CLAIMS

1. A communication method, comprising:

receiving, by a network device, first information from a first terminal device, wherein the first information indicates that the first terminal device has a capability of sending an uplink signal on a first carrier, a center frequency of the uplink signal is different from a center frequency of a first downlink signal, and the first carrier is any one of the following carriers: a carrier on which the first downlink signal is located, a carrier that is on a same frequency band as a carrier on which the first downlink signal is located and whose center frequency is different from a center frequency of the carrier on which the first downlink signal is located, or a carrier that is located on a frequency band different from that of a carrier on which the first downlink signal is located; and

determining, by the network device, second information based on the first information, and sending the second information to the first terminal device, wherein the second information indicates a frequency domain resource used by the first terminal device to send a first uplink signal, and the first uplink signal is a signal obtained through modulating the first downlink signal by the first terminal device, or the first uplink signal is a signal generated by the first terminal device.

2. The method according to claim 1, wherein that the first terminal device has a capability of sending an uplink signal on the first carrier comprises: the first terminal device has a capability of sending the uplink signal at a first frequency domain location that is greater than the center frequency of the first downlink signal on the first carrier and a second frequency domain location that is less than the center frequency of the first downlink signal on the first carrier, wherein a value of a frequency domain offset between the first frequency domain location and a center frequency of the first carrier is the same as a value of a frequency domain offset between the second frequency domain location and the center frequency of the first carrier; or the first terminal device has a capability of sending the uplink signal at the first frequency domain location or the second frequency domain location on the first carrier.

3. The method according to claim 1 or 2, wherein the first carrier is the carrier that is in the same frequency band as the carrier on which the first downlink signal is located and whose center frequency is different from the center frequency of the carrier on which the first downlink signal is located; and that the first terminal device has a capability of sending an uplink signal on the first carrier comprises: the first terminal device has a capability of sending the uplink signal on the first carrier whose frequency is a first frequency offset greater than the center frequency of the carrier on which the first downlink signal is located and the first carrier whose frequency is a second frequency offset less than

the center frequency of the carrier on which the first downlink signal is located, wherein the first frequency offset and the second frequency offset are frequency offsets between center frequencies of the first carriers and the center frequency of the carrier on which the first downlink signal is located, and values of the first frequency offset and the second frequency offset are the same; or the first terminal device has a capability of sending the uplink signal on the first carrier at the first frequency offset or the second frequency offset.

4. The method according to claim 3, wherein the values of the first frequency offset and the second frequency offset are less than or equal to a first threshold.

5. The method according to any one of claims 1 to 4, wherein the second information comprises at least one of the following:

a quantity of frequency domain locations occupied by the first uplink signal, a frequency offset between the first uplink signal and the first downlink signal, a frequency offset between the center frequency of the first carrier and the center frequency of the carrier on which the first downlink signal is located, or a bandwidth of the first uplink signal.

6. The method according to any one of claims 1 to 5, wherein the second information is carried in a paging message, Msg4 in a random access process, downlink control information DCI, a signal carrying a broadcast message, a preamble signal, a reference signal, or a calibration signal.

7. The method according to any one of claims 1 to 6, wherein the second information indicates a frequency domain location and a frequency domain bandwidth that are of the first uplink signal on the first carrier, and the second information comprises modulation and coding scheme MCS information and/or a quantity of frequency domain locations occupied by the first uplink signal, wherein

the quantity of frequency domain locations occupied by the first uplink signal is 1 or 2, and the MCS information is used by the first terminal device to determine a value of a frequency offset between the first frequency domain location and/or the second frequency domain location and the center frequency of the first downlink signal, and the bandwidth of the first uplink signal.

8. The method according to claim 7, wherein the MCS information comprises a value of a line code or spreading code factor of the first uplink signal, and/or a modulation symbol length of the first uplink signal.

9. A communication method, comprising:

sending, by a first terminal device, first information to a network device, wherein the first information indicates that the first terminal device has a capability of sending an uplink signal on a

first carrier, a center frequency of the uplink signal is different from a center frequency of a first downlink signal, and the first carrier is any one of the following carriers: a carrier on which the first downlink signal is located, a carrier that is on a same frequency band as a carrier on which the first downlink signal is located and whose center frequency is different from a center frequency of the carrier on which the first downlink signal is located, or a carrier that is located on a frequency band different from that of a carrier on which the first downlink signal is located; and

receiving, by the first terminal device, second information from the network device, and sending a first uplink signal to the network device on a frequency domain resource indicated by the second information, wherein the first uplink signal is a signal obtained through modulating the first downlink signal by the first terminal device, or the first uplink signal is a signal generated by the first terminal device.

10. The method according to claim 9, wherein that the first terminal device has a capability of sending an uplink signal on the first carrier comprises: the first terminal device has a capability of sending the uplink signal at a first frequency domain location that is greater than the center frequency of the first downlink signal on the first carrier and a second frequency domain location that is less than the center frequency of the first downlink signal on the first carrier, wherein a value of a frequency domain offset between the first frequency domain location and a center frequency of the first carrier is the same as a value of a frequency domain offset between the second frequency domain location and the center frequency of the first carrier; or the first terminal device has a capability of sending the uplink signal at the first frequency domain location or the second frequency domain location on the first carrier.

11. The method according to claim 9 or 10, wherein the first carrier is the carrier that is in the same frequency band as the carrier on which the first downlink signal is located and whose center frequency is different from the center frequency of the carrier on which the first downlink signal is located; and that the first terminal device has a capability of sending an uplink signal on the first carrier comprises: the first terminal device has a capability of sending the uplink signal on the first carrier whose frequency is a first frequency offset greater than the center frequency of the carrier on which the first downlink signal is located and the first carrier whose frequency is a second frequency offset less than the center frequency of the carrier on which the first downlink signal is located, wherein the first frequency offset and the second frequency offset are frequency offsets between center frequencies of the first carriers and the center frequency of the carrier on which the first downlink signal is located, and values of the first frequency offset and the second frequency offset are the same; or the first terminal device has a capability of sending the uplink signal on the first carrier at the first frequency offset or the second frequency offset.

12. The method according to claim 11, wherein the values of the first frequency offset and the second frequency offset are less than or equal to a first threshold.

13. The method according to any one of claims 9 to 12, wherein the second information comprises at least one of the following:

a quantity of frequency domain locations occupied by the first uplink signal, a frequency offset between the first uplink signal and the first downlink signal, a frequency offset between the center frequency of the first carrier and the center frequency of the carrier on which the first downlink signal is located, or a bandwidth of the first uplink signal.

14. The method according to any one of claims 9 to 13, wherein the second information is carried in a paging message, Msg4 in a random access process, downlink control information DCI, a signal carrying a broadcast message, a preamble signal, a reference signal, or a calibration signal.

15. The method according to any one of claims 9 to 14, wherein the second information indicates a frequency domain location and a frequency domain bandwidth that are of the first uplink signal on the first carrier, and the second information comprises modulation and coding scheme MCS information and/or a quantity of frequency domain locations occupied by the first uplink signal, wherein

the quantity of frequency domain locations occupied by the first uplink signal is 1 or 2, and the MCS information is used by the first terminal device to determine a value of a frequency offset between the first frequency domain location and/or the second frequency domain location and the center frequency of the first downlink signal, and the bandwidth of the first uplink signal.

16. The method according to claim 15, wherein the MCS information comprises a value of a line code or spreading code factor of the first uplink signal, and/or a modulation symbol length of the first uplink signal.

17. A communication system, wherein the communication system comprises a network device and a first terminal device, the network device is configured to perform the communication method according to any one of claims 1 to 8, and the first terminal device is configured to perform the communication method according to any one of claims 9 to 16.

18. A communication apparatus, comprising a memory and a processor coupled to the memory, wherein the memory is configured to store a program, the processor is configured to execute the program stored in the memory, and when the communication apparatus runs, the processor runs the program, so that the communication apparatus performs the communication method according to any one of claims 1 to 8, or the communication apparatus performs the communication method according to any one of claims 9 to 16.

19. A computer-readable storage medium, wherein the computer-readable storage medium stores

a computer program or instructions, and when the computer program or the instructions are run, the communication method according to any one of claims 1 to 8 is implemented, or the communication method according to any one of claims 9 to 16 is implemented.