

**DESIGN AND ANALYSIS OF WIDEBAND ANTENNA  
USING METASURFACE RECTANGULAR SPLIT RING  
RESONATOR AT 3.5 GHZ**

A THESIS SUBMITTED TO  
THE SCHOOL OF ELECTRICAL ENGINEERING



BY  
**FERDI KURNIAWAN LUMBANTOBING**  
**201012310041**

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF ELECTRO-TELECOMMUNICATION IN  
THE SCHOOL OF ELECTRICAL ENGINEERING

**FEBRUARY 2025**