CLAIMS

What is claimed is:

1. A physical layer protocol data unit (PPDU) uplink bandwidth indication method, comprising:

generating, by an access point (AP), a trigger frame, wherein the trigger frame comprises an uplink bandwidth extension field, the uplink bandwidth extension field and an uplink bandwidth field in a common information field in the trigger frame jointly indicate an extremely high throughput trigger based physical layer protocol data unit (EHT TB PPDU) bandwidth, and the uplink bandwidth field indicates a high efficient trigger based physical layer protocol data unit (HE TB PPDU) bandwidth, wherein the uplink bandwidth extension field is 2 bits; and

sending, by the AP, the trigger frame.

2. The method according to claim 1, wherein the method further comprises:

receiving, by the AP, an EHT TB PPDU, wherein

a value of a bandwidth field in a universal signal field in a preamble of the EHT TB PPDU is a value jointly indicated by the uplink bandwidth extension field and the uplink bandwidth field.

3. A physical layer protocol data unit (PPDU) uplink bandwidth indication method, comprising:

receiving, by a station (STA), a trigger frame, wherein the trigger frame comprises an uplink bandwidth extension field, the uplink bandwidth extension field and an uplink bandwidth field in a common information field in the trigger frame jointly indicate an extremely high throughput trigger based physical layer protocol data unit (EHT TB PPDU) bandwidth, and the uplink bandwidth field indicates a high efficient trigger based physical layer protocol data unit (HE TB PPDU) bandwidth, wherein the uplink bandwidth extension field is 2 bits; and

determining, by the STA, the EHT TB PPDU bandwidth based on the uplink bandwidth extension field and the uplink bandwidth field.

4. The method according to claim 3, wherein the method further comprises:

generating, by the STA, an EHT TB PPDU, wherein a value of a bandwidth field in a universal signal field in a preamble of the EHT TB PPDU is a value jointly indicated by the uplink bandwidth extension field and the uplink bandwidth field; and

sending, by the STA, the EHT TB PPDU.

5. The method according to any one of claims 1 to 4, wherein the uplink bandwidth extension field is in a first user information field in the trigger frame, and a value of an association identifier AID12 field in the first user information field is a preset value.

6. The method according to any one of claims 1 to 5, wherein that the uplink bandwidth extension field and the uplink bandwidth field jointly indicate the EHT TB PPDU bandwidth comprises at least

one of the following cases:

when a value of the uplink bandwidth field is 0 and a value of the uplink bandwidth extension field is a first value, the jointly indicated EHT TB PPDU bandwidth is 20 MHz; or

when a value of the uplink bandwidth field is 0, and a value of the uplink bandwidth extension field is any one of a second value, a third value, and a fourth value, reserved.

7. The method according to any one of claims 1 to 5, wherein that the uplink bandwidth extension field and the uplink bandwidth field jointly indicate the EHT TB PPDU bandwidth comprises at least one of the following cases:

when a value of the uplink bandwidth field is 1 and a value of the uplink bandwidth extension field is a first value, the jointly indicated EHT TB PPDU bandwidth is 40 MHz; or

when a value of the uplink bandwidth field is 1, and a value of the uplink bandwidth extension field is any one of a second value, a third value, and a fourth value, reserved.

8. The method according to any one of claims 1 to 5, wherein that the uplink bandwidth extension field and the uplink bandwidth field jointly indicate the EHT TB PPDU bandwidth comprises at least one of the following cases:

when a value of the uplink bandwidth field is 2 and a value of the uplink bandwidth extension field is a first value, the jointly indicated EHT TB PPDU bandwidth is 80 MHz;

when a value of the uplink bandwidth field is 2 and a value of the uplink bandwidth extension field is a third value, the jointly indicated EHT TB PPDU bandwidth is 320 MHz-1; or

when a value of the uplink bandwidth field is 2 and a value of the uplink bandwidth extension field is a fourth value, the jointly indicated EHT TB PPDU bandwidth is 320 MHz-2.

9. The method according to any one of claims 1 to 5, wherein

when a value of the uplink bandwidth field is 3 and a value of the uplink bandwidth extension field is a second value, the jointly indicated EHT TB PPDU bandwidth is 160 MHz;

when a value of the uplink bandwidth field is 3 and a value of the uplink bandwidth extension field is a third value, the jointly indicated EHT TB PPDU bandwidth is 320 MHz-1; or

when a value of the uplink bandwidth field is 3 and a value of the uplink bandwidth extension field is a fourth value, the jointly indicated EHT TB PPDU bandwidth is 320 MHz-2.

10. The method according to claim 8 or 9, wherein the 320 MHz-1 and the 320 MHz-2 each are a channel of 320 MHz in a 6 GHz frequency band, and adjacent channels of 320 MHz-1 and 320 MHz-2 partially overlap in frequency domain.

11. The method according to any one of claims 1 to 5, wherein that the uplink bandwidth extension field and the uplink bandwidth field jointly indicate the EHT TB PPDU bandwidth further comprises at least one of the following cases:

when a value of the uplink bandwidth field is 2 and a value of the uplink bandwidth extension field is a second value, the jointly indicated EHT TB PPDU bandwidth is 160 MHz; or

when a value of the uplink bandwidth field is 3 and a value of the uplink bandwidth extension field is a first value, the jointly indicated EHT TB PPDU bandwidth is 80 MHz.

12. The method according to any one of claims 1 to 11, wherein the trigger frame comprises one or more user information fields for scheduling a station supporting the high efficiency HE protocol to transmit the HE TB PPDU, and a trigger frame used when non-high throughput non-HT duplicate transmission is performed on a primary 80 MHz channel or a primary 160 MHz channel cannot be punctured.

13. The method according to any one of claims 1 to 12, wherein the trigger frame comprises either or both of an HE user information field and an EHT user information field; both the HE user information field and the EHT user information field comprise an association identifier of the station; and the HE user information field and the EHT user information field have a same length.

14. The method according to any one of claims 6 to 9, wherein the first value is 0, the second value is 1, the third value is 2, the fourth value is 3.

15. A communication apparatus, comprising a unit or a module configured to perform the method according to any one of claims 1 to 14.

16. A communication apparatus, comprising a processor and a transceiver, wherein the processor is configured to generate a trigger frame, wherein the trigger frame comprises an uplink bandwidth extension field, the uplink bandwidth extension field and an uplink bandwidth field in a common information field in the trigger frame jointly indicate an extremely high throughput trigger based physical layer protocol data unit (EHT TB PPDU) bandwidth, and the uplink bandwidth field indicates a high efficient trigger based physical layer protocol data unit (HE TB PPDU) bandwidth, wherein the uplink bandwidth extension field is 2 bits; and the transceiver is configured to send the trigger frame.

17. A communication apparatus, comprising a processor and a transceiver, wherein the transceiver is configured to receive a trigger frame, the trigger frame comprises an uplink bandwidth extension field, the uplink bandwidth extension field and an uplink bandwidth field in a common information field in the trigger frame jointly indicate an extremely high throughput trigger based physical layer protocol data unit (EHT TB PPDU) bandwidth, and the uplink bandwidth field indicates a high efficient trigger based physical layer protocol data unit (HE TB PPDU) bandwidth, wherein the uplink bandwidth extension field is 2 bits; and the processor is configured to determine the EHT TB PPDU bandwidth based on the uplink bandwidth extension field and the uplink bandwidth field.

18. A communication apparatus, wherein the communication apparatus is a chip, the communication apparatus comprises an input/output interface and a processing circuit, the processing circuit is configured to generate a trigger frame, the trigger frame comprises an uplink bandwidth extension field, the uplink bandwidth extension field and an uplink bandwidth field in a common information field in the trigger frame jointly indicate an extremely high throughput trigger based physical layer protocol data unit (EHT TB PPDU) bandwidth, and the uplink bandwidth field indicates a high efficient trigger based physical layer protocol data unit (HE TB PPDU) bandwidth, wherein the uplink bandwidth extension field is 2 bits; and the input/output interface is configured to send the trigger frame.

19. A communication apparatus, wherein the communication apparatus is a chip, the communication apparatus comprises an input/output interface and a processing circuit, the input/output interface is configured to receive a trigger frame, the trigger frame comprises an uplink bandwidth extension field, the uplink bandwidth extension field and an uplink bandwidth field in a common information field in the trigger frame jointly indicate an extremely high throughput trigger based physical layer protocol data unit (EHT TB PPDU) bandwidth, and the uplink bandwidth field indicates a high efficient trigger based physical layer protocol data unit (HE TB PPDU) bandwidth, wherein the uplink bandwidth extension field is 2 bits; and the processing circuit is configured to determine the EHT TB PPDU bandwidth based on the uplink bandwidth extension field and the uplink bandwidth field.

20. A computer-readable storage medium, wherein the computer-readable storage medium stores program instructions; and when the program instructions are run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 14.