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Efficient Video Steganography Using Scrambled Encryption to Transfer Secret Keys between the Embedded Applications

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ABSTRACT: Steganography is used to covert or secret communication. A graph wavelet transform based steganography using graph signal processing(GSP) is presented, which results in better visual quality stego image as well as extracted secret image. In the proposed scheme, graph wavelet transforms of both the cover image and transformed secret image (using Arnold cat map) are taken followed by alpha bending operation. The GSP Based inverse wavelet transform is performed on the resulting image, to get the stego image. Here, the use of GSP increases the inter-pixel correlation that results in better visual quality stego and extracted secret image. Simulation results show that the proposed scheme is more robust than other existing steganography techniques.

I.INTRODUCTION

With the development of the technology, people have tend to figure out methods which are not only capable in hiding a message,but also capable of hiding the existence of a message. Steganography was introduced as a result of such research work.

II. LITERATURE SURVEY

Eliminating cover image requirement in discrete wavelet transform based digital image steganography by Sehgal,P.,Sharma,V.K.The process is that the absolute invisibility of the large size secret image. Secure binary image steganography based on minimizing the distortion of the texture by Feng,B.,Lu,W.,Sun . This scheme generates the cover vector by dividing the scrambled image into superpixels. Improvisation of security in image steganography using DWT,huffman encoding and RC4 based LSB embedding by Mahajan,P.,Gupta,H. A robust steganographic is achieved by using this multi-tier architecture that enhances the security and capacity of the system while restoring the quality.

III.PROPOSED SYSTEM

We have provided security for information like text/images using the concept of video steganography, cryptography, randomization and parallelization.A secret information to be hidden is encrypted using a key and a frame is selected randomly to avoid repetition. Data is embedded in randomly selected frame. The entire process of Encryption or Decryption and Embedding or Extraction is parallelized.Controller unit is used to generate key to share between the system through video stegnography

IV.OBJECTIVE OF THE PROJECT

To enable a model methodology enabling steganography in videos and images using secret keys .

A.FLOW CHART

A flowchart is a graphical representation of a process. Each step in the process is represented by a different symbol and contains a short description of the process step. The flow chart symbols are linked together with arrows showing the

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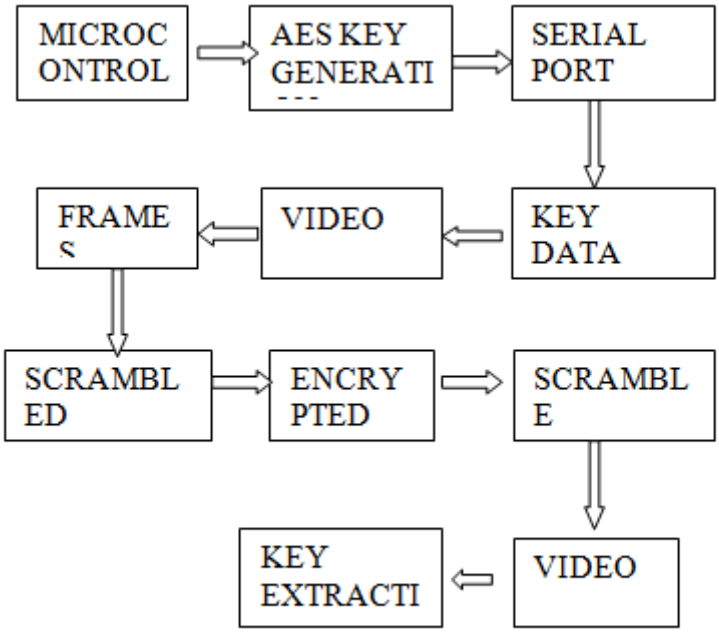
process flow direction.



V.HARDWARE REQUIRED

MICROCONTROLLER 16F877A:

The 16F877A CMOS FLASH based 8 bit microcontroller is upward compatible with the PIC165CX,PIC12CXXX and PIC16C7 devices. It features 200 space ns instruction execution,256 bytes of EEPROM data memory, self – programming, an ICD,2 Comparators, 8 channels of 10 bit analog to digital converter, 2 capture/compare/POM functions, a synchronous serial port that can be configured, self-reprogrammable under software control.

VI.SOFTWARE REQUIRED

MATLAB:

Matlab is a multi-paradigm numerical computing environment and proprietary programming language developed by math works. MATLAB allows matrix multiplication, plotting of functions and data, implementation of algorithms, creation of user interfaces and interfacing with programs written in other languages including C.C++,Java,Fortan and Python.

IMPLEMENTATION:

The Microcontroller is used to generate a key to avoid repetition and the serial port interfacing is done using the MATLAB software. The key which is generated ideally is acquisted and the video is kept ready. The video is divided into frames or segments in which the generated key is kept hidden. The video is encrypted using scrambled encryption and it is sent to the receiver. On the receiver side,the video is decrypted using scrambled decryption and the video is extracted with the secret keys.

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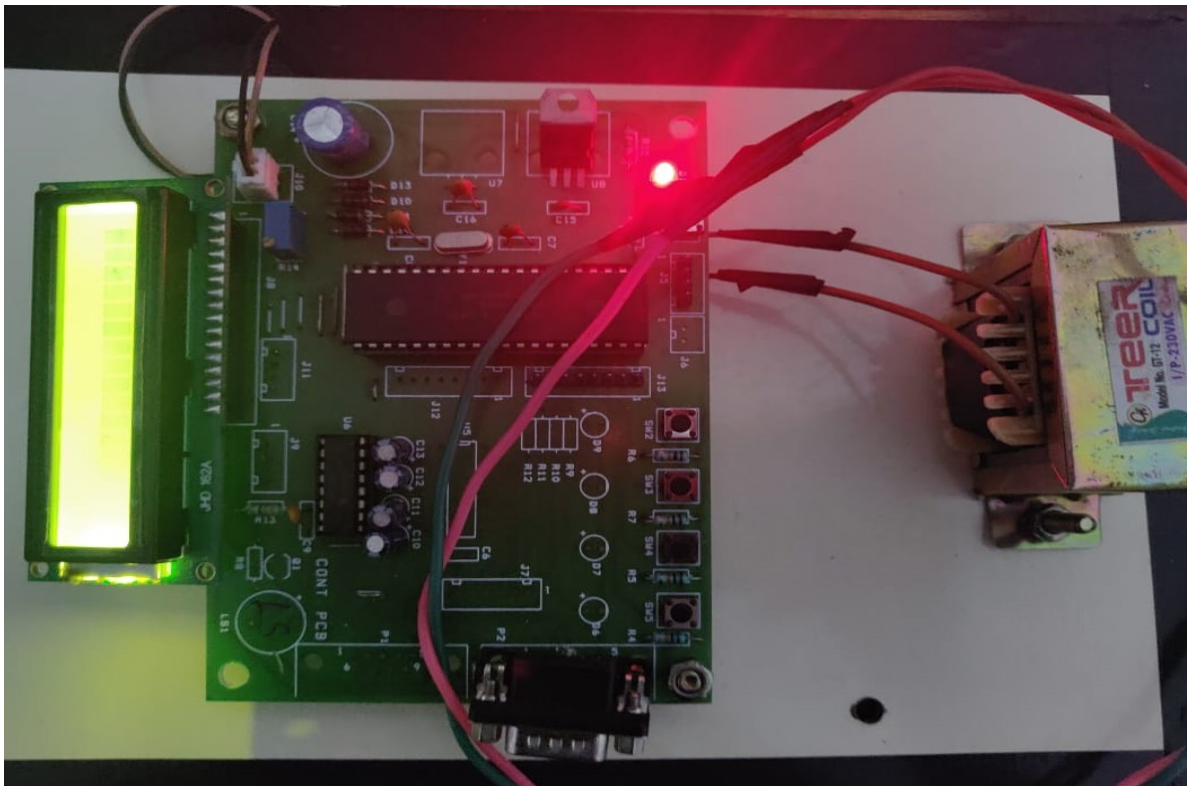
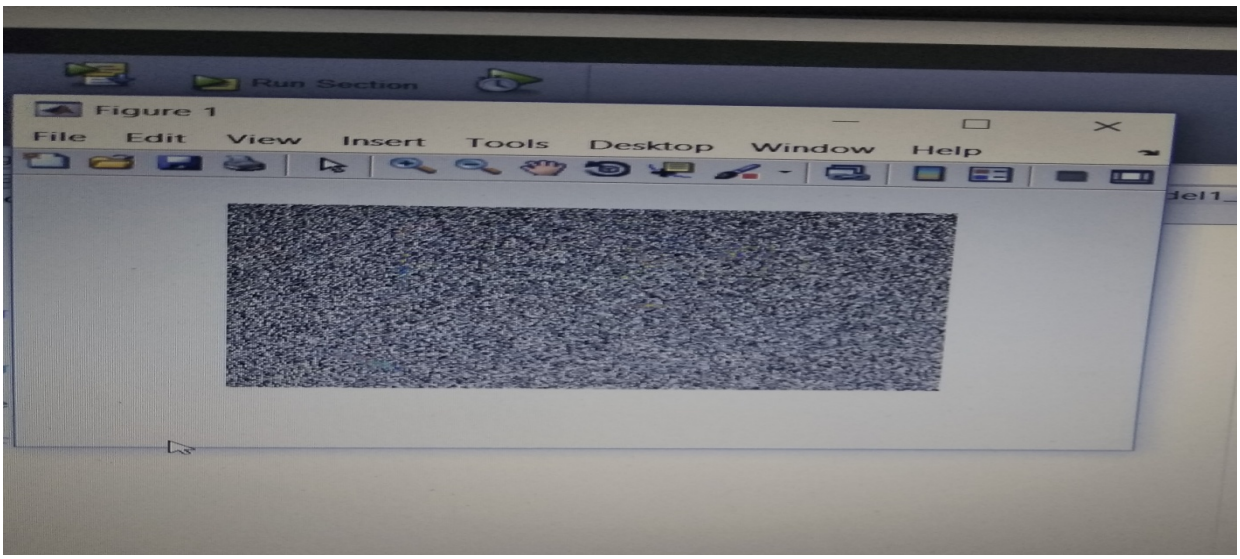
VII. OUTCOME RESULTS

The video is finally decrypted using secret keys and the hidden data is found which is highly secure using steganography.





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VIII. CONCLUSION

A comparison between common video steganographic methods in digital video is provided with a highlight of strength and weakness in conclusion. The video steganography can be explored in effective selection of cover media, to identify methods for embedding secret message with high imperceptibility, high embedding capacity,high embedding efficiency with optimum data hidding locations and so on.Further,video encryption techniques can also be improvised.

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