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Secret Message Transmitter for Defence Outposts

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Abstract: The paper proposes the Morse code [3][4] which is the earliest method used in Radio Telegraphy. It is about a vision and mission for helping the soldiers, who relentlessly stand in the sun and snow to protect our borders. At the outposts, whenever they are transmitting messages over radio, frequencies tend to get hacked by the enemies and the messages are exposed to them. What if we had a system which will not only confuse enemies but even leave them behind with no clues. This work is using the android device of any kind, having the facility of keyboard to transmit the message. The messages are fed via an android device to a microprocessor (i.e., Raspberry Pi)[6][7][8] over Wi-Fi, which will convert the message into code of ("._._") and then transmit using the general light bulb by flashing it. At the receiver's side, a camera will record the flashes and feed it as input to the microprocessor at that side, which will in turn decode it to get the original message, hence the enemies will feel it to be fluctuations in power rather than a message. We have improved the internationally used Morse Codes, to a personalised level and that is being used to transmit the message from one defence outpost to other. It can also be implemented if the lightning inside the posts is switched off for security reasons by using Torches which are available with the soldiers. The microprocessor is connected to the light source to send the flashing instructions by the use of codes.

Keywords: Radio Telegraphy, Universal Morse Code, US Model Straight Key, Photoresistor or camera

I. INTRODUCTION

Present days Morse code are broadly utilized worldwide over by an each one impart a substantial separation. Morse code to give dependable correspondence through wires to Military, abroad dispatching and the railroad depend. After the creation of radio in the time of 1900 s Correspondence turned out to be increasingly spread and unsurprising. Enterprises depend on it to send basic and quick messages to their far off customers and representatives. The successive utilization of web data stream and simplicity of contact in particular ways. Morse code is an old innovation, basic, moderately ease and does not rely upon present day innovation and utilized in desperate crises, framework carelessness or war. The span of the dash is multiple times the term of a speck. Each dash or dab is trailed by a short quietness, equivalent to the dash term. The word is isolated by a space equivalent to three dabs (one dash), and the words are isolated by a space equivalent to seven dabs .In code transmission speck span is the fundamental unit of time estimation. Making Morse code easy and most flexible media transmission we use effectively for keypad on and off capacity for crisis signals. That will be used to glow on or off the light signal to send and receive messages.

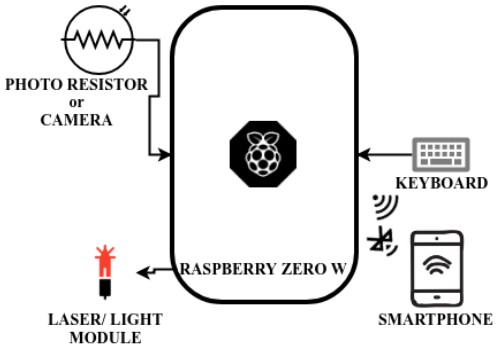

Figure 1.- Overall Design of our proposed system

II. UNIVERSAL MORSE CODE

Morse code[3] is a technique for transmitting content as a succession of on-off states, lights, or snaps that can be straightforwardly comprehended by a decent audience or onlooker with no exceptional scholarly gear. The Universal Morse Code encodes the ISO fundamental Latin letter set, some extra Latin letters, the Arabic numerals and a little

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arrangement of accentuation and procedural flags as systematize groupings of short and long flags called "dabs" and "dashes", or "dits" and "dahs", as in beginner practice. Since numerous non-English common dialects utilize more than the 26 Roman letters, add-on to the Morse letters in order subsist for those dialects. A decent audience or onlooker with no extraordinary scholarly hardware can specifically comprehend the technique for transmitting content as a grouping of on-off states, lights, or snaps in Morse code . A novel arrangement of spots and dashes speak to a content letter or numeral in Morse code which is an image. The span of dash is multiple times the length of spot. A little measure of time is taken by spot span for each dab or dash. The letters of a word are isolated by a space equivalent to three spots (one dash), and the words are isolated by a space equivalent to seven specks. Dab term is the fundamental unit of time estimation in code transmission.

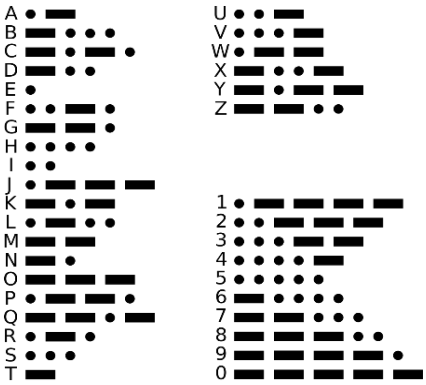

Figure 2.- International Morse Codes

III. LITERATURE REVIEW

An electrical transmit framework was created in the year 1836 by the American architect Samuel.F.B.Morse, the American specialist Joseph Henry, and Alfred Vail .This framework sent heartbeat signs of electric flow alongside wires to control electromagnet which was put at the less than desirable end of the broadcast framework. Characteristic language is transmitted by utilizing these heartbeat flags and built up the advanced Worldwide Morse code. Prior 160 years back Morse code was utilized much of the time than some other electrical flag coding framework. The propelled Global Morse code was made by Friedrich Clemens Greek in the time of 1848. Universal Morse Code was finished at the Worldwide Telecommunication Congress in the time of 1865 in Paris.

Cheng-Hong Yang remote natural control framework for Morse code in December 2003. They structured and execute a remote ecological control framework [8] utilizing updated access specialized device that is Morse code in the time of 2004 Andres Sole, dealt with Morse Portrayal and Geometric Encoding of Computerized Height Maps and created two pictures reciprocal geometric figures a [10]. The topographic outcome of the Morse and waste states of computerized development maps [9] (DEMs) recommends that they can be utilized as the successful in encoding technique.

IV. EXISTING FRAMEWORK

An ordinary U.S. show straight key prior called as the J-38 was created in extraordinary sum amid World War two and rest in overall use today. In a straight key, when the flag is actuated when the handle is squeezed and off when it is discharged. Separation and span of the Morse code is transmitted two states on and off.

Figure 3.- (US Model Straight Key)

At the point when broadcast administrators transmit messages they use Morse code for the portrayal of twofold code working from the above ITU definition and extra characterizing a bit as a spot time. The mix of following five piece strings are utilized to make Morse code grouping.

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• Short sign dab or dit (•): 1
• longer sign, dash or dah (–): 111
• Intra character hole between the spots and dashes inside a character: 0
• Short interim between letters: 000
• Medium interim between words: 0000000

Morse code messages are fundamentally transmitted by a hand worked gadget, for example, a broadcast so there are varieties introduced formally by the expertise of the sender and collector progressively master administrators can send and get at fast speeds. Likewise singular administrators fluctuate somewhat for instance utilizing marginally more or shorter dashes or holes, maybe just for certain characters.The expert administrators can perceive specific people by only it. Morse code Generator is such a sort of instrument made for motioning without having the information of Morse code, it accompany an alpha numeric keypad as our versatile.

V. PROPOSED SYSTEM

A. Input Section

In this device, we've designed to send the input through a mobile phone over the wifi or bluetooth medium. The interface of our system is having such a design which is easy to operate and use even if the user is very new to the smartphone world. We can also replace a simple keyboard instead of a smartphone to send the message in case the phone gives up at that moment. The data is given to our processor which processes it to convert it to the defined code which is used further to glow the light source. The codes are in such a way that people don't find the way to decode the same and get the final message out of it.

B. Processing Section

The down figure contains the design of our system. The raspberry board is the one to get things[6][7][8] worked out altogether. The raspberry[6] will accept the input from sender over wireless medium and then change it to defined codes. Then that secret code is sent over light medium, making use of the Laser Module in our case for now. This could be of great help if presented and implemented at our Outposts.

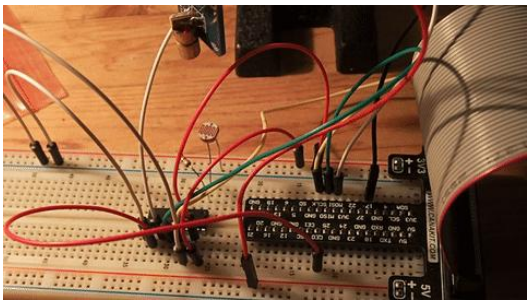

Figure 4.- Assembled Structure of our proposed system

C. Output Section

The light is captured by a photoresistor, who's values is read and stored at the raspberry present at the other side. And then again converted back to what is was, before being sent, hence giving us the desired, protected, message transmission. Then the processed message is received by the mobile on the receiver side. The message would be error-free and secured. As the message is being sent through light medium, it'll be looked upon by spectators to be mere voltage fluctuation.

VI. RESULT

This is an electronic device, used for transmitting morse/secret codes over the light medium, thus giving a secured medium to transmit messages. When the soldiers guarding the outposts, need to communicate, they communicate over the radio signals over the walkie-talkies, which are prone to be intruded with. In view of that, this system is designed to be hack efficient, and to provide them with a transmitter which does the work secretly. The person sitting on the other end of the border will think it as an electricity fluctuation and thereby transmitting the message secretly over the air using just the lights. This graph is processed at the receiver side to get the final message which was sent by the sender. The message is received by the receiver over light medium, hence making it confidential. Hence giving us the final, secured, transmitted message transmission between sender and the receiver

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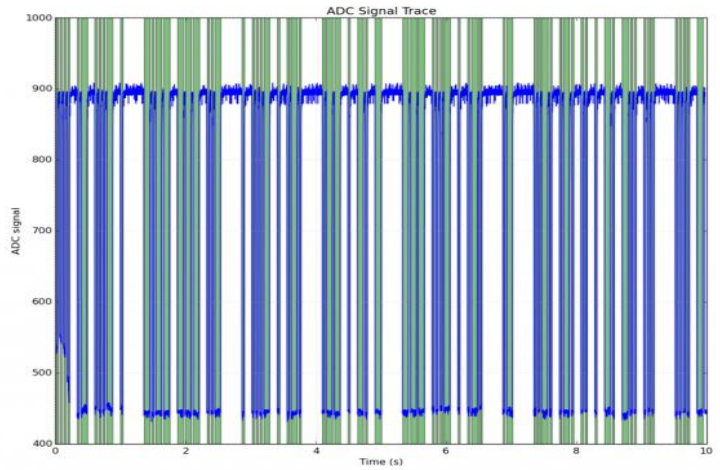

Figure 5.- Output graph at the receiver side

VII. APPLICATIONS

It will be helpful if implemented at large scale for the military outposts. It can also find application at the places where we want to use the task of secret transmission of messages. According to our plans and design it is meant to be applicable at the defence outposts so that it can assist our soldiers in safe transmission of messages, in case of emergency and also at normal times.

CONCLUSION

Henceforth to conclude, we've developed this system to do the above tasks. It'll be dedicated to our soldiers. This system will be of great help for them in transmitting critical data. It is also useful in case of emergencies and any unwanted attack. As the message transmission is safe and secure, it'll provide them with a secret medium to help them informing their peers about any enemy intruder, if they notice. And for the efficient working of the existing methodologies, we'll provide this system to further simplify the lives of soldiers.

FUTURE SCOPE

If we get a chance, we would like to make it on a larger scale and implement it into actual scenarios. It can be further made private and secured by implementing Log-in IDs on the android app. We will give away this software for more number of people and organizations to conduct a Beta Testing and based upon the results we can just make those changes and be assured of the application developed. After the overall implementation of our project is completed, we'll be putting it up for large scale implementation.

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