Build a Smarter World

Quectel Wireless Solutions

Company Overview and Internship Program

Build a Smarter World

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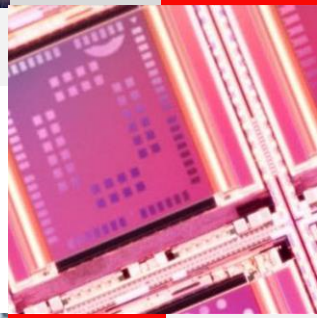
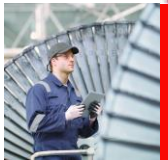
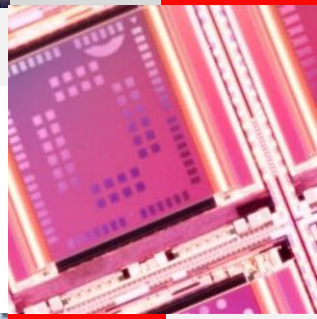
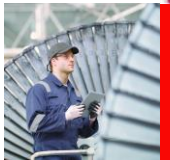
Build a Smarter World

Company Overview

Build a Smarter World



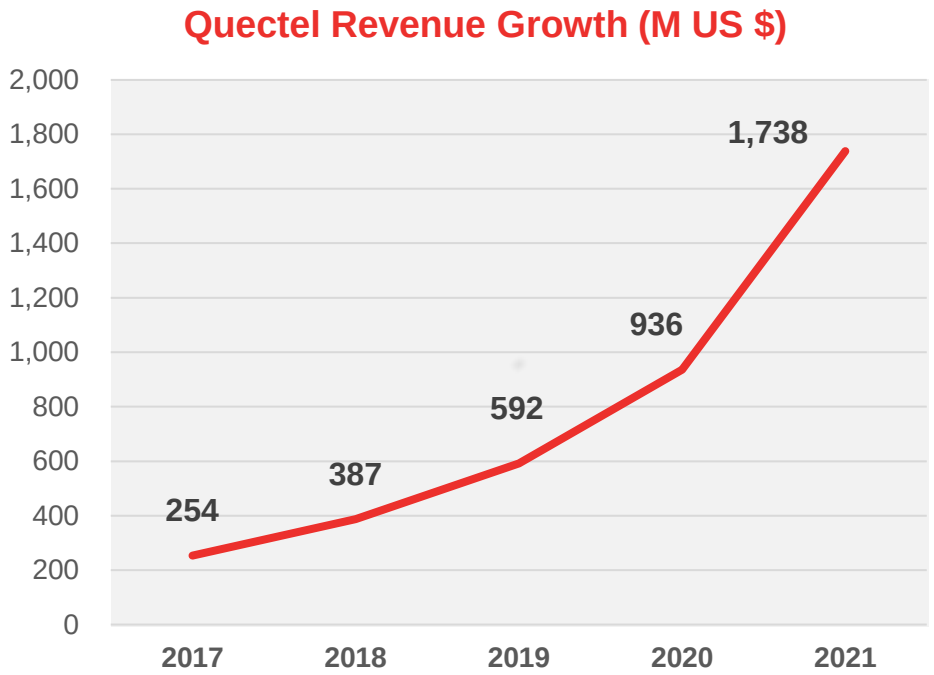


Overview of Quectel as a Company

Founded in October 2010	8 R&D Centers globally: *Shanghai, Hefei, Foshan, Guilin, Wuhan, Belgrade, Vancouver and Penang*	Listed on the Shanghai Stock Exchange: *Stock Code 603236.SS*	
50+ sales offices, 90+ distributors and 4000+ employees worldwide	Monthly production capacity over 22 M pcs	More than 7000 customers worldwide	

Quectel's passion for a smarter world drives us to accelerate IoT innovation. A highly customer-centric organization, we are a global IoT solutions provider backed by outstanding support and services.

Quectel Key Figures

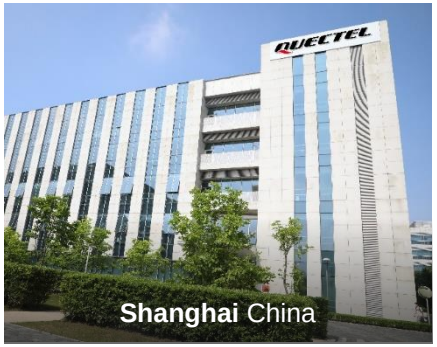


Revenue
$1,738 Million
(FY 2021)

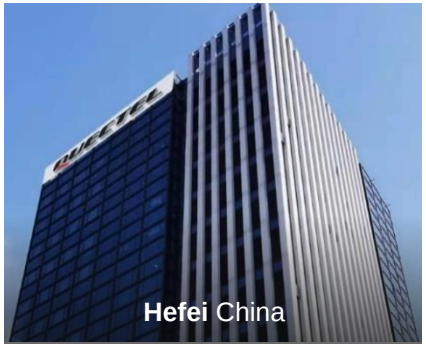
R&D
2300+ R&D engineers

Investment
Unparalleled investment in R&D & automation

Global R&D Centers



Shanghai China



Hefei China

Belgrade Serbia

Vancouver Canada

Foshan China

Guilin China

Wuhan China

Penang Malaysia

Headquarters and Global Sales Offices

Europe

Czech Republic: Prague
Denmark: Copenhagen
France: Nice/Paris
Germany: Augsburg/Berlin/Hannover/Munich
Ireland: Navan
Italy: Casatenovo/Milan
Poland: Gdynia/Warsaw/Wroclaw
Serbia: Belgrade
Slovenia: Ljubljana
Spain: Barcelona
Sweden: Sollentuna/Stockholm
Switzerland: Zurich
The Netherlands: Eindhoven
Turkey: Istanbul
UK: Birmingham/London/ Manchester/Oxford

North America

Canada:
Mississauga/Toronto, ON
Vancouver, B.C

United States:
Alpharetta, GA
Chicago, IL
Houston/Round Rock/San Marcos, TX
Irvine/Orange County/San Diego/
Scotts Valley/Silicon Valley, CA

Israel / Africa

Israel: Tel Aviv
South Africa:
Gauteng /Johannesburg

Asia Pacific

Australia: Melbourne/Sydney
India: Bangalore/Delhi/Hyderabad/Mumbai
Indonesia: Bandung/Jakarta
Japan: Tokyo
Korea: Seoul
Malaysia: Penang
Pakistan: Lahore
Philippines: Manila/Pasay City
Singapore
Thailand: Bangkok/Samutprakarn
Vietnam: Hanoi/HoChiMinh City

Latin America

Argentina: Buenos Aires
Brazil: Sao Paulo
Mexico: Mexico City / Queretaro

Our Values

Focus

- We are laser focused on innovation.
- We provide customers with high quality products and services developed with a spirit of craftsmanship.

Striving

- The success of the company depends on the continuous hard work and development of all our employees.
- The company and employees can only be valued by customers if we offer continuous progress and innovation.

Win-win

- Quectel staff rely on each other and work in cooperation with customers and partners.
- Quectel fosters a sharing environment where development achievements are shared, enabling the company and its employees to progress together.

Innovation

- Innovation is the core of competitiveness, and all innovation should focus on customers' needs.
- Innovation should not be limited to products and technologies, but also to services and management.

Vigilant

- The company operates in a fiercely competitive environment – all employees work with a sense of urgency.
- If a company does not remain dynamic and competitive, the end result will be failure and bankruptcy. Historically 80% of module companies have gone out of business or been acquired.
- All employees should be highly alert to industry changes and market competition and respond quickly to maintain the competitive advantage of the company.
- Our management team proactively monitors market conditions so we can be agile and quickly mitigate any possible risks

Open

- Quectel is dedicated to developing the global IoT market and serving global customers.
- Quectel always maintains an open and sharing mentality and is proactive in adapting to the trend of globalization and responding to greater challenges.

Quectel Portfolio

Cellular Modules

5G/4G/3G/2G

NB-IoT/Cat M

Automotive Modules

Smart Modules

Wi-Fi & Bluetooth Modules

Wi-Fi 6E/6/5/4

BT 5.x

Automotive Wi-Fi/BT

GNSS Modules

Single frequency localization

Multiple frequency localization

High precision positioning

Fusion positioning

Timing

Antenna

Quectel modules are optimized/certified for our embedded and external antenna portfolio

5G/4G/3G/2G

LPWA

Wi-Fi & BT

GNSS

V2X

Services

LBS Location Based Services

OTA Upgrade Services

Connectivity-as-a-Service

Rich product portfolio, providing the full solution

Quectel's products are embedded to various products/industries

- Vehicle Tracking
- Asset Tracking
- Ship Tracking
- Fleet Management
- UBI Auto Insurance
- IoV
- CVI
- OBD
- DVR

- Water Meters
- Thermal Meters
- Wind Generators
- Charging Piles
- Solar Power Generation
- Ammeters
- Gas Meters
- Smart Grids

- Wireless POS
- Cash Registers
- ATMs
- Vending Machines
- Top-up Machines

- Food Traceability
- Farmland Monitoring
- Farm Management
- Meteorological Stations
- Wildlife Protection
- Farm Irrigation
- Environmental Monitoring

- Sharing Economy
- Elevator Monitoring
- Digital Indicators
- Advertising Boards
- Parking Meters
- Toll Collection Systems
- LED Landscape Lighting Controls
- Street Lighting
- Traffic Lights
- Smart Parking
- Smart Bins

- DTUs
- Customers Routers
- Industrial Routers
- VOIP
- Server
- Wi-Fi Hotspots

- Industrial PCs
- Industrial Computers
- Pipeline Monitoring
- Indoor Air Detection
- Industrial PDAs/Scanners
- Industrial Refrigeration
- Water Valves/Pump Controls
- UAV
- Robots
- Flowmeters

- Personal Trackers
- Home Automation
- Elderly Monitoring
- Game Machines
- Patient Monitoring
- Blood Pressure Meters
- Remote Medical Equipment
- Pet Trackers
- Wearables
- Glucometers
- Mobile PCs

- Alarms
- Intrusion Detectors
- Smoke Detectors
- Gas Detectors
- Motion Sensors
- Asset Protection

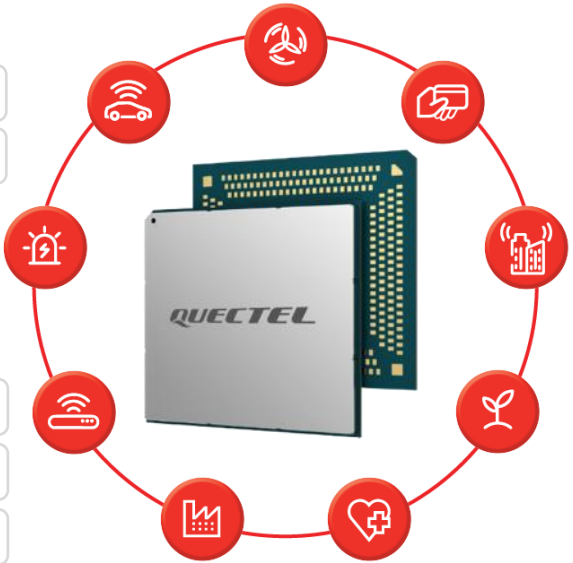
Enabling the Ecosystem with a Wide Variety of Quectel Modules

Chipset

Qualcomm, UNISOC, ST, MediaTek, ASR, Sony, Infineon

Cloud & Partners

amazon, ARM mbed, 阿里云, Google, Ericsson, OneNET, Tencent 腾讯, Baidu 百度, Microsoft, Renesas, Mobile World Congress, 阿里巴巴 Alibaba.com



Carriers

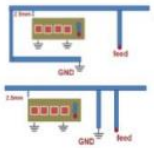
中国移动 China Mobile, 中国电信 China Telecom, China Unicom, CBN, AT&T, verizon, T-Mobile, ROGERS, uscellular, TELUS, Bell, vodafone, Deutsche Telekom, BT, swisscom, Telefónica, TIM, telcel, vivo, Spark, SoftBank, docomo, au, UQ Communications, SK telecom, LG U+, kt

Certifications

FC, ISED, CE, UK CA, PTCRB, GCF, ANATEL, R|T, KC, ICASA, RoHS, ...

Antennas and Antenna Services

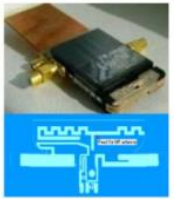
1. Consulting & Evaluation



- Feasibility & Architecture Study
- Risk Identification
- Initial Proof of Concept
- Antenna Component Selection

2. Design

- Antenna Placement
- Antenna Layout Design
- RF Specification Design
- Antenna System Design & Optimization
- Gerber File Review

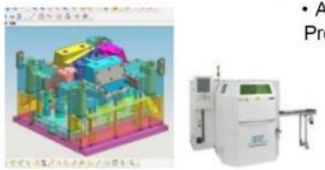


3. Testing & Certification

- Antenna OTA Testing
- Interference Mitigation
- Support for CE/ FCC/ PTCRB radio approval
- Pre-certification OTA Testing for 2G/ 3G/ 4G/ 5G

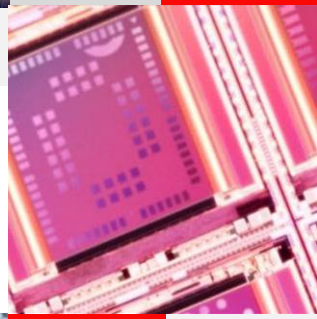
4. Manufacturing

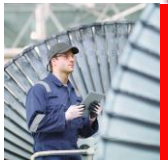
- Antenna Sample
- Tooling & Molding
- Assembly and Production Test
- Delivery



Quectel
Belgrade R&D Center

Build a Smarter World





Belgrade R&D Center Facts

200+ sqm

Lab space

1.6K sqm

Office space

70+

R&D engineers

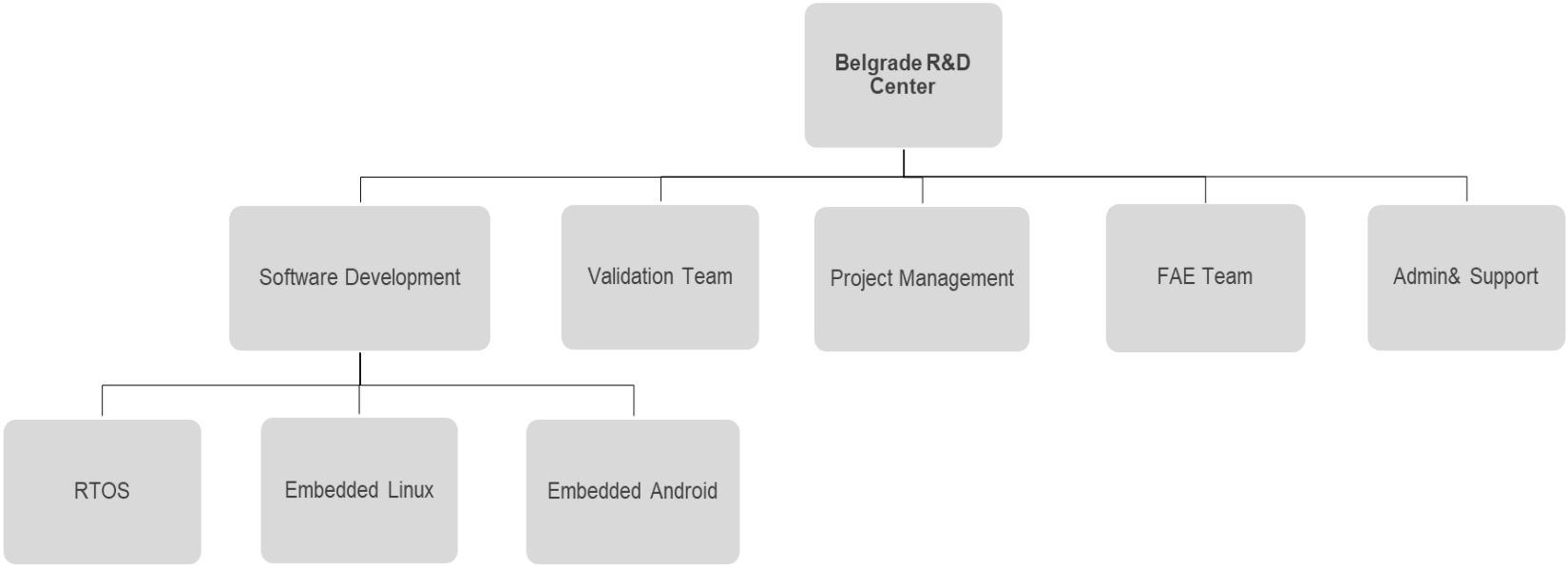
1st Quectel's

R&D center in Europe

3M EUR

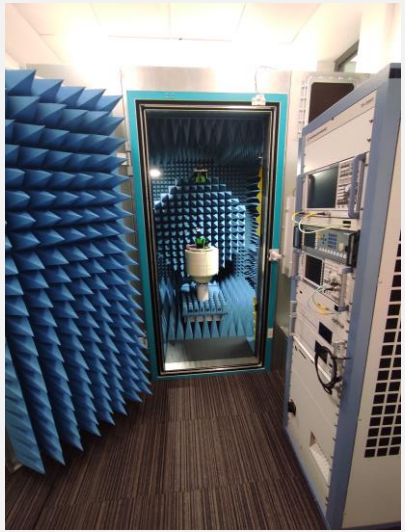
Lab instrument capabilities

How We are Organized in Belgrade



State of Art Equipment to Work on

Anechoic chamber



eNodeB/gNodeB simulators

GNSS signal emulator

Communication testers 2G/3G/4G/BT/WLAN

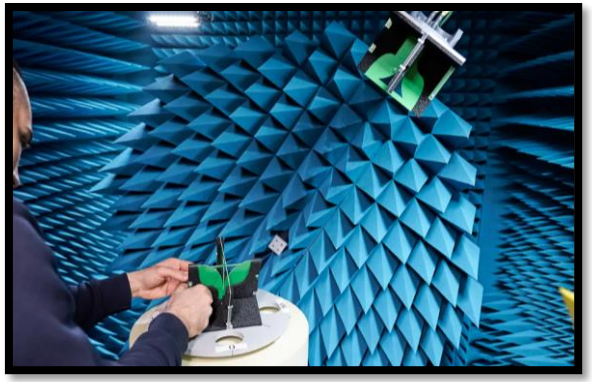
5G

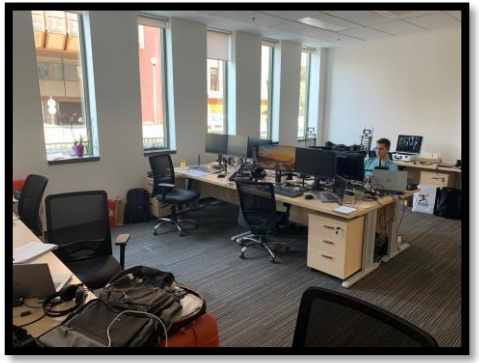
Temperature chamber

Vector network analyzers

DC power anaylzers

Working Environment Gallery



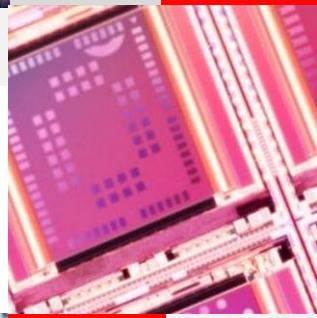


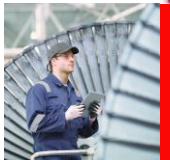
Why You Should Join Quectel

- ✓ State of art equipment
- ✓ International company
- ✓ Global leader
- ✓ Local and global expansion
- ✓ Strong clients
- ✓ Training center
- ✓ Internal mobility
- ✓ Attending international fairs and congresses
- ✓ Team events
- ✓ Team atmosphere
- ✓ Flexible working time
- ✓ Fit and healthy (sport benefits and health insurance)

Internship Program

Build a Smarter World





3 Months of Paid Internship

Designed to provide the best possible **start of careers.**

Gives opportunity to learn by doing and find out what you can do if you have the right **support**.

Hiring interns across **all our business areas**, depending on your filed.

An **individual approach** to students

Possibility to **work for Quectel** in the future

Who Are We Looking for?

Curious minds, open for new ideas, learning form their peers and excited to try something new

See the value and understand the potential of technology – so it can be used to building a smarter world with outstanding contributions for the communities

Challenge yourself and find out what you can do

5 Different Programs

Program duration: 3 months
Start date of the program: flexible, depending on the student's availability
Hours per day: 4-8 hours, depending on the student's availability
Requirements: 4th or higher year of studies
Department / major: Any

SW Engineer Automotive (embedded Linux)	SW Engineer LPWA(RTOS)	SW Engineer Smart Module (embedded Linux and Android)	Field Application Engineer (FAE)	RF Tester	SW Tester

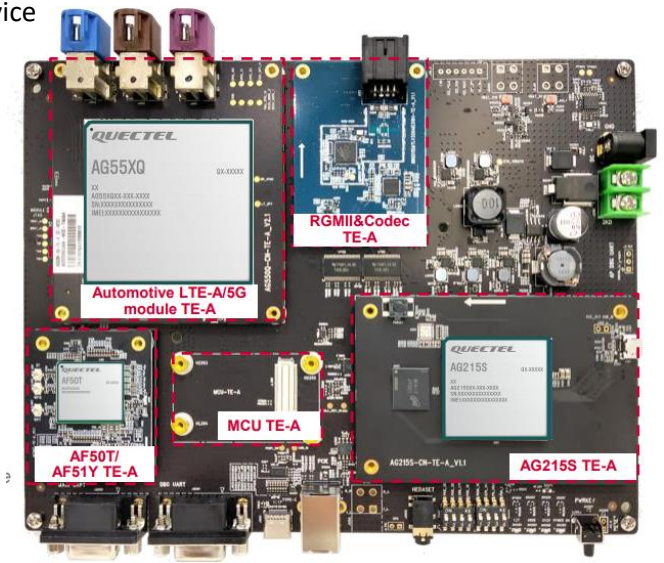
Training example:
- ✓ 70% on-the-job learning
- ✓ 20% learning from your peers and mentors
- ✓ 10% learning through role-specific training

SW Engineer Internship Automotive

Internship Description

As an intern you will learn about embedded software development lifecycle, programing in C/C++ and debugging technics. You will work on embedded Linux based systems (user space, kernel, device driver development), gain knowledge of

- Hardware interfaces (I2C, SPI, UART,I2S, GPIO);
- Network protocols (TCP, UDP, MQTT, HTTP);
- Cross-compiling;
- Cmake;
- Version control systems (GitLab, Gerrit);
- Linux Administration and Linux commands;
- Developing AT commands and APIs;
- Working with the latest and most sophisticated equipment;
- Understanding basic concepts of cellular technologies 2G-5G;



Responsibilities

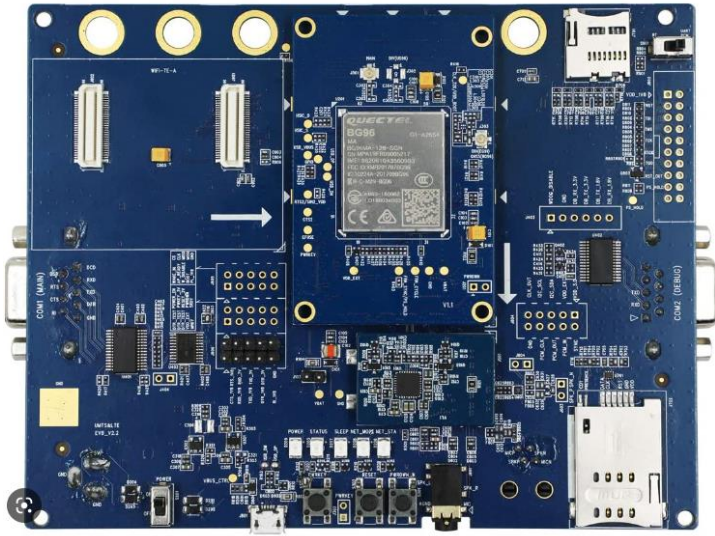
- Work on Yocto based systems, designing and developing cross-platform code in C/C++;
- Develop, maintain, customize, and improve modular and scalable embedded systems components;
- Work in cross-functional teams using Agile software development methods;
- Write unit tests and perform software verification and validation
- Working with young and dynamic environment with a lot of experience in embedded SW engineers.

SW Engineer Internship LPWA

Internship Description

As an intern you will learn about embedded software development lifecycle, programing in C and debugging technics. You will work on RTOS based systems and gain knowledge of

- Hardware interfaces (I2C, SPI, UART,I2S, GPIO);
- Network protocols (TCP, UDP, MQTT, HTTP);
- Cross-compiling;
- Building tools (Cmake, Make);
- Version control systems (GitLab, Gerrit);
- Developing AT commands and APIs;
- Working with the most sophisticated equipment;
- Understanding basic concepts of cellular technologies 2G-5G;



Responsibilities

- Work on RTOS based systems, designing and developing cross-platform code in C;
- Develop, maintain, customize, and improve modular and scalable embedded systems components;
- Work in cross-functional teams using Agile software development methods;
- Write unit tests and perform software verification and validation
- Working with young and dynamic environment with a lot of experience in embedded SW engineers.

SW Engineer Smart Module Internship

Internship Description

As an intern you will learn about Embedded Linux and Embedded Android development lifecycle, programing in C/C++ scripting and debugging technics. You will gain knowledge Linux and Linux commands, Linux Drivers, work on Android Open-Source Project and Android Application programming.

Responsibilities

- Work on developing driver for Linux and debugging (LCD, Camera, Battery, UART, SPI, I2C, GPIO, etc.)
- Configuration AOSP and HIDL/AIDL
- Work on Android application

Field Application Engineer (FAE) Internship

Internship Description

As an intern you will learn about Quectel's entire product portfolios, including 5G, LTE/LTE-A, UMTS/HSPA, GSM/GPRS and GNSS wireless technologies. Gain more experience in embedded product design or Firmware development in electronics, gain knowledge GSM/GPRS /EDGE / UMTS/LTE/TCP/IP/GPS specification/standards.

Responsibilities

- Work on providing technical support for Quectel’s full product line, including wireless, LTE, UMTS/HSPA (+), GSM/GPRS and GNSS modules.
- Work on embedded software or embedded hardware customer support
- With our team participate in project analysis and troubleshooting, to solve technical problems

RF Tester Internship

Internship Description

As an intern you will learn to perform measurements of antenna parameters, but also to perform measurements of radio parameters of wireless modules. All these tests are performed in a full-anechoic chamber using state-of-the art VNAs, spectrum analyzers and base station simulators.

Responsibilities

- Measuring antenna parameters such as gain, radiation patterns and efficiency.
- Measuring the total radiated power of a wireless device.
- Measuring the total isotropic sensitivity of a wireless device.
- Calibrating the anechoic chamber.
- Verification of the anechoic chamber.
- Drafting reports.
- Working with antenna engineers.

SW Test Internship

Internship Description

As an intern you will learn to perform functional and performance tests of wireless modules, which includes cellular modules, WLAN modules, Bluetooth modules, etc. You will also learn to use state-of-the art laboratory equipment such as base station simulators, communication testers, power analyzers, etc.

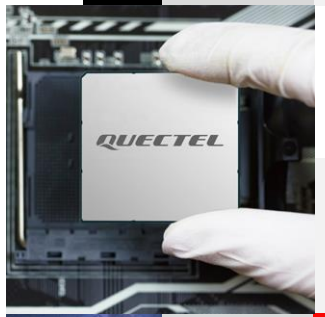
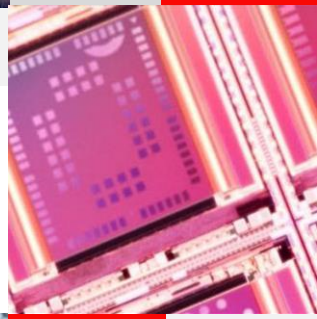
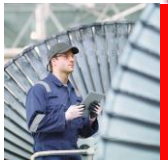
Responsibilities

- Testing the network connectivity using either an MNO's network, or base station simulators.
- Testing internet protocols, such as HTTP, TCP, FTP, etc.
- Testing bus protocols, such as SPI, I2C, UART, etc.
- Measuring the power consumption of modules in various modes of operation.
- Working with test automation engineers.
- Working with embedded SW engineers.

How to Apply

CV and the program(s) of interest should be sent at:

Email address: career@quectel.com
Email subject/title: Internship

Thank You

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