

# Successful active antenna connection test for LTE base stations

February 22 2013

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NTT DOCOMO, Japan's leading mobile operator and provider of integrated services centered on mobility, announced today that it has successfully connected an active antenna, a device expected to be widely used in LTE and LTE-Advanced base stations around the world, to a commercially operational LTE base station in an experiment. The antenna, jointly developed by Tokyo-based Nihon Dengyo Kosaku Co., Ltd. and Ubidyne GmbH of Germany, was connected to a DOCOMO LTE base station via an ORI-standard interface.

The successful experiment indicates that DOCOMO eventually will be able to install active antennas quickly and inexpensively without having to set up new base stations. DOCOMO already operates base stations that use the ORI interface, a specification of the European Telecommunications Standards Institute.

Currently, base station frameworks are limited by the fact that active antennas and base stations must be made by the same vendor due to the lack of a standardized interface to interconnect devices of different vendors.

Active antennas, which feature energy-efficient operation and small form factors, are expected to be utilized in LTE base stations and future LTE-Advanced base stations worldwide.

The base station used in the experiment is a remote installation-type base station comprising one master station and multiple secondary stations. A

conventional secondary station is equipped with an [antenna](#) and separate remote radio heads (RRH) for sending and receiving signals. An active antenna, however, has a built-in RRH, allowing the secondary station to be smaller in size and installed in more confined spaces, resulting in denser LTE coverage and reduced installation costs.

Integrating an antenna with RRH reduces the amount of electrical loss that occurs inside conventional antennas, and when RRH and antennas are joined with a conventional cable connection. As a result, coverage range is extended, [power consumption](#) is lowered, and the active antenna's radio wave transmission directionality can be controlled more precisely for optimized coverage in a variety of situations.

Connection between the secondary base active antenna and master station is based on the ORI standard, which has been widely adopted by equipment vendors worldwide. Linking the active antenna and master station equipment via ORI ensures compatibility with diverse master station manufacturers.

DOCOMO will submit the results of its recent test to the 3rd Generation Partnership Project (3GPP) standards organization, aiming to contribute to the standardization of future active antennas. DOCOMO will now expand testing of its active antenna to outside locations, aiming at early utilization of advanced LTE [base stations](#).

Going forward, DOCOMO intends to steadily broaden coverage areas of its LTE service and improve network quality by utilizing in-house and external technologies for the enhanced convenience of its LTE subscribers.

Provided by NTT Docomo

Citation: Successful active antenna connection test for LTE base stations (2013, February 22)  
retrieved 7 May 2024 from

<https://phys.org/news/2013-02-successful-antenna-lte-base-stations.html>

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