

# CX25820/1 PCI-Express Media Bridge

# Multi-Channel Video and Audio to PCIe Bridge

The CX25820/1 multi-channel media bridge devices enable bi-directional digital video and audio transfers to a host PC via a PCIe x1 interface. The CX25820 and CX25821 contain BT.656/VIP2.0 digital video interfaces supporting 27 MHz input clock rates and I<sup>2</sup>S digital audio interfaces supporting up to 96 kHz sample rates, for uncompressed video and audio data respectively. Both devices are designed for PC-based security Digital Video Recorders (DVRs) supporting PAL and NTSC applications.

#### **Flexible Architecture**

With six bi-directional video interfaces and three bi-directional audio interfaces, the CX25820 can bridge multiple streams of BT.656/VIP2.0 video and I<sup>2</sup>S audio to/ from the PCIe bus. The CX25821 adds four more video interfaces, for a total of ten digital video interfaces (maximum of eight in either direction). The CX25821 also adds two audio interfaces, increasing the total number of  $I^2S$  interfaces to five (maximum of four in either direction). The video interfaces may be configured to accept video data in a "54 MHz Mode", which reduces the number of traces routed on the PCB by interleaving 2 data streams on a single digital video port.

The CX25820/1 contain 48 GPIO pins, which maximize flexibility and allow customization to a variety of applications and designs. The GPIO pins also support I<sup>2</sup>C interfaces, interrupts, flags for motion detection, and other features.

#### Surveillance-Specific Features

The CX25820/1 contains programmable logic to detect motion on incoming BT.656/VIP2.0 streams. The ability to detect motion on incoming video streams allows the CX25820/1 to immediately alert the host processor of motion via interrupts over PCIe.



#### **Distinguishing Features**

- PCIe 1.1 Compliant
- Bi-directional BT.656 interfaces to PCIe
- Bi-directional I<sup>2</sup>S interfaces to PCIe
  Bi-directional I<sup>2</sup>S interfaces to PCIe
- Programmable Motion Detection
- Supports "54 MHz Mode" digital video data (2 channel byte-interleaved mode)
- 48 GPIO pins

## Applications

- PAL and NTSC PC-based DVRs
- Multi-monitor Displays

### Packages

- ◆ 233-pin, 14 x 14 mm, fPBGA
- ◆ 256-pin, 28 x 28 mm, eLQFP



Part Number CX25820, CX25821

**Description** PCI-Express Media Bridge The CX25820/1 can downscale digital video from 4:2:2 format to 4:1:1, reducing the bandwidth from 16 to 12 bits per pixel and permitting additional uncompressed streams to be sent over the PCIe bus.

When properly configured, the CX25821 and any one of Conexant's family of multi-channel video decoders form a high-quality, two-chip PC-DVR

solution capable of capturing and bridging up to 8 channels of real-time full D1.



**Multi-monitor Display Application** 

