

## H.264 Video Processor

# PureVu™ CNW6611 Full-HD Video Processor SoC

Preliminary Product Brief



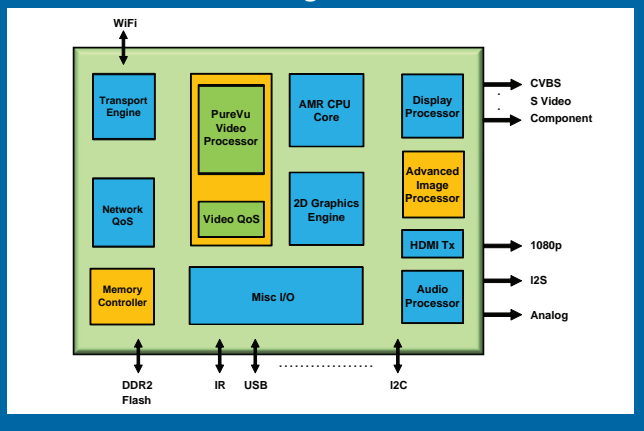
### OVERVIEW

The CNW6611 is a highly-integrated SOC that provides superior H.264, VC-1, AVS, MPEG4, H.263 and MPEG2 video decoding with high quality video scaling, motion adaptive de-interlacing, and integrated video DACs. A high performance embedded ARM processor supports Linux optimized driver and RTOS as well as the embedded software middleware applications. The CNW6611 is optimized for system performance, cost, and power consumption requirements of wireless display adapter market.

The integrated audio DSP engine provides flexibility in decoding popular audio formats, including AC3, AAC, and MP3. The max video decoding performance can reach 1920x1088 pixels or 2048x1024 pixels.



### CNW6611 - Block Diagram



### KEY FEATURES

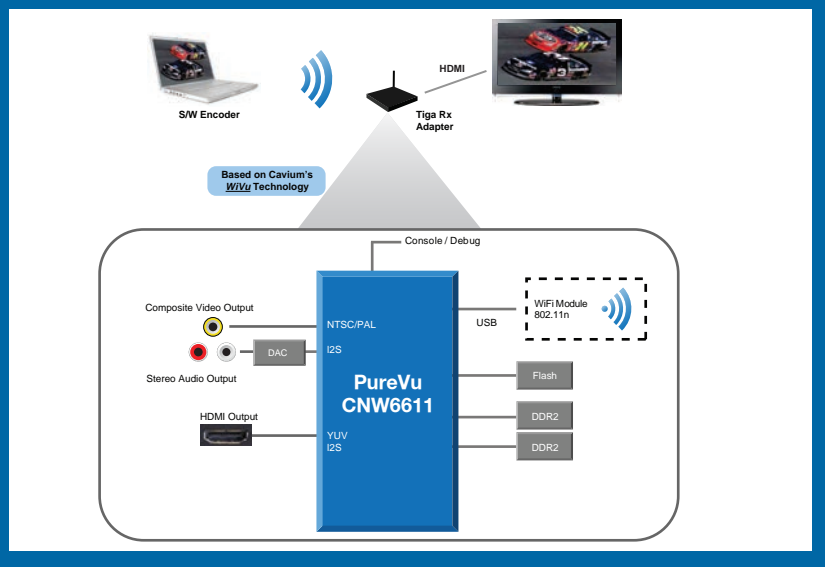
- High performance 1080p30 or 1080i60 multi-format decoder
- Support for H.264, MPEG2, MPEG4, VC-1, AVS decode
- Audio DSP for decode of AC3, AAC, MP3 up to 7.1 channels
- Integrated HDMI 1.3
- Display processor with scaling, 5 layer programmable views
- Less than 1.8W typical power
- 2D graphics

### APPLICATIONS

- Rx dongle for wireless display
- Wireless displays and panels

The CNW6611 provides pristine 1080p quality video with very low overall system BOM, enabling a cost effective solution for wireless display Rx products.

### Smooth Video Over WiFi



## H.264 Video Processor

# PureVu™ CNW6611 Full-HD Video Processor SoC

### Preliminary Product Brief

## FEATURES

### Application CPU

- ARM926EJ-S: 378MHz, 16K/16K Cache

### External Memory

- 32-bit or 16-bit DDR2 SDRAM (Up to DDR2-800)
- 8-bit NAND Flash
- 8-bit External Bus Interface

### Transport Processor

- Dual MPEG-2 TS input/playback
- 64 PID filter shared by the two input interfaces

### Video Processor

- Support MPEG-2 high definition main profile, up to HD MP@HL
- Support H.264 high, main and base profile, up to HD HP@L4.1
- Support VC-1 SP/MP/AP profile at 1080p@30fps
- Support AVS high definition jizhun profile, up to HD JIZHUN@6.2
- Support MPEG4 SP & ASP, H.263 & Sorenson Spark, DivX Home Theater Profile, Real Video 8/9/10 at 1080p@30fp
- Support MPEG4, H.263, H.264 encoding

### Audio Processor

- Programmable audio DSP with advanced DMA
- Decodes MP1/2/3, AC3, AAC-LC, HE-AAC audio streams
- 7.1-channel decoding and output

### Video & Audio Interface

- 4 Video DACs for YPbPr/RGB, S-video and CVBS output
- SD Digital CCIR-656 video input
- Integrated HDMI 1.3 transmitter, DVI mode supported
- Integrated TV encoder
  - Support NTSC, PAL or SECAM color standards
  - Support Standard Definition and High Definition 480i (29.97Hz), 576i (25Hz) 480p (59.94Hz), 576p (50Hz), 720p (60Hz), 720p (59.94Hz), 1080i (30Hz), 1080i (29.97Hz), 1080i (25Hz)
- I2S digital audio input
- I2S, S/PDIF digital audio output

### 2D Graphic Engine

- Rectangle graphics surface size up to 8192x8192
- Supported Color formats: ARGB8888, RGB565, ARGB4444, ARGB 1555, CLUT8 and CLUT4
- Color keying
- Alpha Blending
- Raster Operation (ROP) and/or blending at the outputs
- Generic COPY and FILL (with a predefined color). Support vertical inverse raster scan
- Scaler in Src0
- Anti-flicker (Vertical 2-Tap FIR Filter)

### Display Processor

- Multi-layers Alpha compositor:
  - Background
  - Video #0
  - Video #1
  - Video #2 (1:1 Mode)
  - Graphics layer #0
  - Graphics layer #1

- 2D Graphics Layer Display
  - Supported Color Format Clut4, Clut8, ARGB4444, ARGB1555, RGB565, ARGB8888
  - Color Key
  - Programmable screen locations
- Video Layers
  - NV12 YUV420 video source format
  - Programmable Display View Port (Location, Window size)
  - Down/Up Video Scaler, enable to do 16:9 - 4:3 conversion, letterboxing, pan-scan and SD source display on HD Screen or converse
- Screen Capturer

### Video Post Processor

- 3D motion adaptive De-interlacer
- 3-2-2-2 Film Mode Detection
- High Quality Poly-phase FIR Video Scaler

### Peripherals

- 2 UART, 2 I2C, 1 SPI, 41 GPIO
- 2 Timers, 1 RTC
- RC-5/NEC Remote Control Receiver
- 10/100M Ethernet (MII interface)
- USB 2.0 High Speed Host Controller (phy integrated) with two ports

### Power Requirements

- 3.3V/1.8V/1.2V
- < 1.8W