

CAP-MIMO: Transceiver For 5G Communication

Low-complexity mm- and cm-wave transceiver to improve wireless communication functionality, security, and cost



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Market:

The global 5G services market is \$41.48 billion in 2020 with a CAGR of 43.9%. The 5G RF transceivers market is \$112 million and growing at 30.4% CAGR, driven by need for energy-efficient transceivers for small cell deployment.

Technology:

CAP-MIMO uses a hybrid analog-digital architecture to create a transceiver with simpler hardware and software requirements. The analog front-end uses a lens system with continuous aperture phasing (CAP) for high power gains and multiple input multiple output (MIMO) technology for beam-forming and beam-steering to reduce interference and control power loss from transmission in unintended directions.

IP and Stage:

3 issued patents. Standalone-chip transceiver field tested indoor and outdoor with mm- (28 GHz) and cm-wave (10GHz) spectra.

Impact:

CAP-MIMO has lower hardware and software complexity than multi-antenna transceivers, resulting in higher manufacturability, reduced cost, and improved wireless network deployment and scalability. The higher power gains and advanced beam-forming and beam-steering technology enable more efficient, directional data transmission to improve security and mobility. Compatibility with both mm- and cm-wave spectra increases suitability for expanding network bandwidth.

Ask:

Introductions to industry partners and entrepreneurs working in 5G network deployment.

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