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## Development of a Cost-Efficient FPGA Carrier Board for Digital Logic Design Courses in Electronics Engineering Curricula

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Economic challenges faced by developing and underdeveloped countries often limit undergraduate electrical-electronics engineering students' access to hands-on learning in digital logic design platforms, potentially hindering the development of a skilled workforce. Practical experience is crucial for bridging the gap between theoretical knowledge and industry requirements, yet resource constraints often make it difficult to provide such opportunities. This paper introduces the design and initial prototype of a cost-efficient FPGA carrier board tailored for undergraduate digital design courses, while also being applicable for research and graduate-level courses. The board measures 12.75 x 12.75 cm and supports Sipeed GOWIN based FPGA system on modules, which is compatible with the available free and open-source toolchain for the design and implementation of custom logic circuits. With its projected low cost, this board is designed to enhance the accessibility and scalability of practical digital design education for students in economically disadvantaged regions.

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