power ramping in the next RACH attempt based on the Q and/or the K configured by the network device. For example, when a numeric count of cancelling the PRACH transmission exceeds the K, the power ramping will not be performed for the next RACH attempt, that is, the power ramping counter pauses its increment by 1.

[0061] In some embodiments of the disclosure, determining whether to perform the power ramping based on the protocol, includes: in a case that a first event agreed in the protocol occurs, determining to perform the power ramping.

[0062] The first event is: for the plurality of PRACH transmissions, less than or equal to m PRACH transmissions are reduced in transmission power or cancelled due to a power allocation, the m is less than a numeric count n of transmissions for the plurality of PRACH transmissions determined by the UE, and the m is agreed in the protocol.

[0063] For example, if there are four PRACH transmissions within one RACH attempt, the numeric count n of transmissions for the four PRACH transmissions is 8. For the numeric count n of transmissions for the four PRACH transmissions, less than or equal to m PRACH transmissions are reduced in transmission power or cancelled due to a power allocation (including 1, 2, 3, … m PRACH transmissions), the m is less than the n, i.e., 8. That is, when $1<m<8$, the first event agreed in the protocol occurs, and it is determined to perform the power ramping during the PRACH retransmission, that is, the counting number of the power ramping counter is increased by 1.

[0064] In an optional embodiment of the disclosure, the method further includes: receiving a candidate numeric count of transmissions for the plurality of PRACH transmissions sent by the network device; and determining the n based on the candidate numeric count of transmissions.

[0065] In detail, a set of data configured by the network device for the UE includes a plurality of candidate numeric counts of transmissions. By comparing a measured reference signal received power with several thresholds, the UE may determine the n. For example, the data includes 2, 4 and 8, and the measured reference signal received power is within a third threshold interval, so that it is determined that the n is 8.

[0066] It should be noted that, in some implementations, the UE may further determine whether the first event agreed in the protocol occurs after determining to perform the power ramping based on the configuration information of the network device. If the first event agreed in the protocol occurs, the UE determines to perform the power ramping. Or, if the UE does not

WHAT IS CLAIMED IS:

1. A power ramping determination method, performed by a user equipment (UE), comprising:

for a plurality of physical random access channel (PRACH) transmissions within one random access channel (RACH) attempt, determining whether to perform power ramping based on configuration information of a network device or based on a protocol.

2. The method of claim 1, further comprising:

receiving the configuration information sent by the network device;

wherein the configuration information indicates whether the UE performs the power ramping or not.

3. The method of claim 1 or 2, wherein determining whether to perform the power ramping based on the configuration information of the network device comprises:

in response to receiving the configuration information or in response to receiving the configuration information carrying information indicating the UE to perform the power ramping, determining to perform the power ramping; or

in response to not receiving the configuration information or in response to receiving the configuration information carrying information indicating the UE not to perform the power ramping, determining not to perform the power ramping.

4. The method of any one of claims 1-3, wherein determining whether to perform the power ramping based on the protocol comprises:

in a case that a first event agreed in the protocol occurs, determining to perform the power ramping;

wherein the first event is: for the plurality of PRACH transmissions, less than or equal to m PRACH transmissions are reduced in transmission power or cancelled due to a power allocation, the m is less than a numeric count n of transmissions for the plurality of PRACH transmissions determined by the UE, and the m is agreed in the protocol.

5. The method of claim 4, further comprising:

receiving a candidate numeric count of transmissions for the plurality of PRACH transmissions sent by the network device; and

determining the numeric count n based on the candidate numeric count of transmissions.

6. The method of any one of claims 1-3, wherein determining whether to perform the

power ramping based on the protocol comprises:

in a case that a second event agreed in the protocol occurs, determining not to perform the power ramping;

wherein the second event is: for the plurality of PRACH transmissions, at least one PRACH transmission is reduced in transmission power or cancelled due to a power allocation.

7. The method of any one of claims 1-6, wherein determining whether to perform the power ramping based on the configuration information of the network device or based on the protocol comprises:

determining a threshold P of a numeric count of PRACH transmissions based on the configuration information of the network device or based on the protocol;

determining a numeric count p of PRACH transmissions in a case a third event occurs for the plurality of PRACH transmissions;

determining whether to perform the power ramping based on a relationship between the P and the p;

wherein the third event is a transmission power of a PRACH transmission is reduced or a PRACH transmission is cancelled due to a power allocation.

8. The method of claim 7, wherein determining whether to perform the power ramping based on the relationship between the P and the p comprises:

in a case $p \leqslant P$, determining to perform the power ramping; or

in a case $p > P$, determining not to perform the power ramping.

9. The method of claim 7, wherein the P comprises a threshold Q of a numeric count of reducing the transmission power and a threshold K of a numeric count of cancelling the PRACH transmission, the p comprises a numeric count q of PRACH transmissions with reduced transmission power due to the power allocation for the plurality of PRACH transmissions and a numeric count k of PRACH transmissions cancelled due to the power allocation for the plurality of PRACH transmissions, and determining whether to perform the power ramping based on the relationship between the p and the P comprises:

in a case $k \leqslant K$ and $q \leqslant Q$, determining to perform the power ramping; or

in a case $k > K$ or $q > Q$, determining not to perform the power ramping.

10. The method of claim 9, wherein determining whether to perform the power ramping based on the relationship between the p and the P comprises:

in a case p≤P, q≤Q and k≤K, determining to perform the power ramping; or

in a case any one of p>P, q>Q and k>K holds, determining not to perform the power ramping.

11. A power ramping determination method, performed by a network device, comprising:

sending configuration information to a user equipment (UE);

wherein the configuration information indicates whether the UE performs the power ramping or not.

12. The method of claim 11, further comprising:

sending a candidate numeric count of transmissions for a plurality of physical random access channel (PRACH) transmissions,

wherein the candidate numeric count of the transmissions is used for assisting the UE to determine a numeric count n of transmissions for the plurality of PRACH transmissions.

13. The method of claim 11 or 12, further comprising:

sending a threshold P of a numeric count of PRACH transmissions to the UE.

14. A user equipment (UE), comprising:

a determining module, configured to, for a plurality of physical random access channel (PRACH) transmissions within one random access channel (RACH) attempt, determine whether to perform power ramping based on configuration information of a network device or based on a protocol.

15. A network device, comprising:

a sending module, configured to send configuration information to a user equipment (UE),

wherein the configuration information indicates whether the UE performs the power ramping or not.

16. A communication device, comprising: a transceiver, a memory, and a processor connected to the transceiver and the memory, respectively, wherein the processor is configured to control the transceiver to receive and transmit wireless signals by executing computer-executable instructions on the memory, and is capable of implementing the method of any one of claims 1-13.