



# Concentrator XN



- ✓ Designed for greenfield IoT applications: supports cellular (2G, 3G, 4G), dual-band Wi-Fi and ethernet to connect to Microsoft Azure
- ✓ Enables highly secured, simple, and scalable connectivity from anywhere. Complements your existing cloud infrastructure
- ✓ Integrates with qiiio Sphere Studio® to manage the health, status, location and connectivity of your edge devices
- ✓ Supports geopositioning via GNSS and cellular indoor positioning (qMaps)

## Compact IoT module optimized for cellular operation on Microsoft's Azure Sphere®

Quickly create end-to-end cellular IoT solutions that are protected from cyber threats.

### The most secure cellular IoT technology on the market

The Concentrator XN from qiiio is an IoT edge module preconfigured with Microsoft Azure Sphere, eSIM and comprehensive cellular connectivity. It protects IoT devices from cyber threats and ensures that data transmitted to the cloud via cellular networks is confidential, tamper-proof and authenticated.

Combined with qiiio Sphere Studio®, it forms the basis for the most secure cellular solution available.

### 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

Concentrator XN includes qiiio Sphere Studio® that seamlessly integrate into your IoT designs to monitor and manage the health, status, location and connectivity of your edge devices.

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

## Benefits and features

- **Quickly develop solutions that securely connect, monitor, track 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 existing Azure cloud platform as well as with qiiio Sphere Studio®
- **Zero-touch provisioning** – works out-of-the-box
- **Global coverage** includes roaming agreements with over 500 cellular service providers in 190 countries
- **Comprehensive connectivity:** Supports 2G, 3G, 4G cellular plus dual-band Wi-Fi, Ethernet, GNSS, I<sup>2</sup>C, SPI, UART, PWM and ADC interfaces
- **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



## Part of a complete suite of IoT products and services

Integrated in the qiiio Q200 Guardian (pictured above), the Concentrator XN is also a standalone product and part of qiiio's complete suite of IoT services, development kits and hardware edge products that ensure the integrity, security and robust operation of your IoT deployments. For details, visit [www.qiiio.com](http://www.qiiio.com)

## Technical data

qiiio Concentrator XN	
<b>Hardware</b>	<ul style="list-style-type: none"> <li>▪ Module with qCON connector (M.2 -M key)</li> <li>▪ Dimensions: 70 x 37 x 3.6 cm</li> <li>▪ Embedded, high-security Azure Sphere* MT3620 processor</li> </ul>
<b>qiiio Sphere Studio®</b> qiiio Zero Touch Provisioning qiiio Device Health qiiio Connectivity Insurance	<ul style="list-style-type: none"> <li>▪ Device integration to Azure with a fully automated zero touch process</li> <li>▪ Device Health Monitoring</li> <li>▪ Device Health Prediction</li> <li>▪ Device Health Alerts</li> <li>▪ Cellular connectivity improvement for 50% better coverage</li> </ul>
<b>Interface to IoT asset</b>	
Wired interfaces	<ul style="list-style-type: none"> <li>▪ 12 Sphere GPIOs (6 x PWM + 6 x ADC)</li> <li>▪ 4 Sphere ISU blocks (I<sup>2</sup>C, SPI, UART)</li> <li>▪ WAN ethernet to internet</li> </ul>
<b>Interface to Azure Cloud</b>	
Cellular technologies**	<ul style="list-style-type: none"> <li>▪ 2G (GSM, EDGE)</li> <li>▪ 3G (HSPA+, WCDMA)</li> <li>▪ 4G (LTE CAT1)</li> </ul>
Cellular bands	<ul style="list-style-type: none"> <li>▪ 2G: B2 (1900 MHz), B3 (1800 MHz), B5 (850 MHz), B8 (900 MHz)</li> <li>▪ 3G: B1 (2100 MHz), B2 (1900 MHz), B4 (1700 MHz), B5 (850 MHz), B6 (800 MHz), B8 (900MHz), B19 (800 MHz)</li> <li>▪ 4G (LTE-FDD): B1 (2100 MHz), B2 (1900 MHz), B3 (1800 MHz), B4 (1700 MHz), B5 (850 MHz), B7 (2600 MHz), B8 (900 MHz), B12 (700 MHz), B13 (700 MHz), B18 (850 MHz), B19 (800 MHz), B20 (800 MHz), B25 (1900 MHz), B26 (850 MHz), B28 (700 MHz)</li> </ul>
WLAN interface	<ul style="list-style-type: none"> <li>▪ Wi-Fi 802.11 b/g/n: 2.4 and 5 GHz</li> </ul>
Wired interface	<ul style="list-style-type: none"> <li>▪ Ethernet 1 x RJ45 10/100 Mbit/secs</li> </ul>
<b>Antenna</b>	<ul style="list-style-type: none"> <li>▪ Built-in antennas for cellular, Wi-Fi and GNSS</li> </ul>
<b>Integrated eSIM</b>	<ul style="list-style-type: none"> <li>▪ eUICC (eSIM)</li> <li>▪ Roaming agreements with 500 service providers</li> <li>▪ Plug &amp; Play – works in 190 countries</li> </ul>
<b>Geopositioning**</b>	<ul style="list-style-type: none"> <li>▪ GPS, GLONASS, BeiDou, Galileo, QZSS, qMaps cellular (indoor) positioning</li> </ul>
<b>Analog interfaces</b>	<ul style="list-style-type: none"> <li>▪ 6 12-bit ADCs/GPIOs</li> <li>▪ 6 PWMs</li> </ul>
<b>Operating conditions</b>	
Recommended power supply	<ul style="list-style-type: none"> <li>▪ 3.3 V</li> </ul>
Current consumption at 5 V	<ul style="list-style-type: none"> <li>▪ 0.5 A (Typ), 0.7 A (Max)</li> </ul>
Operating temperature	<ul style="list-style-type: none"> <li>▪ -20°C to +85°C (storage)</li> <li>▪ -20°C to +70°C (operating)</li> </ul>

\* Azure Sphere is a registered trademark of Microsoft Corporation  
 \*\* Embedded antennas included