CLAIMS

What is claimed is:

1. A multi-link communication method, comprising:

sending (S101), by a first multi-link device, a first physical layer protocol data unit (PPDU) to a second multi-link device over a first link through channel contention;

sending (S102), by the first multi-link device, a second PPDU to the second multi-link device over a second link through channel contention, wherein an end time of the second PPDU is aligned with an end time of the first PPDU;

receiving (S103), by the first multi-link device over the first link, first information from the second multi-link device in response to the first PPDU;

receiving (S104), by the first multi-link device over the second link, second information from the second multi-link device in response to the second PPDU; and,

wherein the transmission time of the first information is the same as the transmission time of the second information.

2. The method according to claim 1, wherein the second multi-link device does not support simultaneous transmission and reception.

3. The method according to claim 1 or 2, wherein that the end time of the second PPDU is aligned with the end time of the first PPDU comprises: the end time of the second PPDU is not later than the end time of the first PPDU.

4. The method according to claim 3, wherein that the end time of the second PPDU is not later than the end time of the first PPDU comprises: the end time of the second PPDU is the same as the end time of the first PPDU.

5. The method according to any one of claims 1 to 4, wherein a sending time of the second PPDU is not earlier than a sending time of the first PPDU.

6. The method according to any one of claims 1 to 5, wherein at least one of the first PPDU and the second PPDU is a multi-user PPDU.

7. The method according to any one of claims 1-6, wherein an interval between a time at which the first information is sent and a time at which the first PPDU is received is a preset time interval, and an interval between a time at which the second information is sent and a time at which the second PPDU is received is the preset time interval.

8. The method according to any one of claims 1 to 7, wherein the first PPDU comprises an uplink-downlink indication, the uplink-downlink indication is used to indicate a transmission direction of the first PPDU, and the transmission direction comprises uplink or downlink.

9. The method according to any one of claims 1 to 8, wherein the first PPDU comprises first TXOP duration information, and the first TXOP duration information indicates first TXOP duration; the second PPDU comprises second TXOP duration information, and the second TXOP duration information indicates second TXOP duration; and the first TXOP duration is the same as the second TXOP duration.

10. The method according to any one of claims 1 to 9, wherein: the first information and the second information is a block acknowledgement, BA, respectively; or, the first information and the second information is an ACK, respectively.

11. The method according to any one of claims 1 to 10, wherein the first multi-link device is a multi-link AP, and the second multi-link device is a multi-link STA.

12. A multi-link communication apparatus, comprising:

a first transceiver module (902a), configured to send a first physical layer protocol data unit (PPDU) to a second multi-link device over a first link through channel contention;

a second transceiver module (902b), configured to send a second PPDU to the second multi-link device over a second link through channel contention, wherein an end time of the second PPDU is aligned with an end time of the first PPDU;

the first transceiver module (902a) is further configured to receive, over the first link, first information from the second multi-link device in response to the first PPDU; and

the second transceiver module (902b) is further configured to receive, over the second link, second information from the second multi-link device in response to the second PPDU.

13. The apparatus according to claim 12, wherein the second multi-link device does not support simultaneous transmission and reception.

14. The apparatus according to claim 12 or 13, wherein that the end time of the second PPDU is aligned with the end time of the first PPDU comprises: the end time of the second PPDU is not later than the end time of the first PPDU.

15. The apparatus according to claim 14, wherein that the end time of the second PPDU is not later than the end time of the first PPDU comprises: the end time of the second PPDU is the same as the end time of the first PPDU.

16. The apparatus according to any one of claims 12 to 15, wherein a sending time of the second PPDU is not earlier than a sending time of the first PPDU.

17. The apparatus according to any one of claims 12 to 16, wherein at least one of the first PPDU and the second PPDU is a multi-user PPDU.

18. The apparatus according to any one of claim 12-17, wherein an interval between a time at which the first

information is sent and a time at which the first PPDU is received is a preset time interval, and an interval between a time at which the second information is sent and a time at which the second PPDU is received is the preset time interval.

19. The apparatus according to any one of claims 12 to 18, wherein the first PPDU comprises an uplink-downlink indication, the uplink-downlink indication is used to indicate a transmission direction of the first PPDU, and the transmission direction comprises uplink or downlink.

20. The apparatus according to any one of claims 12 to 19, wherein the first PPDU comprises first TXOP duration information, and the first TXOP duration information indicates first TXOP duration; the second PPDU comprises second TXOP duration information, and the second TXOP duration information indicates second TXOP duration; and the first TXOP duration is the same as the second TXOP duration.

21. The apparatus according to any one of claims 12 to 20, wherein the first information and the second information is a block acknowledgement, BA, respectively; or, the first information and the second information is an ACK, respectively.

22. The apparatus according to any one of claims 12 to 21, wherein the apparatus is a multi-link AP, and the second multi-link device is a multi-link STA.23. An apparatus, comprising a processor and a memory, wherein the memory is configured to store instructions; and when the instructions are run by the processor, the apparatus is enabled to perform the method according to any one of claims 1 to 11.

24. A computer program product comprising instructions, wherein when the computer program product is run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 11.

25. A computer-readable storage medium, wherein the computer-readable storage medium comprises instructions used to implement the method according to any one of claims 1 to 11.

26. An apparatus, configured to implement the method according to any one of claims 1 to 11.

27. A chip system for an access point multi-link device (AP MLD), configured to implement the method according to any one of claims 1 to 11.