A NEW CDMA ENCODING/DECODING METHOD FOR ON CHIP COMMUNICATION NETWORK.

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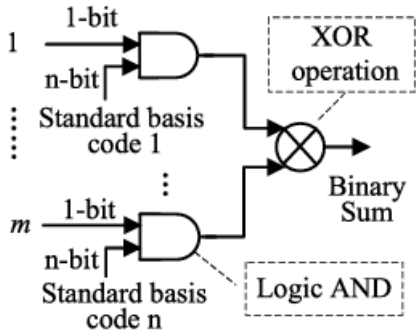
Abstract :
As a high performance on-chip communication. Method,the code division multiple access (CDMA)technique has recently been applied to networks On chip (NOCS).We propose a new standard-basis based Encoding/decoding method the performance and cost of CDMA NOCs in area,power assumption, and network Throughput. In the transmitter module,source data from different Senders are separately encoded with an orthogonal code Of standard basis & these coded data are mixed together By an XOR Operation. Then,the sums of data can be transmitted to their destination through the on chip communication infrastructure. In the receiver module,a sequence of chips is retrieved By taking an AND Operation betn the sums of data andThe corresponding orthogonal code Our method achieves up to 67.86%power saving And 81.24% area saving together with 30% to 50

I. INTRODUCTION

With the rapid growth of the computational complexity,More and more processing elements (PES) are integrated On to a single chip,and this method has been proposedTo address the scalability,throughput,and reliability issue Of on-chip communication.However,conventional packetSwitched method suffers from nondeterministic transmissionLatencyandlimited opportunities for parallel data transfer,Since multiple flows cannot get through a link at the same Time,toresolve the problem,the CDMA(Code divisionMultiple Access) technique effective method for implemented High performance encoding and decoding method.

II. METHODOLOGY

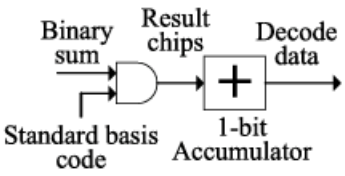
A. SB Encoder



(b)

An original data bit from a sender is fed into an AND gate in a chip-by-chip manner,and it will Be spread to n-chip encoded data with anOrthogonal code of standard basis-Then the encoded data from different senders are mixed together through an XOR operation,and a binary sum signal is generated.Therefore the output signal is always a sequence of binary signal transferred to destination using one single wire.

B. SB Decoder



(b)

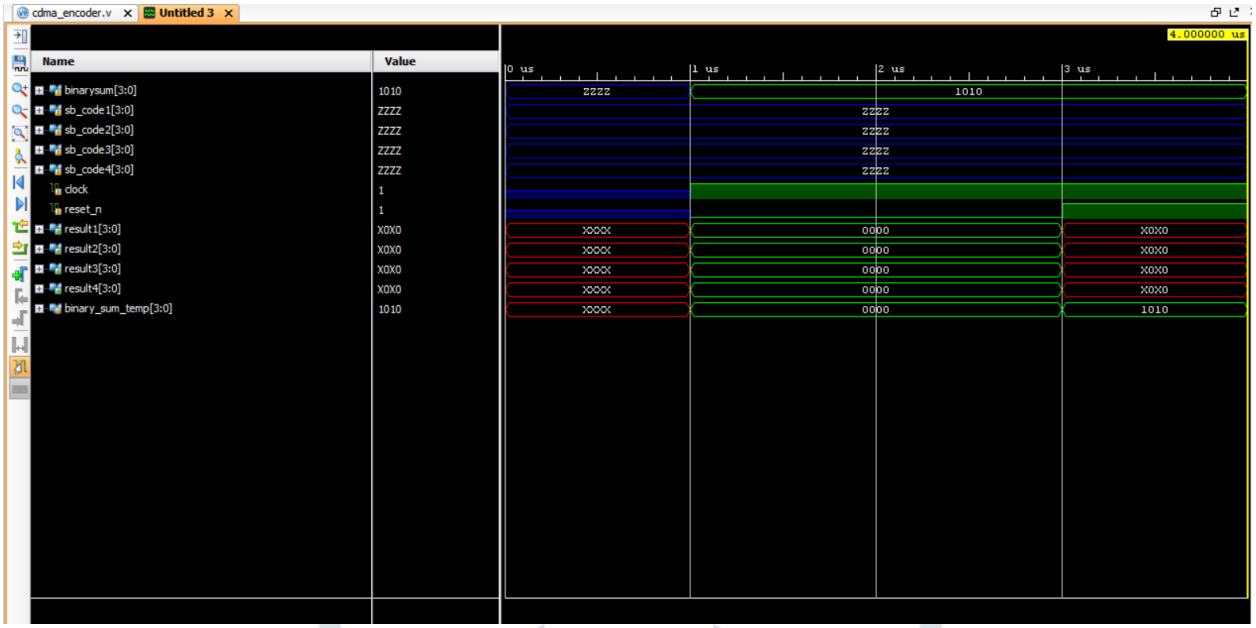
When the binary sum signal arrives at theRx,an AND operation is taken betn th Binary sum and the correspondingOrthogonal code in chip-by-chip mannerThen,the result chips are sent to anAccumulator.After m-chips are accumulate (m-is the length of orthogonal code)The output value of the accumulaWill be the corresponding originaldata.

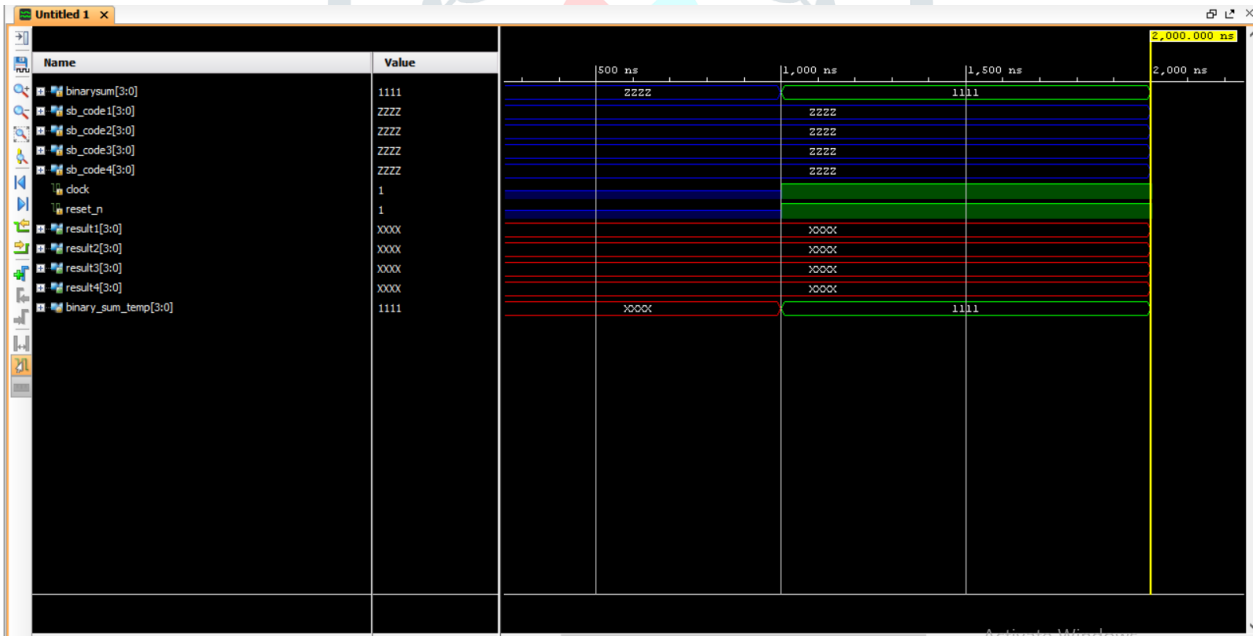
LITERATURE SURVEY:-

Sr.no.	Title	Author	Methodology	Drawback
1	A New CDMA EncodingAnd Decoding Method for On-chipCommunication Network	1)shalini k.j. 2)Nayana M.B. 3)M.Durmi 4)Arshiya Simran 5) Mahadev prasad	In this method our Goal is toEncode the Source dataFrom differentSenders separatelyWith an OrthogonalCode. -These codedData can be Mixed using XOR operation -In the receiver module theData transmittedThrough on Chip communaction Infrastructure Can be decoded using AND Operation betn sums of Data & corresponding Orthogonal code.	1)Design Complexity 2)Low code utilization
2	A New CDMA Encoding/Decoding Method for on-chip communication Network.		1)An origina dataBit fromSender is fed into an AND Gate in a chip-by-chip Manner &itWill be spread to n-Chip encode data with Anorthogonalcodeof astandardbasisThenThe encodeddataFromDifferent sendersAre mixed TogetherThrough XOROperation&a Binary Sum signal Is generated. 2)IntheDecoding methodDecoding operation takenBetn the binarySum & The corresponding Orthogonal code in chip By chip manner.	1)High area 2)High Power.

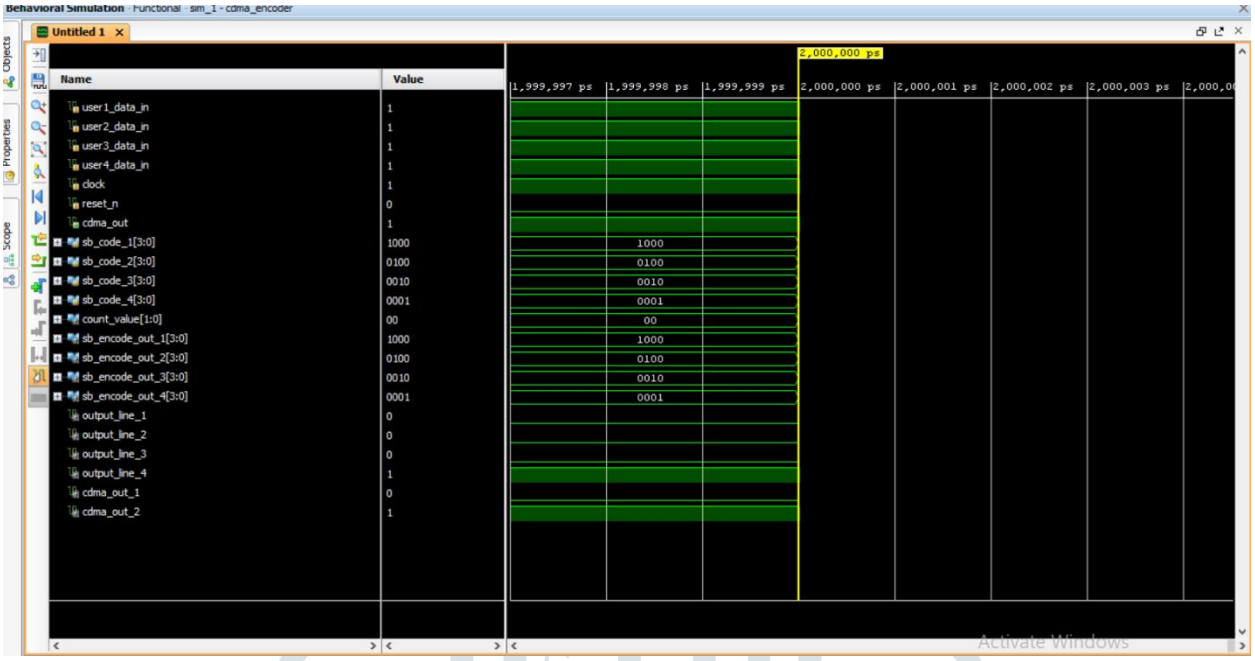
RESULTS AND DISCUSSION:-

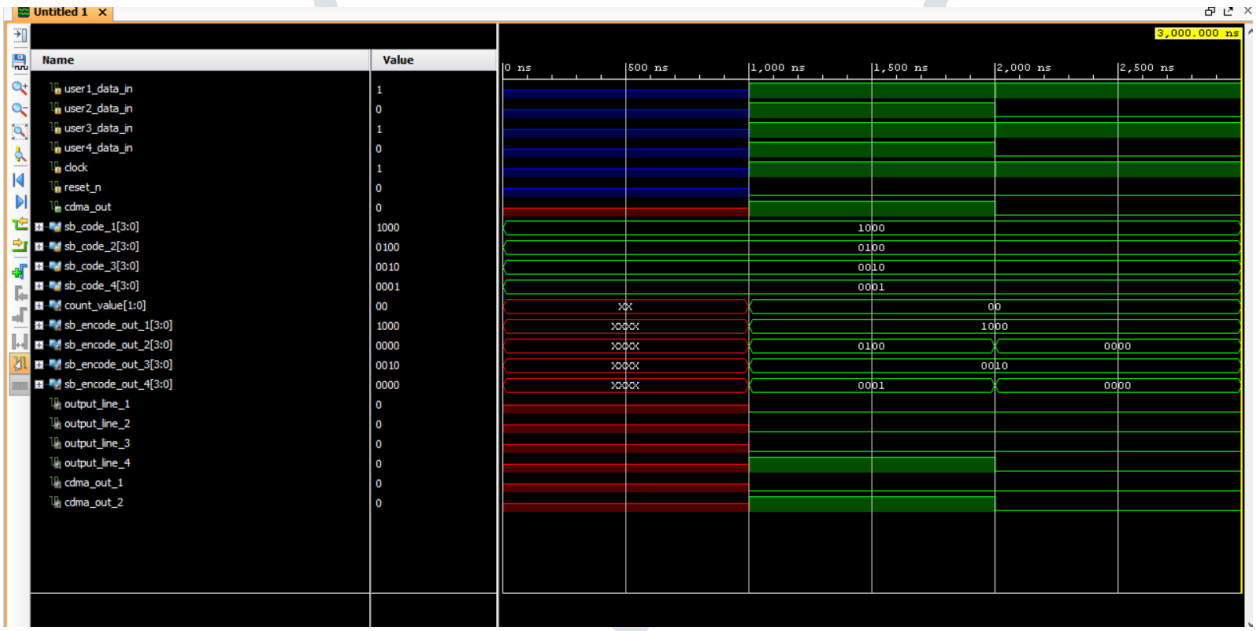
ENCODER SIMULATION RESULT :-





DECODER SIMULATION RESULT: ---





CONCLUSION

CDMA encoding /decoding methods can be efficiently Used for on chip communication. As discussed it can be also efficient RTL Using verilog coded then it can result into less area, less power. In the proposed architecture we are planning to use Standard basis algorithm technique other than Walsh Code. This increases maximum throughput of NOC. The functional correctness of method can be proved by simulation result generated for the verilog RTL.

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