

## ABSTRACT

### DESIGN OF SOUND PROPAGATION PATTERN DETECTION DEVICES WITH MULTI-POINT METHOD USING A COMMUNICATION PROTOCOL TCP/IP WIZ110SR CASE STUDIES OF WORSHIP ROOM OF AL WASI'I MOSQUE UNIVERSITY OF LAMPUNG

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*It has been realized the instrument to detecting and measuring patterns of sound propagation with multi point method using the communication protocol TCP/IP at Al Wasi 'i Mosque of Lampung University. The testing is done by SLM SL4011 under the same conditions in basic electronic and instrumentation laboratory. The ability measurement of this instrument is from  $\pm 50$  dB to  $\pm 115$  dB. Measurement of sound propagation is done in the worship room of Al Wasi'i Mosque, University of Lampung by eight sensors. The average of sound pressure level measurement in all point measurement have sound pressure level as 56,36 dB. The difference of value sound pressure level at point measurement with the largest sound pressure level and sound pressure level average at all point of measurement is 5,66 dB. Another that the difference of value sound pressure level at point measurement with the lowest sound pressure level average at all point of measurement is 2,69 dB. According to the measurement result of this research, the difference of value sound pressure level is less than 6 dB, then the deployment of sound propagation have been spreaded evenly.*

**Keyword:** Acoustic, ATMega16, mosque, WIZ110SR