CLAIMS

1. A method for signal transmission, comprising:

sending indication information to a first terminal device, the indication information indicating a resource region for the first terminal device to receive a downlink control signal;

sending the downlink control signal to the first terminal device in the resource region; and

dividing each of at least one control channel configured to bear the downlink control signal into at least one control channel element and mapping the at least one control channel element onto the resource region,

wherein at least one control channel element of a first control channel of the at least one control channel is mapped onto all Orthogonal Frequency Division Multiplexing (OFDM) symbols in the same Physical Resource Block (PRB) in the resource region.

2. The method of claim 1, wherein the resource region comprises multiple PRBs and any two of the multiple PRBs are successive or discrete on a frequency domain.

3. The method of claim 2, wherein the indication information comprises a first bit table, there are one-to-one correspondences between bits in the first bit table and PRBs in a system bandwidth and, and a bit, which is of a first value, in the first bit table indicates that the PRB corresponding to the bit belongs to the resource region.

4. The method of claim 2, wherein the indication information comprises a starting frequency point and a second bit table, multiple bits in the second bit table correspond to multiple successive PRBs from the starting frequency point, there are one-to-one correspondences between the multiple bits and the multiple PRBs and, a bit, which is of a first value, in the second bit table indicates that the PRB corresponding to the bit belongs to the resource region.

5. The method of claim 2, wherein the indication information comprises a starting frequency point indicating a starting position of the resource region in the system bandwidth and an ending frequency point indicating an ending position of the resource region in the system bandwidth.

6. The method of claim 2, wherein the indication information comprises a starting frequency point indicating a starting position of the resource region in the system bandwidth and a bandwidth of the resource region.

7. A method for signal transmission, comprising:

receiving indication information sent by a network device, the indication information indicating a resource region for a first terminal device to receive a downlink control signal; and

receiving the downlink control signal sent by the network device in the resource region according to the indication information,

wherein the downlink control signal is born in at least one control channel, each of at least one control channel is divided into at least one control channel element, and at least one control channel element of a first control channel of the at least one control channel is mapped onto all Orthogonal Frequency Division Multiplexing (OFDM) symbols in the same Physical Resource Block (PRB) in the resource region.

8. The method of claim 7, wherein the resource region comprises multiple PRBs and any two of the multiple PRBs are successive or discrete on a frequency domain.

9. The method of claim 8, wherein the indication information comprises a first bit table, there are one-to-one correspondences between bits in the first bit table and PRBs in a system bandwidth and, and a bit, which is of a first value, in the first bit table indicates that the PRB corresponding to the bit belongs to the resource region.

10. The method of claim 8, wherein the indication information comprises a starting frequency point and a second bit table, multiple bits in the second bit table correspond to multiple successive PRBs from the starting frequency point, there are one-to-one correspondences between the multiple bits and the multiple PRBs and, a bit, which is of a first value, in the second bit table indicates that the PRB corresponding to the bit belongs to the resource region.

11. The method of claim 8, wherein the indication information comprises a starting frequency point indicating a starting position of the resource region in the system bandwidth and an ending frequency point indicating an ending position of the resource region in the system bandwidth.

12. The method of claim 8, wherein the indication information comprises a starting frequency point indicating a starting position of the resource region in the system bandwidth and a bandwidth of the resource region.

13. The method of any one of claims 9-12, wherein receiving the indication information sent by the network device comprises:

receiving the indication information sent by the first terminal device through a system message or high-layer signaling.

14. The method of claim 7, wherein the resource region comprises at least one successive OFDM symbol starting from a first OFDM symbol in a first slot or a first mini-slot, and the indication information comprises a total number of OFDM symbols belonging to the first slot or the first mini-slot in the resource region.

15. The method of claim 14, wherein receiving the indication information sent by the network device comprises:

receiving the indication information sent by the network device through the system message, the high-layer signaling or physical-layer signaling.

16. The method of claim 15, wherein the high-layer signaling comprises a Radio Resource Control (RRC) message, the system message comprises a System Information Block (SIB) message and a Physical Broadcast Channel (PBCH) message, and the physical-layer signaling comprises common signaling sent through at least one slot or at least one slot or dedicated signaling for the first terminal device.

17. The method of any one of claims 7-16, wherein receiving the downlink control signal sent by the network device in the resource region according to the indication information comprises:

receiving the at least one control channel element corresponding to a downlink control channel of the first terminal device from the network device in the resource region according to the indication information; and

generating the downlink control signal by combining the at least one control channel element.

18. The method of any one of claims 7-17, wherein receiving the downlink control signal sent by the network device in the resource region comprises:

receiving the downlink control signal sent by the network device in the resource region by using a beam corresponding to the resource region.

19. A network device for signal transmission, comprising:

a memory for storing instructions; and

a processor for executing the instructions to perform the method of any one of claims 1-6.

20. A terminal device for signal transmission, comprising:

a memory for storing instructions; and

a processor for executing the instructions to perform the method of any one of claims 7-18.