

CLAIMS

What is claimed is:

1. A sidelink resource transmission method, comprising:

based on an index number of a target physical sidelink transmission channel resource, obtaining, by a terminal device, from a preset mapping relationship an index number of a physical sidelink feedback channel (PSFCH) resource that corresponds to the index number of the target physical sidelink transmission channel resource; and

transmitting feedback information on a target PSFCH resource, wherein the index number of the PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource comprises an index number of the target PSFCH resource, wherein

the preset mapping relationship comprises a preconfigured mapping relationship between index numbers of PSFCH resources and index numbers of physical sidelink transmission channel resources, the index numbers of the physical sidelink transmission channel resources are set according to a first preset order of a first resource factor, the index numbers of the PSFCH resources are set according to a second preset order of a second resource factor, and the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource corresponding to received information;

wherein in a case that unicast transmission is performed on the target physical sidelink transmission channel resource,

the number of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship is S1, and the index number of the target PSFCH resource comprises S2 index numbers of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, wherein

S1 is a positive integer, and S2 is a positive integer less than or equal to S1;

wherein

the index number of the target PSFCH resource comprises at least an index number of the $n1^{\text{th}}$ PSFCH resource that corresponds to the index number of the target physical sidelink

transmission channel resource in the preset mapping relationship, wherein $n1 = [\text{device identification code}] \bmod [S1]$.

2. The method according to claim 1, wherein

the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource with any frequency-domain unit number among physical sidelink transmission channel resources corresponding to the received information;

or

the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource with the largest frequency-domain unit number among physical sidelink transmission channel resources corresponding to the received information;

or

the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource with the smallest frequency-domain unit number among physical sidelink transmission channel resources corresponding to the received information;

or

the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource whose frequency-domain unit number is closest to an average value of frequency-domain unit numbers among physical sidelink transmission channel resources corresponding to the received information;

or

the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource with the largest index number among physical sidelink transmission channel resources corresponding to the received information;

or

the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource with the smallest index number among physical sidelink transmission channel resources corresponding to the received information.

3. The method according to claim 1, wherein in a case that groupcast transmission is performed on the target physical sidelink transmission channel resource and the terminal device and another terminal device occupy the same PSFCH resource,

the number of index numbers of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship is S3, and the index number of the target PSFCH resource is an index number of a PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, wherein

S3 is a positive integer.

4. The method according to claim 3, wherein

in a case that S3 is greater than 1, the index number of the target PSFCH resource is an index number of the $n2^{\text{th}}$ PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, wherein $n2 = [\text{device identification code}] \bmod [S3]$.

5. The method according to claim 1 or 4, wherein the device identification code comprises one of the following:

at least a part of an identifier of the terminal device, at least a part of a groupcast identifier of the terminal device, at least a part of an identifier of a transmit terminal device corresponding to the terminal device, a spliced code that comprises at least a part of the identifier of the terminal device and at least a part of the identifier of the transmit terminal device corresponding to the terminal device, and a spliced code that comprises at least a part of the groupcast identifier of the terminal device and at least a part of the identifier of the transmit terminal device corresponding to the terminal device.

6. The method according to claim 1, wherein in a case that groupcast transmission is performed on the target physical sidelink transmission channel resource and the terminal device and another terminal device occupy different PSFCH resources,

the number of index numbers of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship is S4, the index number of the target PSFCH resource is an index number of the $n3^{\text{th}}$ PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, and $n3 = [\text{first device identification code}] \bmod [S4]$, wherein

S4 is a positive integer.

7. The method according to claim 1, wherein in a case that groupcast transmission is performed on the target physical sidelink transmission channel resource and the terminal device and another terminal device occupy different PSFCH resources,

the number of index numbers of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship is $S5$, the index number of the target PSFCH resource is an index number of the $n4^{\text{th}}$ PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, and $n4 = ([\text{first device identification code}] \bmod [S5]) \times Y + [\text{second device identification code}] \bmod [Y]$, wherein

$S5$ is a positive integer, Y is a configuration parameter, and Y is a positive integer.

8. The method according to claim 1, wherein

a first PSFCH resource set, a second PSFCH resource set, and a third PSFCH resource set are the same;

or

the first PSFCH resource set is the same as the second PSFCH resource set, and the first PSFCH resource set is different from the third PSFCH resource set;

or

the first PSFCH resource set is the same as the third PSFCH resource set, and the first PSFCH resource set is different from the second PSFCH resource set;

or

the first PSFCH resource set, the second PSFCH resource set, and the third PSFCH resource set are different from each other, wherein

the first PSFCH resource set comprises a PSFCH resource that is occupied by unicast transmission and whose index number corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, the second PSFCH resource comprises a PSFCH resource that is jointly occupied by terminal devices in groupcast transmission and whose index number corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, and the third PSFCH resource set comprises a PSFCH resource that is occupied by each terminal device in groupcast transmission and whose index number corresponds to the index number

of the target physical sidelink transmission channel resource in the preset mapping relationship.

9. A terminal device, comprising a processor, a memory, and a computer program stored in the memory and capable of running on the processor, wherein the computer program, when executed by the processor of the terminal device, causes the terminal device to perform:

based on an index number of a target physical sidelink transmission channel resource, obtaining from a preset mapping relationship an index number of a physical sidelink feedback channel (PSFCH) resource that corresponds to the index number of the target physical sidelink transmission channel resource; and

transmitting feedback information on a target PSFCH resource, wherein the index number of the PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource comprises an index number of the target PSFCH resource, wherein

the preset mapping relationship comprises a preconfigured mapping relationship between index numbers of PSFCH resources and index numbers of physical sidelink transmission channel resources, the index numbers of the physical sidelink transmission channel resources are set according to a first preset order of a first resource factor, the index numbers of the PSFCH resources are set according to a second preset order of a second resource factor, and the target physical sidelink transmission channel resource is a physical sidelink transmission channel resource corresponding to received information;

wherein in a case that unicast transmission is performed on the target physical sidelink transmission channel resource,

the number of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship is $S1$, and the index number of the target PSFCH resource comprises $S2$ index numbers of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, wherein

$S1$ is a positive integer, and $S2$ is a positive integer less than or equal to $S1$;

wherein,

the index number of the target PSFCH resource comprises at least an index number of the $n1^{\text{th}}$ PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, wherein $n1 = [\text{device identification code}] \bmod [S1]$.

10. The terminal device according to claim 9, wherein in a case that groupcast transmission is performed on the target physical sidelink transmission channel resource and the terminal device and another terminal device occupy the same PSFCH resource,

the number of index numbers of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship is $S3$, and the index number of the target PSFCH resource is an index number of a PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, wherein

$S3$ is a positive integer.

11. The terminal device according to claim 10, wherein,

in a case that $S3$ is greater than 1, the index number of the target PSFCH resource is an index number of the $n2^{\text{th}}$ PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, wherein $n2 = [\text{device identification code}] \bmod [S3]$.

12. The terminal device according to claim 9, wherein in a case that groupcast transmission is performed on the target physical sidelink transmission channel resource and the terminal device and another terminal device occupy different PSFCH resources,

the number of index numbers of PSFCH resources that correspond to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship is $S4$, the index number of the target PSFCH resource is an index number of the $n3^{\text{th}}$ PSFCH resource that corresponds to the index number of the target physical sidelink transmission channel resource in the preset mapping relationship, and $n3 = [\text{first device identification code}] \bmod [S4]$, wherein

$S4$ is a positive integer.