

# PEGATRON Private 5G Network Solution for Digital Resilience

“ 5G private networks are not available everywhere and current solutions are massive, so we imagined a portable solution. Partnering with Intel, their Xeon scalable processors and FlexRAN allows Pegatron to create next generation communications solution in a suitcase.”

T.H. Tung  
Chairman of PEGATRON

The global private 5G network market size is expected to reach USD 36.08 billion by 2030. It is expected to expand at a CAGR of 47.5% from 2022 to 2030. Significantly growing demand for ultra-reliable low-latency connectivity with an extremely secure network across several mission-critical applications, such as public safety, is expected to boost the deployment of private 5G networks during the forecast period. Moreover, a wide range of industries, including manufacturing, oil and gas, mining, and energy and utility, are investing a massive amount in deploying private 5G telecom services to enhance their overall productivity and operational efficiency. As a

result, it is expected to foster market growth from 2022 to 2030. *(businesswire.com, June 2022)*

Digital resilience has recently been elevated to a global priority for governments, businesses, development agencies, and society at large due to the vital and versatile role technology is playing to support COVID-19 response and recovery. In this new reality, building resilience is fundamental as disruptions and uncertainties will increase in frequency and magnitude due to future public health crises, climate-related disasters, and geopolitical events.

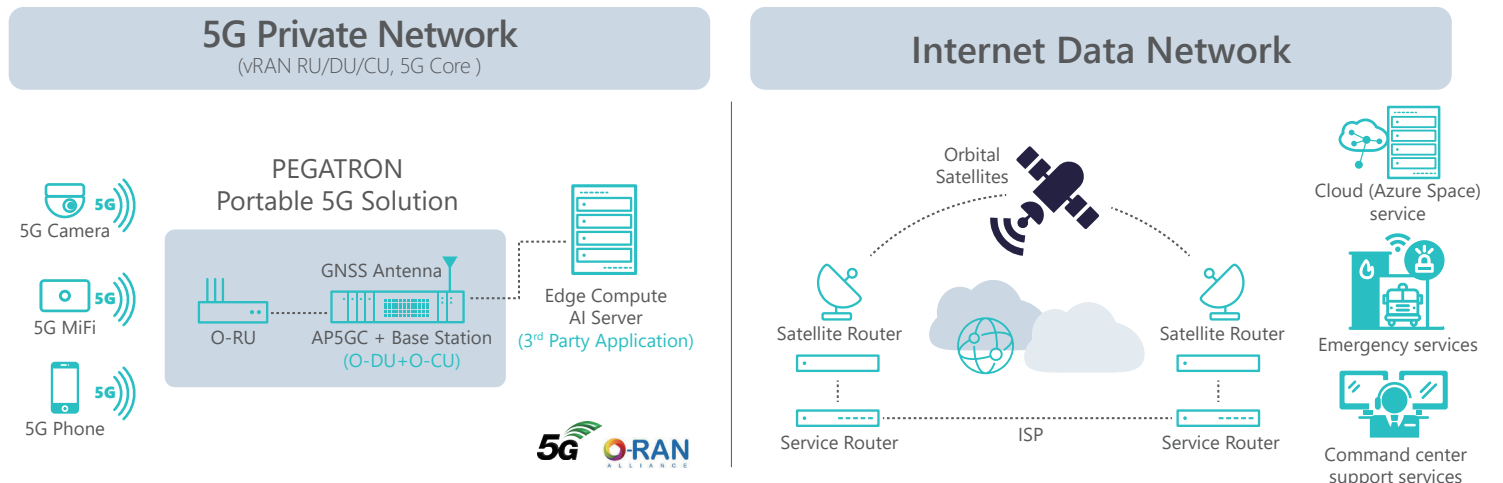
## Integrated and Rapid deployable Private 5G Network



PEGATRON Portable  
Private 5G Network Solution

Pegatron private 5G network solution contains 5G-SA O-RAN based gNodeB plus 5G core system. Pegatron's 5G solutions are cloud-native platforms running on Intel® FlexRAN™ technology to provide the maximum computing power in a highly reliable mobile private network system. Deploying Network Function Virtualization Infrastructure (NFVI) in O-RAN based cloud provides enhanced high availability and further provides flexible, fast, and customizable services. The backhaul external network can be connected to leased lines by ISPs or orbital satellites for internet connection so it's quick and easily to setup a 5G private network to provide on demand broadband network anywhere, based on your use case for Digital Resilience applications. Applications can cover digital transformation for smart factories, public transportation, public safety, mission critical IT systems, corporate data security, etc.

## PEGATRON Private 5G Network Solution with Edge Compute Architecture



# PEGATRON Private 5G Network Solution for Digital Resilience

## Features in Pegatron Private 5G Network Solution

Pegatron's private 5G network solution is designed for private network use cases and compliant with 3GPP and O-RAN standards by using Intel® x86 based servers. Designed to work at or near the edge where data is acquired. Lightweight and built for easy portability from one campus to the next. Built-in Pegatron RAN software and OAM (Operations, Administration and Maintenance) system for management with GUI interfaces. Offering customized services to provide API for edge compute application integration.

## Navigate the Future Faster

### Features

<b>Band Support</b>	FR1: n77, n78, n79, N48 <sup>[2023Q1]</sup>
<b>Modulation</b>	256 QAM (DL), 64 QAM (UL)
<b>Ant. MIMO</b>	4T4R, DL 4 Layers, UL 2 Layers
<b>Profile</b>	<ul style="list-style-type: none"> <li>■ DL Centric 7:3, 4:1</li> <li>■ UL Centric 2:3</li> </ul>
<b>GPS Grand Master</b>	<ul style="list-style-type: none"> <li>■ 1588v2 PTP protocol support</li> <li>■ PTP to sync-E and sync-E to PTP conversion</li> </ul>
<b>OAM</b>	<ol style="list-style-type: none"> <li>1. System Configuration</li> <li>2. UE management with list usage &amp; QoS profile</li> <li>3. Network slicing management</li> <li>4. Northbound interface for higher level management</li> </ol>
<b>5G Core</b>	Microsoft AP5GC

### Radio Unit (RU)

HW: PR1400 Series 4T4R RU, Intel® Arria® 10 platform

### gNodeB Unit (DU, CU)

HW: PG5100 Series computing platform with Intel® Xeon Scalable Gold processor, ACC100 FEC acceleration card

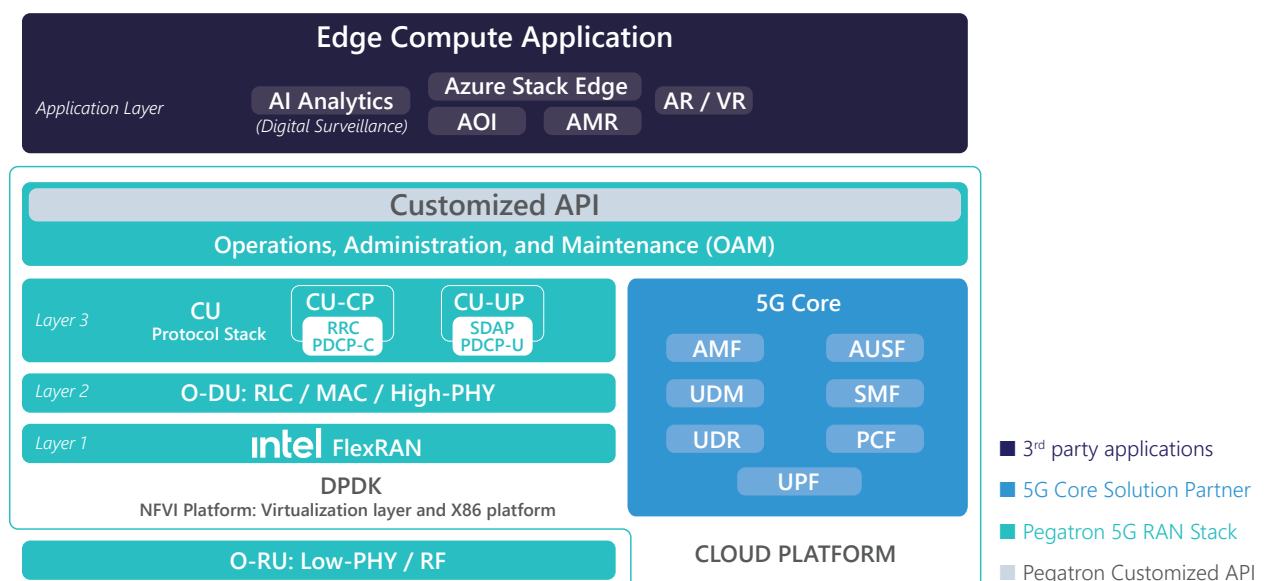
SW: Pegatron 5G RAN w/ Pegatron RAN portal Intel® FlexRANTM architecture.

### 5G Core (Optional)

HW: PG5100 Series computing platform with Intel® Xeon® Scalable Gold processor, same hardware unit with gNodeB.

SW: Druid 5G Core or Saviah 5G Core.

## PEGATRON Private 5G Network Portable Solution Software Stack



# PEGATRON Private 5G Network Solution for Digital Resilience

## Benefits of Pegatron Private 5G Network Solution



**Flexible**

- Deploying Network Function Virtualization Infrastructure (NFVI) in O-RAN based cloud
- Enhances high availability and further provide flexible, fast, and customizable services for various 5G applications.



**Integrated**

- Integrated 5G RAN and 5G Core into an All-in-One Intel x86 Server to deliver high-speed throughput and low latency communications for rapid deployment of advanced 5G applications which reduces deployment costs.
- Provides northbound interface and customized API service for higher level system integration with customer's management system and 5G application solutions.



**Easy Setup**

- Contains Pegatron RAN Portal webGUI management for system operations, administration, and maintenance.
- Provide configurable profile to adjust uplink and downlink throughput for different 5G application deployment cases.



**Portable**

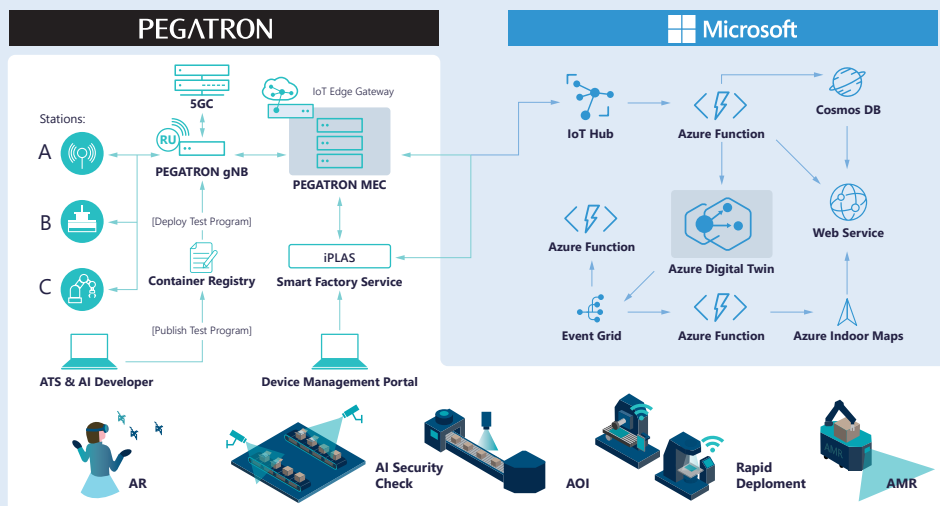
- 19" lightweight luggage suitcase that is easy to transport and deploy anywhere.

## Application Use Case of Pegatron Private 5G Network Solution



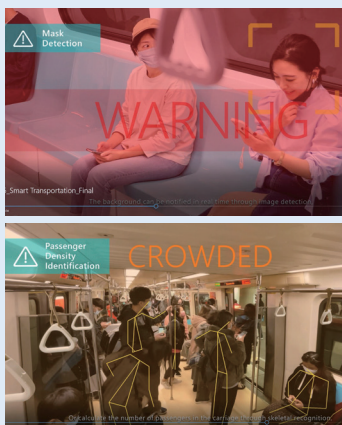
### Smart Factory:

In the control center, rapid deployment of lines are continuously made and updated using wireless 5G connectivity which standardizes test stations with edge computing on MEC servers. On the factory floor, Autonomous Mobile Robots (AMR) move materials to limit human resources for repetitive tasks. On production lines, Automated Optical Inspections (AOI) and Visual AI with continuous AI improvement on the Edge to improve accuracy. On the side, technicians use AR/VR to receive remote assistant to make repairs and discuss projects by remote collaboration anywhere.



### Transportation

5G Private Network deployed in transportation uses DAS to extend 5G signals in tunnels and using Fast Fading technology for fast handover between the remote radio units. This allows 4K IP cameras over 5G Private Network to provide high upload throughput for AI computing on edge computing servers to provide real time monitoring of physical conditions and the status of security controls in the transportation system.

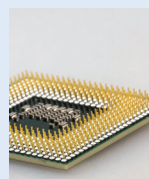


### Digital Resilience

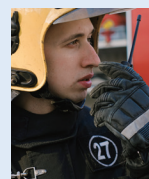
A highly reliable mobile orbital satellite 5G disaster relief network system. The mobile 5G base station uses orbital satellite communications as a backhaul network to connect to the Internet and to global data centers.



Emergency communications for major disasters and regional conflicts



Disaster response for global semiconductor supply chains



Non-interruption for IOT data link and core disaster relief



Urgent message delivery for government and national security



# PEGATRON 5G

Navigate the Future Faster

Learn more:

PEGATRON Private 5G Networks

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## About PEGATRON Corporation

PEGATRON was founded on January 1, 2008. With abundant product development experience and vertically integrated manufacturing, we are committed to providing clients with innovative design, systematic production and manufacturing service in order to comprehensively and efficiently satisfy all of our customers' needs. PEGATRON features a solid R&D team, friendly, fast service quality as well as a high degree of employee cohesion. Furthermore, we have combined EMS and ODM industries to become an emerging Design and Manufacturing Service (DMS) company. Consequently, we are able to offer industry-leading, state-of-the-art products and profitable business opportunities for our partners.

[www.pegatroncorp.com](http://www.pegatroncorp.com)

