

Smart device and base station communication





Overview

Why are base stations important in cellular communication?

Base stations are important in the cellular communication as it facilitate seamless communication between mobile devices and the network communication. The demand for efficient data transmission are increased as we are advancing towards new technologies such as 5G and other data intensive applications.

Can a programmable metasurface build a smart base station framework for 6g?

Here, we propose a large-scale 2-bit millimeter-wave programmable metasurface to build an integrated smart base station framework for 6G communications. The meta-array is composed of 30×30 meta-elements, each with two embedded positive-intrinsic-negative (PIN) diodes.

How a beamforming system enables smart communication of new types of base stations?

The independent and reconfigurable capabilities in manipulating the propagation directions of four streams have facilitated the smart communication of the new types of base stations. We summarize the properties of the proposed beamforming system in Table 1.

What is a wireless base station?

A base station represents an access point for a wireless device to communicate within its coverage area. It usually connects the device to other networks or devices through a dedicated high bandwidth wire of fiber optic connection. Base stations typically have a transceiver, capable of sending and receiving wireless signals;



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smart millimeter-wave base station for 6G application based ...

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