【CLAIMS】

【Claim 1】

A method of receiving a Reference Signal (RS) by a User Equipment (UE) in a wireless communication system, the method comprising:

receiving Quasi Co-Location (QCL) configuration information including a plurality of QCL configuration parameter sets through a Radio Resource Control (RRC) signaling;

receiving the first RS through the first antenna port; and

receiving the second RS through the second antenna port based on QCL relationship between the first antenna port and the second antenna port,

wherein the QCL relationship is based on a specific QCL configuration parameter set among the plurality of QCL configuration parameter sets,

wherein candidate QCL configuration parameter sets related to the QCL relationship are determined among the plurality of QCL configuration parameter sets through L2 (Layer 2)/MAC (medium access control) layer signaling,

wherein the specific QCL configuration parameter set is determined among the candidate QCL configuration parameter sets through L1 (Layer 1)/PHY (Physical) layer signaling,

wherein the specific QCL configuration parameter set includes a spatial reception parameter related to a spatial property of a beam received by the UE.

【Claim 2】

The method of claim 1, wherein the spatial reception parameter is related to at least one of (i) a direction in which a beam is received by the UE or (ii) a reception beam width.

【Claim 3】

The method of claim 1, wherein an RS type of the second RS is the same as an RS type of the first RS.

【Claim 4】

The method of claim 3, wherein the first RS is a first Channel state information (CSI)-RS that is mapped to a first CSI-RS resource,

wherein the second RS is a second CSI-RS mapped to a second CSI-RS resource which is different from the first CSI-RS resource, and

wherein the first antenna port for receiving the first CSI-RS resource and the second antenna port for receiving the second CSI-RS resource are configured to have the QCL relationship based on the spatial reception parameter.

【Claim 5】

The method of claim 3, wherein the first RS and the second RS are the same CSI-RS that is mapped to an identical CSI-RS resource.

【Claim 6】

The method of claim 1, wherein an RS type of the first RS is a CSI-RS and an RS type of the second RS is a Synchronization Signal (SS), and

wherein the first antenna port for receiving the CSI-RS and the second antenna port for receiving the SS are configured to have the QCL relationship based on the spatial reception parameter.

【Claim 7】

The method for receiving an RS of claim 3, wherein an RS type of the first RS is a Demodulation RS (DMRS) and an RS type of the second RS is a Phase noise compensation RS (PCRS), and

wherein the first antenna port for receiving the DMRS and the second antenna port for receiving the PCRS are configured to have the QCL relationship for a plurality of QCL parameters.

【Claim 8】

The method of claim 7, wherein the PCRS corresponds to a reference signal for phase tracking.

【Claim 9】

The method of claim 7, wherein the plurality of QCL parameters comprises the spatial reception parameter and at least one of a Delay spread parameter, a Doppler spread parameter, a Doppler shift parameter, an Average gain parameter or an Average delay parameter.

【Claim 10】

The method of claim 7, wherein a first precoding for the first antenna port for receiving the DMRS is identical to a second precoding for the second antenna port for receiving the PCRS.

【Claim 11】

The method of claim 1, wherein the specific QCL configuration parameter set is determined based on a downlink control information including a specific field related to the QCL relationship, and

wherein a number of bits of the specific field is based on a number of the candidate QCL configuration parameter sets.

【Claim 12】

A User Equipment (UE) configured to receive a Reference Signal (RS) in a wireless communication system, the UE comprising:

a radio frequency (RF) unit;

at least one processor; and

at least one computer memory operably connectable to the at least one processor and storing instructions that, when executed, cause the at least one processor to perform operations comprising:

receiving Quasi Co-Location (QCL) configuration information including a plurality of QCL configuration parameter sets through a Radio Resource Control (RRC) signaling;

receiving, using the RF unit, the first RS through the first antenna port; and

receiving, using the RF unit, the second RS through the second antenna port based on QCL relationship between the first antenna port and the second antenna port,

wherein the QCL relationship is based on a specific QCL configuration parameter set among the plurality of QCL configuration parameter sets,

wherein candidate QCL configuration parameter sets related to the QCL relationship are

determined among the plurality of QCL configuration parameter sets through L2 (Layer 2)/MAC (medium access control) layer signaling,

wherein the specific QCL configuration parameter set is determined among the candidate QCL configuration parameter sets through L1 (Layer 1)/PHY (Physical) layer signaling,

wherein the specific QCL configuration parameter set includes a spatial reception parameter related to a spatial property of a beam received by the UE..

【Claim 13】

The UE of claim 12, wherein the spatial reception parameter is related to at least one of (i) a direction in which a beam is received by the UE or (ii) a reception beam width.

【Claim 14】

The UE of claim 12, wherein an RS type of the second RS is the same as an RS type of the first RS.

【Claim 15】

The method of claim 7, wherein the first antenna port for receiving the DMRS and the second antenna port for receiving the PCRS are configured to have the QCL relationship for all QCL parameters that have been defined for the first antenna port and the second antenna port.

【Claim 16】

The method of claim 2, wherein the spatial reception parameter is related to at least one of an average angle (AA) or an average spread (AS).

【Claim 17】

The method of claim 1, wherein receiving the second RS through the second antenna port that has the QCL relationship with the first antenna port based on the spatial reception parameter comprises:

based on a first value of the spatial reception parameter that is obtained from the first RS received through the first antenna port, determining a second value of the spatial reception parameter for receiving the second RS through the second antenna port.