

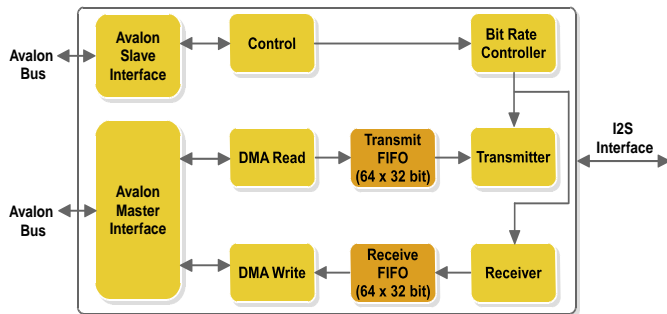
IP Core

I²S Controller

I²S Controller is designed to transfer audio data to and from Audio codec. It can be configured as both Master and Slave mode through software. The Core is Phillips Inter IC Sound (I²S) specification compliant.

It is provided as Altera SOPC Builder ready component and integrates easily into any SOPC Builder generated system.

Architecture



Features

- 8-bit and 16-bit sampling data width support
- Variable sampling rate support
- Used in both Master/Slave mode
- Internal two 64 x 32 bit FIFO for data buffering
- 32-bit DMA engine for both data transmit and receive for reducing CPU overhead
- Transmit and Receive Operation
- Compliant with the Avalon bus
- Left and Right channel support

Implementation Results

Supported Families	Resource Utilization	Performance (Fmax) MHz	Memory Blocks
Cyclone III	800 LE	176	2 M9K
Cyclone IV	815 LE	158	2 M9K
Cyclone V	339 ALM	141	2 M10K
Stratix III	512 ALUT	142	2 M9K
Stratix IV	514 ALUT	142	2 M9K
Stratix V	340 ALM	160	2 M9K
Arria II	514 ALUT	160	2 M9K
Arria V	318 ALM	192	2 M10K
MAX 10	769 LE	146	2 M9K

Note: The implementation results may change upon core revision

Deliverables

Contents	Eval	Full
OpenCore Plus Evaluation: One (1) month evaluation license at no cost	✓	
Full Version: One (1) Year development license with full version purchase for single project and single site. Note: Other licensing schemes are also available.		✓
Time-limited (4 hours) SOF generation support for NEEK Kit (Cyclone III 3C25)	✓	
Full programming files generation support for NEEK Kit (Cyclone III 3C25)		✓
Nios II Application I2S application	✓	✓
Documentation: 1) IP Core user guide 2) Hardware and Simulation tutorial	✓	✓

Applications

- It is used in communication with any I²S compliant audio codec to transmit or receive digital audio data.

Verification

- I²S IP Core functionality is tested on NEEK kit

Support

- IP integration support available with the purchase of full version
- Additional support on chargeable basis for a period of 3 months or more
- Core modification support available at additional cost

Licensing

- **OpenCore Plus Evaluation** : 1 month evaluation license at no cost
- **Full** : 1 Year development license with full version purchase for single project and single site
- **Renewal** : OpenCore Plus Evaluation license update at discounted price

Download the evaluation version for the core from <http://www.slscorp.com/ip-cores/interface/i2s-controller.html>