

Thesis Title	A STUDY ON THE DESIGN AND CONSTRUCTION OF THE CEREBRAL FUNCTION MONITOR BY RECORDING AND ANALYZING ELECTROENCEPHALOGRAPHIC WAVE
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Abstract

Monitoring the functional state of the brain has a significant role in the prevention of brain damage and improving the quality of patient care, especially during comatose or anaesthesia. Brain function can be conveniently and satisfactorily monitored for long periods by monitoring quantitatively electrical activity with the cerebral function monitor.

The purpose of this thesis is to study on the design and construction the prototype of cerebral function monitor for recording and analyzing electroencephalographic wave having a portable size, not complicated in operation, low cost because the component parts are easily found locally. Besides; to provide more simple in an interpretation, not required experience, by display the output in digital, form of mean amplitude and

percentage of each frequency band as beta, alpha, theta and delta. In addition, it can indicate high, low frequency and amplitude artifact including the bad contaction of electrode. The other is to indicate whenever the mean amplitude less than 10 mV and safety from the leakage current also.

From the testing in the 3 patients by comparing with the EEG direct writing the result of frequency classification has statistical correlation 0.8 and it has the similar result for the mean amplitude. Then the device is reliable.