

## IEEE1394 LSI for D-STB, D-VHS, and DTV

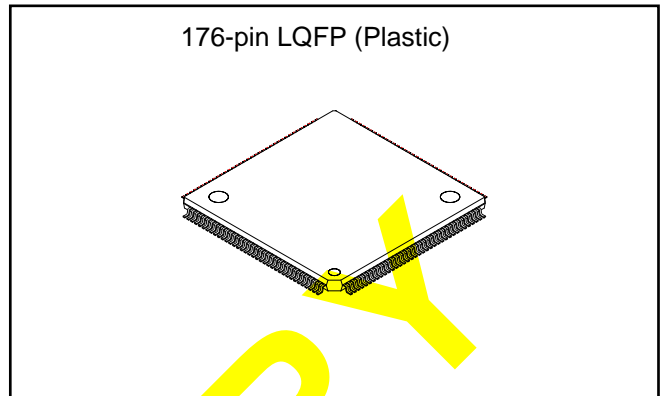
### Description

The CXD3204R is an LSI integrating Link Layer and Physical Layer conforming to the IEEE1394-1995 serial bus standard on a single chip.

Link Layer provides MPEG2 transport stream dedicated input interface and output interface, IEC958 audio stream I/O interface and output interface for D/A converter as a data interface for isochronous communication. Also, a maximum 512 bytes of asynchronous communication is possible.

Physical Layer provides two ports for 1394 cable interface, and supports transfer speed of 200/100Mbit/s. Also, this layer provides received packet data regeneration repeat function, arbitration function and bus initialization logic.

This LSI utilizes Apple Computer's Fire Wire technology.



- ◆ Cable power reduction is detected with cable power status
- ◆ Supports configuration manager cable and power class definition pin.
- ◆ Independent 2-port TpBias

### Feature Summary

- Conforms to IEEE1394-1995 serial bus standard
- Supports 100Mbps/200Mbps
- Link layer
  - ◆ Supports DVB transport streams
  - ◆ Supports IEC958 audio stream
  - ◆ Built-in PID filter function
  - ◆ 2-channel isochronous simultaneous transmission/synchronous transmission and reception
  - ◆ Supports DMA (2-channel) transfer using host bus
  - ◆ Isochronous data inserted from asynchronous data port
  - ◆ Built-in cipher circuit conforming to DTCP format
  - ◆ Large capacity FIFO
    - Isochronous Transmit/Receive FIFO: 960 x 32-bit x 2
    - Asynchronous Transmit FIFO: 132 x 33-bit
    - Asynchronous Receive FIFO: 133 x 33-bit
  - ◆ CIP header automatic attachment/detection
- Physical layer
  - ◆ Live wire detection function when port is connected to operation node
  - ◆ Automatic shutdown function against stopport for power saving
  - ◆ Bus initialization and arbitration state machine logic
  - ◆ Re-synchronization for reception data for local clock
  - ◆ Link-On packet recognition
  - ◆ DS link encode/decode
  - ◆ 196.603MHz PLL

### Application

- Digital interface for D-STB, D-VHS and DTV

### Absolute Max. Ratings (T<sub>A</sub> = 25°C, V<sub>SS</sub> = 0V)

- |  |                  |   |    |
|--|------------------|---|----|
| <input type="checkbox"/> Supply voltage        | V <sub>DD</sub>  | V <sub>SS</sub> -0.5 ~ +4.6                 | V  |
| <input type="checkbox"/> Input voltage         | V <sub>I</sub>   | V <sub>SS</sub> -0.5 ~ V <sub>DD</sub> +0.5 | V  |
| <input type="checkbox"/> Output voltage        | V <sub>O</sub>   | V <sub>SS</sub> -0.5 ~ V <sub>DD</sub> +0.5 | V  |
| <input type="checkbox"/> Operating temperature | T <sub>OPR</sub> | -20 ~ +75                                   | °C |
| <input type="checkbox"/> Storage temperature   | T <sub>STG</sub> | -55 ~ +150                                  | °C |

### Recommended Operating Conditions

- |  |                  |           |    |
|--|------------------|-----------|----|
| <input type="checkbox"/> Supply voltage        | V <sub>DD</sub>  | 3.0 ~ 3.6 | V  |
| <input type="checkbox"/> Operating temperature | T <sub>OPR</sub> | -20 ~ +75 | °C |

**PRELIMINARY**

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