

CLAIMS

- 5 1. A method for transmitting a reference signal, comprising:
determining an orthogonal frequency division multiplexing (OFDM) symbol for
transmitting reference signals; and
transmitting multiple types of reference signals on the OFDM symbol,
wherein each of the multiple types of the reference signals corresponds to a
10 respective transmission parameter, the transmission parameter comprising a subcarrier
spacing for transmission of the corresponding type of reference signals.
2. The method of claim 1, wherein the OFDM symbol is not configured to transmit at
least one of control information or data.
- 15 3. The method of claim 1 or 2, wherein the method is executed by a terminal device,
and determining the OFDM symbol comprises:
receiving, by the terminal device, resource information carried in high-layer
signaling or resource information carried in Downlink Control Information (DCI) from
20 a network device, the resource information comprising a position of the OFDM symbol;
and
determining, by the terminal device according to the resource information, the
OFDM symbol.
- 25 4. The method of claim 1 or 2, wherein the method is executed by a network device,
and after determining the OFDM symbol, the method further comprises:
sending, by the network device, resource information carried in high-layer
signaling or resource information carried in DCI to a terminal device, the resource
information comprising a position of the OFDM symbol.
- 30 5. The method of any one of claims 1-4, wherein a slot or subframe comprising the
OFDM symbol is further configured to transmit at least one of control information or
data.

6. The method of claim 5, wherein determining the OFDM symbol for transmitting the reference signals comprises:

determining a position of the OFDM symbol for transmitting the reference signals according to at least one of a position of an OFDM symbol for transmitting the control information or a position of an OFDM symbol for transmitting the data.

7. The method of claim 5 or 6, wherein

the OFDM symbol for transmitting the reference signals is located before the OFDM symbol for transmitting the control information; or

the OFDM symbol for transmitting the reference signals is located before the OFDM symbol for transmitting the data; or

the OFDM symbol for transmitting the reference signals is located after the OFDM symbol for transmitting the control information and located before the OFDM symbol for transmitting the data; or

the OFDM symbol for transmitting the reference signals is at a starting position of the slot or subframe comprising the OFDM symbol for transmitting the reference signals.

8. The method of any one of claims 1-7, wherein the transmission parameter further comprises at least one of:

transmission bandwidths for transmission of the reference signals,
precoding matrixes for precoding the reference signals, or
beam parameters for beamforming the reference signals.

9. The method of any one of claims 1-8, wherein the reference signals are at least two of the following types:

a Channel State Information Reference Signal (CSI-RS), a Demodulation Reference Signal (DMRS), a Sounding Reference Signal (SRS), a Phase Tracking Reference Signal (PTRS) or a Beam-specific Reference Signal (BRS).

10. A communication device, comprising:

a determination unit, configured to determine an orthogonal frequency division multiplexing (OFDM) symbol for transmitting reference signals; and

a transmission unit, configured to transmit multiple types of reference signals on the OFDM symbol determined by the determination unit,

wherein each of the multiple types of the reference signals corresponds to a respective transmission parameter, the transmission parameter comprising a subcarrier
5 spacing for transmission of the corresponding type of reference signals.

11. The communication device of claim 10, wherein the OFDM symbol is not configured to at least one of transmit control information or data.

10 12. The communication device of claim 10 or 11, wherein the communication device is a terminal device, and the transmission unit is further configured to:

receive resource information carried in high-layer signaling or resource information carried in Downlink Control Information (DCI) from a network device, the resource information comprising a position of the OFDM symbol.

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13. The communication device of claim 10 or 11, wherein the communication device is a network device, and the transmission unit is further configured to:

after the OFDM symbol is determined, send resource information carried in high-layer signaling or resource information carried in DCI to a terminal device, the
20 resource information comprising a position of the OFDM symbol.

14. The communication device of any one of claims 10-13, wherein a slot or subframe comprising the OFDM symbol is further configured to transmit at least one of control information or data.

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15. The communication device of claim 14, wherein the determination unit is specifically configured to:

determine a position of the OFDM symbol for transmitting the reference signals according to at least one of a position of an OFDM symbol for transmitting the control
30 information or a position of an OFDM symbol for transmitting the data.

16. The communication device of claim 14 or 15, wherein the OFDM symbol for transmitting the reference signals is located before the OFDM symbol for transmitting

the control information; or

the OFDM symbol for transmitting the reference signals is located before the OFDM symbol for transmitting the data; or

the OFDM symbol for transmitting the reference signals is located after the
5 OFDM symbol for transmitting the control information and located before the OFDM symbol for transmitting the data; or

the OFDM symbol for transmitting the reference signals is at a starting position of the slot or subframe comprising the OFDM symbol for transmitting the reference signals.

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17. The communication device of any one of claims 10-16, wherein the transmission parameter further comprises at least one of:

transmission bandwidths for transmission of the reference signals,

precoding matrixes for precoding the reference signals, or

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beam parameters for beamforming the reference signals.

18. The communication device of any one of claims 10-17, wherein the reference signals are at least two of the following types:

a Channel State Information Reference Signal (CSI-RS), a Demodulation
20 Reference Signal (DMRS), a Sounding Reference Signal (SRS), a Phase Tracking Reference Signal (PTRS) or a Beam-specific Reference Signal (BRS).