FPGA Project Test Results

1-Level Parallelization with BRAM:

- **Inference Time:** 1,096,045.000 ns
- **Design Reports:**

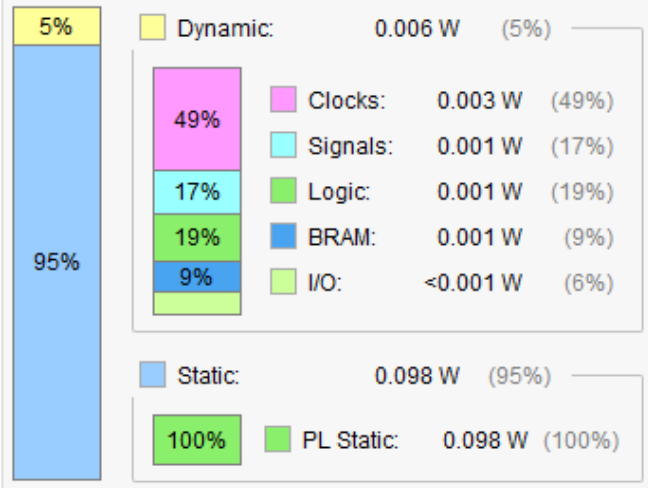
Resource	Utilization	Available	Utilization %
LUT	786	63400	1.24
FF	455	126800	0.36
BRAM	13	135	9.63
IO	14	210	6.67
BUFG	1	32	3.13

Power — **Summary**

Total On-Chip Power:	**0.103 W**
Junction Temperature:	**25.5 °C**
Thermal Margin:	59.5 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Implemented Power Report

Power — Summary | **On-Chip**



Timing	Setup | Hold | Pulse Width
Worst Negative Slack (WNS):	2.428 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	879
Implemented Timing Report	

Timing	Setup | Hold | Pulse Width
Worst Hold Slack (WHS):	0.169 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	879
Implemented Timing Report	

Timing	Setup | Hold | Pulse Width
Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	482
Implemented Timing Report	

1-Level Parallelization without BRAM:

- **Inference Time:** 1,096,035.000 ns
- **Design Reports:**

Resource	Utilization	Available	Utilization %
LUT	2483	63400	3.92
FF	477	126800	0.38
IO	14	210	6.67
BUFG	1	32	3.13

Power

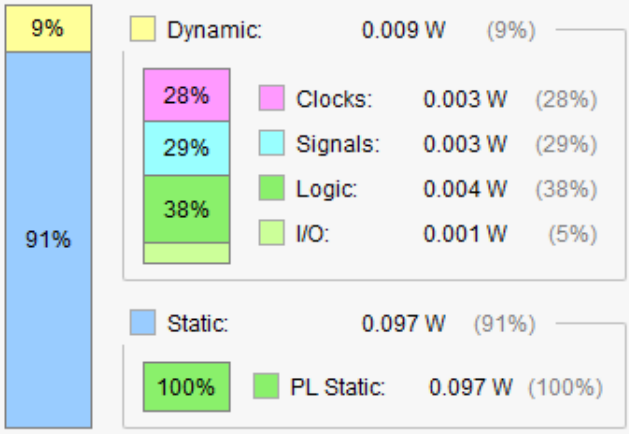
Summary |

Total On-Chip Power:	**0.106 W**
Junction Temperature:	**25.5 °C**
Thermal Margin:	59.5 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Implemented Power Report

Power

Summary | **On-Chip**



Timing

Setup | Hold | Pulse Width

Worst Negative Slack (WNS):	3.564 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	750

Implemented Timing Report

Timing

Setup | **Hold** | Pulse Width

Worst Hold Slack (WHS):	0.115 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	750

Implemented Timing Report

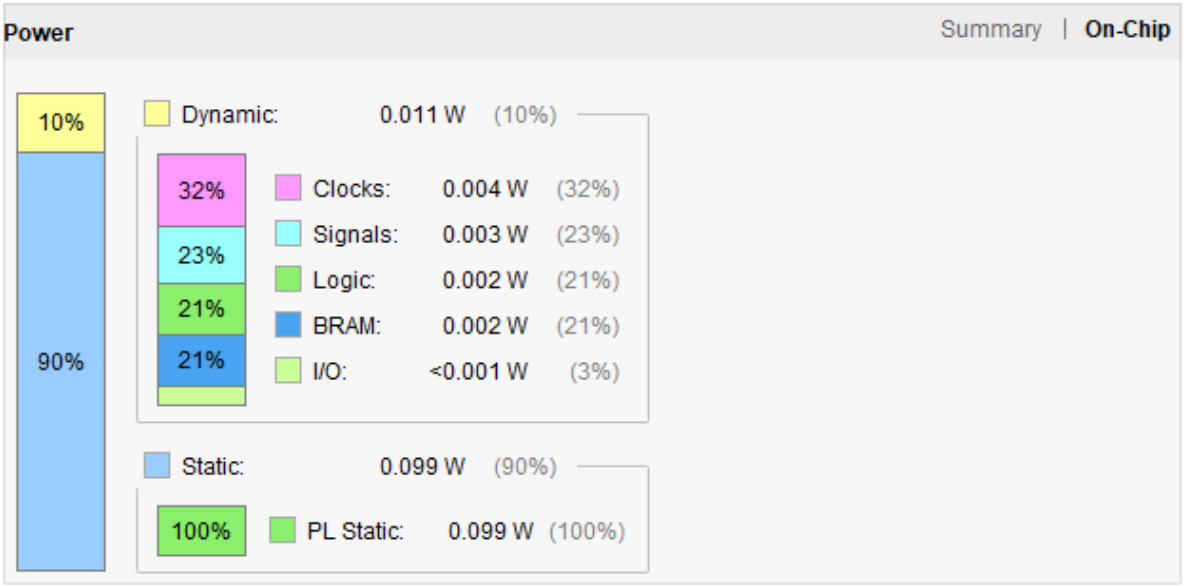
Timing	Setup | Hold | **Pulse Width**
Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	478
Implemented Timing Report	

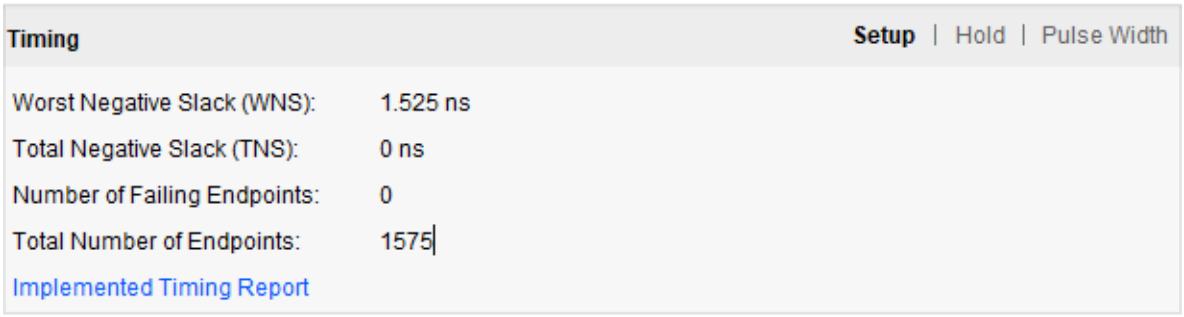
4-Level Parallelization with BRAM:

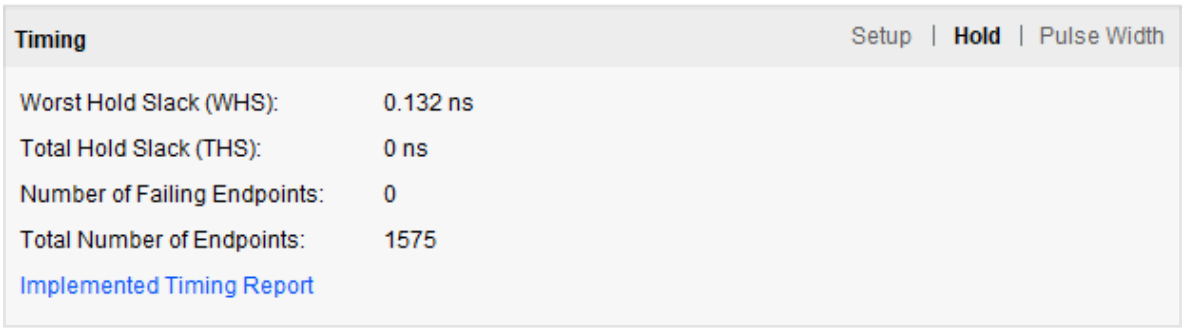
- **Inference Time:** 274,465.000 ns
- **Design Reports:**
-

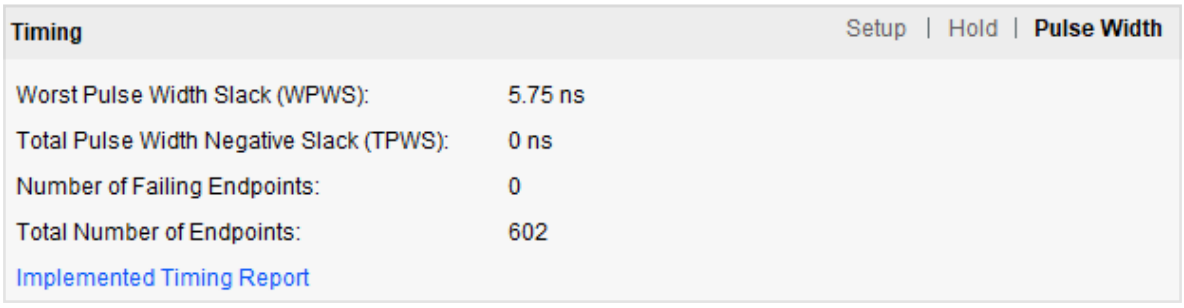
Resource	Utilization	Available	Utilization %
LUT	1661	63400	2.62
FF	497	126800	0.39
BRAM	52	135	38.52
IO	14	210	6.67
BUFG	1	32	3.13

Power	**Summary** | On-Chip
Total On-Chip Power:	**0.111 W**
Junction Temperature:	**25.5 °C**
Thermal Margin:	59.5 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium
Implemented Power Report	









4-Level Parallelization without BRAM:

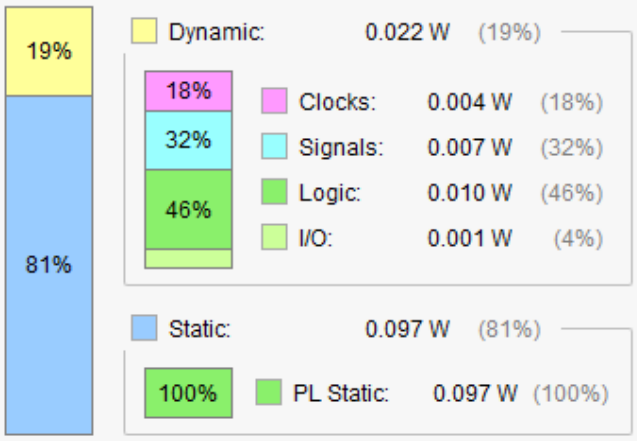
- **Inference Time:** 274,455.000 ns
- **Design Reports:**

Resource	Utilization	Available	Utilization %
LUT	6649	63400	10.49
FF	669	126800	0.53
IO	14	210	6.67
BUFG	1	32	3.13

Power — **Summary** | On-Chip

Total On-Chip Power:	**0.119 W**
Junction Temperature:	**25.5 °C**
Thermal Margin:	59.5 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Power — Summary | **On-Chip**



Timing — **Setup** | Hold | Pulse Width

Worst Negative Slack (WNS):	1.975 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1324

Implemented Timing Report

Timing — Setup | **Hold** | Pulse Width

Worst Hold Slack (WHS):	0.039 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1324

Implemented Timing Report

Timing	Setup | Hold | **Pulse Width**
Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	670

Implemented Timing Report

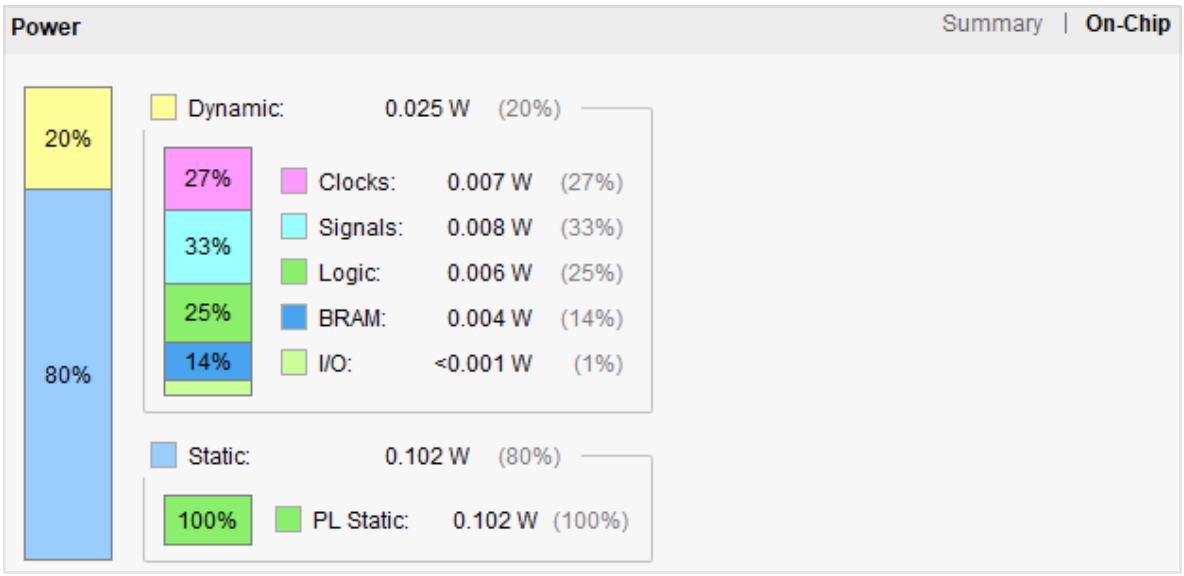
8-Level Parallelization with BRAM:

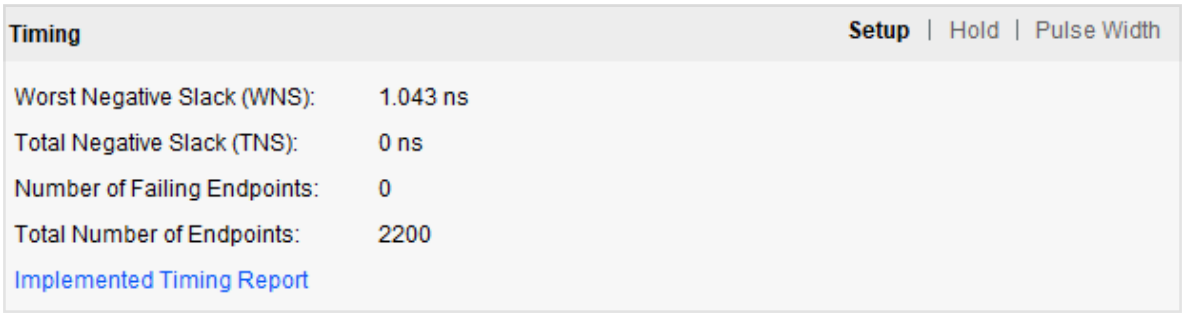
- **Inference Time:** 137,645.000 ns
- **Design Reports:**

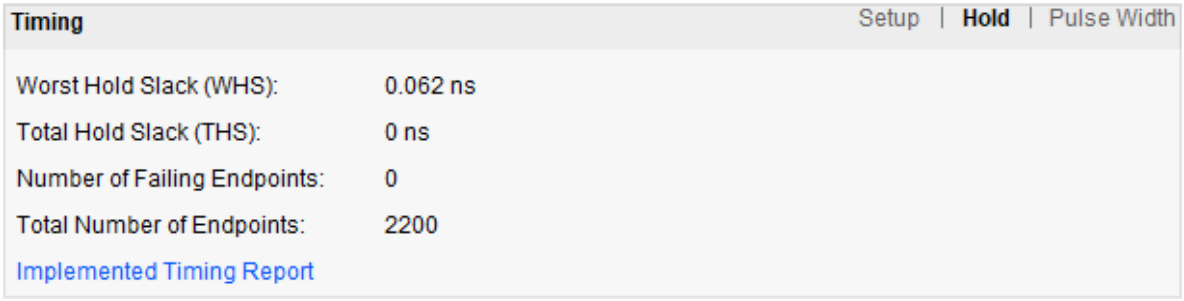
Resource	Utilization	Available	Utilization %
LUT	3093	63400	4.88
FF	605	126800	0.48
BRAM	104	135	77.04
IO	14	210	6.67
BUFG	1	32	3.13

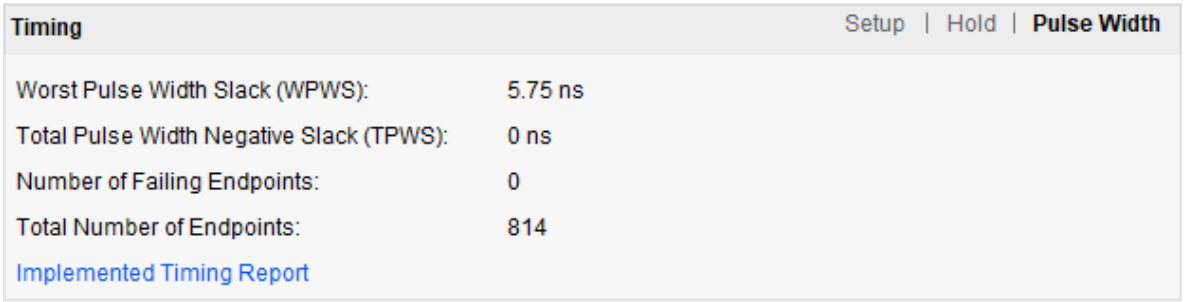
Power	**Summary** | On-Chip
Total On-Chip Power:	**0.127 W**
Junction Temperature:	**25.6 °C**
Thermal Margin:	59.4 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Implemented Power Report









8-Level Parallelization without BRAM:

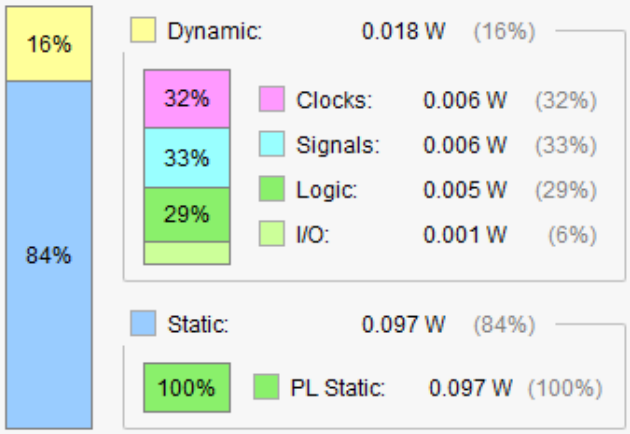
- **Inference Time:** 137,635.000 ns
- **Design Reports:**

Resource	Utilization	Available	Utilization %
LUT	12953	63400	20.43
FF	774	126800	0.61
IO	14	210	6.67
BUFG	1	32	3.13

Power — **Summary** | On-Chip

Total On-Chip Power:	**0.115 W**
Junction Temperature:	**25.5 °C**
Thermal Margin:	59.5 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Power — Summary | **On-Chip**



Timing — **Setup** | Hold | Pulse Width

Worst Negative Slack (WNS):	1.708 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1414

Implemented Timing Report

Timing — Setup | **Hold** | Pulse Width

Worst Hold Slack (WHS):	0.187 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1414

Implemented Timing Report

Timing Setup | Hold | **Pulse Width**

Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	775

Implemented Timing Report

16-Level Parallelization with BRAM:

- **Inference Time:** 68,905.000 ns
- **Design Reports:**

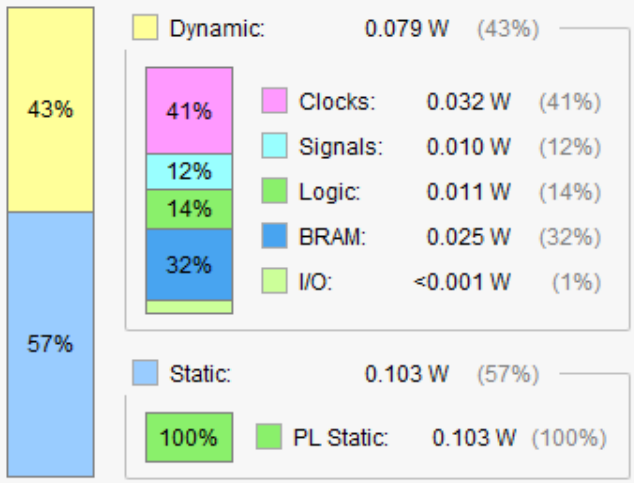
Resource	Utilization	Available	Utilization %
LUT	10364	63400	16.35
FF	5716	126800	4.51
BRAM	132	135	97.78
IO	14	210	6.67
BUFG	1	32	3.13

Power **Summary** | On-Chip

Total On-Chip Power:	**0.183 W**
Junction Temperature:	**25.8 °C**
Thermal Margin:	59.2 °C (12.8 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Implemented Power Report

Power Summary | **On-Chip**



Timing	Setup | Hold | Pulse Width
Worst Negative Slack (WNS):	0.37 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	7562
Implemented Timing Report	

Timing	Setup | Hold | Pulse Width
Worst Hold Slack (WHS):	0.033 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	7562
Implemented Timing Report	

Timing	Setup | Hold | Pulse Width
Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	5981
Implemented Timing Report	

16-Level Parallelization without BRAM:

- **Inference Time:** 68,895.000 ns
- **Design Reports:**

Resource	Utilization	Available	Utilization %
LUT	13786	63400	21.74
FF	992	126800	0.78
IO	14	210	6.67
BUFG	1	32	3.13

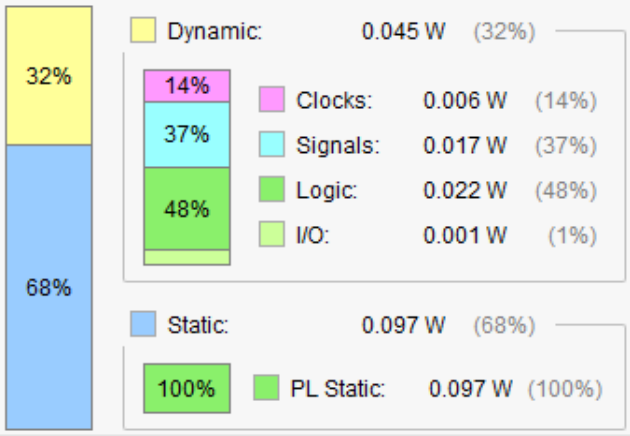
Power

Summary | On-Chip

Total On-Chip Power:	**0.142 W**
Junction Temperature:	**25.6 °C**
Thermal Margin:	59.4 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Power

Summary | **On-Chip**



Timing

Setup | Hold | Pulse Width

Worst Negative Slack (WNS):	1.109 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1950

Timing

Setup | **Hold** | Pulse Width

Worst Hold Slack (WHS):	0.05 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1950

Timing

Setup | Hold | **Pulse Width**

Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	993

32-Level Parallelization with BRAM:

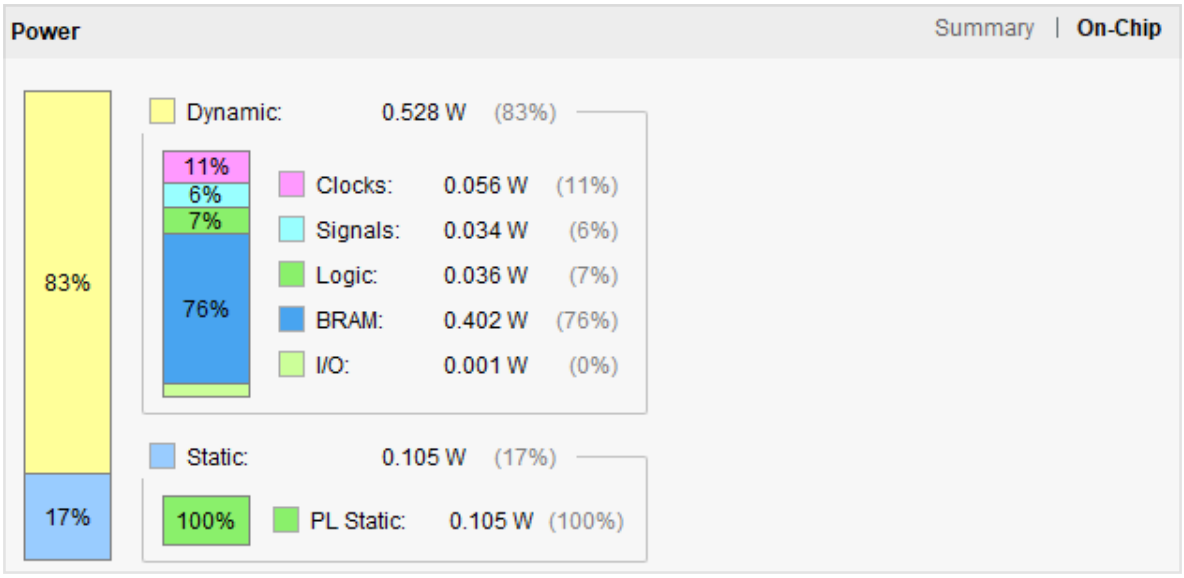
- **Inference Time:** 34,865.000 ns
- **Design Reports:**

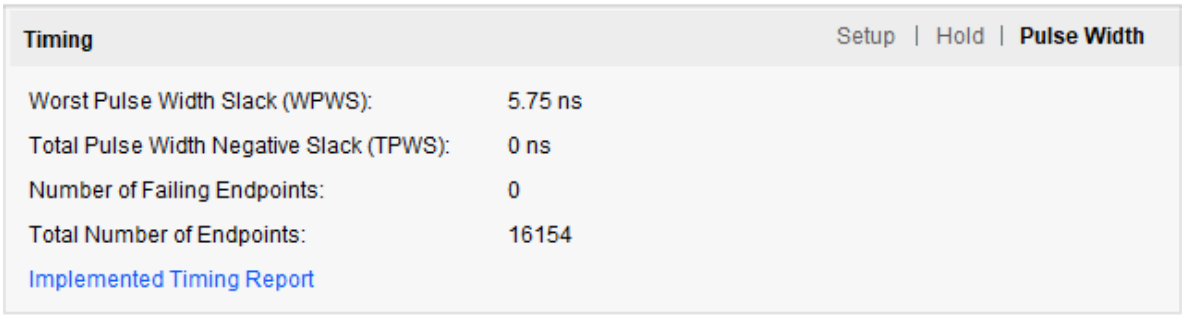
Resource	Utilization	Available	Utilization %
LUT	14401	63400	22.71
FF	15889	126800	12.53
BRAM	132	135	97.78
IO	14	210	6.67
BUFG	1	32	3.13

Power **Summary** | On-Chip

Total On-Chip Power:	**0.633 W**
Junction Temperature:	**27.9 °C**
Thermal Margin:	57.1 °C (12.4 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Implemented Power Report





32-Level Parallelization without BRAM:

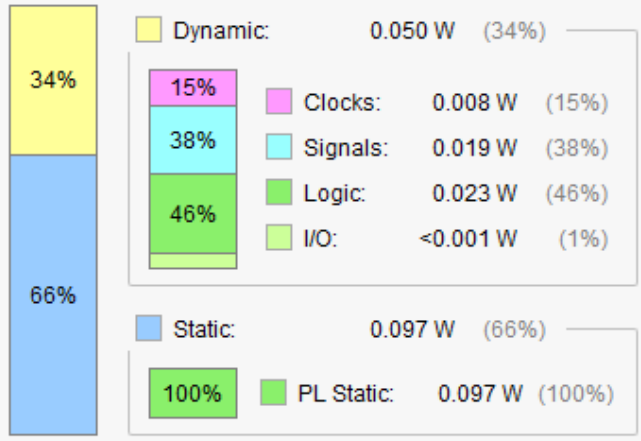
- **Inference Time:** 34,855.000 ns
- **Design Reports:**

Resource	Utilization	Available	Utilization %
LUT	11541	63400	18.20
FF	1217	126800	0.96
IO	14	210	6.67
BUFG	1	32	3.13

Power — **Summary** | On-Chip

Total On-Chip Power:	**0.147 W**
Junction Temperature:	**25.7 °C**
Thermal Margin:	59.3 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Power — Summary | **On-Chip**



Timing — **Setup** | Hold | Pulse Width

Worst Negative Slack (WNS):	1.95 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	2266

Implemented Timing Report

Timing — Setup | **Hold** | Pulse Width

Worst Hold Slack (WHS):	0.129 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	2266

Implemented Timing Report

Timing — Setup | Hold | **Pulse Width**

Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1218

Implemented Timing Report

64-Level Parallelization with BRAM:

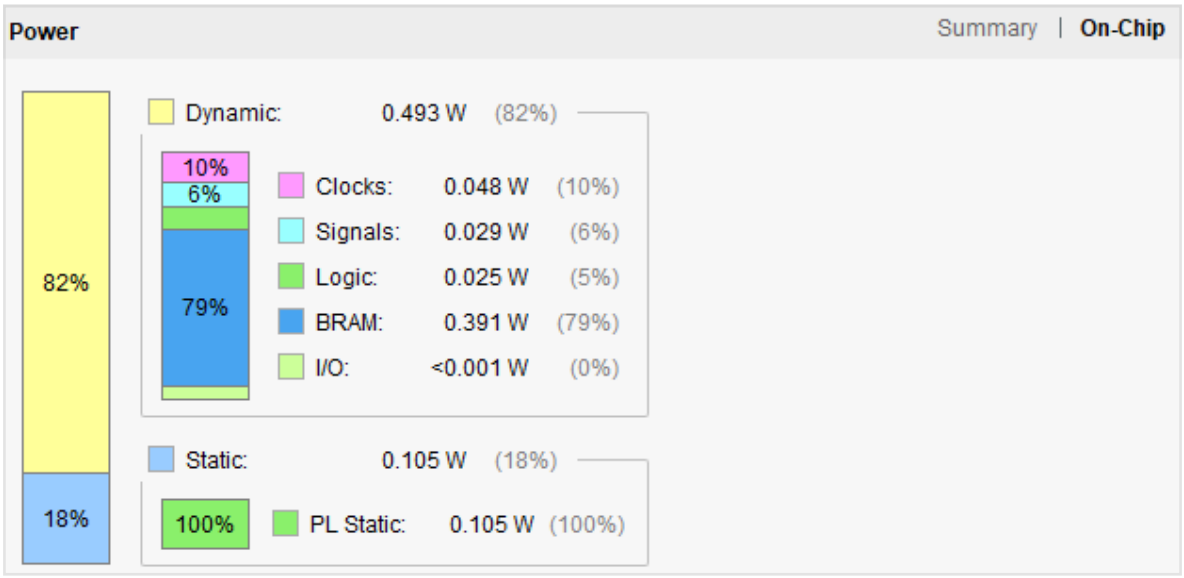
- **Inference Time:** 17,845.000 ns
- **Design Reports:**
-

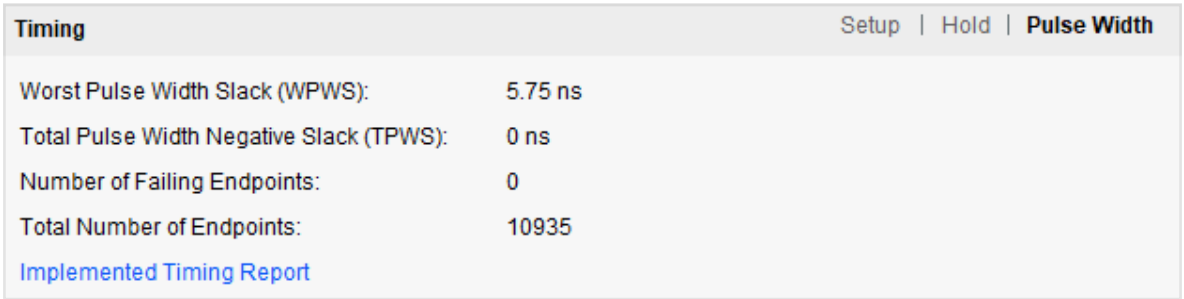
Resource	Utilization	Available	Utilization %
LUT	16494	63400	26.02
FF	10670	126800	8.41
BRAM	132	135	97.78
IO	14	210	6.67
BUFG	1	32	3.13

Power — **Summary** | On-Chip

Total On-Chip Power:	**0.598 W**
Junction Temperature:	**27.7 °C**
Thermal Margin:	57.3 °C (12.4 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

- Implemented Power Report





64-Level Parallelization without BRAM:

- **Inference Time:** 17,835.000 ns
- **Design Reports:**

Resource	Utilization	Available	Utilization %
LUT	15272	63400	24.09
FF	1850	126800	1.46
IO	14	210	6.67
BUFG	1	32	3.13

Power — **Summary** | On-Chip

Total On-Chip Power:	**0.156 W**
Junction Temperature:	**25.7 °C**
Thermal Margin:	59.3 °C (12.9 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Timing — **Setup** | Hold | Pulse Width

Worst Negative Slack (WNS):	0.519 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	3612

Implemented Timing Report

Timing — Setup | **Hold** | Pulse Width

Worst Hold Slack (WHS):	0.04 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	3612

Implemented Timing Report

Timing — Setup | Hold | **Pulse Width**

Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	1851

Implemented Timing Report

128-Level Parallelization without BRAM:

- **Inference Time:** 9,865.000 ns
- **Design Reports:**

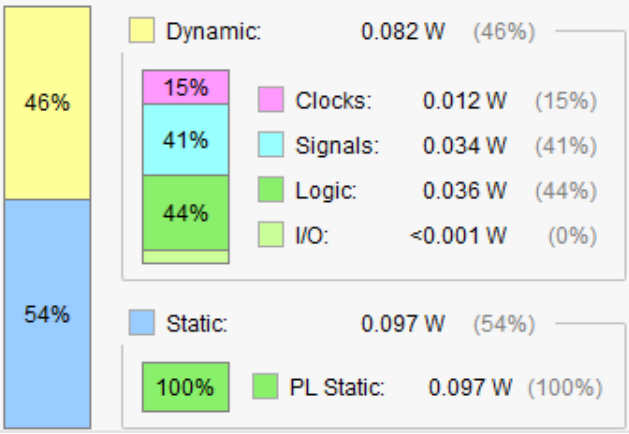
Resource	Utilization	Available	Utilization %
LUT	18626	63400	29.38
FF	3144	126800	2.48
IO	14	210	6.67
BUFG	1	32	3.13

Power — **Summary** | On-Chip

Total On-Chip Power:	**0.179 W**
Junction Temperature:	**25.8 °C**
Thermal Margin:	59.2 °C (12.8 W)
Effective ϑJA:	4.6 °C/W
Power supplied to off-chip devices:	0 W
Confidence level:	Medium

Implemented Power Report

Power — Summary | **On-Chip**



Timing — **Setup** | Hold | Pulse Width

Worst Negative Slack (WNS):	1.163 ns
Total Negative Slack (TNS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	6232

Implemented Timing Report

Timing Setup | **Hold** | Pulse Width

Worst Hold Slack (WHS):	0.025 ns
Total Hold Slack (THS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	6232

Implemented Timing Report

Timing Setup | Hold | **Pulse Width**

Worst Pulse Width Slack (WPWS):	5.75 ns
Total Pulse Width Negative Slack (TPWS):	0 ns
Number of Failing Endpoints:	0
Total Number of Endpoints:	3145

Implemented Timing Report