CLAIMS

What is claimed is:

1. A communication method performed by a terminal device or a chip in a terminal device, comprising:

receiving first information from a network device, wherein the first information indicates an antenna port configuration used by an uplink carrier;

determining statuses of L transmitters in the terminal device based on the antenna port configuration, wherein L is an integer greater than 0; and

sending second power information to the network device, wherein the second power information indicates that the terminal device supports both a first transmit power and a second transmit power for information transmission on at least one of one antenna port or one carrier, and the first transmit power is greater than the second transmit power.

2. The method according to claim 1, wherein the determining statuses of L transmitters in the terminal device based on the antenna port configuration comprises:

determining at least one uplink carrier, wherein the at least one uplink carrier is for transmitting information or the at least one uplink carrier is an uplink carrier scheduled for use by the terminal device;

determining an antenna port transmission configuration based on the at least one uplink carrier and the antenna port configuration, wherein the antenna port transmission configuration indicates an antenna port corresponding to the at least one uplink carrier; and

determining the statuses of the L transmitters based on the antenna port transmission configuration.

3. The method according to claim 2, wherein the antenna port transmission configuration corresponds to one or a plurality of transmitter configurations; and

the determining the statuses of the L transmitters based on the antenna port transmission configuration comprises:

based on the antenna port transmission configuration corresponding to only one transmitter configuration, determining the transmitter configuration corresponding to the antenna port transmission configuration as a first transmitter configuration;

based on the antenna port transmission configuration corresponding to a plurality of transmitter configurations, and the plurality of transmitter configurations comprise a second transmitter configuration, determining the second transmitter configuration as a first transmitter configuration; or

based on the antenna port transmission configuration corresponding to a plurality of transmitter configurations, and the plurality of transmitter configurations do not comprise a second transmitter configuration, selecting one transmitter configuration from the plurality of transmitter configurations corresponding to the antenna port transmission configuration as a first transmitter configuration, wherein

the second transmitter configuration is a transmitter configuration used when the terminal device receives the first information.

4. The method according to claim 3, wherein the second transmitter configuration is located in a first group of transmitter configurations of N groups of transmitter configurations, and the first group of transmitter configurations comprises at least one transmitter configuration; and

the selecting one transmitter configuration from the plurality of transmitter configurations corresponding to the antenna port transmission configuration as a first transmitter configuration comprises:

based on a transmitter configuration that meets a condition being determined to exist in the first group of transmitter configurations, using the transmitter configuration that meets the condition as the first transmitter configuration; or

based on a transmitter configuration that meets a condition being determined to not exist in the first group of transmitter configurations, determining, from the N groups of transmitter configurations in a preset sequence, the transmitter configuration that meets the condition, and using the transmitter configuration that meets the condition as the first transmitter configuration, wherein

the transmitter configuration meeting the condition comprises one or a plurality of antenna port configurations corresponding to the transmitter configuration including the antenna port transmission configuration.

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

based on a first transmitter configuration being different from a second transmitter configuration, determining to perform transmitter configuration switching; or based on a first

transmitter configuration is different from a second transmitter configuration, determining to skip performing transmitter configuration switching, wherein

the second transmitter configuration is statuses of the L transmitters when the terminal device receives the first information, and the first transmitter configuration is statuses of the L transmitters determined based on the antenna port configuration.

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

receiving third information from the network device, wherein the third information indicates the statuses of the L transmitters in the terminal device, and L is an integer greater than 0; or the third information indicates a status of a transmitter corresponding to each of at least one carrier in the terminal device;

sending fifth information to the network device, wherein the fifth information indicates the statuses of the L transmitters in the terminal device, and L is an integer greater than 0; or the fifth information indicates a status of a transmitter corresponding to each of at least one carrier in the terminal device; or

setting the statuses of the L transmitters to pre-configured statuses.

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

receiving first power information from the network device, wherein the first power information indicates that a transmit power of at least one carrier is a first transmit power; and

transmitting information on the at least one carrier by using the first transmit power.

8. A communication method performed by a network device or a chip in a network device, comprising:

sending first information to a terminal device, wherein the first information indicates an antenna port configuration used by an uplink carrier;

determining statuses of L transmitters in the terminal device based on the antenna port configuration, wherein L is an integer greater than 0; and

receiving second power information from the terminal device, wherein the second power information indicates that the terminal device supports both a first transmit power and a second transmit power for information transmission on at least one of one antenna port or one carrier, and the first transmit power is greater than the second transmit power.

9. The method according to claim 8, further comprising:

sending first power information to the terminal device, wherein the first power information indicates that a transmit power of at least one carrier is a first transmit power.

10. A communication apparatus being a terminal device or a chip in a terminal device, comprising:

one or more non-transitory memory storage comprising instructions; and

one or more processors in communication with the one or more memory storage, wherein the instructions, when executed by the one or more processors, cause the apparatus to:

receive first information from a network device, wherein the first information indicates an antenna port configuration used by an uplink carrier;

determine statuses of L transmitters in the terminal device based on the antenna port configuration, wherein L is an integer greater than 0; and

send second power information to the network device, wherein the second power information indicates that the terminal device supports both a first transmit power and a second transmit power for information transmission on at least one of one antenna port or one carrier, and the first transmit power is greater than the second transmit power.

11. The apparatus according to claim 10, wherein the instructions, when executed by the one or more processors, further cause the apparatus to:

determine at least one uplink carrier, wherein the at least one uplink carrier is for transmitting information or the at least one uplink carrier is an uplink carrier scheduled for use by the terminal device;

determine an antenna port transmission configuration based on the at least one uplink carrier and the antenna port configuration, wherein the antenna port transmission configuration indicates an antenna port corresponding to the at least one uplink carrier; and

determine the statuses of the L transmitters based on the antenna port transmission configuration.

12. The apparatus according to claim 11, wherein the antenna port transmission configuration corresponds to one or a plurality of transmitter configurations; and

the instructions, when executed by the one or more processors, further cause the apparatus to:

based on the antenna port transmission configuration corresponding to only one transmitter configuration, determine the transmitter configuration corresponding to the antenna port transmission configuration as a first transmitter configuration;

based on the antenna port transmission configuration corresponding to a plurality of transmitter configurations, and the plurality of transmitter configurations comprise a second transmitter configuration, determine the second transmitter configuration as a first transmitter configuration; or

based on the antenna port transmission configuration corresponding to a plurality of transmitter configurations, and the plurality of transmitter configurations do not comprise a second transmitter configuration, select one transmitter configuration from the plurality of transmitter configurations corresponding to the antenna port transmission configuration as a first transmitter configuration, wherein

the second transmitter configuration is a transmitter configuration used when the terminal device receives the first information.

13. The apparatus according to claim 12, wherein the second transmitter configuration is located in a first group of transmitter configurations of N groups of transmitter configurations, and the first group of transmitter configurations comprises at least one transmitter configuration; and

the instructions, when executed by the one or more processors, further cause the apparatus to:

based on a transmitter configuration that meets a condition being determined to exist in the first group of transmitter configurations, use the transmitter configuration that meets the condition as the first transmitter configuration; or

based on a transmitter configuration that meets a condition being determined to not exist in the first group of transmitter configurations, determine, from the N groups of transmitter configurations in a preset sequence, the transmitter configuration that meets the condition, and use the transmitter configuration that meets the condition as the first transmitter configuration, wherein

the transmitter configuration meeting the condition comprises one or a plurality of antenna port configurations corresponding to the transmitter configuration including the antenna port transmission configuration.

14. The apparatus according to claim 10, wherein the instructions, when executed by the one

or more processors, further cause the apparatus to:

based on a first transmitter configuration being different from a second transmitter configuration, determine to perform transmitter configuration switching; or based on a first transmitter configuration being different from a second transmitter configuration, determine to skip performing transmitter configuration switching, wherein

the second transmitter configuration is statuses of the L transmitters when the communication apparatus receives the first information, and the first transmitter configuration is statuses of the L transmitters determined based on the antenna port configuration.

15. The apparatus according to claim 10, wherein the instructions, when executed by the one or more processors, further cause the apparatus to:

receive third information from the network device, wherein the third information indicates the statuses of the L transmitters in the terminal device, and L is an integer greater than 0; or the third information indicates a status of a transmitter corresponding to each of at least one carrier in the terminal device;

send fifth information to the network device, wherein the fifth information indicates the statuses of the L transmitters in the terminal device, and L is an integer greater than 0; or the fifth information indicates a status of a transmitter corresponding to each of at least one carrier in the terminal device; or

set the statuses of the L transmitters to pre-configured statuses.

16. The apparatus according to claim 10, wherein the instructions, when executed by the one or more processors, further cause the apparatus to:

receive first power information from the network device, wherein the first power information indicates that a transmit power of at least one carrier is a first transmit power; and

transmit information on the at least one carrier by using the first transmit power.

17. A communication apparatus being a network device or a chip in a network device, comprising:

one or more non-transitory memory storage comprising instructions; and

one or more processors in communication with the one or more memory storage, wherein the

instructions, when executed by the one or more processors, cause the apparatus to:

send first information to a terminal device, wherein the first information indicates an antenna port configuration used by an uplink carrier;

determine statuses of L transmitters in the terminal device based on the antenna port configuration, wherein L is an integer greater than 0; and

receive second power information from the terminal device, wherein the second power information indicates that the terminal device supports both a first transmit power and a second transmit power for information transmission on at least one of one antenna port or one carrier, and the first transmit power is greater than the second transmit power.

18. The apparatus according to claim 17, wherein the instructions, when executed by the one or more processors, further cause the apparatus to:

send first power information to the terminal device, wherein the first power information indicates that a transmit power of at least one carrier is a first transmit power.

19. The method according to claim 1, further comprising:

receiving first power information from the network device, wherein the first power information indicates that a transmit power of at least one carrier is a first transmit power; and

transmitting information on the at least one carrier by using the first transmit power.

20. The apparatus according to claim 10, wherein the instructions, when executed by the one or more processors, further cause the apparatus to:

receive first power information from the network device, wherein the first power information indicates that a transmit power of at least one carrier is a first transmit power; and

transmit information on the at least one carrier by using the first transmit power.