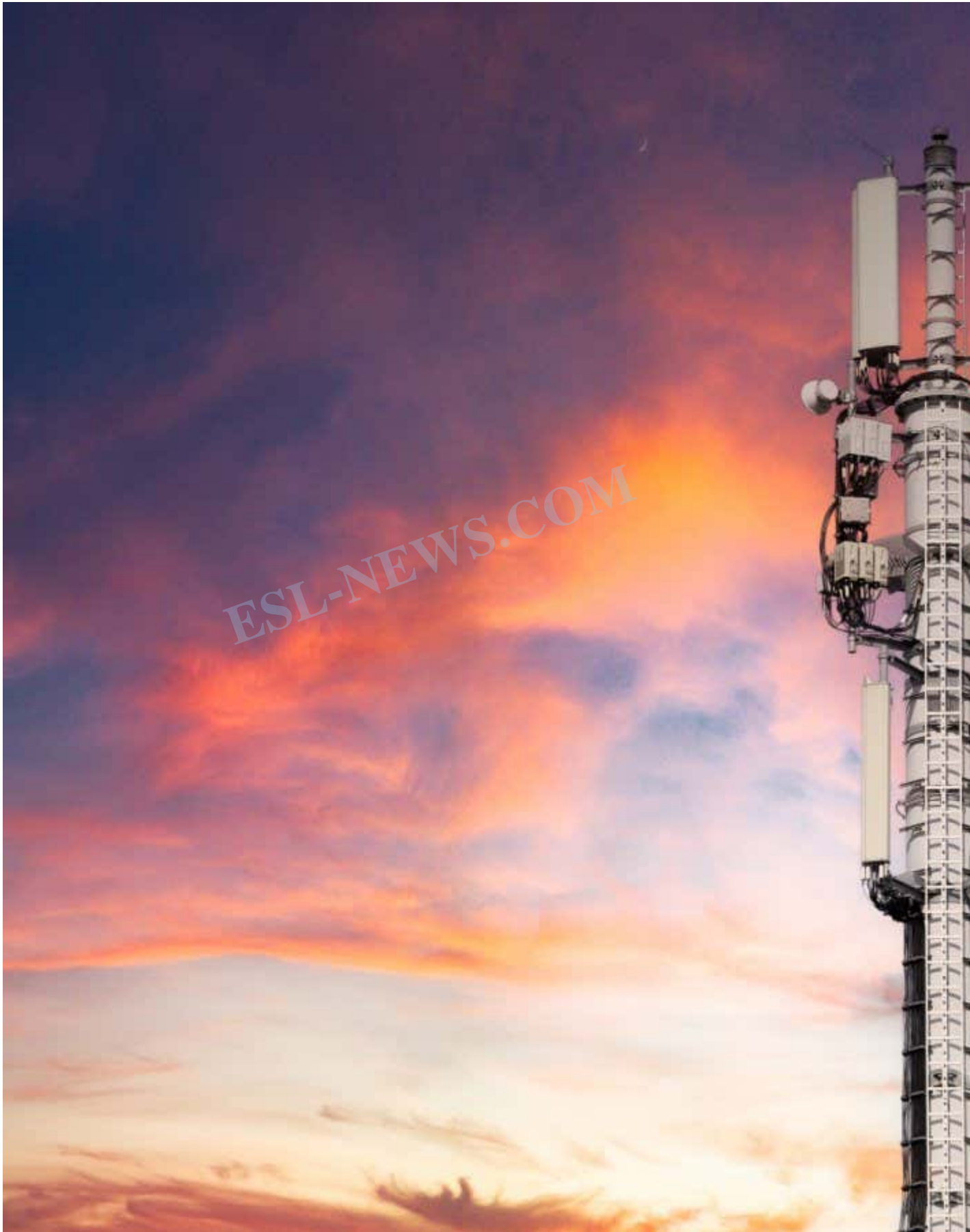




## 6G Network Speed: 9000x Faster Than 5G!

### Description

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Future mobile networks could transmit data much faster if they use a wider range of frequencies

Frank Herrmann/Getty Images

The latest breakthrough in wireless technology has achieved a stunning record speed of 938 gigabits per second, surpassing current 5G connections by over 9000 times. In practical terms, this unprecedented speed could enable the download of more than 20 average-length movies per second. This remarkable feat represents a significant advancement in multiplex data transmission, where multiple signals are combined.

The escalating demand for wireless connectivity, particularly in crowded venues like concerts and train stations, often leads to network congestion due to the limited bandwidth of existing 5G networks. Unlike the narrow frequency bands below 6 gigahertz typically allocated to 5G networks worldwide, researchers at University College London, led by Dr. Zhixin Liu, have experimented with an extensive range of frequencies from 5 gigahertz to 150 gigahertz, utilizing both radio waves and light.

By employing digital-to-analogue converters for lower frequencies and innovative laser-based techniques for higher frequencies, the research team successfully transmitted data at an astonishing rate of 938 Gb/s through the air. This breakthrough opens up the possibility of integrating this technology into next-generation smartphones, offering users unparalleled data speeds for various applications.

Dr. Liu believes that this pioneering work could serve as the foundation for future 6G technologies. However, competing approaches are also being explored in the race to redefine wireless communication networks. This groundbreaking achievement in signal transmission across wide frequency ranges signifies a shift from the congested "narrow road" of current 5G networks to expansive "10-lane motorways," promising a revolution in data delivery.

The potential implications of such rapid data transmission are vast, empowering individuals with high-speed connectivity for undiscovered applications and ensuring seamless video streaming for large audiences, surpassing previous records for multiplex data and outpacing single signal speeds exceeding 1 terabit per second.

As Dr. Liu's team collaborates with industry stakeholders, including smartphone manufacturers and network operators, the future of wireless communication holds exciting possibilities inspired by their groundbreaking research.



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## Vocabulary List:

1. **Breakthrough** /'breɪk.θruː/ (noun): A significant and dramatic discovery or development.
2. **Congestion** /kən'dʒes.tʃən/ (noun): The state of being overcrowded or overfilled.
3. **Multiplex** /'mʌl.tɪ.pleks/ (adjective): Involving several separate channels or signals.
4. **Bandwidth** /'bænd.wɪðθ/ (noun): The range of frequencies used for transmitting a signal.
5. **Integration** /,ɪn.tɪ'greɪ.ʃən/ (noun): The process of combining or coordinating different components.
6. **Implications** /,ɪm.plɪ'keɪ.ʃənz/ (noun): Possible consequences or effects of an action or decision.

## Vocabulary quizzes

### Multiple Choice ( Select the Correct answer for each question. )

1. What term is used to describe a significant development or discovery?  
Option: Congestion  
Option: Revolutionizing  
Option: Breakthrough  
Option: Innovative
2. What are the objects or instruments carried aboard a vehicle such as a spacecraft?  
Option: Payloads  
Option: Multiplex  
Option: Integration  
Option: Mechanisms
3. Which term refers to something made or produced by human beings rather than occurring naturally?  
Option: Artificial  
Option: Atmospheric  
Option: Self-sufficiency  
Option: Tapering
4. What is the point or level at which something begins or changes?  
Option: Implications  
Option: Threshold  
Option: Disaster  
Option: Calamities
5. What term refers to the action or process of combining different elements into a whole?



- Option: Groundbreaking
- Option: Reusability
- Option: Integration
- Option: Harvesting

6. Which term describes the possibility or likelihood of future success or something happening?

- Option: Criticism
- Option: Prospect
- Option: Approvals
- Option: Guidelines

7. What term describes introducing new ideas methods or products?

- Option: Innovative
- Option: Revolutionizing
- Option: Deceleration
- Option: Zenith

8. What word describes events causing great and often sudden damage or distress?

- Option: Innovative
- Option: Calamities
- Option: Self-sufficiency
- Option: Breakthrough

9. What term refers to the maximum data transfer rate of a network or internet connection?

- Option: Deceleration
- Option: Bandwidth
- Option: Zenith
- Option: Multiplex

10. Which term describes something innovative or pioneering?

- Option: Threshold
- Option: Atmospheric
- Option: Groundbreaking
- Option: Harvesting

**Gap-Fill ( Fill in the blanks with the correct word from the vocabulary list. )**

11. The new \_\_\_\_\_ cinema is equipped with multiple screens for simultaneous screenings.

12. The earthquake resulted in a humanitarian \_\_\_\_\_ with widespread destruction and



loss of lives.

13. The community aimed for \_\_\_\_\_ by growing their own food and generating electricity.

14. The project cannot proceed without the necessary permits and \_\_\_\_\_ from the authorities.

15. Employees are required to follow the safety \_\_\_\_\_ to prevent accidents in the workplace.

16. The new technology is \_\_\_\_\_ the way we communicate and access information.

17. The medication dosage should be gradually reduced in a process known as \_\_\_\_\_.

18. The company reached the \_\_\_\_\_ of success with record profits and global recognition.

19. Farmers began \_\_\_\_\_ crops as soon as they ripened to ensure a good yield.

20. The new design received mixed \_\_\_\_\_ from experts in the field.

**Matching Sentences ( Match each definition to the correct word from the vocabulary list. )**

21. The decision to cut costs had significant consequences for the company's workforce.
22. The introduction of new technology led to improved efficiency and customer satisfaction.
23. Effective communication is for the success of any team or organization.
24. The in place ensure the safety and security of the building occupants.
25. The internet speed test measures the available for data transfer.
26. The driver had to apply brakes to slow down the car's on the sharp curve.
27. The company was at the of a major breakthrough in renewable energy technology.



28. His career included becoming a top executive in the industry.

29. The innovative product is the way consumers interact with technology.

30. The new cinema offers a variety of movie genres for viewers to choose from.

## Answer

**Multiple Choice:** 1. Breakthrough 2. Payloads 3. Artificial 4. Threshold 5. Integration 6. Prospect 7. Innovative 8. Calamities 9. Bandwidth 10. Groundbreaking

**Gap-Fill:** 11. Multiplex 12. Disaster 13. Self-sufficiency 14. Approvals 15. Guidelines 16. Revolutionizing 17. Tapering 18. Zenith 19. Harvesting 20. Critical

**Matching sentence:** 1. Implications 2. Innovation 3. Crucial 4. Mechanisms 5. Bandwidth 6. Deceleration 7. Threshold 8. Aspirations 9. Revolutionizing 10. Multiplex

## CATEGORY

1. Sci/Tech - LEVEL4

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