CLAIMS

1. A communication method, comprising:

inputting high-frequency constellation mapping symbols into a tone mapper; and

reordering, by the tone mapper, the high-frequency constellation mapping symbols.

2. The method according to claim 1, wherein the high-frequency constellation mapping symbols are used for single-user transmission.

3. The method according to claim 1, wherein a quantity of data tones of the tone mapper is N_{SD}; and

if a total quantity of tones is 64, N_{SD} is less than 52, and a tone mapping distance parameter D_{TM} of the tone mapper is 3 or 4; or

if a total quantity of tones is 128, N_{SD} is less than 108, and a tone mapping distance parameter D_{TM} of the tone mapper is 5 or 7; or

if a total quantity of tones is 256, N_{SD} is less than 234, and a tone mapping distance parameter D_{TM} of the tone mapper is 2 or 8.

4. The method according to claim 3, wherein if the total quantity of tones is 64,

N_{SD} is 44, and the tone mapping distance parameter D_{TM} of the tone mapper is 4; or

N_{SD} is 42, and the tone mapping distance parameter D_{TM} of the tone mapper is 3; or

N_{SD} is 42, and the tone mapping distance parameter D_{TM} of the tone mapper is 3; or

N_{SD} is 40, and the tone mapping distance parameter D_{TM} of the tone mapper is 4.

5. The method according to claim 3, wherein if the total quantity of tones is 128,

N_{SD} is 100, and the tone mapping distance parameter D_{TM} of the tone mapper is 5; or

N_{SD} is 98, and the tone mapping distance parameter D_{TM} of the tone mapper is 7.

6. The method according to claim 3, wherein if the total quantity of tones is 256,

N_{SD} is 226, and the tone mapping distance parameter D_{TM} of the tone mapper is 2; or

N_{SD} is 224, and the tone mapping distance parameter D_{TM} of the tone mapper is 8.

7. The method according to claim 1, wherein the tone mapper comprises at least one tone mapper, and the at least one tone mapper is at least one tone mapper in a preset tone mapper set.

8. The method according to claim 7, wherein the tone mapper comprises a first tone mapper, a quantity of data tones of the first tone mapper is M, a total quantity of data tones is N, N is greater than M, and N and M are positive integers; and

high-frequency constellation mapping symbols carried on the M data tones of the N data tones are reordered based on the first tone mapper, and high-frequency constellation mapping symbols carried on remaining N–M data tones of the N data tones are not reordered.

9. The method according to claim 8, wherein if a total quantity of tones is 64, a value of the total quantity N of data tones comprises 46, 44, or 42;

a tone mapping distance parameter D_{TM} of the first tone mapper is 3, and the quantity of data tones of the first tone mapper is 36;

the first tone mapper is a tone mapper, applicable to a first multi-resource unit using a dual-carrier modulation mode, in the tone mapper set, the first multi-resource unit comprises a first resource unit and a second resource unit, the first resource unit comprises 26 tones, and the second resource unit comprises 52 tones; and

high-frequency constellation mapping symbols carried on the 36 data tones of the N data tones are reordered based on the first tone mapper, and high-frequency constellation mapping symbols carried on remaining N–36 data tones of the N data tones are not reordered.

10. The method according to claim 7, wherein the tone mapper comprises a first tone mapper, a quantity of data tones of the first tone mapper is M, a total quantity of data tones is N, N is greater than M, and N and M are positive integers; and

high-frequency constellation mapping symbols carried on the M data tones of the N data tones are reordered based on the first tone mapper, to obtain reordered N data tones, and high-frequency constellation mapping symbols carried on M data tones of the reordered N data tones are reordered based on the first tone mapper.

11. The method according to claim 10, wherein if a total quantity of tones is 64, a value of N comprises 46, 44, or 42;

a tone mapping distance parameter D_{TM} of the first tone mapper is 3, and the quantity of data tones of the first tone mapper is 36;

the first tone mapper is a tone mapper, applicable to a first multi-resource unit using a dual-carrier modulation mode, in the tone mapper set, the first multi-resource unit comprises a first resource unit and a second resource unit, the first resource unit comprises 26 tones, and the second resource unit comprises 52 tones; and

high-frequency constellation mapping symbols carried on the 36 data tones of the N data tones are reordered based on the first tone mapper, to obtain reordered N data tones, and high-frequency constellation mapping symbols carried on 36 data tones of the reordered N data tones are reordered based on the first tone mapper.

12. The method according to claim 7, wherein the tone mapper comprises a plurality of tone mappers, and a sum of quantities of data tones of the plurality of tone mappers is equal to a total quantity of data tones; and

the total quantity of data tones is divided into a plurality of parts, high-frequency constellation mapping symbols carried on the plurality of parts are separately reordered based on the plurality

of tone mappers, and the plurality of parts are in a one-to-one correspondence with the plurality of tone mappers.

13. The method according to claim 12, wherein if a total quantity of tones is 128, N is 100, the tone mapper comprises a second tone mapper and a third tone mapper, a tone mapping distance parameter D_{TM} of the second tone mapper is 3, a quantity of data tones of the second tone mapper is 48, a tone mapping distance parameter D_{TM} of the third tone mapper is 4, and a quantity of data tones of the third tone mapper is 52;

the second tone mapper is a tone mapper applicable to a second resource unit in the tone mapper set, the second resource unit comprises 52 tones, the third tone mapper is a tone mapper applicable to a 20 M bandwidth signal in the tone mapper set, and a tone spacing corresponding to the 20 M bandwidth signal is 312.5 kHz; and

high-frequency constellation mapping symbols carried on the 48 data tones of the 100 data tones are reordered based on the second tone mapper, and high-frequency constellation mapping symbols carried on the remaining 52 data tones of the 100 data tones are reordered based on the third tone mapper.

14. The method according to claim 12, wherein if a total quantity of tones is 256, N is 228, the tone mapper comprises a fourth tone mapper and a fifth tone mapper, a tone mapping distance parameter D_{TM} of the fourth tone mapper is 6, a quantity of data tones of the fourth tone mapper is 126, a tone mapping distance parameter D_{TM} of the fifth tone mapper is 6, and a quantity of data tones of the fifth tone mapper is 102;

the fourth tone mapper is a tone mapper applicable to a second multi-resource unit in the tone mapper set, the second multi-resource unit comprises a third resource unit and a first resource unit, the first resource unit comprises 26 tones, the third resource unit comprises 106 tones, and the fifth tone mapper is a tone mapper applicable to the third resource unit in the tone mapper set; and

high-frequency constellation mapping symbols carried on the 126 data tones of the 228 data tones are reordered based on the fourth tone mapper, and high-frequency constellation mapping symbols carried on the remaining 102 data tones of the 228 data tones are reordered based on the fifth tone mapper.

15. The method according to claim 13, wherein if a total quantity of tones is 256, N is 226, the tone mapper comprises a fourth tone mapper, a second tone mapper, and a third tone mapper, a tone mapping distance parameter D_{TM} of the fourth tone mapper is 6, a quantity of data tones of the fourth tone mapper is 126, a tone mapping distance parameter D_{TM} of the second tone mapper is 3, a quantity of data tones of the second tone mapper is 48, a tone mapping distance parameter D_{TM} of the third tone mapper is 4, and a quantity of data tones of the third tone mapper is 52;

the fourth tone mapper is a tone mapper applicable to a second multi-resource unit in the tone

mapper set, the second multi-resource unit comprises a third resource unit and a first resource unit, the first resource unit comprises 26 tones, the third resource unit comprises 106 tones, the second tone mapper is a tone mapper applicable to the second resource unit in the tone mapper set, the second resource unit comprises 52 tones, the third tone mapper is a tone mapper applicable to a 20 M bandwidth signal in the tone mapper set, and a tone spacing corresponding to the 20 M bandwidth signal is 312.5 kHz; and

high-frequency constellation mapping symbols carried on the 126 data tones of the 226 data tones are reordered based on the fourth tone mapper, high-frequency constellation mapping symbols carried on the 48 data tones of data tones other than the 126 data tones of the 226 data tones are reordered based on the second tone mapper, and high-frequency constellation mapping symbols carried on the remaining 52 data tones of the 226 data tones are reordered based on the third tone mapper.

16. The method according to claim 13, wherein if a total quantity of tones is 512, N is 474;

the tone mapper comprises a sixth tone mapper, a seventh tone mapper, and an eighth tone mapper, a tone mapping distance parameter D_{TM} of the sixth tone mapper is 9, a quantity of data tones of the sixth tone mapper is 351, a tone mapping distance parameter D_{TM} of the seventh tone mapper is 4, a quantity of data tones of the seventh tone mapper is 72, a tone mapping distance parameter D_{TM} of the eighth tone mapper is 3, and a quantity of data tones of the eighth tone mapper is 51;

the sixth tone mapper is a tone mapper, applicable to a third multi-resource unit using a dual-carrier modulation mode, in the tone mapper set, the third multi-resource unit comprises a fourth resource unit and a fifth resource unit, the fourth resource unit comprises 484 tones, the fifth resource unit comprises 242 tones, the seventh tone mapper is a tone mapper applicable to a first multi-resource unit in the tone mapper set, the first multi-resource unit comprises a first resource unit and a second resource unit, the first resource unit comprises 26 tones, the second resource unit comprises 52 tones, the eighth tone mapper is a tone mapper applicable to a third resource unit in the tone mapper set, and the third resource unit comprises 106 tones; and

high-frequency constellation mapping symbols carried on the 351 data tones of the 474 data tones are reordered based on the sixth tone mapper, high-frequency constellation mapping symbols carried on the 72 data tones of data tones other than the 351 data tones of the 474 data tones are reordered based on the seventh tone mapper, and high-frequency constellation mapping symbols carried on the remaining 51 data tones of the 474 data tones are reordered based on the eighth tone mapper.

17. A communication apparatus, comprising a unit or a module configured to perform the

method according to any one of claims 1 to 16.

18. A communication apparatus, comprising a communication interface and a processor, wherein the communication interface is configured to send and receive data or signaling, and the processor is configured to execute a computer program or instructions, to enable the communication apparatus to perform the method according to any one of claims 1 to 16.

19. A computer-readable storage medium, comprising a computer program or instructions, wherein when the computer program or the instructions are run on a computer, the method according to any one of claims 1 to 16 is performed.

20. A program which makes a computer to perform a method as claimed in any one of claims 1 to 16.