



# Inventec 5G private network solution

Open, Smart, Agile

## Highlights

- AIoT & Digital twins
- Decision-making by machine intelligence
- End-to-end 5G smart factory solutions
- O-RAN DU/CU/RU N78/N79
- Intelligent Edge Cloud Architecture
- AIAOI, AGV, Remote collaboration
- Multi-access Edge Computing (MEC)
- Cloud computing

Imagine, you can deploy a private network ranging 2 KM and build a million connections. Objects connect and collaborate in real time through reliable and secure private channels. Massive amounts of data are aggregated and analyzed in real time, autonomous decision-making is fulfilled by machine intelligence, and cyber-physical integration is performed by Digital Twin.

## Efficient, Extensive, and In-depth End-to-End Application Technology and Services

Inventec combines its own hardware manufacturing strengths, and uses its production line applications as a foundation to closely integrate the advantages of 5G transmission technology with its existing internal applications. The Company uses the collection, transmission, sorting, and analysis of Big Data, and interact with AI and IOT enterprise applications to create a prototype 5G smart factory to not only realize the ultimate goal of Inventec's digital transformation, but also become a provider of system integration technical services for end-to-end 5G smart factory solutions through years of proven structural experiences. Inventec will then share its construction, operation and maintenance, and consulting services to the global manufacturing market.

## Inventec's Flexible Deployment of 5G-ORAN

In its 5G product line, Inventec has developed O-RAN based N78 and N79 indoor and outdoor O-RU antennas and O-RAN DU/CU servers and software services to provide 5G transmission coverage in enterprise factories and provide IoT data links. Combining application services such as AR, AI applications, remote collaboration, intelligent inspection, industrial and public safety image anomaly identification to support smart manufacturing incorporating machine vision inspections, R&D and production collaboration, remote production control, and preventive smart decision-making to create cross-industry fusion and innovation.

The Inventec O-Rack features a fully-virtualized, ORAN-based standalone 5G enterprise private network (N79 FR1) solution, offered in a 15U server rack cabinet, providing great openness, flexibility, and scalability to be deployed at any location.

The solution integrates RAN nodes (O-CU-CP, O-CU-UP, and O-DU) into the COTS server to provide its own O-RAN devices and 5G core network of trustworthy international telecom brands to complete the system integration of the data link. Microsoft Azure privates 5G Core (A1P5GC) enabling and simplifying global scale serviceability across massive sites at once, and Azure Arc services provide a seamless and secure connection from local edge platforms (Azure Stack Edge, ASE) into the Azure cloud.

Each RAN node offers traffic throughput up to 800 Mbps (DL), 200 Mbps (UL) per

## O-Rack | O-RAN based All-in-one Rack

Item	Description	
Rack	Chassis Dimension	(W) 580mm x (D) 1000mm x (H) 800mm
	Power Supply	Dual Max. 2000 W 100~250V/20A
Core	PDU session	100 (Supporting up to 100 UE)
	Data bandwidth	25Gbps
RAN	Antenna	4T4R Indoor and Outdoor RU (supporting up to 32 RU per BBU)
	Band, Bandwidth	N78,N79
	RF coverage	250mW for 30m coverage
	Modulation	DL 256QAM, UL 64QAM
	Maximum MIMO	SU-MIMO 4x4
	Max output power	24dBm/channel
	Active users per cell	200
Latency	20~60ms	
Performance	DL: 800 Mbps, UL: 200 Mbps (1 UE)*	

Management Switch

Data Switch

Fronthaul Switch

Management Fusion

Core on premise

BBU (Inventec K888G4)



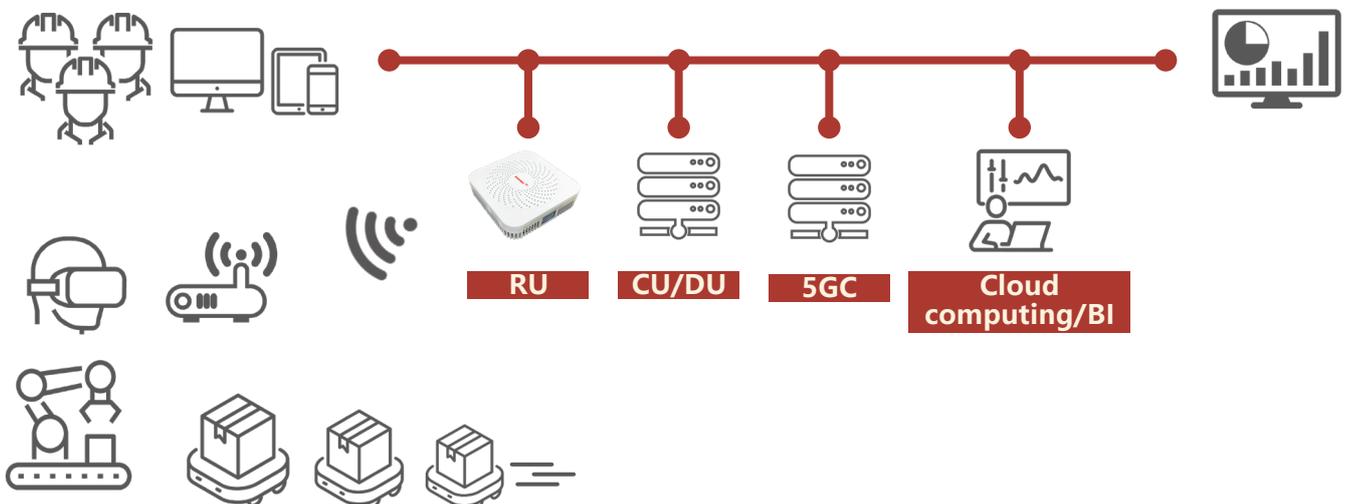
UE, tailored according to application scenarios, and supports 100 active users per radio unit to provide a safe and stable industrial-grade 5G network. Therefore, there is no need for users to familiarize themselves with 5G-related technologies and compliances, and they can seamlessly upgrade their network systems.

## Inventec Intelligent Edge Cloud Architecture

In order to give full play to real-time machine decision-making intelligence, Inventec provides a Multi-access Edge Computing (MEC) architecture for the application development of private 5G networks, deploying real-time computing, control, and identification functions on the edge to provide fast and low-latency services, and utilize the core terminal or the Azure Cloud Services for long-term analysis, statistics and training, and create a variety of configuration combinations for different requirements and service levels of various fields. Inventec continues to launch new types of applications that incorporate digital transformation, including AIAOI, remote collaboration, image recognition, AGV, and digital twins for a 27.5% increase in first pass yield, saving half of the manpower for double confirmations. The efficiency of inspection operations is increased by 20%, the learning curve cycle is reduced by 30%, the costs for debugging are also reduced by 32%, and production efficiency is improved by 18%.

## NEX-AT021E | 4T4R Indoor RU

Item	Description
Chassis Dimension	W) 230mm x (D) 230mm x (H) 70mm
I/O Interface	1 x 10GE optical fiber interface 1 x 10GE Ethernet interface CPRI
Antenna	4x external antennas
Power Supply	DC from rHUB AC adapter: 100~240V/1.8A 50/60Hz
Mounting	Wall Mount
Environmental	Operating Temperature: -10 ° C to 45 ° C IP Ratings (Ingress Protection): IP31 EMC ETSI EN 301 489-4 ETSI EN 301 908-1 Safety Standard EN 60950-1 Last edition EN 60950-22 Last edition RF Standard EN 301 908-1 V6.2.1 EN 301 908-14 V5.2.1





Inventec continues to improve, develop, and evolve in 5G, and is a trustworthy companion for enterprises undergo a 5G digital transformation.



## About Inventec

Since its founding in 1975, Inventec has grown from an early manufacturer of computers and telephones to a leading design manufacturer of notebooks, servers, and wireless communication products. With the advent of the 5G generation, Inventec is expanding its capabilities in 5G private network system integration and architecture, transforming its world-class manufacturing facilities into 5G smart factories.

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## Learn more of Inventec 5G Smart Factory