



PoC in a Box Package



- ✓ Everything you need to realize your cellular IoT project in one box
- ✓ Plug & Play IoT development kit with comprehensive 2G/3G/4G cellular and wired connectivity saves you 3 to 12 months of prototype design
- ✓ Combines qiiio's cellular expertise with Microsoft Azure Sphere security
- ✓ Integrates with qiiio smart connectivity services to remotely control and monitor the health and status of your assets and their connectivity. Seamlessly integrates with Azure IoT Central

Proof-of-Concept IoT Development Kit optimized for cellular operation on Microsoft's Azure Sphere®

Quickly create end-to-end cellular IoT solutions that are protected from cyber threats. Ensure that data transferred to and from the cloud is confidential, tamper-proof and authenticated.

Capitalize on the most secure cellular IoT solution on the market

PoC in a Box Package allows you to rapidly develop secure, cellular-based IoT systems for managing industrial assets requiring high security and ubiquitous connectivity. Typical applications include production, manufacturing, logistics, retail and energy supply.

Once your design is complete, seamlessly migrate to the operator-certified q200 Guardian for mass production.

Built-in Microsoft security technology

Protect your IoT devices and equipment with defense in depth. qiiio's products embed Azure Sphere-certified chips to provide secure connectivity based on a dependable hardware root of trust.

Azure Sphere brokers trust for device-to-cloud communications, detects threats, and renews device security. The OS adds layers of protection and ongoing security updates to create a trustworthy platform to manage your IoT devices.

Essential part of a secure edge-to-cloud solution

PoC in a Box Package includes qiiio's smart connectivity services qTools that seamlessly integrate into your IoT designs to monitor and manage the health, status and connectivity of your edge devices. Six months of cellular connectivity are also included.

Once deployed, you can securely connect, monitor and control your IoT assets over cellular networks via Azure IoT Hub.

Benefits and features

- **Quickly develop solutions that securely connect, monitor and control** your IoT edge devices via cellular networks via an online dashboard
- **Embedded Azure Sphere*** certified processor provides built-in Microsoft technology based on [Seven Properties](#) of IoT security
- **Supports large deployments** which work seamlessly with your Azure cloud platform as well as with qiiio's cloud services for Azure
- **Zero-touch provisioning** – works out-of-the-box
- **Global coverage** includes roaming agreements with over 500 cellular service providers in 190 countries
- **Services included** - 6 months of Azure IoT Central for efficient development plus all qiiio smart connectivity services qTools and cellular connectivity are provided. 30 hours of qiiio engineering services included
- **Fast time-to-market** due to comprehensive interfaces and the modularity of qiiio hardware and software products
- **Comprehensive operational overview** of processes and activities, including usage and marketing data collection
- **Real-time monitoring** of processes and machines results in faster, low-cost and preventative maintenance
- **Saves costs** – eliminates unnecessary travel, reduces security threats, optimizes supply chain logistics, and eases adherence to industry regulatory requirements
- **Streamlines supply chain** management resulting in cheaper and faster logistics and manufacturing processes
- **Comprehensive connectivity:** Supports 2G, 3G, 4G cellular plus Wi-Fi, Ethernet, GNSS, I²C, SPI, UART, PWM and ADC interfaces



From concept to deployment

qiiio's PoC in a Box Package is the quickest way to start your IoT project. Once your design is completed, seamlessly migrate to the operator certified q200 Guardian which includes global coverage and SDK for connectivity management. Use qiiio's demo cloud platform based on Azure IoT Central or connect directly to your own.

Technical data

PoC in a Box Package Development Kit	
Hardware units	<ul style="list-style-type: none"> ▪ One to five PoC in a Box units based on the high-security Azure Sphere* MT3620 processor
Azure Sphere platform security features	
Hardware-based root of trust Small trusted computing base	<ul style="list-style-type: none"> ▪ Prevents device forgery or spoofing ▪ Reduces attack surface area of security-critical hardware and software components
Defense in depth	<ul style="list-style-type: none"> ▪ Multiple layers of security - each layer of software verifies that the layer above it is secured
Compartmentalization	<ul style="list-style-type: none"> ▪ Prevents a security breach in one component from propagating to other components
Certificate-based authentication Renewable security	<ul style="list-style-type: none"> ▪ Signed certificates validated by cryptographic key ▪ Device software is automatically updated to correct known vulnerabilities or security breaches
Failure reporting	<ul style="list-style-type: none"> ▪ Automatic reporting of operational data and failures to a cloud-based analysis system anticipates emerging security threats
Interface to IoT asset	
Wired interfaces	<ul style="list-style-type: none"> ▪ 12 Sphere GPIOs (6 x PWM + 6 x ADC) ▪ 4 Sphere ISU blocks (I²C, SPI, UART) ▪ 1 USB Type C interface for USB <-> UART from ISU4 (shared with ISU block 4, enable/disable via micro switch) ▪ WAN ethernet to internet ▪ Full Arduino interfaces with power, ISU and analog interfaces plus GPIOs to ease development ▪ RS485/422/232 plus CAN and Bluetooth Smart Cables available from qiiio
Interface to Azure Sphere	<ul style="list-style-type: none"> ▪ USB Micro interface to FTDI (4 Channel UART) to program and debug Azure Sphere
Interface to Azure Cloud	
Cellular interfaces**	<ul style="list-style-type: none"> ▪ LTE-FDD, LTE-TDD, DC-HSDPA, HSPA+, HSUPA, UMTS, EDGE, GPRS
Bands	<ul style="list-style-type: none"> ▪ LTE-FDD : B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 ▪ LTE-TDD : B38/B39/B40/B41 ▪ WCDMA : B1/B2/B4/B5/B6/B8/B19 ▪ GSM : 850/900/1800/1900MHz ▪ Wi-Fi: 2.4 and 5 GHz ▪ Ethernet 1 x RJ45 10/100 Mbit/secs
WLAN interface Wired interface	
Antenna	<ul style="list-style-type: none"> ▪ Built-in antennas for cellular, WiFi and GNSS ▪ Ext. antenna possible with U.FL<->SMA connector
Certifications	<ul style="list-style-type: none"> ▪ Production q200 Guardian: PTCRB/FCC/AT&T certified (FCC ID: GC520240Q200), others in progress
Roaming	
Integrated eSIM	<ul style="list-style-type: none"> ▪ Roaming agreements with 500 service providers ▪ Plug & Play – works in 190 countries ▪ Fully programmable ▪ External SIM slot available
GNSS positioning**	<ul style="list-style-type: none"> ▪ GPS, GLONASS, BeiDou, Galileo, QZSS
Analog interfaces	<ul style="list-style-type: none"> ▪ 6 PWMs/GPIOs ▪ 6 12-bit ADCs/GPIOs
Operating conditions	
Recommended power supply	<ul style="list-style-type: none"> ▪ 5 V supporting 1 A (min) via USB C connector
Current consumption at 5 V	<ul style="list-style-type: none"> ▪ 0.5 A (Typ), 0.7 A (Max)
Power connector	<ul style="list-style-type: none"> ▪ P5 Plug 2.1mm ID, 5.5m, USB Type C (5V)
Operating temperature	<ul style="list-style-type: none"> ▪ -40 °C to +85 °C

* Azure Sphere is a registered trademark of Microsoft Corporation

** Embedded antennas included