Agenda

- Company Introduction with Telco Journey
- QCT Edge Server & Community Highlights
- QCT: Transforming Telco with Intel's Innovative vRAN Solutions
- QCT x Intel Testing Result Sharing

Quanta Computer Inc.

A technology, engineering and manufacturing company based in Taiwan

Quanta®
Optimize Your Datacenter

The World's Largest Corporations

FORTUNE GLOBAL 500

Rank: **345**

Employees: 63,783

Corporate Revenue: US$43B

QCT – Quanta Cloud Technology

- A global data center infrastructure solution provider offering end-to-end solution ranging from **5G**, **HPC/ AI** to **Cloud technology** with workload-driven insight.

- Seamless collaboration with world-leading ecosystem and software partners, QCT has proven record of serving **Telco, Enterprises** and **Cloud Service Providers** by driving cutting-edge technology as well as defining the next-generation data center with optimized design.
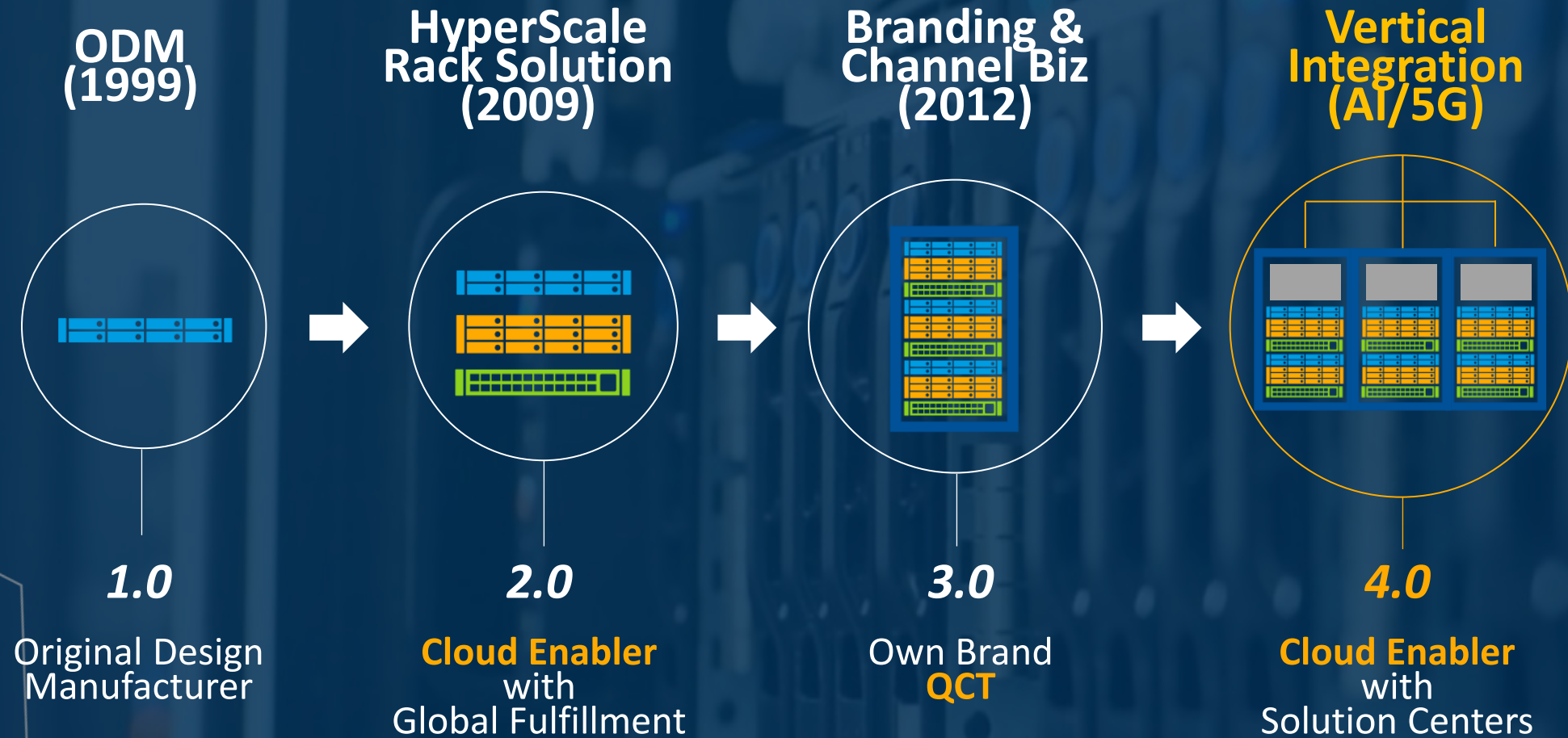
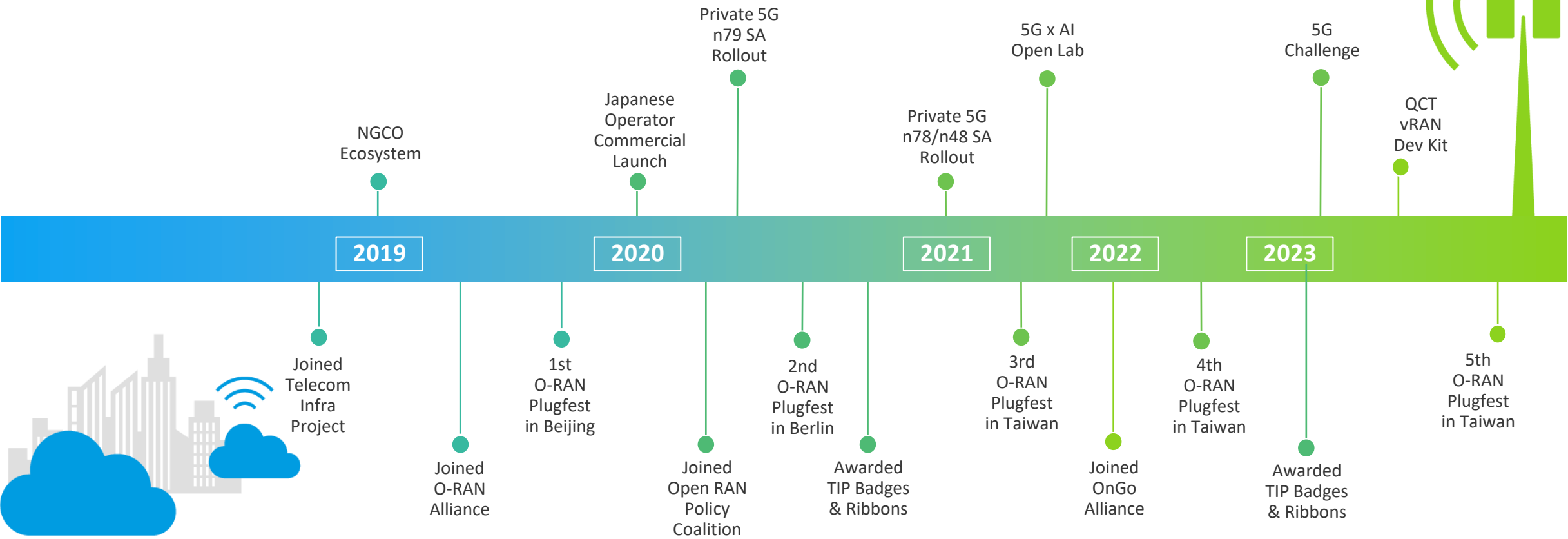# Quanta – Quanta Computer Inc.

- Quanta Computer is QCT's parent company and one of the world's leading notebook manufacturers that has extended its reach to cloud computing business, enterprise network solutions, smart healthcare, IoT, AI applications and more.

- It supports QCT designs, engineering, manufacturing, system, rack integration, and supply chain through the Quanta global network.

Extending Hyperscale Experiences to All

ODM (1999)

HyperScale Rack Solution (2009)

Branding & Channel Biz (2012)

Vertical Integration (AI/5G)

1.0

Original Design Manufacturer

2.0

Cloud Enabler with Global Fulfillment

3.0

Own Brand **QCT**

4.0

Cloud Enabler with Solution Centers

QCT Journey to 5G

Private 5G
n79 SA
Rollout

5G x AI
Open Lab

5G
Challenge

Japanese
Operator
Commercial
Launch

Private 5G
n78/n48 SA
Rollout

QCT
vRAN
Dev Kit

NGCO
Ecosystem

2019   **2020**   **2021**   **2022**   **2023**

Joined
Telecom
Infra
Project

1st
O-RAN
Plugfest
in Beijing

2nd
O-RAN
Plugfest
in Berlin

3rd
O-RAN
Plugfest
in Taiwan

4th
O-RAN
Plugfest
in Taiwan

5th
O-RAN
Plugfest
in Taiwan

Joined
O-RAN
Alliance

Joined
Open RAN
Policy
Coalition

Awarded
TIP Badges
& Ribbons

Joined
OnGo
Alliance

Awarded
TIP Badges
& Ribbons

QCT Global Footprint

- ● QCT worldwide office
- ● QCT's own service center
- ● QCT's authorized service partner
- ○ Integration Center

Seattle ○
Canada
Toronto ●
United States
Fremont ○
Charlotte ●
San Jose ● ○
Nashville ● ○

Düren ● ○
Aachen ● ○
Frankfurt ●
Europe

Delhi ●
China
Beijing ● ● ●
Seoul ● ●
Japan
Korea
Tokyo ● ● ●
Shanghai ○
Taiwan
Taoyuan ● ● ●
Hong Kong ●

Dubai ●
UAE
India

Singapore ● ●

Brazil

Sao Paulo ○

Johannesburg ●
South-East Asia

South Africa

Australia

Sydney ●

Service centers/depots located in **12** countries, and

Service availability covers **58** countries worldwide with more than **2000** cities.

Strong Engineering Team (2000+ experts)

We offer innovative Hardware, BIOS, BMC , Firmware, Software, Mechanical design engineering, along with world-class system validation, optimization & integration capabilities.

Rack/Cable/Packing
System Integration

EE
PCB Board

Power
BBU

Switch
Switch

Switch
Optical

Orqestra
Management Software

Technical & Engineering Capabilities

DM/Product Marketing
System Architecture

Firmware/OpenBMC
BIOS/BMC

ME
Mechanical

Thermal
Thermal Simulation

EE
High Speed Simulation

SIT/SDA
Validation

Why QCT

We provide total infra solution tailored for different workloads and diverse vertical industries.

We ensure speedy customer services and local fulfillment with minimal global supply impact and more coverage

We provide total infra solutions that feature the latest software package, power efficiency, reduced TCO, advanced cooling technology and performance optimization.

Solution and Product Centric Company

Total Infra Solution

Global Supply Chain

QCT Core Competency

One-stop Shopping

Leading Cloud Technology

GTM Champion

We offer a one-stop shopping experience for end-to-end solutions, all the way from pre-configuration and pre-validation stages to system building and deployment .

We have been constantly transforming ourselves to meet the demands of major tech trends, offering leading cloud & data center technologies, X86 commodity platforms, and software defined and container-enabled microservices

We are a GTM Champion for Intel, ARM, and other world-leading companies.

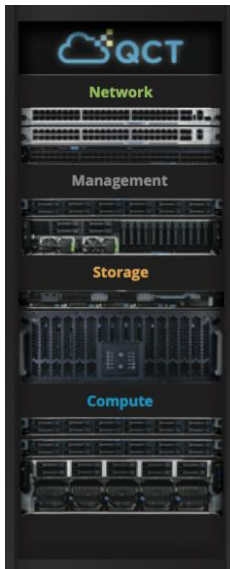# QCT Product Portfolio

Enabling 5G x AI from Edge to Cloud

From Edge to Cloud: Enabling 5G x AI
All Under One Roof
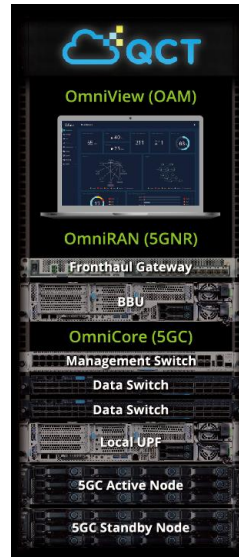
5G x AI Solution

Cloud Data Center to Edge

AI & HPC Converged System

Realize Industrial Workloads with Adaptive HPC & AI Infrastructure

Private 5G

Reliability

Configurability

Flexibility

Manageability

40+ Global Roll out cases

n78, n79, n48

Networking

10G/ 25G/ 40G/ 100G

Compute

1U/ 2U/ 1S/ 2S

Storage

1U/ 5U/ JBOD

GPU

2U/ 3U/ 4U/ 7U

Liquid cooling

L2A Solution

QCT

5G · AI · ☁

QoolRack

QCT Delivers New Innovative Intel® Xeon® Scalable Servers

intel
XEON
PLATINUM

Next-generation QuantaEdge, QuantaGrid, and QuantaPlex server systems supporting the latest Intel® Xeon® Scalable processors

S24P	**S54S**	**EGX77I**	**EGX74I**	**D54Q**	**D54X**	**D54U**	**D74H**
5U	1U	1U2N	1U	2U	1U	3U	7U

Product Portfolio Under One Roof

Partner logos: 航見科技 HANG JIAN TECHNOLOGY, CiRC, SOLOMON, Kneron, Panasonic, ptc, intel., Microsoft, openHPC, BeeGFS, ALTAIR, redis, VOLCANO, slurm, HAILO Empowering Intelligence, LILIN, THALES Building a future we can all trust, TREND MICRO, TECHMAN ROBOT, vmware, kubernetes, kafka, ceph, Lustre, PYTORCH, iRODS, TensorFlow

Factory | Distribution | Service Center

Data Center

Edge Computing

Private 5G
2nd Gen Intel® Xeon® Scalable Processors

Heterogeneous Platforms
4th Gen Intel® Xeon® Scalable Processors

Rack

400mm Depth
3rd / 4th Gen Intel® Xeon® Scalable Processors
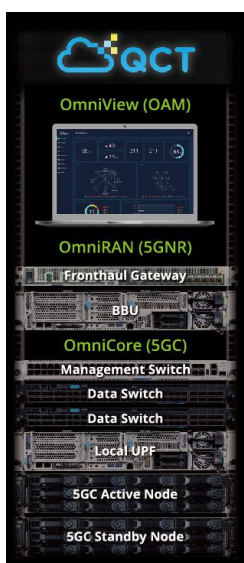
EGX74I-1U
- Inferencing

EGX63IS-1U
- Inferencing

EGX66Y-2U
- Rendering

uCPE
Intel Atom® C Processor Series

EGT23D-DT
- SD-WAN/ Inferencing
- 5G, WiFi support

OmniView (OAM)

OmniRAN (5GNR)
- Fronthaul Gateway
- BBU

OmniCore (5GC)
- Management Switch
- Data Switch
- Data Switch
- Local UPF
- 5GC Active Node
- 5GC Standby Node

Indoor RRU　　**Outdoor RRU**

- 5G E2E solution
- 5G SA mode
- n79, n78, n48
- Outdoor and Indoor RRU

Computing Server

D54X-1U
- HBM workloads

D54Q-2U
- High Flexibility for Expansion

Acceleration Server

D54Q-2U
- Real-time Streaming
- Rendering

D54U-3U
- AI Training and Inference
- HPC + AI

D74H-7U
- DL Training
- Data Analytics

Storage

S54S-1U
- SDS

S24P-5U
- SDS Archive

JB4603-4U
- Storage JBOD

Liquid-cooling Rack

QoolRack
- 19" EIA Rack
- Direct-to-chip liquid cooling cold plate
- Supports higher TDP silicones and lower cooling power
- CDU (Coolant Distribution Unit)'s DC-SCM smart management
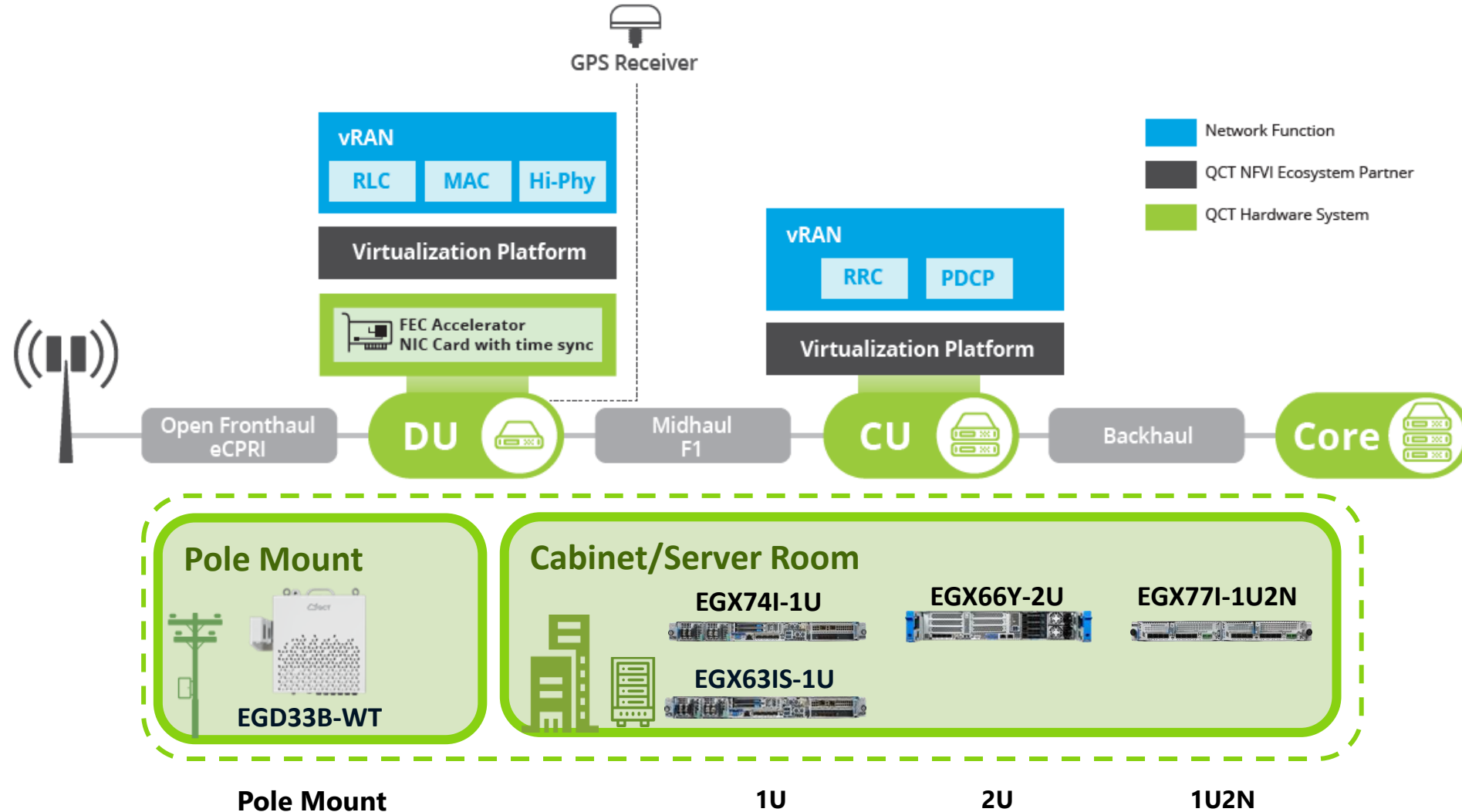- Liquid-to-Air (L2A), Liquid-to-Liquid (L2L) available

Mobile Edge End-to-End Deployments

QCT participates in multiple Open Communities to advance Open RAN technology evolvement

TELECOM INFRA PROJECT

- Accelerate the development, deployment of open, disaggregated, and standard-based technology solutions that deliver the high qualify connectivity that the world need.

O-RAN ALLIANCE

- Committed to evolving Radio Access Networks with its core principles being intelligence and openness. It aims to drive the mobile industry towards an ecosystem of innovative, multi-vendor, interoperable, and autonomous RAN, with reduced cost, improved performance and greater agility.
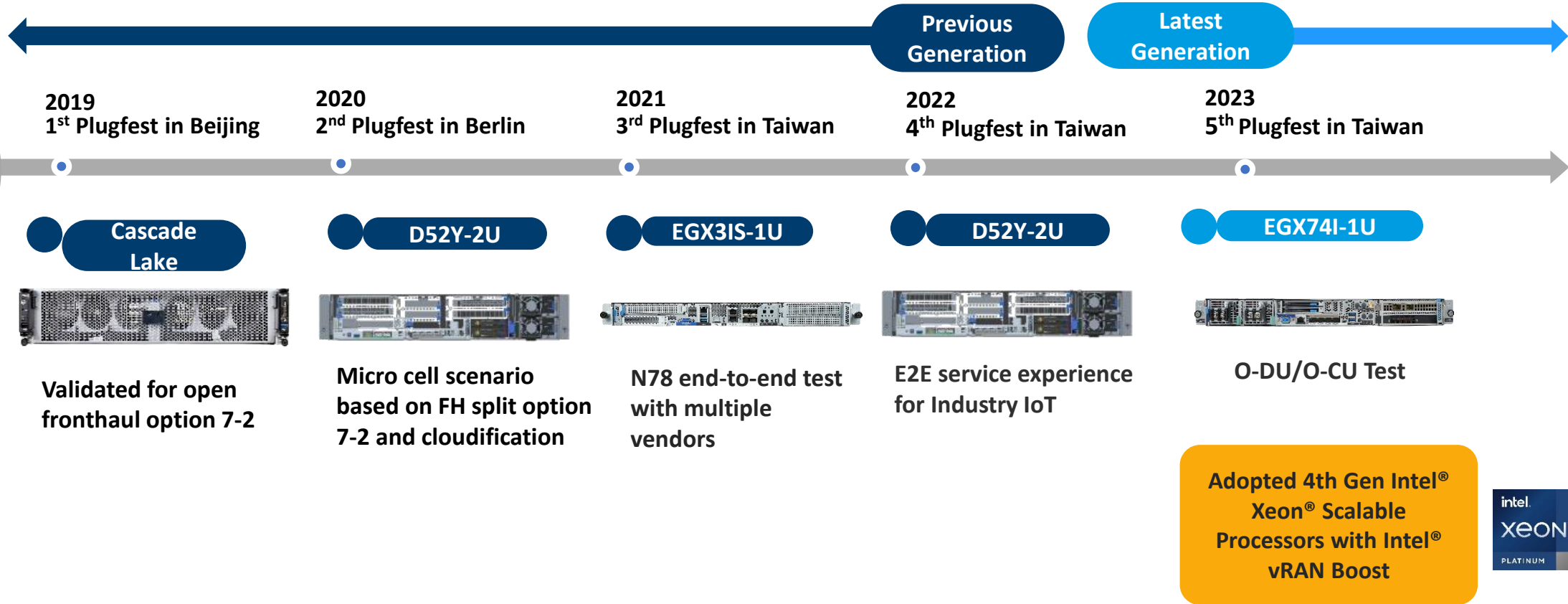
Open RAN POLICY COALITION

- Promote policies that will advance the adoption of open and interoperable solutions in the Radio Access network (RAN) as a means to create innovation, spur competition and expand the supply chain for advanced wireless technologies.

OnGo alliance

- Support the common interests of members, implementers and operators for the development, commercialization, and adoption of LTE and 5G NR solutions for the US 3.5 GHz Citizens Broadband Radio Service.

QCT 5G ECOSYSTEM

QCT Edge Servers Tested/Validated in O-RAN Plugfests

Previous Generation	Latest Generation

2019
1st Plugfest in Beijing

2020
2nd Plugfest in Berlin

2021
3rd Plugfest in Taiwan

2022
4th Plugfest in Taiwan

2023
5th Plugfest in Taiwan

Cascade Lake

D52Y-2U

EGX3IS-1U

D52Y-2U

EGX74I-1U

Validated for open fronthaul option 7-2

Micro cell scenario based on FH split option 7-2 and cloudification

N78 end-to-end test with multiple vendors

E2E service experience for Industry IoT

O-DU/O-CU Test

Adopted 4th Gen Intel® Xeon® Scalable Processors with Intel® vRAN Boost

intel XEON PLATINUM

Powered by Intel® Technology.

TIP-Certificated Design

QuantaGrid D52Y-2U

Under review

SKU	PCIe SKU	Storage SKU
Processor	(2) Intel® Xeon® Scalable Processors Family	
Form Factor	2U Rackmount	
Memory	(16) 2933MHz DDR4 RDIMM/LRDIMM per node	
Storage	(2) 2.5" hot-plug NVMe/SATA/SAS drives	(10) 2.5" hot-plug NVMe/SATA/SAS drives
Expansion Slot	[CPU0] (1) FHFL PCIe Gen3x16 (1) FHHL PCIe Gen3x16 [CPU1] (1) FHFL PCIe Gen3x16 (1) HHHL PCIe Gen3x16 or (2) HHHL PCIe Gen3x8 or (1) SAS Mezz adapter	[CPU0] (1) FHHL PCIe Gen3x16 [CPU1] (1) FHHL PCIe Gen3x16 or (1) SAS Mezz adapter
Environment	Normal Operation Temp : 5℃~ 40℃ Short-term Operation Temp : -5℃~ 50℃ NEBS Level 3 - GR1089/GR63	

QuantaGrid EGX63IS-1U

SKU	Expansion SKU	Storage SKU
Processor	(1) Intel® Xeon® Scalable Processors Family	
Form Factor	1U Rackmount	
Memory	(8) 2933/3200MHz DDR4 RDIMM/LRDIMM per node	
Storage	(2) NVME/SATA3 M.2 2280	(2) NVME/SATA3 M.2 2280 (2) 2.5" SATA3 SSD
Expansion Slot	(1) FHHL PCIe Gen4 x16 (2) FHFL PCIe Gen4 x16	(2) FHFL PCIe Gen4 x16
Environment	Normal Operation Temp : -5℃~ 55℃ NEBS Level 3 and ORAN/OTII compliant	

QCT | **intel.** Powered by Intel® Technology.

5G AI ☁

TIP Exchange

TIP-Certificated Design

IronRAN-FG
└ Under review

Iron-RAN-RUx PI Indoor
└ Under review

Iron-RAN-RUx MO Outdoor

IronRAN-FG	
RRU support	Up to 8x RRUs
Max. Number of Cell to Support	1 Cell with 100 MHz
Time Synchronization	Embedded GPS module (IEEE 1588v2 grand master)
Power Consumption	Up to 68W
Ingress Protection	IP20
Power Supply	110/220V AC
Environment	Operating Temperature : -5℃~ 45℃

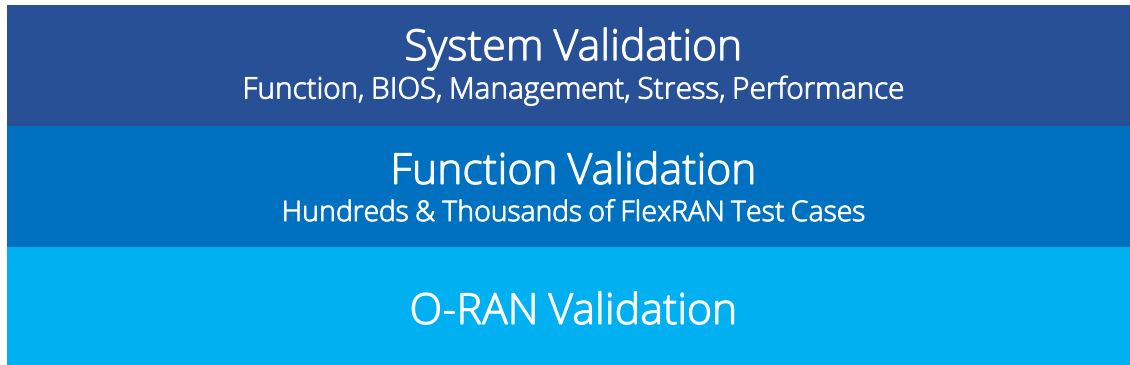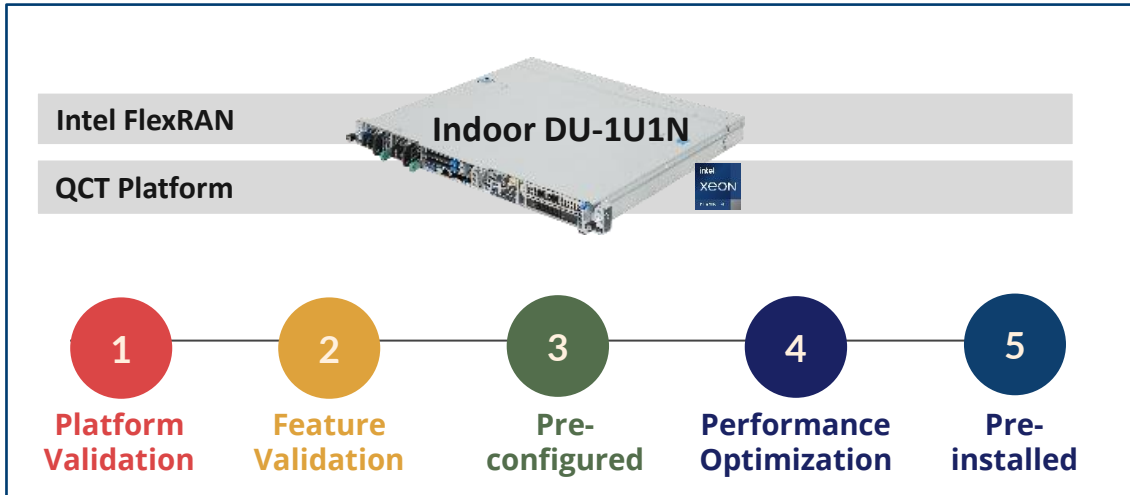| Iron-RAN-RUx PI Indoor	
Band	n48, n78, n79
Bandwidth	100 MHz
MIMO	4T4R
Output power	Maximum 4x 250mW
Synchronization	IEEE 1588v2
Function Split	O-RAN option 7-2
Ingress Protection	IP30
Power Supply	110/220V AC (by local with adapter)
Power Consumption	Up to 60W
Dimension and Weight	204.7(W) x 259.6(H) x 59(D) mm without mounting kit 204.7(W) x 259.6(H) x 61(D) mm with mounting kit
Environment	Operating Temperature : -5℃~ 45℃
Placement	Wall and Ceiling mounting

Iron-RAN-RUx MO Outdoor	
Band	n48, n78, n79
Bandwidth	100 MHz
MIMO	4T4R
Output power	Maximum 4x 5W
Synchronization	IEEE 1588v2
Function Split	O-RAN option 7-2
Ingress Protection	IP65
Power Supply	110/220V AC
Power Consumption	Up to 180W
Dimension and Weight	355(W) x 418.5(H) x 165(D) mm
Environment	Operating Temperature : -40℃~ 55℃
Placement	Wall and Pole mounting

QCT: Transforming Telco with Intel's Innovative vRAN Solutions

QCT Edge Servers Powered by 4th Gen Intel® Xeon® Scalable Processors with Intel® vRAN Boost Technology

- Faster Time-to-Market
- User-Friendly GUI with FlexRAN Test Cases for Validation
- Accelerating the Development & Validation Process to Simplify Brownfield Deployment

Intel FlexRAN

QCT Platform

Indoor DU-1U1N

1	2	3	4	5
Platform Validation	**Feature Validation**	**Pre-configured**	**Performance Optimization**	**Pre-installed**

System Validation
Function, BIOS, Management, Stress, Performance

Function Validation
Hundreds & Thousands of FlexRAN Test Cases
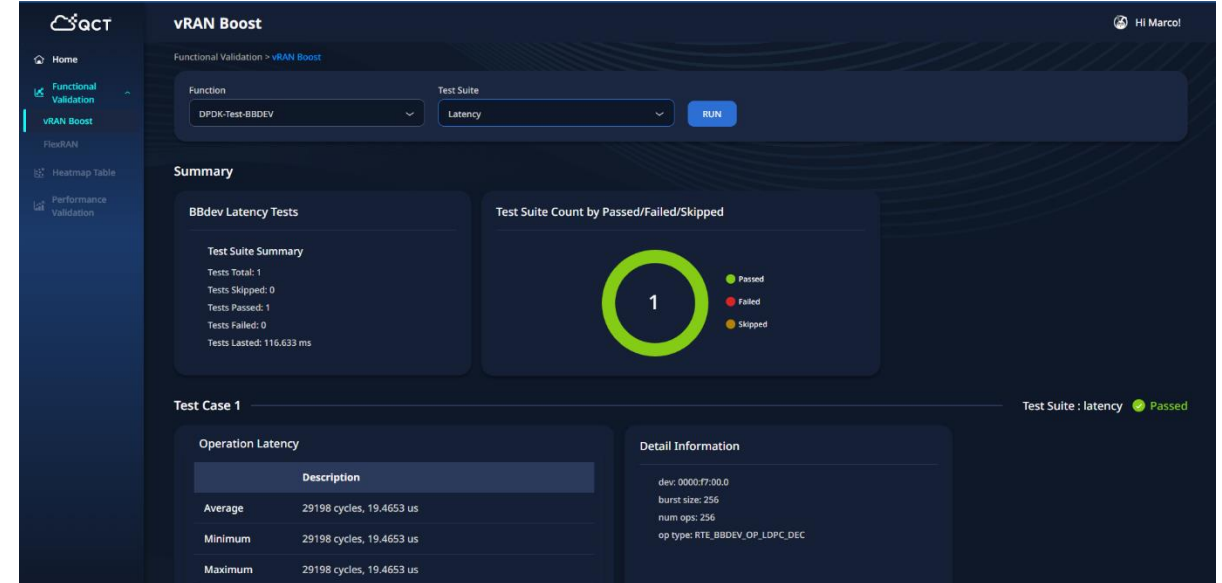
O-RAN Validation

Check System Information
- Software information
- Firmware information
- Hardware information

Execute Functional Validation
- vRAN Boost
  - Throughout /Latency/ Offload

EGX74I-1U Short-Depth Rackmount Server

ORAN / TIP / NEBS GR63 (level 3) / GR1089 (level 3) / GR3108 (class 2) Compliant

Dimension: (D)400mm x (W)447.8mm x (H)42.8mm

Storages

Expansion SKU
- 2x SATA/NVMe M.2 2280

Storage SKU
- 2x SATA/NVMe M.2 2280
- 2x 2.5" U.2 SSD

Networking

- 4x 25 GbE SFP28 ports (NCSI)
- 1x GbE RJ45 management port

PCIe Expansions

Expansion SKU
- 2 x FH3/4L PCIe Gen 5*16
- 1 x FHHL PCIe Gen 5*16

Storage SKU
- 2 x FH3/4L PCIe Gen 5*16

CPU
- 4th Gen Intel® Xeon® Scalable Processors with Intel® vRAN Boost, Single P
- Max TDP 250W
- Intel® C74x series chipset (Emmitsburg)

Memory
- 8x DDR5 4800 MHz ECC RDIMM
- 512GB Max

Integrated IO and Management
- RunBMC AST2600, IPMI 2.0 support
- VGA port from BMC
- 2x USB3.0 Type A ports
- 1x micro-USB type-B serial port
- TPM 2.0 (optional, SPI Mode)

Power Supplies (Front)
- 1200W AC / DC single/redundant PSU

Operating Temp.
- -5 - +55° C
- -40 - +65° C (optional)

EGX77I-1U2N Short-Depth Sled Design Server

ORAN / TIP / NEBS GR63 (level 3) / GR1089 (level 3) / GR3108 (class 2) Compliant

Dimension: (D)400mm x (W)447.8mm x (H)42.8mm

alternations

Storages
- 2x SATA/NVMe M.2 2280

Networking

Expansion SKU
- 8x 25 GbE w / Sync-E, NCSI

Density SKU
- 4x 25 GbE + 8x 10GbE SFP ports w / Sync-E, NCSI

PCIe Expansions

Expansion SKU
- 1 x FHHL PCIe Gen 5*16
- 1 x HHHL PCIe Gen 5*16

Density SKU
- 1 x FHHL PCIe Gen 5*16

Per Sled

CPU
- 4th Gen Intel® Xeon® Scalable Processors with Intel® vRAN Boost, Single P
- Max TDP 250W
- Intel® C74x series chipset (Emmitsburg)

Memory
- 8x DDR4 4800 MHz ECC RDIMM
- 512GB Max

Integrated IO and Management
- RunBMC AST2600, IPMI 2.0 support
- VGA port from BMC
- 1x USB2.0 Type A ports
- 1x micro-USB type-B serial port
- TPM 2.0 (optional, SPI Mode)
- GNSS (optional)

Power Supplies (Front)
- 2x -48V DC Input

Operating Temp.
- -5 - +55° C
- -40 - +65° C (optional)

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www.QCT.io

5G-Based Workload Functional Validation

System Validation

5G-Based Workload Functional Validation With FlexRAN

System & Card Check

Card Functionality Check

End-to-End Stress Test

Tool: DPDK-test-bbdev Test

Performance		Features		Factors
Throughput Offload Latency	X	FEC Encoder FEC Decoder FFT	X	CPU Cores(4-8)

Tool: FlexRAN/TestMac
- Support Cell Number
- Throughout
- Latency
- Power Consumption (PSU)

- System Function Validation
- Server Management Validation
- Performance Validation
- BIOS Validation
- Stress Test

- *FFT is the new features of ACC200 (previously the FFT function was running in software.)*
- *Running different CPU Cores and see the performance results.*

Base Use Cases: 15Khz SCS (mu0)
A. Sub3, Bandwidth:10MHz, 4x4 MIMO, 18 Cells
B. Sub3, Bandwidth:20MHz, 4x4 MIMO, 12 Cells

Plus Use Cases: 30Khz SCS (mu1)
C. Sub6, Bandwidth:100MHz, 4x4 MIMO, 4 Cells
D. mMIMO, Bandwidth:100MHz, 32x32 MIMO, 3 Cells
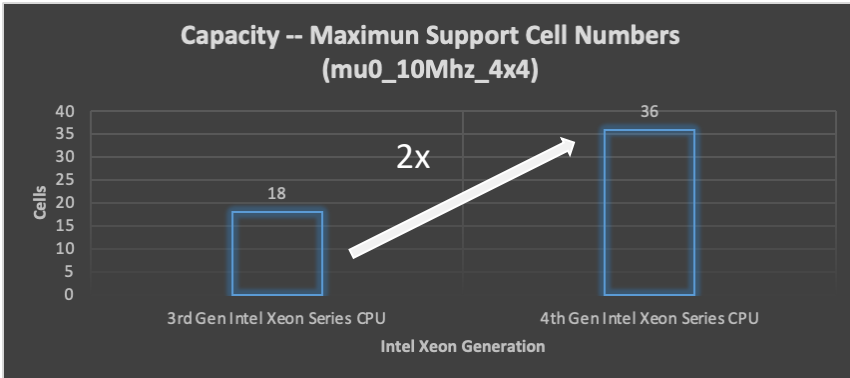E. mMIMO, Bandwidth:100MHz 64x64 (16stream) MIMO, 6 Cells

Platform Details Comparison

	3rd Generation Intel® Xeon® Scalable Processors	4th Gen Intel® Xeon® Scalable Processors with Intel® vRAN Boost
CPU Model Name	Intel® Xeon® Gold 6338N	Intel® Xeon® Gold 5433N
Core Per socket	32 Cores	20 Cores
CPU MHz	1501	2500
L1d Cache	48K	48K
L1i Cache	32K	32K
L2 Cache	1280K	2048K
L3 Cache	48152K	38400K

QCT Edge Server Performance Comparison:
Powered by 4th Gen Intel® Xeon® Scalable Processors with Intel® vRAN Boost vs.
Powered by 3rd Generation Intel® Xeon® Scalable Processors

## Maximum Support Cell Numbers:
Twice (2x) the capacity of cell sites

DL Throughput:
50% Improvement

Power Consumption:
Save 18.2%

Capacity -- Maximun Support Cell Numbers (mu0_10Mhz_4x4)

Performance -- Maximun Support Throughput (mu1_100Mhz_4x4/DDDSUUDDDD)

Power Consumption -- unit: W (mu1_100Mhz_4x4/DDDSU/4 cells)

- Bandwidth: 10MZ_4x4

Test two generation CPU platform the maximum support cell numbers.
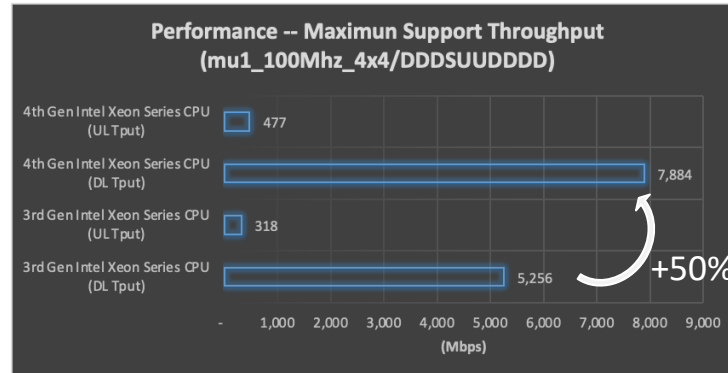
- Bandwidth: 100Mhz_4x4
- Slot format: DDDSUUDDDD

Test two generation CPU platform the maximum throughput.
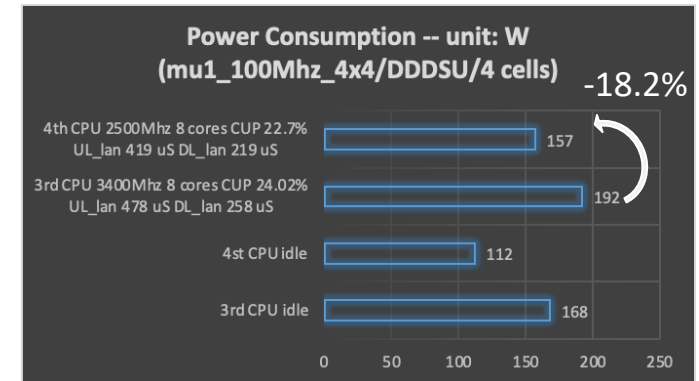
- Bandwidth: 100Mhz_4x4
- Slot format: DDDSU
- Cells: 4 cells

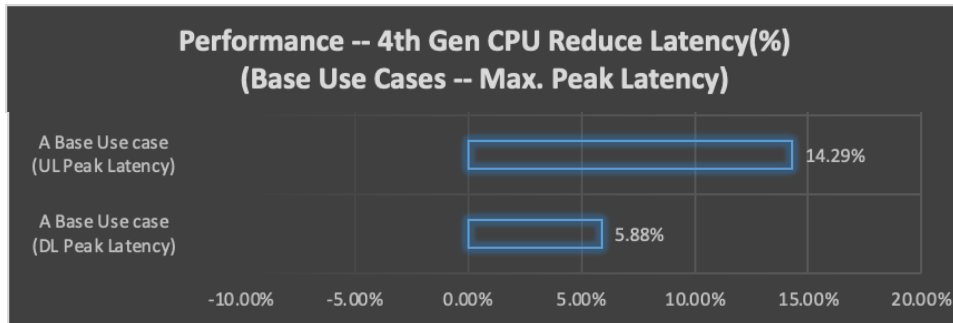*Test two generation CPU platform the power consumption comparison.*

QCT Edge Server Performance Comparison:
Powered by 4th Gen Intel® Xeon® Scalable Processors with Intel® vRAN Boost vs.
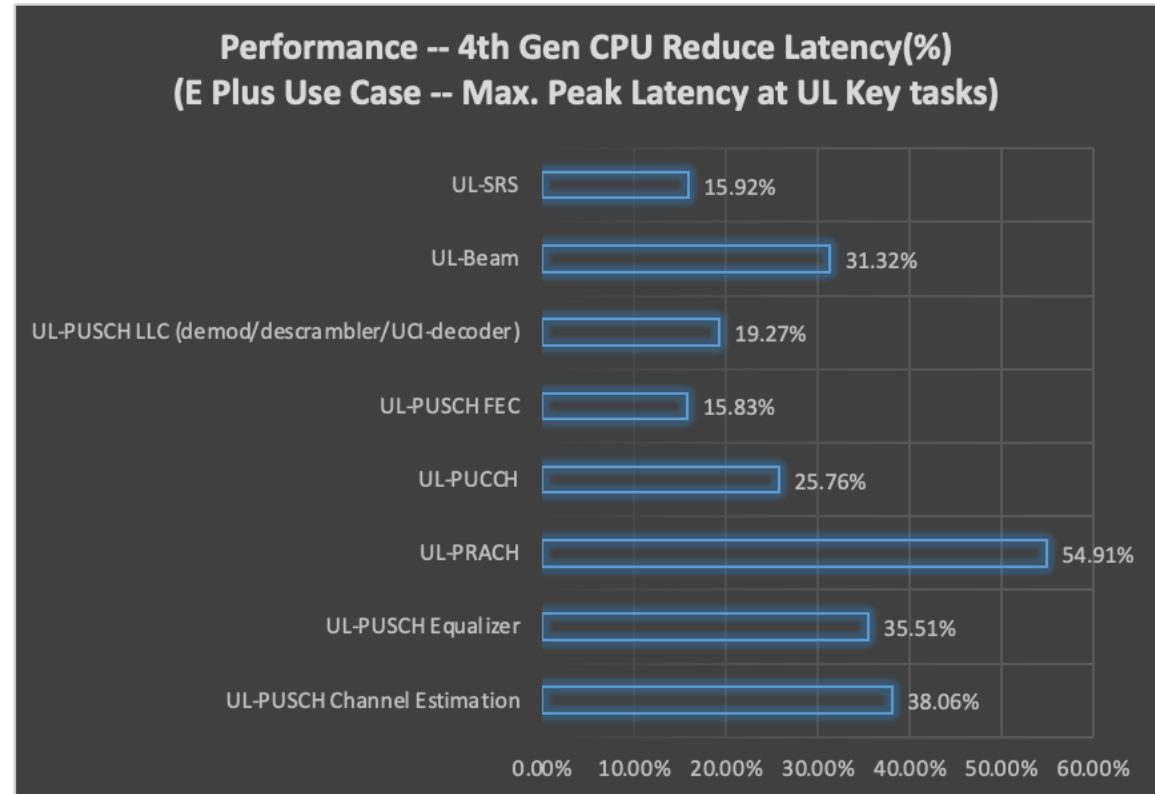# Powered by 3rd Generation Intel® Xeon® Scalable Processors

UL Latency Reduction Function Breakdown: > Reduce 15%+

CPU Latency- FEC decoding:
- 14% reduction for Uplink
- 5% reduction for Downlink

**Performance -- 4th Gen CPU Reduce Latency(%)
(Base Use Cases -- Max. Peak Latency)**

A Base Use case (UL Peak Latency)	14.29%
A Base Use case (DL Peak Latency)	5.88%

Axis: -10.00% -5.00% 0.00% 5.00% 10.00% 15.00% 20.00%

- *Test scenario:10MHz, 4x4 MIMO, 18 Cells*

**Performance -- 4th Gen CPU Reduce Latency(%)
(E Plus Use Case -- Max. Peak Latency at UL Key tasks)**

Task	Value
UL-SRS	15.92%
UL-Beam	31.32%
UL-PUSCH LLC (demod/descrambler/UCI-decoder)	19.27%
UL-PUSCH FEC	15.83%
UL-PUCCH	25.76%
UL-PRACH	54.91%
UL-PUSCH Equalizer	35.51%
UL-PUSCH Channel Estimation	38.06%

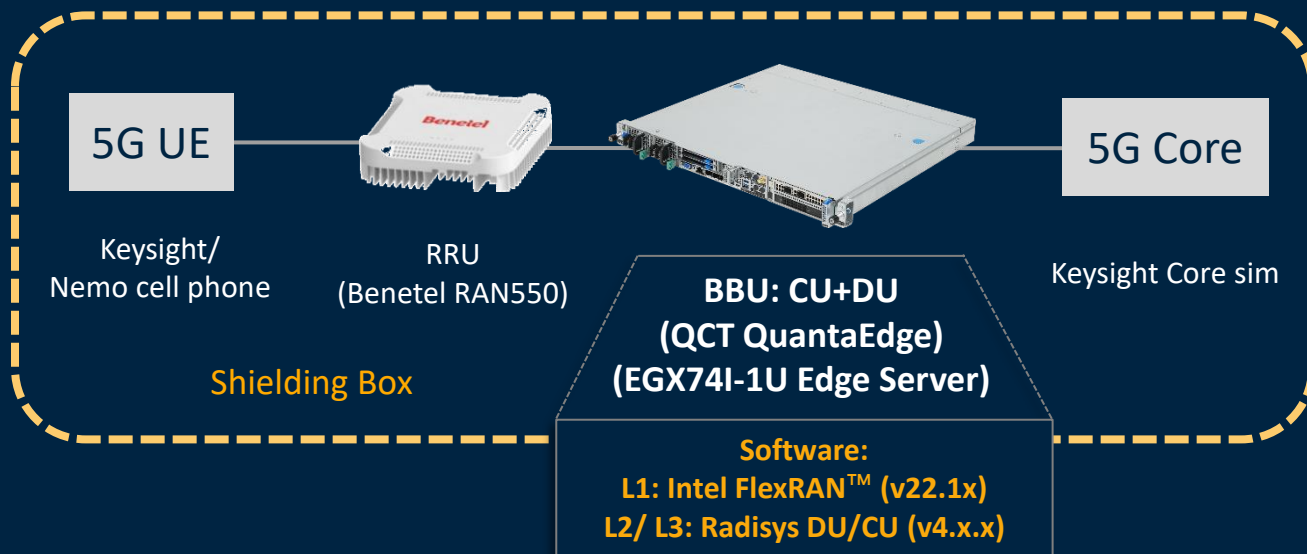Axis: 0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00%

- Test Scenario: *100MHz 64x64 (16stream) MIMO, 6 Cells*
- UL FEC decoding latency, especially in heavy load, Channel Estimation (CE) and Equalizer (EQ) are the most resource-intensive functions, reducing latency by 38.06% and 35.51%

O-RAN Global Plugfest Spring 2023

Testing Architecture

5G UE

Keysight/
Nemo cell phone

RRU
(Benetel RAN550)

BBU: CU+DU
(QCT QuantaEdge)
(EGX74I-1U Edge Server)

Software:
L1: Intel FlexRAN™ (v22.1x)
L2/ L3: Radisys DU/CU (v4.x.x)

5G Core

Keysight Core sim

Shielding Box

Highlights:

- Integration with **QCT edge server** (EGX74I-1U).

- QCT E2E IOT Test (Follow O-RAN.TIFG.E2E-Test.0-v04.00)

- Capable of 5G SA registration and deregistration of single UE and Multiple UEs

- Capable of performing UL & DL throughput.

- Capable of performing practical data transmission (e.g., web browsing)

- Under Traffic Model Testing (Stress Tests)

QCT test system specifications at O-RAN Global Plugfest Spring 2023

BBU (O-DU & O-CU)

One Server Solution (QCT EGX74I-1U)

Key Spotlights

- Extreme Powerful CPU : QCT is worldwide 1st to adopt the 4th Gen Intel® Xeon® Scalable processors with Intel® vRAN Boost for O-RAN PlugFest test
- Latest Software Version Integration : Integrated Intel FlexRAN (v22.1x) for L1 RAN software and Radisys DU/CU (v4.x.x) for L2/L3 RAN protocol
- Integrated FEC/SRS/FFT acceleration on Intel Xeon 4th Chip
- PCIe FrontHaul NIC Card : Intel® Ethernet Network Adapter E810-XXVDA4T with GNSS module, supported PTP IEEE 1588v2 and SyncE protocol, and 1-PPS/10Mhz clock signals in and out
- Up to 4 Cells (Sub6_mu1_100Mhz_4x4) at one S4I Server Platform without any HW upgraded needs
- Optional : QAT accelerator card for better packet layer (PDCP) crypto/decrypto performance

S4I HW Specification Table

Component	Description	Quantity
Server	QuantaEdge EGX74I-1U - Expansion SKU	1
CPU	Intel® Xeon® Gold 5433N Processor	1
DIMM	DDR5 32GB	8
SSD	PCIe 240GB	1
Onboard NIC	Intel® E810-CAM1/2 Network Adapter	1
NIC	Intel® Ethernet Network Adapter E810-XXVDA4T (E810XXVDA4TGG1)	1

O-RAN Global Plugfest Spring 2023 Test Results

Test Specification	O-RAN.TIFG.E2E-Test.0-v04.00
Start date	2023/4/24
Stop date	2023/4/28
Location	Auray
Testers:	
5g Core Network	Keysight/Core sim
UE	Keysight/Nemo cell phone
Connectivity type (Conducted/OTA)	OTA
TDD format	DDDDDDDSUU

Test cases	Test process	Success Rate/Tput	Band	BW	MIMO	Regis. UE	DL/UL/FD	Improved now
5G SA registration and deregistration of single UE	Completed 10 times process	100.00%	n78	100Mhz	4T1R	1	FD	**128UEs**
Downlink peak throughput	Completed 200s test process	745.8(Mbps)	n78	100Mhz	4T1R	1	DL	**1.5Gbps**
Uplink peak throughput	Completed 200s test process	16.43(Mbps)	n78	100Mhz	4T1R	1	UL	**70Mbps**
Data Services (Web Browsing)	Completed							
File upload/download	Completed							

Benefits of QCT EGX74I-1U for vRAN

Low Power Consumption	High Performance	Cost Effectiveness	Flexibility & Scalability
4th Gen Intel® Xeon® CPU (Intel 7 process)	**High Throughput at the Physical Layer** (> 8Gbps for DL)	**4 ports 10/25 GbE with GrandMaster** (GNSS module inside & support IEEE 1588v2 and SyncE)	**PCIe NIC Card** (supporting up to 4 cells w/o addition L1/L2/L3 RAN software upgraded and HW device installation)
Built-in Accelerators (FEC/SRS CE/FFT on Chip)	**Low Latency** (E2E ping : 4~8 ms)	**Integrated FEC Accelerator** (without external FEC accelerator card or FPGA card)	**Pin to Pin Compatible from LCC to MCC** SRPEE LCC (20 cores) SRPEE MCC (32 cores)

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Thank You

5G AI ☁