

# Microamp

Extending 5G/6G Use Cases  
with mmWave:  
ISAC, NTN & Beyond

June 2026

# mmWave - AI revolution catalyst

As AI transforms industries, emerging AI products depend on high reasoning capabilities that require:

- **Real-Time Data Processing**  
AI-driven IoT and industrial computations must run without delays.
- **Heavy Data Uplink**  
GenAI requires large-scale image/video processing.
- **Top Levels of Data Security**  
AI-driven data sensitivity demands private, cyber-secure networks.

**5G/6G+ mmWave networks are ideal to meet these demands and fuel the AI revolution.**

# Problem

State-of-the-art technologies cannot enable next-gen private wireless networks and their critical use cases

- **High-speed solutions are prohibitively expensive, “closed” and not flexible** for serve private networks market.
- **Sub-6 GHz wireless has hit capacity limits:** ~1 Gbps downlink, ~100 Mbps uplink, 20+ ms latency.
- **mmWave adoption is stalled** due to spectrum fragmentation and un-customizability.
- **Entire architecture must be replaced** by private network operators each time they need to increase capacity.

## 80%

of original network cost is spent again with each upgrade (e.g., 4G → 5G).

## 73%

of peak data demand will not be met by network capacity by 2035.

## 87%

of IT executives report, the growing data demands of their new AI systems have exceeded network capabilities.

Source:

<https://www.accenture.com/us-en/insights/cloud/modern-network>

# Solution

## Any-G Wireless Platform

Highly reconfigurable, software-defined radio and gNB for current and future mobile networks.



### Superior performance

up to 6 Gbps downlink and 3+ Gbps uplink.



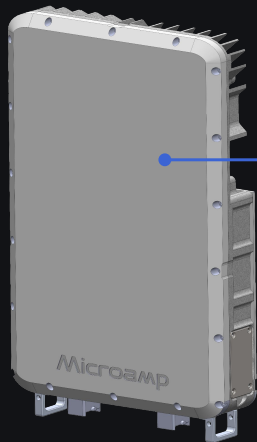
### Extensive coverage and flexibility

optimized for 5G/6G mmWave and upgradeable to FR3 and sub-THz spectrum.



### Seamless adaptation

across evolving 3GPP standards defining Any-G generations.



Any-G Wireless Platform

## Critical IP and trade secrets

- Proprietary signal encoding/decoding implementations.
- Distortion correction algorithms for mmWave signals.
- Signal reconstruction techniques.
- Signal mapping and optimization onto FPGA-based platform.

# Microamp CellBox Air Radio

Multi-gigabit, cost-efficient 5G mmWave radio for enhanced mobile broadband, private networks, fixed wireless access and macro cell deployments.




-  4+ Gbps
-  latency < 5 ms
-  SA, mmWave
-  120° sector


Deployment	Outdoor, macro cell
Frequency Bands	n257 (26.5 – 29.5 GHz) n258 (24.25 – 27.5 GHz) n261 (27.5 – 28.35 GHz)
Modulation Scheme	64 QAM / 256 QAM
Bandwidth	800 MHz
Duplex	TDD
Subcarrier Spacing (SCS)	120 kHz
O-RAN Category	Split option 7.2x
Antenna	2T2R
EIRP	62 dBm (avg)
Fronthaul Interface	SFP28
Synchronization	IEEE 1588v2 (PTPv2), SyncE
3GPP Compliance	Release 16
Power Supply	-48 VDC
Dimensions	395 x 250 x 85 [mm]
Weight	5.3 kg
IP Grade	IP 65


# Microamp CellBox Air Radio

- Integrated with OAI CU/DU
- 1 GHz ready
- Possibility to customize the beams
- Non-3GPP signal can be preloaded for part or all of the spectrum



 4+ Gbps

 latency < 5 ms

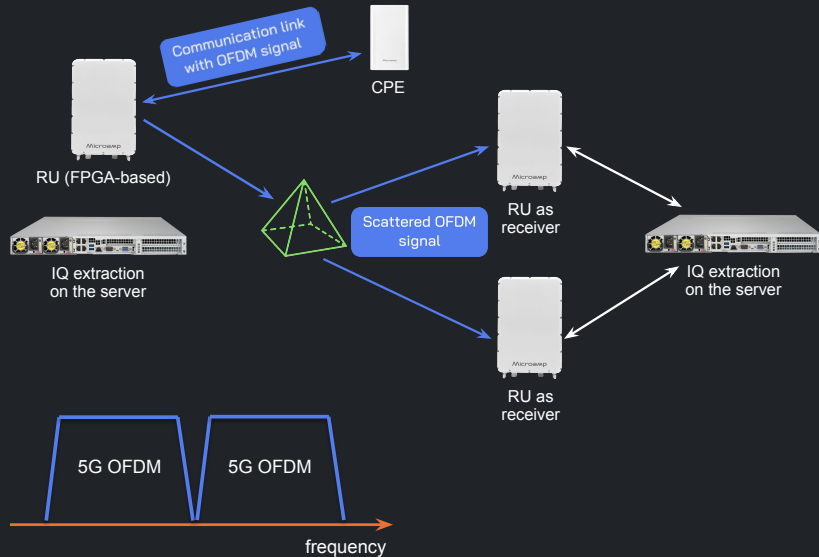
 SA, mmWave

 120° sector

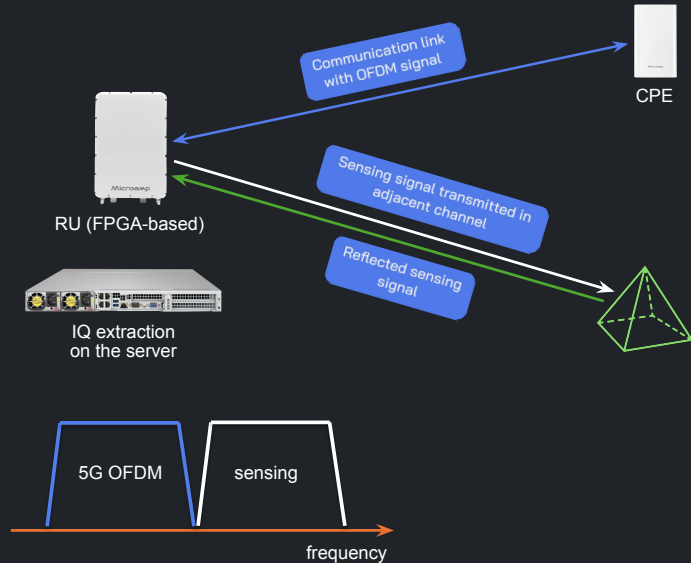
# Integrated Sensing And Communication - ISAC

System compatible with 5G standard

Setup 1: Object detection using OFDM signal  
**(Multistatic ISAC)**



Setup 2: Object detection using dedicated sensing signals  
**(Monostatic ISAC)**



# Non Terrestrial Network

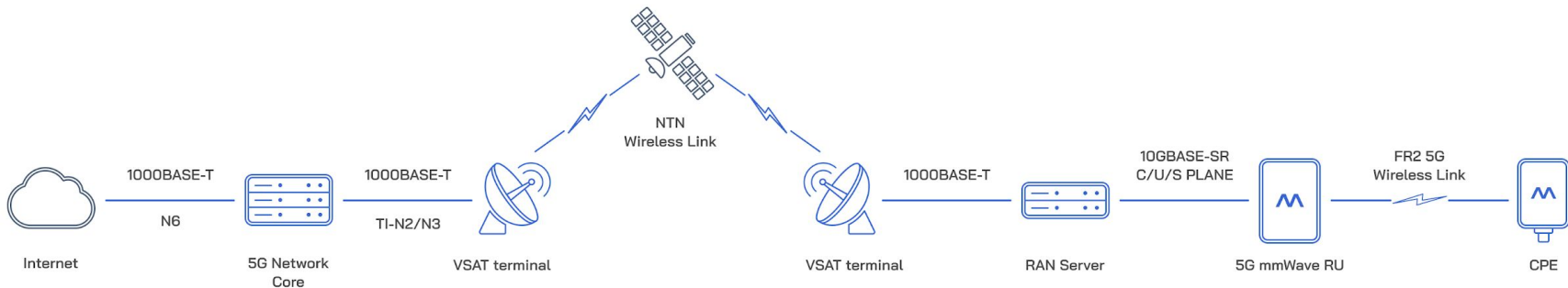
Functional 5G mmWave with precise time and frequency synchronization, and support for NTN tunneling in N2/N3 interfaces

- Backhaul implemented via a VSAT terminal using a satellite channel.
- Next: regenerative payload

Current work with  
European Space Agency



ESA 5G/6G Hub



Microamp 5G mmWave network with NTN backhaul

# Aerial and drone-integrated networks



Radio mounted on the mast at the base site establishes a connection with a large inspection drone, enabling remote operation and streaming real-time, high-resolution video directly to first responders and other field services.

Let's talk →

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**Microamp** is a global leader in resilient 5G and 6G mmWave connectivity for real-time operations. We design, build and deliver ultra-high capacity, near-zero latency end-to-end networks based on our own purpose-built radios.

We merge deep-tech know-how and a broad portfolio of technology partners to empower industries, system integrators, MNOs, DSPs, governments and research institutions worldwide. Our networks support applications requiring deterministic performance and high-uplink throughput, in both commercial and defence sectors, where resilience, security and jamming resistance are crucial.

**Microamp** system is designed for demanding environments, including critical infrastructure, ports, logistics hubs, public transportation, media production, mass events, and specialised military missions.