Annotation

The main task of this project is to develop an eddy current flaw detector made on the basis of a smartphone designed to diagnose conductive sheets. The device is designed for high-precision and prompt detection of defects in conductive sheets.

The first section of the diploma project was devoted to the main types of non-destructive testing, their advantages and disadvantages, the principles of eddy current converters and their main types, methods of location and connection.

The second consists of an analysis of existing types of wireless communication, protocols. Their advantages and disadvantages are identified.

The third consists of the calculations of the eddy current converter.

The last, fourth section, consists of selecting the hardware of the device and calculating the existing major errors of the system elements.

The structural scheme, functional and basic scheme of the eddy current control device, which includes: microcontroller, eddy current converter, digital-to-analog converter, analog-to-digital converter, Bluetooth module, reference voltage source, has been developed. The course project consists of calculation and graphic parts. The following calculations were performed in the calculation part: selected circuit elements, calculated supports, capacities, etc. The graphic part consists of an electrical schematic diagram, an electrical functional diagram, a circuit board diagram, an assembly drawing and a specification.