CLAIMS

1. An information transmission method, comprising:

sending, by a first device, a directional multi-gigabit (DMG) sensing beam descriptor element to a second device, wherein the sensing beam descriptor element comprises a beam descriptor field, and the beam descriptor field indicates a beam polarization direction; and

sending, by the first device, a physical layer protocol data unit (PPDU) to the second device in the beam polarization direction, wherein the PPDU is used for sensing measurement.

2. An information transmission method, comprising:

receiving, by a second device, a directional multi-gigabit (DMG) sensing beam descriptor element from a first device, wherein the sensing beam descriptor element comprises a beam descriptor field, and the beam descriptor field indicates a beam polarization direction; and

receiving, by the second device, a physical layer protocol data unit (PPDU) from the first device, wherein the PPDU is used for sensing measurement, wherein

the beam polarization direction is a polarization direction in which the first device sends the PPDU.

3. The method according to claim 1 or 2, wherein the beam descriptor field comprises one or more of the following:

a horizontal polarization (HP) subfield, wherein the HP subfield indicates that a polarization direction of a beam is horizontal polarization;

a vertical polarization (VP) subfield, wherein the VP subfield indicates that a polarization direction of a beam is vertical polarization;

a left-hand circular polarization (LHCP) subfield, wherein the LHCP subfield indicates that a polarization direction of a beam is left-hand circular polarization; or

a right-hand circular polarization (RHCP) subfield, wherein the RHCP subfield indicates that a polarization direction of a beam is right-hand circular polarization.

4. The method according to claim 1, wherein the sensing beam descriptor element comprises a first beam descriptor field and a second beam descriptor field, the first beam descriptor field indicates a first beam polarization direction, and the second beam descriptor field indicates a second beam polarization direction; and

the sending, by the first device, the PPDU to the second device in the beam polarization direction comprises:

sending, by the first device, a first field of the PPDU to the second device in the first polarization direction; and

sending, by the first device, a second field of the PPDU to the second device in the second

polarization direction.

5. The method according to claim 4, wherein the first polarization direction is either horizontal polarization in a linear polarization manner or vertical polarization in the linear polarization manner, and the second polarization direction is either horizontal polarization in the linear polarization manner or vertical polarization in the linear polarization manner.

6. The method according to claim 4, wherein the first polarization direction is either left-hand polarization in a circular polarization manner or right-hand polarization in the circular polarization manner, and the second polarization direction is either left-hand polarization in the circular polarization manner or right-hand polarization in the circular polarization manner.

7. The method according to any one of claims 1, and 3 to 6, further comprising:

sending, by the first device, capability information of the first device to the second device, wherein the capability information comprises a polarization direction supported by the first device.

8. The method according to claim 7, wherein the capability information is carried in a DMG sensing capabilities element.

9. The method according to any one of claims 1, and 3to 8, further comprising:

receiving, by the first device, sensing result information from the second device, wherein the sensing result information comprises indication information and a sensing result, and the indication information indicates a polarization manner of the sensing result.

10. The method according to claim 2, wherein the sensing beam descriptor element comprises a first beam descriptor field and a second beam descriptor field, the first beam descriptor field indicates a first beam polarization direction, and the second beam descriptor field indicates a second beam polarization direction; and

the first polarization direction is a polarization direction in which the first device sends a first field of the PPDU, and the second polarization direction is a polarization direction in which the first device sends a second field of the PPDU.

11. The method according to claim 10, wherein the first polarization direction is either horizontal polarization in a linear polarization manner or vertical polarization in the linear polarization manner, and the second polarization direction is either horizontal polarization in the linear polarization manner or vertical polarization in the linear polarization manner.

12. The method according to claim 10, wherein the first polarization direction is either left-hand polarization in a circular polarization manner or right-hand polarization in the circular polarization manner, and the second polarization direction is either left-hand polarization in the circular polarization manner or right-hand polarization in the circular polarization manner.

13. The method according to any one of claims 2, 3 and 10 to 12, further comprising:

sending, by the second device, capability information of the second device to the first device, wherein the capability information comprises a polarization direction supported by the first device.

14. The method according to claim 13, wherein the capability information is carried in a DMG sensing capabilities element.

15. The method according to any one of claims 2, 3 and 10 to 14, further comprising:

sending, by the second device, sensing result information to the first device, wherein the sensing result information comprises indication information and a sensing result, and the indication information indicates a polarization manner of the sensing result.

16. The method according to claim 9 or 15, wherein in linear polarization, the indication information indicates that the polarization manner of the sensing result is one of the following:

when a value of the indication information is 1, the indication information indicates that a polarization direction of the sensing result is horizontal polarization-horizontal polarization (H-H);

when the value of the indication information is 2, the indication information indicates that the polarization direction of the sensing result is horizontal polarization-vertical polarization (H-V);

when the value of the indication information is 3, the indication information indicates that the polarization direction of the sensing result is vertical polarization-vertical polarization (V-V); and

when the value of the indication information is 4, the indication information indicates that the polarization direction of the sensing result is vertical polarization-horizontal polarization (V-H).

17. The method according to claim 9 or 15, wherein in circular polarization, the indication information indicates that the polarization manner of the sensing result is one of the following:

when a value of the indication information is 1, the indication information indicates that a polarization direction of the sensing result is left-hand circular polarization-left-hand circular polarization (LH-LH);

when the value of the indication information is 2, the indication information indicates that the polarization direction of the sensing result is left-hand circular polarization-right-hand circular polarization (LH-RH;

when the value of the indication information is 3, the indication information indicates that the polarization direction of the sensing result is right-hand circular polarization-right-hand circular polarization RH-RH; and

when the value of the indication information is 4, the indication information indicates that the polarization direction of the sensing result is right-hand circular polarization-left-hand circular polarization RH-LH.

18. The method according to any one of claims 9, and 15 to 17, wherein the indication information is carried in a DMG sensing report element.

19. A communication apparatus, wherein the communication apparatus comprises a processor and a memory;

the memory is configured to store a computer program or instructions; and

the processor is configured to execute the computer program or the instructions in the memory, to enable the apparatus to perform the method according to any one of claims 1 to 18.

20. A computer-readable storage medium, wherein the computer-readable storage medium stores computer-executable instructions, and when the computer-executable instructions are invoked by an electronic apparatus, the electronic apparatus is enabled to perform the method according to any one of claims 1 to 18.

21. A computer program product, comprising computer-executable instructions, wherein when the computer-executable instructions are run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 18.

22. A chip system, comprising:

a memory, configured to store a computer program or instructions; and

a processor, configured to execute the computer program or the instructions in the memory, to enable a communication apparatus comprising the chip system to perform the method according to any one of claims 1 to 18.