

Introduction

The Utility Reduced Logic core applies a logic reduction function over an input vector to generate a single bit result. The core is intended as glue logic between peripherals. The logical operations supported are AND, OR, XOR and NOT.

Additional Information

See the [product page](#).

Features

- Configurable size of the input vector
- Configurable reduced logic operation over the input vector

LogiCORE IP Facts Table	
Core Specifics	
Supported Device Family ⁽¹⁾	UltraScale+™, UltraScale™, Zynq® -7000, Artix®-7, Virtex® -7, Kintex®-7
Supported User Interfaces	N/A
Provided with Core	
Design Files	VHDL
Example Design	Not Provided
Test Bench	Not Provided
Constraints File	None
Simulation Model	VHDL
Supported S/W Driver	N/A
Tested Design Flows⁽²⁾	
Design Entry	Vivado® Design Suite
Simulation	For supported simulators, see the Xilinx Design Tools: Release Notes Guide .
Synthesis	N/A
Support	
Provided by Xilinx at the Xilinx Support web page	

Notes:

1. For a complete listing of supported devices, see the Vivado IP catalog.
2. For the supported versions of the tools, see the [Xilinx Design Tools: Release Notes Guide](#).

Overview

Figure 1 shows a Utility Reduced Logic in a system.

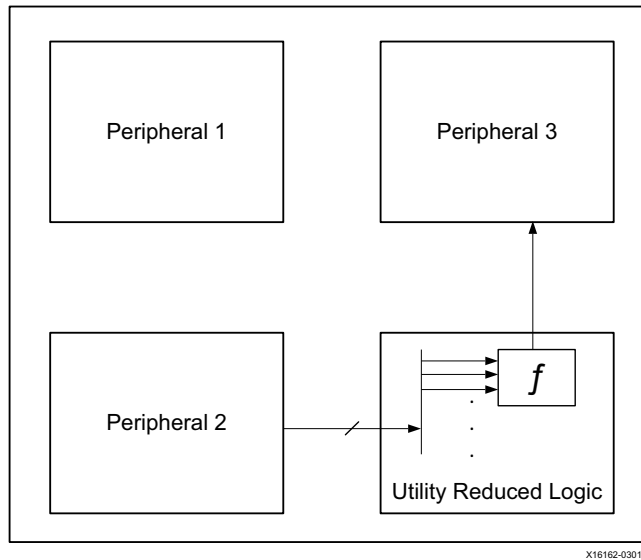


Figure 1: Utility Reduced Logic in a System

Block Diagram

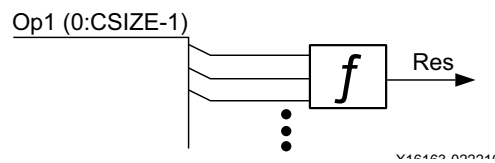


Figure 2: Utility Reduced Logic Block Diagram

I/O Signals

Table 1: I/O Signals

Signal	Interface	I/O	Description
Op1	None	I	Input bus [0: C_SIZE-1]
Res	None	O	One bit output signal. Result from the reduced logic operation.

Design Parameters

Table 2: Design Parameters

Parameter	Description	Type
C_SIZE	The vector size of input bus. Minimum value is 1.	Integer
C_OPERATION	The vector operation to perform. The supported functions (f) are: and, or, xor, not	String

There are no restrictions on allowed parameter combinations for this core.

Parameter-Port Dependencies

Table 3: Port and Parameter Dependencies

Name	Affects	Depends	Relationship Description
Design Parameters			
C_SIZE	Op1	0 to C_SIZE-1	Scale width of input bus
Port Signals			
Op1		C_SIZE	Scale width of input bus

Design Implementation

Design Tools

Note: This IP can only be used in the Vivado® IP integrator. It is not designed to be used in an RTL-only design flow within the Vivado Design Suite.

HDL code is generated by the Vivado IP integrator.

Target Technology

The target technologies are UltraScale+™, UltraScale™, Zynq®-7000, and 7 series devices.

Device Utilization and Performance Benchmarks

Table 4: Resource Utilization

Parameter Value		Device Resources		
C_OPERATION	C_SIZE	Slices	Slice Flip-Flops	Slice LUTs
"and"	8	2	0	2
"or"	8	2	0	2
"xor"	8	2	0	2

Technical Support

Xilinx provides technical support at the [Xilinx Support web page](#) for this LogiCORE™ IP product when used as described in the product documentation. Xilinx cannot guarantee timing, functionality, or support if you do any of the following:

- Implement the solution in devices that are not defined in the documentation.
- Customize the solution beyond that allowed in the product documentation.
- Change any section of the design labeled DO NOT MODIFY.

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Revision History

Date	Version	Revision
04/09/2018	2.0	<ul style="list-style-type: none"> • Changed the minimum value of the C_SIZE parameter to 1 in Table 2. • Updated the legal notices.
04/16/2016	2.0	Initial Xilinx release of this product brief

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