

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

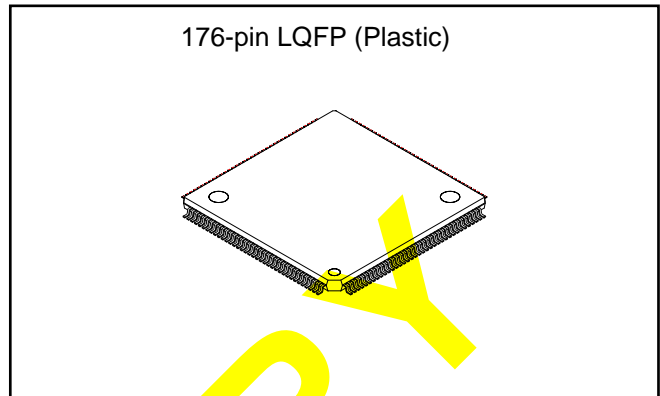
Description

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 powersaving
 - ◆ 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_A = 25°C, V_{SS} = 0V)

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

Recommended Operating Conditions

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

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