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(54) MILLIMETER WAVE (MMW) DOWNLINK MULTIPLE INPUT MULTIPLE OUTPUT (MIMO) AND CARRIER AGGREGATION (CA) ARCHITECTURE

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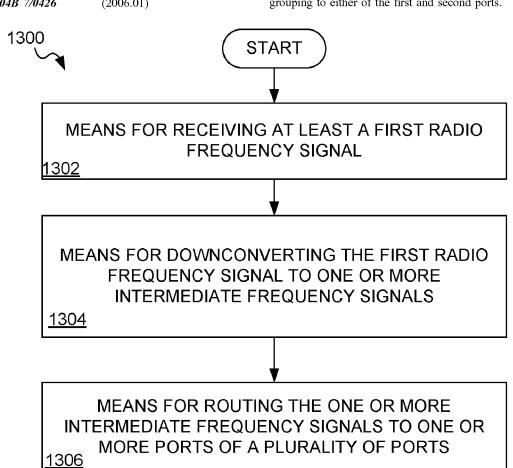
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(57)**ABSTRACT**

A receive system for performing carrier aggregation (CA) and multiple input multiple output (MIMO) operation at millimeter wave (mmW) frequencies includes a phased array having a plurality of groupings, each grouping having a pair of sub array structures, each sub array structure having a mixer and a plurality of phased array elements, each phased array element associated with an antenna element, each phased array element having an amplifier (LNA) and a phase shift circuitry, and an amplifier array associated with each grouping, the amplifier array having two pairs of amplifiers, wherein a first amplifier of each pair is coupled to a first port and a second amplifier of each pair is coupled to a second port, the amplifier array configured to selectively route an output from any of the sub array structures of a grouping to either of the first and second ports.



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