

Efficient Transmission and Reception Method with Low Out-of-Band Radiation

We are looking to out-license the technology for its commercialization.

Enables Efficient Channel Aggregation for Enhanced Communication Capacity

◆Background

Current communication technologies require strong suppression of out-of-band radiation to meet strict spectrum masks and improve frequency efficiency. However, this increases computational load for frequency filtering. In channel aggregation, differing spectrum masks, power, and bandwidth per channel further complicate efficient signal generation with filter-based methods.

◆Description

The present invention enables efficient channel aggregation using time-domain windows that suppress out-of-band radiation with minimal computation, allowing each channel to effectively suppress out-of-band radiation even when channel aggregation is applied.

➤ Suppression of Out-of-Band Radiation Power Achieved by Extending Window Transition Length

By applying time-domain windowing that multiplies an arbitrary time-domain window function to each channel, it is possible to improve suppression performance compared to conventional OFDM (Fig.1).

➤ Adoption of Channel Aggregation to Combine Available Channels Across Multiple Frequency Bands

Time-domain symbols, including orthogonal frequency division multiplexing (OFDM) and orthogonal frequency division multiple access (OFDMA), are transmitted on a per-block basis.

◆Development Status

- Implementation on actual equipment and performance evaluation

◆Applications

- Ccommunication technology

◆Intellectual Property

JP6619234 (Granted)

US10581546B2 (Granted)

◆Offer

- Patent License
- Option for Patent License

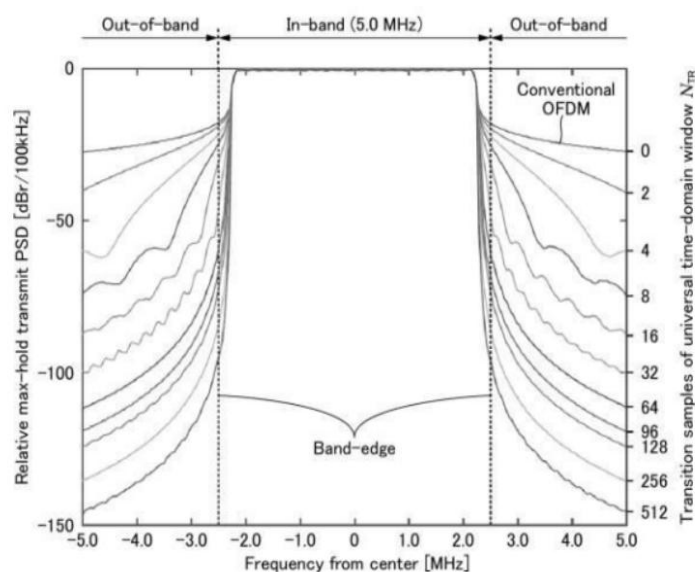


Fig.1 Evaluation of out-of-band radiation power suppression performance using computer simulation with LTE signals

Without time-domain windowing (NTR = 0), frequency components exceed the spectrum mask. Applying windowing suppresses out-of-band radiation power of the OFDM signal.

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