Micro-Controlled Device for Calculation of Irregular Areas Using the Gauss Method, Phase II

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The project aims to develop a portable micro-controlled device that uses the Gauss method to calculate irregular areas. The main purpose is being able to help in civil projects with support for other areas. The calculation of irregular areas is knowledge that proves an inaccessible resource to most workers in the field of area is knowledge that proves inaccessible to most workers in the field of civil construction and works in general. The professionals who perform these tasks are bricklayers, and often they don’t have good access to schooling and information which causes a lack in professional preparation, which can lead to difficulties in acquiring the real measures by dimensioning irregular areas. Our work has a social initiative that helps these workers to acquire accurate data measures in a quick way on their workspace. The principal motivation was the precary situations on the educational system based on a lack of adequate knowledge for the professionals in the area to extract measurements from irregular areas using specific equipment or not. This can hamper the performance of the construction and the professional, with the risk of wasting material and error in the dimensions and proportions of the area to be calculated. The micro-controlled device will perform the calculations automatically, returning the values to the user, based on the programming logic developed by the authors using Gauss' methodology and right triangle trigonometry. It can be used in closed environments, having a limit of 162.85 m² of the area to be calculated. As it is micro-controlled, the device will have programming elaborated by the authors themselves together, which will facilitate the future support of the equipment for future implements and project modifications.

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