**OVERVIEW**

The CNW35XX is a multi-stream H.264 video codec, specifically optimized for video surveillance applications, such as DVRs, video servers and multi-stream IP camera head-ends. The deployment of H.264 results in 80% more efficiency over MJPEG and in 30% more efficiency over MPEG-4.

The 8 bi-directional video ports support spatially and temporally multiplexed video streams, allowing the CNW35XX to process a total of 32 CIF or 8 D1 streams at 30 frames/sec simultaneously. Video input ports can dynamically transrate and transsize the input video streams. The large number of ports allows very cost-effective DVR or multi-stream IP camera head-end implementations without the need for expensive video multiplexers.

Through Super Low Latency Technology™ (SLL Technology™) the CNW35XX achieves sub 40ms encode-decode latency for multi-stream D1 processing. These latency numbers are the lowest in the industry and key requirement for real-time PTZ camera control and for securing premises instantly upon security breaches. The CNW35XX provides the ability to selectively blank/block video areas to hide sensitive information, such as customers' ATM pin codes. Moreover, the CNW35XX provides motion vector and SAD information to the external host for motion detection and other analytics purposes.

**KEY FEATURES**

- H.264 / MPEG-4 AVC (Part 10) video encode/decode
- D1 and CIF support
- 8 Bi-directional BT.656 video ports
- 32 Streams encode or decode
- 16 Streams simultaneous encode and decode
- Super Low Latency Technology™ for sub 40ms multi-stream encode-decode latency
- Transsizing, transrating and stream duplication support
- Content-adaptive noise reduction
- Error resiliency & concealment
- VBR & CBR bit rate control
- On-chip 266 MHz DDR2 DRAM controllers
- On-chip PCI DMA
- PCI and generic host interfaces

**APPLICATIONS**

- Video surveillance DVRs
- Video surveillance video servers
- Multi-stream IP cameras

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**H.264 Video Codecs**

**PureVu™ CNW35XX**

**Multi-Stream Video Codec**

**Product Brief**

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**Simply Perfect Video™**
## FEATURES

### Video Compression
- H.264 Baseline & Main Profile up to L3

### Resolutions
- 480i60, 480p24/30/60
- 576i50, 576p25/50
- CIF, QCIF, VGA, QVGA, SIF, others

### Noise Reduction
- In-loop, low-delay filtering
- CA-MCTF

### Error Resiliency & Concealment
- Intra-frame forcing
- Intra-refresh
- Variable GOP size
- Variable slice size
- Skip-frame
- Skip-macro block
- Decoder tolerant of missing or corrupt NAL units

### Rate Control
- Single pass, low-delay bit rate control
- Constant bit rate control
- Variable bit rate control
- Fixed QP

### Network Support
- Encoder NAL bit stream formatting
- Decoder NAL bit stream parsing

### Video Input and Output Ports
- 8 bi-directional video ports
- Embedded sync support for multiplexed streams
- ITU-R BT.656

### Motion Detection
- Motion vector & SAD information

### Super Low Latency Technology™
- Sub 40ms multi-stream encode-decode latency

### Multi-stream Support
- 960 CIF frames/sec encode capacity
- 8x D1 encode or decode
- 32x CIF encode or decode
- 4x D1 simultaneous encode and decode
- 16x CIF simultaneous encode and decode

### Pre & Post-Processing
- Transsizing & transrating
- YUV 4:2:2 <-> YUV 4:2:0 sample conversion
- Blanking/Blocking input video regions
- Stream duplication
- OSD

### Host Bus Interface
- 32/16-bit, 133 MHz sync/async host bus
- 32-bit, 33/66 MHz PCI 2.2 compatible bus
- 67 virtual PCI DMA channels
- Raw video transport

### Configuration Support Per Stream
- Frame rate
- Statistics
- GOP size
- Error resiliency & concealment
- Noise filtering
- Resolution
- CBR/VBR control

### Memory Interfaces
- 2x DDR2 - 266 MHz interfaces
- SPI Serial FLASH interface

### Miscellaneous Interfaces
- JTAG
- GPIO
- Two-Wire serial bus

### Operational Characteristics
- Core clock frequency 233 MHz
- Power dissipation 2.5W typical
- 0° – +85° C ambient temperature
- 0-90% RH

### Package
- 676 pin BGA
- 27mm x 27mm

## ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Device</th>
<th>Part Number</th>
<th>Streams</th>
<th>Video Ports</th>
<th>Host I/F</th>
<th>Memory</th>
<th>Package</th>
<th>RoHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNW3508</td>
<td>CNW3508-233BG676-Option Code</td>
<td>8x D1</td>
<td>32x CIF</td>
<td>PCI 32-bit, 33/66 MHz or 32-bit synchronous/async host I/F</td>
<td>2x 32-bit wide memory bus I/F DDR2 266 MHz</td>
<td>676 PBGA</td>
<td>Pb-free RoHS-6</td>
</tr>
</tbody>
</table>