

Vega HDK - OTT, PVR, & Wireless Transmit/Receive Design Kit

Preliminary Product Brief

OVERVIEW

Cavium's Vega Hardware Development Kit (HDK) is a reference design for compact OTT media streaming, in-line PVR, and wireless display transmit/receive TV adapter, providing the ability to stream movies and other content from the Internet, time-shift (pause, rewind, etc.) live TV content, and wirelessly distribute 3D video throughout the home. These are only some of the applications that are possible with the Vega HDK. The reference design provides full support for media streaming and wireless display industry standards and protocols, such as Microsoft's Smooth Streaming, HLS, Intel's WiDi, Wi-Fi Alliance's Miracast™, and Cavium's WiVu®, as well as support for a wide range of A/V formats and CODECs, networking and internal crypto capabilities.

Based on the innovative highly integrated CNW8302 media SoC from Cavium, the Vega HDK reference design offers support for full 1080p60 H.264 encode and multi-format decode with advanced audio processing. High quality, full-HD video and audio can be encoded or decoded and displayed via the integrated HDMI 1.4 interface with 3D and MHL 2.0 support. The dedicated 2D and 3D graphics engine enables an engaging GUI experience. The USB and SD/eMMC interface, make for a low cost turnkey in-line PVR solution. Add to that the dual-band, dual-stream 802.11n or 11ac Wi-Fi and/or Ethernet, for a turnkey, production ready OTT solution. Using a pair of the HDK reference designs - one as the transmitter and the other as the receiver - a cost competitive wired or wireless HDMI cable replacement solution can be brought to production.

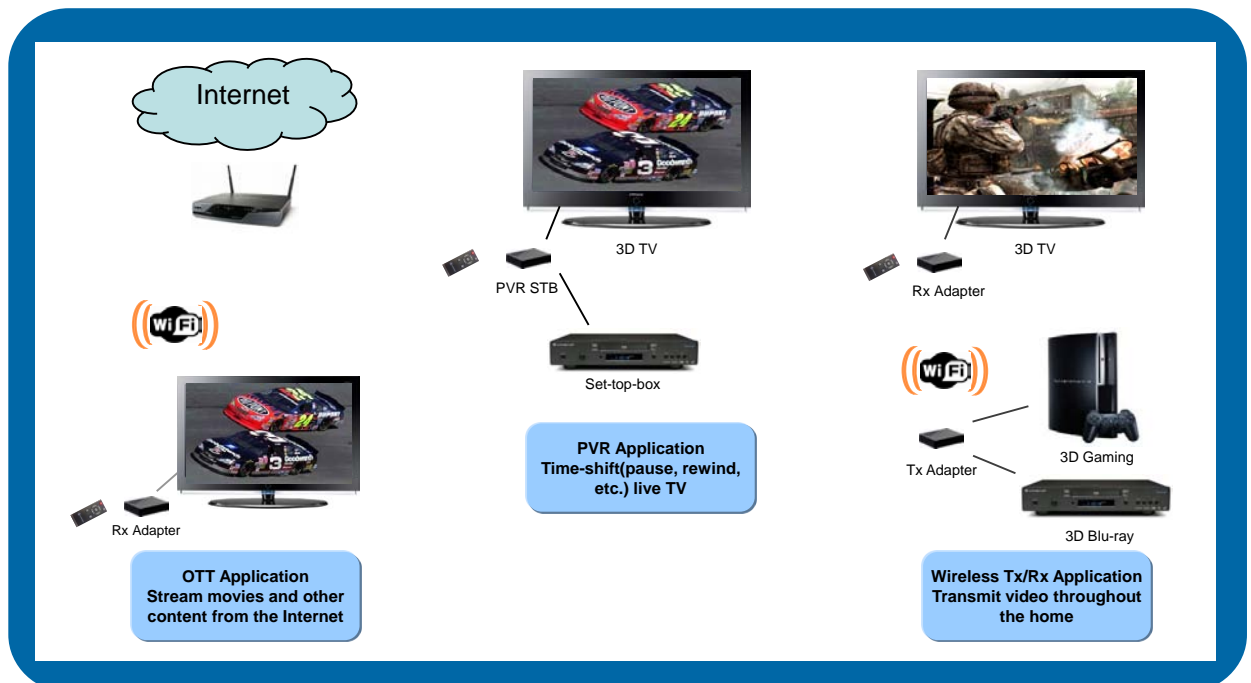


APPLICATIONS

- Home media streaming receiver
- In-line PVR
- IP thin client
- Tx/Rx dongle for wireless 3D display (HDMI cable replacement)

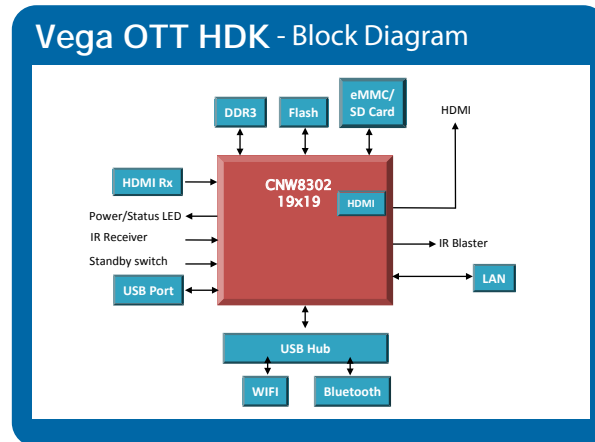
KEY FEATURES

- High performance 1080p60 video encoder
- High performance 1080p60 multi-format decoder
- Support for stereoscopic 3D
- High performance ARM sub-system
- Crypto engine for HDCP 2.x and DTCP-IP
- Integrated HDMI 1.4 output
- MHL interface support
- 2D and 3D graphics
- Support for HLS, Smooth Streaming, DLNA, Miracast, WiDi, and WiVu



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FEATURES

Video Processor

- H.264 Super Low Latency (SLL) Encoding
- H.264 BP/MP/HP Level 4.2 Decoding
- VC-1 SP/MP/AP Decoding
- MPEG-4 SP, ASP/ H.263 Baseline Profile/DivX/XviD Decoding
- MPEG2 Main Profile Decoding
- AVS Jizhun profile level 6.2 Decoding
- RV-8/9/10 Decoding
- VP8 Decoding
- Theora Decoding

Audio Processor

- 32-bit RISC CPU providing future standards upgradability
- Hardware FFT accelerators

Security

- HDCP 2.x
- DTCP-IP
- DRM (PlayReady, etc.)

Video & Audio I/Os

- HDMI 1.4 input and output

Other I/Os

- 2 USB 2.0 (1 - OTG)
- RJ45 Ethernet
- Dual-band Dual-stream IEEE 802.11n WiFi
- SD/eMMC
- IR receiver
- Reset button

Power Requirements

- 5V AC adapter

2D & 3D Graphics Engine

- OpenGL ES 2.0 compliance
- Color keying
- Alpha Blending
- Raster Operation (ROP) and/or blending at the outputs

Vega HDK - Product Family

Part Number	Description
CNW8302-EVK-OTTPVRTR	Vega OTT, PVR, & Wireless Transmit/Receive Design Kit