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AUTOMATING VIDEO FEED MONITORING SYSTEM FOR TV BROADCASTING

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ABSTRACT

Uninterrupted Video transmission is a main part of TV broadcasting systems. Most TV broadcasting stations manually monitor the video feed and inform the station if there are any kinds of failure. This paper proposes an effective and low-cost method to automate video monitoring system for TV broadcasting. This system monitors the sync pulse of the composite video signal by using the received off-air signal of a television and if any failure occurs the system warns the relevant technical staff.

Keywords: *Broadcasting, Sync pulse, Phono Jack, Monitoring*

1.0INTRODUCTION

Independent Television Network (ITN) was the first TV channel in Sri Lanka. It has wide coverage around the country because they broadcast ITN from seven transmitting stations. The transmission section staff should monitor the transmission and if any failure occurs they should setup it as soon as possible. Otherwise it will negatively affect the commercial goals of the company. Therefore the transmission section should fully concentrate on monitoring the video feed of broadcasting transmitters. Here we have designed automating video feed monitoring system for TV broadcasting for transmission sections at a TV channel to monitor the broadcasting video feed.

The reason for this research is currently they do not have any system to detect the video feed automatically. They monitor the transmission with a normal television by receiving signals from a normal off-air antenna and they have to always keep eye on the TV channel to identify failures.

This confirmation of broadcasting feed should monitor at the final receiving point. That means this should monitor by receiving off-air signal using a television. So it is needed an automatic system for the broadcasting feed monitoring and an indication for failures. Then it is more effective and the staff can easily identify if any failures by the indication of the system rather than keep eye on TV as at time it occurs. By considering these we implemented Automating video feed monitoring system for TV broadcasting.

2.0EXPERIMENTAL

Here the confirmation of broadcasting feed should monitor at the final receiving point. That means this should monitor at the off-air receiving point. This system monitors the sync pulse of the composite video signal by using the received off-air signal of a television. By using a Phono Jack can get the TV composite video output and that would be the input to the circuit[1]. The block diagram of the proposed system is shown in Figure 1.

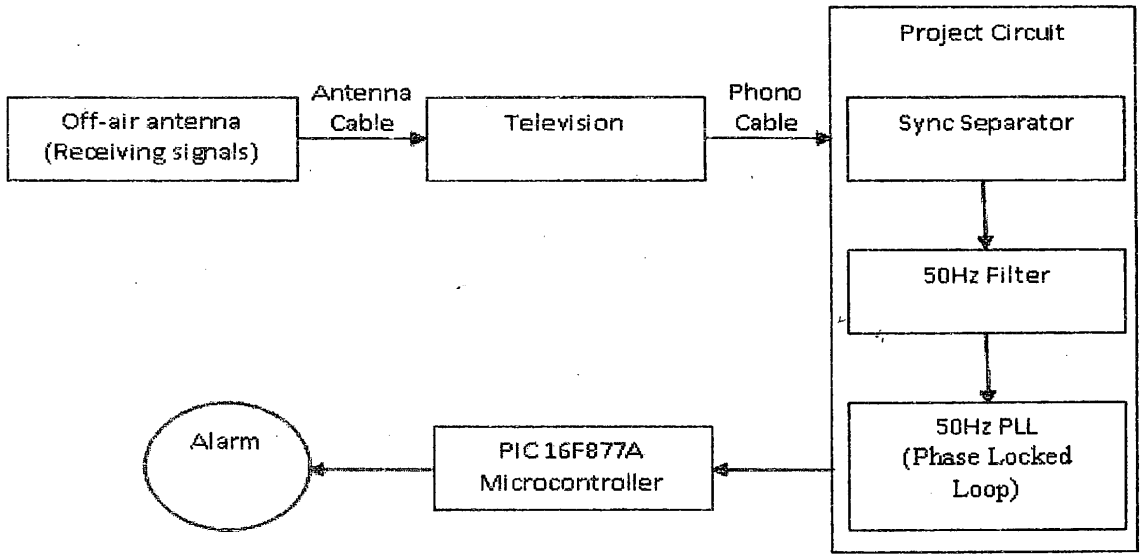

Figure 1: Block diagram of the Automating Video Feed Monitoring System for TV Broadcasting

The process of the broadcasting feed identification is done through the project circuit. The key point for the identification is the sync pulse of composite video signal. When presence the feed can detect the composite signal sync pulse and also when fail the TV does not out a composite signal. So the sync is the key to identify the broadcasting feed[2, 3].

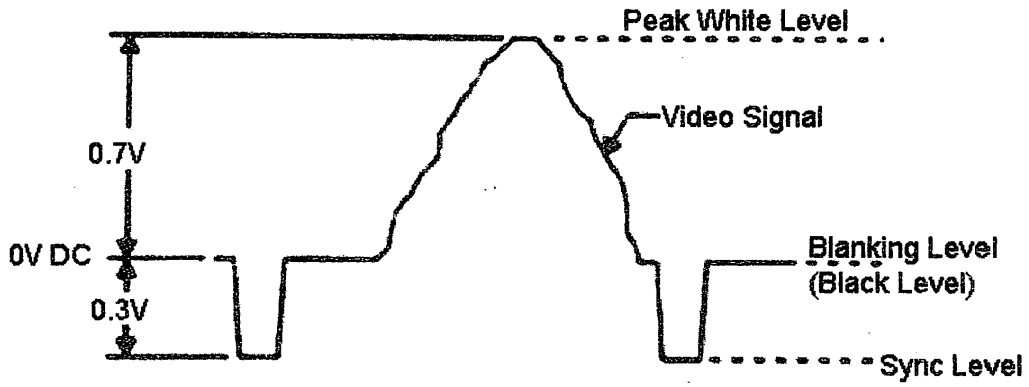

Figure 2: Composite Video Signal with the Sync Pulse

After giving the input to the circuit through the phono cable the first step is to sync separation. It is done by using an LM311 voltage comparator. The second step is 50 Hz filtering circuit (LM3900) and the final step is Phase-Locked Loop (PLL) circuit. The output of the filter is then passed along to an LM567 PLL tone decoder tuned to the vertical sync rate (50 Hz) of the video signal. In the circuit microcontroller gets input from the LM 567 PLL tone decoder [4,5]. From PLL outs logic High(1)when detecting composite video signal and logic Low (0) when distorted the input signal. Microcontroller identifies the status and gives an alarm when detects distorted input signal[6].

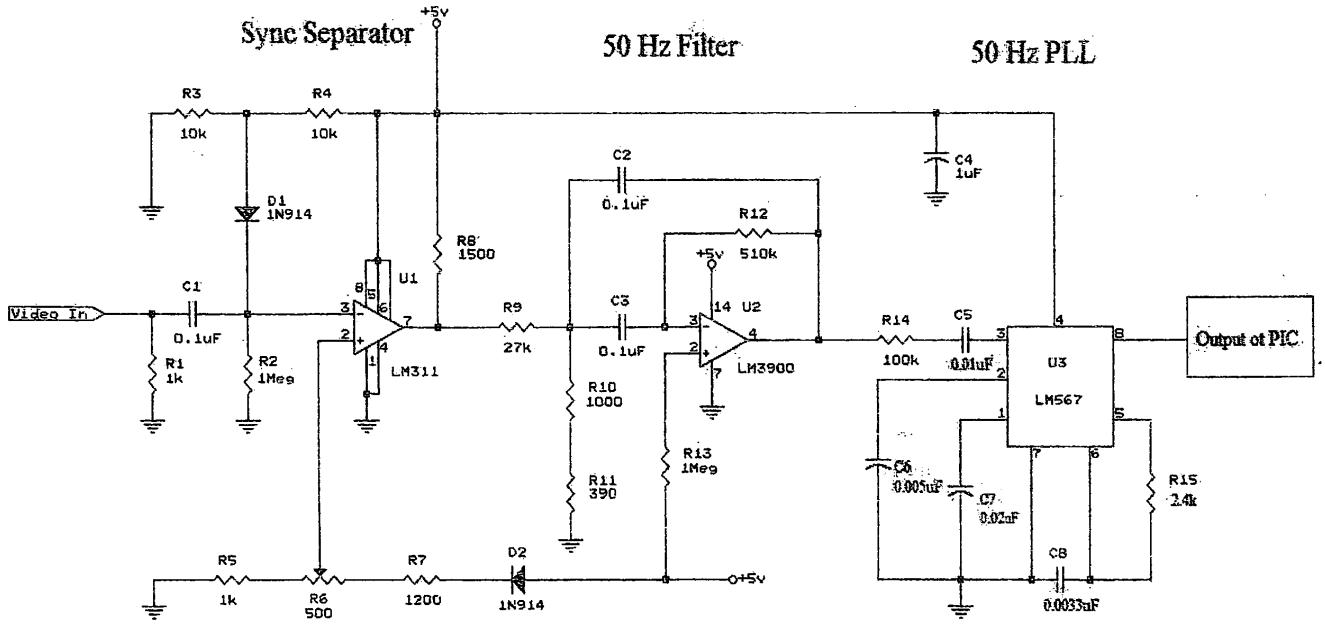

Figure 3: Circuit Diagram

3.0RESULTS AND DISCUSSION

Rather than watching at the television for the monitoring purpose, the final outcome of this research is an automatic broadcasting video feed monitoring and failures indication system. Then it is more effective and the staff can easily identify if any failures by the indication rather than keep eye on TV as at time it occurs without any delay.This system contributes lot of advantages to TV channels and all the transmission station staffs. By using this can easily monitor the broadcasting feedand minimize the failures identification delay. Also can accurately identify the failures and it is easy to install at the present monitoring points within a low budget.

Currently the system monitors only the video feed and when the system identifies any failure gives an alarm to notice that. This system can be extended to monitor the audio feed as well. Instead of a warning alarm signal, an SMS can be sent to relevant technical staff to address the issue.

4.0CONCLUSION

This study attempted to automate video feed monitoring system for TV broadcasting. This system is very useful for any TV broadcasting station and transmitting stations around country to automatically monitor particular broadcasting feed. The system effectively identifies any failure when it occurs in the transmission and warns the relevant technical staff to eliminate the problem. Since the system minimizes the fails identification delay which favorably affects the commercial goals of the company.

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