

OpenCPI
Real Digitizer Component Data Sheet

OpenCPI Release: v2.4.6

Revision History

Revision	Description of Change	Date
v1.0	Initial release.	2/2016
v1.4	Updated formatting, block diagram, and performance and resource utilization. Updated source dependencies to reflect new assets project directory name.	9/2018
v1.5	Added <code>enable_printing</code> and <code>sync_criteria_met</code> properties to <code>real_digitizer.rcc</code> . Also added functional diagram and <code>xilinx13_4</code> as a tested platform.	4/2019

Summary - Real Digitizer

Name	real_digitizer
Worker Type	Application
OpenCPI Release	v2.4.6
Last Update	4/2019
Component Library	ocpi.assets.dsp_comps
Workers	real_digitizer.rcc
Tested Platforms	CentOS7, xilinx13_3, xilinx13_4

Worker Implementation Details

real_digitizer.rcc

This worker performs symbol decisions by decoding signed real Q0.15 symbols into bits. Each positive symbol is decoded to a 1 and each negative symbol is decoded into a 0. Once the sync criteria is met, the decoded bits are packed into 16-bit words which are subsequently sent to the output port. The sync criteria is met when a) the `need_sync` property has a value of false, or b) the first 0xFACE sequence occurs in the decoded bits. When the first 0xFACE sequence occurs in the decoded bits and the `enable_printing` is true, the following is printed to stdout:

```
sync pattern 0xFACE found
```

Block Diagrams

Top level

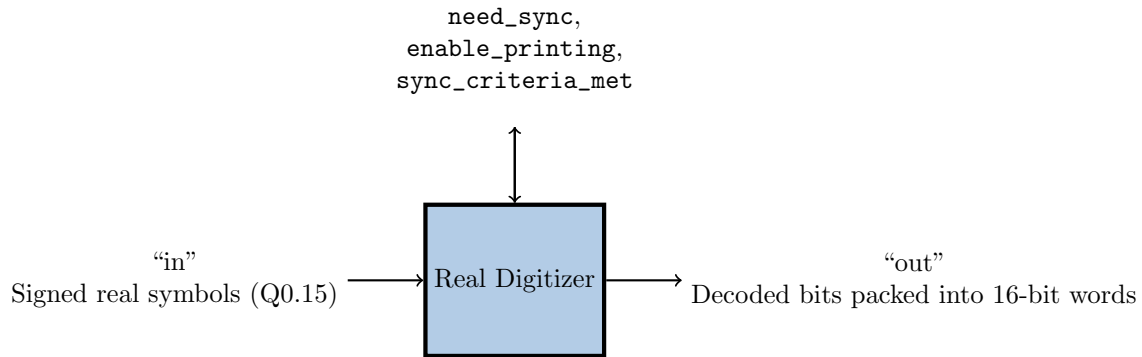


Figure 1: real_digitizer.rcc Worker Diagram

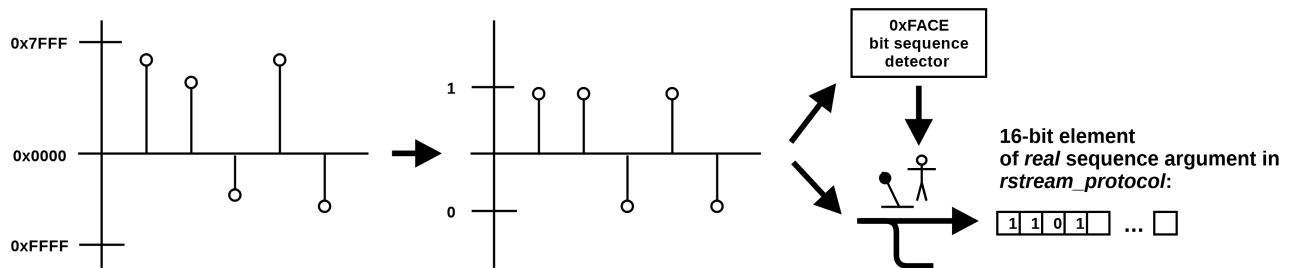


Figure 2: real_digitizer.rcc Functional Diagram

Source Dependencies

`real_digitizer.rcc`

- `projects/assets/components/dsp_comps/real_digitizer.rcc/real_digitizer.c`

Component Properties

Name	Type	SequenceLength	ArrayDimensions	Accessibility	Valid Range	Default	Description
need_sync	Bool	-	-	Readable, Initial	Standard	True	-

Worker Properties

real_digitizer.rcc

Name	Type	SequenceLength	ArrayDimensions	Accessibility	Valid Range	Default	Description
need_sync	Bool	-	-	Readable, Initial	Standard	True	-
enable_printing	Bool	-	-	Writable	Standard	True	Enable stdout/stderr printing.
sync_criteria_met	Bool	-	-	Volatile	Standard	-	Indicates either 0xFACE found or need_sync is false.

Component Ports

Name	Producer	Protocol	Optional
in	False	rstream_protocol.xml	False
out	True	rstream_protocol.xml	False

Worker Interfaces

real_digitizer.rcc

Name	Producer	Protocol	Optional
in	False	rstream_protocol.xml	False
out	True	rstream_protocol.xml	False

Test and Verification

No unit test currently exists for this worker.