

# CNC1800L Multi-Standard HD DTV and IPTV Multimedia SoC

## Product Brief

### Transport Processor

- One parallel or two serial TS input, one TS playback
- One integrated DVB/(3)DES/AES descrambler
- Support for DVB-CI(+) through a PCMCIA port

### Video & Audio Processor

- Support MPEG-2 high definition main profile at 1080p30
- Support H.264 high definition high profile at 1080p30
- Support VC-1, MPEG4, DivX/Xvid at 1080p30
- Support AVS high definition jizhun profile at 1080p30
- Programmable audio DSP with advanced DMA
- Decodes MP1/2/3, AC3, AAC-LC, HE-AAC audio streams
- 7.1-channel decoding and down-mix output

### Video Post Processor

- 3D motion adaptive De-interlacer
- Ultra-low angle interpolation (24 points)
- Multi-tap 64-phase content adaptive FIR scaler
- Sharpness (Detail Enhancement)

### Video & Audio Input & Output

- 4-channel DAC (YpbPr/RGB and CVBS)
- Support Macrovision© encryption
- Supports PAL, NTSC, SECAM, 480p, 576p, 720p, 1080i and 1080p50/60 formats
- Supports Analog VGA, up to 1080p60
- Integrated HDMI 1.3 transmitter, DVI mode supported
- Digital Video Input and Output (16bit YUV4:2:2, 24bit YUV4:4:4 or RGB)
- Stereo I2S and S/PDIF bypass audio output
- Integrated Audio DAC

### 2D Graphics Engine

- Supported Color formats: ARGB8888, RGB565, ARGB1555, ARGB4444, CLUT8 and CLUT4
- Color Keying, Alpha Blending and Raster Operation
- Generic COPY and FILL
- Multi-tap Poly-phase FIR scaler
- Anti-flicker operation by FIR filter

### Display Processor

- Flexible PIP, PBP, and POP Support Capability
- Down/Up Video Scaler, Supported 16:9 ↔ 4:3 conversion, letterboxing, pan-scan, SD source display on HD Screen and vice versa
- Video Capture and Auxiliary SD output

### Application CPU: ARM1176JZF

- ARM1176JZF, 648MHz, 32KI/32KD Cache Java Acceleration, Hardware FloatPoint

### Security

- Support secure boot through code authentication by 2048bit RSA and SHA256
- eFUSE for one time program
- Key ladder in secure engine for DVB descrambler and crypto core, supports (3)DES/AES-128
- RAM2RAM crypto engine for secure storage, supports (3)DES/AES-128/SMS4, ECB and CBC modes
- Compliant with Irdeeto and Nagra on chip security

### External memory

- 16bit DDR3-1333 SDRAM
- Support 8-bit NAND and Serial (SPI) Flash
- NAND, and Serial (SPI) flash bootable
- 8-bit External Bus Interface

### Peripherals

- 2 UART, 2 I2C, 2 SPI with DMA support, 16 GPIO, and 1 Smartcard ports
- 2 timers, 1 real time clocks, 1 watch dog timer
- Flexible Remote Control Receiver, supports NEC, RC5, RC6 and other standards
- 7-segment LED and 16-key input scanner
- PCMCIA port
- 10/100Mbps Ethernet (MII connector)
- USB 2.0 High Speed Host Controller with Integrated PHY
- SD/MMC/CE-ATA Host Controller

### Package

- TBD

### Power Requirements

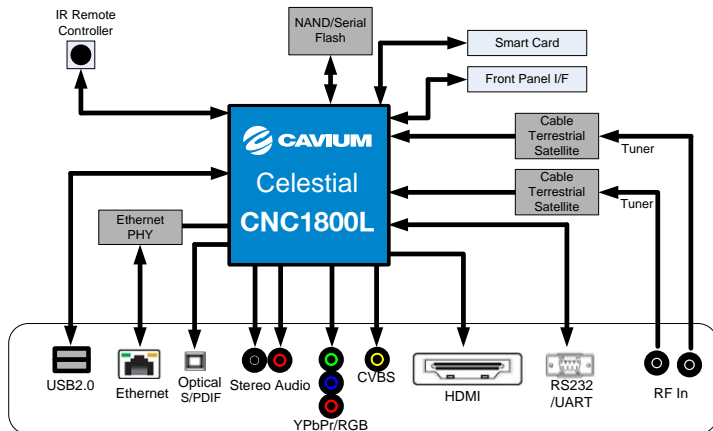
- 3.3V/1.5V/1.2V
- Standby Mode

# CNC1800L Multi-Standard HD DTV and IPTV Multimedia SoC

Product Brief

## Typical Application and Block Diagram

- DVB and IPTV Set-top Box
- CRT, LCD and Plasma HDTV with Digital Cable Receiver



## Chip Function Block Diagram

