SocLib Components General Index

!!!! UNDER CONSTRUCTION !!!!

ST231 Processor Functional Description

The ST231 processor core is an hardware component implementing a 7-stage VLIW processor with register scoreboarding and 32-bit x 32-bit multiplies for integer and fractional data representations. Though a MMU was also added so the ST231 can be used as a host processor, this processor is mostly used in digital video consumer electronics.

This component is an ISS, which should be wrapped with an IssWrapper for integration into a complete platform.

This instruction set simulator acts as a slave to the IssWrapper and is organised identically to the other Isses available within the library.

Component definition

Available in source: trunk/soclib/soclib/lib/st231/metadata/st231.sd

Usage

ST231 has no parameters.

```
Uses( 'st231')
```

Microblaze Processor ISS Implementation

The implementation is in

- st231.hh, st231.cpp : Defines the class ST231iss which is the impementation of the ISS respecting the IssWrapper interface.
- cpu/st231_isa.hh, cpu/st231_isa.cpp : Implements the ST231 instruction set.
- cpu/bundle.hh, cpu/bundle.cpp : Implements the VLIW instruction bundle.
- cpu/exception.hh, cpu/exception.cpp : Implements the associated exceptions.
- cpu/soclib_symtab.hh, cpu/soclib_symtab.cpp : Implements the associated symbol table.
- cpu/cpu_tlmt.hh, cpu/cpu_tlmt.cpp : Implements the CPU including the 7-stage pipeline.

Template parameters

This component has no template parameters.

Constructor parameters

```
ST231iss(
    uint32_t ident       // processor id
);
```

Ports

The `IssWrapper` module is in charge of defining the communication ports.