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Title: **DESIGN AN IMAGE ENCODER USING MANCHESTER ARTHEMATIC**

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# DESIGN AN IMAGE ENCODER USING MANCHESTER ARTHEMATIC

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**ABSTRACT** Thecommunity of the research in the last few years has received significant attention from the field of approximate computing, particularly in different signal processing context. The compression algorithms of the image and video such as MPEG and JPEG and so on, which can be exploited to realize the implementations of highly power-efficient of these algorithms. However, existing approximate architectures naturally fix the approximations of hardware levels statically and are not adaptive to the input data. This project addresses this issue through proposing a reconfigurable approximate for encoders of MPEG which optimizes consumption of power with the aim of maintaining a particular peak signal-to-noise ratio threshold for any video. I design reconfigurable adder/ subtract blocks, and later integrate these blocks in the special levels all the video in to image these image wil

be converted to digital form and then compression of theimage

**I.INTRODUCTION** Introducing a limited amount of computingimprecision in image and video dispensation algorithm separately results in aninsignificant amount of perceptible visual Change in the output, which makes these algorithms asideal candidates for the use of Approximate Computing architectures develop the fact that a small relaxation in the output correctness can resultin considerably simplerand lower power implementations.On the other hand,the most approximate hardware architectures projected so far suffer from the restriction that, for widely varyinginput parameters, it becomes very tough to provide a qualitybound on the output, and in some other cases, the output qualitymay be severely degraded. The main reason for this outputquality variation is that the degree of approximation (DA) in the hardware architecture is permanent statically and

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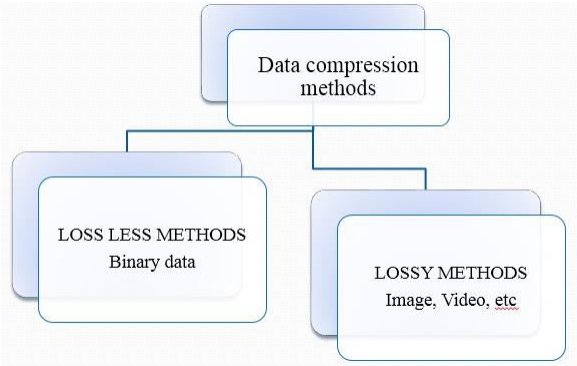
cannotbe modified for different inputs. One possible solution is to assume a conservative approach and use a verylowDA in the hardware so that the output accuracy is not drastically exaggerated. However, such a conventional approach will, as expected, considerably impact the power savings as well.

**II. EXISTED SYSTEM** There are of two compression techniques. One is lossless compression and another one lossycompression.Lossy compression is employed to decrease the data of the image , picture or video. By victimization of this compression technique the receiver could lose some data. It will be loss to the receiver as well as to the sender. In the applications of net and transmission lossy compression is the common usage.




To overcome this drawback of reduction of the information or data, a brand new compression technique was been introduced, i.e., lossless compression.Lossless compression is exactly opposite to lossy compression. Lossy compression is irreversible and lossless compression is reversible compression. Lossless compression sends the image without reduction of the information to the receiver.

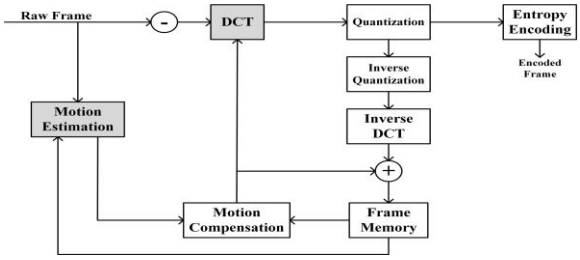



FIG. 2 EXISTED SYSTEM OF BLOCK DIAGRAM

MPEG encoding involves three kinds of frames:1)I-frames (Intra-frame encoded); 2) Pframes (Predicted encoded); and 3) B-frames (Bidirectional encoded). As evident from their names, our-frame is encoded completely for data bits.An I-frame usually proceeds each MPEG data stream. P-frames are constructed using the differences between the current frame and the immediately preceding I or P frame. B-frames are produced relative to the closest two I/P frame on either side of the current frame. The I, P and B frames are further compressed when subjected to DCT, which helps to eliminate and existing interframe spatial redundancy as much as possible.

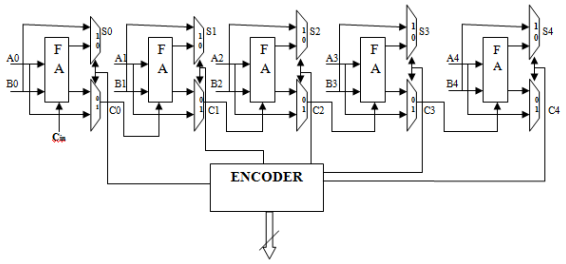



FIG 3. 8-BIT RECONFIGURABLE RCA BLOCK.

Dynamic variation of the DA can be done when each of the adder/subtractor blocks is facilitate with one or more of its approximate copies. As per requirement it is

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able to switch between them. This reconfigurable architecture can comprise of any approximate version of the adders/subtractors. Gupta et al. proposed six different kinds of approximate circuits for adders. Although, it also needs to be verified that the additional area overheads essential for constructing the reconfigurable approximate circuits which are minimal with sufficiently large power savings. Assume as examples, we have chosen the two most naive methods presented, namely truncation and approximation 5, for approximating the adder/subtractor blocks. The final one can also be conceptualized as an enhanced version of truncation as it just relays the two 1-bit inputs, one as Sum and the other as Carry Out. In case A, B, and Cin are the 1-bit inputs to the full adder (FA), then the outputs are Sum = B and Cout = A. The resultant truth-table shows that the outputs are correct for more than half of all input combinations, thus proving to be a better approximation mode than truncation. The Existed scheme replaces each FA cell of the adders/subtractors with a dual-mode FA (DMFA) cell in which each FA cell can operate either in fully accurate or in some approximation mode depending on the state of the control signal APP. A logic high value of the APP signal denotes that the DMFA is operating in the approximate mode. We termed these adders/subtractors as RABs. The FA cell is power-gated when operating in the approximate mode. Synthesis and evaluation of power consumption of a 16-bit RCA were performed in Synopsys Design and Power Compiler. By using Manchester selection we are making as arithmetic units. Our experiments have shown a negligible difference in the power consumption of DFMA when operated in either of the two approximation methods. Hence, without any loss of generality approximation 5 was chosen for its higher probability of giving the correct output result than truncation which invariably outputs 0 irrespective of the input.

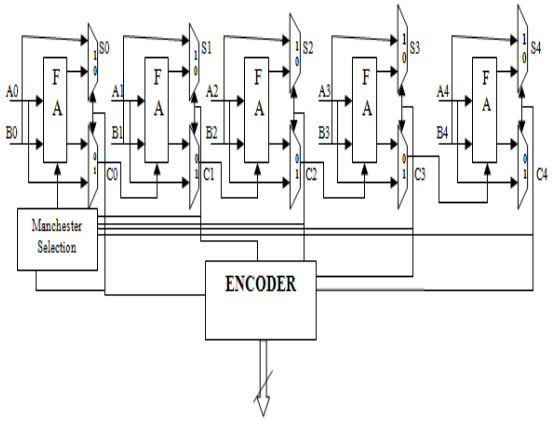


FIG 4. PROPOSED MANCHESTER ENCODER

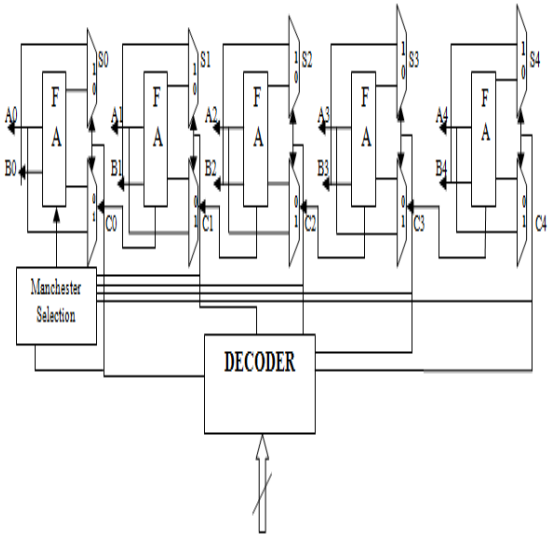


Fig 5.PROPOSED MANCHESTER DECODER.

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In proposed system the Manchester encoder as shown in fig 4 will operate the FAs as per the selection of Manchester coding. The Manchester decoder as shown in fig 5 will perform the operation of decoding as per the selection of Manchester coding. So, the Manchester will perform the operation as per the data. The remaining blocks will be disabled. Hence, it gives fast of operation in less area. By exploitation lossless compression, the receiver won't lose any information or data from the image picture or video. The quality of the image also won't be modified by the Lossless compression. The process of the lossless compression is: At initial stage the information or the data of the image are remodeled into binary forms i.e., zero and one format (0,1). This information can splits into rows and columns. This can be referred to as binirization. During this method the binary digits can forms like bits in a very sequence. And these bits can forward to down as the regular bits

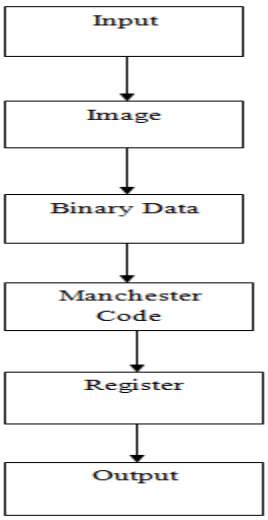


FIG.6 FLOW CHART OF PROPOSED SYSTEM

These bits are ready to merge. Now the data is united with the primary digit of the primary row with the primary digit of the primary column. During this method all the rows and columns are united.Then the binary data is prepared to compress. As I know that, are utilizing lossless compression technique here to change the image. The image is reworked into binary data here just in case of lossless compression. This can be very helpful technique to achieve the accurate image as we would like. In this technique first the binary data will be remodeled into black and white format as we tend to shown in the fig.6. Then the image are going to be transformed into binary data i.e., zero and one (0,1) format as I tend to shown in fig.9. Here I tend to square measure victimization sixty four bit compression that is extremely helpful to the rework. Finally lossless compression can send the original data as output. The ultimate output comes without any loss of information within the image .As a result, we tend to used lossless compression technique for this point. Lossless compression is extremely advantageous and really helpful technique than lossy compression technique.

## IV. RESULTS

FIG: 7 COLOR IMAGE

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The above image (Fig.7) is to be sent to another person. If this is the case, then we need to change the image into black and white image as in Fig.8.

FIG.8 BLACK AND WHITE

This black and white image is further converts to 0, 1 format as it is in the Fig.9.

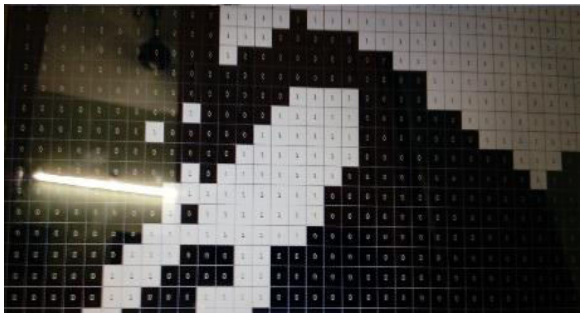

FIG.9.BINARYDATA

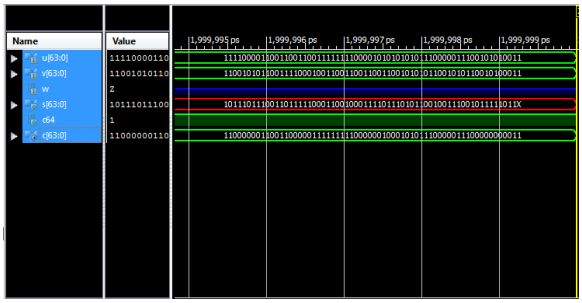


FIG 10 OUTPUT

**V. CONCLUSION** This new and advanced proposed system tells us the about the transformation of the image from one device to another device. Suppose I want to send a colorimage from Transmitting toRx, then I have to consume more data. To deduce the data, I want to change the image by following steps. By using this technique, the colourimage will be transformed into black and white image and then it will be transformed into 0, 1 binary form by compressing the data. Then with the help of compression technique data iscompressed without loss of data. So, finally the colorimage is converted to binary data with the help of mat lab and the binary data is compressed by using Xilinx 14.7. VI.

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