

Inside Geyan Technology: Full-Stack Engineering for True Smartwatch Customization

In today's ultra-competitive wearables market, "customization" is often just cosmetic. Geyan Technology delivers engineering-first OEM/ODM smartwatch development covering hardware, firmware, algorithms, UI/UX, mobile apps, and cloud integration.

1. Why Deep Engineering Matters

Modern customers expect accurate health insights, localized UI, ecosystem integration, and proprietary features. Geyan's 60+ engineers span electrical design, embedded systems, biomedical signal processing, and full-stack development.

2. Hardware Innovation & PCB Design

- Custom 4–10 layer rigid-flex PCB
- EMC/EMI optimization for FCC/CE
- Ultra-low-power routing
- Modular sensors: ECG, PPG, GPS, NFC, barometer
- Multi-chipset support: Realtek, Nordic, Ambiq, ATS
- Premium ID/MD: CNC housings, 1000-nit AMOLED, IP68 sealing

3. Firmware Customization

- Custom sensor drivers & BLE stack optimization
- RTC/RTOS-level power management
- Secure boot + OTA
- Proprietary algorithms: sleep staging, HRV, ECG, sports
- Fully custom UI engine with branded navigation, icons, fonts

4. Mobile Apps & Cloud Ecosystem

- White-label iOS/Android apps
- Real-time health dashboards
- RESTful API, SDK, webhooks
- Cloud: AWS/Azure/GCP
- HealthKit, Google Fit, Mapbox integration

5. Manufacturing & Quality Assurance

- 72-hour EVT prototyping
- Automated ECG/PPG calibration
- Reliability testing: aging, vibration, thermal cycling

- IP68 waterproof testing
- Mass production in 15–20 days

6. Global Case Studies

- Islamic smartwatch with Qibla + Hijri + Arabic UI
- European running brand with VO2max & training engine
- Industrial safety wearable with HRV fatigue detection & BLE mesh

Geyan Technology delivers true end-to-end customization—from silicon to cloud.