CLAIMS

1. A method for transmitting a physical layer protocol data unit, comprising:

generating a physical layer protocol data unit PPDU, wherein the PPDU comprises a short training field, and a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048; and

sending the PPDU on a target channel, wherein a bandwidth of the target channel is 320 MHz;

wherein the frequency domain sequence of the short training field is $\{HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, -HES_{-496:16:496}\}$;

wherein $HES_{-496:16:496} = \{M,1,-M,0,-M,1,-M\} \cdot (1+j)/\sqrt{2}$, and M = {–1,–1,–1,1,1,1,–1,1,1,1,–1,1,1,–1,1}.

2. A method for transmitting a physical layer protocol data unit, comprising:

receiving a physical layer protocol data unit PPDU on a target channel, wherein the PPDU comprises a short training field, a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048, and a bandwidth of the target channel is 320 MHz; and

parsing the PPDU;

wherein the frequency domain sequence of the short training field is $\{HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, -HES_{-496:16:496}\}$;

wherein $HES_{-496:16:496} = \{M,1,-M,0,-M,1,-M\} \cdot (1+j)/\sqrt{2}$, and M = {–1,–1,–1,1,1,1,–1,1,1,1,–1,1,1,–1,1}.

3. The method according to claim 1 or 2, wherein the PPDU is any one of: a high efficiency single-user physical layer protocol data unit (HE SU PPDU), a high efficiency multi-user physical layer protocol data unit (HE MU PPDU), a high efficiency extended range single-user physical layer protocol data unit (HE ER SU PPDU).

4. The method according to claim 1 or 2, wherein a time domain waveform of the short training field comprises five repetition periods and each period length is 0.8 μs.

5. The method according to claim 1 or 2, wherein a peak to average power ratio (PAPR) value of the short training field is 8.2020 dB when channel puncturing pattern is [1 1 1 1 0 0 1 1 1 1 1 1 1 1 1 1], wherein one "1" indicates a 20 MHz channel bandwidth that is not punctured, and one "0" indicates a 20 MHz channel that is punctured.

6. A method for transmitting a physical layer protocol data unit, comprising:

generating a physical layer protocol data unit PPDU, wherein the PPDU comprises a short training field, and a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048; and

sending the PPDU on a target channel, wherein a bandwidth of the target channel is 320 MHz;

wherein the frequency domain sequence of the short training field is

$\{HES_{-504:8:504}, 0, HES_{-504:8:504}, 0, -HES_{-504:8:504}, 0, -HES_{-504:8:504}\}$;where$HES_{-504:8:504}$ = $\{M,-1,M,-1,-M,-1,M,0,-M,1,M,1,-M,1,-M\}\cdot (1+j)/\sqrt{2}$, and M = {–1,–1,–1,1,1,1,–1,1,1,1,–1,1,1,–1,1}.

7. A method for transmitting a physical layer protocol data unit, comprising:

receiving a physical layer protocol data unit PPDU on a target channel, wherein the PPDU comprises a short training field, a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048, and a bandwidth of the target channel is 320 MHz; and

parsing the PPDU;

wherein the frequency domain sequence of the short training field is $\{HES_{-504:8:504}, 0, HES_{-504:8:504}, 0, -HES_{-504:8:504}, 0, -HES_{-504:8:504}\}$;

wherein $HES_{-504:8:504}$ = $\{M,-1,M,-1,-M,-1,M,0,-M,1,M,1,-M,1,-M\}\cdot (1+j)/\sqrt{2}$, and M = {–1,–1,–1,1,1,1,–1,1,1,1,–1,1,1,–1,1}.

8. The method according to claim 6 or 7, wherein the PPDU is a high efficiency trigger based physical layer protocol data unit (HE TB PPDU).

9. The method according to claim 6 or 7, wherein a time domain waveform of the short training field comprises five repetition periods and each period length is 1.6 μs.

10. The method according to claim 6 or 7, wherein a PAPR value of the short training field is 9.0122 when puncturing is not performed and a multi-RU allocation manner is used.

11. The method according to claim 6 or 7, wherein a PAPR value of the short training field is 9.8171 when channel puncturing pattern is [1 1 1 1 1 1 1 1 1 1 0 0 1 1 1 1] or [1 1 1 1 1 1 1 0 0 0 0 1 1 1 1], wherein one "1" indicates a 20 MHz channel bandwidth that is not punctured, and one "0" indicates a 20 MHz channel that is punctured.

12. An access point for transmitting a physical layer protocol data unit, comprising:

a processing unit, configured to: generate a physical layer protocol data unit (PPDU), wherein the PPDU comprises a short training field, and a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048; and

send the PPDU on a target channel, wherein a bandwidth of the target channel is 320 MHz; and

a communication unit, configured to send the PPDU on a target channel, wherein a bandwidth of the target channel is greater than 160 MHz;

wherein the frequency domain sequence of the short training field is $\{HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, -HES_{-496:16:496}\}$;

wherein $HES_{-496:16:496} = \{M,1,-M,0,-M,1,-M\} \cdot (1+j)/\sqrt{2}$, and M = {–1,–1,–1,1,1,1,–1,1,1,1,–1,1,1,–1,1}.

13. An station for transmitting a physical layer protocol data unit, comprising:

a transceiver unit, configured to receive a physical layer protocol data unit (PPDU) on a target channel, wherein the PPDU comprises a short training field, a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048, and a bandwidth of the target channel is 320 MHz; and

a communication unit, configured to parse the PPDU;

wherein the frequency domain sequence of the short training field is $\{HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, HES_{-496:16:496}, 0, -HES_{-496:16:496}\}$;

wherein $HES_{-496:16:496} = \{M,1,-M,0,-M,1,-M\} \cdot (1+j)/\sqrt{2}$, and M = {–1,–1,–1,1,1,1,–1,1,1,1,–1,1,1,–1,1}.

14. An access point for transmitting a physical layer protocol data unit, comprising:

a processing unit, configured to: generate a physical layer protocol data unit (PPDU), wherein the PPDU comprises a short training field, and a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048; and

a communication unit, configured to send the PPDU on a target channel, wherein a bandwidth of the target channel is 320 MHz, wherein the frequency domain sequence of the short training field is $\{HES_{-504:8:504}, 0, HES_{-504:8:504}, 0, -HES_{-504:8:504}, 0, -HES_{-504:8:504}\}$;

wherein $HES_{-504:8:504} = \{M,-1,M,-1,-M,-1,M,0,-M,1,M,1,-M,1,-M\} \cdot (1+j)/\sqrt{2}$, and M = {–1,–1,–1,1,1,1,–1,1,1,1,–1,1,1,1,–1,1,1,–1,1}.

15. A station for transmitting a physical layer protocol data unit, comprising:

a transceiver unit, configured to receive a physical layer protocol data unit (PPDU) on a target channel, wherein the PPDU comprises a short training field, a quantity of subcarriers of a frequency domain sequence of the short training field is greater than 2048, and a bandwidth of the target channel is 320 MHz; and

a communication unit, configured to parse the PPDU;

wherein the frequency domain sequence of the short training field is $\{HES_{-504:8:504}, 0, HES_{-504:8:504}, 0, -HES_{-504:8:504}, 0, -HES_{-504:8:504}\}$;

wherein $HES_{-504:8:504} = \{M,-1,M,-1,-M,-1,M,0,-M,1,M,1,-M,1,-M\} \cdot (1+j)/\sqrt{2}$, and $M = \{-1,-1,-1,1,1,1,-1,1,1,1,-1,1,1,-1,1\}$.

16. A communication apparatus, comprising:

a memory, configured to store computer instructions; and

a processor, configured to execute the computer instructions stored in the memory, to enable the communication apparatus to perform the method according to any one of claims 1 to 11.

17. A chip, comprising a processor and an input/output interface, wherein the processor is configured to execute instructions, to control the input/output interface to send and/or receive a signal, to enable a communication apparatus comprising the chip to perform the method according to any one of claims 1 to 11.

18. A computer-readable storage medium, configured to store a computer program, wherein the computer program comprises instructions which, when executed by a processor, cause a communication apparatus comprising the processor to perform the method according to any one of claims 1 to 11.

19. A computer program product, comprising instructions, wherein when the instructions are executed by a computer or a processor, a communication apparatus comprising the processor is enabled to perform the method according to any one of claims 1 to 11.

20. A communication system, comprising the access point for transmitting a physical layer protocol data unit according to claim 12 or 14 and the station for transmitting a physical layer protocol data unit according to claim 13 or 15.