

Allegro DVT compliance test streams

- **Video elementary streams:**
 - H.264/MPEG-4 AVC|MVC|SVC compliance streams
 - H.265/HEVC compliance streams
 - AVS2 compliance streams
 - VP9 compliance streams
 - AV1 compliance streams
- **Audio/video system streams:**
 - ATSC 3.0
 - DVB-T for European DTT (Digital Terrestrial TV)
 - DVB-3D
 - ISDB-Tb for South American DTT



Allegro DVT comp

AUDIO/VIDEO DECODER VALIDATION

VIDEO ELEMENTARY STREAMS

- Unique Selling Points**
- Avoids expensive re-design phases and shortens development cycles. Due to their high complexity, video decoders need to be extensively validated ahead of production.
 - Strengthens the decoder against all possible encodings, existing ones or future streams, to extend final products' life.
 - Future-proof your products to prepare mass production. Increase target product long-term operability by ensuring it will comply with today and tomorrow's broadcast.
 - Each streams suite targets a specific profile/level combination.

Customers

- IP and IC vendors, system vendors (set-top boxes, digital TVs, smartphones, tablets, etc.).

Deliverables

- Elementary streams suite, each stream focusing on a specific video feature to allow fast and simple analysis of potential issues.
- Allegro DVT's reference video decoder software to generate the expected decoded pictures.
- Debug tools, including Quick Restart and Quick Debug, to speed up the validation process.
- PES and transport multiplexing software (optional).
- Complete reference documentation.

Test AV1 video decoders compliance

Technical features

Syntax streams ensure that decoders support all coding tools.

Performance streams test decoding speed (i.e. capability to decode worst case streams in real-time).

Error resilience streams test decoders' behaviour with non-compliant streams.

AV1 compliance test suites:

AV1 **syntax** streams
Main profile (4:2:0 8-bit/10-bit)

AV1 **performance** streams
Main profile (4:2:0 8-bit/10-bit)

AV1 **error resilience** streams
Main profile (4:2:0 8-bit/10-bit)

Test VP9 video decoders compliance

Technical features

Syntax streams ensure that decoders abide by all features of VP9 compression standard, including corner cases.

VP9 **syntax** streams
Profile 0 (4:2:0 8-bit)

VP9 **syntax** streams
Profile 2 (4:2:0 10-bit)

Test AVS2 video decoders compliance

Technical features

Syntax streams ensure that decoders abide by all features of AVS2 compression standard, including corner cases.

AVS2 **syntax** streams
Main Profile (4:2:0 8-bit)

AVS2 **syntax** streams
Main-10bit Profile (4:2:0 10-bit)

Test H.265/HEVC video decoders compliance

Technical features

Syntax streams ensure that decoders support all H.265/HEVC coding tools.

Performance streams test decoding speed (i.e. capability to decode worst case streams in real-time).

Error resilience streams test decoders' behaviour with non-compliant streams.

H.265/HEVC Main/Main10 Profile compliance test suites:

HEVC **syntax** streams
Main/Main10 Profile

HEVC **performance** streams
Main/Main10 Profile

HEVC **error resilience** streams
Main/Main10 Profile

H.265/HEVC RExt compliance test suites:

HEVC **syntax** streams
Range Extensions Profiles

HEVC **performance** streams
Range Extensions Profiles

HEVC **error resilience** streams
Range Extensions Profiles

Range Extensions Profiles : Main 12, Main 4:2:2 10, Main 4:2:2 12, Main 4:4:4, Main 4:4:4 10, Main 4:4:4 12

Scalable Main 10 Profile compliance test suites:

SHVC **syntax** streams

SHVC **performance** streams

Multiview Main Profile compliance test suites:

MV-HEVC **syntax** streams

Screen Extended Profile compliance test suites:

SCC-HEVC **syntax** streams

Screen Extended Profiles

Screen-Extended Main profile
Screen-Extended Main 10 profile

Screen-Extended Main 4:4:4 profile
Screen-Extended Main 4:4:4 10 profile

Compliance test streams

Test H.264/AVC video decoders compliance

Technical features

Syntax streams ensure that decoders abide by all features of H.264 compression standards, including corner cases.

Performance streams test if a decoder is able to decode worst case streams in real-time.

H.264/AVC **syntax** streams
Baseline/Main/High Profile
Level 1.3 to Level 4.2

H.264/AVC **performance** streams
Baseline/Main/High Profile
Level 1.3 to Level 4.2

H.264/MVC **syntax** streams
Stereo High Profile
Level 4.1

H.264/MVC **performance** streams
Stereo High Profile
Level 4.1

H.264/SVC **syntax** streams
Scalable High Profile
Level 4.2

H.264/SVC **performance** streams
Scalable High Profile
Level 4.2

Coverage tool

Technical features

- Produces detailed coverage reports to assess the coverage of a given test set.
- Highlights sections and equations of the standard that are being exercised.
- Reports branch, equation and table coverage.

AUDIO/VIDEO SYSTEM STREAMS

Unique Selling Points

- Verify system compliance and robustness before mass-deployment to end users. Thanks to Allegro DVT system test streams, IC vendors, OEMs and broadcasters can be confident that their products will comply with today's and tomorrow's broadcasts.
- Allegro DVT system streams are specifically designed to ease system testing. They provide two levels of verification: quick visual check or in-depth and accurate analysis with measuring tools.

Customers

- IC vendors, system vendors (set-top boxes, digital TVs, smartphones, tablets, etc.) and broadcasters.

Description

- Allegro DVT provides audio/video system streams, encapsulated and multiplexed in a variety of formats. They are the perfect tool to validate:
 - Audio/video synchronization
 - Dynamic picture resolution change
 - Aspect ratio
 - Dynamic video codec change
 - Active Format Description
 - DVB subtitles
 - Closed captions
 - Teletext

Test compliance of DVB-T, DBV-3D, IPTV, ISDB-Tb and MPEG-TS systems.

These test suites support all popular audio and video compression formats, including:

Video	H.265/HEVC HD Main/Main10 profiles, H.265/HEVC UHD Main/Main10 profiles H.264/AVC CIF Baseline Profile, H.264/AVC SD High Profile, H.264/AVC HD High Profile, MPEG-2 CIF MP@ML, MPEG-2 SD MP@ML, MPEG-2 HD MP@HL
Audio	MPEG-1 Layer I and II, AC-3, E-AC-3 (DD+), AAC-LC, HE-AAC v1 (aacPlus), HE-AAC v2 (aacPlus v2)
Systems	(Application specific) DVB-T, DVB-3D, IPTV, ISDB-Tb (General purpose) MPEG-2 Transport (13818-1)

DVB-T(*) system streams (Europe)	DVB-3D	IPTV	ISDB-Tb system streams (South America)
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(*) Our DVB-T systems streams allow our customers to perform the industry most comprehensive pre-compliance testing for European DTT logo like: Nordig (Denmark, Finland, Iceland, Norway, Sweden, Ireland), TNT (France), DGTVi (Italy), ...

Test compliance of ATSC 3.0 systems.

These test suite supports the following audio and video compression formats:

Video	HEVC Main/Main10 profiles for Legacy SD, Interlaced HD and Progressive resolutions with frame rates of 60Hz
Audio	AC-4 and MPEG-H 3D

Allegro DVT compliance test streams

AUDIO/VIDEO DECODER VALIDATION

Allegro DVT has been chosen by the leading companies of the digital video industry.
Our reference customers include:



Allegro DVT is a leading provider of H.264/AVC, H.265/HEVC, AVS2, VP9 and AV1 solutions, including industry standard compliance test suites, H.264/AVC, H.265/HEVC and VP9 encoder, codec and decoder hardware (RTL) IPs. Allegro DVT products have been chosen by more than 100 major IC providers, OEMs and broadcasters.

For more information, visit <http://www.allegrodvt.com> or contact info@allegrodvt.com



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