

CLAIMS

What is claimed is:

1. A method for sidelink rate matching and resource mapping, wherein the method is executed by a terminal device, and the method comprises:

5 calculating, based on a resource size of a target resource, a length E of coded bits carriable by a usable resource with the target resource excluded; and

 performing resource mapping based on a coded bit sequence output by rate matching, wherein a length of the coded bit sequence is equal to E or equal to $E+E'$, and E' is a length of coded bits carriable by the target resource;

10 wherein the target resource comprises:

 a resource occupied by automatic gain control (AGC);

 wherein the performing resource mapping based on a coded bit sequence output by rate matching comprises:

 mapping the coded bit sequence output by rate matching to the usable resource
15 in ascending order from the $(N+1)$ -th symbol to the last symbol of the usable resource, and then mapping a remaining coded bit sequence to the usable resource in ascending order from the 1st symbol to the N -th symbol, wherein

 the length of the coded bit sequence output by rate matching is equal to $E+E'$, and $N=1$;

20 wherein, in the usable resource, mapping information of the first N symbols is repetition of mapping information of the $(N+1)$ -th to $(2N)$ -th symbols.

2. A method for sidelink rate matching and resource mapping, wherein the method is executed by a terminal device, and the method comprises:

25 calculating, based on a resource size of a target resource, a length E of coded bits carriable by a usable resource with the target resource excluded; and

 performing resource mapping based on a coded bit sequence output by rate matching, wherein a length of the coded bit sequence is equal to E or equal to $E+E'$, and E' is a length of coded bits carriable by the target resource;

wherein the target resource comprises:

a resource occupied by automatic gain control (AGC); or

a resource occupied by a physical sidelink shared channel (PSSCH), wherein the resource occupied by the PSSCH and a resource occupied by a physical sidelink control channel PSCCH overlap in time domain;

wherein the performing resource mapping based on a coded bit sequence output by rate matching comprises:

mapping the coded bit sequence output by rate matching to the usable resource in ascending order from the (M+1)-th resource element (RE) to the last RE of the usable resource, and then mapping a remaining coded bit sequence to the usable resource in ascending order from the 1st RE to the M-th RE, wherein

the length of the coded bit sequence output by rate matching is equal to $E+E'$, the target resource comprises a resource occupied by the PSSCH, and M is the number of REs occupied by the PSSCH;

wherein, in the usable resource, mapping information of the first M REs is repetition of mapping information of the (M+1)-th to (2M)-th REs.

3. A method for sidelink rate matching and resource mapping, wherein the method is executed by a terminal device, and the method comprises:

calculating, based on a resource size of a target resource, a length E of coded bits car-
riable by a usable resource with the target resource excluded; and

performing resource mapping based on a coded bit sequence output by rate matching, wherein a length of the coded bit sequence is equal to E or equal to $E+E'$, and E' is a length of coded bits car-
riable by the target resource;

wherein the target resource comprises:

a resource occupied by automatic gain control (AGC);

wherein the performing resource mapping based on a coded bit sequence output by rate matching comprises:

mapping the coded bit sequence output by rate matching to the usable resource in ascending order from the (N+1)-th symbol to the last symbol of the usable resource, wherein in the usable resource, complex-value symbols mapped to the first

N symbols are the same as complex-value symbols mapped to the (N+1)-th to (2N)-th symbols, wherein

the length of the coded bit sequence output by rate matching is equal to E, and $N=1$.

5 4. A method for sidelink rate matching and resource mapping, wherein the method is executed by a terminal device, and the method comprises:

calculating, based on a resource size of a target resource, a length E of coded bits carriable by a usable resource with the target resource excluded; and

performing resource mapping based on a coded bit sequence output by rate matching, wherein a length of the coded bit sequence is equal to E or equal to $E+E'$,
10 and E' is a length of coded bits carriable by the target resource;

wherein the target resource comprises:

a resource occupied by automatic gain control (AGC); or

a resource occupied by a physical sidelink shared channel (PSSCH), wherein
15 the resource occupied by the PSSCH and a resource occupied by a physical sidelink control channel PSCCH overlap in time domain;

wherein the performing resource mapping based on a coded bit sequence output by rate matching comprises:

mapping the coded bit sequence output by rate matching to the usable resource
20 in ascending order from the (M+1)-th RE to the last RE of the usable resource, wherein in the usable resource, complex-value symbols mapped to the first M REs are the same as complex-value symbols mapped to the (M+1)-th to (2M)-th REs, wherein

the length of the coded bit sequence output by rate matching is equal to E, the
25 target resource comprises a resource occupied by the PSSCH, and M is the number of REs occupied by the PSSCH.

5. A method for sidelink rate matching and resource mapping, wherein the method is executed by a terminal device, and the method comprises:

calculating, based on a resource size of a target resource, a length E of coded
30 bits carriable by a usable resource with the target resource excluded; and

performing resource mapping based on a coded bit sequence output by rate matching, wherein a length of the coded bit sequence is equal to E or equal to $E+E'$, and E' is a length of coded bits carriable by the target resource;

wherein the target resource comprises:

5 a resource occupied by automatic gain control (AGC);

wherein the performing resource mapping based on a coded bit sequence output by rate matching comprises:

mapping the coded bit sequence output by rate matching to the usable resource in ascending order from the 1st symbol to the last symbol of the usable resource;

10 wherein

the length of the coded bit sequence output by rate matching is equal to $E+E'$, and $N=1$;

wherein

15 in the usable resource, mapping information of the first N symbols is repetition of mapping information of the $(N+1)$ -th to $(2N)$ -th symbols; or

in the usable resource, mapping information of the first M REs is repetition of mapping information of the $(M+1)$ -th to $(2M)$ -th REs.

6. A method for sidelink rate matching and resource mapping, wherein the method is executed by a terminal device, and the method comprises:

20 calculating, based on a resource size of a target resource, a length E of coded bits carriable by a usable resource with the target resource excluded; and

performing resource mapping based on a coded bit sequence output by rate matching, wherein a length of the coded bit sequence is equal to E or equal to $E+E'$, and E' is a length of coded bits carriable by the target resource;

25 wherein the target resource comprises:

a resource occupied by automatic gain control (AGC); or

a resource occupied by a physical sidelink shared channel (PSSCH), wherein the resource occupied by the PSSCH and a resource occupied by a physical sidelink control channel PSCCH overlap in time domain;

30 wherein the performing resource mapping based on a coded bit sequence output

by rate matching comprises:

mapping the coded bit sequence output by rate matching to the usable resource in ascending order from the 1st symbol to the last symbol of the usable resource; wherein

5 the number of usable resource elements (REs) on the 1st symbol is half the total number of REs on the 1st symbol, and the length of the coded bit sequence output by rate matching is equal to E .

7. The method according to claim 1 or 2, wherein before the performing resource mapping based on a coded bit sequence output by rate matching, the
10 method further comprises:

in a case of polar coding, outputting a subsequence with a second sequence length E' and a subsequence with a first sequence length E starting from a position of $k=0$ of coded bits, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; or

15 in a case of polar coding, outputting a subsequence with a second sequence length E' and a subsequence with a first sequence length E starting from a position of $k=A-E$ of coded bits, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; wherein

A is a length of a circular buffer, A is obtained through calculation based on E ,
20 and k represents a starting output position of the coded bits.

8. The method according to claim 1 or 2, wherein before the performing resource mapping based on a coded bit sequence output by rate matching, the method further comprises:

in a case of LDPC coding, outputting a subsequence with a second sequence
25 length E' and a subsequence with a first sequence length E starting from a starting information position of a redundancy version, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; wherein

9. The method according to claim 1 or 2, wherein before the performing
30 resource mapping based on a coded bit sequence output by rate matching, the

method further comprises:

in a case of polar coding, outputting a subsequence with a first sequence length E starting from a position of $k=A-E$ of coded bits, and outputting a subsequence with a second sequence length E' starting from a position of $k=0$ of the coded bits, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; or

in a case of polar coding, outputting a subsequence with a first sequence length E starting from a position of $k=0$ of coded bits, and outputting a subsequence with a second sequence length E' starting from a position of $k=E$ of the coded bits, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; or

in a case of polar coding, outputting a subsequence with a first sequence length E starting from a position of $k=E \bmod A$ of coded bits, and outputting a subsequence with a second sequence length E' starting from a position of $k=(E \bmod A)+E$ of the coded bits, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; wherein

A is a length of a circular buffer, A is obtained through calculation based on E , k represents a starting output position of the coded bits, and $\bmod$ represents a modulo operation.

10. The method according to claim 1 or 2, wherein before the performing resource mapping based on a coded bit sequence output by rate matching, the method further comprises:

in a case of LDPC coding, outputting a subsequence with a second sequence length E' and a subsequence with a first sequence length E starting from a position of $m=E$ of a redundancy version, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; or

in a case of LDPC coding, outputting a subsequence with a second sequence length E' and a subsequence with a first sequence length E starting from a position of $m=E \bmod A$ of a redundancy version, so as to generate a sequence with a length

$E'+E$, wherein the subsequence with the length E' is after the subsequence of the length E ; wherein

A is a length of a circular buffer, A is obtained through calculation based on E , m represents a starting output position, and mod represents a modulo operation.

5 11. The method according to claim 5, wherein before the performing resource mapping based on a coded bit sequence output by rate matching, the method further comprises:

10 in a case of polar coding, outputting a subsequence with a second sequence length E' and a subsequence with a first sequence length E starting from a position of $k=0$ of coded bits, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is before the subsequence of the length E ; or

15 in a case of polar coding, outputting a subsequence with a second sequence length E' and a subsequence with a first sequence length E starting from a position of $k=A-E$ of coded bits, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is before the subsequence of the length E ; wherein

A is a length of a circular buffer, A is obtained through calculation based on E , and k represents a starting output position of the coded bits.

20 12. The method according to claim 5, wherein before the performing resource mapping based on a coded bit sequence output by rate matching, the method further comprises:

25 in a case of LDPC coding, outputting a subsequence with a second sequence length E' and a subsequence with a first sequence length E starting from a starting information position of a redundancy version, so as to generate a sequence with a length $E'+E$, wherein the subsequence with the length E' is before the subsequence of the length E .

13. The method according to any one of claims 1 to 6, wherein before the performing resource mapping based on a coded bit sequence output by rate matching, the method further comprises:

30 based on a configuration of numerology, determining a starting symbol position or starting RE position for the resource mapping.

14. The method according to any one of claims 1 to 6, wherein before the performing resource mapping based on a coded bit sequence output by rate matching, the method further comprises:

5 determining, based on a redundancy version, a starting symbol position or starting RE position for the resource mapping.

15. The method according to claim 14, wherein the determining, based on a redundancy version, a starting symbol position or starting RE position for the resource mapping comprises:

10 based on the redundancy version and whether limited buffer rate matching LBRM is enabled, determining the starting symbol position or starting RE position for the resource mapping.

16. A terminal device, comprising a memory, a processor, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the method for
15 sidelink rate matching and resource mapping according to any one of claims 1 to 15 are implemented.

17. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, and when the computer program is executed by a processor, the steps of the method for sidelink rate matching and
20 resource mapping according to any one of claims 1 to 15 are implemented.