Realizing Super 3G: NTT Develops Low-Power LSI Incorporating MIMO Signal-Processing Technology

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NTT DoCoMo announced today that it has developed and successfully tested a trial large-scale-integration (LSI) chip incorporating advanced power-saving signal-processing technologies that enable the chip to work at a sufficiently low power consumption and to be made small enough to fit into forthcoming Super 3G handsets and beyond.

Super 3G will provide superfast downlinks in excess of 100Mbps. Super 3G is called Long Term Evolution (LTE) in the 3rd Generation Partnership Project (3GPP).

In the test, DoCoMo's LSI achieved a transmission rate of 200Mbps with high precision over a high-speed wireless network, while power consumption did not exceed 0.1W thanks to DoCoMo's proprietary signal-processing technology.

The LSI demodulates and separates MIMO (multiple-input multiple-output) -multiplexed OFDM (orthogonal frequency division multiplexing) signals transmitted in the 20MHz bandwidth from four antennas. Signal processing is based on MLD (maximum likelihood detection) technology that DoCoMo has originally developed for 4G wireless access.

Redundant circuits have been eliminated in the experimental chip, which was made with 65 nanometer processing.

Source: NTT DoCoMo