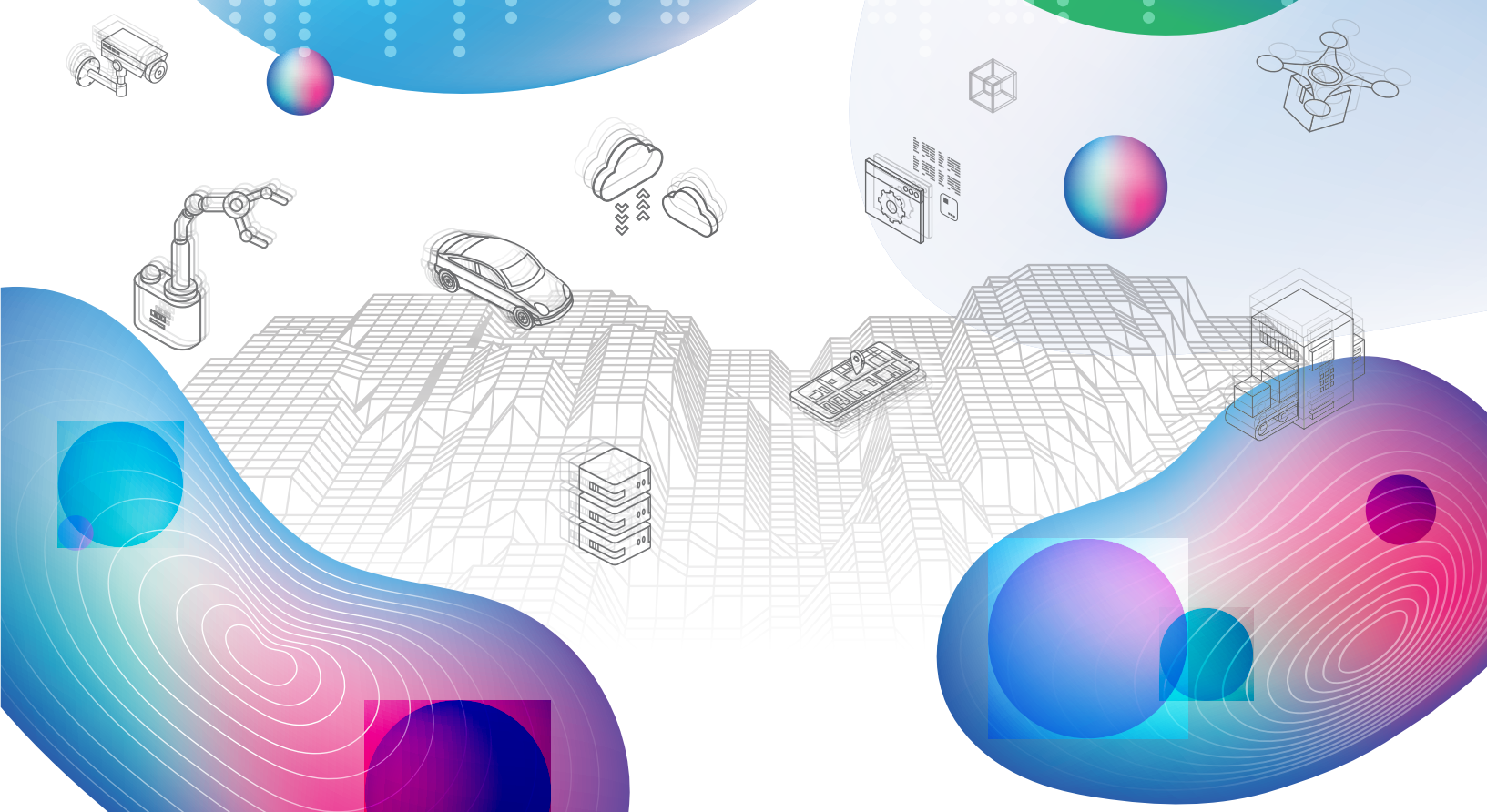
Learn more:
https://go.qct.io/omnipod-enterprise-5g-solution/

QCT OMNIPOD ENTERPRISE 5G



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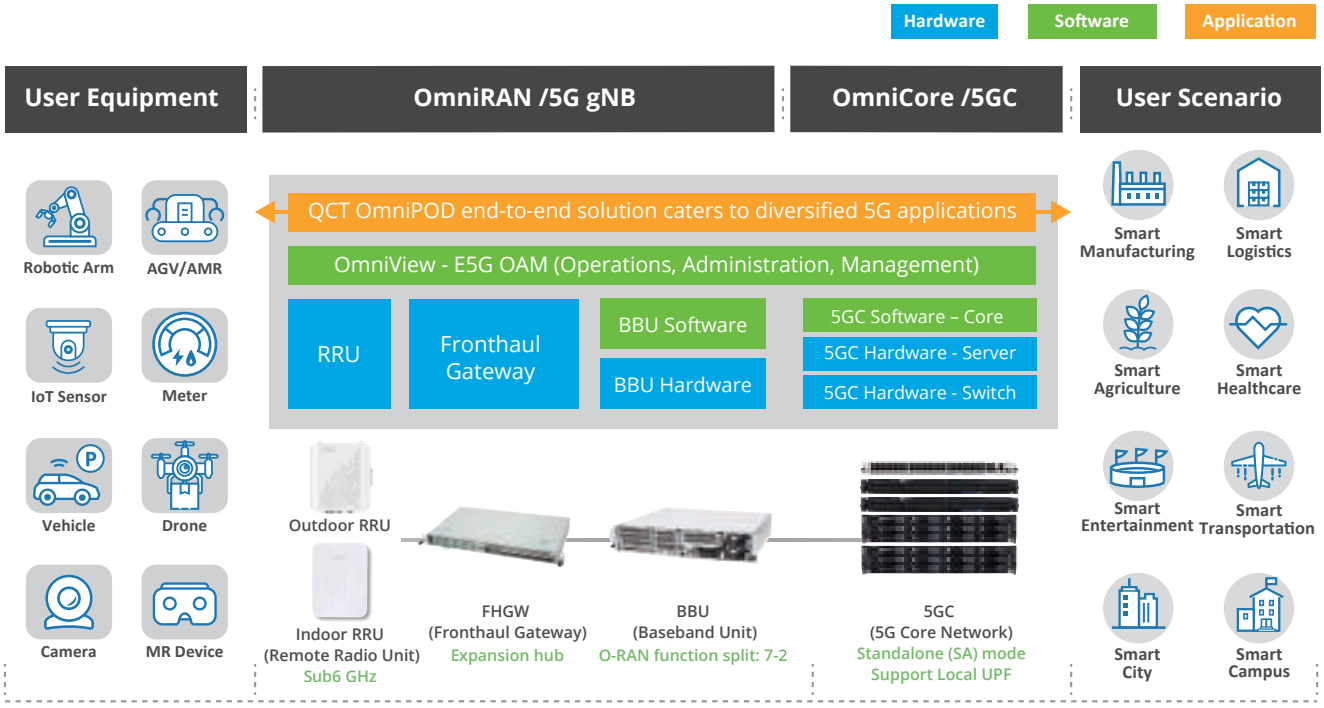
QCT OmniPOD Enterprise 5G Overview

QCT OmniPOD Enterprise 5G is an ideal solution for businesses looking to transition to standalone (SA) 5G core and RAN networks, making possible a whole new range of 5G services from enhanced mobile broadband (eMBB), massive machine-type communication (mMTC), to ultra-reliable low latency communication (URLLC).



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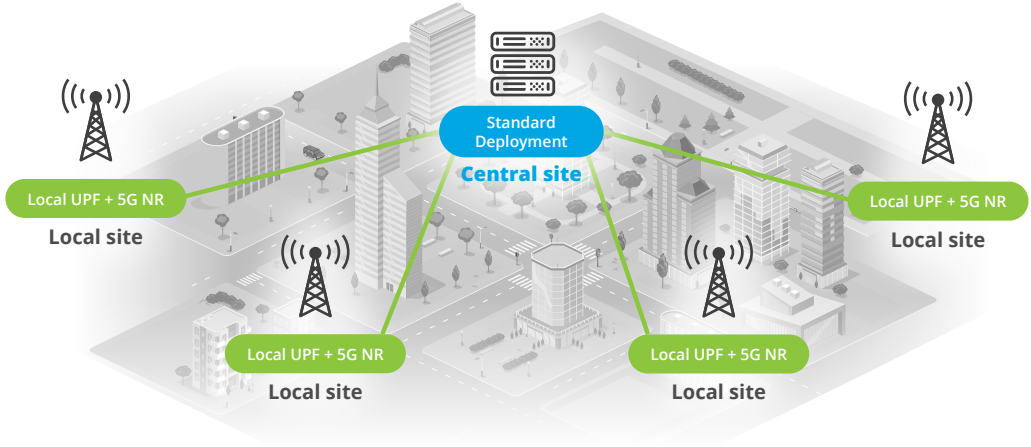
QCT OmniPOD Enterprise 5G Deployment

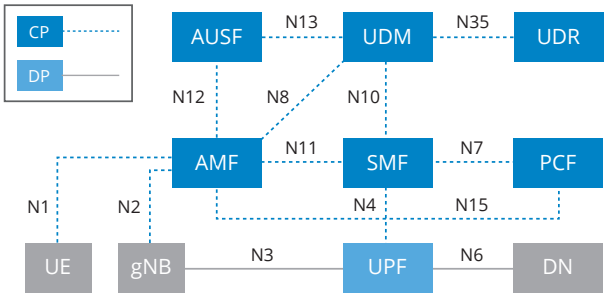
QCT OmniPOD supports various scales from single-site to multi-site Enterprise 5G deployments, depending on different scenarios. QCT OmniPOD includes Control and User Plane Separation (CUPS) design in the network function architecture. It allows user data to be computed in the edge site, bringing the benefits of decreasing data transmission latency, reducing the CAPEX of the company due to Cross-site Link saving-cost, and also increasing the confidentiality of the user data. Local UPF enhances the efficiency of operation and management in local site.



- Scalable deployment
- Support local UPF (based on CUPS design)
- Single-site and multi-site deployment
- Operation and management for central & local site

QCT OmniCore Overview

QCT OmniCore is a cloud-native, virtualized 5G core network solution built on commodity hardware that allows for the optimization of network functions and the realization of dynamic 5G applications and services (e.g., eMBB, mMTC, URLLC) for diverse vertical industry requirements.



- **3GPP Release 15 compliant**
- **Standalone (SA) mode**
- **High Availability (HA) design**
- **Control & User Plane Separation (CUPS)**
- **Support Local UPF in multi-site deployments**
- **Up to 160 Gbps DL/UL combined**
- **Up to 10,240 simultaneously attached UEs**

QCT OmniCore Hardware

Powered by Intel® Xeon® Scalable Processors

5G Core Server

Data Switch

Management Switch

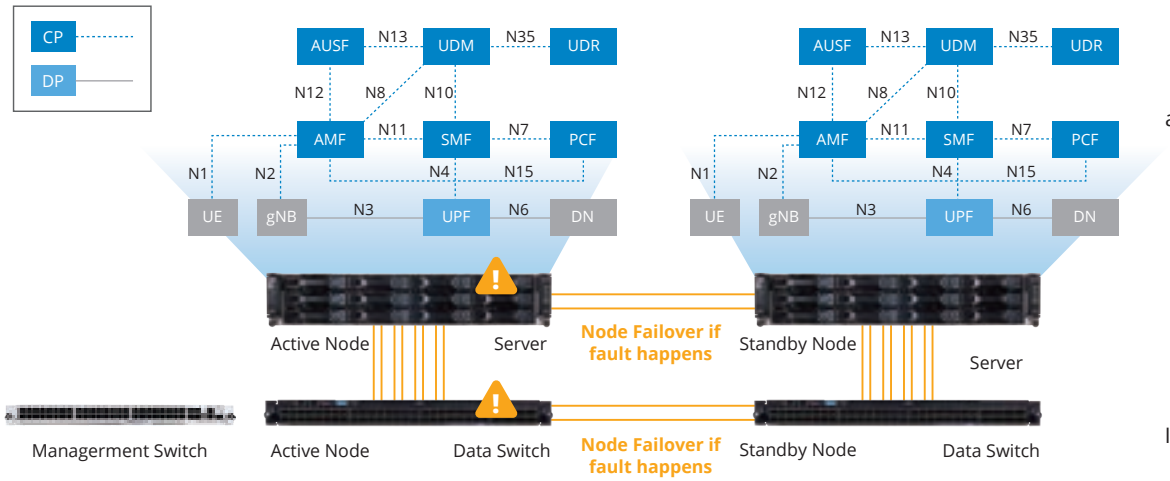
Local UPF Server

5G Core Architecture	
5GC Hardware Model	• 5GC Server x2 • Data Switch x2 • Management Switch x1 • (Optional) Local UPF Server
Network Function	CP: AMF, SMF, UDM, UDR, AUSF, PCF/ DP: UPF
Reference Interface	N1, N2, N3, N4, N6, N7, N8, N10, N11, N12, N13, N15, N35

5G Core Server Specifications	
Environment	• Operating temperature: 5°C ~ 40°C • Operating relative humidity: 20% ~ 85%
Power Supply	110/220V AC
Power Consumption	< 1200W (Active & Standby server)
Dimensions & Weight	(W) 440 x (H) 87.5 x (D) 780 mm ; < 35kg

Local UPF Server Specifications	
Environment	• Operating temperature: 5°C ~ 40°C • Operating relative humidity: 5% ~ 85%
Power Consumption	<800W
Dimensions & Weight	(W) 447.8 x (H) 86.3 x (D) 420 mm; < 25kg

QCT OmniCore HA Mechanism



Continuous service availability for a long time.

Automatic node failover when fault happens.

Immediate system backup and failsafe PDU session.

QCT OmniRAN Overview

Standard Compatibility
3GPP-compliant to interwork with various 5G terminals.

Disaggregated Platform
Baseband Unit (BBU) software built on top of x86 edge purpose servers.

Standard Time Synchronization Protocol
According to 1588v2, FHGW receives GPS signal or external 1588 packet to synchronize time with RRUs and BBU.

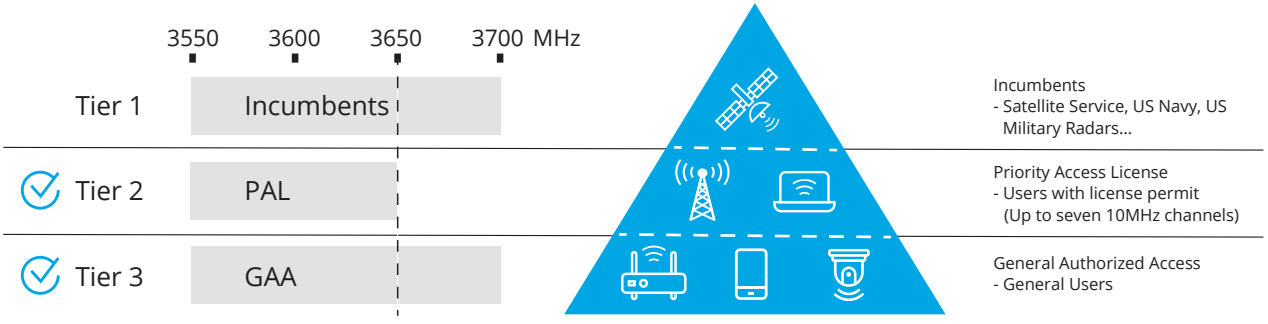
Various Coverage Options
Both indoor and outdoor options are available to meet various deployment scenarios in customer fields.

Expandable Ratio Network at a Single Cell
Depending on field coverage requirements, each Fronthaul Gateway (FHGW) can support multiple Remote Radio Units (RRUs). With cascade mode, each cell can support multiple FHGWs to expand the radio network coverage.

Configurable Uplink-Downlink Throughput Ratio
Configurable slot formats to accommodate varying uplink and downlink throughputs for different use cases.

QCT OmniRAN in US Market - Citizens Broadband Radio Service (CBRS)

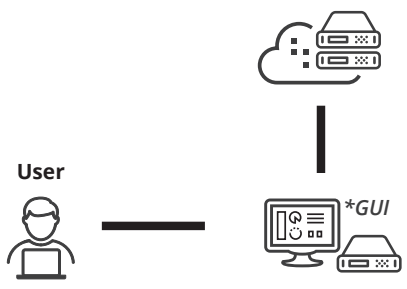
Targeting the US market, QCT OmniRAN fulfills US requirements for the Citizens Broadband Radio Service (CBRS). CBRS comprises 150 MHz (n48, 3550-3700MHz) shared spectrum for US public use with 3-tier usage prioritizing. QCT supports Priority Access License (PAL) and General Authorized Access (GAA) user requirements.



**CBRS 3 Tiers' Users:*
Federal Communications Commission (FCC) requires that GAA users cannot interfere with PAL or incumbent users, and PAL users cannot interfere with incumbent users.

QCT OmniRAN CBRS is controlled by a Spectrum Access System (SAS), the frequency coordination system across the 3 tiers. SAS is operated by third party providers authorized by Federal Communications Commission (FCC).

Citizens Broadband Radio Service Devices (CBSDs), or the RRUs, need to register with a SAS for CBRS services and subsequently request its spectrum granted through Domain-Proxy as the proxy role.



Spectrum Access System (SAS)

* Service is operated by 3rd party providers authorized by FCC.
* Frequency Coordination System across the 3 tiers.
* Service is operated by 3rd party providers authorized by FCC.
* Frequency Coordination System across the 3 tiers (Incumbents, PAL, GAA).

BBU + Domain-Proxy (DP)

* Domain-Proxy (DP) as a proxy role
* CBSDs registered with a SAS for CBRS services and subsequently request its spectrum granted through DP

CBRS Devices (CBSDs)

* CBSDs are the devices approved by FCC to support CBRS.

Both QCT Indoor CBSD & Outdoor CBSD have been approved by Federal Communications Commission (FCC).

IronRAN-RUx PI GenA
(Indoor RRU)

CBSD Category: A
FCCID: HFS-IRONRAN-RU5PI

IronRAN-RUx MO GenA
(Outdoor RRU)

CBSD Category: B
FCCID: HFS-IRONRAN-RU4MO

QCT OmniRAN Product Specifications

OmniRAN-E5GBBU
Front View

OmniRAN-E5GBBU
Rear View

Powered by
Intel® Xeon® Scalable
Processors

BBU Product Specifications

Model Name	OmniRAN-E5GBBU
Standard	3GPP R15 SA
Modulation	Downlink: QPSK, 16QAM, 64QAM, 256QAM Uplink: QPSK, 16QAM, 64QAM
Active User/ Connected User	128 active UE/ 384 connected UE
Cell bandwidth	10/20/40/50/60/80/90/100 MHz per cell (Support multiple bands depending on 3GPP-defined specifications)
Frame Structure	Pattern1: DDDSU DDSUU Pattern2: DDSUU Pattern3: DSUUU Pattern4: DDDSUU DDDD (TDD-Sync for Japan) Pattern5: DDDSUU DSUU (Semi-Sync for Japan) Pattern6: DDSUUU DSUU (Semi-Sync 2 for Japan) Pattern7: DSUUUU DSUU (Semi-Sync 3 for Japan)
Power Consumption	<800W
Power Supply	110/ 220V AC
Dimension and Weight	(W)447.8 x (H)86.3 x (D)420 mm, 25kg
Environment	Operating temperature: -5°C ~ 40°C Operating relative humidity: 5% ~ 85%

IronRAN-FG GenA
Front View

IronRAN-FG GenA
Rear View

FHGW Product Specifications

Model Name	IronRAN-FG GenA
RRU Support	Support RRU up to 100 MHz; Up to 8 RRUs supported
Time Synchronization	Embedded GPS module (IEEE 1588v2 grand master)
Ingress Protection	IP20
Power Supply	110/220V AC
Power Consumption	<70W
Dimension and Weight	(W)449.2 x (H)43.2 x (D)258.5 mm, 4.3kg
Power for RRU	+54V DC
Environment	Operating temperature: -5°C ~ 45°C Operating relative humidity: 5% ~ 95%

Indoor RRU Product Specifications

Model Name	IronRAN-RUx PI GenA
Band	n48, 3550 MHz – 3700 MHz n78, 3300 MHz – 3800 MHz n79, 4600 MHz – 4900 MHz
Bandwidth	Support up to 100 MHz
MIMO	4T4R
Maximum Output Power	4x 250mW
Synchronization	IEEE 1588v2
Placement	Wall mount & ceiling mount
Function Split	O-RAN option 7-2
Ingress Protection	IP30 for indoor
Power Supply	54V DC (by FHGW) or 100~240V AC (by local with adapter)
Power Consumption	60W
Dimension and Weight	(W)204.7 x (H)259.1 x (D)52.5 mm without mounting kit (W)204.7 x (H)259.1 x (D)72.5 mm with mounting kit 1.34kg
Environment	Operating temperature: -5°C ~ 45°C Operating relative humidity: 5% ~ 95%
Noise	Under normal temperature (25°C) < 40 dBA

IronRAN-RUx PI GenA is the first RRU product to obtain both Taiwan certification and Japan TELEC certification for n79.

Outdoor RRU Product Specifications

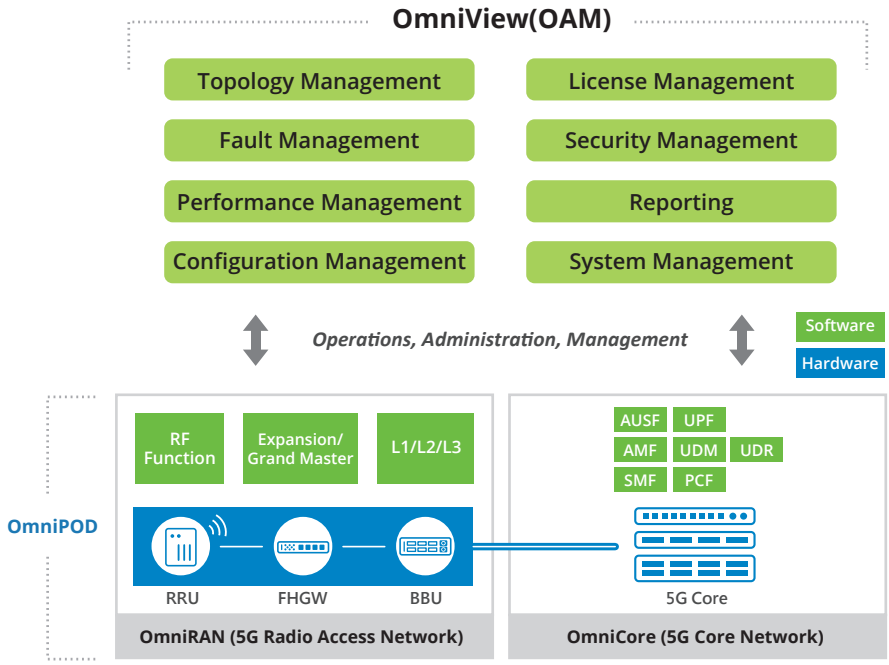
Model Name	IronRAN-RUx MO GenA
Band	n48, 3550 MHz – 3700 MHz n78, 3300 MHz – 3800 MHz n79, 4600 MHz – 4900 MHz
Bandwidth	Support up to 100 MHz
MIMO	4T4R
Maximum Output Power	4x 5W
Synchronization	IEEE 1588v2
Placement	Wall mount & pole mount
Function Split	O-RAN option 7-2
Ingress Protection	IP65
Power Supply	100~240V AC
Power Consumption	180W
Fan	Fanless design
Dimension and Weight	(W)355 x (H)418.5 x (D)165 mm, 15kg
Environment	Operating temperature: -40°C ~ 55°C (best case) Operating relative humidity: 5% ~ 95%

QCT OmniView Overview

QCT OmniView is a network management system for monitoring QCT OmniPOD hardware and software.

It serves as a pair of eyes overseeing the overall network system, providing 8 major functions with a user-friendly, web-based, and visual management.

QCT OmniView Dashboard



QCT OmniView Architecture

QCT OmniView Features

Visualized Management

Key system indicators are visualized in a graphic dashboard for easy management.

Single Pane of Glass Display

All network data is displayed in a unified view.

SIM Provisioning & Management

Activating, deactivating, managing SIM card remotely.

Real-time Fault Notification

Immediately sends out email alerts upon the detection of a fault.

3GPP-based KPI Measurement

Performance is measured by 3GPP standards.

IP Whitelist Control

Network access is only granted to IP addresses that users authorized.

QCT OmniView Functions

Topology Management

Display the physical and logical views of the network structure, networking relation, and operating status of QCT OmniPOD.

Fault Management

Manage and monitor all alarms that are generated by NFs and hardware of OmniPOD.

Performance Management

Display and monitor the key performance indicators that are generated by OmniPOD.

Configuration Management

Execute SIM import and UE provisioning of OmniCore, and configure the key parameters of OmniRAN.

License Management

Manage OmniPOD license.

Security Management

Manage users and user groups as well as to record operation logs.

Reporting

Allows users to manage and export all reports that are generated by the network system.

System Management

Display basic system information and set up the overall system such as NTP server & mail server settings.

QCT Enterprise 5G for Digital Transformation

With a comprehensive portfolio and solution deployment know-how, QCT is taking the lead in helping enterprises capture the value of 5G private networks, unlocking a whole world of use cases for businesses to stay ahead of the game in this age of rapid digital transformation.

Smart Manufacturing

Smart Theater

Smart Agriculture

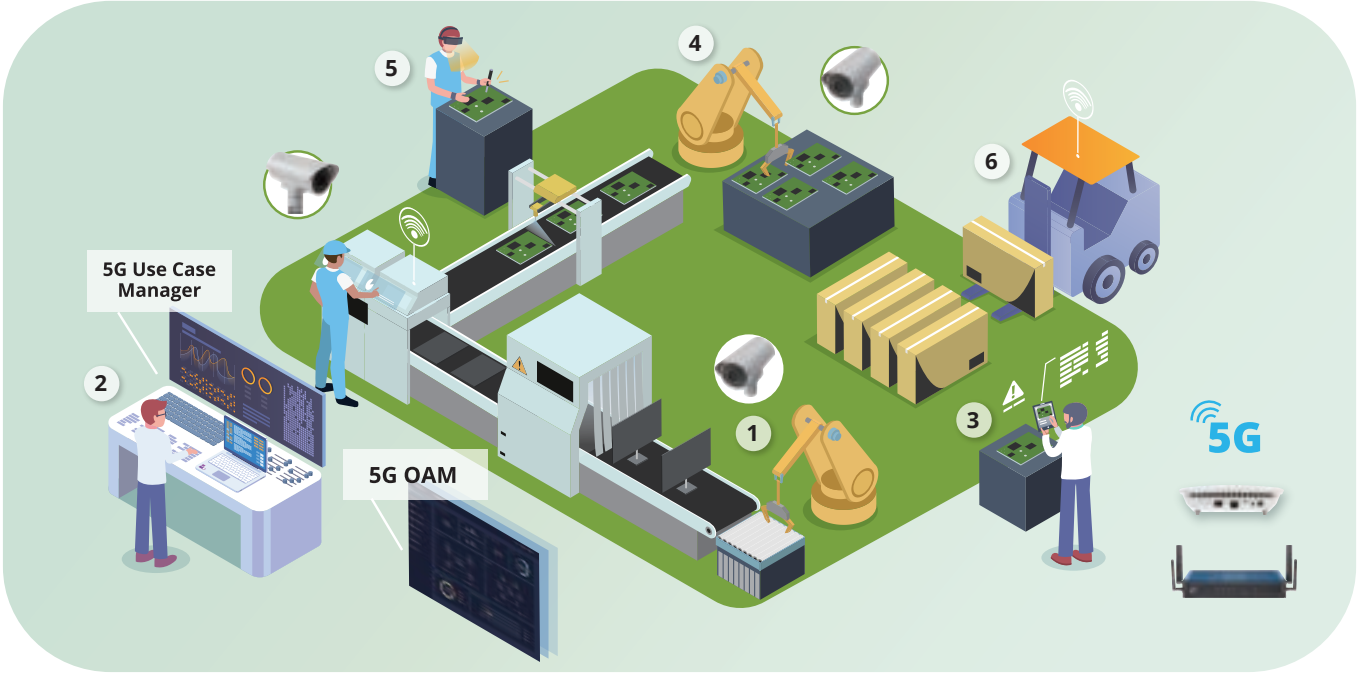
Smart Healthcare

QCT's Successful Smart Manufacturing Use Cases

Realize smart factories with QCT's enterprise 5G OmniPOD solution.

Taking advantage of the high bandwidth and low latency of 5G, QCT's Enterprise 5G solutions ensure the real-time transmission of large-scale data to meet varying customer demands.

- ✓ **IoT**
- ✓ **Security**
- ✓ **Automation**
- ✓ **Quality Control**



1 Safety AI

To ensure workplace safety and security, image recognition technology is used for real-time monitoring to detect noncompliance of safety regulations, generate automated alerts, and halt dangerous machinery when trespassing occurs; a safety AI dashboard is used for easy management.

2 AR Information Visualization

To easily monitor the production line status at a glance, AR technology is used display production equipment operating and product assembly statuses in real time.

3 AR Identification

To lower the specialist background threshold required, image recognition and AR technology are used to display product model information and installation instructions.

4 Image Archiving

To provide control for future maintenance needs, high-resolution images of all products are recorded by industrial-grade cameras.

5 AR Repair

To improve maintenance efficiency, image recognition and AR technology are used to display fault and repair instructions.

6 AGV Transportation

Through the deployment of 5G signals throughout the factory, AGVs can be controlled by a central management system for parts and equipment transportation.

About QCT

Quanta Cloud Technology (QCT) is a global data center solution provider. We combine the efficiency of hyperscale hardware with infrastructure software from a diversity of industry leaders to solve next-generation data center design and operation challenges. QCT serves cloud service providers, telecoms and enterprises running public, hybrid and private clouds.

Product lines include hyper-converged and software-defined data center solutions as well as servers, storage, switches, integrated racks with a diverse ecosystem of hardware component and software partners. QCT designs, manufactures, integrates and services cutting edge offerings via its own global network. The parent company of QCT is Quanta Computer, Inc., a Fortune Global 500 corporation.

QCT Authorized Partner

www.QCT.io

QCT OmniPOD

Contact Us

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