ABSTRACT

Mental health among young people has become a growing concern around the world due to the increasing number of psychological issues such as stress, anxiety, and depression. Teenagers often find it difficult to recognize or express their emotional state which often leads to early signs of mental health problems being missed. They may seem fine on the outside while actually experiencing emotional distress. The situation shows the need for an early detection method that is practical, affordable, and comfortable to use.

To solve this issue, a non-contact psychological monitoring system was developed using a multicircular microstrip antenna. This antenna is designed to detect electromagnetic signals from the human body in the frequency range of 590-670 MHz. The received signals are then processed using a radio frequency receiver and analyzed with a Python program. The program translates the signal frequencies into three aura colors that represent emotional states, cyan for empathy, black for anger, and blue for relaxation.

Based on testing, the system was able to capture electromagnetic signals with a gain value of 2 dB after optimization. This value shows that the antenna's performance meets the expected target. The aura color results also matched the psycological response of the subjects. Overall, this system has proven to be a practical and non-contact solution for early detection of psychological conditions and has the potential to support mental health services through technology.

Keywords: Aura, Biofield, Early Detection, Mental Health, Microstrip Antenna, Teenager.