



**PRIVATE
NETWORK
SOLUTIONS**

5G

**How can Enterprise Benefit
from Comba's 5G Private
Network Solutions?**

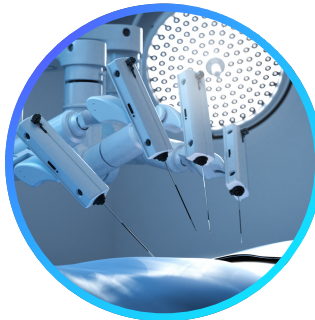
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5GComba

As the demands for private network solutions continue to surge across different sectors such as manufacturing, mining, utilities, logistics, and government, the market for private 5G solutions is witnessing a notable upswing.



Highlighting this trend, Dell'Oro Group's 2023 report underscores a remarkable year-over-year increase of approximately 60% in private wireless RAN revenues during the second quarter. This growth encompasses both traditional private wide-area macro and small cells, playing a pivotal role in the overall expansion of private wireless RAN revenues.

**Manufacturing****Healthcare****Logistic****Mining****Utilities****Oil or Gas rig**

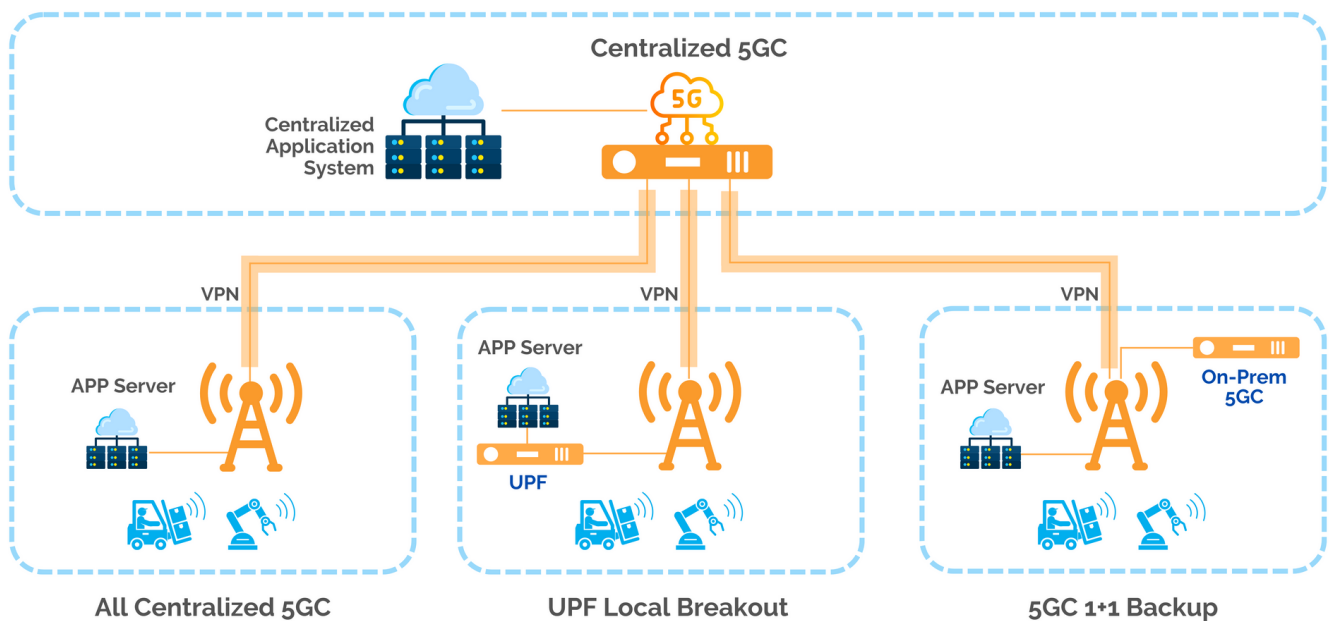
A Glimpse of Benefits

- | | |
|--|---|
| <input checked="" type="checkbox"/> Increased Operation Efficiency | <input checked="" type="checkbox"/> Leveraged Know-how |
| <input checked="" type="checkbox"/> Enable New Ways of Working | <input checked="" type="checkbox"/> Uplifted Workplace Safety |
| <input checked="" type="checkbox"/> Enhanced Data and Information Security | <input checked="" type="checkbox"/> Lower OPEX |

Embrace Flexibility

→ Flexible on-Premise and centralized deployment

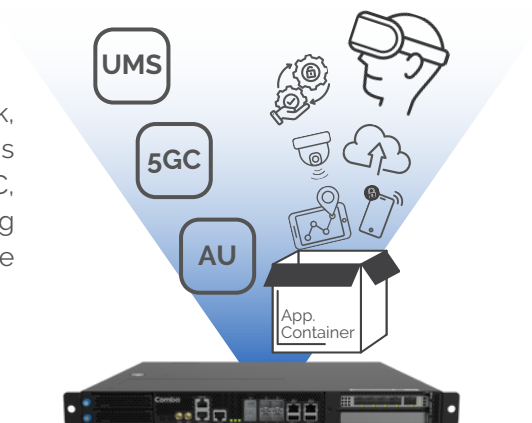
Comba's private network solutions support various networking methods, including centralized 5GC and UPF local breakout, offering customers tailored networks that align with specific needs and budgets.



Keep it Simple

→ All in one deployment

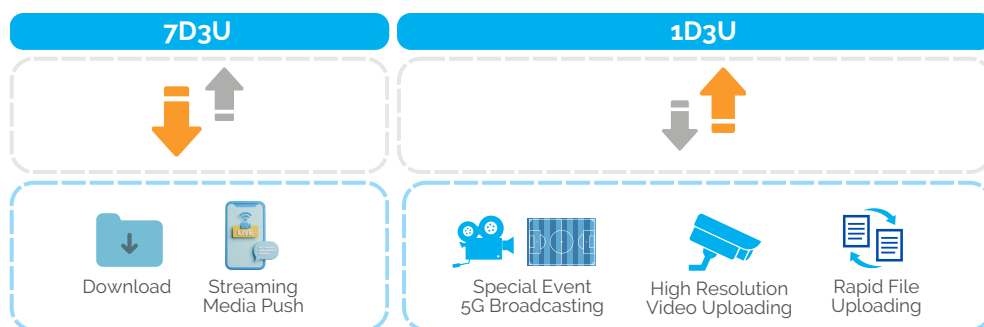
For smaller setups needing their own 5G private network, Comba offers a straightforward integrated deployment. This method involves combining lightweight components like 5GC, 5G APP Server, 5G UMS, and 5G AU into a single server using containerization. This allows multiple network elements to use a single hardware server efficiently.



Match the Demand

→ Uplink enhancement to satisfy the massive connections of 5G intelligent terminals

High-resolution video monitoring, remote control, and machine vision are common industrial applications that demand substantial uplink capacity. Comba RAN software features multiple TDD patterns, including 7D3U and 1D3U, allocating resource blocks based on the deployment scenario.

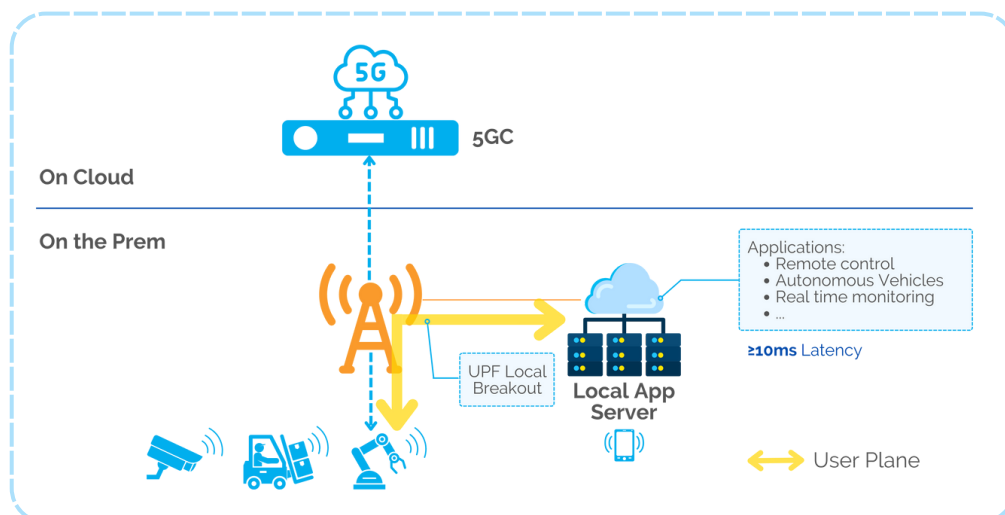


Cut the Latency

→ Realize single-digit millisecond latency with local breakout

Local breakout directs traffic data to a local computing server for immediate processing. This not only meets the need for lower latency but also enhances reliability in real-time decision-making scenarios, such as those involving autonomous vehicles and industrial automation.

Furthermore, offloading data processing locally enhances security and privacy by confining sensitive data within a restricted area.

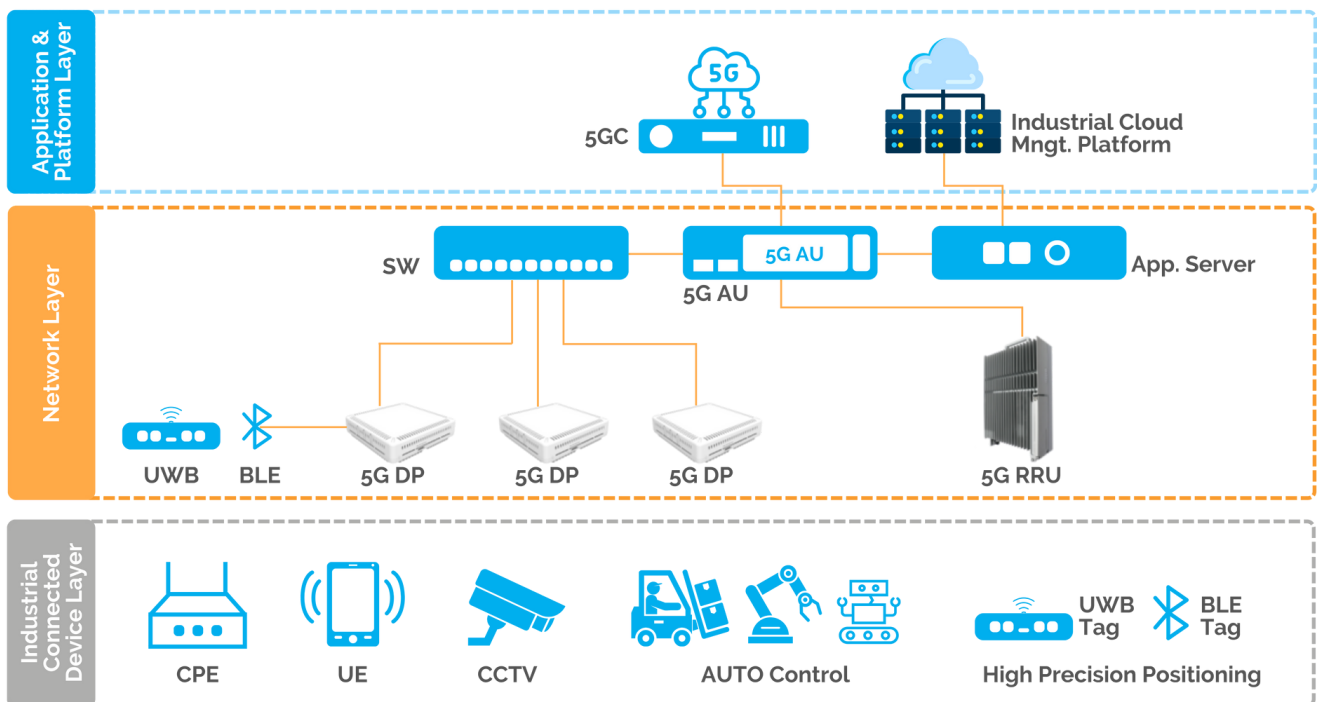


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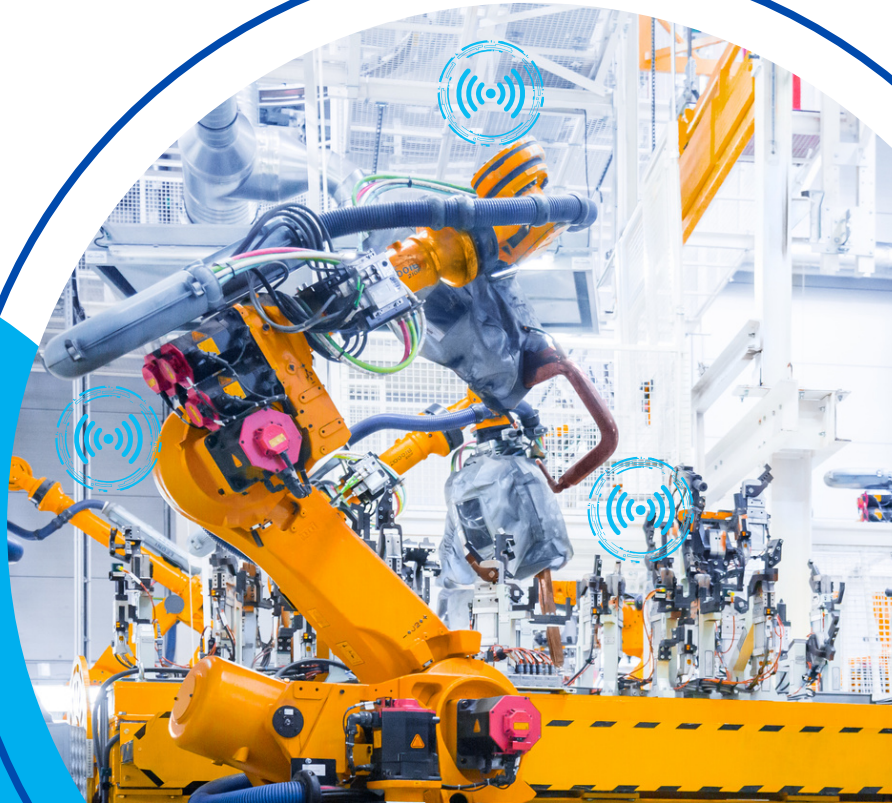
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Scenario 01

• Manufacturing



- ✓ Low Latency
- ✓ Enhanced Bandwidth Utilization
- ✓ High security
- ✓ High-reliability

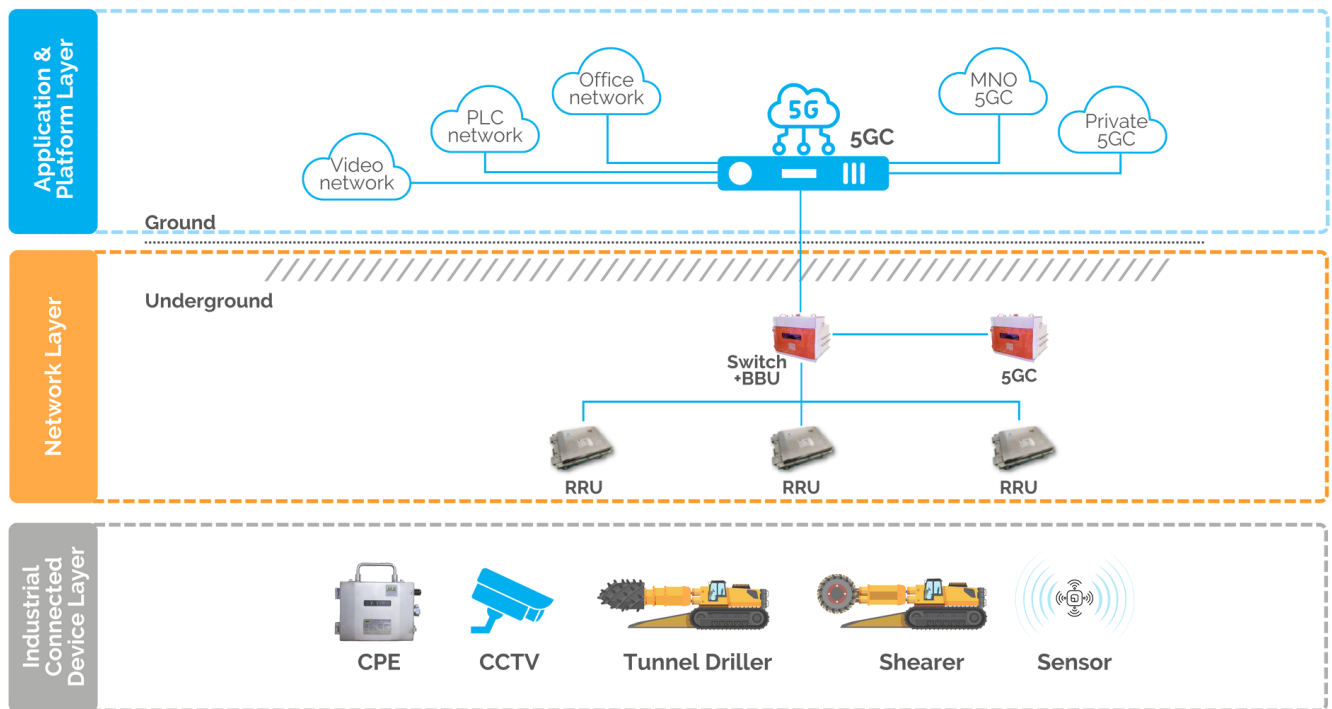


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Scenario 02

• Mining



- ✓ High security
- ✓ Ruggedized Equipment
- ✓ High reliability
- ✓ Anti-explosion

PRODUCT HIGHLIGHTS

Access Unit (AU)



- 5G Baseband unit
- Up to **400** active users/carrier
- Support dual mode **4G+5G**

Extension Unit (SW)



- IQ data merge for Uplink & Downlink
- Support next level cascading
- Power over Hybrid cable up to 8 DP units

Unified Network Element Management System (UMS)



- Support SNMP V1/V2/V3, TR069, TCP/IP, FTP Web-Service, RESTful
- Support alarm notification via SMS or email
- Fault/System Log/ Task/ Performance management
- COTS bases system

Macro RRU



- Single Band and Multi-Band RRU
- Support 2T2R or 4T4R
- Up to 60W per Tx

Micro RRU



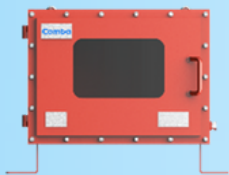
- Support eCPRI/CPRI interface
- Support 4T4R
- Up to 10W per Tx

Distributed Point (DP)



- Support dual mode 4G + 5G
- Support 5G 4T4R & 4G 2T2R
- Up to 250mW per Tx

Industrial Mining Kits



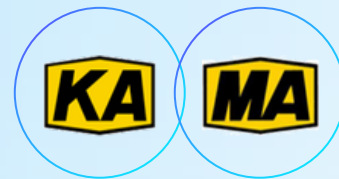
Industrial Baseband Unit



Industrial Fronthaul Switch



Industrial 5G pRRU
– Low Power



Industrial mining kits are KA or MA certified.
*Customization is required to meet specific market requirement

- Compliant with mining safety standards (IP65, anti-explosion)
- Robust & Ruggedized design
- Suitable for underground & hazardous environments



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