

The background of the slide features a dark blue gradient with a complex pattern of lighter blue, wavy, concentric lines that resemble ripples on water or a topographical map. Scattered throughout this pattern are numerous small, light blue dots of varying sizes, some appearing as sharp points and others as soft, out-of-focus bokeh.

Microamp

mmWave Solutions for Stadiums and Surrounding Areas

Dawid Kuchta
Microamp, CEO

5G mmWave not only for fans



Not just watching a game – new experiences

New behaviors and habits:

- live-streaming (uploading)
- cashier-free shopping
- in-seat ordering
- VR/AR games and applications



Source: <https://www.justwalkout.com/>



Source: https://youtu.be/M5m2_xElnaU



Source: <https://www.youtube.com/watch?v=XjCecThmB8U>

Converting every seat into the best seat

Low-latency HD video changes the view:

- zooming and high quality replays
- real-time metrics and statistics
- security analytics
- operational services, VAR
- retail



5G mmWave changes viewers into participants

- Live polls displayed on the jumbotron
- 3D player personalities
- Interactive AR elements on the game field
- Live multiplayer AR games



Source: https://www.youtube.com/watch?v=M_Jf_vwR0v0



Source: <https://www.youtube.com/watch?v=esGak2E5HUU>



Source: https://www.youtube.com/watch?v=zoUIXfq_RfU

Challenges and solutions

Signal attenuation – transmission loss caused by distance and obstacles

- 5G mmWave: 24-29 GHz (FR2)
- Signal much shorter and easier to block by physical barriers than sub-6 GHz
- mmWave users: closer to 5G tower and in line-of-sight (LOS)

Solution:

- Proper network planning

mmWave advantages:

- operates in uncongested spectrum area → less interference from other signals
- different performance level → new use cases



Challenges and solutions

High number and density of users with high demand for data transfer – network performance and coverage.

- Small cells as signal source for Distributed Antenna System (DAS) → additional advantage: reduced energy requirements
- Smart repeaters with adaptive beamforming
- Steerable phased arrays for advanced beam management
- Network slicing: individually optimized sectors



Microamp 5G mmWave network



Outstanding Economies of Scale



Superior Performance & Capacity



Purely Standalone Networks



Flexibility-Enabling Features (IAB, Mobility Mode or Uplink-heavy System)



Integrated with Major RAN Software Platforms



A Broad Portfolio of CPEs



Who we are

Microamp is a multinational deep-tech company building multi-gigabit and ultra-low latency 5G mmWave wireless networks based on purpose-built radios.

- Global leader in [5G mmWave](#)
- Headquartered in Warsaw, [Poland](#)
- Proprietary technology: Microamp 5G mmWave
- [End-to-end approach](#): hardware, software and use case deployment support
- International team of [50+ experts](#)



Why Microamp



A Strong Global Partner Ecosystem
of technological partners and solution providers who support our business development efforts and work with us on key deployments.



End-to-end Support
from planning the network and specific use cases to building proofs of concept, facilitating large-scale deployments, and providing technical assistance and maintenance.



Extensive Technology Roadmap
that scales the most advanced mmWave product portfolio, ensuring MNOs are well-prepared for future technological advancements and all necessary infrastructure upgrades.



Track Record
of partnerships with major MNOs on 5G mmWave network deployments worldwide. A market-validated technology with 40+ deployments across 15 countries (primarily in the US, JP, DE, IE, UK).

What we do

Microamp leverages 5G mmWave to build versatile connectivity solutions.



End-to-End 5G mmWave Private Networks

Networks of multi-gigabit throughput for processing massive data sets in real time.



Fixed Wireless Access

Fiber-like, high-speed internet access for homes, rural areas or industrial parks.



5G Mobile Broadband

Superior-capacity and ultra-low latency networks for dense areas.



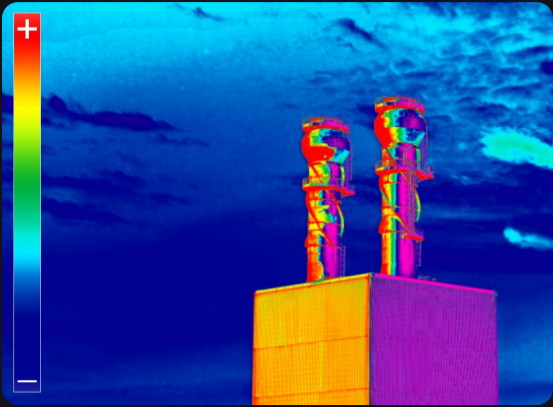
5G mmWave Backhaul

Wireless 5G mmWave transport network for streamlining greenfield deployments.

Applications



Drone Monitoring



10K & Infrared Monitoring



Remote Controlling



Crowded Area Capacity



Industrial VR/AR



Automated Guided Vehicles



Predictive Maintenance



Industrial IoT




Let's talk →

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Thank you!