

ATIF KHAN

Hardware Design Engineer | Expert in PCB Layout, Circuit Design & Embedded Systems Integration

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*I am an expert in **hardware design, PCB layout, and embedded systems development**, holding a **Bachelor's degree in Engineering Sciences with a specialization in Optoelectronics from GIKI**. With over **two years of experience as a freelance Hardware and PCB Design Engineer on Fiverr**, I have successfully delivered a wide range of **projects—from prototyping to production—ensuring optimized performance and reliable embedded integration**. Currently, I am working as an **Embedded Hardware Engineer on ATEX-compliant product development**, where I design circuits and PCBs that meet strict safety standards for explosive environments. My expertise combines deep technical knowledge with hands-on experience in developing certified, field-ready industrial electronics.*

EDUCATION:

Ghulam Ishaq Khan Institute Of Engineering Sciences & Technology, (GIKI) Swabi Pakistan
BS in Engineering Sciences: 2020 - 2024

- Specialized In **Opto-Electronics**.
- **Relevant Course Work:** Circuit Design, Embedded Systems, Digital Logic Design, Instrumentation, Digital Communication Systems, Photonics, PCB Design.

PROFESSIONAL EXPERIENCE:

Smart Computing Pvt Ltd., German Based (Lhr)

January 2025 - July 2025

Website: <https://smartcomputings.com/>

Responsibility:

- Led schematic verification and PCB-level design analysis of an **STM32F407**-based system featuring integrated **4G LTE, relay control, SoC switching between primary & secondary sources, and 3-phase AC monitoring**.
- Conducted extensive **lab prototyping and testing** of digital input/output circuits using oscilloscopes and function generators for signal verification and fault isolation.
- Validated **peripheral interfaces** such as **SPI, UART, and I2C** along with **industrial communication protocols: RS-232, RS-485, CAN, USB, and Ethernet**.
- Performed board bring-up and power domain verification for **Renesas Synergy MCU**, ensuring proper voltage sequencing and regulator configuration.
- Integrated **SIMCom and Quectel cellular modules** for remote telemetry and validated pressure/temperature sensor interfaces.

- Simulated HIL (Hardware-in-the-Loop) conditions and proposed circuit enhancements including **reverse polarity protection, flyback diode optimization, and ESD/TVS** placement strategies.
- Reverse engineered European **ATEX-certified EVC hardware** to localize components and reduce cost while maintaining safety and functional integrity.
- Designed and tested industrial power regulation modules (24V to 5V/3.3V), adhering to **IEC 60079-7:2013** for explosive atmospheres.
- Analyzed schematic and design compliance for **Zone 1 & Zone 2 ATEX gas flow computers**, ensuring critical safety and environmental standards were met.
- Led QA and compliance verification processes for field deployment in **hazardous locations (Zone 2)**, including final assembly checks.
- Managed firmware flashing, device initialization, and complete hardware validation of ATEX-compliant systems.
- Used **Altium Designer** for complex multi-layer impedance-controlled PCB layout, thermal modeling, EMI mitigation, and power integrity optimization.
- Oversaw hardware QA, BOM verification, and delivery of production-ready hardware modules for embedded field deployments.

NR Trading Company, Taxila Pakistan

June 2024 - Dec 2024

Website: nr-trading.com

Responsibility:

- Design **multi-layer and RF PCBs**, handling **component selection** and optimization.
- Develop **embedded systems** with AT89S52 and PIC microcontrollers, including schematic design and simulation.
- Manage **prototyping, testing, and troubleshooting** to ensure high-quality, timely project delivery.

FIVERR Seller level 1

Dec 2022 - 2024

Website: fiverr.com/itx_atifkhan

Responsibility:

- Responsible for **PCB design** using software such as **KiCad and EasyEDA**.
- Handle **simulations, BOM file creation, and Gerber file generation** for manufacturing.
- Ensure high-quality, functional designs through **detailed component selection and layout optimization**.

Chip Soul Technology, Peshawar (Internship)

10/08/2023 - 03/09/2023

Website: chipsoultech.com

Responsibility:

- Gained hands-on experience in embedded systems development.
- Learned C programming for the 8051 microcontroller family.
- Worked on various projects involving microcontroller interfacing and control systems.

Chip Soul Technology, Peshawar (Internship)

01/07/2022 - 02/09/2022

Website: chipsoultech.com

Responsibility:

- Learned PCB design in detail, including multi-layer board development.
- Gained experience in specific component selection for optimized performance.
- Assisted in the layout and simulation of electronic circuits for various projects.

PTCL - Pakistan Telecommunication Company(Internship)

01/07/2023 - 07/08/2023

Website: ptcl.com.pk

Responsibility:

- Gained hands-on experience in telecommunications and network deployment through practical work on-site with PTCL.
- Developed skills in fiber-to-the-home (FTTH) installations, troubleshooting, and maintenance.
- Collaborated with a team to ensure efficient project execution and high-quality service delivery.

AREA OF EXPERTIES:

- ATEX
- PCB Design
- Circuit Design
- Components Selection
- Professional Layout
- Embedded Systems
- Communication Systems
- Sensors & Optoelectronics

Softwares:

- KiCad
- Altium Designer
- STM32CubeIde
- EasyEDA
- Proteus
- MultiSIM
- Arduino IDE
- Keil

Other Skills:

- Graphic Design
- CANVA
- WordPress
- Html & CSS
- Bootstrap
- Solid Works

WORK PORTFOLIO:

Github: <https://github.com/Atifkhan12396-ed/Portfolio/blob/main/Atif-Hardware%20Engineer-Portfolio.pdf>

Fiverr Portfolio: https://www.fiverr.com/users/itx_atifkhan/portfolio?origin=seller_profile

NOTE: Portfolio is not up-to-date. latest projects I can show at the interviewing time.

I have successfully completed numerous projects in **PCB design, Embedded Systems, IoT, and Communication**, showcasing my versatility and technical expertise in these areas. My work encompasses a range of applications, from designing efficient circuit layouts to developing embedded solutions that integrate seamlessly with IoT devices. I have leveraged my skills in various design software and tools to deliver high-quality results. **For a comprehensive overview of my projects, a detailed PDF portfolio is available in my GitHub repository or can be accessed through my Fiverr profile.**