

CLAIMS

What is claimed is:

1. A communication method, wherein the method is applicable to a first terminal device, and comprises:

5 receiving first information from a network device, wherein the first information is used to indicate a first control resource set, a quantity of resource blocks of the first control resource set is N , a quantity of resource element group bundles REGbundles of the first control resource set is W , and bandwidth supported by the first terminal device is less than bandwidth corresponding to the N resource blocks, and N and W are positive integers;

10 monitoring a first control channel on M REGbundles in the W REGbundles, wherein M is less than W , indexes $\{i, i+1, \dots, i+(Y-1)\}$ of Y REGbundles in the M REGbundles are consecutive, indexes $\{i+(Y+X), i+(Y+X+1), \dots, i+(M-1+X)\}$ of remaining $(M-Y)$ REGbundles in the M REGbundles are consecutive, M represents a quantity of available REGbundles of the first terminal device, i , Y , and X are values determined by the first terminal device, M and Y are positive integers,
15 and i and X are integers greater than or equal to 0; or

monitoring the first control channel on M control channel element CCE resources corresponding to the M REGbundles in the W REGbundles, wherein M is less than W , indexes of Y CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(Y-1)\times 2\}$, and indexes of remaining $(M-Y)$ CCE resources in the M CCE resources are $\{C2, C2+2, \dots, C2+(M-Y-1)\times 2\}$;
20 or indexes of the M CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(M-1)\times 2\}$; and M represents the quantity of the available REGbundles of the first terminal device, $C1$, $C2$, Y , and X are values determined by the first terminal device, M and Y are positive integers, and $C1$ and $C2$ are integers greater than or equal to 0.

~~2. A communication method, wherein the method is applicable to a network device, and~~
25 ~~comprises:~~

~~sending first information to a first terminal device, wherein the first information is used to~~
~~indicate a first control resource set, a quantity of resource blocks of the first control resource set is~~
 ~~N , a quantity of resource element group bundles REGbundles of the first control resource set is W ,~~
~~and bandwidth supported by the first terminal device is less than bandwidth corresponding to the~~
30 ~~N resource blocks, and N and W are positive integers;~~

5 sending a first control channel on M REGbundles in the W REGbundles, wherein M is less than W, indexes $\{i, i+1, \dots, i+(Y-1)\}$ of Y REGbundles in the M REGbundles are consecutive, indexes $\{i+(Y+X), i+(Y+X+1), \dots, i+(M-1+X)\}$ of remaining (M-Y) REGbundles in the M REGbundles are consecutive, M represents a quantity of available REGbundles of the first terminal device, i, Y, and X are values determined by the first terminal device, M and Y are positive integers, and i and X are integers greater than or equal to 0; or

10 sending the first control channel on M control channel element CCE resources corresponding to the M REGbundles in the W REGbundles, wherein M is less than W, indexes of Y CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(Y-1)\times 2\}$, and indexes of remaining (M-Y) CCE resources in the M CCE resources are $\{C2, C2+2, \dots, C2+(M-Y-1)\times 2\}$; or indexes of the M CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(M-1)\times 2\}$; and M represents the quantity of the available REGbundles of the first terminal device, C1, C2, Y, and X are values determined by the first terminal device, M and Y are positive integers, and C1 and C2 are integers greater than or equal to 0.

15 32. A communication method, wherein the method is applicable to a network device, and comprises:

20 sending first information to a first terminal device, wherein the first information is used to indicate a first control resource set, a quantity of resource blocks of the first control resource set is N, a quantity of resource element group bundles REGbundles of the first control resource set is W, and bandwidth supported by the first terminal device is less than bandwidth corresponding to the N resource blocks, and N and W are positive integers;

25 sending a first control channel on M REGbundles in the W REGbundles, wherein M is less than W, indexes $\{i, i+1, \dots, i+(Y-1)\}$ of Y REGbundles in the M REGbundles are consecutive, indexes $\{i+(Y+X), i+(Y+X+1), \dots, i+(M-1+X)\}$ of remaining (M-Y) REGbundles in the M REGbundles are consecutive, M represents a quantity of available REGbundles of the first terminal device, i, Y, and X are values determined by the first terminal device, M and Y are positive integers, and i and X are integers greater than or equal to 0; or

30 sending the first control channel on M control channel element CCE resources corresponding to the M REGbundles in the W REGbundles, wherein M is less than W, indexes of Y CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(Y-1)\times 2\}$, and indexes of remaining (M-Y) CCE resources in the M CCE resources are $\{C2, C2+2, \dots, C2+(M-Y-1)\times 2\}$; or indexes

of the M CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(M-1) \times 2\}$; and M represents the quantity of the available REG bundles of the first terminal device, C1, C2, Y, and X are values determined by the first terminal device, M and Y are positive integers, and C1 and C2 are integers greater than or equal to 0.

5 32. The method according to claim 1 ~~or 2~~, wherein i is determined based on one or more of the bandwidth supported by the first terminal device, a quantity l of symbols comprised in the first control resource set, N, W, a subcarrier spacing, a frequency range, a cell identifier, a radio frame number, a subframe number, and a slot number; and/or

Y is determined based on one or more of the bandwidth supported by the first terminal device,
10 the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

X is determined based on one or more of the bandwidth supported by the first terminal device, the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

15 C1 is determined based on one or more of the bandwidth supported by the first terminal device, the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

C2 is determined based on one or more of the bandwidth supported by the first terminal device, the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the
20 radio frame number, the subframe number, and the slot number.

43. The method according to ~~any one of claims 1 to 3~~ claim 1 or 2, wherein

$i = \{n + Z\} \bmod (W/2)$, wherein n represents an identifier of a cell in which the first terminal device is located, $Z = W/2 - 2^{l-u}$, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and mod represents a REM operation; and/or

25 $Y = M/2$, or $Y = 2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X = W/2 - 2^{l-u+1}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

30 $X = \lceil W/2 - 2^{l-u+1} \rceil / 2$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X = W/2 - 2^{l-1}$, wherein l represents the quantity of symbols comprised in the first control

resource set, and u is the subcarrier spacing parameter.

54. The method according to claim 1 or 2~~any one of claims 1 to 3~~, wherein

$C1=2N1+T$, wherein $N1=W/2-2^{l-u}$; when a result obtained through $n \bmod W$ is greater than or equal to 2^{l-u} and less than or equal to $2^{l-u}+W/2-1$, $T=1$; when the result obtained through $n \bmod W$ is less than 2^{l-u} or greater than $2^{l-u}+W/2-1$, $T=0$, wherein N represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

$C2=2N2+1-T$, wherein $N2=W/2-2^{l-u+1}$, or $N2=(W/2-2^{l-u+1})/2$; when the result obtained through $n \bmod W$ is greater than or equal to 2^{l-u} and less than or equal to $2^{l-u}+W/2-1$, $T=1$; when the result obtained through $n \bmod W$ is less than 2^{l-u} or greater than $2^{l-u}+W/2-1$, $T=0$, wherein n represents the identifier of the cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

65. The method according to claim 1 or 2~~any one of claims 1 to 3~~, wherein

$i=n \bmod (W/2)+Z$, wherein n represents an identifier of a cell in which the first terminal device is located, $Z=W/2-2^{l-u+1}$, or $Z=[W/2-2^{l-u+1}]/2$, wherein l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X=0$.

76. The method according to claim 1 or 2~~any one of claims 1 to 3~~, wherein

$C1=2N1+T$, wherein $N1=W/2-2^{l-u+1}$, or $N1=[W/2-2^{l-u+1}]/2$; when a result obtained through $n \bmod W$ is greater than or equal to 0 and less than or equal to $W/2-1$, $T=0$; when the result obtained through $n \bmod W$ is greater than $W/2-1$, $T=1$, wherein n represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

87. The method according to claim 1 or 2~~any one of claims 1 to 3~~, wherein the monitoring a first control channel comprises: monitoring the first control channel in a first resource subset or a second resource set, wherein

i , Y , and X in the first resource subset satisfy the following feature: When a result obtained through $n \bmod W/2$ is greater than or equal to 1 and less than or equal to 2^{l+1} , $i=0$, wherein $Y=n \bmod W/2$, and $X=Z$; when the result obtained through $n \bmod W/2$ is less than 1 or greater than or equal to 2^{l+1} , $i=(n+Z) \bmod W/2$, and $X=0$, wherein $Z=W/2-2^{l-u+1}$, or $Z=[W/2-2^{l-u+1}]/2$, n represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

i , Y , and X in the second resource subset satisfy the following feature: When the result obtained through $n \bmod W/2$ is greater than or equal to 1 and less than or equal to 2^{l+1} , $i=W/2$, $Y=n \bmod W/2$, and $X=Z$; when the result obtained through $n \bmod W/2$ is less than 1 or greater than or equal to 2^{l+1} , $i=(n+Z) \bmod W/2+W/2$, and $X=0$, wherein $Z=W/2-2^{l-u+1}$ or $Z=[W/2-2^{l-u+1}]/2$, n represents the identifier of the cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is the subcarrier spacing parameter, and $\bmod$ represents the REM operation.

98. The method according to claim 1 or 2~~any one of claims 1 to 3~~, wherein

the monitoring a first control channel comprises: monitoring the first control channel in a first resource subset or a second resource set, wherein

i , Y , and X in the first resource subset satisfy the following feature: When a result obtained through $n \bmod W$ is greater than or equal to 1 and less than or equal to N , $C1=W+1-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, and $C2=Z$; when the result obtained through $n \bmod W$ is greater than or equal to $1+W/2$ and less than or equal to $N+W/2$, $C1=W-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, $C2=Z+1$, and $N2=n \bmod W/2$; when the result obtained through $n \bmod W$ is greater than or equal to $N+1$ and less than or equal to $W/2$, $C1=Z+1$; when the result obtained through $n \bmod W$ is less than 1 or greater than $N+W/2$, $C1=Z$, wherein $N=2^{l+1}$, $Z=W/2-2^{l-u+1}$ or $Z=[W/2-2^{l-u+1}]/2$, n represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM

operation; and/or

i, Y, and X in the second resource subset satisfy the following feature: When the result obtained through $n \bmod W$ is greater than or equal to 1 and less than or equal to N, $C1=W-(N \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, and $C2=Z+1$; when the result obtained through $n \bmod W$ is greater than or equal to $1+W/2$ and less than or equal to $N+W/2$, $C1=W+1-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, $C2=Z$, and $N2=n \bmod W/2$; when $n \bmod W$ is greater than or equal to $N+1$ and less than or equal to $W/2$, $C1=Z$; when $n \bmod W$ is greater than or equal to 1 and less than or equal to $N+W/2$, $C1=Z+1$, wherein $N=2^{l+1}$, $Z=W/2-2^{l-u+1}$, or $Z=[W/2-2^{l-u+1}]/2$, n represents the identifier of the cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is the subcarrier spacing parameter, and mod represents the REM operation.

109. The method according to claim 98, wherein the monitoring the first control channel in a first resource subset or a second resource set comprises:

monitoring the first control channel on a resource of the first resource subset in a first time unit and monitoring the first control channel on a resource of the second resource subset in a second time unit.

110. The method according to any one of claims 1 to 109, wherein the method further comprises:

receiving, by the first terminal device, second information before receiving the first information, wherein the second information indicates the first terminal device to monitor the first control channel on a resource of the first control resource set, or monitor the first control channel on a resource set not overlapping the first control resource set.

11. A communication method, wherein the method is applicable to a network device, and comprises:

sending first information to a first terminal device, wherein the first information is used to indicate a first control resource set, a quantity of resource blocks of the first control resource set is N, a quantity of resource element group bundles REGbundles of the first control resource set is W, and bandwidth supported by the first terminal device is less than bandwidth corresponding to the N resource blocks, and N and W are positive integers;

sending a first control channel on M REGbundles in the W REGbundles, wherein M is less than W, indexes {i, i+1, ..., i+(Y-1)} of Y REGbundles in the M REGbundles are consecutive, indexes {i+(Y+X), i+(Y+X+1), ..., i+(M-1+X)} of remaining (M-Y) REGbundles in the M

REGbundles are consecutive, M represents a quantity of available REGbundles of the first terminal device, i, Y, and X are values determined by the first terminal device, M and Y are positive integers, and i and X are integers greater than or equal to 0; or

sending the first control channel on M control channel element CCE resources corresponding to the M REGbundles in the W REGbundles, wherein M is less than W, indexes of Y CCE resources in the M CCE resources are {C1, C1+2, ..., C1+(Y-1)×2}, and indexes of remaining (M-Y) CCE resources in the M CCE resources are {C2, C2+2, ..., C2+(M-Y-1)×2}; or indexes of the M CCE resources in the M CCE resources are {C1, C1+2, ..., C1+(M-1)×2}; and M represents the quantity of the available REGbundles of the first terminal device, C1, C2, Y, and X are values determined by the first terminal device, M and Y are positive integers, and C1 and C2 are integers greater than or equal to 0.

12. The method according to claim 11, wherein i is determined based on one or more of the bandwidth supported by the first terminal device, a quantity l of symbols comprised in the first control resource set, N, W, a subcarrier spacing, a frequency range, a cell identifier, a radio frame number, a subframe number, and a slot number; and/or

Y is determined based on one or more of the bandwidth supported by the first terminal device, the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

X is determined based on one or more of the bandwidth supported by the first terminal device, the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

C1 is determined based on one or more of the bandwidth supported by the first terminal device, the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

C2 is determined based on one or more of the bandwidth supported by the first terminal device, the quantity l of symbols, N, W, the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number.

13. The method according to claim 11 or 12, wherein

$i = \{n + Z\} \bmod (W/2)$, wherein n represents an identifier of a cell in which the first terminal device is located, $Z = W/2 - 2^{l-u}$, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and mod represents a REM operation; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X=W/2-2^{l-u+1}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

5 $X=[W/2-2^{l-u+1}]/2$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X=W/2-2^{l-1}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

14. The method according to claim 11 or 12, wherein

10 $C1=2N1+T$, wherein $N1=W/2-2^{l-u}$; when a result obtained through $n \bmod W$ is greater than or equal to 2^{l-u} and less than or equal to $2^{l-u}+W/2-1$, $T=1$; when the result obtained through $n \bmod W$ is less than 2^{l-u} or greater than $2^{l-u}+W/2-1$, $T=0$, wherein N represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation;
15 and/or

$C2=2N2+1-T$, wherein $N2=W/2-2^{l-u+1}$, or $N2=(W/2-2^{l-u+1})/2$; when the result obtained through $n \bmod W$ is greater than or equal to 2^{l-u} and less than or equal to $2^{l-u}+W/2-1$, $T=1$; when the result obtained through $n \bmod W$ is less than 2^{l-u} or greater than $2^{l-u}+W/2-1$, $T=0$, wherein n represents the identifier of the cell in which the first terminal device is located, l represents the
20 quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

15. The method according to claim 11 or 12, wherein

25 $i=n \bmod (W/2)+Z$, wherein n represents an identifier of a cell in which the first terminal device is located, $Z=W/2-2^{l-u+1}$, or $Z=[W/2-2^{l-u+1}]/2$, wherein l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control
30 resource set, and u is the subcarrier spacing parameter; and/or

$X=0$.

16. The method according to claim 11 or 12, wherein

$C1=2N1+T$, wherein $N1=W/2-2^{l-u+1}$, or $N1=[W/2-2^{l-u+1}]/2$; when a result obtained through $n \bmod W$ is greater than or equal to 0 and less than or equal to $W/2-1$, $T=0$; when the result obtained through $n \bmod W$ is greater than $W/2-1$, $T=1$, wherein n represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

17. The method according to claim 11 or 12, wherein the monitoring a first control channel comprises: monitoring the first control channel in a first resource subset or a second resource set, wherein

i , Y , and X in the first resource subset satisfy the following feature: When a result obtained through $n \bmod W/2$ is greater than or equal to 1 and less than or equal to 2^{l+1} , $i=0$, wherein $Y=n \bmod W/2$, and $X=Z$; when the result obtained through $n \bmod W/2$ is less than 1 or greater than or equal to 2^{l+1} , $i=(n+Z) \bmod W/2$, and $X=0$, wherein $Z=W/2-2^{l-u+1}$, or $Z=[W/2-2^{l-u+1}]/2$, n represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

i , Y , and X in the second resource subset satisfy the following feature: When the result obtained through $n \bmod W/2$ is greater than or equal to 1 and less than or equal to 2^{l+1} , $i=W/2$, $Y=n \bmod W/2$, and $X=Z$; when the result obtained through $n \bmod W/2$ is less than 1 or greater than or equal to 2^{l+1} , $i=(n+Z) \bmod W/2+W/2$, and $X=0$, wherein $Z=W/2-2^{l-u+1}$ or $Z=[W/2-2^{l-u+1}]/2$, n represents the identifier of the cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is the subcarrier spacing parameter, and $\bmod$ represents the REM operation.

18. The method according to claim 11 or 12, wherein

the monitoring a first control channel comprises: monitoring the first control channel in a first resource subset or a second resource set, wherein

i , Y , and X in the first resource subset satisfy the following feature: When a result obtained through $n \bmod W$ is greater than or equal to 1 and less than or equal to N , $C1=W+1-(n \bmod W) \times 2$,

$Y=n \bmod 2^{l+1}$, and $C2=Z$; when the result obtained through $n \bmod W$ is greater than or equal to $1+W/2$ and less than or equal to $N+W/2$, $C1=W-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, $C2=Z+1$, and $N2=n \bmod W/2$; when the result obtained through $n \bmod W$ is greater than or equal to $N+1$ and less than or equal to $W/2$, $C1=Z+1$; when the result obtained through $n \bmod W$ is less than 1 or greater than $N+W/2$, $C1=Z$, wherein $N=2^{l+1}$, $Z=W/2-2^{l-u+1}$ or $Z=\lceil W/2-2^{l-u+1} \rceil/2$, n represents an identifier of a cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

i , Y , and X in the second resource subset satisfy the following feature: When the result obtained through $n \bmod W$ is greater than or equal to 1 and less than or equal to N , $C1=W-(N \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, and $C2=Z+1$; when the result obtained through $n \bmod W$ is greater than or equal to $1+W/2$ and less than or equal to $N+W/2$, $C1=W+1-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, $C2=Z$, and $N2=n \bmod W/2$; when $n \bmod W$ is greater than or equal to $N+1$ and less than or equal to $W/2$, $C1=Z$; when $n \bmod W$ is greater than or equal to 1 and less than or equal to $N+W/2$, $C1=Z+1$, wherein $N=2^{l+1}$, $Z=W/2-2^{l-u+1}$, or $Z=\lceil W/2-2^{l-u+1} \rceil/2$, n represents the identifier of the cell in which the first terminal device is located, l represents the quantity of symbols comprised in the first control resource set, u is the subcarrier spacing parameter, and $\bmod$ represents the REM operation.

19. The method according to claim 18, wherein the monitoring the first control channel in a first resource subset or a second resource set comprises:

monitoring the first control channel on a resource of the first resource subset in a first time unit and monitoring the first control channel on a resource of the second resource subset in a second time unit.

20. The method according to any one of claims 11 to 19, wherein the method further comprises:

receiving, by the first terminal device, second information before receiving the first information, wherein the second information indicates the first terminal device to monitor the first control channel on a resource of the first control resource set, or monitor the first control channel on a resource set not overlapping the first control resource set.

~~12. A communications apparatus, wherein the communications apparatus is a first communications apparatus, and the first communications apparatus comprises:~~

~~a transceiver module, configured to receive first information from a second communications~~

apparatus, wherein the first information is used to indicate a first control resource set, a quantity of resource blocks of the first control resource set is N , a quantity of resource element group bundles REGbundles of the first control resource set is W , and bandwidth supported by the first communications apparatus is less than bandwidth corresponding to the N resource blocks, and N and W are positive integers; and

a processing module, configured to monitor a first control channel on M REGbundles in the W REGbundles, wherein M is less than W , indexes $\{i, i+1, \dots, i+(Y-1)\}$ of Y REGbundles in the M REGbundles are consecutive, indexes $\{i+(Y+X), i+(Y+X+1), \dots, i+(M-1+X)\}$ of remaining $(M-Y)$ REGbundles in the M REGbundles are consecutive, M represents a quantity of available REGbundles of the first communications apparatus, i , Y , and X are values determined by the first communications apparatus, M and Y are positive integers, and i and X are integers greater than or equal to 0; or

the processing module is configured to monitor the first control channel on M control channel element CCE resources corresponding to the M REGbundles in the W REGbundles, wherein M is less than W , indexes of Y CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(Y-1)\times 2\}$, and indexes of remaining $(M-Y)$ CCE resources in the M CCE resources are $\{C2, C2+2, \dots, C2+(M-Y-1)\times 2\}$; or indexes of the M CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(M-1)\times 2\}$; and M represents the quantity of the available REGbundles of the first communications apparatus, $C1$, $C2$, Y , and X are values determined by the first communications apparatus, M and Y are positive integers, and $C1$ and $C2$ are integers greater than or equal to 0.

13. A communications apparatus, wherein the communications apparatus is a second communications apparatus, and the second communications apparatus comprises:

a processing module, configured to send first information to a first communications apparatus by using a transceiver module, wherein the first information is used to indicate a first control resource set, a quantity of resource blocks of the first control resource set is N , a quantity of resource element group bundles REGbundles of the first control resource set is W , and bandwidth supported by the first communications apparatus is less than bandwidth corresponding to the N resource blocks, and N and W are positive integers, wherein

the processing module is configured to send a first control channel on M REGbundles in the W REGbundles by using the transceiver module, wherein M is less than W , indexes $\{i, i+1, \dots, i+(Y-1)\}$ of Y REGbundles in the M REGbundles are consecutive, indexes $\{i+(Y+X),$

$i+(Y+X+1), \dots, i+(M-1+X)$ of remaining $(M-Y)$ REGbundles in the M REGbundles are consecutive, M represents a quantity of available REGbundles of the first communications apparatus, i , Y , and X are values determined by the first communications apparatus, M and Y are positive integers, and i and X are integers greater than or equal to 0; or

5 the processing module is configured to send the first control channel on M control channel element CCE resources corresponding to the M REGbundles in the W REGbundles by using the transceiver module, wherein M is less than W , indexes of Y CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(Y-1) \times 2\}$, and indexes of remaining $(M-Y)$ CCE resources in the M CCE resources are $\{C2, C2+2, \dots, C2+(M-Y-1) \times 2\}$; or indexes of the M CCE resources in the M CCE resources are $\{C1, C1+2, \dots, C1+(M-1) \times 2\}$; and M represents the quantity of the available REGbundles of the first communications apparatus, $C1$, $C2$, Y , and X are values determined by the first communications apparatus, M and Y are positive integers, and $C1$ and $C2$ are integers greater than or equal to 0.

14. The communications apparatus according to claim 12 or 13, wherein i is determined based on one or more of the bandwidth supported by the first communications apparatus, a quantity l of symbols comprised in the first control resource set, N , W , a subcarrier spacing, a frequency range, a cell identifier, a radio frame number, a subframe number, and a slot number; and/or

Y is determined based on one or more of the bandwidth supported by the first communications apparatus, the quantity l of symbols, N , W , the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

X is determined based on one or more of the bandwidth supported by the first communications apparatus, the quantity l of symbols, N , W , the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

$C1$ is determined based on one or more of the bandwidth supported by the first communications apparatus, the quantity l of symbols, N , W , the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number; and/or

$C2$ is determined based on one or more of the bandwidth supported by the first communications apparatus, the quantity l of symbols, N , W , the subcarrier spacing, the frequency range, the cell identifier, the radio frame number, the subframe number, and the slot number.

15. The communications apparatus according to any one of claims 12 to 14, wherein $i = \{n+Z\} \bmod (W/2)$, wherein n represents an identifier of a cell in which the first

communications apparatus is located, $Z=W/2 \cdot 2^{1-u}$, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and mod represents a REM operation; and/or

$Y=M/2$, or $Y=2^{1-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X=W/2 \cdot 2^{1-u+1}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X=\lceil W/2 \cdot 2^{1-u+1} \rceil / 2$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X=W/2 \cdot 2^{1-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

16. The communications apparatus according to any one of claims 12 to 14, wherein

$C1=2N1+T$, wherein $N1=W/2 \cdot 2^{1-u}$; when a result obtained through $n \bmod W$ is greater than or equal to 2^{1-u} and less than or equal to $2^{1-u}+W/2-1$, $T=1$; when the result obtained through $n \bmod W$ is less than 2^{1-u} or greater than $2^{1-u}+W/2-1$, $T=0$, wherein N represents an identifier of a cell in which the first communications apparatus is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and mod represents a REM operation; and/or

$C2=2N2+1-T$, wherein $N2=W/2 \cdot 2^{1-u+1}$, or $N2=(W/2 \cdot 2^{1-u+1})/2$; when the result obtained through $n \bmod W$ is greater than or equal to 2^{1-u} and less than or equal to $2^{1-u}+W/2-1$, $T=1$; when the result obtained through $n \bmod W$ is less than 2^{1-u} or greater than $2^{1-u}+W/2-1$, $T=0$, wherein n represents the identifier of the cell in which the first communications apparatus is located, l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$Y=M/2$, or $Y=2^{1-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

17. The communications apparatus according to any one of claims 12 to 14, wherein

$i=n \bmod (W/2)+Z$, wherein n represents an identifier of a cell in which the first communications apparatus is located, $Z=W/2 \cdot 2^{1-u+1}$, or $Z=\lceil W/2 \cdot 2^{1-u+1} \rceil / 2$, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and mod represents a REM operation; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter; and/or

$X=0$.

18. The communications apparatus according to any one of claims 12 to 14, wherein

5 $C1=2N1+T$, wherein $N1=W/2 \cdot 2^{l-u+1}$, or $N1=[W/2 \cdot 2^{l-u+1}]/2$; when a result obtained through $n \bmod W$ is greater than or equal to 0 and less than or equal to $W/2 - 1$, $T=0$; when the result obtained through $n \bmod W$ is greater than $W/2 - 1$, $T=1$, wherein n represents an identifier of a cell in which the first communications apparatus is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and mod represents
10 a REM operation; and/or

$Y=M/2$, or $Y=2^{l-u}$, wherein l represents the quantity of symbols comprised in the first control resource set, and u is the subcarrier spacing parameter.

19. The communications apparatus according to any one of claims 12 to 14, wherein the processing module is configured to monitor the first control channel in a first resource subset or a
15 second resource set, wherein

i , Y , and X in the first resource subset satisfy the following feature: When a result obtained through $n \bmod W/2$ is greater than or equal to 1 and less than or equal to 2^{l+1} , $i=0$, wherein $Y=n \bmod W/2$, and $X=Z$; when the result obtained through $n \bmod W/2$ is less than 1 or greater than or equal to 2^{l+1} , $i=(n+Z) \bmod W/2$, and $X=0$, wherein $Z=W/2 \cdot 2^{l-u+1}$, or $Z=[W/2 \cdot 2^{l-u+1}]/2$, n represents
20 an identifier of a cell in which the first communications apparatus is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and mod represents a REM operation; and/or

i , Y , and X in the second resource subset satisfy the following feature: When the result obtained through $n \bmod W/2$ is greater than or equal to 1 and less than or equal to 2^{l+1} , $i=W/2$, $Y=n \bmod W/2$, and $X=Z$; when the result obtained through $n \bmod W/2$ is less than 1 or greater than or equal to 2^{l+1} , $i=(n+Z) \bmod W/2+W/2$, and $X=0$, wherein $Z=W/2 \cdot 2^{l-u+1}$ or $Z=[W/2 \cdot 2^{l-u+1}]/2$, n
25 represents the identifier of the cell in which the first communications apparatus is located, l represents the quantity of symbols comprised in the first control resource set, u is the subcarrier spacing parameter, and mod represents the REM operation.

20. The communications apparatus according to any one of claims 12 to 14, wherein the processing module is configured to monitor the first control channel in a first resource subset or a

second resource set, wherein

5 i , Y , and X in the first resource subset satisfy the following feature: When a result obtained through $n \bmod W$ is greater than or equal to 1 and less than or equal to N , $C1=W+1-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, and $C2=Z$; when the result obtained through $n \bmod W$ is greater than or equal to $1+W/2$ and less than or equal to $N+W/2$, $C1=W-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, $C2=Z+1$, and $N2=n \bmod W/2$; when the result obtained through $n \bmod W$ is greater than or equal to $N+1$ and less than or equal to $W/2$, $C1=Z+1$; when the result obtained through $n \bmod W$ is less than 1 or greater than $N+W/2$, $C1=Z$, wherein $N=2^{l+1}$, $Z=W/2-2^{l-u+1}$ or $Z=[W/2-2^{l-u+1}]/2$, n represents an identifier of a cell in which the first communications apparatus is located, l represents the quantity of symbols comprised in the first control resource set, u is a subcarrier spacing parameter, and $\bmod$ represents a REM operation; and/or

10 i , Y , and X in the second resource subset satisfy the following feature: When the result obtained through $n \bmod W$ is greater than or equal to 1 and less than or equal to N , $C1=W-(N \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, and $C2=Z+1$; when the result obtained through $n \bmod W$ is greater than or equal to $1+W/2$ and less than or equal to $N+W/2$, $C1=W+1-(n \bmod W) \times 2$, $Y=n \bmod 2^{l+1}$, $C2=Z$, and $N2=n \bmod W/2$; when $n \bmod W$ is greater than or equal to $N+1$ and less than or equal to $W/2$, $C1=Z$; when $n \bmod W$ is greater than or equal to 1 and less than or equal to $N+W/2$, $C1=Z+1$, wherein $N=2^{l+1}$, $Z=W/2-2^{l-u+1}$, or $Z=[W/2-2^{l-u+1}]/2$, n represents the identifier of the cell in which the first communications apparatus is located, l represents the quantity of symbols comprised in the first control resource set, u is the subcarrier spacing parameter, and $\bmod$ represents the REM operation.

20 21. The communications apparatus according to claim 20, wherein the processing module is configured to: monitor the first control channel on a resource of the first resource subset in a first time unit and monitor the first control channel on a resource of the second resource subset in a second time unit.

25 22. The communications apparatus according to any one of claims 12 to 21, wherein the processing module is configured to: before receiving the first information, receive second information by using the transceiver module, wherein the second information indicates the first communications apparatus to monitor the first control channel on a resource of the first control resource set, or monitor the first control channel on a resource set not overlapping the first control resource set.

~~23~~21. A communications apparatus, comprising a transceiver module and a processing module, wherein

the processing module is configured to implement the method according to any one of claims 1 to ~~11~~10 by using the transceiver module.

5 ~~24~~22. A communications apparatus, comprising a processor and a communications interface, wherein the communications interface is coupled to the processor, and the processor is configured to perform the method according to any one of claims 11 to ~~11~~20.

10 ~~25~~23. A computer storage medium, wherein the computer storage medium stores a program or instructions, and when the program or the instructions is/are executed by an apparatus, the method according to any one of claims 1 to ~~11~~10 or any one of claims 11 to 20 is implemented.