Summary - SI5338

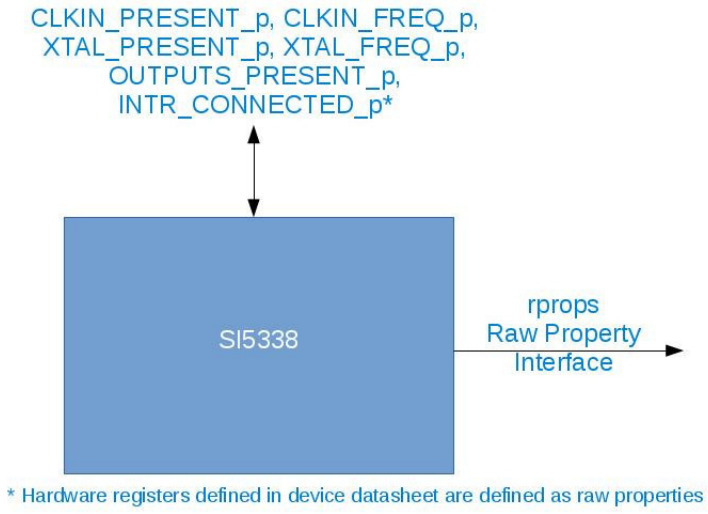
Name	si5338
Worker Type	Device
Version	v1.3
Release Date	February 2018
Component Library	ocpi.assets.devices
Workers	si5338.hdl
Tested Platforms	Matchstiq-Z1(PL)

Worker Implementation Details

The SI5338 device worker uses the raw property interface to expose the features and hardware registers of the SI5338 IC to the OpenCPI framework.

Block Diagrams

Top level



Source Dependencies

si5338.hdl

- ocpiassets/hdl/devices/si5338.hdl/si5338.vhd

Component Spec Properties

Name	Type	SequenceLength	ArrayDimensions	Accessibility	Valid Range	Default	Usage
CLKIN_PRESENT_p	Bool	-	-	Readable, Parameter	-	0	Input Clock Presence Parameter
CLKIN_FREQ_p	Float	-	-	Readable, Parameter	-	0	Input Clock Frequency
XTAL_PRESENT_p	Bool	-	-	Readable, Parameter	-	0	Crystal Oscillator Input Presence Parameter
XTAL_FREQ_p	Float	-	-	Readable, Parameter	-	0	Crystal Oscillator Input Frequency
OUTPUTS_PRESENT_p	Bool	-	4	Readable, Parameter	-	0	Output Connection Presence Parameter
INTR_CONNECTED_p	Bool	-	-	Readable, Parameter	-	0	Interrupt Connection Presence Parameter

All other properties in the Component Spec are Raw Properties and were derived from the device datasheet[1]. The Raw Properties are intended to match the ICs hardware registers exactly.

Worker Interfaces

si5338.hdl

Type	Name	DataWidth	Advanced	Usage
RawProp	rprops	-	Master=true	Raw properties connection for slave I2C device worker
ControlInterface	-	-	Timeout=131072	Control clock cycles required to complete property read/write. I2C transactions require additional clock cycles to complete than the default of 16

Control Timing and Signals

The SI5338 HDL device worker uses the clock from the Control Plane and standard Control Plane signals.

Performance and Resource Utilization

si5338.hdl

Table 1: Worker Build Configuration "0"

OpenCPI Target	Tool	Version	Device	Registers	LUTs	Fmax (MHz)	Memory/Special Functions
stratix4	Quartus	15.1.0	N/A	62	106	N/A	N/A
virtex6	ISE	14.7	6vcx75tff484-2	56	112	501.643	N/A
zynq	Vivado	2017.1	xc7z020clg400-3	59	77	350.508	N/A
zynq_ise	ISE	14.7	7z010clg400-3	56	112	644.371	N/A

Test and Verification

There is no unit test for this device worker. The test and verification of this worker is covered in the Matchstiq I2C device worker. See the component datasheet of this worker for more details.

References

[1] SI5338 Product Data Sheet
https://www.silabs.com/Support Documents/TechnicalDocs/AN619.pdf