CLAIMS

1. A communication method, wherein the method is applied to a first ultra-wideband (UWB) device, and the method comprises:

receiving first indication information from a second UWB device, wherein the first indication information indicates a device type of the second UWB device; and

sending a first physical layer protocol data unit (PPDU) to the second UWB device, wherein a format of the first PPDU is determined based on a device type of the first UWB device and a device type of the second UWB device.

2. The method according to claim 1, wherein the device type of the first UWB device comprises at least one of the following: a ranging device, a sensing device, and a data transmission device; or

the device type of the second UWB device comprises at least one of the following: a ranging device, a sensing device, and a data transmission device.

3. The method according to claim 1 or claim 2, wherein

when the first UWB device and the second UWB device are of a device type that supports the dynamic physical header, the format of the first PPDU is a first format, and the first PPDU in the first format comprises two physical headers; or

when the first UWB device and/or the second UWB device are/is of a device type that does not support the dynamic physical header, the format of the first PPDU is a second format, and the first PPDU in the second format comprises one physical header.

4. The method according to claim 1 or claim 2, wherein when the format of the first PPDU is a first format, and the first PPDU in the first format comprises two physical headers, the method further comprises:

sending, by an upper layer of the first UWB device, a first primitive to a physical layer of the first UWB device, wherein the first primitive indicates a rate and a modulation and coding scheme that are used by a physical header in the first PPDU and a rate and a modulation and coding scheme that are used by a physical payload in the first PPDU, and the physical header in the first PPDU indicates a length of the physical payload in the first PPDU; and

generating, by the physical layer of the first UWB device, the first PPDU based on the rate and the modulation and coding scheme that are indicated by the first primitive.

5. The method according to claim 4, wherein the first primitive comprises a first data rate field, the first data rate field indicates a first index, the first index is associated with first information, and the first information indicates at least one of the following: the first UWB device

determining to use the dynamic physical header, a constraint length of convolutional code used by the first UWB device, whether the first UWB device supports the low-density parity-check coding, the rate of the physical header in the first PPDU, and the rate of the physical payload in the first PPDU.

6. The method according to claim 5, wherein the first primitive comprises a second data rate field and a code field, the second data rate field indicates a rate of the physical payload in the first PPDU, and the code field indicates a constraint length of convolutional code used by the first UWB device and/or whether the first UWB device supports the low-density parity-check coding.

7. The method according to any one of claims 1 to 6, wherein when the format of the first PPDU is the second format, a rate and a modulation and coding scheme that are used by a physical header in the first PPDU and a rate and a modulation and coding scheme that are used by a physical payload in the first PPDU are determined based on at least one of a data rate type, the low-density parity-check coding, and a constraint length of convolutional code that are determined by the first UWB device.

8. The method according to claim 2, wherein the ranging device comprises a general ranging device and/or an advanced ranging device, wherein the general ranging device does not support a dynamic physical header and low-density parity-check coding, and the advanced ranging device supports the dynamic physical header and the low-density parity-check coding.

9. The method according to claim 2, wherein the sensing device comprises a general sensing device and/or an advanced sensing device, wherein the general sensing device does not support a dynamic physical header and low-density parity-check coding, and the advanced sensing device supports the dynamic physical header and the low-density parity-check coding.

10. The method according to claim 2, wherein the data transmission device comprises a general data transmission device and/or an advanced data transmission device, wherein the general data transmission device does not support a dynamic physical header and low-density parity-check coding, and the advanced data transmission device supports the dynamic physical header and the low-density parity-check coding.

11. A communication method, wherein the method is applied to a second ultra-wideband (UWB) device, and the method comprises:

sending first indication information to a first UWB device, wherein the first indication information indicates a device type of the second UWB device; and

receiving a first PPDU from the first UWB device, wherein a format of the first PPDU is determined based on a device type of the first UWB device and a device type of the second UWB device.

12. The method according to claim 11, wherein the device type of the first UWB device comprises at least one of the following: a ranging device, a sensing device, and a data transmission device; or

the device type of the second UWB device comprises at least one of the following: a ranging device, a sensing device, and a data transmission device.

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

when the first UWB device and the second UWB device are of a device type that supports the dynamic physical header, the format of the first PPDU is a first format, and the first PPDU in the first format comprises two physical headers; or

when the first UWB device and/or the second UWB device are/is of a device type that does not support the dynamic physical header, the format of the first PPDU is a second format, and the first PPDU in the second format comprises one physical header.

14. The method according to claim 12, wherein the ranging device comprises a general ranging device and/or an advanced ranging device, wherein the general ranging device does not support a dynamic physical header and low-density parity-check coding, and the advanced ranging device supports the dynamic physical header and the low-density parity-check coding.

15. The method according to claim 12, wherein the sensing device comprises a general sensing device and/or an advanced sensing device, wherein the general sensing device does not support a dynamic physical header and low-density parity-check coding, and the advanced sensing device supports the dynamic physical header and the low-density parity-check coding.

16. The method according to claim 12, wherein the data transmission device comprises a general data transmission device and/or an advanced data transmission device, wherein the general data transmission device does not support a dynamic physical header and low-density parity-check coding, and the advanced data transmission device supports the dynamic physical header and the low-density parity-check coding.

17. A communication apparatus, configured to implement a method according to any one of claims 1 to 10, or a method according to any one of claims 11 to 16.

18. A communication apparatus, wherein the communication apparatus comprises at least one processor and a memory, wherein

the memory is configured to store a computer program or instructions, and the at least one processor is configured to execute the computer program or the instructions in the memory, so that a method according to any one of claims 1 to 15 is performed, or a method according to any one of claims 11 to 16 is performed.

19. A communication system, wherein the communication system comprises a first ultra-wideband UWB device and a second UWB device, wherein

the first UWB device is configured to perform a method according to any one of claims 1 to 10; and

the second UWB device is configured to perform a method according to any one of claims 11 to 16.

20. A computer-readable storage medium, wherein the computer-readable storage medium stores computer instructions, and when the computer instructions are executed, a computer is enabled to perform a method according to any one of claims 1 to 10, or a method according to any one of claims 11 to 16.

21. A computer program product, wherein the computer program product comprises computer program code, and when the computer program code is run by a computer, the computer is enabled to perform a method according to any one of claims 1 to 10, or a method according to any one of claims 11 to 16.

22. A chip, wherein the chip comprises at least one processor and an interface, the processor is configured to read and execute instructions stored in a memory, and when the instructions are run, the chip is enabled to perform a method according to any one of claims 1 to 10, or a method according to any one of claims 11 to 16.