

Overview

The IPB-I2S-TDM core is a serial audio transceiver designed to input and output digital audio streams in TDM full duplex.

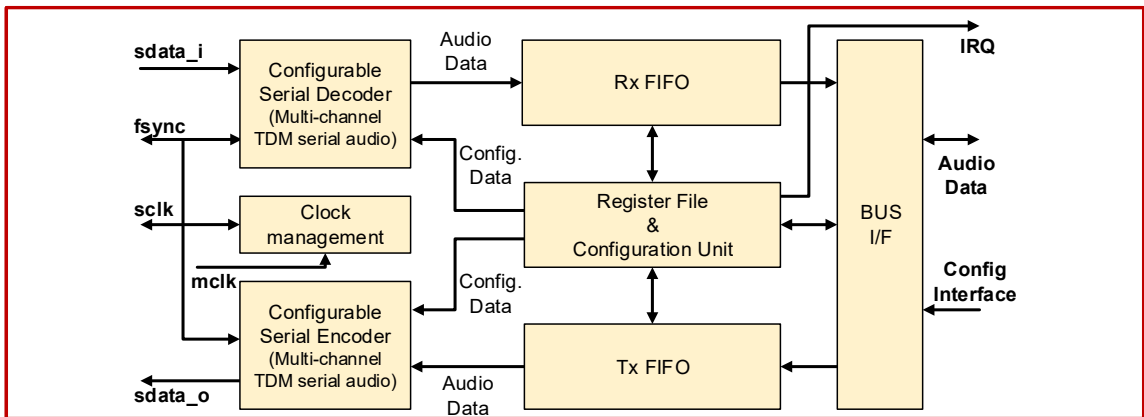
The IPB-I2S-TDM core also supports the well-known stereo formats: I²S, Left-Justified or Right-Justified.

The backend interface is supplied with a choice of AMBA-AXI, AMBA-AHB, AMBA-APB, Avalon-MM or a parallel interface.

Deliverables

- Datasheet and user documentation for system integration
- Verilog source code or FPGA netlist
- RTL testbench
- Synthesis and implementation constraints
- Example software driver

Block Diagram



Features

- Runtime configurable audio format: multi-channel serial audio (TDM) and also I²S, Left-Justified, and Right-Justified
- Full duplex operation
- Supports all commonly used sample rates including 32, 44.1, 48, 96 and 192 kHz
- Runtime configurable sample width, ranging from 8 to 32 bits per sample
- Pre-synthesis configurable sample FIFO size
- Reports FIFO full and empty conditions and the number of samples in the FIFOs
- Supports slave or master modes of the audio bus
- Supports up to 128 audio channels

Benefits

- Permits rapid development of a TDM audio front-end interface for a multitude of vendor specific formats
- Choice of different backend interfaces
- Small silicon area

Disclaimer: IPbloq reserves the right to modify the current technical specifications without notice

Xilinx FPGAs	Slices	LUTs	REGs	F _{max} (MHz)
Spartan-6™	393	975	642	194
Virtex-6™	328	914	666	250

Intel FPGAs	LEs / ALUTs	F _{max} (MHz)
Cyclone®-IV	1632	174
Stratix®-IV	1210	253

ASICs	Area (mm ²)	F _{max} (MHz)
TSMC 130 nm	0.074	270
TSMC 90 nm	0.040	407
TSMC 65 nm	0.024	544

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