

CLAIMS

1. A signal processing method, comprising:
 - 5 determining, by a terminal device, a Quasi-Co-Location (QCL) identifier (ID) corresponding to a first port set for a first downlink signal;
determining, by the terminal device, a second downlink signal in QCL with the first port set for the first downlink signal based on the QCL ID; and
processing, by the terminal device, signals on the first port set for the first
10 downlink signal based on QCL information obtained from the second downlink signal.
2. The method of claim 1, wherein the QCL ID is one of the following: a cell ID, a beam ID, a time index of a synchronization signal (SS) block, and a reference signal (RS) ID configured to generate a sequence of a downlink RS.
15
3. The method of claim 1 or 2, wherein the first port set comprises part or all of ports for the first downlink signal.
4. The method of any one of claims 1-3, wherein the QCL ID is a time index of the SS
20 block, and
wherein determining, by the terminal device, the second downlink signal in QCL with the first port set for the first downlink signal based on the QCL ID comprises:
determining, by the terminal device, an SS block containing the time index or a signal in the SS block as the second downlink signal in QCL with the first port set for
25 the first downlink signal.
5. The method of any one of claims 1-4, wherein a large scale property of a channel for transmitting the second downlink signal is used to determine a large scale property of a channel corresponding to the first port set for the first downlink signal; or
30 a beam adopted to transmit or receive the second downlink signal is used to determine a beam adopted to transmit or receive the signal on the first port set for the first downlink signal.
6. The method of claim 5, wherein the second downlink signal is an SS block, and

a large scale property of a channel for transmitting an SS in the SS block or a demodulation reference signal (DMRS) of a physical broadcast channel (PBCH) is used to determine the large scale property of the channel corresponding to the first port set for transmission of the first downlink signal.

5

7. The method of claim 5, wherein the second downlink signal is an SS block, and

a beam adopted to transmit or receive an SS in the SS block or the PBCH is used to determine the beam adopted to transmit or receive the signal on the first port set for the first downlink signal.

10

8. The method of any one of claims 1-7, wherein the QCL information comprises a large scale property of a channel, or beam information.

9. The method of claim 8, wherein processing, by the terminal device, the signal on the first port set for the first downlink signal based on the QCL information obtained from the second downlink signal comprises:

15 acquiring, by the terminal device, a large scale property of a channel for transmitting the second downlink signal; and

performing channel estimation on the channel corresponding to the first port set for the first downlink signal based on the large scale property of the channel for transmitting the second downlink signal.

20

10. The method of claim 8, wherein processing, by the terminal device, the signals on the first port set for the first downlink signal based on the QCL information obtained from the second downlink signal comprises:

25

determining, by the terminal device, a beam adopted to receive the second downlink signal as a target beam adopted to receive the signal on the first port set for the first downlink signal; and

adopting the target beam to receive the signals on the first port set for the first downlink signal.

30

11. The method of any one of claims 8-10, wherein the large scale property of the channel comprises at least one of:

a delay spread, a doppler spread, a doppler shift, an average gain, an average delay, a departure of angle, an arrival of angle, correlation of receiving, or correlation of transmitting.

5 12. The method of any one of claims 1-11, wherein the first downlink signal is one of the following: a DMRS, a Channel State Information-reference signal (CSI-RS), an SS block, an SS, and a synchronization channel.

10 13. The method of any one of claims 1-12, wherein the second downlink signal is one of the following: a CSI-RS, an SS block, an SS, a synchronization channel, and a Phase Tracking reference signal (PT-RS).

14. A signal processing apparatus, comprising:

15 a determination module, configured to determine a Quasi-Co-Location (QCL) identifier (ID) corresponding to a first port set for a first downlink signal and determine a second downlink signal in QCL with the first port set for the first downlink signal based on the QCL ID; and

20 a processing module, configured to process signals on the first port set for the first downlink signal based on QCL information obtained from the second downlink signal.

25 15. The apparatus of claim 14, wherein the QCL ID is one of the following: a cell ID, a beam ID, a time index of a synchronization signal (SS) block, and a reference signal (RS) ID configured to generate a sequence of a downlink RS.

16. The apparatus of claim 14 or 15, wherein the first port set comprises part or all of ports for the first downlink signal.

30 17. The apparatus of any one of claims 14-16, wherein the QCL ID is a time index of a SS block, and the determination module is configured to:

determine an SS block or a signal in the SS block containing the time index as the second downlink signal in QCL with the first port set for the first downlink signal.

18. The apparatus of any one of claims 14-17, wherein a large scale property of a channel for transmitting the second downlink signal is used to determine a large scale property of a channel corresponding to the first port set for the first downlink signal; or

5 a beam adopted to transmit or receive the second downlink signal is used to determine a beam adopted to transmit or receive the signal on the first port set for the first downlink signal.

19. The apparatus of claim 18, wherein the second downlink signal is an SS block, and a large scale property of a channel for transmitting an SS in the SS block or a demodulation reference signal (DMRS) of a physical broadcast channel (PBCH) is used to determine the large scale property of the channel corresponding to the first port set for transmission of the first downlink signal.

20. The apparatus of claim 18, wherein the second downlink signal is an SS block, and a beam adopted to transmit or receive an SS in the SS block or the PBCH is used to determine the beam adopted to transmit or receive the signal on the first port set for the first downlink signal.

21. The apparatus of any one of claims 14-20, wherein the QCL information comprises a large scale property of a channel, or beam information.

22. The apparatus of claim 21, wherein the processing module is configured to: acquire a large scale property of a channel for transmitting the second downlink signal; and

25 perform channel estimation on the channel corresponding to the first port set for the first downlink signal based on the large scale property of the channel for transmitting the second downlink signal.

23. The apparatus of claim 21, wherein the processing module is specifically configured to:

30 determine a beam adopted to receive the second downlink signal as a target beam adopted to receive the signal on the first port set for the first downlink signal; and the apparatus further comprises:

a communication module, configured to adopt the target beam to receive the signal on the first port set for the first downlink signal.

24. The apparatus of any one of claims 21-23, wherein the large scale property of the
5 channel comprises at least one of:

a delay spread, a doppler spread, a doppler shift, an average gain, an average delay, a departure of angle, an arrival of angle, correlation of receiving, or correlation of transmitting.

10 25. The apparatus of any one of claims 14-24, wherein the first downlink signal is one of the following: a DMRS, a channel state information-reference signal (CSI-RS), an SS block, or an SS, or a synchronization channel.

15 26. The apparatus of any one of claims 14-25, wherein the second downlink signal is one of the following: a CSI-RS, an SS block, an SS, a synchronization channel, and a phase tracking reference signal (PT-RS).