CLAIMS

What is claimed is:

1. A channel sounding method, comprising:

sending, by a first communication device, a first frame to a second communication device, wherein the first frame is used to indicate an antenna set of the first communication device, on which the second communication device to perform channel sounding;

sending, by the first communication device, a second frame to the second communication device, wherein the second frame is used by the second communication device to perform channel sounding on the part of antennas; and

receiving, by the first communication device, a third frame from the second communication device, wherein the third frame is used to indicate a result of performing channel sounding on the antenna set.

2. The method according to claim 1, wherein before the receiving, by the first communication device, a third frame from the second communication device, the method further comprises:

sending, by the first communication device, a fourth frame to the second communication device, wherein the fourth frame is used to indicate the second communication device to send the third frame to the first communication device.

3. The method according to claim 1 or 2, wherein before the sending, by a first communication device, a first frame to a second communication device, the method further comprises:

sending, by the first communication device, a training frame to the second communication device, wherein the training frame is used to perform channel sounding on all the antennas of the first communication device;

receiving, by the first communication device, a feedback frame from the second communication device; and

determining, by the first communication device, the part of antennas based on the feedback frame.

4. The method according to claim 3, wherein before the sending, by the first communication device, a training frame to the second communication device, the method further comprises:

sending, by the first communication device, a pre-training frame to the second communication device, wherein the pre-training frame is used to indicate the second

communication device to perform channel sounding on all the antennas of the first communication device.

5. The method according to claim 3 or 4, wherein before the receiving, by the first communication device, a feedback frame from the second communication device, the method further comprises:

sending, by the first communication device, a trigger frame to the second communication device, wherein the trigger frame is used to indicate the second communication device to send the feedback frame to the first communication device.

6. The method according to any one of claims 1 to 5, wherein the first frame comprises a first field, wherein the first field is used to indicate a part of panels of the first communication device, and the part of antennas comprises an antenna corresponding to the part of panels.

7. The method according to any one of claims 1 to 5, wherein the first frame comprises a first field, wherein the first field is used to carry an antenna index, and the antenna index is used to indicate the part of antennas.

8. The method according to claim 6 or 7, wherein the first frame further comprises a second field, wherein the second field is used to indicate that the first field is used to indicate a part of panels of the first communication device or carry an antenna index.

9. The method according to any one of claims 1 to 8, wherein the first frame comprises a third field, wherein the third field is used to indicate that the first frame is a frame of an extremely high throughput EHT variant.

10. The method according to any one of claims 1 to 8, wherein the first frame is a null data packet announcement (NDPA) frame, and the first frame comprises a third field, wherein the third field comprises a standard control field; and

when a value of the standard control field is 00, it indicates that the first frame is a frame of a very high throughput (VHT) variant;

when a value of the standard control field is 01, it indicates that the first frame is a frame of a high efficiency (HE) variant;

when a value of the standard control field is 10, it indicates that the first frame is a frame of a ranging (Ranging) variant; or

when a value of the standard control field is 11, it indicates that the first frame is a frame of an extremely high throughput (EHT) variant.

11. The method according to any one of claims 1 to 10, wherein the second frame comprises an extremely high throughput (EHT) signal field, an EHT short training field, and an EHT long training field, wherein the part of antennas corresponds to at least two antenna panels, the second frame comprises at least two second subframes, and the EHT long training field in the second subframe comprises a long training field of an antenna corresponding to one of the at least two antenna panels.

12. A channel sounding method, comprising:

receiving, by a second communication device, a first frame from a first communication device, wherein the first frame is used to indicate an antenna set of the first communication device, on which the second communication device to perform channel sounding;

receiving, by the second communication device, a second frame sent by the first communication device, wherein the second frame is used by the second communication device to perform channel sounding on the antenna set;

performing, by the second communication device, channel sounding on the part of antennas based on the second frame; and

sending, by the second communication device, a third frame to the first communication device, wherein the third frame is used to indicate a result of performing channel sounding on the part of antennas.

13. The method according to claim 12, wherein before the sending, by the second communication device, a third frame to the first communication device, the method further comprises:

receiving, by the second communication device, a fourth frame sent by the first communication device, wherein the fourth frame is used to indicate the second communication device to send the third frame to the first communication device.

14. The method according to claim 12 or 13, wherein before the receiving, by a second communication device, a first frame from a first communication device, the method further comprises:

receiving, by the second communication device, a training frame from the first communication device, wherein the training frame is used to perform channel sounding on all the antennas of the first communication device; and

sending, by the second communication device, a feedback frame to the first communication

device, so that the first communication device determines the part of antennas based on the feedback frame.

15. The method according to claim 14, wherein before the receiving, by the second communication device, a training frame from the first communication device, the method further comprises:

receiving, by the second communication device, a pre-training frame sent by the first communication device, wherein the pre-training frame is used to indicate the second communication device to perform channel sounding on all the antennas of the first communication device.

16. The method according to claim 14 or 15, wherein before the sending, by the second communication device, a feedback frame to the first communication device, the method further comprises:

receiving, by the second communication device, a trigger frame from the first communication device, wherein the trigger frame is used to indicate the second communication device to send the feedback frame to the first communication device.

17. The method according to any one of claims 12 to 16, wherein the first frame comprises a first field, wherein the first field is used to indicate a part of panels of the first communication device, and the part of antennas comprises an antenna corresponding to the part of panels.

18. The method according to any one of claims 12 to 16, wherein the first frame comprises a first field, wherein the first field is used to carry an antenna index, and the antenna index is used to indicate the part of antennas.

19. The method according to claim 17 or 18, wherein the first frame further comprises a second field, wherein the second field is used to indicate that the first field is used to indicate a part of panels of the first communication device or carry an antenna index.

20. The method according to any one of claims 12 to 19, wherein the first frame comprises a third field, wherein the third field is used to indicate that the first frame is a frame of an extremely high throughput (EHT) variant.

21. The method according to any one of claims 12 to 19, wherein the first frame is a null data packet announcement (NDPA) frame, and the first frame comprises a third field, wherein the third field comprises a standard control field; and

when a value of the standard control field is 00, it indicates that the first frame is a frame of

a very high throughput (VHT) variant;

when a value of the standard control field is 01, it indicates that the first frame is a frame of a high efficiency (HE) variant;

when a value of the standard control field is 10, it indicates that the first frame is a frame of a ranging (Ranging) variant; or

when a value of the standard control field is 11, it indicates that the first frame is a frame of an extremely high throughput (EHT) variant.

22. The method according to any one of claims 12 to 21, wherein the second frame comprises an extremely high throughput (EHT) signal field, an EHT short training field, and an EHT long training field, wherein the part of antennas corresponds to at least two antenna panels, the second frame comprises at least two second subframes, and the EHT long training field in the second subframe comprises a long training field of an antenna corresponding to one of the at least two antenna panels.

23. A channel sounding apparatus, comprising:

a memory, configured to store computer instructions; and

a processor, configured to execute the computer instruction stored in the memory, to enable the channel sounding apparatus to perform the method according to any one of claims 1 to 11, or enable the channel sounding apparatus to perform the method according to any one of claims 12 to 22.

24. A computer-readable storage medium, configured to store computer instructions, wherein when the computer instructions are executed by a computer, the computer is enabled to perform the method according to any one of claims 1 to 11, or the computer is enabled to perform the method according to any one of claims 12 to 22.

25. A communication system, comprising a first channel sounding apparatus and a second channel sounding apparatus, wherein the first channel sounding apparatus is configured to perform the method according to any one of claims 1 to 11, and the second channel sounding apparatus is configured to perform the method according to any one of claims 12 to 22.

26. A computer program product, comprising instructions, wherein when the instructions are executed by a computer, the computer is enabled to perform the method according to any one of claims 1 to 11, or the computer is enabled to perform the method according to any one of claims 12 to 22.