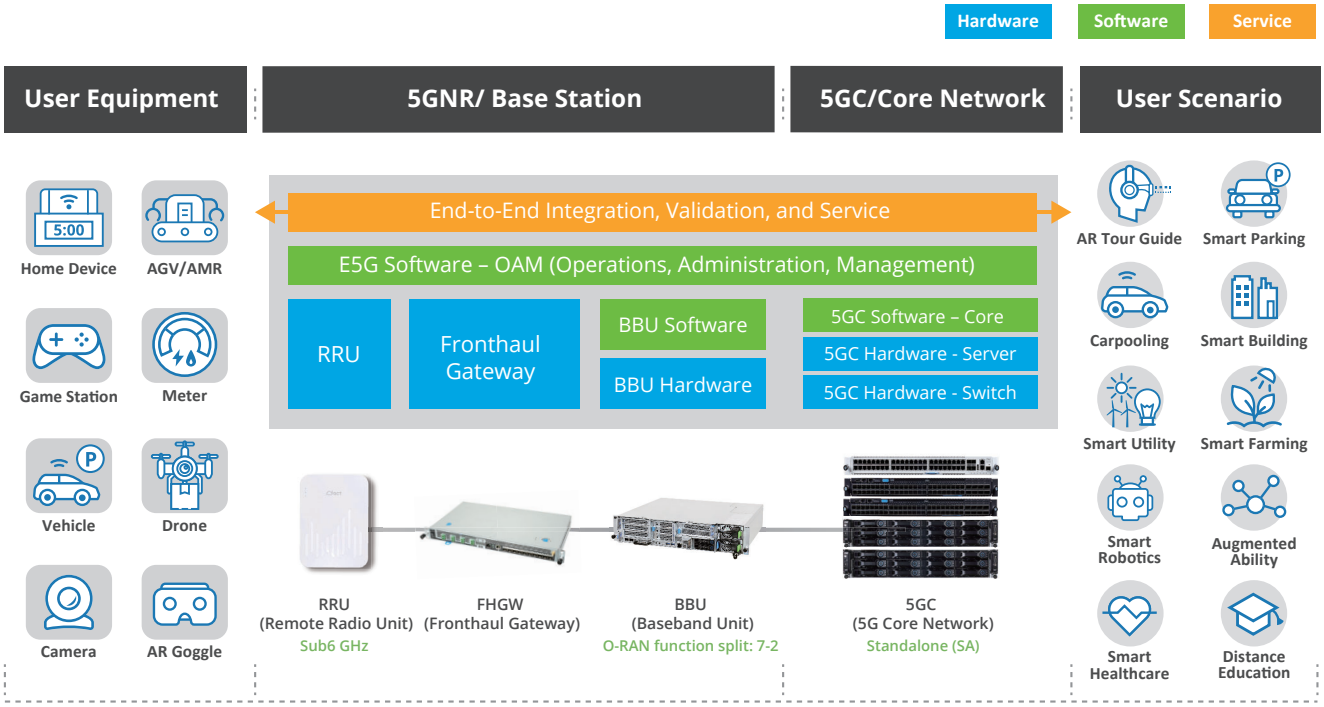
QCT OMNIPOD ENTERPRISE 5G

QCT OmniPOD Enterprise 5G Overview

QCT OmniPOD Enterprise 5G consists of three essential components: OmniCore (5G Core), OmniRAN (5G RAN), and OmniView (OAM). It 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 (uRLLC).



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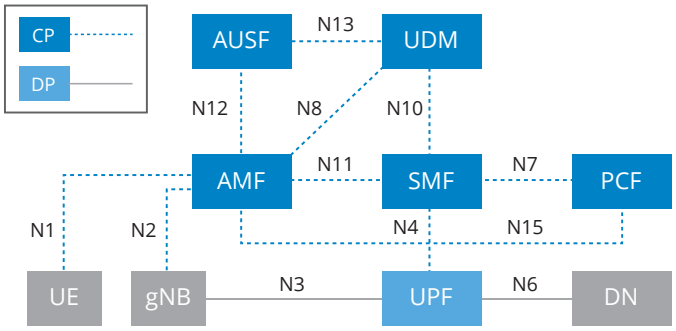
Learn more: https://go.qct.io/telco/

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)**
- ✓ **Up to 160 Gbps DL/UL combined**
- ✓ **Up to 10,240 simultaneous attached UEs**
- ✓ **Up to 256 gNodeB/cell/fronthaul gateway**

QCT OmniCore Hardware

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5G Core Server

Data Switch

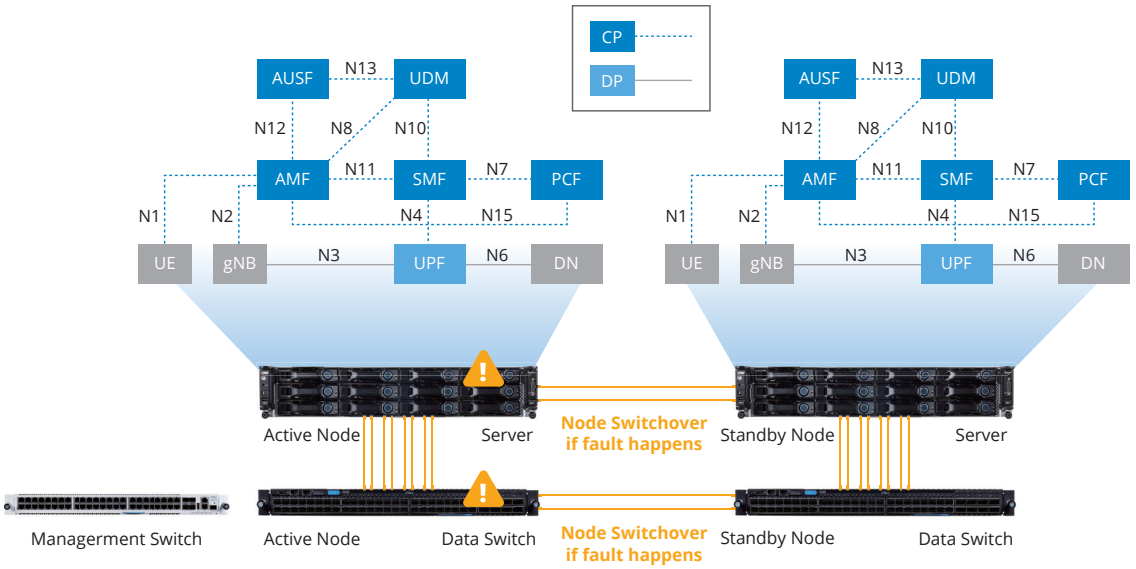
Management Switch

5G Core Architecture	
5GC Hardware Model	• 5GC Server x2 (QuantaGrid D52BQ-2U) • Data Switch x2 (QuantaMesh T4048-IX8D) • Management Switch x1 (QuantaMesh T1048-LY4R)
Network Function	CP: AMF, SMF, UDM, AUSF, PCF; DP: UPF
Reference Interface	N1, N2, N3, N4, N6, N7, N8, N10, N11, N12, N13, N15

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

Found at: www.QCT.io/wheretobuy

QCT OmniCore HA Mechanism



Automatic node switchover when fault happens.

Immediate system backup and failsafe PDU session.

Continuous service availability for a long time.

QCT OmniRAN Overview

The architecture of QCT OmniRAN Indoor 5G Picocell is based on O-RAN. Under OmniRAN, one Baseband Unit (BBU) can support one Fronthaul Gateway (FHGW), while one FHGW can support up to four Remote Radio Units (RRU). In multi-cell deployment scenarios, IEEE1588v2 technology is implemented to meet the 3GPP time synchronization requirement. Using GPS as the accurate primary reference time source, FHGW acts as a grand master that generates IEEE1588v2 signals for RRU.

Disaggregated platform
BBU software on top of x86 general purpose server.

Flexible deployment
Wall mount and ceiling mount options available to satisfy diverse use case demands.

High compatibility
3GPP standard compliant to interwork with different 5G terminals.

Adjustable ratio for uplink and downlink time slots
Flexible frame structure to accommodate varying uplink data rates for different use cases.

Expandable radio network for single cell
Each cell can support up to 4 remote radio units (RRU) depending on field coverage requirements.

QCT OmniRAN Product Specifications

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OmniRAN-E5GBBU
Front View

OmniRAN-E5GBBU
Rear View

IronRAN-FG GenA
Front View

IronRAN-FG GenA
Rear View

IronRAN-RU1 PI GenA
Exterior View

*IronRAN-RU1 PI GenA is the first RRU product to obtain both Taiwan NCC certification and Japan TELEC certification for n79.

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
No. of Cell; Cell bandwidth	1 cell; 100 MHz per cell
MIMO	UL 2 layers/ DL 4 layers
Frame Structure	Pattern1: DDDSUDDSUU Pattern2: DDSUU Pattern3: DSUUU
Dimension and Weight	(W)447.8 x (H)86.3 x (D)420 mm 25kg

FHGW Product Specifications

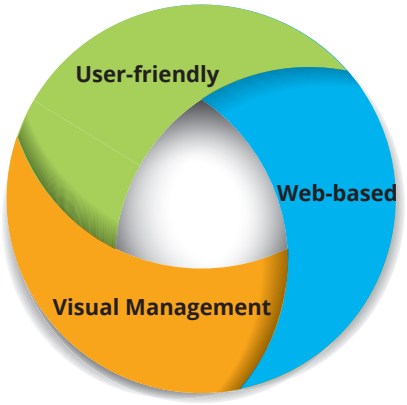
Model Name	IronRAN-FG GenA
Cell Support; RRU Support	1 cell with 100 MHz, 4x4 MIMO; Max. 4 RRUs
GPS	Embedded GPS module (IEEE 1588v2 grand master)
Time Synchronization	IEEE 1588v2
Ingress Protection	IP20
Power Supply	110/220V AC
Power Consumption	<70W (only FHGW); <400W (power supply to 4x RRUs)
Dimension and Weight	(W)446 x (H)44.5 x (D)250 mm 4.3kg
Power for RRU	+54V DC, 80W x 4
Operating Temperature; Humidity	-5°C ~ 45°C 5% ~ 95%

RRU Product Specifications

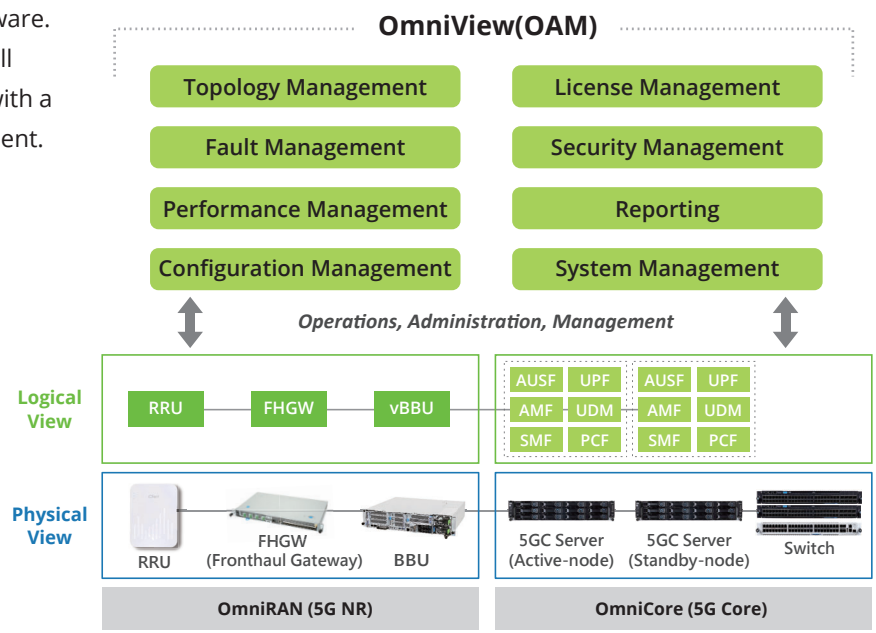
Model Name	IronRAN-RU1 PI GenA
Band	n79, 4800 MHz – 4900 MHz n78, 3300 MHz – 3600 MHz
Bandwidth	100 MHz
MIMO	4T4R
Output Power	250mW/channel; Total: 1W
Synchronization	IEEE 1588v2
Placement	Wall mount & ceiling mount
Function Split	O-RAN option 7-2
Ingress Protection	IP30 for indoor
Power Supply	54V DC from FHGW through power cord 19V DC from power adapter through power cord
Power Consumption	60W
Dimension and Weight	(W)204.7 x (H)259.6 x (D)52.5 mm without mount kit (W)204.7 x (H)259.6 x (D)72.5 mm with mount kit 1.34kg
Operating Temperature; Humidity	-5°C ~ 45°C 5% ~ 95%
Noise	Under normal temperature (25°C) < 40 dBA

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 Features



QCT OmniView Architecture

QCT OmniView Functions

Topology Management
Topology management is used to display the physical and logical views of the network structure, networking relationship, and operating status of QCT OmniPOD.

Fault Management
Fault management is used to manage and monitor all alarms that are generated by NFs and hardware of OmniPOD.

Performance Management
Performance management is used to display and monitor the key performance indicators that are generated by OmniPOD.

Configuration Management
Configuration management is used to execute SIM import and UE provisioning, and configure the key parameters of OmniRAN.

License Management
License management allows users to manage OmniCore license.

Security Management
Security management is used to manage users and user groups as well as to record operation logs.

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

System Management
System management is used to display basic system information and set up the overall system such as back up & restore.

QCT OmniView Dashboard At a Glance

Dashboard displays the current performance indicators, topology status, and alarm overview.

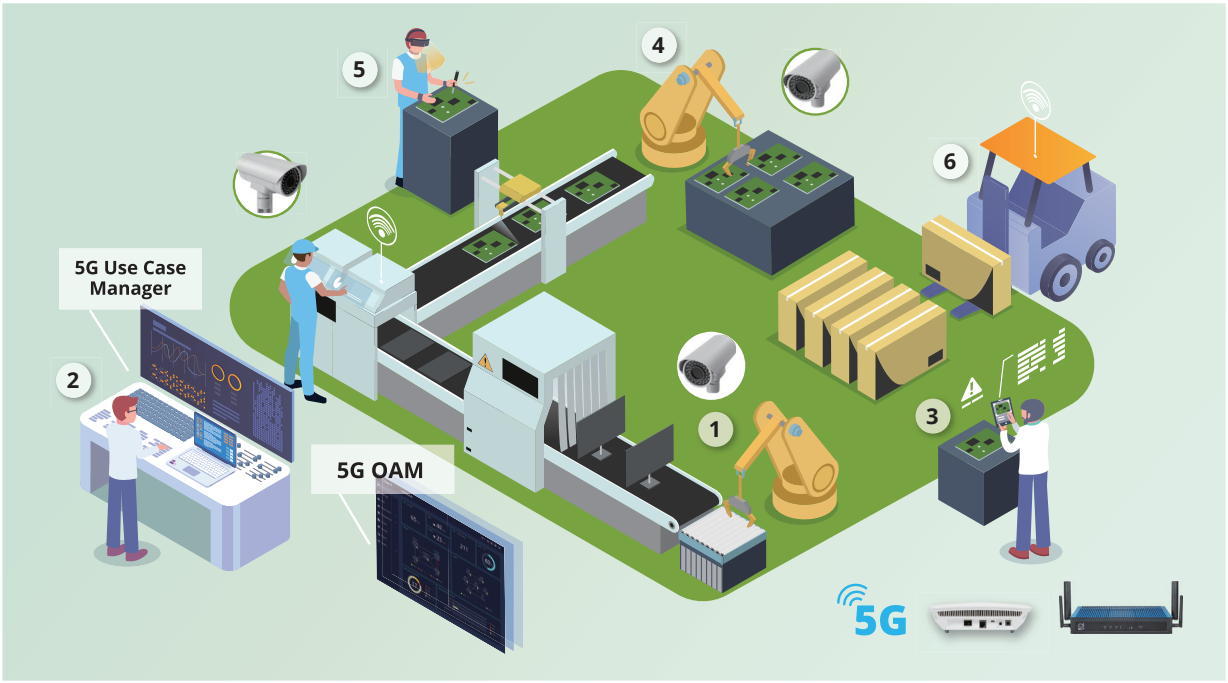
Dashboard allows users to monitor, observe, and manage the network system in a quick, easy, and clear way.

Dashboard reduces the complexity and increases the efficiency of managing OmniView.

QCT Enterprise 5G PoC Use Case

With a comprehensive hardware 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.

QCT's Successful Smart Manufacturing Use Cases



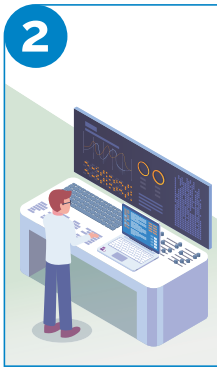
QCT helps customers realize smart factories with its Enterprise 5G solutions.

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**

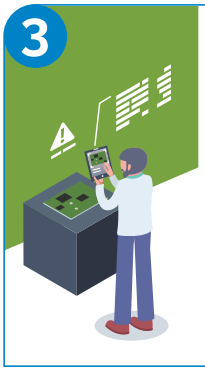
1 Safety AI

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

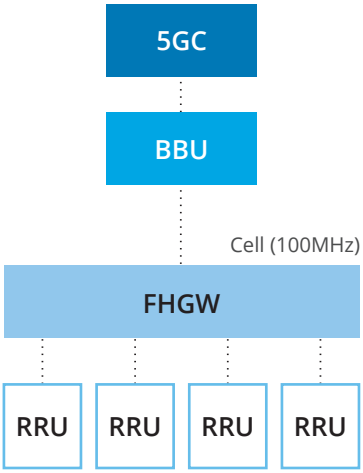
To improve maintenance efficiency, image recognition and AR technology are used to display fault and repair instructions.

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.

QCT OmniPOD Enterprise 5G Coverage & Capacity

QCT OmniPOD Enterprise 5G is a standards-compliant (3GPP R15, O-RAN, TIP), enterprise-grade private 5G network solution, including a high-availability design for 5GC to address core network reliability demands and a flexible system configuration for RAN to fulfill diverse coverage and capacity requirements.



Design & Compliancy

- 3GPP Release 15 compliant
- Standalone (SA) mode
- High Availability (HA) design
- Control & User Plane separation (CUPs)

Capacity & Features

- O-RAN 7-2 Function Split
- Sub6 GHz
- 1 BBU can support 1 FHGW cell with 100MHz 4x4 MIMO
- 1 BBU can connect to 4 RRUs via 1 FHGW
- Time synchronization: IEEE1588, GPS
- Flexible UL/DL adjustments
- RRU Ceiling Mount and Wall Mount options

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.

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