

WHAT IS CLAIMED IS:

1. A method for frequency domain resource assignment, applied to a network side device, comprising:

sending downlink control information (DCI) to a terminal, wherein the DCI is used to indicate frequency domain resource assignment for physical shared channel, and frequency domain resources of the physical shared channel are located within one or more frequency domain resource ranges;

wherein the DCI comprises a first information field and a second information field; the first information field is used to indicate one or more indexes of the one or more frequency domain resource ranges where the frequency domain resources of the physical shared channel are located in; and the second information field is used to indicate the frequency domain resource assignment within a frequency domain resource range.

2. The method of claim 1, wherein the first information field uses a bitmap or a codepoint to indicate the one or more indexes of the one or more frequency domain resource ranges.

3. The method of claim 1, wherein the one or more frequency domain resource ranges comprise: a first frequency domain resource range with a minimum bandwidth and at least one second frequency domain resource range other than the first frequency domain resource range.

4. The method of claim 1 or 3, wherein a size of bits of the second information field is equal to a size of bits for a resource assignment determined based on a bandwidth of the first frequency domain resource range.

5. The method of claim 3, wherein when the frequency domain resource assignment is type 1, a start resource block (RB) of the second frequency domain resource range corresponding to a resource indication value (RIV) included in the second information field is:

$$RB_{\text{start}} = 0, K, 2 \cdot K, \dots, (N_{\text{min}}^{\text{size}} - 1) \cdot K;$$

$$\text{a number of RBs that are consecutively assigned is } L_{\text{RBs}} = K, 2 \cdot K, \dots, N_{\text{min}}^{\text{size}} \cdot K;$$

where, $N_{\text{min}}^{\text{size}}$ represents a bandwidth size of the first frequency domain resource range or a number of physical resource blocks (PRBs); and

K represents a ratio of a bandwidth of the second frequency domain resource range to a bandwidth of the first frequency domain resource range.

6. The method of claim 3, wherein when the frequency domain resource assignment is type 0, bits of the second information field correspond to resource block groups (RBGs) of the second

frequency domain resource range, wherein,

a size of a first RBG is $RBG_0^{size} = P * K - N_{other,i}^{start} \bmod P * K$;

in case that $(N_{other,i}^{start} + N_{other,i}^{size}) \bmod P * K > 0$, a size of a last RBG is $RBG_{last}^{size} = (N_{other,i}^{start} + N_{other,i}^{size}) \bmod P * K$, in case that $(N_{other,i}^{start} + N_{other,i}^{size}) \bmod P * K$ is less than or equal to 0, the size of the last RBG is $P * K$, and a size of remaining RBGs is $P * K$;

where P represents a size of a RBG of the first frequency domain resource range, K represents a ratio of a bandwidth of the second frequency domain resource range to a bandwidth of the first frequency domain resource range; $N_{other,i}^{start}$ represents a resource starting position of the second frequency domain resource range, and $N_{other,i}^{size}$ represents a bandwidth size of the second frequency domain resource range or a number of PRBs.

7. A method for frequency domain resource assignment, applied to a terminal, comprising:

receiving downlink control information (DCI) sent by a network side device, wherein the DCI is used to indicate frequency domain resource assignment for physical shared channel, and frequency domain resources of the physical shared channel are located within one or more frequency domain resource ranges;

wherein the DCI comprises a first information field and a second information field; the first information field is used to indicate one or more indexes of the one or more frequency domain resource ranges where the frequency domain resources of the physical shared channel are located in; and the second information field is used to indicate the frequency domain resource assignment within a frequency domain resource range.

8. The method of claim 7, wherein the first information field uses a bitmap or a codepoint to indicate the terminal the one or more indexes of one or more scheduled frequency domain resource ranges .

9. The method of claim 7, wherein the one or more frequency domain resource ranges comprise: a first frequency domain resource range with minimum bandwidth and at least one second frequency domain resource range other than the first frequency domain resource range.

10. The method of claim 7 or 9, wherein a size of bits of the second information field is equal to a size of bits for resource assignment determined based on a bandwidth of the first frequency domain resource range.

11. The method of claim 10, wherein when the frequency domain resource assignment is type 1, a start resource block (RB) of the second frequency domain resource range corresponding

to a resource indication value (RIV) included in the second information field is:

$$RB_{start} = 0, K, 2 \cdot K, \dots, (N_{min}^{size} - 1) \cdot K;$$

a number of RBs that are consecutively assigned is $L_{RBs} = K, 2 \cdot K, \dots, N_{min}^{size} \cdot K$;

where, N_{min}^{size} represents a bandwidth size of the first frequency domain resource range or a number of physical resource blocks (PRBs); and

K represents a ratio of a bandwidth of the second frequency domain resource range to the bandwidth of the first frequency domain resource range.

12. The method of claim 10, wherein when the frequency domain resource assignment is type 0, bits of the second information field correspond to resource block groups (RBGs) of the second frequency domain resource range,

wherein a size of a first RBG is $RBG_0^{size} = P \cdot K - N_{other,i}^{start} \bmod P \cdot K$;

in case that $(N_{other,i}^{start} + N_{other,i}^{size}) \bmod P \cdot K > 0$, a size of a last RBG is $RBG_{last}^{size} = (N_{other,i}^{start} + N_{other,i}^{size}) \bmod P \cdot K$, in case that $(N_{other,i}^{start} + N_{other,i}^{size}) \bmod P \cdot K$ is less than or equal to 0, the size of the last RBG is $P \cdot K$, and a size of remaining RBGs is $P \cdot K$;

where P represents a size of RBG of the first frequency domain resource range, K represents a ratio of a bandwidth of the second frequency domain resource range to the bandwidth of the first frequency domain resource range; $N_{other,i}^{start}$ represents a resource starting position of the second frequency domain resource range, and $N_{other,i}^{size}$ represents a bandwidth size of the second frequency domain resource range or a number of PRBs.

13. An apparatus for frequency domain resource assignment, applied to a network side device, comprising:

a transceiver module, configured to send downlink control information (DCI) to a terminal, wherein the DCI is used to indicate frequency domain resource assignment for physical shared channel, and frequency domain resources of the physical shared channel are located within one or more frequency domain resource ranges;

wherein the DCI comprises a first information field and a second information field; the first information field is used to indicate one or more indexes of the one or more frequency domain resource ranges where the frequency domain resources of the physical shared channel are located in; and the second information field is used to indicate the frequency domain resource assignment within a frequency domain resource range.

14. An apparatus for frequency domain resource assignment, applied to a terminal,

comprising:

a transceiver module, configured to receive downlink control information (DCI) sent by a network side device, wherein the DCI is used to indicate frequency domain resource assignment for physical shared channel, and frequency domain resources of the physical shared channel are located within one or more frequency domain resource ranges;

wherein the DCI comprises a first information field and a second information field; the first information field is used to indicate one or more indexes of the one or more frequency domain resource ranges where the frequency domain resources of the physical shared channel are located in; and the second information field is used to indicate the frequency domain resource assignment within a frequency domain resource range.

15. A communication device comprising: a processor and a memory having a computer program stored thereon, wherein when the computer program is executed by the processor, the method of any one of claims 1 to 6 or the method of any one of claims 7 to 12 is performed.

16. A computer-readable storage medium having instructions stored thereon, wherein when the instructions are executed by a computer, the method of any one of claims 1 to 6 or the method of any one of claims 7 to 12 is performed.