Wave manipulation technology using multishape radio

Background

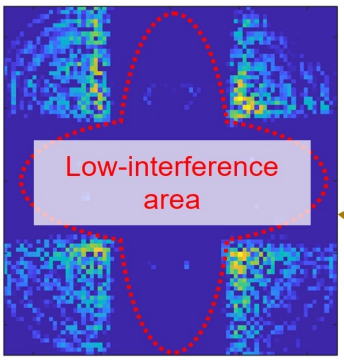
Toward the IOWN/6G era, many devices will be connected to wireless networks, and interference between users will be severe. Applying wave manipulation technology developed in optics to radio waves, we aim to realize interference-free transmission with flexible radio wave propagation area formation.

Summary

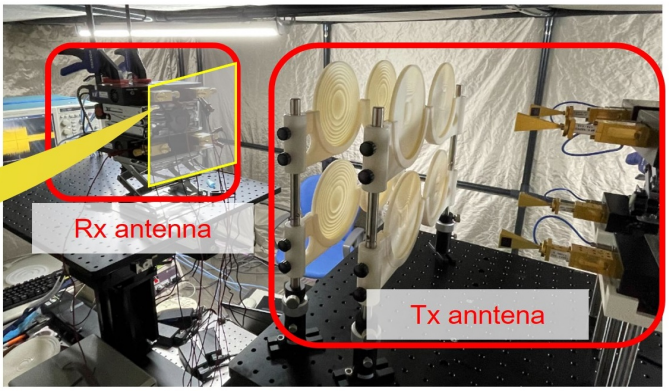
We demonstrated the utilization of airy beams to form a propagation area in the sub-THz (140 GHz) band where four beams can be transmitted independently without interfering, as well as the ability to transmit data over a wide bandwidth.

Wave Manipulation Technology Using Multishape Radio

Creating a wireless space with low interference



Airy beam 4 multiple transmission experiment



Features

- Generate airy beams that bend the trajectory of radio waves by dielectric lens antenna
- Utilizing the characteristics of airy beams, the sub-THz band is used to create propagation areas where the four beams without interference
- Transmits four beams carrying data and realizes parallel broadband transmission without digital signal processing for separation

Future_benefits

By controlling the interference-free area to form flexible wireless spaces, it enables interference-free, high-capacity communications under a wide variety of device connections.

Exhibiting Company

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