ASMD\_MULTIPLIER\_TESTPLAN

Module Name/Internal ID: ASMD\_MULT

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# Revision

| Rev | Comments | Date | Approval: Team/Date |
| --- | --- | --- | --- |
| 1.0 | Initial Creation | 8/7/2023 | 9/21/2023 |

# Required Documents

|  |  |  |
| --- | --- | --- |
| ID | Name | Revision |
|  |  |  |

# Supplemental Documents

|  |  |  |
| --- | --- | --- |
| ID | Name | Revision |
| ASM | Algorithmic\_state\_machine (Wikipedia) | https://en.wikipedia.org/wiki/Algorithmic\_state\_machine |

# Acronyms

|  |  |
| --- | --- |
| Abbreviation | Definition |
| ASMD | Algorithmic state machine with datapath |

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# Scope

This document describes in detail, the test plan and test results for the XXX module.

# Functional Verification

* 1. Interface

ASMD\_MULT\_F001: Verify that the module implements the interfaces described in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| Port | Direction | Width | Description |
| clk | input | 1’b1 | Input Clock Signal |
| rst | input | 1’b1 | Input Synchronous Reset Signal |
| start | input | 1’b1 | Input Module Start Signal |
| word0 | input | [word-length]’b1 | Input Word0 |
| word1 | input | [word-length]’b1 | Input Word1 |
| ready | output | 1’b1 | Module Ready Output Signal |
| produce | output | [word-length’2] | Module Multiplication Product Output |

* 1. Parameters

ASMD\_MULT\_F002: Verify that module implements the parameters described in the following table:

|  |  |  |
| --- | --- | --- |
| Name | Default Value | Description |
| word\_length | 4 | Input Word Size In Bits |

* 1. Logic Requirements

1. ASMD\_MULT\_F003: Module shall, upon assertion of reset:

a. assert ready.

b. Assign product to zeros.

2. ASMD\_MULT\_F004: Module shall, upon assertion of start:

a. deassert ready.

b. Calculate the product of word0 \* word1.

c. Assert ready only when the multiplication computation is complete.

d. Ouput the the multiplcation computation on the product output port.