INNOVATIVE SEMICONDUCTORS, INC.

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ISI-770
1394a Audio/Video Link Layer IP with 5C support

IEEE 1394

IEEE 1394 is a high-speed serial bus standard that allows video and audio consumer devices to communicate quickly, reliably, and inexpensively with a PC and with each other.

FlexFire™ Architecture

Innovative Semiconductors' FlexFire architecture is based on a set of parameterized building blocks that can be quickly and easily configured to support a wide range of 1394 applications. The FlexFire 1394a family includes general purpose and application-specific cores for Link Layer Controllers as well as a PHY.

FlexFire offers a fast and convenient way to incorporate Firewire capabilities into products such as digital cameras, set-top-boxes, audio/video devices, disk controllers, and other PC peripherals.

ISI-770 A/V Link Layer Core

The ISI-770 provides the interface to connect video devices to the high speed 1394 serial bus, at speeds up to 400 Mbits/sec.

The core can be used in set-top boxes, digital TV/VCRs, video PCs, or any application that requires isochronous video data transfer according to the IEC 61883 specification. A 5C encryption/decryption block is available as an option.

The ISI-770 can be integrated with Innovative's ISI-736 Mixed Signal PHY core for a single chip 1394a Audio/Video solution. The ISI-770 is available in synthesizable RTL, and includes a comprehensive test bench and validation suite, synthesis scripts, and user documentation.

Features

- Compliant with IEEE 1394a Link Layer specification
- Supports 100, 200, and 400 Mbits/sec transfer rates
- Supports IEC 61883 standard
- Optional support for 5C encryption
- Works with Innovative's ISI-736 Mixed Signal PHY Layer core, or with commercial PHY chips
- Based on parameterized building blocks that can be configured for a wide range of A/V applications
- Performs jitter compensation
- Supports CIP, PCR, and FCP
- Provides full Link Layer support, plus some Transaction Layer and Bus Management functions
- Supports asynchronous and isochronous transfers, including multi-channel isochronous receive
- Cycle master capable
- 8, 16, or 32-bit application bus interfaces to common embedded processors
- Dynamically configurable FIFO functionality, number, and size
- Detects late packet and sequence errors

FlexFire™ 1394a Core Family

- **ISI-755**: *General purpose Link*
- **ISI-758**: *Link compatible with Texas Instrument's GPLynx™*
- **ISI-770**: *Audio/Video Link with 5C encryption*
- **ISI-736**: *1394a Cable PHY*
- **ISI-738**: *1394 Backplane PHY*