Summary - PCA9535

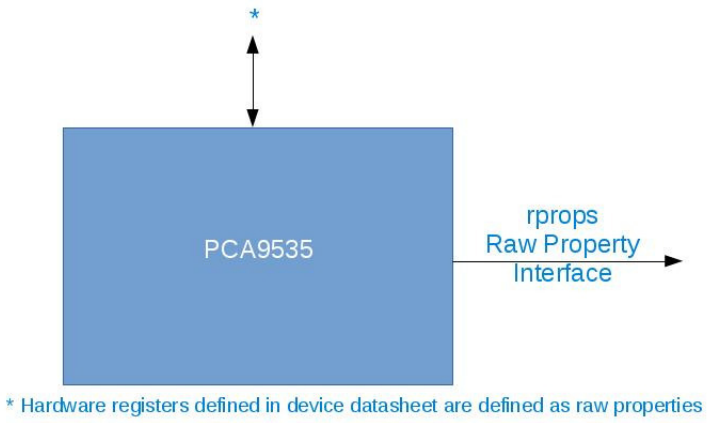
Name	pca9535
Worker Type	Device
Version	v1.3
Release Date	February 2018
Component Library	ocpi.assets.devices
Workers	pca9535.hdl
Tested Platforms	Matchstiq-Z1(PL)

Worker Implementation Details

The PCA9535 device worker uses the raw property interface to expose the features and hardware registers of the PCA9535 IC to the OpenCPI framework.

Block Diagrams

Top level



Source Dependencies

pca9535.hdl

- ocpiassets/hdl/devices/pca9535.hdl/pca9535.vhd

Component Spec Properties

All 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

pca9535.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 PCA9535 HDL device worker uses the clock from the Control Plane and standard Control Plane signals.

Performance and Resource Utilization

pca9535.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	46	63	N/A	N/A
virtex6	ISE	14.7	6vcx75tff484-2	44	55	761.383	N/A
zynq	Vivado	2017.1	xc7z020clg400-3	41	57	351.124	N/A
zynq_ise	ISE	14.7	7z010clg400-3	40	55	871.000	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] PCA9535 Product Data Sheet
http://www.nxp.com/documents/data_sheet/PCA9535_PCA9535C.pdf