

ILYA KOZLYANSKY

PCB Design Engineer | Altium Designer Specialist

Batumi, Georgia

Open to worldwide remote roles and international relocation with visa sponsorship

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## PROFESSIONAL SUMMARY

PCB Design Engineer with 2.5+ years of industrial electronics experience and advanced expertise in Altium Designer. Designed 8 PCB projects end-to-end and contributed to 10+ electronic products brought to serial production.

Experienced in mixed-signal, power, RF/433 MHz, smart metering, IoT communication hardware and high-voltage electronics. Strong background in schematic design, PCB layout, prototyping, manufacturing preparation, design reviews and production support.

## CORE SKILLS

Altium Designer: schematic capture, hierarchical/multi-sheet designs, PCB layout, ERC/DRC, design rules, variants, Draftsman, OutJobs, ActiveBOM, database libraries, footprints, 3D/STEP integration.

PCB Engineering: mixed-signal and analog/digital electronics, SMPS, mains-powered hardware, RF/433 MHz, isolation, EMI/EMC, component selection, mechanical integration, DFM and legacy redesign.

Interfaces: RS-485, CAN, UART, LoRa 433 MHz, NB-IoT, Bluetooth, eSIM.

Manufacturing: Gerber, NC Drill, BOM, Pick&Place, fabrication/assembly drawings, STEP/3D, prototype support and supplier communication.

Tools: ANSYS HFSS, SolidWorks, KOMPAS-3D, C#/.NET, Python, Git.

Soft Skills: technical leadership, engineering decision-making, design reviews, cross-functional collaboration, manufacturing handoff coordination, supplier communication, independent problem-solving, knowledge sharing.

## PROFESSIONAL EXPERIENCE

Industrial Electronics LLC

Research Engineer in Nanoelectronics – PCB / Electronics Hardware Engineering  
Dec 2023 – Jul 2026

Designed 8 PCB projects end-to-end, from schematics and component selection through layout, 3D verification, prototyping, manufacturing release and production support.

Contributed to 10+ products brought to serial production, including electricity meters, communication modules, network coordinators, data acquisition systems and power electronics.

Served as the team's primary Altium Designer specialist, supporting advanced workflows, design reviews, redesigns and troubleshooting.

Owned PCB manufacturing preparation across the engineering team, including Gerber, NC Drill, BOM, Pick&Place, drawings, specifications, STEP models and procurement documentation.

Reviewed and refactored existing hardware, resolving electrical, PCB layout, mechanical-integration and prototype issues.

Created 50+ Altium library components with 3D models for the shared company library.

Worked directly with PCB/PCBA suppliers in Russia and China on prototyping and production issues.

Simulated and refined 433 MHz printed PCB antennas in ANSYS HFSS.

## SELECTED INDUSTRIAL PROJECTS

### Multifunctional Single-Phase Smart Electricity Meter

Major schematic and PCB redesign of a mixed-signal meter integrating precision energy measurement, 230 V power conversion, MCU, memory, RS-485, LoRa 433 MHz, Bluetooth, RTC and anti-tamper circuitry.

Implemented high-voltage isolation including an 8 mm creepage barrier, copper-free zones and milled isolation slots.

Result: brought to serial production.

### Data Acquisition and Transmission Unit – YCIIД

Took over a complex legacy project developed by multiple engineers. Consolidated fragmented schematics, corrected electrical issues found during testing and completely redesigned the main PCB following enclosure and component changes.

Result: hardware completed and prepared for manufacturing sourcing.

### Network Coordinator Family

Developed three hardware generations – D3MG/V32, D1MG/V32 and D1MG/V8510 – integrating mains power, E32 radio, RS-485, MCU, memory and watchdog circuitry.

Progressively reduced enclosure size and increased component density; the final revision used a compact two-board 90° architecture.

### NB-IoT & LoRa Smart Meter Communication Hardware

Designed an ultra-compact two-board NB-IoT module integrating N21, V8510, eSIM, CAN and NE485 within an existing meter enclosure.

Also developed a LoRa 433 MHz retrofit module for meters not designed for an additional communication PCB. Completed 5 PCB revisions in slightly over two weeks and solved mechanical integration using an angled connector and custom FR-4 structure.

Result: 500 LoRa modules deployed in the pilot stage, followed by serial production.

#### Smart Meter Communication Modules

Developed complete hardware, excluding firmware, for multiple production communication modules, including:

ROTEK LoRa 433 MHz module designed under fixed Rosseti-standard mechanical and electrical constraints.

E32 + RS-485 module integrating an existing radio power section with a new RS-485 interface PCB.

Result: both designs released to production.

#### Three-Phase Power Supply / Multifeeder Board

Refactored the customer schematic and designed the PCB from scratch for a board combining L1/L2/L3/N mains input, high-voltage rectification, isolated flyback conversion, low-voltage power management and AC supervision.

Result: released to production.

#### ENGINEERING TOOLING

##### RevTrace – Version Control System for Altium Designer

Designed and developed an internal version-control system for Altium projects, replacing manual Google Drive project copies with structured revision management.

Implemented version history, branching, visual revision comparison and selective restoration.

Adopted by all 5 engineers and remains in use at the company after my departure.

#### EDUCATION

##### North-Caucasus Federal University

Bachelor of Science – Electronics and Nanoelectronics

Profile: Industrial Electronics | 2026

Bachelor's thesis: Development of a Multifunctional Single-Phase Electricity Meter for Residential Applications – based on an actual industrial smart-meter project.

#### LANGUAGES

Russian: Native

English: B2 – Professional working proficiency

Georgian: Basic