CLAIMS

1. A communication method, wherein the method is applied to a first communication apparatus, and the method comprises:

generating one or more orthogonal frequency division multiplexing OFDM symbols in a radio frame; and

sending the one or more OFDM symbols on a first channel in a first band, wherein

a subcarrier spacing of the first channel is $2^N$ times a subcarrier spacing of a second channel in a second band, the subcarrier spacing of the second channel is 480 kilohertz kHz, and a lowest frequency of the first band is higher than a highest frequency of the second band; and

a bandwidth of the second channel is $2^P$*20 megahertz MHz, and a bandwidth of the first channel is $2^N$*$2^P$*20 MHz, wherein N is an integer greater than 0, and P is an integer greater than or equal to 0.

2. A communication method, wherein the method is applied to a second communication apparatus, and the method comprises:

receiving one or more OFDM symbols in a radio frame on a first channel in a first band; and

processing the one or more OFDM symbols, wherein

a subcarrier spacing of the first channel is $2^N$ times a subcarrier spacing of a second channel in a second band, the subcarrier spacing of the second channel is 480 kilohertz kHz, and a lowest frequency of the first band is higher than a highest frequency of the second band; and

a bandwidth of the second channel is $2^P$*20 megahertz MHz, and a bandwidth of the first channel is $2^N$*$2^P$*20 MHz, wherein N is an integer greater than 0, and P is an integer greater than or equal to 0.

3. The method according to claim 1 or 2, wherein a number of discrete Fourier transform DFT points corresponding to the bandwidth of the first channel is $2^P$*64.

4. The method according to claim 3, wherein the subcarrier spacing of the first channel is 3.84 MHz, and the bandwidth of the first channel and the number of DFT points corresponding to the first channel meet any one of the following:

the bandwidth of the first channel is 160 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 64;

the bandwidth of the first channel is 320 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 128;

the bandwidth of the first channel is 640 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 256;

the bandwidth of the first channel is 1280 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 512; and

the bandwidth of the first channel is 2560 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 1024.

5. The method according to claim 3, wherein the subcarrier spacing of the first channel is 1.92 MHz, and the bandwidth of the first channel and the number of DFT points corresponding to the bandwidth of the first channel meet any one of the following:

the bandwidth of the first channel is 80 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 64;

the bandwidth of the first channel is 160 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 128;

the bandwidth of the first channel is 320 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 256;

the bandwidth of the first channel is 640 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 512;

the bandwidth of the first channel is 1280 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 1024; and

the bandwidth of the first channel is 2560 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 2048.

6. The method according to claim 1 or 2, wherein a number of discrete Fourier transform DFT points corresponding to the bandwidth of the first channel is $2^P*256$.

7. The method according to claim 6, wherein the subcarrier spacing of the first channel is 1.92 MHz, and the bandwidth of the first channel and the number of DFT points corresponding to the first channel meet any one of the following:

the bandwidth of the first channel is 320 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 256;

the bandwidth of the first channel is 640 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 512;

the bandwidth of the first channel is 1280 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 1024; and

the bandwidth of the first channel is 2560 MHz, and the number of DFT points corresponding to the bandwidth of the first channel is 2048.

8. The method according to claim 1 or 2, wherein the first channel comprises a left guard interval, a right guard interval, and Q subcarriers located between the left guard interval and the right guard interval, wherein Q is an integer greater than 1; and

a bandwidth between the left guard interval and the right guard interval is Q times the subcarrier spacing of the first channel.

9. The method according to claim 8, wherein a number of discrete Fourier transform DFT points corresponding to the bandwidth of the first channel is $2^P*64$, and the subcarrier spacing of the first channel is 3.84 MHz; and

the left guard interval is 3.84 MHz; and when Pmod2=1, the right guard interval is 5.12 MHz, or when Pmod2=0, the right guard interval is 6.4 MHz; or

the left guard interval is 5.12 MHz; and when Pmod2=1, the right guard interval is 3.84 MHz, or when Pmod2=0, the right guard interval is 5.12 MHz; or

the left guard interval is 6.4 MHz; and when Pmod2=1, the right guard interval is 6.4 MHz, or when Pmod2=0, the right guard interval is 3.84 MHz, wherein

mod represents a modulo operation.

10. The method according to claim 8, wherein a number of discrete Fourier transform DFT points corresponding to the bandwidth of the first channel is $2^P*64$, and the subcarrier spacing of the first channel is 1.92 MHz; and

the left guard interval is 1.92 MHz; and when Pmod2=1, the right guard interval is 2.56 MHz, or when Pmod2=0, the right guard interval is 3.2 MHz; or

the left guard interval is 2.56 MHz; and when Pmod2=1, the right guard interval is 1.92 MHz, or when Pmod2=0, the right guard interval is 2.56 MHz; or

the left guard interval is 3.2 MHz; and when Pmod2=1, the right guard interval is 3.2 MHz, or when Pmod2=0, the right guard interval is 1.92 MHz, wherein

mod represents a modulo operation.

11. The method according to claim 9 or 10, wherein the Q subcarriers are sorted in ascending order of frequencies, the Q subcarriers comprise Q1 subcarriers and Q2 subcarriers, the Q1 subcarriers are direct current subcarriers, the Q2 subcarriers are occupied subcarriers, and the occupied subcarriers comprise a data subcarrier and/or a pilot subcarrier, wherein Q1 is an odd number greater than or equal to 1, Q2 is an integer greater than or equal to 1, Q1 is less than Q, and Q2 is less than Q.

12. The method according to claim 11, wherein

when Qmod2=1, the Q2 subcarriers comprise (Q–2–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers and (Q–2–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers, wherein a rightmost subcarrier in the (Q–2–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers is adjacent to a leftmost subcarrier in the Q1 subcarriers, and a leftmost subcarrier in the (Q–2–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers is adjacent to a rightmost subcarrier in the Q1 subcarriers; or

when Qmod2=0, the Q2 subcarriers comprise (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers and (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers, wherein a rightmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers is adjacent to a leftmost subcarrier in the Q1 subcarriers, and a leftmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers is adjacent to a rightmost subcarrier in the Q1 subcarriers; and

Q3 subcarriers in the Q subcarriers other than the Q1 subcarriers and the Q2 subcarriers are null subcarriers; and when Qmod2=1, Q3=2, or when Qmod2=1, Q3=1, wherein mod represents a modulo operation.

13. The method according to claim 11, wherein

when Qmod2=1, the Q2 subcarriers comprise (Q–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers and (Q–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers, wherein a rightmost subcarrier in the (Q–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers is adjacent to a leftmost subcarrier in the Q1 subcarriers, and a leftmost subcarrier in the (Q–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers is adjacent to a rightmost subcarrier in the Q1 subcarriers; or

when Qmod2=0, the Q2 subcarriers comprise (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers and (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers, wherein a rightmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers is adjacent to a leftmost subcarrier in the Q1 subcarriers, and a leftmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers is adjacent to a rightmost subcarrier in the Q1 subcarriers; and one subcarrier in the Q subcarriers other than the Q1 subcarriers and the Q2 subcarriers is a null subcarrier, wherein

mod represents a modulo operation.

14. The method according to claim 8, wherein a number of discrete Fourier transform DFT points corresponding to the bandwidth of the first channel is $2^{P}$*256, and the subcarrier spacing of the first channel is 1.92 MHz; and

the left guard interval is 7.68 MHz; and when Pmod2=1, the right guard interval is 10.24 MHz, or when Pmod2=0, the right guard interval is 12.8 MHz; or

the left guard interval is 10.24 MHz; and when Pmod2=1, the right guard interval is 7.68 MHz, or when Pmod2=0, the right guard interval is 10.24 MHz; or

the left guard interval is 12.8 MHz; and when Pmod2=1, the right guard interval is 12.8 MHz, or when Pmod2=0, the right guard interval is 7.68 MHz.

15. The method according to claim 14, wherein the Q subcarriers are sorted in ascending order of frequencies, the Q subcarriers comprise Q1 subcarriers and Q2 subcarriers, the Q1

subcarriers are direct current subcarriers, the Q2 subcarriers are occupied subcarriers, and the occupied subcarriers comprise a data subcarrier and/or a pilot subcarrier, wherein Q1 is an odd number greater than or equal to 1, Q2 is an integer greater than or equal to 1, Q1 is less than Q, and Q2 is less than Q.

16. The method according to claim 15, wherein Q=Q'*4, and Q' is an integer greater than or equal to 1;

when Q'mod2=1, Q2=Q–5–Q1, and the Q2 subcarriers comprise (Q–5–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers and (Q–5–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers, wherein a rightmost subcarrier in the (Q–5–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers is adjacent to a leftmost subcarrier in the Q1 subcarriers, and a leftmost subcarrier in the (Q–5–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers is adjacent to a rightmost subcarrier in the Q1 subcarriers; or

when Q'mod2=0, Q2=Q–1–Q1, and the Q2 subcarriers comprise (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers and (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers, wherein a rightmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers is adjacent to a leftmost subcarrier in the Q1 subcarriers, and a leftmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers is adjacent to a rightmost subcarrier in the Q1 subcarriers; and

Q3 subcarriers in the Q subcarriers other than the Q1 subcarriers and the Q2 subcarriers are null subcarriers; and when Q'mod2=1, Q3=5, or when Q'mod2=0, Q3=1, wherein mod represents a modulo operation.

17. The method according to claim 15, wherein Q=Q'*4, and Q' is an integer greater than or equal to 1;

the Q2 subcarriers comprise (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers and (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers, wherein a rightmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the left of the Q1 subcarriers is adjacent to a leftmost subcarrier in the Q1 subcarriers, and a leftmost subcarrier in the (Q–1–Q1)/2 contiguous subcarriers to the right of the Q1 subcarriers is adjacent to a rightmost subcarrier in the Q1 subcarriers; and

Q3 subcarriers in the Q subcarriers other than the Q1 subcarriers and the Q2 subcarriers are null subcarriers, and Q3=1.

18. A communication apparatus, comprising a unit configured to perform the method according to claim 1 or 2.

19. A communication apparatus, comprising a processor, wherein the processor is coupled to a memory, the memory stores a computer program, and the processor is configured to invoke a

part or all of the computer program in the memory, so that the method according to claim 1 or 2 is performed.

20. A computer-readable storage medium, wherein the storage medium stores a computer program, and when a part or all of the computer program is executed by a computer, the method according to claim 1 or 2 is performed.