**Pseudo code for Tangent Hyperbolic Lookup Table**

1. Function Determination.

1. FunctionApproximation.Problem = Tangent Hyperbolic

2. Initialization of fixed-point data sample.

1. Bound = (-4, 4)
2. Word-Length = [4, 8, 14, 16]
3. BreakpointSpecification = [EvenSpacing, ExplicitValues, EvenPow2Spacing]

3. Problem Solving.

4. Problem Comparing

5. Problem Approximating.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FPGA** | **Word Length** | **Delay** | **Multipliers** | **Adders/Subtractors** | **Multiplexers** | **I/O** |
| Xilinx Vivado | 16 | 8.574 | 2 | 6 | 15 | 32 |
| Altera Quartus II | 16 | 6.042 | 2 | 6 | 15 | 32 |
|  |  |  |  |  |  |  |
| Xilinx Vivado | 14 | 8.574 | 2 | 6 | 18 | 32 |
| Altera Quartus II | 14 | 6.042 | 2 | 6 | 18 | 32 |
|  |  |  |  |  |  |  |
| Xilinx Vivado | 8 | 8.574 | 1 | 5 | 7 | 32 |
| Altera Quartus II | 8 | 6.042 | 1 | 5 | 7 | 32 |
|  |  |  |  |  |  |  |
| Xilinx Vivado | 4 | 8.574 | 2 | 6 | 16 | 8 |
| Altera Quartus II | 4 | 6.042 | 2 | 6 | 16 | 8 |