

Success story:

# Powering network efficiency

Showing how embracing  
sustainability doesn't mean  
sacrificing performance



**ERICSSON**

In partnership with



**vodafone**

December 2021

# A sustainable, cost-efficient network

In order to meet their ambitious environmental targets, Vodafone has teamed up with Ericsson to show that embracing sustainability can reduce energy consumption and lower operating costs without impacting network performance.

## Committed to a sustainable digital society

Vodafone believes that business success should not come at a cost to the environment and has taken action to address the climate emergency. It is already on course to eliminate emissions from its own activities and from the energy it purchases by 2027. Vodafone aims to take this a step further by ensuring the carbon footprint of its products, joint ventures, supply chain purchases and business travel are all at net-zero by 2040.

In a decisive step towards meeting these targets, Vodafone has partnered with Ericsson to install new antenna-integrated radio (AIR)

solutions on the roof of Speechmark, its Central London headquarters.

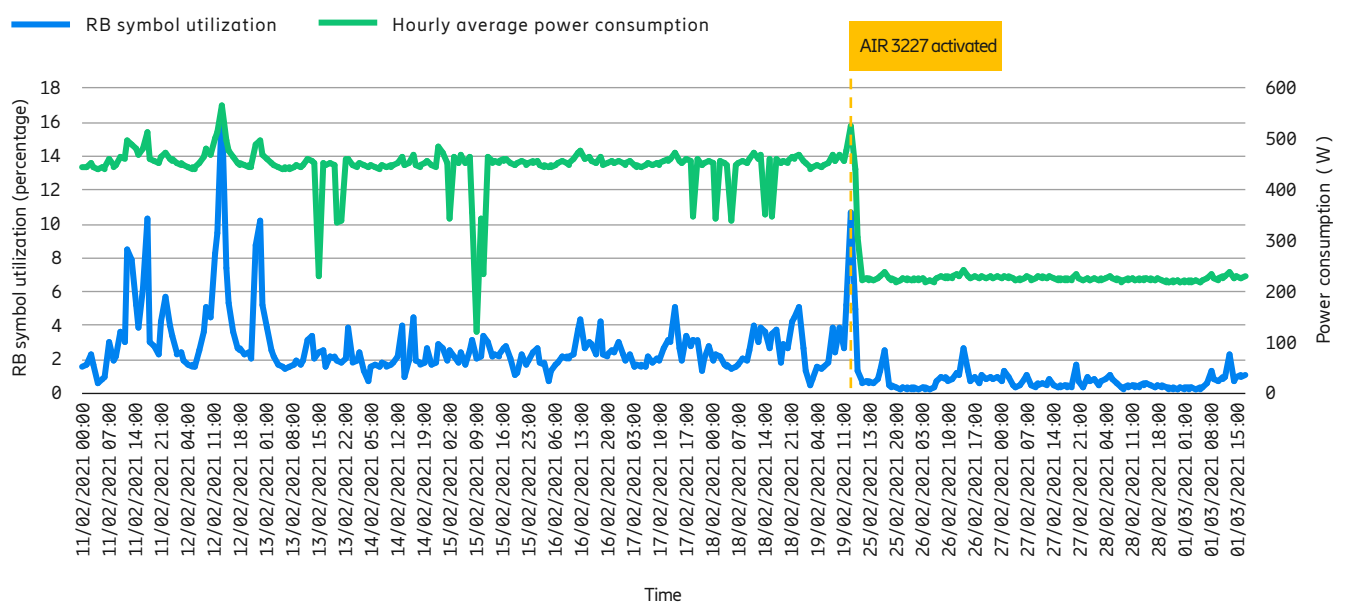
This decision has been taken to help Vodafone reduce its energy consumption and lower its financial costs. The AIR 6488 models were swapped out for the newer, more efficient AIR 3227 – a mid-band radio with 32 transmitters (32T) and 32 receivers (32R) supporting both LTE and New Radio (NR). Some of the characteristics of the AIR 3227 include:

- lower inter-cell interference, leading to improved network performance
- high order spatial multiplexing and multi-user MIMO (MU-MIMO) support
- full radio resource utilization in vertical and horizontal beamforming

“The success of this trial allows us to explore new ways we can more effectively manage the energy consumption of our network with our partner Ericsson. There is no silver bullet to manage our network energy consumption – it is about putting sustainability at the heart of every decision and adding up all the small gains to make a material difference.”

Andrea Dona  
Chief Network Officer, Vodafone UK

Figure 1: How the AIR 3227 reduced power consumption



The trials showed that the AIR 3227 helped decrease energy consumption by an average of 43 percent when compared directly to the previous-generation Massive MIMO radios. In fact, these savings rose to as much as 55 percent during off-peak times.

Ahead of the trial, a baseline was established by monitoring the AIR 6488 64T64R at a maximum total output of 200W. The results indicated an hourly average power consumption of up to 445W. There was a slight reduction in consumption when using the same antenna with some configuration changes but, as shown in Figure 1, the real improvements came when switching to the AIR 3227 antenna. Consumption plummeted by about 50 percent against the baseline with the AIR 3227. Figure 2 highlights the stark, and immediate, reduction in power consumption once the AIR 3227 was switched on and similar results were observed across all three sectors during the trial.

Not only is the AIR 3227 more energy-efficient, but it is also smaller and 51 percent lighter than the AIR 6488. The new model can be installed by a single technician in places that were previously impossible to reach, allowing sites to have a smaller footprint and making 5G upgrades quicker and easier. Moreover, all this has been made possible without having any detrimental effect on network performance or user experience. The benefits are not limited to the

environmental either. The AIR 3227 enables financial savings of GBP 0.1 per kWh, which equates to north of GBP 585,000 over 5 years.

**Connect for a better future**

The success of the London trial has prompted Vodafone to make the AIR 3227 the standard for all new base stations nationwide. There are already plans to deploy 1,500 new units by April 2022 to help reduce the energy consumption of its future 5G network.

Björn Odenhammar, CTO, Networks & Managed Services, Ericsson UK & Ireland, said: “Sustainability is central to Ericsson’s purpose and our industry-leading new radios will help Vodafone to reduce network energy consumption, simplify network rollout and efficiently manage the expected growth in data traffic of both current and future 5G networks.

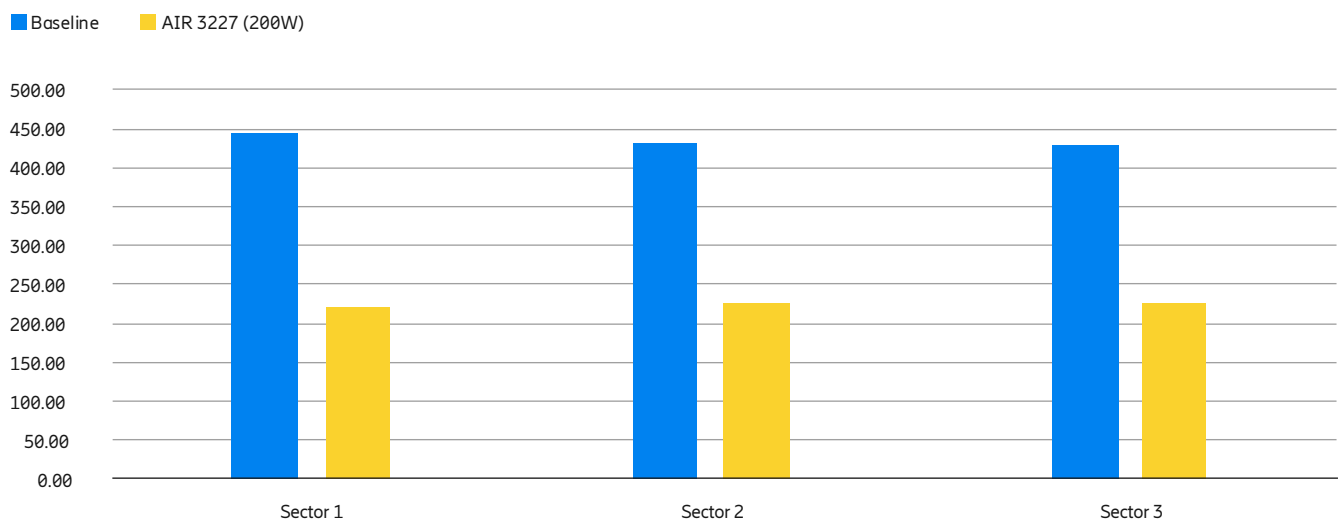
Together we are building the 5G network of the future – one that delivers the highest possible performance with improved resource efficiency and low environmental impacts.”

For Vodafone and Ericsson, this intelligent approach to sustainability is a win-win. They are able to meet their climate goals and make significant financial savings – all while delivering a high-quality user experience. It also shows other service providers that breaking the energy curve is not only possible, but it’s already within reach.

**About the customer**

- Vodafone is one of the UK’s leading service providers, with more than 18 million customers nationwide.
- It also serves 962,000 home broadband customers and accounts for more than 94 million Internet of Things connections.
- Vodafone recently presented Ericsson with its Planet Award for services to sustainability.

**Figure 2: Hourly average power consumption after AIR 3227 was introduced**



## About Ericsson

Ericsson enables communications service providers to capture the full value of connectivity. The company's portfolio spans Networks, Digital Services, Managed Services, and Emerging Business and is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's investments in innovation have delivered the benefits of telephony and mobile broadband to billions of people around the world. The Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.

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