93 streams	101 streams	282 streams
12 streams	11 streams	28 streams
21 streams	18 streams	63 streams
144 streams	144 streams	144 streams

VP9 Bitstreams

Profile 0 (8bit, 420)	Profile 1 (8bit, 422/440/444)	Profile 2 (10/12bit, 420)	Profile 3 (10/12bit, 422/440/444)
60 streams	78 streams	120 streams	156 streams
18 streams	30 streams	36 streams	60 streams
21 streams	63 streams	36 streams	108 streams
20 streams	60 streams	52 streams	156 streams

AVC/H264 Bitstreams

High (8bit, mono/420)	High 10 (8/9/10 bit, mono/420)	High 422 (8/9/10bit, mono/420/422)	High 444 Predictive (8/9/10bit, mono/420/422/444)
807 streams	1616 streams	2262 streams	2984 streams
0 streams	0 streams	0 streams	0 streams
0 streams	0 streams	0 streams	0 streams
0 streams	0 streams	0 streams	0 streams