

WHAT IS CLAIMED IS:

1. A receiving method, performed by a terminal device, comprising:

determining a resource mapping relationship between control channel element (CCE) sets in N beam directions, wherein N is a positive integer greater than 1, wherein the resource mapping relationship comprises a frequency domain mapping relationship; and

receiving downlink control information (DCI) signaling sent on the CCE sets in the N beam directions based on the resource mapping relationship;

wherein in a case that the N beam directions correspond to a same frequency domain resource, and the N beam directions correspond to first CCE sets in the same frequency domain, receiving the DCI signaling sent on the CCE sets in the N beam directions based on the resource mapping relationship comprises:

receiving a same DCI signaling sent on the first CCE sets in the N beam directions separately in response to the N beam directions sending the complete content of the DCI signaling through the same frequency domain resource separately.

2. The receiving method of claim 1, wherein,

the CCE sets in the N beam directions separately send a complete content of the DCI signaling;

or,

the CCE sets in the N beam directions collectively send the complete content of the DCI signaling.

3. The receiving method of claim 2, wherein,

the CCE sets comprise X CCEs, wherein X is a positive integer;

the X is equal to an aggregation level of the DCI signaling; or,

the X is equal to the aggregation level of the DCI signaling divided by the N.

4. The receiving method of claim 1, wherein in a case that the N beam directions correspond to different frequency domain resources, and the N beam directions correspond to N CCE sets one by one;

wherein receiving the DCI signaling sent on the CCE sets in the N beam directions based on the resource mapping relationship comprises:

receiving, in the N beam directions separately based on second indication information, same DCI signaling sent on the N CCE sets in response to the N beam directions separately sending the

complete content of the DCI signaling through different frequency domain resources, the second indication information being configured to indicate a mapping relationship between serial numbers of candidate physical downlink control channels (PDCCH candidates) corresponding to the N CCE sets respectively.

5. The receiving method of claim 4, wherein,

the mapping relationship between the serial numbers of the specific CCEs is configured based on different aggregation levels;

or, the mapping relationship between the serial numbers of the specific CCEs is the same for all the aggregation levels.

6. The receiving method of claim 4, wherein the specific CCEs are CCEs at a minimum frequency in the CCE sets.

7. The receiving method of claim 4, wherein the second indication information is configured to indicate an ID of a search space to which the N CCE sets belong, and/or an ID of a control resource set to which the N CCE sets belong.

8. The receiving method of claim 4, wherein,

the mapping relationship between the serial numbers of the PDCCH candidates is configured based on different aggregation levels;

or, the mapping relationship between the serial numbers of the PDCCH candidates is same for all the aggregation levels.

9. The receiving method of any of claims 1 to 3, wherein the resource mapping relationship comprises a time domain mapping relationship.

10. The receiving method of claim 9, wherein the N beam directions correspond to a same time domain resource, and the N beam directions correspond to second CCE sets in the same time domain;

wherein receiving the DCI signaling sent on the CCE sets in the N beam directions based on the resource mapping relationship comprises:

receiving same DCI signaling sent on the second CCE sets in N beam directions separately in response to the N beam directions separately sending the complete content of the DCI signaling through the same time domain resource.

11. The receiving method of claim 10, wherein the N beam directions correspond to different time domain resources, and the N beam directions correspond to N CCE sets one by one;

wherein receiving the DCI signaling sent on the CCE sets in the N beam directions based on the resource mapping relationship comprises:

receiving, in the N beam directions separately based on third indication information, same DCI signaling sent on the N CCE sets in response to the N beam directions separately sending the complete content of the DCI signaling through different time domain resources, the third indication information being configured to indicate a mapping relationship between time domains of the N CCE sets.

12. The receiving method of claim 11, wherein,

the mapping relationship between the time domains of the N CCE sets comprises a mapping relationship between serial numbers of specific CCEs corresponding to the N CCE sets respectively;

or, the mapping relationship between the time domains of the N CCE sets comprises a mapping relationship between serial numbers of PDCCH candidates corresponding to the N CCE sets respectively.

13. The receiving method of claim 11, wherein,

the mapping relationship between the time domains of the CCE sets is configured based on different aggregation levels;

or, the mapping relationship between the time domains of the CCE sets is same for all the aggregation levels.

14. The receiving method of claim 11, wherein the third indication information is configured to indicate an ID of a search space to which the N CCE sets belong, and/or an ID of a control resource set to which the N CCE sets belong.

15. The receiving method of any of claims 1 to 3, wherein determining the resource mapping relationship between the CCE sets in the N beam directions comprises:

determining the resource mapping relationship between the CCE sets in the N beam directions according to an instruction of a network device;

or, determining a predefined resource mapping relationship as the resource mapping relationship between the CCE sets in the N beam directions.

16. The receiving method of any of claims 1 to 3, wherein,

each CCE set comprises a PDCCH candidate.

17. The receiving method of any of claims 1 to 3, wherein,

CCE sets in different beam directions belong to a same search space;

or, the CCE sets in different beam directions belong to different search spaces in a same control resource set;

or, the CCE sets in different beam directions belong to different control resource sets.

18. A terminal device, comprising:

a processor;

a transceiver connected with the processor; and

a memory for storing executable instructions of the processor;

wherein the processor is configured to load and execute the executable instructions to implement the receiving method of any one of claims 1 to 17.