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Multi channel electromyography (EMG) signal acquisition using microcontroller with rectifier

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Abstract

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Abstract:

Muscle signal acquisition for compression need some threatment to get the optimum data quality. On the stressed muscle, the characteristics is near periodic signal or quasi periodic signal as shown on speech signal. On the sinusoidal model, there are many kinds for representing the signal that contain of the amplitude, period and singal phase. On quantization based on peak to peak, EMG signal was detected its peaks, both of positive and negative. On the half mode, quantization could be implemented on one side only, positive or negative part. In this paper, we proposed a new method to acquisite ECG signal before processed on the microcontroller. Half part of signal could be an information to microcontroller in order to get the peak signal. Peak signal was represent of the stress level of the muscle or the power of muscle. On the multi channel input built in ADC microcontroller, electromyography signal have to arrange before precessed. By using the polling system, signals from the plant could be processed by queueing mechanism.

Published in: [2016 3rd International Conference on Information Technology, Computer, and Electrical Engineering \(ICITACEE\)](#)

Date of Conference: 19-20 October 2016

DOI: [10.1109/ICITACEE.2016.7892403](#)

Date Added to IEEE Xplore: 06 April 2017

Publisher: IEEE

► ISBN Information:

Conference Location: Semarang, Indonesia

I. Introduction

Modern technological development especially on exploring muscle signal was growing very rapidly. There play an important role in the lives of everyday people, not close to the mechanics sector and electromedical. They could help people who have lost muscle motor function and then it can replaced with the use of this technology that the muscle signal can be used an information to move the robot arm. muscle also could be stimulated by electronic system by using microcontroller [1]-[2].

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