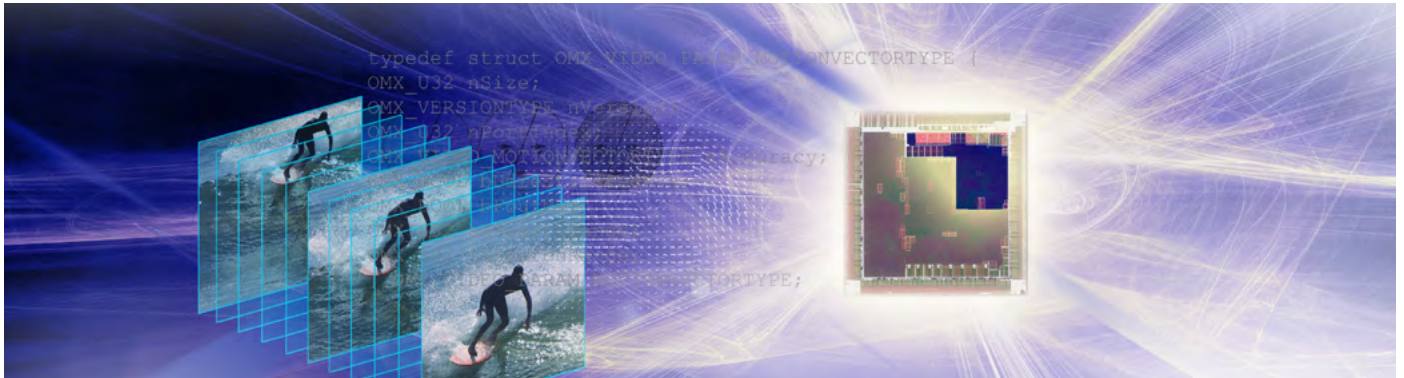


# PowerVR Video Decoder

## IP Core Family



PowerVR™ Video Decoder IP cores offer the industry’s most comprehensive family of video decoders, provided as fully synthesiable RTL. The cores decode video from the bit stream level and provide all the bit stream parsing and functions required by various video standards to produce output video.

PowerVR video decoders are multi-standard and multi-stream and include several advanced features, including full support for H.265 (HEVC), with Main, Main 10 and Main Still Picture profiles at both Main and High tier.

They offer a highly configurable, flexible design, to ensure all needs from low area to high performance can be met.

### Features

- Full hardware decoding from ES to video
- Full support for 10 bit formats
- Support for 4:4:4, 4:2:2 & 4:2:0 formats
- Full multi-standard solution
- Highly configurable design

### Benefits

- High performance 4K60 support
- UHD TV
- Low power consumption
- Low silicon area
- Easily targetable for multiple applications

### Applications

- Smartphone and tablet
- UHD TV and other CE
- Miracast/wireless display
- Network SoCs
- DSCs
- Automotive
- Broadcast

### Comprehensive standards support

Standard	Resolution	Frame Rate
H.265 Main 10 @ L5.1	3840 x 2160	60
H.264 HP @ L4.2	1920 x 1080	60
VC1 AP @ L3	1920 x 1080	30
Dual stream H.264 HP MVC (BD)	1920 x 1080	30
MPEG-4 ASP @ L5	720 x 480	30
AVS Jizhun @ 6.0	1920 x 1080	30
MPEG-2 MP @ HL	1920 x 1080	30
MPEG-1 CPB	720 x 480	30
JPEG	<32 Mpixels	-
Sorenson Spark	352 x 288	30
Real Video RV8/9/10	1920 x 1080	30
On2 VP6	1920 x 1080	30
WebM (VP8)	1920 x 1080	30

<b>OS Support</b>	Windows, Linux, Android
<b>API Support</b>	Viddec (low level), OpenMAX IL, DXVA

## Multi-standard

The efficient multi-mode hardware design enables the efficient decode of multiple different standards. By using a single hardware engine to perform the decode of all standards, the design offers lower risk, easier integration and better performance than discrete solutions for individual standards.

## High Performance

As video moves into the 4K era, many features in addition to the improved resolution are also important. The improved colour fidelity of 10-bit resolution, and 4:2:2 / 4:4:4 colour space supported by the PowerVR video decoder cores, makes them ideal for demanding applications such as UHD TV (enabling solutions to meet ITU-R Recommendation BT.2020), wireless display and automotive. The high frame rate capabilities, allow for faster than real time decoding (e.g. 1080P120), ideal for use in transcoding and video editing.

## Low Power Consumption

Advanced power management techniques including block- and register-level clock gating ensure that the minimum amount of logic is powered for each video standard. This ensures that the cores have low power requirements enabling high-definition video to be brought to power-constrained devices such as portable media players and mobile phones.

## Single, Dual and Multi-stream

The cores can be configured on a time division multiplex basis to handle single, dual and multi-stream decoding. This allows functions such as picture-in-picture and multi-picture menus.

## Software Support

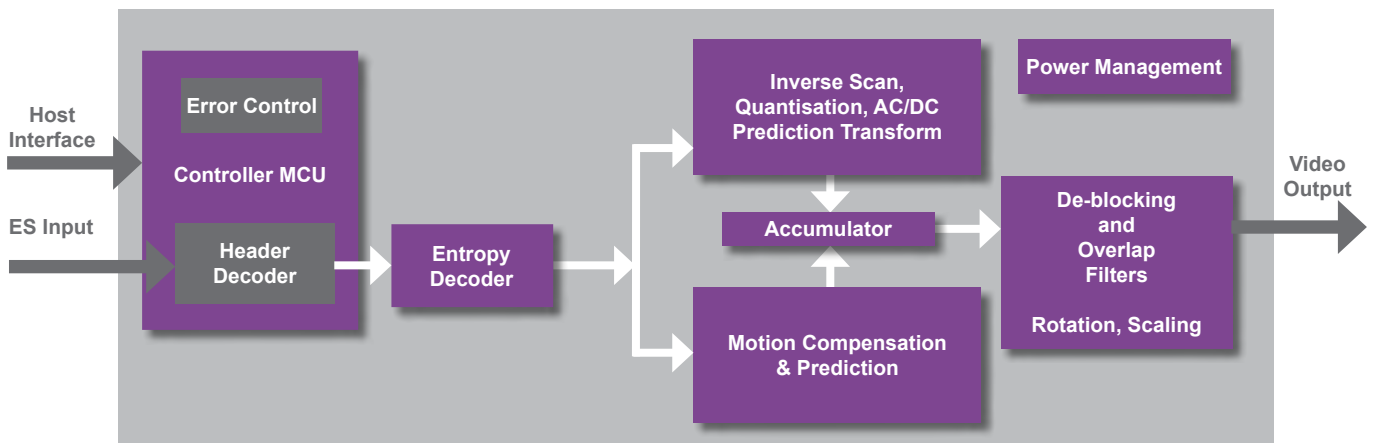
PowerVR video decoders have low overhead host CPU software drivers supporting the video standards through a single easy to use interface. The drivers are in ANSI C code and are easily ported to a wide range of operating systems.

The firmware for the stream manager is provided as part of the product deliverables. Industry standards such as Gstreamer and OpenMAX IL are supported.

## Ease of Integration

All our IP platforms are designed to be easily integrated into a wide range of SoCs. They are system latency tolerant, with low memory bandwidth loading and excellent power management.

## PowerVR Video Decoder Architecture



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