

Dilawar Ali

Embedded Systems & Cellular IoT Engineer

Pakistan | +92 323 9632496 | dilawarali5@gmail.com | linkedin.com/in/dilawarali5

Open to visa sponsorship and relocation across Europe

Professional Summary

Embedded systems and cellular validation engineer with nearly 9 years of experience across LTE Cat 1/Cat M1/NB-IoT firmware and modem validation, improving validation coverage by 20% and reducing stress-test cycles from 6 days to 3 days. Delivered 20+ IoT products from concept to production as a founder-consultant, with practical NAS/RRC familiarity and strong focus on 3GPP compliance, FOTA reliability, and low-power optimization.

Core Skills

Languages: Embedded C, Perl

Embedded Systems: ARM Cortex-M (TI TM4C1294, EFM32 M0+/M4), STM32, ESP32, nRF52/53/91/54

Connectivity: LTE Cat 1, LTE Cat M1, NB-IoT, MQTT, LwM2M, TCP, UART, SPI, GNSS (NMEA), SMS, FTP

Telecom Stack Exposure: NAS, RRC, 3GPP compliance analysis

RTOS/Platforms: FreeRTOS, Zephyr RTOS, TI SYS/BIOS, Micrium OS, CMX RTOS, IAR

Firmware Expertise: Secure boot chain, dual-image bootloader, FOTA, multithreaded event-driven architecture, low-power optimization

Validation & Tools: Anritsu MD8475, R&S CMW290, Nutaq Pico LTE, Saleae Logic Analyzer, Otii Arc

Professional Experience

Founder & IoT Product Developer

Dec 2021 – Present

Self-Employed, Bit Byte | Part-time through Jan 2023; full-time since Feb 2023

- Led a 4-member engineering team and delivered 20+ products for 20+ global clients (about 90% US-based).
- Managed delivery through weekly sprints and monthly milestones, achieving 90% on-time delivery.
- Built long-term client partnerships with a 60% repeat-client rate while leading end-to-end firmware architecture.
- Built production-grade solutions using ESP32, STM32, nRF52/nRF53/nRF91/nRF54, LTE Cat-M1, NB-IoT, FreeRTOS, Zephyr, and LVGL.

Specialist Engineer (Full-time)

Nov 2018 – Feb 2023

u-blox | Freelancing concurrently part-time from Dec 2021

- Contributed to LTE Cat 1, Cat M1, and NB-IoT modem development and validation with focus on quality, stability, and standards compliance.
- Expanded modem validation coverage by 20% and reduced stress-test execution from 6 days to 3 days by optimizing stress tests and fixing false positives.
- Extended validation automation for simulated cellular networks using Anritsu MD8475, R&S CMW290, and Nutaq Pico LTE.
- Identified and supported resolution of 100+ defects, improving release stability and reducing field-impact issues.
- Performed modem and network trace analysis to identify and report 3GPP compliance gaps.

Embedded Systems Developer

Jun 2017 – Nov 2018

Powersoft19

- Developed firmware for IoT gateway and end devices using TI TM4C1294, TI CC3220, EFM32, Telit LE910, and u-blox SARA-R4/ZOE-M8.
- Implemented multithreaded event-driven firmware architecture, achieving 99% communication success for secure LTE cloud and device-to-sensor communication.
- Implemented OTA/FOTA workflows with dual-image verification, achieving 99% update success in field deployments.
- Optimized low-power architecture and component control, improving battery life by up to 50%.

Education

BSc Electrical Engineering

Sep 2013 – May 2017

University of Engineering and Technology, Lahore

Languages: English (Professional Working Proficiency) | Urdu (Native)