

# **PAPAN SKOR SEPAK BOLA DENGAN KENDALI SMARTPHONE ANDROID**

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## **ABSTRAK**

Perkembangan olahraga mengikuti kemajuan teknologi yang berkembang pada era modern saat ini, banyak alat pendukung yang digunakan saat pertandingan diselenggarakan serba canggih dan otomatis. Papan skor yang sering digunakan pada pertandingan-pertandingan sepak bola biasanya sangat canggih. Oleh karena itu, papan skor dalam suatu pertandingan dapat dikontrol secara nirkabel melalui *smartphone* Android. Papan skor sepak bola LED *matrix* menggunakan mikrokontroler HD-W64 sebagai pengendali utama lalu dihubungkan ke jaringan wi-fi dan dikontrol dengan *smartphone* Android. Dari hasil pengujian papan skor sepak bola jarak jangkauan koneksi wi-fi sejauh 65 meter, jangkauan pengiriman data perintah sejauh 62 meter saat kondisi cuaca normal, jangkauan pengiriman data perintah sejauh 55 meter saat kondisi cuaca hujan, jarak koneksi ideal pengiriman data adalah 50 meter, rata-rata kecepatan waktu pengiriman data perintah 2,08 detik dan kinerja papan skor pada kondisi cuaca normal 90 % serta energi listrik yang dibutuhkan dalam 1 pertandingan sebesar 0,0465 kWh dengan biaya Rp 62,86.

**Kata Kunci:** Papan skor, *smartphone* Android, LED *matrix*, HD-W64

# ***SOCCKER SCOREBOARD WITH ANDROID SMARTPHONE CONTROL***

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## ***ABSTRACT***

*The development of sports follows the technological advances that are developing in the modern era today, many supporting tools used when the match is held are sophisticated and automatic. Scoreboards that are often used in soccer matches are usually very sophisticated. Therefore, the scoreboard in a match can be controlled wirelessly via an Android smartphone. LED matrix soccer scoreboard using HD-W64 microcontroller as the main controller and then connected to wi-fi network and controlled with Android smartphone. From the results of testing the soccer scoreboard, the wi-fi connection range is only 65 meters, the range of sending command data is 62 meters during normal weather conditions, the range of sending command data is 55 meters during rainy weather conditions, the ideal connection distance for sending data is 50 meters, the average speed of sending command data is 2.08 seconds and scoreboard performance in 90% normal weather conditions and the electrical energy required in 1 match is 0.0465 kWh at a cost of Rp 62.86.*

***Keywords:*** *Scoreboard, smartphone Android, LED Matrix, HD-W64*